

Industry: Food & Drink /// Packaging

Products Used: FX PLCs /// Servos

Sandwiches served with Servos

The rise of Sunday trading has encouraged Regent Service to turn traditional machine design thinking upside down, and to develop a label applicator fast enough and accurate enough for today's high volume packaged sandwich makers.



Mitsubishi Electric servo systems are used to replace the more usual pneumatics as the prime mover of the system in order to achieve the speed and positioning specifications required to win major high street chains' supply contracts. Unusually, on the new machine the label applicator head moves to meet the sandwiches, rather than being static and having them presented to it. Also it sits underneath the main production surface and fixes the 'ingredients' label to the bottom surface of the packaging, rather than being suspended above it and applying the 'sales' label downwards onto the top surface.

The main element of the applicator is a 20kg head. This is driven back and forth across the sandwich conveyor on a 750mm linear bearing slide by a Mitsubishi AC servo and controlled by a Mitsubishi PLC. Defined home and extreme travel positions are programmed into the PLC, a Mitsubishi FXON unit, which oversees all positioning operations ensuring accurate high-speed positioning control to within 1mm.

Production uptime has become even more of an issue for the sandwich industry in recent years, with the rise of Sunday trading leading to seven day working as a matter of course. Typically a large sandwich factory will produce between 150,000 and 250,000 sandwiches a day in batches of 5000 to 20,000. Regent, based in Clacton Essex, helps to cope with these demands by ensuring that all the components of its machines are working well within their capabilities. The Mitsubishi servo motor, for example, cycles the applicator head to apply typically 80 labels per minute, but would manage 100 without difficulty and could probably cope with 120 without significant modification.

With the sandwich market probably reaching a peak, Regent is now actively looking at transferring its flying head applicator technology to new fields such as cosmetics and pharmaceuticals labelling.

Application story first released November 1999 by Mitsubishi Electric UK