

## WIRING THE HEATER POWER SUPPLY

**Fig. 14** Take the longer PS board (with the 47R resistors and the fuse) and, using M3x6 screws, fix it to the chassis to the left of the mains transformer. The diodes should be positioned towards the front of the amplifier.

**Figs. 13 / 14** Tightly twist the black wires from the secondary of the mains transformer, cut to length, and solder one to each of the 47R resistors (13 & 14).

Tightly twist the red wires from the secondary of the mains transformer, cut to length, and solder to the AC links of the diode bridge - one to the junction of D5/D8 (20) and the other to the fuse F1 (16).

Tightly twist the pink wires from the secondary of the mains transformer, route them towards the rear of the chassis to the right of the transformer and tuck them out of the way for the moment.

Cut 350mm and 210mm lengths of brown and grey heater cable and solder the browns to one R47 resistor (12 & 13) and the greys to the other (14 & 15). Twist the 350mm brown and grey tightly together and route them to the octal valve base U4 on the right. Solder grey to pin 2 and brown to pin 7 and, using approx 180mm twisted lengths of brown and grey, link to pins 2 and 7 of the U3 valve base on the right.

Repeat, using the 210mm lengths, for U4 and U3 on the left.

Note: When wiring AC heater connections it is important NOT to loop wires round the valve bases. Make sure the wires pass along only one side of the socket - see Fig.16.

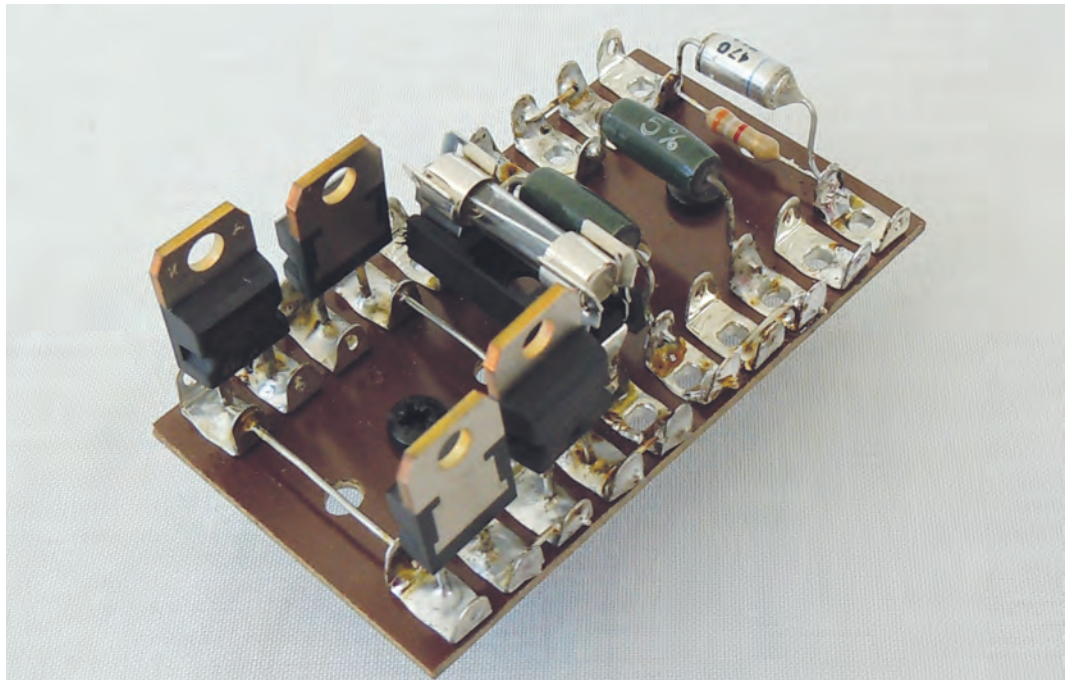


Fig. 14 Heater Power Supply Tag Board

Figs.  
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Fit the pi filter capacitors C14 and C17 to their plastic clips with the negative terminals next to each other. Using a short length of thin brown wire connect the positive terminal of C14 to the junction of D5/D6 (9). Using a short length of thin grey wire connect the negative terminal of C14 to the junction of D7/D8 (10). Link the negative terminals of C14 and C17 with a short length of grey wire. Insulate the ends of R30 and solder between the positive terminals of C14 and C17.

**Note: The value of R30 depends on the heater load. For the power amp R30 should be 0.56R, and for the integrated version (which uses the heater supply to power the input relay switches) R30 should be 0.47R.**

Take 240mm thin brown and grey wire and solder grey to the negative terminal of C17 and brown to the positive. Twist tightly together and route to the nearest B9a valve base. Solder the grey to pins 4-5 (which must be linked) and the brown to pin 8. Using twisted lengths of brown and grey link these pins to pins 4-5 (linked) and **pin 9** of the U1 valve base and 4-5 (linked) and **pin 8** of the remaining U2 valve base.

