

CASE STUDY

Machine Vision Solutions for Pharmaceuticals Industry

Introduction

RNA were contacted with a request for a fully automated quality control and inspection system to handle and inspect blister pack tablets. The request was from a global leader in the Pharmaceuticals industry.

The system handled with minimum changeover two different size components. Today pharmaceutical industry requires the highest standards of design, usability and performance for their processing equipment. The system was located in a Grade D (EU GMP Annex1) environment and conformed to a very high pharmaceutical specification ensuring the required standards were met.

The system inspected the product from all three planes: 1. Top for damage and missing tablets 2. Bottom for damage and OCR (optical character recognition); 3. Side for damage, height and profile. The system also as critical feature detected 100% of any reject components, without damaging the component.

The customer required a complete system with the following minimum requirements:

1. The system to be capable of operating at up to a rate of 600 parts/minute
2. Designed to meet pharmaceutical and GAMP standards.
3. Include a customized HMI system to meet the specific needs of the customer.

Solution

To enable the system to deliver 600 parts per minute the design utilizes a twin headed system with duplicate bowl feeders, conveyors, glass disc and reject segregation, with a common good part collection. This handling solution involved the innovative idea of a “**rotating disc to transport and gap the parts**”.

The components were fed from a bowl feeder onto a conveyor system and fed individually onto the rotating disc, where they were presented to the camera system (3 cameras for top, bottom, side inspection).

An air blast complete with control solenoid valve removed individual ‘good’ components from the disc into a chute; remaining ‘reject’ components continued round the disc until they reached a mechanical divert which guided them into a chute.

Inspected components were discharged from the system via a chute into collection bins - 2 collection bins for ‘good’ components, 2 collection bins for ‘reject’ components. Once a count of 8000 components was reached, the machine alerted an operator via a flashing beacon. A mechanical divert then directed components to the 2nd bin, allowing the operator replace the bin without stopping the machine.

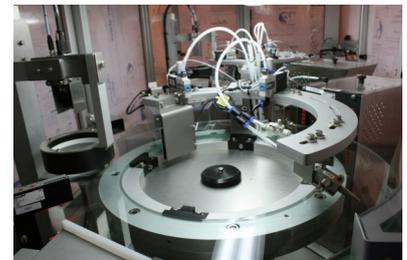
To meet the high demand of the customer’s requirements for the HMI system, RNA developed in house a user-friendly visualization program capable of showing detailed information on the control processes for the system. It also allowed up to 64 accounts with individual passwords, enabling multiple registrations to the system. The program provided a verification solution designed to help pharmaceutical manufacturers consistently deliver quality products.

Key features & benefits

The System:-

- Provides a complete solution with minimum changeover between components that are different in size
- Offers minimum damage at maximum feed rates of up to 600 parts per minute
- Offers cost-saving benefits such as labour cost savings and high production speeds
- Offers additional incremental benefits such as reduced downtime, improved quality control, raised standards of health & safety and high hygiene standard for pharmaceuticals.

All of these benefits deliver a short payback period and impressive return on investment.



<< rotating glass disc

