

**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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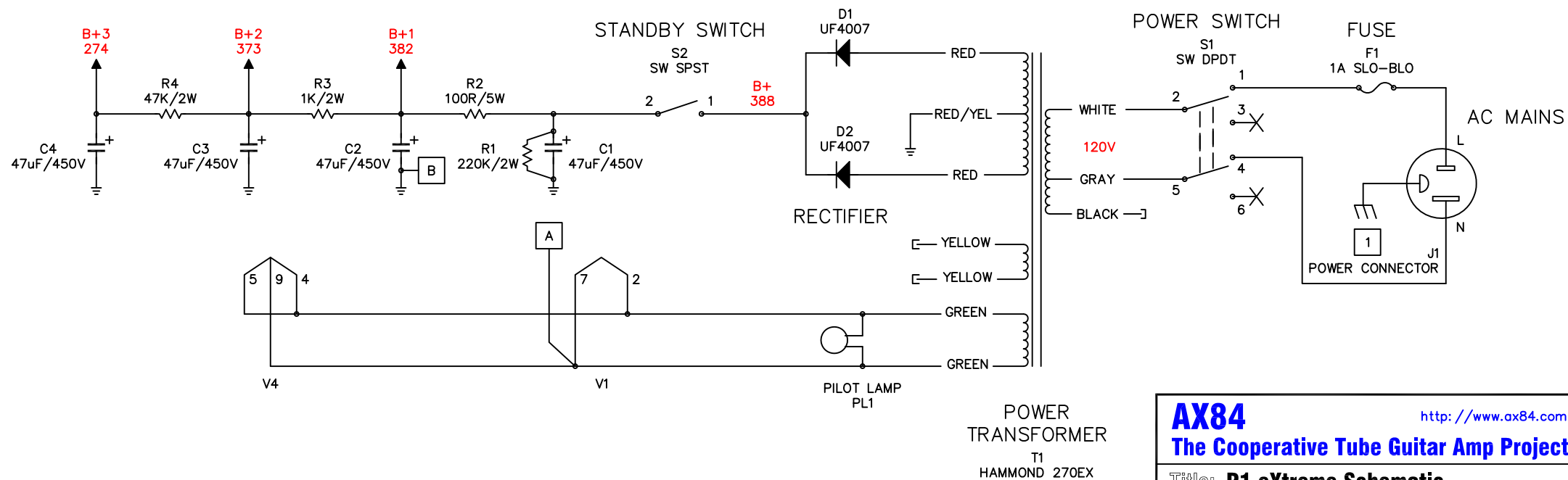
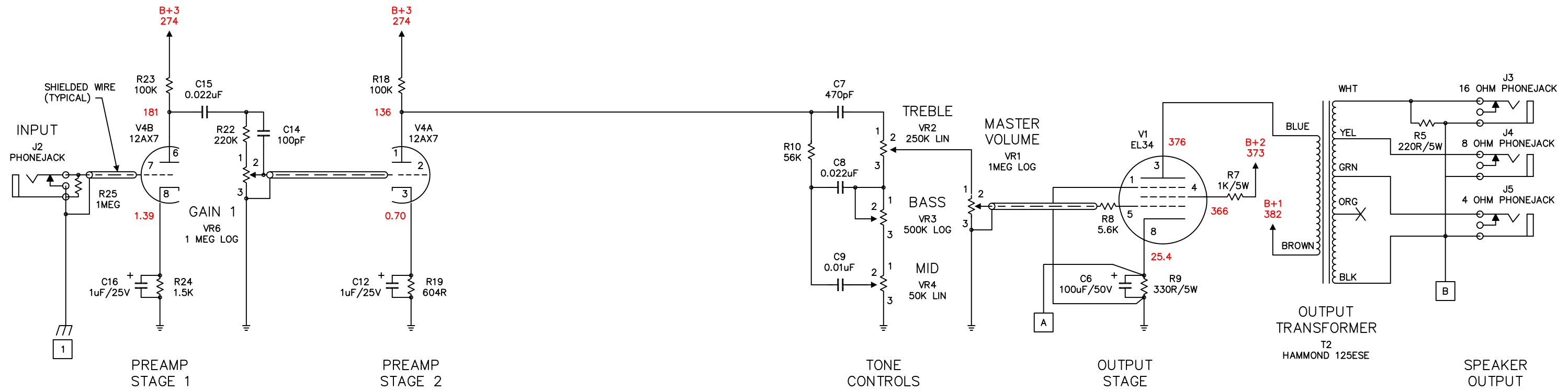
**CAPACITOR, DIODE, RESISTOR, POT. AND TUBE NUMBERING NOTE:**

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.