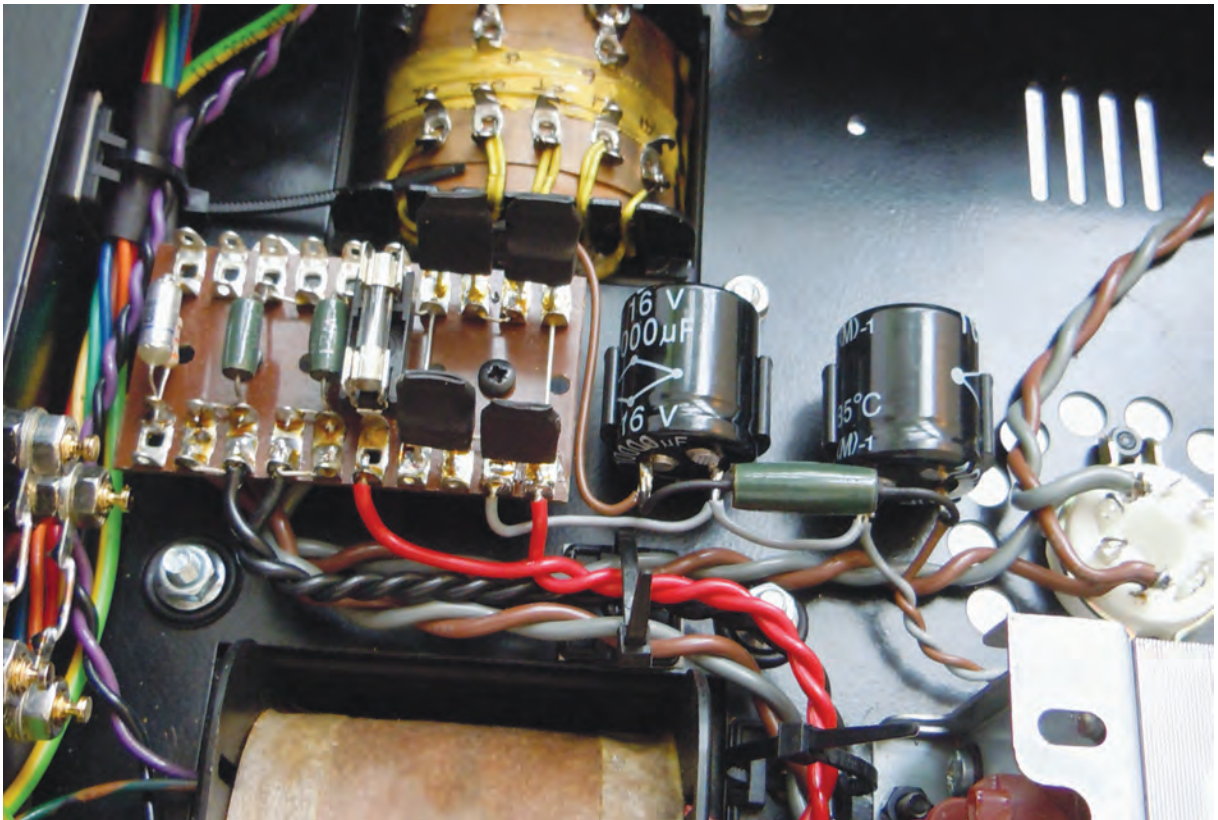


Fig. 15 Heater Power Supply Wiring



