



WHITE PAPER

# COMPETITIVE ADVANTAGE – EFFECTIVE CODING FOR CONTRACT PACKING

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**LINX**



# 1 Introduction

The exponential growth of the global contract packing industry is set to continue. Valued at USD 40.65 billion in 2017, it is expected to reach USD 78.65 billion by 2023 – a compound annual growth rate of 11.51% over the five years from 2018<sup>1</sup>.

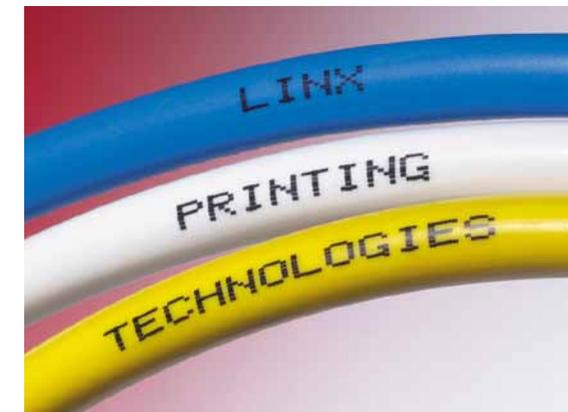
This is being driven, in part, by the increasing tendency of manufacturers to use contract packers as part of a strategy to optimise costs – a symptom of economic uncertainty in which many are reluctant to invest in in-house equipment.

It's not only the industry's value that's growing – even its name appears to be going the same way, with the appearance of the term *Outsourced manufacturing, packing, fulfilment and logistics* to reflect how customers using outsourcing services increasingly expect a one-stop shop that also includes storage, pick and pack, and logistics.

Naturally, this is leading to increases in both opportunities and competition, as demonstrated by third-party logistics companies such as DHL beginning to enter the market.

Recent times have seen the emergence of a variety of new opportunities such as a rise in start-up innovators who use contract packers; growth in luxury packaging, whose shorter runs are ideal for the sector; and innovations in medical science that are creating opportunities for specialist organisations with skilled labour. The current growth in e-commerce and online fulfilment is further boosting the sector.

All of these have implications for the contract packer's coding and marking requirements and underline the importance of finding a solution that is flexible, reliable, and easy to operate and control – helping to keep lines running efficiently so that businesses can remain competitive.





## 2 How effective coding supports contract packing

### 2.1 Reliable printer operation

Reliability is perhaps the most important requirement for a contract packer’s coding operation. When printing onto a range of packs for a variety of customers, all of whom expect the highest quality, it is essential that packers can always meet their production targets and stay competitive.

Continuously reliable, quality coding is best ensured by observing regular maintenance schedules. Printers with long maintenance intervals – such as 18 months to two years – minimise the disruption this causes. Similarly, those with self-cleaning printheads require manual cleaning only every three months or so, further keeping the line running, while some printers allow for quick and simple self-maintenance, enabling managers to plan servicing around their production.

For contract packers that code in challenging environments, IP55 and IP65 ratings indicate that the machines can handle these.

Furthermore, the Industrial Internet of Things (IIoT) – or Cloud-based networking of coding solutions to laptops or smartphones – today allows operators to monitor their equipment and anticipate any potential malfunctions. This increases their ability to keep the production line running, while proactive remote support and maintenance from the printer provider further insures against unnecessary downtime.



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## 2 How effective coding supports contract packing (continued)

### 2.2 Flexibility

For a contract packer servicing a wide range of companies, often across more than one industry, flexibility is essential. Naturally, this applies to their coding and marking too.

Multi-functional printers that can perform various jobs – for example, both primary and secondary coding – are often valuable in that they surmount the problem of needing different printers for different requirements. Aside from the obvious benefit of saving money, this also reduces the likelihood of mistakes caused by confusion, as line operators will only have to learn one interface.

Even for packers whose requirements are relatively straightforward at present, an element of versatility in their coding solution stands them in good stead should their circumstances change. The industry is constantly changing, and an adaptable coder can be the difference between making the most of the new opportunity presented by a new project – and having to turn it down and therefore miss out.

Another valuable coding capability for many contract packers is that of easy movement between lines. Some coding solutions can service multiple lines due to being quick and easy to move and set up. This leads to cost-savings, fewer mistakes, and the ability to react quickly in an unpredictable environment.

For ink-based technologies, lighter coloured options – often yellow or blue – work well with a wide variety of packaging types, and can often cover all needs. These ink solutions meet customers’ demands for legibility and ensure packers only need to store one type of ink. As a non-contact technology, CIJ is also capable of coding onto any shape – an increasing consideration as different sizes, shapes, and types of flexible packaging continue to proliferate in the packaging industry. For products that contain cosmetics or chemicals, alcohol-resistant inks resist removal by the contents.

Through their excellent performance, the best coding and marking solutions today enable managers at contract packing companies to spend less time on the line and focus their energies on other areas of the business. Changeovers are faster thanks to accurate predictions of batch-completion times, fewer message errors are made due to simple remote input, and many breakdowns are averted by proactive maintenance.

For outer packaging, high-resolution case coders for secondary boxes, which upload imagery and logos and print directly onto cardboard boxes, mean there is no need to store lots of different printed outer boxes or labels. This saves on inventory and storage costs and frees up money and factory space for other uses.



