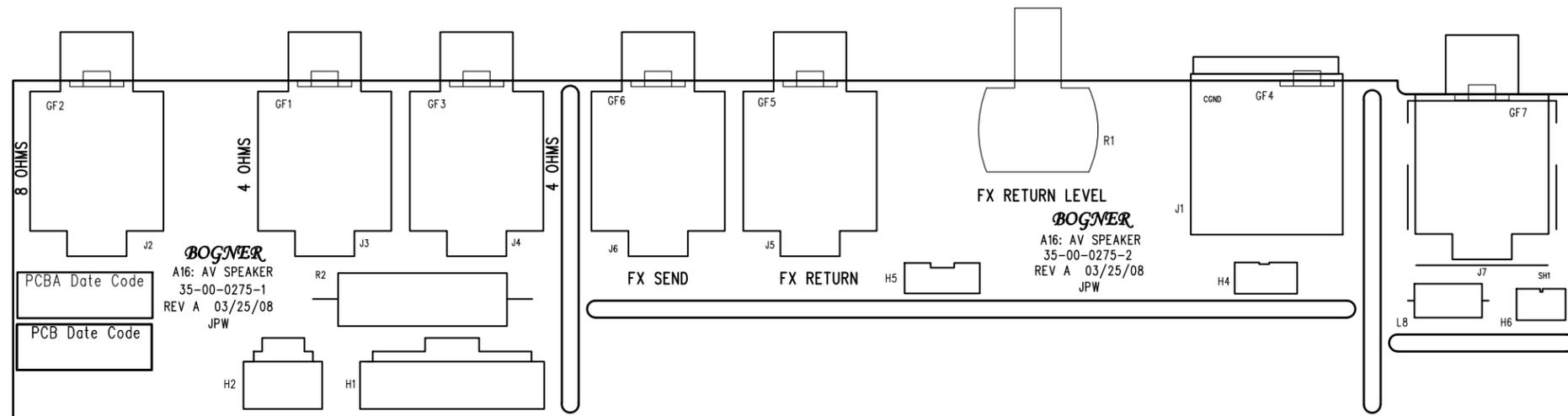
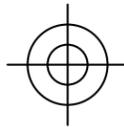
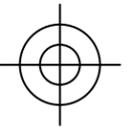




Alchemist 112/212/HD

**Alchemist
Service Manual**

TUBE AMP DESIGN BY
Bogner



SILKSCREEN TOP

COMPANY:  **LINE 6**

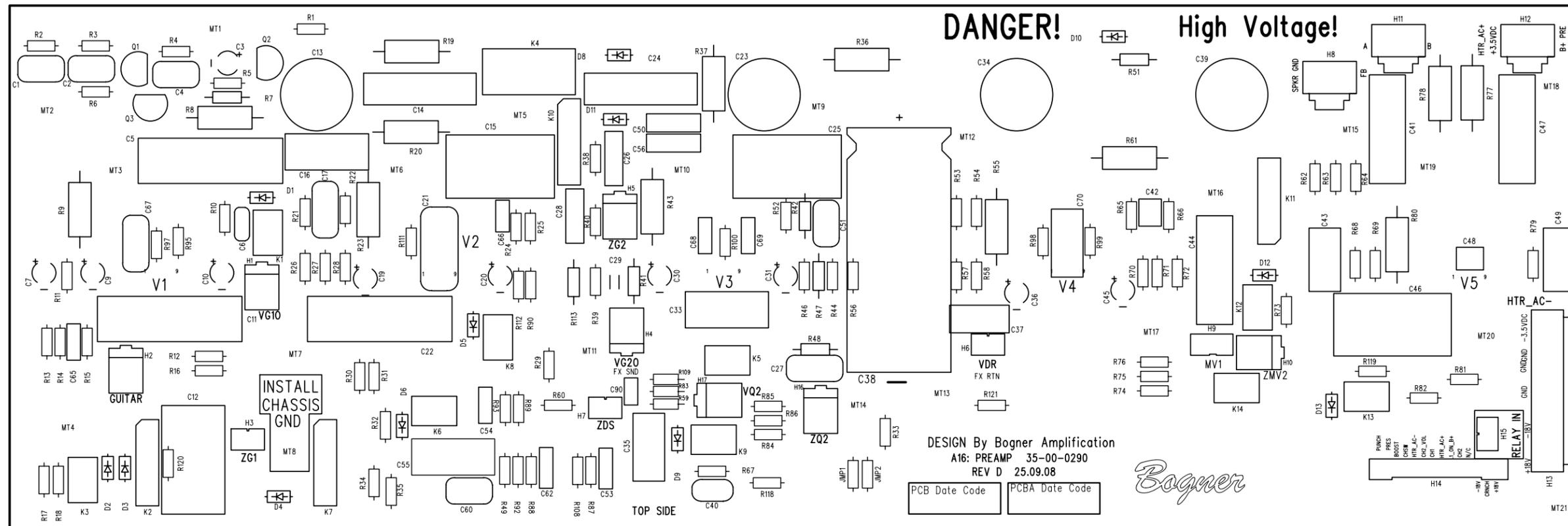
PROGRAM: PADS POWER PCB 2004

FILE: A16 AV Speaker-XLR-FX-Guitar REV A.PCB

SCALE: 1:1 | REV: A | DATE: 03/25/08

TITLE: A16 AV Speaker-XLR-FX-Guitar REV X1.PCB
 35-00-0275-1,2,3

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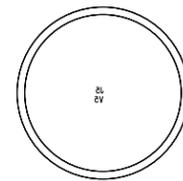
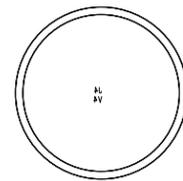
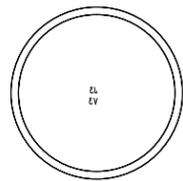
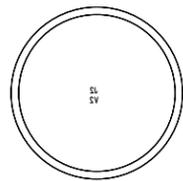
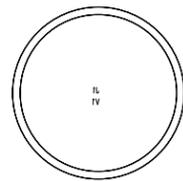
DESIGN By Bogner Amplification
 A16: PREAMP 35-00-0290
 REV D 25.09.08

PCB Date Code PCBA Date Code

SILKSCREEN TOP

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COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE:		
SCALE: 1:1	REV: D	DATE: 25 September 2008
TITLE: A16 CALI- Preamp PCB 35-00-0290		

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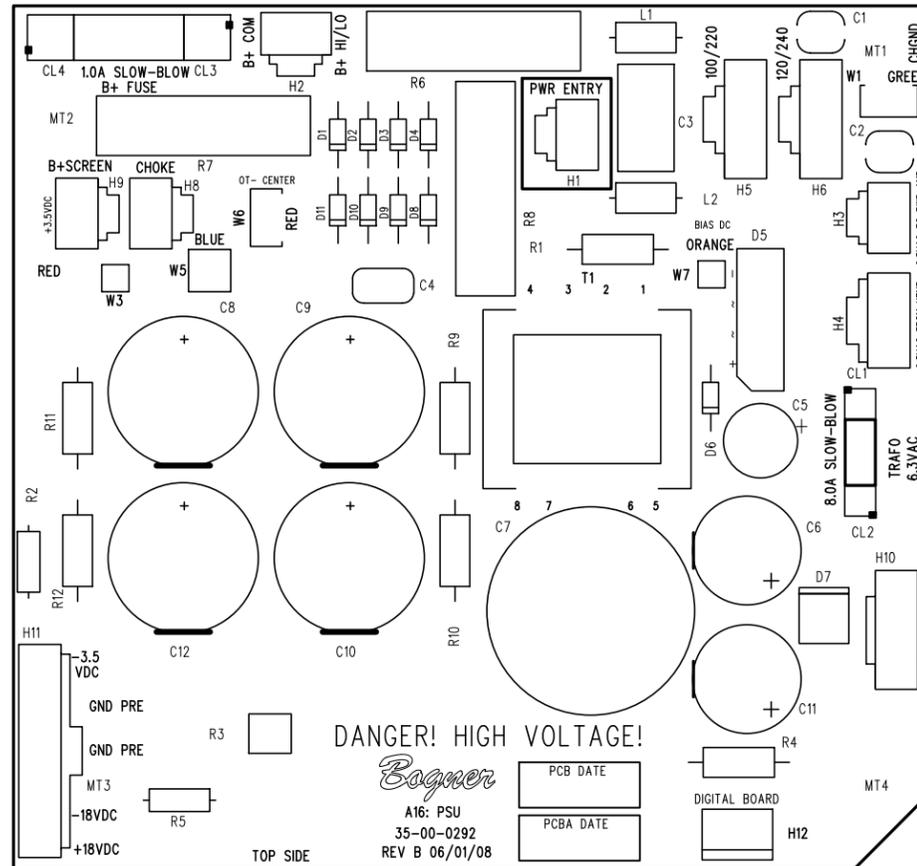
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SILKSCREEN BOTTOM

COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE:		
SCALE: 1:1	REV: D	DATE: 25 September 2008
TITLE: A16 CALI- Preamp PCB 35-00-0290		

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SILKSCREEN TOP

SILKSCREEN TOP		
COMPANY:	LINE 6	
PROGRAM:	PADS Layout 2005	
FILE:		
SCALE:	REV: B	DATE: 06/01/08
TITLE:	A16 CALI- PSU PCB 35-00-0292	

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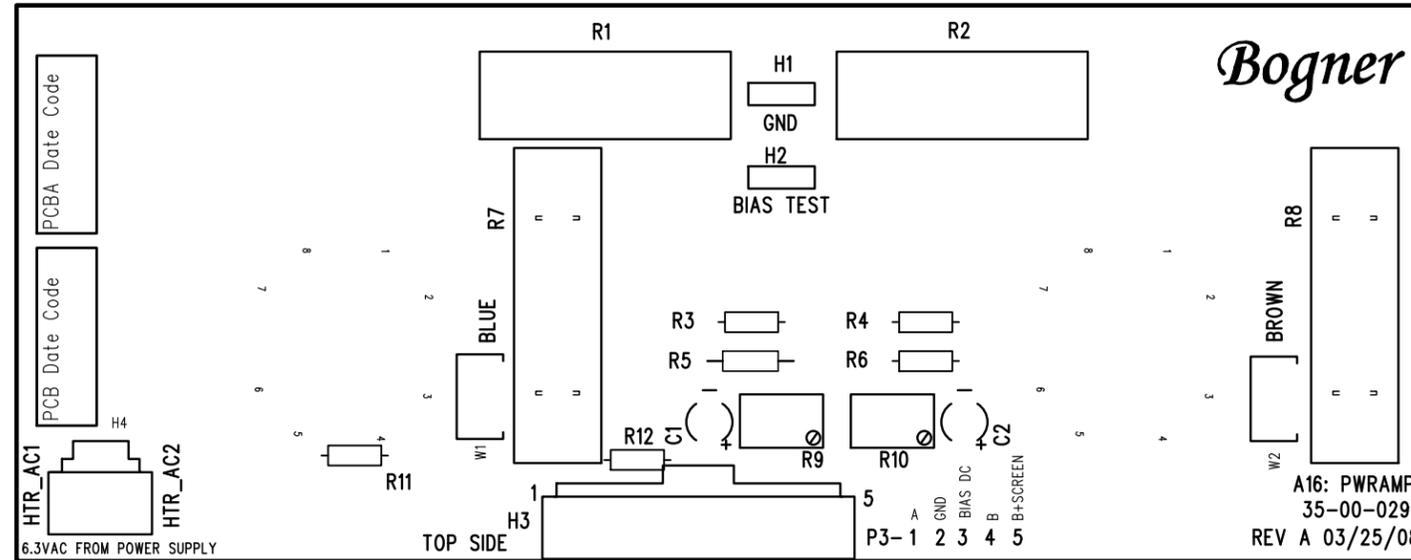
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SILKSCREEN BOTTOM

COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE:		
SCALE: 1:1	REV: B	DATE: 06/01/08
TITLE: A16 CALI- PSU PCB 35-00-0292		

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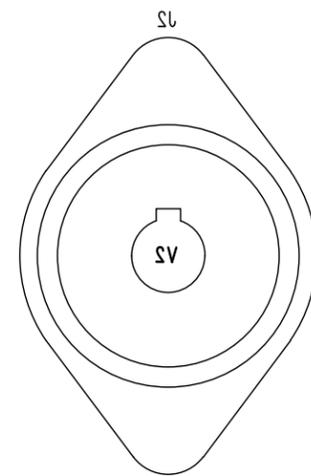
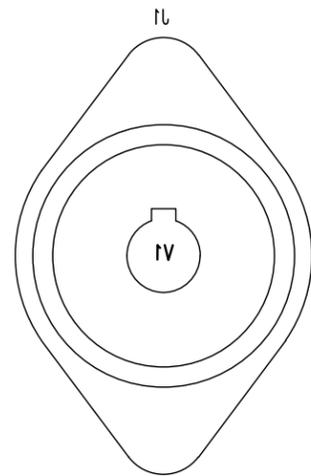
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SILKSCREEN TOP

COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE: A16 CALI- Pwramp PCB 35-00-0291		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16 CALI- Pwramp PCB 35-00-0291		

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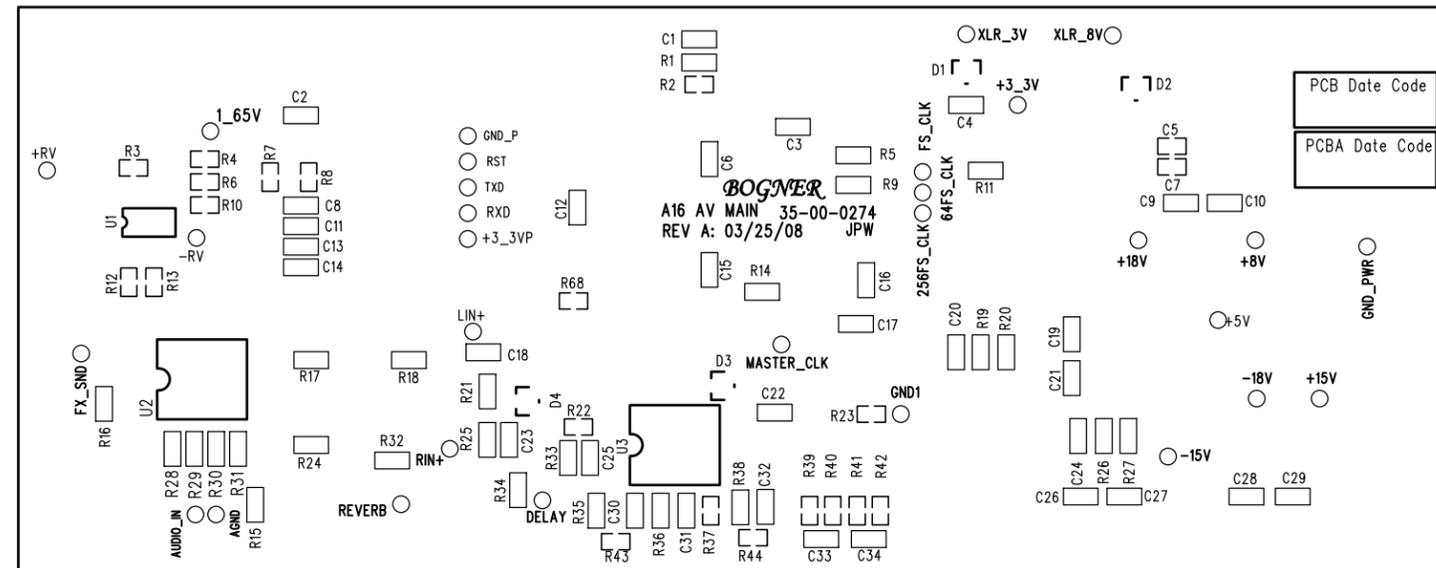
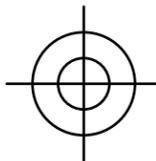
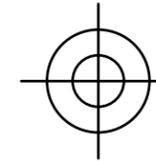
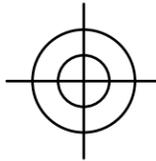


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PROGRAM: PADS Layout 2005		
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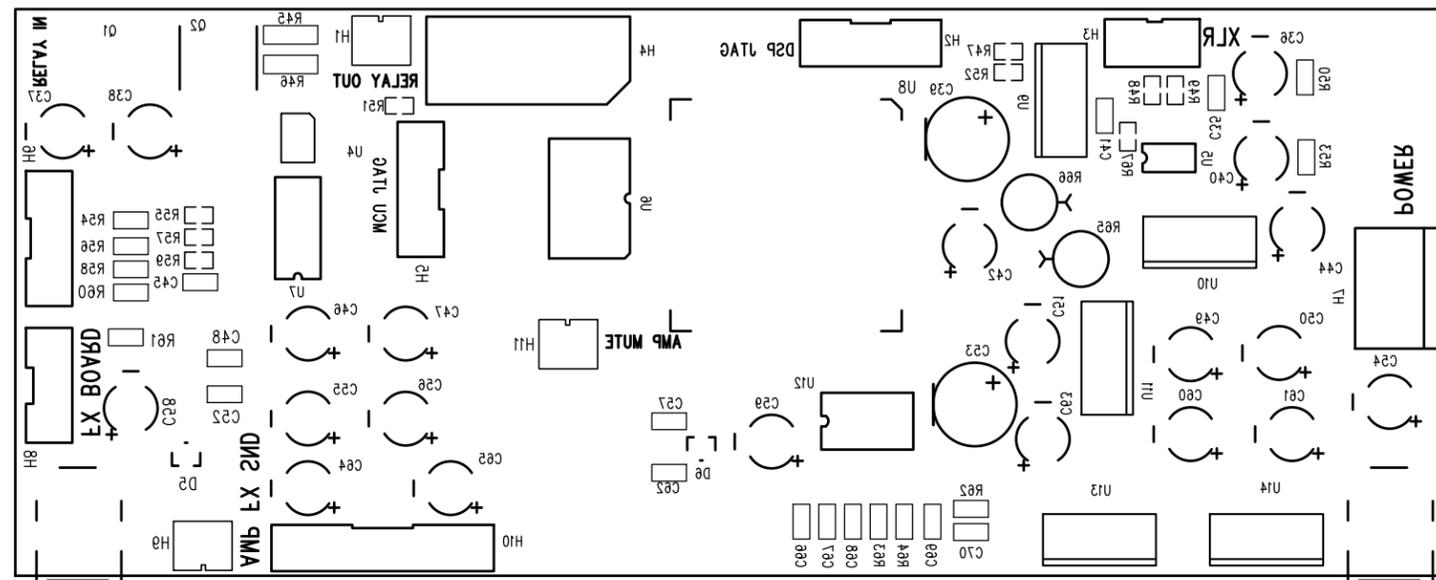
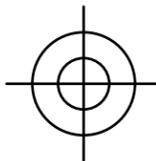
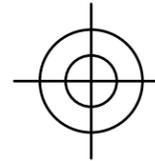
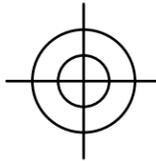
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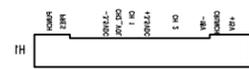
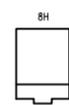
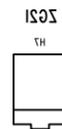
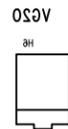
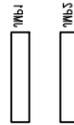
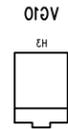
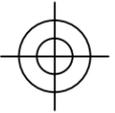
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PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV Main Rev A.PCB		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16: AV MAIN		
PART NO # 35-00-0274		



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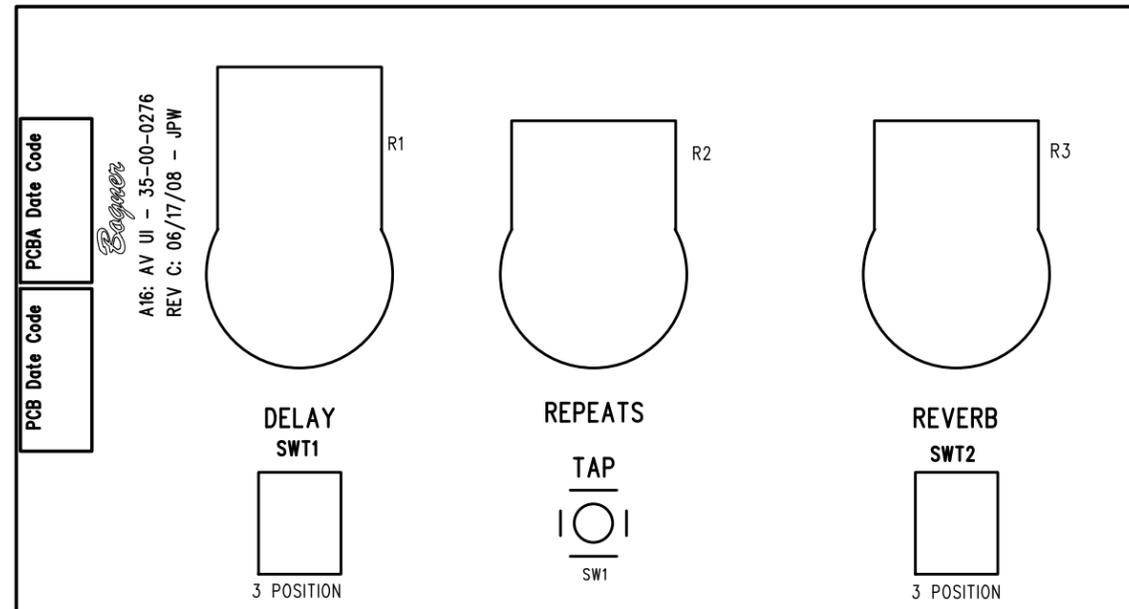
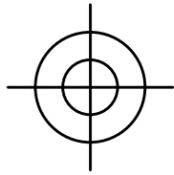
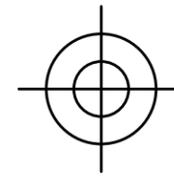
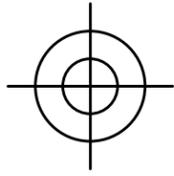
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PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV Main Rev A.PCB		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16: AV MAIN		
PART NO # 35-00-0274		



SILKSCREEN BOTTOM

COMPANY:		
		LINE 6
PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV ANALOG UI REV D.PCB		
SCALE: 1:1	REV: C	DATE: 07/25/08
TITLE: A16: AV ANALOG UI 35-00-0293		

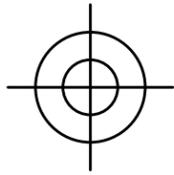
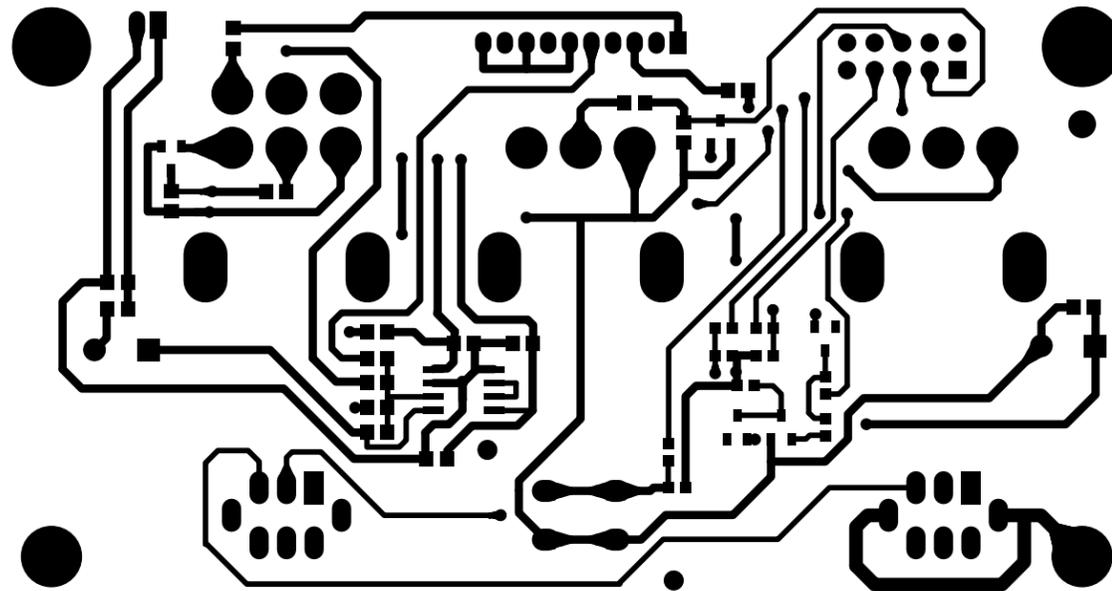
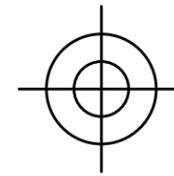
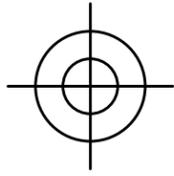
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SILKSCREEN TOP

COMPANY:			LINE 6	LINE 6
PROGRAM: PADS POWER PCB 2004				
FILE: A16 AV UI REV C.PCB				
SCALE: 1:1	REV: C	DATE: 06/17/08		
TITLE:		A16: AV UI 35-00-0276		

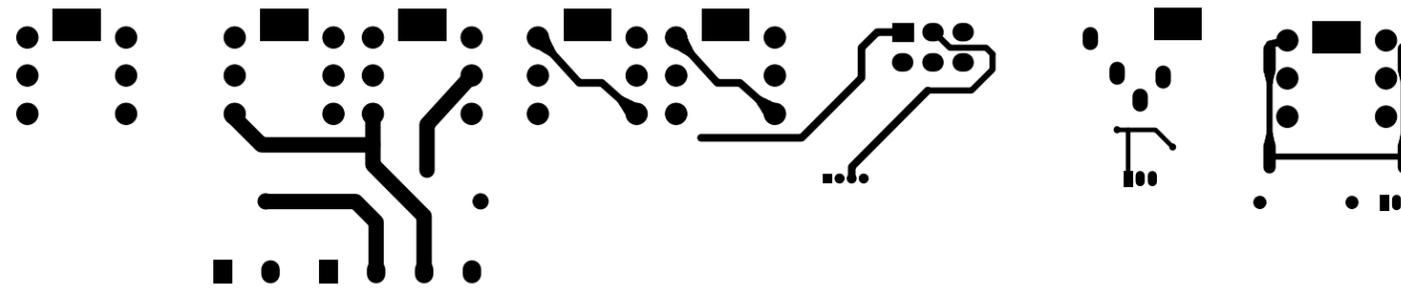
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ARTWORK BOTTOM

COMPANY:				LINE 6
PROGRAM: PADS POWER PCB 2004				
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SCALE: 1:1	REV: C	DATE: 06/17/08		
TITLE:		A16: AV UI	35-00-0276	

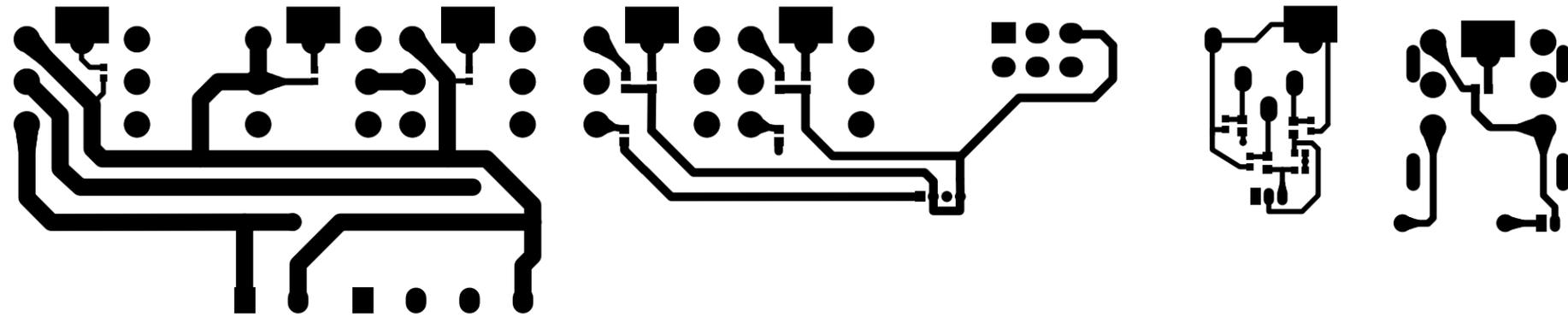
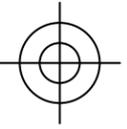
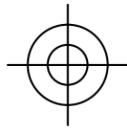
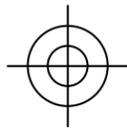
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COMPANY:		LINE 6
PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV Speaker-XLR-FX-Guitar REV A.PCB		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16 AV Speaker-XLR-FX-Guitar REV X1.PCB 35-00-0275-1,2,3		

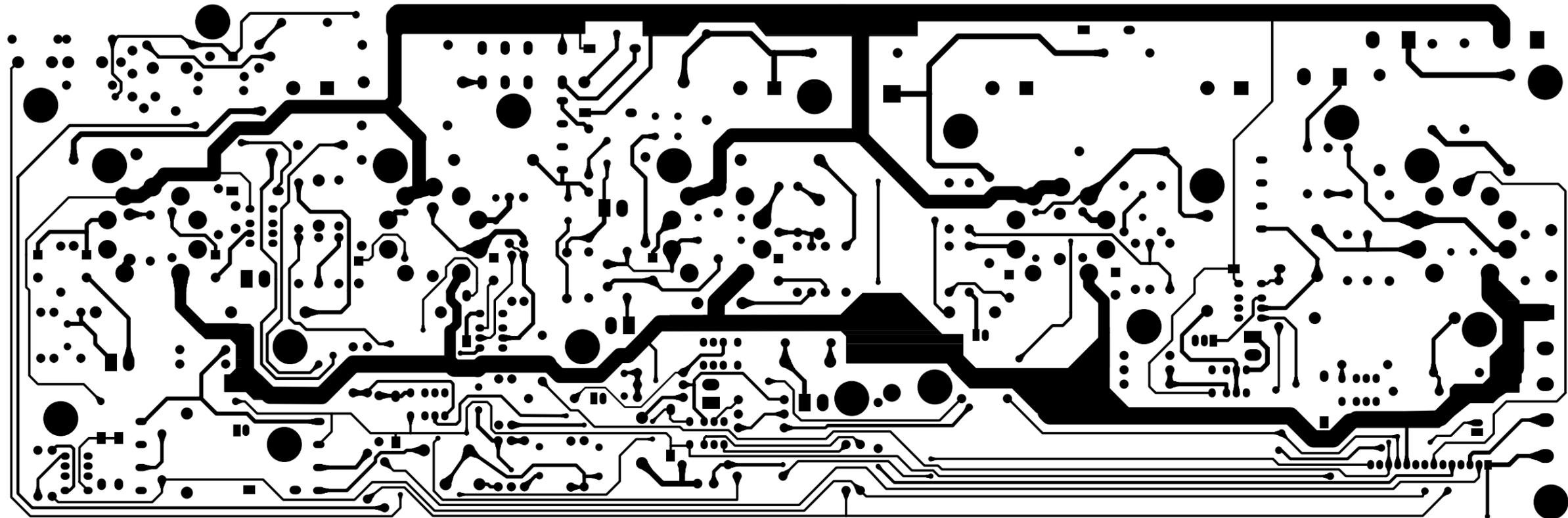
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COMPANY:		LINE 6
PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV Speaker-XLR-FX-Guitar REV A.PCB		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16 AV Speaker-XLR-FX-Guitar REV X1.PCB 35-00-0275-1,2,3		

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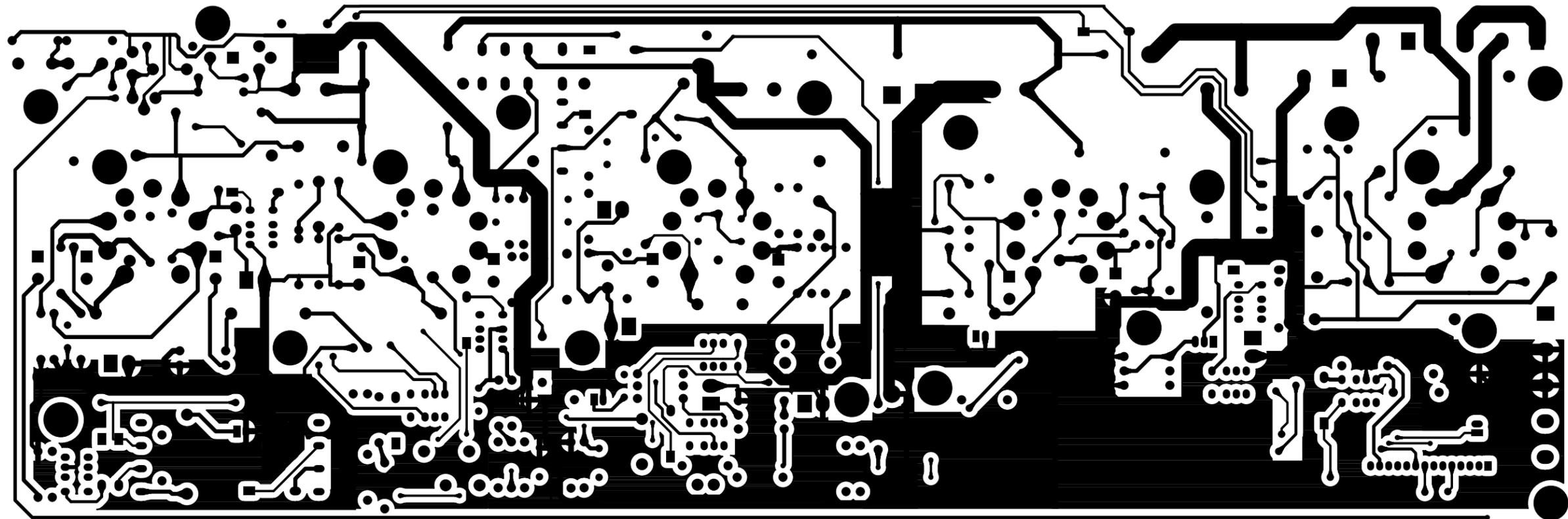


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COMPANY:		LINE 6
PROGRAM:	PADS Layout 2005	
FILE:		
SCALE: 1:1	REV: D	DATE: 25 September 2008
TITLE:	A16 CALI- Preamp PCB 35-00-0290	

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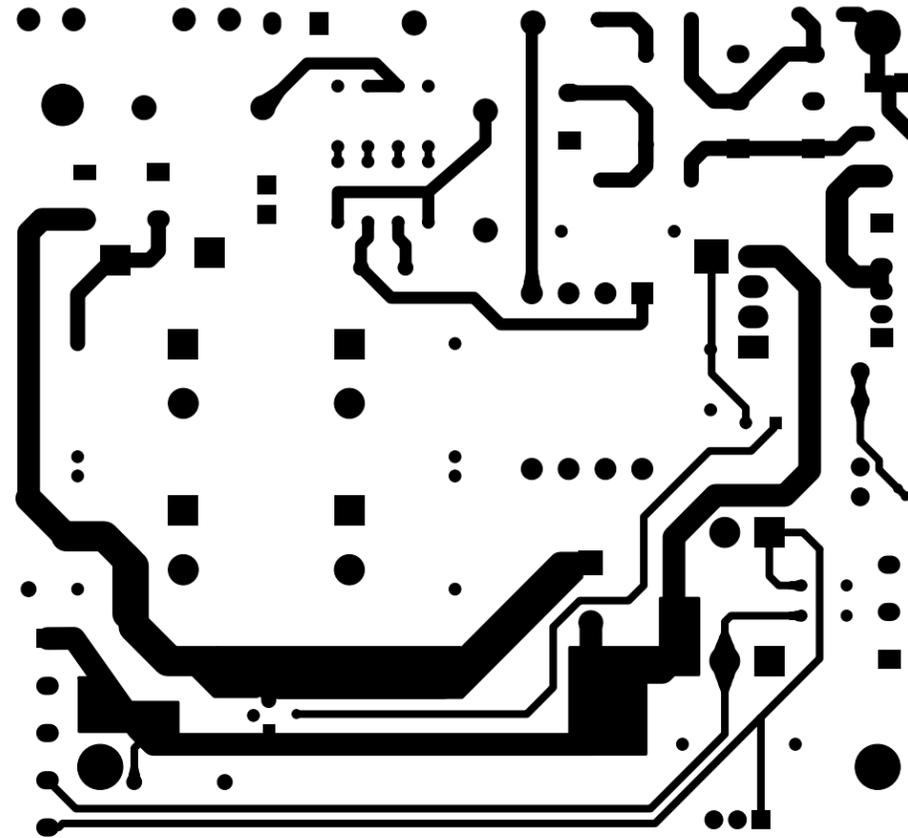


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COMPANY:		LINE 6
PROGRAM:	PADS Layout 2005	
FILE:		
SCALE: 1:1	REV: D	DATE: 25 September 2008
TITLE:	A16 CALI- Preamp PCB 35-00-0290	

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COMPANY:  LINE 6

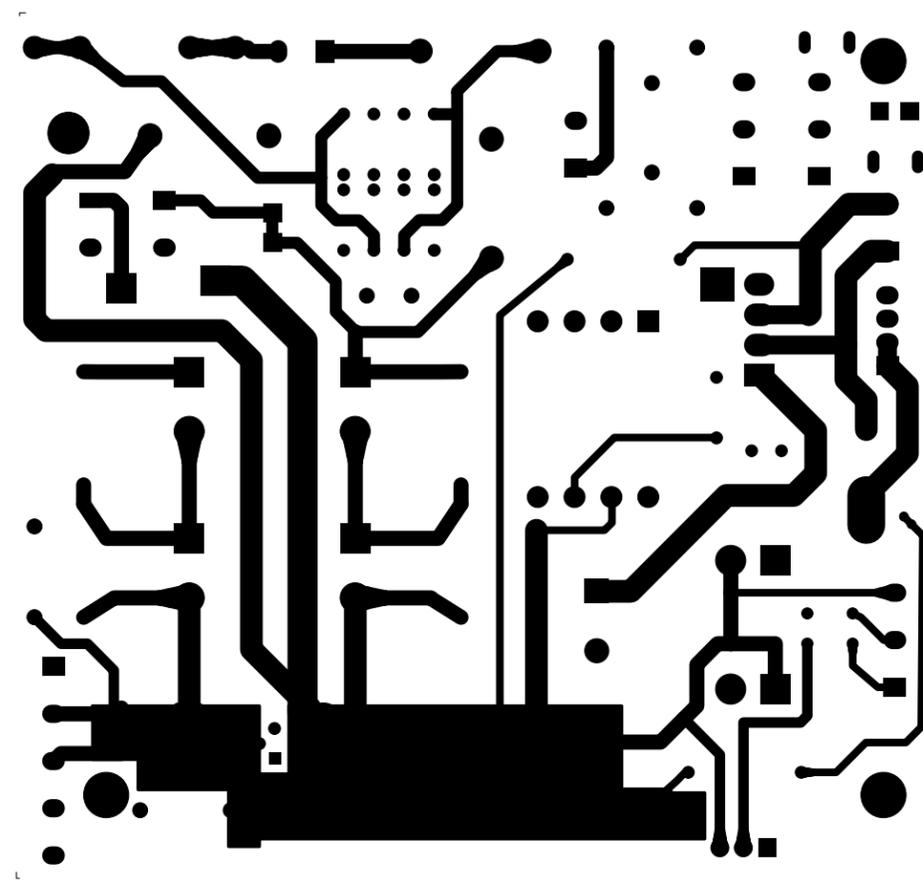
PROGRAM: PADS Layout 2005

FILE:

SCALE: 1:1 | REV: B | DATE: 06/01/08

TITLE: A16 CALI- PSU PCB 35-00-0292

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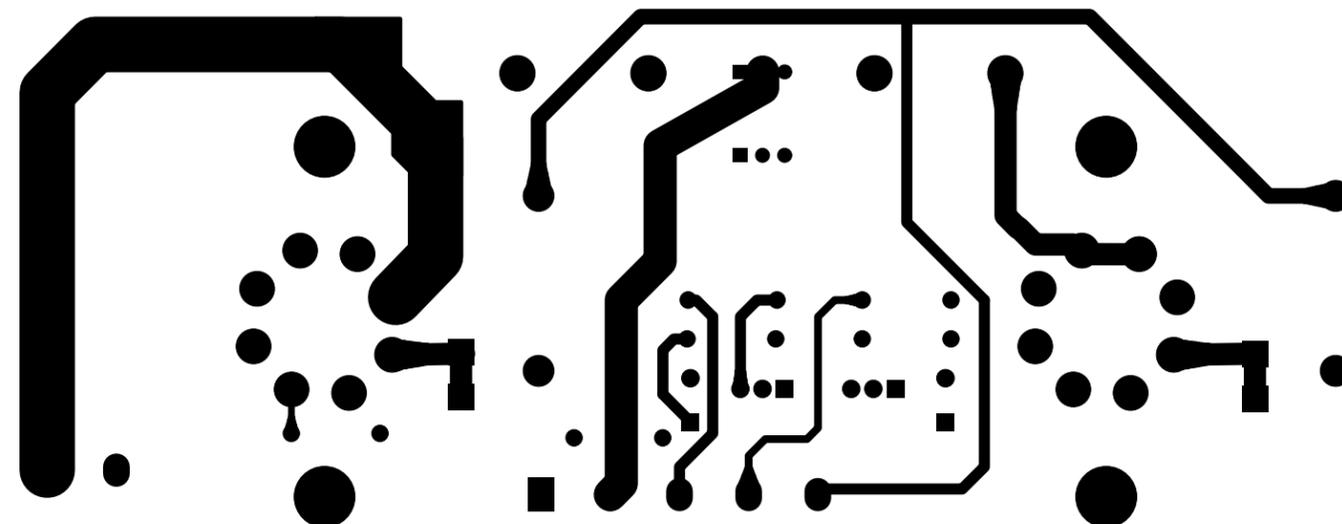
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COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE:		
SCALE: 1:1	REV: B	DATE: 06/01/08
TITLE: A16 CALI- PSU PCB 35-00-0292		

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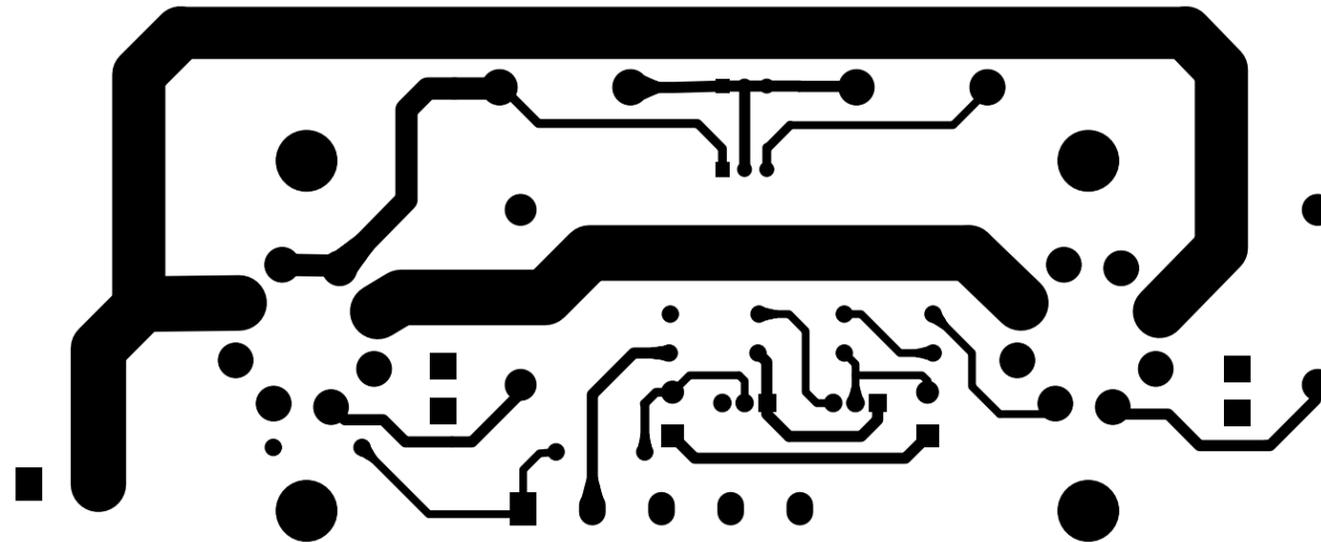


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COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
FILE: A16 CALI- Pwramp PCB 35-00-0291		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE: A16 CALI- Pwramp PCB 35-00-0291		

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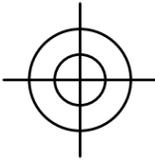
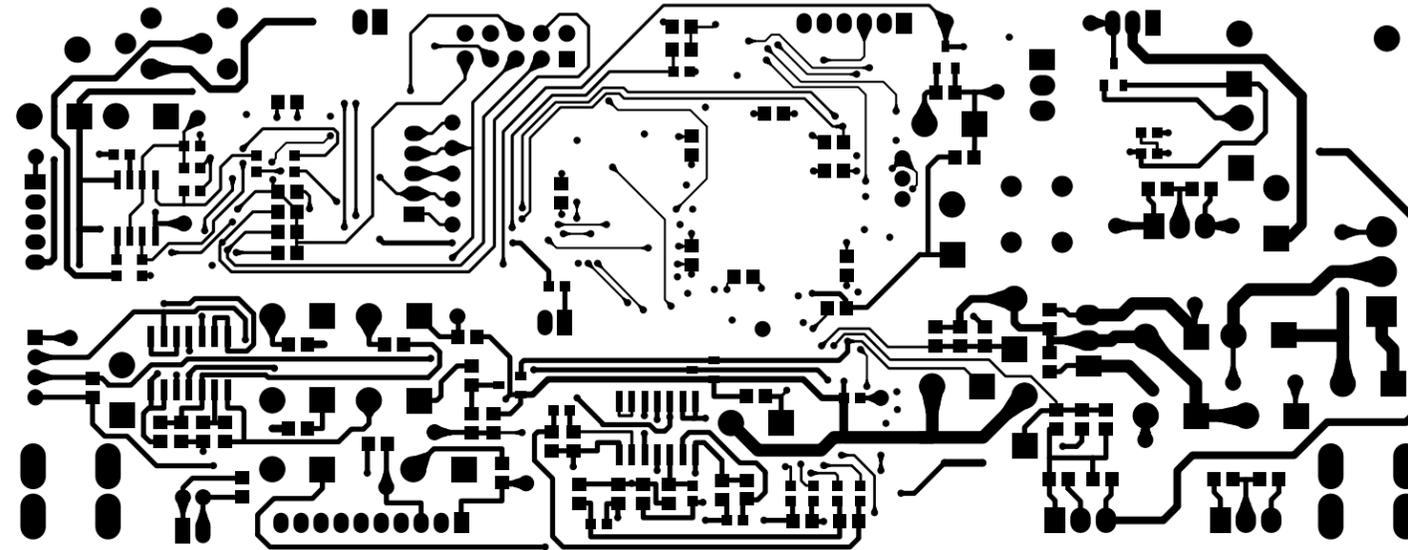
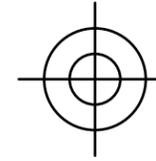
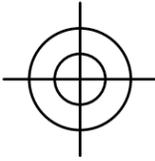


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COMPANY:		LINE 6
PROGRAM: PADS Layout 2005		
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SCALE: 1:1	REV: A	DATE: 03/25/08
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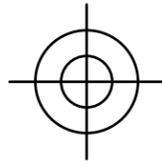
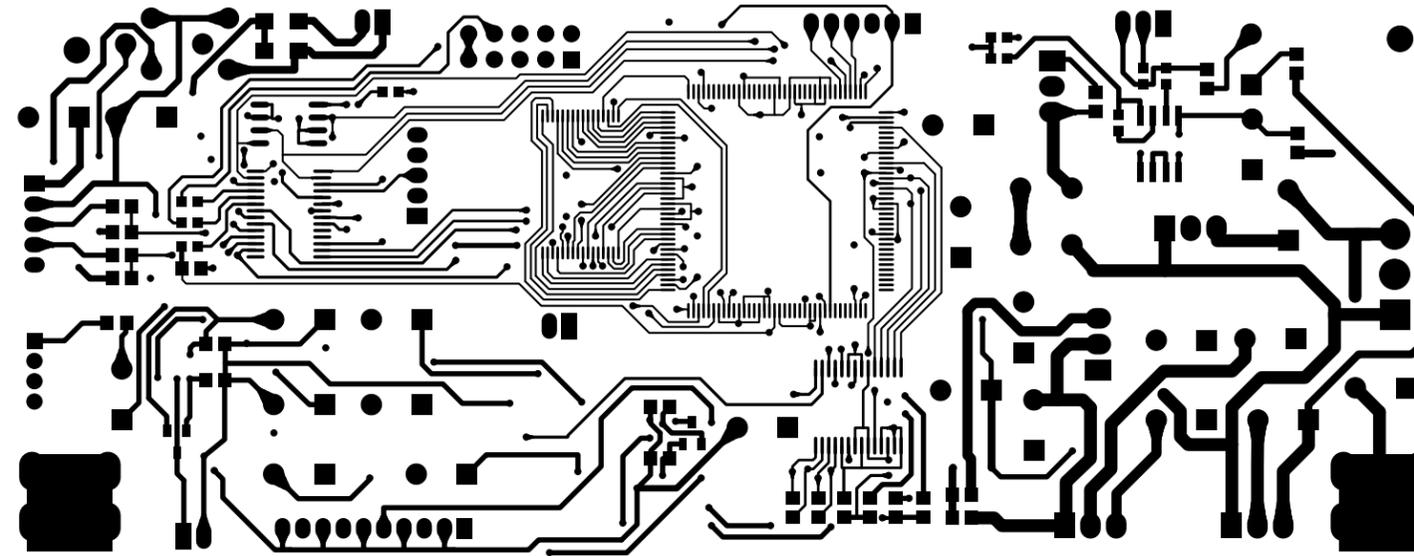
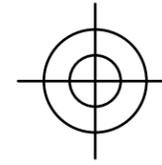
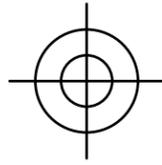
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PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV Main Rev A.PCB		
SCALE: 1:1	REV: A	DATE: 03/25/08
TITLE:	A16: AV MAIN PART NO # 35-00-0274	



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LINE 6 Inc.

PROGRAM: PADS POWER PCB 2004

FILE: A16 AV Main Rev A.PCB

SCALE: 1:1

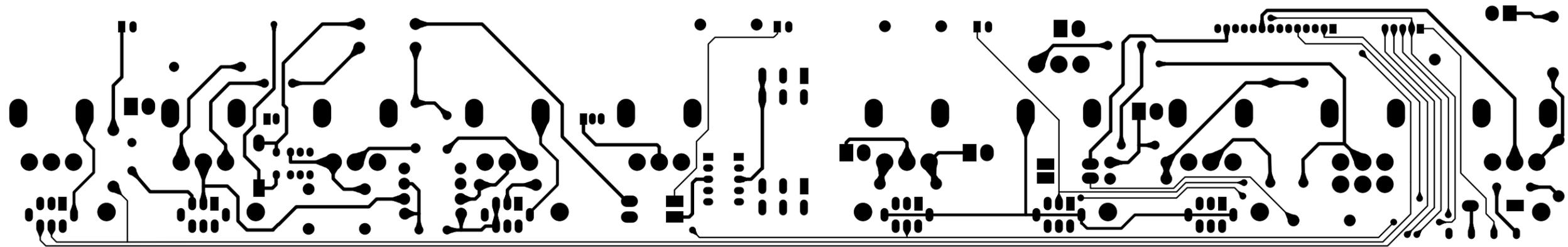
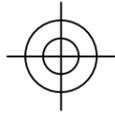
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DATE: 03/25/08

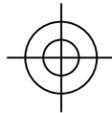
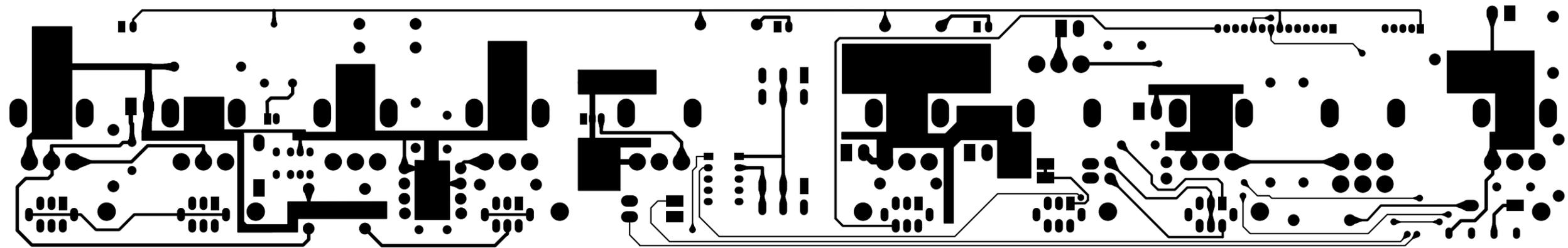
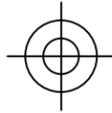
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A16: AV MAIN

PART NO # 35-00-0274



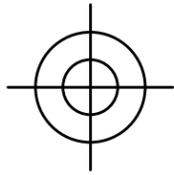
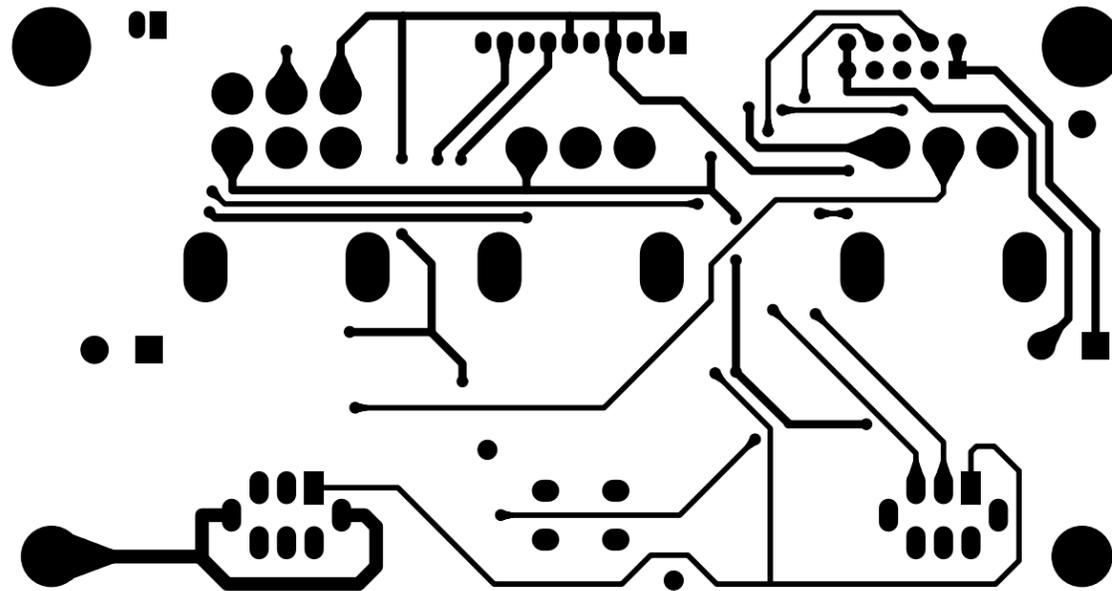
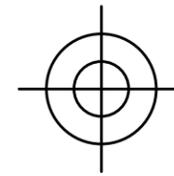
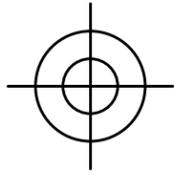
ARTWORK TOP		
COMPANY:		LINE 6
PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV ANALOG UI REV D.PCB		
SCALE: 1:1	REV: C	DATE: 07/25/08
TITLE: A16: AV ANALOG UI 35-00-0293		
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LINE 6 INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF LINE 6 INC. IS PROHIBITED		



ARTWORK BOTTOM

COMPANY:		LINE 6
PROGRAM: PADS POWER PCB 2004		
FILE: A16 AV ANALOG UI REV D.PCB		
SCALE: 1:1	REV: C	DATE: 07/25/08
TITLE: A16: AV ANALOG UI 35-00-0293		

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LINE 6 INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF LINE 6 INC. IS PROHIBITED



ARTWORK TOP

COMPANY:



LINE 6

PROGRAM: PADS POWER PCB 2004

FILE: A16 AV UI REV C.PCB

SCALE: 1:1

REV: C

DATE: 06/17/08

TITLE:

A16: AV UI

35-00-0276

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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

500mVpp Sine Wave @ 500Hz
 8 ohm load on Speaker Output
 TREBLE, MID, BASS, VOLUME = Max
 GAIN = set to read 40Vpp on 8 ohm load
 All swithes to Left unless noted

22Vpp - CH1
 (to ANALOG UI)

23.4Vpp - CH2
 CH2 RELAY ON
 (not shown)

65.2Vpp - CH2
 BOOST OFF (shown)

23.2Vpp - CH2
 (to ANALOG UI)

1.2Vpp - CH2
 PUNCH OFF (shown)

110Vpp - CH2
 (from ANALOG UI)

220mVpp - CH2

8.0Vpp - CH2

7.0Vpp - CH2
 (to ANALOG UI)

GUITAR
 (FROM JACK)

CH1 EQ/GAIN SND
 ZG1

CH2 BOOST

CH2 GAIN SND
 ZG2

PUNCH RLY1

PUNCH RLY2

CH2 GAIN RTN
 VG20

CH2 EQ SND
 ZQ2

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 PROPERTY OF LINE 6 INC. ANY REPRODUCTION IN PART OR WHOLE
 WITHOUT THE WRITTEN PERMISSION OF LINE 6 INC. IS PROHIBITED

COMPANY: LINE 6		LINE 6	
TITLE: A16: PREAMP GAIN STAGE 1			
PROGRAM: PADS LOGIC 2005			REV: C
FILENAME:			
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0290	SHEET: 1 OF 3

PRELIMINARY DRAWINGS
 FOR QUOTATION PURPOSES ONLY
 DO NOT USE FOR PRODUCTION

DRAWN: D. BARTHOLD	DATED: 06/01/2008
CHECKED: review panel	DATED:

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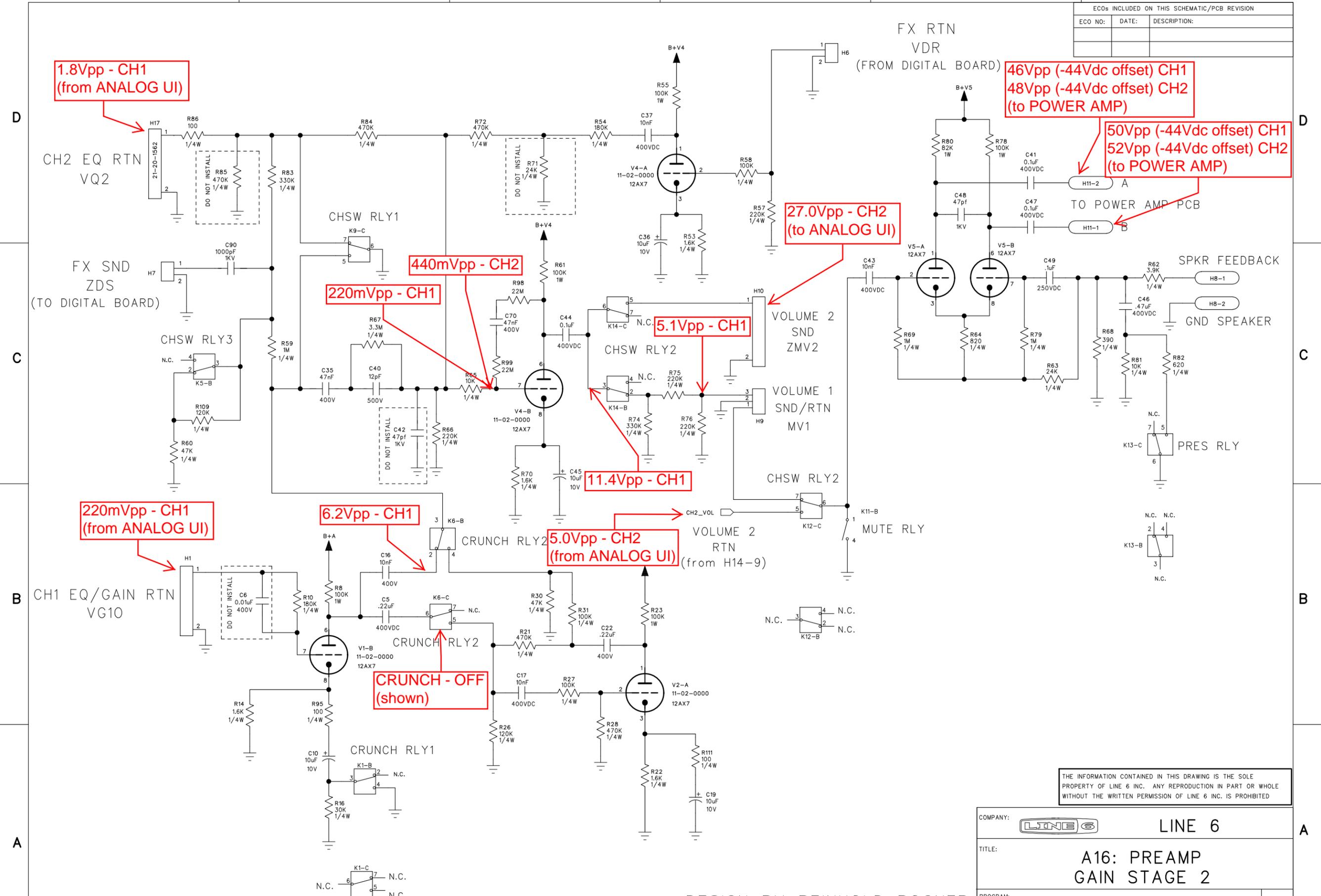
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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LINE 6 INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF LINE 6 INC. IS PROHIBITED

COMPANY:	LINE 6	
TITLE:	A16: PREAMP GAIN STAGE 2	
PROGRAM:	PADS LOGIC 2005	REV: C
FILENAME:		
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0290
		SHEET: 2 OF 3

PRELIMINARY DRAWINGS FOR QUOTATION PURPOSES ONLY DO NOT USE FOR PRODUCTION

DESIGN BY REINHOLD BOGNER
 DRAWN: J. YARBROUGH
 CHECKED: review panel
 DATED: 04/01/2008

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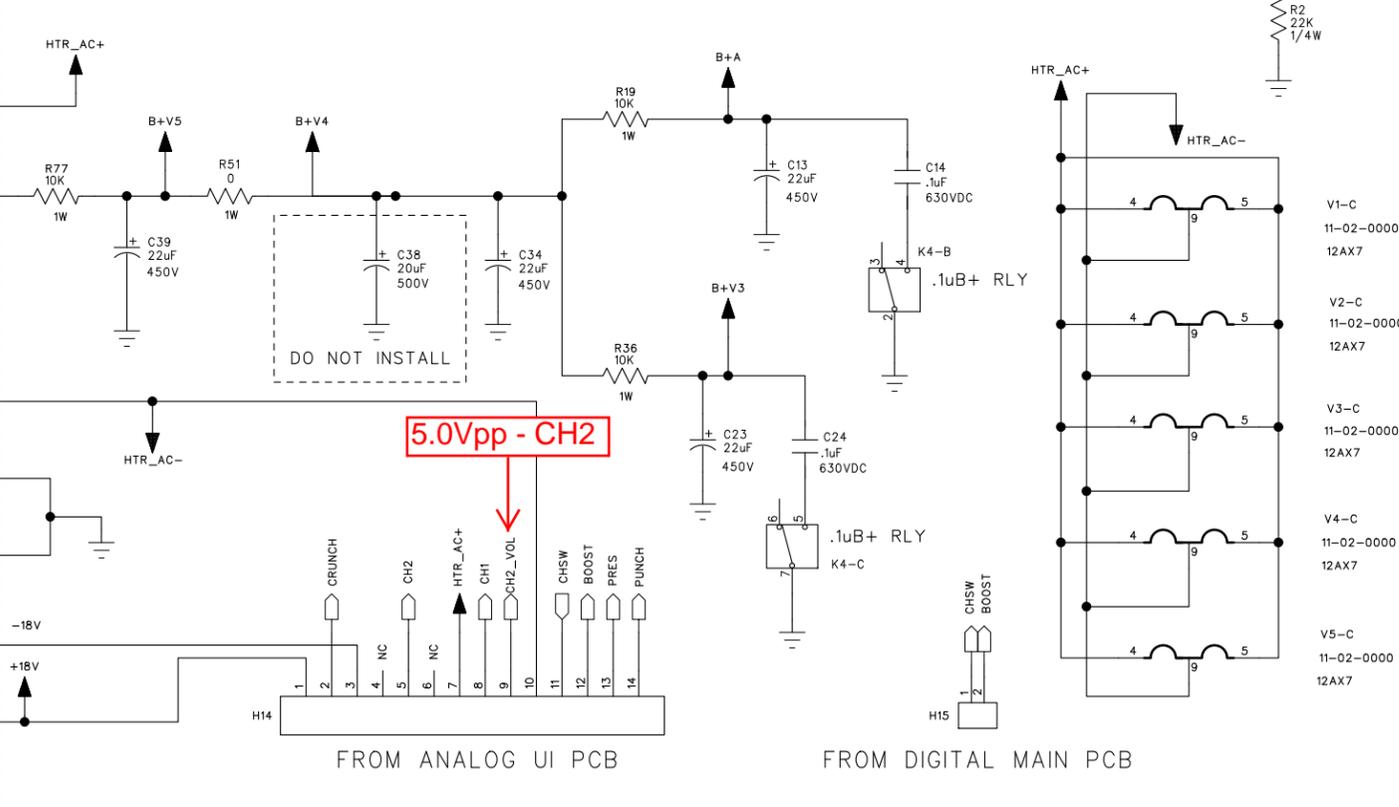
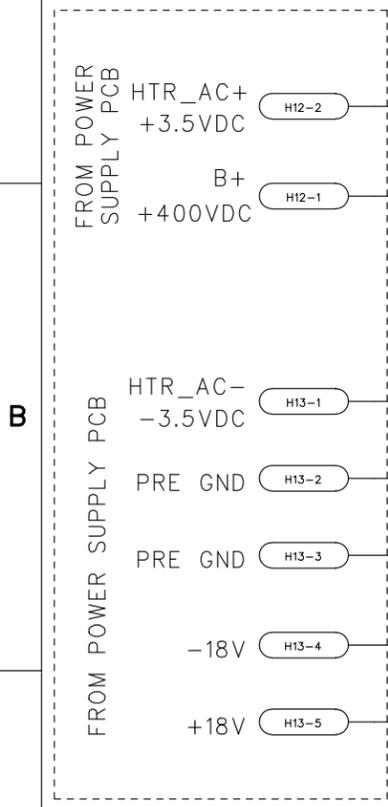
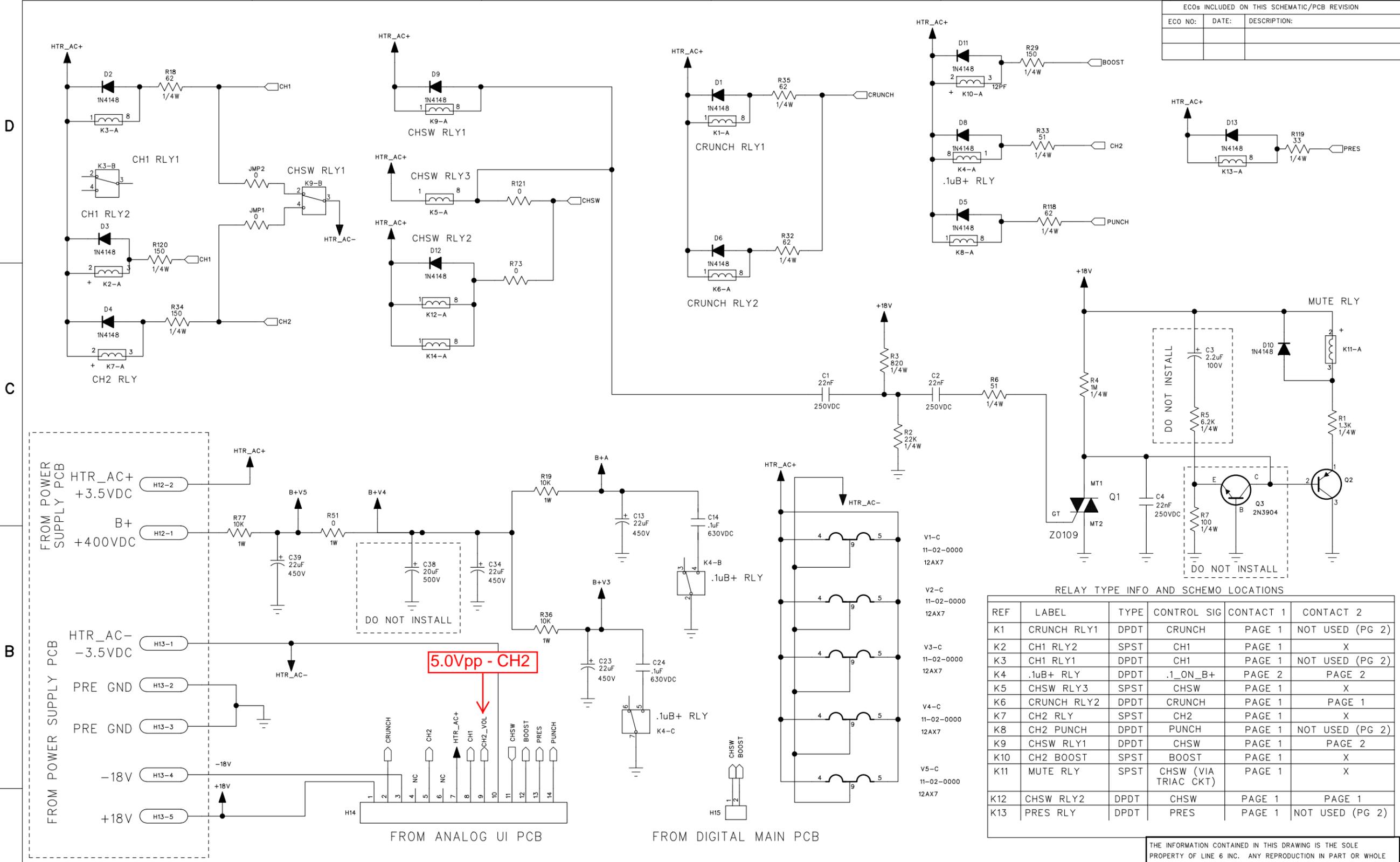
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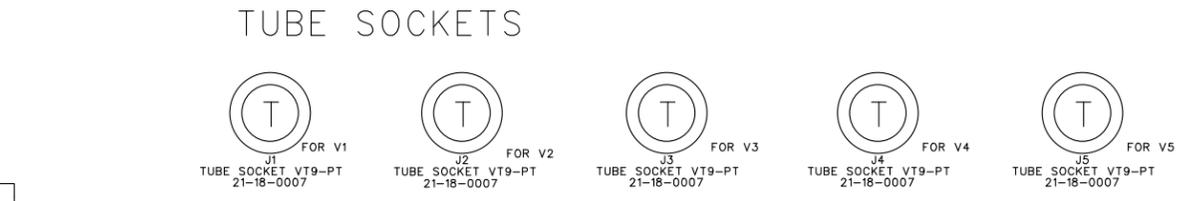
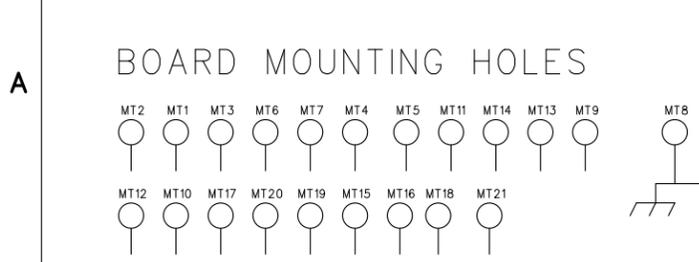
1

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



RELAY TYPE INFO AND SCHEMO LOCATIONS

REF	LABEL	TYPE	CONTROL SIG	CONTACT 1	CONTACT 2
K1	CRUNCH RLY1	DPDT	CRUNCH	PAGE 1	NOT USED (PG 2)
K2	CH1 RLY2	SPST	CH1	PAGE 1	X
K3	CH1 RLY1	DPDT	CH1	PAGE 1	NOT USED (PG 2)
K4	.1uB+ RLY	DPDT	.1_ON_B+	PAGE 2	PAGE 2
K5	CHSW RLY3	SPST	CHSW	PAGE 1	X
K6	CRUNCH RLY2	DPDT	CRUNCH	PAGE 1	PAGE 1
K7	CH2 RLY	SPST	CH2	PAGE 1	X
K8	CH2 PUNCH	DPDT	PUNCH	PAGE 1	NOT USED (PG 2)
K9	CHSW RLY1	DPDT	CHSW	PAGE 1	PAGE 2
K10	CH2 BOOST	SPST	BOOST	PAGE 1	X
K11	MUTE RLY	SPST	CHSW (VIA TRIAC CKT)	PAGE 1	X
K12	CHSW RLY2	DPDT	CHSW	PAGE 1	PAGE 1
K13	PRES RLY	DPDT	PRES	PAGE 1	NOT USED (PG 2)



COMPANY: **LINE 6**

TITLE: **A16: PREAMP CONTROL & POWER**

PROGRAM: PADS LOGIC 2005

REV: **C**

SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0290 | SHEET: 3 OF 3

DESIGN BY REINHOLD BOGNER

PRELIMINARY DRAWINGS FOR QUOTATION PURPOSES ONLY DO NOT USE FOR PRODUCTION

DRAWN: J. YARBROUGH

CHECKED: review panel

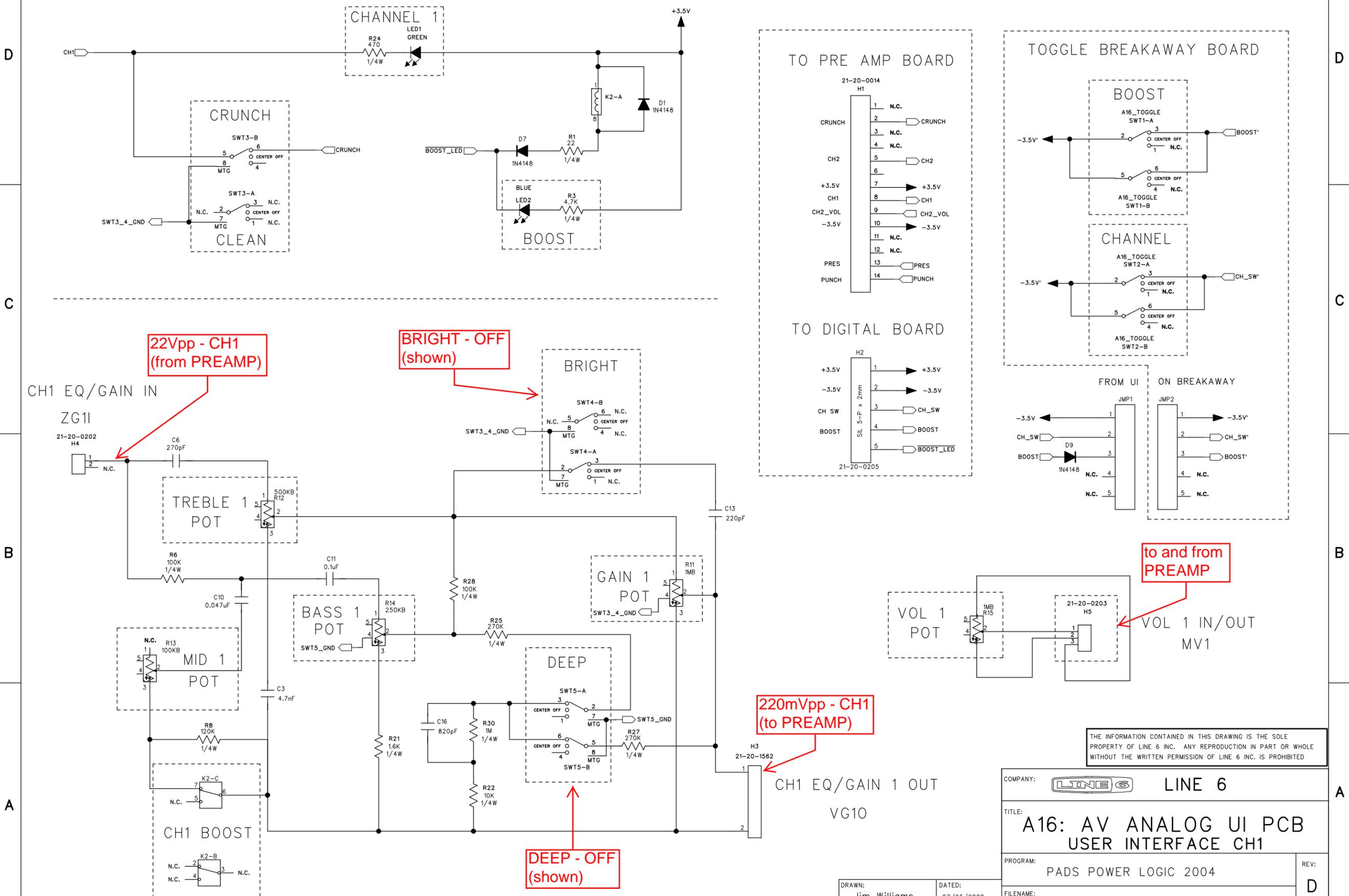
DATED: 04/01/2008

DATED:

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CHANNEL 1

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



22Vpp - CH1 (from PREAMP)

BRIGHT - OFF (shown)

to and from PREAMP

220mVpp - CH1 (to PREAMP)

DEEP - OFF (shown)

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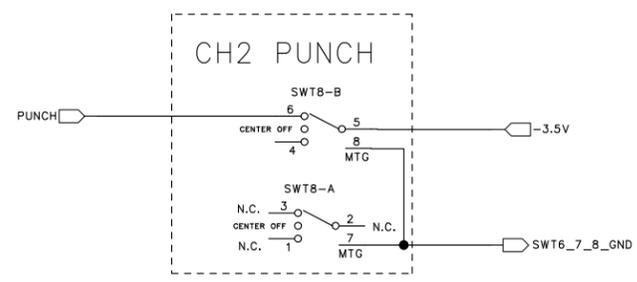
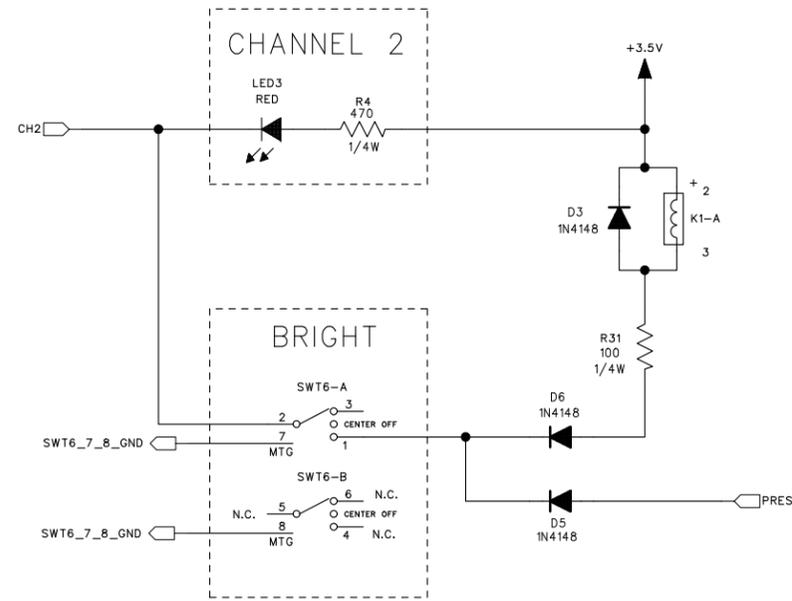
DESIGN BY REINHOLD BOGNER

DRAWN: Jim Williams	DATED: 07/25/2008
CHECKED: review panel	DATED:

COMPANY: LINE 6	LINE 6
TITLE: A16: AV ANALOG UI PCB USER INTERFACE CH1	
PROGRAM: PADS POWER LOGIC 2004	REV: D
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0293	SHEET: 1 OF 2

CHANNEL 2

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



23.2Vpp - CH2
(from PREAMP)

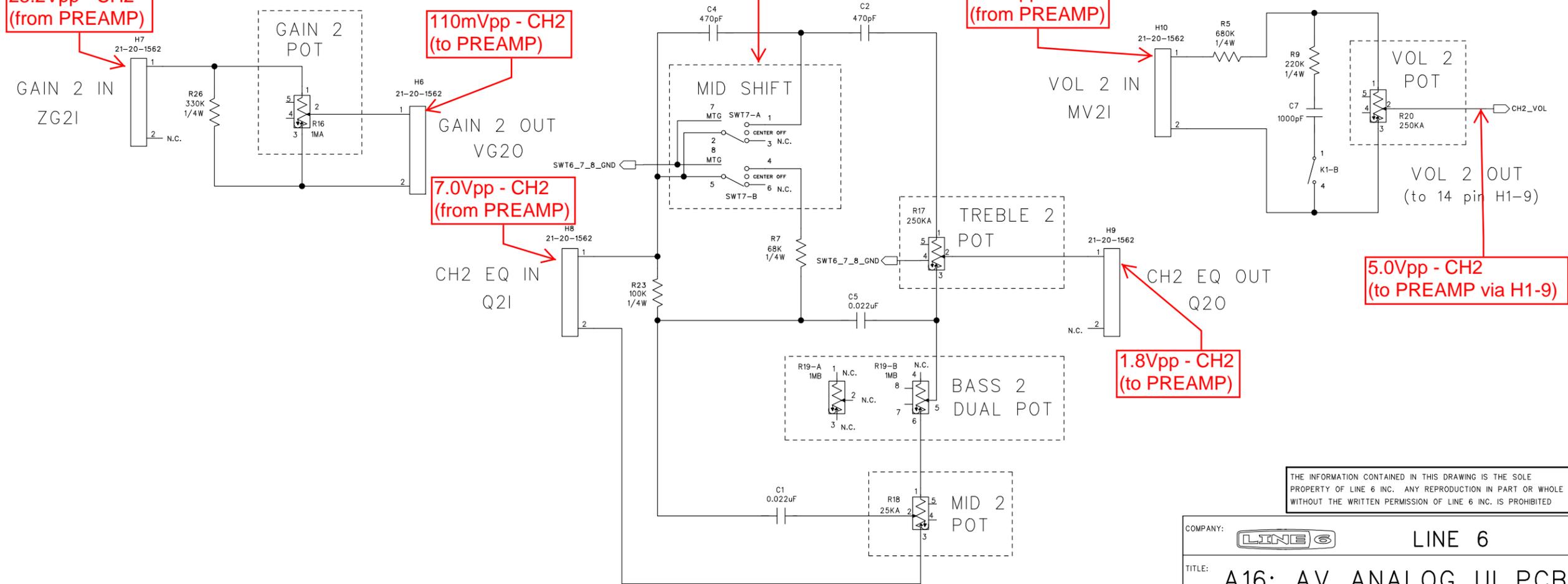
110mVpp - CH2
(to PREAMP)

27.0Vpp - CH2
(from PREAMP)

7.0Vpp - CH2
(from PREAMP)

