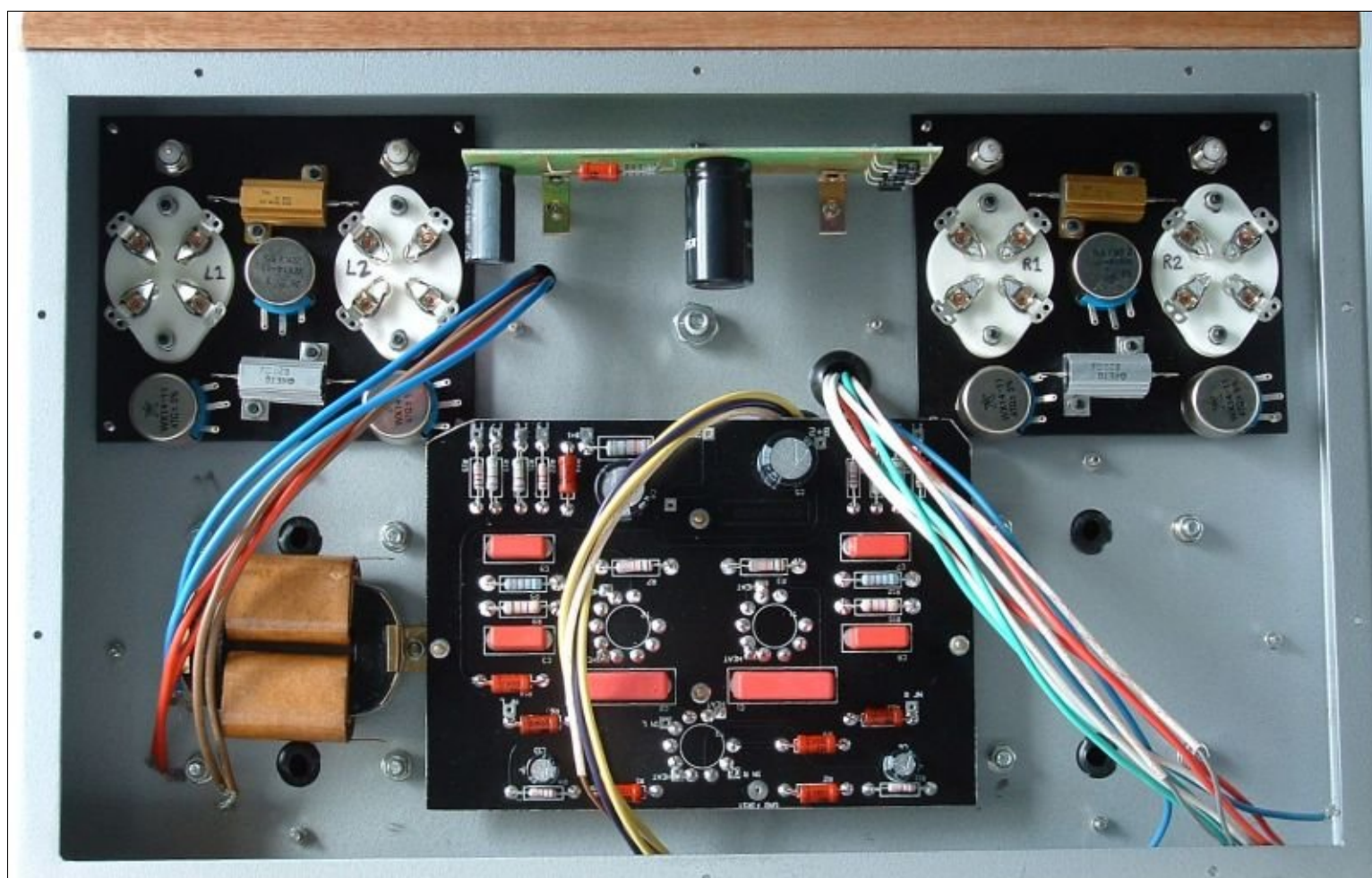


Joplin 2A3 DHT Push-Pull Amplifier Kit

Introduction

The Joplin tube amplifier is a 2A3 or 45 based unit using 2 DHT power tubes per channel in push-pull configuration. The unit features a pre-amplifier stage and a volume control allowing it to be driven directly from a line level source negating the need for a separate pre-amplifier. Featuring a solid cherry wood front face plate and built on a very heavy metal chassis the unit matches the other Consonance / diyhifisupply units very well. The round transformer covers also give it a more distinct look like the Ella. It uses a single ECC81 at the input with 1 half of the triode being used per channel. Each channel then uses a both halves of a 5687 tube in long-tail