Revision	Description
08.06.23	Issued For Construction
10.03.18	Added Radial Cap Layout To Documents
10.06.16	Updated Hammond PT Hookup
10.06.16	Clarified 5V Wiring On Chassis Layout Relocated R5

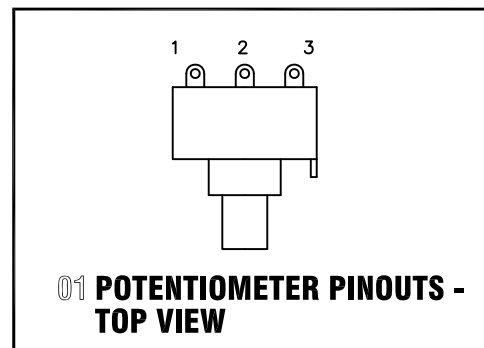


**AX84**  
The Cooperative Tube Guitar Amp Project

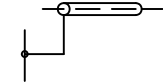
<http://www.ax84.com>

Title: **P1 eXtreme Schematic**

Revision	Description
08.06.23	Issued For Construction
10.03.18	Added Radial Cap Layout To Documents
10.06.16	Updated Hammond PT Hookup
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GENERAL NOTES:

- ALL RESISTORS 1/2W MINIMUM UNLESS OTHERWISE NOTED.
- ALL COUPLING CAPACITORS 400V OR GREATER.
- 47uF/450V ELECTROLYTIC POWER SUPPLY CAPACITOR VALUES/VOLTAGES ARE NOT CRITICAL. SUGGESTED VALUES: 20-50uF AT 450-500V.
- THE HAMMOND 270DX POWER TRANSFORMER IS USED IN THIS AMP. IT MAY BE REPLACED BY UNITS WITH THE FOLLOWING SPECIFICATIONS:  
  
275-0-275V @ 90mA OR MORE SECONDARY B+ TAPS  
6.3V @ 4A OR MORE FILAMENT TAPS
- THE HAMMOND 125ESE OUTPUT TRANSFORMER IS USED IN THIS AMP. IT MAY BE REPLACED BY UNITS WITH THE FOLLOWING SPECIFICATIONS:  
  
SINGLE-ENDED OUTPUT  
5000 OHM PRIMARY IMPEDENCE  
90mA OR MORE MAXIMUM D.C. BIAS  
4, 8, AND 16 OHM SECONDARY TAPS
- SHIELDED WIRE, AS WELL AS THE SHIELD'S TIE TO GROUND, IS SHOWN IN THIS MANNER ON THE SCHEMATIC:  
  

- 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 270EX.

CONSTRUCTION NOTES:

- 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: **P1 eXtreme Detail Sheet**

