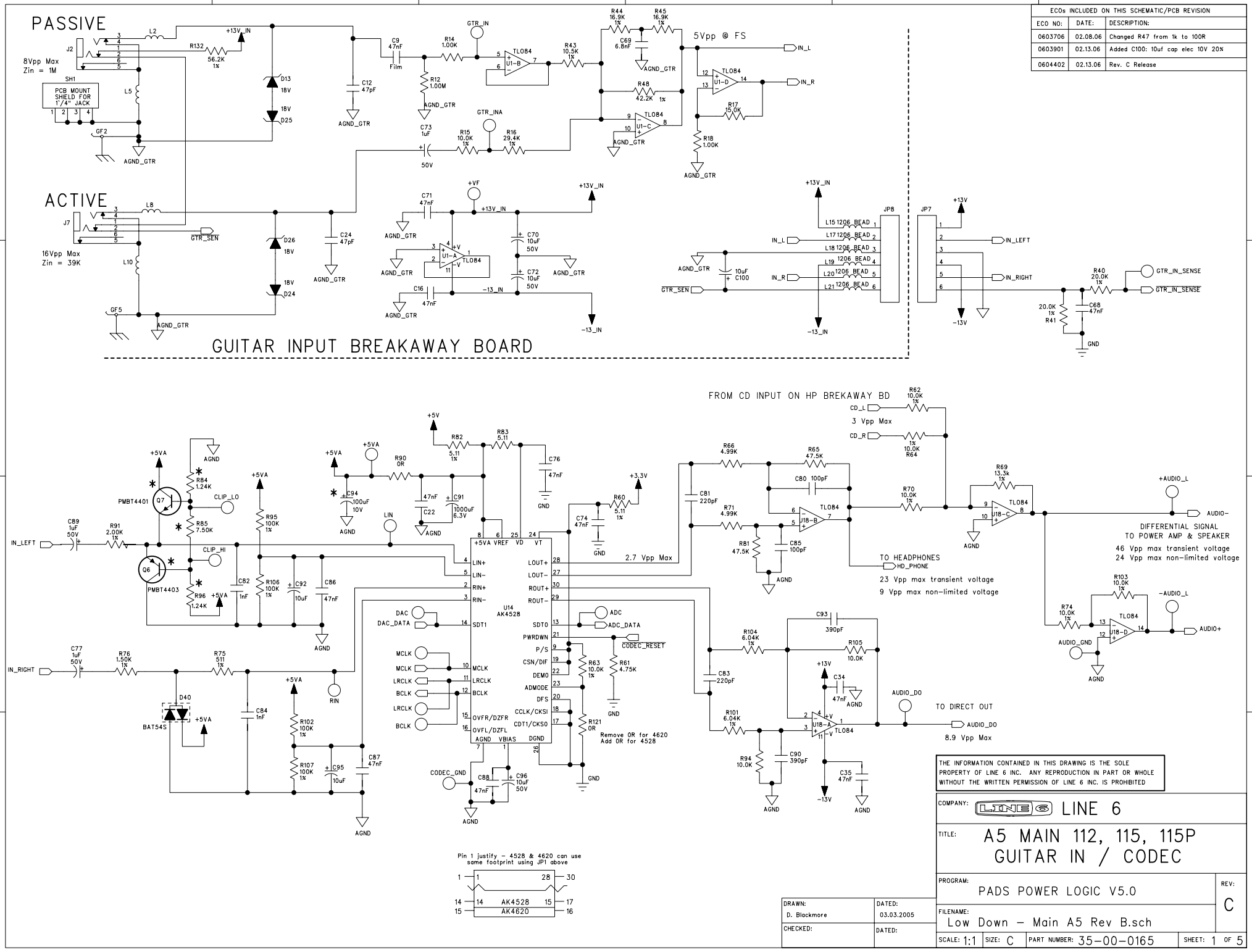
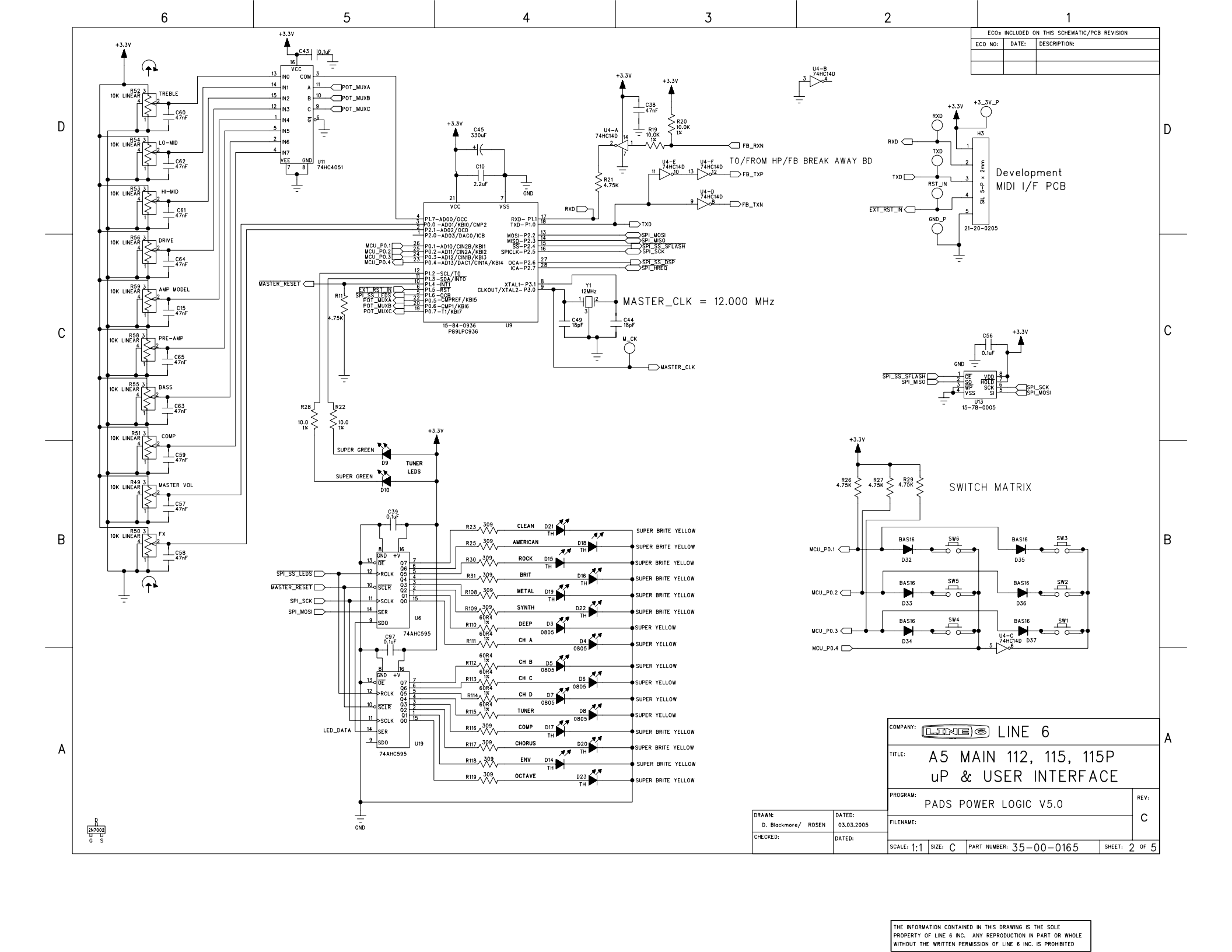
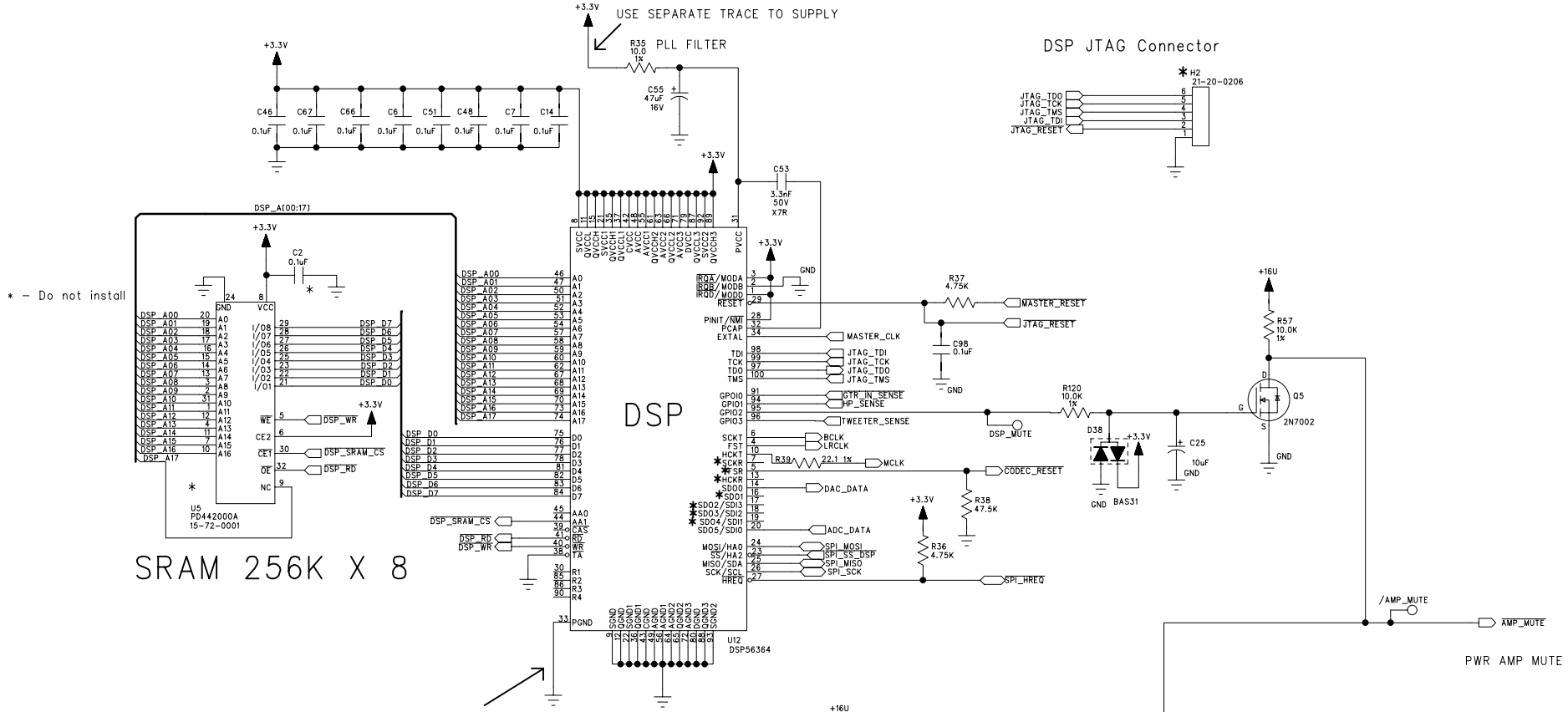
LD 150 LD 175 LD 300 Pro

Service Manual

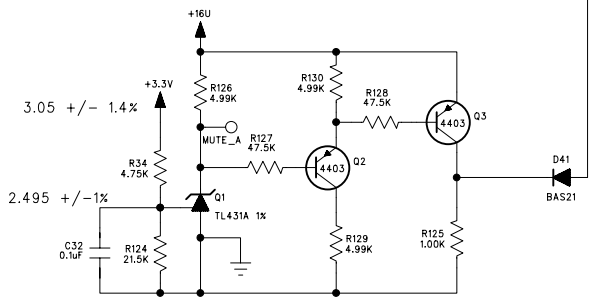

PASSIVE
8Vpp Max
Zin = 1M
PCB MOUNT SHIELD FOR 1"/4" JACK
5Vpp @ FS
ACTIVE
16Vpp Max
Zin = 39K
GUITAR INPUT BREAKAWAY BOARD
ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION
ECO NO: | DATE: | DESCRIPTION:
0603706 | 02.08.06 | Changed R47 from 1k to 100R
0603901 | 02.13.06 | Added C100: 10uf cap elec 10V 20%
0604402 | 02.13.06 | Rev. C Release
FROM CD INPUT ON HP BREKAWAY BD
3 Vpp Max
TO HEADPHONES
HD_PHONE
23 Vpp max transient voltage
9 Vpp max non-limited voltage
DIFFERENTIAL SIGNAL
TO POWER AMP & SPEAKER
46 Vpp max transient voltage
24 Vpp max non-limited voltage
2.7 Vpp Max
TO DIRECT OUT
8.9 Vpp Max
Remove OR for 4620
Add OR for 4528
Pin 1 justify – 4528 & 4620 can use same footprint using JP1 above
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: A5 MAIN 112, 115, 115P GUITAR IN / CODEC
PROGRAM: PADS POWER LOGIC V5.0
REV: C
FILENAME: Low Down – Main A5 Rev B.sch
DRAWN: D. Blackmore
DATED: 03.03.2005
CHECKED:
DATED:
SCALE: 1:1
SIZE: C
PART NUMBER: 35-00-0165
SHEET: 1 OF 5



