

Pallet Assembly Aystem for Automotive Glovebox Latch

TQC have performed a number of sophisticated pallet based automatic assembly and test projects for several demanding applications. The system shown above was designed and engineered for the automation of a glove box assembly for a high volume automotive manufacturer.

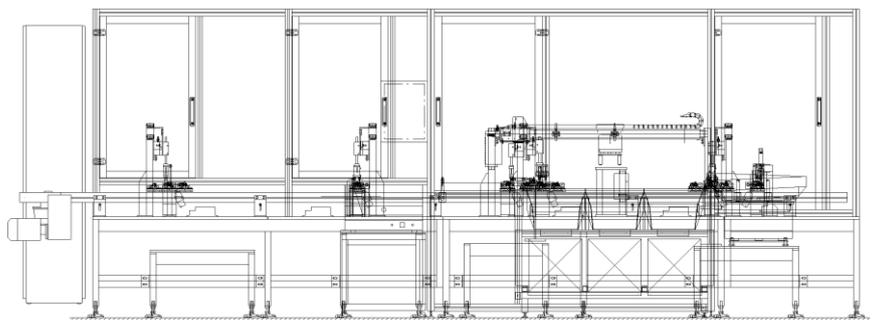
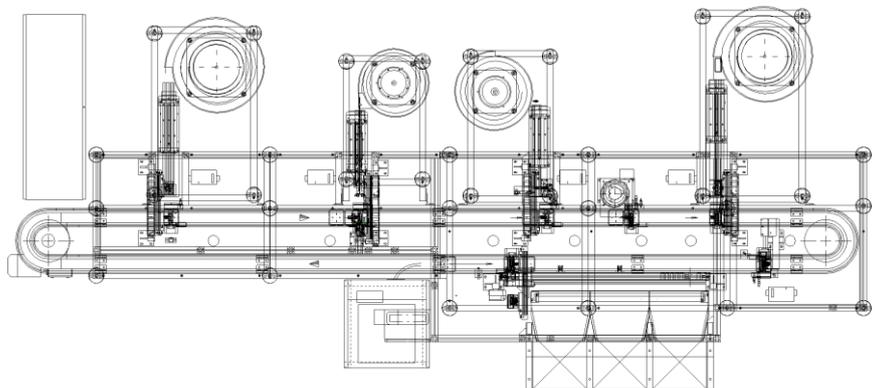
The latch can be produced in different formats for different applications, hence a modular automation approach has been adopted. The production volumes are large and hence the machine cycle time is relatively short. The system was supplied to Southco Manufacturing winners of the Management Today 2001 Best Factory Award.

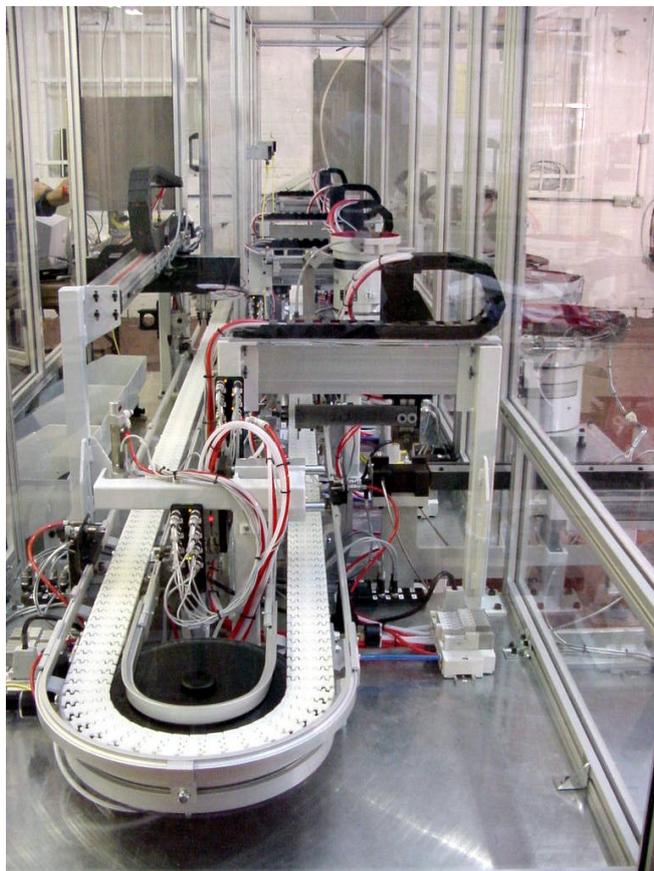
TQC have provided multi station industrial automation production lines and robot workstations in different applications, ranging from automotive parts manufacture, transfer of green state ceramic components, medical device assembly and precision automation at high speeds.

This particular assembly cell is engineered to have minimum operator involvement. All parts are automatically fed from vibratory bowl feeder systems where box quantities of product are loosely tipped into the feeding bowls.

The output from the cell is automatically placed into shipping cartons at the unload station.

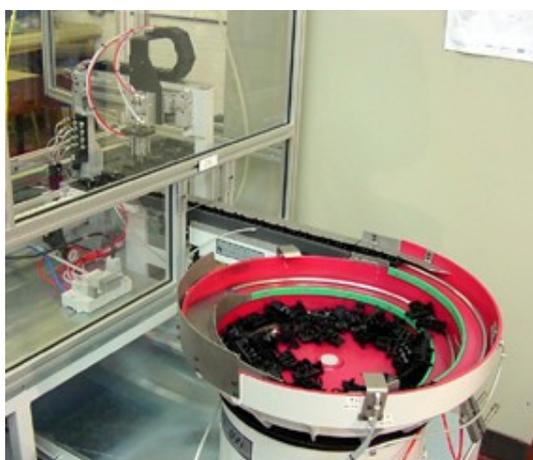
The system takes six parts, including plastic mouldings and springs to assemble the latch. The part is tested for correct operation within the cell after the assembly operation is complete. The good parts are automatically ink jet marked.





Key Features

- Fully automatic pallet transfer system with multiple stations
- Automatic parts feeding using bowl feeders
- Automatic part marking and packing
- High volume throughput



The facility is completely guarded with aluminium extruded frames and clear guard panels. All of the openings for the bowl feeders are outside the guarded area, allowing the operator to top up the bowls without stopping the machine. The deposit point for the assembled and tested product is also outside of the guarded area. The carton filling system also has an automatic carton change facility.

The production line has been engineered to allow for future variants of the similar high volume automotive latch mechanisms to be assembled on the same production line.

The design of the assembly cell follows a modular approach; each element is wired and piped back to distribution points on each station.

The system incorporated a PLC control system complete with Human Machine Interface Panel. The HMI unit consisted of a display and function buttons, this was used to provide status information on the machine for diagnostic purposes and manual setting operations at each station.

Attention was paid to minimising noise levels on the shop floor by using acoustic covers. In addition, there was a roof on the guarding system over the pallet conveyor area for additional noise reduction and to keep the whole system clean.

Similar systems have been engineered by TQC to assemble a diesel fuel switch, a distributor and domestic appliance switches.

TQC used it's professional engineering project management approach to ensure that this project met both timescale and budget requirements.

