

CASE STUDY

Reusable Packaging and Material Handling Automation

CHALLENGE

A Reusable Packaging Container (RPC) Management business purchased an automated washer for trays managed in the production system. The complete solution needed to handle a large volume of trays dispensed into a washer. Production was continuous with high volume.

The solution needed to wash each tray with a matching lid. Insert the lid back into the tray automatically after both items completed the wash cycle. Cost was an issue and the goal was to deliver an automated system.

TWO PART SOLUTION

In feed: Trays and lids weigh about 5 lbs and are presented in stacks that are large and greasy. All trays were one size. A designed gripper system handled the stack lowering it onto a feed conveyor. Using 80/20 framework and Bimba Pneumatic actuators a gripper was designed. Also, an HPU with valving was used to control the lowering cylinder and the conveyor motor. When the stack was sensed to be in place, it was lowered. Stacks were carried to the washer where the operator loaded the trays and lids into their respective wash lane.

Out feed: After cleaning was complete, trays and lids were married together automatically. Again, accomplished with 80/20 Framework and Bimba/TRD actuators. A conveyor rack included the framework tied to it to provide mounting location for the actuators. A framework designed vision system box was utilized and able to detect if the lid was inserted in to the tray and properly oriented. Once again, the versatile 80/20 Framework and Bimba actuators delivered a stacking and gripping system for the finished product. The completed stack was then transferred by a fork lift operator to the truck loading stations. Finally, an 80/20 framework barrier system around the process provides safety for workers in the plant. A Mitsubishi controller helps with the sequencing of this application.

BENEFITS

1. This system allowed the customer to completely run this line with one operator.
2. Keep costs down, the system design, assembly and startup came in under budget and ahead of schedule.
3. Providing the customer with a strong and immediate ROI (6 month payback) and helping to keeping business flowing smoothly through this line.

