FANUC ROBOTICS

PRESS RELEASE

Shimizu takes six axes route to total automation

“Our intention is to automate any production process that returns a benefit to our customers and Shimizu,” a clear statement given by Trevor Gaughan, Technical Director of Shimizu Industry UK Limited, as he recently described its three six axes robot installations. By the end of January a further two robot systems will be installed at the Telford Site.

Shimizu is a moulding and assembly company supplying automotive tier one companies. Operating from two sites, in Welshpool and Telford, the business is clearly driven by the demand for high quality products delivered on time. Trevor Gaughan explains, “Automation of the moulding and assembly processes has given us a deviation of ‘0’ on cycle times with resultant improvements on quality and increased output. Without doubt this has allowed us to be competitive with Eastern European moulders and to pass the benefits on to our customers.”

The core products moulded by Shimizu are radiator blower mouldings and assemblies, and aircon unit mouldings. Since the early nineties three axes robots had been used by Shimizu for straight-forward removal of mouldings from presses but post moulding operations, until recently, have remained manual. The decision to move to six axes robots was based on being able to reduce manual intervention and reduce work in progress bottlenecks.

Hi-Tech Automation Limited, the specialist plastics sector integrator, was contacted by Shimizu to provide a solution. Designing and manufacturing all the post moulding equipment including tooling and grippers, Hi-Tech's aim was to keep everything as straight-forward as possible and customise standard or existing equipment wherever possible.

FANUC Robotics was chosen as Hi-Tech's partner for the project and the ARCMate 120*i*BE robot arm was selected for each system - its reach, speed and in particular its ability to 'flip' over backwards made the arm the most cost effective solution to achieve the target cycle time.

Each system - cell one is producing the Yaris shroud, cell two shrouds for Honda and cell three Corolla fans – is dedicated to producing one product and its variants.

In cell one the FANUC ARCMate robot locates the shroud when the press tool opens after the moulding process. The tool ejects the moulding and the robot locates seven inserts into the tool. The robot then locates the shroud into a hot plate welder into which it has previously loaded a lid – the welder cycle then begins and the robot drops the shroud sprue into the granulator. During the welding cycle the robot picks up another seven inserts ready for the next cycle. After welding, the shroud assembly is removed from the welder and put into a pressure tester. A lid is then placed into the welder and the robot then takes the shroud from the pressure tester to the output conveyor, if passed, and then the cycle recommences. To date the only limitation of operating the cell at its maximum cycle rate has been the inability for an operator to assemble a heat sheild and

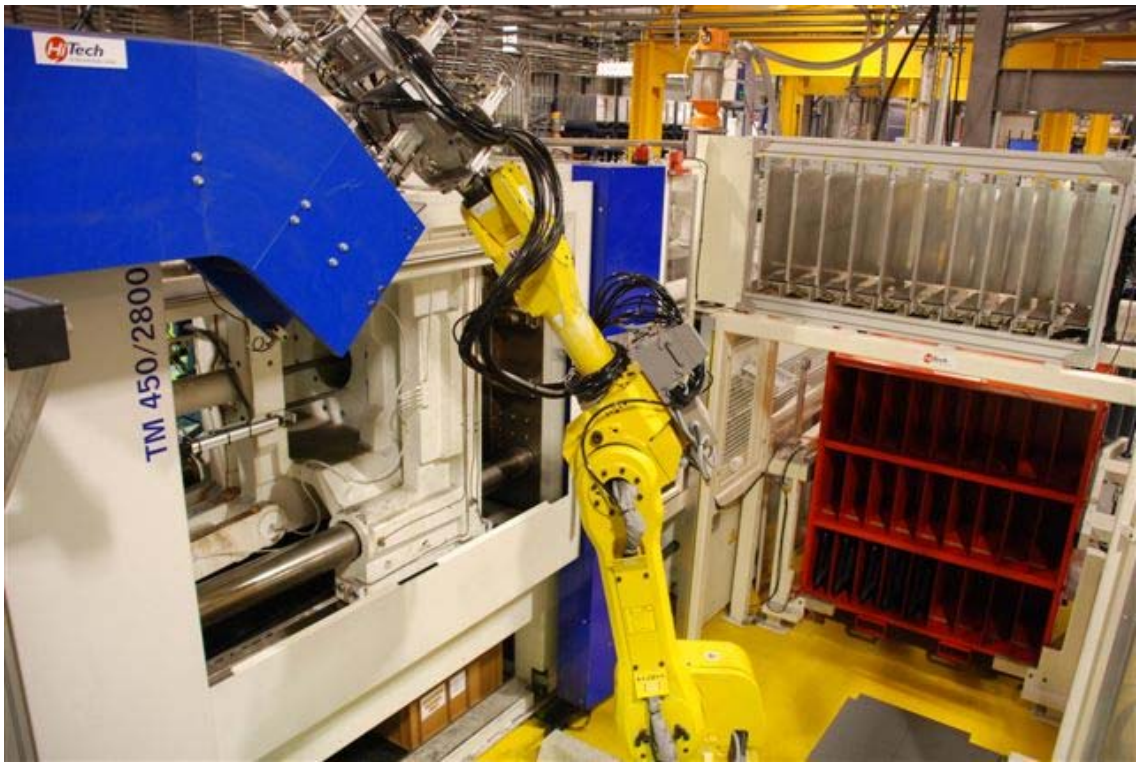
other parts quickly enough – but this limitation is planned to be addressed at some time in the future with further automation.

Cell two, moulding eight shroud variants for Honda, robot removes the mould and inserts up to seven inserts and checks they are all moulded in place. On completion each assembled shroud is placed securely into a dolly. The flexible design of the FANUC Robotics ARCMate allows the cell to be compact saving on floorspace – recycling the sprue using the robot arm's 1.37 mtr reach allowed the granulator shoot to be positioned well above the cell.

"The decision to purchase cell two was strongly based on the success of cell one, and in particular the ability of the over arm or 'flip' action to allow us to achieve cycle times," explained Trevor.

The third cell removes the Corolla Fan and places an insert into the tool, checks for an insert in the moulding and recycles the sprue. As with the other two cells cycle time deviation is zero.

"Central to making these cells effective was providing the engineers on site with 'ownership of the project'. We involved the Team right from the development stage and sent them on programming courses to FANUC Robotics' Coventry based training school. From the very start we made everyone clear at Shimizu that robots were essential to make the company increasingly efficient and competitive for the long term.," concluded Trevor.



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Notes to editors:

FANUC Robotics UK Limited provides integrated robotic process solutions for manufacturing industry. A wholly owned subsidiary of FANUC Limited of Japan, FANUC Robotics has been established in the UK since 1982. Operating from its 2,200 sq mtr facility in Coventry, FANUC employs over 45 staff, and supports an installed UK base approaching 6,000 robots.

FANUC Limited was established in 1974 and employs over 2000 people world-wide. Based at the foot of Mt Fuji near Lake Yamanaka FANUC's factory uses over 1000 FANUC robots to support the production of over 24,000 robots per annum. The global installed base of Fanuc robots is over 140,000.