

# Greencore Group Plc

The Marco Trac-IT Yield Control Module, which forms an integral part of Marco's award winning Trac-IT factory floor efficiency system, is achieving rapid and radical yield improvements for leading international manufacturer of convenience foods, Greencore Group Plc at their Manton Wood and Park Royal sites.

Located near Worksop in Nottinghamshire, Manton Wood is the world's largest and most sophisticated sandwich manufacturing facility. When built in 2000 it was judged by the Times and Royal College of Art as one of the most desirable places to work in the UK. Greencore customers include major supermarket and high street chains, as well as leading forecourt and convenience retailers. The facility operates night and day throughout the year, employing up to 2,000 people.



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## Background

Located near Worksop in Nottinghamshire, Manton Wood is believed to be the world's largest and most sophisticated sandwich manufacturing facility. When you make almost a quarter of a billion sandwiches a year, you need to make sure you have the best factory floor efficiency systems available. Although there are high levels of automation at both sites, critical parts of the 'build' process rely on the manual dexterity of the line operators. Just one gram of overfill per sandwich of a high cost protein component can amass to over 4 tonnes a week or 200 tonnes a year for that component, translating directly through to significant cost implications.

## The Solution

The fully wireless Marco Trac-IT Yield Control Module installations comprise a series of LineMaster portion control workstations complemented by hand-held Portable Data Acquisition terminals (PDAs) to gain even more information on demand. Each supervisor uses a PDA, giving them control over an important line parameter, wherever they are in the factory. This equips them with total hands on flexibility to check out the lines. When requirements change, the data is sent instantly from the central server, located on another Greencore site, directly to the Workstations and the PDAs.

Any changes, instigated by line supervisors with an assigned permission level via their PDA, are automatically logged on the system. Marco Trac-IT makes sure the correct product is always at the correct place on the line to ensure sandwich layering is in the right order. All factory floor data from the Marco systems goes live instantly onto the Greencore factory network via Marco's robust RF network.

The LineMasters operate in takeaway mode, whereby operators remove the required amount of any sandwich component from trays placed on the weighing platform, guided by a simple red-amber-green traffic light system. Maintaining the right blend of sandwich fillings within close pre-determined tolerances, whilst still ensuring the all important 'mouth-watering aesthetics', requires the optimum in line control, especially as sandwich fillings become more complex and adventurous.



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Line control and efficiency factors are further complicated by the need for rapid line changes to meet customers' ever-changing requirements, whereby fillings can range from simple prawns or ham to more complex BLTs, pastas and salad mixes. However, in order to counter this Marco have pioneered the development of their dynamic Automatic Optimisation (AO) software, which minimises giveaway, whilst maintaining a high level of efficiency. The unique AO software package continually fine tunes target weights at individual workstations, based on real time factory floor data. Operators are unaware of this subtle fine tuning as they continue to work to the 'green light' on the LineMaster scales. Results from dozens of Marco installations demonstrate that giveaway can be reduced to fractions of a gram per sandwich component, whilst simultaneously improving line speed.

Greencore operate rigorous cleaning routines throughout the day and the stainless steel LineMasters have been designed specifically to meet their strict hygiene requirements. Line flexibility is imperative to accommodate changing demands for short or long runs of sandwiches and wraps. The network cable free RF workstations are easily wheeled to wherever they are needed on the line for any particular run.

Greencore's Infrastructure Technician is delighted with the Marco installations and as he concludes: "Prior to the Marco system, our sandwich assembly lines operated virtually in isolation from the rest of the plant and we had no real time visibility. We used standalone takeaway scales that required a high degree of manual input to set up for a specific order or when parameters changed. Line changes were time consuming and by the time we had analysed line production data, the 'moment' had come and gone. Marco took the time to listen to our requirements and understand our processes. They designed the whole system around our criteria without any compromises. During the installation their engineers worked around the clock so that there was minimum disruption to our normal production. With only the need for minimal training, our operators have found the new system extremely easy to use and we are now seeing significant benefits in terms of reduced giveaway. We now have a comprehensive overview of the sandwich assembly processes at both plants and supervisors can react immediately to changes via their PDAs. We've always prided ourselves in our production quality and we now feel we have moved up a gear, which is further good news for our customers and consumers."

**To learn more about Greencore click here**

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