

**WARNING! - Please Read this Information Carefully:**

The project described in these pages utilizes **POTENTIALLY FATAL HIGH VOLTAGES**. If you are in any way unfamiliar with high voltage circuits or are uncomfortable working around high voltages, **PLEASE DO NOT RISK YOUR LIFE BY BUILDING THEM**. Seek help from a competent technician before building any unfamiliar electronics circuit. While efforts are made to ensure accuracy of these circuits, no guarantee is provided, of any kind!

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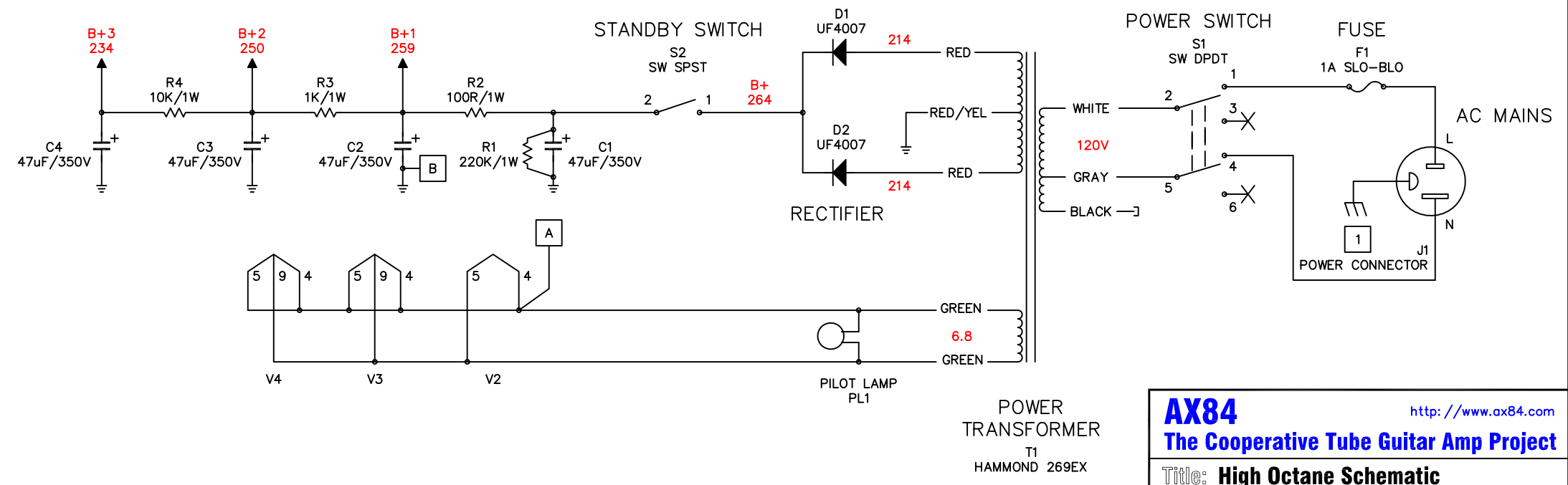
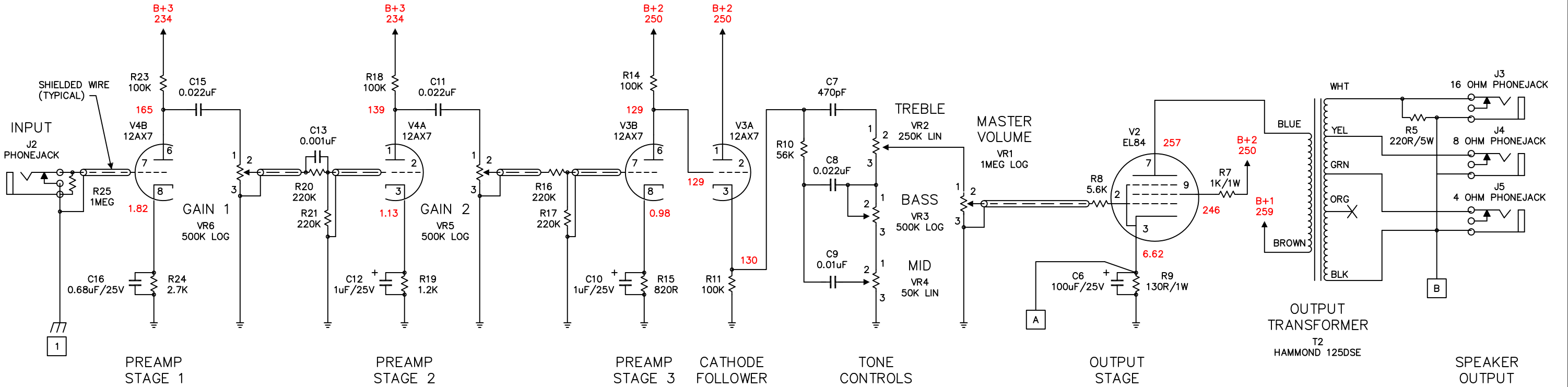
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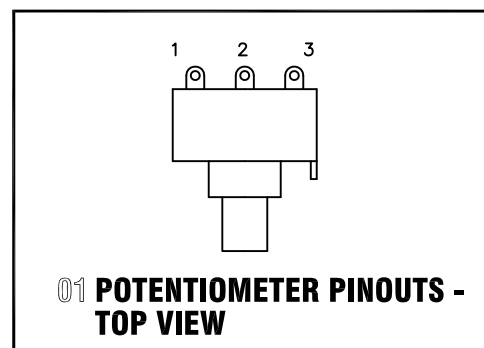
Revision	Description
08.05.07	Added Voltage Readings
10.03.18	Added Radial Cap Layout To Documents
10.06.16	Updated Hammond PT Hookup
10.10.04	Relocated R5

