



Technology • Test Processes • Engineering Services

# Squeak and Rattle Solutions

Helping Automotive OEMs and Suppliers Design and Build Squeak and Rattle Free Products with Measurable Quality

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## Full Vehicle

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Dynamic Vehicle Torquer



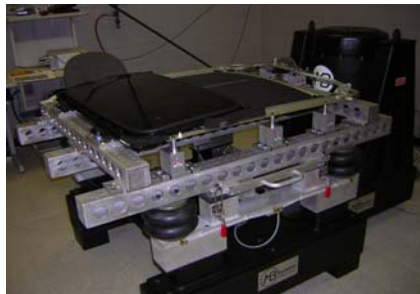
Direct Body Excitation

MB's Full Vehicle S&R systems allow OEMs like BMW, Ford, GM, and Daimler-Chrysler to perform end of line production verification, or off-line auditing for identifying S&R root causes during the design and development process. **Quieter, less expensive, and more effective than the alternative.**

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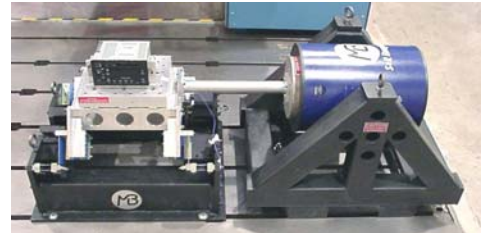
## Subsystems

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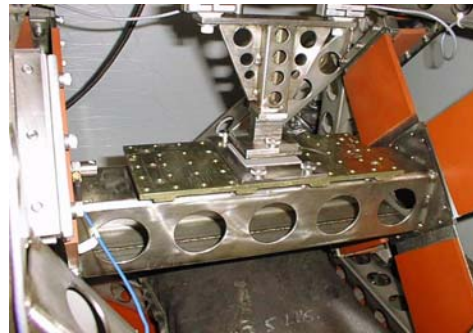
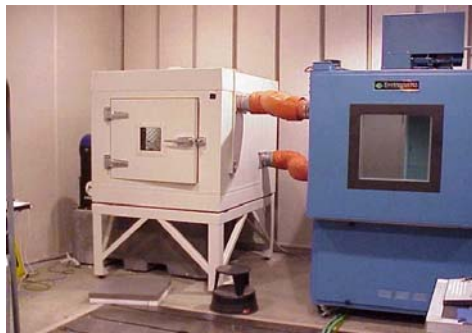
Custom, turnkey systems designed to meet your stringent requirements. Test components vertically, fore-aft, and laterally with one or two shakers. The Universal Fixture makes changing between multi-axis configurations simple and efficient.

# Components



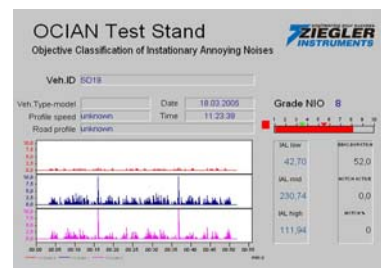
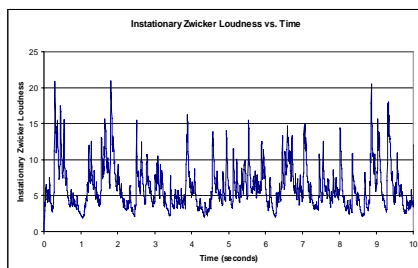
MB custom-makes fixtures to test any automotive component including those requiring quiet rooms or environmental chambers.

# Material Pairs



A unique testing environment capable of subjecting actual vehicle parts, or a wide selection of materials, to a variety of motions and in-vehicle environmental conditions. The Material Compatibility System acquires, monitors, analyzes, and reports acoustic and friction characteristics of contacting pairs of materials.

# S&R Metrics



To deliver Squeak & Rattle-free products, it is necessary to measure and objectively quantify squeaks & rattles not just hear and subjectively decide if they are OK or Not OK. The MB **S&R Metrics** measurement system is software and acoustic data acquisition hardware dedicated to measuring S&Rs. Not a Sound Quality tool, **S&R Metrics** acquires acoustic time histories during road or lab tests and presents results against pre-set thresholds of 1/3rd octave with A/B/C weighting, dBA overall or peak-hold, and Time-Varying Loudness including statistics such as N10. Simplified GUIs make **S&R Metrics** usable by acoustics experts or plant QC people unfamiliar with vibration or acoustics.