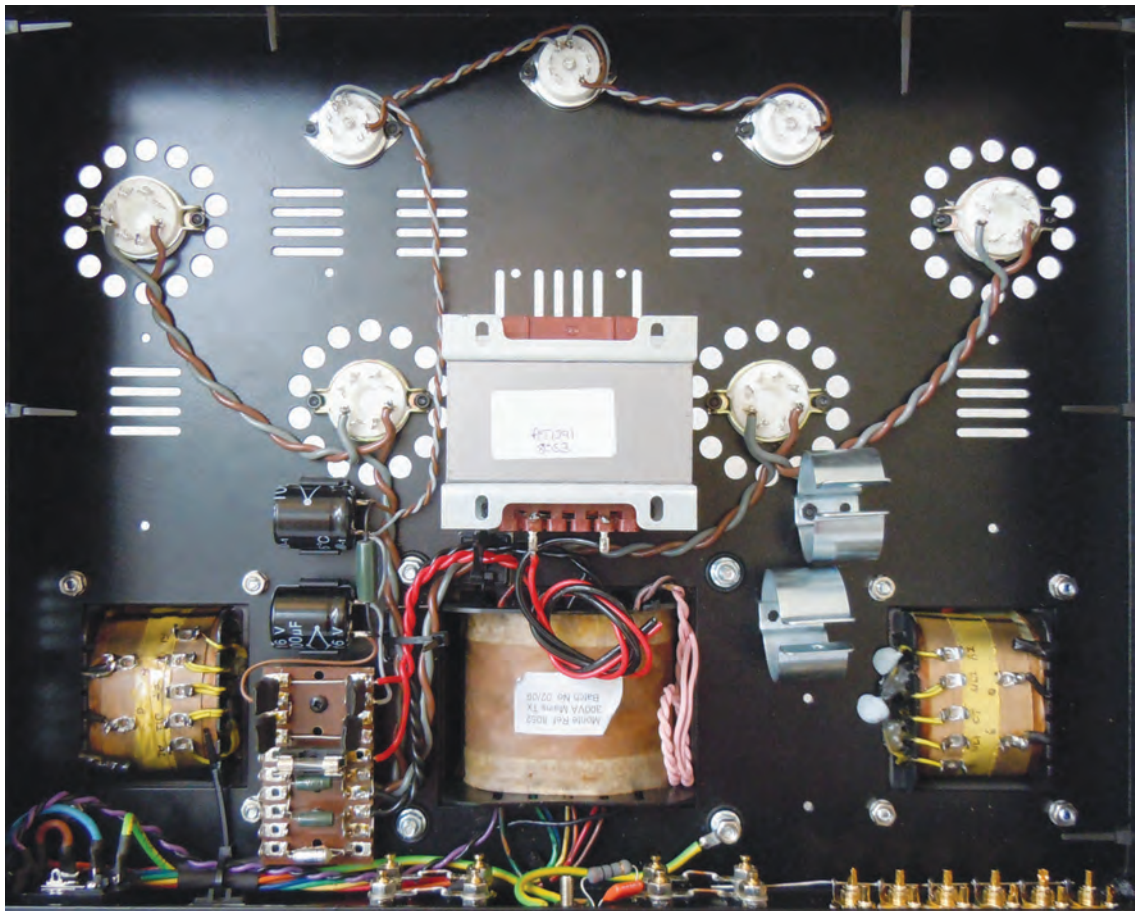
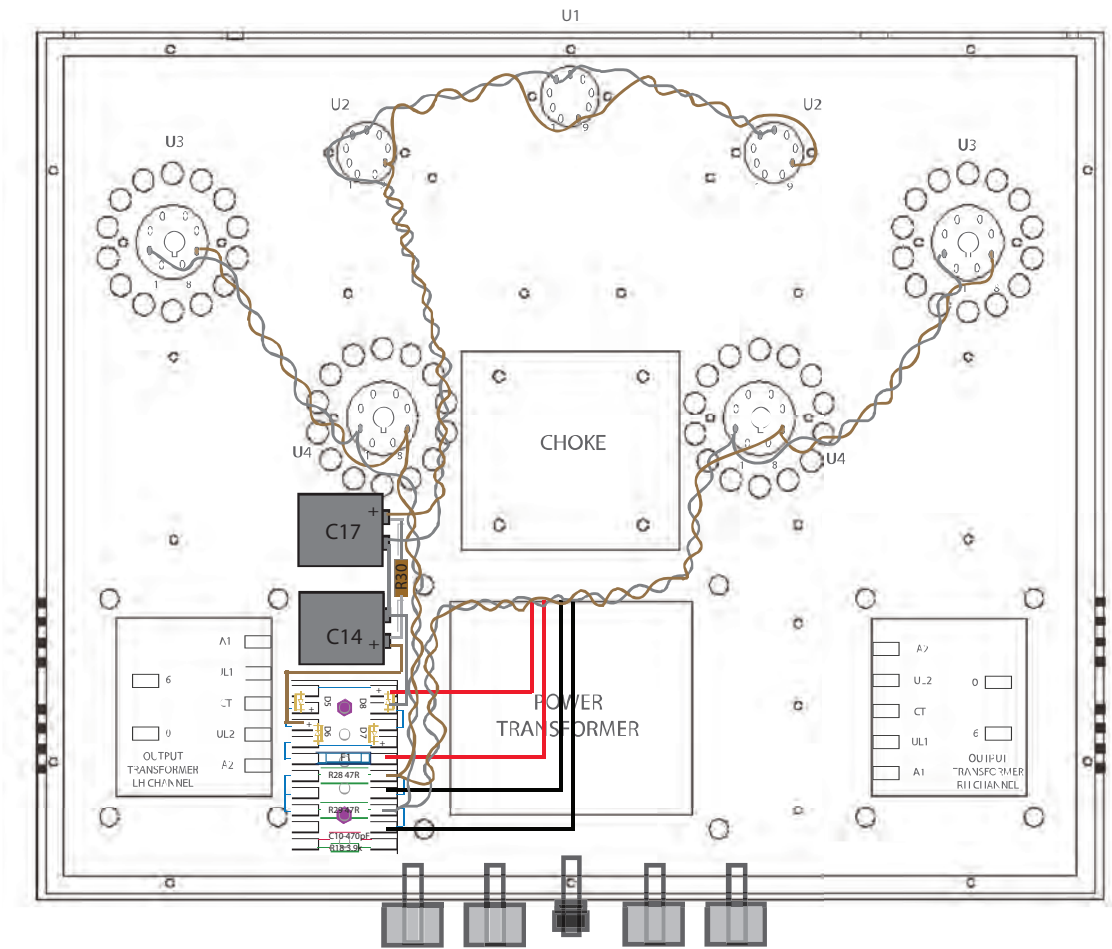