5.0Vpp - CH2
(to PREAMP via H1-9)

1.8Vpp - CH2
(to PREAMP)



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DESIGN BY REINHOLD BOGNER

COMPANY:	LINE 6	
TITLE:	A16: AV ANALOG UI PCB USER INTERFACE CH2	
PROGRAM:	PADS LOGIC 20040	REV: D
FILENAME:	Product Directory/PCBs/Board Directory/File.sch	
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0293
SHEET: 2 OF 2		

PRELIMINARY DRAWINGS
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DO NOT USE FOR PRODUCTION

DRAWN:	Name (F.Last)	DATED:	04/01/2008
CHECKED:	Name (F.Last)	DATED:	00/00/01



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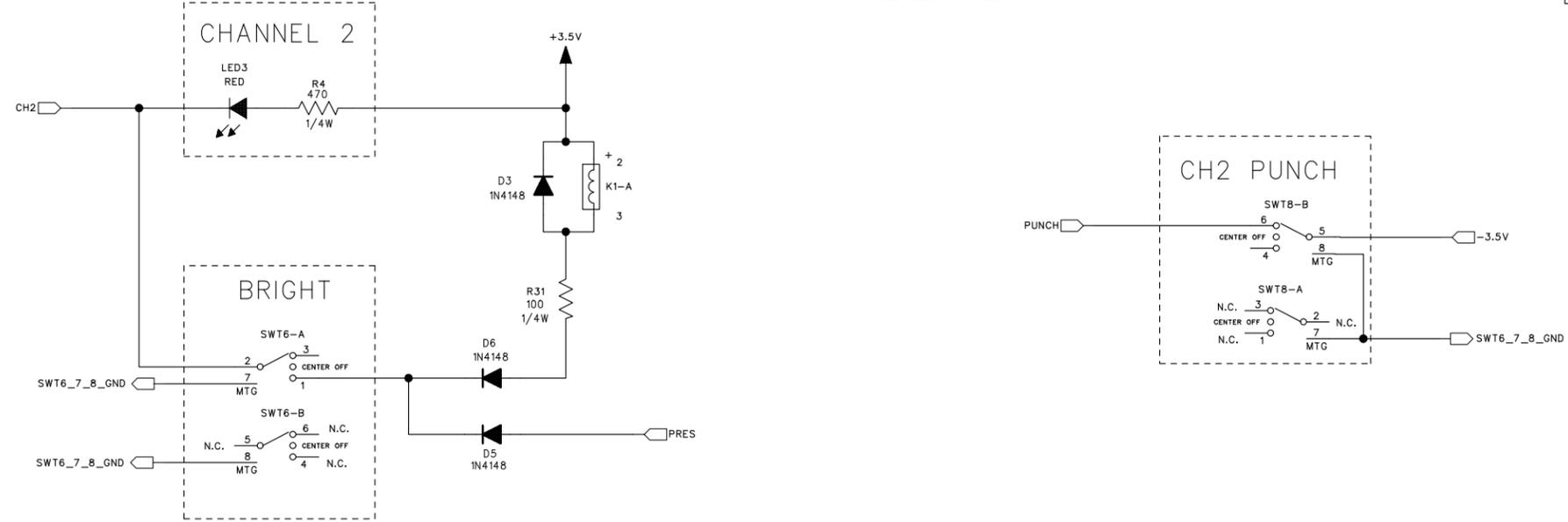
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CHANNEL 2

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

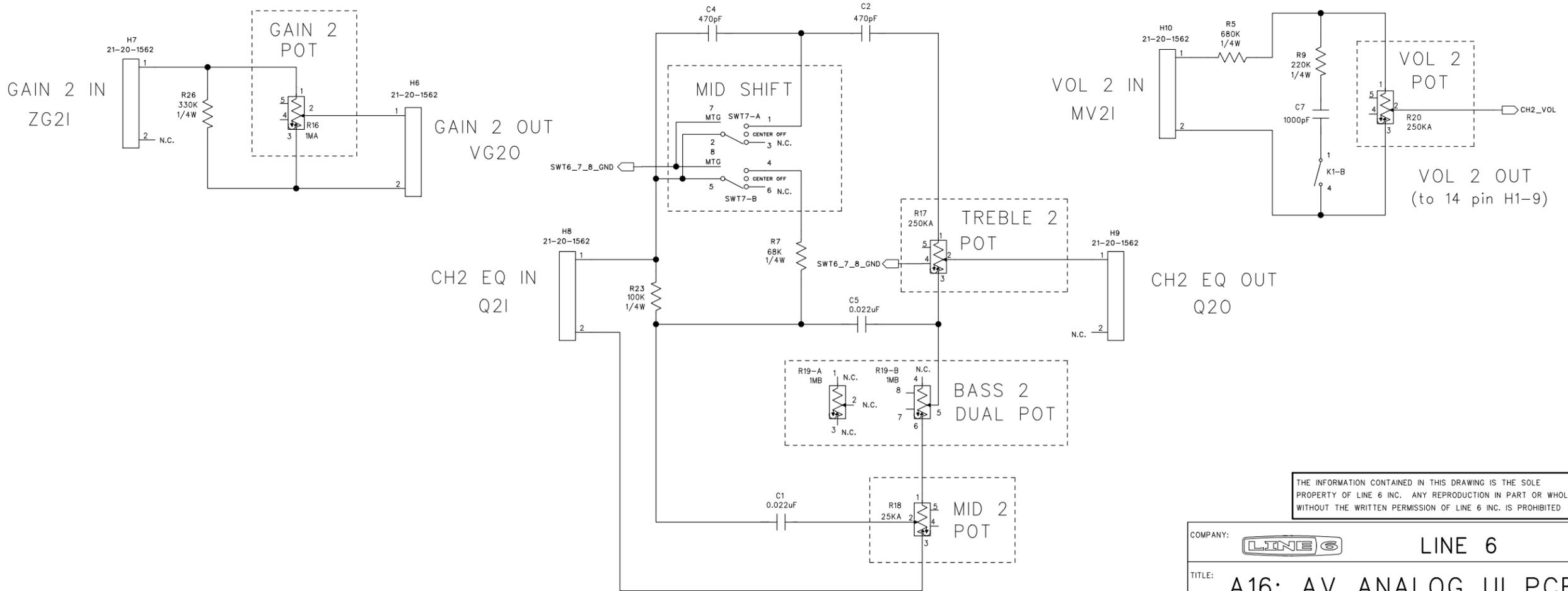
D

D



C

C



B

B

A

A

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DESIGN BY REINHOLD BOGNER

**PRELIMINARY DRAWINGS
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DRAWN: Name (F.Last)	DATED: 04/01/2008
CHECKED: Name (F.Last)	DATED: 00/00/01

COMPANY: LINE 6	LINE 6
TITLE: A16: AV ANALOG UI PCB USER INTERFACE CH2	
PROGRAM: PADS LOGIC 20040	REV: C
FILENAME: Product Directory/PCBs/Board Directory/File.sch	
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0293	SHEET: 2 OF 2

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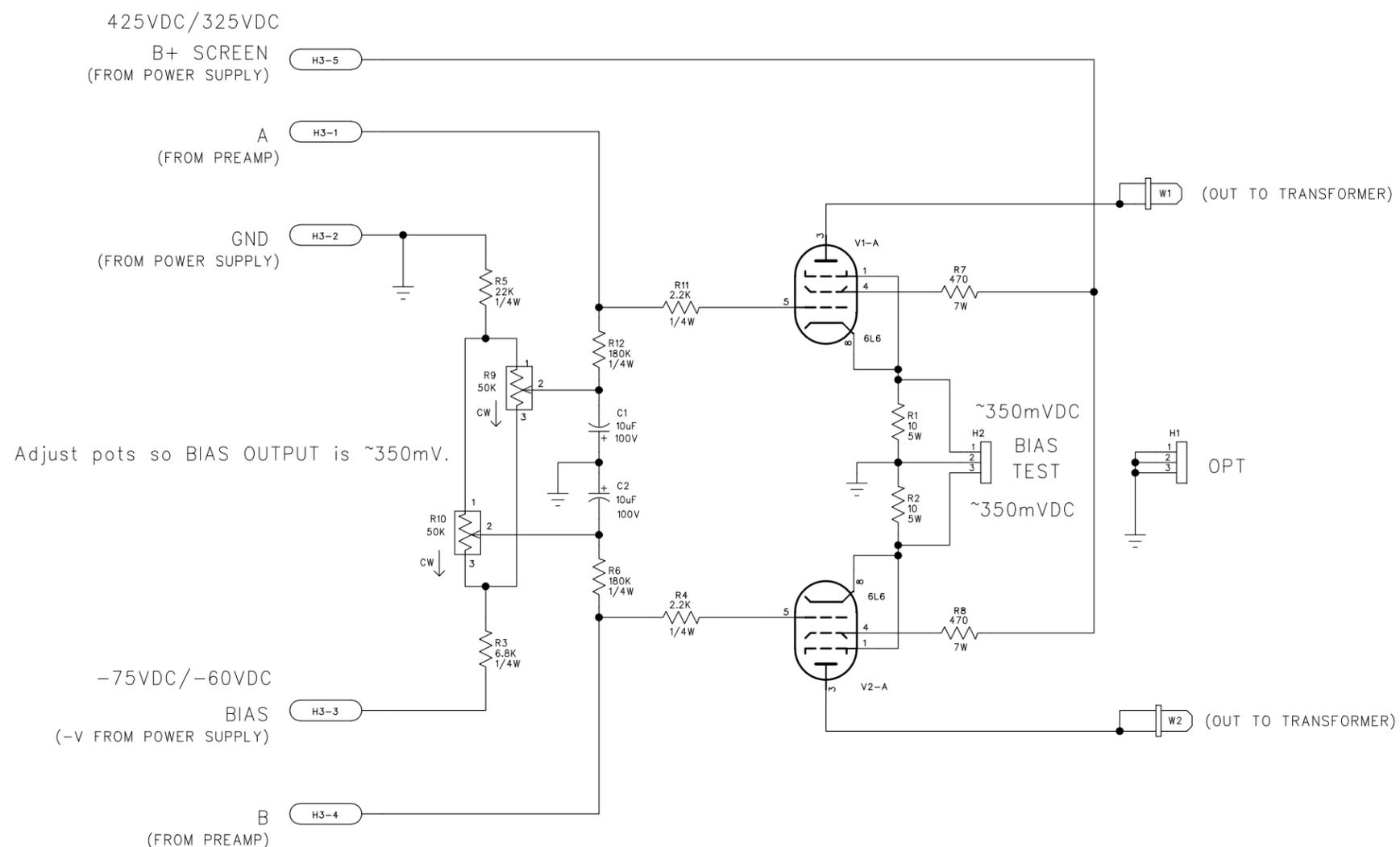
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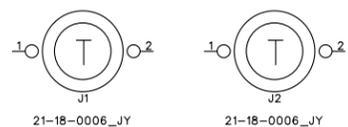
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ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

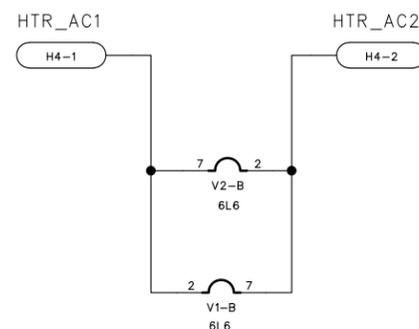
POWER AMP



HEATER AC
(APPROX 6.5VAC FROM POWER SUPPLY)



SOCKETS FOR V1 AND V2



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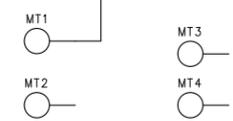
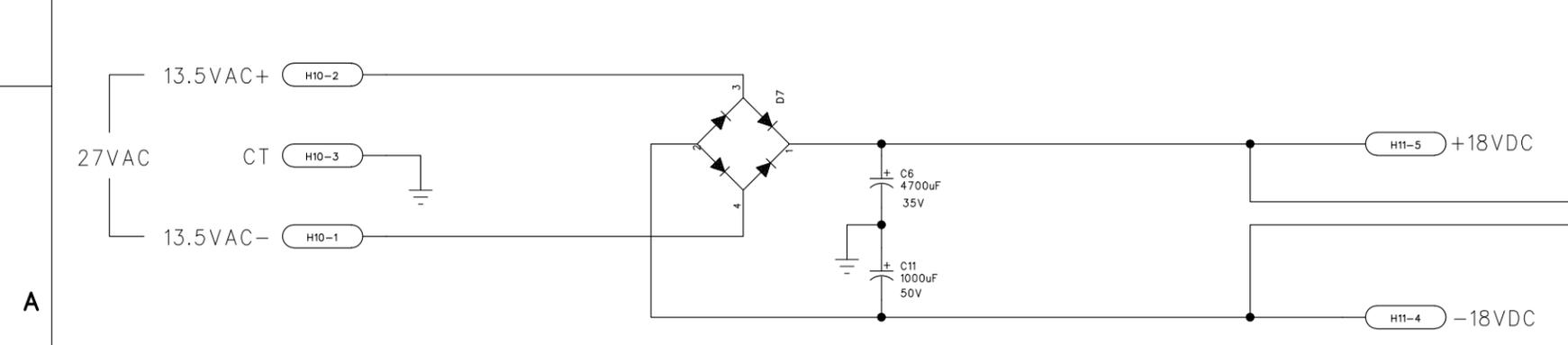
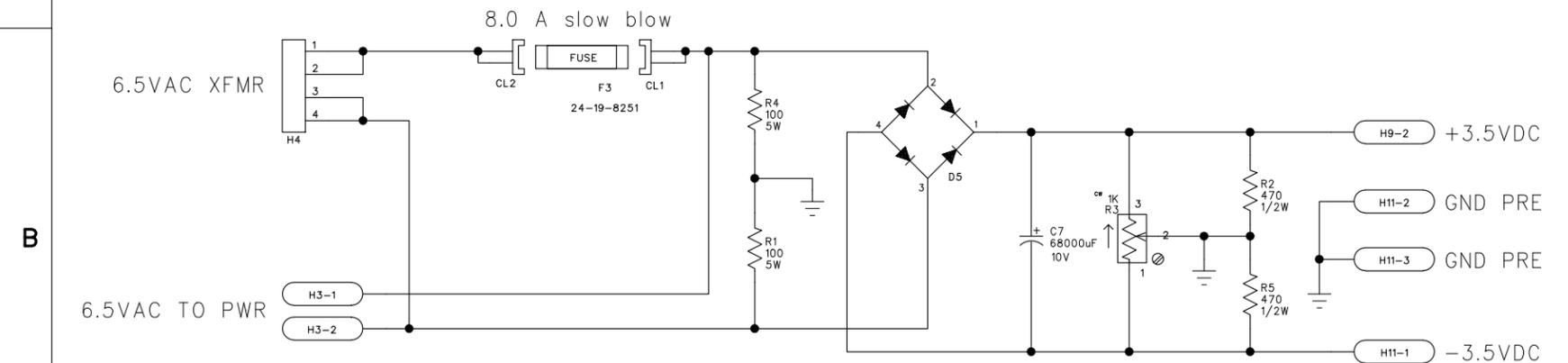
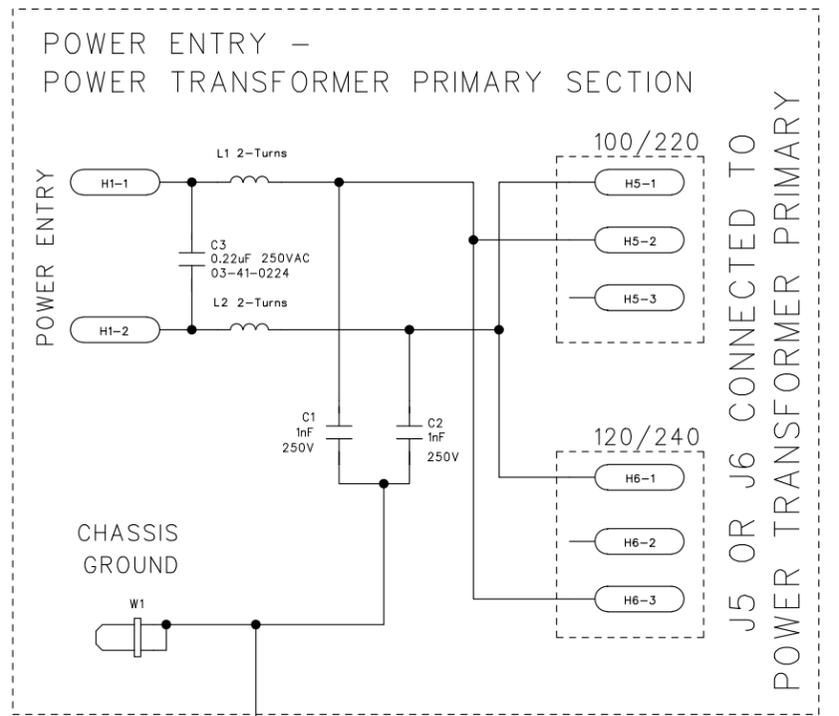
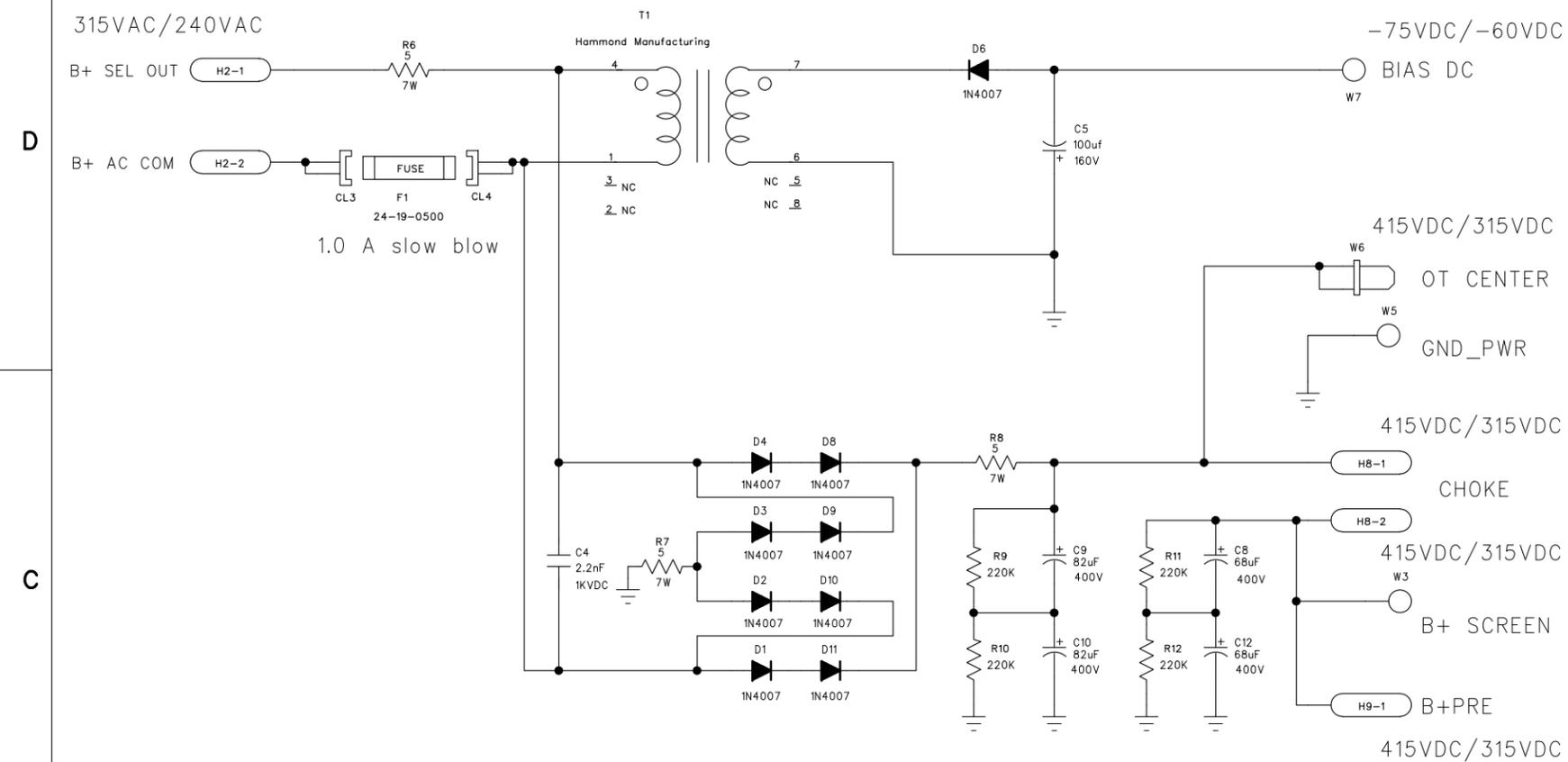
COMPANY:	LINE 6
TITLE:	A16: POWER AMP
PROGRAM:	PADS LOGIC 2005
REV:	A
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0291	SHEET: 1 OF 1

DESIGN BY REINHOLD BOGNER

**PRELIMINARY DRAWINGS
FOR QUOTATION PURPOSES ONLY
DO NOT USE FOR PRODUCTION**

DRAWN:	J. YARBROUGH	DATED:	03/25/2008
CHECKED:	review panel	DATED:	

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



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COMPANY:	LINE 6	
TITLE:	A16: POWER SUPPLY	
PROGRAM:	PADS LOGIC 2005	REV: B
FILENAME:		
SCALE: 1:1	SIZE: C	PART NUMBER: 35-00-0292
SHEET: 1		OF 1

DESIGN BY REINHOLD BOGNER
PRELIMINARY DRAWINGS FOR QUOTATION PURPOSES ONLY DO NOT USE FOR PRODUCTION
 DRAWN: J. YARBROUGH DATED: 01/10/2008
 CHECKED: review panel DATED:

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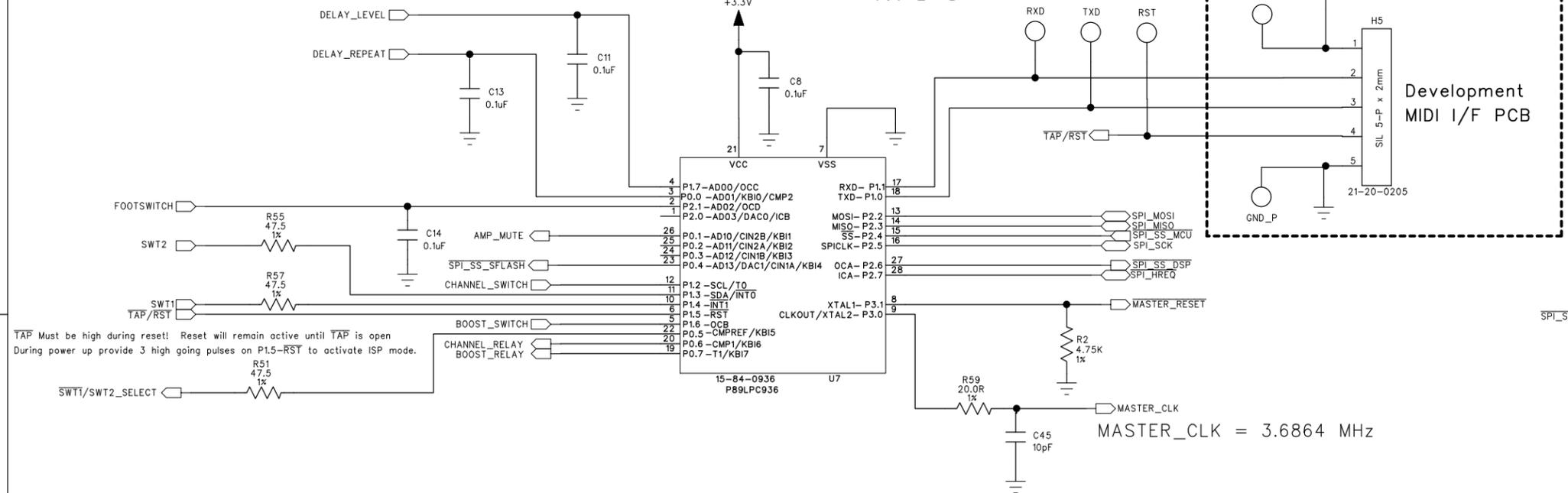
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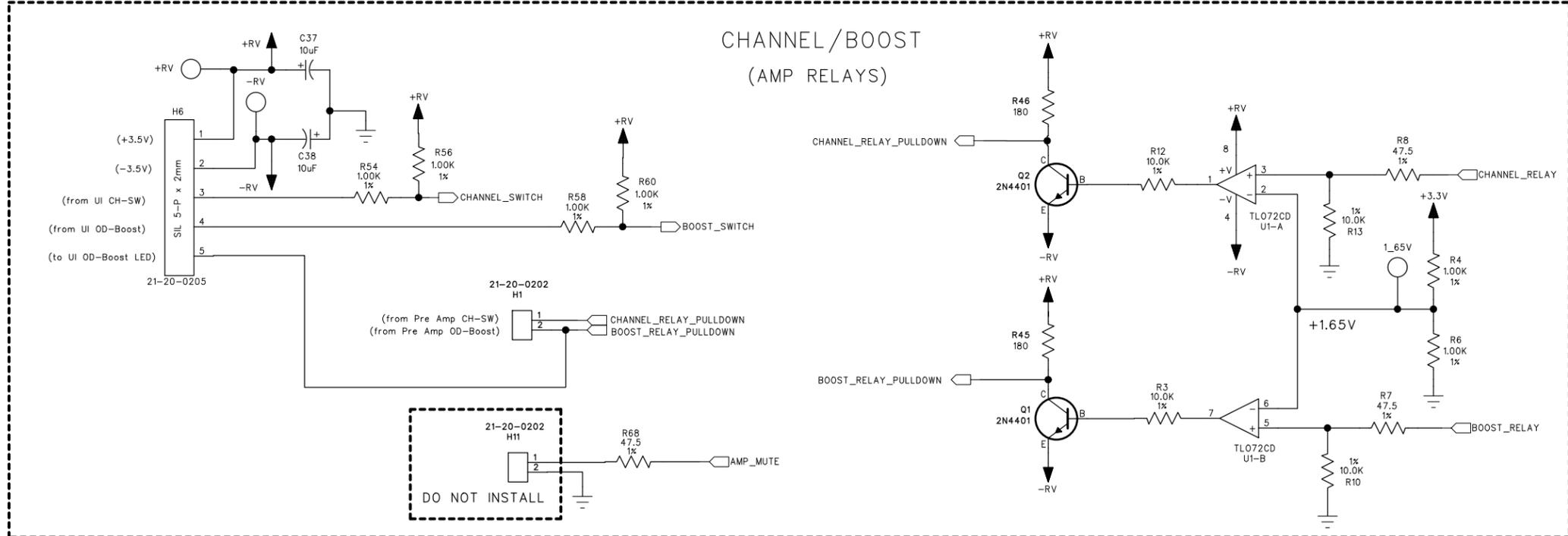
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ECO NO:	DATE:	DESCRIPTION:
0715903	06.08.07	Released as rev.A

MCU

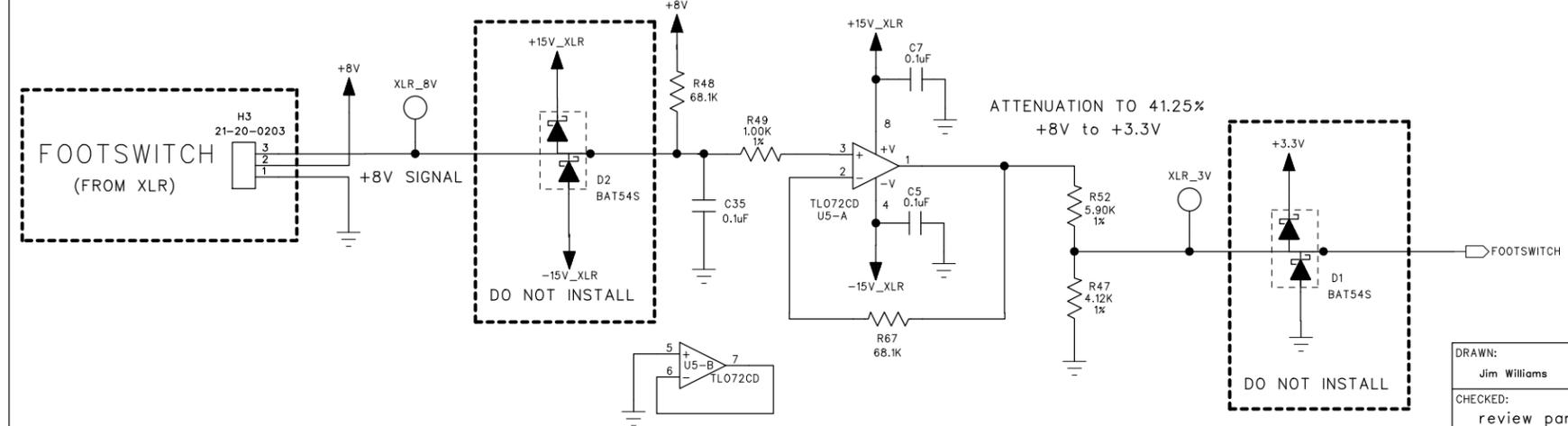


TAP Must be high during reset! Reset will remain active until TAP is open
 During power up provide 3 high going pulses on P1.5-RST to activate ISP mode.

CHANNEL/BOOST (AMP RELAYS)



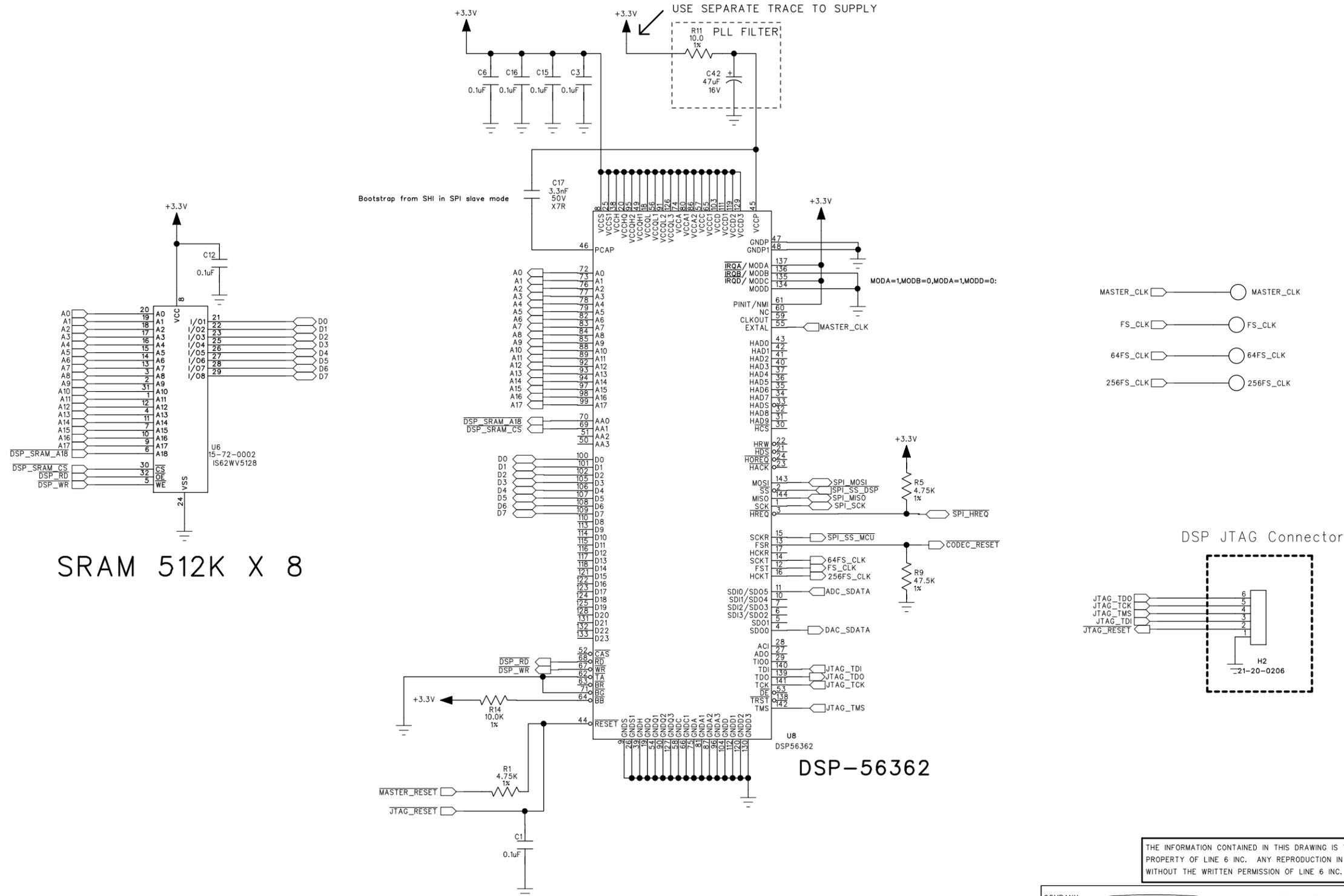
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COMPANY: LINE 6		TITLE: A16: AV MAIN MCU	
PROGRAM: PADS POWER LOGIC 2004		REV: A1	
DRAWN: Jim Williams	DATED: 03/25/2008	SCALE: 1:1	SIZE: C
CHECKED: review panel	DATED:	PART NUMBER: 35-00-0274	SHEET: 1 OF 4

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

DSP



SRAM 512K X 8

DSP-56362

DSP JTAG Connector

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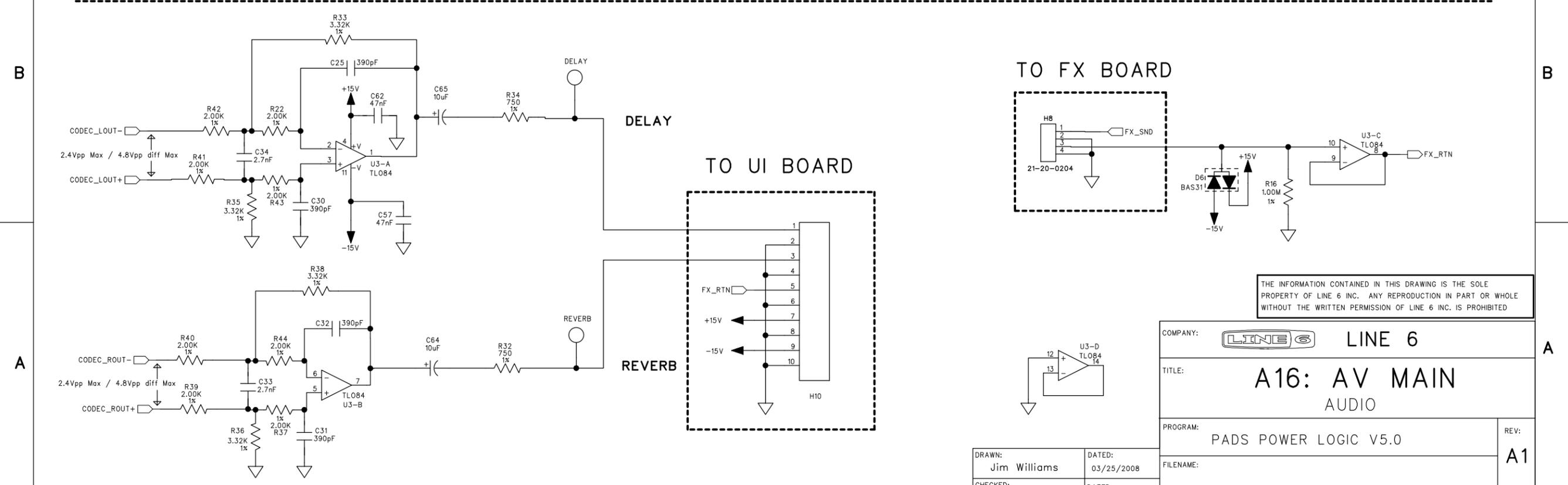
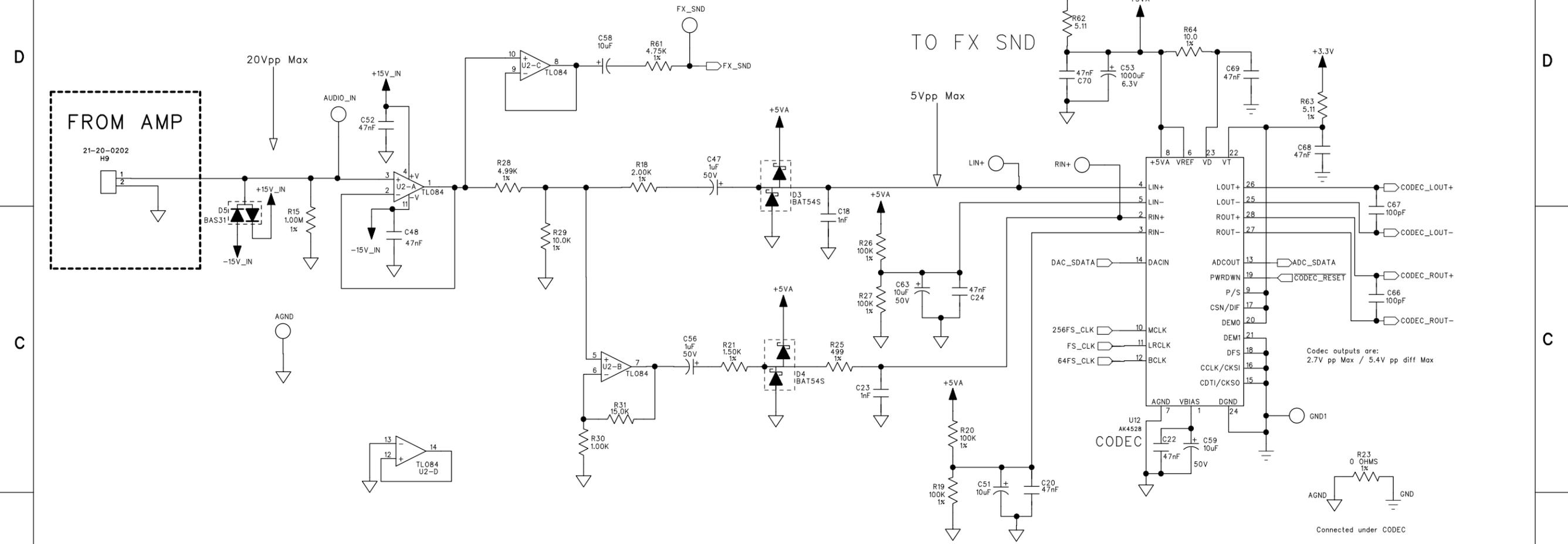
MASTER_CLK = 3.6864 MHz
 DSP CORE CLOCK = 120 MHz
 256FS_CLK = 5 MHz
 64FS_CLK = 1.25 MHz
 FS_CLK = 19,531.25 Hz

DRAWN: Jim Williams
 CHECKED: review panel
 DATED: 03/25/2008
 DATED:

COMPANY:	LINE 6
TITLE:	A16: AV MAIN DSP
PROGRAM:	PADS POWER LOGIC 2004
FILENAME:	A1
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0274	SHEET: 2 OF 4

AUDIO

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



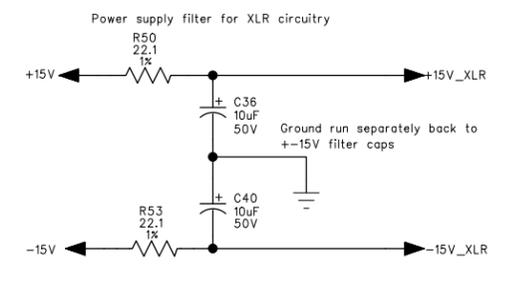
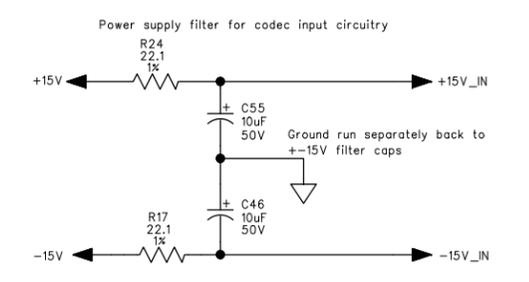
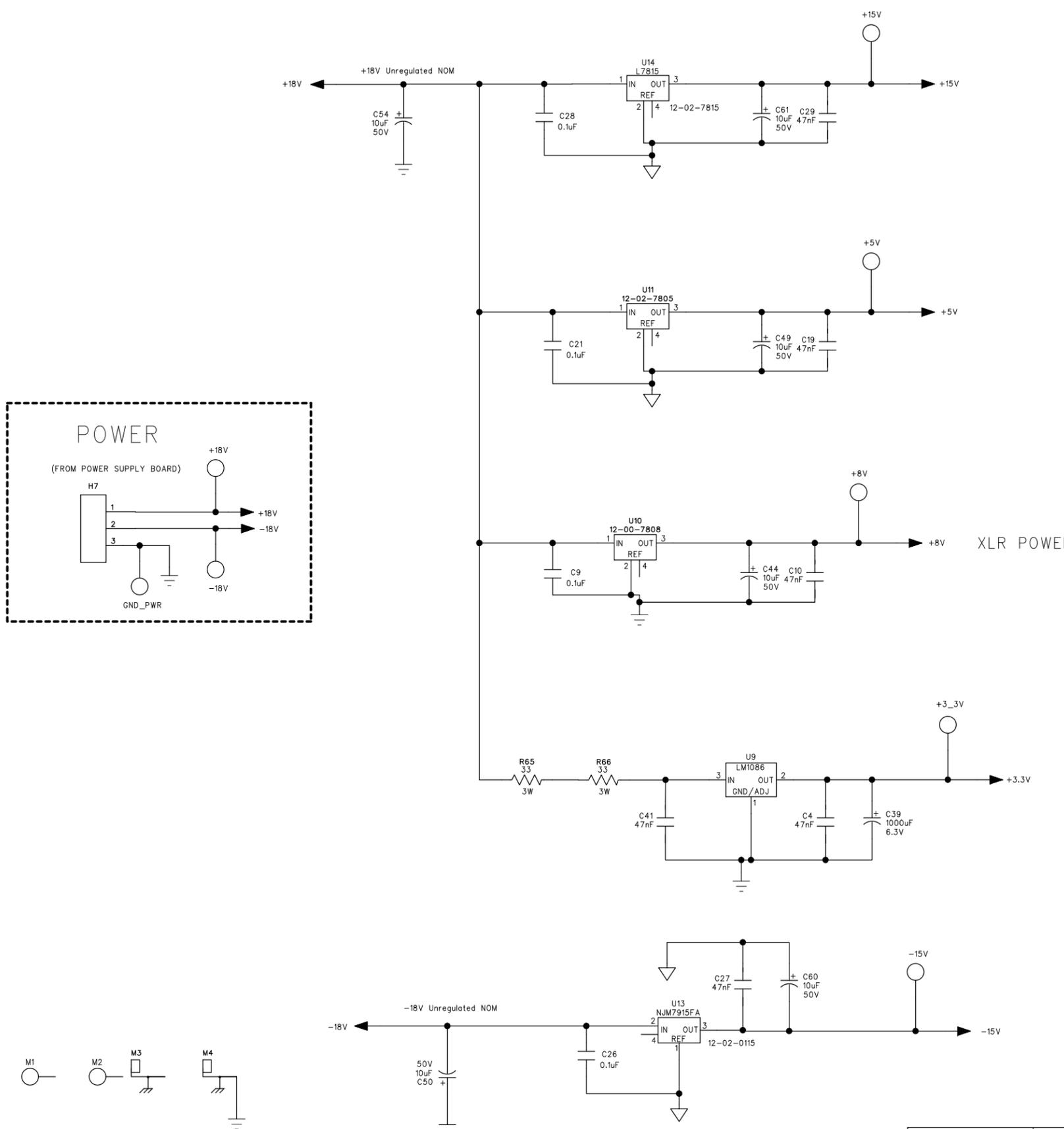
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF LINE 6 INC. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF LINE 6 INC. IS PROHIBITED

COMPANY:	LINE 6
TITLE:	A16: AV MAIN AUDIO
PROGRAM:	PADS POWER LOGIC V5.0
REV:	A1
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0274	SHEET: 3 OF 4

DRAWN:	Jim Williams	DATED:	03/25/2008
CHECKED:	review panel	DATED:	

POWER

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



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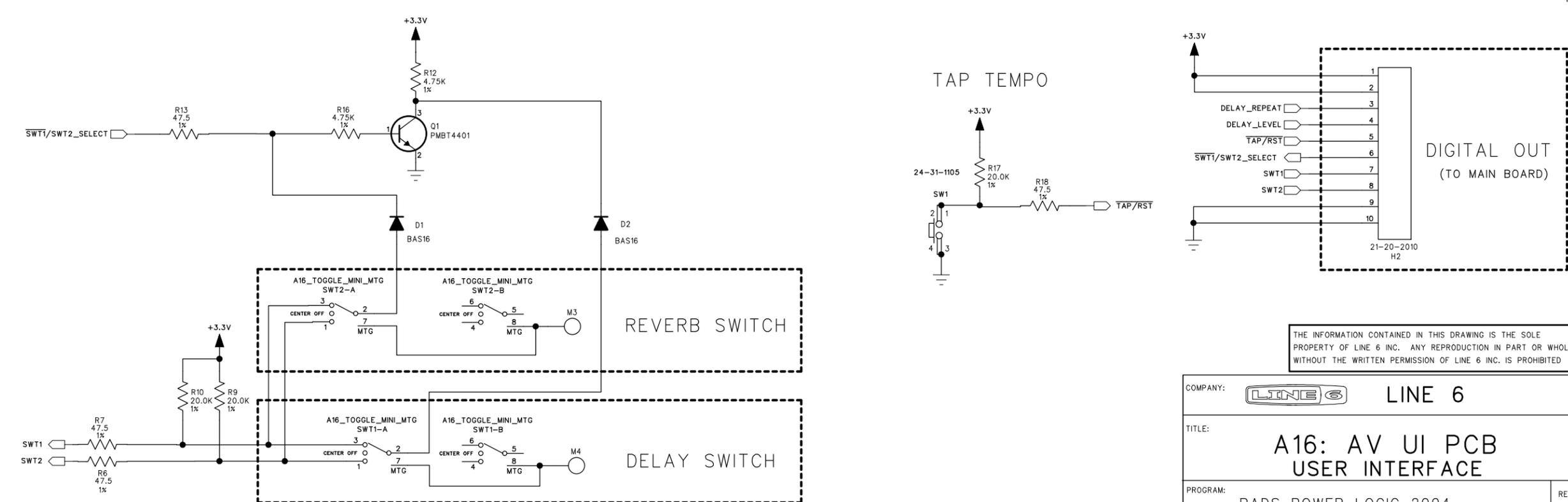
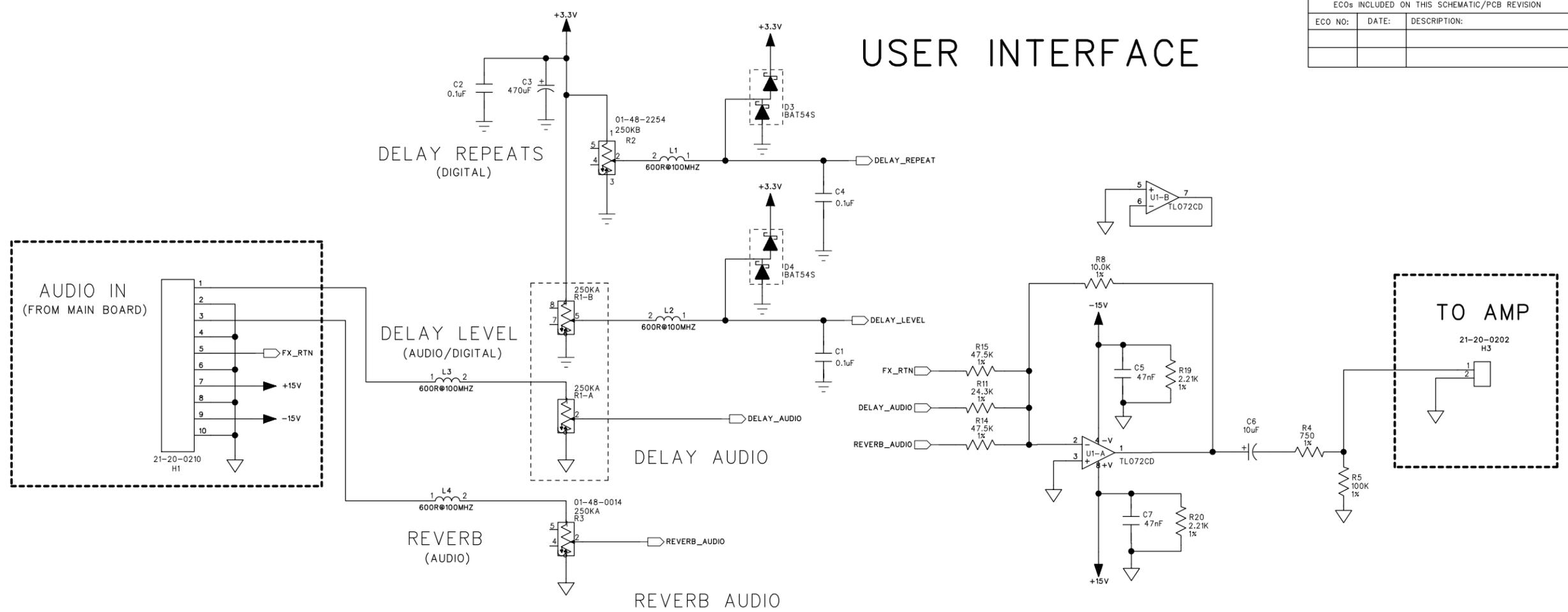
COMPANY:	LINE 6
TITLE:	A16: AV MAIN POWER
PROGRAM:	PADS POWER LOGIC 2004
FILENAME:	
SCALE: 1:1	SIZE: C
PART NUMBER: 35-00-0274	SHEET: 4 OF 4

DRAWN:	Jim Williams	DATED:	03/25/2008
CHECKED:	review panel	DATED:	

REV: **A1**

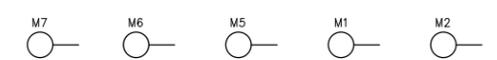
ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:

USER INTERFACE



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COMPANY: LINE 6	
TITLE: A16: AV UI PCB USER INTERFACE	
PROGRAM: PADS POWER LOGIC 2004	REV: C
FILENAME:	SCALE: 1:1
DRAWN: Jim Williams	DATED: 06/17/2008
CHECKED: review panel	DATED:
PART NUMBER: 35-00-0276	SHEET: 1 OF 1



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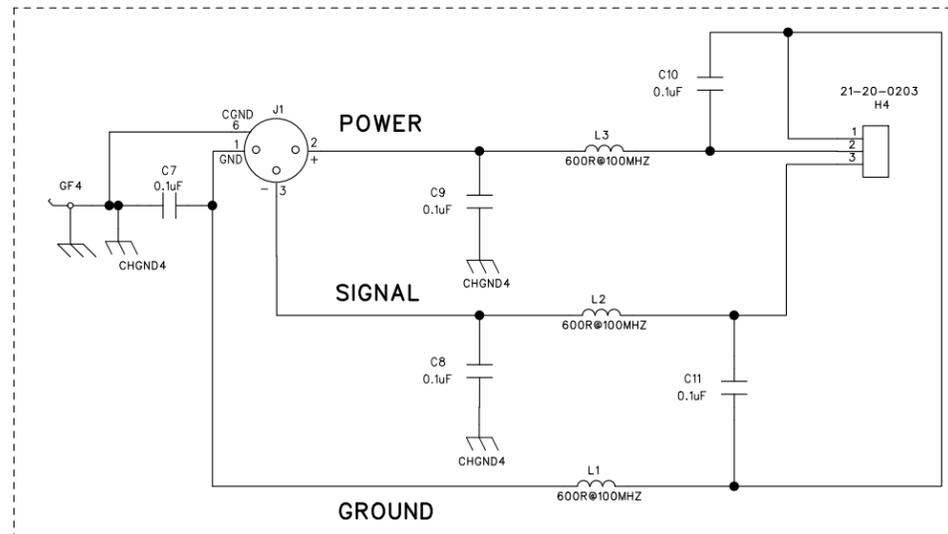
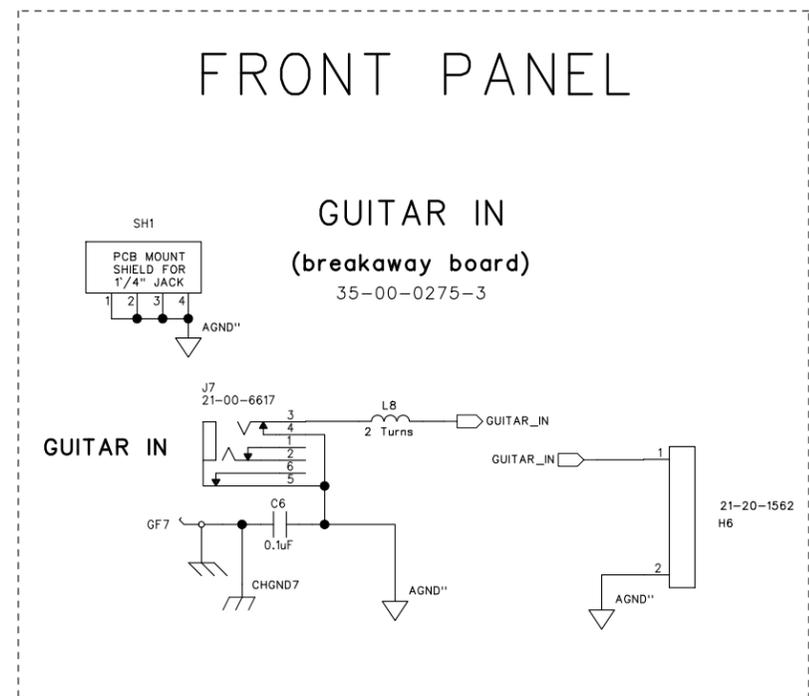
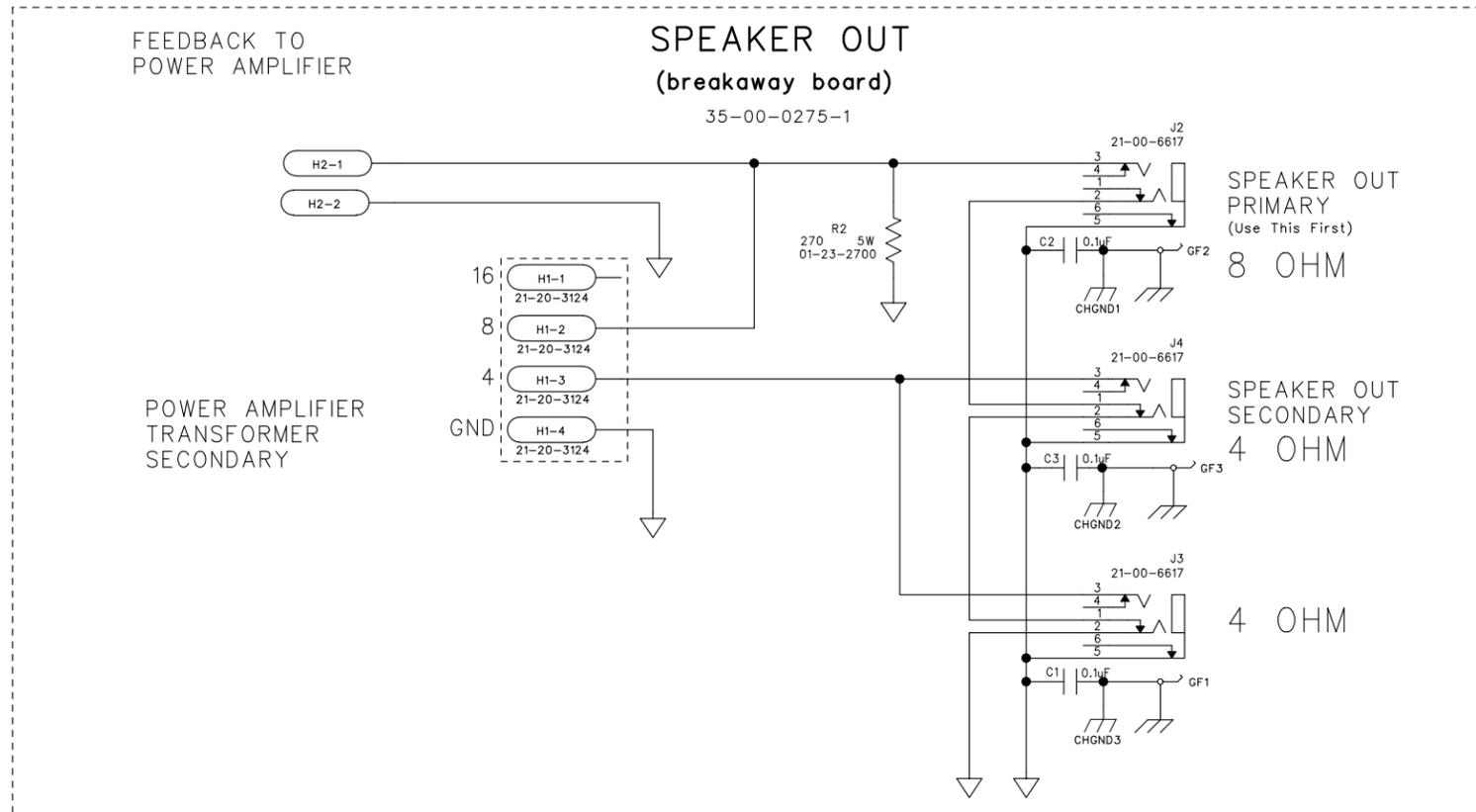
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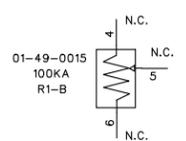
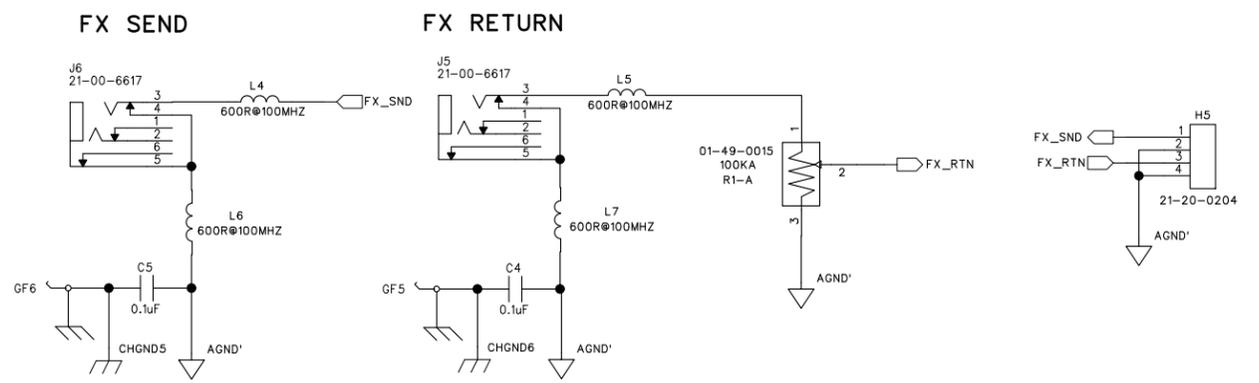
REAR PANEL

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:



XLR - FX SEND/RETURN (breakaway board)

35-00-0275-2



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COMPANY:	LINE 6
TITLE:	LINE 6
A16: AV FRONT & REAR PANEL SPEAKER, XLR, FX, GUITAR	
PROGRAM:	PADS LOGIC 2004
REV:	B1
SCALE: 1:1	SIZE: C
PART NUMBER:	35-00-0275-1,2,3
SHEET:	1 OF 1

PRELIMINARY DRAWINGS FOR QUOTATION PURPOSES ONLY DO NOT USE FOR PRODUCTION

DRAWN:	Jim Williams	DATED:	04/22/2008
CHECKED:	review panel	DATED:	

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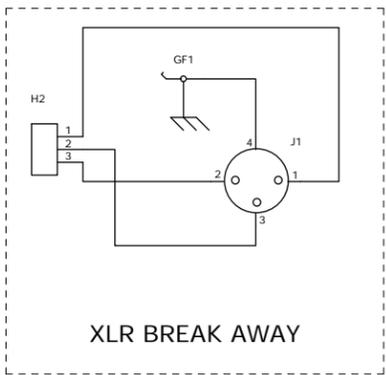
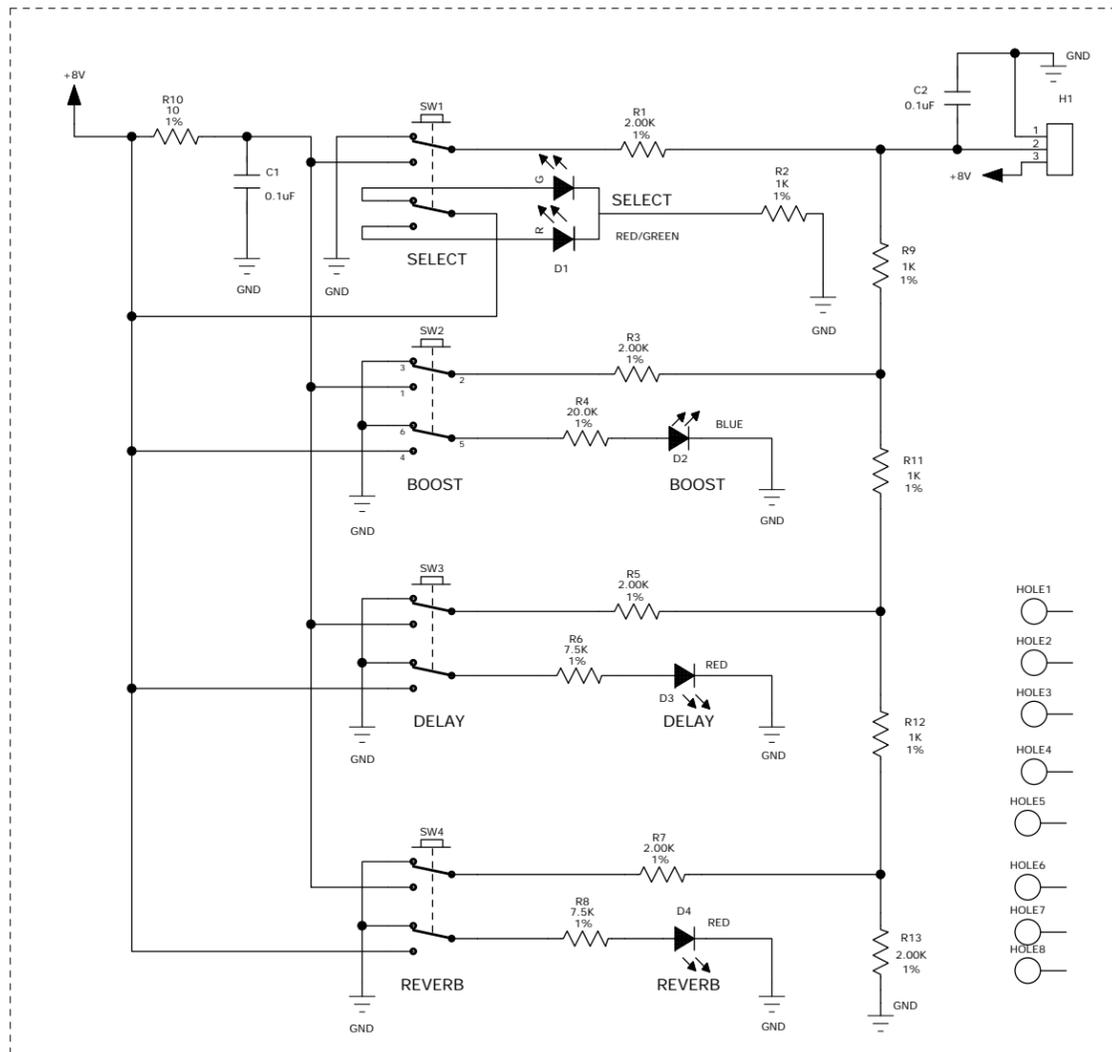
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2

1

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO.	DATE	DESCRIPTION



SW1	SW2	SW3	SW4	Vol. OUT (V)	Tolerance
0	0	0	0	0	+/- 0.02V
0	0	0	1	0.5010	+/- 0.02V
0	0	1	0	1.009	+/- 0.02V
0	0	1	1	1.5010	+/- 0.02V
0	1	0	0	2.000	+/- 0.02V
0	1	0	1	2.5010	+/- 0.02V
0	1	1	0	3.001	+/- 0.02V
0	1	1	1	3.500	+/- 0.02V
1	0	0	0	4.010	+/- 0.02V
1	0	0	1	4.501	+/- 0.02V
1	0	1	0	5.000	+/- 0.02V
1	0	1	1	5.510	+/- 0.02V
1	1	0	0	6.010	+/- 0.02V
1	1	0	1	6.510	+/- 0.02V
1	1	1	0	7.010	+/- 0.02V
1	1	1	1	7.510	+/- 0.02V

- HOLE1
- HOLE2
- HOLE3
- HOLE4
- HOLE5
- HOLE6
- HOLE7
- HOLE8

COMPANY: **LINE 6** LINE 6

TITLE: A16 FOOT SWITCH
35-00-0046

PROGRAM: PADS POWER LOGIC 2004

REV: A

FILENAME:

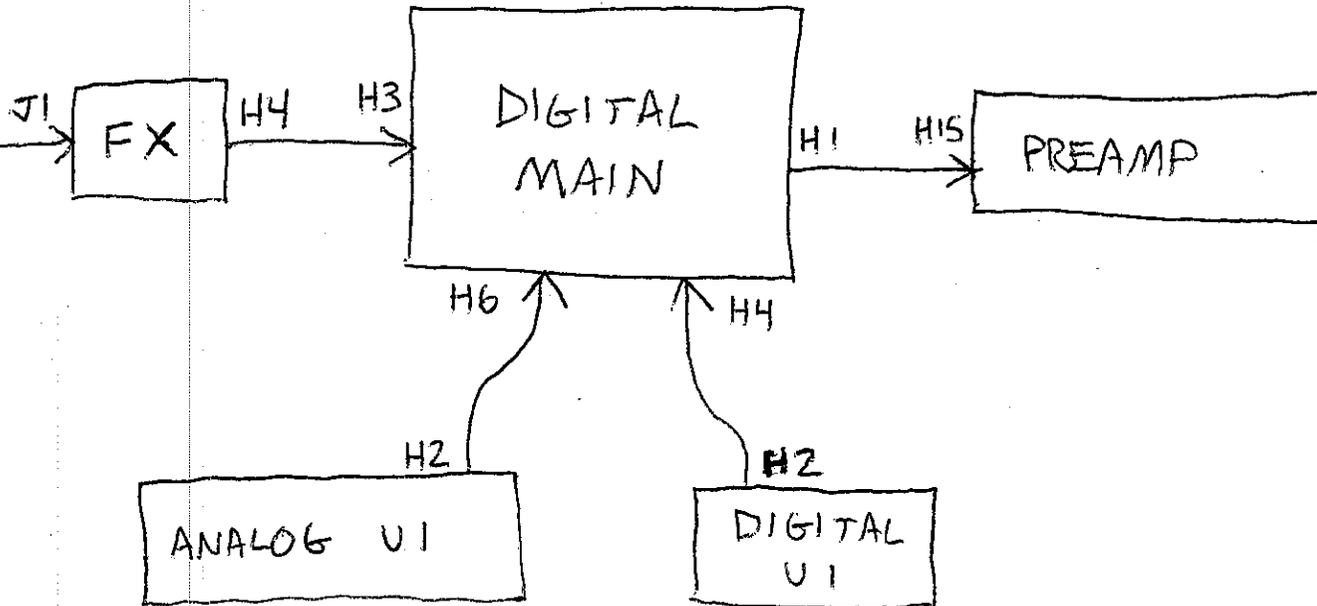
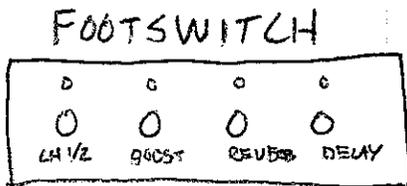
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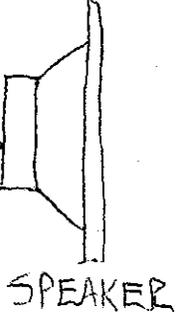
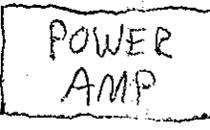
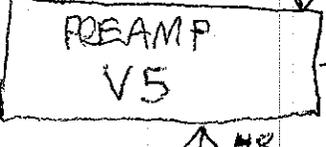
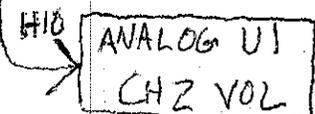
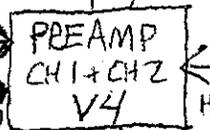
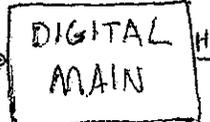
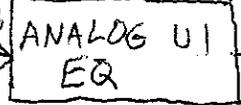
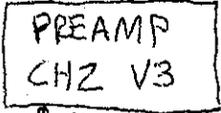
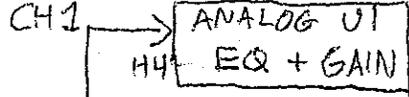
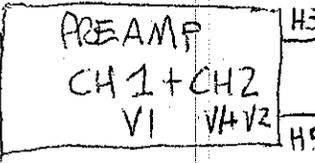
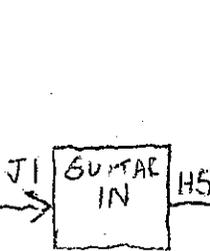
DRAWN: WEI ZHONG
CHECKED: REVIEW PANEL
DATED: 03/25/2008

AV CALI CONTROLS

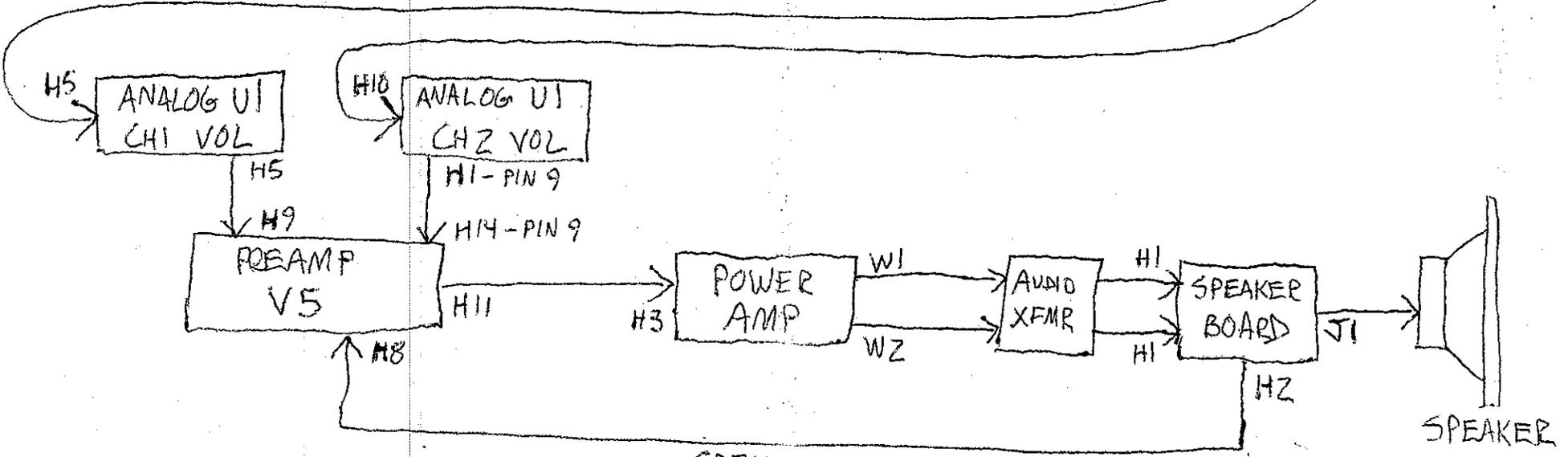
CHANNEL 1, 2, BOOST, REVERB, DELAY
TAP



AV CALI AUDIO



SPEAKER FEEDBACK



Alchemist 112/212/HD Parts List

99-011-0305 Alchemist 112 Packout BOM			
Part Number	Description	Qty	Reference Designator(s)
21-34-0118-1	CBL XLR-XLR 3 PIN 24AWG 5.3MM X 5486MM STRND A16	1	
21-37-1160	CBL PWR UL/CSA SJT 8.2FT BLK E L-302 w/GND EL70	1	
40-00-0172	MANUAL USER ALCHEMIST A16	1	
40-10-0211	ENDCAP FOAM SHIPPING TOP SV COMBO A15	4	
40-10-0212	ENDCAP FOAM SHIPPING BOTTOM SV COMBO A15	4	
40-10-0226	NOT USED AT THIS TIME	1	
40-10-0229	CARTON GIFT ALCHEMIST A16-1	1	
40-15-0022	SILICA GEL PACK 3.0" x 3.5"	3	
40-15-0023	ANTISEPTIC PACK (5g/package)	1	
40-20-0011	BAG PLASTIC 10 x 16 2 mil	1	
40-20-0024	BAG PLASTIC xx" W x xx" H CLEAR 4 MIL A16-1	1	
59-00-0280-1	ASSY UNIT COMPLETE AV 112 A16-1 US 120V	1	
99-011-0405 Alchemist 212 Packout BOM			
Part Number	Description	Qty	Reference Designator(s)
21-34-0118-1	CBL XLR-XLR 3 PIN 24AWG 5.3MM X 5486MM STRND A16	1	
21-37-1160	CBL PWR UL/CSA SJT 8.2FT BLK E L-302 w/GND EL70	1	
30-48-0005	CASTER PLUG IN 2" A15	4	
40-00-0172	MANUAL USER ALCHEMIST A16	1	
40-10-0211	ENDCAP FOAM SHIPPING TOP SV COMBO A15	4	
40-10-0212	ENDCAP FOAM SHIPPING BOTTOM SV COMBO A15	4	
40-10-0227	NOT USED AT THIS TIME	1	
40-10-0230	CARTON GIFT ALCHEMIST A16-2	1	
40-15-0022	SILICA GEL PACK 3.0" x 3.5"	3	
40-15-0023	ANTISEPTIC PACK (5g/package)	1	
40-20-0011	BAG PLASTIC 10 x 16 2 mil	1	
40-20-0025	BAG PLASTIC xx" W x xx" H CLEAR 4 MIL A16-2	1	
59-00-0290-1	ASSY UNIT COMPLETE AV 212 A16- 2 US 120V	1	
99-021-0215 Alchemist HD Packout BOM			
Part Number	Description	Qty	Reference Designator(s)
21-34-0118-1	CBL XLR-XLR 3 PIN 24AWG 5.3MM X 5486MM STRND A16	1	
21-37-1160	CBL PWR UL/CSA SJT 8.2FT BLK E L-302 w/GND EL70	1	
40-00-0172	MANUAL USER ALCHEMIST A16	1	
40-10-0211	ENDCAP FOAM SHIPPING TOP SV COMBO A15	4	
40-10-0212	ENDCAP FOAM SHIPPING BOTTOM SV COMBO A15	4	
40-10-0228	NOT USED AT THIS TIME	1	
40-10-0231	CARTON GIFT ALCHEMIST A16-3	1	
40-15-0022	SILICA GEL PACK 3.0" x 3.5"	3	
40-15-0023	ANTISEPTIC PACK (5g/package)	1	
40-20-0011	BAG PLASTIC 10 x 16 2 mil	1	
40-20-0026	BAG PLASTIC xx" W x xx" H CLEAR 4 MIL A16-3	1	
59-00-1807	ASSY UNIT COMPLETE FOOTSWITCH AV COMBO A16	1	
59-00-0280-1 Alchemist 112 Complete Unit BOM			
Part Number	Description	Qty	Reference Designator(s)
11-20-1004	SPEAKER 12" 8 OHM CELESTION VINTAGE 30 T3903A	1	
21-34-0098-3	CBL 1/4" RT ANGLE TO DUAL .205 12.5" 18AWG QUICK CONNECT	1	
30-00-0033	SCREW 10-24 x7/8 TRUSS HD PHH BLK	4	
30-00-0072	SCREW WOOD #10 x 1-1/4" OVAL H D PB	10	
30-00-1130	SCREW 10-32 x 4" OVAL CTSK PB STL	4	
30-03-0035	WASHER #10 SPLIT LK WASH ZINC	4	

Alchemist 112/212/HD Parts List

30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	14	
30-03-1010	WASHER #10 FLAT .20-.25 ID, .45-.55 OD, .04-.05 THK ZINC	4	
40-25-0030	LABEL ETL KWANASIA 2"x 1"	1	
40-25-0100	LABEL BAR CODE SERIAL NUMBER 4-PANEL LABEL	1	
50-03-0053	ASSY CABINET 112 AV/CALI A16-1	1	
30-00-0121	SCREW WOOD #6 x 1.25 PHH FLH BLK	10	
30-00-0122	SCREW 10-24 x 0.7 OVH PHILLIPS NI PLD / CRM	4	
30-00-0138	SCREW WOOD #6 x 1/2" FHP BLACK OXIDE	5	
30-00-0141	SCREW 6-32 x 1.25 w/LK WASH PHP STL BLK OXIDE	2	
30-00-6839	SCREW WOOD 10-12 x 7/8" PPZ	4	
30-03-0806	WASHER #8 0.600 OD x 0.190 ID 0.040 STL BLK OXIDE	2	
30-06-1024	NUT-T 10-24 X 5/16 STEEL	8	
30-27-0315	PIPING AV AMPS (A16)	1	
30-36-0011	COVER VINYL AV/CALI A16	1	
30-39-0025	GRILL CLOTH AV/CALI A16	1	
30-51-0333	LOGO BOGNER 7.0 X 2.9 X .7 CAS T ALUMINUM BRUSHED A16	1	
30-51-0348	TRIM U/I 21.8 x 2.7 x 0.7 BRUS HED ALUM BLK A16	1	
30-57-0001	HANDLE CABINET PVC BLACK W/CHROME BRACKETS	1	
30-75-0008	RUBBER FOOT 1.50" I.D. X .75"H BLACK	4	
50-04-0290-1	ASSY E/M CHASSIS AV/CALI A16 U S 120V	1	
59-00-0290-1	Alchemist 212 Complete Unit Assembly BOM		
Part Number	Description	Qty	Reference Designator(s)
11-20-0101	SPEAKER 12" 16 OHM CELESTION G12M GREENBACK 25 WATTS	1	
11-20-0102	SPEAKER 12" 16 OHM CELESTION G12H 30 WATTS	1	
21-34-0098-4	CBL 1/4" RT ANGLE TO DUAL .205 15.5" 18AWG QUICK CONNECT	1	
21-36-0266-2	CBL 2 COND 18AWG TWISTED 15.3" .205 SPADE-FM x 4 BL/WH	1	
30-00-0033	SCREW 10-24 x7/8 TRUSS HD PHH BLK	8	
30-00-0072	SCREW WOOD #10 x 1-1/4" OVAL H D PB	10	
30-00-1130	SCREW 10-32 x 4" OVAL CTSK PB STL	4	
30-03-0035	WASHER #10 SPLIT LK WASH ZINC	8	
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	14	
30-03-1010	WASHER #10 FLAT .20-.25 ID, .45-.55 OD, .04-.05 THK ZINC	8	
40-25-0030	LABEL ETL KWANASIA 2"x 1"	1	
40-25-0100	LABEL BAR CODE SERIAL NUMBER 4-PANEL LABEL	1	
59-00-0300-1	Alchemist HD Complete Unit BOM		
Part Number	Description	Qty	Reference Designator(s)
59-00-0300-1	ASSY UNIT COMPLETE AV HD A16-3 US 120V	1	
30-00-0858	SCREW #8 x 5/8IN PHIL-TRUSS BLACK w/WAX	5	
30-00-1130	SCREW 10-32 x 4" OVAL CTSK PB STL	4	
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	4	
30-51-0350	PANEL BACK MESH 24.0 x 6.1 x .3 BLK POWDER COAT A16-3	1	
30-48-0010	FOOT RUBBER w/ADHESIVE 3M BUMPON SJ-5012 (OR EQUIV)	2	
40-25-0100	LABEL BAR CODE SERIAL NUMBER 4-PANEL LABEL	1	
40-25-0030	LABEL ETL KWANASIA 2"x 1"	1	
50-03-0052	ASSY CABINET HEAD AV/CALI A16- 3	1	
30-00-0024	SCREW WD #8 x 1-1/8IN PPB STL	4	
30-00-0122	SCREW 10-24 x 0.7 OVH PHILLIPS NI PLD / CRM	4	
30-00-0138	SCREW WOOD #6 x 1/2" FHP BLACK OXIDE	5	
30-00-0141	SCREW 6-32 x 1.25 w/LK WASH PHP STL BLK OXIDE	2	
30-00-0858	SCREW #8 x 5/8IN PHIL-TRUSS BLACK w/WAX	4	
30-03-0806	WASHER #8 0.600 OD x 0.190 ID 0.040 STL BLK OXIDE	2	

