Your Ultimate Guide to Coding and Labelling Technology

Matthews
INTELLIGENT IDENTIFICATION

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Your Ultimate Guide to Coding and Labelling Technology

The demands of a label and code are ever changing. Where once brand owners solely looked to codes for product identification, now they are being used to fight counterfeiters and build trust with consumers. Where labels were used for marketing and promotions, now they carry a treasure-trove of information as laid down by industry and retailer standards.

At the same time, coding and labelling technology has been subject to the ongoing drive for better efficiency on the production line. Just like other packaging and processing machinery, coders and labellers are being scrutinised for their ability to maximise productivity, reduce operational costs, improve business growth and ultimately create a lean organisation

But not all coding and labelling equipment is created equal. That's why, whether you're thinking of investing in coding and labelling equipment for the first time, or need to upgrade, it pays to understand the types of coding and labelling technologies and how they will benefit your business, now and into the future.

Your Ultimate Guide to Coding and Labelling will help you learn:

- Why you need coding and labelling technology
- Trends in coding and labelling
- The codes every manufacturer should know
- Types of coding and labelling technology
- How to choose the right coding and labelling technology
- Tips to optimise your equipment
- And much more

Coding & Labelling Technology - Going beyond compliance

Are you using coding and labelling technology to its full potential? There's a huge range of reasons you can use coding and labelling technology in your business. Improve traceability, build long-lasting consumer relationships, drive sales, fight counterfeiters… the list goes on.

Here are just a few of the most important ways you can use coding and labelling technology:

1. Product identification

In its most basic form, coding and labelling technology is used to apply some sort of mark or code to identify a product through the supply chain. This could be a unique number that's a combination of date and batch codes, primary barcodes, or product barcodes, to identify the product at the retail point of sale, or even a carton or pallet label to identify a group of products.

Primary barcodes are generally included within the artwork used for the retail packaging, and are pre-printed on the packaging or labels.

2. Protect your brand from counterfeiters

The global anti-counterfeit packaging market for food and beverages is expected to reach US$62.5 billion globally by 2020. However, with the right coding and labelling technology, brand owners can make it more difficult for counterfeiters to break into the supply chain, namely by assisting in the identification, authentication and tracking of products.

3. Track and trace

Track-and-trace solutions enable items to be traced through the supply chain all the way to the consumer. Barcode-enabled product tracking is one of the most common methods, with coding and labelling technologies making this easy to implement in a production or packaging line. This is also an effective way to ensure your products — not the counterfeits — are what the consumer is buying. Track and trace also enables withdrawals and recalls should the need arise.

4. Connect with consumers, boost sales and build loyalty

Codes and labels are a powerful promotional vehicle to engage and connect with their customers. On-pack promotions are just one example of how marketers can boost short-term sales, generate brand loyalty and awareness, and reward purchasers.

Take QR codes – with Australian consumers more smartphone-savvy than ever, QR codes, and other scannable codes, are growing in use. When added to food product labels, QR codes can be scanned by consumers using their smartphones to access interactive and trustworthy online content, such as recipes, competitions and videos. Not only do QR codes help businesses connect online and offline information quickly and easily, they do so while taking up very little valuable label or packaging space.

McDonalds is a prolific user of QR codes in Australia. Previous applications have included the "Track My Maccas" app, which in 2013 allowed McDonalds consumers to use the QR codes on its packaging to track ingredients and access nutrition information, and the use of QR codes on beverages and fries to provide exclusive NFL video content to consumers.

Another method is alphanumeric codes. While not as new and exciting as QR codes, they are proven to deliver valuable and cost-effective benefits, allowing you to run a short on-pack campaign without repackaging your product.

5. Communicate product information

More than ever before, today's consumers want to know everything about products they are buying. At the same time, retailers are demanding a higher standard of product information before allowing the item on their shelves. Coding and labelling technologies allow manufacturers to include the level of information demanded by consumers and retailers, while also meeting the relevant industry standards.

For example, ingredient lists and nutritional panels are essential for most packaged food products sold in Australia, and according to the Food Standards Code, this information must be legible for the end consumer.

Create one lean solution

Imagine your production line as one seamless, ultra-efficient process. Some coding and labelling systems can now be incorporated into other line technologies, so your automated solutions work as one, driving efficiency to new heights. For example, the Matthews A-Series Label Printer Applicator can be fully networked using software integration allowing easier label design, format changes, quick product changeovers and real-time line status monitoring.

Top trends in Coding and Labelling Technology

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Here are the top five trends to look out for:

1. Flexible lines, flexible ID

Having agility on your lines means you can run products with different sizes and shapes. While making better use of your capital, the flexibility also allows you to be more responsive to the market and consumer trends.

To do this though, you also need coding and labelling equipment that is flexible. For instance, you might need to code 50mm high now, but just a year or so down the track you might need to code 200mm high. Another example is a coder that adjusts the amount of solvent it uses according to what's being coded, and yet another is a printer that can easily switch between intermittent and continuous printing modes.

Such flexibility in the latest technologies opens up the market for contract packers and allows manufacturers to take advantage of consumer trends. Technology that can grow with a manufacturer's needs also helps to "future proof" them.

2. Serialisation and authentication

This topic has been hot in the news lately. Serialisation as a process is not new, but technologies have been developed that allow products to be authenticated by a consumer standing in the supermarket aisle on the other side of the world with their smartphone and instantly know if it's genuine. This has huge brand-protection implications for products (and entire industries) feeling the pinch from ever-more-clever fakes encroaching upon them — and of course, one of the biggest benefits here is safety of health.

