

JENTON DIMACO

THE LABEL VERIFICATION COMPANY



Since its inception almost twenty years ago, Dimaco has been the leader in pack label verification. Now, as part of the Jenton Group, Dimaco is growing again by focussing on what really matters – the data.



What can Jenton Dimaco data and label verification systems do?

Jenton Dimaco label and data verification equipment is used to detect and prevent mis-labelling or the use of the wrong packaging materials and thus prevents rejection, repackaging and worst, expensive returns and recalls from customers.

In line or stand alone, Jenton Dimaco systems allow scanning of images (of labels or packaging film) to detect characters using the best OCR (optical character recognition) software available – all unique to Jenton Dimaco. These characters, barcodes and numbers are then read, and the data obtained.

First, the system assesses the text to make sure it is clear and legible – to the standard set by the customer (sometimes different for human read / machine read information). Secondly, the system checks to make sure non-variable data is correct (the right film, promo labels etc) and, thirdly, the system checks to make sure the data is correct. It does this by means of calculation and most importantly, reference to Jenton Dimaco's unique database system – "Veri-CENTRAL" which coordinates all data with producer and retailers' databases. Many hundreds of systems are already running in the UK food industry.



As an introduction to what Jenton Dimaco can offer, please consider the following **22 points**:

1

Jenton Dimaco does not use 'smart cameras' or 'vision toolboxes'. Jenton Dimaco uses the correct optical head for each application. This will be a carefully chosen combination of camera, lens, lighting & optical filter. (Vision toolboxes have been developed as a one size fits all solution to industrial vision problems from shape detection to optical character recognition (OCR)) In some applications these will be just fine, but in the majority of real-world label verification solutions they will struggle to provide the necessary accuracy and repeatability.

2

Jenton Dimaco has created its own range of OCR algorithms – developed over fifteen years, the Jenton Dimaco suite of OCR algorithms have been tailored to perform the exacting task of reading labels on production lines. These labels often have a combination of high-quality pre-printed artwork and variable print-on-demand data, often of a very poor quality. Once the pre-printed artwork has been verified as being the correct version, the real work is in verifying the content of the variable data to ensure that all product information is correct.

3

Data that is printed in real-time often suffers as a result of the packaging material moving whilst being printed. This can cause compression, elongation and rotation of the text. Jenton Dimaco systems can easily be tuned to accept text within an acceptable range so that not every pack with a slight imperfection is rejected. In essence, it can be set so that only packs that are not easily read by a human would be rejected.

Jenton Dimaco check **100% of all the production**

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Conventional COPs require hard copies of labels to be taken at regular periods throughout a production run. Usually this means taking physical copies, and attaching them to a label sheet, at the start of production, every hour, if a line stops for more than a set time and at the end of a run. This soon builds up to a lot of paper to store and search through later on, should a problem arrive. Not only does Jenton Dimaco check 100% of all the production, it can store far more images as well. Although it is unusual to store all images, one every 30 minutes or so is very common. As of 2019, the M&S COP no longer requires producers to physically store label hard copies if a Jenton Dimaco, or similar, system is in use.

5

Different pack rejection procedures can be implemented. A common scenario is as follows:

- a. A pack with incorrect data will cause the production line to be stopped immediately.
- b. A pack on which the label is missing or the data could not be read will be rejected into a locked bin.
- c. Three packs within a minute that have missing labels or that cannot be read will cause the line to be stopped.

This allows for occasional printing errors to be reworked whilst preventing large volumes of incorrect packs to be produced.

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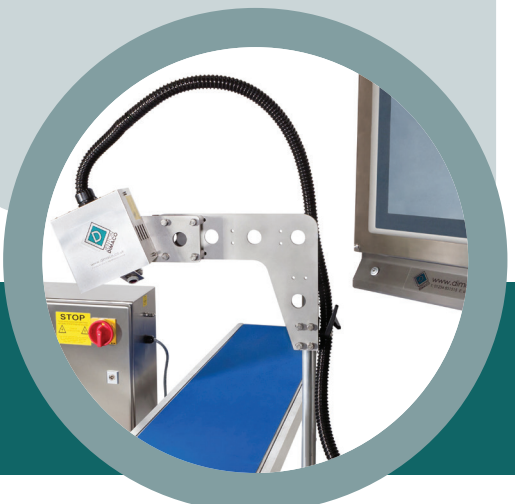
Everything described so far takes place on the production line using a machine called a Veri-PACK. This is usually a conveyerised machine with an optic head and a touch-screen computer, however we also integrate into other third-party machines such as horizontal form fill and seal where the finished pack would be impossible to read. However, this is only one part of the system. The heart of the Jenton Dimaco offering is Veri-CENTRAL. Veri-CENTRAL is a SQL database that resides on a server somewhere in the factory. One Veri-CENTRAL will often service many tens of Veri-PACK systems throughout the factory.

