A mechanism for healthier workers

Reducing risks to health is just one reason businesses should look to automation, says systems designer and installer GB Innomech

AUTOMATION IS NOT just about reducing workforce head count. It can reduce accidents, prevent work-related medical conditions and eliminate exposure to toxic or corrosive substances. In fact, it can be argued that automation is the best thing for workers' health and safety since Davy's safety lamp.

Work-related conditions such as repetitive strain injury (RSI), carpal tunnel syndrome and backache, collectively referred to as occupational musculoskeletal disorders, are increasing dramatically across Europe.

Safety: use of robots can eliminate repetitive work that can cause upper-limb disorders

According to the latest figures from the European Working Conditions Survey, 24.7 per cent of European workers complain of backache, 22.8 per cent of muscular pains and 45.5 per cent report working in painful or tiring positions.

According to some studies, the cost of upper-limb disorders alone could amount to as much as 2 per cent of gross national product, a staggering sum. In many cases the cost of cover staff, compensation and training resulting from a single injury amounts to tens of thousands of pounds, which is a significant portion of the cost of automating the process. So why do most companies ignore the potential improvements in safety when preparing to justify an investment in automation?

Better safety means fewer accidents and work-related medical outcomes, and that means higher productivity and lower costs, says Tim Mead, commercial director of Cambridge-based designer and installer of automation systems, GB Innomech.

"We have been talking to customers about the cost of moving from a manual system to an automated system and their justification is simply the potential for displacing human operators from boring and repetitive tasks".

"If you simply look at the costs of employing someone to do a task it can be quite tricky to justify the cost of an automated solution, but if you look at the risk of RSI injury to the operator, who is doing repetitive and strenuous tasks, there are additional costs."

The huge cost of upper-limb disorders in particular is due to assembly processes, Mead says: "One of the main issues is forearm RSI caused by picking and placing small parts and to some extent by operating small assembly presses where there is a need to twist levers or press buttons ten times a minute – over the course of a shift the number of similar operations is incredible. As anyone affected knows, the symptoms are incredibly debilitating and very painful."

Occupational disorders are not the only costs that are usually ignored when making an investment decision – for example, robots need none of the facilities that have to be provided for a human workforce. "Automated systems are also more compact and don't need canteens or toilets. Recruitment and training costs are lower, too." Robots are absolutely loyal to their company, don't suddenly decide they don't want to come in on Monday and don't accidentally bring in E coli, which in the medical or food industries is a significant risk."

One route to addressing many of these concerns is RoBox, a new concept in robotics shortly to be launched by GB Innomech, designed as a flexible robotic workcell for manipulating small, delicate or harmful products through process stations, which is still a major area where the flexibility of human workers is employed.

The RoBox is a "robot in a box" that can be quickly configured to automatically process parts through existing manual jigs and fixtures without human intervention, eliminating the repetitive work that can cause musculoskeletal disorders.

> Occupational disorders are not the only costs commonly ignored when making an investment decision – robots need none of the facilities a human workforce does

As Mead points out: "Most automation specialists want to look at developing a new totally integrated system, but many customers already have process stations that have been proven to work and all they need is a flexible robot system to transfer parts between them."

www.innomech.co.uk