



main page



music



archive



contact

COLUMN

Integrated amplifier/Headphone amplifier

Leben CS-300 X (SP) [Custom Version]

Price of the version CS-300 X (S): 9500 zł

Distributor: [Nautilus Hi-End](#)

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r e k l a m a



This will not be a classic test but rather something like a column, in which I want to show you, what potential is hidden in the small enclosure of the Leben CS-300 amplifier. I am writing about the basic version on purpose, although it is no longer manufactured. Everything started with that version, and I had the pleasure of using it for two years. I'll just remind you, that I received this device for testing (you can read the test [HERE](#)) in July 2006 from Mr. Yoshi Hontai, the representative of Leben (and also Acrolink, Acoustic Review, Oyaide, etc) outside of Japan. Mr. Hontai took a significant risk at that time, because none of his brands were present in Poland, and "High Fidelity" was still on the beginning of its journey, so he sent the package more or less blindfolded. However I think, that he does not regret this move, as the brands found their distributor soon thereafter. But the Leben was first. This small device turned out to be

 HI-FI STEREO

Here I could stop, but an upgrade once started could not stop at this point. So next steps were imminent:

- change the feet,
- change the mains fuse 2A,
- exchange the IEC socket.

just plain brilliant. It handled loudspeakers and headphones equally well, setting such a high level with the latter, that it is really hard to beat.



The designer and owner of Leben, Mr. Taku Hyodo is a NOS tube lover. This is the reason, that the CS-300 was shortly followed by an improved version CS-300 X (Limited), where some changes were introduced (photo nr. 7). The output terminals used were better, there was an additional choke in the power supply, some passive elements were exchanged to better ones, but most of all the output tubes were exchanged to rare Mullard NOS. I had a chance to test this version of the amplifier, and its test was published in "Audio" (you can download a PDF version of the test [HERE](#); unfortunately I quoted a wrong name of the version, as this was the name I received from the distributor - CS-300 X (S)). Quite interestingly the price of this version was not much higher than the basic version. The amplifier was incredibly popular, so all stock of the EL84 Mr. Taku had, were quickly gone. And they needed to be matched in quarts. This is the reason that a subsequent version of the amplifier appeared, the CS-300 X (S), where the „S” stands for the brand name of the output tubes – Sovtek. Those are tubes from current production. So the wheel made a full turn and we returned to the same tubes, that were part of the original, basic version. However there were NOS tubes in the input stage, the JAN5751 from General Electric. This did also not last forever... In February 2010 they were replaced by the Sovtek 12AX7 (in the CS-300 and the CS-300 X (S))

This was a lot going on, for such a small amplifier, wasn't it? This could have been done, because the basic circuitry allowed for many changes, immediately audible, distinctive and important. At first I thought, that the difference between my CS-300 and the X (Limited) version was not so big. I must admit I was wrong – I apologize to anybody who was fooled by me!!! The longer I listen to the modified version, the more I am confident that the changes were substantial. They are not audible immediately, from the start, because it is not about show-off. After two months I was ready to buy the Limited version. But it was already too late. The only available version was the one with the Sovtek tubes. I heard also that version, and it was actually not worse than the Mullard version, although some of the magic disappeared. Of course I could buy some tubes and replace them, but I wanted to have something, that was made by Mr. Hyodo from the beginning to the end. So I used my acquaintance with Mr. Hontai, the mentioned Leben agent, and asked, if the owner of Leben could prepare a special version of the amplifier only for me. Both gentlemen approached my request seriously, and I waited some time before I received the response. And this turned out to be incredibly interesting. Mr. Hyodo could prepare a special version of the CS-300 X (in the customs declaration it is called CS-300 Custom Version, but the official name is CS-300 X (SP)) and Mr. Hontai wrote about it as follows:

"I've consulted to Mr. Hyodo/Leben. He can arrange the following special arrangements for you:

- 1) To use highest grade switches from his stocked components.
- 2) To use highest grade components (resistors/condensers) from his stock.
- 3) To use a very rare NOS tube 6R-P15 (upgraded tube of EL84) originally made by Toshiba and exported to some USA/European companies under OEM basis (Mr. Hyodo re-imported such tubes). Unfortunately, Mr. Hyodo has only 8 pieces of this tube with different trademarks and can supply you four spare tubes. Needless to say, you can use for this amp EL84 as well when all of 6R-P15 were died."