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In the case of catch-weight products, not only will the system check the price per kilo, unit price and weight, it will re-check the calculations as well. Furthermore, if configured in Veri-Central, it can operate on different price/weight as a function of weight. Not only will the human readable values be checked, but also all information contained within the barcode.

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Veri-CENTRAL carries out two distinct functions – it provides the data to each Veri-PACK and stores the results of every verification. Although it is possible for an operator to configure a Veri-PACK this is highly unusual. The normal procedure is for Veri-CENTRAL to automatically retrieve the pack data from either an MRP system or production spreadsheet. All the operator then has to do is scan the first barcode and Veri-CENTRAL will instantly configure the Veri-PACK parameters such as use by date, country of origin, price and artwork version.



*The heart of the Jenton Dimaco offering is **Veri-CENTRAL***



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Often packaging contains cooking time information. This cooking time is a function of the weight of the product (very common with whole chickens). Once Veri-CENTRAL knows the rules for calculating the cooking time then Veri-PACK can check the printed value is correct

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Veri-PACK can read and check all linear and 2D barcodes as well as stacked data-embedded barcodes. By early 2021 we plan to be able to read and verify Digimarc codes as well.

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All rules for computation of use by dates can be configured on Veri-CENTRAL, this includes slaughtered-on and depot dates. Furthermore, public holiday and special date compensation can be pre-configured. This means that not only does Veri-PACK check what's printed is legible and correct, but Veri-CENTRAL checks what Veri-PACK is being asked to check for corporate consistency.

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Veri-CENTRAL can also be used to verify that case-end labelling is correct and tallies with the packs being produced.

13

Where a single line can produce many products such as pasties, each ingredient can be scanned as it is brought onto the line and then the label checked to ensure that each ingredient is listed on the product label. This is of particular relevance to ranges of products where some, but not all, contain allergens as Veri-CENTRAL can check that the correct ingredients have been used.

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Such is the power of Veri-CENTRAL that some customers use it as a main tool to control production. For example, pre-existing price changes can be scheduled to an exact time and date and Veri-CENTRAL can even configure the coders as well.

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All aspects of Veri-PACK and Veri-CENTRAL are password protected. Every single user from line operator to site administrator will have their own login and password – usually in the form of a physical key fob, although sometimes biometrics are also used. Not only does this control a person's ability to make changes through usage rights, but every single change that is made is logged so it is possible to see who changed what and when.

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An operator with sufficient access rights (usually a Technical Manager) is able to remotely view and control every Veri-PACK in real time as well as viewing any report.



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Although a large variety of reports are pre-existing such as 'failures between times/dates', 'operator overrides' and other key production data, it is common for customers to request specific reports and formats. Once set up these can save a huge amount of time.

18

Jenton Dimaco now works with manufacturers of high quality check-weighers and metal detectors to provide fully integrated end-of-line verification systems. Not only do these result in short line length solutions, but allow Veri-CENTRAL to fully configure the machines and record all production data in a similar way label verification.

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Labels come in many varieties, shapes and sizes. It is not uncommon to verify a top label, base label and promotion label on a single pack. Promotion labels are often used on very short runs and limited numbers and can be subject to last minute changes. Additionally, we can also check that no promotion label has been inadvertently applied.

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Label verification is not a fit and forget technology. Our team of engineers are expert in remotely logging in to a system and diagnosing a verification "problem" very quickly. In the majority of cases it is not actually a Jenton Dimaco issue, but that the Veri-PACK & Veri-CENTRAL have detected a non-conformity and stopped the line.

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Jenton Dimaco has a wealth of experience with non-standard labelling such as the use of a single barcode and SKU for a product with five different countries of origin! As we have our own team of software engineers, nothing is too complicated for our system. Another reason why "toolboxes" and "smart solutions" don't compare with the Jenton Dimaco system.

22

Jenton Dimaco systems facilitate the efficient use of end of line automation. Traditionally, the person stacking and boxing the products also checks the labels. Neither is very efficient. Not only will Jenton Dimaco check every pack prior to boxing, but it will also check the case labelling as well.

No other company can offer the breadth and depth of solutions and technology required for label verification as Jenton Dimaco.

Our team is always keen to meet to discuss your requirements. A successful implementation will involve stakeholders from production, technical, engineering and IT so it is extremely important to get their involvement as early as possible.

Since 2016, Jenton Dimaco has been part of the Jenton Group of companies. Jenton has many technologies to support the food production sector including high speed product and pack handling from Jenton Ariana and ultraviolet surface and air disinfection by JenACT.

To discuss any of these technologies further, please contact Dr Russell Sion on

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