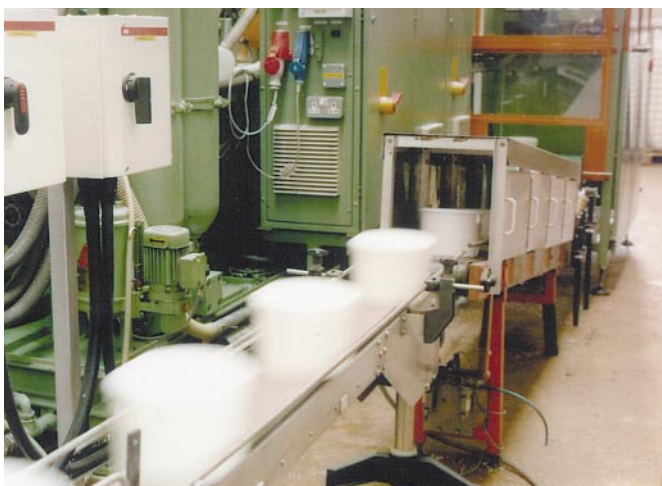


Industry: Plastics /// Manufacturing

Products Used: Modular PLCs /// HMIs /// Robots /// Servos

High-speed side entry robot uses Mitsubishi positioning system

PCE Automation has developed a new, ultra fast side entry robot, using a Mitsubishi Electric A series PLC and servo based motion and positioning system. The robot was designed and developed by PCE as part of a joint technical co-operation with RPC Containers for use in their container moulding operation.



RPC manufacture moulded plastic containers which are typically used in the food, paint and DIY industries. Their aim was to control the positioning of their products as they leave the mould without increasing the time taken by their previous 'free fall' system that resulted in inefficiencies and consumed valuable operator time. The new robot now removes the moulded containers from the injection mould and delivers them to a conveyor which moves them to downstream automated functions such as handle fitting.

Initial set up of the robots motion control system is very simple using Mitsubishi's pre-configured motion software, which eliminates the need for time consuming programming. Positions and speeds are simply set up as a series of blocks with absolute or incremental positioning and the robot is ready to operate.

The clever MR-J2H servo drive compensates for any weight change when moulded parts are picked up using Mitsubishi's unique Real Time Adaptive Tuning algorithm that continuously optimises the drive system for online load and inertia changes.

For ease of installation and set up the whole set of Mitsubishi control components is integrated. The position controller module simply plugs onto the A series PLC rack and connects directly to compatible amplifiers and motors, making for quicker and easier installation than attempting to fit together different elements from a variety of vendors.

The simple set up and flexible control system means that the robot system need not be dedicated to one product. The robot system is able to handle a wide range of mouldings by simply changing the set of inexpensive receiver plates and programming in new positions. The operator interface to change the robots positions is also simple to use with the robot's control information presented and altered in four interactive text lines via a Mitsubishi MAC50 HMI operator terminal.

Application story first released May 1998 by Mitsubishi Electric UK