**CAPACITOR, DIODE, RESISTOR, POT. AND TUBE NUMBERING NOTE:**  
 GAPS HAVE BEEN LEFT IN THE CAPACITOR, DIODE, RESISTOR, POTENTIOMETER, AND TUBE NUMBERING IN ORDER TO MAINTAIN CONSISTENCY BETWEEN THE P1, HIGH OCTANE, AND P1 EXTREME AMPS. A MISSING COMPONENT INDICATES THAT IT IS NOT USED ON THAT AMP, BUT IS USED ON ANOTHER.

**RADIO NOISE NOTE:**  
 IN THE UNLIKELY EVENT YOUR AMP STARTS PICKING UP RADIO STATIONS, YOU CAN INSTALL A GRID RESISTOR ON PIN 7 OF V4B. THE VALUE SHOULD BE BETWEEN 10K AND 68K. THE HIGHER THE VALUE, THE LESS RADIO NOISE AND THE LOWER THE VALUE, THE LESS POWER SUPPLY NOISE.



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GENERAL NOTES:

1. ALL RESISTORS 1/2W MINIMUM UNLESS OTHERWISE NOTED.
2. ALL COUPLING CAPACITORS 250V OR GREATER.
3. 47uF/350V ELECTROLYTIC POWER SUPPLY CAPACITOR VALUES/VOLTAGES ARE NOT CRITICAL. SUGGESTED VALUES: 20-50uF AT 350-500V.