On top of this, the manufacturer can communicate with the end consumer in ways never before possible: they can build their brand story and engage in a relationship with that consumer, suggest recipes, offer deals and much more.

3. Smarter technologies

Technologies are becoming increasingly smarter. Two great examples are self-cleaning and giving audible or visible warnings when attention is needed, such as if a service is due or fluid levels are low.

Innovative ink-recirculation systems ensure no ink is wasted in print-head cleaning, while self-cleaning technology optimises uptime and ensures crisp print quality. On-board diagnostics, providing fault, warning and help messages are another way to optimise factory-floor productivity, while customisable on-screen prompts enable mistake-free editing, reducing coding errors. Other highly useful developments include simple on-screen prompts to set up new lines or messages, and being able to control multiple lines from the one unit.

Smarter technologies such as these are very practical developments in coding technologies, saving manufacturers wasted time and unnecessary costs.

4. Integrating ID & inspection

Inspection technologies such as vision, check weigh and metal detection, are an important tool on production lines to inspect product quality in real-time. Integrating them with product identification improves the quality of products that go out the factory door. Software integration solutions give real-time data, which is vital in enabling managers and floor staff alike to make informed decisions about what's happening on the production line. Integrated ID and inspection systems help manufacturers make their packaging process leaner and more reliable, allowing them to drive a sustainable competitive advantage.

5. Increased need for automation & data capture

Automating processes clearly removes the possibility of human mistakes, speeds up output and can make products look more professional by being more consistently presented. Inspection is a big area where automating helps a business by vastly improving quality control. Automation also reduces costs and creates greater efficiencies, with better returns, helping manufacturers to remain competitive.

Having the right data gives a business a better opportunity to make better decisions. Capturing data both on the production line — such as the number and cause of rejects and downtime — and at the consumer end is a vital part of this.

From everything we've seen, all these five trends will continue to grow in 2016.

5 Codes every manufacturer should know

Since the humble barcode appeared in the 1960s, the number of codes in the supply chain has multiplied. Today there are lots of different codes you can use on your products, each with their own set of rules. We won't lie – it can be confusing!

To help, here are five codes every manufacturer should know:

1. Use-by / best-before

In Australia, the Food Standards Code states that packaged foods with a shelf life of less than two years must have a use-by date on the primary packaging and a best-before date in most other cases.

- **Use-by date:** The day and/or month by which the product must be consumed. Foods cannot legally be sold after this date because they may pose a health or safety risk.
- **Best-before date:** Indicates when the product will begin to degrade from its optimal quality — including when the food becomes stale, begins to taste "off" or goes mouldy. You can still eat foods after the best before date, but they may have lost some quality. Foods with a best-before date can legally be sold after that date provided the food is fit for human consumption.

You can find more information on date-coding requirements on the Food Standards Australia New Zealand (FSANZ) website.

2. Batch numbers / codes

A batch number or lot number is critical for traceability. FSANZ says traceability is “the ability to track any food through all stages of production, processing and distribution (including importation and at retail).”

All packages with the same batch number are considered to be the same in all respects. For example, two packets of biscuits may have the same ingredients in the same quantities, but just before the second packet was produced, a nut factory was built next door to the biscuit factory. As a result, the second packet must have a different batch number to the first.

The same would apply if any one ingredient were sourced from a different supplier — even if the result looks, tastes and appears the same as every other packet of biscuits. If the consumer, retailer or manufacturer identifies a problem with a product, the batch code allows the product to be traced back to a specific batch. Products with the same batch code can then be recalled or withdrawn from the supply chain. The smaller the batch, the less costly it is for the manufacturer.

Find out more about batch codes on the FSANZ website.

3. Identification codes

Identification codes are also used to trace a product through the supply chain. Identification codes may be in the form of barcodes or alphanumeric codes. They can be printed on labels that are affixed to the product, or printed or engraved directly on it. With parts manufacturing, for example, the advantage of directly adding identification codes ensures that the code remains on the part even if a label is lost over time.

Identification codes can include information on the model number and serial number, factory information, date of manufacture and other relevant details. The code can then be read at each point in the manufacturing, assembly and testing processes to track the product's location and performance. The codes tell the manufacturer exactly where each product is in the factory, and when it exits the line.

To read these identification codes, an automated vision system integrated with software such as Matthews iDSnet can be used. These systems can image the part, locate the identification code and look up the code in the system database. The software then updates the database with the current location of that individual part.

4. Barcodes

Barcodes can be used to identify trade items/products, locations, logistic units/cartons or pallets, and assets in a wide range of industry sectors, from retail to healthcare. A barcode (or “bar code”) is a machine-readable image used to represent data. A barcode scanner decodes the image and sends the data back to a computer system where it’s interpreted and processed.

Not all barcodes are the same, and different types of barcodes are needed for different applications. Here are three applications you should be familiar with:

1. **Product:** Also referred to as “primary barcodes”, product barcodes are used at the retail point of sale (POS) and are included in the artwork of the retail packaging. Their technical name is a GTIN (Global Trade Item Number) barcode because they comprise a number that uniquely identifies the trade item globally. Product barcodes can also be used to contain variable measure weight or price information.

2. **Carton:** Barcodes on shipper cartons are used to identify products when they’re being transported or distributed, and satisfy retailer demands for barcode compliance. These barcodes can be printed with your carton artwork, if you have a dedicated carton for each product (or SKU) you manufacture. Alternatively, you can use a generic carton with product-specific information printed and applied to the carton within your plant. Find out how to apply carton labels.

