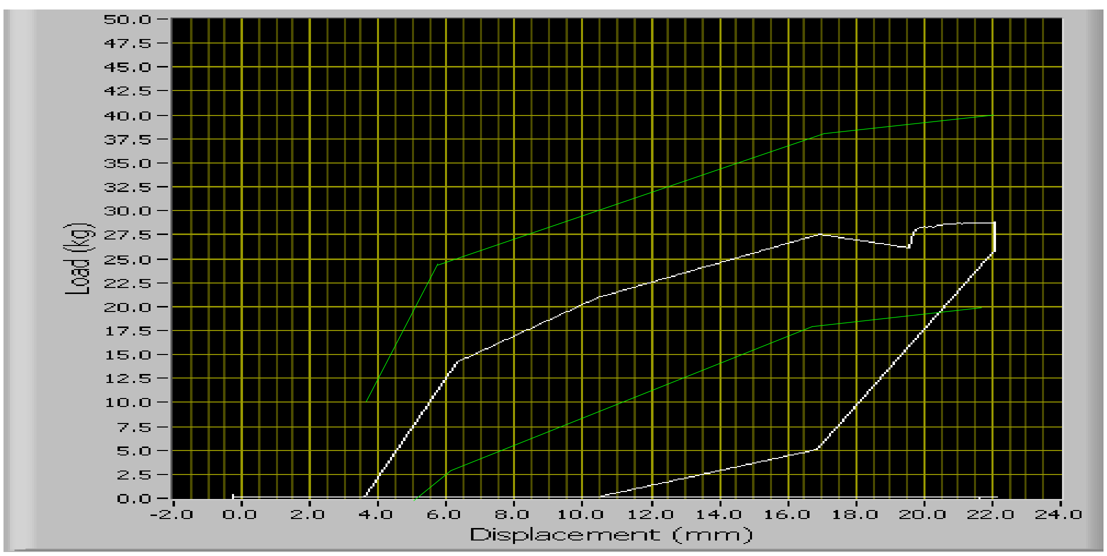
The Objective:
The customer was planning to use conventional pneumatic / hydro - pneumatic presses for assembly operations. Initial trials revealed cracks in some of the pressed components. To ensure that cracked components get detected before subsequent operations are carried out, the customer was planning to install an inline x-ray system. This would have increased the cost significantly. The x-ray inspection was a non-value adding operation ('*muda*')

The Challenges:
The cracks formed during pressing were sometimes not detectable visually. A better approach would be to detect potential cracks during the pressing operation. Cost of imported servo presses was prohibitive for the project.

The Solution:
We developed a servo press with a load v/s displacement algorithm. This press was fully programmable. It monitored the load reaction at all positions of the ram. If, at any point during the ram travel, the load reaction falls above or below a band, the system sends an error message. A real-time graph is also displayed. A data acquisition system records the input and generates customized reports.



The Outcome:
100% Automatic incoming part qualification reduced dependency on manual audit checking. The customer saved on value addition costs on rejected sub-assemblies. Crack detection happened during the pressing operation, resulted in early detection of defects. The cost of x-ray machine was saved.