

Bespoke packaging SME collaborates with the AMRC to develop low-cost robotic manufacturing solution



An autonomous robotic solution for improving process time and health and safety during the manufacture of cardboard boxes has been developed by the Integrated Manufacturing Group (IMG) of the AMRC.

The system was developed for The Cardboard Box Company, an SME based in Accrington that designs, prints and manufactures bespoke corrugated packaging solutions for industrial, retail or promotional displays.

The Cardboard Box Company accessed the expertise and state-of-the-art capabilities at the AMRC and benefitted from a grant-funding scheme run by the AMRC specifically to help SMEs fund research projects. The initiative match-funds the costs involved in conducting research and development projects for SMEs and is funded by HVM Catapult.

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Managing Director of The Cardboard Box Company, Ken Shackleton, said: “The AMRC came to visit us in Accrington to look at our operation and how they might improve upon any of our manufacturing processes.

“It was decided that exploring the possibility of installing some form of robotics at the end of one of our production lines would help with our palletisation process. With potential benefits of maintaining consistent production speeds, whilst reducing manual labour and the health and safety issues related to the process.”

The company produces 22,000 cardboard boxes per hour, with operators loading and unloading cardboard bales which weigh between 15-20kg manually, an incredibly labour intensive process.

To address this, IMG successfully developed a cost-effective automated system which uses a robotic arm palletising bundles of boxes. The prototype system was used to demonstrate to The Cardboard Box Company how they would be able to halve the time operators spend manually handling the cardboard materials during production.

IMG Project Manager, Ben Fisher, said: “This kind of development is valuable for an SME such as The Cardboard Box Company, as it allows them to redeploy employees to production processes requiring higher skill levels and therefore a greater need of manual intervention, creating valuable efficiencies.

“Alongside this benefit, this kind of automated technology brings consistency and speed to the production process and has valuable applications in safeguarding the health and safety of employees; reducing the need for physically demanding manual operations.”

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Projects of this nature are valuable to demonstrate to SMEs the access they have to work with research institutions such as the AMRC; to develop and integrate state-of-the-art automated production processes and technologies at low-cost, on any scale.

Ken Shackleton said: “This would not have been possible without the help of AMRC. For an SME to be able to access this technical level of knowledge to develop a project or resolve manufacturing issues is incredible.

“To have access to an organisation that is currently developing the ideas and processes for some of the most advanced technical businesses in the world is a privilege. If we are to build and promote manufacturing in the UK, then the services of AMRC need to be taken advantage of.”

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