Alchemist 112/212/HD Parts List

30-06-1024	NUT-T 10-24 X 5/16 STEEL	4	
30-27-0315	PIPING AV AMPS (A16)	1	
30-36-0011	COVER VINYL AV/CALI A16	1	
30-39-0025	GRILL CLOTH AV/CALI A16	1	
30-51-0333	LOGO BOGNER 7.0 X 2.9 X .7 CAS T ALUMINUM BRUSHED A16	1	
30-51-0348	TRIM U/I 21.8 x 2.7 x 0.7 BRUS HED ALUM BLK A16	1	
30-57-0001	HANDLE CABINET PVC BLACK W/CHROME BRACKETS	1	
30-75-0008	RUBBER FOOT 1.50" I.D. X .75"H BLACK	4	
50-04-0290-1	ASSY E/M CHASSIS AV/CALI A16 U S 120V	1	
50-04-0290-1	Alchemist 112 Chassis Assembly BOM		
Part Number	Description	Qty	Reference Designator(s)
11-02-0011	VALVE ELECTRO-HARMONIX 12AX7EH (LOW MICROPHONIC)	3	
11-02-0020	VALVE RUBY TUBES 12AX7	2	
11-02-0022	VALVE RUBY TUBES 6L6GCMSTR MATCHED PAIR	1	
11-30-0033	XFMR 100/120VAC 330/240/13.5x2 /6.5 AV A16 W/ 2 GROMMETS	1	
11-33-1105	XFMR OUTPUT ALL VALVE A16 50 Watts 8-4-2 Ohm W/2 GROMMETS	1	
11-33-1201	XFMR AUDIO CHOKE 5 Henry @1KHz 1V 0mA	1	
21-18-0008	TUBE SHIELD #1-2.5-50	2	
21-29-0007	WIRE 18AWG FSTN .187 2/.250 14"/3.5" WHITE	1	
21-29-0008-1	WIRE 2-PIN/1COND 26AWG 2mm F-F 3" INSUL STRANDED Z-TYPE WHITE	1	
21-34-0013	CBL SIL 5 COND 26AWG 2 x 50.8M M F-F	1	
21-34-0076-4	CBL SIL 2 COND 26AWG 2MM x 4.0 " JST PHR-2 BLUE	1	
21-34-0087-1	CBL ASSY 10 COND 26AWG F/F x 5 .0" WHITE	1	
21-34-0095-1	CBL SIL 3 COND 18AWG 3 PIN 3.0" x .156" PITCH WHITE	1	
21-34-0099-1	CBL ASSY 4 PIN SIL 4 COND 18" 26 AWG SHLD	1	
21-34-0103-1	CBL SIL 3 COND 26AWG 2MM 20" F-F WHITE	1	
21-34-0104-1	CBL SIL 3-PIN/2 COND 16AWG 3.96 4" TWSTED F-F RD/WH LKG	2	
21-34-0104-2	CBL SIL 3-PIN/2 COND 16AWG 3.96 18.5" TWSTD F-F RD/WH LKG	1	
21-34-0105-1	CBL SIL 9-PIN/5 COND 18AWG 3.96 3" WHITE LOCKING	1	
21-34-0107-1	CBL SIL 3 COND 26AWG SHLD 2mm 7" F-F	1	
21-34-0108-1	CBL SIL 2 COND SHLD 3.96mm 4.25" F-F BLK	2	
21-34-0108-2	CBL SIL 2 COND SHLD 3.96mm 6" F-F BLK	1	
21-34-0108-3	CBL SIL 2 COND SHLD 3.96mm 9" F-F BLK	4	
21-34-0114-1	CBL ASSY 2 PIN SIL 9.0" 26 AWG SHLD	1	
21-34-0114-2	CBL ASSY 2 PIN SIL 14.0" 26AWG SHLD	1	
21-34-0135-4	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT RED/WHITE	1	
21-34-0135-5	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT WHITE/BLK	1	
21-34-1022	CBL FSTN .187-RCPT x 2 1-COND 178MM STRAND 18AWG BK	1	
21-34-1023-1	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" BLK	1	
21-34-1023-2	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" WHT	1	
21-48-0004	HOLDER FUSE PANEL MOUNT SHOCK SAFE 500V	1	
21-48-0005	FUSE CAP No. 816 FOR 6.3 x 32M M	1	
24-03-0004	SWITCH TOGGLE DPST ON-OFF 250V 10A QUICK TERMINAL PNL MNT	1	
24-03-0014	SWITCH TOGGLE DPDT ON-OFF-ON 250V 10A QUICK TERMINL PNL MT	1	
24-19-0005	FUSE 0.5A 250V SLOW BLOW 3AG	1	
24-19-0250	FUSE 2.5A 250V 5MM x 20MM	1	
30-00-0042	SCREW SHEET METAL 4 x 0.375 IN SELF-TAP PPB	2	
30-00-0043	SCREW 6-32 x 5/16 W/LK WASH PPZ STL	28	
30-00-0125	SCREW 8-32 x 5/16 W/LK WASH PP H BLK STL	6	
30-00-0128	SCREW 6-32 x .375 W/LK WASH PP H BLK	2	
30-00-0132	SCREW 10-32 x .375 PPH W/LK WA SH BLACK OXIDE	8	

Alchemist 112/212/HD Parts List

30-00-0137	SCREW 4-40 x .3125 w/LK WASH PAN HD PHIL BLK	4	
30-15-0041	SPACER .11 THICK x .63OD ABS B LK	6	
30-15-0042	SPACER .75 OD x .50 ID x .17 HT ABS BLK	4	
30-21-0005	RETAINER TUBE EL34 STYLE	2	
30-24-0030	CABLE TIE 4.0" LONG BLACK	18	
30-27-0059	LENS LED .19" DIA x .29" HT PLASTIC CLEAR SNAP IN	3	
30-27-0314	GUIDE SCREW 2.9 x 1.2 x 0.6 AB S BLK A16	4	
30-27-0316	SPRT DUAL LKG CKT BD TEARDROP .500 LG 6/6 NYLON NAT	2	
30-42-0055	OVERLAY FRONT 22.5 x 2.75 x .0 60 CLEAR POLYCARBONATE A16	1	
41-00-0178	ARTWORK SILKSCREEN OVERLAY UI AV/CALI A16	1	
30-45-0021	KNOB 0.88 DIA x 0.5 HIGH ALUMI NUM A16	10	
30-45-0022	KNOB 0.76 DIA x 0.46 HIGH ALUM INUM A16	4	
30-51-0330	CHASSIS 22.5 x 8.5 x 2.75 STEEL A16	1	
41-00-0181	ARTWORK SILKSCREEN CHASSIS REAR AV CALI A16	1	
30-51-0331	TUBE CAGE 6.6 x 4.1 x 2.3 ALUM BLK A16	1	
30-75-9600	GROMMET RUBBER 7/16-D x 1/16 GRV x 3/4" GRV-DIA BLACK	1	
50-00-0001	ASSY RECEPTACLE-A/C w/GND WIRE SNAP-IN	1	
50-04-0290-1	Alchemist 212 Chassis Assembly BOM		
Part Number	Description	Qty	Reference Designator(s)
50-04-0290-1	ASSY E/M CHASSIS AV/CALI A16 U S 120V	1	
11-02-0011	VALVE ELECTRO-HARMONIX 12AX7EH (LOW MICROPHONIC)	3	
11-02-0020	VALVE RUBY TUBES 12AX7	2	
11-02-0022	VALVE RUBY TUBES 6L6GCMSTR MATCHED PAIR	1	
11-30-0033	XFMR 100/120VAC 330/240/13.5x2 /6.5 AV A16 W/ 2 GROMMETS	1	
11-33-1105	XFMR OUTPUT ALL VALVE A16 50 Watts 8-4-2 Ohm W/2 GROMMETS	1	
11-33-1201	XFMR AUDIO CHOKE 5 Henry @1KHz 1V 0mA	1	
21-18-0008	TUBE SHIELD #1-2.5-50	2	
21-29-0007	WIRE 18AWG FSTN .187 2/.250 14"/3.5" WHITE	1	
21-29-0008-1	WIRE 2-PIN/1COND 26AWG 2mm F-F 3" INSUL STRANDED Z-TYPE WHITE	1	
21-34-0013	CBL SIL 5 COND 26AWG 2 x 50.8M M F-F	1	
21-34-0076-4	CBL SIL 2 COND 26AWG 2MM x 4.0 " JST PHR-2 BLUE	1	
21-34-0087-1	CBL ASSY 10 COND 26AWG F/F x 5 .0" WHITE	1	
21-34-0095-1	CBL SIL 3 COND 18AWG 3 PIN 3.0" x .156" PITCH WHITE	1	
21-34-0099-1	CBL ASSY 4 PIN SIL 4 COND 18" 26 AWG SHLD	1	
21-34-0103-1	CBL SIL 3 COND 26AWG 2MM 20" F-F WHITE	1	
21-34-0104-1	CBL SIL 3-PIN/2 COND 16AWG 3.96 4" TWSTED F-F RD/WH LKG	2	
21-34-0104-2	CBL SIL 3-PIN/2 COND 16AWG 3.96 18.5" TWSTD F-F RD/WH LKG	1	
21-34-0105-1	CBL SIL 9-PIN/5 COND 18AWG 3.96 3" WHITE LOCKING	1	
21-34-0107-1	CBL SIL 3 COND 26AWG SHLD 2mm 7" F-F	1	
21-34-0108-1	CBL SIL 2 COND SHLD 3.96mm 4.25" F-F BLK	2	
21-34-0108-2	CBL SIL 2 COND SHLD 3.96mm 6" F-F BLK	1	
21-34-0108-3	CBL SIL 2 COND SHLD 3.96mm 9" F-F BLK	4	
21-34-0114-1	CBL ASSY 2 PIN SIL 9.0" 26 AWG SHLD	1	
21-34-0114-2	CBL ASSY 2 PIN SIL 14.0" 26AWG SHLD	1	
21-34-0135-4	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT RED/WHITE	1	
21-34-0135-5	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT WHITE/BLK	1	
21-34-1022	CBL FSTN .187-RCPT x 2 1-COND 178MM STRAND 18AWG BK	1	
21-34-1023-1	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" BLK	1	
21-34-1023-2	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" WHT	1	
21-48-0004	HOLDER FUSE PANEL MOUNT SHOCK SAFE 500V	1	
21-48-0005	FUSE CAP No. 816 FOR 6.3 x 32M M	1	

Alchemist 112/212/HD Parts List

24-03-0004	SWITCH TOGGLE DPST ON-OFF 250V 10A QUICK TERMINAL PNL MNT	1
24-03-0014	SWITCH TOGGLE DPDT ON-OFF-ON 250V 10A QUICK TERMINL PNL MT	1
24-19-0005	FUSE 0.5A 250V SLOW BLOW 3AG	1
24-19-0250	FUSE 2.5A 250V 5MM x 20MM	1
30-00-0042	SCREW SHEET METAL 4 x 0.375 IN SELF-TAP PPB	2
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	28
30-00-0125	SCREW 8-32 x 5/16 W/LK WASH PP H BLK STL	6
30-00-0128	SCREW 6-32 x .375 W/LK WASH PP H BLK	2
30-00-0132	SCREW 10-32 x .375 PPH W/LK WA SH BLACK OXIDE	8
30-00-0137	SCREW 4-40 x .3125 w/LK WASH PAN HD PHIL BLK	4
30-15-0041	SPACER .11 THICK x .63OD ABS B LK	6
30-15-0042	SPACER .75 OD x .50 ID x .17 HT ABS BLK	4
30-21-0005	RETAINER TUBE EL34 STYLE	2
30-24-0030	CABLE TIE 4.0" LONG BLACK	18
30-27-0059	LENS LED .19" DIA x .29" HT PLASTIC CLEAR SNAP IN	3
30-27-0314	GUIDE SCREW 2.9 x 1.2 x 0.6 AB S BLK A16	4
30-27-0316	SPRT DUAL LKG CKT BD TEARDROP .500 LG 6/6 NYLON NAT	2
30-42-0055	OVERLAY FRONT 22.5 x 2.75 x .0 60 CLEAR POLYCARBONATE A16	1
41-00-0178	ARTWORK SILKSCREEN OVERLAY UI AV/CALI A16	1
30-45-0021	KNOB 0.88 DIA x 0.5 HIGH ALUMI NUM A16	10
30-45-0022	KNOB 0.76 DIA x 0.46 HIGH ALUM INUM A16	4
30-51-0330	CHASSIS 22.5 x 8.5 x 2.75 STEEL A16	1
41-00-0181	ARTWORK SILKSCREEN CHASSIS REAR AV CALI A16	1
30-51-0331	TUBE CAGE 6.6 x 4.1 x 2.3 ALUM BLK A16	1
30-75-9600	GROMMET RUBBER 7/16-D x 1/16 GRV x 3/4" GRV-DIA BLACK	1

50-04-0290-1 Alchemist HD Chassis BOM

Part Number	Description	Qty	Reference Designator(s)
11-02-0011	VALVE ELECTRO-HARMONIX 12AX7EH (LOW MICROPHONIC)	3	
11-02-0020	VALVE RUBY TUBES 12AX7	2	
11-02-0022	VALVE RUBY TUBES 6L6GCMSTR MATCHED PAIR	1	
11-30-0033	XFMR 100/120VAC 330/240/13.5x2 /6.5 AV A16 W/ 2 GROMMETS	1	
11-33-1105	XFMR OUTPUT ALL VALVE A16 50 Watts 8-4-2 Ohm W/2 GROMMETS	1	
11-33-1201	XFMR AUDIO CHOKE 5 Henry @1KHz 1V 0mA	1	
21-18-0008	TUBE SHIELD #1-2.5-50	2	
21-29-0007	WIRE 18AWG FSTN .187 2/.250 14"/3.5" WHITE	1	
21-29-0008-1	WIRE 2-PIN/1COND 26AWG 2mm F-F 3" INSUL STRANDED Z-TYPE WHITE	1	
21-34-0013	CBL SIL 5 COND 26AWG 2 x 50.8M M F-F	1	
21-34-0076-4	CBL SIL 2 COND 26AWG 2MM x 4.0 " JST PHR-2 BLUE	1	
21-34-0087-1	CBL ASSY 10 COND 26AWG F/F x 5 .0" WHITE	1	
21-34-0095-1	CBL SIL 3 COND 18AWG 3 PIN 3.0" x .156" PITCH WHITE	1	
21-34-0099-1	CBL ASSY 4 PIN SIL 4 COND 18" 26 AWG SHLD	1	
21-34-0103-1	CBL SIL 3 COND 26AWG 2MM 20" F-F WHITE	1	
21-34-0104-1	CBL SIL 3-PIN/2 COND 16AWG 3.96 4" TWSTED F-F RD/WH LKG	2	
21-34-0104-2	CBL SIL 3-PIN/2 COND 16AWG 3.96 18.5" TWSTD F-F RD/WH LKG	1	
21-34-0105-1	CBL SIL 9-PIN/5 COND 18AWG 3.96 3" WHITE LOCKING	1	
21-34-0107-1	CBL SIL 3 COND 26AWG SHLD 2mm 7" F-F	1	
21-34-0108-1	CBL SIL 2 COND SHLD 3.96mm 4.25" F-F BLK	2	
21-34-0108-2	CBL SIL 2 COND SHLD 3.96mm 6" F-F BLK	1	
21-34-0108-3	CBL SIL 2 COND SHLD 3.96mm 9" F-F BLK	4	
21-34-0114-1	CBL ASSY 2 PIN SIL 9.0" 26 AWG SHLD	1	
21-34-0114-2	CBL ASSY 2 PIN SIL 14.0" 26AWG SHLD	1	

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21-34-0135-4	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT RED/WHITE	1	
21-34-0135-5	CBL ASSY 18AWG 3 PIN SIL 12" x 12" x .250 RCPT WHITE/BLK	1	
21-34-1022	CBL FSTN .187-RCPT x 2 1-COND 178MM STRAND 18AWG BK	1	
21-34-1023-1	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" BLK	1	
21-34-1023-2	CBL FSTN .205-RCPT/.250-RCPT 1-COND 18AWG 8" WHT	1	
21-48-0004	HOLDER FUSE PANEL MOUNT SHOCK SAFE 500V	1	
21-48-0005	FUSE CAP No. 816 FOR 6.3 x 32M M	1	
24-03-0004	SWITCH TOGGLE DPST ON-OFF 250V 10A QUICK TERMINAL PNL MNT	1	
24-03-0014	SWITCH TOGGLE DPDT ON-OFF-ON 250V 10A QUICK TERMINL PNL MT	1	
24-19-0005	FUSE 0.5A 250V SLOW BLOW 3AG	1	
24-19-0250	FUSE 2.5A 250V 5MM x 20MM	1	
30-00-0042	SCREW SHEET METAL 4 x 0.375 IN SELF-TAP PPB	2	
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	28	
30-00-0125	SCREW 8-32 x 5/16 W/LK WASH PP H BLK STL	6	
30-00-0128	SCREW 6-32 x .375 W/LK WASH PP H BLK	2	
30-00-0132	SCREW 10-32 x .375 PPH W/LK WA SH BLACK OXIDE	8	
30-00-0137	SCREW 4-40 x .3125 w/LK WASH PAN HD PHIL BLK	4	
30-15-0041	SPACER .11 THICK x .63OD ABS B LK	6	
30-15-0042	SPACER .75 OD x .50 ID x .17 HT ABS BLK	4	
30-21-0005	RETAINER TUBE EL34 STYLE	2	
30-24-0030	CABLE TIE 4.0" LONG BLACK	18	
30-27-0059	LENS LED .19" DIA x .29" HT PLASTIC CLEAR SNAP IN	3	
30-27-0314	GUIDE SCREW 2.9 x 1.2 x 0.6 AB S BLK A16	4	
30-27-0316	SPRT DUAL LKG CKT BD TEARDROP .500 LG 6/6 NYLON NAT	2	
30-42-0055	OVERLAY FRONT 22.5 x 2.75 x .060 CLEAR POLYCARBONATE A16	1	
41-00-0178	ARTWORK SILKSCREEN OVERLAY UI AV/CALI A16	1	
30-45-0021	KNOB 0.88 DIA x 0.5 HIGH ALUMI NUM A16	10	
30-45-0022	KNOB 0.76 DIA x 0.46 HIGH ALUM INUM A16	4	
30-51-0330	CHASSIS 22.5 x 8.5 x 2.75 STEEL A16	1	
41-00-0181	ARTWORK SILKSCREEN CHASSIS REAR AV CALI A16	1	
30-51-0331	TUBE CAGE 6.6 x 4.1 x 2.3 ALUM BLK A16	1	
30-75-9600	GROMMET RUBBER 7/16-D x 1/16 GRV x 3/4" GRV-DIA BLACK	1	
50-00-0001	ASSY RECEPTACLE-A/C w/GND WIRE SNAP-IN	1	
50-00-0001	A/C Receptacle BOM		
Part Number	Description	Qty	Reference Designator(s)
21-14-0002	JACK IEC w/FUSE MALE 3 PIN PAN EL MOUNT SNAP IN VERT	1	
21-34-1116	CBL EARTHING w/EYELET 16AWG 5" GREEN w/YELLOW STRIPE	1	
50-02-0274	Alchemist Main PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0274	PCBA MAIN ALL VALVE A16	1	
01-04-0181	RES 180R 5% 1206	2	R45-R46
01-23-0330	RES METAL OXIDE 33R 3W 5% TH STRAIGHT LEAD	2	R65-R66
01-24-1001	RES 1.00K 1% 0805	5	R30,R54,R56,R58,R60
01-24-1002	RES 10.0K 1% 0805	2	R14,R29
01-24-1003	RES 100K 1% 0805	4	R19-R20,R26-R27
01-24-1004	RES 1.00M 1% 0805	2	R15-R16
01-24-10R0	RES 10.0R 1% 0805	2	R11,R64
01-24-1501	RES 1.50K 1% 0805	1	R21
01-24-1502	RES 15.0K 1% 0805	1	R31
01-24-2001	RES 2.00K 1% 0805	1	R18
01-24-22R1	RES 22.1R 1% 0805	4	R17,R24,R50,R53

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01-24-3321	RES 3.32K 1% 0805	4	R33,R35-R36,R38
01-24-4751	RES 4.75K 1% 0805	3	R1,R5,R61
01-24-4752	RES 47.5K 1% 0805	1	R9
01-24-4990	RES 499R 1% 0805	1	R25
01-24-4991	RES 4.99K 1% 0805	1	R28
01-24-5R11	RES 5.11R 1% 0805	2	R62-R63
01-24-7500	RES 750R 1% 0805	2	R32,R34
01-25-0000	RES 0R 1% 0603	1	R23
01-25-1001	RES 1.00K 1% 0603	3	R4,R6,R49
01-25-1002	RES 10.0K 1% 0603	4	R3,R10,R12-R13
01-25-2001	RES 2.00K 1% 0603	8	R22,R37,R39-R44
01-25-20R0	RES 20.0R 1% 0603	1	R59
01-25-4121	RES 4.12K 1% 0603	1	R47
01-25-4751	RES 4.75K 1% 0603	1	R2
01-25-47R5	RES 47.5R 1% 0603	6	R7-R8,R51,R55,R57,R68
01-25-5901	RES 5.90K 1% 0603	1	R52
01-25-6812	RES 68.1K 1% 0603	2	R48,R67
03-10-6108	CAP ELEC 1000uF 6.3V 20% RADIAL 8/11.5/5	2	C39,C53
03-12-1476	CAP ELEC 47uF 16V 20% RADIAL 5/7/5	1	C42
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	2	C47,C56
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	18	C36-C38,C40,C44,C46,C49-C51,C54-C55,C58-C61,C63-C65
03-50-0100	CAP NPO 10pF 50V 5% 0805	1	C45
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C66-C67
03-50-0102	CAP NPO 1nF 50V 5% 0805	2	C18,C23
03-50-0272	CAP NPO 2.7nF 50V 5% 0805	2	C33-C34
03-50-0391	CAP NPO 390pF 50V 5% 0805	4	C25,C30-C32
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	16	C1-C3,C6,C8-C9,C11-C16,C21,C26,C28,C35
03-52-0332	CAP X7R 3.3nF 50V 10% 0805	1	C17
03-52-0473	CAP X7R 47nF 50V 10% 0805	16	C19-C20,C22,C24,C27,C29,C41,C48,C52,C57,C62,C68-C70,C4 C10
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	2	C5,C7
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM	2	D3-D4
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM	2	D5-D6
09-00-4401	TRANS NPN SMALL SIGNAL 2N4401 TH	2	Q1-Q2
12-00-7808	IC REG +8V 1A TO-220 TH	1	U10
12-02-0115	IC REG -15V 1.5AMP TO-220F TH	1	U13
12-02-1086	IC REG +3.3V TO-220 TH	1	U9
12-02-7805	IC REG +5V 1.5 AMP TH	1	U11
12-02-7815	IC REG +15V 1AMP TO-220 TH	1	U14
12-54-0072	IC OP AMP DUAL TL072 SM	2	U1,U5
12-54-0084	IC OP AMP QUAD TL084CD SM	2	U2-U3
12-64-4528	IC CONVERTER 24BIT 96KHz AUDIO CODEC AK4528 SM	1	U12
15-72-0002	IC SRAM 512K x 8 BIT TSOP32 SM	1	U6
15-86-6362	IC DSP 24 BIT AUDIO DSP56362 TQFP-144 SM	1	U8
21-18-0002	TERMINAL SCREW PCB MOUNT RIGHT ANGLE SNAP-IN 6-32 THREAD	2	M3-M4
21-20-0202	HDR SIL PCB-MT 2 PIN x 2MM MAL E SHRD VERT MT TH	2	H1,H9
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H3
21-20-0204	HDR SIL PCB-MT 4 PIN x 2MM MAL E SHRD VERT MT TH	1	H8
21-20-0205	HDR SIL PCB-MT 5 PIN x 2MM MAL E SHRD VERT MT TH	2	H5-H6
21-20-0206	HDR SIL PCB-MT 6 PIN x 2MM MAL E SHRD VERT MT TH	1	H2
21-20-0210	HDR SIL PCB-MT 10 PIN x 2MM MA LE SHRD VERT MNT TH	1	H10
21-20-1563	HDR SIL PCB-MT 3 PIN x 3.96MM MALE VERT MNT FRIC LOCK	1	H7

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21-20-2010	HDR DIL PCB-MT 10 PIN 2 x 5 x 100 MALE SHRD VERT	1	H4
35-00-0274	PCB MAIN ALL VALVE A16	1	
45-01-0037	IC PROGRAMMED MCU/FLASH V1.00 C/S 0X5D4FE8CA AV CALI A16	1	U7
15-84-0936	IC MCU 16KB FLASH P89LPC936 TS SOP-28 SM	1	U7
45-02-0045	IC PROGRAMMED FLASH VX.XX C/S 0XXXXXXX AV COMBO A16	1	U4
15-78-0005	IC FLASH 512Kb SPI SERIAL SOIC -8 SM	1	U4
50-02-0275-1	Alchemist Speaker Out PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0275-1	PCBA SPEAKER OUT ALL VALVE A16	1	
01-23-2700	RES WIREWOUND 270R 5W 5% TH	1	R2
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	3	C1-C3
21-00-6617	JACK 1/4" TRS PCB MOUNT 6 PIN HORIZONTAL W/CHROME HRDWARE TH	3	J2-J4
21-20-3122	HDR SIL PCB-MT 2 PIN x 7.92MM MALE VERT MNT FRIC LOCK	1	H2
21-20-3124	HDR SIL PCB-MT 4 PIN x 7.92MM MALE VERT MNT FRIC LOCK	1	H1
30-18-3030	CLIP GROUND PCB .30 x .30 x .07	3	GF1-GF3
35-00-0275-1	PCB SPEAKER OUT ALL VALVE A16	1	
50-02-0275-2	Alchemist XLR Input - FX Send/RETURN PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0275-2	PCBA XLR INPUT - FX SEND/RETU RN ALL VALVE A16	1	
01-49-0015	POT DUAL 100KA AUDIO TAPER 15M M TH	1	R1
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	2	C4-C5
03-58-0104	CAP X7R 0.1uF 25V 10% 0603	5	C7-C11
04-05-0004	FERRITE BEAD 400mA 1500 OMH 0805	1	L4
11-10-2012	FERRITE BEAD 600R @ 100MHz 300 mA 0805 SM	6	L1-L3,L5-L7
21-00-6617	JACK 1/4" TRS PCB MOUNT 6 PIN HORIZONTAL W/CHROME HRDWARE TH	2	J5-J6
21-08-0002	JACK XLR FEMALE PCB MOUNT RT ANGLE W/NO RELEASE TAB TH	1	J1
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H4
21-20-0204	HDR SIL PCB-MT 4 PIN x 2MM MAL E SHRD VERT MT TH	1	H5
30-18-3030	CLIP GROUND PCB .30 x .30 x .07	3	GF4-GF6
35-00-0275-2	PCB XLR INPUT - FX SEND/RETURN ALL VALVE A16	1	
50-02-0275-3	PCBA GUITAR INPUT ALL VALVE A16	1	
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	1	C6
11-10-2020	CHOKE WIDE BAND 1-5 TURNS	1	L8
21-00-6617	JACK 1/4" TRS PCB MOUNT 6 PIN HORIZONTAL W/CHROME HRDWARE TH	1	J7
21-20-0202	HDR SIL PCB-MT 2 PIN x 2MM MAL E SHRD VERT MT TH	1	H6
30-18-3030	CLIP GROUND PCB .30 x .30 x .07	1	GF7
30-51-0146	SHIELD PCB MT FOR 1/4 JACK 1.00 Hx1.25Wx.013THK BERYL COP	1	SH1
35-00-0275-3	PCB GUITAR INPUT ALL VALVE A16	1	
50-02-0276	Alchemist UI Digital Section PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0276	PCBA UI DIGITAL SECTION ALL VALVE A16	1	
01-24-1002	RES 10.0K 1% 0805	1	R8
01-24-1003	RES 100K 1% 0805	1	R5
01-24-2211	RES 2.21K 1% 0805	2	R19-R20
01-24-2432	RES 24.3K 1% 0805	1	R11
01-24-7500	RES 750R 1% 0805	1	R4
01-24-4752	RES 47.5K 1% 0805	2	R14-R15
01-25-2002	RES 20.0K 1% 0603	3	R9-R10,R17
01-25-4751	RES 4.75K 1% 0603	2	R12,R16
01-25-47R5	RES 47.5R 1% 0603	4	R6-R7,R13,R18
01-48-2254	POT SINGLE 250KB LINEAR 16MM D-SHAFT W-AXIS ANGLE TH	1	R2

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03-10-0477	CAP ELEC 470uF 6.3V 20% RADIAL 6.3/11/5	1	C3
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	1	C6
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	3	C1-C2,C4
03-52-0473	CAP X7R 47nF 50V 10% 0805	2	C5,C7
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM	2	D3-D4
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM	2	D1-D2
09-10-4401	TRANS NPN SMALL SIGNAL SOT-23 SM	1	Q1
11-10-2012	FERRITE BEAD 600R @ 100MHz 300 mA 0805 SM	4	L1-L4
12-54-0072	IC OP AMP DUAL TL072 SM	1	U1
21-20-0202	HDR SIL PCB-MT 2 PIN x 2MM MAL E SHRD VERT MT TH	1	H3
21-20-0210	HDR SIL PCB-MT 10 PIN x 2MM MA LE SHRD VERT MNT TH	1	H1
21-30-0004-1	CBL RIBBON SIL 10 COND 28AWG .100 5" Z-TYPE STAKED M-F	1	H2
24-03-0211	SWITCH TOGGLE DPDT 3 POS 20V 0.4VA 8P SNAP IN SEALED	2	
24-31-1105	SWITCH TACT 6MM SQ 4 PIN TH	1	SW1
30-27-0300-2	BUTTON 1.00 x .50 x .94 H ABS BLACK A16	1	
35-00-0276	PCB UI DIGITAL SECTION ALL VALVE A16 REV.C	1	
01-49-0018	POT DUAL 10KA AUDIO TAPER 16MM D-SHAFT W-AXIS ANGLE TH	1	R1
01-48-0014	POT SINGLE 10KA AUDIO TAPER 16MM D-SHAFT TH W-AXIS ANGLE	1	R3
50-02-0290	Alchemist Pre Amp PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0290	PCBA PRE AMP ALL VALVE A16	1	
01-12-0000	RES CARBON FILM OR 1/4W 5% TH	8	JMP1-JMP2,R41,R47-R48,R51,R73,R121
01-12-0101	RES CARBON FILM 100R 1/4W 5% TH	5	R44,R86,R95,R111-R112
01-12-0102	RES CARBON FILM 1K 1/4W 5% TH	1	R89
01-12-0103	RES CARBON FILM 10K 1/4W 5% TH	3	R56,R65,R81
01-12-0104	RES CARBON FILM 100K 1/4W 5% TH	4	R27,R31,R58,R88
01-12-0105	RES CARBON FILM 1M 1/4W 5% TH	8	R4,R15,R40,R59,R69,R79,R87,R108
01-12-0124	RES CARBON FILM 120K 1/4W 5% TH	2	R26,R109
01-12-0132	RES CARBON FILM 1.3K 1/4W 5% TH	1	R1
01-12-0151	RES CARBON FILM 150R 1/4W 5% TH	3	R29,R34,R120
01-12-0162	RES CARBON FILM 1.6K 1/4W 5% TH	5	R13-R14,R22,R53,R70
01-12-0182	RES CARBON FILM 1.8K 1/4W 5% TH	2	R25,R46
01-12-0184	RES CARBON FILM 180K 1/4W 5% TH	2	R10,R54
01-12-0223	RES CARBON FILM 22K 1/4W 5% TH	1	R2
01-12-0224	RES CARBON FILM 220K 1/4W 5% TH	5	R52,R57,R66,R75-R76
01-12-0226	RES CARBON FILM 22M 1/4W 5% TH	3	R97-R99
01-12-0243	RES CARBON FILM 24K 1/4W 5% TH	2	R38,R63
01-12-0303	RES CARBON FILM 30K 1/4W 5% TH	2	R16-R17
01-12-0330	RES CARBON FILM 33R 1/4W 5% TH	1	R119
01-12-0334	RES CARBON FILM 330K 1/4W 5% TH	3	R74,R83,R90
01-12-0335	RES CARBON FILM 3.3M 1/4W 5% TH	1	R67
01-12-0373	RES CARBON FILM 37K 1/4W 5% TH	1	R39
01-12-0391	RES CARBON FILM 390R 1/4W 5% TH	1	R68
01-12-0392	RES CARBON FILM 3.9K 1/4W 5% TH	1	R62
01-12-0473	RES CARBON FILM 47K 1/4W 5% TH	2	R30,R60
01-12-0474	RES CARBON FILM 470K 1/4W 5% TH	8	R21,R24,R28,R72,R84,R92-R93,R100
01-12-0475	RES CARBON FILM 4.7M 1/4W 5% TH	1	R12
01-12-0510	RES CARBON FILM 51R 1/4W 5% TH	2	R6,R33
01-12-0620	RES CARBON FILM 62R 1/4W 5% TH	4	R18,R32,R35,R118
01-12-0621	RES CARBON FILM 620R 1/4W 5% TH	1	R82
01-12-0683	RES CARBON FILM 68K 1/4W 5% TH	2	R11,R113

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01-12-0821	RES CARBON FILM 820R 1/4W 5% TH	3	R3,R49,R64
01-12-0824	RES CARBON FILM 820K 1/4W 5% TH	1	R42
01-17-0103	RES CARBON FILM 10K 1W 5% TH	3	R19,R36,R77
01-17-0104	RES CARBON FILM 100K 1W 5% TH	8	R8-R9,R20,R23,R43,R55,R61,R78
01-17-0224	RES CARBON FILM 220K 1W 5% TH	1	R37
01-17-0823	RES CARBON FILM 82K 1W 5% TH	1	R80
03-00-0222	CAP CER DISC 2200pF 1KV 10% TH 9.5/6/6.35	2	C26,C62
03-00-2223	CAP POLY FILM 22nF 600V 10% TH	3	C12,C15,C25
03-00-3102	CAP CER DISC 1000pF 1KV 10% TH 6.5/6/6.35	2	C53,C90
03-00-3470	CAP CER DISC SL 47pF 1KV 5% TH 6.5/6.0/6.35	2	C48,C65
03-00-3471	CAP CER 470pF 1000V 10% TH 6.5/6/6.35	3	C28,C51,C56
03-10-0106	CAP ELEC 10uF 10V 20% RADIAL 5/11/2	5	C10,C19-C20,C36,C45
03-22-0225	CAP ELEC 2.2uF 100V 20% RADIAL 5/11/2	1	C31
03-22-0226	CAP ELEC 22uF 450V 20% RADIAL 16/32/12.5	4	C13,C23,C34,C39
03-22-0335	CAP ELEC 3.3uF 100V 20% RADIAL 5/11/2	1	C7
03-23-0105	CAP ELEC 1uF 100V 20% LowZ 0.7R RADIAL 5/11/2	1	C9
03-24-0223	CAP MET POLY 22nF 250V 10% TH 10.3/4.4/7.5/7.5	3	C1-C2,C4
03-24-1224	CAP MET POLY 0.22uF 400V 10% 28/8.5/0.8	3	C5,C11,C22
03-24-1684	CAP MET POLY 0.68uF 100V 5% TH 18.0/5.5/10.5/15	1	C21
03-24-3104	CAP MET POLY 0.1uF 400V 10% TH AXIAL 20.5/8/0.8	3	C41,C44,C47
03-25-0103	CAP MET POLYPROP 0.01uF 400V 10% TH	3	C17,C37,C43
03-25-0104	CAP MET POLYPROP 0.1uF 250V 10%TH	1	C49
03-25-0223	CAP MET POLYPROP .022uF 630V 630V, 5% TH 13/5/11/10	1	C67
03-25-0471	CAP POLY-PROP 470pF 630V, 5% TH 10/3/8.5/7.5	1	C60
03-25-0474	CAP MET POLYPROP 0.47uF 400V 10% AXIAL TH	1	C46
03-25-6104	CAP MET POLYPROP 0.1uF 630V 10% TH 26/15/10/22.5	2	C14,C24
03-27-0103	CAP POLYESTER 0.01uF 400V 10% TH 20.3/14.7/7.1/9.5 ORANGE DR	1	C16
03-27-0503	CAP POLYESTER .047uF 400V 10% TH 20.3/16.5/10.4/9.5 ORANGE D	2	C35,C70
03-27-1223	CAP POLYESTER 0.022uF 400V 10% TH 20.3/7.87/16.5/9.5 ORANGE	2	C33,C55
03-70-0050	CAP MICA STD DIPPED 5pF 500V 5% TH 9.1/4.8/8.4/3.6	1	C68
03-70-0120	CAP MICA STD DIPPED 12pF 500V 5% TH 9.1/4.8/8.4/3.6	1	C40
03-70-0220	CAP MICA STD DIPPED 22pF 500V 5% TH 9.1/4.8/8.4/3.6	1	C66
03-70-0330	CAP MICA STD DIPPED 33pF 500V 5% TH 9.4/4.8/8.6/3.6	1	C69
03-70-0470	CAP MICA STD DIPPED 47pF 500V 5% TH 9.4/4.8/8.6/3.6	1	C54
06-00-4148	DIODE SMALL SIGNAL 100V 300mA 4nS DO-35 TH	12	D1-D6,D8-D13
09-00-5401	TRANS PNP SMALL SIGNAL 2N5401 TH	1	Q2
12-12-0109	IC SWITCH ANALOG 1 600V 20109 TO-92 TH	1	Q1
21-18-0007	TUBE SOCKET BELTON VT9-PT	5	J1-J5
21-20-0202	HDR SIL PCB-MT 2 PIN x 2MM MAL E SHRD VERT MT TH	4	H3,H6-H7,H15
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H9
21-20-0214	HDR SIL PCB-MT 14 PIN x 2MM MA LE SHRD VERT MNT TH	1	H14
21-20-1562	HDR SIL PCB-MT 2 PIN x .156 MA LE VERT MNT FRIC LOCK	7	H1-H2,H4-H5,H10,H16-H17
21-20-3122	HDR SIL PCB-MT 2 PIN x 7.92MM MALE VERT MNT FRIC LOCK	3	H8,H11-H12
21-20-3125	HDR SIL PCB-MT 5 PIN x .312 MA LE VERT MNT FRIC LOCK	1	H13
24-15-0005	RELAY DPDT OMRON LOW SIGNAL G6A-234P-ST-US-DC5	1	K4
24-15-0007	RELAY SPST COTO TECHNOLOGY 9007-05-00 SPARTAN REED RELAY	4	K2,K7,K10-K11
24-15-0016	RELAY DPDT NEC MINIATURE SIGNL NON LATCH UC2-SNU CoilRes=178	9	K1,K3,K5-K6,K8-K9,K12-K14
35-00-0290	PCB PRE AMP ALL VALVE A16	1	

Alchemist 112/212/HD Parts List

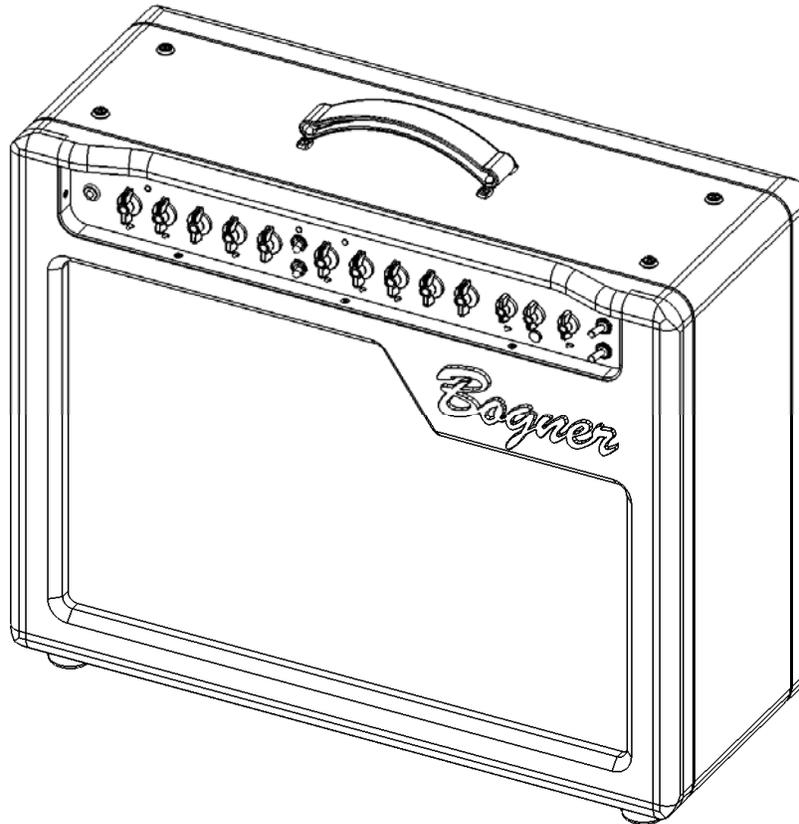
50-02-0291 Alchemist Power Amp PCBA BOM			
Part Number	Description	Qty	Reference Designator(s)
50-02-0291	PCBA POWER AMP ALL VALVE A16	1	
01-12-0184	RES CARBON FILM 180K 1/4W 5% TH	2	R6,R12
01-12-0222	RES CARBON FILM 2.2K 1/4W 5% TH	2	R4,R11
01-12-0223	RES CARBON FILM 22K 1/4W 5% TH	1	R5
01-12-0682	RES CARBON FILM 6.8K 1/4W 5% TH	1	R3
01-23-0100	RES WIREWOUND 10R 5W 5% TH	2	R1-R2
01-23-0471	RES WIREWOUND 470R 7W 5% TH	2	R7-R8
01-52-0503	POT TRIM 50K MULTI TURN TOP ADJ 9.53/6.10/10.03	2	R9-R10
03-22-0106	CAP ELEC 10uF 100V 20% 85C RADIAL 6.3/11/2.5	2	C1-C2
21-18-0009	TUBE SOCKET BELTON VT8-PTS 8 PIN TH OVAL MNT HOLE SHORT LL	2	J1-J2
21-18-0250	CONN TAB FAST TIN PCB .250" x .032" MALE TH	2	W1-W2
21-20-0012	HDR SIL PCB-MT 3 PIN x .100 MA LE FRIC-LOCK VERT MNT TH	1	H2
21-20-3122	HDR SIL PCB-MT 2 PIN x 7.92MM MALE VERT MNT FRIC LOCK	1	H4
21-20-3125	HDR SIL PCB-MT 5 PIN x .312 MA LE VERT MNT FRIC LOCK	1	H3
30-00-0137	SCREW 4-40 x .3125 w/LK WASH PAN HD PHIL BLK	4	
30-12-0011	STANDOFF HEX .250 4-40 F-F 0.500-IN AL	4	
35-00-0291	PCB POWER AMP ALL VALVE A16	1	
50-02-0292 Alchemist Power Supply PCBA BOM			
Part Number	Description	Qty	Reference Designator(s)
50-02-0292	PCBA POWER SUPPLY ALL VALVE A16	1	
01-16-0471	RES CARBON FILM 470R 1/2W 5% TH	2	R2,R5
01-17-0101	RES CARBON FILM 100R 1W 5% TH	2	R1,R4
01-17-0224	RES CARBON FILM 220K 1W 5% TH	4	R9-R12
01-23-05R0	RES WIREWOUND 5R 7W 5% TH	3	R6-R8
01-52-0102	POT TRIM 1K SINGLE TURN TOP ADJ 6.75 x 6.75 x 7.75MM	1	R3
03-00-0222	CAP CER DISC 2200pF 1KV 10% TH 9.5/6/6.35	1	C4
03-00-1102	CAP CER DISC Y-CAP 1nF 250VAC 20% 8D/7/7.5	2	C1-C2
03-10-0689	CAP ELEC 68000uF 10V 20% RADIAL 35/40/10	1	C7
03-16-0478	CAP ELEC 4700uF 35V 20% 105C RADIAL 18/35.5/7.5	1	C6
03-18-0108	CAP ELEC 1000uF 50V 20% FC RAD IAL	1	C11
03-22-0826	CAP ELEC 82uF 400V 20% RADIAL 25.4/25/10 SNAP IN	2	C9-C10
03-22-1686	CAP ELEC 68uF 400V 20% RADIAL 25/20/10 SNAP IN	2	C8,C12
03-23-0101	CAP ELEC 100uF 160V RADIAL	1	C5
03-41-0224	CAP X-CAP 0.22uF 275VAC 20% POLYPROPYLENE 18/9.5/17.5/15	1	C3
06-01-4007	DIODE RECTIFIER 1N4007 1KV 1A DO-41 TH	9	D1-D4,D6,D8-D11
06-16-0008	DIODE BRIDGE RECTIFIER 600V 8A 4 PIN SIL TH	1	D5
06-16-0101	DIODE BRIDGE RECTIFIER 50V 1A 4 PIN DB-1 TH	1	D7
11-10-2020	CHOKE WIDE BAND 1-5 TURNS	2	L1-L2
11-30-0032	XFMR 330VAC-55VAC @ 25mA	1	T1
21-18-0250	CONN TAB FAST TIN PCB .250" x .032" MALE TH	2	W1,W6
21-20-1563	HDR SIL PCB-MT 3 PIN x 3.96MM MALE VERT MNT FRIC LOCK	1	H12
21-20-1564	HDR SIL PCB-MT 4 PIN x .156 MA LE VERT MNT FRIC LOCK	1	H4
21-20-3122	HDR SIL PCB-MT 2 PIN x 7.92MM MALE VERT MNT FRIC LOCK	5	H1-H3,H8-H9
21-20-3123	HDR SIL PCB-MT 3 PIN x 7.92MM MALE VERT MNT FRIC LOCK	3	H5-H6,H10
21-20-3125	HDR SIL PCB-MT 5 PIN x .312 MA LE VERT MNT FRIC LOCK	1	H11
21-34-0106	CBL SIL 9-PIN/5 COND 18AWG 3.96 MULTI 2-COND/3-S/T	1	POWER AMP H3 TO PREAMP H11
21-48-0520	FUSE CLIP PCB MNT FOR 5 x 20MM	2	CL1-CL2
21-48-2071	HOLDER FUSE CLIP BARREL 3AG / 3AB 0.25"(6.3mm) FUSE DIAMETER	2	CL3-CL4
24-19-0010	FUSE 1.0A 250V SLOW BLOW 3AG	1	F1 (CL3 TO 4)

Alchemist 112/212/HD Parts List

24-19-8251	FUSE 8.0A 250V 5MMx20MM SLOW BLOW	1	F3 (CL1 TO 2)
35-00-0292	PCB POWER SUPPLY ALL VALVE A16	1	
50-02-0293	Alchemist Analog UI PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0293	PCBA ANALOG UI ALL VALVE A16	1	
01-12-0101	RES CARBON FILM 100R 1/4W 5% TH	1	R31
01-12-0103	RES CARBON FILM 10K 1/4W 5% TH	1	R22
01-12-0104	RES CARBON FILM 100K 1/4W 5% TH	3	R6,R23,R28
01-12-0105	RES CARBON FILM 1M 1/4W 5% TH	1	R30
01-12-0124	RES CARBON FILM 120K 1/4W 5% TH	1	R8
01-12-0162	RES CARBON FILM 1.6K 1/4W 5% TH	1	R21
01-12-0220	RES CARBON FILM 22R 1/4W 5% TH	1	R1
01-12-0224	RES CARBON FILM 220K 1/4W 5% TH	1	R9
01-12-0274	RES CARBON FILM 270K 1/4W 5% TH	2	R25,R27
01-12-0334	RES CARBON FILM 330K 1/4W 5% TH	1	R26
01-12-0471	RES CARBON FILM 470R 1/4W 5% TH	2	R4,R24
01-12-0472	RES CARBON FILM 4.7K 1/4W 5% TH	1	R3
01-12-0683	RES CARBON FILM 68K 1/4W 5% TH	1	R7
01-12-0684	RES CARBON FILM 680K 1/4W 5% TH	1	R5
01-48-0011	POT SINGLE 250KA AUDIO TAPER 16MM D-SHAFT TH W-AXIS ANGLE	1	R17
01-48-0504	POT SINGLE 500KB LINEAR 16MM D-SHAFT TH	1	R12
01-48-1105	POT SINGLE 1MB LINEAR 16MM D-SHAFT TH	2	R11,R15
01-48-1254	POT SINGLE 250KB LINEAR 16MM D-SHAFT TH	1	R14
01-48-2253	POT SINGLE 25KA AUDIO 16MM D-SHAFT TH	1	R18
01-48-3105	POT SINGLE 1MA AUDIO 16MM D-SHAFT TH	1	R16
01-48-3254	POT SINGLE 250KA AUDIO 16MM D-SHAFT TH	1	R20
01-48-4104	POT SINGLE 100KB LINEAR 16MM D-SHAFT TH	1	R13
01-49-1105	POT DUAL 1MB LINEAR TAPER 16MM D-SHAFT TH	1	R19
03-00-0821	CAP CER DISC 820pF 1KV 10% TH 6.5/6/6.35	1	C16
03-24-2104	CAP MET POLY 0.1uF 400V 10% TH WIMA	1	C11
03-24-2223	CAP MET POLY 22nF 630V 5% TH AXIAL 16.5/7/7/22.5	2	C1,C5
03-25-0102	CAP POLYPROP 1000pF 630V , 5% TH 10/3/8.5/7.5	1	C7
03-25-0471	CAP POLY-PROP 470pF 630V, 5% TH 10/3/8.5/7.5	2	C2,C4
03-25-0472	CAP MET POLYPROP 0.0047uF 1600V, 10% TH 19/9.5/15.5/15	1	C3
03-25-0473	CAP MET POLYPROP 0.047uF 400V 10% TH 13/11/7.5/10	1	C10
03-70-0221	CAP MICA STD DIPPED 220pF 500V 5% TH 11.7/5.1/9.7/5.9	1	C13

Alchemist 112/212/HD Parts List

03-70-0271	CAP MICA STD DIPPED 270pF 500V 5% TH 11.9/5.3/9.9/5.9	1	C6
06-00-4148	DIODE SMALL SIGNAL 100V 300mA 4nS DO-35 TH	6	D1,D3,D5-D7,D9
18-02-0002	LED RED DIFFUSED LENS 5V T-1 3MM 635nm TH	1	
18-03-0003	LED BLUE T-1 3MM SOLID STATE LAMP WATER CLEAR TH	1	
18-04-0001	LED GREEN SUPER BRIGHT TH	1	
21-20-0202	HDR SIL PCB-MT 2 PIN x 2MM MAL E SHRD VERT MT TH	1	H4
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H5
21-20-0205	HDR SIL PCB-MT 5 PIN x 2MM MAL E SHRD VERT MT TH	1	H2
21-20-1562	HDR SIL PCB-MT 2 PIN x .156 MA LE VERT MNT FRIC LOCK	6	H3,H6-H10
21-30-0055-1	CBL SIL 14 COND 26AWG 2MM 3.0" S/T	1	
21-34-0084-1	CBL SIL 5 COND 22AWG .1" PITCH x 1.5" TINNED ENDS 300V 105C	1	
24-03-0200	SWITCH TOGGLE DPDT 120V 5A 6P 1.27 PC TERMINAL THREAD MNT	2	
24-03-0210	SWITCH TOGGLE DPDT 2 POS 20V 0.4VA 8P SNAP IN SEALED	6	
24-15-0007	RELAY SPST COTO TECHNOLOGY 9007-05-00 SPARTAN REED RELAY	1	K1
24-15-0016	RELAY DPDT NEC MINIATURE SIGNL NON LATCH UC2-SNU CoilRes=178	1	K2
30-15-0029	SPACER LED .160 H x .170 O.D. PLASTIC LH-5-4	3	
35-00-0293	PCB ANALOG UI ALL VALVE A16	1	
59-00-1807	Alchemist Footswitch BOM		
Part Number	Description	Qty	Reference Designator(s)
59-00-1807	ASSY UNIT COMPLETE FOOTSWITCH AV COMBO A16	1	
21-34-0103-2	CBL SIL 3 COND 26AWG 2MM 3" F-F WHITE	1	
30-00-9813	SCREW 4-40 x 0.250" FLAT-HD STEEL BLACK-OXIDE	6	
30-03-0017	WASHER 15.9 x11.9x .53mm STEEL NICKEL	4	
30-21-0013	LED RETAINING CLIP PLASTIC BLACK A16	4	
30-48-0010	FOOT RUBBER w/ADHESIVE 3M BUMPON SJ-5012 (OR EQUIV)	6	
30-51-0324	CHASSIS BOTTOM FT SW 12.5 x 3. 2 x 1.6 GALVANIZED STEEL A16	1	
30-51-0325	CHASSIS TOP FT SW 12.5 x 3.3 x 1.6 GALVANIZED STEEL A16	1	
41-00-0175	ARTWORK SILKSCREEN CHASSIS FOOTSWITCH AV A16	1	
50-02-0109-1	Alchemist Footswitch Main PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0109-1	PCBA FOOTSWITCH MAIN A16	1	
01-36-0100	RES CARBON FILM 10R 1/4W 1% TH	1	R10
01-36-1001	RES CARBON FILM 1K 1/4W 1% TH	4	R2,R9,R11-R12
01-36-2001	RES CARBON FILM 2K 1/4W 1% TH	5	R1,R3,R5,R7,R13
01-36-2002	RES CARBON FILM 20K 1/4W 1% TH	1	R4
01-36-7501	RES CARBON FILM 7.5K 1/4W 1% TH	2	8,R6
03-24-1104	CAP MET POLY 0.1uF 100VDC 5% TH 4.5/7.5/7/5	2	C1-C2
18-00-1503	LED RED SUPER BRIGHT T1 3/4 5M M TH	2	D2-D3
18-03-0002	LED BLUE DIFFUSED T-1 3/4 5MM 465nm TH	1	D2
18-06-0001	LED BI COLOR GRN/AlGaAs/RED TH	1	D1
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H1
24-01-0000	SWITCH LATCHING PUSH BUTTON DP DT 6 PIN DIL TH	4	SW1-SW4
30-15-0740	SPACER LED 0.74 H x 0.255 O.D BIVAR ELM 3-740	4	D1-D4
35-00-0046-1	PCB FOOT SWITCH A16 MAIN	1	
50-02-0109-2	Alchemist Footswitch Switch PCBA BOM		
Part Number	Description	Qty	Reference Designator(s)
50-02-0109-2	PCBA FOOTSWITCH XLR A16	1	
21-08-0013	JACK XLR MALE PCB MOUNT RIGHT ANGLE TH	1	J1
21-20-0203	HDR SIL PCB-MT 3 PIN x 2MM MAL E SHRD VERT MT TH	1	H2
30-18-3030	CLIP GROUND PCB .30 x .30 x .07	1	GF1
35-00-0046-2	PCB FOOT SWITCH A16 XLR	1	



Forward and Notes

The information in this booklet applies to the AV/Cali 112 Combo (A16-1). It details the assembly of the cabinet and complete unit. It is suggested that the steps for assembly follow the order presented in these instructions.

These instructions deal with the assembling of the major subassemblies, the final product, and quality/inspection considerations. See also the Related Electrical assembly documentation for major considerations in assembling the electrical components of the PCBs (through the soldering process and preparation of the board for addition of custom components).

A note on the text: the illustrations in this book are for reference only. In some cases, color and geometry of illustrations may not accurately reflect the color or exact geometry of actual parts.

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- For clarity, not all component details are shown. This is especially true with respect to cable assemblies. They are often omitted from views to provide a clearer picture of the material discussed. Do not be confused by the absence (or unexpected presence) of any component in the illustrations in this book.



Revision Comment Sheet

Revision	Changes
A	ECO 0813601. Initial release.
B	ECO 0823304. Step 5 (added) – application of model # LABEL. Requirement for safety.

STEP 1

P/N required:

1 each **50-03-0053** CABINET ASSY 112

1 each **11-20-1004** SPEAKER 12" 8 OHM CELESTION VINTAGE 30

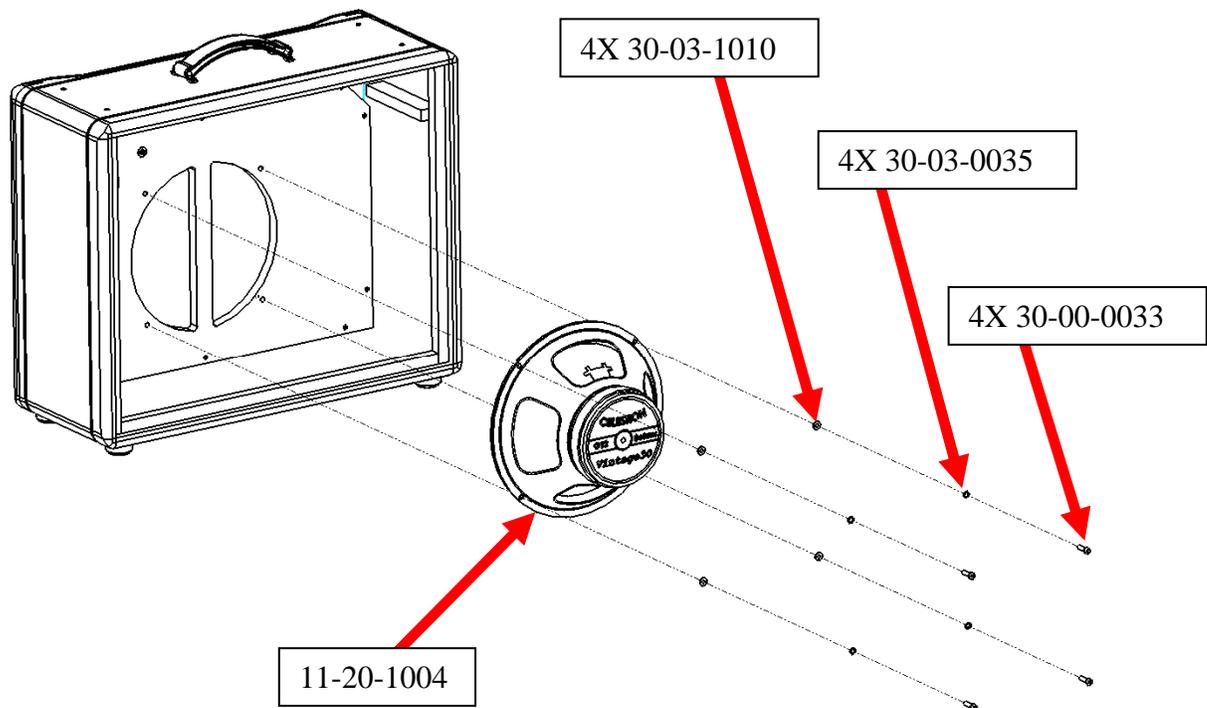
4 each **30-00-0033** SCREW #10-24 x 7/8"

4 each **30-03-0035** SPLIT LOCK WASHER #10

4 each **30-03-1010** FLAT WASHER #10

Secure the SPEAKER to the CABINET ASSY with 4 SCREWS, SPLIT LOCK WASHERS, and FLAT WASHERS each. Apply threadlocker (Loctite p/n 21463 or equivalent) to the threads of the SCREWS before assembly. Torque the SCREWS to 8 – 10 inch-pounds.

The speaker terminals shall be oriented as shown.



STEP 2

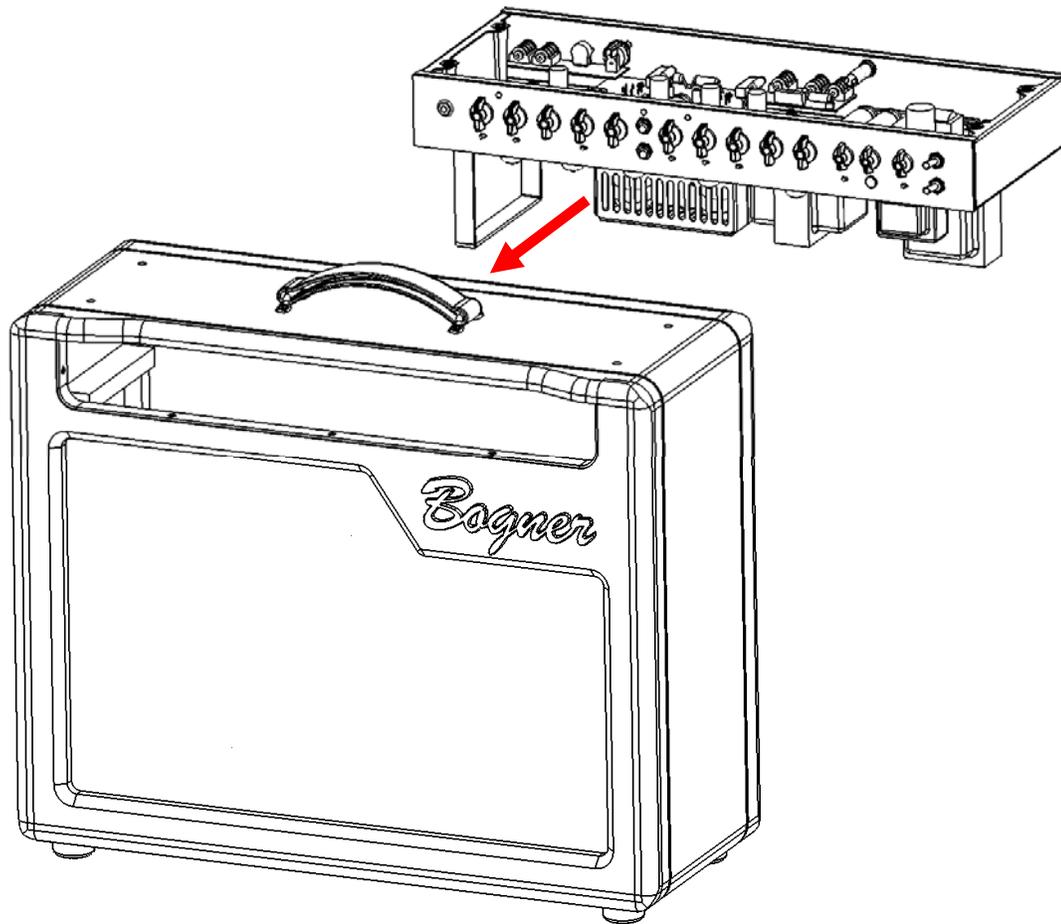
P/N required:

1 each **50-04-0290** CHASSIS ASSY (A16)

4 each **30-03-0112** FINISHING WASHER #10

4 each **30-00-1130** SCREW #10-32 x 4" OVAL BLK

Insert CHASSIS ASSY into CABINET ASSY as shown.

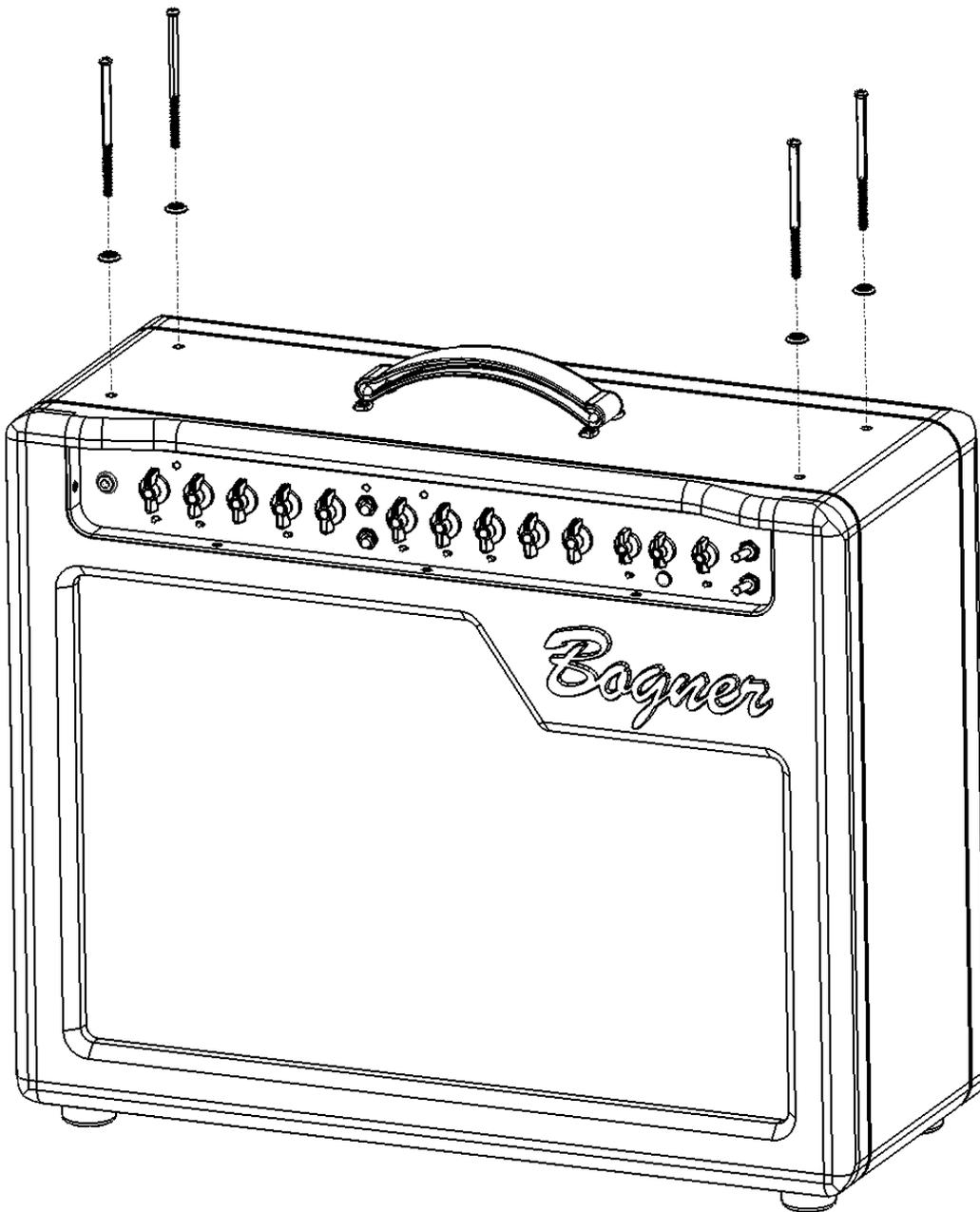


Step 2 is continued on next page

STEP 2 CONT'D

Secure to CABINET using four (4) SCREWS and FINISHING WASHERS.

Torque each SCREW to 10 – 12 inch-pounds.





STEP 3

P/N required:
1 each **21-34-0098-1** SPEAKER CABLE



Plug the 1/4" plug from the SPEAKER CABLE into the 1/4" jack labeled "A" on the back panel of the CHASSIS.



Step 3 is continued on the next page

STEP 3 CONT'D

Plug the Fast-on connectors from the SPEAKER CABLE to the speaker terminals.

Connect the white wire to the positive (+) terminal on the speaker.

Connect the black wire to the negative (-) terminal on the speaker.



STEP 4

P/N required:

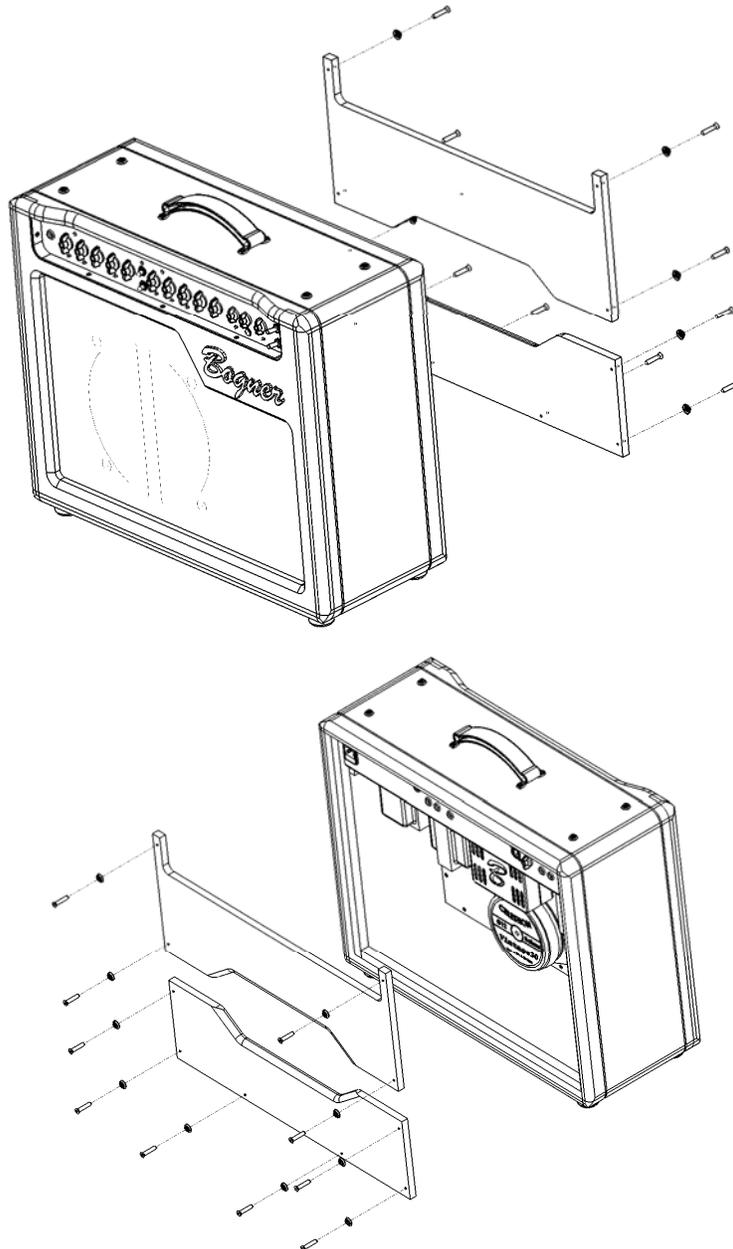
10 each **30-00-0072** SCREW #10 x 1 1/4"

10 each **30-03-0112** FINISHING WASHER #10

1 each KICK BOARD BOTTOM (included with CAB ASSY)

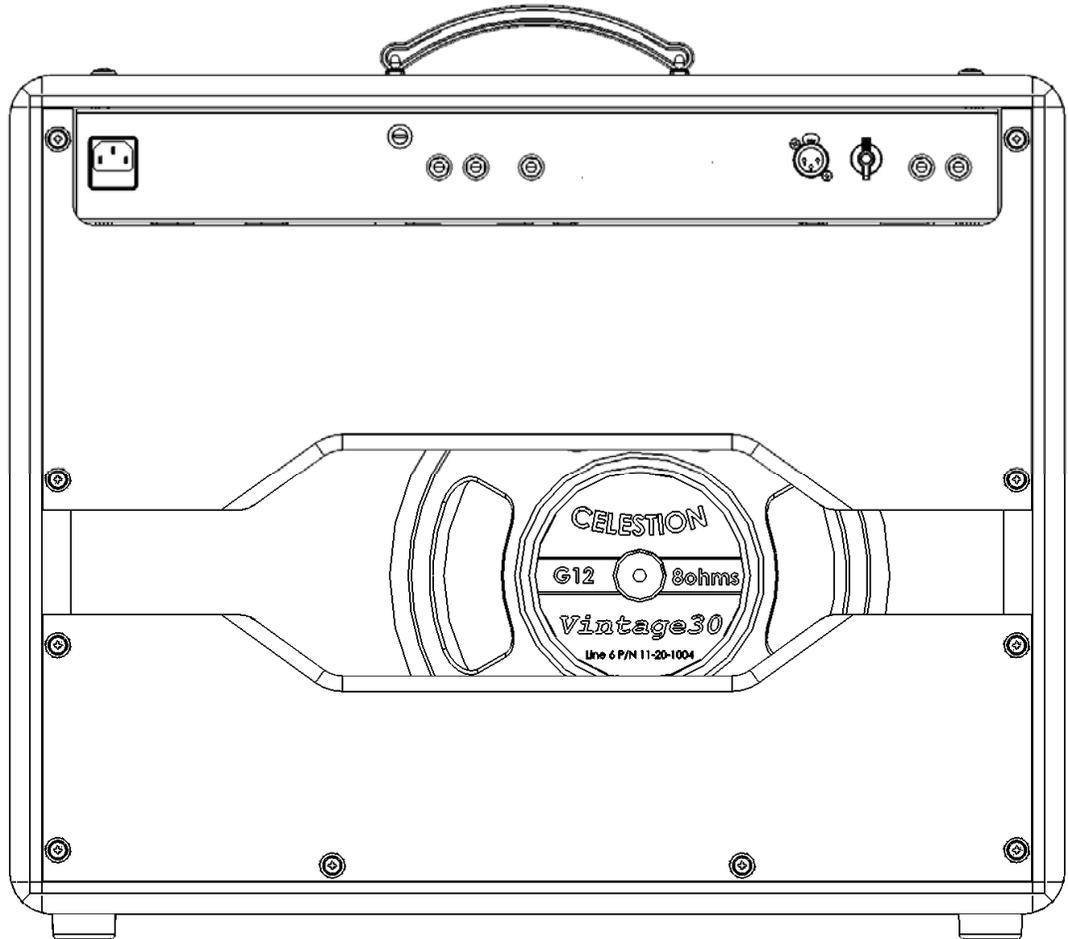
1 each KICK BOARD TOP (included with CAB ASSY)

Turn SCREWS until fully seated.





STEP 4 CONT'D



Reference View – Cabinet Back (w/Back Panels Installed)



STEP 5

P/N required:

1 each **40-25-0144 LABEL ALCHEMIST 112 REAR CHASSIS A16-1**

Install the LABEL in the approximate location shown.



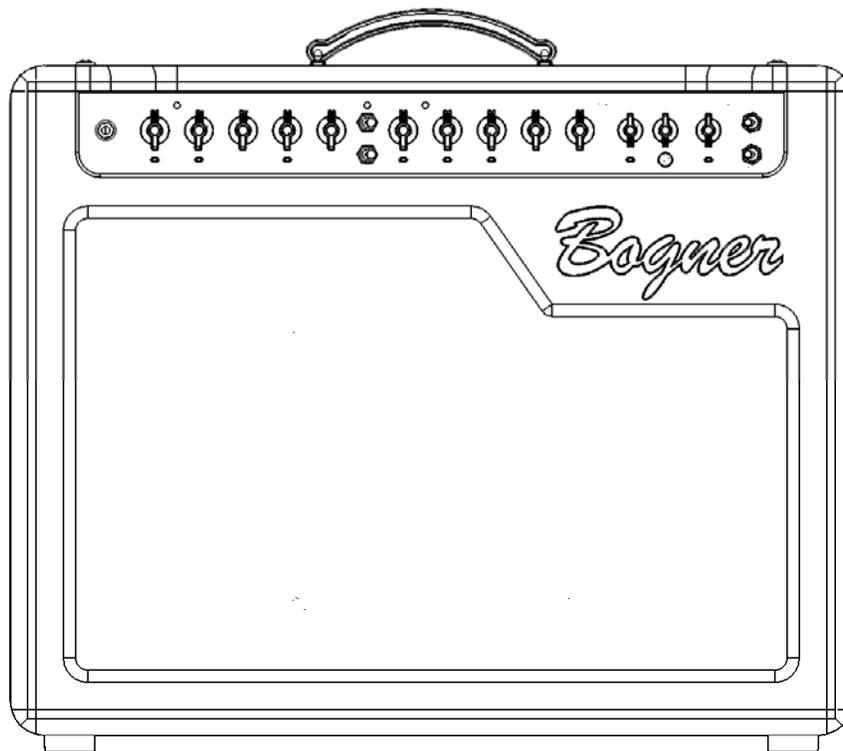
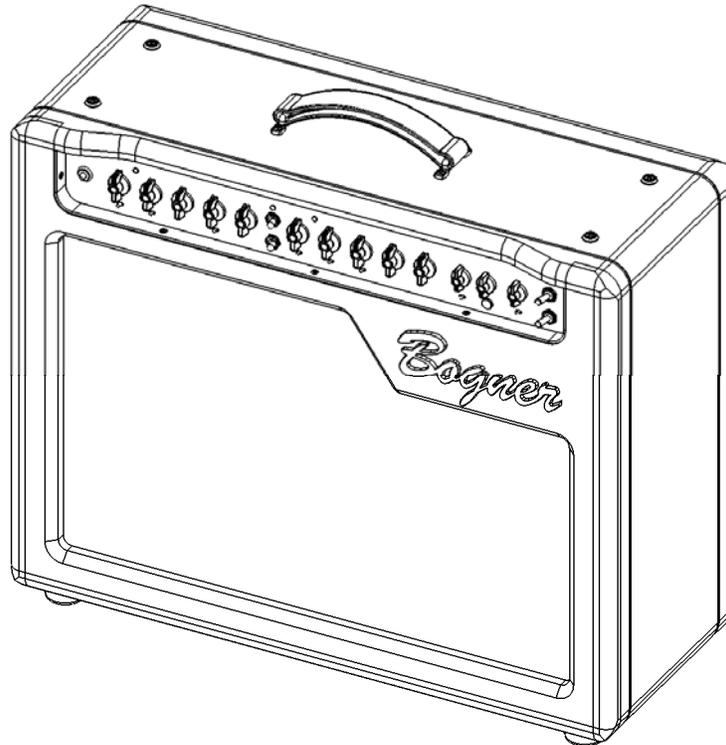
APPLY LABEL HERE
(centered over "Bogner")

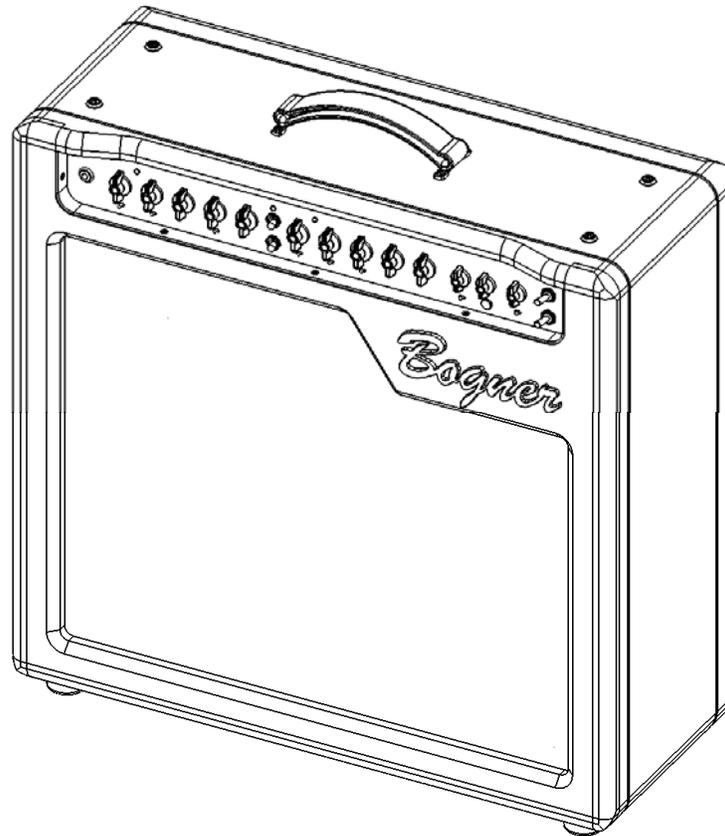


Assembly of the AV/Cali 112 (A16-1) Complete Unit is now complete.



Completed Views (Reference)





Forward and Notes

The information in this booklet applies to the AV/Cali 212 Combo (A16-2). It details the assembly of the cabinet and complete unit. It is suggested that the steps for assembly follow the order presented in these instructions.

These instructions deal with the assembling of the major subassemblies, the final product, and quality/inspection considerations. See also the Related Electrical assembly documentation for major considerations in assembling the electrical components of the PCBs (through the soldering process and preparation of the board for addition of custom components).

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Revision Comment Sheet

Revision	Changes
A	ECO 0813601. Initial release.
B	ECO 0817604. Step 4. Revised Cable Assy P/N to 21-36-0266-2. Was P/N 21-36-0266-3.
C	ECO 0823304. Step 6 (added) – application of model # LABEL. Requirement for safety.
D	ECO 0825404. Step 2 – Added instruction for CHASSIS ASSY installation. Added step after Step 4 – added cable tie to tie the speaker cables together.

STEP 1

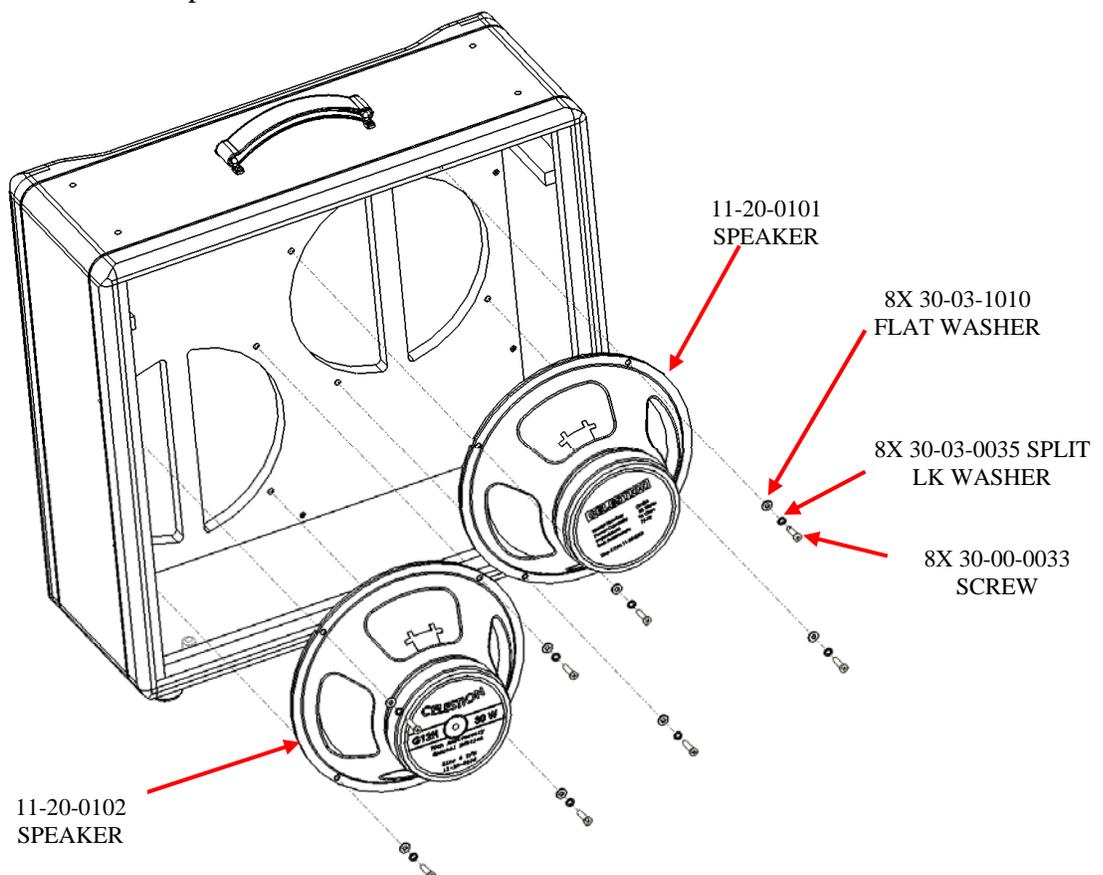
P/N required:

- 1 each **50-03-0054** CABINET ASSY 212
- 1 each **11-20-0101** SPEAKER CELESTION G12M GREENBACK
- 1 each **11-20-0102** SPEAKER CELESION G12H
- 8 each **30-00-0033** SCREW #10-24 x 7/8"
- 8 each **30-03-0035** SPLIT LOCK WASHER #10
- 8 each **30-03-1010** FLAT WASHER #10

Secure the each SPEAKER to the CABINET ASSY with four (4) SCREWS, SPLIT LOCK WASHERS, and FLAT WASHERS each. Apply threadlocker (Loctite p/n 21463 or equivalent) to the threads of the SCREWS before assembly.

Torque all SCREWS to 8 – 10 inch-pounds.

Note the position of each speaker.