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



DSP CORE CLOCK = 99,993,600 Hz (approx 100MHz)
MCLK 256FS_CLK = ??M Hz
BCLK 64FS_CLK = ??M Hz
LRCLK FS_CLK =??K Hz

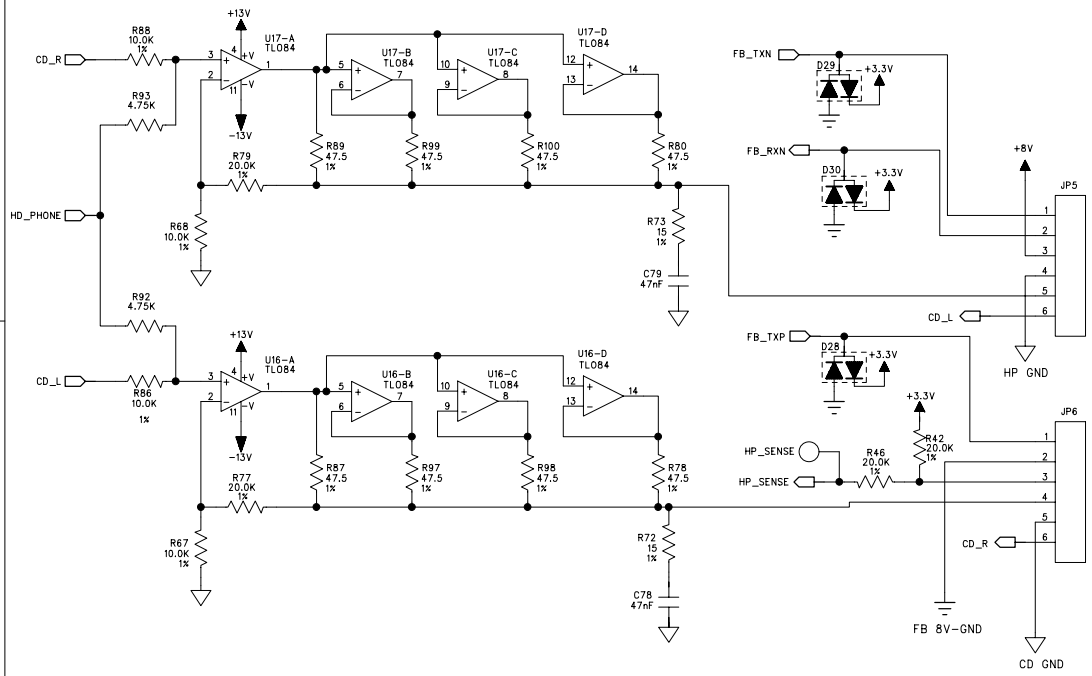


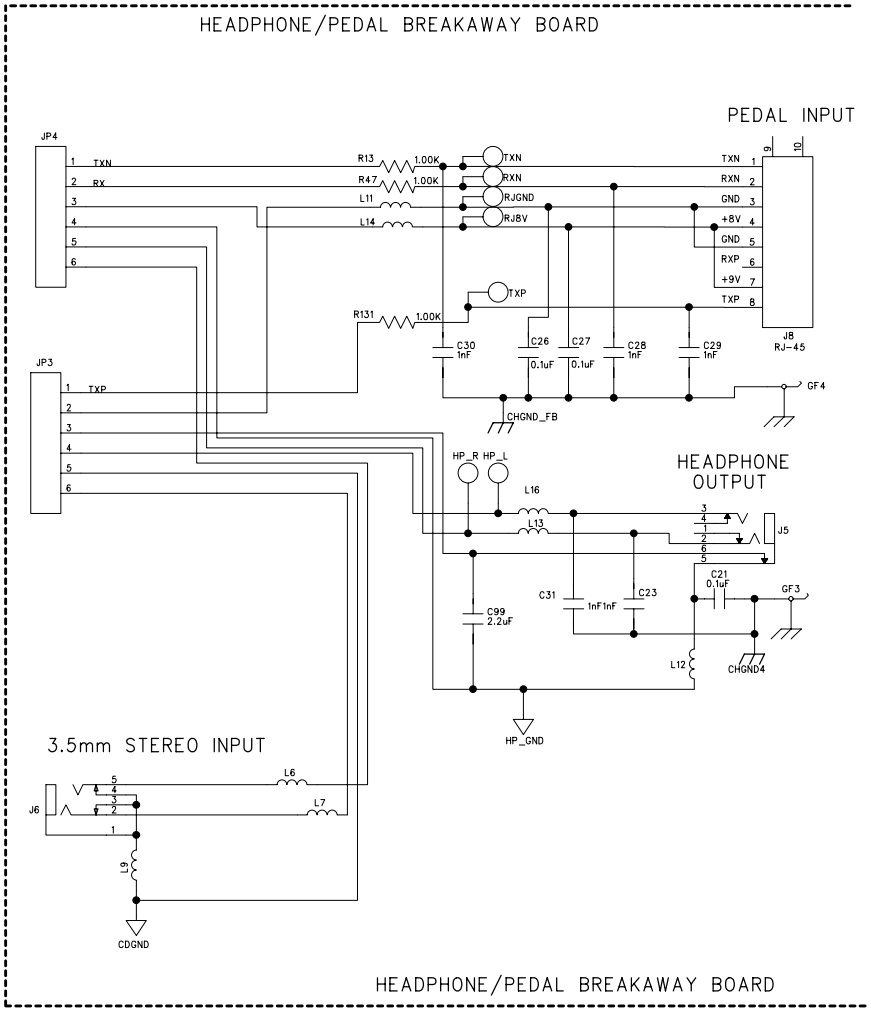
POWER FAIL DETECT:

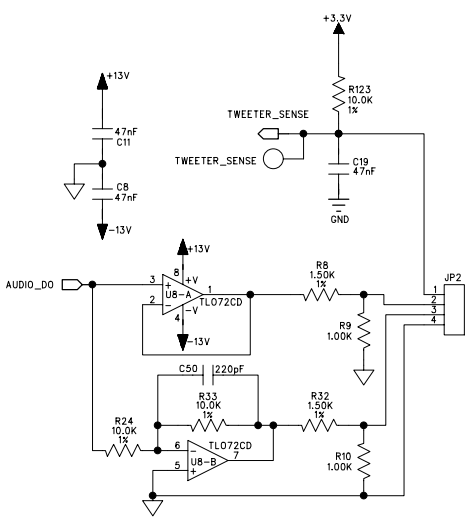
Q1 turns off at 3.3V<3.05V +/-1.4%
Q2 off, Q3 off, R125 pulls MUTE low

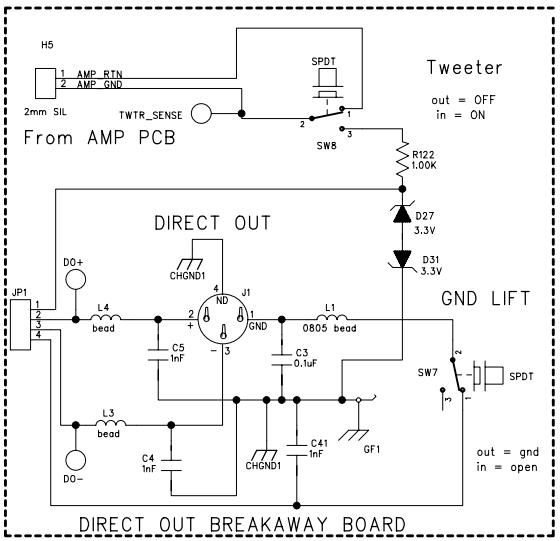
DRAWN: D. Blackmore	DATED: 03.03.2005	COMPANY: LINE 6	
CHECKED: Name (F.Last)	DATED: 00/00/01	TITLE: A5 MAIN 112, 115, 115P DSP	
		PROGRAM: PADS POWER LOGIC V4.0	REV: C
		FILENAME: A5 Main Rev A.sch	
		SCALE: 1:1 SIZE: C PART NUMBER: 35-00-0165	SHEET: 3 OF 5

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









COMPANY: LINE 6

TITLE: A5 MAIN 112, 115, 115P
DIRECT OUT / HEADPHONE AMP

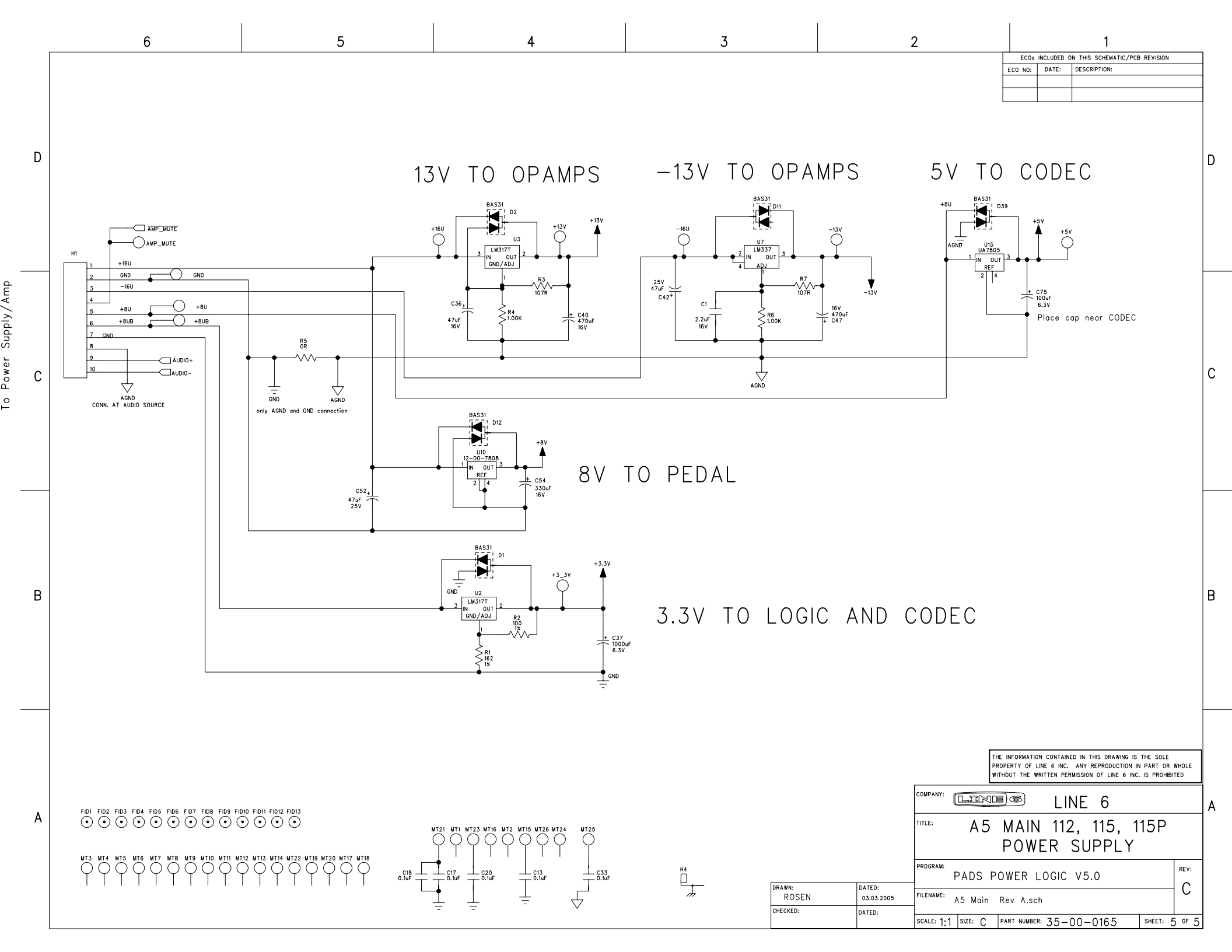
PROGRAM: PADS POWER LOGIC V5.0

REV: C

DRAWN:	DATED:
D. Blackmore	03.03.2005
CHECKED:	DATED: Date

FILENAME: A5 Main Rev A.sch

SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0165 | SHEET: 4 OF 5


ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION
ECO NO: DATE: DESCRIPTION:
13V TO OPAMPS
−13V TO OPAMPS
5V TO CODEC
8V TO PEDAL
3.3V TO LOGIC AND CODEC
To Power Supply/Amp
H1
AMP_MUTE
+16U
GND
−16U
+8U
+8UB
AUDIO+
AUDIO−
AGND
CONN. AT AUDIO SOURCE
R5 0R
only AGND and GND connection
BAS31 D2
U3 LM317T
R3 107R
R4 1.00K
C36 47uF 16V
C40 470uF 16V
+13V
BAS31 D11
U7 LM337
R7 107R
R6 1.00K
C42 25V 47uF
C1 2.2uF 16V
C47 16V 470uF
−13V
BAS31 D39
U15 UA7805
C75 100uF 6.3V
+5V
Place cap near CODEC
BAS31 D12
U10 12-00-7808
C54 330uF 16V
C52 47uF 25V
+8V
BAS31 D1
U2 LM317T
R2 100 1%
R1 162 1%
C37 1000uF 6.3V
+3_3V
+3.3V
FID1 FID2 FID3 FID4 FID5 FID6 FID7 FID8 FID9 FID10 FID11 FID12 FID13
MT3 MT4 MT5 MT6 MT7 MT8 MT9 MT10 MT11 MT12 MT13 MT14 MT22 MT19 MT20 MT17 MT18
MT21 MT1 MT23 MT16 MT2 MT15 MT26 MT24 MT25
C18 0.1uF
C17 0.1uF
C20 0.1uF
C13 0.1uF
C33 0.1uF
H4
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: A5 MAIN 112, 115, 115P POWER SUPPLY
PROGRAM: PADS POWER LOGIC V5.0
REV: C
FILENAME: A5 Main Rev A.sch
DRAWN: ROSEN
DATED: 03.03.2005
CHECKED:
DATED:
SCALE: 1:1
SIZE: C
PART NUMBER: 35-00-0165
SHEET: 5 OF 5

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0532103	11.17.05	Released to MFG as rev.A (A5-1/A5-2)

@ DAC max out = 5.4Vpp
DAC buffer gain = 4.4
Max input to power amp = 23.8Vpp
23.8Vpp x 0.154 x 21.1 = 77.3Vpp = 187 Watt pk

@ DAC out = 4.86Vpp
DAC buffer gain = 4.4
Input to power amp = 21.4Vpp
21.4Vpp x 3.24 = 69.3Vpp = 150 Watt

Power amp gain = 3.24

23.8Vpp max

77 Vpp max
187 Watt pk

FROM POWER SUPPLY PCBA

12V REGULATOR
REF TO -16U RAIL

Pin 7 is GND from MAIN PCBA

To Speakers

Front Panel Tweeter Switch

NTC Thermistor

TEMP(C)	RES	V(wrt-16U)
0	35K	2.9v
25	15K	5.2v
50	5K5	8.1v
80	2K	10.2v
110	800R	11.2v

turn-on @ 51 C

H1 for test of fan control
Inject TBD VDC for Q3/Q4 turn-on
Inject TBD VDC for Q1/Q2 turn-on

TARGETED
FAN SPEED VS. TEMP.