pair configuration driving either the 2A3 or 45 power triodes. The standard unit is supplied with 4 x Valve Art 2A3 power tubes. It is also possible to use 300B power tubes for those with deeper pockets and who demand more power but this is intended for the more experienced kit builders. The unit provides 9W of Class A amplification with 2A3 tube.

The amplifier only has one line level input with no selector switch fitted. If you only have a single source like a CD Player then this is ideal since it is the simplest and shortest signal audio path. You would need to use an external source selector box if you have more than one audio source in your hifi. As with all the units from DiyHiFiSupply and Consonance the mains transformer is quite hefty and has lots of voltage taps so it can be wired for many countries including 110/120/230 and 240V operation. I have wired this for UK mains use.



The Joplin Chassis as it arrives. The pre-amplifier stage is already assembled. Transformers, chokes and tube sockets are already mounted on the chassis and as usual high quality. A large part of the work has already been done for you in this kit.



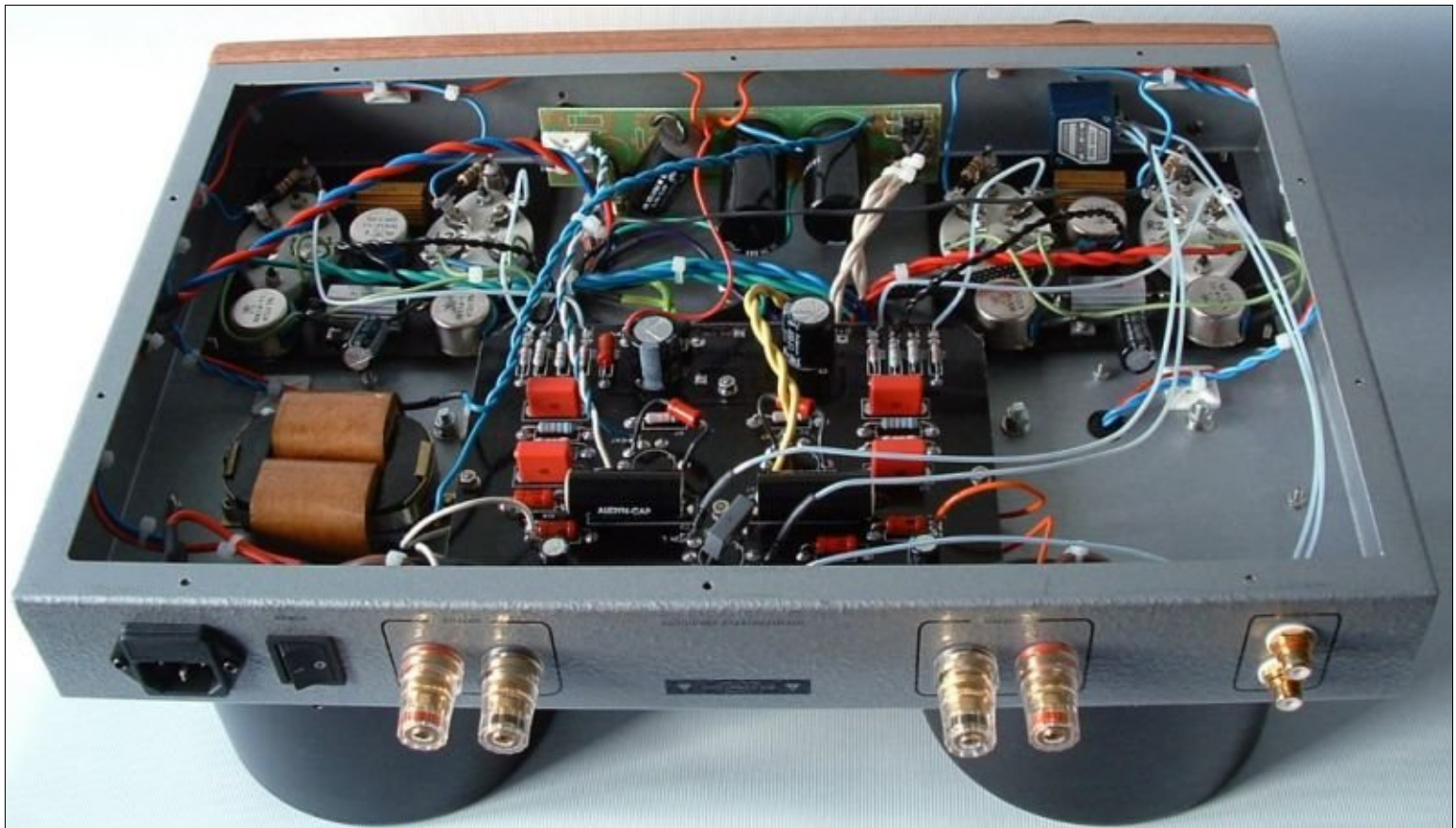
The Joplin pre-amplifier stage. The Red Wima brand capacitors are nothing special and more typical of commercial HiFi separates but these are very easily upgraded. The advantage of a kit over a commercial line. The PCB has a thick track layout and is excellent quality compared to other PCB based kit's I have seen in the past.