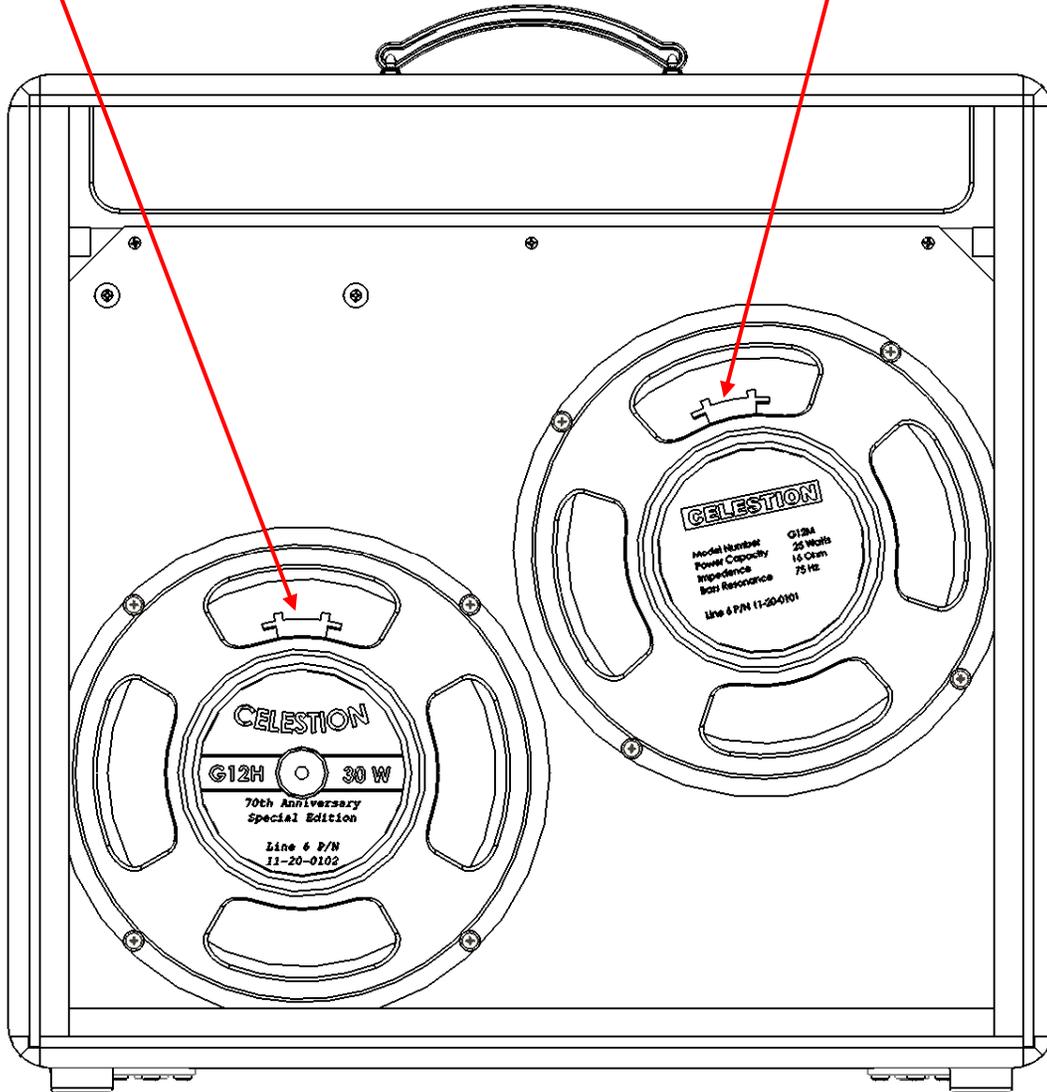


STEP 1 CONT'D

The speaker terminals shall be oriented as shown.

11-20-0102 SPEAKER
Terminals Oriented to Top

11-20-0101 SPEAKER
Terminals Oriented to Top



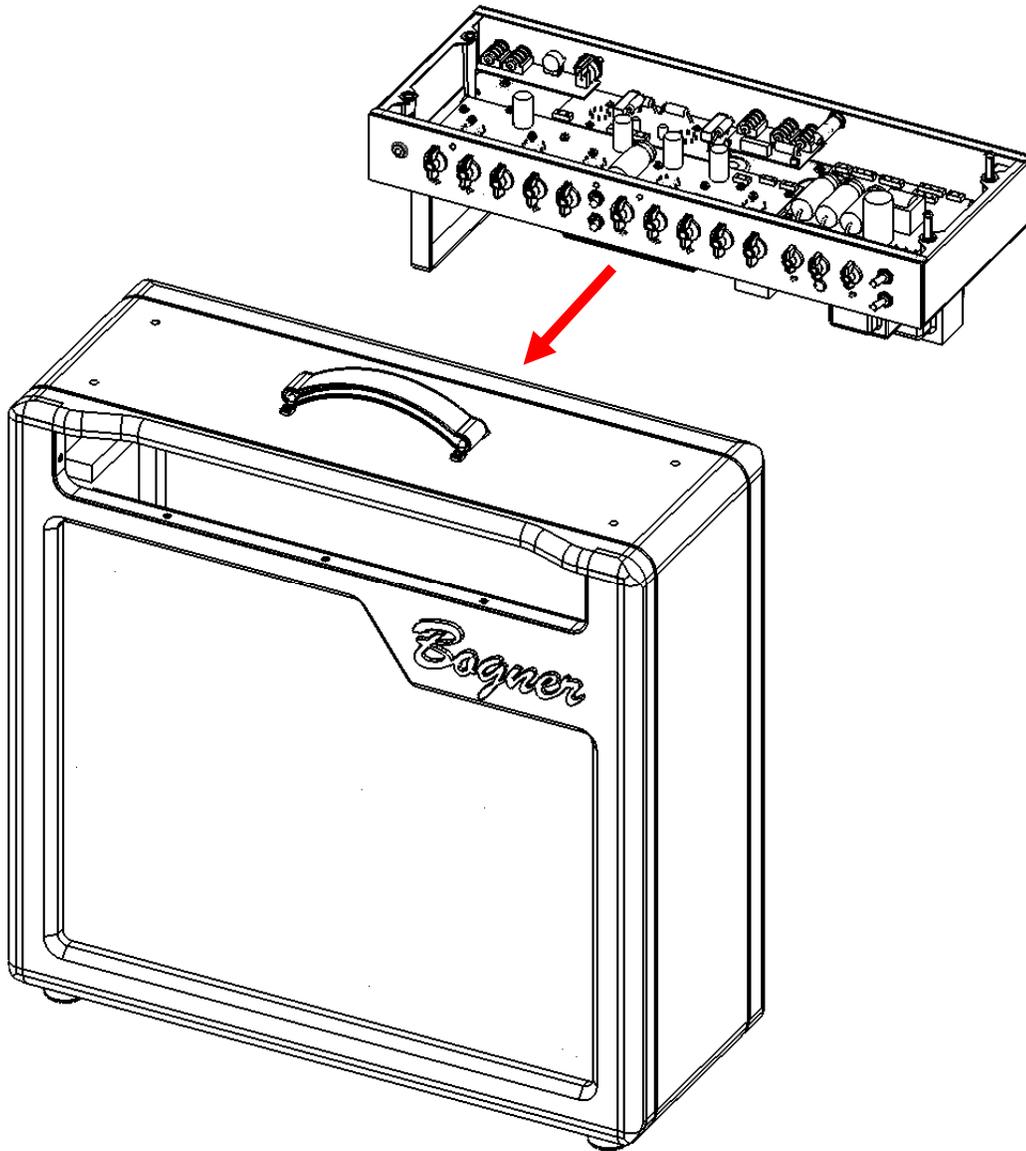
Cabinet Back View

STEP 2

P/N required:

- 1 each **50-04-0290** CHASSIS ASSY (A16)
- 4 each **30-03-0112** FINISHING WASHER #10
- 4 each **30-00-1130** SCREW #10-32 x 4" OVAL BLK

Insert CHASSIS ASSY into CABINET ASSY as shown. The CHASSIS ASSY shall be inserted fully until it touches the front panel of the CABINET ASSY.

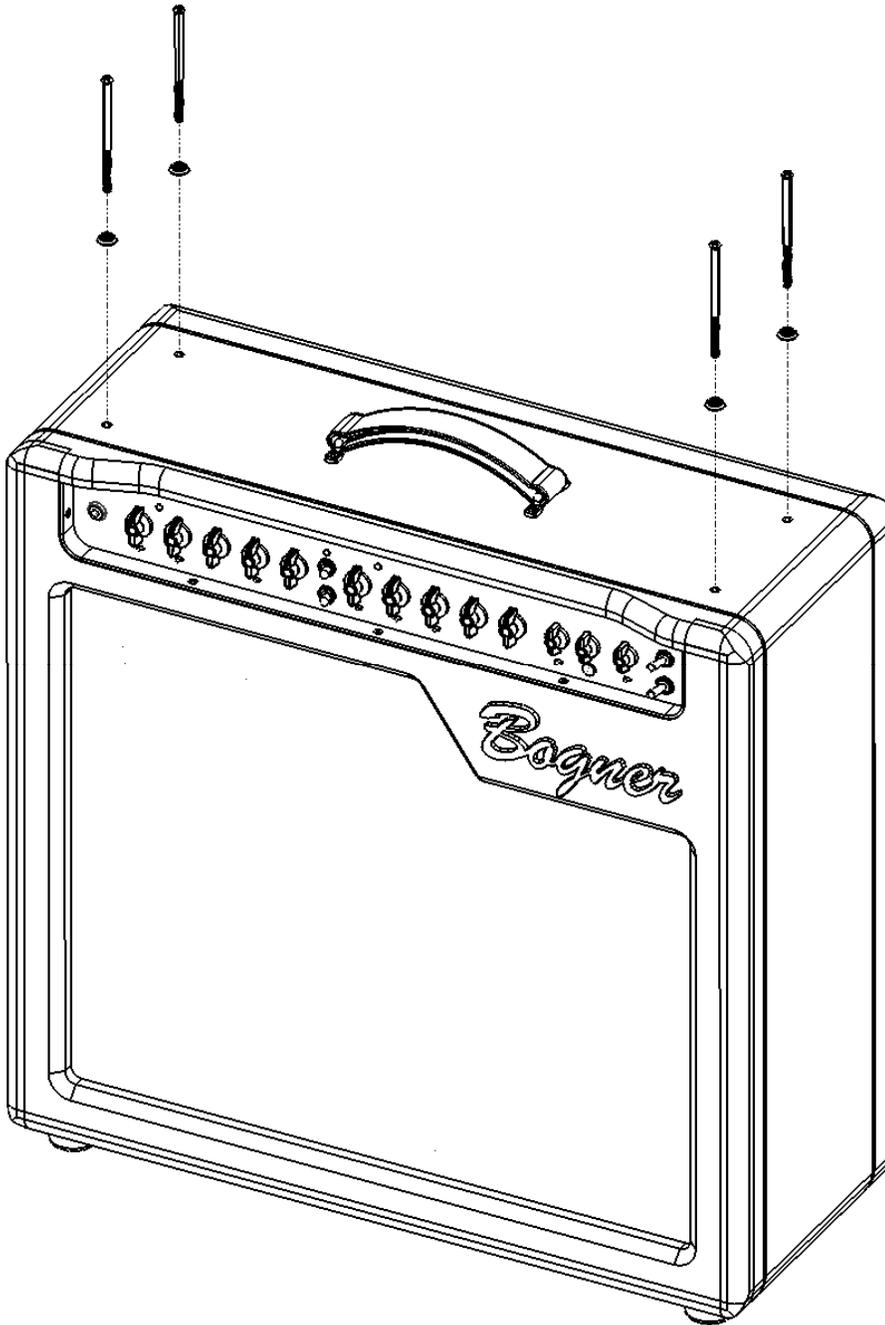


Step 2 is continued on next page

STEP 2 CONT'D

Secure to CABINET using four (4) SCREWS and FINISHING WASHERS.

Torque each SCREW to 10 – 12 inch-pounds.



STEP 3

P/N required:

1 each **21-34-0098-4** SPEAKER CABLE



Plug the 1/4" plug from the SPEAKER CABLE into the 1/4" jack labeled "A" on the back panel of the CHASSIS.



Step 3 is continued on the next page

STEP 3 CONT'D

Plug the Fast-on connectors from the SPEAKER CABLE to the speaker terminals.

Connect the white wire to the positive (+) terminal on the speaker.

Connect the black wire to the negative (-) terminal on the speaker.



STEP 4

P/N required:

1 each **21-36-0266-2** SPEAKER CABLE TWISTED



Plug the Fast-on connectors from the SPEAKER CABLE to each set of speaker lugs. Be sure to connect the correct wire to the correct lug.

Connect the white wire to the positive (+) terminal on the speakers.

Connect the black wire to the negative (-) terminal on the speakers.



STEP 4 CONT'D

Connect the white wire to the positive (+) terminal on the speakers.

Connect the black wire to the negative (-) terminal on the speakers.

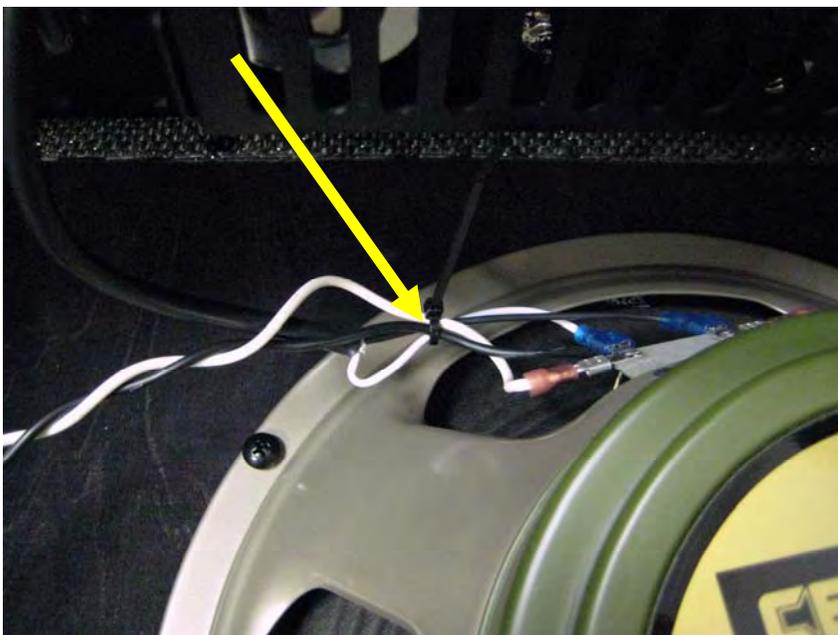


STEP 5

P/N required:

1 each **30-24-0030** CABLE TIE

Install a CABLE TIE as shown. Clip off excess material from the CABLE TIE after installation.



STEP 6

P/N required:

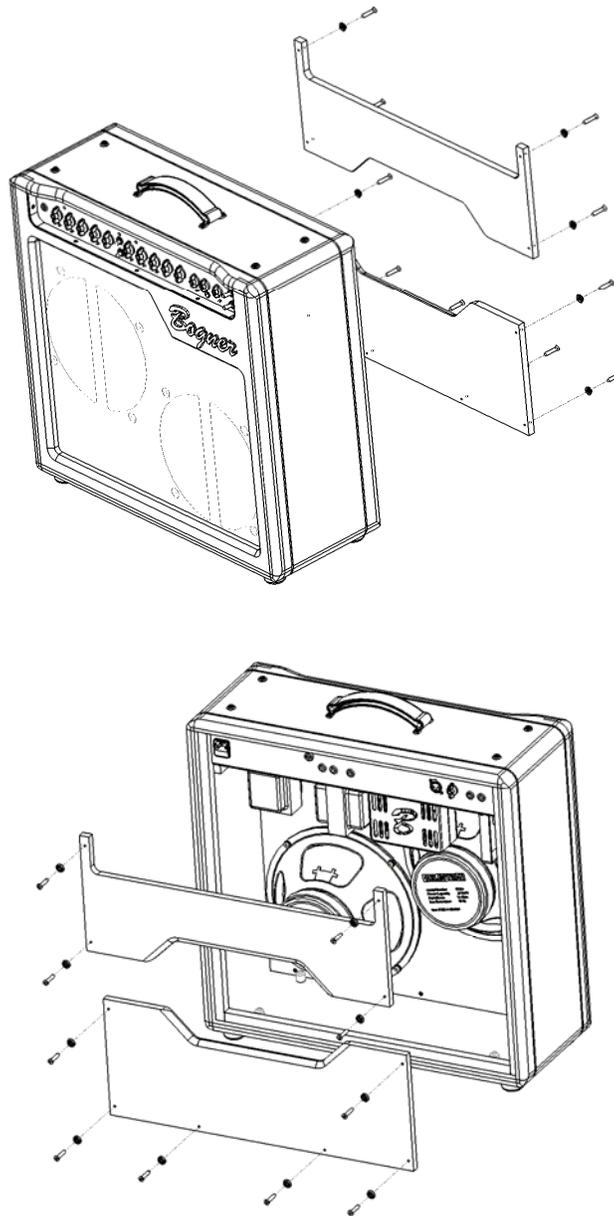
10 each **30-00-0072** SCREW #10 x 1 1/4"

10 each **30-03-0112** FINISHING WASHER #10

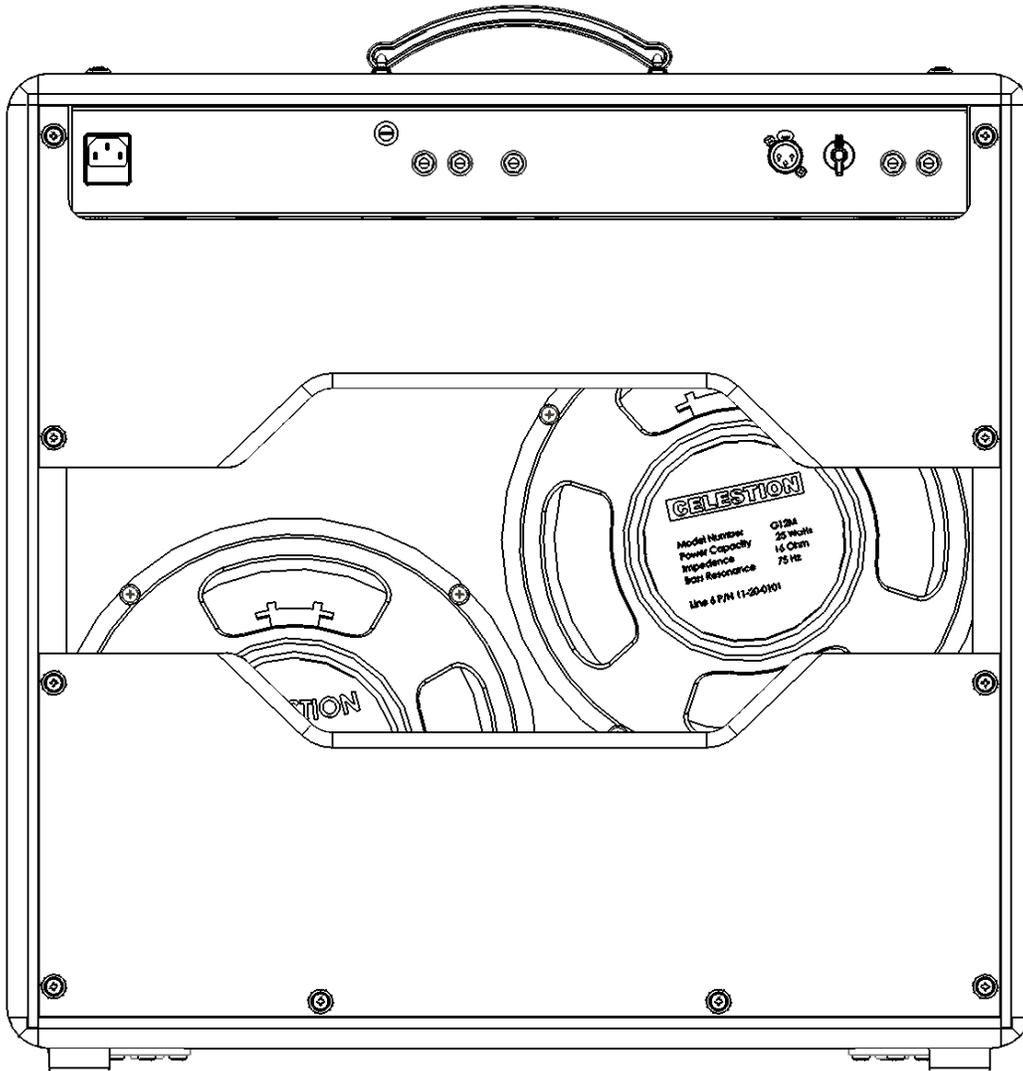
1 each KICK BOARD BOTTOM (included with CAB ASSY)

1 each KICK BOARD TOP (included with CAB ASSY)

Turn SCREWS until fully seated.



STEP 6 CONT'D



Reference View – Cabinet Back (w/Back Panels Installed)



STEP 7

P/N required:

1 each **40-25-0145 LABEL ALCHEMIST 212 REAR CHASSIS A16-2**

Install the LABEL in the approximate location shown.



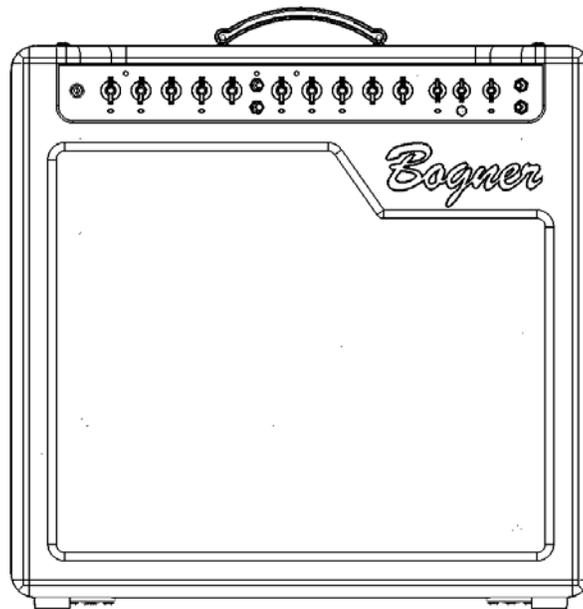
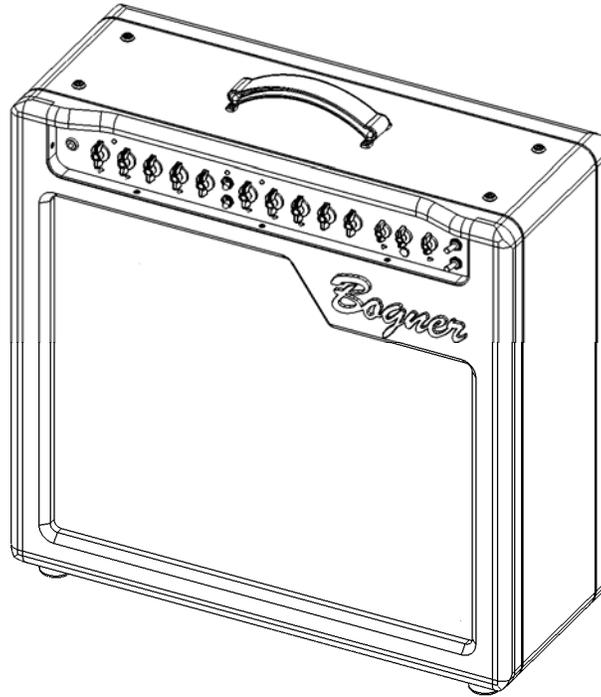
APPLY LABEL HERE
(centered over "Bogner")

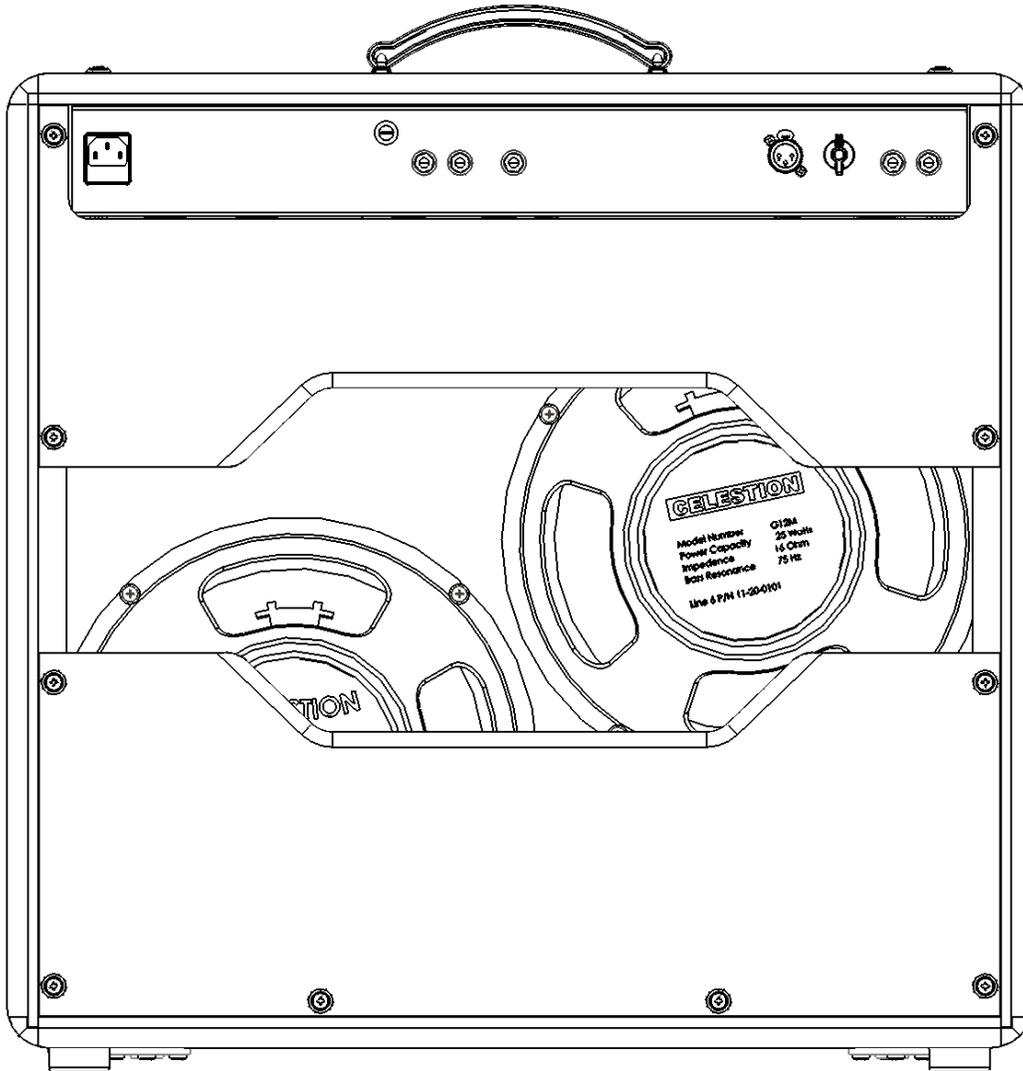


Assembly of the AV/Cali 212 (A16-2) Complete Unit is now complete.

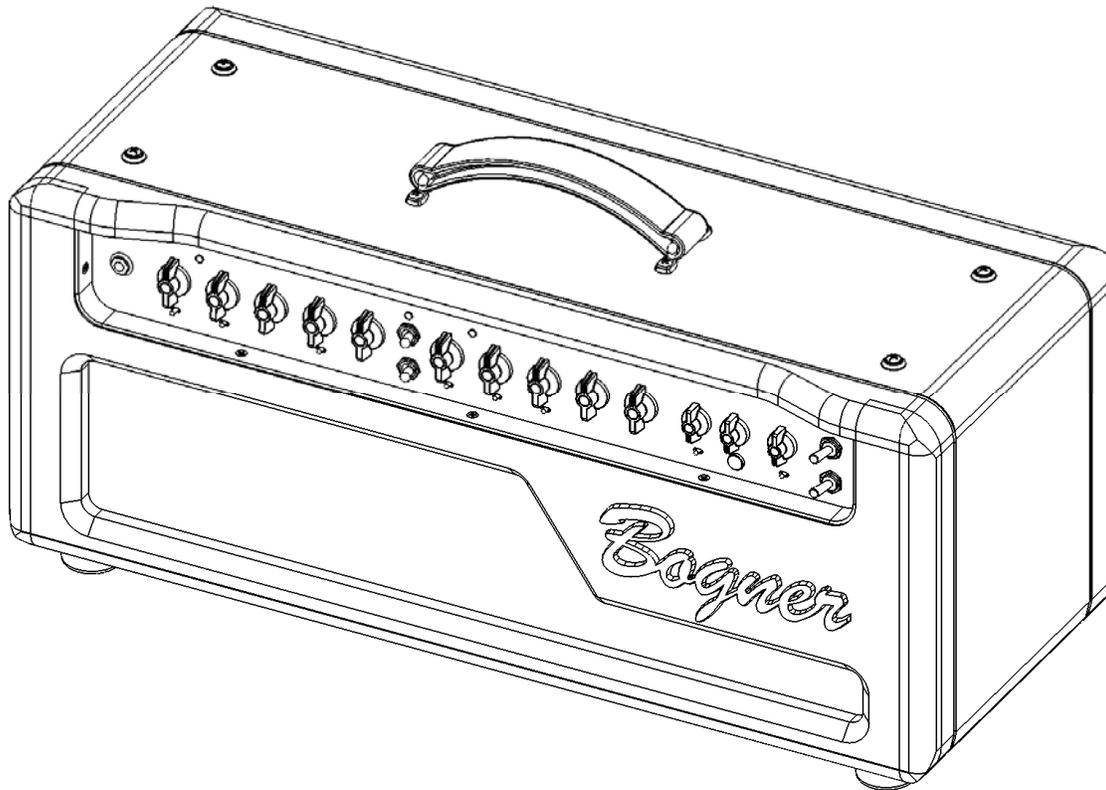


Completed Views (Reference)





Reference View – Cabinet Back (w/Back Panels Installed)



Forward and Notes

The information in this booklet applies to the AV/Cali Head (A16-3). It details the assembly of the cabinet and complete unit. It is suggested that the steps for assembly follow the order presented in these instructions.

These instructions deal with the assembling of the major subassemblies, the final product, and quality/inspection considerations. See also the Related Electrical assembly documentation for major considerations in assembling the electrical components of the PCBs (through the soldering process and preparation of the board for addition of custom components).

A note on the text: the illustrations in this book are for reference only. In some cases, color and geometry of illustrations may not accurately reflect the color or exact geometry of actual parts.

- Unless otherwise noted, all dimensions are in inches.
- Drawings are not to scale.
- Torque value tolerance +/- .5 in.-lbs. Do not over tighten any components.
- For clarity, not all component details are shown. This is especially true with respect to cable assemblies. They are often omitted from views to provide a clearer picture of the material discussed. Do not be confused by the absence (or unexpected presence) of any component in the illustrations in this book.



Revision Comment Sheet

Revision	Changes
A	ECO 0813601. Initial release.
B	ECO 0823304. Step 4 (added) – application of model # LABEL. Requirement for safety.

STEP 1

P/N required:

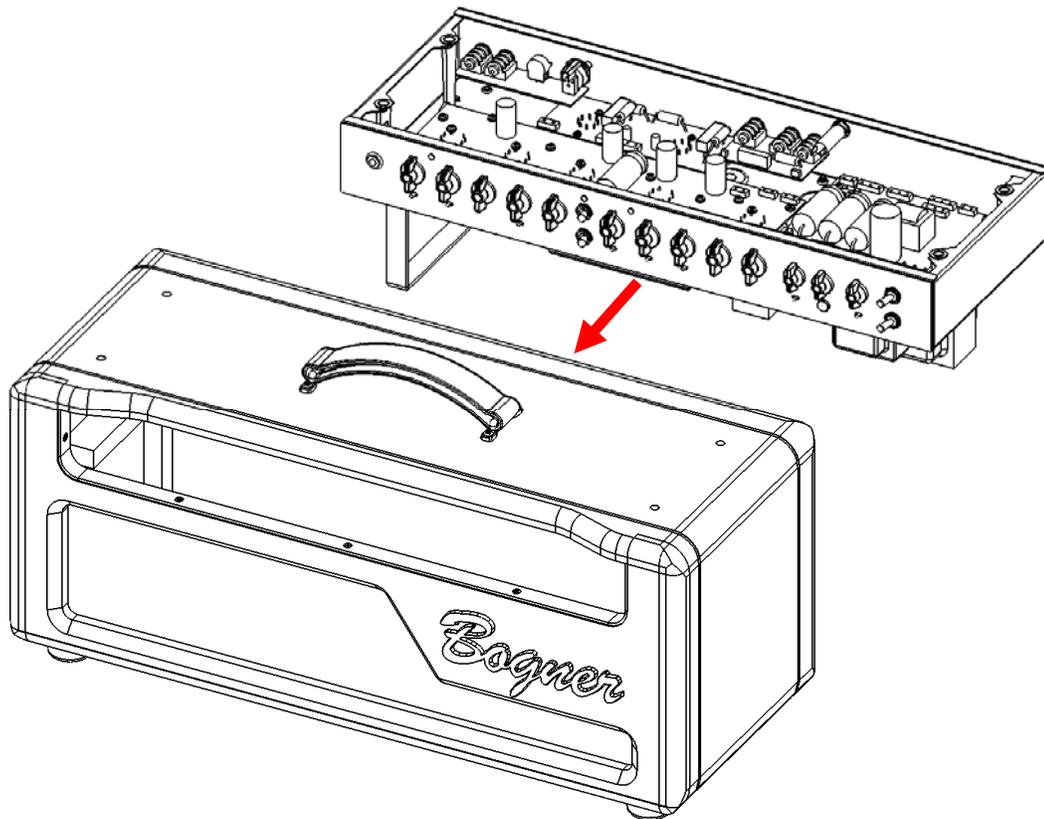
1 each **50-03-0052** CABINET ASSY HEAD

1 each **50-04-0290** CHASSIS ASSY (A16)

4 each **30-03-0112** FINISHING WASHER #10

4 each **30-00-1130** SCREW #10-32 x 4" OVAL BLK

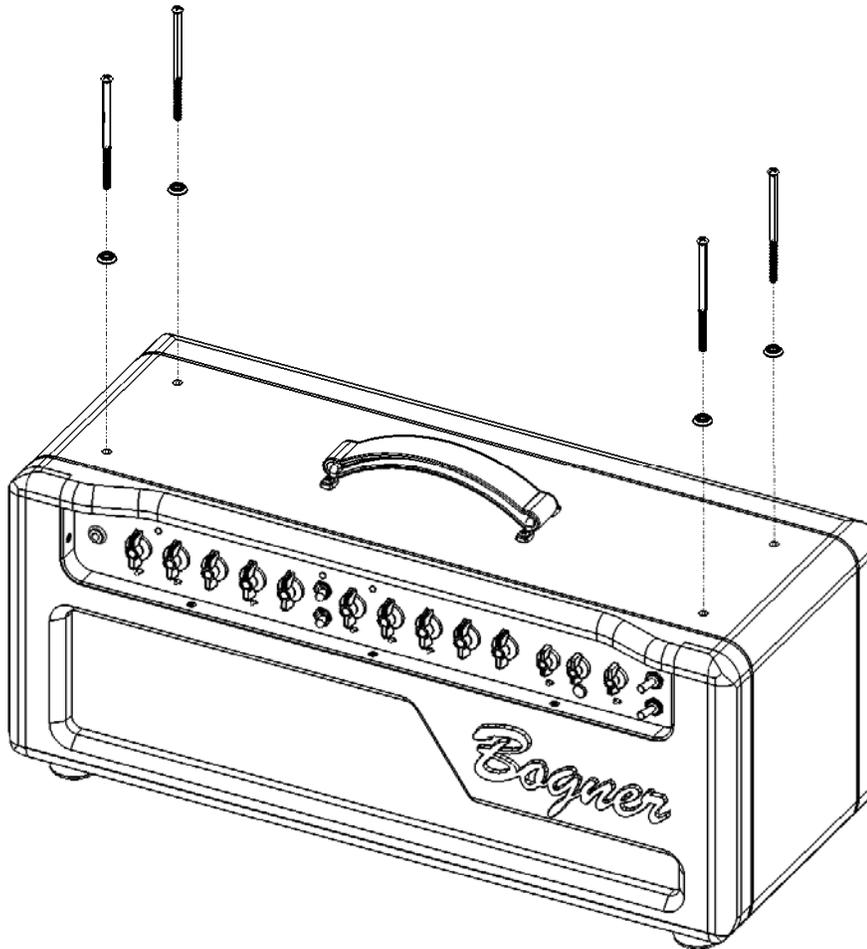
Insert CHASSIS ASSY into CABINET ASSY as shown.



Step 1 is continued on next page

STEP 1 CONT'D

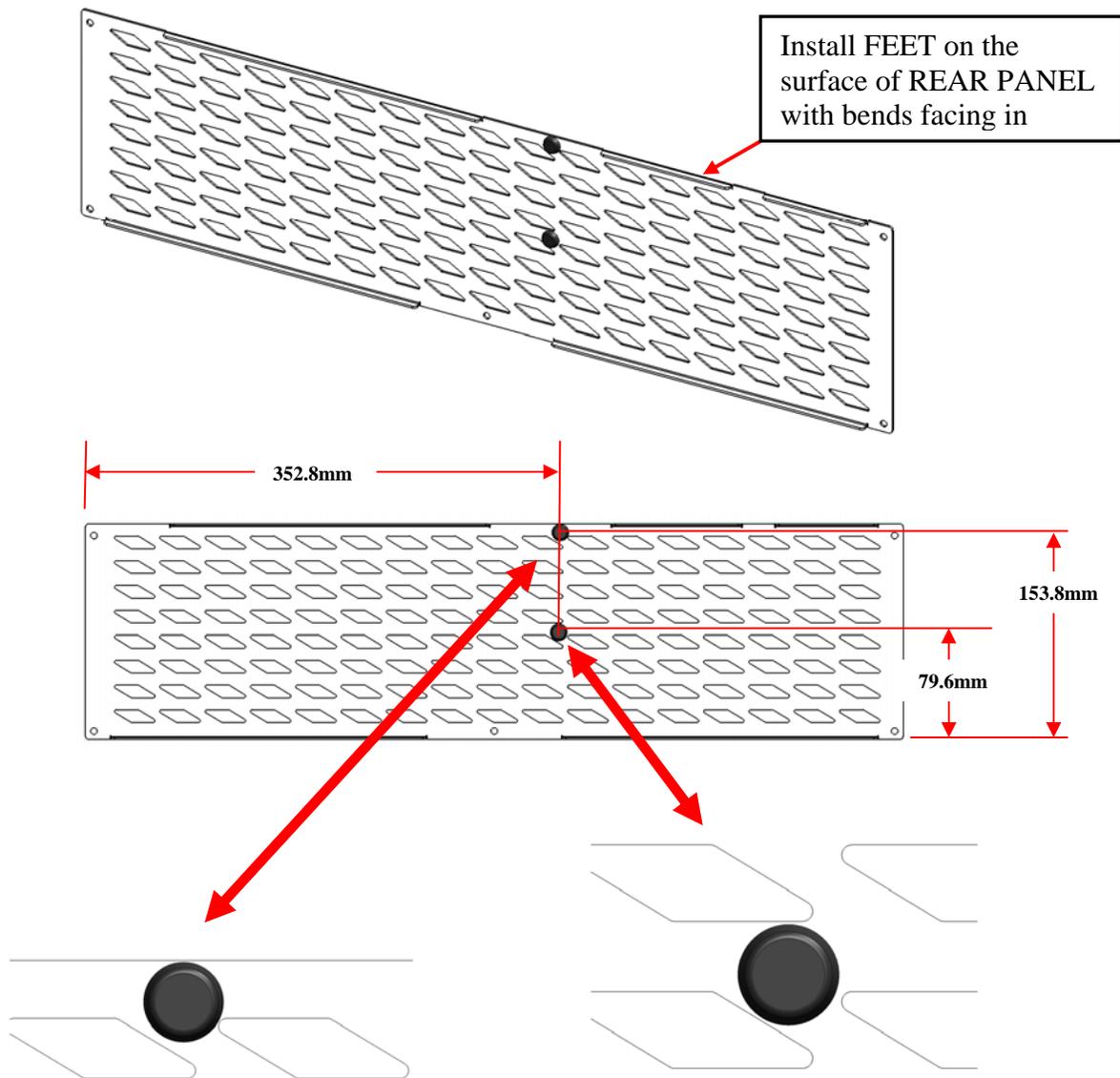
Secure to CABINET using four (4) SCREWS and FINISHING WASHERS. Torque each SCREW to 10 – 12 inch-pounds.



STEP 2

P/N required:
2 each **30-48-0010** RUBBER FOOT
1 each **30-51-0350** REAR PANEL

Install two (2) RUBBER FEET against the REAR PANEL in the positions shown.

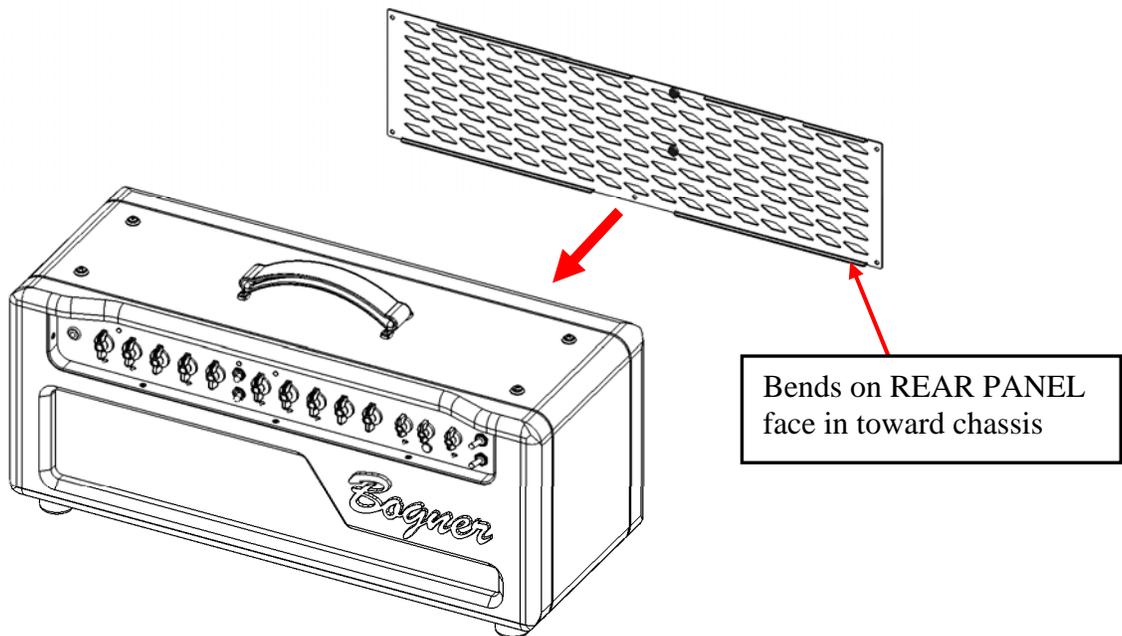




STEP 3

P/N required:
6 each **30-00-0858** SCREW #8 x 5/8" WOOD BLK

Install the REAR PANEL as shown. Note the orientation.

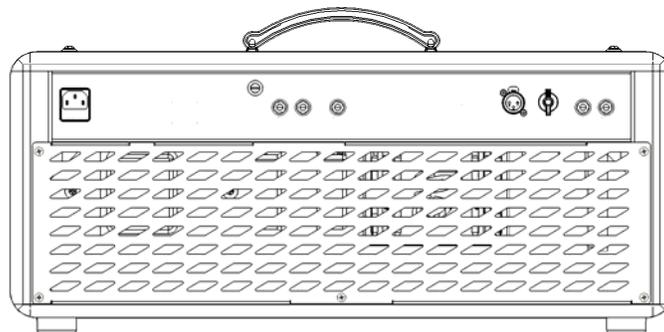
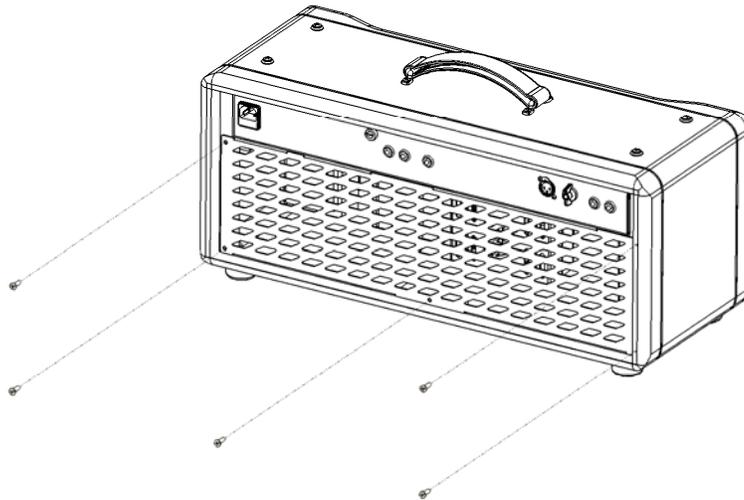


Step 3 is continued on next page



STEP 3 CONT'D

Secure the REAR PANEL to the CABINET using six (6) screws in the locations shown.
Turn each screw until fully seated.



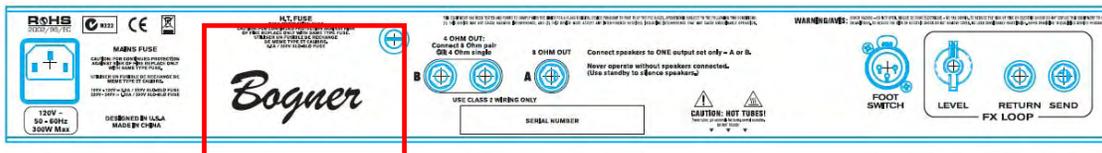


STEP 4

P/N required:

1 each **40-25-0146 LABEL ALCHEMIST HD REAR CHASSIS A16-3**

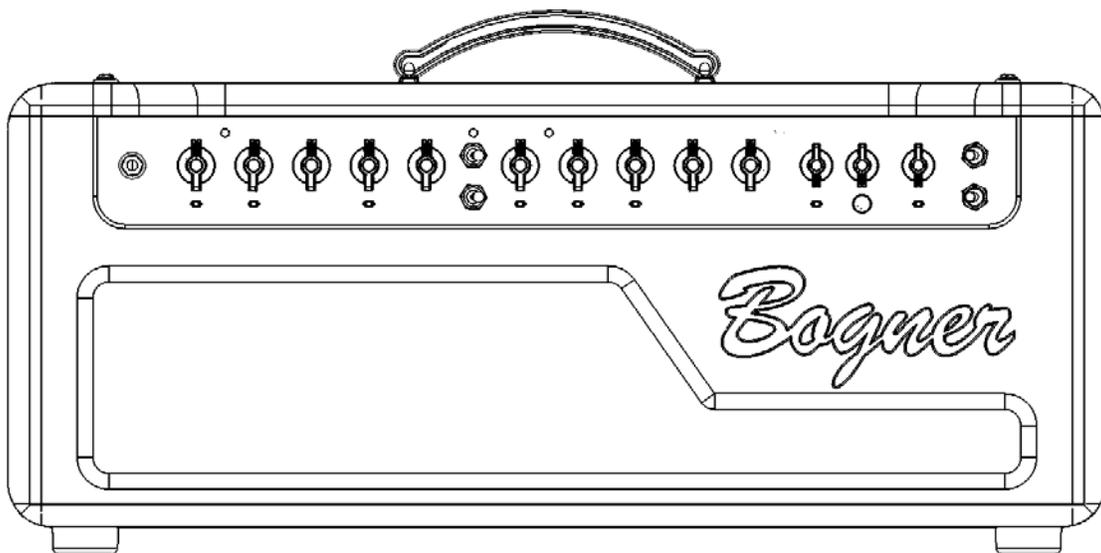
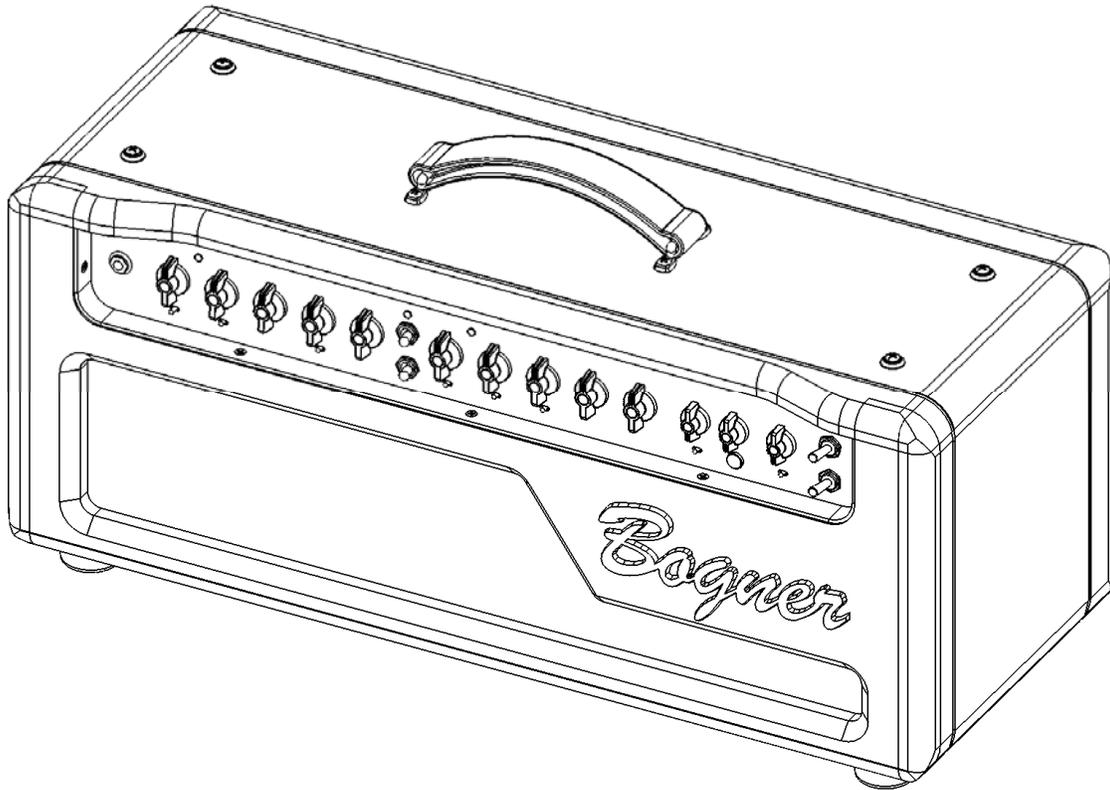
Install the LABEL in the approximate location shown.

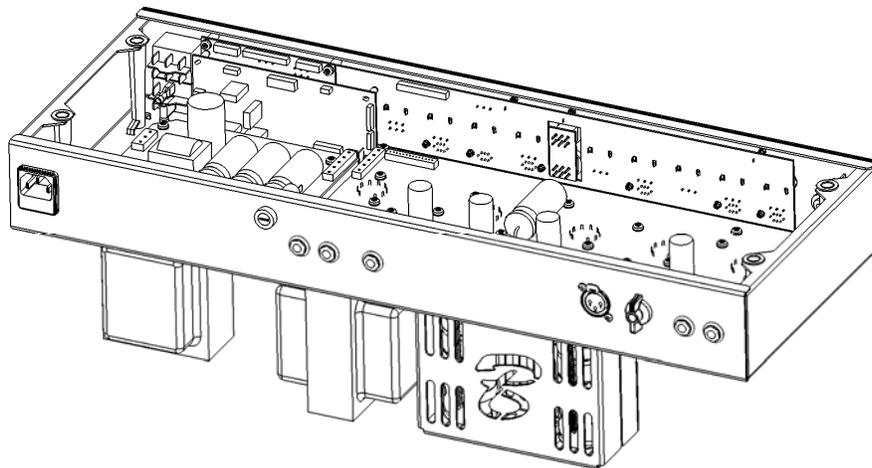
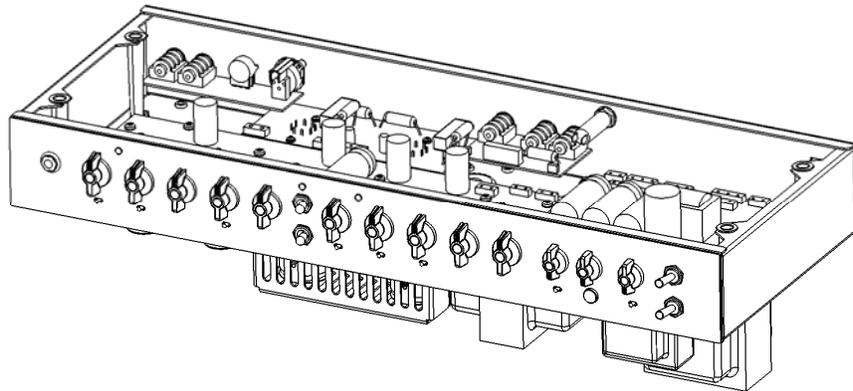


APPLY LABEL HERE
(centered over "Bogner")



Assembly of the AV/Cali Head (A16-3) Complete Unit is now complete.





Forward and Notes

The information in this booklet applies to the AV/Cali Chassis E/M Assembly (A16). It is suggested that the steps for assembly follow the order presented in these instructions.

These instructions deal with the assembling of the major subassemblies, the final product, and quality/inspection considerations. See also the Related Electrical assembly documentation for major considerations in assembling the electrical components of the PCBs (through the soldering process and preparation of the board for addition of custom components).

A note on the text: the illustrations in this book are for reference only. In some cases, color and geometry of illustrations may not accurately reflect the color or exact geometry of actual parts.

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Revision Comment Sheet

Revision	Changes
A	ECO 0813601. Initial release.
B	ECO 0815501. Step 47 – Removed 21-34-0101-2 Cable. Replaced with 21-34-0114-2. Step 48 – Removed 21-34-0101 Cable. Replaced with 21-34-0114-1.
C	ECO 0822405. Step 23 – Updated Hex Nut P/N. Ref ECO 0821404. Step 68a – (was step 68). Updated Tube to 11-02-0020 TUBE PRE-AMP. Ref ECO 0815806. Step 68b – (new step). Updated Tube to 11-02-0000 TUBE PRE-AMP. Ref ECO 0822104.
D	ECO 0823304. Step 35 – Added Voltage Label sticker specification. Step 67 – Revised qty of 11-02-0011 TUBE PRE-AMP to 3. (was 2) Step 68a – Revised qty of 11-02-0020 TUBE PRE-AMP to 1. (was 2)
E	ECO 0824904. Step 57 – Added RTV application to cable header.
F	ECO 0825404. Step 57 – Updated text for clarity; eliminated hot glue. Step 76 – Updated ETL LABEL to 40-25-0148 ETL LABEL. Added Step 78 for application of 40-25-0283 SHOCK HAZARD LABEL.



Revision Comment Sheet Cont'd

G ECO 0826306.

Step 26 – Specified new spacer position and installation sequence.

H ECO 0827602.

Step 57a – was Step 57 (no change).

Step 57b – Added cable tie installation.

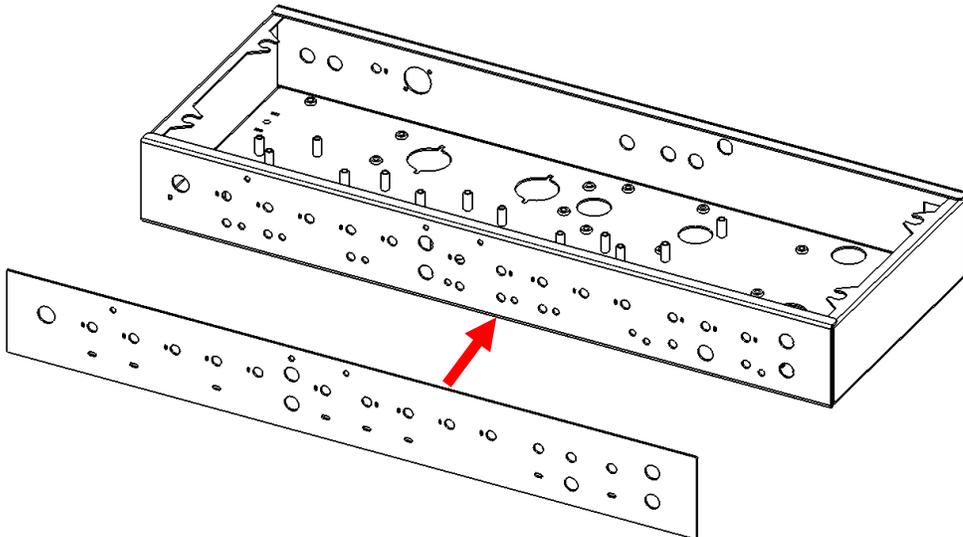
STEP 1

P/N required:

1 each **30-51-0330** CHASSIS A16

1 each **30-42-0055** OVERLAY FRONT

Remove the protective backing from the UI OVERLAY and press it into place on the CHASSIS face as shown. Care shall be taken to align the UI OVERLAY with edges and cutouts on the CHASSIS face.



STEP 2

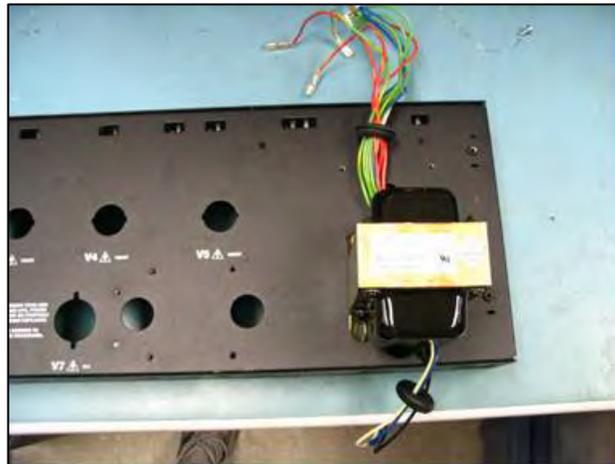
P/N required:
1 each (see Table 1)

Table 1

AC Voltage	POWER TRANSFORMER part number
100/120 VAC (JA, US)	11-30-0033
220/240 VAC (AU, UK, EU)	11-30-0034

Orient the POWER TRANSFORMER as shown on the CHASSIS. Pass the cables from the POWER TRANSFORMER through the holes in the CHASSIS as shown. Install the RUBBER GROMMETS in the holes in the CHASSIS.

Note – the RUBBER GROMMETS should already be installed around the wires on the TRANSFORMER.



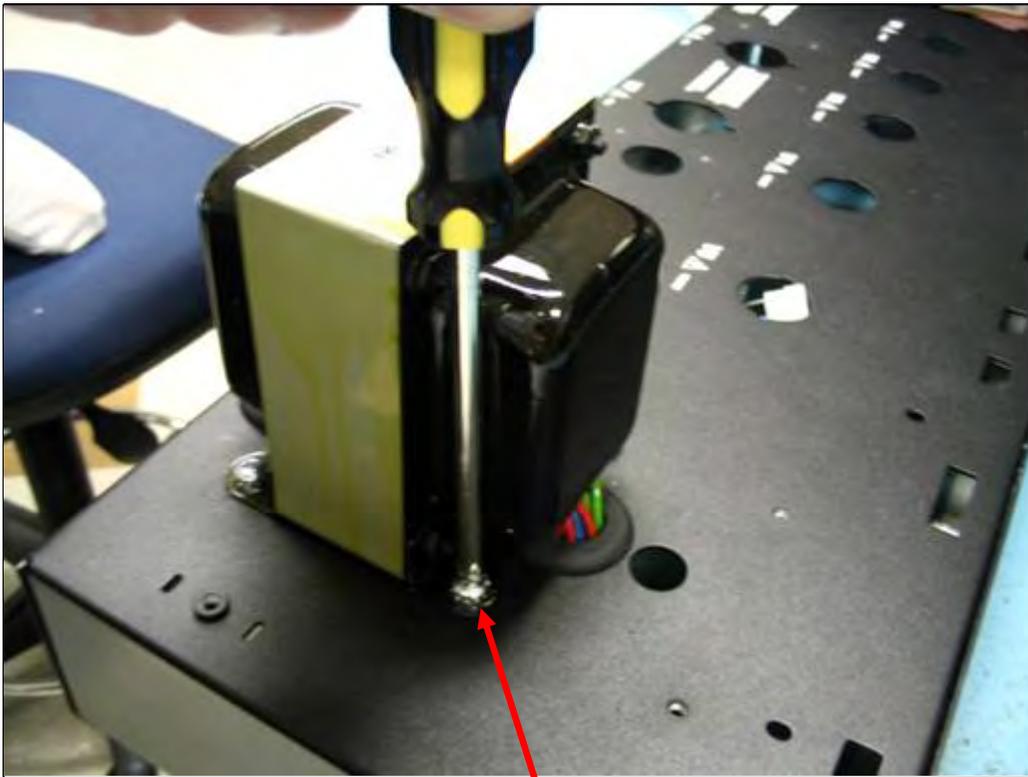
STEP 3

P/N required:

4 each **30-00-0132** SCREW 10-32 x 3/8 w/LK WASH BLK

Secure the POWER TRANSFORMER to the chassis with 4 SCREWS.

Torque the SCREWS to 8-10 inch-pounds.



Note – Screws will be black

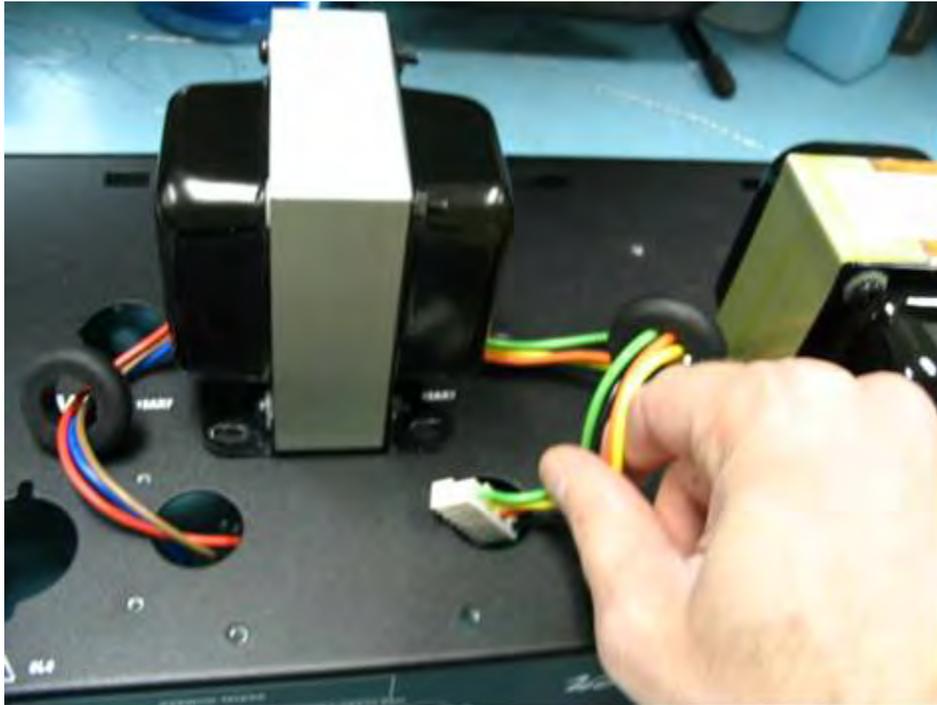
STEP 4

P/N required:

1 each **11-33-1105** OUTPUT TRANSFORMER w/GROMMETS

Orient the OUTPUT TRANSFORMER as shown on the CHASSIS. Pass the cables from the OUTPUT TRANSFORMER through the holes in the CHASSIS as shown. Install the RUBBER GROMMETS in the holes in the CHASSIS.

Note – the RUBBER GROMMETS should already be installed around the wires on the TRANSFORMER.



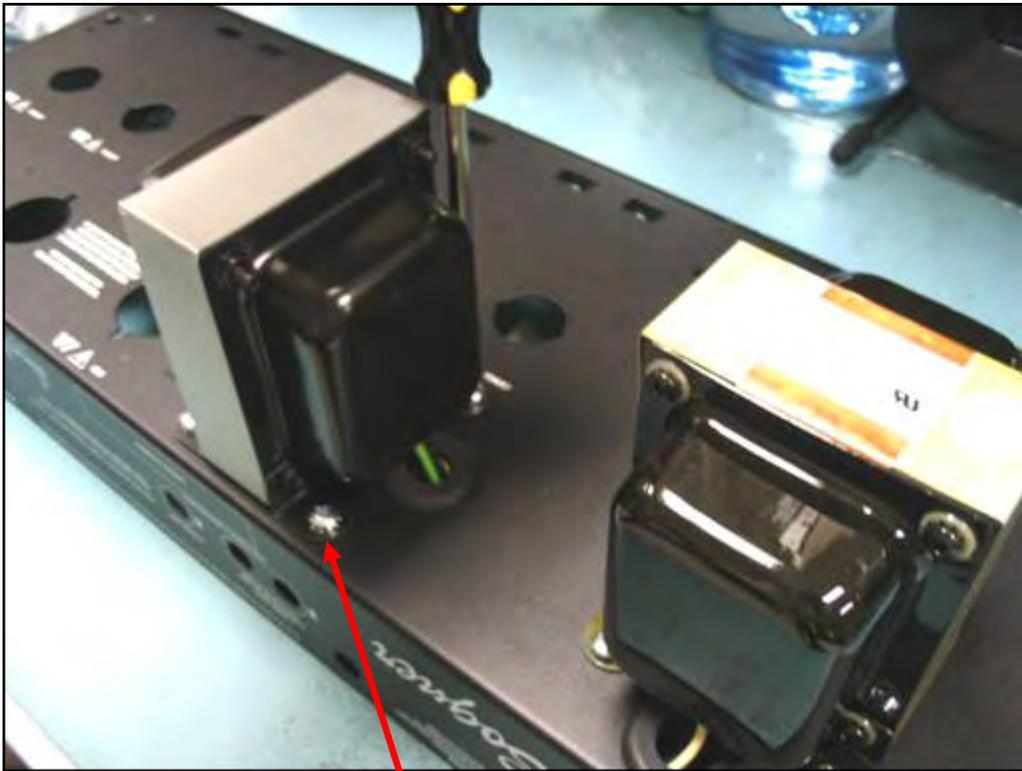
STEP 6

P/N required:

4 each **30-00-0132** SCREW 10-32 x 3/8 w/LK WASH BLK

Secure the OUTPUT TRANSFORMER to the chassis with 4 SCREWS.

Torque the SCREWS to 8 – 10 inch-pounds



Note – Screws will be black

STEP 7

P/N required:

1 each **11-33-1201** CHOKE

1 each **30-75-9600** RUBBER GROMMET

Pass the cables from the CHOKE through the RUBBER GROMMET. Pass the cables from the CHOKE through the hole in the CHASSIS as shown. Install the RUBBER GROMMET in the hole in the CHASSIS.



30-75-9600
Grommet

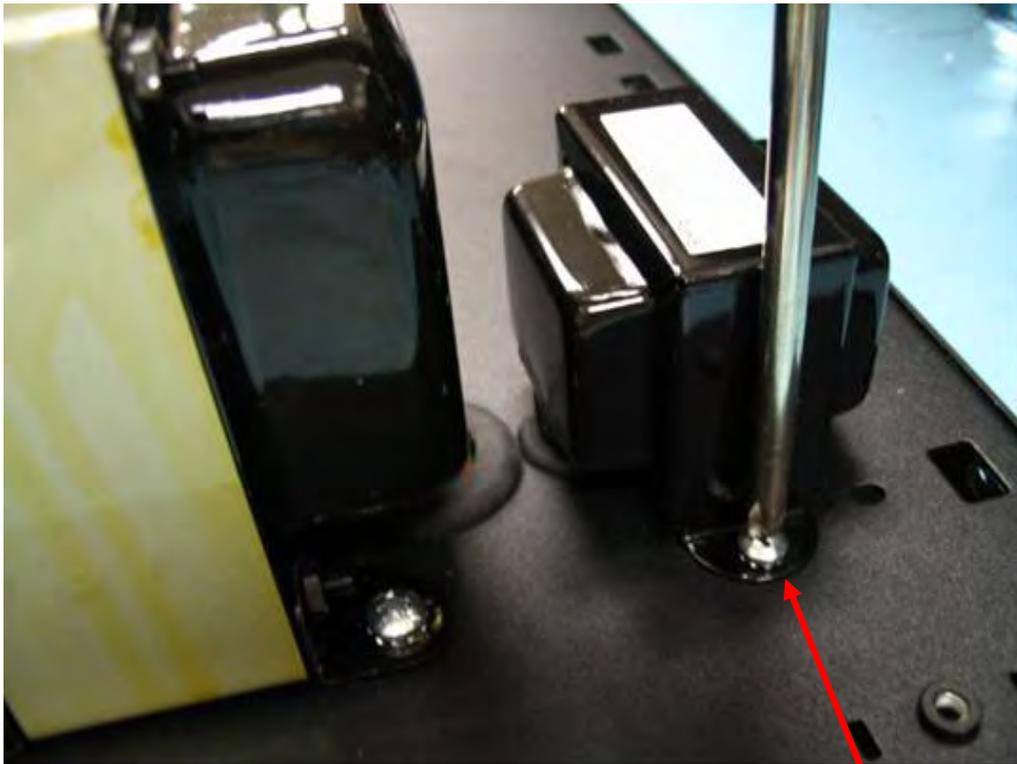


STEP 8

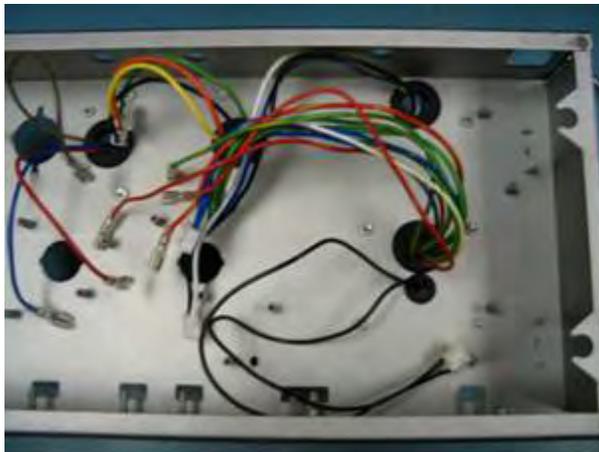
P/N required:

2 each **30-00-0125** SCREW 8-32 x 5/16 w/LK WASH BLK

Secure the CHOKE to the chassis with 2 SCREWS. Torque each SCREW to 8 – 10 inch-pounds.



Note – Screws will be black





STEP 9

This step removed prior to release.

STEP 10

P/N required:

1 each **50-00-0001** AC RECEPTACLE ASSEMBLY

1 each **30-00-0043** SCREW 6-32 x 5/16" WITH STAR WASHER

Secure the cable from the AC RECEPTACLE ASSEMBLY to the threaded insert shown with a SCREW 6-32 x 5/16" WITH STAR WASHER. Torque SCREW to 8 – 10 inch-pounds and apply loctite. The cable from the AC RECEPTACLE ASSEMBLY shall be installed completely within the CHASSIS.





STEP 11

P/N required:
 1 each (see Table 2)

Open and remove fuse holder. Install correct fuse value. Install fuse holder back into AC receptacle.

Table 2

AC Voltage	FUSE part number
100 VAC (JA)	24-19-0250 (2.5A/250V)
120 VAC (US)	24-19-0250 (2.5A/250V)
240 VAC (AU, UK, EU)	24-19-0125 (1.25A/250V)



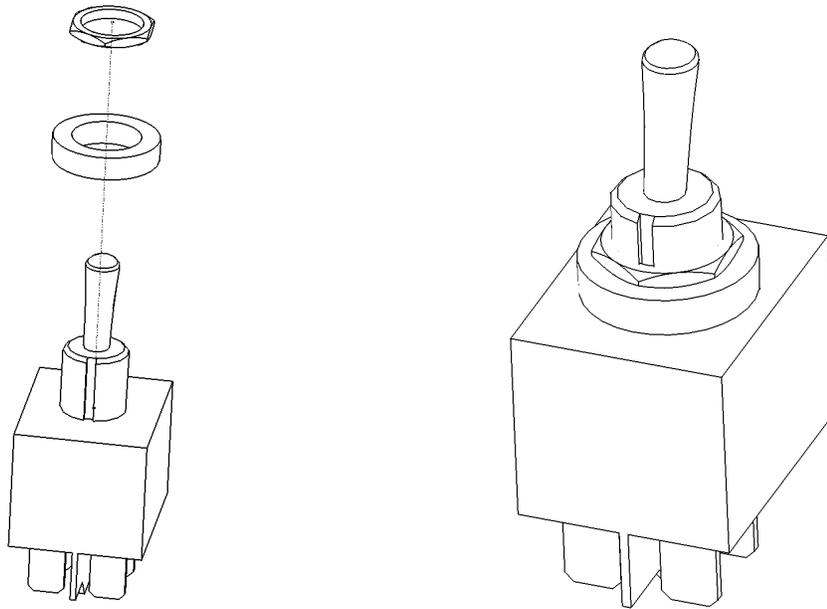
STEP 12

P/N required:

1 each **24-03-0004** TOGGLE SWITCH (2-POSITION)

1 each **30-15-0042** SPACER

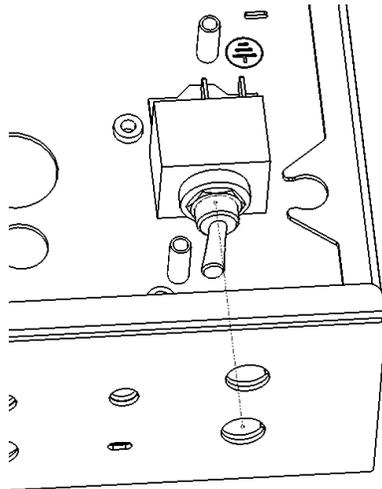
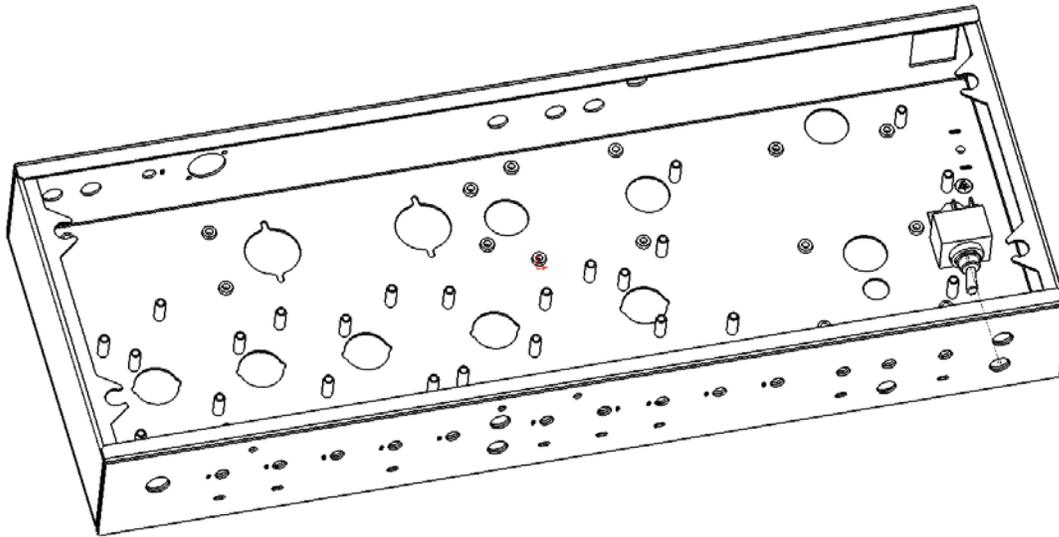
Remove the hex nuts from the TOGGLE SWITCH. Slide one SPACER onto the threaded barrel of TOGGLE SWITCH. Finger-tighten one hex nut onto the threaded barrel of the TOGGLE SWITCH to secure the SPACER.



Step 12 is continued on the next page

STEP 12 Cont'd

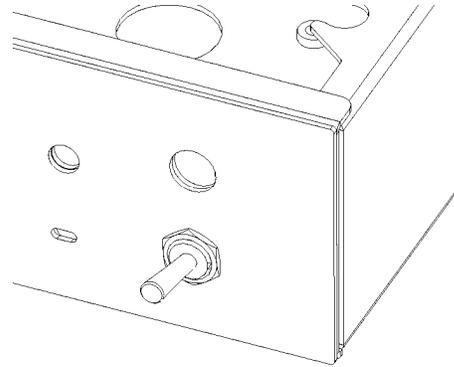
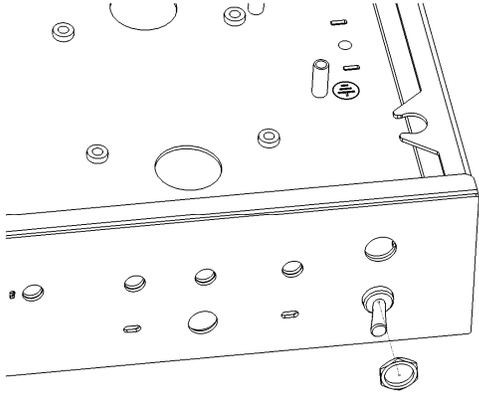
Insert the TOGGLE SWITCH into the bottom CHASSIS hole as shown. Be sure to align the notch in the CHASSIS hole with the keyway in the TOGGLE SWITCH. Secure the TOGGLE SWITCH to the chassis using the hex nut.



Step 12 is continued on the next page

STEP 12 Cont'd

Torque the hex nut to 6 inch-pounds.



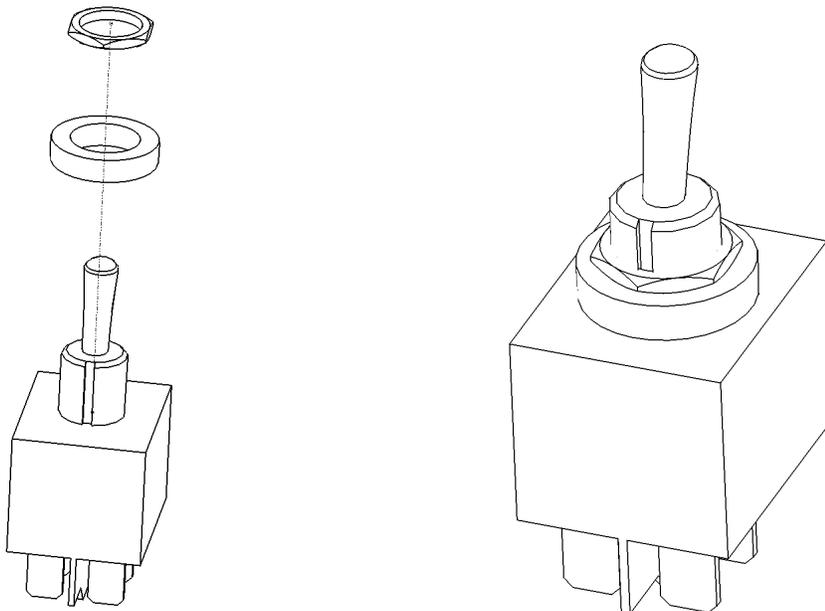
STEP 13

P/N required:

1 each **24-03-0014** TOGGLE SWITCH (3-POSITION)

1 each **30-15-0042** SPACER

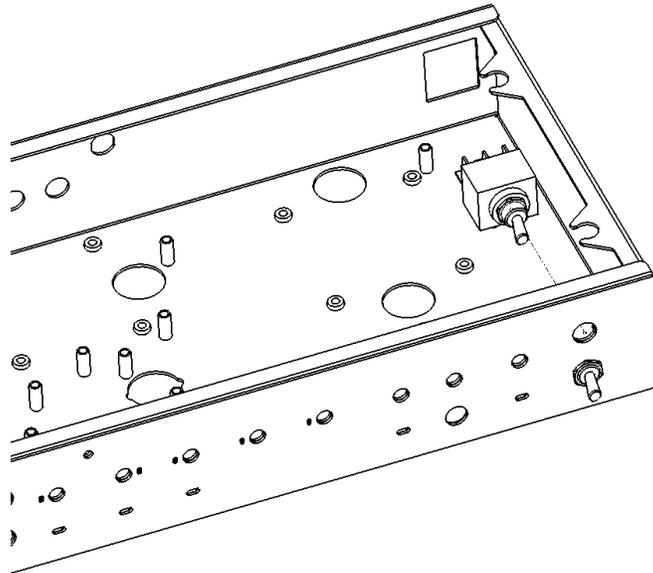
Remove the hex nuts from the TOGGLE SWITCH. Slide one SPACER onto the threaded barrel of TOGGLE SWITCH. Finger-tighten one hex nut onto the threaded barrel of the TOGGLE SWITCH to secure the SPACER.



Step 13 is continued on the next page

STEP 13 Cont'd

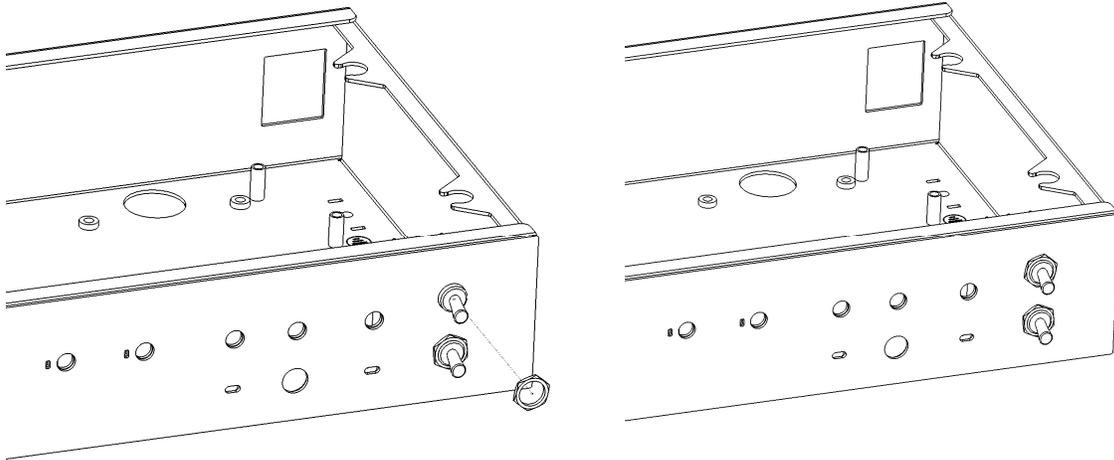
Insert the TOGGLE SWITCH into the top CHASSIS hole as shown. Be sure to align the notch in the CHASSIS hole with the keyway in the TOGGLE SWITCH. Secure the TOGGLE SWITCH to the chassis using the hex nut.



Step 13 is continued on the next page

STEP 13 Cont'd

Torque the hex nut to 6 inch-pounds.

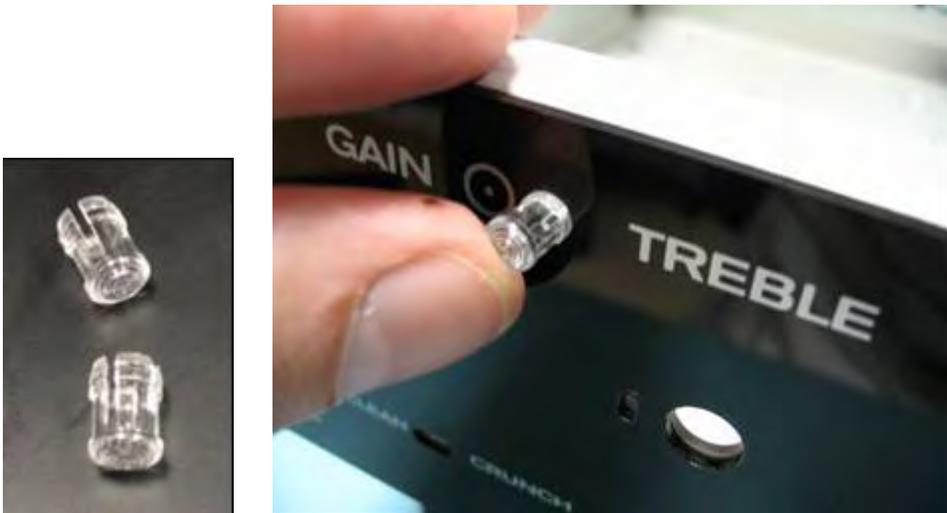


STEP 14

P/N required:

3 each **30-27-0059** LENS

Insert each LENS as shown. Press firmly until the LENS is fully seated against the overlay.



