



CHOOSING THE BEST AUTOMOTIVE COMPONENT CODING SOLUTION

INTRODUCTION

With a modern vehicle containing thousands of individual components, many needing to carry a specific part number, there is no room for error in the selection of coding and marking equipment.

From suppliers manufacturing the smallest parts, to vehicle makers relying on the correct coding for traceability through the assembly process and beyond, the inclusion of information which stays in place – whether on metal, rubber, plastic, glass, fabric or card – is a crucial part of the process.

Europe’s car parts sector employs about five million people¹ while in the UK, 2,350 UK companies regard themselves as ‘automotive’ suppliers, employing around 82,000 people.

Over 1.5 million vehicles and 2.5 million engines are produced in the UK each year, with car manufacturing volumes predicted to reach a record high by 2017. Indeed the UK Government has identified a £3bn opportunity for domestic suppliers to provide parts to UK-based vehicle manufacturers.²

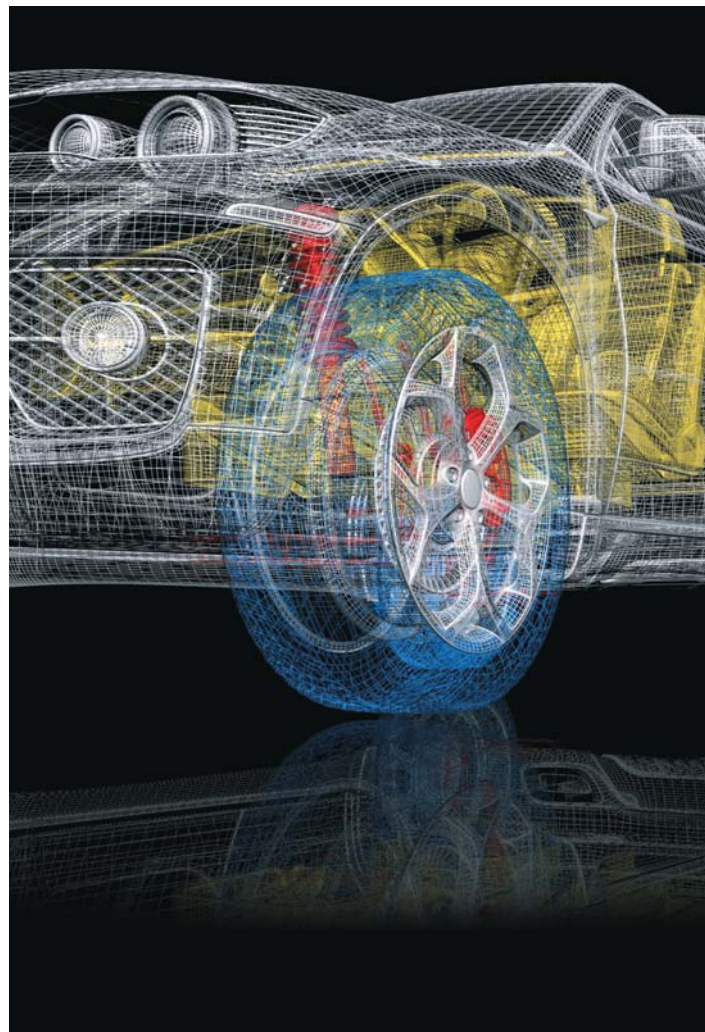
Industry operating profit margins are predicted to grow, widening to an estimated 8.1% in 2017-18. Coupled with that, margins will strengthen slightly due to better stock controls, more efficient supply chain systems and more stable demand than during the previous five years.³

It is against that background that the key importance of robust coding, for traceability and supply chain management, becomes clear. Manufacturers are looking to global traceability and containment solutions, to maximise their responsiveness and minimise the impact of vehicle recalls due to faulty parts, such as the 2013 recalls around Takata airbags.⁴

Direct part marking, especially with the use of 2D codes, can combine with the use of vision systems to make the traceability process as smooth as possible.

