With the decreasing cycle of new consumer product introductions, inflexible packaging machinery is regarded as a barrier in the production system. Although some fixed automation systems are highly sophisticated, they are not easy to modify. A robotics-based system permits changes to be automatically accommodated with some minor programming changes. Robots are being used in factory for about 20 years. They replace either manned repetitive motion tasks or other strenuous work. Economic justification is the main criterion for selecting robots, and to date they have almost exclusively been installed in countries with high labour costs. With decreasing need for human performance, the potential for robotic applications is growing. The proliferation of robots in packaging machinery is expected to continue for many years. The new machines are not only large, articulated arm robots and conveyors designed for the automotive industry that have been adapted for end-line applications, such as palletising and case packing.

Carry on down the line

Innovative two- and three-axis Delta robots are operating in both primary packaging systems for product pick-and-place, and secondary operations, such as cartoning and case packaging. ABB’s FlexPicker (figure 1) is one example of a high-speed vision-controlled robot that is primarily used for pharmaceutical and electronics industries. Many of today’s packaging-system providers are developing their own robotic mechanisms which are customised to their own machinery. Various packaging operations developed by the German companies Gerhard Schubert and Interpack Systems have recently been making their way into various packaging operations. Most of the machine constituents and basic system composition of these robots have been developed for packaging or roboticised packaging lines and put into practical use. It is worth noting that the developments differ from those applied for welding and assembly. With the development of automation technology, Adept Technology is providing technological developments that are specific to the packaging market. The equipment performs pick-up and placement of a product during various stages of the product packaging process. The packaging machinery consists of compatible robotic packaging systems that are fitted with food, medical products, electronic and consumer goods.

Infinite variety fuels innovation

With the application of robotics in the automotive industry, this type of machine automation point, there appears to be great opportunities for robotics in packaging. The demand for food packaging and consumer products is increasing, and this makes for an area that is currently being researched for its potential. The packaging industry is changing, and this is leading to new requirements for the packaging machinery. This will totally entwine all aspects of the packaging industry, which in turn increases the technological and design challenges at a higher level to be met. For example, it is necessary to constantly meet the changing requirements at the food, pharmaceutical and electronics industries. Many of today’s packaging-system providers are developing their own robotic mechanisms which are integrated with their other machinery. Various packaging operations developed by the German companies Gerhard Schubert and Interpack Systems have recently been making their way into various packaging operations. Most of the machine constituents and basic system composition of these robots have been developed for packaging or roboticised packaging lines and put into practical use. It is worth noting that the developments differ from those applied for welding and assembly. With the development of automation technology, Adept Technology is providing technological developments that are specific to the packaging market. The equipment performs pick-up and placement of a product during various stages of the product packaging process. The packaging machinery consists of compatible robotic packaging systems that are fitted with food, medical products, electronic and consumer goods.

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Figure 1: ABB FlexPicker is a high-speed vision-controlled robot.