3. **Pallet:** A shipment can contain pallets or containers of mixed products or single products. These are also known as “logistics units”. A Serial Shipping Container Code (SSCC) is used to identify, manage and track the logistics unit throughout its lifetime in the warehousing, distribution and transport process. An SSCC is typically represented in a GS1-128 barcode.

5. QR codes and promotional codes

QR codes are two-dimensional computer-generated images that can be scanned by smartphones or tablets to generate an action. Created in Japan over 20 years ago to help manufacturing lines in the automotive industry, they are now almost exclusively used by brands to communicate with consumers. In its simplest form, you just aim a smartphone at the QR code, where software decodes it and connects you to the relevant webpage.

Another more traditional type of promotional code is the alphanumeric code. Their most popular use is for temporary on-pack campaigns. This is not only extremely cost-effective, but it also makes it easy to track results. A system such as Matthews iDSnet can generate and manage promotional codes as well as keep a record of what is printed.

Do you know what code you need? The next step is to take a look at the types of coding and labelling technology to understand the right one for your application.

Types of Coding and Labelling Technology

Once upon a time, there was only a handful of coding and labelling methods to choose from. Now there is something for practically every application, industry and product. There are four completely different types of inkjet technology alone!

Take some time to understand the differences so you can choose the right one for your business.

Coding

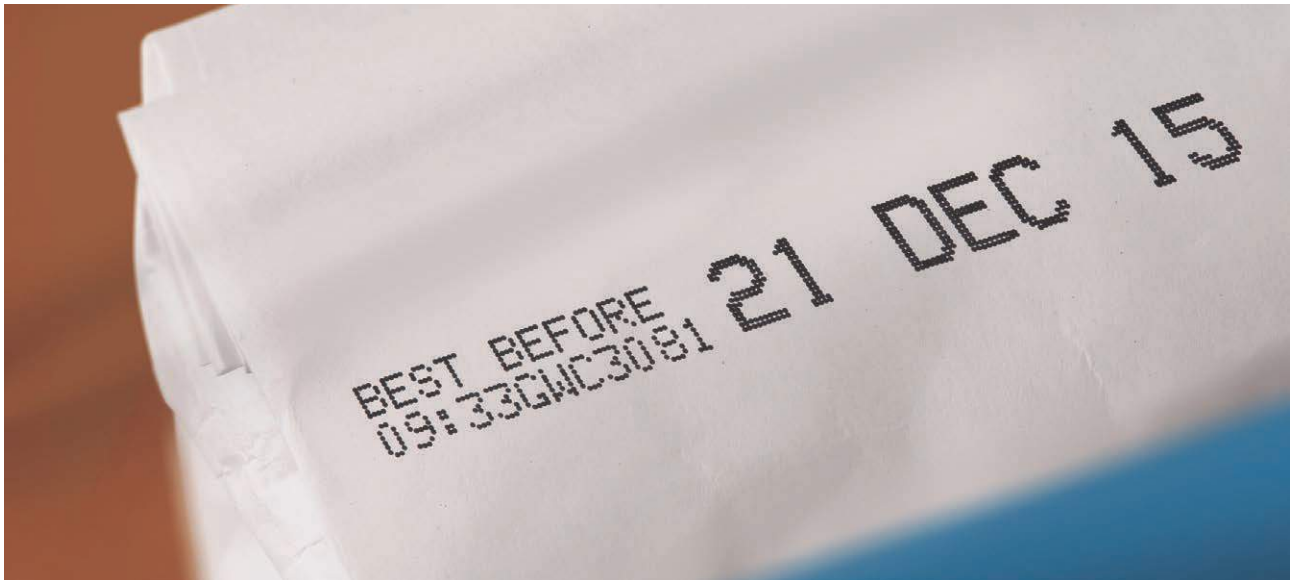
Inkjet

Small character continuous inkjet (CIJ): A non-contact printing method where electrically charged droplets of ink are expelled from a printhead nozzle at up to 120,000 droplets per second. Because the ink droplets are just half the diameter of a human hair, CIJ printing technology delivers fast, precise and reliable results.

Best for:

- Variable information, such as product identification codes, batch numbers and use-by dates
- Graphics, such as your logo
- Small character text
- Primary packaging at high speeds

Not recommended for: Printing barcodes onto products or secondary packaging. Barcode labels are the preferred method for applying barcodes to generic cartons in Australia.



Large character inkjet

There are three main types of large character inkjet coders:

Thermal inkjet coding (TIJ): Uses a cartridge containing an ink reservoir and a series of resistive elements. Each element is activated by an electrical current, which heats the ink in contact with the element. An ink droplet is formed and then ejected out of the faceplate nozzle precisely onto the substrate. The time between each firing is only 100 millionths of a second and the technology has a throw distance of 1-6mm (depending on the print-head technology employed), meaning TIJ technology is extremely fast and will print exceptional quality, even at high line speeds.

Best for:

- Carton coding
- Porous and non-porous packaging for food, beverage, household products, and more
- Some can be used for industrial environments, including timber marking and grading.

Not recommended for: Wet environments or high vibration production lines.

Drop-on-demand (DOD) inkjet printers: Each printhead contains several individual valves (typically 7, 16 or 32) that print dots at regular intervals. Arranged in a single column, the valves open and close independently to form ink drops “on demand”. As your product moves adjacent to the printhead, it results in printed characters. DOD printers can use a wide variety of inks to mark many different substrates, and can make low to medium resolution marks over heights ranging from 2.5mm to 128mm, or even higher when print-heads are linked together.

