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IGA VALVES
BILBAO

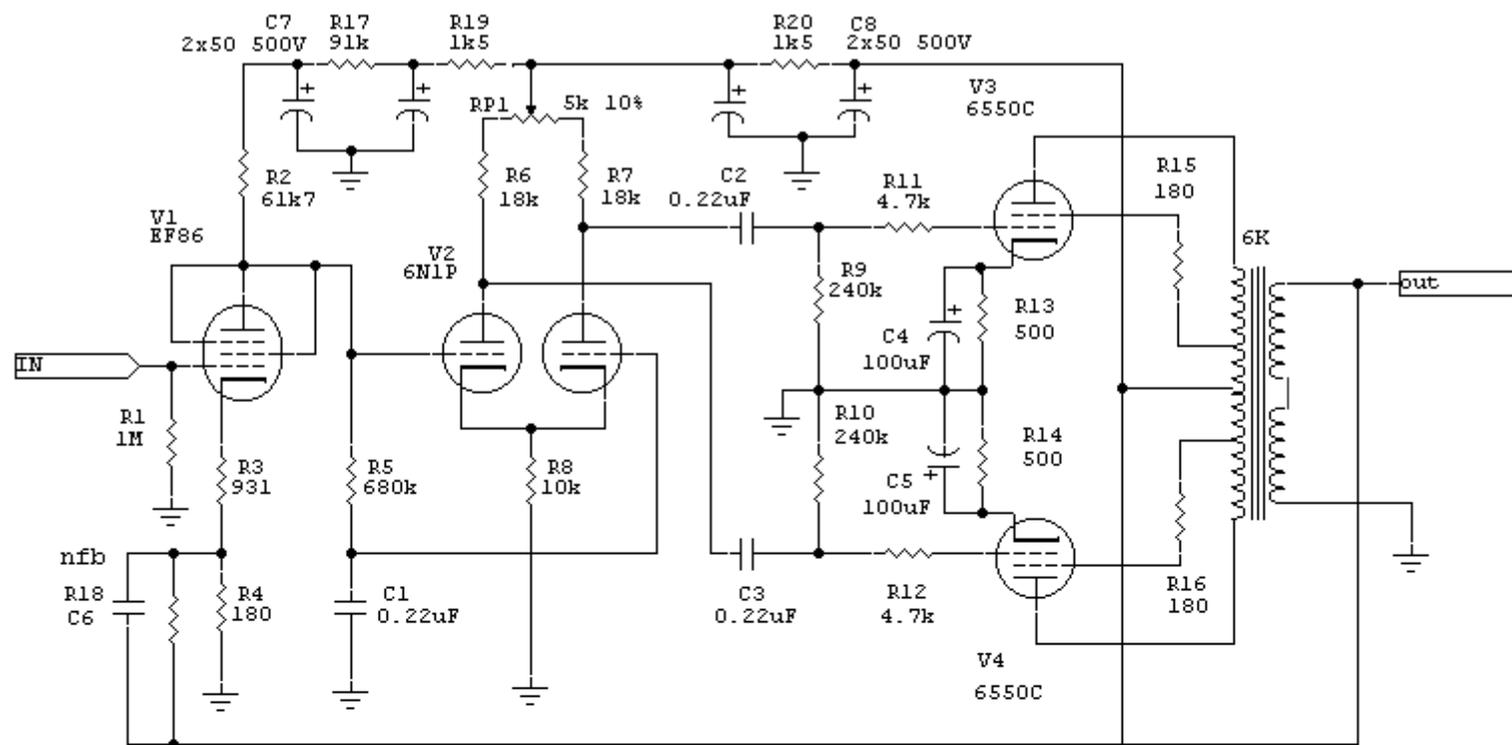


IGA 6550C ULPP. As published in Svetlana Technical Bulletin N° 60, 1999.

Design goals : This amp uses only modern production, low-cost and readily available Svetlana tubes. No esoteric components and no jewelry where possible. Output stage works in ULPP cathode biased in class A. I have found this configuration a lot more musical compared to the brutal power of SV6550 with fixed bias. With 400V on plates, biased to 86mA per tube, this amp produces about 35W of very nice audio before clipping. Actually I biased the output tubes for about 92mA each, using 470 Ohm cathode resistors, with no problems. Input stage is a triode-connected EF86 directly coupled to a 6N1P long tail phase splitter. RP1 must be adjusted for minimum distortion. In my amp I used fixed 18k and 22k resistors for R6 and R7. Power supply is heretically conventional. I do not use chokes in Push Pull amplifiers and since I'm absolutely out of SE field - I never use chokes. Central tap of filament winding for input tubes is lifted to +43V. I've done it by (inelegantly) connecting it to the cathode of one of output tubes. A simple voltage divider can be used for this purpose. The sensitivity of the amp is about 0,1V for full power without NFB. Actually I'm using about 14 dB feedback ($R_{fb} = 6,2 \text{ K}$, $C_{fb} = 220\text{pF}$) with very good results. There is about 5% ringing with a 10kHz square wave test. Perfectionists can try an RC network connected in parallel with the EF86's anode load resistor. Even without this network, amplifier has no signs of instability.

Parts : All resistors in the prototypes are Philips metal film. R2, R4, R6, R7, R8, R15, R16 and R20 are 2W, the rest are 0,6W. R13 and R14 are 20W. C2 and C3 are SCR MKPs, and the electrolytics are Ruby Gold Caps. Output transformer is a Sowter U020 (40W, Ra-a 6K) and the power transformer is custom wound by Sowter.

Construction : I built this amp as a pair of monoblocks. Each amp is mounted on 60x135x300mm aluminium chassis. Due to the small size of chassis, layout is very critical, but once correct earth points are found amp is absolutely hum and noise free. Star grounding to a single point is recommended.



SV6550C ULPP 35W amp.
(c) 2000 IGA

