Subject: Re: Motor braking
Posted by Wayne Parham on Mon, 03 Dec 2012 19:14:11 GMT
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I should clarify that driver Qes doesn't actually change (obviously) but the behavior is the same as if it did. If you add series resistance, then it has an effect just like Qes was increased. And Qes has the largest impact on Qtc, so this is fairly significant.

Series resistance is increased by the speaker cable and any coils in the crossover network, as well as by the output impedance of the amplifier.

As for the driver itself, high-efficiency designs do typically have strong motors and relatively low Qes. But this isn't always the case, especially the inexpensive cast-frame drivers. But as a general rule, the better drivers have low Qes. In fact, many have such low Q they don't develop much bass in anything but the largest boxes. This is OK though, since most of our speakers are used with subs.

We used to discuss this a lot. Do a search here for "Zmax" and you'll find lots of posts that talk about high-Q motors and tube amps. They're usually not a good match.