

# Ready for inspection

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Quality inspection is critical in all manufacturing and packaging lines. Being able to catch a defective product before the products are shipped to customers can bring significant savings in both time and money, preventing expensive product recalls, wasted production and potentially expensive legal costs.

For perishable products, from food to pharmaceuticals, quality inspection of the packaging is also critical. An unreadable barcode or an incorrect expiry date could result in perfectly good products being discarded. And increasingly strict legislation is making clear marking a top priority for all types of product.

As production lines become ever more automated, inspection and quality control also need to be more automated. Automated systems can improve a line's effectiveness, by performing tasks quickly and accurately. However, the real benefits only truly materialize when 'smart' automation is implemented, utilizing such features as smart data. When this is applied to vision inspection systems, defects can be spotted and dealt with swiftly with minimal impact to the line. A smart vision inspection system can make any production line more highly efficient and less wasteful, both in terms of produce and down time.

## The importance of quality control

All production lines face challenges regarding inspection and quality control. But in the



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pharmaceutical industry, mistakes must be avoided at all costs. Therefore, the pharma industry leads the market in ensuring its line equipment delivers the best guarantees against defects. And while the consequences may not be as severe in other industries, there is rarely room for mistakes. The effects of defects reaching the public domain can still be far-reaching, affecting everything from consumer health to brand confidence.

Governments also want to protect their citizens, and as a result, are enforcing ever tighter restrictions on package markings, especially in the food and pharma sector. For example, the EU will introduce new regulations in 2019 that means production lines will have to meet even higher standards of quality control.

### All present and correct: Omron system solution

Omron systems cover all parts of the production line, including quality inspection. Whether providing a complete system solution or a partial upgrade to an existing system, each component is geared towards ensuring the highest quality control. For inspection and quality control, the company's very compact visual inspection units monitor production in real time and respond instantly to any defect.

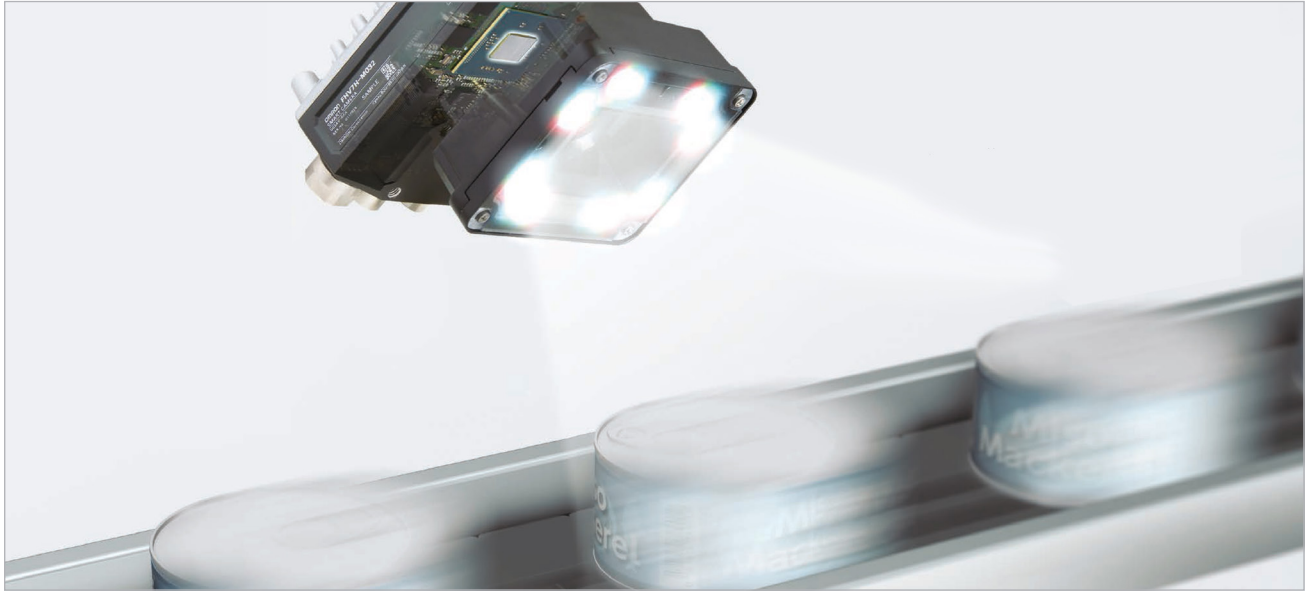


Data sent from the vision system is processed locally and sent via the cloud for powerful analysis that allow the system to take appropriate actions. The system is totally interlinked, with the improved connection between machines in a manufacturing line delivering more accurate quality control and higher efficiency. If any error is detected, the system can often compensate automatically, allowing production to continue unaffected. Omron's smart automation solutions are very fast and possess lots of processing power, yet they are easy to use. This combination of speed, intelligence and user-friendliness delivers the most effective inspection and transparent quality control.

### Following the rules

For an inspection system to be able to make smart decisions, it needs to collect data from a sensor, such as a vision camera. Vision cameras can be set up to monitor different aspects of the product, perhaps to check for imperfections, or to check labels for misprints or missing information. Powerful processing then analyses this data to monitor the process, comparing actual results with expected results. If any problems are found, the system follows programmed rules on how to respond to any changes. It may even be able to deal with the matter automatically, but in every case an operator will always be informed for correct process management and in case any additional action that might be required.

The more data there is, and the more processing performed, the 'smarter' the machine can be to help keep manufacturing lines running longer, with less downtime and higher productivity. All data is logged by the system and is typically stored in the cloud. This also helps meet regulations as operations can be later reviewed for auditing purposes.



### Flexibility, now and in the future

In addition to catching production errors and reducing waste, a further advantage of an effective inspection and process management system is flexibility. By combining vision, motion, control, safety, and robotics, all in a single management system, such as Omron's Sysmac Studio, production lines can more easily accommodate short production runs and adapt to market demands. Line set-ups can be changed quickly for new production runs, and the recognition pattern for quality inspection can be updated easily in the software. This ensures different variants or even

different products are produced and packaged correctly.

The system is also future-proofed as it can be easily adapted to accommodate any changes to regulations. Therefore, manufacturers do not need to worry about what they might need to do to their production lines to meet future regulations. All that is required is to rollout a new firmware update for the existing solution.