55C HIGH
40C LOW
77C
OFF
51C

FAN
12VDC
180mA max

* Voltage w.r.t. -16U

DRAWN:	ROSEN	DATED:	10/1/05
CHECKED:		DATED:	Date

COMPANY: LINE 6
TITLE: A5 150W Power Amp
PROGRAM: PADS POWER LOGIC V5.0
REV: A
FILENAME: A5/../Power Amp/Rev A/Power Amp Rev A.sch
SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0166 | SHEET: 1 OF 1

Max Sagged Amp Output = 300W
300W @ 8R = 138Vpp
138Vpp / (2x5.49) = 12.6Vpp = max poweramp input
12.6Vpp / 4.4 (DAC Buffer Gain) = 2.86Vpp
2.86Vpp = 53% FSDAC out

So, 53% FS DAC = max sagged power

Max UnSagged Amp Output = 343W
343W @ 8R = 148Vpp
148Vpp / (2x5.49) = 13.5Vpp = max poweramp input
13.5Vpp / 4.4 (DAC Buffer Gain) = 3.07Vpp
2.86Vpp = 57% FSDAC out

So, 57% FS DAC = max sagged power

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0532103	11.17.05	Released to MFG as rev.A (A5-3)

Power amp gain = 5.49 (14.8dB)

AUDIO- / AUDIO+
23.8Vpp pk
20.7Vpp cont.

77 Vpp max

STDBY
MUTE
AMP_MUTE

Front Panel Tweeter Switch

To Speakers

Power amp gain = 3.24

AMP_BUFFER_+
AMP_BUFFER_-

FROM POWER SUPPLY PCBA

12V REGULATOR

All voltages in fan circuit (dotted line) are referenced to -16U.

Pin 7 is GND from MAIN PCBA

NTC Thermistor

TEMP(C)	RES	V(wrt-16U)
0	35K	2.9v
25	15K	5.2v
50	5K5	8.1v
80	2K	10.2v
110	800R	11.2v

H1 for test of fan control
Inject TBD VDC for Q1/Q2 turn-on
turn-on @ 51 C

TARGETED FAN SPEED VS. TEMP.

Therm temp: 44C 51.4C HIGH
LOW
VT: 8.1V 8.8V

* Voltage w.r.t. -16U
* 8.25V

FAN 12VDC 180mA max

MT1 MT2

DRAWN: ROSEN	DATED: 11/7/05
CHECKED:	DATED: Date

COMPANY: LINE 6
TITLE: A5 300W Power Amp
PROGRAM: PADS POWER LOGIC V5.0
REV: A
FILENAME: A5/../Power Amp/Rev A/A5 300W Power Amp Rev A.sch
SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0172 | SHEET: 1 OF 1

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0532103	11.17.05	Released to MFG as rev.A (A5-1/A5-2)

PANEL MOUNT SWITCH 24-24-0606

CHASSIS

CHASSIS

120/230VAC 50/60HZ

H7

F1

H8

L2 Ferrite

L1

C17 0.22uF

C23 1nF

C22 1nF

MT4 MT3 MT2 MT1

FOR 220/240VAC USE 250V/2A TIME DELAY 24-18-2251 Littlefuse#218 002 or equiv.

FOR 100/120VAC USE 125V/4A TIME DELAY 24-19-4025 Littlefuse#239 004 or equiv.

CABLING TO TRANSFORMER DETERMINES HIGH OR LOW VOLTAGE RANGE BY PLUGGING INTO H2 OR H3 .

N/C H1-3

N/C H3-2

120/240 VOLT H3-3

H1-2 100/220 VOLT

H3-1

H1-1

DIFFERENT TRANSFORMER FOR USA & EUROPE

SPIDER II 210/212/HD:
100/120V = 11-30-0008
220/240V = 11-30-0009

H4 SIL 5-P x .156 (1 2 3 4 5)

D1

C18 4700uF 50V

R1 47K

C1 4700uF 50V

V+

V-

C14 1000uF 35V

B340LA D14

D15 B340LA

C2 1000uF 35V

+16U

+16U

C7 1000uF 35V

D13 B340LA

B340LA D12

C6 1000uF 35V

-16U

-16U

D18 S3DB-13 3A@200V

C47 4700uF 16V

+8U

AGND

+8U for 3.3V REG

+8U

+16U

+8U

H5 SIL 8-P x .156 (1 2 3 4 5 6 7 8 9 10)

To MAIN PCBA

AMP_MUTE

AUDIO_GND

AUDIO+

AUDIO-

-16U

AGND

-16U

AGND for 3.3V REG

V+

H2 SIL 8-P x .156 (1 2 3 4 5 6 7 8)

To POWER AMP PCBA

AGND

-16U

V-

DRAWN:	ROSEN	DATED:	3/1/05
CHECKED:		DATED:	Date

COMPANY: LINE 6

TITLE: A5-1,2 Power Supply 150 Watt

PROGRAM: PADS POWER LOGIC V5.0

REV: A

FILENAME: A5/../Power Amp/Rev A/Power Amp Rev A.sch

SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0167 | SHEET: 1 OF 1

ECOs INCLUDED ON THIS SCHEMATIC/PCB REVISION		
ECO NO:	DATE:	DESCRIPTION:
0532105	11.17.05	Released to MFG as rev.A (A5-3)

PANEL MOUNT SWITCH 24-24-0606

CHASSIS

CHASSIS

120/230VAC 50/60HZ

FOR 220/240VAC USE 250V/4A FAST 24-19-4251 Schurter FSF 0034.1522 or equiv.

FOR 100/120VAC USE 125V/6.3A FAST 24-19-6326 Schurter FSF 0034.1524 or equiv.

CABLING TO TRANSFORMER DETERMINES HIGH OR LOW VOLTAGE RANGE BY PLUGGING INTO J1 OR J2 .

DIFFERENT TRANSFORMER FOR USA & EUROPE
100/120V = 11-32-0002
220/240V = 11-30-0001

H7 F1 L3 C17 0.22uF

H8 L4

N/C H1-3
N/C H3-2
120/240 VOLT H3-3
H1-2 100/220 VOLT
H3-1
H1-1

C11 1nF C10 1nF

MT4 MT3 MT2 MT1

H4

KBU8J D2

C4 10,000uF 50v
C5 10,000uF 50v
R2 47K
AGND
V+
V-

D4 1N4002 D10 1N4002
D3 1N4002 D5 1N4002
C8 6800uF 16V
+8U

D9 1N4002 D8 1N4002
D6 1N4002 D7 1N4002
C9 1000uF 35V
C12 1000uF 35V
AGND
R3 2.4K
+16U
-16U

+8U for 3.3V REG
+8U
+8U for 3.3V REG
+8U
TP9
+16U
TP8
H5
To MAIN PCBA
1 2 3 4 5 6 7 8 9 10
TP1
TP2
AMP_MUTE
TP3
AUDIO_GND
TP4
AUDIO+
TP5
AUDIO-
V+
H2
1 2 3 4 5 6 7 8
SIL 8-P x .156
To POWER AMP PCBA
AGND
-16U
V-
TP6
TP7
AGND
-16U
AGND for 3.3V REG

DRAWN: ROSEN	DATED: 3/1/05
CHECKED:	DATED: Date

COMPANY: LINE 6

TITLE: A5-3 300W Power Supply

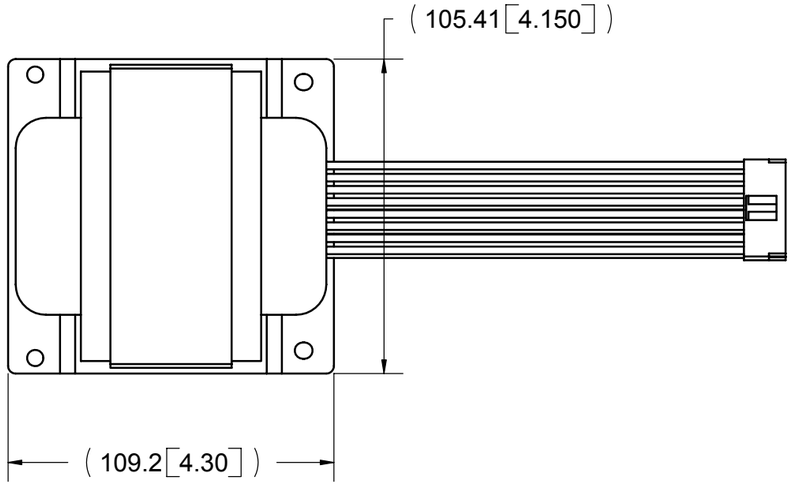
PROGRAM: PADS POWER LOGIC V5.0

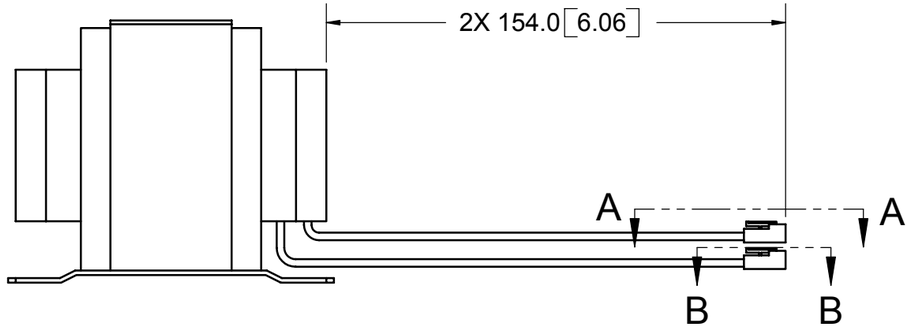
REV: A

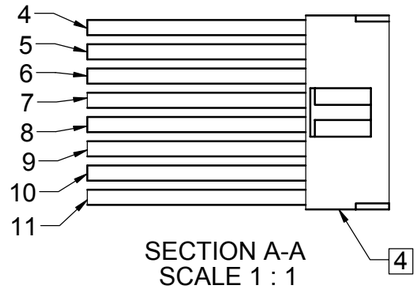
FILENAME: A5/../Power Amp/Rev X0/A5 PSU300.sch

SCALE: 1:1 | SIZE: C | PART NUMBER: 35-00-0173 | SHEET: 1 OF 1

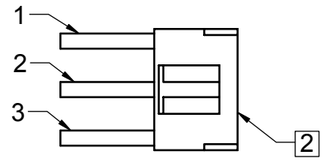
REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE



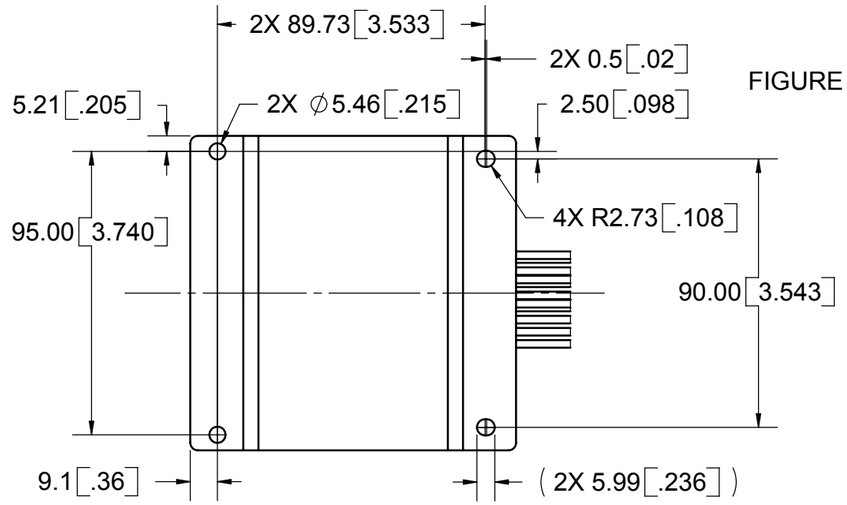




SECTION A-A
SCALE 1 : 1



SECTION B-B
SCALE 1 : 1



BOTTOM VIEW
MOUNTING HOLES

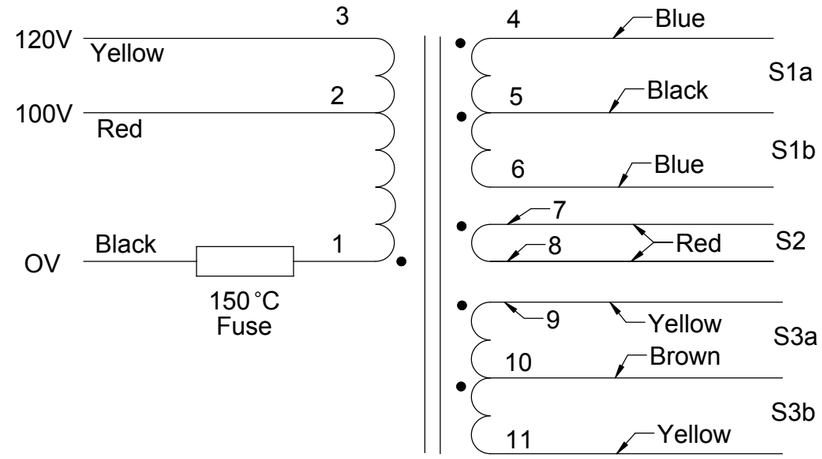


FIGURE 1 - TRANSFORMER SCHEMATIC

SECONDARY WINDINGS		
	No Load	Load
S1a	33.4V	4500mA @ 31.0V
S1b	33.4V	4500mA @ 31.0V
S2	9.7V	2500mA @ 9.0V
S3a	15.7V	500mA @ 15.0V
S3b	15.7V	500mA @ 15.0V

NOTES:

1. MATERIAL: ALL WIRE SHALL BE 18 AWG STRANDED, UL RECOGNIZED, 105 °C, 300 V.
2. AUK P/N VH 3.96-5P
3. COLOR: WIRE COLORS AS NOTED IN FIGURE 1.
4. AUK P/N VH 3.96-8P
5. NO FEATURES OR DIMENSIONS SHALL BE CHANGED IN ANY WAY WITHOUT WRITTEN APPROVAL FROM A LINE 6 ENGINEERING REPRESENTATIVE.
6. 130 °C INSULATION SYSTEM ON ALL TRANSFORMER MATERIALS.