As you can see, the manufacturer concentrated on three areas:



Before I talk about them, I would like to mention a change, that happened more or less by coincidence, and was introduced by Mr. Waszczyszyn. When the Leben visited him, I asked to check, why there is a slight mains hum audible (you can hear a 50Hz noise, and its multiplications 100Hz, 150Hz, especially in one channel). This was not the flaw of my unit – I heard something like that with all other CS-300 listened to. With normal use, with 89dB or less efficient loudspeakers, it was somewhere in the background, and did not interfere with music. The same thing was with headphones – AKG, which I used with all the Leben versions, have 62Ω impedance, quite low, so they did not pose any problems. But the HD800 are high impedance headphones - 600Ω – and they are not so forgiving, any error, any noise or hum can be heard immediately – just like with high efficiency loudspeakers. And with them, this hum was annoying. Mr. Waszczyszyn, like any scientist, systematically searched for the reason, and found out, that there is no choke in my unit, but only resistors, what increases noise slightly, and that the hum is a result of the chosen topology, with one channel closer to the power supply than the other. So it cannot be helped without reworking the whole amplifier. And I did not want to do that, because we could maybe improve on this one aspect, while destroying everything else, because architecture of elements is a part of the "magic" coming from years of experience. And I am sure Mr. Hyodo knew what he was doing. Well – this was probably a part of the compromise. There is nothing we can do with the loudspeaker output, but with the headphone output it is a different story. It was enough to solder a few resistors to the headphone socket, and that was it. Their values must be chosen experimentally, as it will depend on the impedance and efficiency of our headphones. At first the values were chosen too big, and needed to be adjusted, but now I can tell, that there is no hum at all! And no noise. This is the reason I recommend this simple trick to everyone – it is cheap and effective. Probably in the future I would like to see better resistors there, like Vishay, but for now, I am happy.

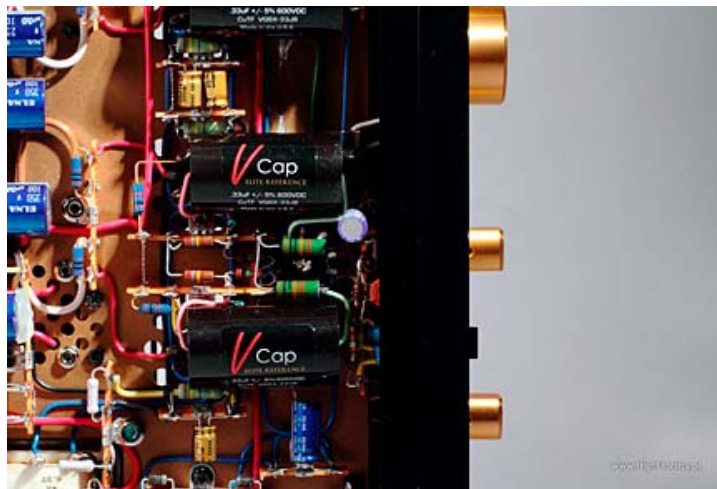
So I return to the first three steps. The first, and completely natural one, is the exchange of the feet. All Leben gear uses the same plastic feet, with a metal ring and a felt support. They are quite OK, allow to keep the price of the CS-300 at absurd low levels, but it can be done better if you have the necessary funds. At first I tried the CeraBalls Universal from finite elements, which we listened to in the Krakow Sonic Society (report [HERE](#)). Janusz bought four sets of three feet, which he placed under the amplifiers and converters from Ancient Audio. I also bought a set of four CB and they improved the sound a bit, bass and sound stage improved. But the Leben did not look nice placed on top of them, because they are narrow and high. So when I saw the Cerabase Slimline, I knew they will be perfect. Those are flat, are based on three balls and look splendid with the CS-300. And the sound is – at least I think so – even deeper and more velvety. At first I tried four placed below the original feet. Then I removed the feet and placed the Leben directly on the CS. And it was even better. But the optimal setting turned out to be three feet – two on the back and one in the front. The supports are loose, and this is not useful for me, as I often replace the gear, move it around, reconnect it. So the feet must be connected to the enclosure. So I want to use the screws that came with the Cerabase. To do it, I needed to make the holes for the original feet in the back bigger, and drill a new hole in the front. But this is quite a big interference in the structure of the amplifier, and I did not want to do that. The screws supplied have a diameter of 5mm and a length of 30mm. The last value is too big, because they would go too far inside the amplifier, and touch the elements inside. So I decided to choose another way – I will look for bolts with the same diameter as the old ones – 3.5mm – but a bit longer, about 20mm. In the box with the Cerabase we have also plastic sleeves, that help to use smaller screws with them than those supplied. But you can do it your way, of course.

And finally two elements related to mains – both relatively easy to exchange and both unknown to me in terms of influence on the sound. I have decided to use the IEC socket Furutech Inlet R, with rhodium plated contacts, for 53zl. Just like the one in the Air. (Just before the publication

1. Switches
2. Passive elements
3. Output tubes

But later, Mr. Jarek Waszczyszyn, who modified this amplifier – I am running a bit to the future now – exchanging the capacitors, some changes were also made in the power supply circuitry. The values of some elements are different, there choke, which was one of the biggest changes to the Limited version, is also gone. Why? One thing was clear from the beginning: the tubes used in my version, the Toshiba 6R-P15 are different than the EL84. This results in different voltages and bias settings, as well as lower output power. Mr. Jarek measured about 8W per channel in my amp. Just to remind you, the CS-300 has 12W and the X (S) 15W. A second thing is related to listening sessions. A choke in power section, in the anode circuitry, is a “holy grail”, and is used by many tube device manufacturers. But like any other element, it has its problems. This is the reason that there are some designers, who do not use them – for example Mr. Waszczyszyn. The X (SP) version does also not use them, in its place there are some resistors, making a classic Pi type filter. This is not easy to see, because the resistors are covered by a metal plate. So this is the amplifier I bought. There is also a nice touch on the back plate – there is a signature of Mr. Hyodo and a dedication for “High Fidelity” – now this is what you can call custom...