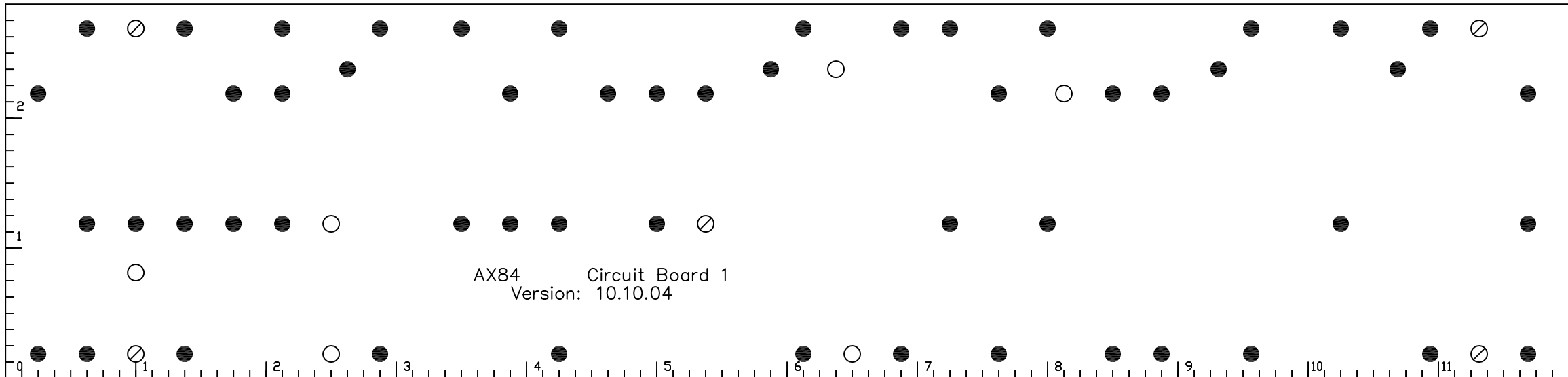
# AX84 P1eX Amplifier BOM

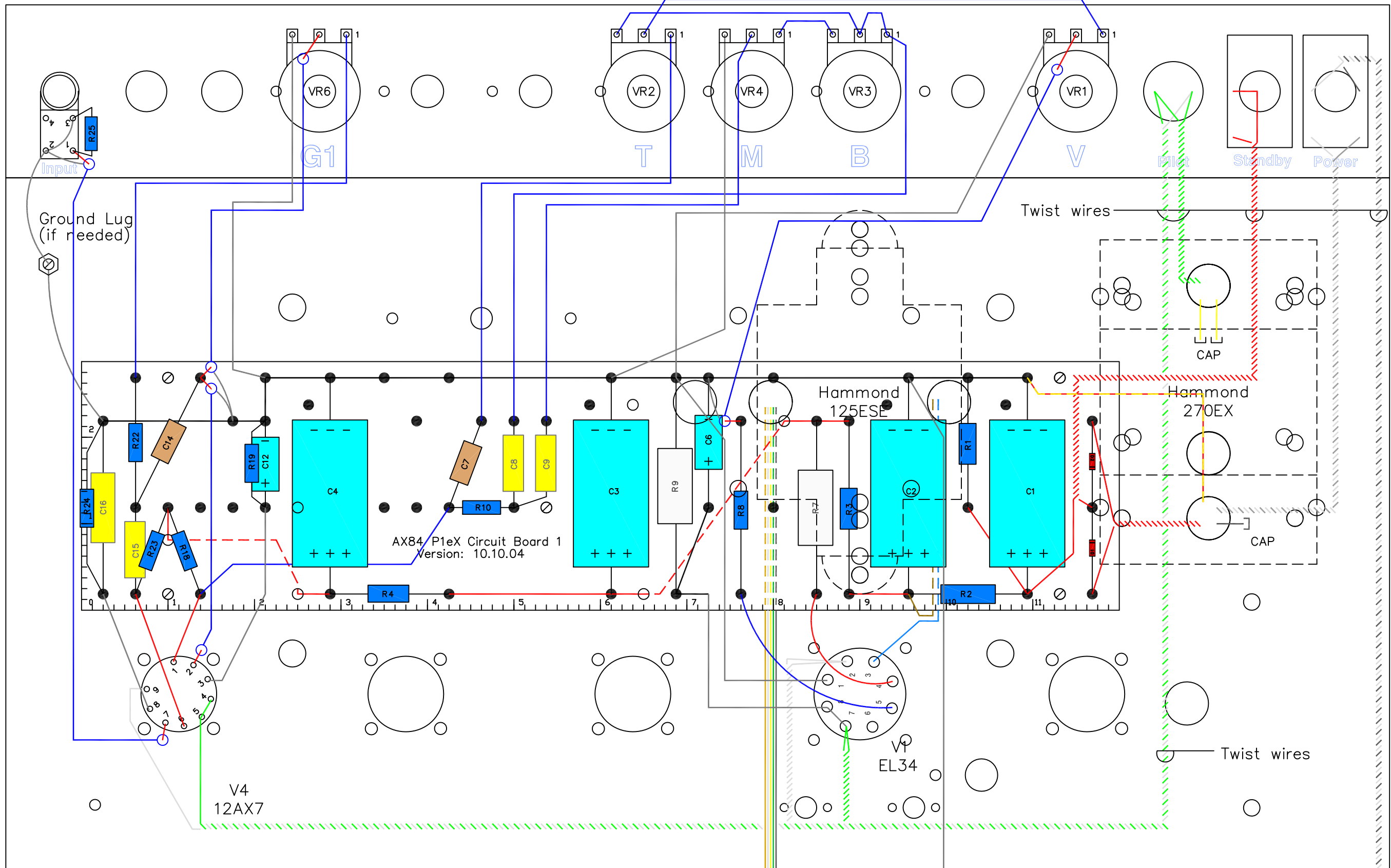
Revision: 10.10.04

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

Item	Quantity	Reference	Value
1	4	C1, C2, C3, C4	47uF/450V
2	0	C5	Not Used
3	1	C6	100uF/50V
4	1	C7	470pF
5	2	C8, C15	0.022uF
6	1	C9	0.01uF
7	0	C10, C11	Not Used
8	2	C12, C16	1uF/25V
9	0	C13	Not Used
10	1	C14	100pF
11	1	R1	220K/2W
12	1	R2	100R/5W
13	1	R3	1K/2W
14	1	R4	47K/2W
15	1	R5	220R/5W
16	0	R6	Not Used
17	1	R7	1K/5W
18	1	R8	5.6K
19	1	R9	330R/5W
20	1	R10	56K
21	0	R11, R12, R13, R14, R15, R16, R17	Not Used
22	2	R18, R23	100K
23	1	R19	604R
24	0	R20, R21	Not Used
25	1	R22	220K
26	1	R24	1.5K
27	1	R25	1 Meg
27	1	F1	2A SLO-BLO
28	1	FH1	Fuse Holder
29	1	J1	Power Connector
30	4	J2, J3, J4, J5	Phonejack
31	4	JW1, JW2, JW3, JW4	Phonejack Isolation Washer (if needed)
32	1	S1	SW DPDT
33	1	S2	SW SPST
34	2	D1, D2	UF4007
35	1	PL1	Pilot Lamp Assembly And Bulb
36	1	T1	Hammond 270EX
37	1	T2	Hammond 125ESE
38	1	SK4	9 Pin Tube Socket
39	1	SK1	8 Pin Octal Socket
40	1	V1	EL34
41	1	V4	12AX7
42	2	VR1, VR6	1Meg LOG
43	1	VR2	250K LIN
44	1	VR3	500K LOG

