Subject: You might ask them
Posted by Wayne Parham on Mon, 20 Jun 2005 14:22:05 GMT
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Compression drivers are designed to be used with a horn. They are a lot like dome mid/tweeters but since they are designed to be used mounted on a horn, they are optimized for that application. A horn reduces excursion, so without a horn, diaphragm excursion will increase for a given drive level.You might want to ask them what they've done to address these issues in their application. Maybe they did some excursion measurements during R&D and found the limits of a TAD 4001 when used without a horn. It would be interesting to know what frequency and power causes the diaphragm to move too far in that application, and whether the coil moves out of the gap, the surround fails or the diaphragm hits the phase plug when the excursion limit is exceeded. You sure don't want to shatter one of those beryllium diaphragms.The Deep Audio loudspeaker has

the horn. I cannot help wonder about it, and can only assume they have derated the device appropriately and made it work for them in that fashion as a dome tweeter.At its simplest level, a horn is a way of pointing the sound. Instead of wasting energy sending sound out to the sides and the rear, a horn directs sound into the room, where it is needed. This not only helps focus the sound making it more powerful on-axis, but it also reduces reflections. If directionality is matched throughout the audio band, then the reverberent field is made uniform too. So really, using a horn to point the sound where it is wanted is a good application of a very simple and useful acoustic device.Basically what I'm saying is that I can't see any reason to forego the use of a horn on a compression driver. High frequency horns are simple and effective acoustic devices, they aren't terribly large and they have no downside I can see. To omit the horn is to use the compression driver in a mode it wasn't designed for, and throws away the advantage of controlled directivity. It also requires increased excursion from a device that was intended for limited excursion.