Fig. 16 Heater Wiring

## FITTING THE RELAY BOARD

**Fig. 17** Push the completed Relay Switch Board carefully onto the pins of the phono sockets at the inside rear of the case and secure using M3x6 screws through the rear panel into the spacers.

Solder the two (Ground) tinned copper wires from the input phono socket solder tags to the GRD1 PCB terminal pin.

**IMPORTANT: DO NOT SOLDER THE PHONO SOCKETS AT THIS STAGE.**

**Fig. 18** Route the twisted brown and grey wires from the relay PCB round the side of the chassis to the right hand U2 valve base and cut to length. Solder brown to pin 8 and grey to pins 4-5.

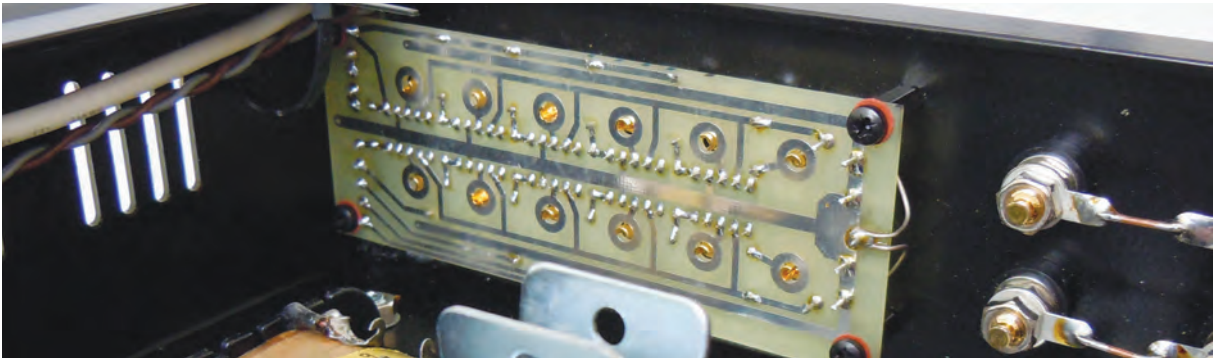


Fig. 17 Fitting the Relay Board

## FITTING THE INPUT SELECTOR SWITCH

**Fig. 18** Holding the shaft of the switch in a small vice or mole grips, cut the shaft of the input selector switch to 20mm length measured from the end of the threaded portion. Sand the cut end of the shaft smooth to fit the chrome knob.

Check that the inner “locking” washer is set to position 6 (6-way), pass the switch through the hole in the chassis and secure using the washer and nut provided.

Route the the six way cable from the Relay PCB round the side of the chassis, cut to length, and solder the free ends to the terminals of the input selector switch as follows:

Black - Inner Terminal A, Blue - Pin 2, Green - Pin 3,  
Red - Pin 4, Yellow - Pin 5, White - Pin 6.