STEP 15

P/N required:

1 each **50-02-0293** PCBA ANALOG U/I

2 each **30-15-0042** SPACER

Remove the hex nuts from each TOGGLE SWITCH on the breakaway PCB. Slide one SPACER onto the threaded barrel of each TOGGLE SWITCH. Finger-tighten one hex nut onto the threaded barrel of the TOGGLE SWITCH to secure the SPACER.



Breakaway the toggle switch PCB from the PCBA ANALOG U/I as shown.



STEP 16

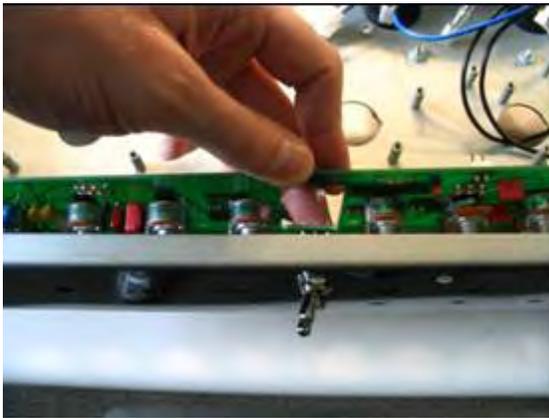
P/N required:

10 each **WASHER FLAT** (included with potentiometers)

2 each **HEX NUT** (included with Toggle Switches)

10 each **HEX NUT** (included with potentiometers)

Insert PCBA ANALOG U/I into CHASSIS as shown. Insert shaft of TOGGLE SWITCHES through the holes in the CHASSIS and OVERLAY as shown.



Verify that CAPACITOR C3 on the PCBA ANALOG U/I is bent down as shown. The PCBA will not assemble into the CHASSIS unless CAPACITOR is bent down as shown.



Step 16 is continued on next page

STEP 16 CONT'D

Slide WASHERS over each POTENTIOMETER shaft as shown (10 PL).



Install the PCBA ANALOG U/I to the CHASSIS as shown. The PCBA ANALOG U/I secures to the CHASSIS over seven (7) “snap-top” standoffs.



STEP 16 CONT'D

If required, a small flathead screw driver or pry tool can be used as shown to help secure the PCBA ANALOG U/I as shown.



Secure each TOGGLE SWITCH to the CHASSIS and OVERLAY by tightening HEX NUTS. Torque each HEX NUT to 5-6 inch-pounds.



STEP 16 CONT'D

Install HEX NUTS over each POTENTIOMETER shaft as shown (10 PL). Torque each HEX NUT to 5-6 inch-pounds.



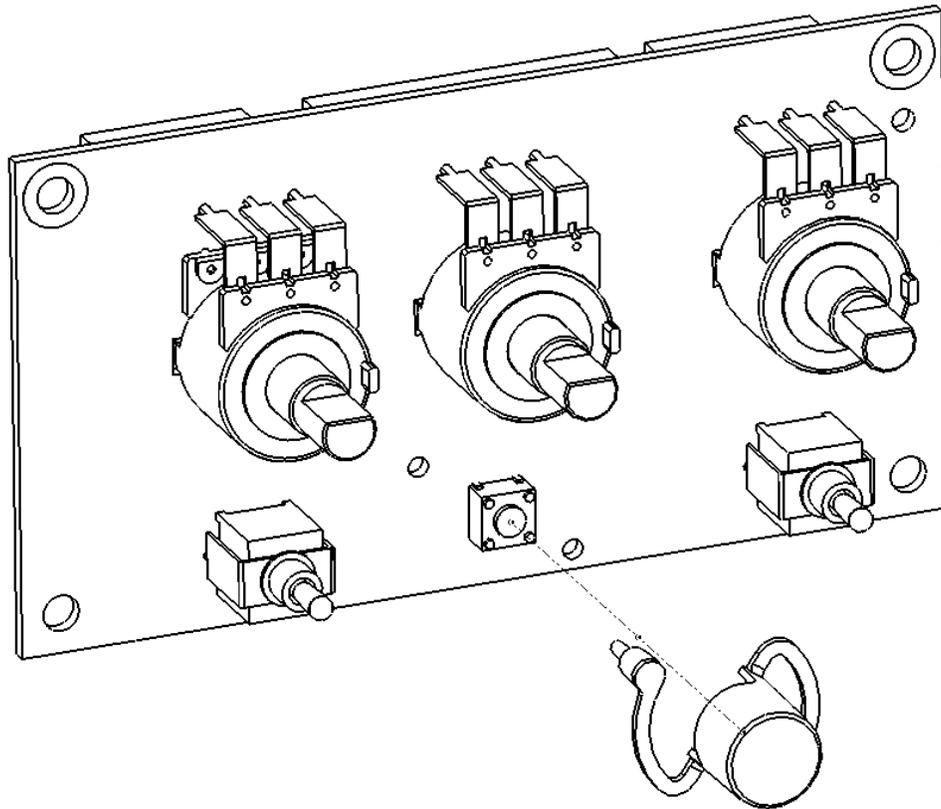
STEP 17

P/N required:

1 each 50-02-0276 PCBA U/I DIGITAL

1 each 30-27-0300-2 BUTTON BLK

Secure the BUTTON to the PCBA by heat-staking the posts on the BUTTON (2 PL).



STEP 18

P/N required:

3 each **WASHER FLAT** (included with potentiometers)

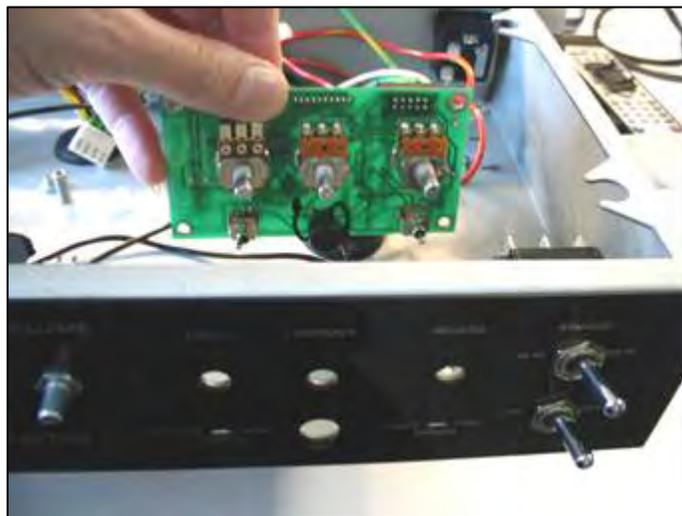
3 each **HEX NUT** (included with potentiometers)

2 each **30-00-0043 SCREW 6-32 x 5/16" WITH STAR WASHER**

Slide **WASHERS** over each **POTENTIOMETER** shaft as shown (3 PL).



Install the **PCBA DIGITAL U/I** to the **CHASSIS** as shown. The **PCBA DIGITAL U/I** secures to the **CHASSIS** over two (2) “snap-top” standoffs.



Step 18 is continued on the next page

STEP 18 CONT'D

Install two (2) SCREWS to the chassis standoffs as shown. Torque each screw to 8-10 in-lbs.



Install HEX NUTS over each POTENTIOMETER shaft as shown (3PL). Torque each HEX NUT to 5-6 inch-pounds.

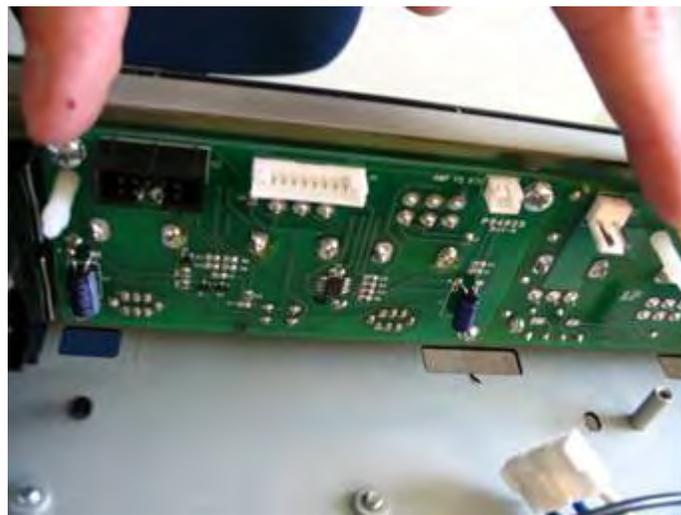
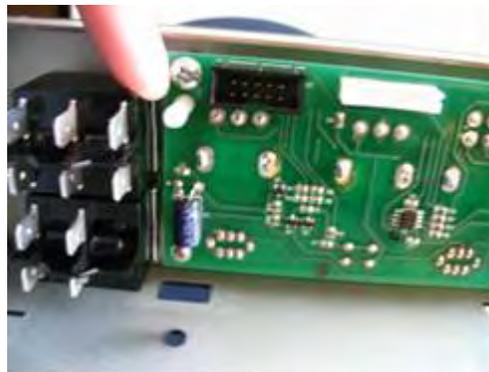


STEP 19

P/N required:
2 each 30-27-0316 DUAL LOCKING PCBA SUPPORT



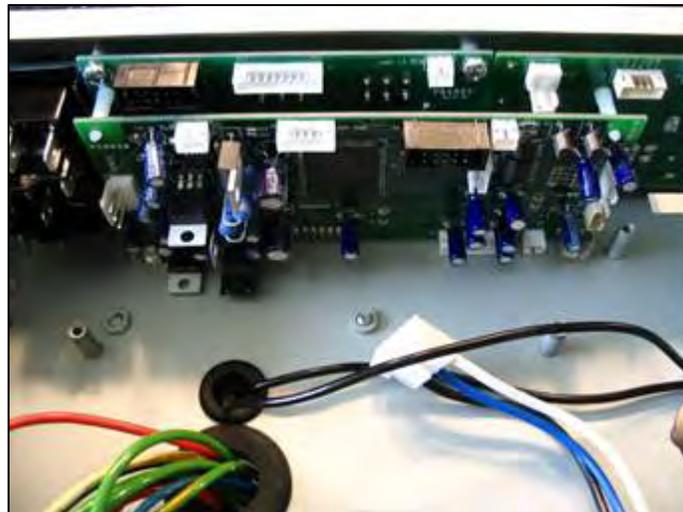
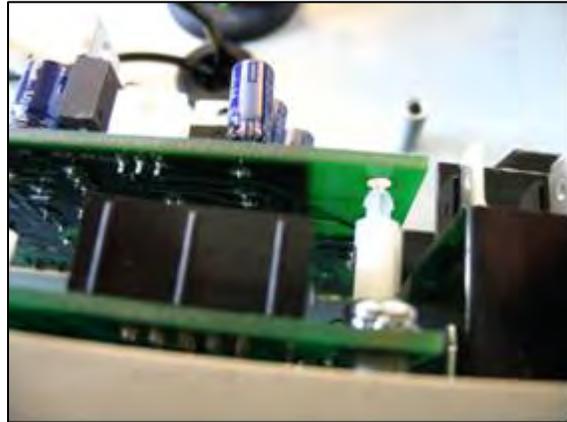
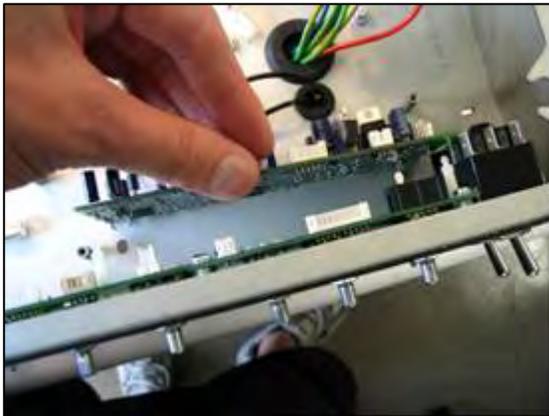
Insert one end of each DUAL LOCKING PCBA SUPPORT through the holes in the PCBAs.



STEP 20

P/N required:
1 each 50-02-0274 PCBA MAIN

Install the PCBA MAIN over the ends of each DUAL LOCKING PCBA SUPPORT as shown. The board shall be oriented as shown.

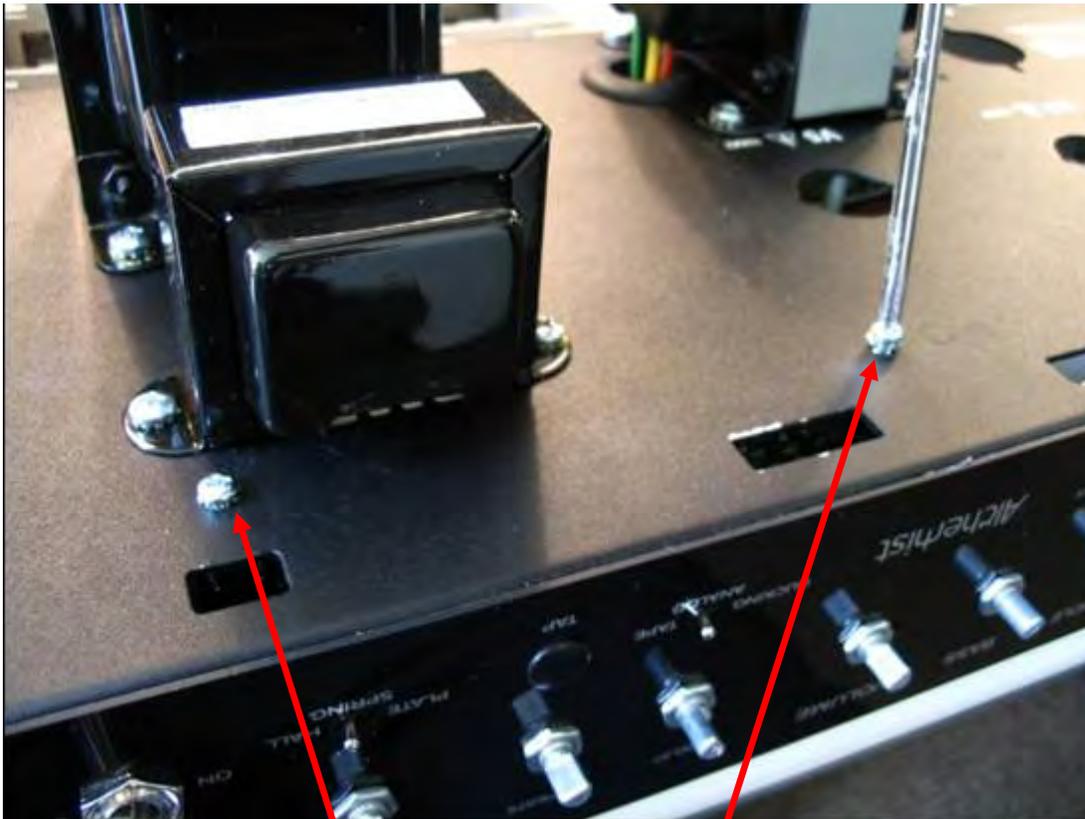


STEP 21

P/N required:

2 each 30-00-0128 SCREW #6-32 x 3/8" WITH STAR WASHER BLK

Secure PCBA MAIN to the CHASSIS bottom surface with two (2) SCREWS as shown.
Torque each screw to 8-10 in-lbs.



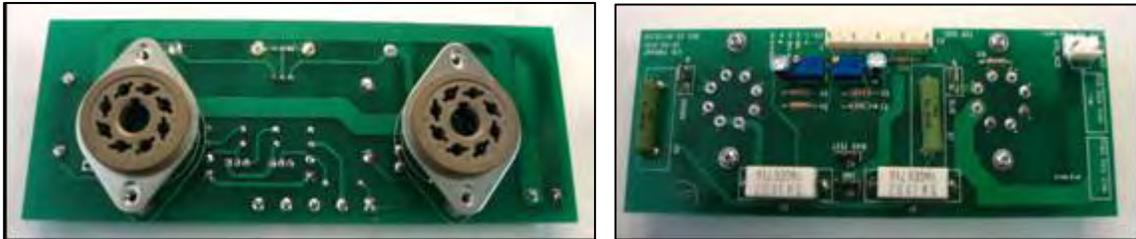
Note – Screws will be black

STEP 22

P/N required:

1 each 50-02-0291 PCBA POWER AMP

4 each 30-00-0137 SCREW #4-40 x 5/16" WITH STAR WASHER BLK



Insert PCBA POWER AMP into CHASSIS as shown below.



On opposite face of CHASSIS, finger tighten four (4) SCREWS as shown.



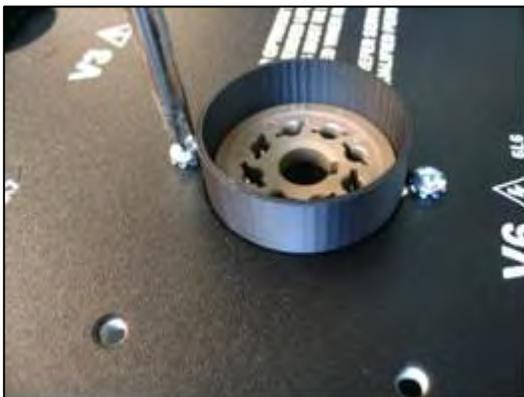
Step 22 is continued on the next page

STEP 22 CONT'D

Before fully-tightening SCREWS, center each tube socket in each CHASSIS hole using a cylindrical sleeve or equivalent shop aid. See below.



With the sleeve installed, tighten each SCREW to 6-8 in-lbs. After screws are fully tightened, remove the sleeve.



STEP 23

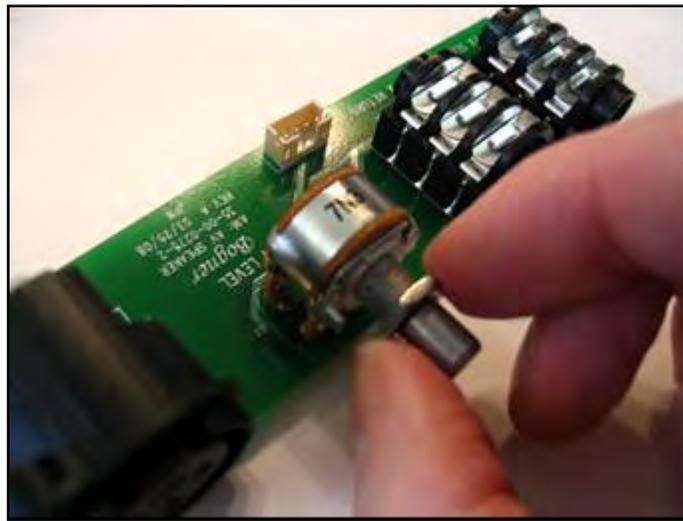
P/N required:

1 each **50-02-0275-2** PCBA XLR INPUT – FX SEND/RETURN

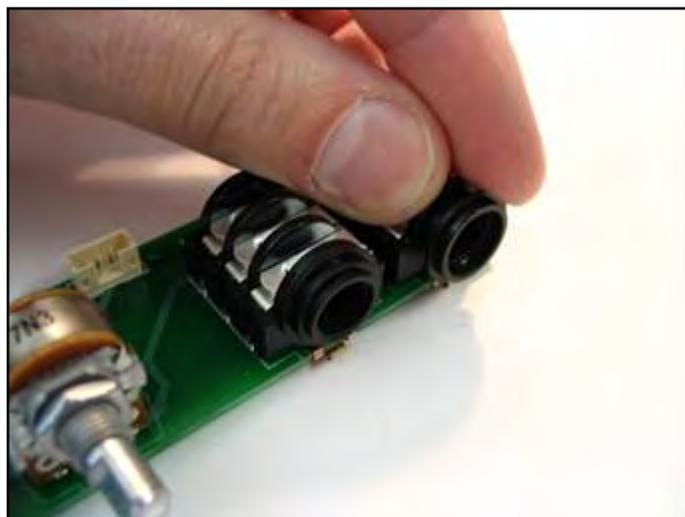
1 each **30-06-0017** HEX NUT 10x2mm THR=M7x0.75 STL ZN

2 each **30-15-0041** SPACER JACK

Install HEX NUT over the POTENTIOMETER shaft. Turn nut until it is fully seated against the POTENTIOMETER body.



Install one SPACER over each ¼" JACK. SPACER shall be oriented as shown.



STEP 24

P/N required:

- 1 each **WASHER FLAT** (included with potentiometer)
- 1 each **HEX NUT** (included with potentiometer)
- 2 each **WASHER FINISHING** (included with ¼" jack)
- 2 each **PLASTIC CHROME NUT** (included with ¼" jack)
- 2 each **30-00-0042 SCREW #4 x 3/8" BLK**

Install the PCBA XLR INPUT – FX SEND/RETURN into the CHASSIS as shown.



Install the WASHER and the HEX NUT over the POTENTIOMETER shaft as shown.
Torque the HEX NUT to 5-6 inch-pounds.



Step 24 is continued on the next page

STEP 24 CONT'D

Secure each ¼” jack to the CHASSIS using one WASHER FINISHING and PLASTIC CHROME NUT. Torque each PLASTIC CHROME NUT to 5 - 6 inch-pounds.



Secure the XLR JACK to the CHASSIS using two (2) SCREWS as shown. Torque each screw to 6-8 in-lbs.



STEP 25

P/N required:

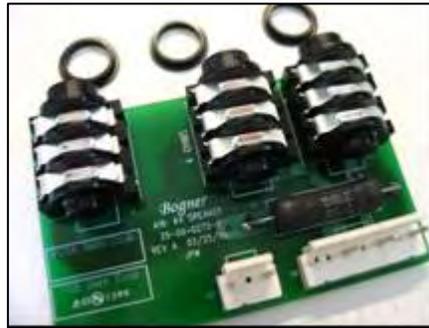
1 **PCBA SPEAKER OUT** (breakaway)

3 each **30-15-0041 SPACER JACK**

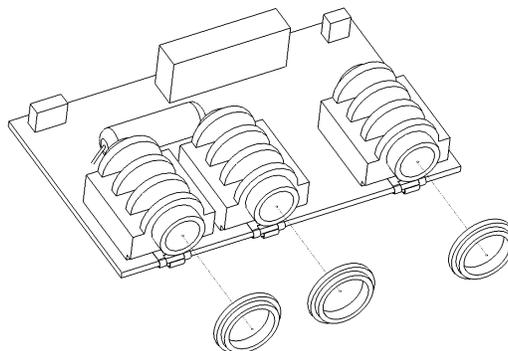
1 each **WASHER FLAT** (included with potentiometer)

3 each **WASHER FINISHING** (included with ¼" jack)

3 each **PLASTIC CHROME NUT** (included with ¼" jack)



Install one SPACER over each ¼" JACK. SPACER shall be oriented as shown.



Insert PCBA SPEAKER OUT into CHASSIS as shown.



Step 25 is continued on next page

STEP 25 CONT'D

Secure each 1/4" jack to the CHASSIS using one WASHER FINISHING and PLASTIC CHROME NUT. Torque each PLASTIC CHROME NUT to 5 - 6 inch-pounds.



STEP 26

P/N required:

1 **50-02-0275-3** PCBA GUITAR INPUT (breakaway)

1 each **30-15-0041** SPACER JACK

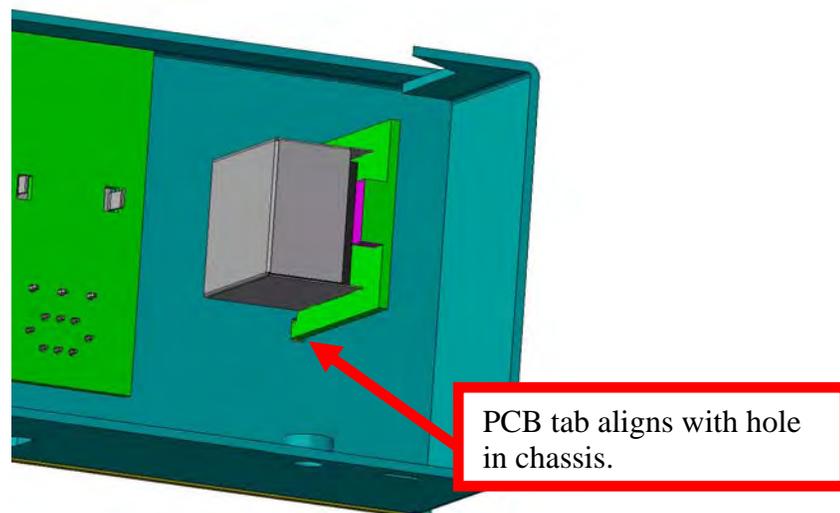
1 each **WASHER FINISHING** (included with 1/4" jack)

1 each **PLASTIC CHROME NUT** (included with 1/4" jack)

Install the SPACER and FINISHING WASHER over the threaded shaft of the chrome nut. SPACER and FINISHING WASHER shall be oriented as shown below.

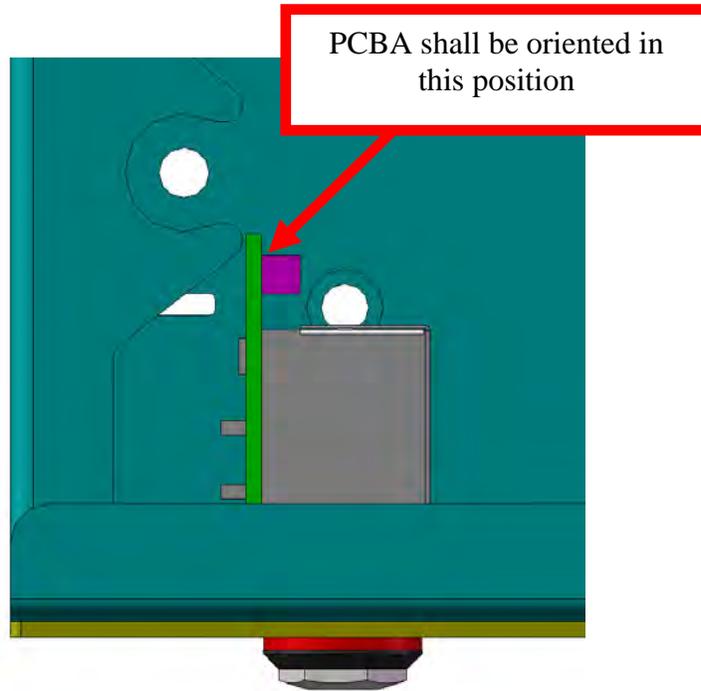


Note the alignment of the PCBA with the chassis. The tab on the PCB should align with hole in the chassis.



Step 26 continued on next page

STEP 26 CONT'D



Secure the PCBA to the CHASSIS as shown above.

Torque the PLASTIC CHROME NUT to 5 - 6 inch-pounds.

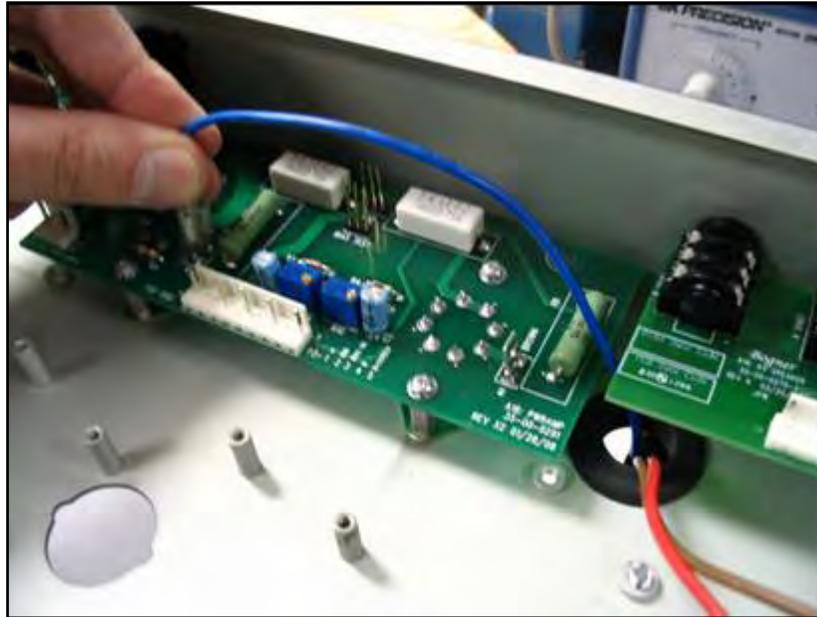
STEP 27

Twist the OUTPUT TRANSFORMER secondary header (green, yellow, red and black) and connect to the H1 header on the **PCBA SPEAKER OUT** as shown.



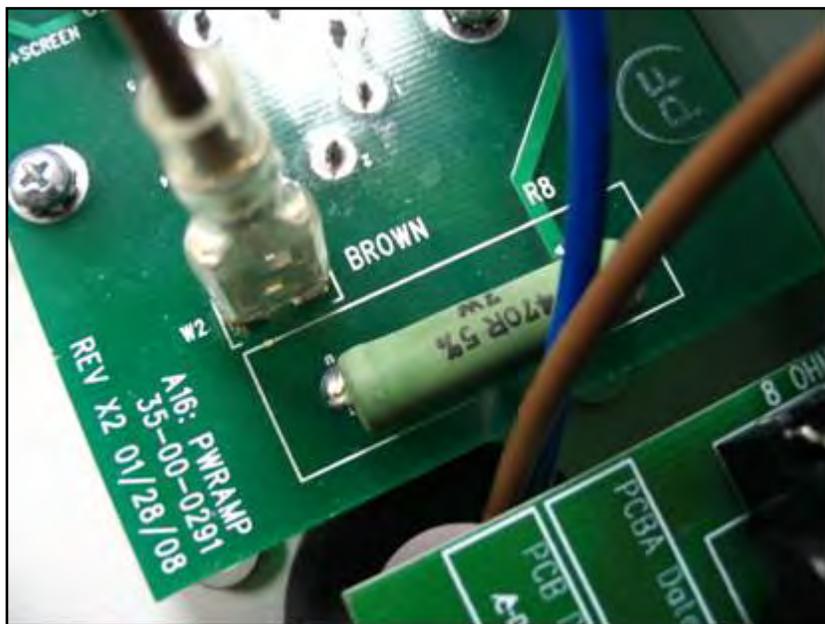
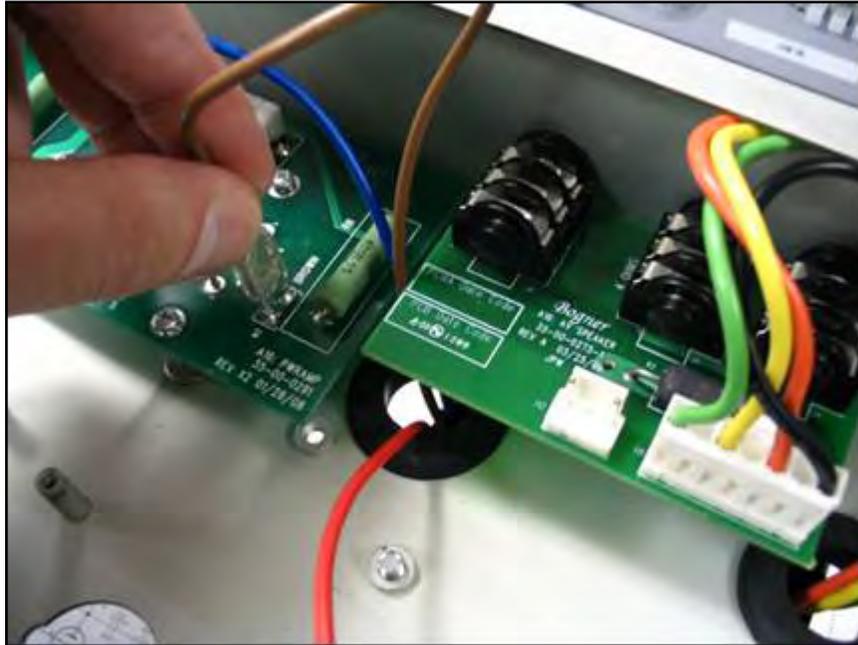
STEP 28

Connect the single blue wire from the OUTPUT TRANSFORMER to the header labeled “BLUE” on the POWER AMP PCBA as shown.



STEP 29

Connect the single brown wire from the OUTPUT TRANSFORMER to the header labeled “BROWN” on the POWER AMP PCBA as shown.



STEP 30

P/N required:

1 each **50-02-0290** PCBA PRE AMP

21 each **30-00-0043** SCREW 6-32 x 5/16" WITH STAR WASHER



Insert the PCBA PRE AMP into the CHASSIS, oriented as shown. Secure to the CHASSIS using 21 SCREWS. Torque each SCREW to 8-10 in-lbs.



STEP 31

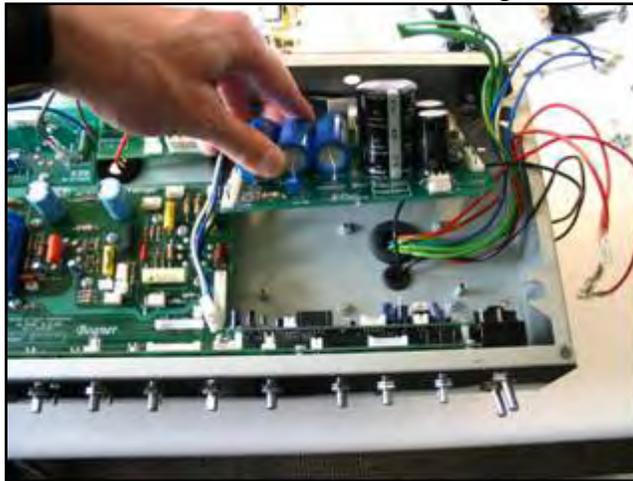
P/N required:

1 each **50-02-0292** PCBA POWER SUPPLY

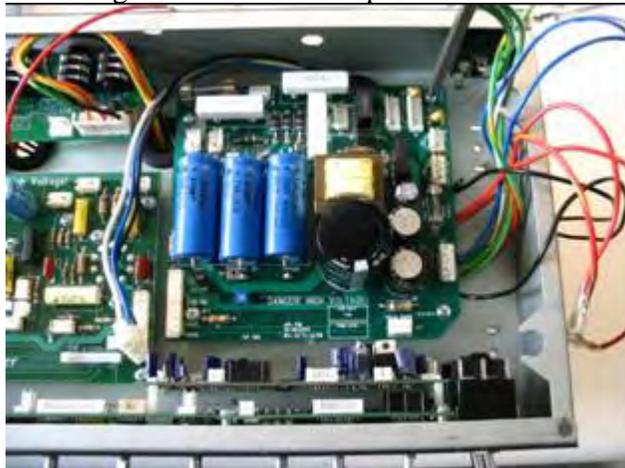
4 each **30-00-0043** SCREW 6-32 x 5/16" WITH STAR WASHER



Insert the PCBA POWER SUPPLY into the CHASSIS, oriented as shown. Be sure all wires are routed to the outside of the PCBA before securing.



Secure to the CHASSIS using 4 SCREWS. Torque each SCREW to 8-10 in-lbs.



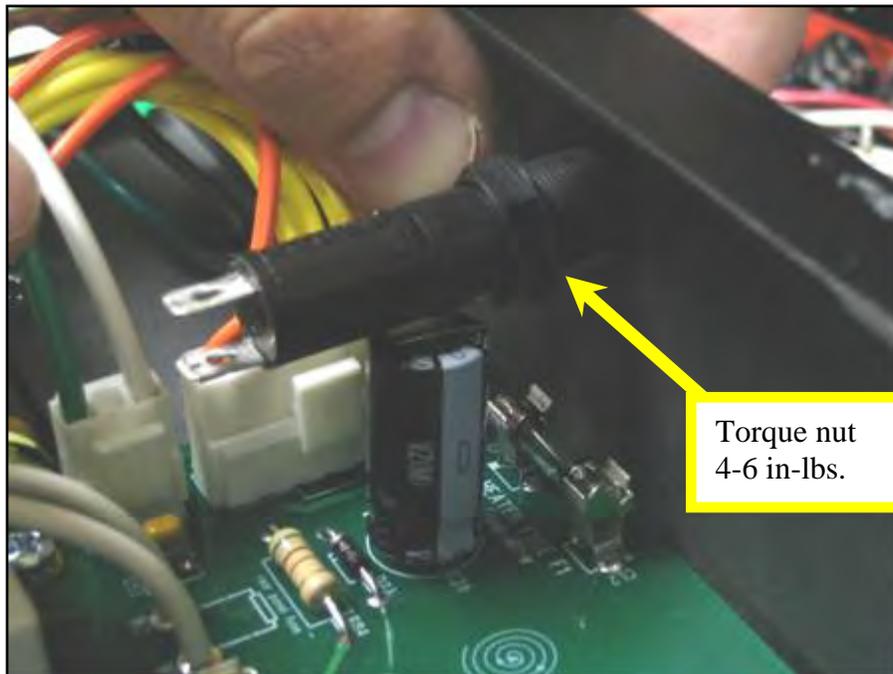
STEP 32

P/N required:

1 each **21-48-0004** FUSEHOLDER

1 each **24-19-0005** FUSE 0.5A 250V

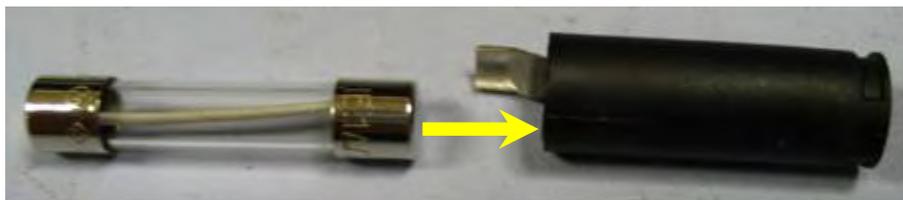
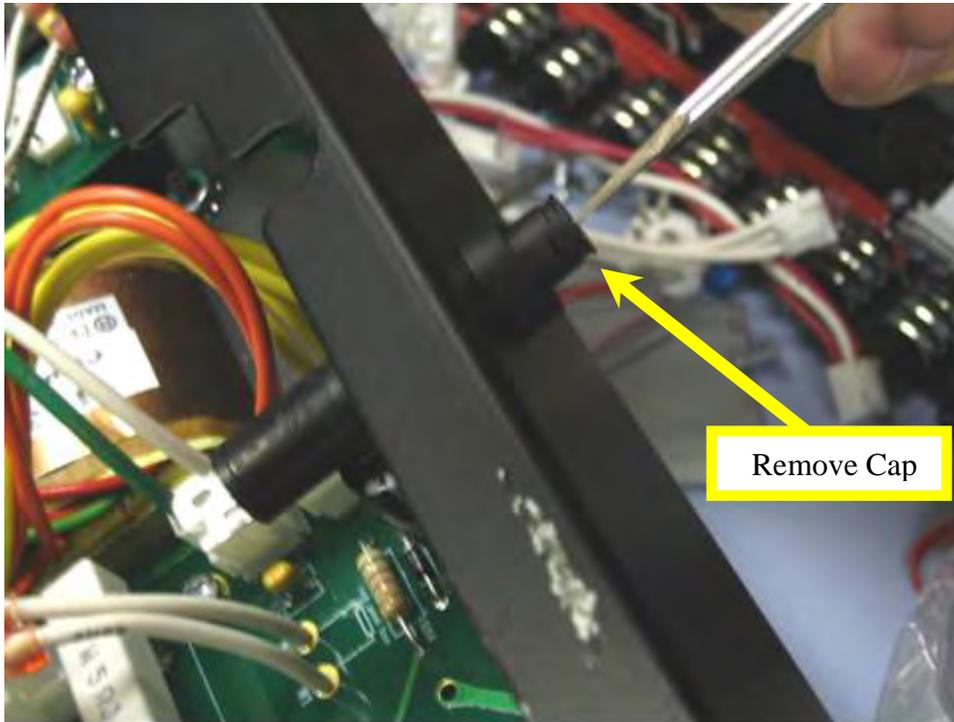
Insert the FUSEHOLDER into the hole in the CHASSIS as shown. Secure the FUSEHOLDER with the included nut. Torque the nut to 4 – 6 inch-pounds.



(step 32 is cont'd on next page)

STEP 32 CONT'D

Use a flathead screwdriver to remove the cap from the FUSEHOLDER by turning it ¼ turn counterclockwise. Install the FUSE 0.5A 250V into the cap and reinstall it into the FUSEHOLDER.



STEP 33

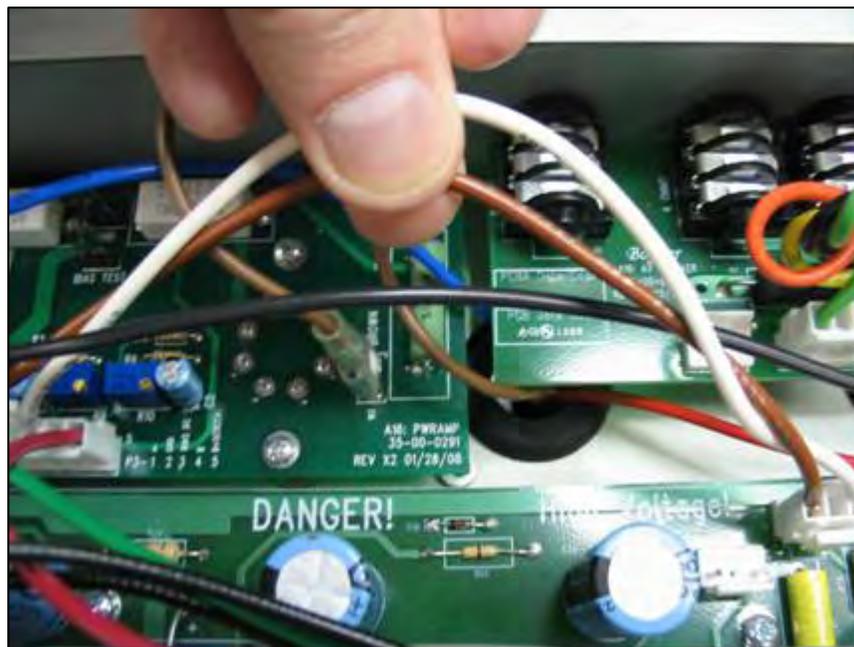
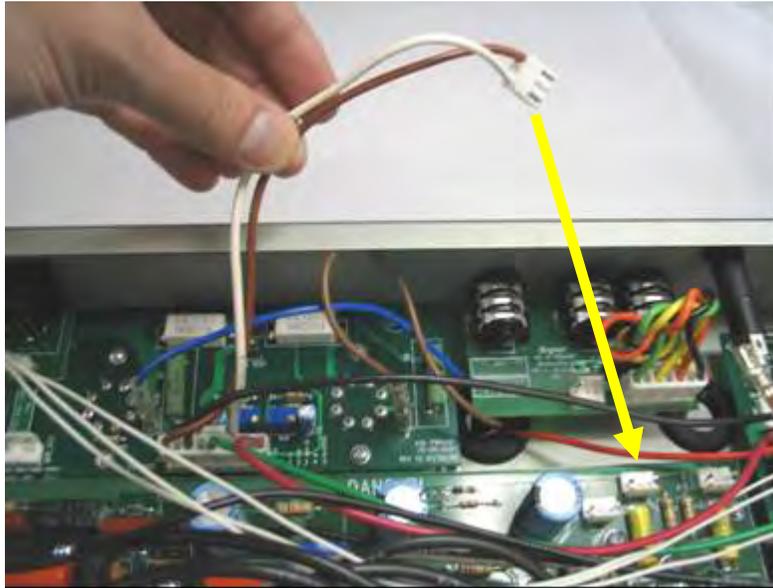
Connect the large 9-pin header on the 21-34-0106 Cable Assy to the 'H3' Header on the Power Amp PCBA.

Note that the blue, red and orange wires on the 21-34-0106 Cable Assy should already be soldered to the Power Supply PCBA.



STEP 34

Connect the 3-pin, 2-conductor header on the 21-34-0106 Cable Assy (brown and white wires) to the 'H11' header on the PCBA PRE-AMP.

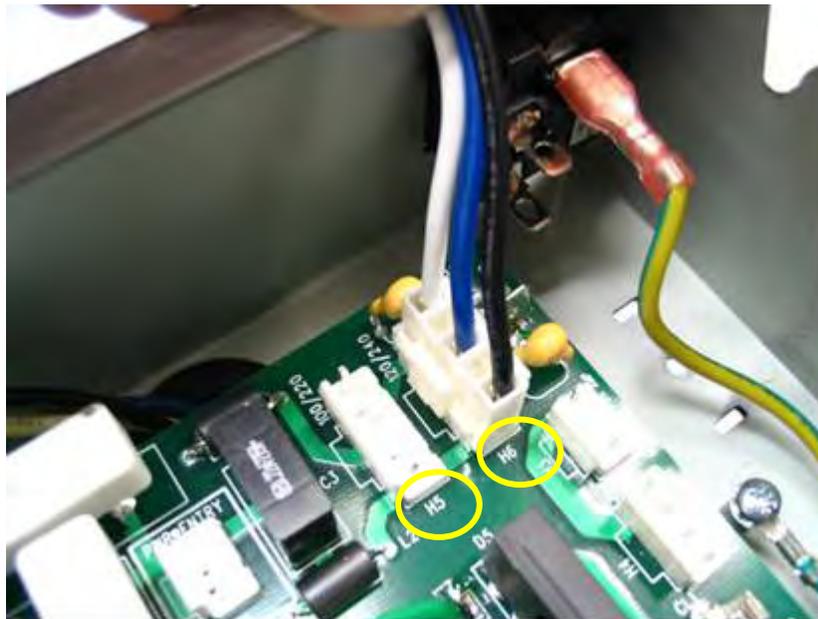


STEP 35

Connect the POWER TRANSFORMER primary wires (blue, black, white) to the appropriate header on the PCBA POWER SUPPLY as shown. See Table 3.

Table 3

AC Voltage	Header on AC PCBA	Label P/N
100 VAC (JA)	H5	40-25-0141
120 VAC (US)	H6	(no sticker)
220 VAC (EU)	H5	40-25-0142
240 VAC (AU, UK)	H6	40-25-0143



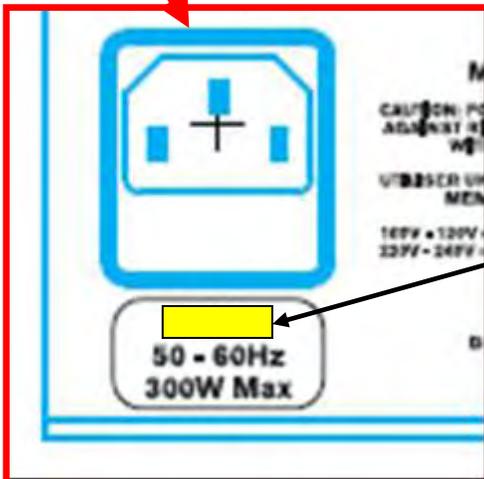
Step 35 is continued on next page



STEP 35 Cont'd

Apply the appropriate LABEL VOLTAGE sticker to indicated area on the Chassis Rear U/I.

The appropriate LABEL can be determined from Table 3 (see previous page).

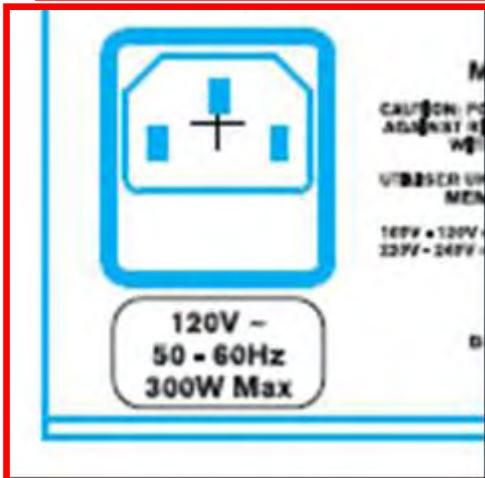


APPLY LABEL HERE
 (over the 120V ~)

Do NOT APPLY label on the
 120V Units (per Table 3)

Apply LABEL on 100V, 220V and 240V
 units, per Table 3.

Sticker shall cover the "120V ~" font



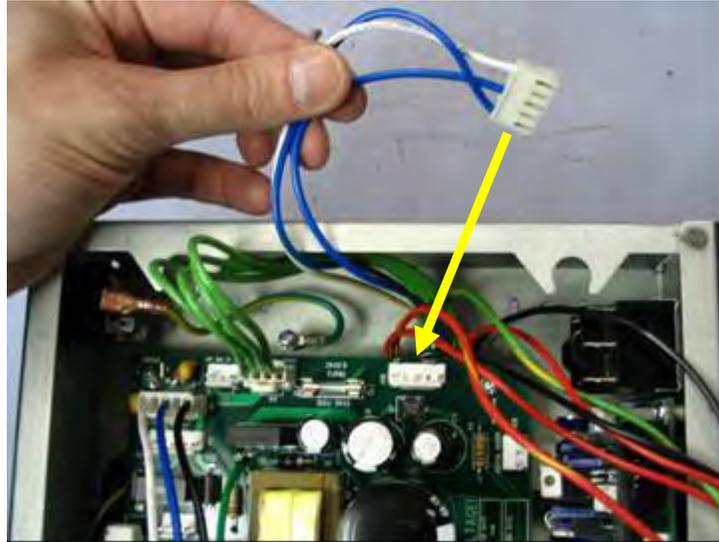
STEP 36

Connect the green wire bundle from the POWER TRANSFORMER to Header 'H4' on the PCBA POWER SUPPLY.



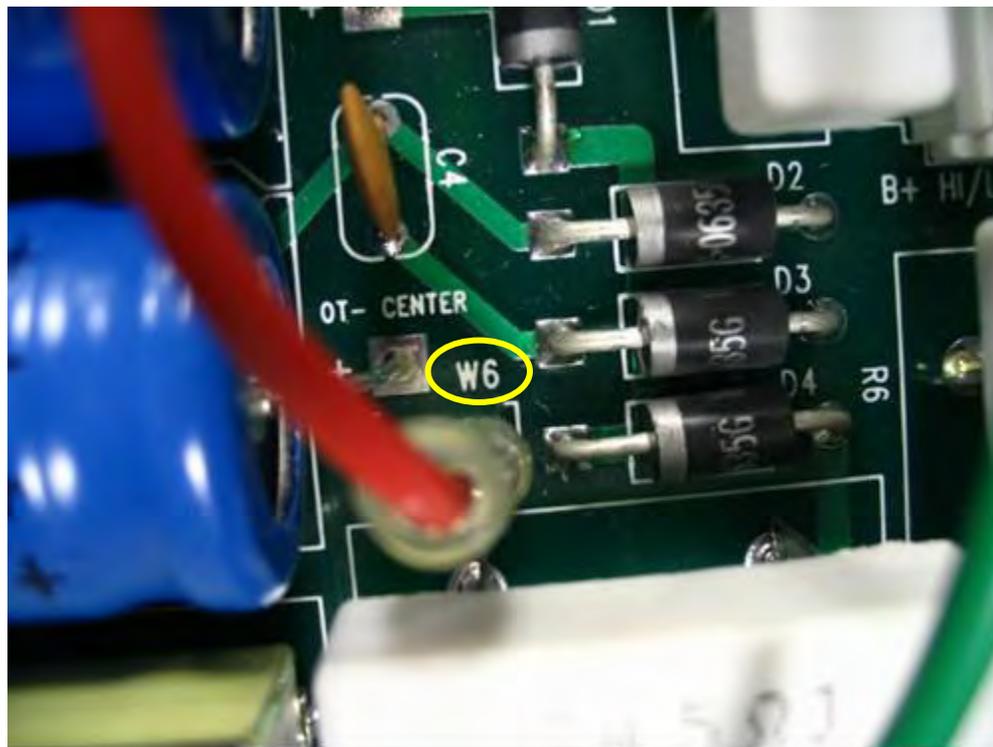
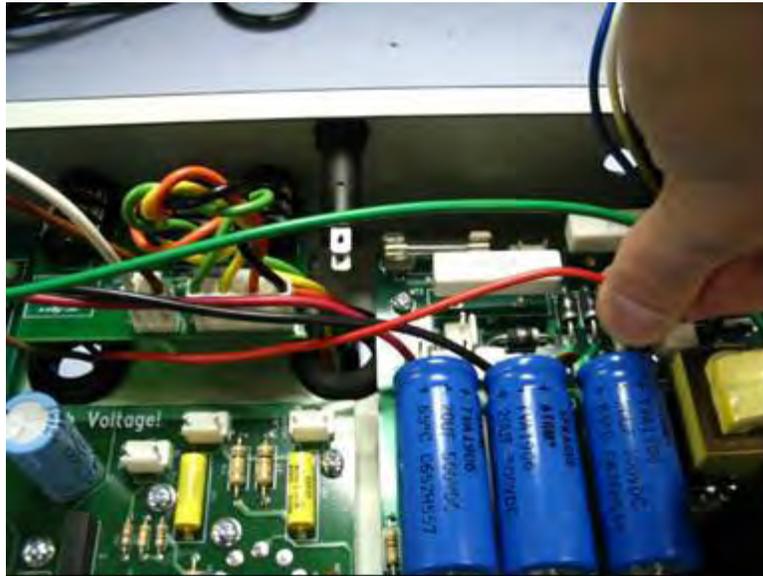
STEP 37

Connect the blue, blue and white wire bundle from the POWER TRANSFORMER to Header 'H10' on the PCBA POWER SUPPLY.



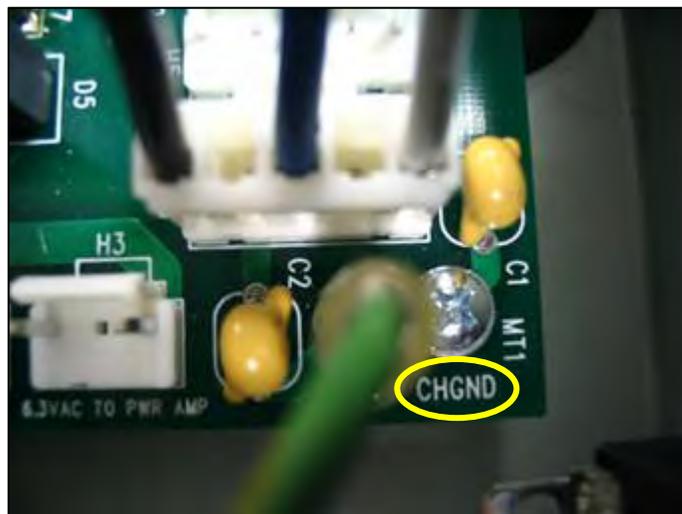
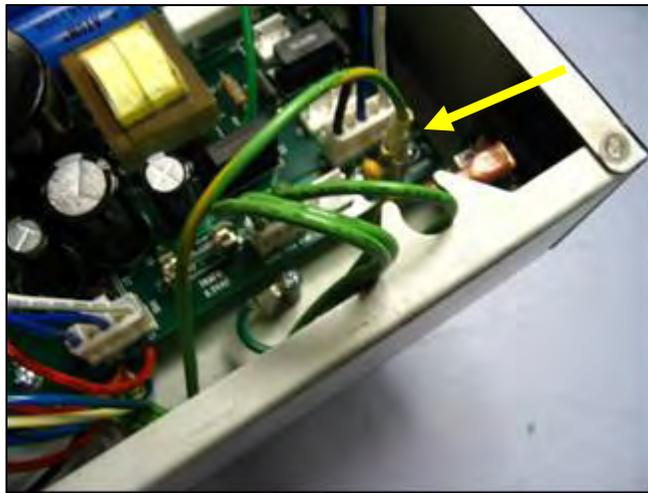
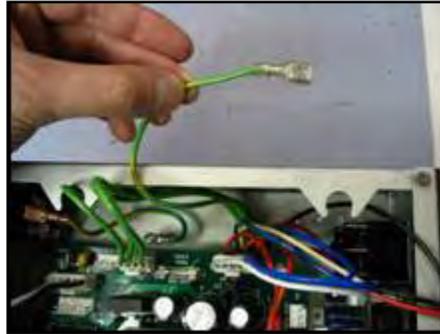
STEP 38

Connect the single red wire from the OUTPUT TRANSFORMER to 'W6' lug on the PCBA POWER SUPPLY.



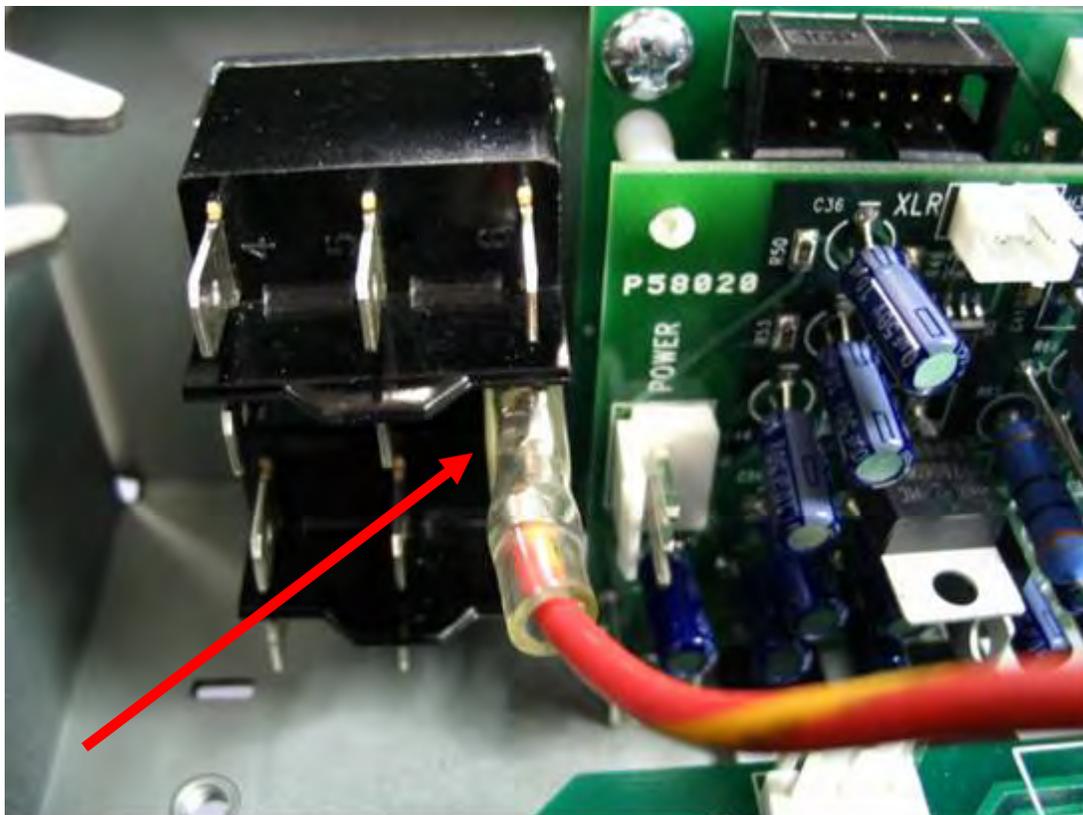
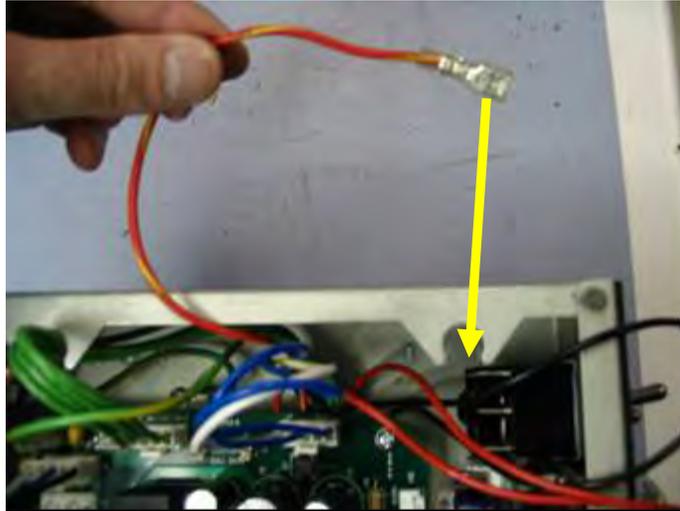
STEP 39

Connect the single green and yellow wire from the POWER TRANSFORMER to 'CHGND' lug on the PCBA POWER SUPPLY



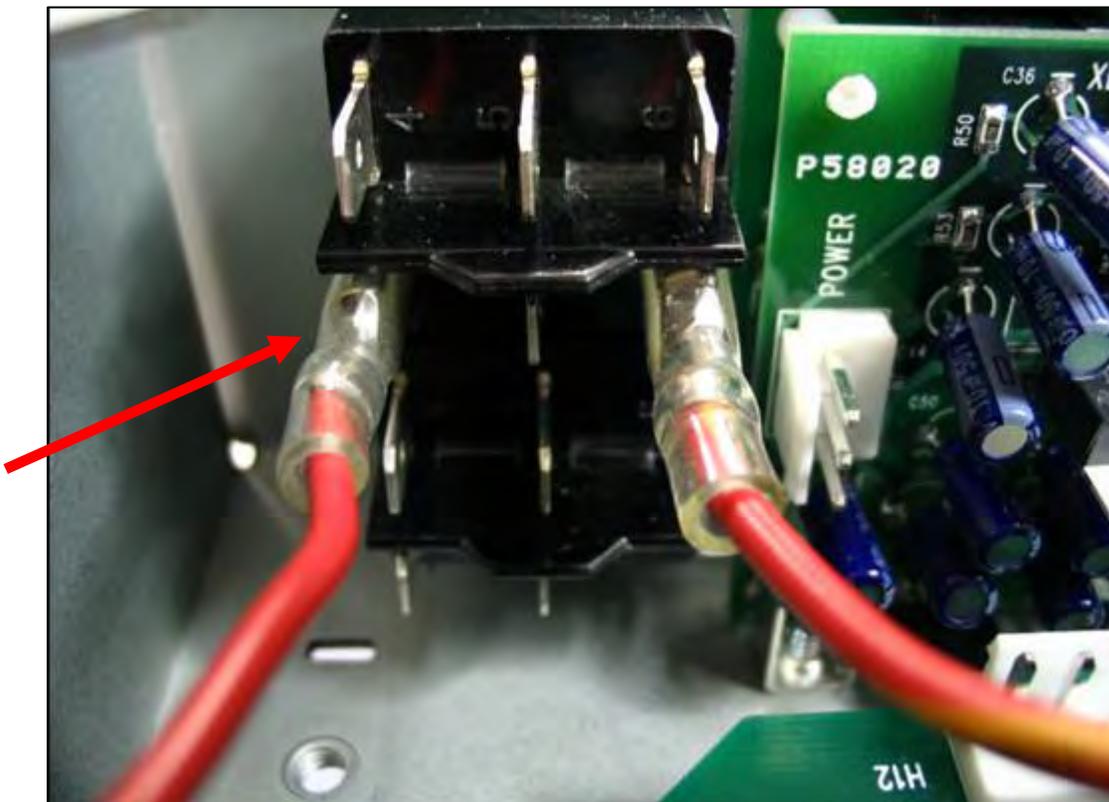
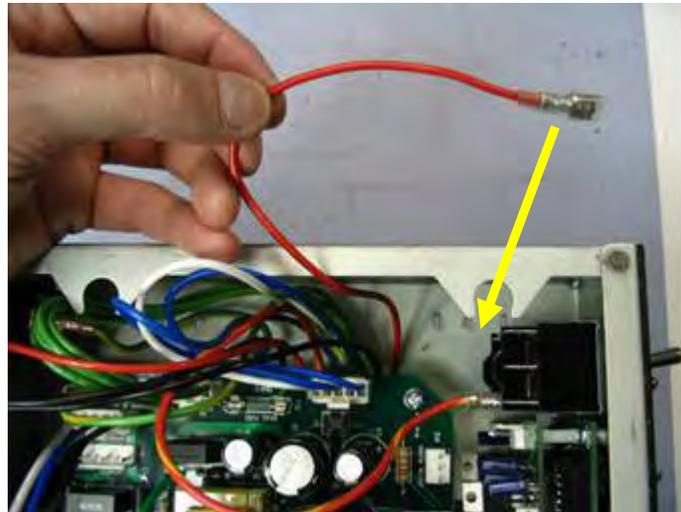
STEP 40

Connect the single red and yellow wire from the POWER TRANSFORMER to the bottom, right lug on the **24-03-0014 TOGGLE SWITCH (3-POSITION)** as shown.



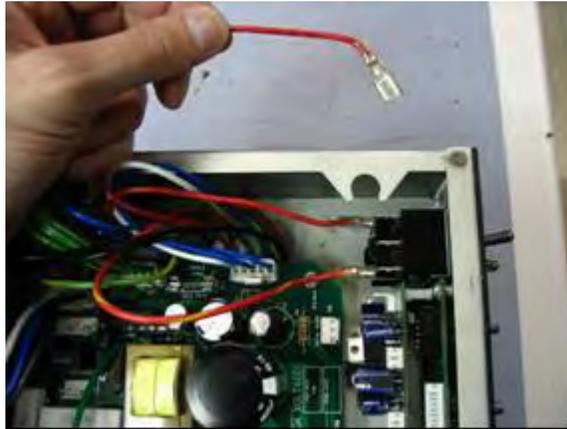
STEP 41

Connect the single red wire with the larger spade (0.250" spade) from the POWER TRANSFORMER to the bottom, left lug on the **24-03-0014 TOGGLE SWITCH** (3-POSITION) as shown.



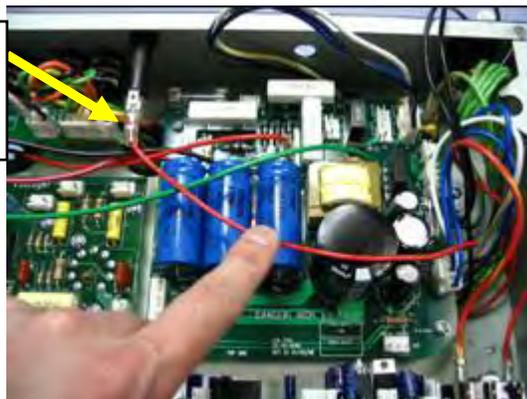
STEP 42

Connect the single red wire with the smaller spade (0.205" spade) from the POWER TRANSFORMER to the bottom lug on the **21-48-0004 FUSEHOLDER** as shown.



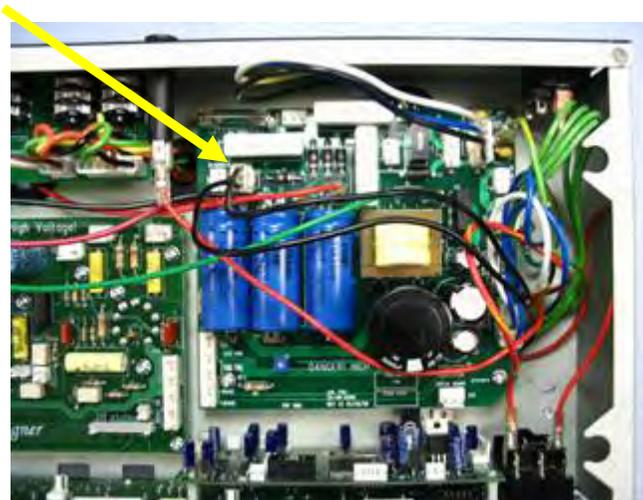
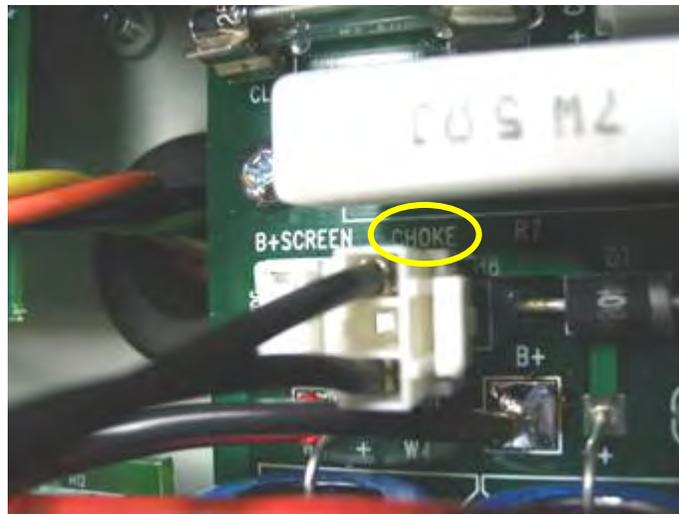
Connect to bottom
lug on
FUSEHOLDER

Connect to bottom
lug on
FUSEHOLDER



STEP 43

Connect the black wires from the CHOKE to Header 'H8' (labeled 'CHOKE') on the PCBA POWER SUPPLY.



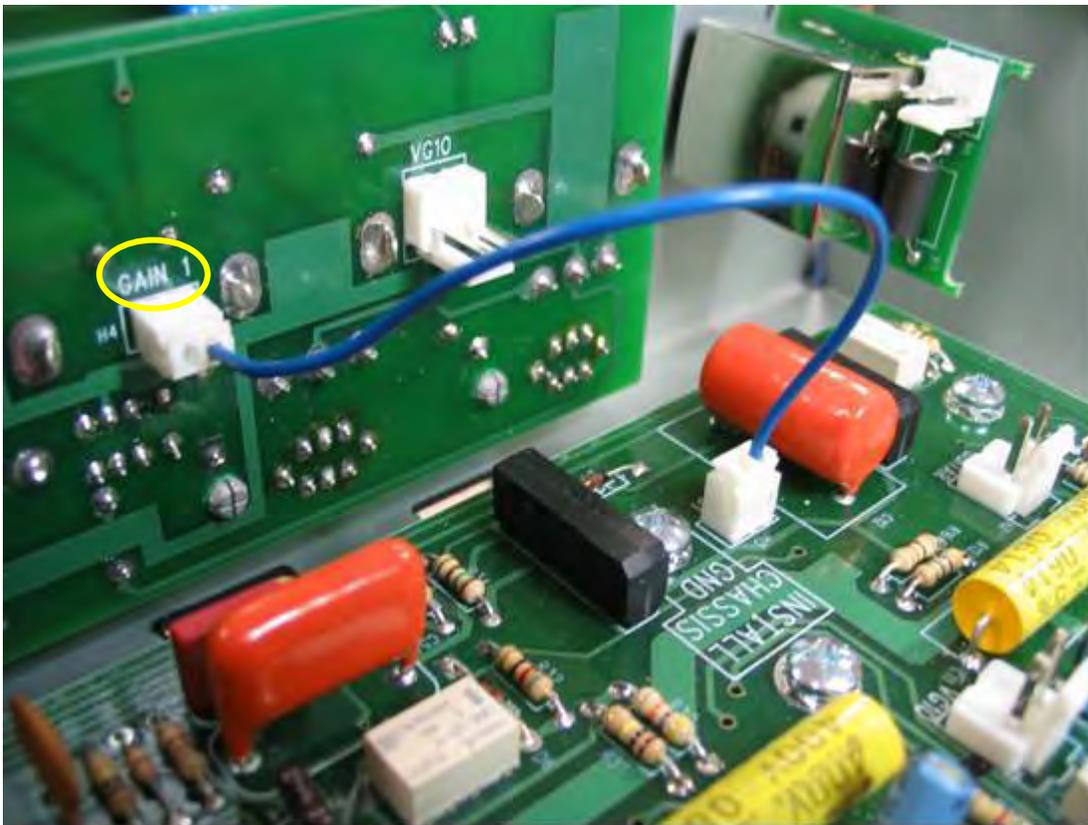
STEP 44

P/N required:
1 each **21-29-0008-1** CABLE ASSY 1-COND



Note – cable will be white (not blue, as pictured)

Connect the CABLE ASSY from the GAIN 1 “H4” header on the PCBA ANALOG U/I to the ZGI “H3” header on the PCBA PRE-AMP as shown.



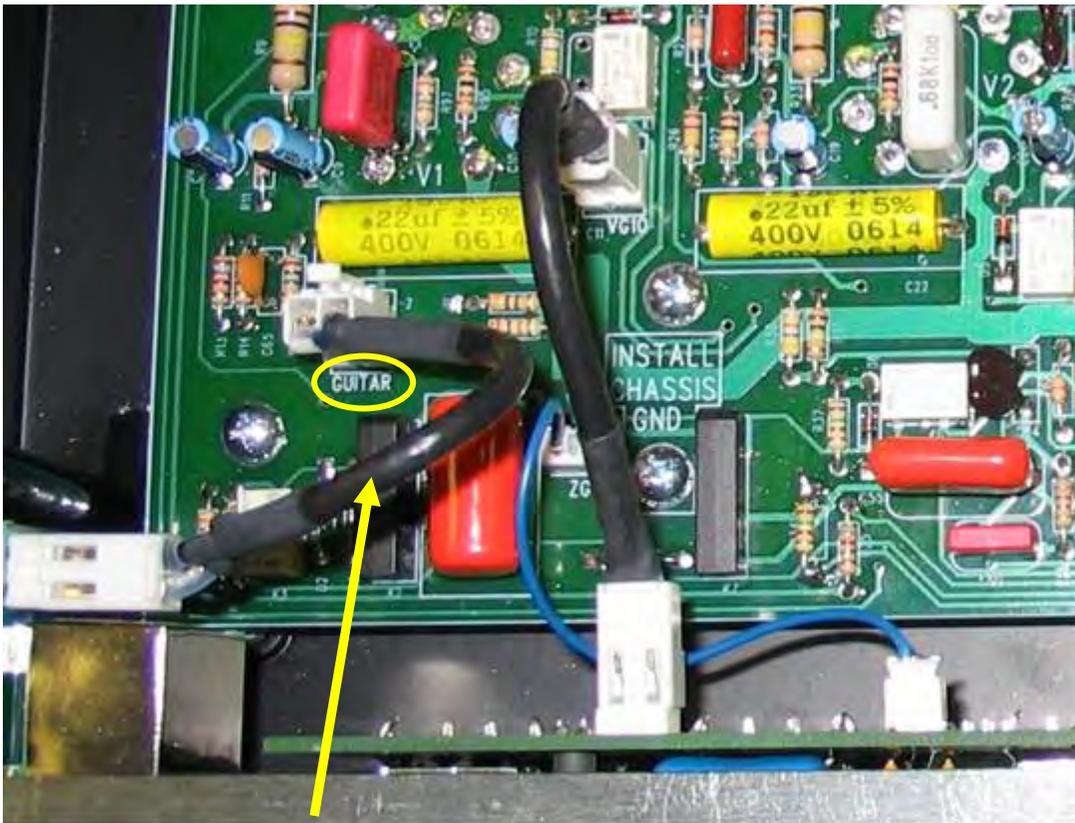
STEP 45

P/N required:

2 each **21-34-0108-1** CABLE ASSY 2-COND SHIELDED



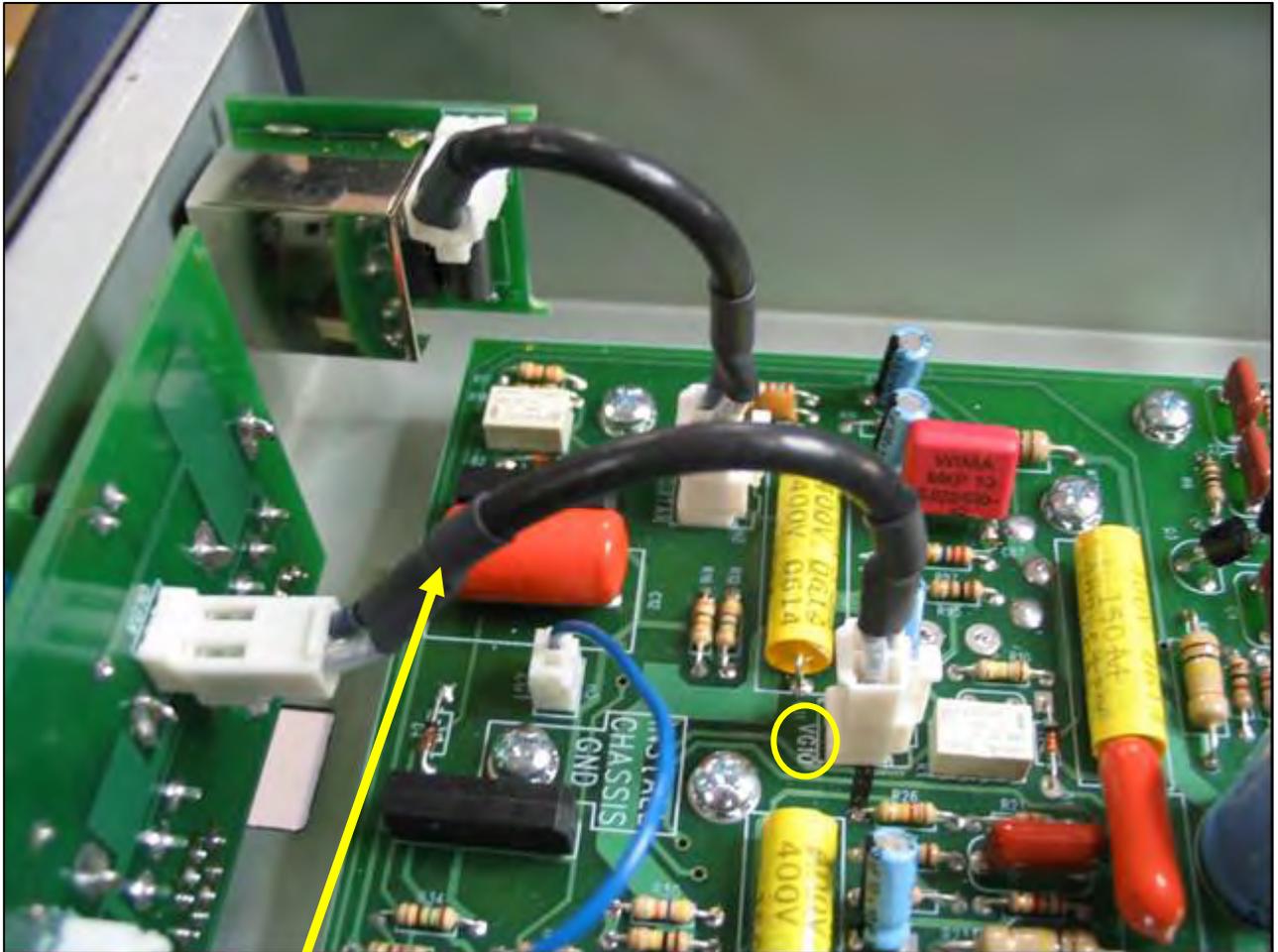
Connect one CABLE ASSY from the “H6” header on the PCBA GUITAR INPUT to the GUITAR “H2” header on the PCBA PRE-AMP as shown.



Step 45 is continued on the next page

STEP 45 CONT'D

Connect the other CABLE ASSY from the VG10 header on the PCBA ANALOG UI/I to the VG10 “H1” header on the PCBA PRE-AMP as shown.



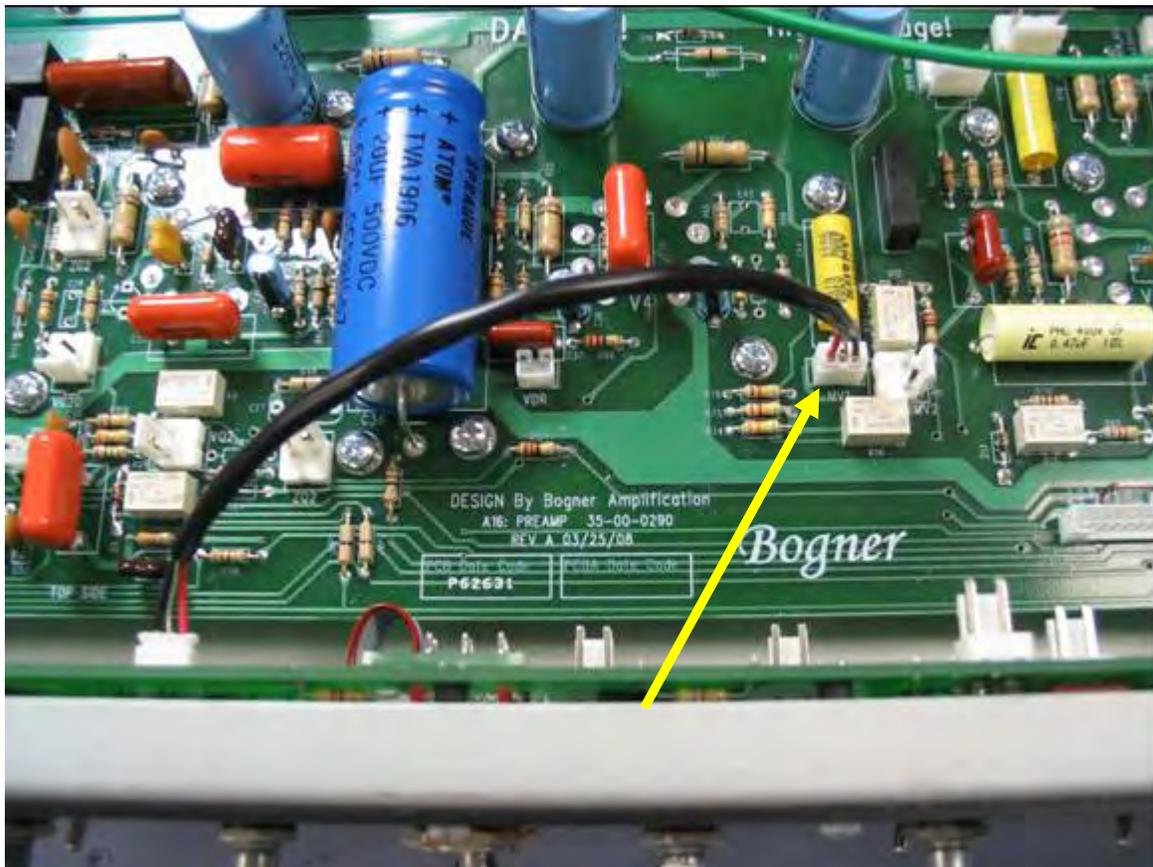
STEP 46

P/N required:

1 each **21-34-0107-1** CABLE ASSY 3-COND SHIELDED



Connect the CABLE ASSY from the MV1 RTN/SND “H5” header on the PCBA ANALOG U/I to the MV1 “H19” header on the PCBA PRE-AMP as shown.