The choke is mounted inside the Joplin due to limited top chassis space. This is unlike the Billie/Ladyday power amplifier and the Basie pre-amplifier which both have the choke mounted on top of the chassis under a metal cover.



The power tube sockets, hum balance pots, tube balance pots and cathode resistors for 2A3 tubes and 45 tubes are mounted on a metal plate on the inside for point to point wiring. Depending upon which power tubes you wish to use you wire in the appropriate resistor. The unit is flexible on tube type so if you do not like the 2A3 you are not stuck with it but can try other types of power tubes with a few modifications inside.



Inside the completed Joplin. It is quite busy inside with most of the working being wiring rather than component assembly in this kit.



The completed Joplin using the supplied Valve Art 2A3 tubes. The pre-amplifier driver tubes are not visible from the front. It is a very stylish looking amplifier once finished.

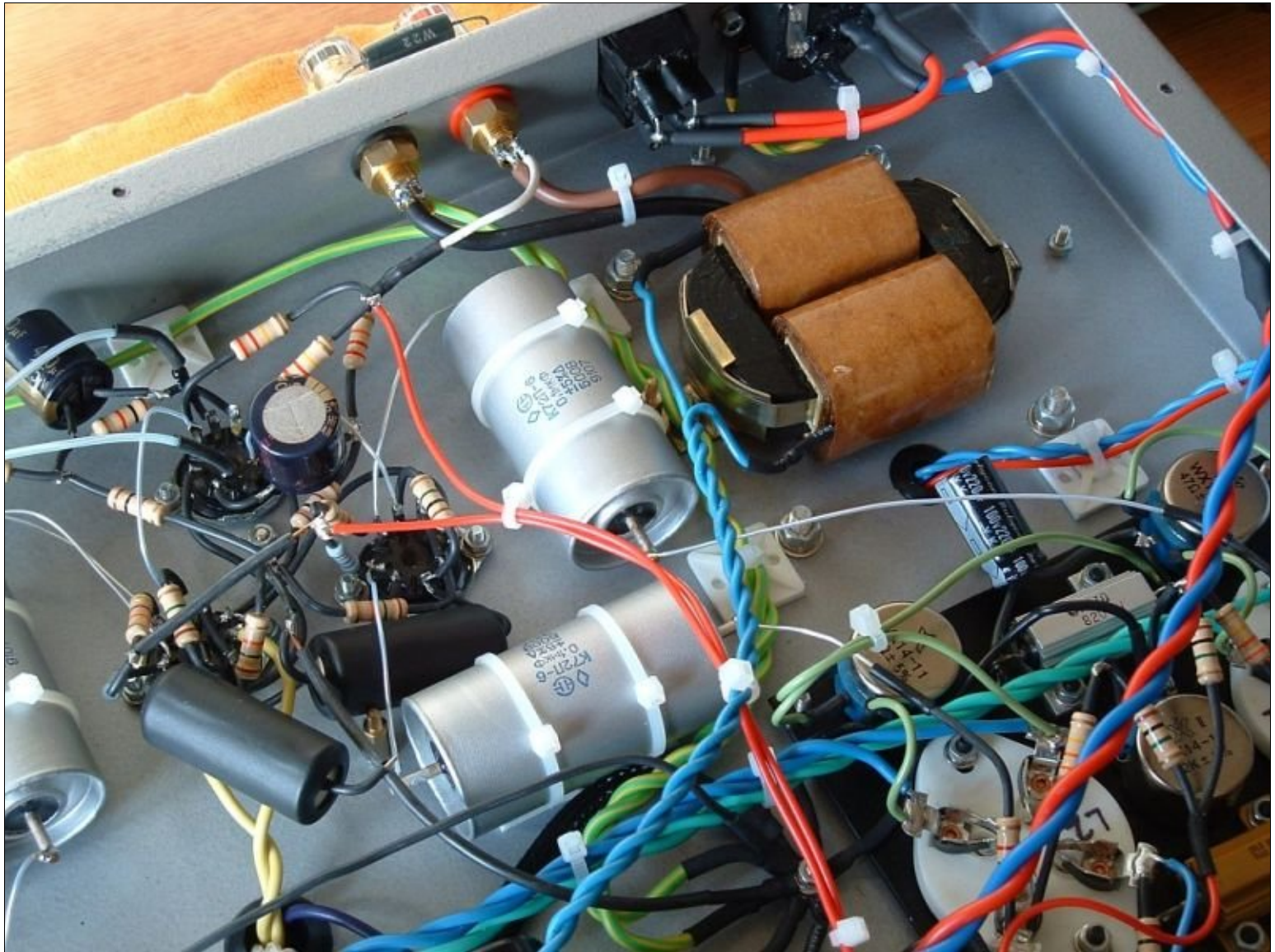
Sound

For reference I am comparing the basic build Joplin to a heavily upgraded Billie 300B SET unit and Basie II pre-amplifier. The Billie and Basie combination are very open, tonally rich and lush sounding with greater emphasis on the mid range. Treble is sweet and bass is controlled but relaxed and not overly extended. In comparison the Joplin exhibits a stronger bass which is tighter and more controlled than the Billie. The treble is also more extended without sounding too bright and aggressive and at times does sound more detailed at the top end than the Billie because of this. The mid range is clear and open but it does not quite have the same texture, richness and depth as the upgraded Billie/Ladyday. Stereo separation and sound stage are excellent and almost on par with the Billie, as are dynamics.

