

VISATON Bijou

Loudspeaker DIY Project H-J. Leubnitz & Upgrade-Sound, April 2009

The plan: I wanted to build good loudspeakers mainly for music listening. They should use high-quality components so I would enjoy them for very long, however of course I had some idea about budget as well. Low-bass would be nice of course but I did not want to go for column speakers to get this since I have a subwoofer still. And of course they should look special, too.

I have made couple of very pleasant speakers with Visaton in the past, and because I know Visaton has pretty good selection range and delivers basically all needed measurement data on their web pages, they were clearly my favorites.

Normally I have ordered loudspeaker stuff from Germany, however after some googling I found that www.upgrade-sound.fi offered Visaton Speaker sets in Finland actually. Well, great. Prices in the end turned out better than from the usual German supply, since no shipment cost needed to be added. And in fact the Bijou happened to be reduced price. It was finally an easy decision to go for this kit, it promised exactly what I wanted.

The shipment from Visaton arrived in reasonable time (I think it was less than 2 weeks after order).

Some words about the Bijou components: The KE 25 SC tweeter is a high-end ceramic calotte, which is supposed to be one of the best in the world. Visaton promises very low-distortions even at high levels. The element price (and the weight of it) tells it's own story. It is ferro-fluid cooled and has a special (almost invisible) acoustic lens inside the protection grille (which BTW is great choice because I have very curious kids).

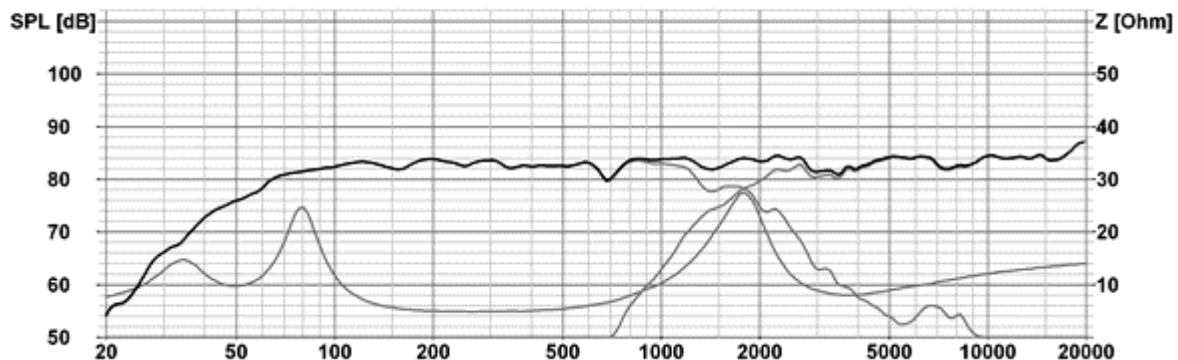
The High-End Bass-Midrange speaker AL130 uses low-weight, ultra-stiff anodized aluminium cone and very soft, long-stroke suspension. The basket is aluminium die-cast, the voice-coil uses capton as main material. The pole plate is vented, the entire construction is very low-loss designed.



Also the crossover is rather sophisticated for a simple 2-way speaker, it uses original Visaton hi-Q components. Cables, terminals, screws and damping sheets are included, too. And it also included the “Building Suggestions” Leaflet, just in case...

Here is the frequency sweep for this Bijou building kit and housing suggestion, downloaded from the Visaton pages:

http://www.visaton.com/en/bauvorschlaege/2_wege/bijou/index.html :



The housing preparations: For the housing I saw basically four options: MDF, plywood, wood-fibre boards or glued furniture wood. The latter one is supposed to be a bit less beneficial in terms of resonances, however it promised the finest finish with little effort. It is more easily to work without splicing, and since this is going to be rather small box (so little possibilities for wall vibrations anyway) I just went for it. Total cost for the housing materials turned out something like 100Eur.



For the critical steps of the wood-work we used a helping hand from an experienced guy who has better tools also, to make sure the final looks will be adequate. We basically followed the 2D drawing from Visaton to make the housing, to be sure to get same sound performance as intended.

A few learnings: The two cutout enlargements in the front plate for the tweeter connection bumps should have been made slightly wider than on the drawing, to make sure the visible front screws (after tolerances) end up symmetrically. In my case fit was pretty tight and I could not adjust the rotation angle of the KE25SC anymore to get screws perfectly symmetrical. Not sure what was wrong in the first place, anyway I did not want to open it up anymore after I noticed it (with finished lacquer). On the other hand it is in fact hard to notice when you don't know it.

Mounting the crossover inside proved a bit cumbersome, since the housing is rather small to get a drill into it when it is assembled. I had of course not considered to pre-drill holes for mounting it later. Finally I settled for just “squeezing” the X-over PCB into angled position into the damping material, so it is not moving around and has low risk for short circuiting or disturbing noise. Naturally it should also not obstruct the BR free air flow near the back-wall neither come too close to the bass drivers's voicecoil (avoid magnetic coupling).

For the finish we used several layers of highly transparent (cherry-brownish) and glossy lacquer, which brings out the wooden texture very nicely I think. It looks adequately “high-end” if you ask me, a true hand-made “Kotimainen Tuote”.

First listening: What should I say. I was expecting a great performance, but I was actually shocked how good it is for this size. The bass was going so low that I checked several times if my subwoofer is really switched off. And the tweeter for sure deserves it's reputation and price: I heard many new details in 10 year-old CDs, so my music collection is now double as interesting for me to spend hours and hours of listening. This is the greatest speaker for this small size (and price) I have probably ever heard.

The best thing: It's now mine!!!