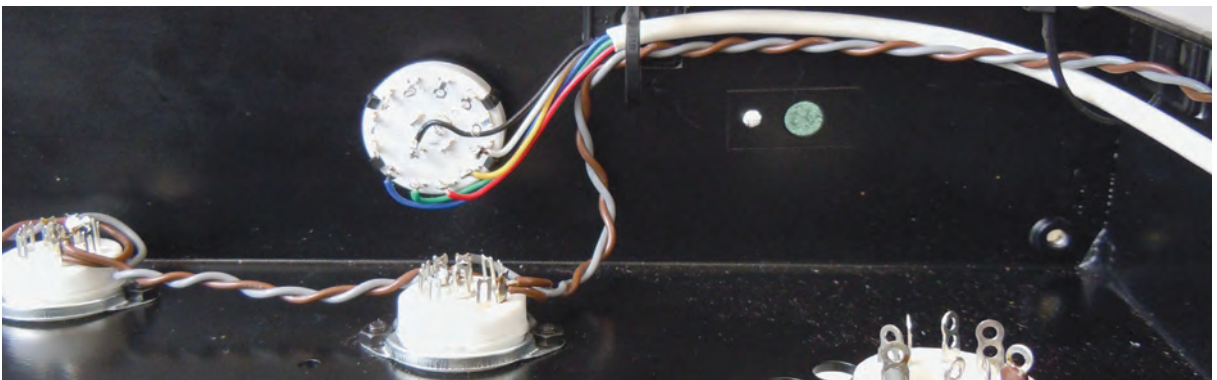


Fig. 18 Input Selector Switch



## WIRING THE HT POWER SUPPLY

**Fig. 19** Fit C12 and C13 into their mounting clips so that the negative terminals are next to each other. Rotate the clips slightly anti-clockwise, insert C12 and then straighten the clips. C12 should be just clear of the right output transformer and there should be enough room for all the connections at the mains transformer end. You can now slide in C13 so that the terminals are about 10mm from the choke - check that the right channel Output Board will fit behind it.

Use M3x25 screws, grip washers and nuts to secure the capacitors in their clamps and fully tighten the capacitor clips to the chassis.

Now remove the choke to allow access for the following connections.

Use M5x10 screws and serrated washers to fit 6 solder tags to the positive terminal of C13, 4 to the positive terminal of C12 and 3 to each of the negative terminals. If you wish, you can double-up connections to the solder tags and thereby use fewer tags.

Whatever the case the following connections need to be made:

Connect C12a (1.5uF Soniqs SAX) bypass capacitor across each capacitor. Keep the legs full-length so that you can position the capacitors clear of other components.

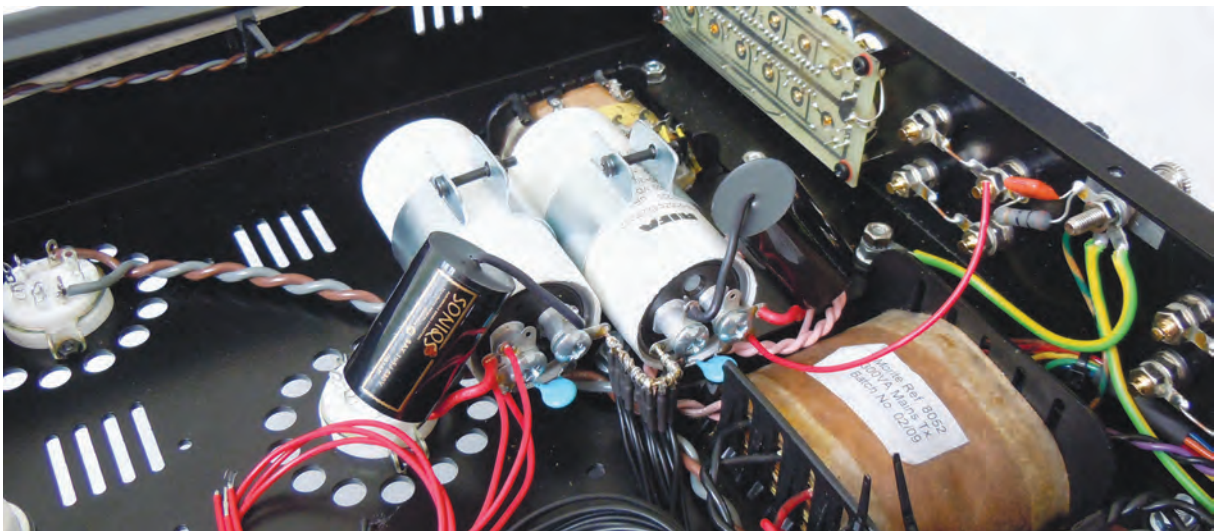
Connect C12b (0.01uF ceramic disc) bypass capacitor across each capacitor.

Solder three lengths approx 300mm red wire to the positive terminal of C13.

Solder one length approx 100mm red wire to the positive terminal of C12. We suggest you label this wire to avoid confusing it with the red HT wires from the positive terminal of C13.

The choke will eventually be connected across C12 positive and C13 positive terminals - so keep solder tags free for this later.

The star earth busbar will be connected between C12 negative and C13 negative terminals.



**Fig. 19** Fitting the Power Capacitors

Form the star earth busbar by stripping the insulation from approx 50mm 1mm solid core wire and bend it into a loop so that it will fit across the negative terminals of C12 and C13.

If you have a powerful soldering iron (say 60W plus) and you are a confident solderer, you can now solder the busbar across the negative terminals of C12 and C13, and proceed to forming the star earth by soldering twelve lengths approx 350mm black wire to the busbar.