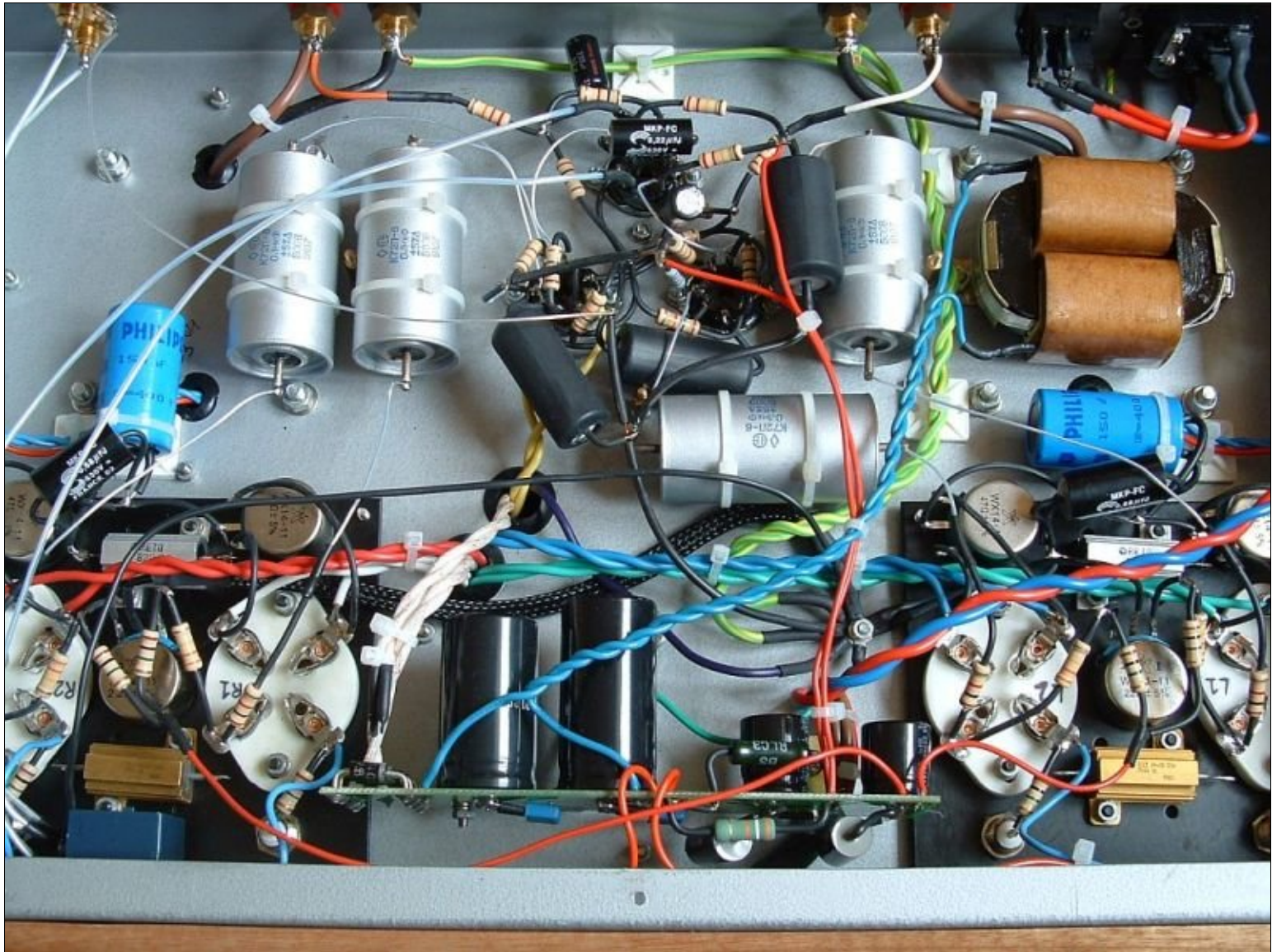
I would say that the Billie / Ladyday are more laid back and relaxed sounding with great texture, composure and depth were-as the Joplin is a little more lively, controlled and up front in character. If the Billie is more at home in the blues and late night jazz club, then the Joplin is very much more an all-rounder and can rock when it you want it to. With a few minor tweaks and upgrades such as tubes and capacitors I think may be possible to bring in some of those mid range qualities of a SET based amplifier without loosing the obvious benefits that the Joplin has over the Billie.