Best for:

- Secondary packaging and carton coding
- Fibre cartons and shrink wrap, such as product descriptions and batch numbers
- Hardware product marking, e.g. timber, metal products, steel pipes, roofing, concrete, and plastic substrates.
- 2D codes on a variety of packaging materials

Not recommended for: Most retail packaging, due to their lower printing resolution.

High-resolution inkjet printers: The latest generation uses piezoelectric technology to create super-crisp images, with print heights up to 100mm from a single printhead; these can also be stacked together to achieve over 900mm. Ideal when you need the highest quality print on corrugated boxes and other porous materials.

Best for:

- Barcodes, graphics and text on primary and secondary packaging
- Specialised timber applications

Why choose Inkjet Coders and Markers

Versatile: Inkjet printers can code onto a wide variety of packaging sizes, shapes and substrates, from primary and secondary packaging to timber and steel. They can print date codes, batch codes, text and even graphics.

Speed: With a broad range of printing speeds on offer, you can find an inkjet coder for even the most rapid production line.

Low cost of ownership: Depending on the machine, inkjet coders can be incredibly cost-effective. For example, Matthews’ range of Linx CIJ coders are renowned globally for their ease of use, reliability and low cost of ownership thanks to their robust, sealed printhead, which is ideal for harsher environments. Of all the inkjet technologies, DOD printers tend to have lower capital and operational costs.

Minimal maintenance and downtime: The top quality inkjet machines are designed for minimal downtime and operator intervention, so your lines keep moving. DOD printers, in particular, are designed to withstand tough environments with dust, shocks and vibrations.

Exceptional print quality: Thermal inkjet coders especially are renowned for their print quality, — even at high speeds. This comes down to the superior print-head technology, which provides exact drop placement.

Easy-to-use: Inkjet coders are easy to set up and use.

Thermal Transfer Overprinters

Thermal Transfer Overprinters (TTOs) use a high-resolution thermal printhead, which melts a wax and/or resin-based ink from a very thin thermal transfer ribbon (or “foil”) coating onto the surface of your product. By allowing you to print easily onto generic film packaging, TTOs are an extremely cost-effective printing solution.

Best for:

- Date codes, batch codes, logos, product descriptions, ingredients lists, nutritional panels and fully compliant barcodes
- Snack foods
- Confectionary
- Fresh produce

Not recommended for: Printing barcodes onto products or secondary packaging. Barcode labels are the preferred method for applying barcodes to generic cartons in Australia.

Why choose Thermal Transfer

Efficient printing: Designed for reduced downtime and maximise ribbon economy to keep your business running smoothly.

High quality print results: The smooth, waxy surface of the thermal transfer ribbon creates less friction when applying your code onto the product, making it ideal for high-speed production lines.

Long printhead life: The life of your printhead can be as much as double with thermal transfer compared to direct thermal barcode printing.

High-resistance codes: A thermal transfer barcode is highly resistant to any chemicals, humidity, UV rays, abrasion and climatic changes that your packaging may encounter through the supply chain.

Laser

Not too long ago, the laser was considered a specialist marking and coding solution, with a hefty price tag to match. Today, thanks to the rapid advances in technology, laser coding has not only become more cost-effective, but it's also now the number one choice for a wide range of applications across food, beverage and pharmaceutical packaging, right through to heavy industries. Lasers can also now mark clear and legible barcodes on primary and secondary packaging.

Types of laser technology

There are two types of technology from which to choose, depending on your application and the substrate you're marking onto:

The traditional way: CO2 laser

CO2 laser technology is the old-school method of laser marking. It uses a carbon dioxide gas mixture, which is electrically stimulated to produce a high efficiency, high-quality beam. They are the most widely used laser types because of the cost efficiency, low operation costs, low maintenance and lack of consumables.

CO2 laser coders are also extremely versatile and can be used to mark onto a broad range of materials at high line speeds, including paper, cardboard, foils, coated metals, plastics, wood, glass and more.

The new way: fibre lasers

Fibre laser is the newer of the two types and comes with some extra advantages. As part of the solid state laser group, this laser technology produces a higher intensity laser which is ideally suited to metal engraving and high-contract plastic markings.

A major advantage of fibre lasers over CO2 lasers is that they can mark flexible packaging material where no special laser field exists. In other words, the original field created for a small character inkjet code will often be sufficient. Because of the beam's high stability, the fibre laser won't perforate flexible films, such as those used for snack food and confectionary packaging. This is of tremendous benefit for the food and grocery industry.

Another advantage is that this technology is completely maintenance free, even over thousands of working hours. With a fibre system, you can expect a life expectancy more than four times that of the standard CO2 laser tube technology. Laser technology already boasts a low total cost of ownership (TCO), and the extended extraction filter life decreases this even more. Fibre laser technology also doesn't need factory air for cooling or marking-head cleaning.

Why choose laser

Reliable coding: Laser coding solutions have come leaps and bounds in the last decade; they can now apply human-readable text on both primary and secondary packaging, as well as fully compliant barcodes. In fact, they can reliably code onto glass, plastics, metal and cardboard and flexible packaging.

Permanent mark: Laser coding technology is ideal if you need permanent marks, such as for anti-counterfeiting and brand protection. First the laser ablates the substrate to remove materials from the area to be marked, such as ink on printed packaging or a layer of metal. Then, onto this clean patch, the laser engraves the substrate with a very fine groove. The result is a permanent mark and, in some applications, a colour change may occur.

