



The manufacture of automotive Side-Impact Bars used in vehicle doors requires the frequent testing of sample parts to ensure compliance with the customers specifications in regard to the materials strength and it's ability to absorb energy.

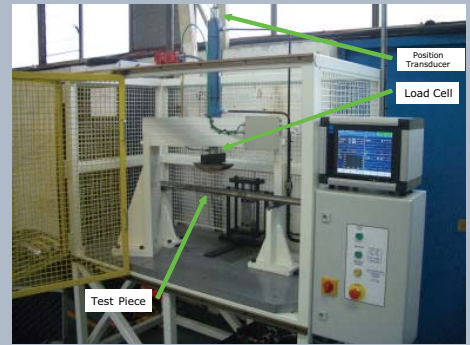
Each sample part must be destructively tested to produce a set of results that can be compared against minimum specification limits on the engineering drawings.

There are also two types of side impact bar, front and rear. Both differ in length and have different specification limits too.

The solution provided for this OEM was a custom build test stand comprising of a hydraulic power pack and cylinder with basic PLC control. A Decade 60 Series monitor with Load Cell and Position Transducer is then used to control and monitor the test process and record the results.

**Test Control.**

When a new test is started the 260 System will start by looking for an increase of force that indicates the test piece has been 'touched' by the tooling — at this point the 260 zeros the position datum and starts measuring.



Deflection Testing Machine.



'Bent' Test Piece after Testing.

## Strength and Energy Calculations

During the test the test piece is deformed by the hydraulic ram moving at a constant rate. The 260 Series measures the force developed and the position travelled. From these values it then calculates :

- Material Strength
- Energy Used
- Peak Force

When the test piece has been deflected by a pre-set distance the 260 System signals to the PLC to stop the hydraulic ram moving. Using the results measured and calculated the 260 System displays them along with a process graph and then Passes or Fails the overall test cycle.

## Datalogging

The 260 will record the test results in its own internal memory. But this can be supplemented with a network connection to a central database where these results can be stored and then viewed using a web browser.



260 Screen with Test Results.