UNLESS OTHERWISE SPECIFIED
A. ALL DIMENSIONS AND TOLERANCES IAW ANSI Y14.5M, 1994
B. UNBRACKETED DIMENSIONS ARE MILLIMETERS
C. BRACKETED DIMENSIONS ([ ]) ARE INCHES
D. TOLERANCES ARE MATERIAL DEPENDANT AS LISTED BELOW:

METALS AND ELECTRICAL: X ± 0.8 [.XX ± .03] .XX ± 0.38 [.XXX ± .015]
PLASTICS: .X ± 0.3 [.XX ± .01] .XX ± 0.13 [.XXX ± .005]
WOOD: .X ± 0.8 [.XX ± .03] .XX ± 0.38 [.XXX ± .015]
ANGULAR TOL (ALL MATERIALS) ± .5°
THIRD ANGLE

CAD GENERATED DRAWING, NO MANUAL UPDATES

APPROVALS	DATE
DRAWN SGWHITE	05/09/13
CHECKED --	--
EE ENG R.ROSEN	05/09/13
MFG ENG T.HO	05/09/13
NEXT ASSY 50-	

PARTS LIST

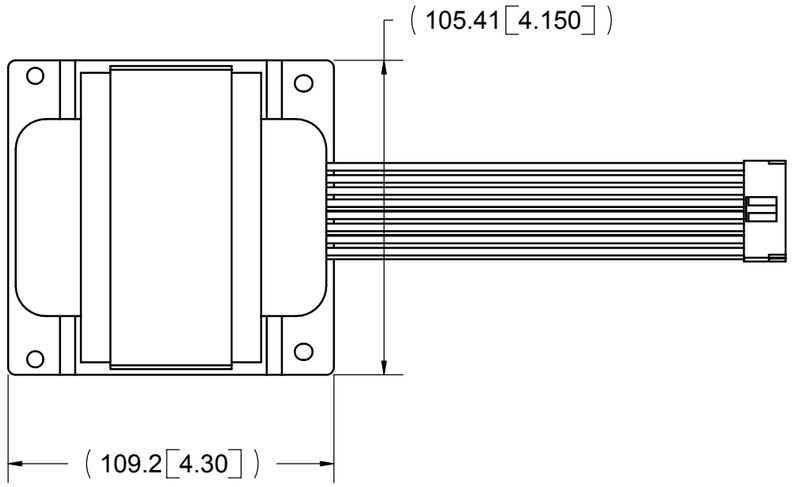
TRANSFORMER 100V/120V
--

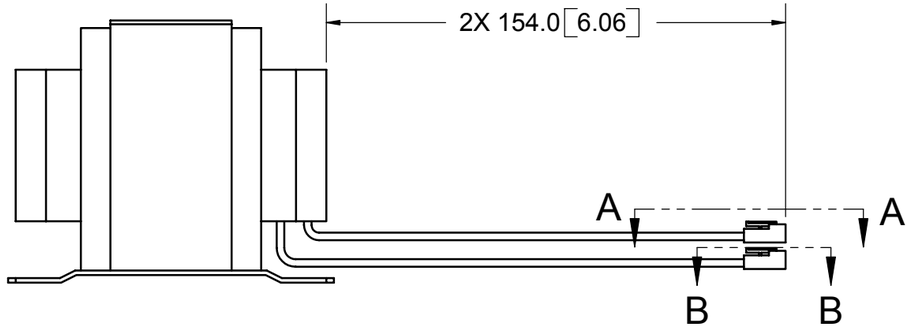
SIZE	PART NUMBER	SCALE 1:2	REV.
B	11-30-0002	DO NOT SCALE DRAWING	X0

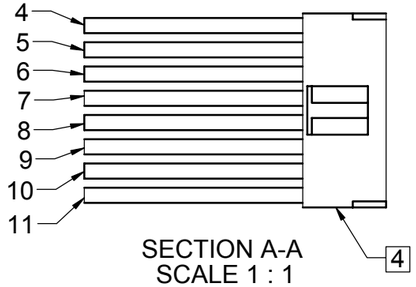
PROJECT NAME: LowDown (A5)
SHEET 1 OF 1

SOLIDWORKS CAD FILE: I:\Corp\RnD\Private\Products\A5\Mechanical\Components-assemblies\11-30-XXXX Transformer

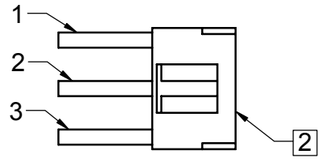
REVISIONS			
REV.	DESCRIPTION	APPROVED	DATE







SECTION A-A
SCALE 1 : 1



SECTION B-B
SCALE 1 : 1

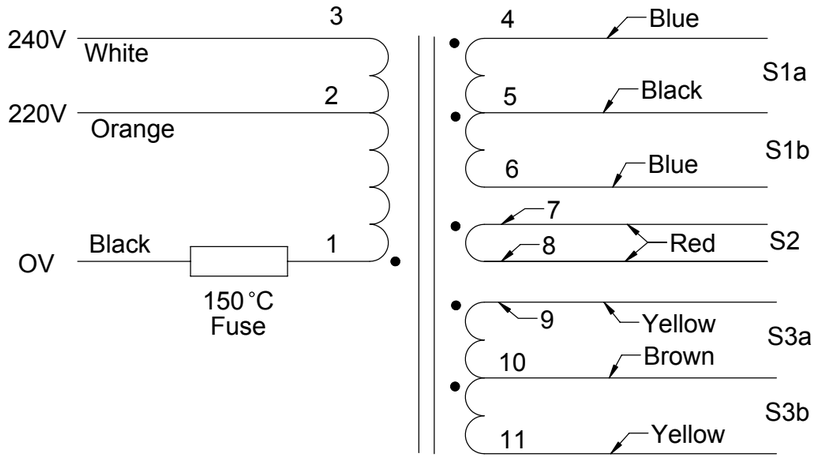
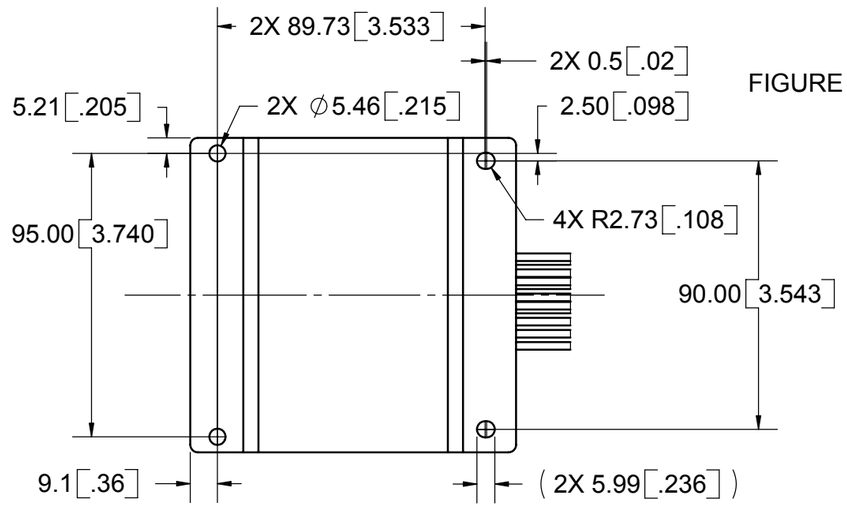


FIGURE 1 - TRANSFORMER SCHEMATIC



BOTTOM VIEW
MOUNTING HOLES

SECONDARY WINDINGS		
	No Load	Load
S1a	33.4V	4500mA @ 31.0V
S1b	33.4V	4500mA @ 31.0V
S2	9.7V	2500mA @ 9.0V
S3a	15.7V	500mA @ 15.0V
S3b	15.7V	500mA @ 15.0V

NOTES:

1. MATERIAL: ALL WIRE SHALL BE 18 AWG STRANDED,
2. AUK P/N VH 3.96-5P
3. COLOR: WIRE COLORS AS NOTED IN FIGURE 1.
4. AUK P/N VH 3.96-8P
5. NO FEATURES OR DIMENSIONS SHALL BE CHANGED IN ANY WAY WITHOUT WRITTEN APPROVAL FROM A LINE 6 ENGINEERING REPRESENTATIVE.
6. 130 °C INSULATION SYSTEM ON ALL TRANSFORMER MATERIALS.

UNLESS OTHERWISE SPECIFIED
A. ALL DIMENSIONS AND TOLERANCES IAW ANSI Y14.5M, 1994
B. UNBRACKETED DIMENSIONS ARE MILLIMETERS
C. BRACKETED DIMENSIONS ([ ]) ARE INCHES
D. TOLERANCES ARE MATERIAL DEPENDANT AS LISTED BELOW:

METALS AND ELECTRICAL: X ± 0.8 [.XX ± .03] .XX ± 0.38 [.XXX ± .015]
PLASTICS: .X ± 0.3 [.XX ± .01] .XX ± 0.13 [.XXX ± .005]
WOOD: .X ± 0.8 [.XX ± .03] .XX ± 0.38 [.XXX ± .015]
ANGULAR TOL (ALL MATERIALS) ± .5°
THIRD ANGLE

CAD GENERATED DRAWING, NO MANUAL UPDATES

APPROVALS	DATE
DRAWN SGWHITE	05/09/13
CHECKED --	--
EE ENG R.ROSEN	05/09/13
MFG ENG T.HO	05/09/13
NEXT ASSY 50-	

PARTS LIST

TRANSFORMER 220V/240V
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SIZE	PART NUMBER	SCALE 1:2	REV.
B	11-30-0001	DO NOT SCALE DRAWING	X0

PROJECT NAME: LowDown (A5)
SHEET 1 OF 1

SOLIDWORKS CAD FILE: I:\Corp\RnD\Private\Products\A5\Mechanical\Components-assemblies\11-30-XXXX Transformer

Low Down 115 Bass Amp 175W

59-00-0016-1	Low Down 115 Complete Assembly 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-30-0008	XFMR 100/120VAC 34Vx2/9V 86mm SPIDER2-210/212/HD & A5-1/2	1	
21-37-0002-5	CBL POWER US/JA 10A/250V 73" AC-PLUG to LONG CRIMP-TERM x3	1	
24-19-4025	FUSE 4A 125V TL 5x20mm Littlefuse# H239 004 or equiv.	1	
50-03-0028-1	ASSY COMPLETE SPEAKER CAB 15" w/TWEETER LOW DOWN A5-2	1	
50-04-0052	ASSY E/M CHASSIS LOW DOWN 115 A5-2	1	

50-03-0028-1	Low Down 115 Speaker Cab Assembly 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-20-0009	SPEAKER BASS 15" 4-OHM 150W HI-TOUCH P-15-114-3A	1	
11-20-1217	TWEETER PIEZO 75 Wrms BLK 98MM DIA. X 62MM HEIGHT	1	
21-36-0270-1	CBL 18AWG 4-COND TWSTED/PAIR 1-JST/.205 SPADE-Fx4 19IN/17IN	1	POWER AMP CABLE
30-00-0078	SCREW #10 x 2 3/4 SHCS BLK	2	PLASTIC FOOTER
30-00-0095	SCREW WOOD #6 x 1.0" LONG BLK PARTICLE BOARD THREAD	5	SECURES FOOTER BOTTOM
30-00-0675	SCREW WOOD NO 6 x 3/4" PHIL PHBLACK	4	SECURES TWEETER
30-00-0812	SCREW w/WAX 8 x 3/4 PTB	30	2-PER CORNER, 8-PER HANDLE, 6-GRILL
30-00-1016	SCREW 10-24 x 1" PPB STL	8	SECURES SPEAKER
30-00-3485	SCREW #3-48 x 3/8" PHIL FLAT STL BLK	2	SECURES LOGO
30-00-6839	SCREW WOOD 10-12 x 7/8" PPZ	4	SECURES RUBBER FEET
30-03-0335	WASHER #3 x .350 x .040 FLAT STEEL BLK	2	SECURES LOGO
30-03-0806	WASHER #8 0.600 OD x 0.190 ID 0.040 STL BLK OXIDE	5	SECURES FOOTER BOTTOM
30-06-0014	NUT HEX 3-48 BLK STL ZINC W/NYLON INSERT	2	SUCURES LOGO WITH SCREWS
30-06-1024	NUT-T 10-24 X 5/16 STEEL	10	8-SPEAKER, 2-PLASTIC FOOTER
30-27-0153	FOOTER 20.7" x 5.5" x 3.3" IMPHDPE BLK A5-2 A5-3	1	
30-28-0004	CORNER BACK HI-DENSITY POLYETHYLENE TEXTURED BLACK	4	
30-39-0007	CARPET SYNTHETIC 0.06" THK BLK	12.5	
30-39-0008-2	STRIP VELCRO HOOK NYLON 13" x 1.5"	1	SECURES A/C POWER CABLE
30-39-0009-1	STRIP VELCRO LOOP NYLON 6" x 1.5"	1	SECURES A/C POWER CABLE
30-51-0227	GRILL 20.4x17.5x1.5" GALV STL BLK PAINT FINISH A5-2 A5-3	1	
30-57-0006	HANDLE SIDE 8 HOLE LOW DOWN A -5	2	
30-60-0004	LOGO LINE 6 LRG 184.91x37.52mmBRUSHED/BLK FINISH AL	1	
30-63-0021	FOAM w/ADH SEG R TWEETER BLK 2.6"ID x 3.96"OD x .025 A5-2/3	1	TO SEAL TWEETER
30-63-0022	FOAM w/ADH SEG R PORT BLK 3.6"ID x 5.4"OD x 0.90" A5-2/3	2	TO SEAL BOTH PORTS
30-63-0600-1	FOAM W/ADH. 6.0" x 0.25" x 0.06" VOLARAPOLOLEFIN	2	PADS for LOGO
30-75-0008	FOOT RUBBER 1.50" I.D. x .75"HBLACK	4	
30-75-0032	U-CHANNEL RUBBER 5x0.13x0.35" BLK A5-2/3	4	BOTTOM OF GRILL