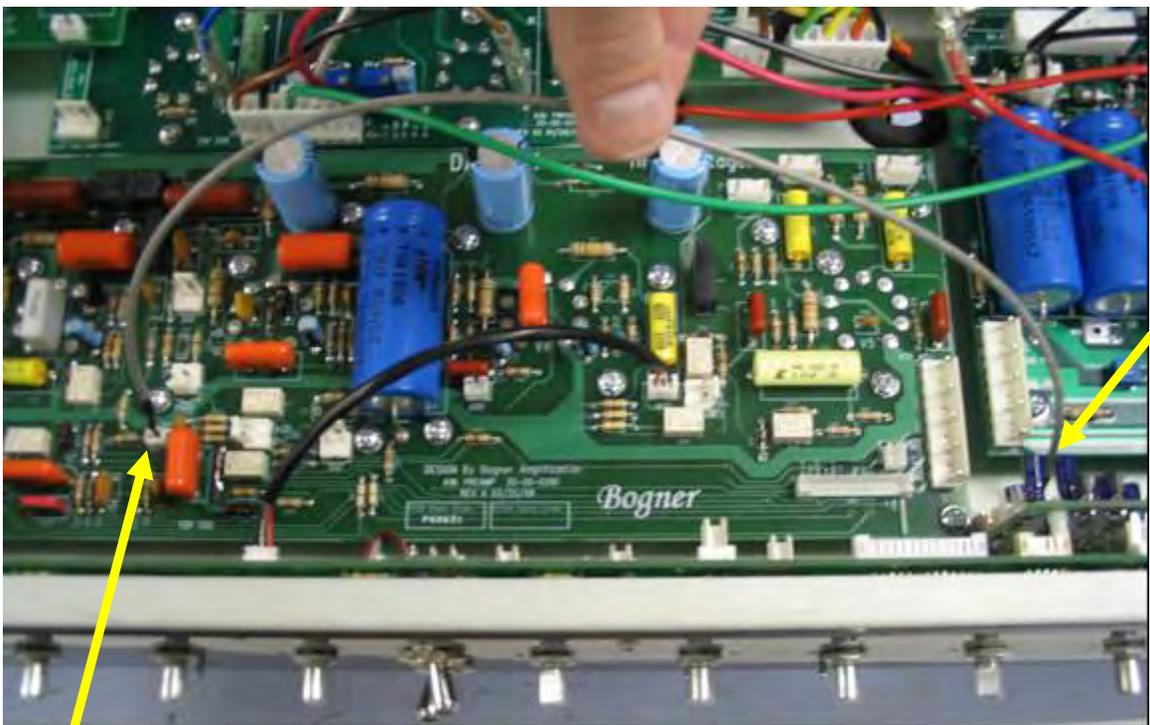
STEP 47

P/N required:

1 each **21-34-0114-2** CABLE ASSY 2-COND SHIELDED



Connect the CABLE ASSY from the AMP FX SND “H9” header on the PCBA MAIN to the ZDS “H7” header on the PCBA PRE-AMP as shown.



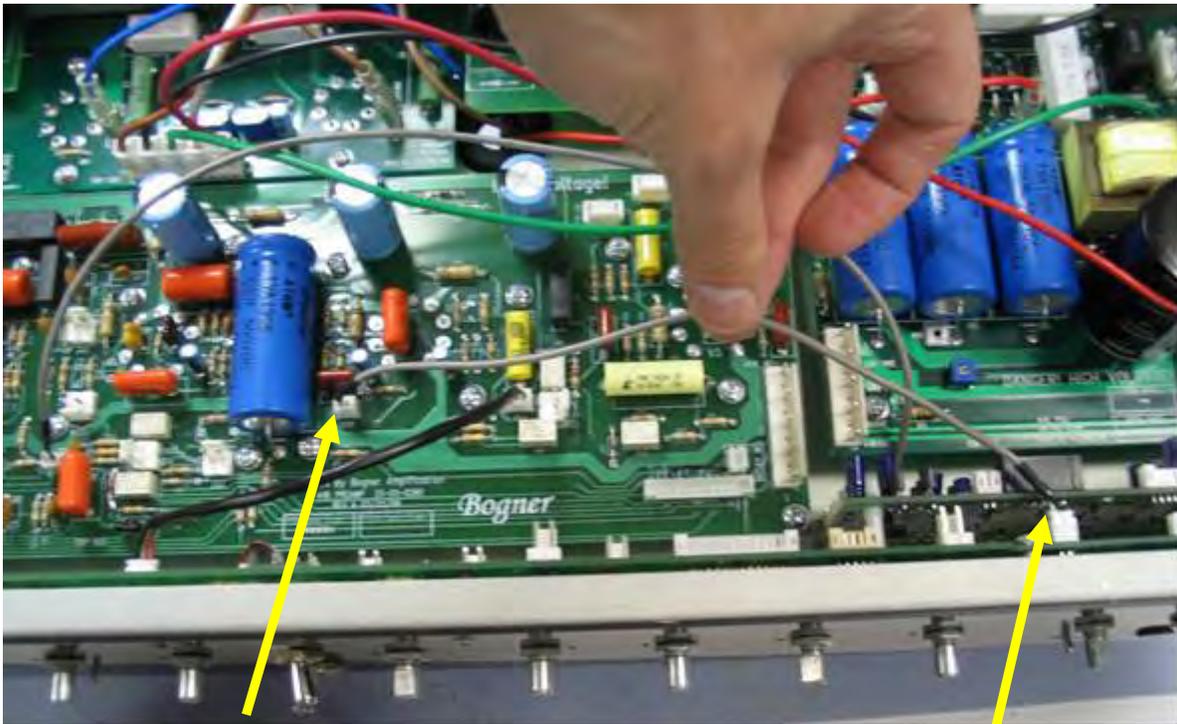
STEP 48

P/N required:

1 each **21-34-0114-1** CABLE ASSY 2-COND SHIELDED



Connect the CABLE ASSY from the AMP FX RTN “H5” header on the PCBA DIGITAL U/I to the VDR “H6” header on the PCBA PRE-AMP as shown.



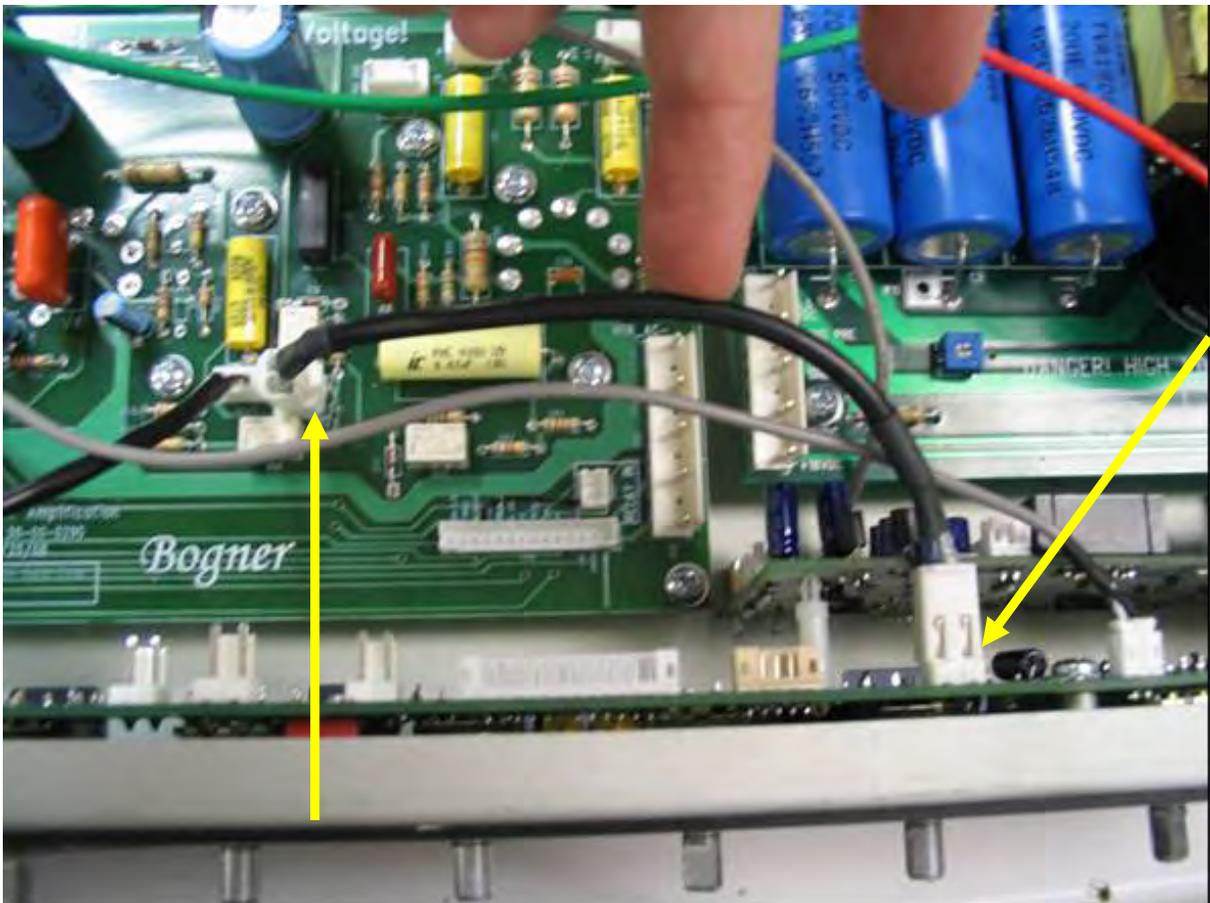
STEP 49

P/N required:

1 each **21-34-0108-2** CABLE ASSY 2-COND SHIELDED



Connect the CABLE ASSY from the MV21 “H10” header on the PCBA ANALOG U/I to the ZMV2 “H10” header on the PCBA PRE-AMP as shown.

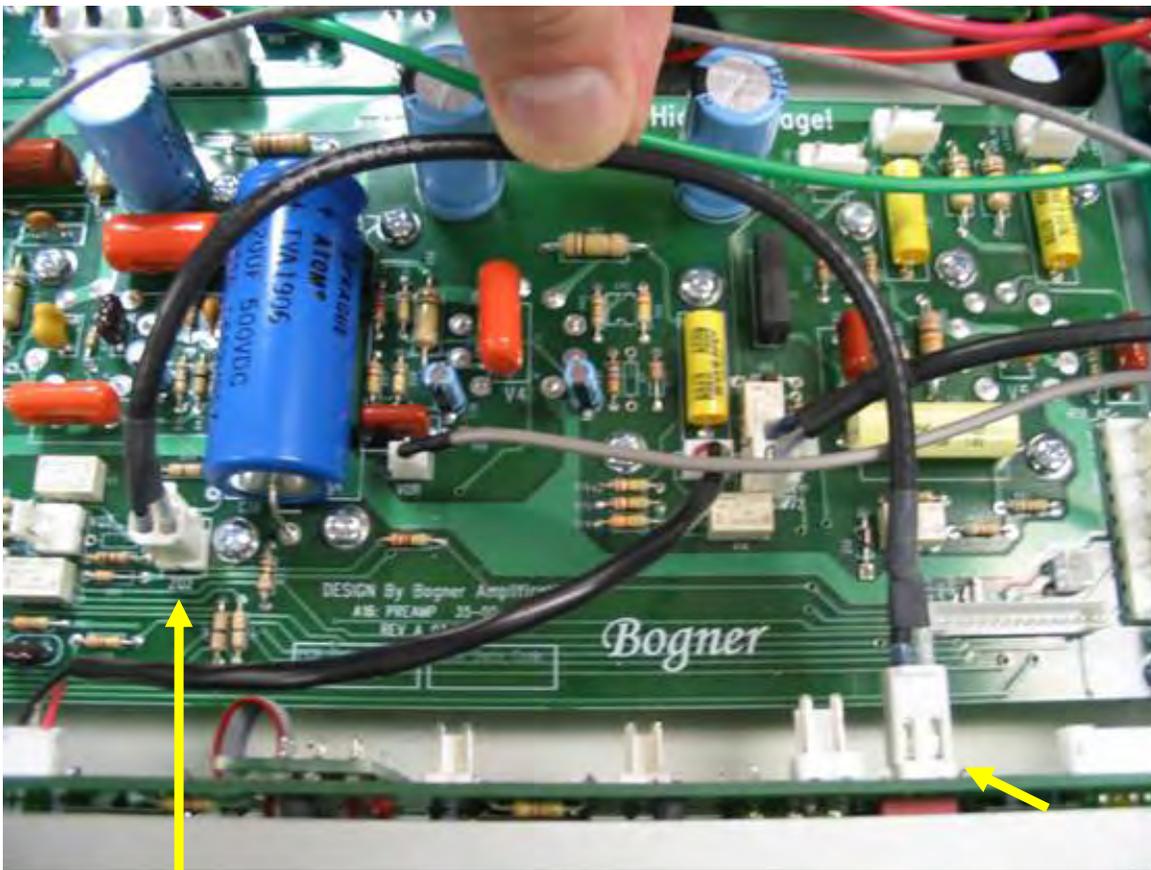


STEP 50

P/N required:
4 each **21-34-0108-3** CABLE ASSY 2-COND SHIELDED



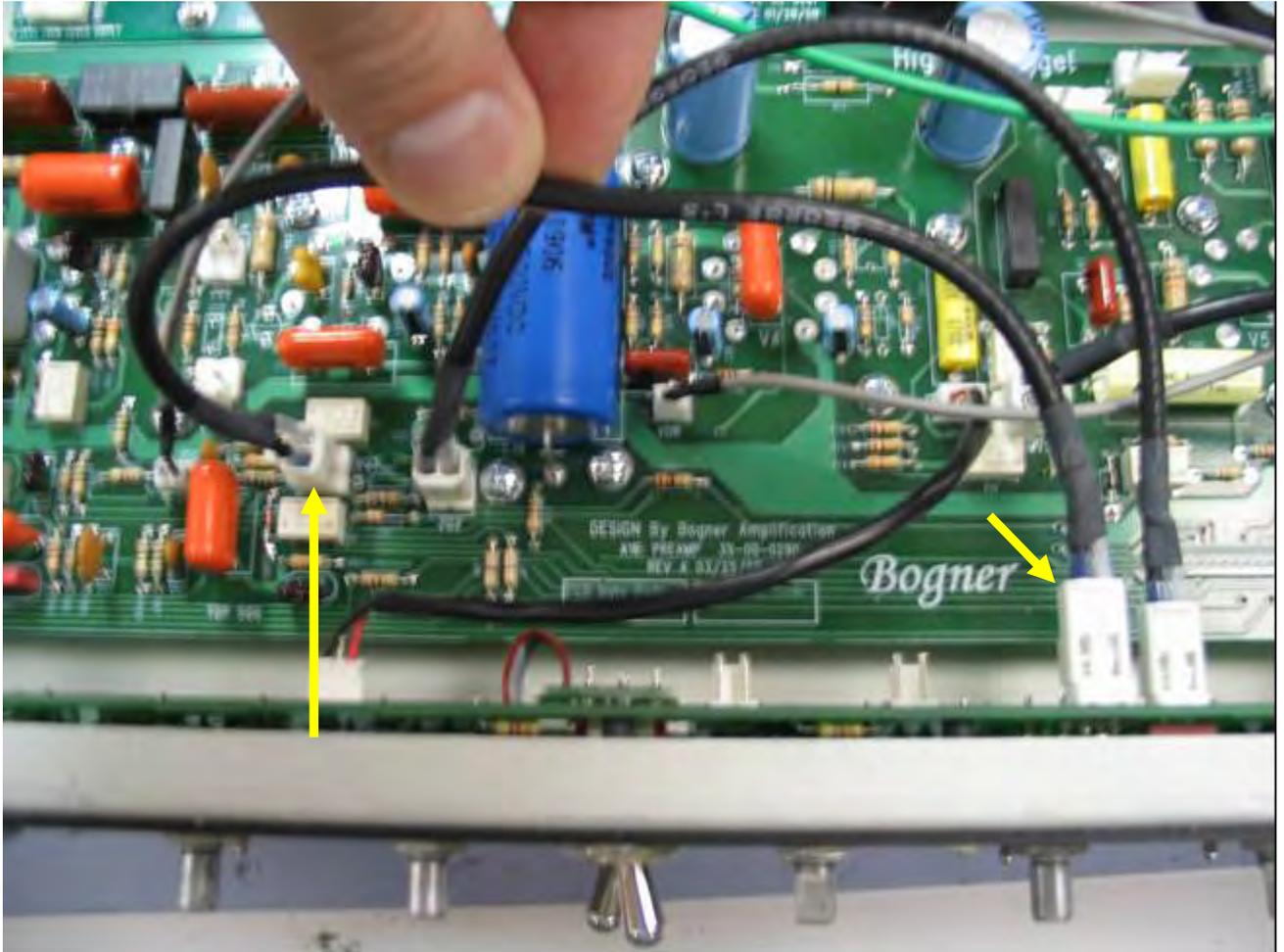
Connect one (1) CABLE ASSY from the Q21 header on the PCBA ANALOG U/I to the ZQ2 "H16" header on the PCBA PRE-AMP as shown.



Step 50 is continued on the next page

STEP 50 CONT'D

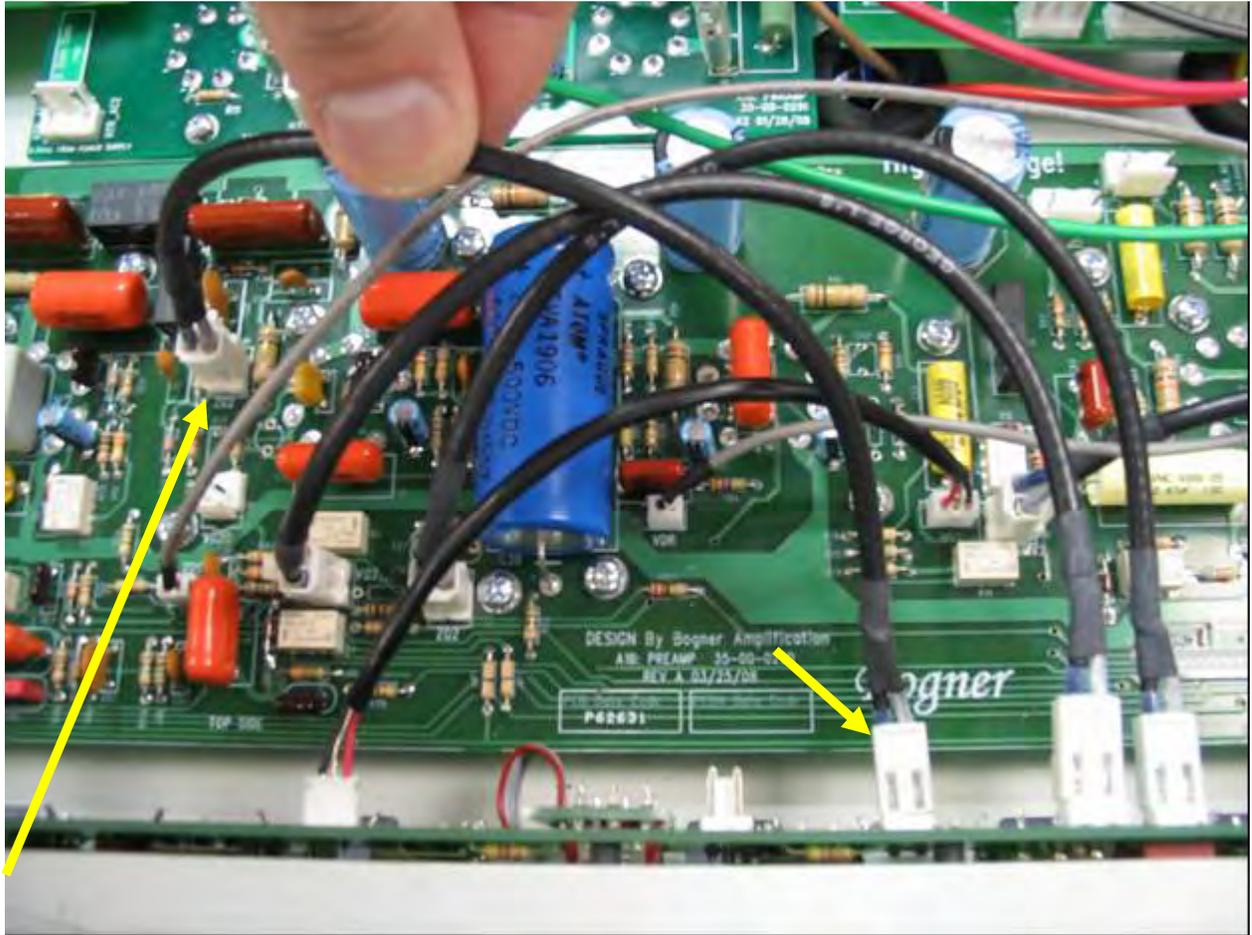
Connect one (1) CABLE ASSY from the Q20 “H9” header on the PCBA ANALOG U/I to the VQ2 “H17” header on the PCBA PRE-AMP as shown.



Step 50 is continued on the next page

STEP 50 CONT'D

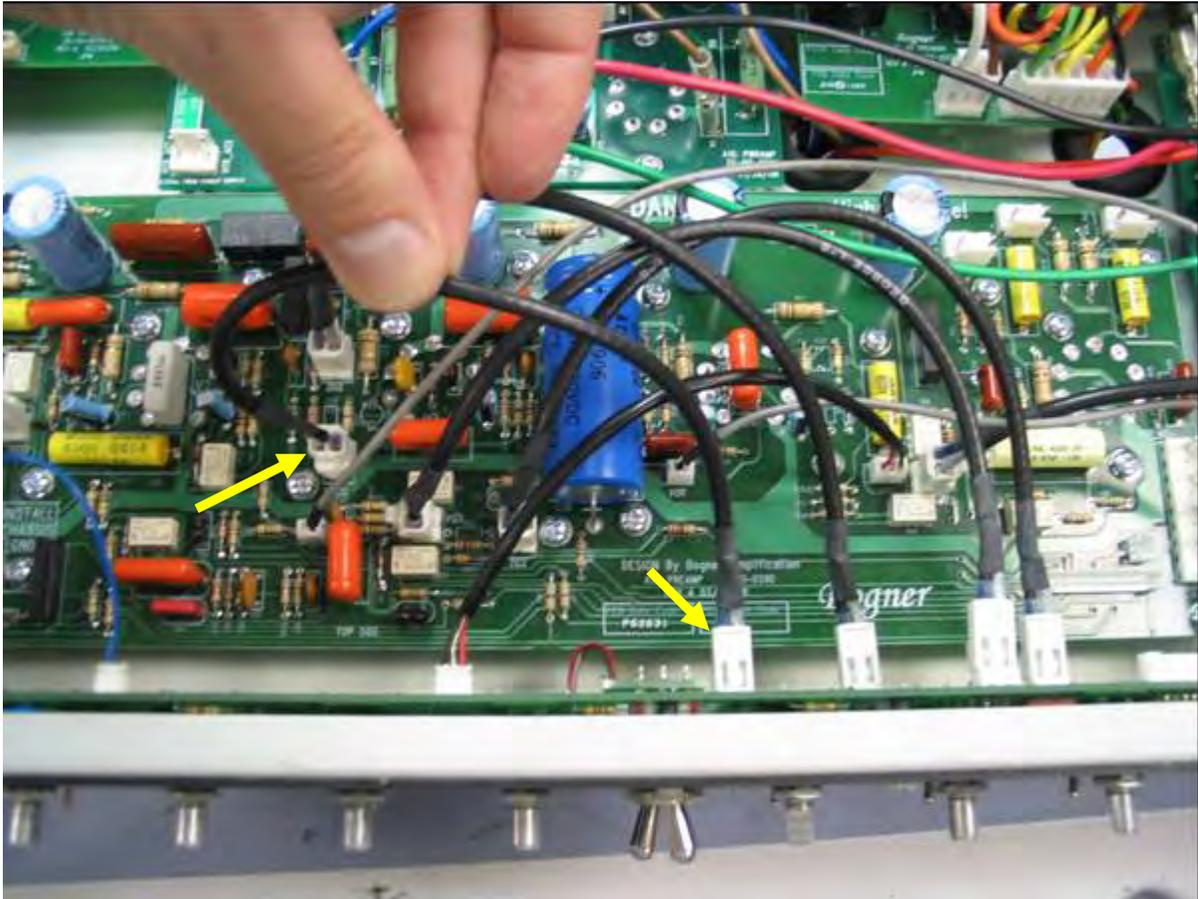
Connect one (1) CABLE ASSY from the ZG21 header on the PCBA ANALOG U/I to the ZG2 “H5” header on the PCBA PRE-AMP as shown.



Step 50 is continued on the next page

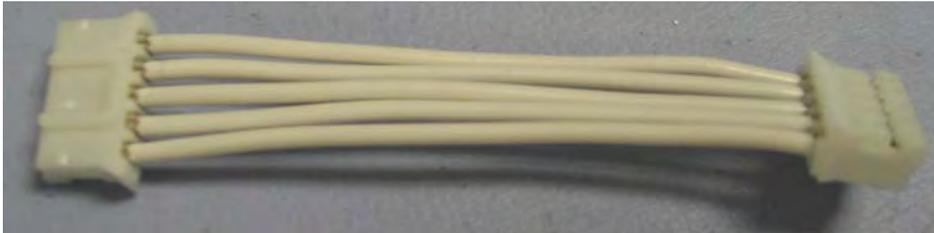
STEP 50 CONT'D

Connect one (1) CABLE ASSY from the VG20 header on the PCBA ANALOG U/I to the VG20 “H4” header on the PCBA PRE-AMP as shown.

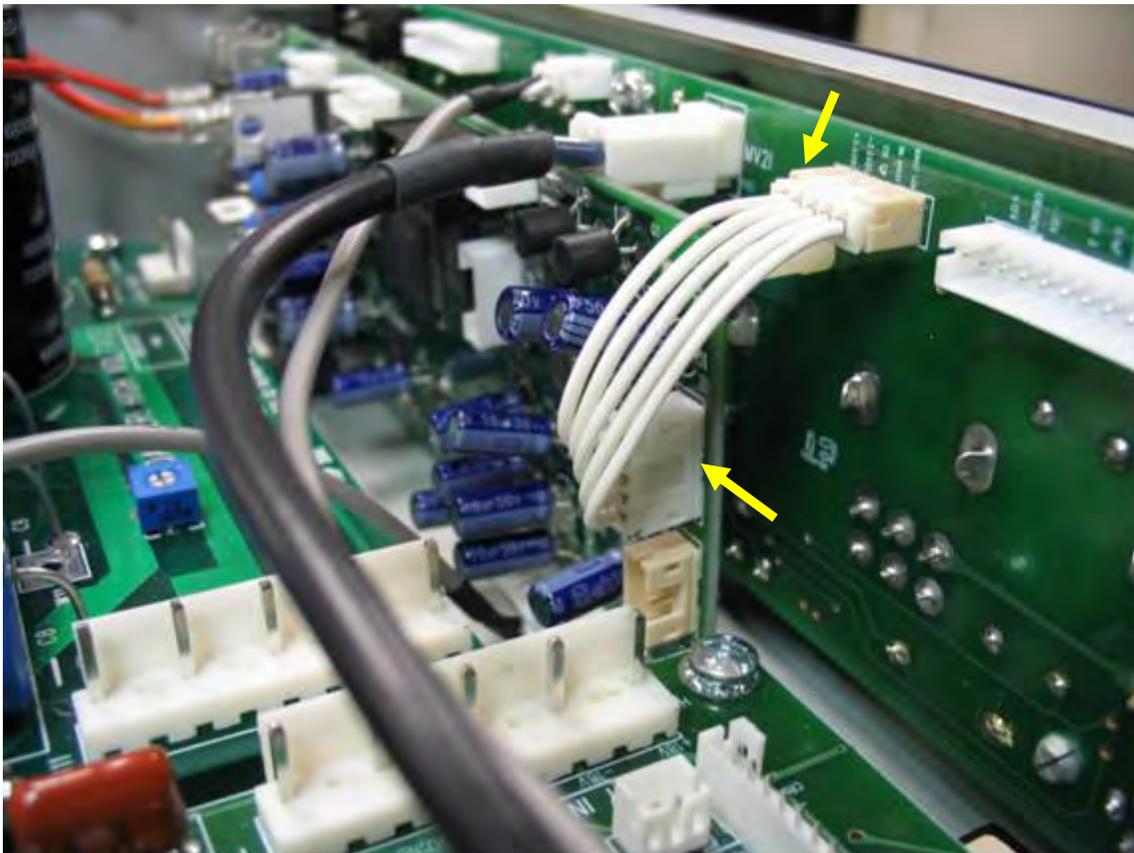


STEP 51

P/N required:
1 each **21-34-0013 CABLE SIL 5-COND**



Connect the CABLE from the “H2” header on the PCBA ANALOG U/I to the “H6” header on the PCBA MAIN as shown.

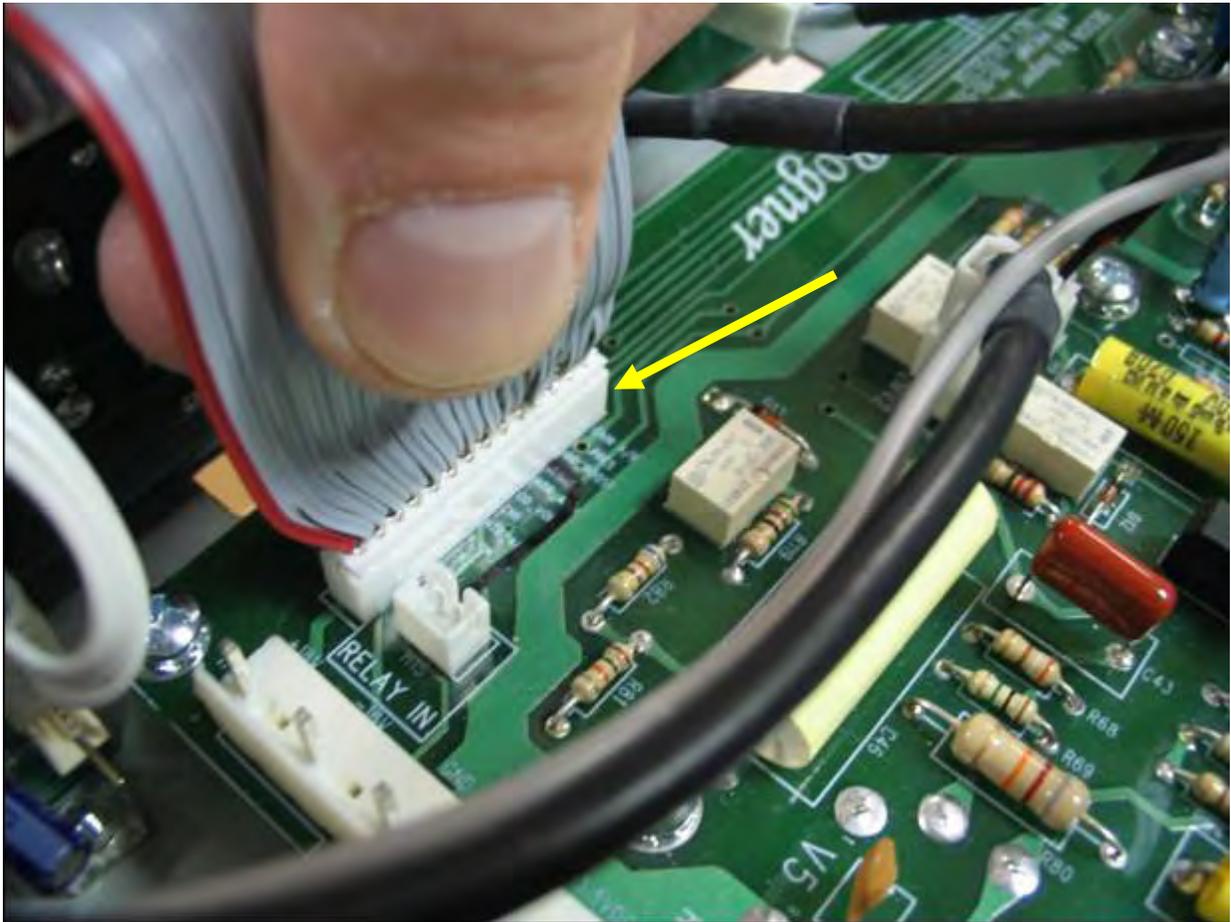


STEP 52

P/N required:

1 each **21-30-0055-1 CABLE ASSY 14-PIN**

Connect the free end of the CABLE ASSY to the “H14” header on the PCBA PRE-AMP as shown.

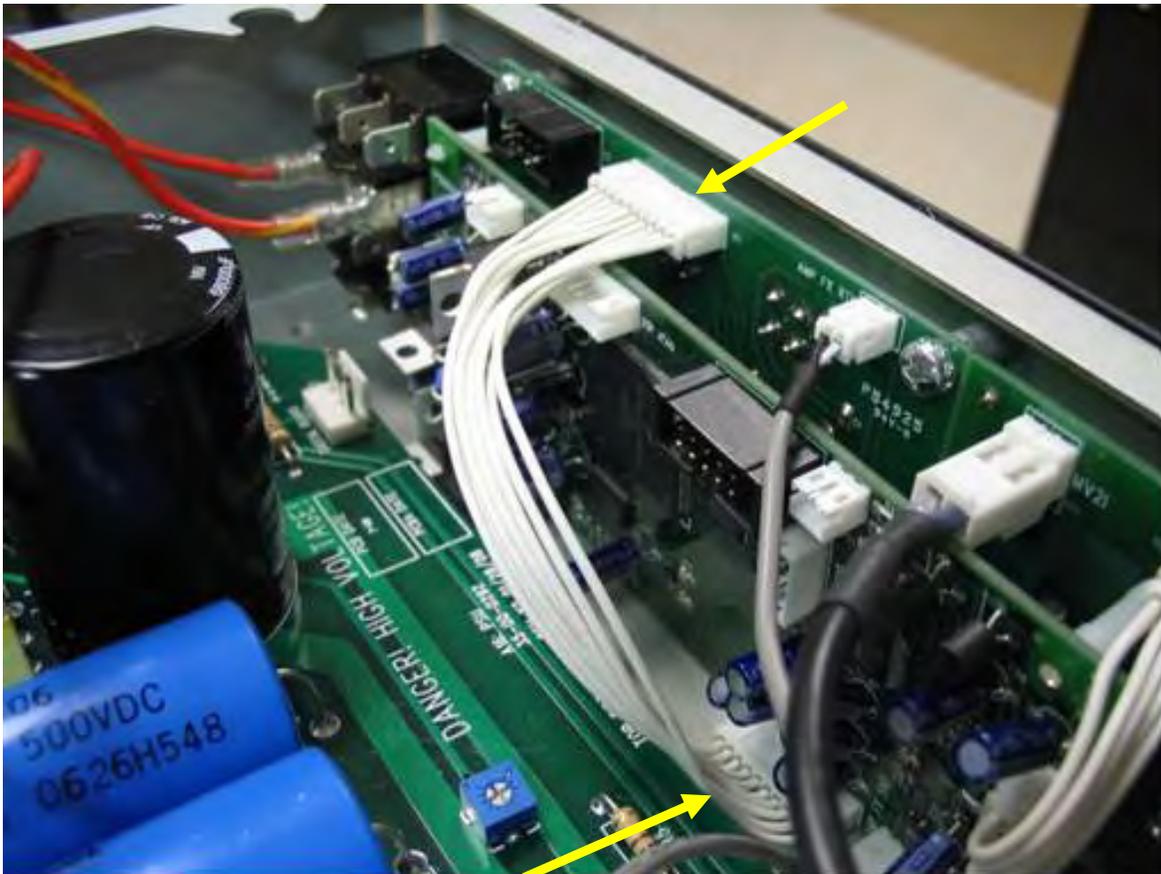


STEP 53

P/N required:
1 each **21-34-0087-1 CABLE ASSY 10-PIN**



Connect the CABLE ASSY from the “H1” header on the PCBA DIGITAL U/I to the “H10” header on the PCBA MAIN as shown.

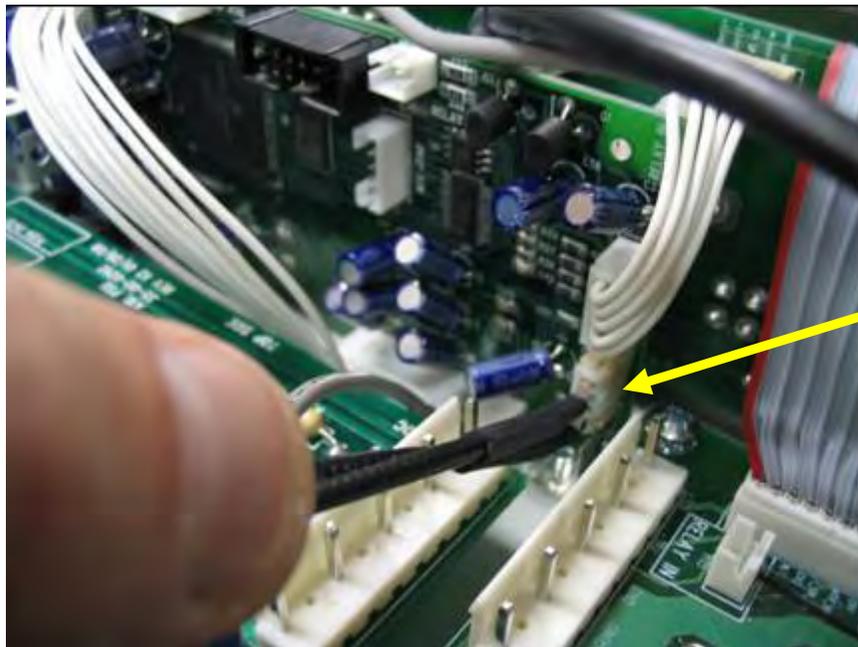


STEP 54

P/N required:

1 each **21-34-0099-1 CABLE ASSY 4-COND SHIELDED**

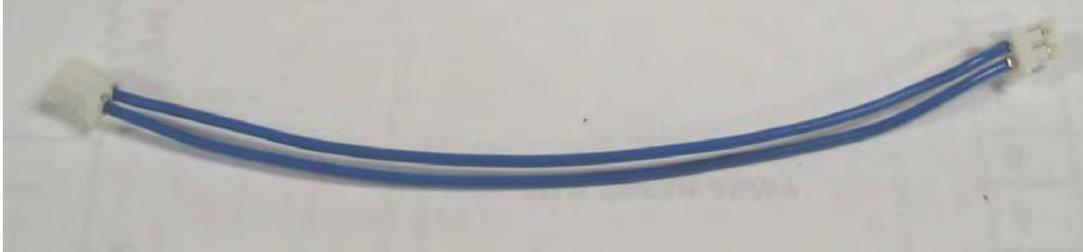
Connect the CABLE ASSY from the FX BOARD header on the PCBA MAIN to the “H5” header on the PCBA XLR INPUT – FX SEND/RETURN as shown.



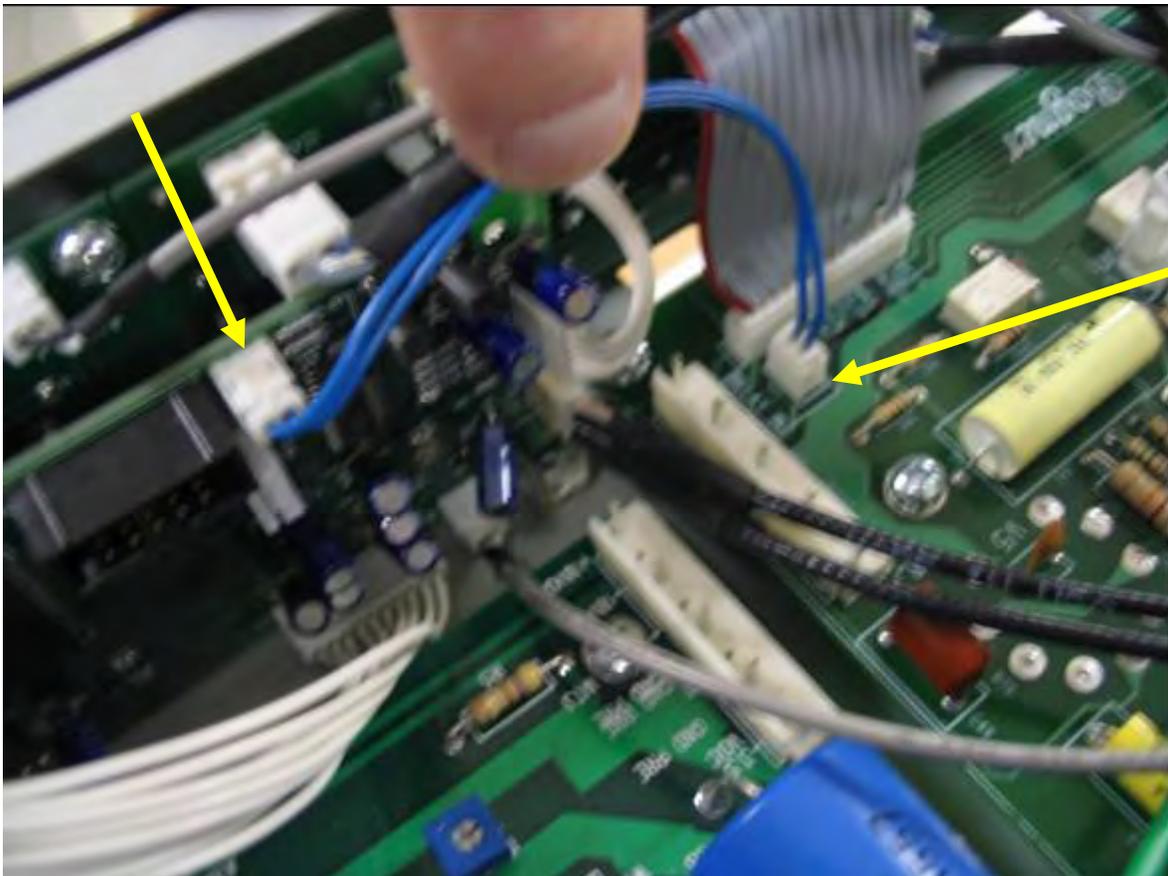
STEP 55

P/N required:

1 each **21-34-0076-4 CABLE ASSY 2-COND**

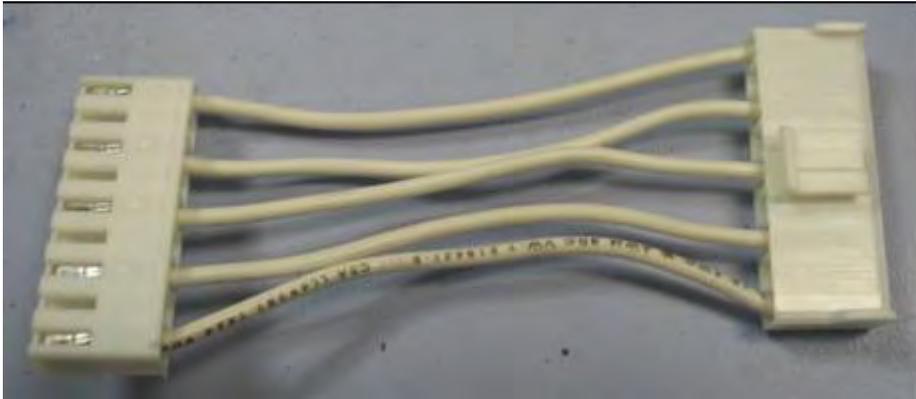


Connect the CABLE ASSY from the RELAY OUT header on the PCBA MAIN to the RELAY IN “H15” header on the PCBA PRE-AMP as shown.

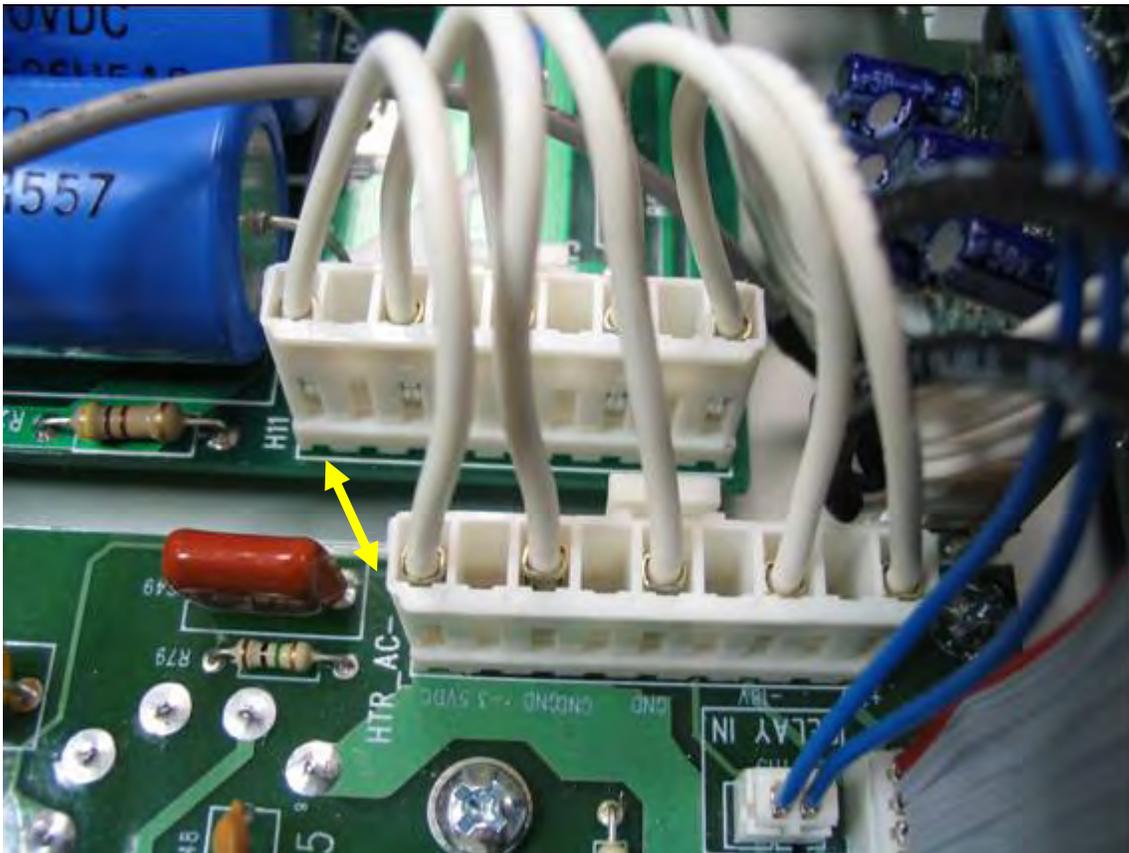


STEP 56

P/N required:
1 each **21-34-0105-1 CABLE ASSY 5-COND**



Connect the CABLE ASSY from the “H11” header on the PCBA POWER SUPPLY to the HTR_AC- “H13” header on the PCBA PRE-AMP as shown.



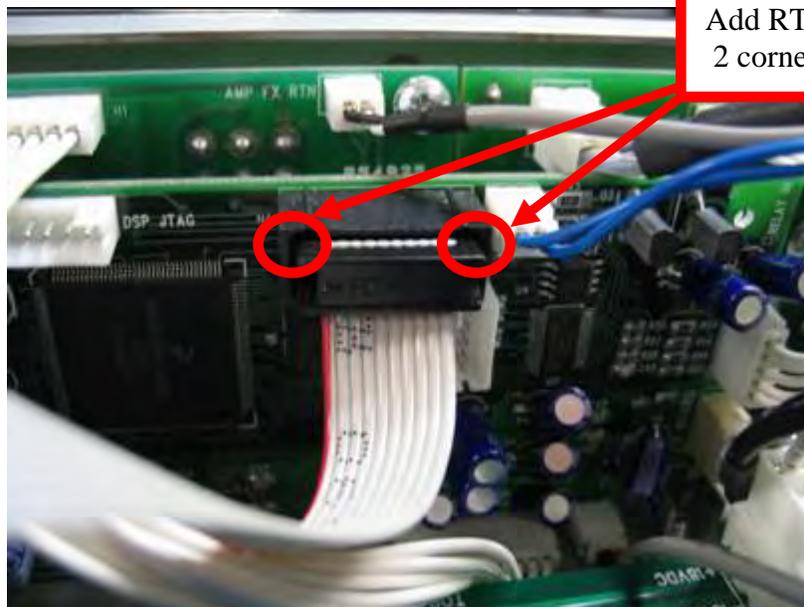
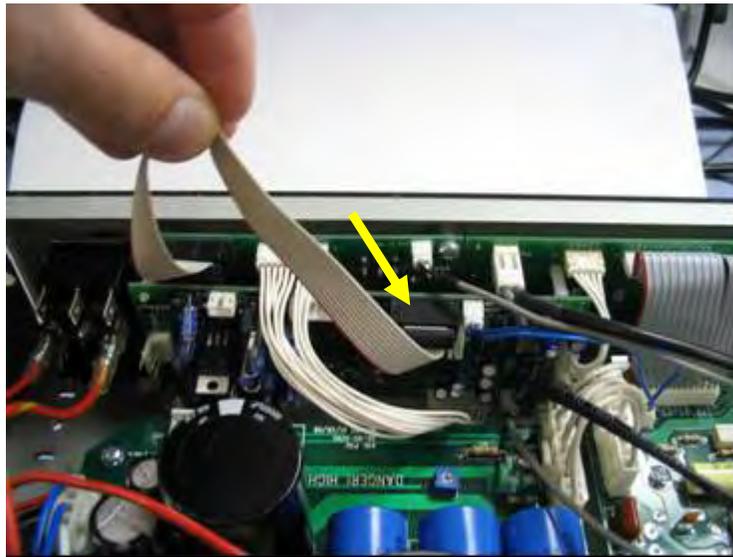
STEP 57a

P/N required:

1 each **21-30-0004-1** CABLE ASSY 10-COND RIBBON

(note – staked end of this cable is already soldered on the PCBA DIGITAL U/I.

Fully insert the free end of the CABLE ASSY to the H4 header on the PCBA Main as shown. Add RTV to the cable header in the indicated locations. See below.

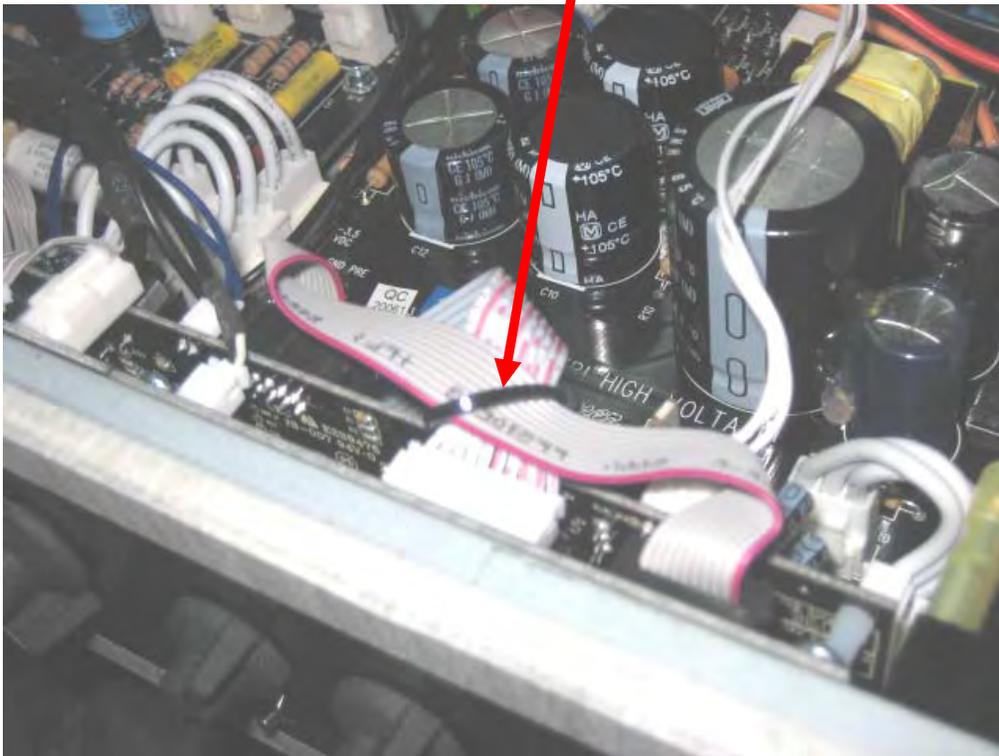


STEP 57b

P/N required:
1 each **30-24-0030 CABLE TIE**

Install CABLE TIE as shown. Clip off excess material from CABLE TIE after installation.

Install CABLE TIE here

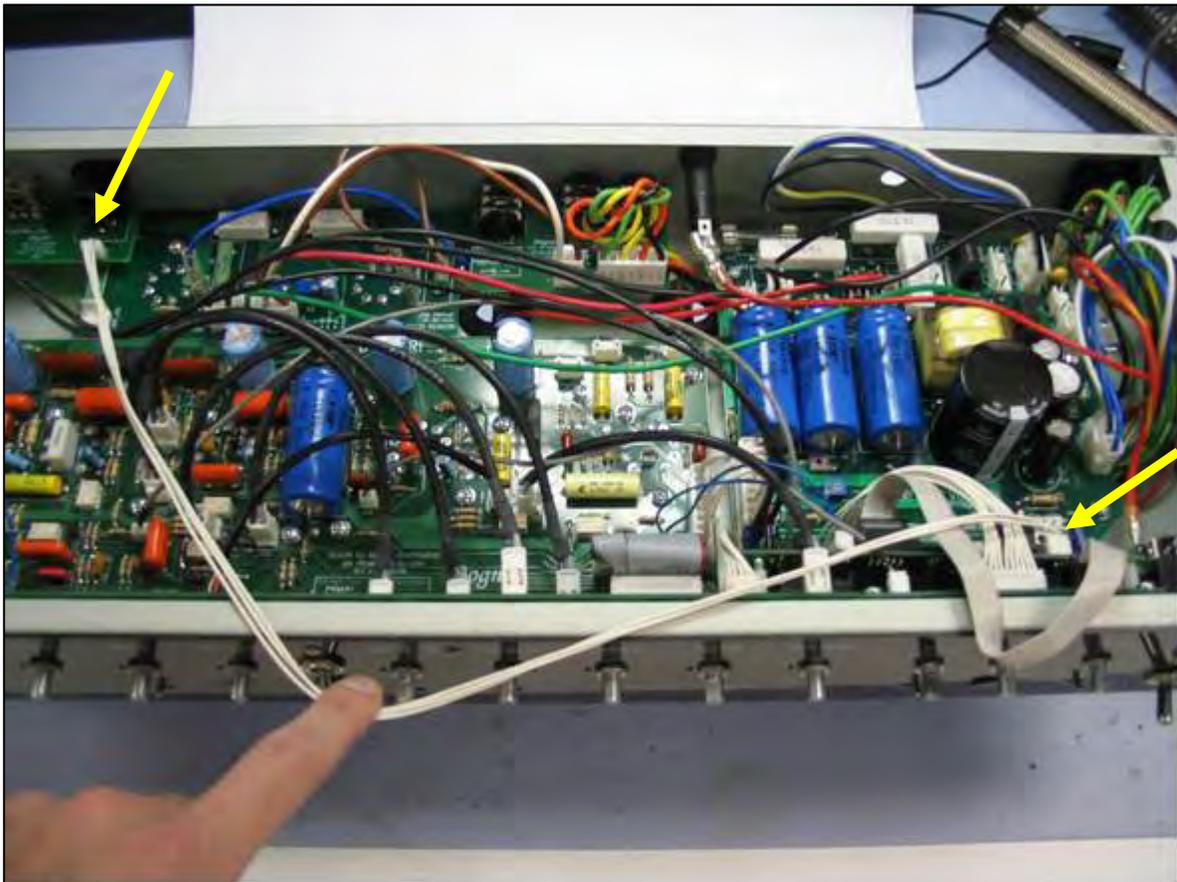


STEP 58

P/N required:
1 each **21-34-0103-1** CABLE ASSY 3-COND



Connect the CABLE ASSY from the H4 header on the PCBA EFFECTS to the XLR H3 Header on the PCBA MAIN.

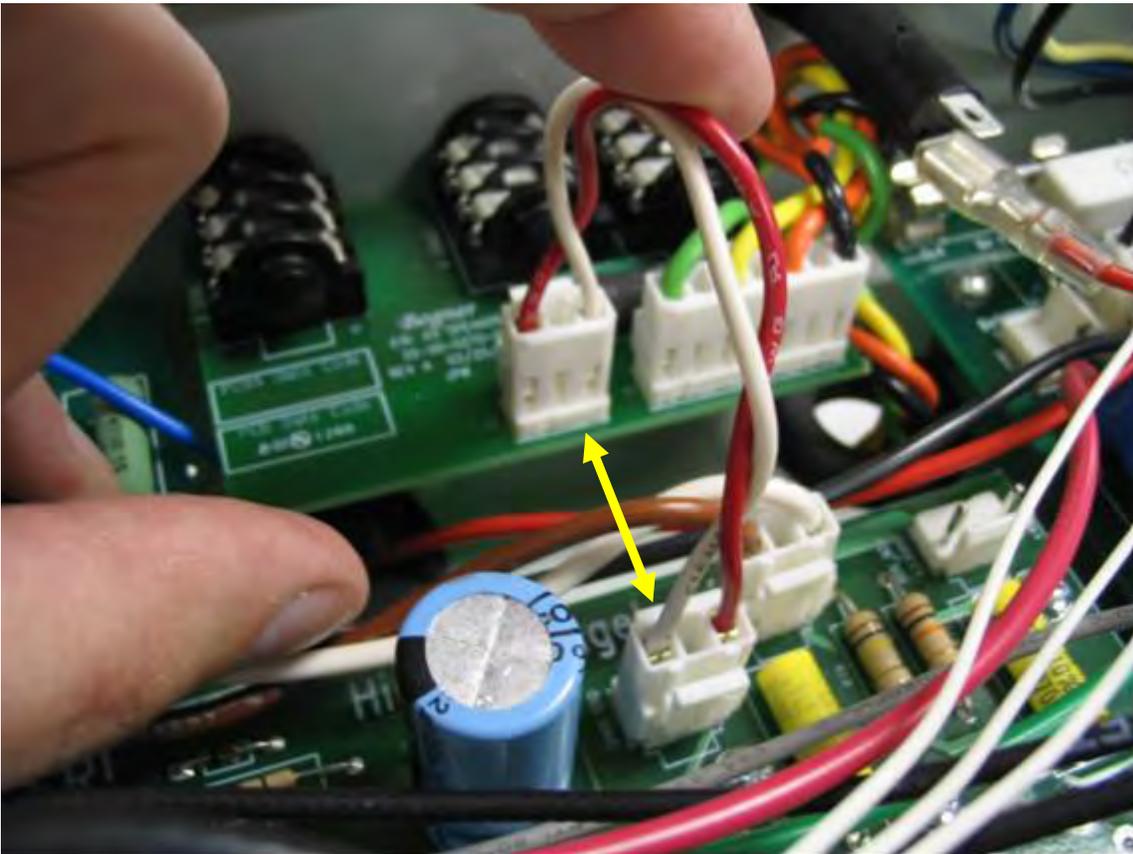


STEP 59

P/N required:
2 each **21-34-0104-1** CABLE ASSY



Connect one CABLE ASSY from the H2 header on the PCBA SPEAKER OUTS to the SPKR GND H8 header on the PCBA PRE-AMP.



Step 59 is continued on the next page

STEP 59 CONT'D

Connect one CABLE ASSY from the B+SCREEN H9 header on the PCBA POWER SUPPLY to the B+ PRE H12 header on the PCBA PRE-AMP.

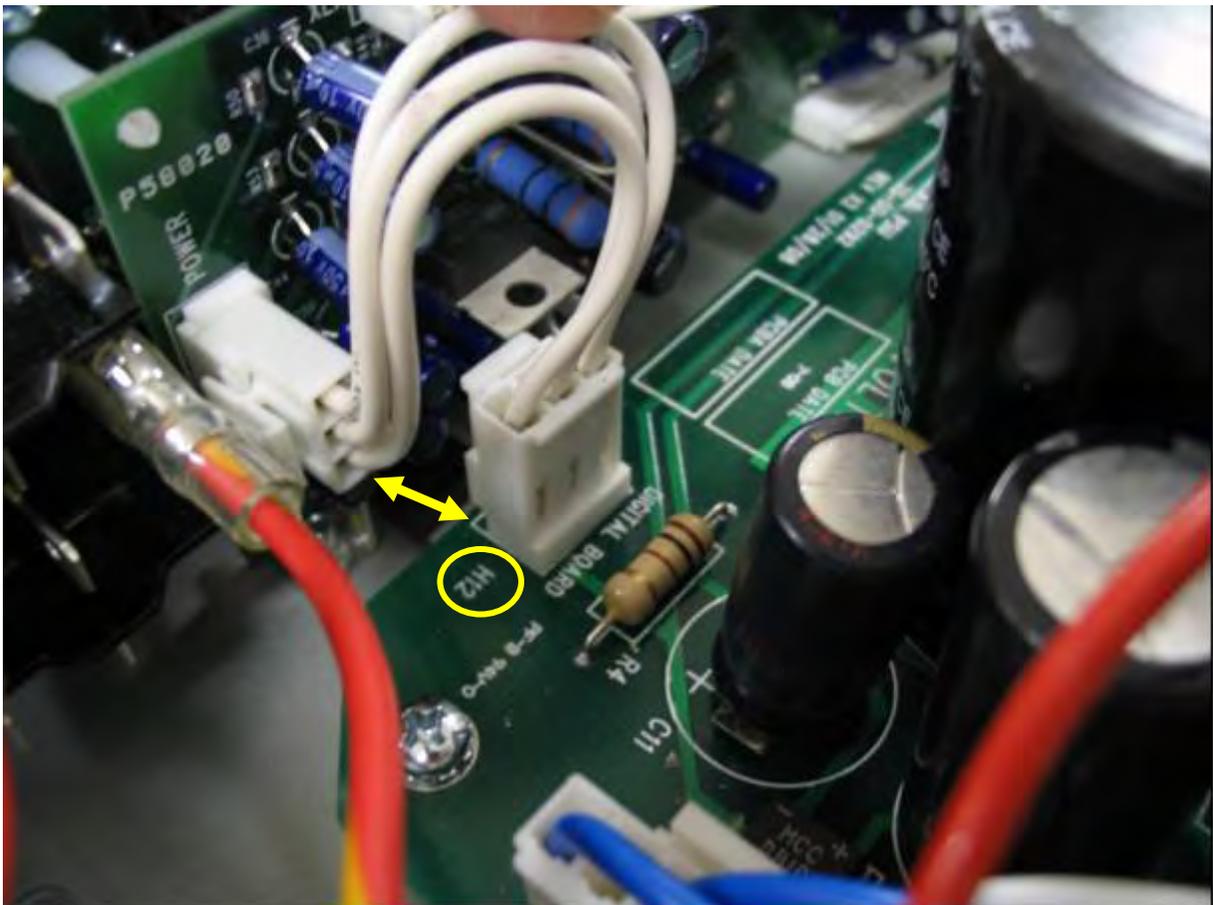


STEP 60

P/N required:
1 each **21-34-0095-1** CABLE ASSY 3-COND

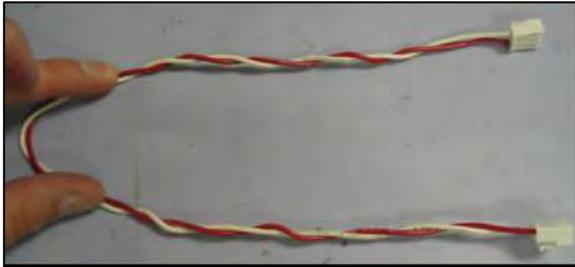


Connect the CABLE ASSY from the 'DIGITAL BOARD H12' header on the PCBA POWER SUPPLY to the POWER header on the PCBA MAIN.

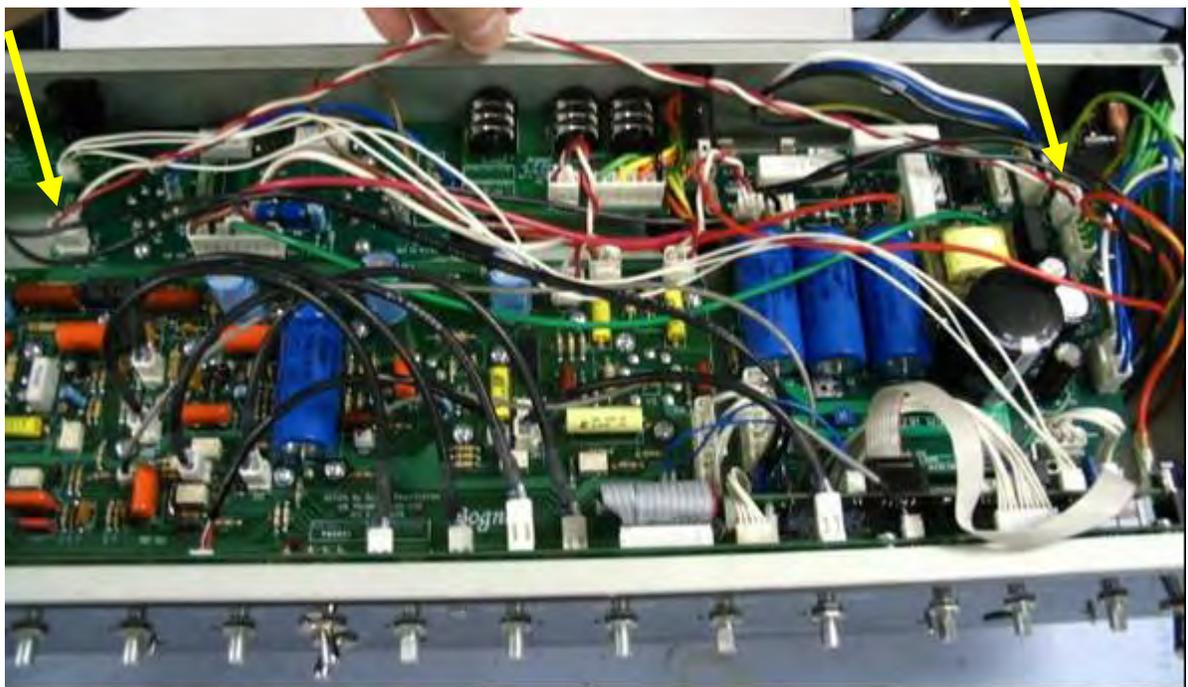


STEP 61

P/N required:
1 each **21-34-0104-2** CABLE ASSY



Connect the CABLE ASSY from the 'H4' header on the PCBA POWER AMP to the 6.3VAC TO PWR AMP 'H3' header on the PCBA POWER SUPPLY as shown.

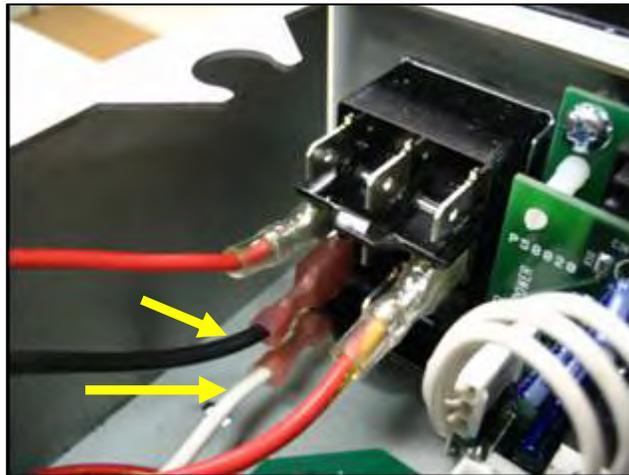


STEP 61

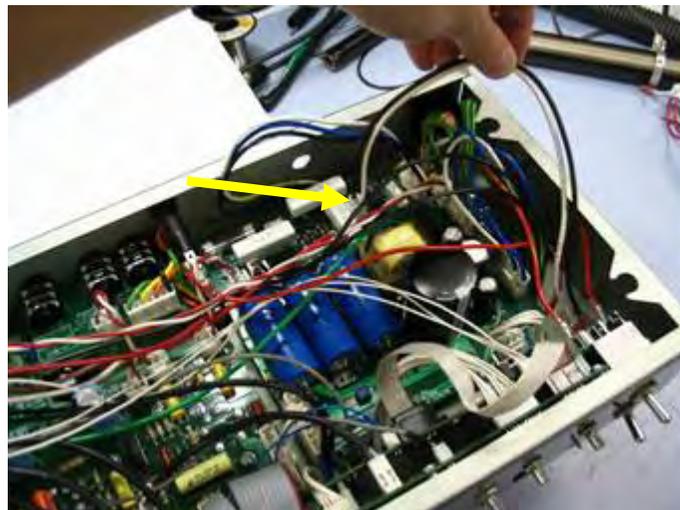
P/N required:
1 each **21-34-0135-5 CABLE ASSY**



Connect the single black wire and single white wire as shown to the bottom TOGGLE SWITCH.



Connect the 3-pin header on the CABLE ASSY to the H1 header on the PCBA POWER SUPPLY.

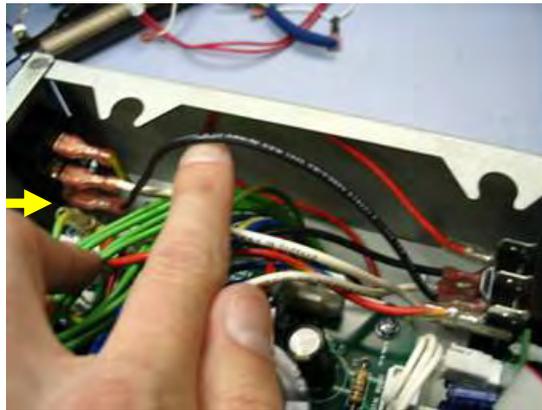


STEP 62

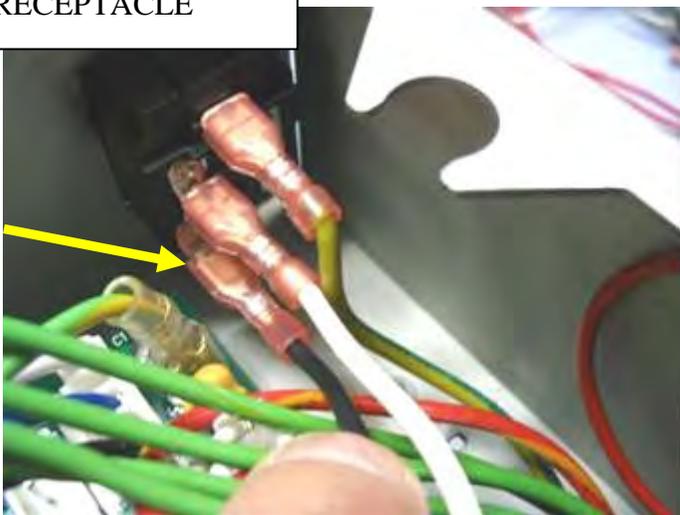
P/N required:
1 each **21-34-1023-1 CABLE ASSYS 1-COND**



Connect the smaller spade on the CABLE ASSY to the bottom tab on the A/C RECEPTACLE. Connect the larger spade on the CABLE ASSY to the middle, top lug on the bottom TOGGLE SWITCH as shown.



Connect smaller spade to bottom tab on A/C RECEPTACLE



Connect larger spade to middle, top lug on TOGGLE SWITCH

STEP 63

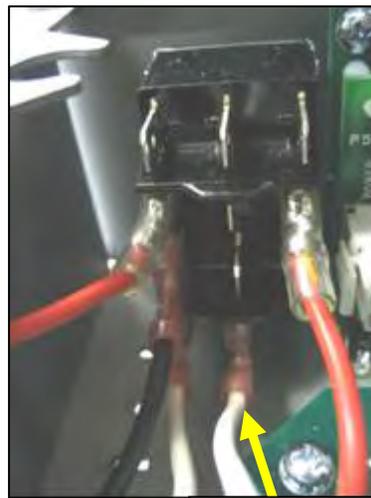
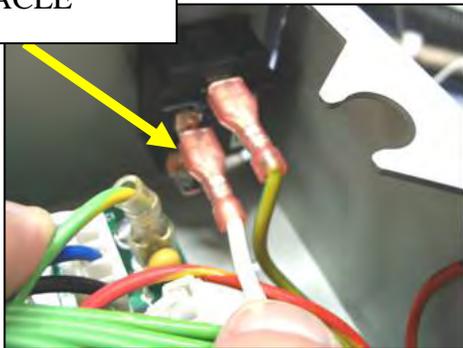
P/N required:
1 each **21-34-1023-2 CABLE ASSYS 1-COND**



Connect the smaller spade on the CABLE ASSY to the middle tab on the A/C RECEPTACLE. Connect the larger spade on the CABLE ASSY to the middle, bottom lug on the bottom TOGGLE SWITCH as shown.



Connect smaller spade to middle tab on A/C RECEPTACLE



Connect larger spade to middle, bottom lug on TOGGLE SWITCH

STEP 64

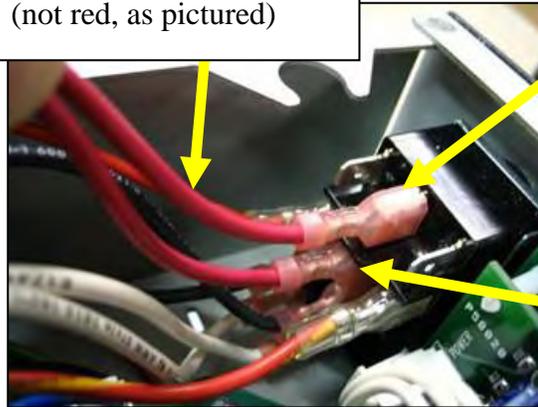
P/N required:
1 each **21-34-0135-4 CABLE ASSY**



Note – one of the cables will be white (not red, as pictured)

Connect the red wires to the bottom middle lug on the top TOGGLE SWITCH as shown.

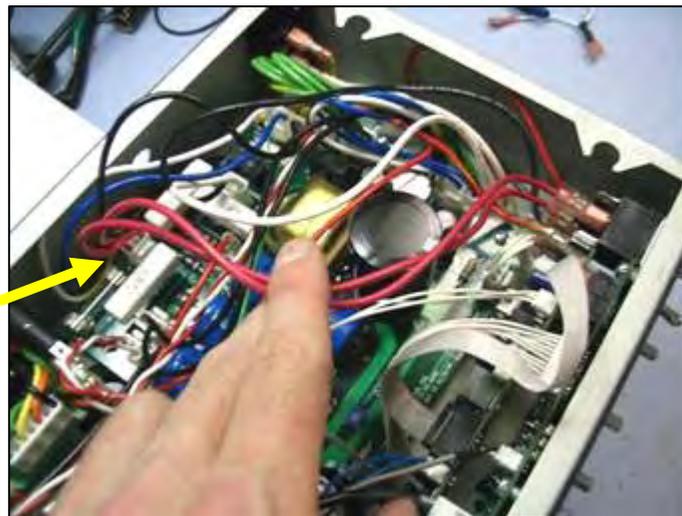
Note – this wire will be white (not red, as pictured)



Connect white wire to top, middle lug

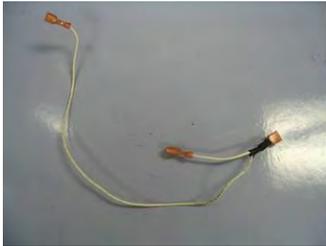
Connect red wire to bottom, middle lug

Connect the 3-pin header on the CABLE ASSY to the H2 header on the PCBA POWER SUPPLY.



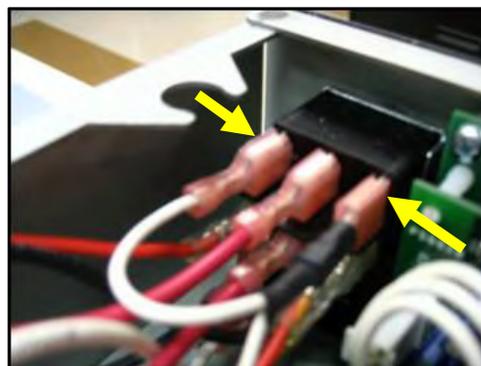
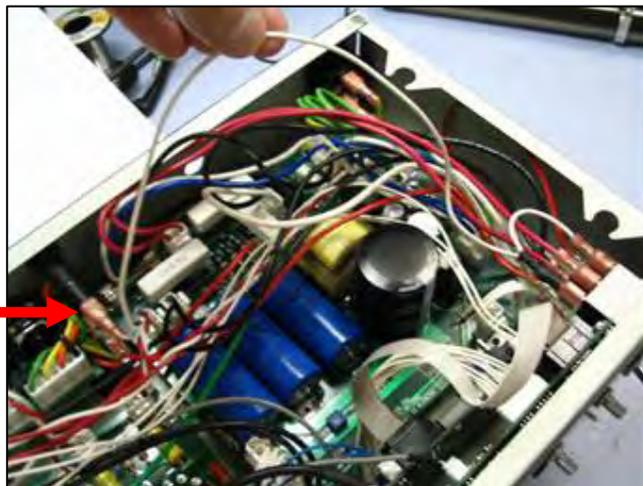
STEP 65

P/N required:
1 each **21-29-0007 CABLE ASSY**



Connect the single, smaller terminal on the CABLE ASSY to the top terminal on the FUSEHOLDER. Connect the two larger terminals on the CABLE ASSY to the top left and top right terminals on the top TOGGLE SWITCH as shown.

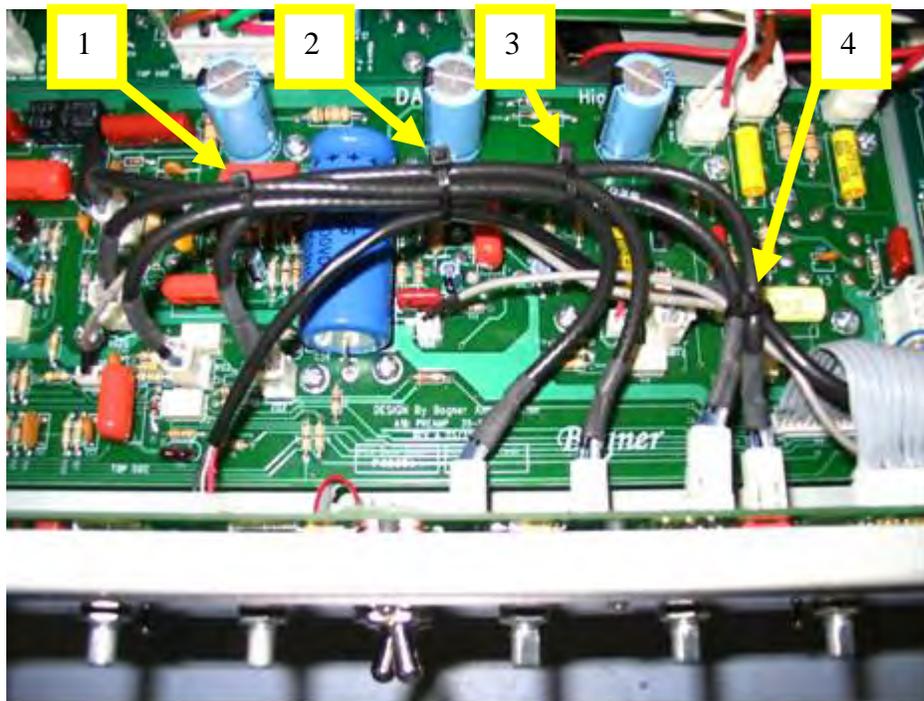
Connect to top
lug on
FUSEHOLDER



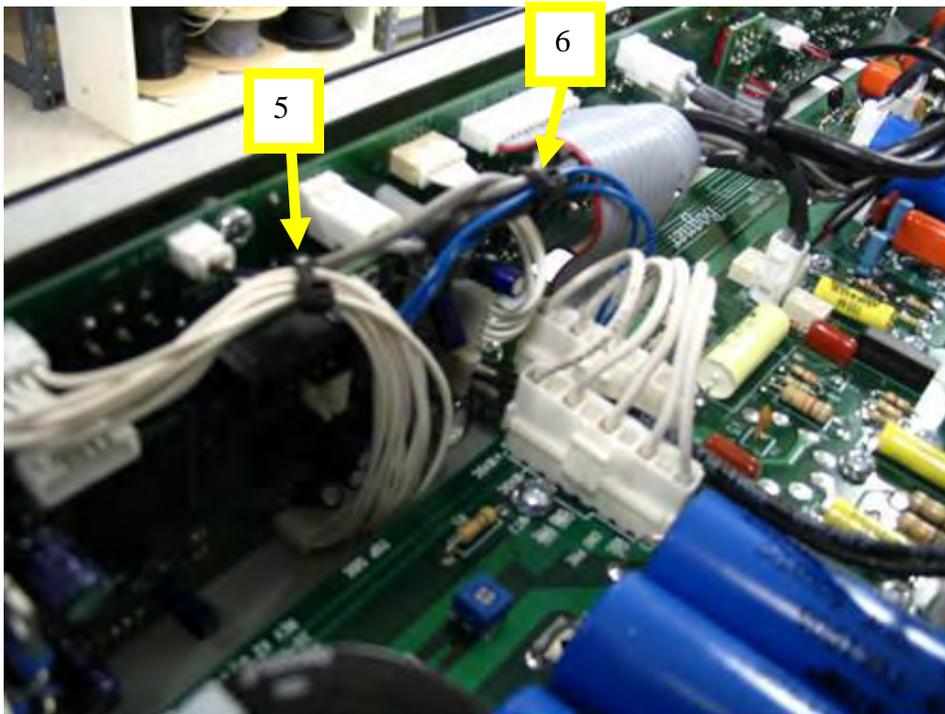
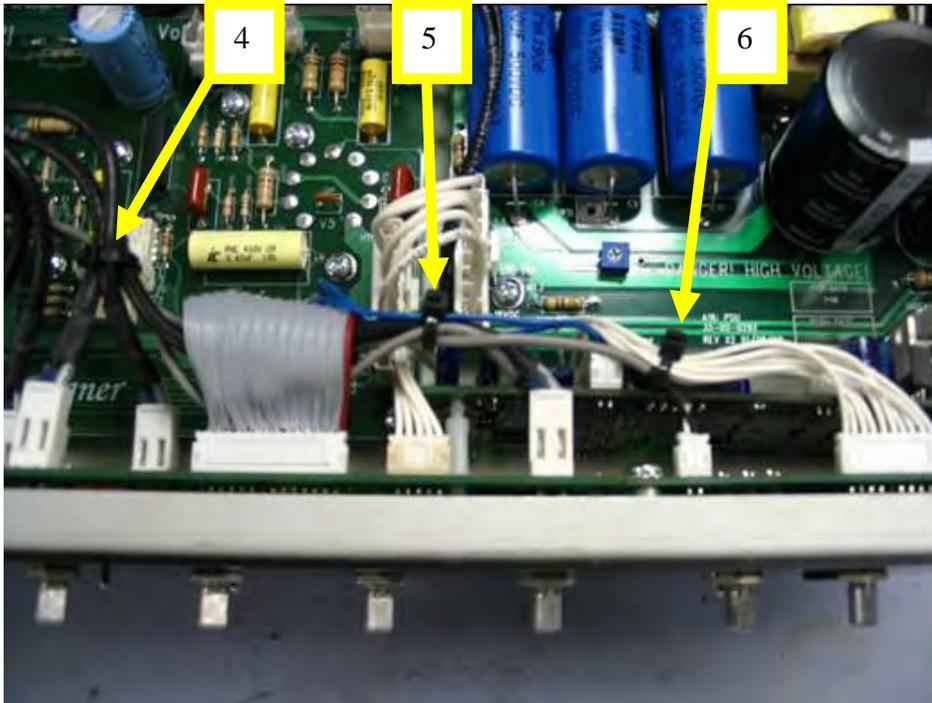
STEP 66

P/N required:
13 each **30-24-0030 CABLE TIE**

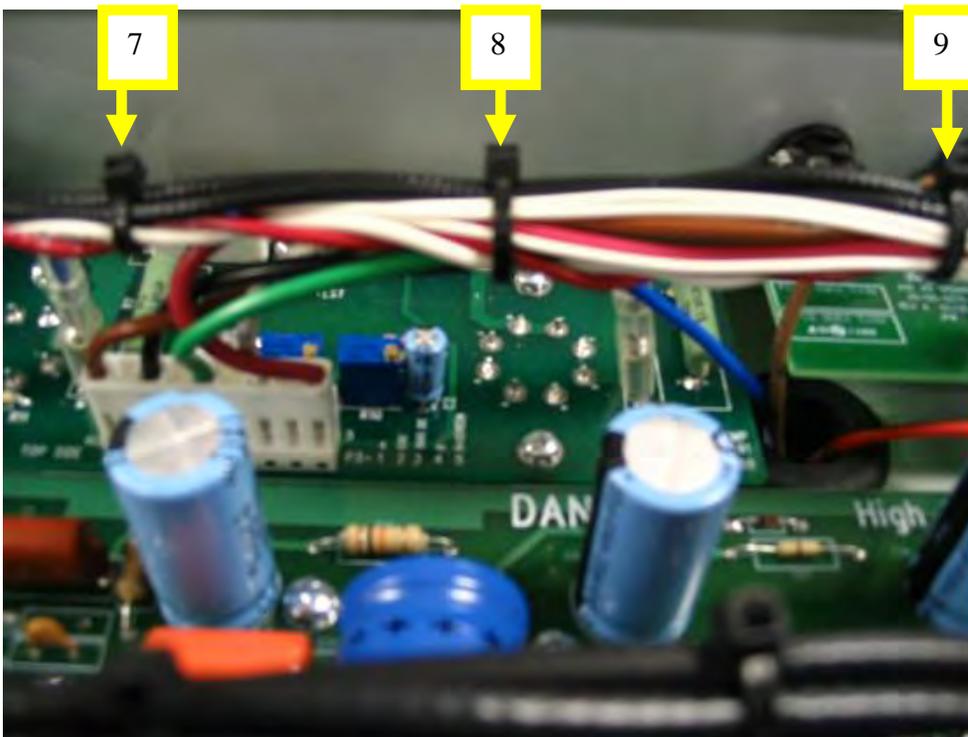
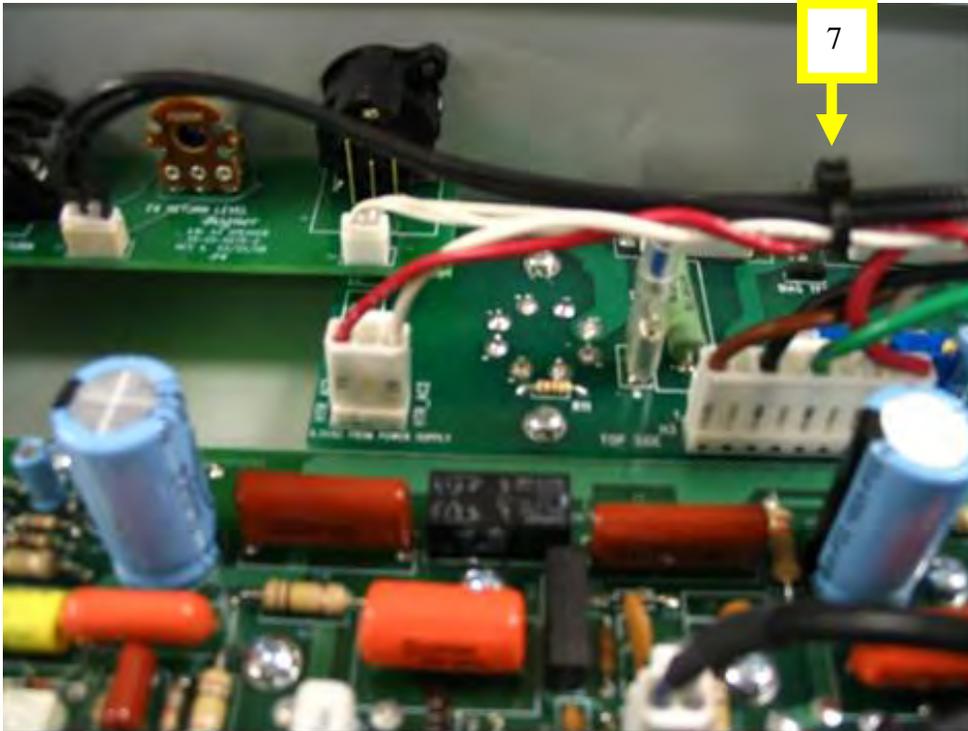
Install the CABLE TIES as shown. Clip off excess material from CABLE TIES after installation.