High quality: With the ability to create high-quality marks, the laser is ideal for applications where product presentation is critical. So it's not surprise this technology is the number one choice for the wine industry.

High speeds: Lasers offer a more cost-effective solution for high-speed lines, especially compared with inkjet technology. This is because lasers have no consumables (solvents, ribbons, etc). Research shows the return on investment (ROI) can be less than three years on medium-volume production lines. So if your line has an output of more than 100 products per minute, the laser could be the smart choice.

Low total cost of ownership (TCO): Traditionally, laser technology has been most suited for high-volume applications where the equipment's higher capital cost is balanced by the ongoing lower operational costs. Smaller businesses have simply been unable to justify the high capital outlay. However, today you don't have to run a high-volume production line to enjoy the benefits of laser technology. Thanks to more compact and lower-cost systems, the laser is now a cost-effective solution for lower-volume manufacturers too.

Labellers

Apply only

Also known as in-line applicators, label applicators (LAs) are automated labelling systems that apply pre-printed pressure-sensitive labels onto products.

Without the print technology of Label Printer Applicators (LPAs), LAs tend to be the perfect cost-effective alternative to the manual “slap-and-ship”. LAs can be used to apply primary labels to all shapes and sizes to retail products, promotional or marketing labels onto pre-labelled retail packs, and more.

Best for:

- Applying pre-printed barcode labels onto cartons and trays
- Applying labels to flat, tapers and round surfaces
- Applying promotional labels

Why choose a Label Applicator

Flexible technology: Used for human and machine-readable information, label applicators provide flexibility to suit your business. They can be used for a variety of applications, including the application of labels to flat, tapered or round surfaces.

Precise finish: Use a label applicator to apply labels precisely to give your product a professional finish.

Apply multiple labels at higher speeds: LAs have the capacity to apply multiple labels even at high line speeds, making them the ideal alternative to manual label application.

Print and Apply

Automated

If you're looking to drive efficiencies on your line and print compliant labels onto your primary products, cartons or pallets, there's no doubt that a Label Printer Applicator (LPA) is a sound option. Ongoing advances in technology have led to rugged, high-performing workhorses that are the smart choice in even the most demanding environments.

Unlike Label Applicators, which apply pre-printed pressure-sensitive labels, a Label Printer Applicator prints onto pressure-sensitive labels then automatically applies those labels to a product, using a pneumatic applicator.

There are two types of LPA labels:

1. Thermal direct labels, which are thermal sensitive
2. Thermal transfer labels, which use ribbons to transfer the ink onto the labels

Best for:

Because they are so versatile, LPAs are used for applying human-readable and barcode information to many different products. However, they are predominantly used for cartons or pallets, especially because barcode labels are the preferred method in Australia for applying barcodes to generic cartons and pallets.

On automated production lines, for example, LPAs are typically installed at or immediately after the pallet stretch wrap station. The LPA can then be interlocked with the stretch wrapper to apply an SSCC label on each fork entry side of the pallet. An unattended scanner can be used to automatically read each carton barcode so that the LPA can print the appropriate pallet label.

LPA's are also used for primary retail products and even metal delivery stillages, timber, pipes and steel. Some LPAs can also print RFID Smart Labels.

Why choose LPAs

Streamline label printing and application process: This is arguably the biggest benefit of LPAs, as they give you the opportunity to drive efficiencies in the line. For example, the Matthews A-Series, a 'Best New Product' finalist at the APPMA Awards 2015, is specially designed for more uptime, quicker changeovers and easy operation.

Excellent print quality: This means barcode labels and pallet labels (SSCC labels) are fully compliant with strict GS1 and retailer quality standards, minimising the risk of your stock being rejected by from retailers.

Easy to use: Today's LPAs come with integrated software so the machine can be easily programmed without a PC on the production line. This is ideal for logic programming, such as dates. Also, they tend to be designed so that operators can easily see how to change labels and ribbons, resulting in less downtime. For example, the Matthews A-Series features onboard software and a colour touchscreen to make easy work of printer control and message editing.

Integrate with the production line: Some LPAs, such as Matthews A-Series, can be fully networked using software integration allowing easier label design, format changes, quick product changeovers and real-time line status monitoring.

Manual

Another option is to print the labels using a label printer and apply them to the product manually. This ensures that labels are fully compliant and will scan every time, either at the point of manufacture of the point of dispatch. Choose from either mobile industrial or desktop label printers, both of which are designed to help manufacturers increase productivity and accuracy in the factory or warehouse.

Best for:

- Pallet labels with human-readable text and scannable symbols, including the Serial Shipping Container Code (SSCC)
- Smaller operations

How to choose the right Coding and Labelling Technology

When it comes to choosing coding and labelling technology, it pays to be strategic. Only by doing your research and weighing up the pros and cons can you pick the right technology for your application and business goals, now and well into the future.

Though every firm's needs are unique, there are some things that every company should consider when investing in coding and labelling technology.

What are you printing?

The equipment you choose will depend on the code or label you are printing. Are you printing a use-by date on the primary packaging? Or batch codes on secondary packaging? Take the time to outline clearly what you need to print before you leap. Also, consider if there are multiple different message types and what they are.

What are you coding or labelling onto?

Paper, cardboard, wet glass, plastic, wood, cloth; every material has different properties, which ultimately affect the way a code will be printed or a label attached. For example, lasers are a popular choice for firms in a range of industries – beverage, pharmaceutical and snack foods to name but a few – because they offer a very fast way to print high quality, permanent codes on almost any substrate, such as glass, plastics (such as PET, polystyrene and polypropylene), metal and cardboard.