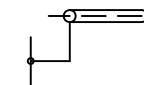
4. THE HAMMOND 269EX POWER TRANSFORMER IS USED IN THIS AMP. IT MAY BE REPLACED BY UNITS WITH THE FOLLOWING SPECIFICATIONS:

180-0-180V @ 65mA OR MORE SECONDARY B+ TAPS  
6.3V @ 2.5A OR MORE FILAMENT TAPS

5. THE HAMMOND 125DSE OUTPUT TRANSFORMER IS USED IN THIS AMP. IT MAY BE REPLACED BY UNITS WITH THE FOLLOWING SPECIFICATIONS:

SINGLE-ENDED OUTPUT  
4000-5000 OHM PRIMARY IMPEDENCE  
70mA OR MORE MAXIMUM D.C. BIAS  
4, 8, AND 16 OHM SECONDARY TAPS

6. SHIELDED WIRE, AS WELL AS THE SHIELD'S TIE TO GROUND, IS SHOWN IN THIS MANNER ON THE SCHEMATIC:



7. IF YOU HAVE MAINS VOLTAGES OF 200VAC OR ABOVE, YOU SHOULD USE HAMMOND'S 3XX SERIES TRANSFORMERS INSTEAD OF THE 2XX SERIES SHOWN. THE 369EX SHOULD REPLACE THE 269EX, THE 370DX REPLACES THE 270DX, AND THE 370EX REPLACES THE 270DX.

CONSTRUCTION NOTES:

- 1 THIS IS A GROUND CONNECTION TO THE CHASSIS. THE MAINS SAFETY CONNECTION SHOULD BE MADE AS CLOSE AS POSSIBLE TO THE POINT WHERE AC ENTERS THE CHASSIS. THE CIRCUIT CONNECTION SHOULD BE MADE AS CLOSE AS POSSIBLE TO THE INPUT JACK. IDEALLY, THE JACK ITSELF SHOULD BE USED AS THE CONNECTION POINT BY NOT ISOLATING IT FROM THE CHASSIS.

