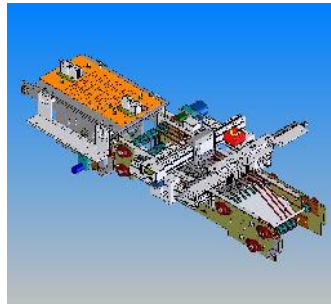




# Automated PCB Test & De-panelling Machine

## Description

Design and manufacture of an automated, end-of-line PCB test and de-panelling machine for automotive switches. A panel of 44 PCB's is fed directly into the machine and each tested to ensure presence of 9 correct resistors and 3 correctly illuminated colour LED's by actuating 3 micro-switches on each PCB.



*Design*



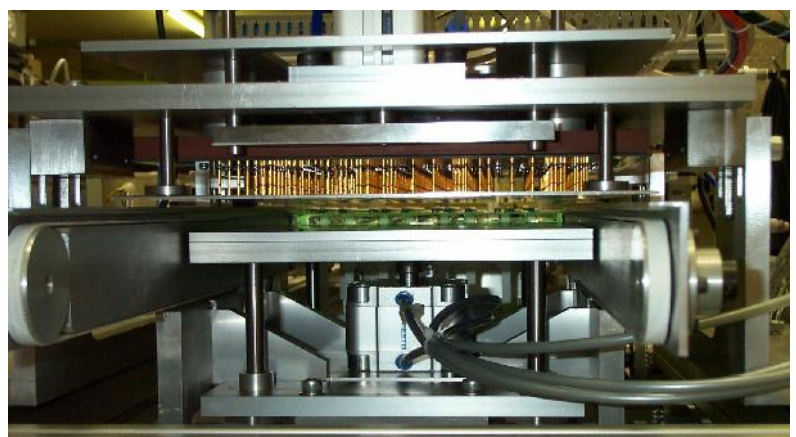
*Machine In Build*

All 44 PCB's are tested simultaneously using a bespoke "bed of nails", the micro-switches being activated by a separate system. All pass/fail data for each PCB is stored and then the panel moved to the XYZ de-panelling station.

The high precision XYZ stepper motor driven table then moves a high speed spindle to cut PCB's from the panel. Each PCB is held in position by a vacuum system and the resulting dust removed by an industrial extractor. The PCB's are then transferred to the pass/fail sorting station where the passed components are separated from any failed components and the outer panel waste, by means of a pneumatic pick and place system. All control is through a PC & PLC, with a LabVIEW DAQ system operating through a second, separate PC.

## Specification Summary

- Cycle time = 160 seconds
- Adjustable electro-mechanical transfer machine with pneumatic lift systems
- Bespoke data routing machine PCB's to acquire test PCB data
- Precision XYZ router traversing system operating @ 20mm/s
- PLC control, PC LabVIEW DAQ and separate PC router control
- Bespoke design vacuum table



*Bed of Nails Assembly*

## Disciplines Used

- Electro-mechanical, electronics & pneumatic system design, PLC & PC LabVIEW DAQ & control, project management, manufacture, assembly, test & commissioning.