



Complex Flexible Robots (CFR)



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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...*



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The Compact Flexible Robot (CFR) has been specifically designed and developed to provide exceptional speeds, with a high level of flexibility to adapt to a multitude of different products and market sectors.

The CFR. uses an articulated swing arm motion to produce a linear entry movement into the mould area. By using this specific motion, the floor space required for this unit is reduced in comparison to a conventional side entry unit.

The flexibility offered by the robot can be attributed to its practical design concept. It is easily adaptable to cope with a wide range of products and can be integrated with ease to a variety of IMM machines and manufacturers. Highest yields on cycle time savings can be seen by utilising the robot for products with significant depth, which makes the most out of the dynamic nature of the unit. Capable of a range of payloads the unit is perfectly suited to the application requirements

The main swing arm is responsible for taking product from IMM, swinging out to the centre of the product in a perpendicular motion; deploying its vacuum cups to grip the part, with the centre cup being utilised to conduct a leak/flow.



A vertical take-off transfers moulds from the Injection Mould Machines, rotates 90 degrees and sets product onto a conveyor, where product can be indexed, or collated into stacks, via servo motion.



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Using high performance servo-controlled motions, the CFR. can comfortably achieve take-out times of 200 milliseconds coupled with integrated down-stream hand-over mechanisms the cell can achieve stand-by to stand-by cycle times of 5 seconds.

The Flexible robot is designed with a secondary axis which provides the de-mould stroke suited directly to deep products. The de-mould stroke is configured such that the movement follows the opening of the IMM platens. At the point of suitable clearance, the robot swings into mould area, collecting the finished product, which is usually prior to the mould tool reaching its fully open position).

This dynamic process results in reduced cycle times, increased production yields and ultimate cell performance.



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