**AX84** <http://www.ax84.com>  
**The Cooperative Tube Guitar Amp Project**

Title: **High Octane Detail Sheet**

# AX84 High Octane Amplifier BOM

Revision: 10.10.04

NOTE: Parts for options are not included on this bill of materials.

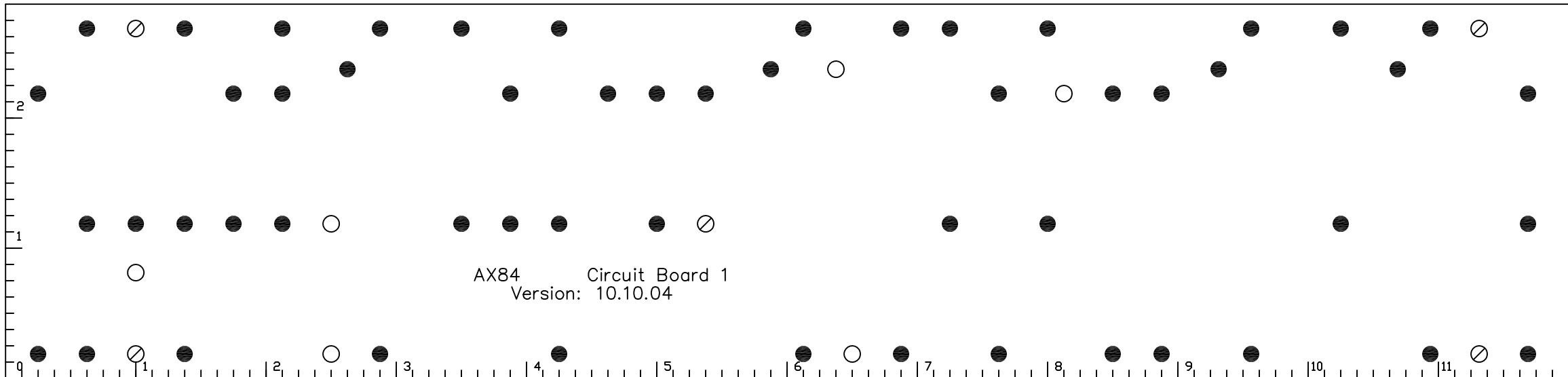
Item	Quantity	Reference	Value
1	4	C1, C2, C3, C4	47uF/350V
2	0	C5	Not Used
3	1	C6	100uF/25V
4	1	C7	470pF
5	3	C8, C11, C15	0.022uF
6	1	C9	0.01uF
7	2	C10, C12	1uF/25V
8	1	C13	0.001uF
9	0	C14	Not Used
10	1	C16	0.68uF/25V
11	1	R1	220K/1W
12	1	R2	100R/1W
13	2	R3, R7	1K/1W
14	1	R4	10K/1W
15	1	R5	220R/5W
16	0	R6	Not Used
17	1	R8	5.6K
18	1	R9	130R/1W
19	1	R10	56K
20	4	R11, R14, R18, R23	100K
21	2	R12, R13	Not Used
22	1	R15	820R
23	4	R16, R17, R20, R21	220K
24	1	R19	1.2K
25	0	R22	Not Used
26	1	R24	2.7K
27	1	R25	1 Meg
28			
29	1	F1	1A SLO-BLO
30	1	FH1	Fuse Holder
31	1	J1	Power Connector
32	4	J2, J3, J4, J5	Phonejack
33	4	JW1, JW2, JW3, JW4	Phonejack Isolation Washer (if needed)
34	1	S1	SW DPDT
35	1	S2	SW SPST
36	2	D1, D2	UF4007
37	1	PL1	Pilot Lamp Assembly And Bulb
38	1	T1	Hammond 269EX
39	1	T2	Hammond 125DSE
40	3	SK2, SK3, SK4	9 Pin Tube Sockets
41	1	V2	EL84
42	2	V3, V4	12AX7
43	1	VR1	1Meg LOG
44	1	VR2	250K LIN
45	3	VR3, VR5, VR6	500K LOG
46	1	VR4	50K LIN