45	1	VR4	50K LIN
46	5	K1, K2, K3, K4, K6	Knobs
47	1	CH1	Chassis



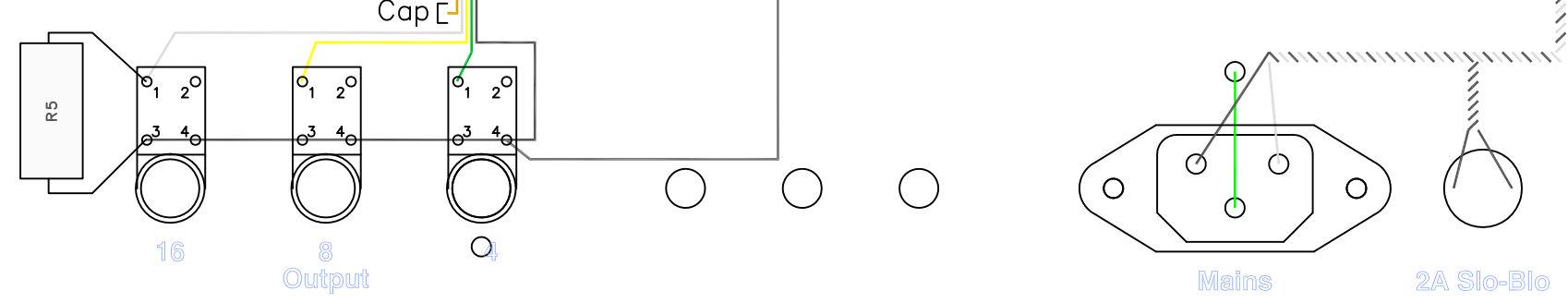


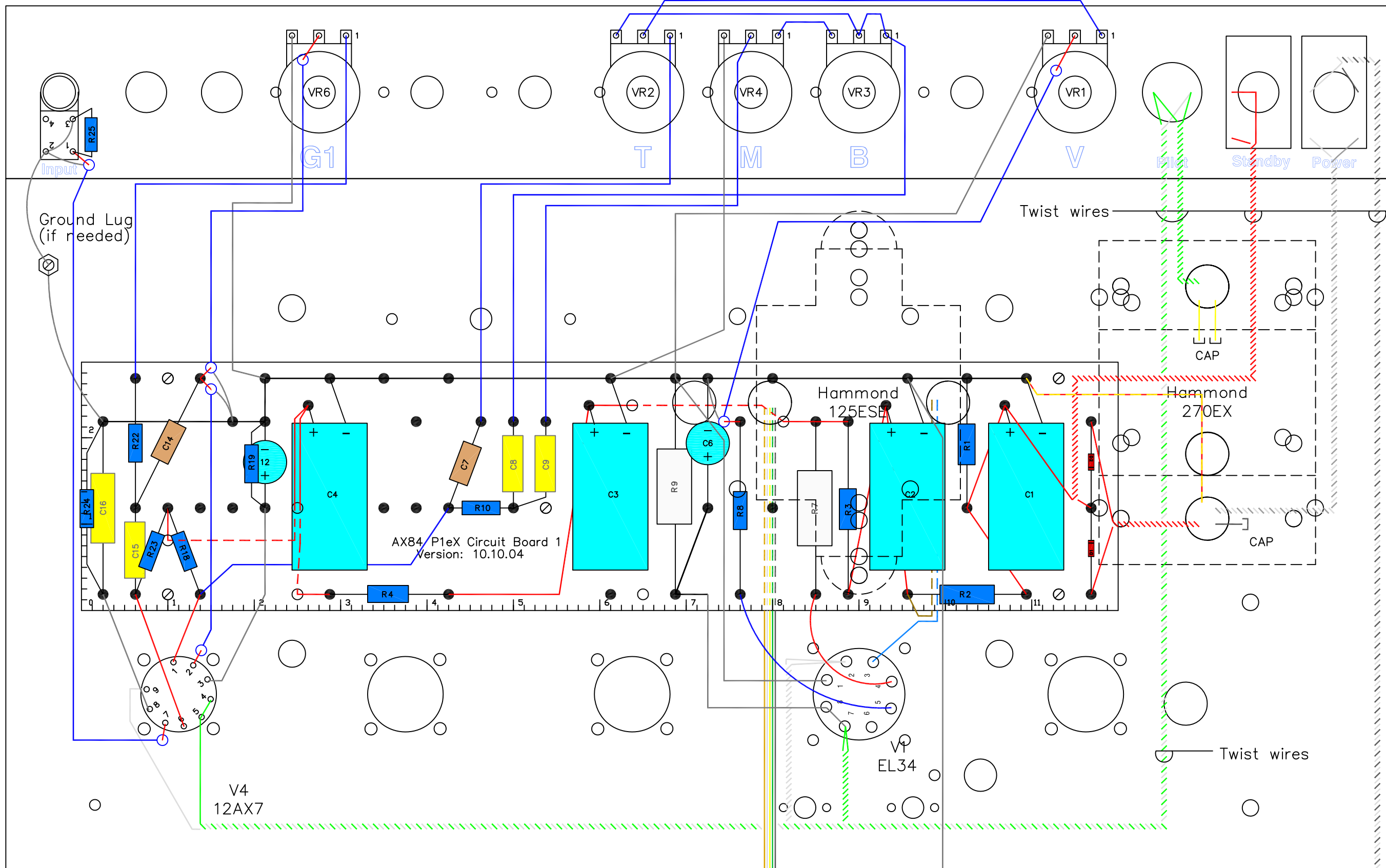
**AX84 P1eX Chassis Layout (Axial Layout)**

Version: 10.10.04

**AX84 Kit Chassis 1**

Version: 08.05.07





### AX84 P1eX Chassis Layout (Radial Layout)

Version: 10.10.04

### AX84 Kit Chassis 1

Version: 08.05.07

