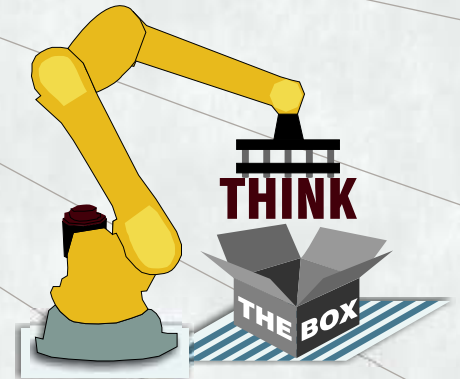


The Benefits of Robotics in Pharmaceutical Packaging (FAQs)

Q: Does robotic packaging equipment have particular advantages for pharmaceutical packaging? If so, what are they?

A: In many instances robotics are utilized to automate an existing manual process such as loading cartoners, horizontal form-fill-seal machines, or blister machines. In these cases, the advantages include increased speed, efficiency and an increase to overall equipment effectiveness (OEE). Other advantages may lead to reduced cost, reduced injury and eliminating re-work.

Robots are extremely accurate and repeatable. They operate 24/7 and, with options like vision and line tracking, can verify placement of product and track movement of continuous motion machines to keep up with production speeds.



Innovative Packaging Solutions

Q: How do robots reduce contamination during pharmaceutical packaging?

A: Clean room robots have been designed specifically for aseptic environments that have little tolerance for the introduction of contaminants. These robots include features such as the ability to withstand a wash down, the use of special grease or greaseless components, and smooth finish that will not retain particles that may contaminate the product and resists bacterial growth and rusting. The use of robots also allows the manufacturer to reduce the number of personnel involved in the process. Even in the most stringent pre-entry wash down procedure, human personnel represent a significant potential for the introduction of contaminants during the packaging process.



LR Mate 200iB Collating and Loading Blisters of a Drug Delivery Device into the Infeed of an Automatic Horizontal Cartoner

Q: Are robotic packaging processes more efficient than other packaging processes? Why and how?

A: Robots are more efficient than manual packaging processes. Robotic loading/unloading greatly increases the productivity of machines such as thermoformers and blister packers/sealers. Today, approximately 80% of these machines are manually loaded or unloaded. This requires that the workers maintain a constant speed at the infeed to maintain the machine's production level. Also, many packaging machines automatically stop if too much product has accumulated at the machine discharge. Robotic systems have the ability to meet or exceed the infeed and discharge rates required by these machines to keep them running at full production capacity.

pharmaceutical

cosmetics

consumer products

INDUSTRIES AND APPLICATIONS

Q: Are robotic packaging processes more flexible than other packaging processes? Why and how?

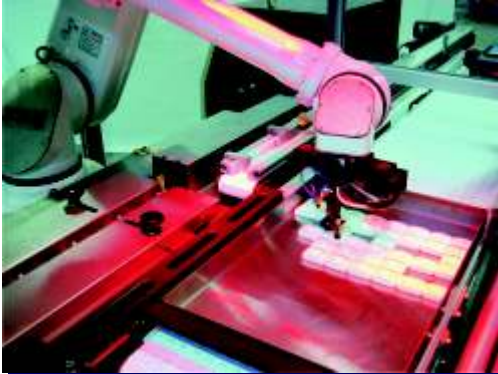
A: Robotic packaging processes offer much greater flexibility compared to manual or non-robotic automated processes. The key to this flexibility lies in the end effector and the programming of robotic packaging equipment. End effectors designed with "quick release" connections experience a very fast changeover of less than two minutes in most cases. And increasingly sophisticated robotic controls can be programmed for different packaging applications with relative ease. These facts allow a single robot to handle multiple SKUs with little more than a new end effector and programming. By contrast, application-specific hard automation, equipment designed to handle one type of product in a single application, becomes obsolete or requires expensive retooling when a manufacturer wants to run a new product on an existing packaging line.



LR Mate 200iB Placing Tray Covers
in a Pharmaceutical Tray Loading Application

Q: Do robotic packaging lines save space? How?

A: Robotic cells typically offer a very small foot print compared to other types of packaging equipment. At the same time, these cells offer a generous work envelope, allowing the installed equipment to handle multiple packaging lines. A typical robotic loading, assembly, or collating system uses a foot print less than 3' x 3'. Even a dual cell palletizer, typically a larger robotic packaging machine, only occupies less than 12' x 10' of floor space.



M-430iA with Vision and Line Tracking to Pick Diagnostic Test Kits
and Load Them Into the Infeed Conveyor of a Pouching Machine

In addition to the small foot print, robotic packaging lines can save space by using a single robotic cell for multiple functions, eliminating the need for additional equipment. For example, a robotic case packing and palletizing cell can be created that both loads product into cases but also places the filled case on a pallet, reducing the equipment and space required. Robots can be used to load multiple machine infeeds as well, allowing one robot to feed several lines, rather than requiring a feeder for each packaging line.

Q: Do robots offer advantages in the manufacturing process as well as the packaging process? If so, what?

A: Robotics in manufacturing offer many of the same advantages as robotics used in packaging. Robots reduce cost by eliminating expensive and inflexible fixed automation. Proven robotic technologies and quick production start up allow manufacturers to bring products to market faster. Robots optimize overall system throughput and increase system uptime. In addition, FANUC robots have standard vision built into every R-30iA robot controller, which speeds up the start-up process while reducing cost. Finally, robotic systems are very compact, saving valuable factory floor space.