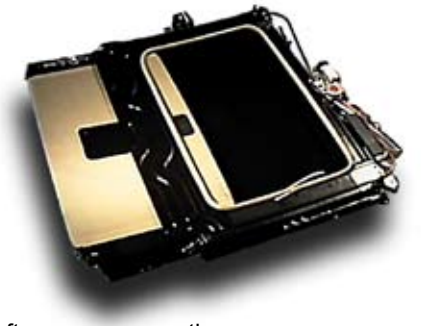
Sun Roof Testing: Performance and Defect Detection Using NVH Signature Analysis

Highlights:

- NVH Signature Analysis used to detect:
  - Defective motors
  - Improper assembly
  - Misalignment
  - Defective components
  - Defective drives
  - Debris
- 100% data storage for traceability and process control
- Easy to use graphical user interface

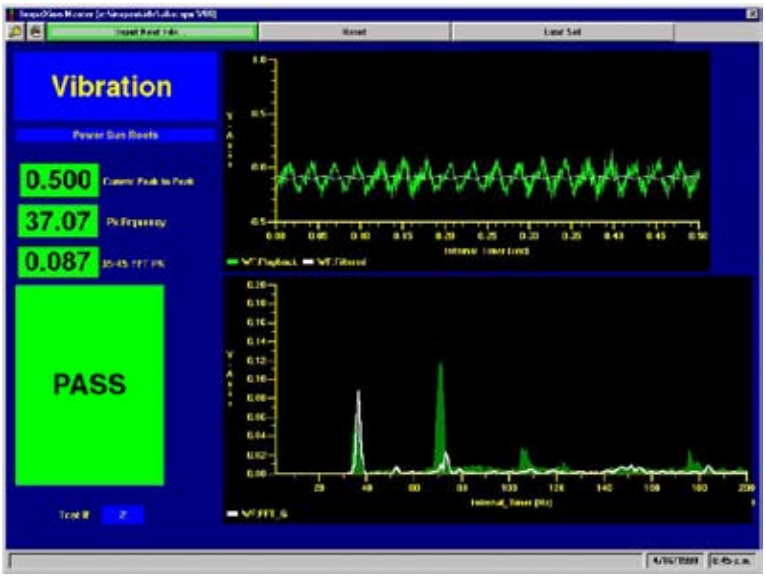


Excessive noise, vibration and harshness (NVH) usually indicate that machinery is not performing within its manufacturing specifications. Various types of noise can indicate specific problems. Words such as growling, grumbling, clicking or corn-cobbing are used in the automotive industry to describe these sounds as well as to help in fault diagnosis.

Assessing the acceptable level of noise directly is a highly subjective process. Since words often mean different things to different people, and noises vary according to conditions, there can be considerable margin for error.

Sciemetric's Test and Analysis System with InspeXion® Test and Analysis software removes the subjective aspect of testing and fault diagnosis entirely. It is the ideal choice for the detection of a wide variety of NVH and performance defects that are commonly encountered in sunroof production. Eight analog input channels are available for connection to strategically mounted sensors that measure speed, distance, vibration and current. The system digitizes the outputs and monitors vibration frequency and amplitude and motor current versus the sunroof opening and closing distance as well as time. It compares these measurements with acceptable limits derived from known, good assemblies and returns a PASS/FAIL result to the operator. The signature can be stored for later statistical analysis and also recorded as a bar code or a pallet tag so that the unit can be shipped or serviced as required.

Signature Analysis eliminates the ambiguity associated with subjective testing and can detect defects that would otherwise be missed under relatively noisy factory conditions. It makes 100% testing to well-defined standards a practical reality and is an effective tool for quality improvement.



InspeXion® Screen showing Acceptable Sunroof Vibration Limits.

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