50-04-0052	Low Down 115 Chassis Assembly 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-50-0813	FAN 12V DC 25mm x 80mm x 80mm	1	Chassis-Rear
21-29-0012-2	WIRE18AWG DBL INSUL STRAND 13"1x.187/1x.205 Q-CONN FEM WH	1	AC Switch to Power Supply
21-34-0014-6	CBL SIL 8-PIN .156" PITCH 9.25-IN A5-3	1	Power Supply to Power Amp
21-34-0075-1	CBL ASSY 10-COND SIL 26AWG 4.25-IN 2mm F-F Z-TYPE BLUE A5	1	Power Supply to Main Board
21-34-0076-2	CBL SIL 2-COND 26AWG 2mm x 18"JST PHR-2 YELLOW	1	Tweeter Cable
24-21-1124	CAP SWITCH PLASTIC .354" DIA. x .197" BLK	2	Ground Lift & Tweeter Switch Caps
24-24-0606	SWITCH POWER ROCKER 6A/250VAC 10A/120VAC PNL-MNT BLK	1	Chassis-Front
30-00-0042	SCREW SHEET METAL 4 x 0.375 INSELF-TAP PPB	2	Mounts XLR Jack to Chassis
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	15	9 Main PCB, 4 Power Supply, 1 Ground, 1 Power Amp
30-00-0079	SCREW 8-32 x 1.25" PHILLIPS PHBLK	4	Mounts Fan to Chassis
30-00-0092	SCREW 8-32 x 7/16 PPB w/EXT. TOOTH WASHER STL/ZNC	2	Mounts Heat Sink to Chassis
30-00-0098	SCR 6-32 x 1/4" PHILLIPS PNH STL	1	Mounts XLR/RJ45 PCBA to Chassis
30-00-1128	SCREW 10-32 x 1-3/4 OVAL CTSK PB STL	4	Mounts Chassis to Cabinet
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	4	Chassis Mounting
30-06-0832	NUT .335 HEX 8-32 STL ZINC W/ TOOTH WASHER	8	4 Transformer, 4 Fan
30-24-0030	CABLE-TIE 4.0 IN. LG BLK Panduit p/n PLT1M-CO	4	2 Transformer, 1 Power Switch Cable, 1 Power Amp Cables.
30-45-0011	KNOB POT .77 DIA x .76 HT PLASTIC CHROME-PLATED	10	
30-51-0232-1	CHASSIS 19x8.7x3.75" LOW DOWN 0.06" THK STL A5-2	1	
30-75-0021	STRAIN RELIEF BUSHING 13.5MM x12MM	1	
30-75-0027	KEYPAD RUBBER 8.3"x1.9"x0.73" A5-1/2/3	1	
30-75-0028	COVER LED RUBBER 2.8x1.3x0.46"A5-1/2/3	1	
30-75-0029	COVER LED RUBBER 1.3x1.1x0.46"A5-1/2/3	1	
50-02-0167	PCBA POWER SUPPLY LOW DOWN 112/115 A5-1 A5-2	1	
50-02-0168	PCBA MAIN PROGRAMMED LOW DOWN 115/115P A5-2 A5-3	1	
50-04-0054	PCBA POWER AMP w/HEATSINK 150WLOW DOWN A5-1 A5-2	1	

50-02-0167	Low Down 115 Power Supply PCBA 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-12-0473	RES CARBON FILM 47K 1/4W 5% TH	1	R1
03-12-0478	CAP ELEC 4700uF 16V 20% RADIAL 16/25/7.5	1	C47
03-16-2108	CAP ELEC 1000uF 35V 20% 105C LowZ RADIAL 12.5/25/5	4	C2,C6,C7,C14
03-18-1478	CAP ELEC 4700uF 50V 20% SNAPINRADIAL 25/40/10	2	C1,C18
03-41-0224	CAP X-CAP 0.22uF 275VAC 20% POLYPROYPYLENE 18/9.5/17.5/15	1	C17
03-75-0102	CAP Y-CAP 1nF 250VAC 20% TH CER DISC 7D/7/7.5	2	C22,C23
06-16-0008	DIODE BRIDGE-RECT 8A 600V 4-PIN SIL TH KBU8J	1	D1
06-23-0340	DIODE SCHOTTKY 3A 40V SMA SM B340LA	4	D12,D13, D14,D15
06-32-0313	DIODE RECTIFIER 200V 3A SMB SM S3DB-13 - F	1	D18
11-10-2020	CHOKE WIDE BAND 1-5 TURNS ISI LB2/1.5ZA	2	L1,L2
21-18-0250	CONN QUICK-CONNECT POST .250x.032-IN AMP 63824-1	2	H7,H8
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H5
21-20-1565	HDR SIL PCB-MT 5-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H4
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H2
21-20-3123	HDR SIL PCB-MT 3-PIN X 7.92mm MALE VERT-MNT FRIC-LOCK	2	H1,H3
21-48-9521	CLIP FUSE HOLDER	2	F1
35-00-0167	PCB POWER SUPPLY LOW DOWN REV.A A5-1 A5-2	1	

50-02-0168	Low Down 115 Main PCBA 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-24-0000	RES 0R 1% 0805	3	R5,R90,R121
01-24-1000	RES 100R 1% 0805	2	R2,R47
01-24-1001	RES 1.00K 1% 0805	10	R4,R6,R9,R10,R13,R14,R18,R122,R125,R131
01-24-1002	RES 10.0K 1% 0805	20	R15,R19,R20,R24,R33,R57,R62-R64,R67,R68,R70,R74,R86, R88,R94,R103,R105,R120,R123
01-24-1003	RES 100K 1% 0805	4	R95,R102,R106,R107
01-24-1004	RES 1.00M 1% 0805	1	R12
01-24-1052	RES 10.5K 1% 0805	1	R43
01-24-1070	RES 107R 1% 0805	2	R3,R7
01-24-10R0	RES 10.0R 1% 0805	3	R22,R28,R35
01-24-1332	RES 13.3K 1% 0805	1	R69
01-24-1501	RES 1.50K 1% 0805	3	R8,R32,R76
01-24-1502	RES 15.0K 1% 0805	1	R17
01-24-15R0	RES 15R 1% 0805	2	R72,R73
01-24-1620	RES 162R 1% 0805	1	R1
01-24-1692	RES 16.9K 1% 0805	2	R44,R45
01-24-2001	RES 2.00K 1% 0805	1	R91
01-24-2002	RES 20.0K 1% 0805	6	R40,R41,R42,R46,R77,R79
01-24-2152	RES 21.5K 1% 0805	1	R124
01-24-22R1	RES 22.1R 1% 0805	1	R39
01-24-2942	RES 29.4K 1% 0805	1	R16
01-24-3090	RES 309R 1% 0805	10	R23,R25,R30,R31,R108,R109,R116,R117,R118,R119
01-24-4222	RES 42.2K 1% 0805	1	R48
01-24-4751	RES 4.75K 1% 0805	11	R11,R21,R26,R27,R29,R34,R36,R37,R61,R92,R93
01-24-4752	RES 47.5K 1% 0805	5	R38,R65,R81,R127,R128
01-24-47R5	RES 47.5R 1% 0805	8	R78,R80,R87,R89,R97,R98.R99,R100
01-24-4990	RES 499R 1% 0805	1	R75
01-24-4991	RES 4.99K 1% 0805	5	R66,R71,R126,R129,130
01-24-5622	RES 56.2K 1% 0805	1	R132
01-24-5R11	RES 5.11R 1% 0805	3	R60,R82,R83
01-24-6041	RES 6.04K 1% 0805	2	R101,R104
01-24-60R4	RES 60.4R 1% 0805	6	R110-R115
01-48-0102	POT MONO 10KB LINEAR TAPER 25 mm D-SHAFT MEDIUM TORQUE	10	R49,R50,R51,R52,R53,R54,R55R56,R58,R59
03-10-1106	CAP ELEC 10uF 10V 20% RADIAL 3/5/5	1	C100
03-10-1107	CAP ELEC 100uF 6.3V 20% RADIAL5/11/5	1	C75
03-10-6108	CAP ELEC 1000uF 6.3V 20% RADIAL 8/11.5/5	2	C37,C91
03-12-0337	CAP ELEC 330uF 16V 20% RADIAL 8/11.5/5	2	C45,C54

50-02-0168	Low Down 115 Main PCBA 175W		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
03-12-1477	CAP ELEC 470uF 16V 20% RADIAL 8/12/5	2	C40,C47
03-14-0476	CAP ELEC 47uF 25V 20% RADIAL 6.3/7/5	2	C42,C52
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	3	C73,C77,C89
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	6	C25,C70,C72,C92,C95,C96
03-27-0682	CAP POLYESTER 6.8nF 50V 5% TH 7/3/6/5	1	C69
03-45-0473	CAP 47nF 16V 20% 1206 FILM	1	C9
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	3	C1,C10,C99
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C80,C85
03-50-0221	CAP NPO 220pF 50V 5% 0805	3	C50,C81,C83
03-50-0391	CAP NPO 390pF 50v 5% 0805	2	C90,C93
03-52-0102	CAP X7R 1nF 50V 10% 0805	10	C4,C5,C23,C28,C29,C30,C31,C41,C82,C84
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	23	C3,C6,C7,C13,C14,C17,C18,C20,C21,C26,C27,C32,C33,C39,C43, C46,C48,C51,C56,C66,C67,C97,C98
03-52-0332	CAP X7R 3.3nF 50V 10% 0805	1	C53
03-52-0470	CAP X7R 47pF 50V 10% 0805	2	C12,C24
03-52-0473	CAP X7R 47nF 50V 10% 0805	27	C8,C11,C15,C16,C19,C22,C34,C35,C38,C57-C65,C68,C71,C74,C76, C78,C79,C86,C87,C88
03-56-0180	CAP NPO 18pF 50V 5% 0603	2	C44,C49
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM BAT54S	1	D40
06-28-0330	DIODE ZENER 3.3V 5% 500mW SOD-123 SM	2	D27,D31
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	4	D13,D24,D25,D26
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	6	D32-D37
06-34-0021	DIODE SWITCHING 250V 200mA 50nS SOT-23 SM BAS21LT1	1	D41
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	9	D1,D2,D11,D12,D28,D29D30,D38,D39
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	1	Q5
09-10-4403	TRANS PNP SMALL-SIGNAL MBT4403SOT-23 SM	2	Q2,Q3
11-00-1201	CRYSTAL 12MHZ SHORT-CAN HC49 TH	1	Y1
11-10-2012	FERRITE BEAD 600R@100MHZ 300mA 0805 SM	15	L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L16
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	2	U2,U3
12-00-0337	IC VREG ADJ -1.5-37V 1.5 AMP TH TO-220 LM337	1	U7
12-00-0431	IC REG ADJ PREC SHUNT 2.495V 1% TO-226/TO-92 TH TL431ACLP	1	Q1
12-00-7808	IC REG +8V 1A TO-220 TH LM7808	1	U10
12-02-7805	IC REG +5v 1.5 Amp TH	1	U15
12-54-0072	IC OP-AMP DUAL TL072CD SM	1	U8
12-54-0084	IC OP AMP QUAD TL084CD SM	4	U1,U16,U17,U18
12-64-4528	IC CONVERTER 24B 48/96KHz AUDIO CODEC SM AK4528	1	U14
15-62-0014	IC 74HC14 INVERTER HEX SCHMITT TRIGGER SO-14 SM	1	U4

50-02-0168	Low Down 115 Main PCBA 175W		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
15-62-4051	IC 74HC4051 8 TO 1 ANALOG MUX/DMUX SM 74HC4051	1	U11
15-86-0364	IC DSP 24-BIT TQFP-100 SM DSPB56364AF100	1	U12
18-02-0001	LED YELLOW SUPERBRITE T1(3MM) TH WP7104SYC	10	D14,D15,D16,D17,D18,D19,D20,D21,D22,D23
18-22-0003	LED YELLOW SUPER 2.0x1.2x1.1mmAP2012SYC SM	6	D3,D4,D5,D6,D7,D8
18-24-0003	LED GREEN SUPER SML-LX0805SGC-TR 0805 SM	2	D9,D10
21-00-6617	JACK 1/4" TRS 6-PIN PCB MT HORIZ TH W/CHROME HRDWARE	3	J2,J5,J7
21-08-0013	JACK XLR MALE PCB MNT RT ANG TH NEUTRIK-NC3MAH	1	J1
21-12-0035	JACK 3.5mm STEREO 5 PIN CRIMPED LEADS NON-THREADED	1	J6
21-16-0045	JACK RJ-45 8-PIN FEMALE PCB-MNT RT-ANG	1	J8
21-18-0005	TERM SCREW PCB MT RT ANGLE TH A5-1/2/3	1	H4
21-20-0202	HDR SIL PCB-MT 2-PIN x 2mm MALE SHRD VERT MT TH	1	H5
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-30-0015-1	CBL RIBBON SIL 6-COND 1.75 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP4 to JP5
21-30-0015-2	CBL RIBBON SIL 6-COND 2.0 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP3 to JP6
21-30-0015-3	CBL RIBBON SIL 6-COND 2.5 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP7 to JP8
21-30-0016-1	CBL RIBBON SIL 4-COND 1.75 IN 2mm 26AWG w SPLIT ENDS S/T	1	JP1 to JP2
24-01-0003	SWITCH LATCHING PUSH BUTTON SPDT 3-PIN SIL HORIZONTAL TH	2	SW7,SW8
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	4	(U2,U3,U7,U10)
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U10)
30-12-2210	STANDOFF HEX .250 6-32 F-F .500 LG AL	3	(U2,U3,U7)
30-15-0004	SPACER .13THKx.63OD NYLON	3	(J2,J5,J7)
30-15-0007	INSULATOR XTAL 4.9mm C-C 11.8x5.6mm MYLAR	1	(Y1)
30-18-3030	CLIP GND PCB .30x.30x.07	5	GF1,GF2,GF3,GF4,GF5
30-51-0146	SHIELD PCB MT FOR 1/4 JACK 1.00 Hx1.25Wx.013THK BERYL COP	1	SH1
35-00-0165	PCB MAIN LOW DOWN REV C A5-1 A5-2 A5-3	1	
35-00-0168	PCB INPUT SHIELD LOW DOWN REV.A A5-1 A5-2 A5-3	1	
45-01-0023	IC PROGRAMMED MCU v1.00 LOW DOWN A5	1	U9
45-02-0032	IC PROGRAMMED FLASH v1.00 LOW DOWN A5-2/A5-3	1	U13