What is your line speed?

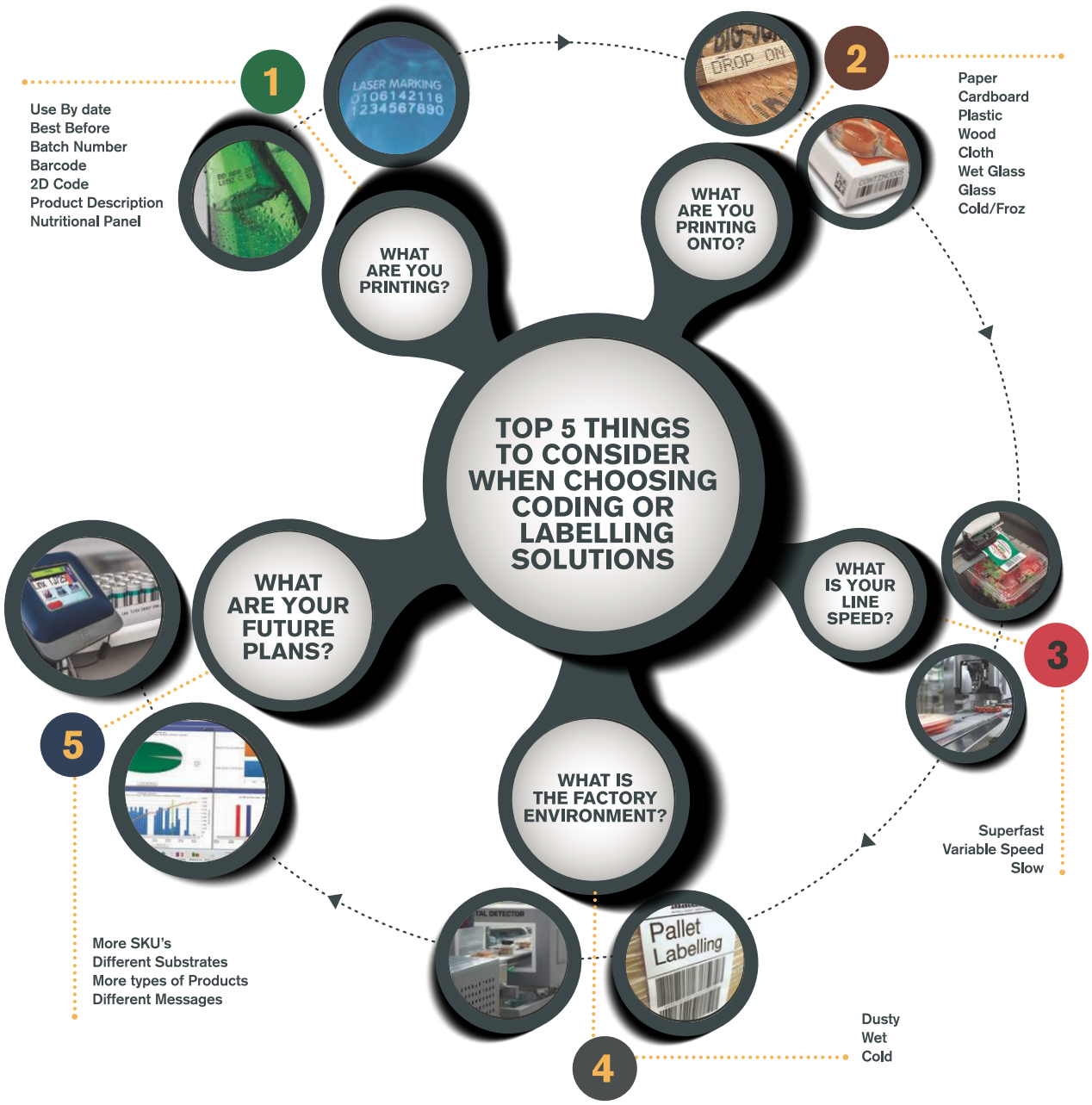
The speed of your production line will determine the capability you need from your coder or labeller. Look for a coder or labeller that can match the speed without compromising quality and reliability. For example, continuous inkjet printers (CIJs) have the advantage of being able to mark clearly on all packaging substrates at all production speeds. They are also very easily integrated into a conveyor production line.

How much space do you have for your printer or coder?

If you're looking for a compact machine, consider one that is machined as one piece to provide a smaller footprint on the factory floor.

What is your product range?

If you need to code or label more than one product, select a machine that enables you to swap and change between lines. For example, the CJ400 is portable and can be used to code use-by dates onto products and also for carton coding.



What is your current factory environment?

Dusty? Wet? Cold? Some manufacturing environments can be challenging for technology. Choosing a coder or labeller that's built to withstand your unique environment will ensure you get longer use and greater reliability. For example, the Fox IV Standard label printer applicator range features a rugged gear-driven design for reliable performance around the clock and a single pressurised industrial housing to protect the machine from extreme dust, temperatures and wash-down environments.

Integration

You should also consider the current technology in your factory, and how easy it will be to integrate the coder or labeller with minimum disruption to your production line. Work out which connections you need for your line. You might need your coder or labeller to connect directly to barcode scanners, weigh scales, keyboards and other peripheral devices.

What are your future plans?

There's no sense in investing in a coding or labelling solution that doesn't meet your firm's needs twelve months down the line. Think about your plans: Are you expecting to grow? Will you be printing on different substrates? Will you be introducing new SKUs or printing different messages? Each of these will impact your coding and labelling needs.