The cost to a vehicle manufacturer of dealing with the consequences of a defective part can be huge, taking into account not just recall costs, but possible fines, loss of share value and damage to reputation.⁵

Further, effective coding can help in the fight against counterfeit auto parts. Fakes, including counterfeit brake pads, tyres, suspension components, steering linkages and other accessories are also universally being distributed and sold to consumers in greater volumes. The Director of



Europol, Rob Wainwright said: “Those behind this serious organised crime are unscrupulous and show a complete lack of concern for the health and safety of citizens. These criminals are only interested in their illegal profits, while totally oblivious to the potential injuries or risk to life that can come from sub-standard illicit car spare parts.”⁶



FACTORS TO CONSIDER

Choosing the right coding solution 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 – will increased code complexity such as additional lines of print, 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. 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 hot and dusty, for example, ensure that your solution has the right IP rating and features 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 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 suggests that the key driver behind coding purchases in the vehicle components industry is the no-compromise demand for effective codes for traceability. Coupled with that is the need for coding and marking equipment to work reliably. These factors, and others, are often inter-connected.

TRACEABILITY FROM THE START

Whether for monitoring components through the assembly process, stock control or to meet customer expectations, durable, clear and accurate codes are a given. Designed to withstand the effects of even the harshest production environments, inks which are resistant to heat, dust or oil can deliver longer-lasting codes.

High contrast pigmented inks offer better clarity coding in the industry for durable traceability right the way through to end use. These are available in a range of colours from white and grey through to yellow, black and blue to provide clear, legible codes on any colour material.

The latest coders are easy to set up and manage on busy, highly automated production lines. Simple message selection, intuitive user interfaces and a large message storage capacity help ensure the right code is selected first time, every time. Automated message selection and remote monitoring (even by smartphone) further reduce the risk of code errors.

Coding and marking technologies can also help combat the growth of counterfeiting in the automotive industry: an estimated \$12bn of global counterfeiting is related to the automotive industry.⁷

Counterfeit goods pose a serious threat to profits as well as safety. The World Trade Organization has highlighted areas where coding and marking can help, including scannable barcodes, anti-counterfeiting printing inks used to mark surfaces invisibly, and smartphone technology; by text messaging a unique code printed on a product to a specific number, end customers can confirm at the point of sale that a product is genuine.⁸

With the ability to print with permanence, and in a range of colours as well as a variety of styles, effective coding and marking technology delivers robust, legible and traceable coding on any substrate.





HARD WORKING AND RELIABLE

Less downtime on your production line means reduced cost to your business, and less downtime on your customer's production line due to an incorrectly coded component means less chance of you losing their business. That's why the leading coders are built for durable coding during continuous operation; ultra-reliable with long service intervals and low-cost maintenance to maximise production performance while minimising operating costs.

IP55 and IP65-rated steel enclosures offer protection against water and particle contamination such as carbon or rubber dust, preventing stoppages and offering high quality continuous coding. Other features such as a positive air printhead for example, also help towards reliable operation even in exceptionally dusty production environments.

Built for busy production lines where coding requirements frequently change, coders can be linked to a central PC to reduce the chance of manual errors when producing multiple products or for multiple customers.

Some printers are easily transferrable between lines, giving extra flexibility and saving time in production. Traversing printheads give greater flexibility for larger components, such as sheet metal, or across multi-lanes.

And with vehicle manufacturers often managing their supply chain on LEAN principles, effective coders mean you are well positioned to react quickly to fast-changing customer requirements.



THE DIFFERENT CODING TECHNOLOGIES

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

Laser

Particularly strong at delivering the 2D codes commonly required for effective automotive traceability, laser coding also provides a permanent code on a wide range of materials at high line speeds, including rubber and plastic, for example on rubber door trims or windscreen wipers. As there is no ink involved in the coding process and therefore no drying time, the risk of smudging is removed, for example when the coded product is in contact with other products or handling systems soon after coding. Laser coders are particularly attractive due to their low downtime, high-speed capability and the fact there are no consumables; which together make the long-term cost of ownership lower than some other technologies

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 across a wide range of print sizes. They are particularly suitable where high quality codes are required, for example when reproducing a customer's logo.

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.

Continuous Ink Jet (CIJ)

Perhaps the most cost-effective choice, CIJ maintains an important place 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. Many more inks are available, such as UV-readable inks for anti-counterfeiting or water-removable inks for internal traceability, 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 containing components. 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 Inkjet Printers

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



CONCLUSION

In an industry which requires information to be printed onto individual components at various stages of the process, coding and marking equipment must be able to meet complex demands comfortably.

Robust coders are required to operate reliably in challenging production environments, with trouble-free integration into production processes.

Code functions vary in the industry: codes may need to be removable for internal traceability; discreet for anti-counterfeiting purposes; or long-lasting to meet customer traceability requirements.

An effective coding solution, tailored to the manufacturer's requirements, can help facilitate smooth manufacturing and assembly processes, as well as helping vehicle manufacturers deliver top-quality after-care to drivers.

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