

PRESS RELEASE

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Robots are on the march

There have not been that many robots used in food processing industries to date but we are on the cusp of a sea change, says Chris Evans, Marketing & Operations Group Manager at Mitsubishi Electric Europe B.V. Automation Systems Division. Five years from now they will be very much the norm.

Modern food processing industries were born out of the gradual industrialisation of traditional techniques, with automation being adopted as equipment became available. A generation ago, a food processing plant consisted of conveyors bringing ingredients to workstations, which may be manual or mechanised.

Over the years the equipment improved and the arrival of automation, particularly PLCs

(programmable logic controllers), led to the integration of separate workstations into continuous processes. As computing power increased, the automated processes were optimised for lean manufacturing and constantly improving productivity.

The dominant trend of the last five years has been a drive to reduce costs, because raw material prices have gone up while consumers' spending power has declined. However, other trends, such as reducing carbon emissions, increasing hygiene and developing new processes and products will also have continued.

In fact, it is fair to say that the food processing industries innovate in both products and processes as a matter of course. About £1bn/yr is spent on research and development, as it strives to meet the end-customers' expectation of product quality, variety and availability.

For the processors this means agile product changeovers and rapid product redesigns. From an engineering point of view, the needs are to reduce costs and waste and increase yields, improve ingredient handling and maximise plant usage.

"For many years food processors have embraced a constant drive for improvements in production processes and productivity," says Chris Evans. "They have already embraced automation and increasingly are now adopting robots!"

Until now food engineers were probably wary of robots. They thought robots were expensive, complicated, unreliable and could not provide the sort of flexibility that a team of people can achieve in terms of learning new tasks, switching between tasks and being prepared to work irregular hours.

More recently, robots began appearing in the packaging section. This was a proving ground and it was soon seen that few if any of the assumed problems were reality. Confidence in robots began to grow and now they are increasingly spreading



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across the whole plant.

“Food processors are realising that robots have many attributes that are particularly well suited to their industries,” notes Evans. “They are very flexible and can hold multiple programs in their memory, so are able to easily switch from one job to another. They do not tire and slow down, nor do unexpected things that could compromise safety, nor breathe over foodstuffs. They do not need comfort breaks.”

“They can work through the night or other long hours. They are completely consistent in their movements, thus ensuring product quality and their own safety in a way that human operators cannot.”

“Robots, when coupled with advancements in gripper technology, can have a very delicate touch, reducing the risk of product damage. They are also excellent for lifting and never suffer from repetitive strain injuries.”

In fact, Mitsubishi Electric has recently introduced a new family of robots – the F-Series – aimed at the food and other hygienic industries. These are designed to meet IP67, allowing easy cleaning of the arm, while food safe HG1 food grade grease is used for lubrication. A clean room version is also available for ultra-hygienic requirements.

Typically, robots cost £5/hr to operate, half that of employing people, and because they can run continuously they are highly productive. Return on investment is usually achieved in around 18 months.

Evans concludes: “Companies that invest in robots will be securing their long term future far better than those that choose to sub-contract out work.”

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With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 124.000 employees the company recorded consolidated group sales of 39.3 billion US Dollar* in the fiscal year ended March 31, 2014.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Mitsubishi Electric Europe, Industrial Automation – UK Branch is located in Hatfield, United Kingdom. It is a part of the European Factory Automation Business Group based in Ratingen, Germany which in turn is part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of Industrial Automation – UK Branch is to manage sales, service and support across its network of local branches and distributors throughout United Kingdom.

*Exchange rate 103 Yen = 1 US Dollar, Stand 31.3.2014 (Source: Tokyo Foreign Exchange Market)



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