

Subwoofers & Speed

There is a misconception that subwoofers are slow. If they could only be fast then there would be no issues with seamlessly blending them with speakers. I call this a misconception because speed, in and of itself, is actually a function of loudness. Volume. Decibels. SPL's. If a subwoofer, or any speaker for that matter, is playing louder, it's actually playing faster. It has to, and here's why:

Consider a speaker driver reproducing a 40Hz signal at a certain volume level. Let's say (not to scale) it has to travel this far [→] to do so. It then has to travel this far [←] in the opposite direction to complete it's task. This motion completes one cycle. It does this 40 times a second to reproduce that 40Hz signal.

Now let's turn up the volume. It has to travel farther to increase it's output without changing the frequency of 40Hz, or 40 cycles per second. It now has to travel this far [→→→] and back again [←←←] within the **same amount of time**. Therefore, it has to become **faster** to accomplish this.

Our friend Isaac Newton stated that an object at rest prefers to stay at rest and an object in motion prefers to stay in motion. This is where large subwoofer drivers have issues. The larger the driver, the more it weighs. It has mass. And the more something weighs, the harder it is to get it moving. Think of your overweight Uncle Eddie (sorry Eddie) getting out of a chair. And once something heavy starts moving the harder it is to get it to stop. Picture Uncle Eddie running (Now THAT would be a sight!) and trying to suddenly stop to grab that double cheeseburger loaded with extra bacon and cheese.

It's this moving mass that we address by using smaller, lighter and more responsive drivers. Because we use multiples of them, they can move just as much air as large drivers. And that is required to properly reproduce a realistic sense of scale, something that small subwoofers just can not do.

Large modern subwoofer drivers are becoming more like bass generating machines. Large motor structures ensure the acceleration needed to get that heavy moving mass (I said mass, not a**) up to speed. But launching is still hampered by their moving mass. And stopping is even more difficult thanks to inertia, which wants that moving mass.....to keep moving.

This is the problem, or issue, with large subwoofers. Add to this the fact that many of them are starting out with a compromised acoustical design to conform to size constraints, and you have the definition of a modern subwoofer. All the electronic manipulation in the world will never make something like this sound natural and un-processed. But they can make bass. Lots of bass. And that is fine. If you want lots of bass. Velveeta is good. Spam is.....umm.....good. Pork Roll is good (Yes, I am from New Jersey). But they're not the same as natural cheeses and meats. And don't even get me started on plant based Frankenmeat. Bacon??? My God, nothing is sacred!

If, on the other hand, you are looking for something that sounds natural and organic and blends in acoustically with your beloved speaker system and only makes them sound more full range without drawing attention to itself and has that natural, effortless and realistic sound quality without sounding forced and overly processed (whew!), then you should give us a try. The MD Series of Bass Augmentation Speaker Systems are a Patent Pending Acoustically Optimized Alternative.

So the next time your kids are blasting what they consider music at ludicrous levels, you can just tell them to "Slow that s**t down!"

HAPPY LISTENING

John