Upgrades

The recommended initial upgrade to do inside the Joplin is to remove the small square red Wima brand capacitors off the PCB and use something of a higher quality. I wanted to use 4 x 0.1uF 500V Teflon capacitors for the audio coupling positions but these are quite large and space is a premium inside the Joplin once it has been assembled. A good alternative would be a quality copper film-foil capacitor or some Jupiter Beeswax types since these are slightly smaller and will just about fit on the PCB. Audionote copper PIO capacitors would also give some of that mid-range magic but I was determined to use the teflon's for their speed and sheer transparency. So I made a radical decision to remove the PCB and hard-wire the pre-amplifier stage, I never did like PCB's anyway and an hardwired unit is always much better IMHO, even though the Joplin PCB is well made and most people would be very happy with it. I already had many of the needed components without removing them from the PCB. By hard-wiring the components onto chassis mounted valve bases the pre-amplifier real-estate could be optimised. <Note : The new Joplin now comes shipped with point to point hardwiring replacing the PCB. Brian over at diyhifisupply takes notice of what people want in an amplifier>



Completed hardwired Joplin. It is not really that difficult to do once you get started but does take some time. You do need to be able to read the schematic and build directly from that rather than follow a manual. A sensible alternative for a beginner would be to fit some smaller high quality capacitors on the PCB.



Completed hardwiring of the PCB stage to fit the large silver Teflon capacitors in place. I think it looks much better than the PCB version but that may be me trying to justify all the hard work involved. This was taken at a later date after a few more minor upgrades and tweaks. I took my time with this and I hope it shows. All wiring was carefully placed and routed to minimise hum and noise pickup and all connections are silver soldered.

Conclusion

These upgraded capacitors did make quite a difference to the Joplin with the sound taking on a more transparent and slightly 'creamy' texture with much better resolution around the mid range. It certainly brought it a step closer to the mid range qualities of the Billie / Ladyday I own. I have been using this amplifier for a week or so now and I have not been rushing to remove it and put the Billie 300B back. The Joplin DHT does have a very different character to the SET amplifier and it really is a matter of personal taste and what music styles you mostly listen to. With the Joplin being more extended at the frequency extremes and with tighter control than the Billie it does work well with a wide variety of music styles were-as many SET based amplifiers like the 300B have been described by some as only sounding great with typical 'girl and guitar' music and do work best with single way high efficiency loudspeakers. There may be an element of truth in this at times. The 300B is better matched to more sensitive speakers while the Joplin has more grip and so copes better with a harder load.

I have not had the opportunity to try the Joplin with 45 tubes which are quite popular and so may be much better than the Valve Art 2A3 tubes I have used here. Similarly, 2A3 mesh plate tubes such as the mesh plate 300B types I am using in the Billie would make quite a difference as these are quite a step-up in quality and price from the valve art 2A3 so the comparison is not entirely fair. I am comparing this unit to something that I have spent 3 times the cost on as a reference.

So if you like a tighter and more controlled sound with excellent extension at the frequency extremes the Joplin can deliver were-as the SET tends towards sounding more relaxed with greater emphasis on the mid-range. The Joplin as a basic kit build even before upgrades will knock seven bells out of any commercially priced product in this range and above at many times its price (most kits do anyway when you compare price for price). It has excellent dynamics, great upper and lower extension with tight control and with a few key component upgrades can have a hint of the SET sound still keeping the tube smoothness and lushness you very rarely hear in solid state commercial HiFi.

Considering it is also almost half the cost of the standard build Billie / Ladyday this makes a great amplifier for those on a smaller budget but want a taste of the Hi end sound of tubes with potential for future upgrades such as mesh plates or 45 tubes. It is fairly easy to build with mostly wire links rather than component placement so will suit a beginner. For the more experienced or adventurous you can tweak it to use various tube types and capacitors or do what I have done here and remove the pre-amp stage and rebuild it using point to point wiring and fit some esoteric components in.

The Final Build With Tweaks and Upgrades

1 x Electro Harmonix ECC81 Pre-amplifier Input Tube

2 x JAN Phillips 5687 Driver Tubes

4 x Valve Art 2A3 Power Tubes

4 x 0.1uF 500V Teflon Audio Coupling Capacitors

2 x 0.47uF Audyn Tin Foil De-Coupling Capacitors

Solid Silver Wire for all Audio Connections Inside

Hardwired Pre-amplifier Stage (Removing PCB) to fit those Nice Teflon's

Solen PSU By-pass capacitors.