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Upfront cost vs. Total cost of ownership

Armed with your answers to the above questions, give some thought to the costs of the coding or labelling solution: what is the purchase cost of the equipment, and what are the ongoing running costs for your business? Know the operating costs, such as training, maintenance, energy, materials, repair, parts, service, and so on. This will help you determine the solution that will provide the best return-on-investment.

It is critical to choose an equipment provider with local maintenance teams who have the skills and resources to install, service and fix the date coder should anything go wrong.

Training

Talk to your team and find out what they will be comfortable operating. They might require additional training, so find out what kind of support is offered by the equipment provider.

Expert tips to optimise cost and efficiency

Australian manufacturers are under growing pressure to improve efficiency and lower costs. Traditionally this has meant struggling to find the delicate balance between cost-cutting and product quality. This is made even more complex with the high line speeds and frequent line changeovers – both of which are becoming more common as manufacturers keep trying to push productivity to the limits.

A large part of the solution lies in internally optimising processes and equipment, including your labelling and coding equipment:

1. Reduce Total Cost of Ownership (TCO)

You can save money, increase your coding equipment's performance and improve your workforce's productivity all by simply understanding the life-cycle costs associated with equipment ownership – the Total Cost of Ownership.

The TCO covers both visible and hidden expenses, and should generally be measured over a 3-5 year period. Visible expenses for labelling and coding equipment, for example, would include:

- Capital
- Installation costs
- Consumables over the period
- Routine maintenance
- Corrective maintenance
- Service contracts
- Spare parts

By understanding the true cost of your labelling and coding equipment, you can take proactive steps to reduce the TCO and improve your bottom line. A large factor in this is choosing the right equipment provider in the first place. For example, the right provider can regularly inspect and maintain the coder, labeller or inspection equipment, with fixed-price service contracts, and provide the proper operator training. You also need to weigh up the coder's capital cost versus its ongoing running cost – a low capital cost but high running cost is a hidden TCO.

2. Improve productivity and efficiency

The more efficient the manufacturer, the higher the potential for profit – that much is simple. But in our increasingly competitive business environment, the challenge for Australian manufacturing companies is to find effective ways to be more productive without sacrificing the quality of the products going out the door. The second you start compromising on quality and overlooking regulatory and compliance standards, you say goodbye to customers.

But there are ways to improve productivity while maintaining your high quality and compliance. For example, by using vision technologies to automate quality control of your coding and labelling, you will reduce the potential for human error, enable greater transparency throughout the process and benefit from major cost savings, due to reduced rework and more reliable product quality.

Manufacturers can spend a significant amount of time, energy and money in checking products manually, but vision inspection systems allow for checks to be done automatically and accurately. Investing in or upgrading your product ID and inspection equipment is a proven way to streamline your existing processes and improve efficiency.

3. Measurement and visibility

How can you know where to improve efficiency if you haven't got visibility of your production line? Overall Equipment Effectiveness (OEE) is a best practice metric used by many manufacturers to measure productivity. OEE identifies the percentage of planned production time that's truly productive i.e. a score of 100% represents perfect production with no downtime. However, most manufacturing lines are only 60% productive, meaning there is massive room for improvement.

OEE is a good metric for managers, but it can be a bit too abstract for employees. "TAED" is a better metric for operators, because it provides real-time, motivational goals:

- **Target:** real-time production target established by the planned rate of production
- **Actual:** actual production count
- **Efficiency:** ratio of target to actual, i.e. how far ahead/behind production is running as a percentage
- **Downtime:** accumulated downtime per shift in real-time

To see where to improve, you can't rely on guesswork — you need to put the procedures and technology in place to clearly see, measure and drive efficiency. Coding and labelling equipment can easily keep product count since it sits towards the end of the line to measure actual production count, while inspection systems can keep count of the rejects.

4. Total Productive Maintenance

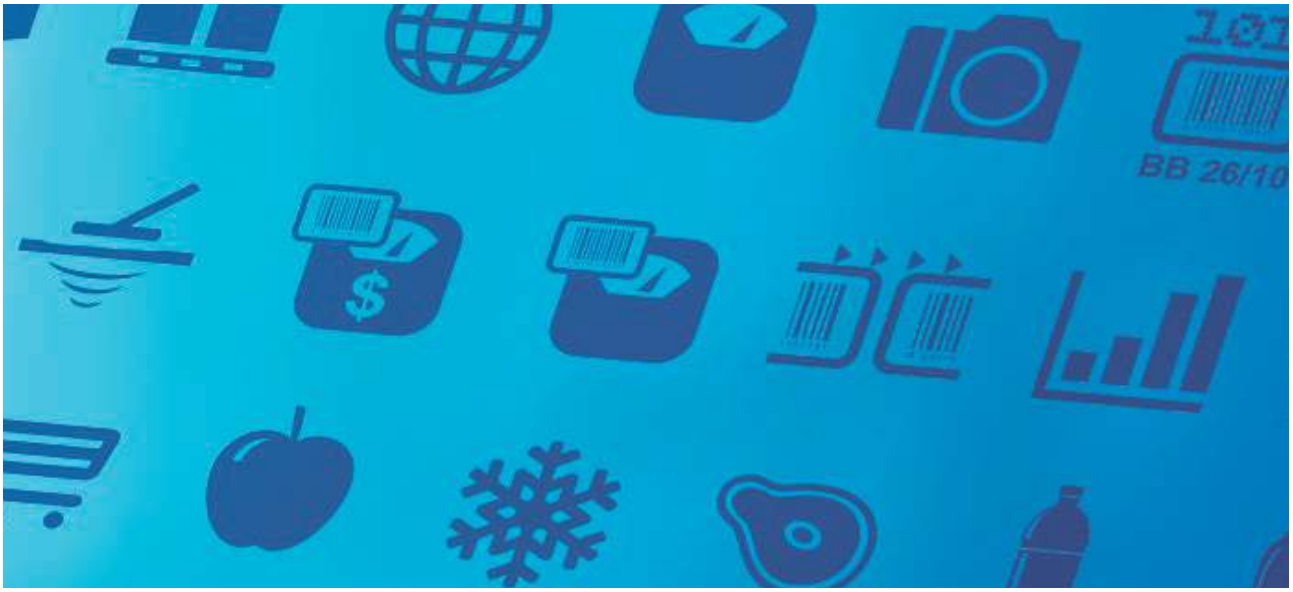
In Japan, Toyota has shown that, to maximise the money you make in manufacturing, you need Total Productive Maintenance (TPM). In other words, you have to take care of your equipment so you can eliminate all unplanned downtime.

