CASE STUDY

Robot De-Moulding & Assembly Cell

Component: A range of plastic moulded letter box facia plates - 9 variants in terms of moulding shape and size

Introduction

The world's leading intelligent lock manufacturer approached RNA to design and develop a robot de-moulding & assembly system to handle and assemble plastic moulded letter box facia plates. There are nine variants in terms of moulding shape and size and all variants are produced on the same moulding machine with a moulding cycle time of between 35 to 45 seconds.

RNA developed a robot de-moulding and assembly system incorporating a six axis robot with a bespoke gripper system to suit more than one product, a holding and assembly station, and a box feeding conveyor system. The request was from the UK's largest lock group, providing security solutions across a range of markets.

Solution

Working in close cooperation with our customer, engineers at RNA selected a six axis robot which brings increased flexibility and additional functionality to automated de-moulding. Mounted firmly to a static robot plinth beside the injection moulding machine, the robotic arm can grip all nine variants using a specially designed interchangeable tooling system.

When the moulding cycle is complete, the robot indexes to the mould tool, picks the first set of components and places them to a holding and assembly station where the letter box is automatically assembled. The robot will then pick the sub-assembly and place vertically within its storage box.

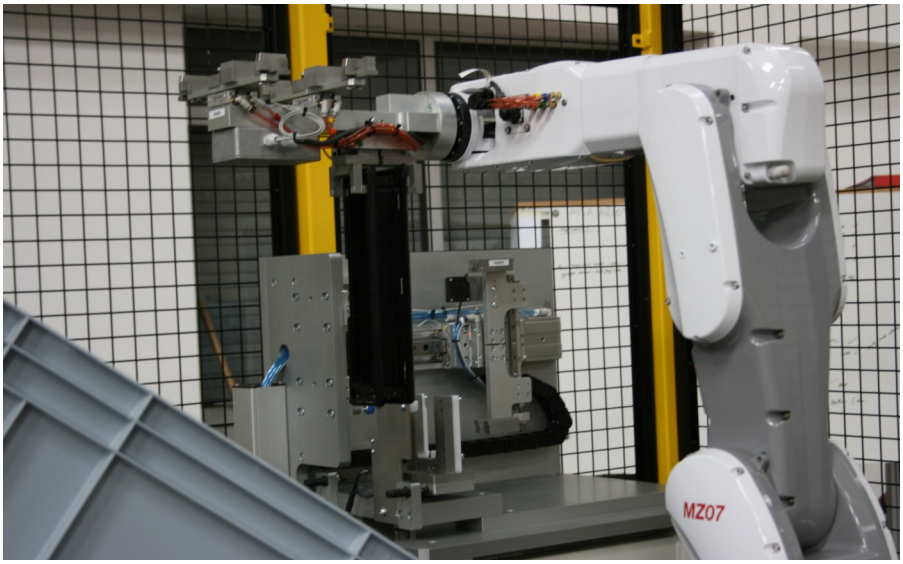
The robot de-moulding & assembly cell replaces manual labour and allows production running costs to be reduced. The system will be set up to run overnight which leads to reduced cycle time and enhanced productivity. RNA's flexible robotic solution has given the customer the ability to process more than one product style on one machine.

Key features & benefits

The System:-

- Provides a complete solution that provides minimum changeover between components that are different in size and shape
- Provides quick and easy tool changeover between component runs
- Offers cost-saving benefits such as labour cost savings and high production speeds
- Offers additional incremental benefits such as reduced downtime, improved quality control, raised standards of health & safety.

All of these benefits deliver a short payback period and impressive return on investment.



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