

# SOUND **dB**ATE™

Up-To-Date Technical Information from Dynamic Control of North America, Inc.

## Get More Bass™ with Dynamat

Higher SPL has become a common objective for car audio installations. The trend towards more and larger subwoofers and amplifiers is undoubtedly a quest for louder bass. SPL competition has become very popular and the technology used to achieve high SPL has proven that attention must be given to the structure of the vehicle itself to compete and win.

### Energy Management

As the SPL produced by the system increases, the surrounding body panels of the vehicle try to expand much like a balloon reacting to an increasing volume of air. Every panel then, has a different energy handling capability or energy resistance. When the subwoofer "energizes" or vibrates the car body, instead of moving air, it inhibits the production of additional SPL. In fact, the body panel movement will counteract the subwoofer, reduce the SPL potential of the system and even produce sympathetic and harmonic distortion.

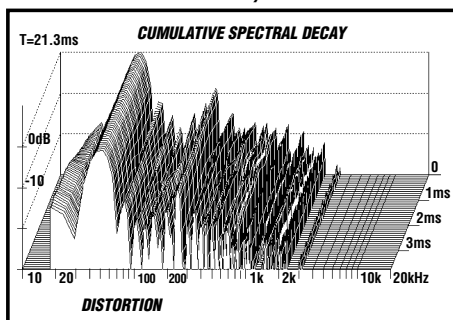
### What If?

If flexible, energy losing panels can reduce the potential for higher SPL, then can we increase the SPL by improving the energy resistance of those same panels? Is it possible to improve SPL without additional speakers, amplifiers or other electronics?

### The Test

A 15 inch subwoofer mounted in a 4 cubic feet ported enclosure was placed in the trunk of a totally stock Saturn SL2. A 250 watt, 50 hertz tone was produced without any other modifications to the vehicle and again with the addition of a 20 square feet *Dynamat Trunk Kit*. Body panel vibration and SPL measurements were recorded over a frequency range of 20 hertz to 200 hertz in order to understand the effect of body panel movement on SPL and distortion production.

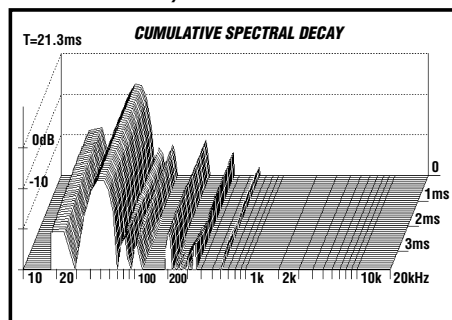
Without Dynamat



The Waterfall Plot (*Time Energy Frequency or TEF*) shows secondary sound produced by the interaction of the sheet metal and the original 50 hertz tone. The 50 hertz spike shown here is actually a sympathetic distortion and the other frequencies are harmonic distortions.

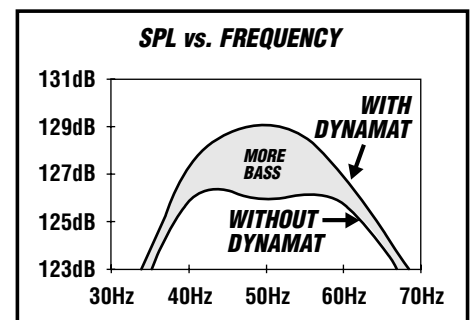
The *Dynamat Trunk Kit* was installed in the Saturn according to the instructions on the package.

With Dynamat Trunk Kit



The sympathetic and harmonic distortion was drastically reduced with the addition of the *Dynamat Trunk Kit*. The reduction in harmonic distortion greatly improved sound quality and reduced the localization of the sub. The 9dB drop in the 50 hertz range means that less audio system energy is being used to move body panels, making more energy available to create SPL.

3 More dB



Bass pressure intensity was measured from the front seat. Peak SPL was measured at 126 dB, with an unnatural dip at the desired frequency of 50 Hz.

After installing the *Dynamat Trunk Kit*, the SPL at 50 Hz was increased 3 dB. The SPL was being held back! Improving the energy resistance of the body panels with the *Dynamat Trunk Kit* installation did increase the SPL.

### Get a Proven Gain!

You need Dynamat to maximize any system's SPL potential. It is commonly said that a 3dB gain in SPL requires a doubling of power. But, remember, that's only a potential 3dB gain not a sure thing. Rather than adding another amp and sub, try 12 pounds of Dynamat that can deliver another 3 dB with a simple peel and stick installation. Dynamat is absolutely the easiest way to increase SPL. *Get More Bass! Get a Dynamat Trunk Kit.*