Because the large capacitors “sink” a good deal of heat (as will the busbar, increasingly, as you add each earth wire), you may find it easier to pre-form the star earth; this has the additional advantage of allowing much better access for soldering the joints. When you have soldered the 12 lengths of black wire to the busbar you can then solder the completed star earth between the negative terminals of C12 and C13.

Figs.  
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Route one of the red HT wires from C13 towards the front of the chassis to the right of the choke position along with five of the black star earth wires.

Route another of the red HT wires with three of the black star earth wires towards the rear of the chassis to the right of the mains transformer.

Route the remaining red HT wire and the remaining four black star earth wires between the choke position and the mains transformer.

Do not solder any of these wires yet, but coil them neatly out of the way until you come to use them.

Figs.  
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Position the second PS board (carrying diodes 1-4) between C12 and the rear of the chassis and secure it to the chassis using M3x6 screws to the spacers. The diodes should be nearest to C12.

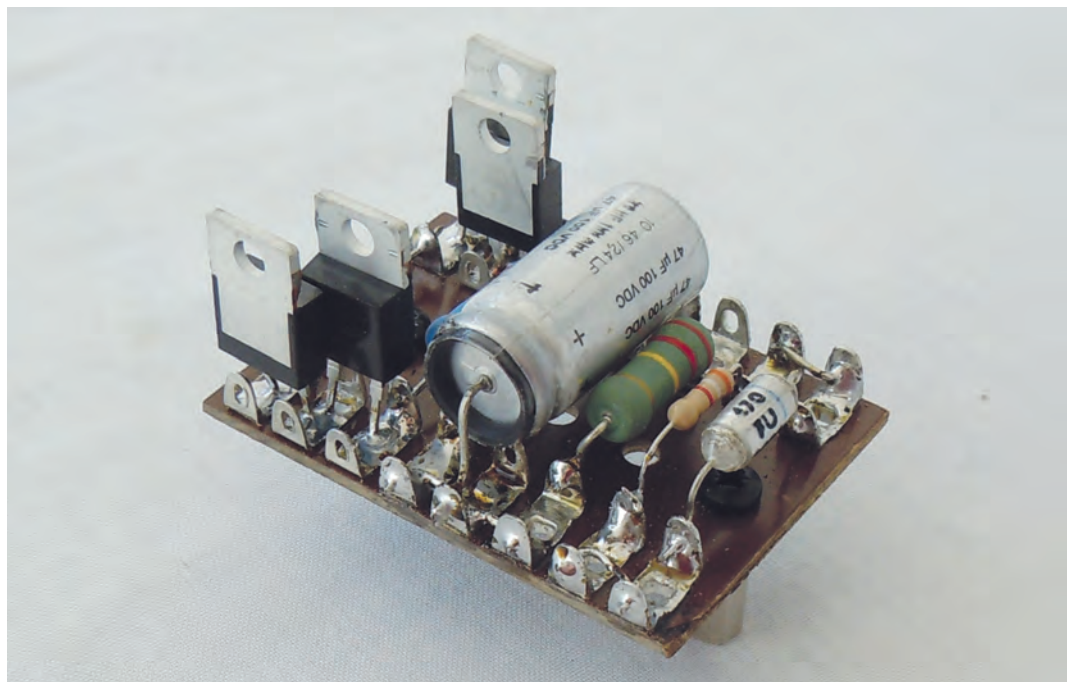


Fig. 20 HT Power Supply Tag Board

**Figs. 21 / 22** Using approx 250mm grey wire link the junction of D7 / D8 (18) on the first PS board to the junction of R25 / C16 / R26 (25) on the second. Route the wire tidily between the choke and the mains transformer.

Take the twisted pink secondaries from the mains transformer, cut to length, and solder one lead to the junction of D1 / D3 (28) and the other to the junction of D2 / D4 (26).

Take the red wire from the positive terminal of C12. TAKE CARE THAT YOU DO NOT MISTAKE THIS WIRE FOR THE RED HT WIRE FROM C13. Cut it to length and solder to the junction of D1 / D2 (27). Similarly take one of the three black earth leads and solder to the junction of D3 / D4 (35). Check that this tag is linked to R26 and C16 on the tag board.

Take the remaining two black earth wires from the right side of the mains transformer and connect one to the RH black speaker terminals and the other to the LH black speaker terminals. Cut to length and solder directly to the links between the pairs of terminals, or use solder tags if you prefer.

Take the red HT lead from C13+ routed to the right of the mains transformer, cut to length, and solder to the Centre Tap (CT) of the right channel output transformer. Link this with a short length of red wire to R25 (31) on the second tag board.

Similarly, using the red HT wire that you routed between the choke and the transformer, connect C13+ to the centre tap of the left channel output transformer.

Take one of the black earth wires that you routed between the choke and the transformer, cut to length and solder to the junction of R28 / R29 (4) on the first PS board.

