

# Solutions@Mecmesin

## Soldered Flexi-circuits Tensile Test

### Specification

The customer was a manufacturer and developer of braking systems for the heavy goods vehicle, bus and truck industries. This involves the manufacture of printed circuit boards (PCB's), hot bar soldered flexi-circuits, ribbon cable and thin film soldered connections and connectors. For in-process quality control checks, The customer wanted to monitor the pull-off or retention force of their manufactured and assembled products.

### Solution

Mecmesin supplied the company with a specially designed system capable of repeatedly testing the soldered circuits to establish their retention force. The system consisted of a MultiTest 1-x console-controlled test system, 100N loadcell, a wedge grip, a specially designed sample location plate, sample clamp top plate and fixture clamp. The PCB is positioned in the location plate to avoid movement of the sample during tests. The sample top plate is placed on top of the PCB board slotting into the lower plate. Flexi-circuits are cut so that they can be positioned through the holes within the top plate and clamped by the wedge grip to perform the tensile test. Before the test begins, a fixture clamp arm is moved to a position to secure the assembly. The tensile test is then initiated and the force displayed on the MultiTest 1-x LCD screen. Before this system was implemented, the company had performed the test using larger laboratory equipment. The compact size of the Mecmesin system, the quick and easy-to-use dedicated fixturing and automated data transfer means the customer can now undertake in-process QC checks quickly and simply within their production areas.

### System

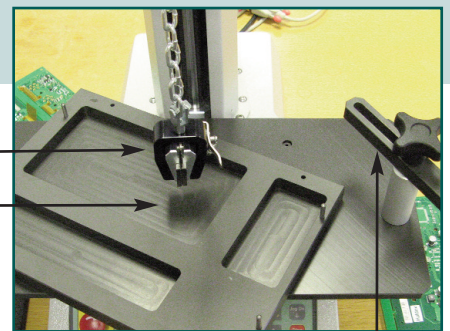
- MultiTest 1-x
- 100N XLC loadcell
- Wedge Grip
- Specially designed location plate, sample clamp top plate and fixture clamp



Wedge grip shown gripping flexi-circuit



Whole unit assembly



Wedge grip →  
Sample location plate →

Fixture clamp

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## automotive industry



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