Subject: starting construction on bass horn ?
Posted by adavis464 on Sat, 26 Jun 2004 13:56:10 GMT
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Using mcbean(JBL2240) ANG. 1.0 XPi,S1-529,S2-2000,EXP-120 F12-30.34,S10000,EXP-180,F23-24.28 How much room should you make for the driver cone motion.

Subject: Re: starting construction on bass horn ?
Posted by Mike.e on Sat, 26 Jun 2004 16:18:00 GMT
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oh2240?Xmax is a peak measurement,(if i remember right) and if you have a driver with 10mm xmax,with 20mm xmech, an 18MM mdf spacer should do the trick.if your sending it to its 20mm xmech then it will hit obviously,but thats what the xmech is-where the driver gets physically damaged.Purely arbitrary numbers there btw,i dont know the specs on that woofer.you could always do 2 spacers..ofcourse that would increase the Front chamber volume.

Subject: Re: starting construction on bass horn ?
Posted by adavis464 on Sat, 26 Jun 2004 17:29:41 GMT
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There is no front chamber volume to this design using mcbean.What will this volume do to the response ?

Subject: Re: starting construction on bass horn ?
Posted by Bill Fitzmaurice on Sat, 26 Jun 2004 19:14:24 GMT
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The front chamber would be the volume of the air space between the cone and the baffle if there is no other separate compartment. The front chamber size in combination with the throat size affects LP filtering and Fs alteration. Xmax is a one way measurement but it is only considering the voice coil overhang, not potential excursion. Some manufacturers list the destructive Xmax, which is when the coil hits the backplate, and that's the depth you'd use for the spacer,inclusive of the driver gasket. If you can't find the destructive XMax then go with twice the regular XMax to be safe.

Subject: Re: voice coil overhang and Xmax
Posted by wunhuanglo on Sun, 27 Jun 2004 12:32:07 GMT
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I thought I once understood (and now clearly don't) that Xmax represented the one-way excursion limit to keep the gap filled with voice coil.With that understanding it was clear to me that, with an overhung coil, Xmax is equal to the overhang.But what isn't clear is why the same doesn't apply to an underhung coil. Wouldn't Xmax the the excursion limit at which the first (or last) turn of voice coil just started to peek out of the gap?

Subject: Re: voice coil overhang and Xmax
Posted by Bill Fitzmaurice on Sun, 27 Jun 2004 13:10:44 GMT
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Either way the XMax is that range within which the coil remains under the control of the motor with linear response, so you can also consider it the linear response travel range of the cone. But the cone can travel further in most cases, as prudent engineering dictates that you don't have the destuction point of the former anywhere near the linear operating range.

Subject: Re: starting construction on bass horn ?
Posted by John Sheerin on Mon, 28 Jun 2004 10:27:59 GMT
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Just another point to consider - the mechanical limit can be other things besides the voice coil crashing on the back plate:spider crashing on the top platevoice coil former coming out of the top of the gapsuspension getting torn upJohn

Subject: Re: starting construction on bass horn ?
Posted by Mike.e on Mon, 28 Jun 2004 12:38:19 GMT
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spider crashing on the top plate voice coil former coming out of the top of the gap suspension getting torn upCan certain geometries be chosen,as to avoid some of the above?Somewhere i saw a site,it mightve been LDSG ,and they showed in depth magnetic circuit analysis and physical excursion limits etc,discussing the pros and cons of each.