

■ EGR (Exhaust Gas Re-circulation) Valve: Functionality Test Using Signature Analysis

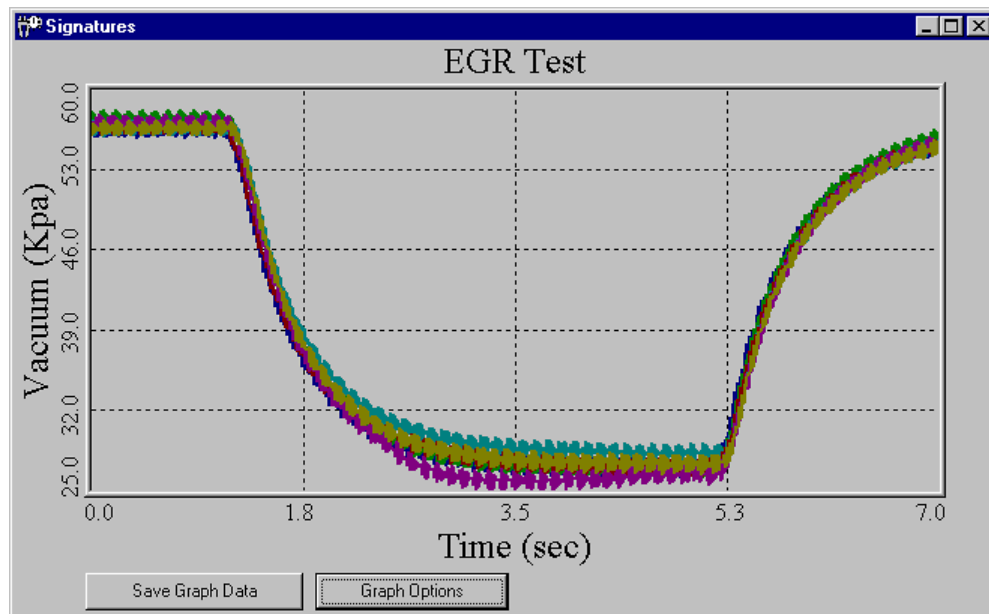
Highlights:

- Defects detectable:
 - EGR valve malfunction or misconnection
 - Missing/ damaged gaskets
- Data saved to PLC
- Intake vacuum monitored as EGR valve is cycled

Engines often undergo a general end of line functional cold test and one of the many components tested during the cold test is the EGR valve. The valve is a crucial part of the engine as it is used to re-circulate exhaust gases back into the intake manifold for re-burning, helping improve vehicle emissions and keeping combustion chamber temperatures down. It is important that the EGR system function properly in order that the vehicle operate smoothly and pass strict vehicle emission requirements.

To verify proper functionality of the EGR valve, the Signature Analysis system monitors the intake vacuum level as the EGR valve is cycled as shown in the screen below. A defective valve shows up as a pronounced change in the waveform, such as a flat line at 57kpa if the EGR valve does not open.

This is just one more example of the many successful manufacturing and assembly solutions that Sciometric provides throughout the world.



Signature Waveforms showing the change in Pressure versus Time for an EGR Valve

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