



Cartesian & Gantry Robots



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Introduction

The PCE GROUP of Companies

The PCE GROUP of Companies manufacture a comprehensive range of world-class automation solutions, across a multitude of industries, from part feeding equipment to complete turnkey production lines.

From our modern industrial production facilities in Suffolk (HQ) and Leicestershire, **The PCE GROUP** have complete in-house skills and capabilities to Design, Project Manage, Manufacture, Program, Install, Commission and Service; resulting in shorter project lead times, optimised efficiency and throughput and a swift Return on Investment.

Our automation solutions are skilfully crafted from quality materials, which stand the test of time; delivering exceptional value and longevity to our customers.

Winners of a coveted and prestigious Queens Award for Enterprise in 2020, for International Export; we export across the UK, Europe, North, Central and South America.



We look forward to becoming *your partner in automation...*



Cartesian and Gantry Robots

Typically deployed for presses and moulding machines, such as plastic injection moulding. Whilst these can be specially configured versions of standard robots such as cartesian or articulated robots, for specific applications dedicated designs can be used.

For very fast cycling injection moulding applications such as thin-wall packaging or ocular moulds, where the overall process time can be less than 3 seconds, the time taken for the robot to demould the parts is critical, with every tenth of a second causing large volume losses. These Take-out Robots tend to be a side-entry design with a single, or maximum two, axis of movement.

The carriage drive can be either rotary servo driven belt axis or, in critical applications, a linear servo motor. The responsiveness and acceleration along with minimal moving masses all contribute to the low cycle additions. In one application the cell was injection moulding eight small round discs per cycle, the complete cycle including moulding machine movement; plastic processing; part cooling and robot part demoulding took a total of 2 seconds. The cycle interruption for the robot was <300ms.

Adaptions of these robots have been used for a specialist process called in-mould labelling or IML. This is where the decorated and printed labels are printed on a thin version of the plastic used in the container such as margarine and ice-cream containers.

Each cycle the robot loads a complete set of labels precisely in the mould tool, the labels held in place by static charge, whilst simultaneously removing the finished product from the opposite side of the mould tooling. Complete cell cycles of <7 seconds are not uncommon for the thinnest part.



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