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## 2 How effective coding supports contract packing (continued)

### 2.3 Enhanced ease-of-use and control

With many demands on the contract packing industry, coding solutions that entail quick and easy setup, changeovers, and code selection and creation are of great value.

Many of the latest solutions feature smartphone-inspired screens with intuitive touch-screen operation, including picture-led displays. This helps to ensure quick message set-up and retrieval, and will also enable swifter changeovers and fewer errors in code selection and rework or scrappage, even when there are many SKUs. Nor is there any need to read a manual – all it takes is three button-presses to select a message.

Another benefit of an easy-to-use coder is that, especially in environments where staff turnover is high, it is simple and fast to train new members of the team and there is reduced potential for mistakes.

The remote management of the printer enabled by IIoT capability further ensures greater ease-of-use, while at the same time – due to being managed centrally – reducing the number of errors during code changes.

The ability to monitor print performance via the IIoT also provides far greater control over coding and marking. For example, users can set KPIs – i.e. ‘Number of products coded’ – and then monitor their progress in real-time, with access to useful information such as predicted completion times. This increases the chances that contract packers will be on time for the next batch run by ensuring their printer remains on track.



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### 3 Printer selection – factors to consider

Coding and marking equipment should be simple to integrate onto packaging lines and work reliably and unobtrusively, delivering consistent codes to the expected standard.

Beyond these basic requirements, Linx’s own Voice of Customer research has found that, as well as ease-of-use, contract packers most prize coders that can print onto any product, no matter the material; coders that seldom break down; and coders that always produce a high-quality code.

When considering a coding equipment purchase, it is also advisable to assess the overall Cost of Ownership. This takes into account not just the initial purchase price, but also the consumables and servicing costs over the years, plus any hidden costs of downtime caused by an unreliable printer or delays in set up and changeovers. Going for the cheapest option can often cost more in the long run.

Leasing options may be available, including short-term leasing to meet a sudden increase in demand. The higher overall cost of leasing may be offset by the attraction of not having to get capital expenditure approval.



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## 4 The different coding technologies

A wide variety of coding technologies is available, but for a contract packing operation, the main options outlined here deliver effective and reliable codes while offering the most flexibility and other benefits.

### 4.1 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 – for example in confectionery packs.

From cardboard and plastic, to paper, metal and glass, CIJ can print from one to multiple lines of text and simple graphics at high 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.

Although traditionally used for primary coding, some latest CIJ printers now include a carton coding feature, meaning they can produce more codes of a greater height. This enables a single model to print variable data for both primary and secondary packs, making it an extremely versatile choice, particularly lighter, portable models that can be quickly moved from line to line.

### 4.2 Thermal Inkjet (TIJ)

TIJ printers also offer a flexible coding solution for both primary packaging and outer packaging.

Ideal for higher quality codes and barcodes, TIJ offers good entry level coder technology which is simple to operate, while no cleaning is required because the printhead and ink are contained within one easily-replaceable cartridge.

Easy to use colour touch screens and simple machines which are quick to install straight out of the box add to the flexibility of TIJ, making it one of the more portable solutions.

These high-resolution coders offer crisp codes, including 2D codes, for premium packaging, and are a cost-effective solution where production is not 24/7. The contact nature of printing makes this technology better suited to slower lines, and flat boxed packaging with no irregular surfaces.



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## 4 The different coding technologies (continued)

### 4.3 Impulse Jet

For large character marking onto outer cases, Impulse Jet Printers, using piezo inkjet technology, can be an effective alternative to labels and pre-printed boxes. They offer an ideal solution for high definition printing of both branding and variable information directly onto a variety of surfaces and materials – helping to keep costs low.

As well as code quality, these printers are easy to set-up and adjust, and their reliability and predictable cost of ownership endear them to production lines in a range of industries.

Clean operation can be assured by selecting a coder with a self-cleaning printhead, a particularly valuable benefit in dusty working environments. Again, this is a contact method of coding so is suited to coding onto flat surfaces on slower lines.

### 4.4 Laser

Laser marking provides a permanent, high-quality code, and is suitable for a wide range of substrates at any line speed. There is no ink involved in the printing process and therefore no drying time or risk of smudging. This can be important where coded packs are in contact with other products soon after coding.

While not as flexible as other technologies – and therefore traditionally less prevalent in contract packing – laser may be suitable for semi-permanent or permanent production lines. With its optimal quality and unrivalled permanency, it should be considered for premium products with high aesthetic standards that may be susceptible to counterfeiting.



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## 5 Conclusion

The shorter production runs and requirement for different types of codes on different types of packs and materials mean selecting the right coding and marking equipment is critical in the contract packing industry.

Reliable operation avoids costly unplanned downtime; the flexibility to deal with a range of code formats and substrates ensure the ability to stay ahead of changing customer and market requirements; and enhanced ease-of-use and control speed up changeovers, reduce errors, and enable optimisation of the line.

By investing in effective coding, contract packers can maximise the speed and efficiency of their production lines, ensuring they remain competitive and able to take advantage of the many opportunities in a rapidly developing market.

### References

- <sup>1</sup> <https://www.mordorintelligence.com/industry-reports/global-contract-packaging-market-industry>

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