
>Robotic cell for strapping and palletising

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News Release

Robotic Cell for Strapping and Palletising metal studs from APEX Automation and Robotics

APEX Automation & Robotics has been supplying robotic systems for packaging and palletising a variety of products. The weights of these products range from few hundred grams such as the case of plastic bottles, to few hundred kilograms as in the case of heavy metal parts. In this application, Apex Automation and Robotics was faced with the challenge of collecting, bundling, strapping and palletising mine roof bolts. These bolts vary in length from 600mm up to 3000mm and each bundle can weigh up to 250kg. An ABB - IRB 7600 robot with a payload of 400kg was used in this robotic cell that included an automatic Polyester (PET) strapping machine. The bolts are collected in small bundles of five. The robot picks up each bundle and presents the first end of the bolts to the strapping machine. The robot then spins the bundle around to strap the other end. These small bundles are then collected to form a large pack. Each pack is presented by the robot to the strapping machine, and after both ends are strapped, the packs are automatically palletised. The robot also removes a single bolt for QA tests every 500 bolts or on demand. The robotic cell has two palletising bays separated by light curtains. When a pallet is complete in one bay, the robot moves to the other bay so that production is never interrupted. Due to the massive payload, it was necessary to implement a collision detection software in the robot program, to prevent mechanical damages should any malfunction occurs. In the metal manufacturing industry, handling heavy parts is labour intensive and can lead to serious injuries. This robotic cell is another system supplied by Apex Automation and Robotics to this industry to improve OH & S and reduce production cost.