STEP 66 CONT'D

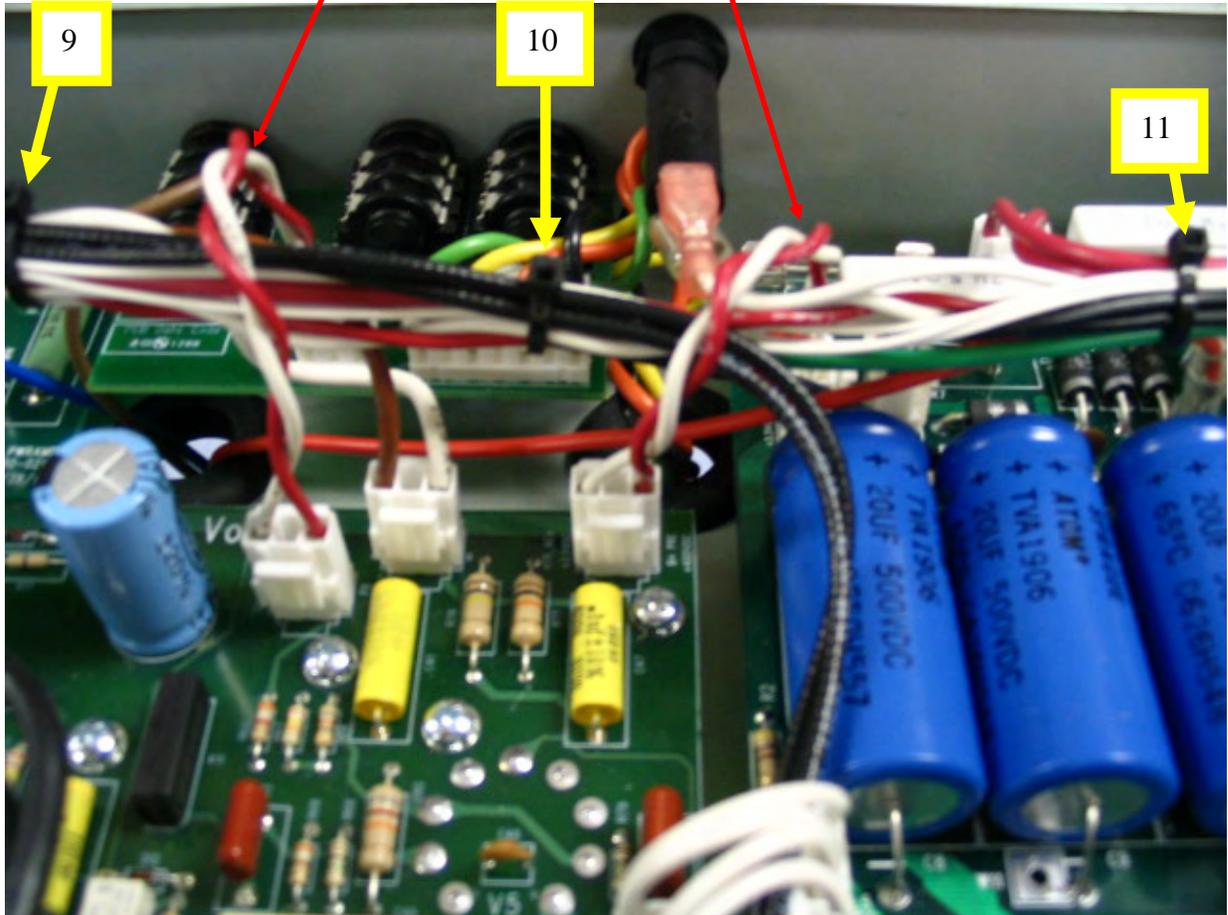


STEP 66 CONT'D

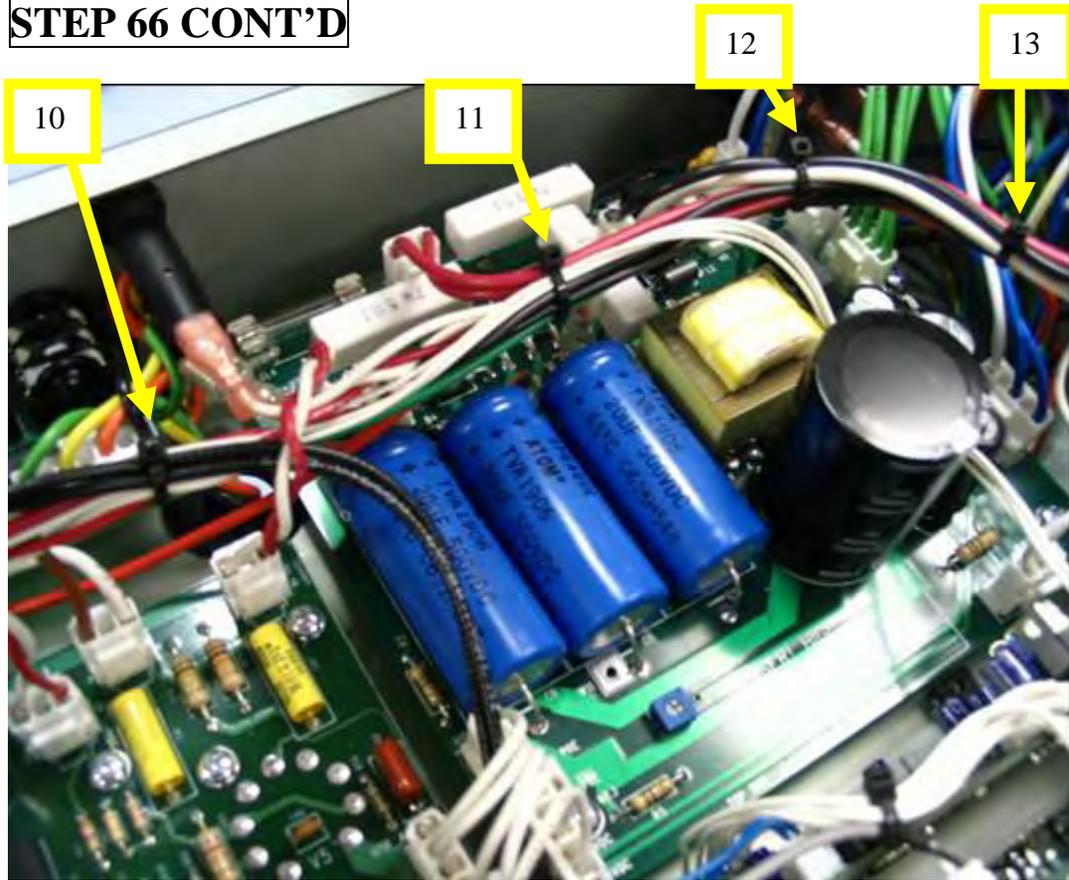


STEP 66 CONT'D

Route the red and white twisted cables over all the others (2 PL)



STEP 66 CONT'D

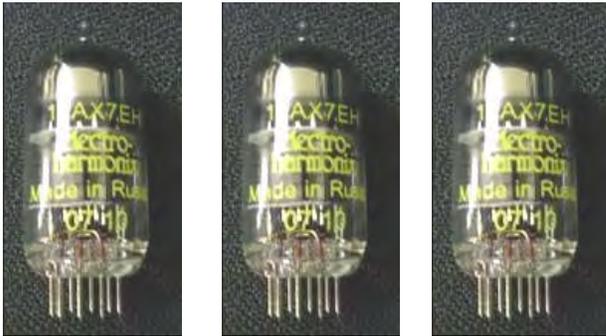


Completed View (Reference)

STEP 67

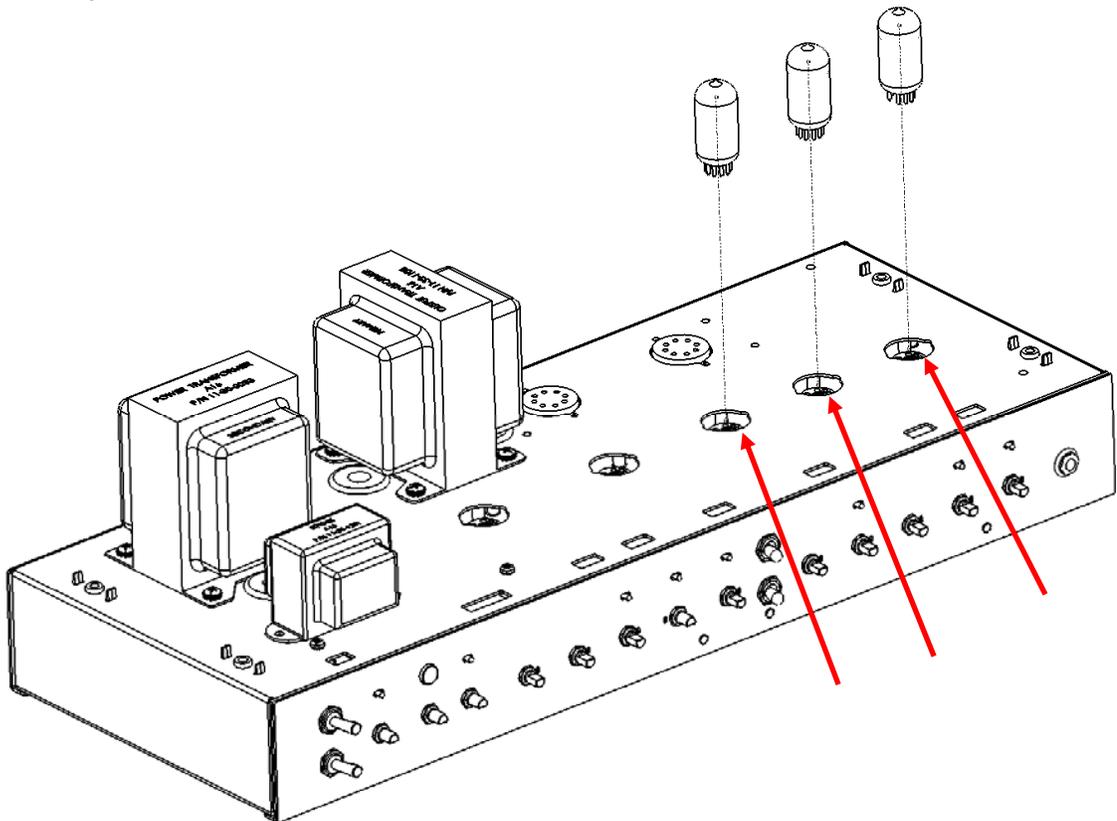
P/N required:

3 each **11-02-0011** TUBE PRE-AMP (LOW MICROPHONIC)



Turn the CHASSIS up-side-down such that the bottom surface is facing up.

Install the TUBES in the indicated locations (V1, V2 and V3). Press firmly until each TUBE is fully seated.

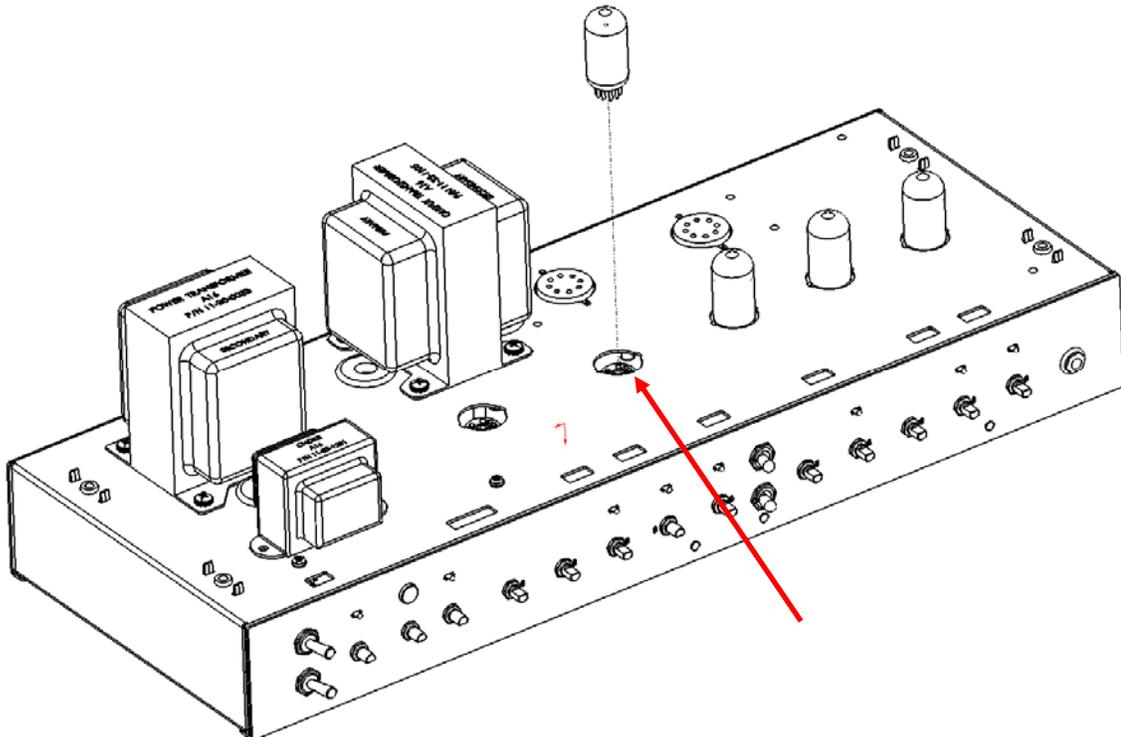


STEP 68a

P/N required:
1 each **11-02-0020** TUBE PRE-AMP



Install the TUBE in the indicated location (V4). Press firmly until the TUBE is fully seated.

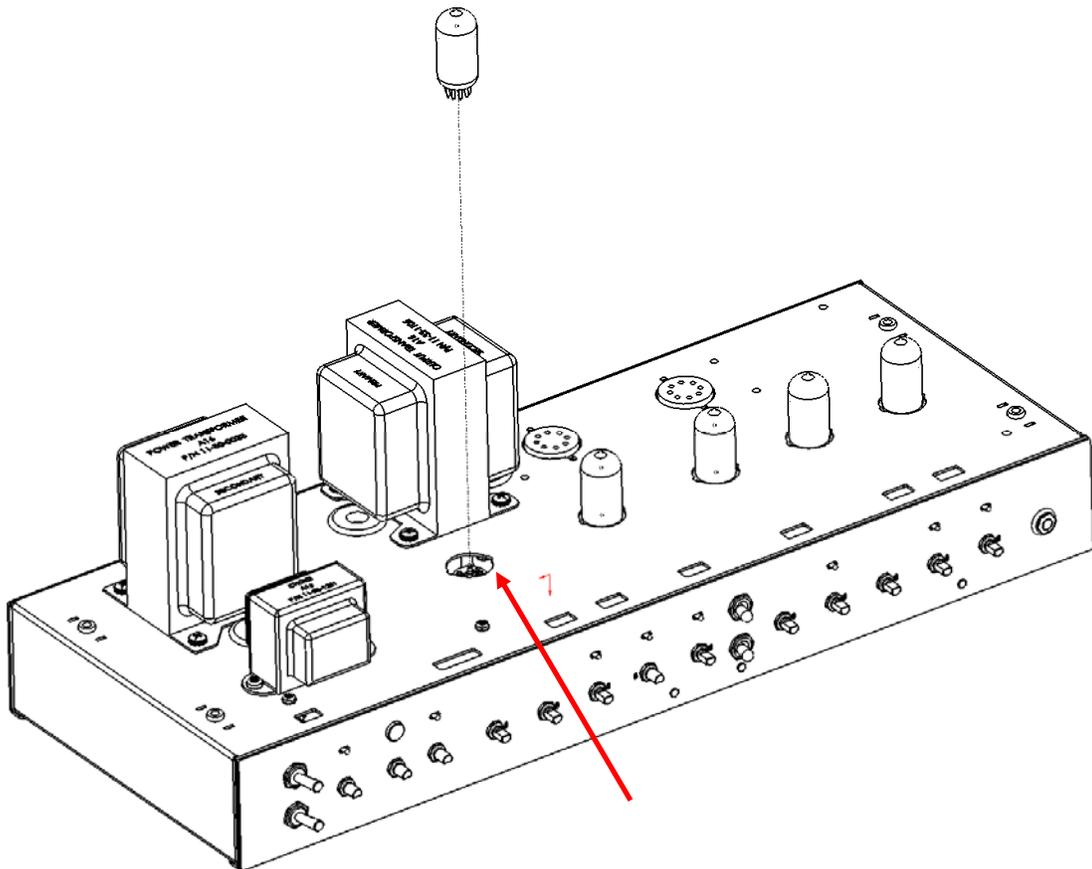


STEP 68b

P/N required:
1 each **11-02-0000** TUBE PRE-AMP



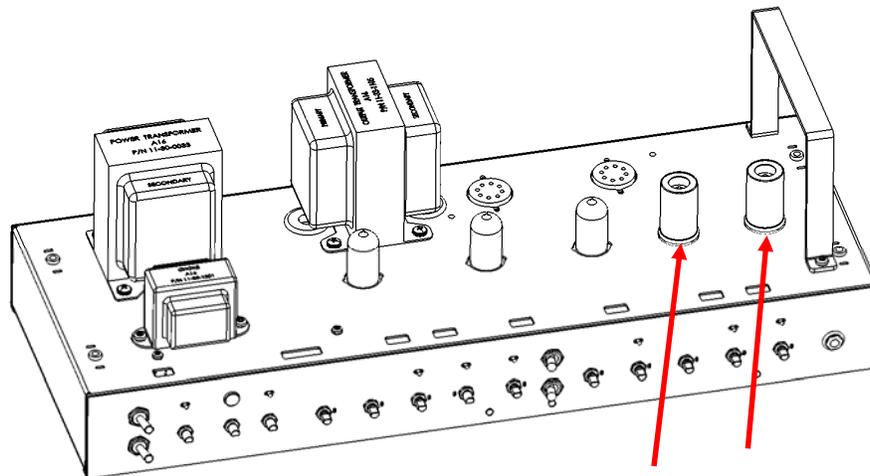
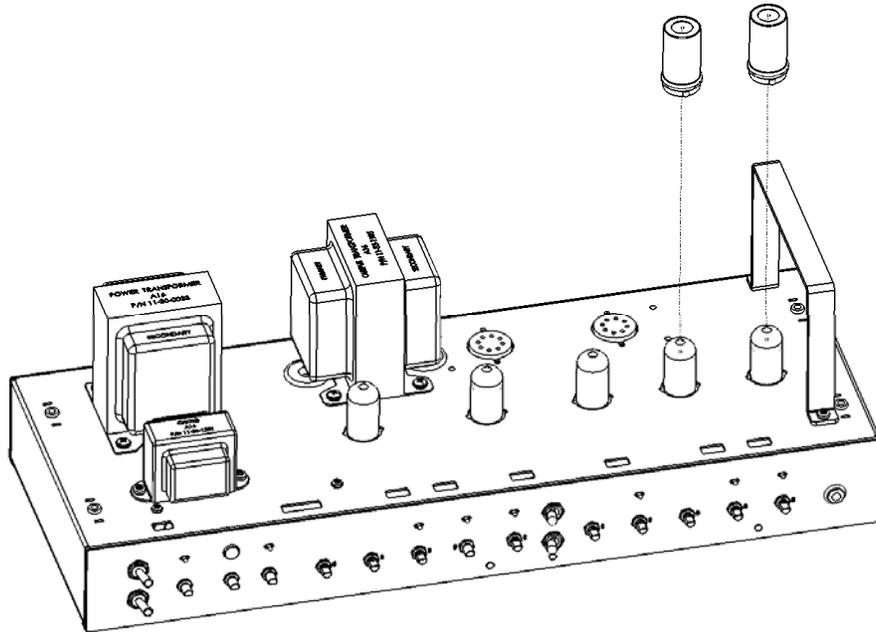
Install the TUBE in the indicated location (V5). Press firmly until the TUBE is fully seated.



STEP 69

P/N required:
2 each **21-18-0008** TUBE SHIELD

Install TUBE SHIELDS over the two TUBES shown. Insert the SHIELD through the hole in the CHASSIS and rotated ~90 degrees to fully secure.



STEP 70

P/N required:
2 each **30-21-0005** TUBE RETAINER



Remove the **SCREWS** one at a time when installing each leg of the **TUBE RETAINER**.
Note – these **SCREWS** were installed in **STEP 22** of these assembly instructions.



Remove one screw at a time. Do not remove all screws at once!



This screw shall be secure while installing **RETAINER** leg on opposite side

Re-install screw to secure **RETAINER** leg

STEP 70 CONT'D



Torque each screw to 6 – 8 in-lbs.

STEP 71

P/N required:
2 each **11-02-0012** TUBE POWER AMP



Install the TUBE POWER AMP as shown. The TUBE must be clocked correctly for the pins to register in the socket. Press firmly down on the TUBE until fully seated.

Pull the TUBE RETAINER over the top of each TUBE as shown.



Pull TUBE RETAINERS over
the top of each TUBE.



Ensure SCREWS are still
torque to 6-8 in-lbs.
(4 PL)



Ensure the SCREWS for the TUBE RETAINERS are still torqued to 6-8 in-lbs.

STEP 72

P/N required:

1 each **30-51-0331** TUBE CAGE

4 each **30-00-0125** SCREW 8-32 x 5/16 w/LK WASH BLK



Install the TUBE CAGE with the 'B' oriented towards the chassis rear, as shown.

Secure using four (4) SCREWS. Torque each screw to 8-10 in-lbs.

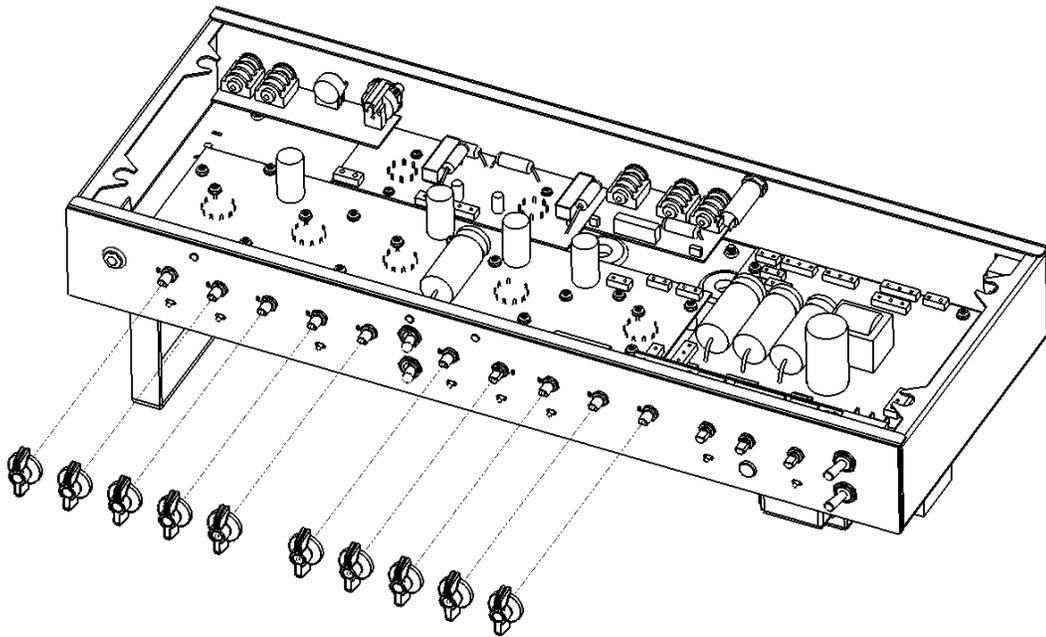


Screws (4 PL)

STEP 73

P/N required:
10 each **30-45-0021 KNOB (large)**

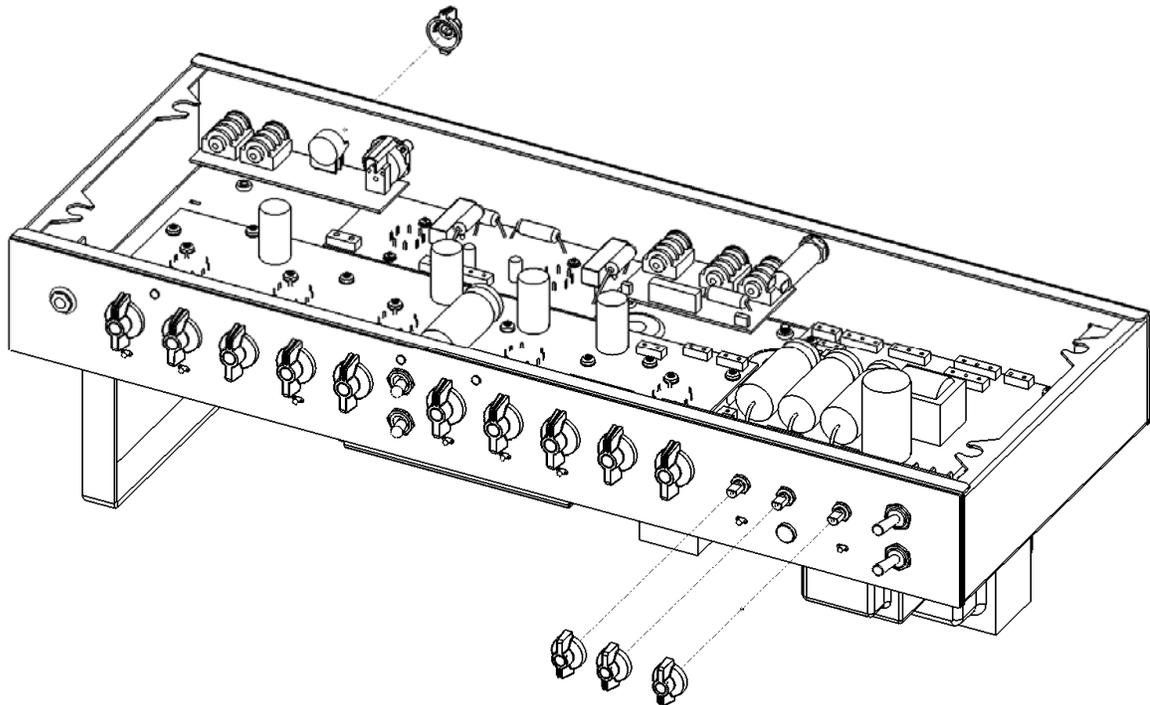
Install the **KNOBS (large)** over the indicated potentiometer shafts. Press firmly until **KNOBS** are firmly seated.



STEP 74

P/N required:
4 each **30-45-0022 KNOB (small)**

Install the KNOBS (small) over the indicated potentiometer shafts. Press firmly until KNOBS are firmly seated.

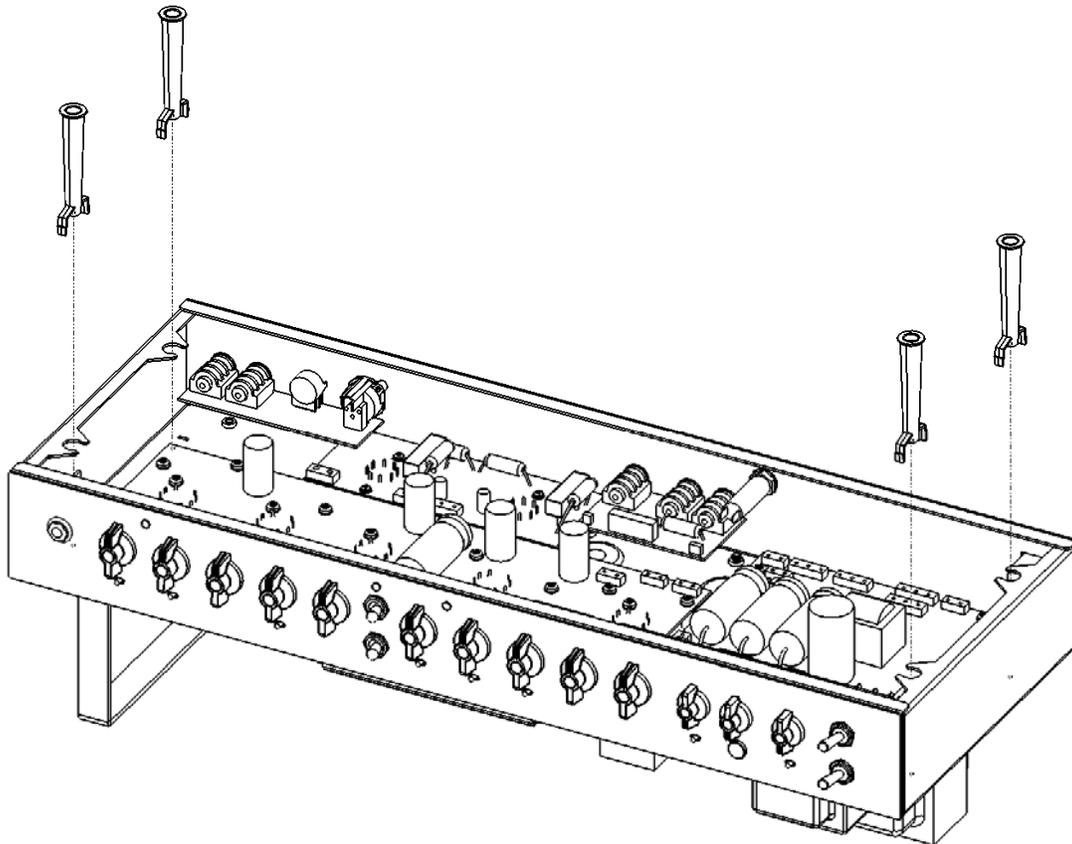


STEP 75

P/N required:
4 each **30-27-0314 GUIDE SCREW**



Install GUIDES into the CHASSIS as shown. Be sure the snap hooks have registered through the slots in the bottom of the chassis.





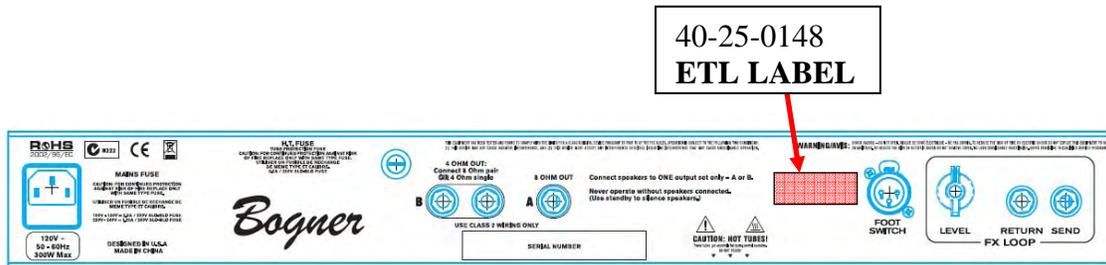
STEP 76

P/N required:

1 each **40-25-0148 ETL LABEL**

Apply the ETL LABEL in the approximate location shown.

Note – Line 6 must complete all safety certification testing before the ETL label can be applied. Do not apply ETL label until an ECO has been issued to add the label.



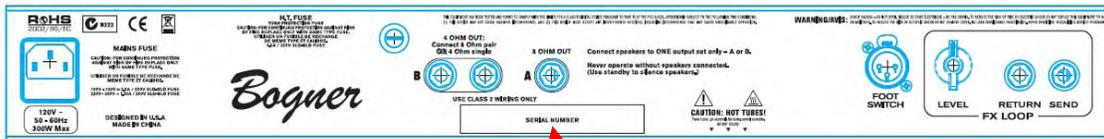


STEP 77

P/N required:

1 each **40-25-0100 LABEL BAR CODE S/N 4-PNL**

Apply the LABEL BAR CODE in the box labeled 'Serial Number' on the silkscreen.





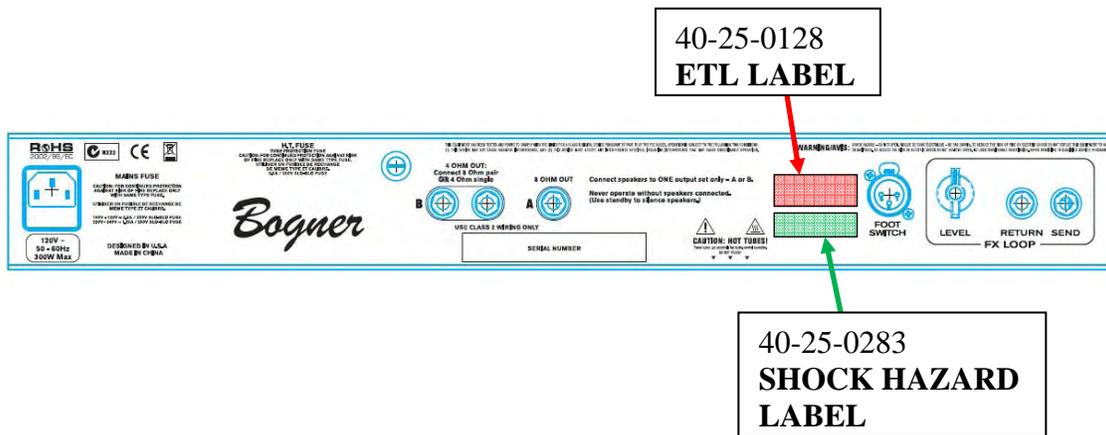
STEP 78

P/N required:

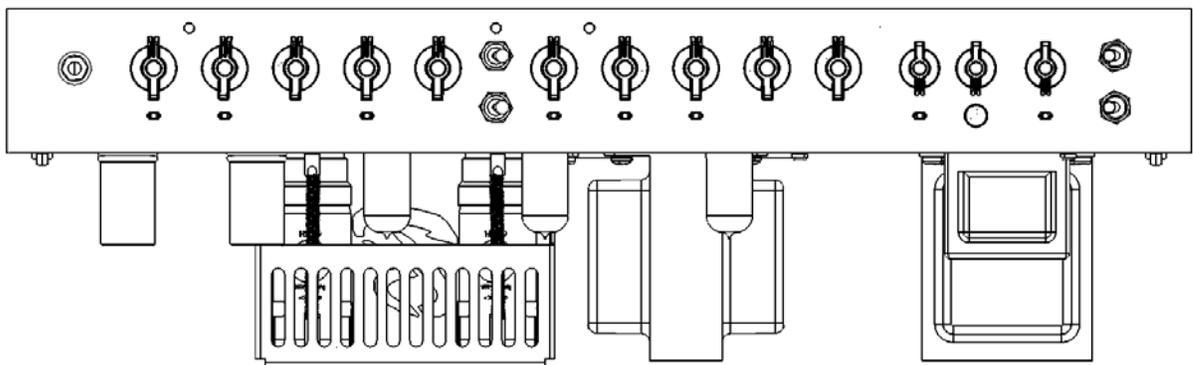
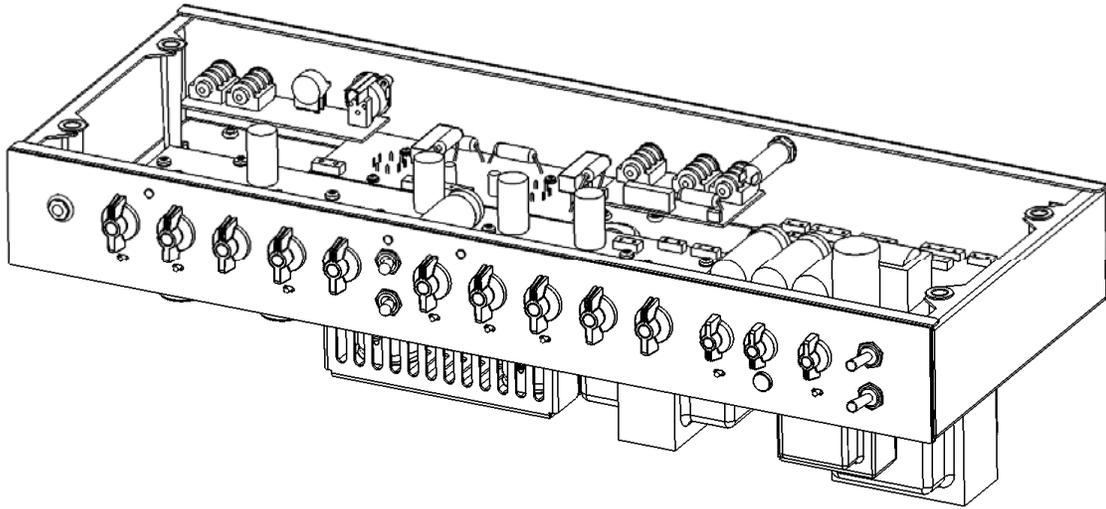
1 each **40-25-0283 SHOCK HAZARD LABEL**

Apply the SHOCK HAZARD LABEL in the approximate location shown.

Note – The SHOCK HAZARD LABEL is NOT required on 41-00-0181 REAR CHASSIS SILKSCREEN revision D or above.



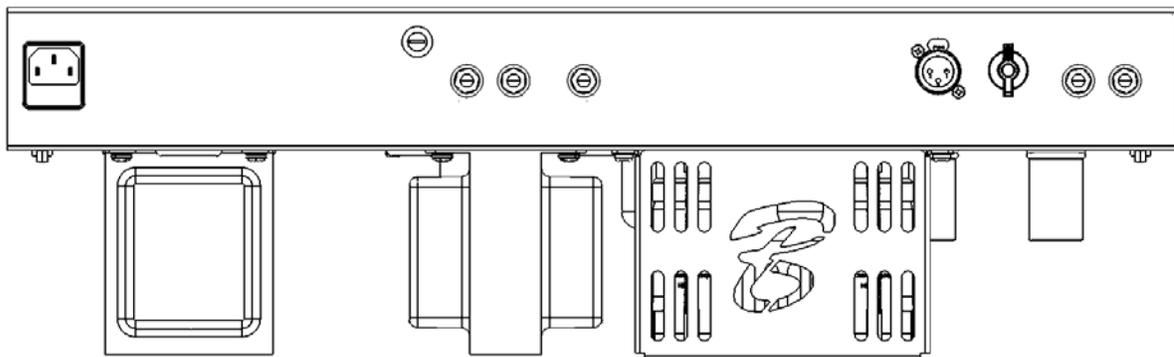
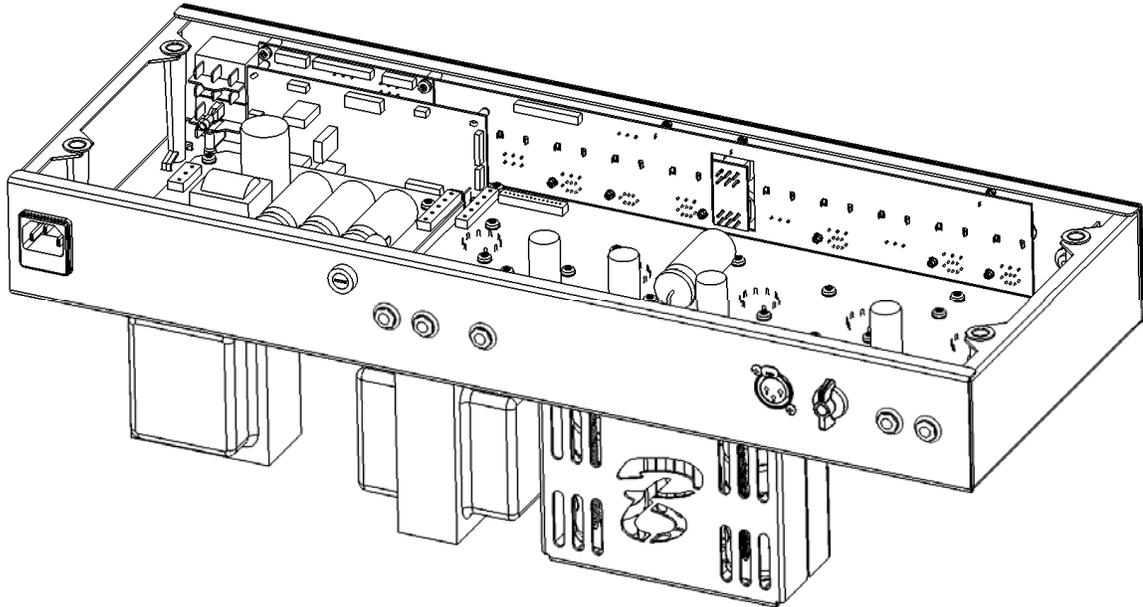
Completed Views (Reference)



Completed Views (Reference)



Completed Views (Reference)



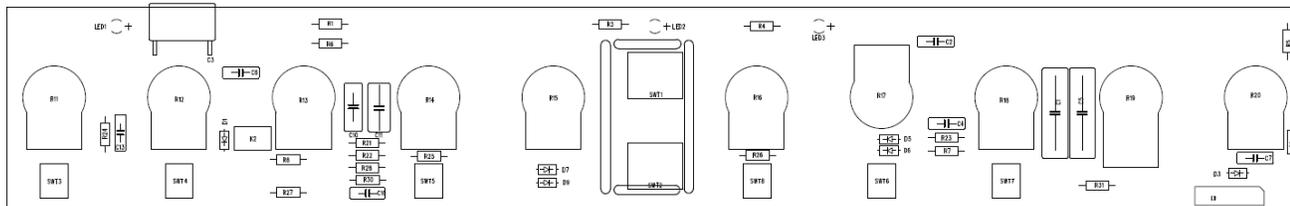
Completed Views (Reference)

A16 ANALOG UI PCBA ASSEMBLY INSTRUCTIONS

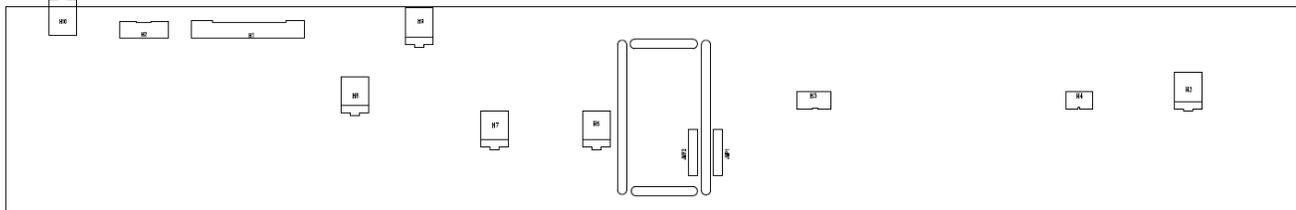
Rev. A

A16 ANALOG UI PCBA: 50-02-0293
 Refers to A16 ANALOG UI PCB, Rev. C: 35-00-0293

TOP

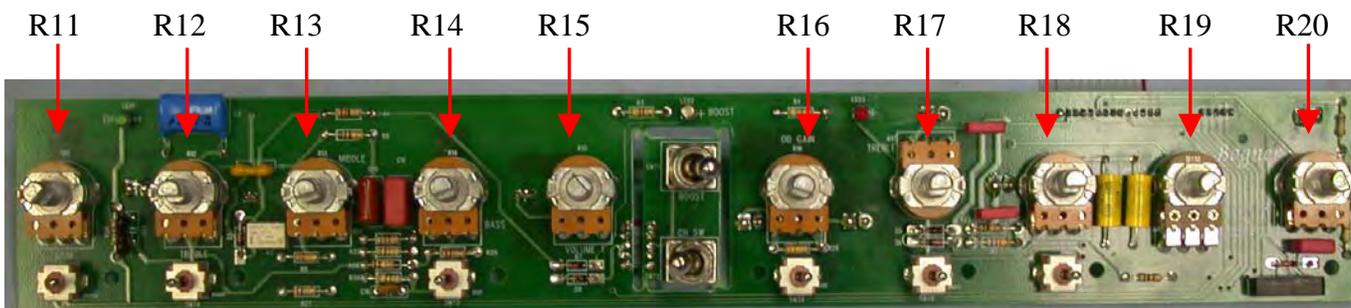


BOTTOM



1. **“DO NOT INSTALL” COMPONENTS:** None.
2. **TOP SIDE:** Be sure to install correct potentiometers, R11 through R20.

- R11 (01-48-1105)
- R12 (01-48-0504)
- R13 (01-48-4104)
- R14 (01-48-1254)
- R15 (01-48-1105)
- R16 (01-48-3105)
- R17 (01-48-0011)
- R18 (01-48-2253)
- R19 (01-49-1105)
- R20 (01-48-3254)



LINE 6

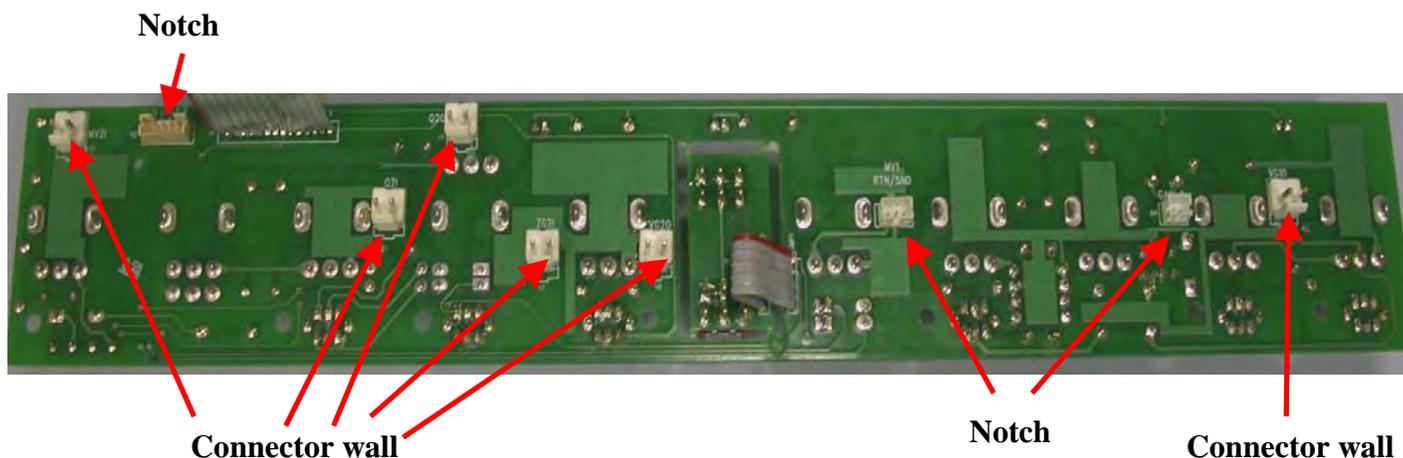
Engineering

3. **LED SPACERS:** Insert LED spacers (30-15-0029) onto the three LEDs. Be sure to install the LEDs with correct polarity.
- LED1 = GREEN (18-04-0001)
 - LED2 = BLUE (18-03-0003)
 - LED3 = RED (18-02-0002)



LED Spacer (30-15-0029)

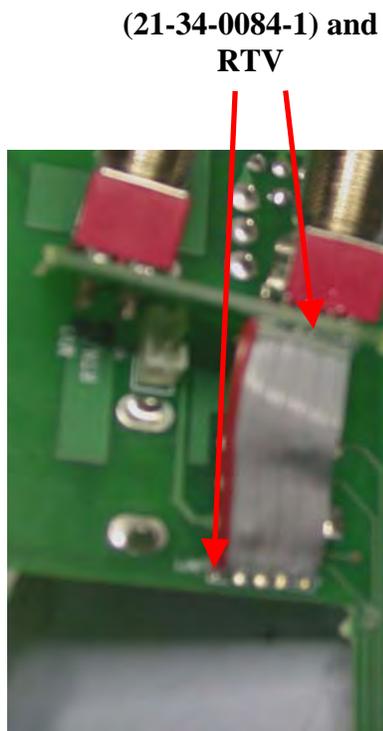
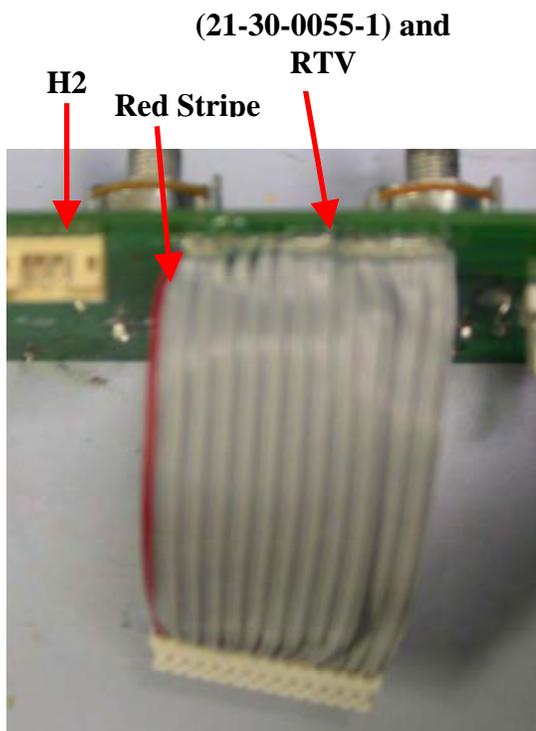
4. **HEADERS:** H3, 6-10 (21-20-1562), H4 (21-20-0202), H5 (21-20-0203), and H2 (21-20-0205) are mounted flush with the PCB. Check that the headers are installed correctly by confirming that the center notch in each header is on the same side as the notch in the silkscreen outline.



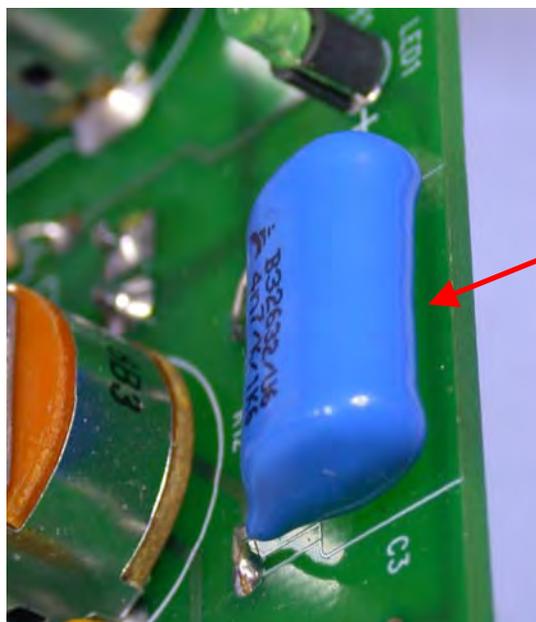
LINE 6

Engineering

RIBBON CABLES: Install the two ribbon cables and secure with RTV on both sides of cable. Be sure that the red stripe is oriented correctly. You will need to detach the break-off board to apply RTV to both sides of the ribbon cable.



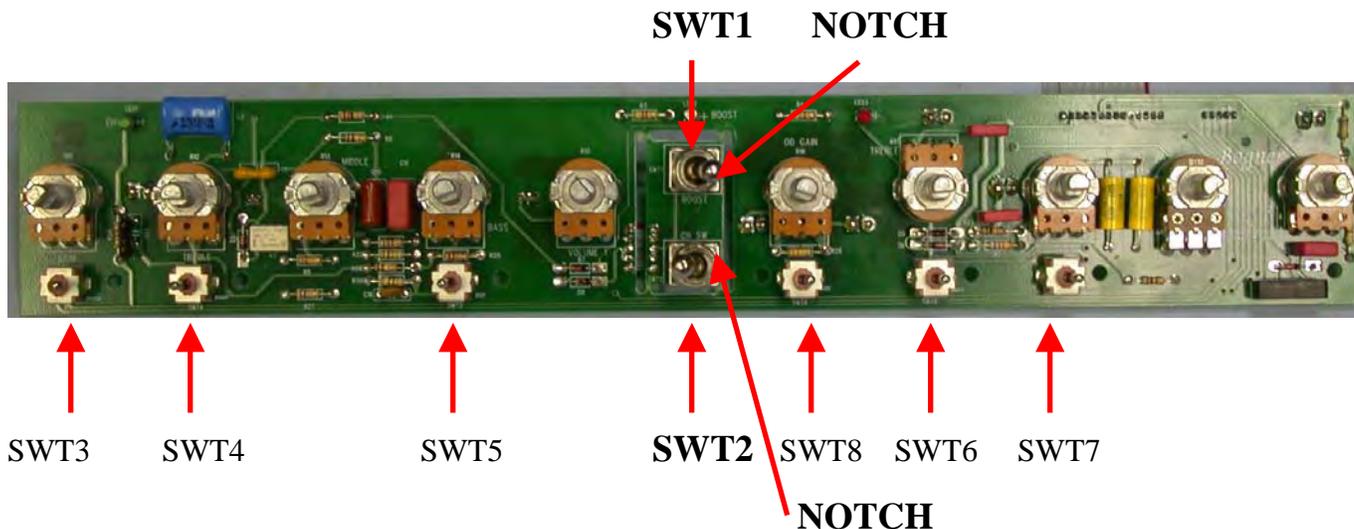
5. **FOLD DOWN C3:** Fold down capacitor C3 to the PCB.



Fold down C3

LINE 6 Engineering

6. **SWITCHES:** Make sure that switches **SWT1-2** (24-03-0200) mounted with the **NOTCH** facing to the **RIGHT**. Make sure that **SWT3-8** (24-03-0210 – two position switch) are mounted flush to the board, there is no polarity direction on **SWT3-8**.



- END OF ANALOG UI PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

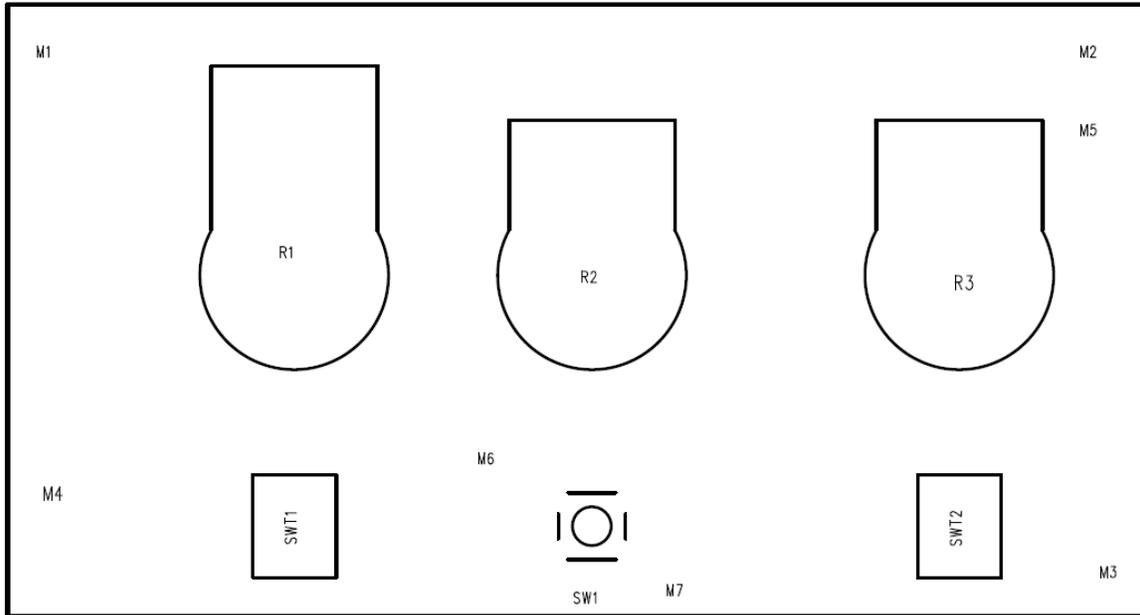
REVISION	NOTES	DATE	RELEASED BY
A	Initial Release – Beta Build	06/19/08	Jim Williams

A16 DIGITAL UI PCBA ASSEMBLY INSTRUCTIONS

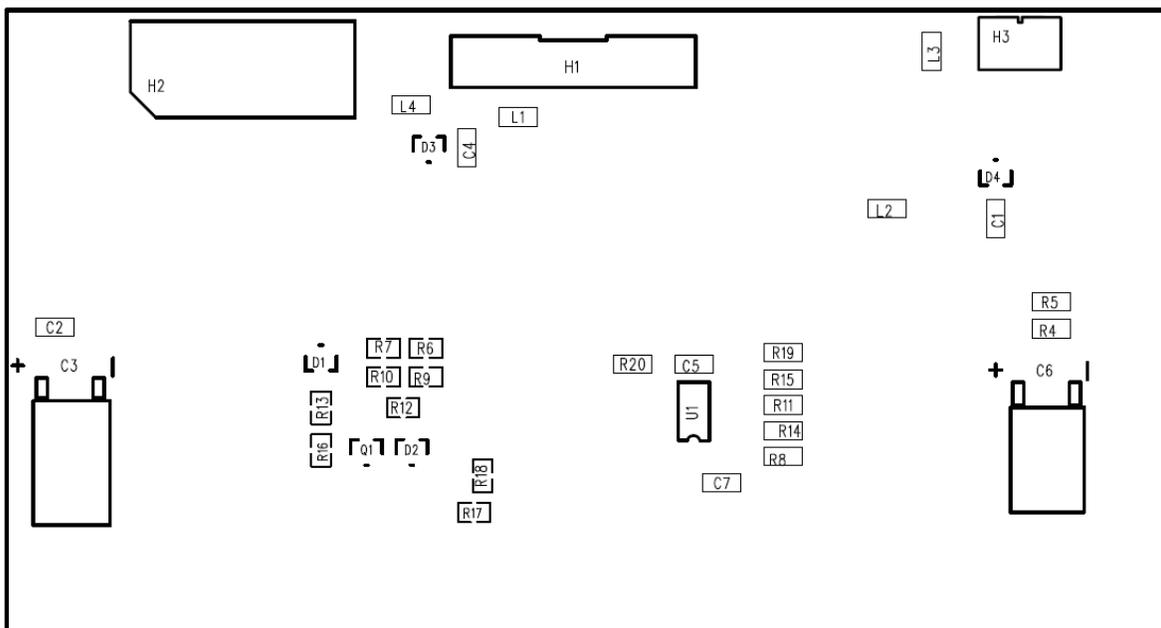
Rev. A

A16 DIGITAL UI PCBA: 50-02-0276
Refers to A16 DIGITAL UI PCB, Rev. C: 35-00-0276

TOP



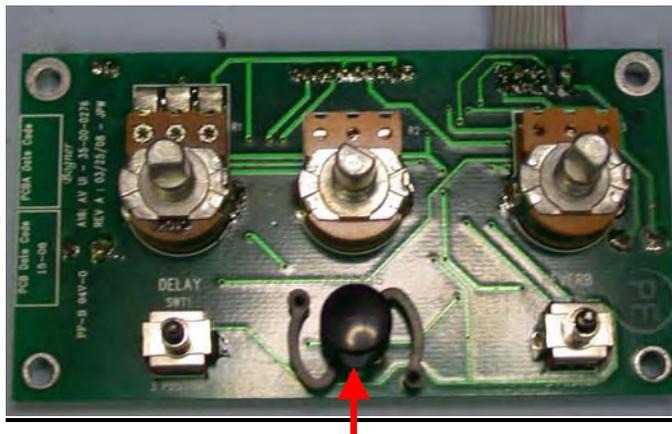
BOTTOM



LINE 6

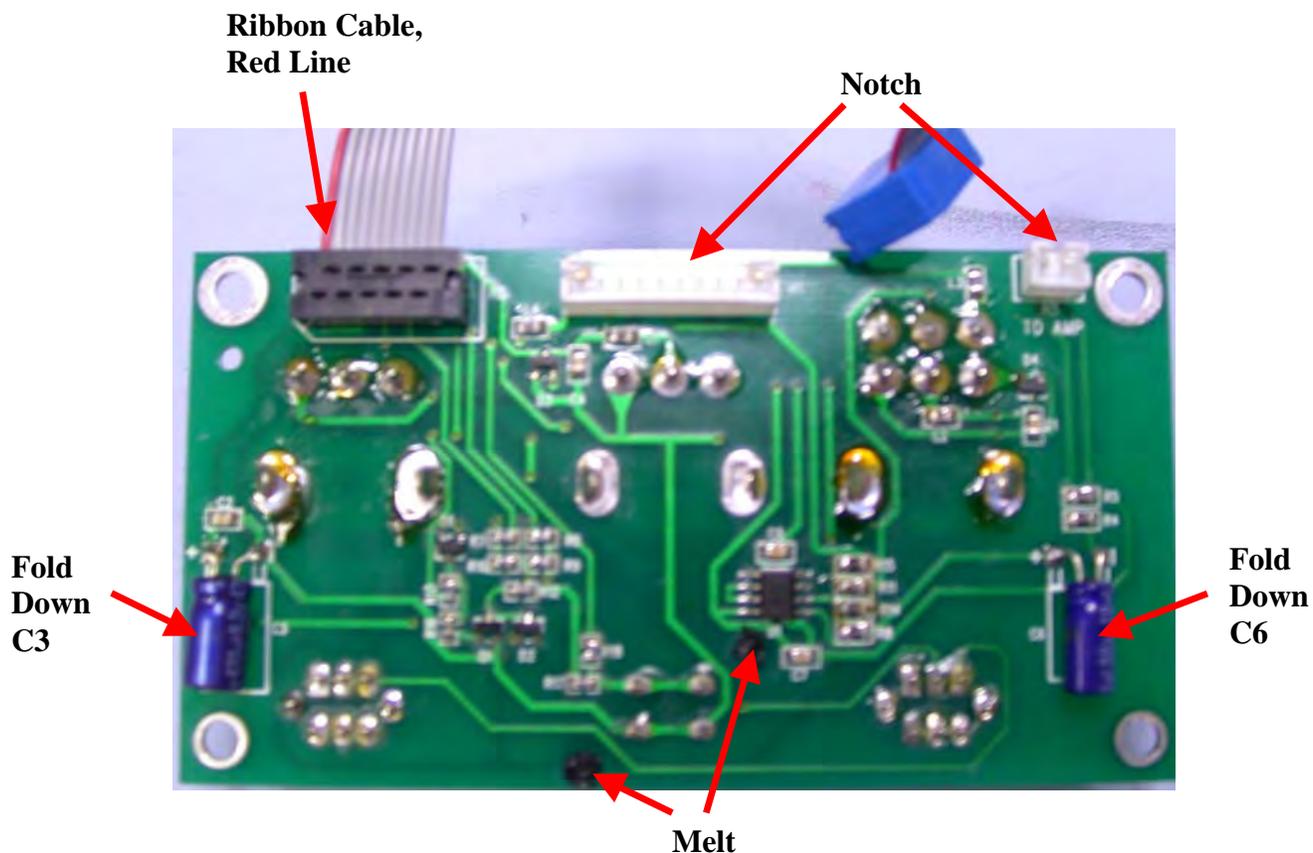
Engineering

1. **“DO NOT INSTALL” COMPONENTS:** None.
2. **BUTTON:** Install the **Button** (30-27-0300-2) over switch SW1. Melt legs on Bottom (see Step 3).



Button

3. **BOTTOM:** Melt **Button** legs to secure the **Button** (30-27-0300-2) to the PCB. Install headers **H1** & **H3** with correct orientation. Solder **Ribbon Cable** header (21-30-0004-1) into **H2** with the ribbon cable pointing away from the PCB. Fold down capacitors **C3** and **C6**.

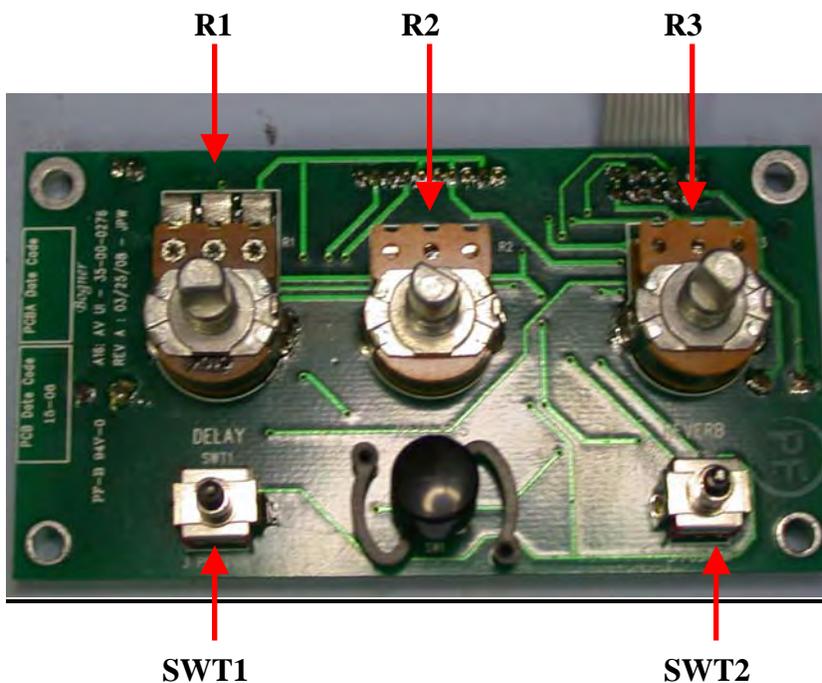


LINE 6

Engineering

4. **SWITCHES**: Make sure that **SWT1-2** (24-03-0211 – three position switch) are mounted flush to the board, there is no polarity direction on **SWT1-2**.
5. **POTENTIOMETERS**: Make sure that the correct potentiometers are installed for **R1-3**.

R1 (01-49-0018)
R2 (01-48-2254)
R3 (01-48-0014)



- END OF DIGITAL UI PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

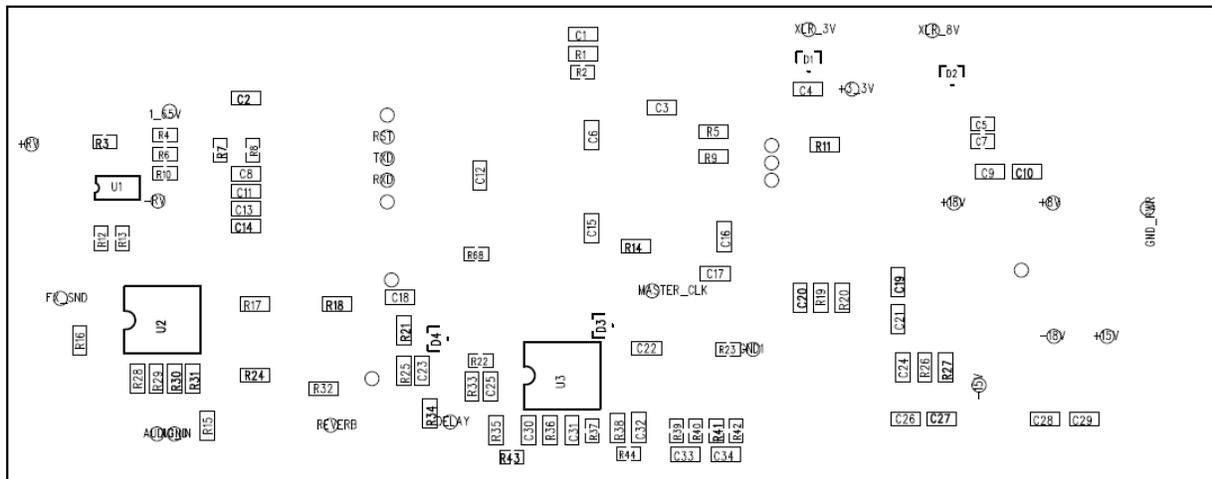
<u>REVISION</u>	<u>NOTES</u>	<u>DATE</u>	<u>RELEASED BY</u>
A	- Initial Release - For Beta Build.	06/19/08	Jim Williams

A16 MAIN PCBA ASSEMBLY INSTRUCTIONS

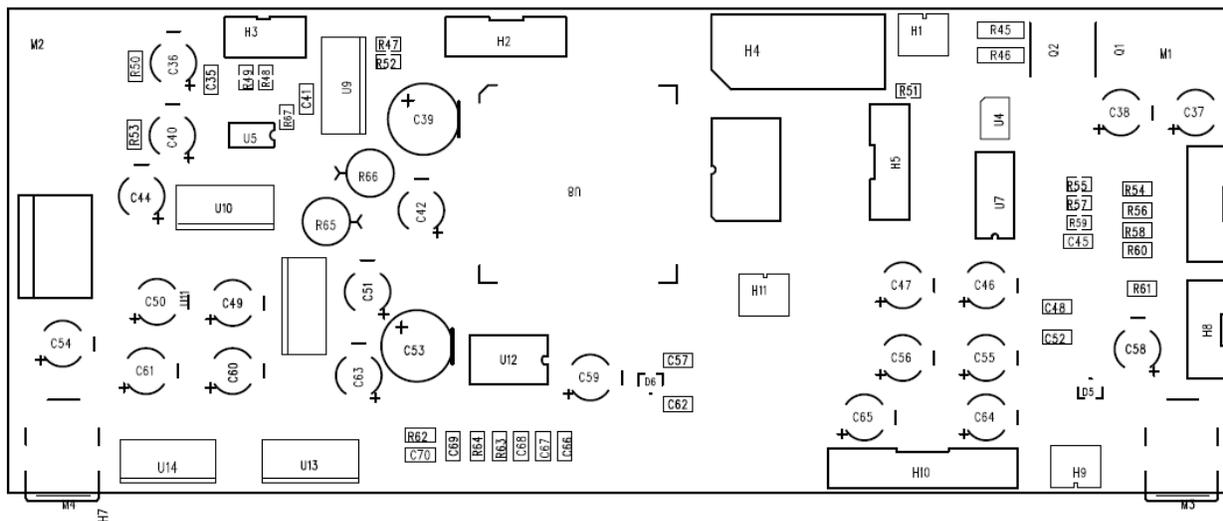
Rev. A

A16 ANALOG UI PCBA: 50-02-0274
Refers to A16 ANALOG UI PCB, Rev. A: 35-00-0274

TOP



BOTTOM

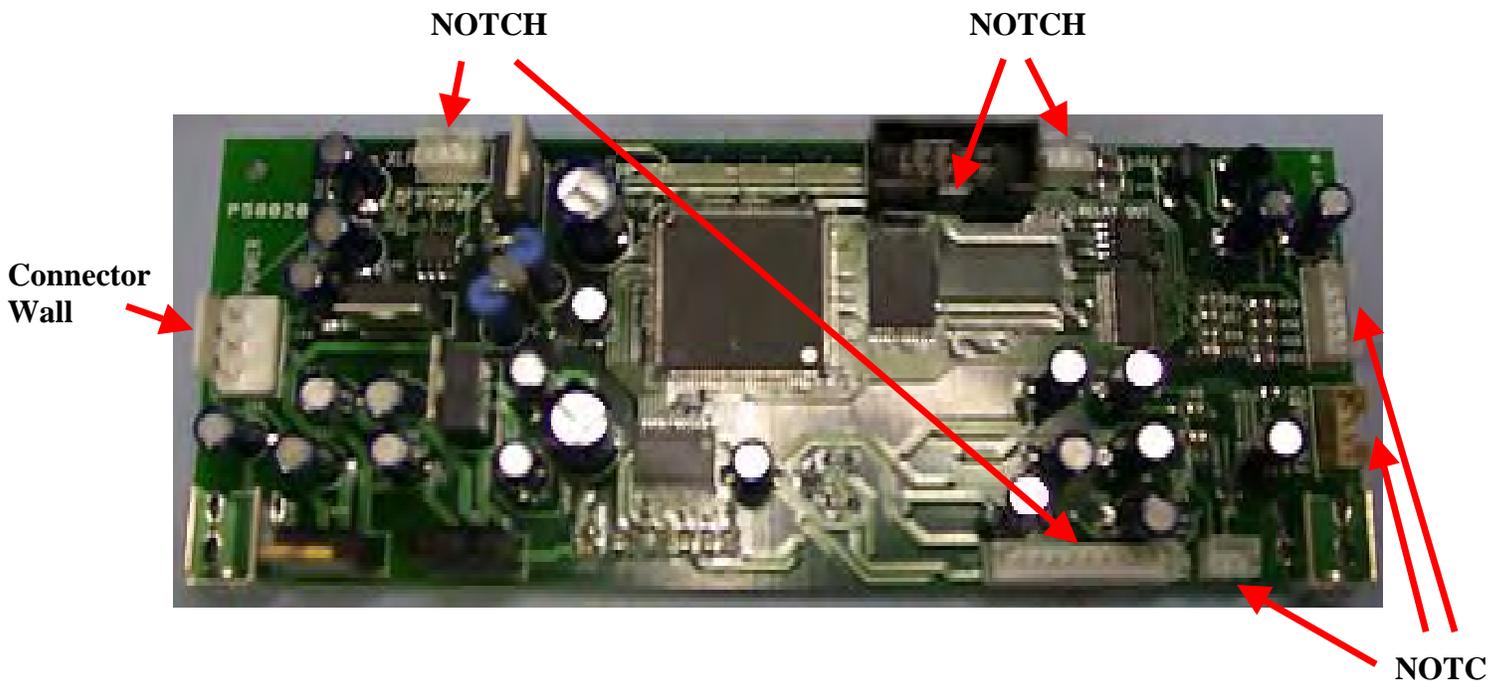


1. **“DO NOT INSTALL” COMPONENTS: D1-2, H2, H5, H11.**

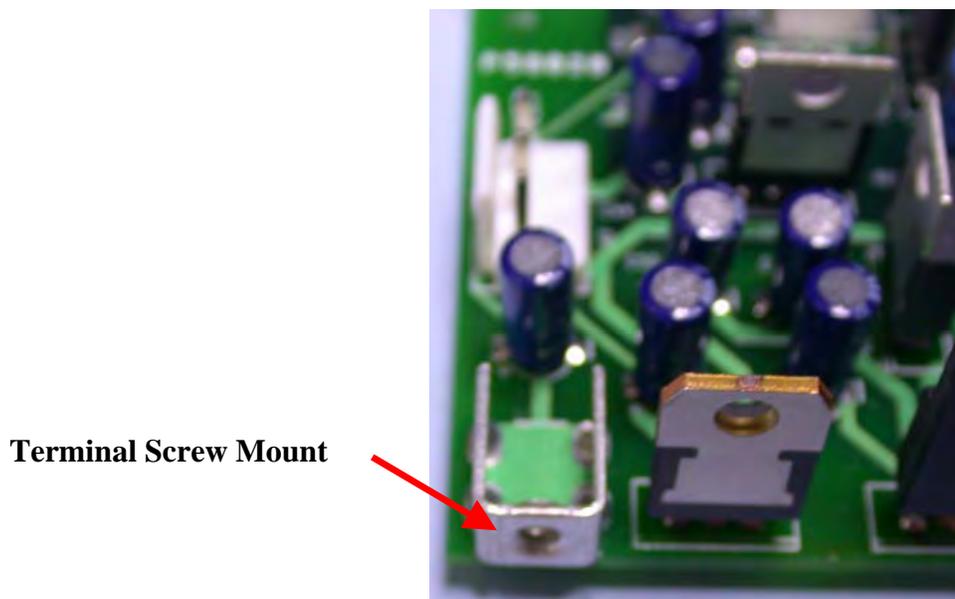
LINE 6

Engineering

2. **CONNECTORS:** Install all connectors with proper orientation.



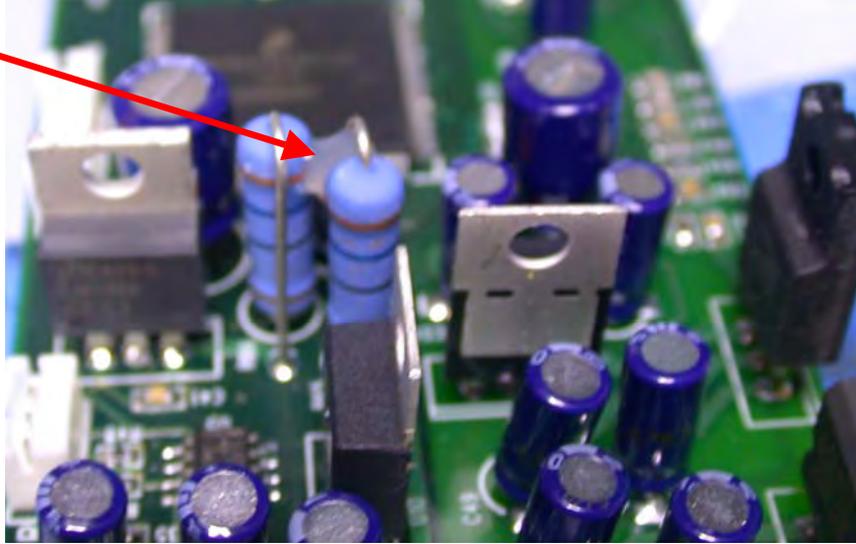
3. **TERMINAL SCREW PCB MOUNTS:** Install the 2 Terminal Screw PCB Mounts (21-18-0002) M3-4 securely and flush with the PCB.



LINE 6
Engineering

4. **RTV:** Glue resistors **R65** and **R66** together with RTV.

