



ASK THE EXPERT

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Innovations in Automation

Breakthroughs in robotics give producers even more reason to consider automating their operations

As the field of robotics rapidly advances, some manufacturers may not be aware of the value provided by robotics. Following are several reasons to consider including robots in your manufacturing operations:

Overall ease of use – There still remains a perception that robots are difficult to program. However, just as computer technology has become more user-friendly so have robots.

Non-automotive applications are a key focus for robot manufacturers – The Robotics Industry Association reports that of the 12,765 robots sold in 2006, 44 per cent of those were put to use outside the traditional automotive industries, including food, beverage, tobacco and consumer products. There are approximately 166,000 robots operating in North American factories today.

Robots can compete with fixed automation – Robots have the payload and speed to compete with fixed automation, as well as offering two key advantages. The first is increased reliability, which results in higher plant yields, while the second is flexibility to handle future products, which protects your investment.

Benefits exceed labour savings – While first-time robot users typically justify an application on labour savings, there are the added savings of increased productivity and improved quality.

ROI measures need to be updated – Many plants still use a “double standard” for capital equipment ROI. Certain capital, such as machine tools, use “useful life” calculations, while automation and robots still use short paybacks, such as one year. This results in the under-utilization of a very reliable piece of equipment with a lifespan of seven to 10 years, and the flexibility to be re-applied again and again.



Handling randomly located product – An increasing number of robotic systems are using 2D vision as an alternative to special jigs/fixtures or conveying mechanisms. Some robot controllers even have vision systems as a standard built-in option, eliminating the need for an external PC.

Higher cycle times – Each new robot and controller design results in products that have higher speeds. When making expansion plans, be sure to check on the cycle times possible with the newest generation of robots.

Assembly tasks – The use of six degrees of freedom force sensors means that robots can perform assembly tasks with larger 3D parts that were not previously possible.

Handling large parts – The maximum payload that a robot can handle continues to rise, with some robots able to handle 700 kg. If you couple this with dual arm robots, it's possible to handle a 1,400-kg payload.

Large work envelopes are no problem – For many years, robots have been placed on linear slides to increase the working range. Now robots can be placed on overhead rails. This allows the plant work area to remain largely open while still allowing rail travel of up to 70 m.

Many consultants to manufacturers and even large companies stress the need to relocate to lower-cost regions of the world. Contrary to this perception, the implementation of automation, including robots, can often result in productivity and quality improvements that will save factories and jobs in North America.

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