

## robotics, automation &amp; vision

# SMEs CAN afford to automate!

*Machinery Update* asks Nigel Steel, European sales manager, Electromechanical & Drives Division, Parker Hannifin his views on the future for automation.

***Smaller producers still see automation as beyond their means. Is this purely down to cost, or are there other reasons?***

Historically, automation systems have been seen as the preserve of larger manufacturers due to their complexity, the associated need for ongoing staff and other support requirements. Add the historic cost of purchasing and operating such systems, and it is easy to see why many companies felt that automation was not for them. Today the reality is somewhat different.

***Can automation be a viable solution in small to medium operations now?***

New technologies, changes in manufacturing processes and a greater emphasis on usability have led to simpler, more modular and scalable products which have opened up automation to a wider range of applications and smaller businesses.

By simply adopting a process of doing 'what is necessary' rather than 'what is technically possible', OEMs and end users can develop systems that are not overly complex or unwieldy and lead to tangible production or cost benefits.

***Can you describe some of the key developments and why they are useful for the processing and packaging sector?***

Electronic and mechanical components have benefited greatly from new technologies and materials in the last 20 years; this has led to smaller and more compact automation systems. Technological advances have provided more functionality in products as standard; examples include electronic cam profiling and application macros, making it simpler to automate existing processes and applications.

The wider availability of technologies such as ATEX approved motors and IP65 washdown actuators have opened up automation into areas previously considered too problematic or challenging. Advanced manufacturing techniques and new material developments offer higher levels of accuracy and repeatability at reduced cost, opening the possibility of automating more packing and process applications.



***Advances in modular automation systems are available now to integrate into existing lines. Can they be integrated effectively and what are the benefits?***

For many years, larger control systems' manufacturers developed proprietary communications protocols, preventing OEMs from selecting products from other vendors and effectively 'locking' them into one manufacturer's products. In recent years, open, non-vendor specific communications have been developed such as Ethernet and Ethercat, allowing OEMs to select components that most suit their application.

This is leading to the development of guidelines and standards for control system architectures, such as those being created by the Packaging Workgroup of OMAC (the Organization for Machine Automation and Control). These guidelines will ensure the inter-operability of equipment.

***One reason that producers still use manual operations is because they are 100 per cent flexible. Can new automation systems offer similar performance?***

With the almost exponential rise in processing power automation systems have

increasingly become more flexible, especially when equipped with modern vision systems. This allows faster product changeover with reduced wastage and improved product handling, reducing damage or loss.

Automation is primarily used to provide consistency and accuracy to repetitive, labour intensive or hazardous operations. But these tasks need to be performed in sufficient volume to justify the cost.

***In which areas are the new systems most effective?***

Packaging is often the bottleneck for manufacturers. The ability to run repetitive systems without a break and to the same level of consistency is a major driver for automation of packaging operations. Product scrappage or loss can be minimised, traceability ensured and manual handling eliminated.

***Where is the 'tipping point' to make SMEs invest in this new technology?***

When deciding to invest in automation, manufacturers need to be clear about their expectations in terms of increased production, freeing up labour and improved product handling and control, and choose a system that matches these expectations.

***Where do you see the next big advance?***

Linear motors are increasingly finding favour in the micro-machining, bio-medical and research industries where dynamic performance and high levels of accuracy and repeatability are pre-requisites. As the technology matures and the costs of such systems reduce OEMs will look again at what this can offer.

These motors could cause packaging and process equipment cycle times to fall dramatically, increasing productivity and reducing on-going running costs, all within a smaller physical envelope.

*Parker Hannifin is a major supplier of automation solutions to the processing and packaging sectors.*  
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