There are essentially two approaches to equipment maintenance: Reactive Maintenance (the traditional approach) and Preventative Maintenance (the new approach). Reacting to maintenance on an "as needed" basis has the attraction of flexibility. That is, until you find yourself unable to get the parts or labour you need within a profitable timeframe. The "putting out fires" approach usually occupies valuable resources, as key staff or technicians are forced to make crisis management time in their day.

Worse, when you do have to fix something, you are working on limited information. You'll have to order supplies, tools, and trained labourers when breakdown happens, leading to unpredictable downtimes. And all the while your floor staff are idle, unable to do their jobs.

The lean approach is predictive, preventative maintenance. On a closely monitored line, you have more information about the condition of your equipment, so you can discover what's causing the breakdowns or production stoppages more quickly. You can avoid the "grey" areas of assessment (and dodge unnecessary equipment purchases) with up-to-date, real-time information on hand. It also means you can get to the root cause of quality problems by ensuring equipment competence. And when your product is coming off the line with first-pass quality assurance, you avoid the expense and hassle of rework.

Preventative maintenance is also a major factor in increasing the life of your line equipment. In fact, many Matthews' customers have in-line printers on the field for 15 (or more) years—even though the expected life of most printers is 5-7 years.



5 Steps to choose the right Labelling & Coding equipment provider

Running an efficient manufacturing environment doesn't just mean having cutting-edge technology; it relies on you managing reactive and preventative equipment maintenance effectively. The best way to do this is to choose equipment providers who have local maintenance teams with the skills and resources to install, service and fix equipment — sooner rather than later.

After all, when we're talking about the breakdown of coding and labelling equipment on the end of the line, no code means no product. So the faster you can get your production line back up and running, the less impact to your bottom line. That's why it's critical to choose a local equipment provider with reliable service and support capability.

A provider's expertise on the ground — when you need it — means you avoid the stress, hassle and costs of excessive downtime. For example, if your equipment needs a special part for repair, you won't have to wait weeks and weeks for it to arrive from overseas because a local equipment provider should have it ready to go. And, as every manufacturer knows, every minute your equipment is down is another dent in your profit margin and potentially your company's reputation, because you can't meet your supply schedules.

But it's not all about costs and deadlines; it's also a matter of having access to specialists who can build a relationship with your team, and who will understand your individual business needs and service requirements. Only a local technical support team can do this properly.

When it comes to the crunch, how do you know that your coding and labelling equipment provider will come through? Here are 5 things you should look for:

1. **Response time:** How quickly can they support you if a breakdown occurs? How quickly can someone reach your site? Does it take days or weeks?
2. **First-time-fix rate:** When the technician visits your site, do they resolve the issue the first time? Or does it take a few visits? Or (very annoyingly) do they leave, only for the equipment to fail again just a few days later?
3. **Phone assistance:** Do they have a 24/7 helpdesk to guide you through basic fault-finding, so you can get up and running quickly?
4. **Operator training:** Do they have a program to train your staff on how to use and maintain your equipment effectively? For coding equipment in particular, operator training is essential to reduce coding errors.
5. **Spare part availability:** Many breakdowns require a part or module replacement, but does the field technician carry adequate spare parts? Or will you have to wait (and suffer costly downtime while the delivery eventually comes through from overseas)?

The Answer? Choose Local

Choosing a local labelling and coding equipment provider makes great business sense. You get access to a nationally located technical support team, who are on hand to provide professionally servicing and support. Having this type of capability and specialist knowledge at your fingertips is a real benefit to Australian manufacturers, who are otherwise faced with the challenge of finding spare parts, managing lengthy delivery time-scales or the costs of air-freight for replacement parts. Look for a local supplier who provides 24-hour support too, as this will save even more time, money and hassle if your equipment breaks down.

Next Steps

There's no shortage of coding and labelling technologies to choose from, but it pays to consider some key factors when investing or upgrading in the right solution for your business. Weigh up the technical, operational and commercial implications. Look at the related challenges and advantages. Think about your future goals.

The good news is this is a journey you don't need to embark on alone; Matthews Australasia has helped many Australian manufacturers to successfully deploy the right coding and labelling technologies. We can work with you to pick the solution that will work best for your business and application.

Want to learn more?

Go to our resource library for an ongoing series of thought leadership articles, reports, white papers, case studies, videos, and more, focused on coding and labelling.

Ready to get started?

If you are ready to upgrade your coding and labelling equipment, or are thinking about investing in coding and labelling machinery for the first time, please contact us.

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