50-04-0054	Low Down Power Amp PCBA 175W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-04-02R2	RES 2.2R 5% 1206	1	R11
01-22-02R2	RES METAL OXIDE 2.2R 2W 5% TH	1	R21
01-23-0510-1	RES METAL OXIDE 51R 3W 5% TH	1	R18
01-23-0510-2	RES METAL OXIDE 51R 5W 5% TH	1	R10
01-24-1002	RES 10.0K 1% 0805	6	R2,R3,R7,R8,R9,R15
01-24-1003	RES 100K 1% 0805	2	R6,R16
01-24-10R0	RES 10.0R 1% 0805	1	R20
01-24-1132	RES 11.3K 1% 0805	1	R22
01-24-1211	RES 1.21K 1/8W 1% 0805	1	R19
01-24-1431	RES 1.43K 1% 0805	1	R14
01-24-1692	RES 16.9K 1% 0805	1	R17
01-24-3242	RES 32.4K 1% 0805	3	R1,R4,R23
01-24-4221	RES 4.22K 1% 0805	1	R5
01-24-4872	RES 48.7K 1% 0805	1	R13
01-24-6811	RES 6.81K 1% 0805	1	R12
01-70-0153	THERMISTOR NTC 15K @ 25C 3% TH4 x 4.4 x 2.5mm (2.54mm L.S.)	1	TH1
03-12-0477	CAP ELEC 470uF 16V 20% RADIAL 10/20/5	1	C13
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	2	C10,C16
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	1	C19
03-18-0225	CAP ELEC 2.2uF 50V 20% RADIAL 5/11/5	2	C2,C3
03-18-0227	CAP ELEC 220uF 50V 20% RADIAL 10/12.5/5	4	C4,C5,C9,C11
03-18-0336	CAP ELEC 33uF 50V 20% RADIAL 5/11/5	2	C6,C7
03-24-0564	CAP MET-POLY 0.56uF 100VDC 5% TH 4.5/7.5/7/5	1	C23
03-36-0103	CAP ESTR 10nF 50V 5% TH 7.3/3.2/5/5	1	C8
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	1	C17
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C1,C12
03-52-0102	CAP X7R 1nF 50V 10% 0805	2	C14,C15

50-04-0054	Low Down Power Amp PCBA 175W		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	2	D3,D4
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	1	D1
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	2	D2,D5
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	4	Q1,Q2,Q3,Q4
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	1	U6
12-30-7293	IC POWER-AMP 100W TDA7293 TO-220/15 TH	2	U1,U2
12-54-0084	IC OP AMP QUAD TL084CD SM	1	U3
21-18-0002	TERMINAL SCREW PCB MOUNT RT ANGLE SNAP-IN TH	2	MT1,MT2
21-20-0202	HDR SIL PCB-MT 2-PIN x 2mm MALE SHRD VERT MT TH	2	H3,H4
21-20-0203	HDR SIL PCB-MT 3-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-20-1564	HDR SIL PCB-MT 4-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H5
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H2
30-00-0005	SCREW 6-32 x 1/4 w/LK WASHER PPZ STL	1	(U6)
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U6)
30-00-0010	SCREW 8-32 x 9/16 SKT-CAP S-STL	1	Mount Bracket to Heatsink
30-00-0610	SCREW 6-32 x 5/8 IN PPZ STL ZINC w/LOCK WASHER	2	Mount Rt Angle Screw Terminals (MT1,MT2)
30-03-0002	WASHER #8 .293 x.174x .040 STEEL	1	Between Bracket and Screw
30-51-0073	CLAMP HEATSINK TO-220 1.3x.45x.35" CR STEEL 1018	1	
30-51-0229-1	HEATSINK AL BLK ANODIZED 3.8INA5-1 A5-2	1	
30-63-0006	PAD THERMAL 6mil 25mm x 30mm w/ADHESIVE 4KVAC VTM-O	2	Between Power Amps and Heatsink
30-63-0020	GAP-PAD VO-SOFT .100" THK .35" x .35"	1	Between Thermistor and Heatsink
35-00-0166	PCB POWER AMP LOW DOWN 150W REV.A A5-1/A5-2	1	

Low Down 112 Bass Amp 150W

59-00-0015-1	Low Down 112 Complete Assembly 150W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-30-0008	XFMR 100/120VAC 34Vx2/9V 86mm SPIDER2-210/212/HD & A5-1/2	1	
21-37-0002-1	CBL POWER US/JA 10A/250V 73" AC-PLUG to SHORT CRIMP-TERM x3	1	
24-19-4025	FUSE 4A 125V TL 5x20mm Littlefuse# H239 004 or equiv.	1	
50-03-0027	ASSY COMPLETE SPEAKER CAB 12" TILT BACK LOW DOWN A5-1	1	
50-04-0051	ASSY E/M CHASSIS LOW DOWN 112 A5-1	1	

50-03-0027	Low Down 112 Speaker Cab Assembly		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-20-0008	SPEAKER BASS 12" 4-OHM 125W HI-TOUCH P-0512004-X2	1	
21-36-0270-1	CBL 18AWG 4-COND TWSTED/PAIR 1-JST/.205 SPADE-Fx4 19IN/17IN	1	Power AMP Cable - No tweeter wires
30-00-1016	SCREW 10-24 x 1" PPB STL	8	For Speakers
30-00-1024	SCREW 10-24 x 1IN OVAL CTSK PPB STL WAXED	2	Secures Handle
30-00-3485	SCREW #3-48 x 3/8" PHIL FLAT STL BLK	2	Secueres Logo
30-00-6839	SCREW WOOD 10-12 x 7/8" PPZ	8	Secueres Rubber Feet
30-00-8100	SCREW WOOD #8 x 1" OVAL PH H STL BLK OXIDE	4	To Attach Grill
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	4	To Attach Grill
30-03-0335	WASHER #3 x .350 x .040 FLAT STEEL BLK	2	Secueres Logo
30-06-0014	NUT HEX 3-48 BLK STL ZINC W/NYLON INSERT	2	Secueres Logo With Screws
30-06-1024	NUT-T 10-24 X 5/16 STEEL	10	For Speakers And Handle
30-39-0007	CARPET SYNTHETIC 0.06" THK BLK	11.6	
30-39-0008-1	STRIP VELCRO HOOK NYLON 4" x 1.5"	1	Secueres A/C power Cable
30-39-0009-1	STRIP VELCRO LOOP NYLON 6" x 1.5"	1	Secueres A/C power Cable
30-51-0226	GRILL 16.7x14.8x1.5" GALV STL BLK PAINT FINISH A5-1	1	
30-57-0580	HANDLE/STRAP HEAVY DUTY BLACK	1	
30-57-0581	ENDCAPS BLACK TEXTURED FINISH	2	For Handle
30-60-0004	LOGO LINE 6 LRG 184.91x37.52mmBRUSHED/BLK FINISH AL	1	
30-63-0600-1	FOAM W/ADH. 6.0" x 0.25" x 0.06" VOLARAPOLOLEFIN	2	Vibration Pads For Logo
30-75-0030	FOOT RUBBER 1.5 O.D. x .40 HT BLACK	8	

50-04-0051	Low Down 112 Chassis Assembly		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-50-0813	FAN 12V DC 25mm x 80mm x 80mm	1	Chassis-Rear
21-29-0012-1	WIRE18AWG DBL INSUL STRAND 11"1x0.187/1x0.205 Q-CONN FEM WH	1	AC Switch to Power Supply
21-34-0014-4	CBL SIL 8-PIN .156" PITCH 6.0-IN A5-1	1	Power Supply to Power Amp
21-34-0075-2	CBL ASSY 10-COND SIL 26AWG 6.25-IN 2mm F-F Z-TYPE BLUE A5	1	Power Supply to MainBoard
24-21-1124	CAP SWITCH PLASTIC .354" DIA. x .197" BLK	1	Ground Switch Cap
24-24-0606	SWITCH POWER ROCKER 6A/250VAC 10A/120VAC PNL-MNT BLK	1	Chassis-Rear
30-00-0042	SCREW SHEET METAL 4 x 0.375 INSELF-TAP PPB	2	Mounts XLR Jack to Chassis
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	15	9 Main PCB, 4 Power supply, 1 Ground, 1 Power Amp
30-00-0079	SCREW 8-32 x 1.25" PHILLIPS PHBLK	4	Mounts Fan to Chassis
30-00-0092	SCREW 8-32 x 7/16 PPB w/EXT. TOOTH WASHER STL/ZNC	2	Mounts Power Amp to Chassis
30-00-0098	SCR 6-32 x 1/4" PHILLIPS PNH STL	1	Mounts XLR/RJ45 PCBA to Chassis
30-00-1128	SCREW 10-32 x 1-3/4 OVAL CTSK PB STL	4	Mounts Chassis to Cab
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	4	Chassis Mounting
30-06-0832	NUT .335 HEX 8-32 STL ZINC W/ TOOTH WASHER	8	4 Transformer, 4 Fan
30-24-0030	CABLE-TIE 4.0 IN. LG BLK Panduit p/n PLT1M-CO	8	PCB's
30-45-0011	KNOB POT .77 DIA x .76 HT PLASTIC CHROME-PLATED	10	
30-51-0230	CHASSIS 15.5 x 8.6 x 3.45 0.06 THK CRS A5-1	1	
30-75-0021	STRAIN RELIEF BUSHING 13.5MM x12MM	1	
30-75-0027	KEYPAD RUBBER 8.3"x1.9"x0.73" A5-1/2/3	1	
30-75-0028	COVER LED RUBBER 2.8x1.3x0.46"A5-1/2/3	1	
30-75-0029	COVER LED RUBBER 1.3x1.1x0.46"A5-1/2/3	1	
50-02-0165	PCBA MAIN PROGRAMMED LOW DOWN 112 A5-1	1	
50-02-0167	PCBA POWER SUPPLY LOW DOWN 112/115 A5-1 A5-2	1	
50-04-0054	PCBA POWER AMP w/HEATSINK 150WLOW DOWN A5-1 A5-2	1	

50-02-0165	Low Down 112 Main PCBA Programmed		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-24-0000	RES 0R 1% 0805	3	R5,R90,R121
01-24-1000	RES 100R 1% 0805	2	R2,R47
01-24-1001	RES 1.00K 1% 0805	9	R4,R6,R9,R10,R13,R14,R18,R125,R131
01-24-1002	RES 10.0K 1% 0805	20	R15,R19,R20,R24,R33,R57,R62-R64,R67,R68,R70,R74,R86,R88,R94,R103,R105,R120,R123
01-24-1003	RES 100K 1% 0805	4	R95,R102,R106,R107
01-24-1004	RES 1.00M 1% 0805	1	R12
01-24-1052	RES 10.5K 1% 0805	1	R43
01-24-1070	RES 107R 1% 0805	2	R3,R7
01-24-10R0	RES 10.0R 1% 0805	3	R22,R28,R35
01-24-1332	RES 13.3K 1% 0805	1	R69
01-24-1501	RES 1.50K 1% 0805	3	R8,R32,R76
01-24-1502	RES 15.0K 1% 0805	1	R17
01-24-15R0	RES 15R 1% 0805	2	R72,R73
01-24-1620	RES 162R 1% 0805	1	R1
01-24-1692	RES 16.9K 1% 0805	2	R44,R45
01-24-2001	RES 2.00K 1% 0805	1	R91
01-24-2002	RES 20.0K 1% 0805	6	R40,R41,R42,R46,R77,R79
01-24-2152	RES 21.5K 1% 0805	1	R124
01-24-22R1	RES 22.1R 1% 0805	1	R39
01-24-2942	RES 29.4K 1% 0805	1	R16
01-24-3090	RES 309R 1% 0805	10	R23,R25,R30,R31,R108,R109,R116,R117,R118,R119
01-24-4222	RES 42.2K 1% 0805	1	R48
01-24-4751	RES 4.75K 1% 0805	11	R11,R21,R26,R27,R29,R34,R36,R37,R61,R92,R93
01-24-4752	RES 47.5K 1% 0805	5	R38,R65,R81,R127,R128
01-24-47R5	RES 47.5R 1% 0805	8	R78,R80,R87,R89,R97,R98,R99,R100
01-24-4990	RES 499R 1% 0805	1	R75
01-24-4991	RES 4.99K 1% 0805	5	R66,R71,R126,R129,130
01-24-5622	RES 56.2K 1% 0805	1	R132
01-24-5R11	RES 5.11R 1% 0805	3	R60,R82,R83
01-24-6041	RES 6.04K 1% 0805	2	R101,R104
01-24-60R4	RES 60.4R 1% 0805	6	R110-R115
01-48-0102	POT MONO 10KB LINEAR TAPER 25 mm D-SHAFT MEDIUM TORQUE	10	R49,R50,R51,R52,R53,R54,R55,R56,R58,R59
03-10-1106	CAP ELEC 10uF 10V 20% RADIAL 3/5/5	1	C100
03-10-1107	CAP ELEC 100uF 6.3V 20% RADIAL5/11/5	1	C75
03-10-6108	CAP ELEC 1000uF 6.3V 20% RADIAL 8/11.5/5	2	C37,C91
03-12-0337	CAP ELEC 330uF 16V 20% RADIAL 8/11.5/5	2	C45,C54

