

Oil Pump Integrity Check: “Upstream” Production Defect Detection and Analysis

**Highlights:**

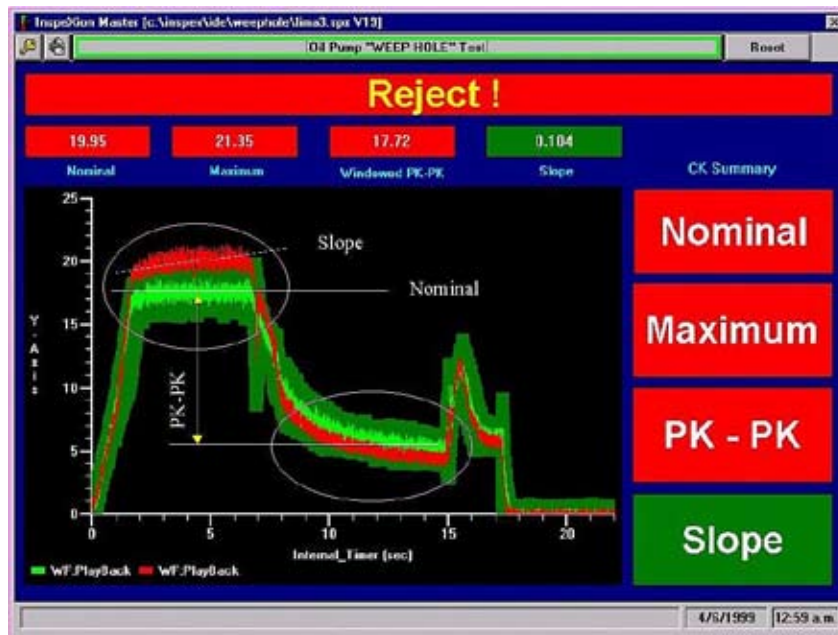
- Detect machining defects:
  - Gear clearance
  - Blind “weep” hole
  - Chamber “wall” defects
  - Off center gears
  - Out of round gears
- Hydraulic “pump” up characteristics
- Output pressure tracking
- Short cycle time
- Barcode traceable
- Maintenance/manager Password protection
- PLC & network server provisions
- “FFT” based hydraulic “noise” analysis
- InspeXion® based application

The lifeblood of an automotive engine is oil and its circulation. Subtle defects in the oil pump can and will result in after sale (Warranty) defects with serious cost and image consequences. Sciometric’s Signature Analysis System with InspeXion® now offers an ideal platform to identify such defects “upstream” prior to engine installation.

High-speed data capture of pressure combined with simultaneous time and frequency domain (FFT) analysis allows InspeXion® to quickly “learn” normality of the pump family currently under test. 3s “envelope” bands provide the first and simplest level of defect detection. Additional pre-configured Advanced Signature Analysis “tools” are then applied to find the more subtle “needle in the haystack” type defects, which directly affect ultimate engine quality.



Since the pump is monitored directly out of the machining department, time and frequency domain analysis of the discharge pressure quickly identifies potential tool set up and wear problems. Trended shifts in the data provide an early warning for adjustment of tooling thereby eliminating any added downstream embedded costs. For additional information on this or any other production defect detection problem, please feel free to contact the experienced solution team at Sciometric.



InspeXion® Screen showing Oil Pressure Signature