The sound of this version is incredible. Lower power means fewer loudspeakers you can use it with. But the limitation is not big – I did not have problems driving my Harpia Dobermann, and with the Harbeth it sounded just fabulous. But for me it was most important, how it would sound with my headphones. I use mostly two models - **AKG K701** and most of all the Sennheiser HD800. The new version was more true, the sound deeper, darker, but in the good meaning of those words – I mean more natural. And the resolution – this cannot be described in a few words, because something like this I heard only with the best Stax electrostatics (**HERE**). But with one difference, here the bass had also real weight.



Now I knew, that all those changes made sense. And that more can be done... The first to change were the coupling capacitors. In all previous version Mr. Hyodo used nice, polypropylene “mesh-shielding” capacitors (you can see it on picture nr 8), but I postulated to have them exchanged in all tests I made. So this is what I did. The choice of the new capacitors was easy, because I tested them in my CD player **Ancient Audio Prime**, and in the new Air. I am talking about **V-Cap** from the **Danish VH-Audio**, run by one of the nicest people I met in the audio branch, Mr. Chris VenHaus (the ‘VH’ in the company name comes from that name). At first I thought about the tin-Teflon version TTF, because I know that one from the Air, but I received information from Chris, that he prepared a new version, copper-Teflon CuTF. And although it was a complete novelty, and I did not know their influence on the sound, I took the risk and ordered them for the Leben and Air. The highest available value is 0.33µF and they are big. But we managed to fit them inside, barely, but surely! What capacitors those are!!! The TTF and the oil OIMP are splendid, and in many applications they will be the best choice, but as tube couplers I think, that the CuTF are the best. Their sound is at the same time velvety, slightly dark and incredibly resolved. This last characteristic is even better than with the TTF, which were incredible themselves, but with better saturation of the midrange and bass. I heard it in the Leben and in the Air, so it is most probable that it is like that. With the V-Cap the sound was mature, full and velvety. Just brilliant.

Mr. Ningsheng Liu, the representative of Create Audio informed me, that the company introduced their own IEC sockets – as soon as they reach me, I will let you know). I would also like to test the Furutech fuse, there is a 2A value available (for 195zl), but first I will listen to the Leben with a fuse from **Synergy Hi-Fi** (this is the parent company to Create Audio). Earlier I tested Create Audio tubes, especially the 300B (review **HERE**) so the company looks very credible and promising to me. The company offers 1A and 3A values, but I think, the latter will be OK in this case.

Useful information

Leben tests:

- Integrated amplifier **CS-300**
- Integrated amplifier **CS-300 X (Limited)**
- Power amplifier **CS-660P**
- Preamplifier **RS-28CX**



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ASSOCIATED EQUIPMENT

- CD player: Ancient Audio Lektor Prime (tested [HERE](#))
- Phono preamp: RCM Audio Sensor Prelude IC (tested [HERE](#))
- Preamp: Leben RS-28CX (tested [HERE](#); soon to be changed to Polaris II, tested [HERE](#))
- Power amp: Luxman M-800A (tested [HERE](#))
- Integrated amp: Leben CS300 (reviewed [HERE](#))
- Loudspeakers: Harpia Acoustics Dobermann (tested [HERE](#))
- headphones: AKG K701, Ultrasono PROLine 2500, Beyerdynamic DT-990 Pro, 600 Ω version (reviewed [HERE](#), [HERE](#), and [HERE](#))
- interconnects: CD-preamp: Wireworld Gold Eclipse 52 (tested [HERE](#); soon to be changed to Acrolink Mexcel 7N-DA6300, article [HERE](#)), preamp-power amp: Velum NF-G SE (tested [HERE](#))
- speaker cable: Velum LS-G (tested [HERE](#))
- power cables: Acrolink Mexcel 7N-PC9100 (CD; reviewed [HERE](#)) and 2 x Acrolink Mexcel 7N-PC7100 (preamp, power amp (reviewed [HERE](#)))
- power conditioning: Gigawatt PF-2 Filtering Power Strip (reviewed [HERE](#))
- audio stand Base
- resonance control: Finite Elemente Ceraball under the CD (article [HERE](#)) Turntables change continuously, as do cartridges. My dream

setup: SME 30 with Series V tone-arm and Air Tight PC-1 cartridge (also in the PC-1 Mono version).

[main page](#) | [music](#) | [archive](#) | [contact](#)

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