50-02-0165	Low Down 112 Main PCBA Programmed		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
03-12-1477	CAP ELEC 470uF 16V 20% RADIAL 8/12/5	2	C40,C47
03-14-0476	CAP ELEC 47uF 25V 20% RADIAL 6.3/7/5	2	C42,C52
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	3	C73,C77,C89
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	6	C25,C70,C72,C92,C95,C96
03-27-0682	CAP POLYESTER 6.8nF 50V 5% TH 7/3/6/5	1	C69
03-45-0473	CAP 47nF 16V 20% 1206 FILM	1	C9
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	3	C1,C10,C99
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C80,C85
03-50-0221	CAP NPO 220pF 50V 5% 0805	3	C50,C81,C83
03-50-0391	CAP NPO 390pF 50v 5% 0805	2	C90,C93
03-52-0102	CAP X7R 1nF 50V 10% 0805	10	C4,C5,C23,C28-C31,C41,C82,C84
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	23	C3,C6,C7,C13,C14,C17,C18,C20,C21,C26,C27,C32,C33,C39,C43, C46,C48,C51,C56,C66,C67,C97,C98
03-52-0332	CAP X7R 3.3nF 50V 10% 0805	1	C53
03-52-0470	CAP X7R 47pF 50V 10% 0805	2	C12,C24
03-52-0473	CAP X7R 47nF 50V 10% 0805	27	C8,C11,C15,C16,C19,C22,C34,C35,C38,C57-C65,C68,C71,C74,C76, C78,C79,C86-C88
03-56-0180	CAP NPO 18pF 50V 5% 0603	2	C44,C49
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM BAT54S	1	D40
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	4	D13,D24,D25,D26
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	6	D32,D33,D34,D35,D36,D37
06-34-0021	DIODE SWITCHING 250V 200mA 50nS SOT-23 SM BAS21LT1	1	D41
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	9	D1,D2,D11,D12,D28,D29,D30,D38,D39
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	1	Q5
09-10-4403	TRANS PNP SMALL-SIGNAL MBT4403SOT-23 SM	2	Q2,Q3
11-00-1201	CRYSTAL 12MHZ SHORT-CAN HC49 TH	1	Y1
11-10-0601	FERRITE BEAD 600R @100MHZ 1206	6	L15,L17,L18,L19,L20,L21
11-10-2012	FERRITE BEAD 600R@100MHZ 300mA 0805 SM	15	L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L16
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	2	U2,U3
12-00-0337	IC VREG ADJ -1.5-37V 1.5 AMP TH TO-220 LM337	1	U7
12-00-0431	IC REG ADJ PREC SHUNT 2.495V 1% TO-226/TO-92 TH TL431ACLP	1	Q1
12-00-7808	IC REG +8V 1A TO-220 TH LM7808	1	U10
12-02-7805	IC REG +5v 1.5 Amp TH	1	U15
12-54-0072	IC OP-AMP DUAL TL072CD SM	1	U8
12-54-0084	IC OP AMP QUAD TL084CD SM	4	U1,U16,U17,U18
12-64-4528	IC CONVERTER 24B 48/96KHz AUDIO CODEC SM AK4528	1	U14
15-62-0014	IC 74HC14 INVERTER HEX SCHMITT TRIGGER SO-14 SM	1	U4

50-02-0165	Low Down 112 Main PCBA Programmed		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
15-62-4051	IC 74HC4051 8 TO 1 ANALOG MUX/DMUX SM 74HC4051	1	U11
15-86-0364	IC DSP 24-BIT TQFP-100 SM DSPB56364AF100	1	U12
18-02-0001	LED YELLOW SUPERBRITE T1(3MM) TH WP7104SYC	10	D14,D15,D16,D17,D18,D19,D20,D21,D22,D23
18-22-0003	LED YELLOW SUPER 2.0x1.2x1.1mmAP2012SYC SM	6	D3,D4,D5,D6,D7,D8
18-24-0003	LED GREEN SUPER SML-LX0805SGC-TR 0805 SM	2	D9,D10
21-00-6617	JACK 1/4" TRS 6-PIN PCB MT HORIZ TH W/CHROME HRDWARE	3	J2,J5,J7
21-08-0013	JACK XLR MALE PCB MNT RT ANG TH NEUTRIK-NC3MAH	1	J1
21-12-0035	JACK 3.5mm STEREO 5 PIN CRIMPED LEADS NON-THREADED	1	J6
21-16-0045	JACK RJ-45 8-PIN FEMALE PCB-MNT RT-ANG	1	J8
21-18-0005	TERM SCREW PCB MT RT ANGLE TH A5-1/2/3	1	H4
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-30-0015-3	CBL RIBBON SIL 6-COND 2.5 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP7 to JP8
21-30-0015-5	CBL RIBBON SIL 6-COND 10.5 IN 2.54mm 26AWG w SPLIT ENDS S/T	2	JP3 to JP6, JP4 to JP5
21-30-0016-2	CBL RIBBON SIL 4-COND 8.5 IN 2mm 26AWG w SPLIT ENDS S/T	1	JP1 to JP2
24-01-0003	SWITCH LATCHING PUSH BUTTON SPDT 3-PIN SIL HORIZONTAL TH	1	SW7
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	4	(U2,U3,U7,U10)
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U10)
30-12-2210	STANDOFF HEX .250 6-32 F-F .500 LG AL	3	(U2,U3,U7)
30-15-0004	SPACER .13THKx.63OD NYLON	3	(J2,J5,J7)
30-15-0007	INSULATOR XTAL 4.9mm C-C 11.8x5.6mm MYLAR	1	(Y1)
30-18-3030	CLIP GND PCB .30x.30x.07	5	GF1,GF2,GF3,GF4,GF5
30-51-0146	SHIELD PCB MT FOR 1/4 JACK 1.00 Hx1.25Wx.013THK BERYL COP	1	SH1
35-00-0165	PCB MAIN LOW DOWN REV C A5-1 A5-2 A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART
35-00-0168	PCB INPUT SHIELD LOW DOWN REV.A A5-1 A5-2 A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART
45-01-0023	IC PROGRAMMED MCU v1.00 LOW DOWN A5	1	U9
45-02-0031	IC PROGRAMMED FLASH v1.00 LOW DOWN A5-1	1	U13

50-02-0167	Low Down 112 Power Supply PCBA		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-12-0473	RES CARBON FILM 47K 1/4W 5% TH	1	R1
03-12-0478	CAP ELEC 4700uF 16V 20% RADIAL 16/25/7.5	1	C47
03-16-2108	CAP ELEC 1000uF 35V 20% 105C LowZ RADIAL 12.5/25/5	4	C2,C6,C7,C14
03-18-1478	CAP ELEC 4700uF 50V 20% SNAPINRADIAL 25/40/10	2	C1,C18
03-41-0224	CAP X-CAP 0.22uF 275VAC 20% POLYPROYPYLENE 18/9.5/17.5/15	1	C17
03-75-0102	CAP Y-CAP 1nF 250VAC 20% TH CER DISC 7D/7/7.5	2	C22,C23
06-16-0008	DIODE BRIDGE-RECT 8A 600V 4-PIN SIL TH KBU8J	1	D1
06-23-0340	DIODE SCHOTTKY 3A 40V SMA SM B340LA	4	D12,D13,D14,D15
06-32-0313	DIODE RECTIFIER 200V 3A SMB SM S3DB-13 - F	1	D18
11-10-2020	CHOKE WIDE BAND 1-5 TURNS ISI LB2/1.5ZA	2	L1,L2
21-18-0250	CONN QUICK-CONNECT POST .250x.032-IN AMP 63824-1	2	H7,H8
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H5
21-20-1565	HDR SIL PCB-MT 5-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H4
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H2
21-20-3123	HDR SIL PCB-MT 3-PIN X 7.92mm MALE VERT-MNT FRIC-LOCK	2	H1,H3
21-48-9521	CLIP FUSE HOLDER	2	F1
35-00-0167	PCB POWER SUPPLY LOW DOWN REV.A A5-1 A5-2	1	NOT AVAILABLE AS A REPLACEMENT PART

50-04-0054	Low Down 112 Power Amp W/Heatsink		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-04-02R2	RES 2.2R 5% 1206	1	R11
01-22-02R2	RES METAL OXIDE 2.2R 2W 5% TH	1	R21
01-23-0510-1	RES METAL OXIDE 51R 3W 5% TH	1	R18
01-23-0510-2	RES METAL OXIDE 51R 5W 5% TH	1	R10
01-24-1002	RES 10.0K 1% 0805	6	R2,R3,R7,R8,R9,R15
01-24-1003	RES 100K 1% 0805	2	R6,R16
01-24-10R0	RES 10.0R 1% 0805	1	R20
01-24-1132	RES 11.3K 1% 0805	1	R22
01-24-1211	RES 1.21K 1/8W 1% 0805	1	R19
01-24-1431	RES 1.43K 1% 0805	1	R14
01-24-1692	RES 16.9K 1% 0805	1	R17
01-24-3242	RES 32.4K 1% 0805	3	R1,R4,R23
01-24-4221	RES 4.22K 1% 0805	1	R5
01-24-4872	RES 48.7K 1% 0805	1	R13
01-24-6811	RES 6.81K 1% 0805	1	R12
01-70-0153	THERMISTOR NTC 15K @ 25C 3% TH4 x 4.4 x 2.5mm (2.54mm L.S.)	1	TH1
03-12-0477	CAP ELEC 470uF 16V 20% RADIAL 10/20/5	1	C13

50-04-0054	Low Down 112 Power Amp W/Heatsink		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	1	C19
03-18-0225	CAP ELEC 2.2uF 50V 20% RADIAL 5/11/5	2	C2,C3
03-18-0227	CAP ELEC 220uF 50V 20% RADIAL 10/12.5/5	4	C4,C5,C9,C11
03-18-0336	CAP ELEC 33uF 50V 20% RADIAL 5/11/5	2	C6,C7
03-24-0564	CAP MET-POLY 0.56uF 100VDC 5% TH 4.5/7.5/7/5	1	C23
03-36-0103	CAP ESTR 10nF 50V 5% TH 7.3/3.2/5/5	1	C8
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	1	C17
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C1,C12
03-52-0102	CAP X7R 1nF 50V 10% 0805	2	C14,C15
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	4	C18,C20,C21,C22
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	2	D3,D4
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	1	D1
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	2	D2,D5
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	4	Q1-Q4
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	1	U6
12-30-7293	IC POWER-AMP 100W TDA7293 TO-220/15 TH	2	U1,U2
12-54-0084	IC OP AMP QUAD TL084CD SM	1	U3
21-18-0002	TERMINAL SCREW PCB MOUNT RT ANGLE SNAP-IN TH	2	MT1,MT2
21-20-0202	HDR SIL PCB-MT 2-PIN x 2mm MALE SHRD VERT MT TH	2	H3,H4
21-20-0203	HDR SIL PCB-MT 3-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-20-1564	HDR SIL PCB-MT 4-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H5
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H2
30-00-0005	SCREW 6-32 x 1/4 w/LK WASHER PPZ STL	1	(U6)
30-00-0010	SCREW 8-32 x 9/16 SKT-CAP S-STL	1	Mount Bracket to Heatsink
30-00-0610	SCREW 6-32 x 5/8 IN PPZ STL ZINC w/LOCK WASHER	2	Mount Rt Angle Screw Terminals (MT1,MT2)
30-03-0002	WASHER #8 .293 x.174x .040 STEEL	1	Between Bracket and Screw
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U6)
30-51-0073	CLAMP HEATSINK TO-220 1.3x.45x.35" CR STEEL 1018	1	
30-51-0229-1	HEATSINK AL BLK ANODIZED 3.8INA5-1 A5-2	1	
30-63-0006	PAD THERMAL 6mil 25mm x 30mm w/ADHESIVE 4KVAC VTM-O	2	Between Power Amps and Heatsink
30-63-0020	GAP-PAD VO-SOFT .100" THK .35" x .35"	1	Between Thermistor and Heatsink
35-00-0166	PCB POWER AMP LOW DOWN 150W REV.A A5-1/A5-2	1	NOT AVAILABLE AS A REPLACEMENT PART

Low Down 115 Pro Bass Amp 300W

59-00-0017-1	Low Down 115 Pro, Complete Assembly		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-30-0002	XFMR 100V/120V 16.2x2/9.7/33.6x2 w/CBL ASSY CHASSIS-MNT	1	
21-37-0002-5	CBL POWER US/JA 10A/250V 73" AC-PLUG to LONG CRIMP-TERM x3	1	
24-19-6326	FUSE 6.3 AMP 250V 5X20mm DOM FSchurter FSF0034.1524	1	
50-03-0028-2	ASSY COMPLETE SPEAKER CAB 15" w/TWEETER LOW DOWN A5-3	1	
50-04-0053	ASSY E/M CHASSIS LOW DOWN 115PA5-3	1	