RTV



- END OF MAIN PCBA INSTRUCTIONS -

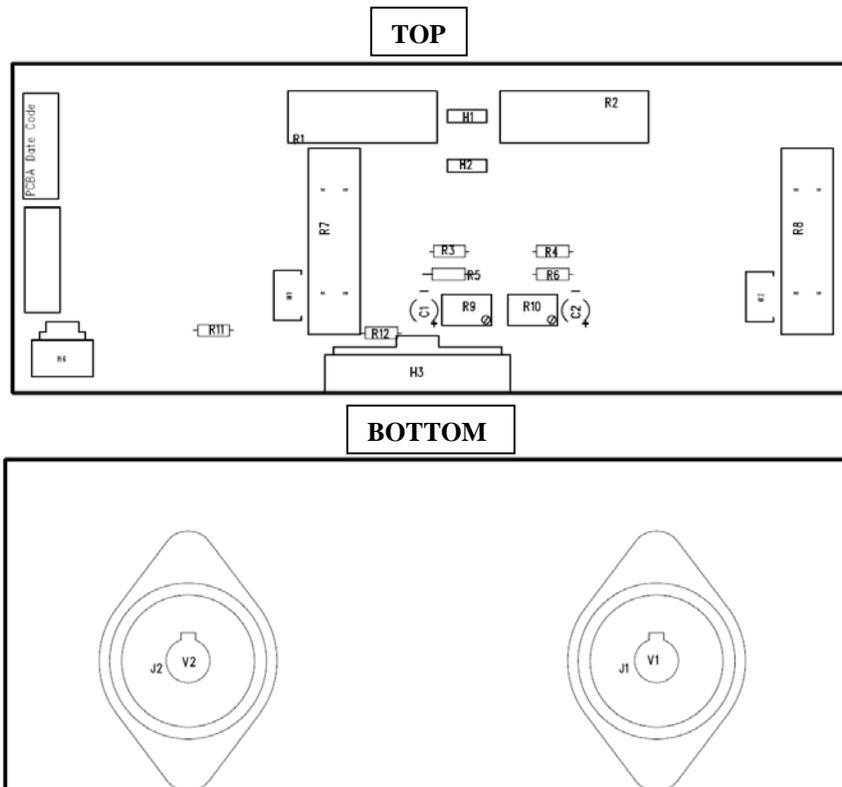
PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release - For Rev. A	06/19/08	Jim Williams

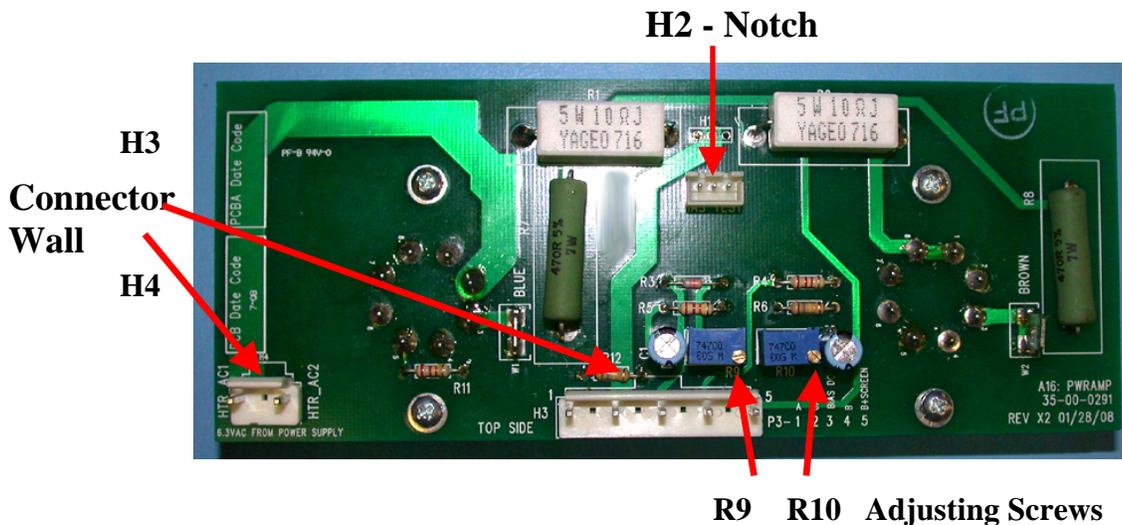
A16 POWER AMP PCBA ASSEMBLY INSTRUCTIONS

Rev. A

A16 POWER AMP PCBA: 50-02-0291
 Refers to A16 POWER AMP PCB, Rev. A: 35-00-0291



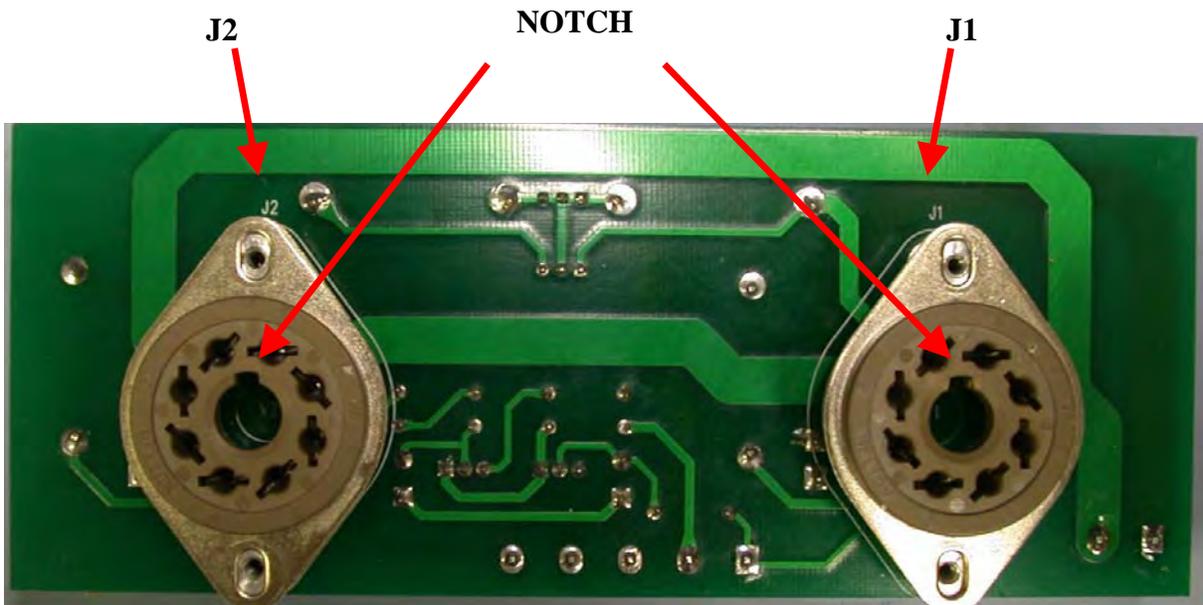
1. **“DO NOT INSTALL” COMPONENTS:** H1.
2. **TOP COMPONENTS:** Install all headers **H2** (Notch should face up towards H1 - uninstalled), **H3** and **H4** correctly and install resistors **R9** and **R10** with the adjusting screw oriented on the bottom.



3. **CONNECTOR TABS:** Solder connector tabs **W1** and **W2** (21-18-0250) straight up at 90 degrees to the PCB.

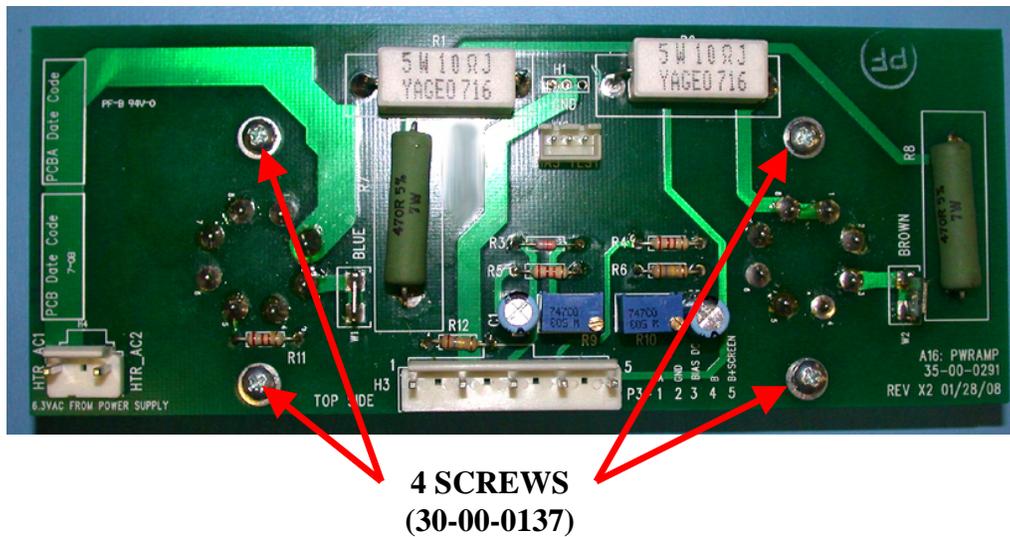
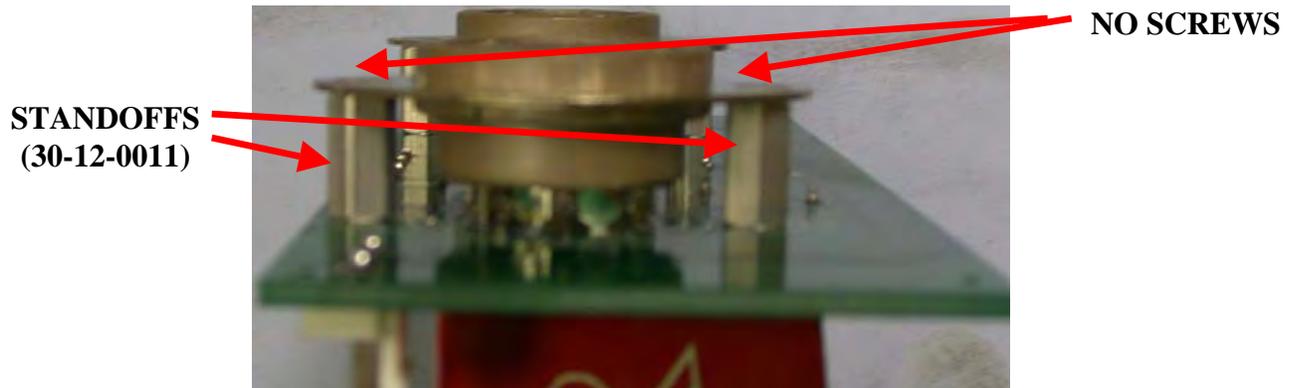


4. **TUBE SOCKETS:** Mount the tube sockets with the notch in the socket pointing toward the silkscreen designator **J1** or **J2**.



LINE 6 Engineering

5. **STANDOFFS:** Screw 4 **STANDOFFS** (30-12-0011) with 4 **SCREWS** (30-00-0137) to the top of the PCB (NOT THE BOTTOM).



- END OF POWER AMP PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release - For Beta Build	06/20/08	Jim Williams

POWER SUPPLY PCBA ASSEMBLY INSTRUCTIONS

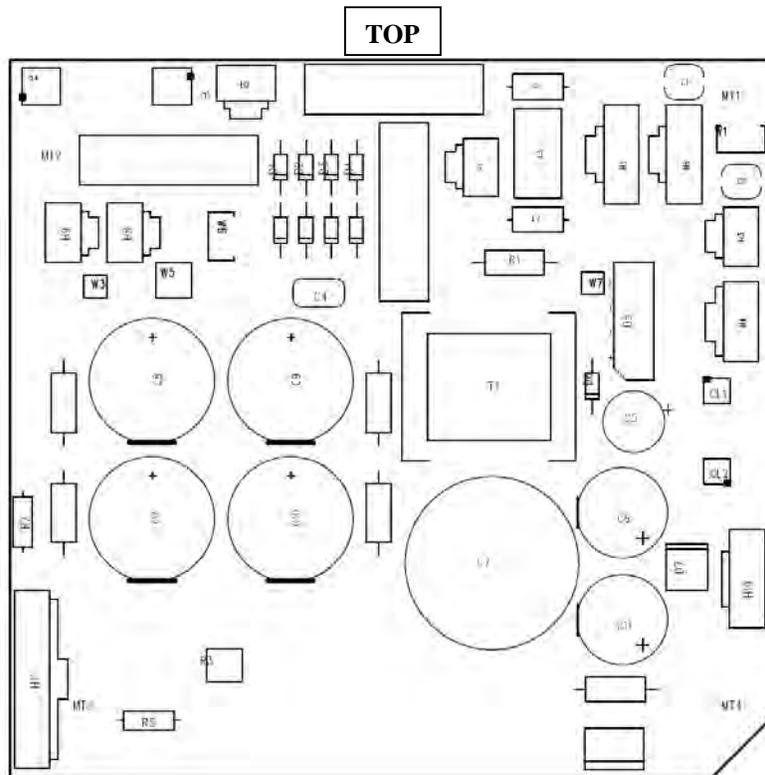
Rev. A

A16 POWER SUPPLY PCBA:

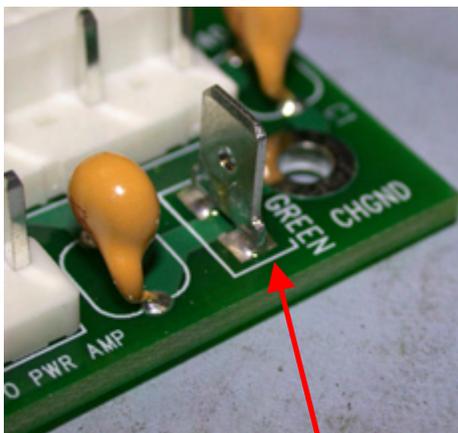
50-02-0292

Refers to A16 POWER SUPPLY PCB, Rev. B:

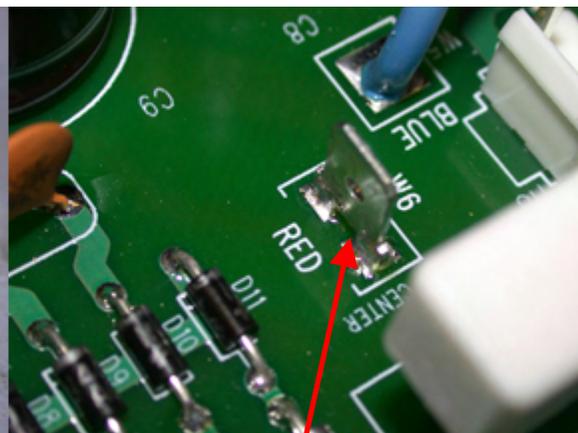
35-00-0292



1. **“DO NOT INSTALL” COMPONENTS:** None.
2. **CONNECTOR TABS:** Solder connector tabs **W1** and **W6** (21-18-0250) straight up at 90 degrees to the PCB.

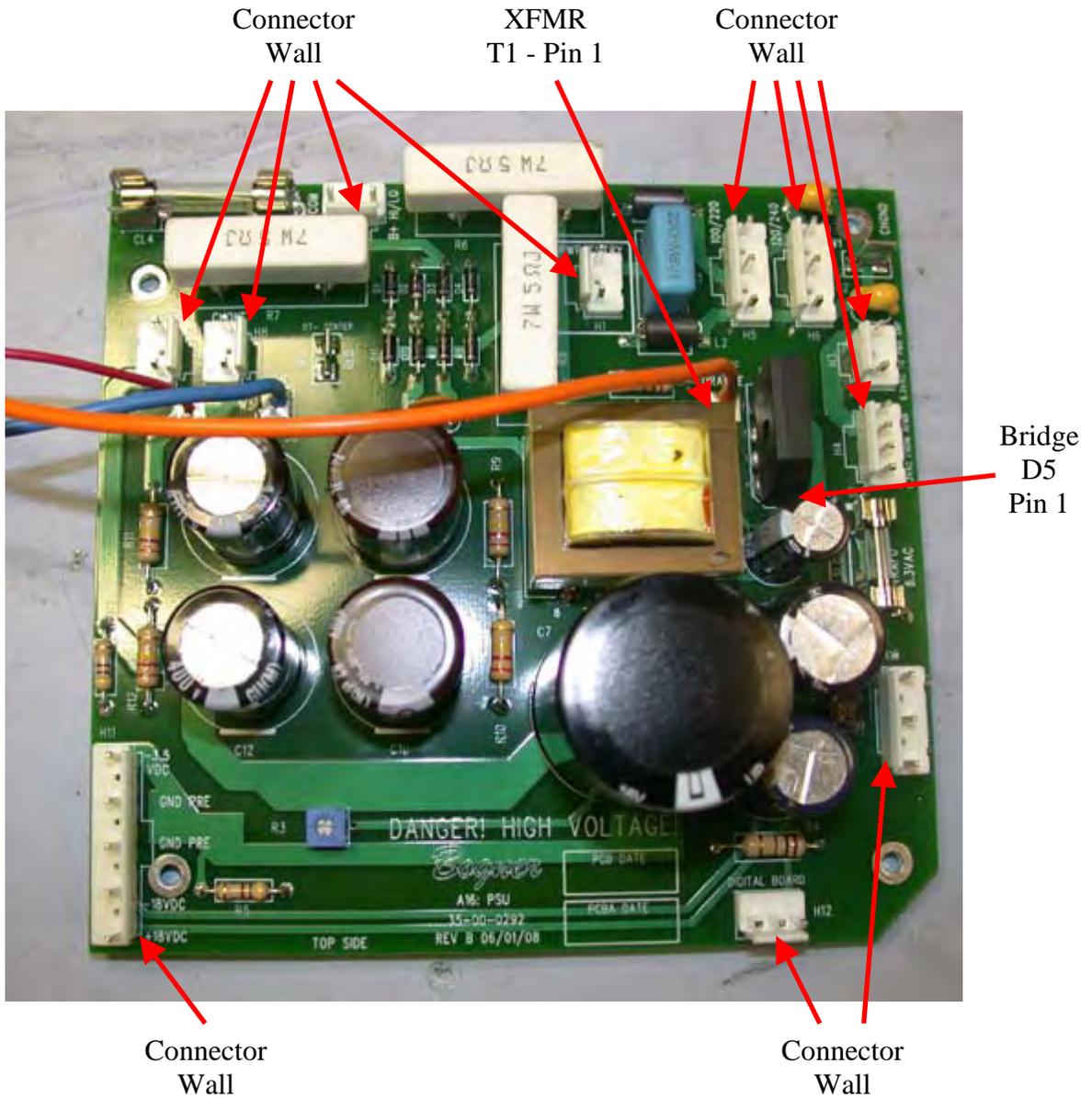


W1



W6

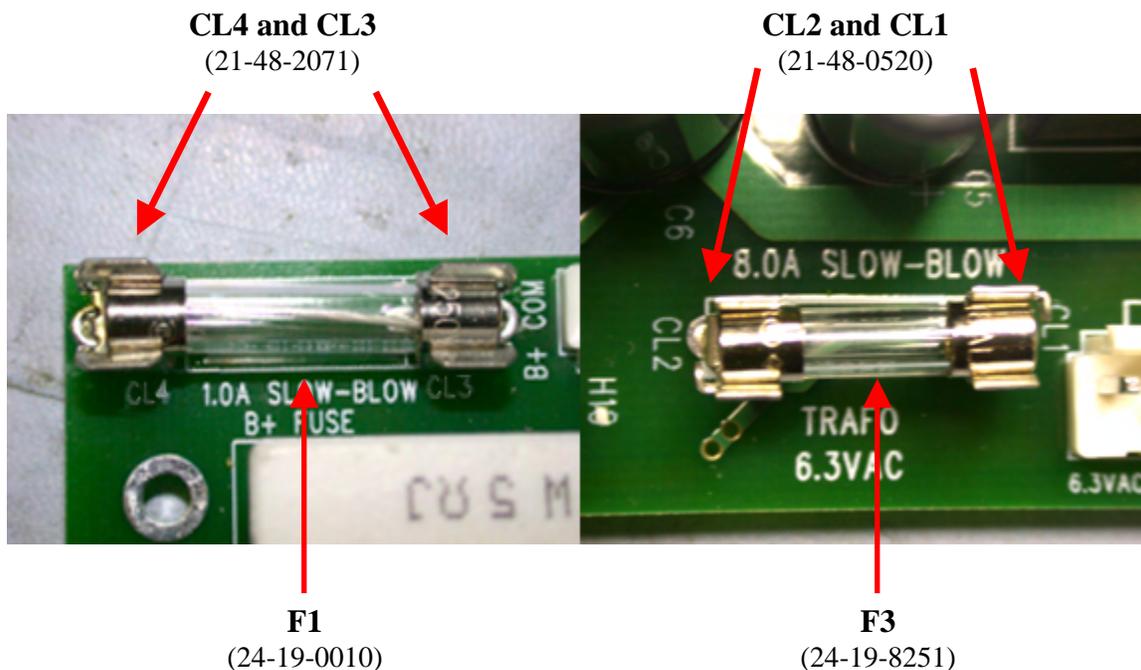
3. **PROPER COMPONENT ORIENTATION:** Make sure that all components are properly oriented on the board including headers, diodes, capacitors, and the transformer.



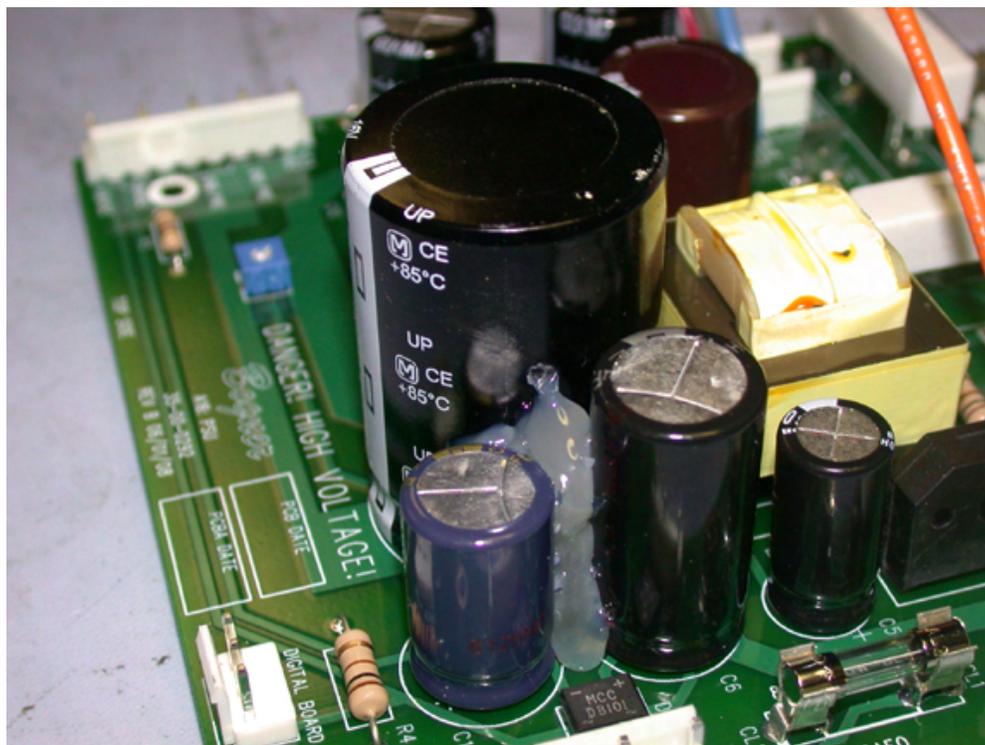
LINE 6

Engineering

4. **INSTALL THE FUSE HOLDERS AND FUSES:** Make sure that the fuse holders are installed with the tabs that keep the fuse in place properly oriented. Install fuse **F1** (24-48-2071 – 1.0A) into **CL3-4** and install fuse **F3** (21-48-0520 – 8.0A) into **CL1-2**.



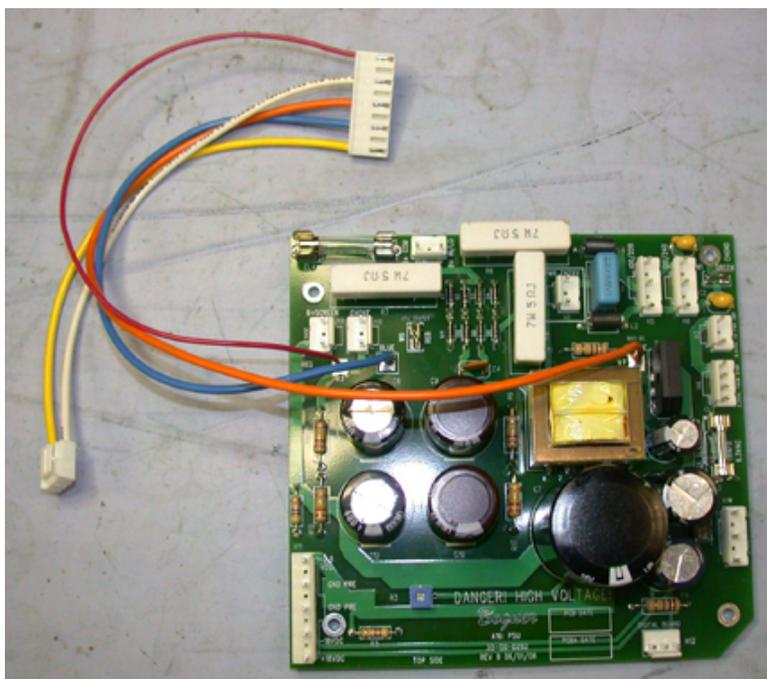
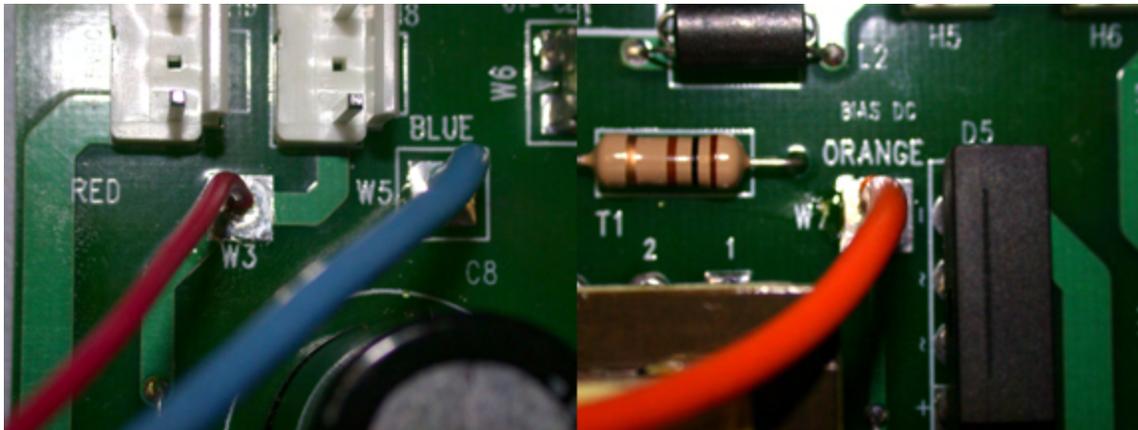
5. **RTV:** Glue capacitors C6, C7, and C11 with RTV.



LINE 6

Engineering

6. **CABLE:** Solder cable 21-34-0106 to the PCB. Solder the **RED** cable to **W3**, the **BLUE** cable to **W5** and the **ORANGE** cable to **W7**.



- END OF POWER SUPPLY PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release – Beta Build	06/11/08	Jim Williams



Engineering

A16 PRE AMP PCBA ASSEMBLY INSTRUCTIONS

Rev. A

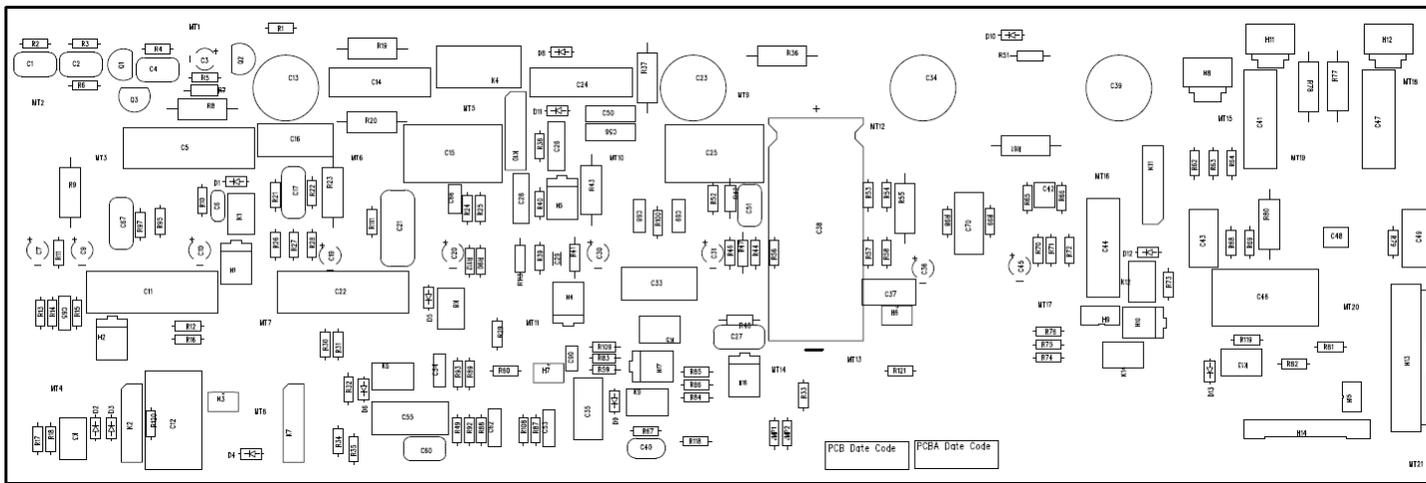
A16 PRE AMP PCBA:

50-02-0290

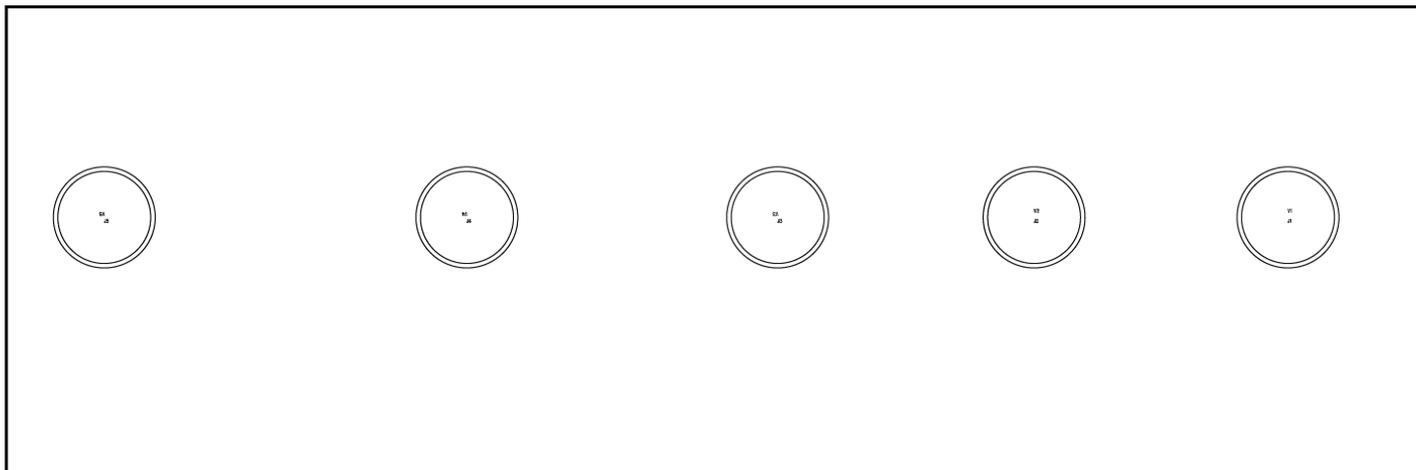
Refers to A16 PRE AMP PCB, Rev. C:

35-00-0290

TOP



BOTTOM

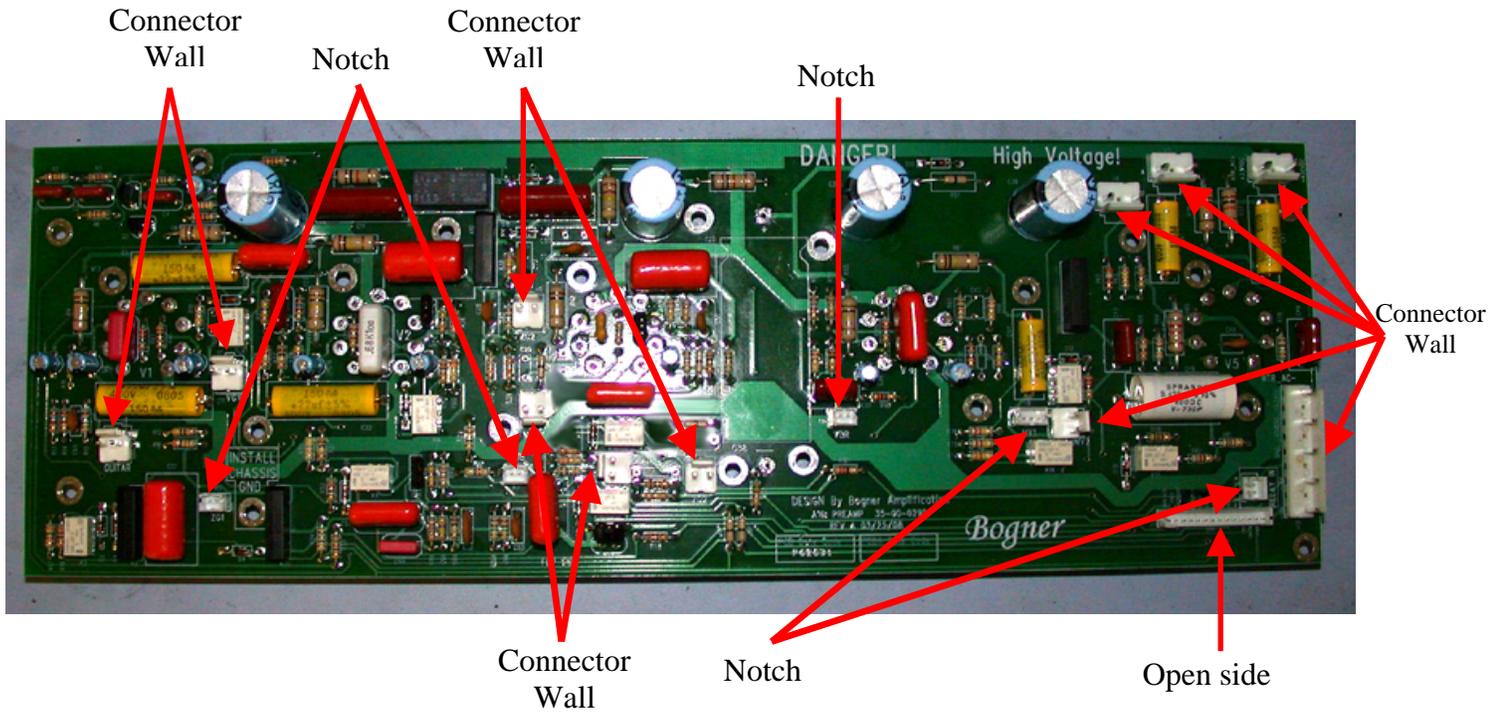


1. **“DO NOT INSTALL” COMPONENTS:** Do not install the following components:
C3, C6, C27, C29, C30, C38, C42, C50, C27, R5, R7, R71, R85.

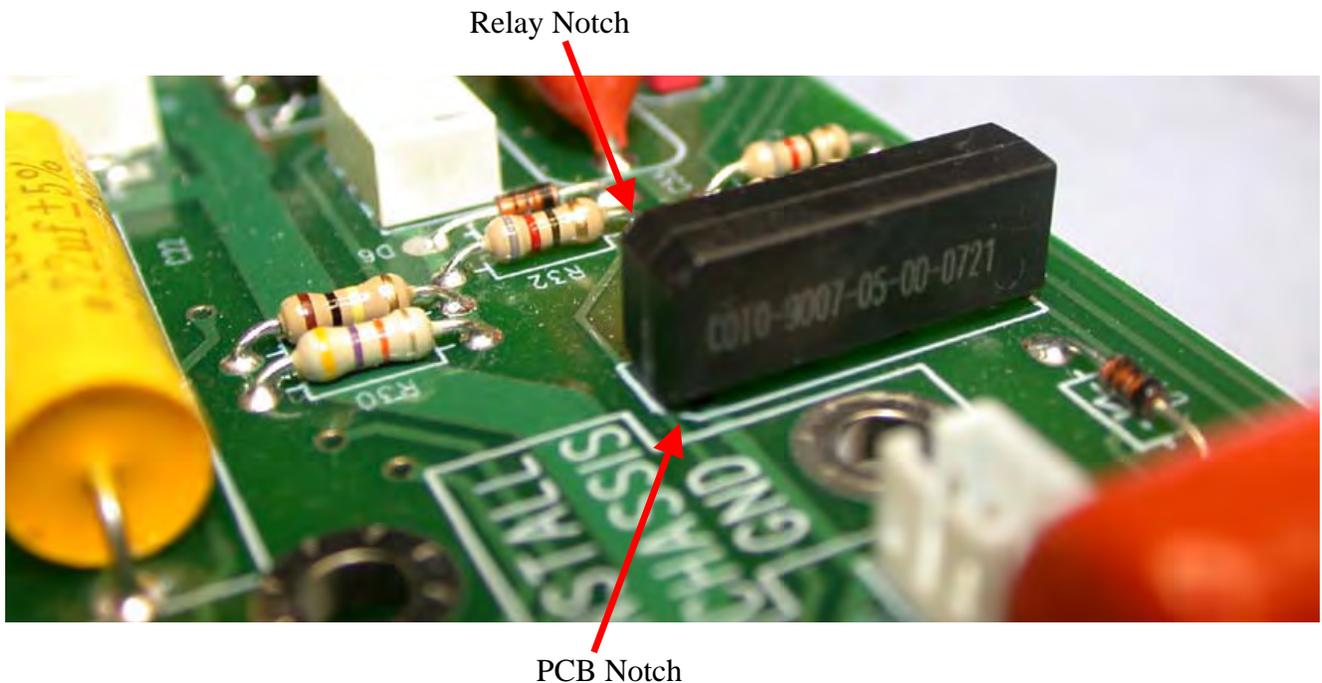
LINE 6

Engineering

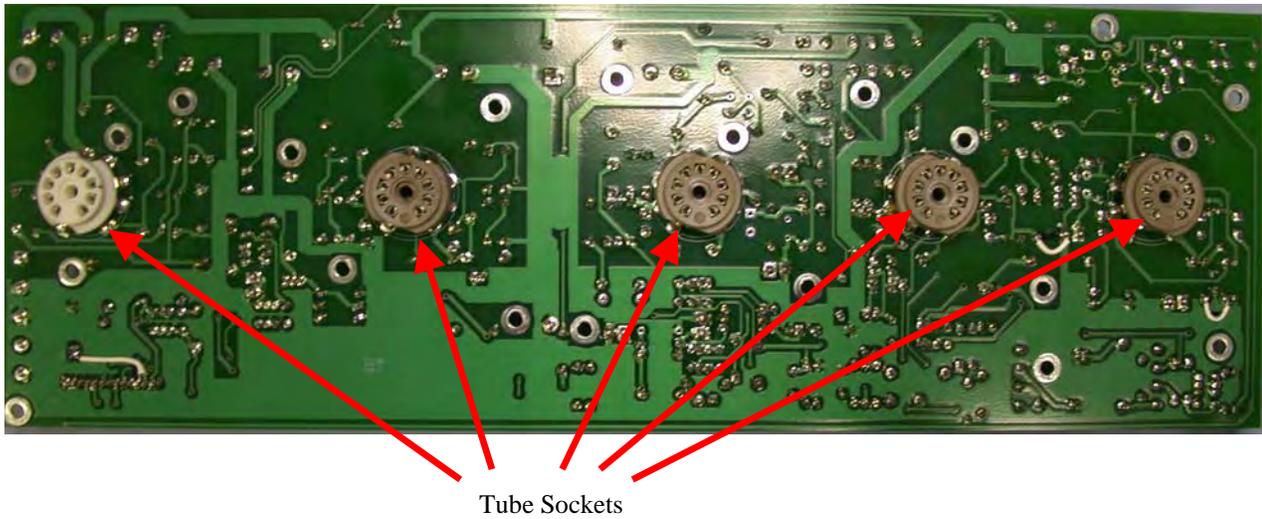
2. **PROPER ORIENTATION:** Make sure that all components are properly oriented, including electrolytic capacitors, diodes and headers.



3. **RELAYS:** Install relays K2, K7, K10 & K11 with the **Notch** of the **relay** facing the **Notch** of the **PCB outline**.



4. **TUBE SOCKETS**: Install the tube sockets on the back of the PCB, part J1 through J5.



- END OF PRE AMP PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release – Beta Build	06/19/08	Jim Williams

A16 Speaker-XLR-FX-Guitar PCBA ASSEMBLY INSTRUCTIONS

Rev. A

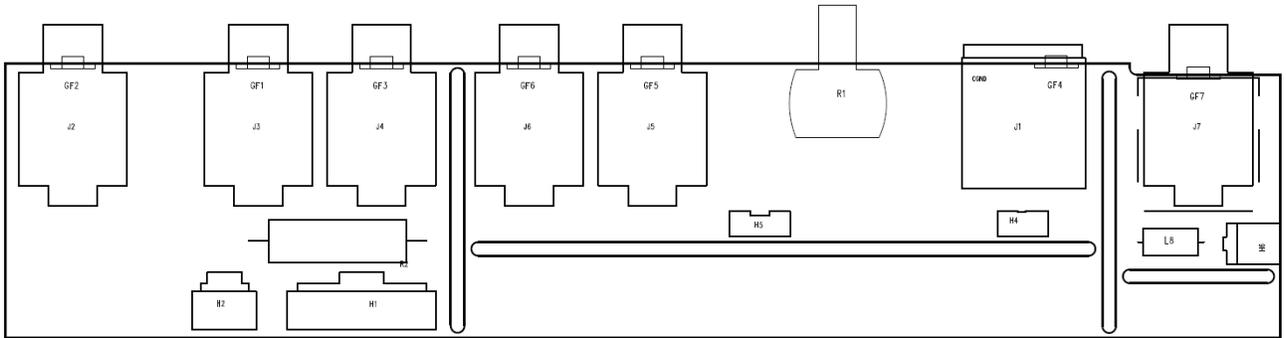
A16 Speaker-XLR-FX-Guitar PCBA:

50-02-0275-1,2,3

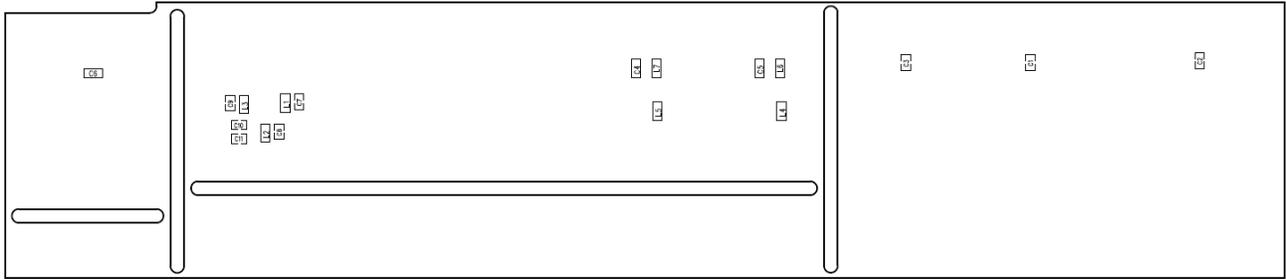
Refers to A16 Speaker-XLR-FX-Guitar PCB, Rev. B:

35-00-0275-1,2,3

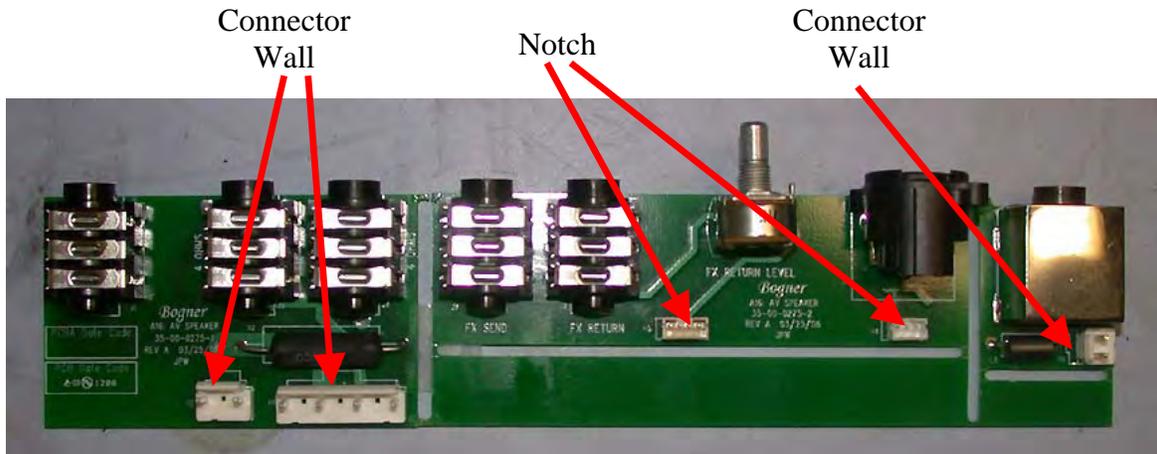
TOP



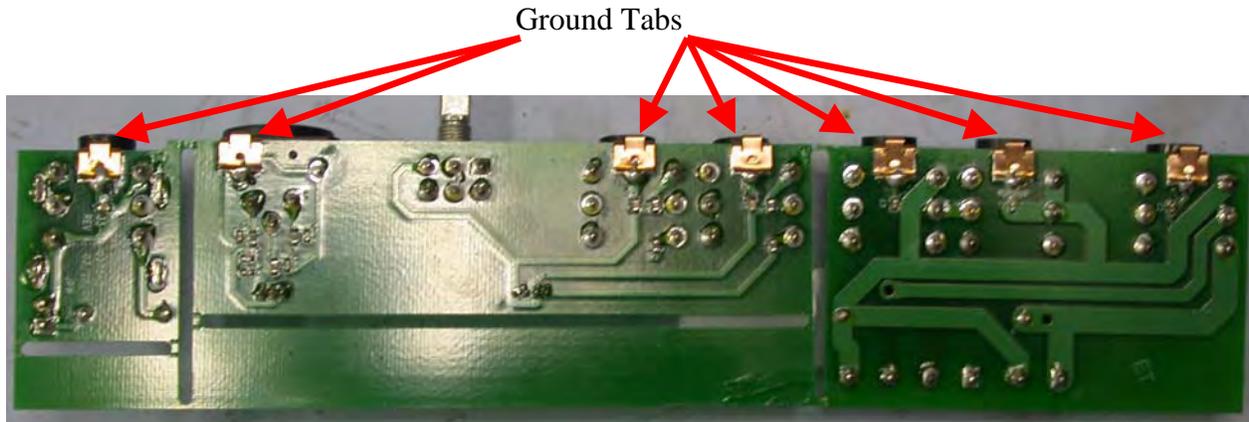
BOTTOM



1. **“DO NOT INSTALL” COMPONENTS:** None.
2. **HEADERS:** Install headers **H1, H2, H4, H5 & H6** (note: there is no H3) with proper orientation.



3. **GROUND TABS**: Solder ground tabs **GF1-7** to bottom of PCB.

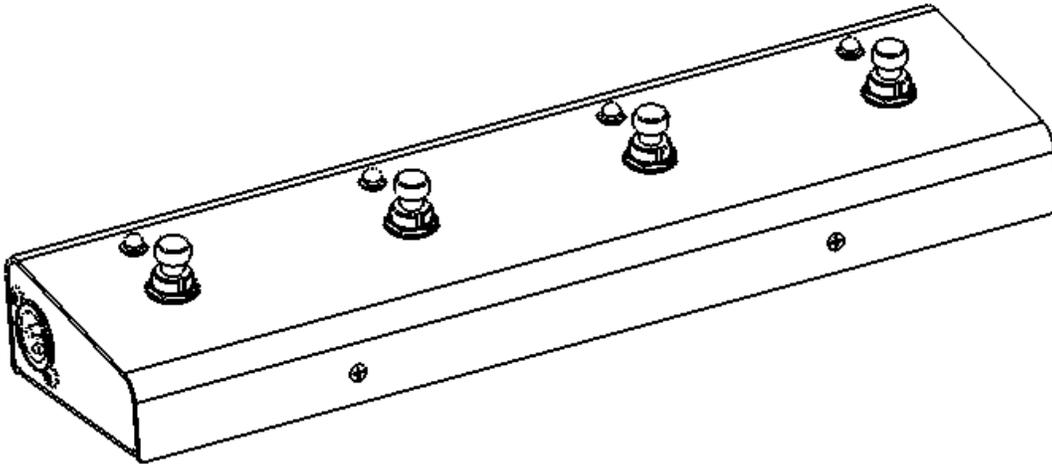


- END OF SPEAKER, XLR/FX, GUITAR PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release - For Beta Build.	06/19/08	Jim Williams

A16 FOOTSWITCH UNIT ASSY INSTRUCTIONS



Isometric View

Special Notes

The instructions describe the electro-mechanical assembly of the A16 Footswitch unit assembly (P/N 59-00-1807).

A note on the text: the illustrations in this book are for reference only. In some cases, color and geometry of illustrations may not accurately reflect the color or exact geometry of actual parts.

- Unless otherwise noted, all dimensions are in inches.
- Part identifying notes are in this format: Description (Part Number)
- Drawings are not to scale.
- Torque value tolerance +/- .5 in.-lbs. Do not over tighten any components.

For clarity, not all component details are shown. This is especially true with respect to cable assemblies. They are often omitted from views to provide a clearer picture of the material discussed. Do not be confused by the absence (or unexpected presence) of any component in the illustrations in this book.



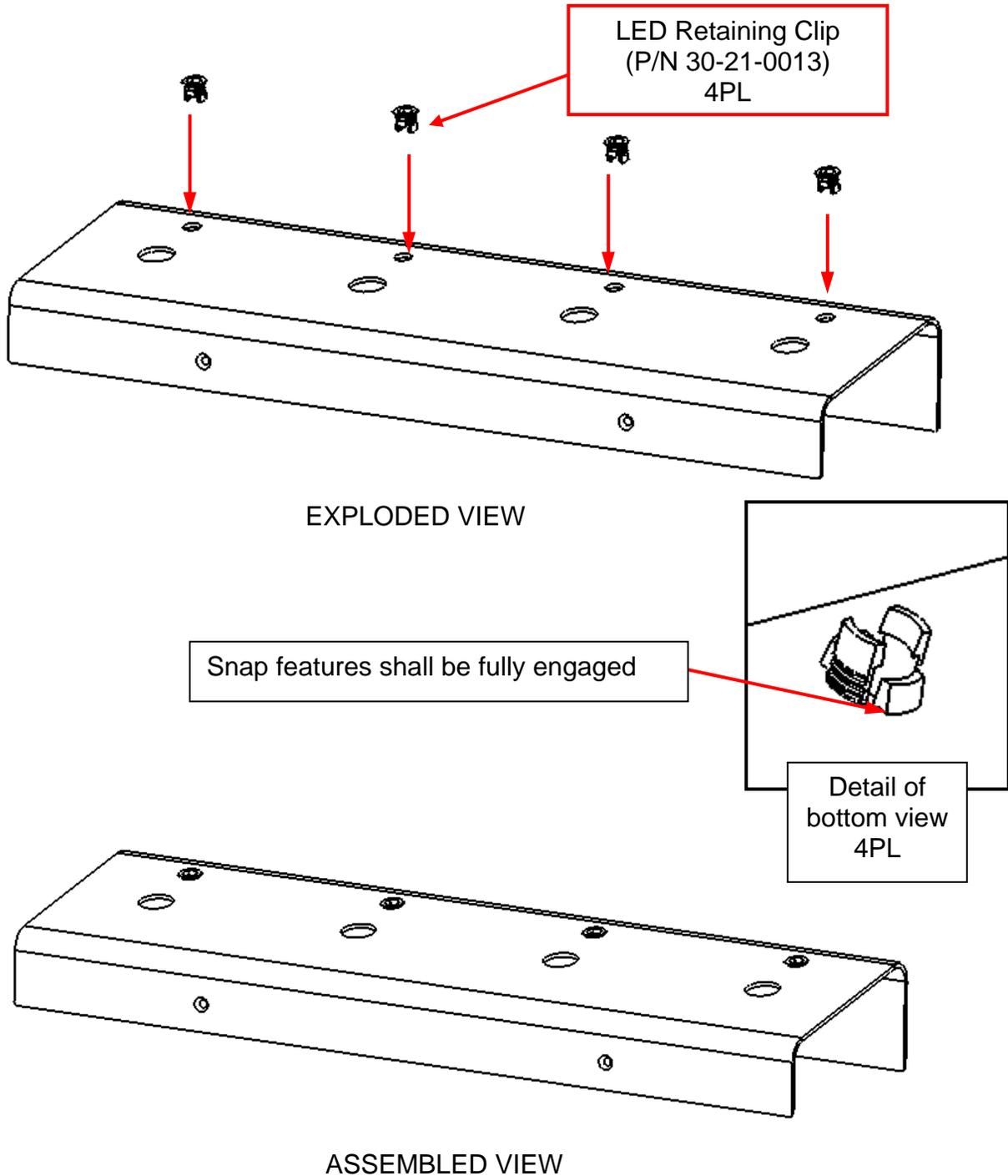
Revision Comment Sheet

Revision	Changes
A	INITIAL RELEASE
B	ECO 0827601 Revised assembly sequence of Steps 3 and 4. Reoriented the position of XLR PCBA in the assembly.

STEP 1:

- 1 each Chassis Top (P/N 30-51-0325)
- 4 each LED Retaining Clips (P/N 30-21-0013)

Insert four (4) LED Retaining Clips (P/N 30-21-0013) through the holes of the Chassis Top (P/N 30-51-0325) as shown. Ensure that the snap features of LED Retaining Clips are fully engaged to the metal sheet surface.

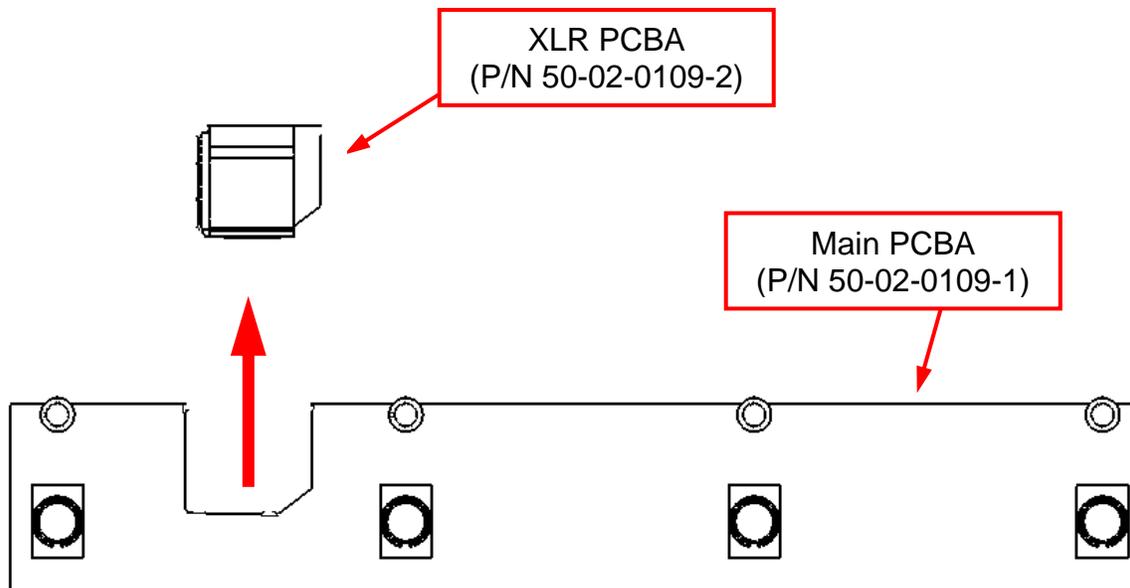
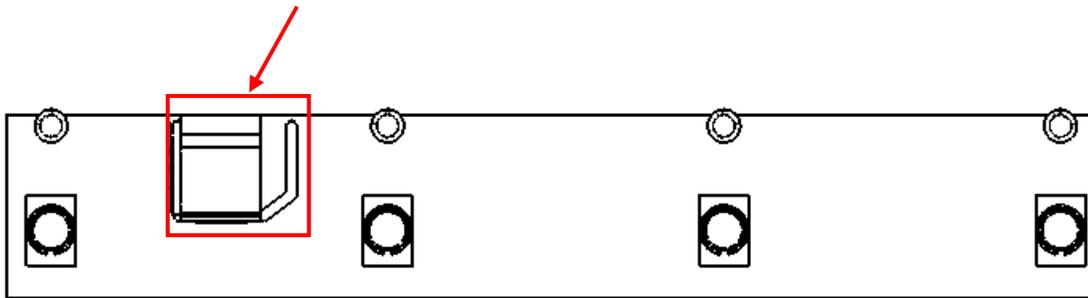


STEP 2:

Parts required:

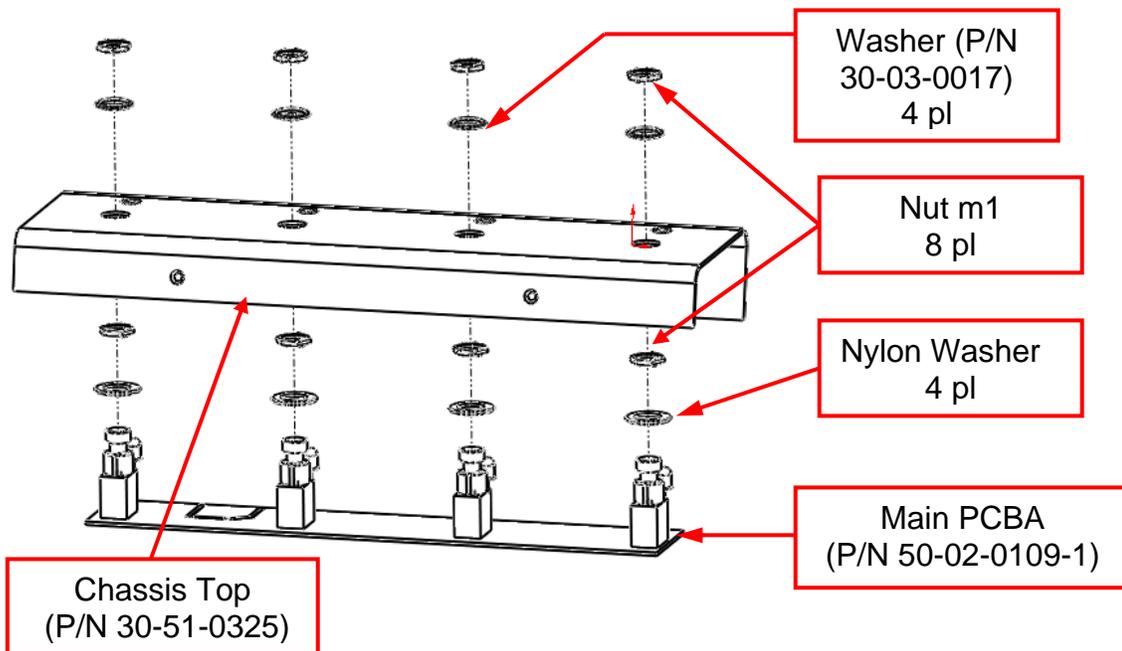
- 1 each PCBA board (Main PCBA P/N 50-02-0109-1) and (XLR PCBA P/N 50-02-0109-2)
- 4 each Nylon Washers **(included with Foot Switch Alpha)**
- 8 each Nuts M1 **(included with Foot Switch Alpha)**
- 4 each Washer Steel (P/N 30-03-0017)
- 1 each Three-conductor cable (P/N 21-34-0103-2) (not shown)

- Break away the small board of XLR PCBA (P/N 50-02-0109-2) from Main PCBA (P/N 50-02-0109-1)
- Connect the three-conductor cable (P/N 50-02-0109-2 (not shown) to H1 of the Main PCBA (P/N 50-02-0109-1).

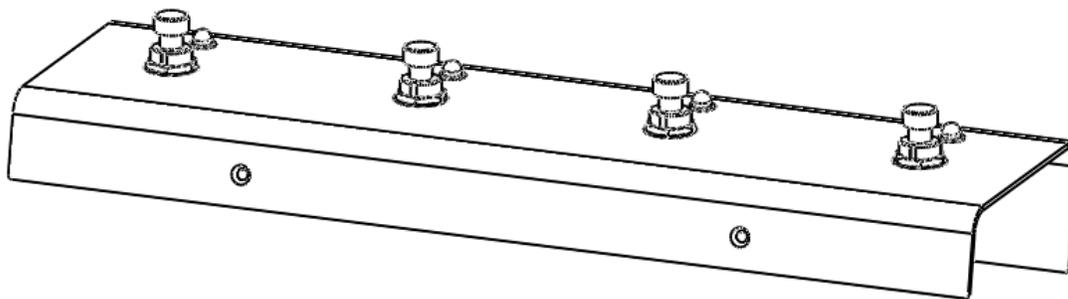


STEP 2 CONTINUED:

- Insert four (4) Nylon Washers onto the four (4) switch buttons of Main PCBA (P/N 50-02-0109-1).
- Secure four (4) Nylon Washer onto switch button with four (4) Nuts M1.
- Insert the above assembly to chassis top (P/N 30-51-0325) making sure all four (4) switch go through holes of the chassis, centered and flat.
- Insert four (4) 12mm Washers onto the switches that stick out of the chassis.
- Thread four (4) Nuts M1 onto switch and turn to lock tight. Torque set at 8 in/lbs.



EXPLODED VIEW



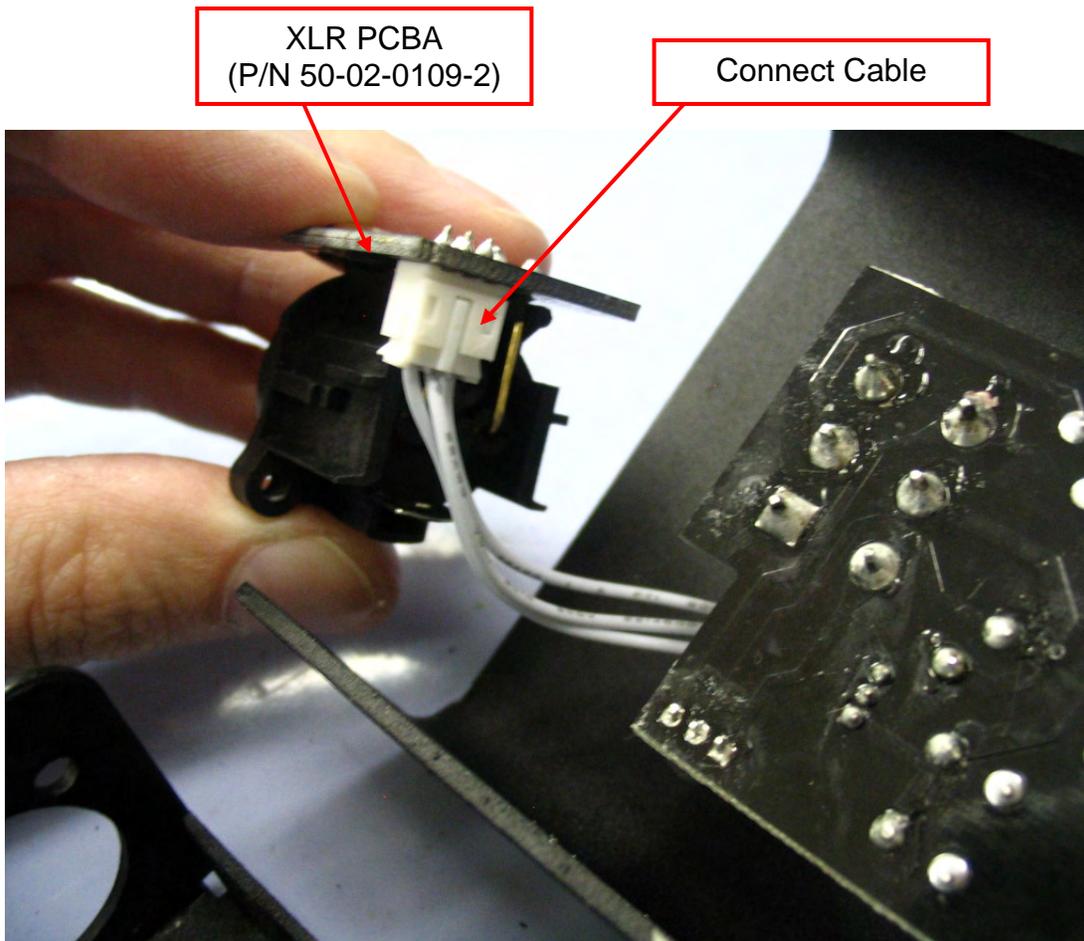
ASSEMBLED VIEW

STEP 3:

Parts Required:

1 each XLR PCBA (P/N 50-02-0109-2)

- Put Chassis Top Subassembly upside down on a proper fixture.
- Insert the free end of the three-conductor cable (P/N 21-34-0103-2) (**SEE STEP 2**) into H2 of the small breakaway XLR PCBA (P/N 50-02-0109-2).



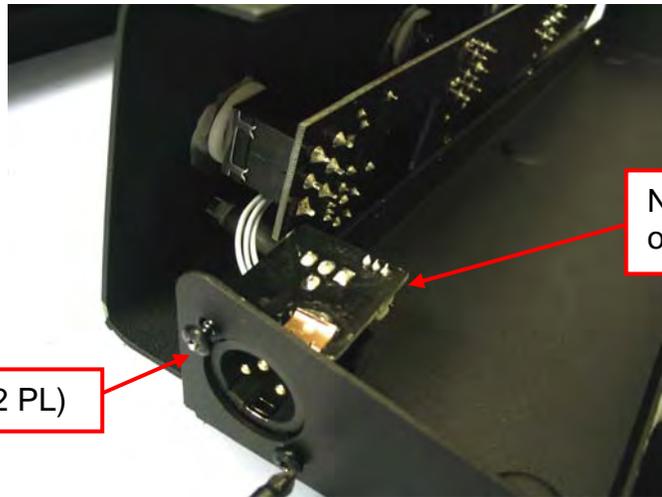
STEP 4:

Parts Required:

2 each Screws (P/N 30-00-9813)

1 each Chassis Bottom (P/N 30-51-0324)

- Install XLR PCBA (P/N 50-02-0109-2) thru opening in Chassis Bottom (P/N 30-51-0324). Note the orientation of the PCB. The PCB should be “up”.
- Secure XLR PCBA (P/N 50-02-0109-2) with two (2) screws as shown below. Set screw torque at 2.5 in/lbs.
- Insert Chassis Bottom Subassembly onto Chassis Top Subassembly as shown.



Note – PCB should be oriented as shown (up)

30-00-9813 Screws (2 PL)

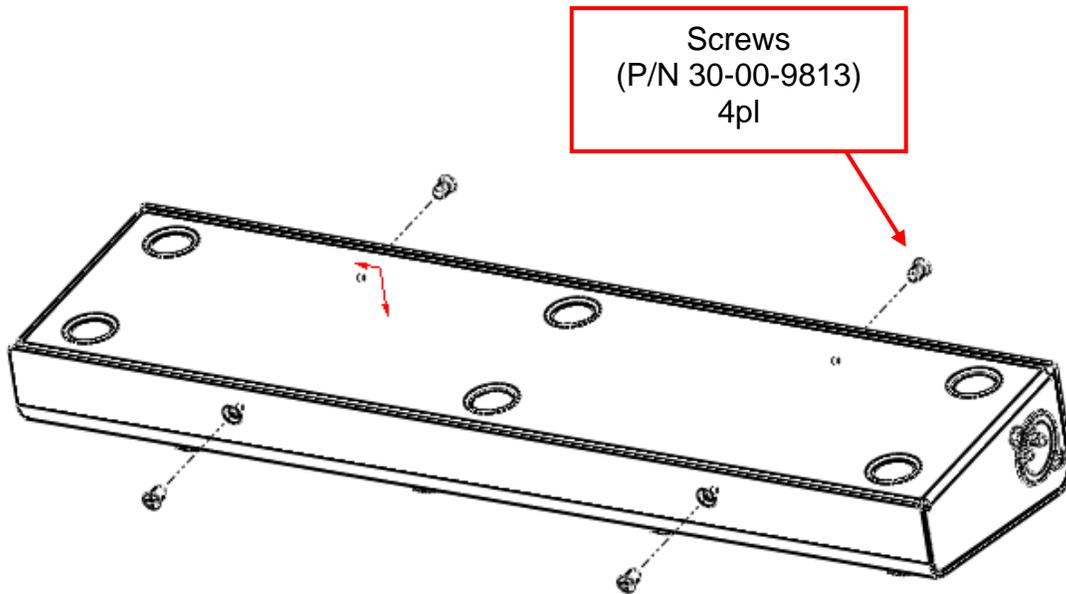


STEP 5:

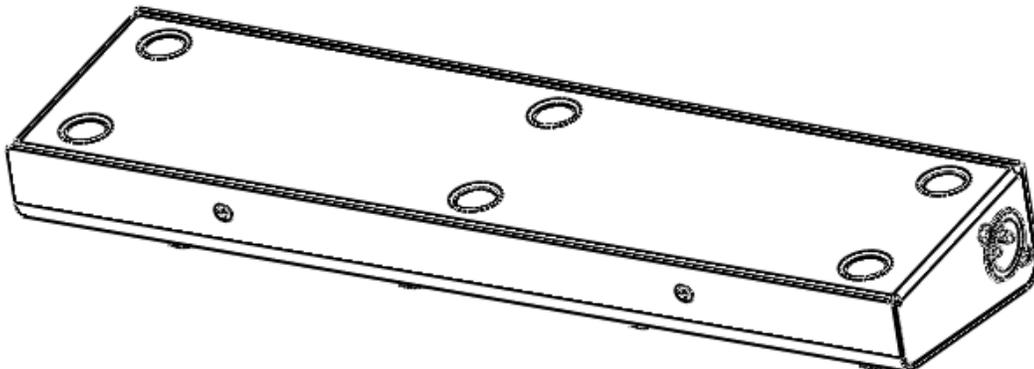
Parts Required:

4 each Screws (P/N 30-00-9813).

Secure Chassis Top (P/N 30-51-0325) to Chassis Bottom (P/N 30-51-0324) with four screws (P/N 30-00-9813) as shown below. Set screw torque at 4.5 in/lbs.



EXPLODED VIEW



ASSEMBLED VIEW

STEP 6:

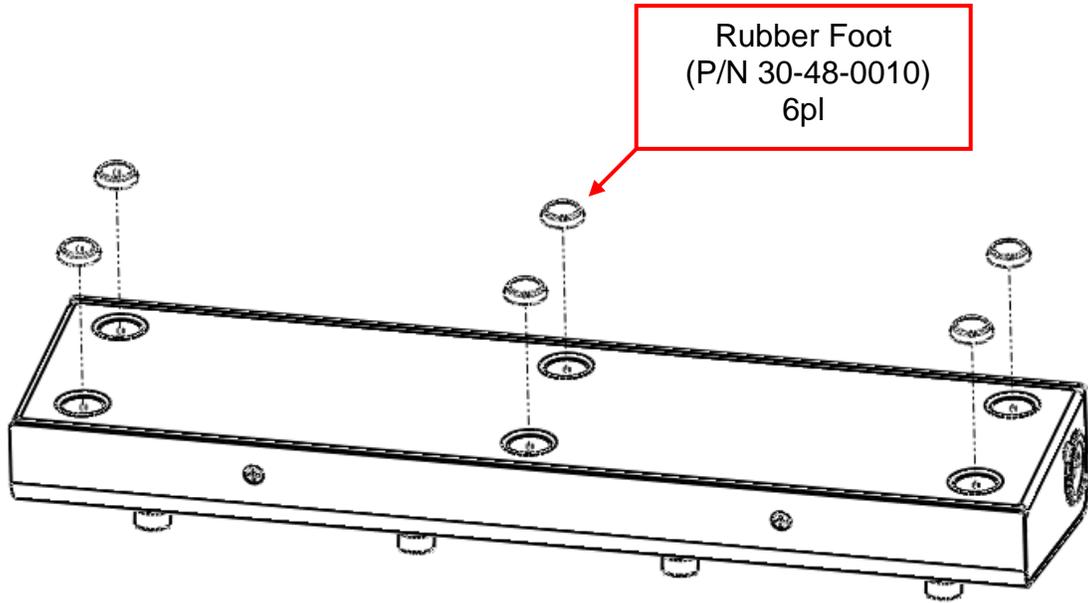
Parts Required:

6 each Rubber feet (P/N 30-48-0010).

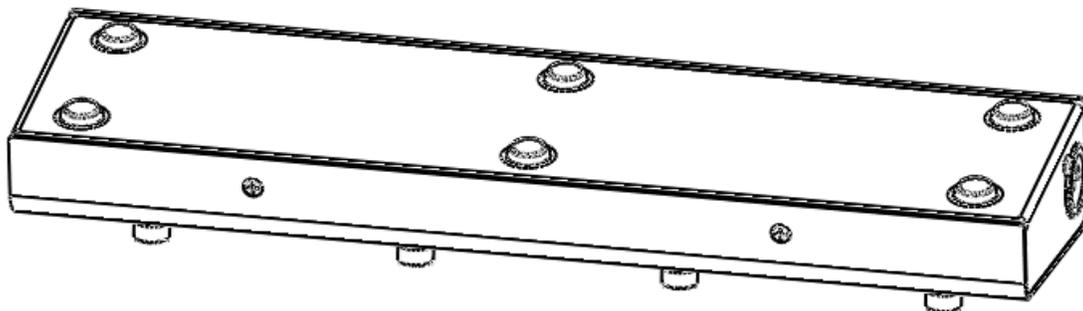
INSTALL (6) self-adhesive Rubber Feet (P/N 30-48-0010) onto the indicated recess locations on Chassis Bottom (P/N 30-51-0324).

PRESS FIRMLY.

VERIFY Rubber Foot (P/N 30-48-0010) is aligned and centered in recess.



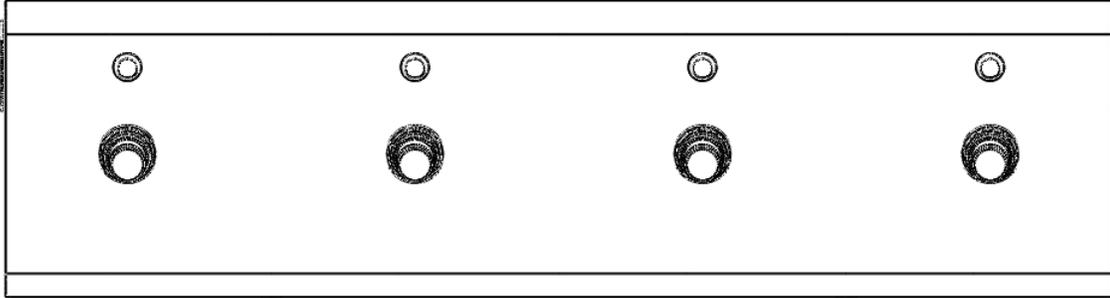
EXPLODED VIEW



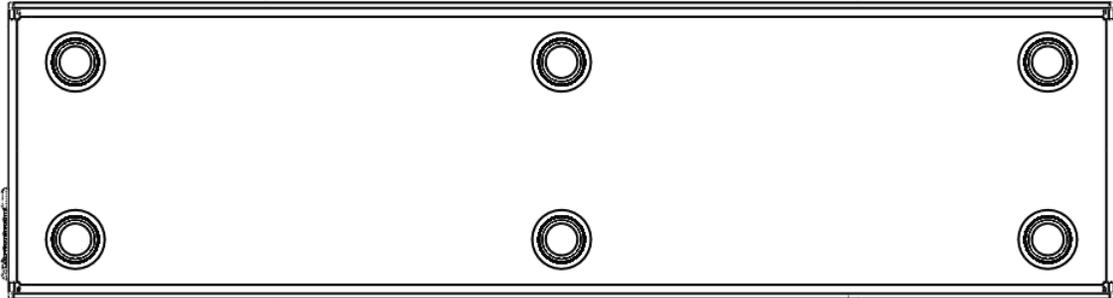
ASSEMBLED VIEW



Completed Unit Reference Views:

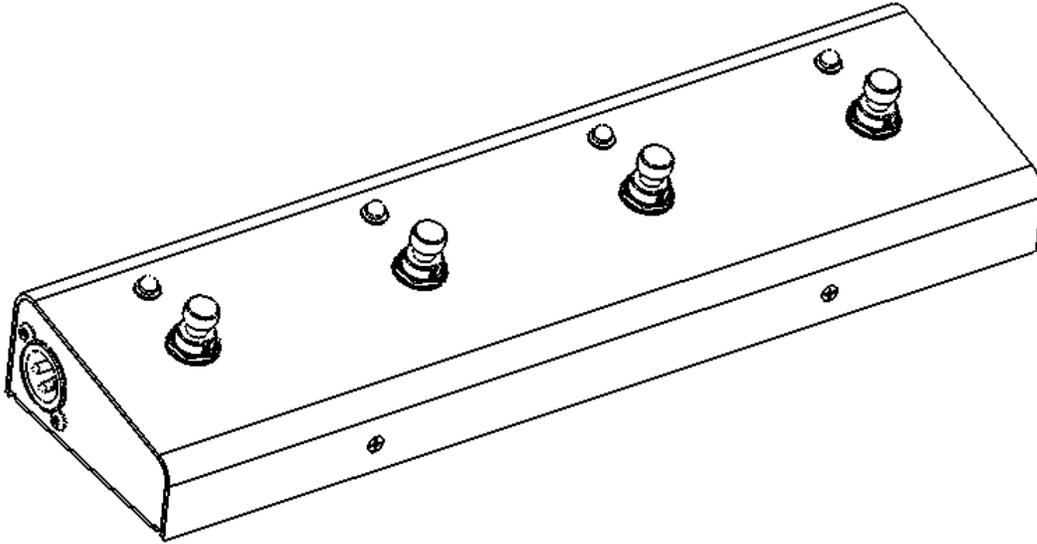


TOP VIEW

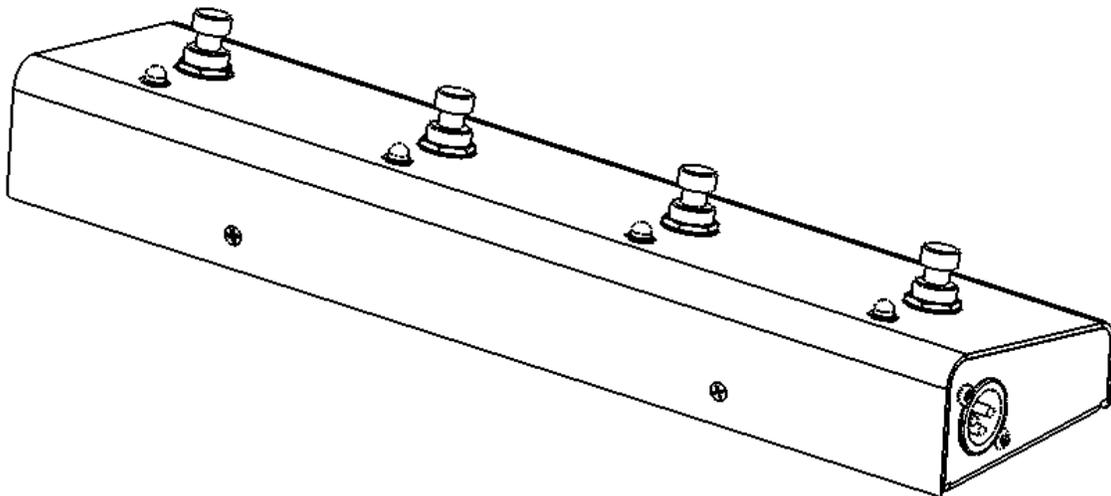


BOTTOM VIEW

Completed Unit Reference Views:



FRONT ISOMETRIC VIEW



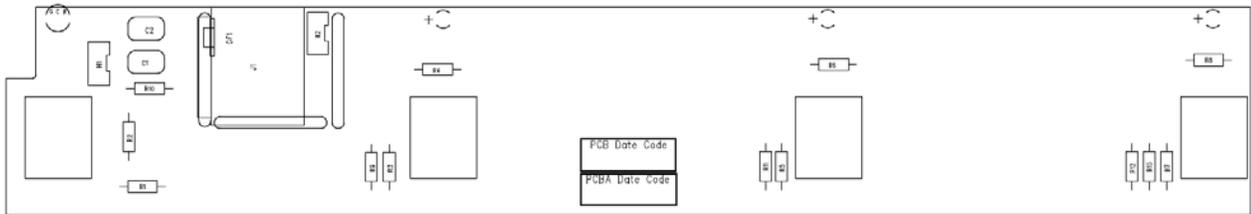
REAR ISOMETRIC VIEW

A16 FOOTSWITCH PCBA ASSEMBLY INSTRUCTIONS

Rev. A

A16 FOOTSWITCH PCBA: 50-02-0109-1,2
A16 FOOTSWITCH PCB, Rev. A: 35-00-0046-1,2

TOP

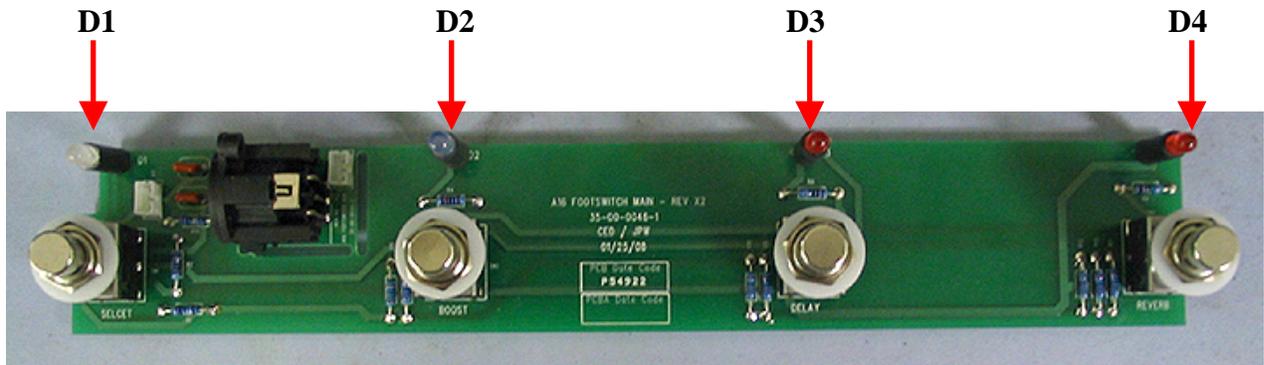


1. **“DO NOT INSTALL” COMPONENTS:** None.
2. **HEADERS:** Install headers **H1-H2** (21-20-0203) in the proper direction.

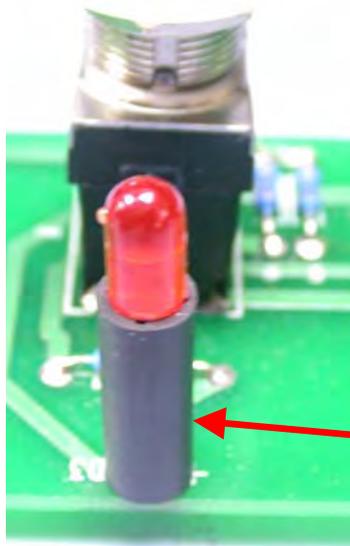
Notch



3. **BREAKAWAY BOARD:** Do not break apart breakaway board until installation in the chassis.
4. **LEDs:** Install LED's with proper polarity, and with **LED Spacers** (30-15-0740)
 - D1 = BI-COLOR (18-06-0001)
 - D2 = BLUE (18-03-0002)
 - D3-4 = RED (18-00-1503)

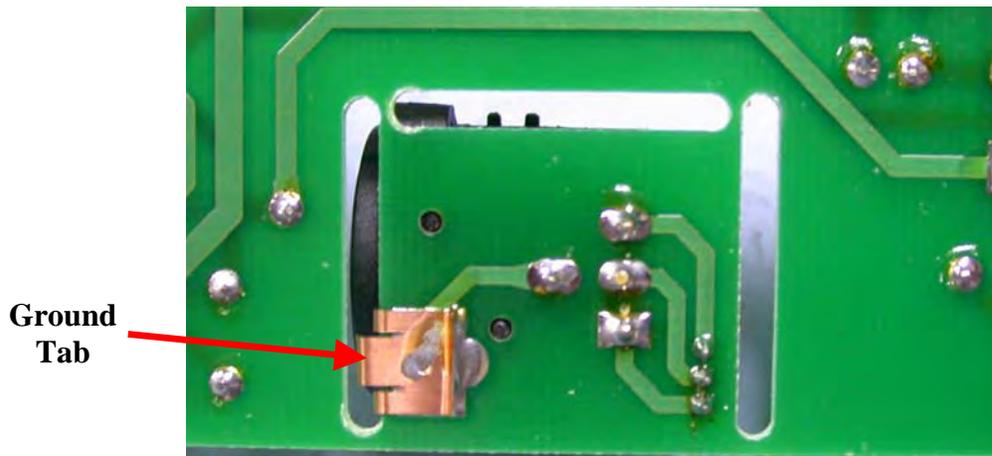


LINE 6
Engineering



LED Spacer

5. **GROUND TAB**: Solder ground tab to bottom of PCB.



6. **SWITCHES**: Mount and solder switches SW1-4 flush to the board.

- END OF FOOTSWITCH PCBA INSTRUCTIONS -

PCBA ASSEMBLY INSTRUCTIONS REVISION CHANGE HISTORY

REVISION	NOTES	DATE	RELEASED BY
A	Initial Release - For Beta Build.	06/19/08	Jim Williams