

# PRESS RELEASE

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## Robots make sure there isn't a screw loose



Mitsubishi Electric has worked with system integrator TQC to build a new production line for a customer where robots and automation have been combined with an OEE monitoring system to ensure assembly and testing work is carried out as efficiently and effectively as possible.

When working towards optimising production efficiency, the worst case scenario for this manufacturer is for an assembly to reach testing with missing parts or inconsistent screw torque and therefore fail the test procedure. In case of a failure the assembly would have to be disassembled and examined as well as the cause of failure investigated, then rectified. All of which is both time consuming and very costly.

To avoid this scenario, the product being assembled has been designed specifically so that it can be manufactured and tested using a combination of robots, automation and people.

At the start of the line some of the initial parts are positioned on a pallet by human operators using a pick-to-light guided operator bin system and cameras to ensure correct parts are picked and positioned. Screwing the parts down and adding O-rings, lubricant and additional small components is then

carried out by a pair of Mitsubishi Electric articulated arm robots working in tandem. Robots are ideal for these procedures simply because they are faster and more consistent with this type of operation.

The robots are Mitsubishi Electric's popular MELFA Series units, offering extended articulation, dynamic movement and fast cycle times. These characteristics are combined with a class leading degree of accuracy and repeatability, ensuring the highest levels of productivity can be achieved.

An important feature for the integrator is the modular nature of the control components. The robot controllers, for example, are mounted directly on the same physical backplane as the Q series PLC that runs the entire production line. This not only reduces purchase costs for the hardware, but also saves space and simplifies integration and commissioning work.

The production line was designed and installed by TQC using a complete package of components and software from Mitsubishi Electric including drives, HMIs, networking and operational software in addition to the robots and PLCs. TQC sales director Mark Jones comments: "The cross platform way of programming and the ease of integration between hardware and software make it simple to develop even for quite complex systems. This enables us to deliver projects quickly and control costs more effectively."

The customer is also reaping the benefits of an integrated OEE system installed on the line, with live performance dashboards displayed on large monitors to give operators real-time data about the line efficiency. With this information, they can easily see when line efficiency is dropping and take action to correct it. Moreover, it is enabling continuous improvement of the line, by recording and showing the immediate effect of any pro-active changes that are made.



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Steve Kirby, the Mitsubishi Electric Sales Manager responsible for the project comments: "The robots have replaced much of what would have traditionally been elements of 'fixed automation' in this project. Because they can multitask so effectively, from positioning screwdrivers to fitting small delicate parts and even passing assemblies to each other, a number of different models of the end product can be manufactured on this line.

"This flexibility is not only space efficient, but also makes the production facility itself more responsive, both of which contribute significantly to the bottom line. Combined with the OEE visualisation, the Mitsubishi Electric products have made a huge contribution towards improving efficiency, quality, productivity and resource optimisation."

## About Mitsubishi Electric

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.

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