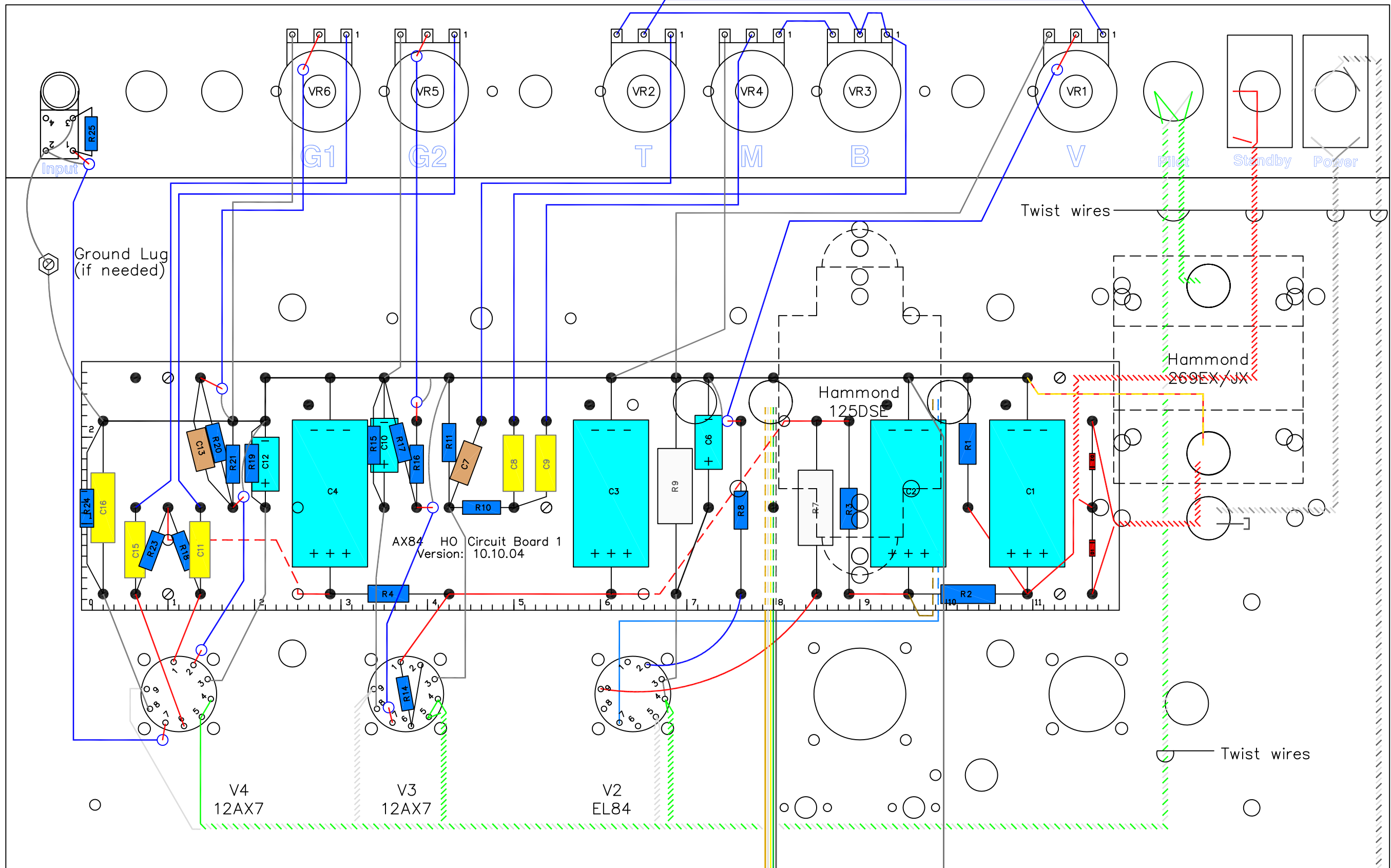
47  
48

6  
1

K1, K2, K3, K4, K5, K6  
CH1

Knobs  
Chassis



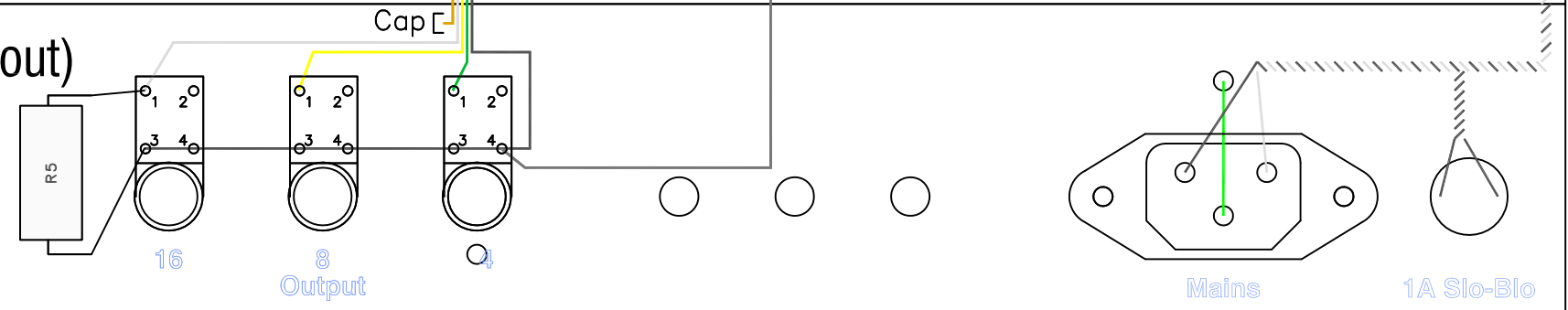


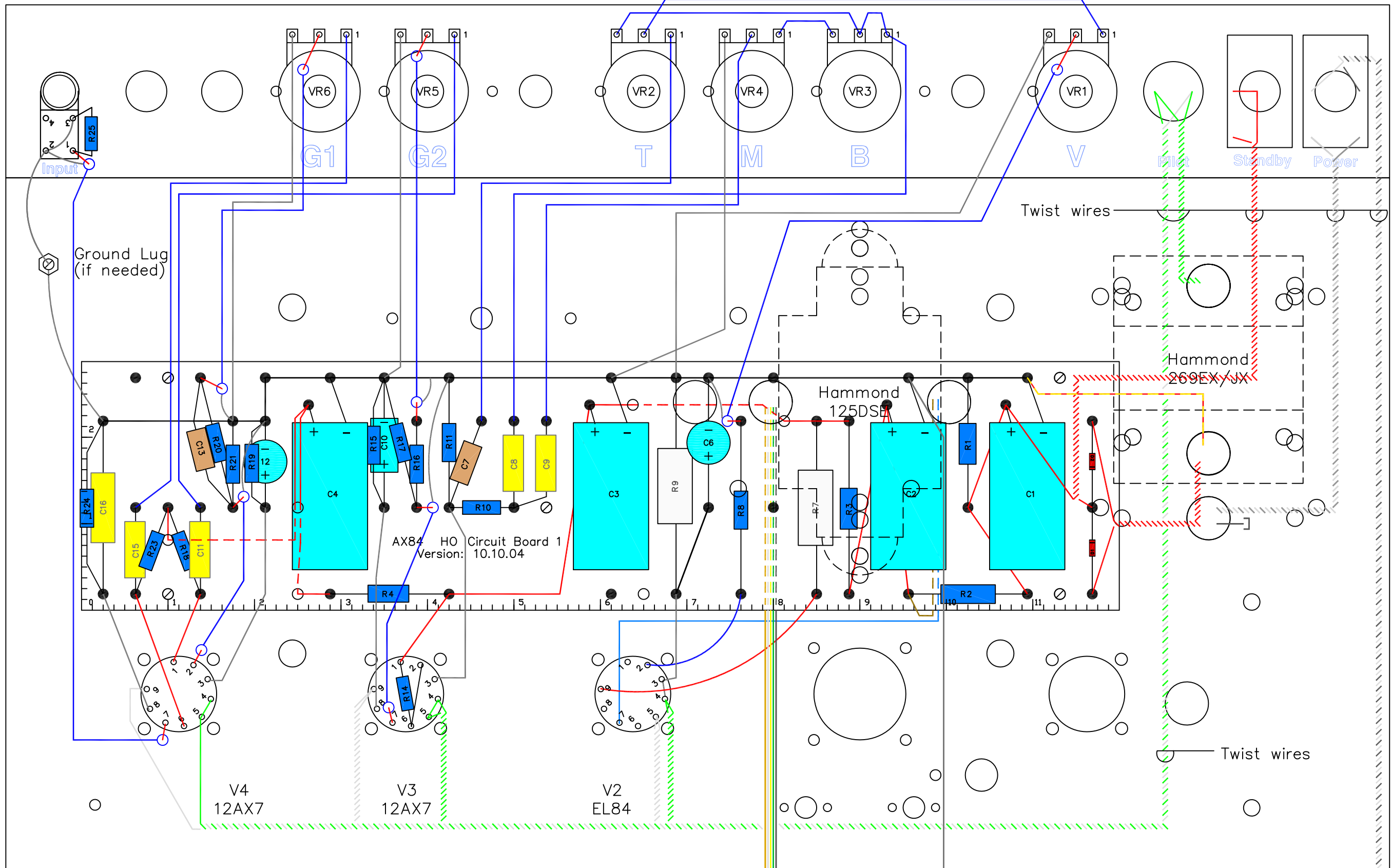
**AX84 High Octane Chassis Layout (Axial Layout)**

Version: 10.10.04

**AX84 Kit Chassis 1**

Version: 08.05.07





**AX84 High Octane Chassis Layout (Radial Layout)**

Version: 10.10.04

**AX84 Kit Chassis 1**

Version: 08.05.07

