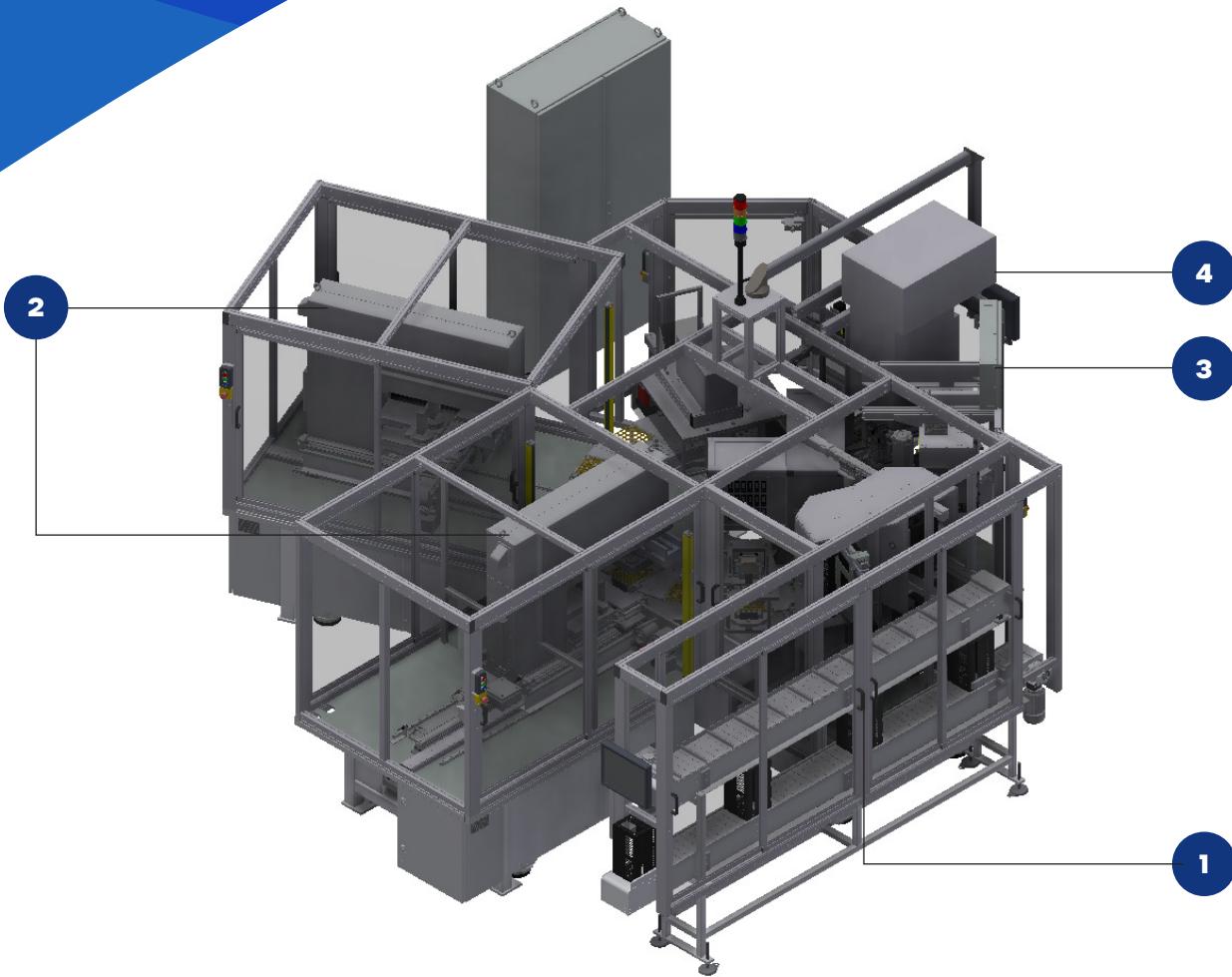


High Volume Eye Care Pad Printing System



1 Automatic cassette feeding at load and unload

2 Pad printing of multiple products

3 UV Curing of multiple products

4 Automatic decoupling and recoupling station

High Volume Eye Care Pad Printing System

Eyecare products require to be manufactured with well controlled surface finishes and accuracies. Handling of such products requires precision engineering and world class automation.

On this particular project SP Automation & Robotics was tasked with designing a machine to pad print features on a eye care product at speed at high speed.

The Challenge

The main challenge was to provide a fully automatic printing, curing and inspection system which could operate at a speed of 200 parts per minute,

Many handling technologies were considered, however a rotary indexing system gave the best balance of functionality and compactness.

The requirements of the machine were as follows:

- Automatic feeding and transportation of the eye care product (handling cassettes, trays and individual moulds)
- Pad printing of each product
- Curing of each contact lens
- 100% vision inspection of all of the lenses processed on the machine
- Automatic segregation of 'good' and 'bad' parts

The Solution

The system was designed around a 16 station rotary indexing system with cassette handling conveyors, pad printing modules and vision inspection stations positioned around the periphery of the machine. The product was fed into the machine in banks of multiple parts on trays, with the trays themselves being fed in on cassettes or towers.

The trays were escaped from the cassette and are then picked and place on to the indexer. The product was made up of two halves and separated with one half being parked on a bank of secondary locations on the indexer. The product, which were then pad printed over two stations. The pad printed products were then indexed to a station where banks of UV lamps are used to cure the ink.

A vision system, mounted to a servo-driven X-Y gantry, then inspected all 36 of the products to ensure that the print is present and is of acceptable quality. Any products that failed the vision inspection were ejected from the indexing system using a pick and place, into a segregated collection area.

The remaining 'good' product was then coupled back together with its mating half. The printed were then transferred back to their respective cassettes before they are conveyed back out of the machine.

Features & Benefits

- Automatic cassette feeding at load and unload of machine
- Tray handling mechanics – mounted to a 16 station rotary indexing ring
- Product decouple and recouple mechanics
- 36 position pad printing systems
- UV curing stations
- Automatic reject pick and place
- Barcode scanning and tracking on trays and cassettes



For more information or to discuss your bespoke solution get in touch.

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