Tidy all the wires as you see fit, and re-fit the choke: Twist the choke cables tightly together, cut to length, and solder the red wire to the positive terminal of C13 and the black wire to the positive terminal of C12. You can now fix the choke permanently in place using M4x10 screws, serrated washers and nuts. Offer up the base plate to the chassis to check that the choke will sit squarely in its hole.

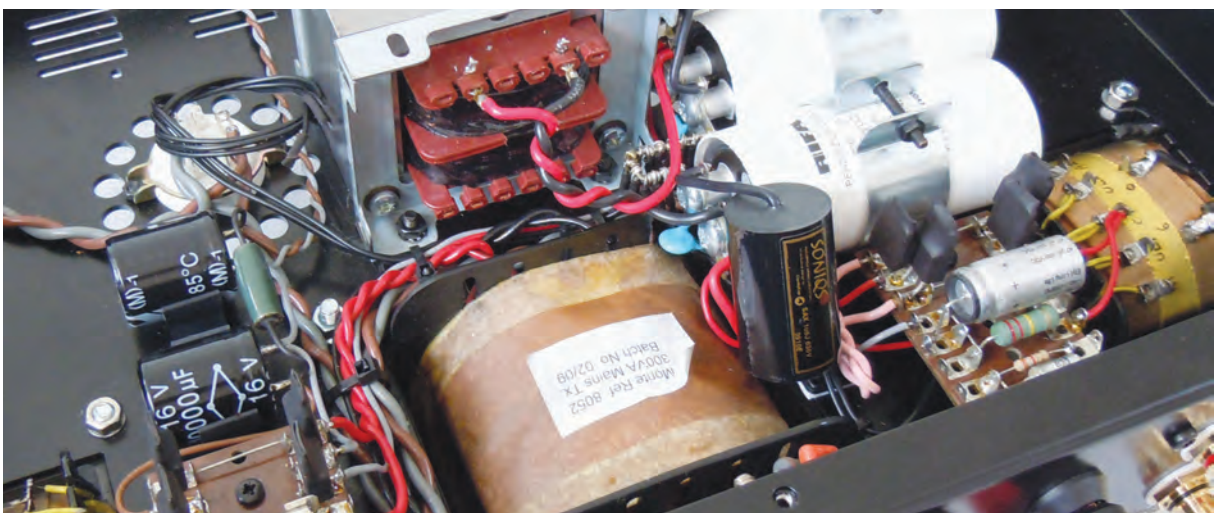


Fig. 21 HT Power Supply



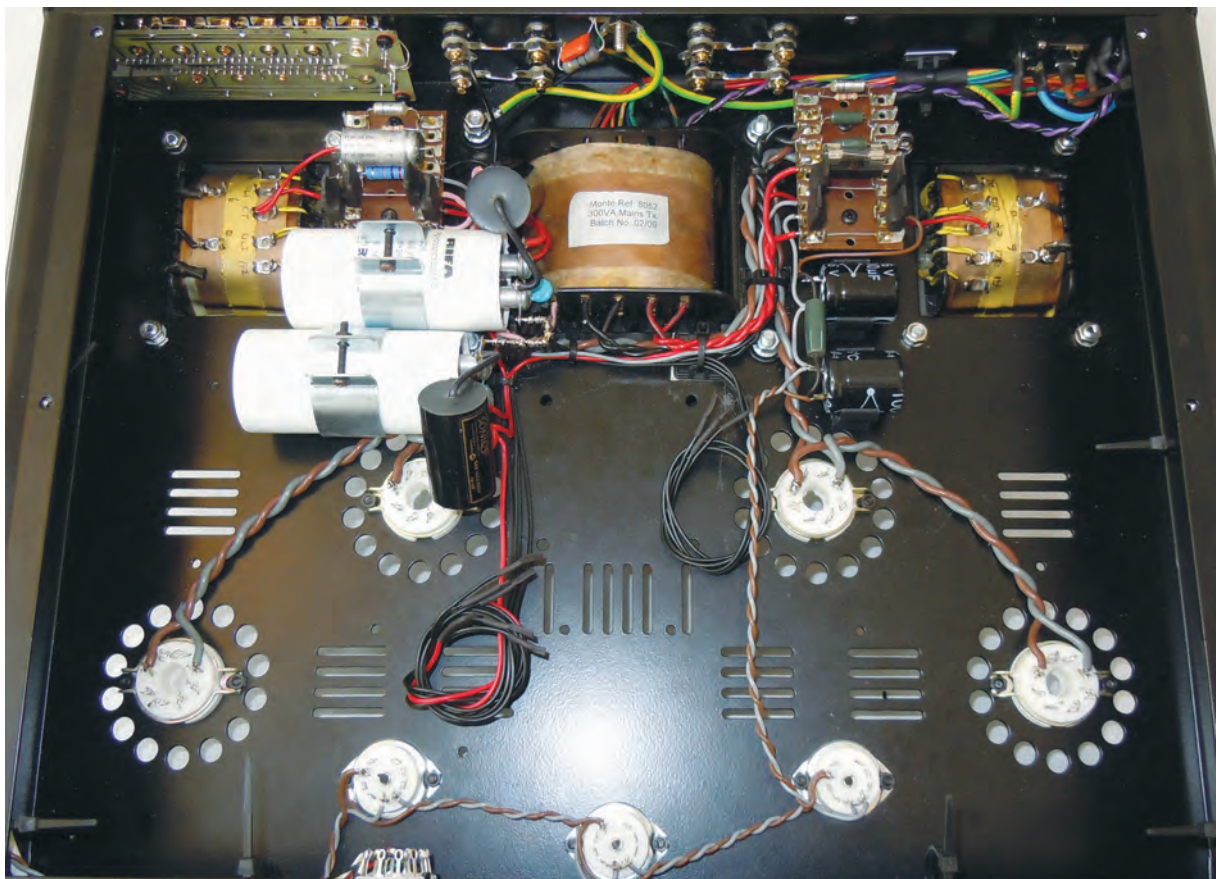
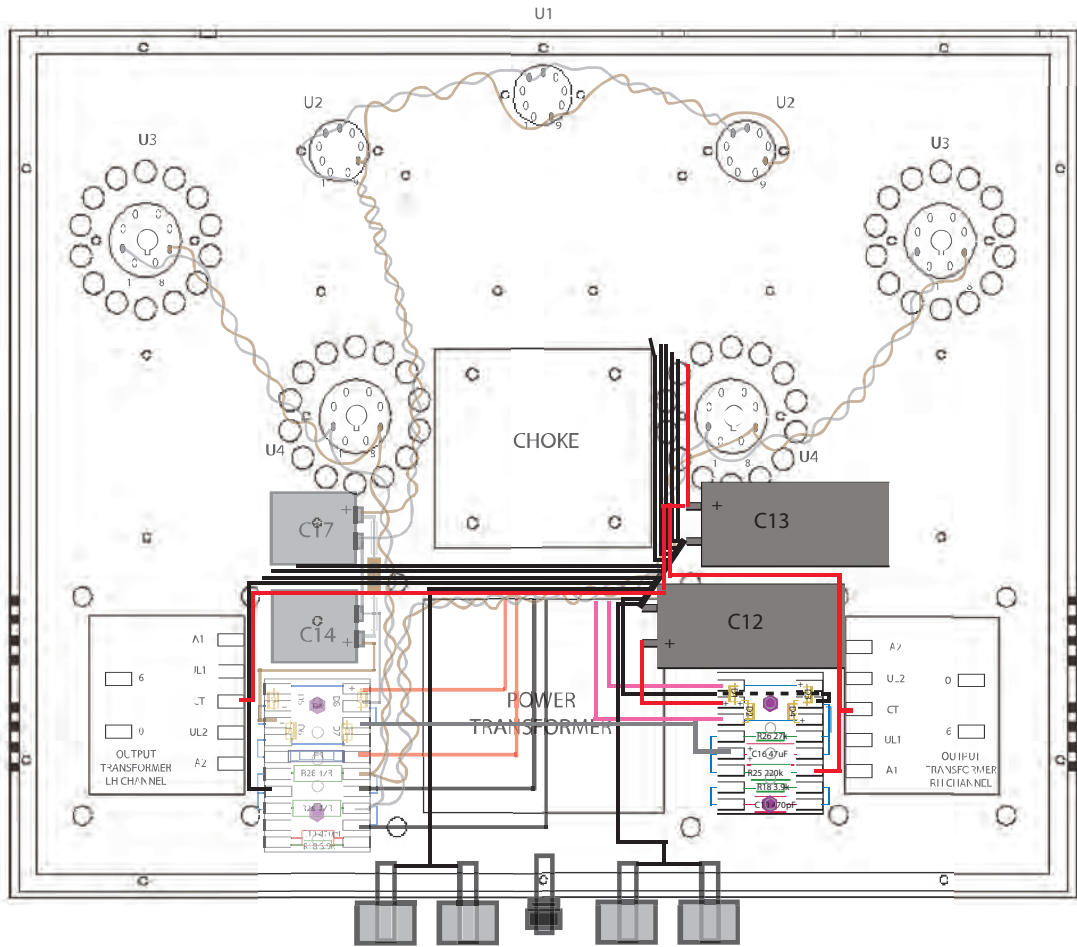


Fig. 22 Power Supply Wiring