



Automated Electrical Switch Tester

Description

Design and manufacture of an automated electrical and leak test workstation for automatic gearbox switches.

The electrical test uses a high precision SMAC actuator to move the switch through its cycle and identify all the switching positions to within 5 microns.

Positions for each switch are compared to the specification and a pass / fail signal produced as a result.

Passed components are then transferred to the leak detection station, which tests for a 0.3mbar/s pressure drop at 1.03 bar, using a high sensitivity differential pressure transducer.

Passed components are with a date stamp using an ink jet printer, failed components are rejected into a latched bin.

Disciplines Used

- Electro-mechanical, electronics and pneumatic system design
- PLC DAQ & control
- Project management
- Manufacture, assembly, test & commissioning

Specification Summary

- Configured to suit 8 product variants with universal fixtures
- Average cycle time of 7 sec's
- Switch variant selected from control panel
- Separate PLC for each station
- Spring test pin arrangement for electrical contact on both stations
- Latched reject bins at each station to prevent missing rejects
- High sensitivity differential pressure transducer used for pressure measurement with bespoke, high gain, amplifier
- Passed components date stamped by inkjet printer
- Aluminium extrusion framework



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