

■ 2-Stage Fuel Tank Valve Test: Leak, Flow and Press Monitoring Testing

**Highlights:**

- All test data is saved to disk by valve serial number for 100% traceability
- Sciemetric's Signature Analysis System monitors all predetermined press and leak profiles
- PLC communication via Allen-Bradley Data Highway Plus™ and Modicon Modbus Plus™
- Easy to use menuing and full graphic displays
- Signature, SPC, reports

Sciemetric provides a complete test solution for automotive manufacturers at various levels of assembly, including in-process and final test.

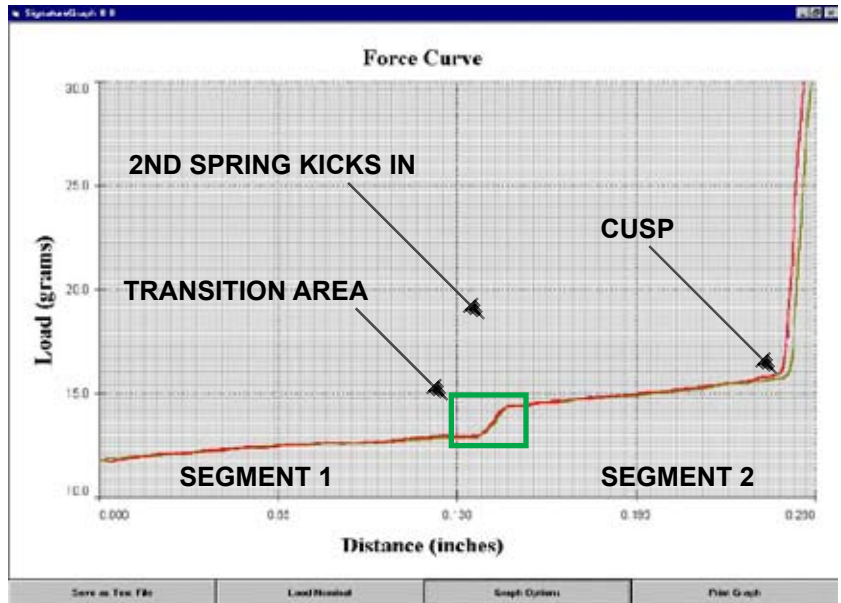
The waveform below shows a classical "text book" press curve, with one extra: the transition in the middle of the waveform. The "bottom-out" is also not shown on the graph (it would be to the right of the cusp). A stepper motor was used to compress the plunger against the internal springs. Initially, only one spring is engaged, and the force follows segment 1. As the motor advances, eventually the first spring hits a hard stop and the second spring takes over. Hence the transition zone in the middle of the curve. Note that the force rises slightly as it enters segment 2. Notice that the slope of segment 2 is slightly higher than that of segment 1. Eventually the stepper advances enough to reach the "cusp" and then bottoms-out so the force rises abruptly.



Using Signature Analysis, the key waveform elements can be computed and checked for acceptable levels:

- slope, segment 1
- slope, segment 2
- location of transition
- cusp force
- cusp location

This more elaborate analysis leads to enhanced defect detection.



Screen showing 2-Stage Fuel Tank Valve Test Signature Waveform Produced