50-03-0028-2	Low Down 115 Pro, Speaker Cab Assembly		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-20-0011	SPEAKER BASS 15" 8-OHM 150 W HI-TOUCH P-15-114-3B	1	
11-20-1217	TWEETER PIEZO 75 Wrms BLK 98MM DIA. X 62MM HEIGHT	1	
21-36-0270-1	CBL 18AWG 4-COND TWSTED/PAIR 1-JST/.205 SPADE-Fx4 19IN/17IN	1	POWER AMP CABLE
30-00-0078	SCREW #10 x 2 3/4 SHCS BLK	2	PLASTIC FOOTER
30-00-0095	SCREW WOOD #6 x 1.0" LONG BLK PARTICLE BOARD THREAD	5	SECURES FOOTER BOTTOM
30-00-0675	SCREW WOOD NO 6 x 3/4" PHIL PHBLACK	4	SECURES TWEETER
30-00-0812	SCREW w/WAX 8 x 3/4 PTB	30	2-PER CORNER, 8-PER HANDLE, 6-GRILL
30-00-1016	SCREW 10-24 x 1" PPB STL	8	SECURES SPEAKER
30-00-3485	SCREW #3-48 x 3/8" PHIL FLAT STL BLK	2	SECURES LOGO
30-00-6839	SCREW WOOD 10-12 x 7/8" PPZ	4	SECURES RUBBER FEET
30-03-0335	WASHER #3 x .350 x .040 FLAT STEEL BLK	2	SECURES LOGO
30-03-0806	WASHER #8 0.600 OD x 0.190 ID 0.040 STL BLK OXIDE	5	SECURES FOOTER BOTTOM
30-06-0014	NUT HEX 3-48 BLK STL ZINC W/NYLON INSERT	2	SUCURES LOGO WITH SCREWS
30-06-1024	NUT-T 10-24 X 5/16 STEEL	10	8-SPEAKER, 2-PLASTIC FOOTER
30-27-0153	FOOTER 20.7" x 5.5" x 3.3" IMPHDPE BLK A5-2 A5-3	1	
30-28-0004	CORNER BACK HI-DENSITY POLYETHYLENE TEXTURED BLACK	4	
30-39-0007	CARPET SYNTHETIC 0.06" THK BLK	12.5	
30-39-0008-2	STRIP VELCRO HOOK NYLON 13" x 1.5"	1	SECURES A/C POWER CABLE
30-39-0009-1	STRIP VELCRO LOOP NYLON 6" x 1.5"	1	SECURES A/C POWER CABLE
30-51-0227	GRILL 20.4x17.5x1.5" GALV STL BLK PAINT FINISH A5-2 A5-3	1	
30-57-0006	HANDLE SIDE 8 HOLE LOW DOWN A -5	2	
30-60-0004	LOGO LINE 6 LRG 184.91x37.52mmBRUSHED/BLK FINISH AL	1	
30-63-0022	FOAM w/ADH SEG R PORT BLK 3.6"ID x 5.4"OD x 0.90" A5-2/3	2	TO SEAL BOTH PORTS
30-63-0600-1	FOAM W/ADH. 6.0" x 0.25" x 0.06" VOLARAPOLOLEFIN	2	PADS for LOGO
30-75-0008	FOOT RUBBER 1.50" I.D. x .75"HBLACK	4	
30-75-0032	U-CHANNEL RUBBER 5x0.13x0.35" BLK A5-2/3	4	BOTTOM OF GRILL

50-04-0053	Low Down 115 Pro, Chassis Assembly		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
11-50-0813	FAN 12V DC 25mm x 80mm x 80mm	1	Chassis-Rear
21-29-0012-2	WIRE18AWG DBL INSUL STRAND 13"1x.187/1x.205 Q-CONN FEM WH	1	AC Switch to Power Supply
21-34-0014-6	CBL SIL 8-PIN .156" PITCH 9.25-IN A5-3	1	Power Supply to Power Amp
21-34-0075-1	CBL ASSY 10-COND SIL 26AWG 4.25-IN 2mm F-F Z-TYPE BLUE A5	1	Power Supply to Main Board
21-34-0076-2	CBL SIL 2-COND 26AWG 2mm x 18"JST PHR-2 YELLOW	1	Tweeter Cable
24-21-1124	CAP SWITCH PLASTIC .354" DIA. x .197" BLK	2	Ground Lift & Tweeter Switch Caps
24-24-0606	SWITCH POWER ROCKER 6A/250VAC 10A/120VAC PNL-MNT BLK	1	Chassis-Front
30-00-0042	SCREW SHEET METAL 4 x 0.375 INSELF-TAP PPB	2	Mounts XLR Jack to Chassis
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	15	9 Main PCB, 4 Power Supply, 1 Ground, 1 Power Amp
30-00-0079	SCREW 8-32 x 1.25" PHILLIPS PHBLK	4	Mounts Fan to Chassis
30-00-0092	SCREW 8-32 x 7/16 PPB w/EXT. TOOTH WASHER STL/ZNC	3	Mounts Heat Sink to Chassis
30-00-0098	SCR 6-32 x 1/4" PHILLIPS PNH STL	1	Mounts XLR/RJ45 PCBA to Chassis
30-00-1128	SCREW 10-32 x 1-3/4 OVAL CTSK PB STL	4	Mounts Chassis to Cabinet
30-03-0112	WASHER FINISHING #10 FLANGED STL BLK OXIDE	4	Chassis Mounting
30-06-0832	NUT .335 HEX 8-32 STL ZINC W/ TOOTH WASHER	8	4 Transformer, 4 Fan
30-24-0030	CABLE-TIE 4.0 IN. LG BLK Panduit p/n PLT1M-CO	3	1 Transformer, 1 AC Switch Cable, 1 Tweeter/Fan Cable.
30-45-0011	KNOB POT .77 DIA x .76 HT PLASTIC CHROME-PLATED	10	
30-51-0232-2	CHASSIS 19x8.7x3.75" LOW DOWN 0.06" THK STL A5-3	1	
30-75-0021	STRAIN RELIEF BUSHING 13.5MM x12MM	1	
30-75-0027	KEYPAD RUBBER 8.3"x1.9"x0.73" A5-1/2/3	1	
30-75-0028	COVER LED RUBBER 2.8x1.3x0.46"A5-1/2/3	1	
30-75-0029	COVER LED RUBBER 1.3x1.1x0.46"A5-1/2/3	1	
50-02-0168	PCBA MAIN PROGRAMMED LOW DOWN 115/115P A5-2 A5-3	1	
50-02-0173	PCBA POWER SUPPLY LOW DOWN 115P A5-3	1	
50-04-0055	PCBA POWER AMP w/HEATSINK 250WLOW DOWN A5-3	1	

50-02-0168	Low Down 115 Pro, Main PCBA 300W		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-24-0000	RES 0R 1% 0805	3	R5,R90,R121
01-24-1000	RES 100R 1% 0805	2	R2,R47
01-24-1001	RES 1.00K 1% 0805	10	R4,R6,R9,R10,R13,R14,R18,R122,R125,R131
01-24-1002	RES 10.0K 1% 0805	20	R15,R19,R20,R24,R33,R57,R62,63,R64,R67,R68,R70,R74,R86, R88,R94,R103,R105,R120,R123
01-24-1003	RES 100K 1% 0805	4	R95,R102,R106,R107
01-24-1004	RES 1.00M 1% 0805	1	R12
01-24-1052	RES 10.5K 1% 0805	1	R43
01-24-1070	RES 107R 1% 0805	2	R3,R7
01-24-10R0	RES 10.0R 1% 0805	3	R22,R28,R35
01-24-1332	RES 13.3K 1% 0805	1	R69
01-24-1501	RES 1.50K 1% 0805	3	R8,R32,R76
01-24-1502	RES 15.0K 1% 0805	1	R17
01-24-15R0	RES 15R 1% 0805	2	R72,R73
01-24-1620	RES 162R 1% 0805	1	R1
01-24-1692	RES 16.9K 1% 0805	2	R44,R45
01-24-2001	RES 2.00K 1% 0805	1	R91
01-24-2002	RES 20.0K 1% 0805	6	R40,R41,R42,R46,R77,R79
01-24-2152	RES 21.5K 1% 0805	1	R124
01-24-22R1	RES 22.1R 1% 0805	1	R39
01-24-2942	RES 29.4K 1% 0805	1	R16
01-24-3090	RES 309R 1% 0805	10	R23,R25,R30,R31,R108,R109,R116,R117,R118,R119
01-24-4222	RES 42.2K 1% 0805	1	R48
01-24-4751	RES 4.75K 1% 0805	11	R11,R21,R26,R27,R29,R34,R36,R37,R61,R92,R93
01-24-4752	RES 47.5K 1% 0805	5	R38,R65,R81,R127,R128
01-24-47R5	RES 47.5R 1% 0805	8	R78,R80,R87,R89,R97,R98.R99,R100
01-24-4990	RES 499R 1% 0805	1	R75
01-24-4991	RES 4.99K 1% 0805	5	R66,R71,R126,R129,130
01-24-5622	RES 56.2K 1% 0805	1	R132
01-24-5R11	RES 5.11R 1% 0805	3	R60,R82,R83
01-24-6041	RES 6.04K 1% 0805	2	R101,R104
01-24-60R4	RES 60.4R 1% 0805	6	R110-R115
01-48-0102	POT MONO 10KB LINEAR TAPER 25 mm D-SHAFT MEDIUM TORQUE	10	R49,R50,R51,R52,R53,R54,R55R56,R58,R59
03-10-1106	CAP ELEC 10uF 10V 20% RADIAL 3/5/5	1	C100
03-10-1107	CAP ELEC 100uF 6.3V 20% RADIAL5/11/5	1	C75
03-10-6108	CAP ELEC 1000uF 6.3V 20% RADIAL 8/11.5/5	2	C37,C91
03-12-0337	CAP ELEC 330uF 16V 20% RADIAL 8/11.5/5	2	C45,C54

50-02-0168	Low Down 115 Pro, Main PCBA 300W		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
03-12-1477	CAP ELEC 470uF 16V 20% RADIAL 8/12/5	2	C40,C47
03-14-0476	CAP ELEC 47uF 25V 20% RADIAL 6.3/7/5	2	C42,C52
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	3	C73,C77,C89
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	6	C25,C70,C72,C92,C95,C96
03-27-0682	CAP POLYESTER 6.8nF 50V 5% TH 7/3/6/5	1	C69
03-45-0473	CAP 47nF 16V 20% 1206 FILM	1	C9
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	3	C1,C10,C99
03-50-0101	CAP NPO 100pF 50V 5% 0805	2	C80,C85
03-50-0221	CAP NPO 220pF 50V 5% 0805	3	C50,C81,C83
03-50-0391	CAP NPO 390pF 50v 5% 0805	2	C90,C93
03-52-0102	CAP X7R 1nF 50V 10% 0805	10	C4,C5,C23,C28,C29,C30,C31,C41,C82,C84
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	23	C3,C6,C7,C13,C14,C17,C18,C20,C21,C26,C27,C32,C33,C39,C43, C46,C48,C51,C56,C66,C67,C97,C98
03-52-0332	CAP X7R 3.3nF 50V 10% 0805	1	C53
03-52-0470	CAP X7R 47pF 50V 10% 0805	2	C12,C24
03-52-0473	CAP X7R 47nF 50V 10% 0805	27	C8,C11,C15,C16,C19,C22,C34,C35,C38,C57-C65,C68,C71,C74,C76, C78,C79,C86,C87,C88
03-56-0180	CAP NPO 18pF 50V 5% 0603	2	C44,C49
06-23-0054	DIODE SCHOTTKY DUAL 30V 200mA 5nS SOT-23 SM BAT54S	1	D40
06-28-0330	DIODE ZENER 3.3V 5% 500mW SOD-123 SM	2	D27,D31
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	4	D13,D24,D25,D26
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	6	D32-D37
06-34-0021	DIODE SWITCHING 250V 200mA 50nS SOT-23 SM BAS21LT1	1	D41
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	9	D1,D2,D11,D12,D28,D29D30,D38,D39
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	1	Q5
09-10-4403	TRANS PNP SMALL-SIGNAL MBT4403SOT-23 SM	2	Q2,Q3
11-00-1201	CRYSTAL 12MHZ SHORT-CAN HC49 TH	1	Y1
11-10-2012	FERRITE BEAD 600R@100MHZ 300mA 0805 SM	15	L1,L2,L3,L4,L5,L6,L7,L8,L9,L10,L11,L12,L13,L14,L16
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	2	U2,U3
12-00-0337	IC VREG ADJ -1.5-37V 1.5 AMP TH TO-220 LM337	1	U7
12-00-0431	IC REG ADJ PREC SHUNT 2.495V 1% TO-226/TO-92 TH TL431ACLP	1	Q1
12-00-7808	IC REG +8V 1A TO-220 TH LM7808	1	U10
12-02-7805	IC REG +5v 1.5 Amp TH	1	U15
12-54-0072	IC OP-AMP DUAL TL072CD SM	1	U8
12-54-0084	IC OP AMP QUAD TL084CD SM	4	U1,U16,U17,U18
12-64-4528	IC CONVERTER 24B 48/96KHz AUDIO CODEC SM AK4528	1	U14
15-62-0014	IC 74HC14 INVERTER HEX SCHMITT TRIGGER SO-14 SM	1	U4

50-02-0168	Low Down 115 Pro, Main PCBA 300W		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
15-62-4051	IC 74HC4051 8 TO 1 ANALOG MUX/DMUX SM 74HC4051	1	U11
15-86-0364	IC DSP 24-BIT TQFP-100 SM DSPB56364AF100	1	U12
18-02-0001	LED YELLOW SUPERBRITE T1(3MM) TH WP7104SYC	10	D14,D15,D16,D17,D18,D19,D20,D21,D22,D23
18-22-0003	LED YELLOW SUPER 2.0x1.2x1.1mmAP2012SYC SM	6	D3,D4,D5,D6,D7,D8
18-24-0003	LED GREEN SUPER SML-LX0805SGC-TR 0805 SM	2	D9,D10
21-00-6617	JACK 1/4" TRS 6-PIN PCB MT HORIZ TH W/CHROME HRDWARE	3	J2,J5,J7
21-08-0013	JACK XLR MALE PCB MNT RT ANG TH NEUTRIK-NC3MAH	1	J1
21-12-0035	JACK 3.5mm STEREO 5 PIN CRIMPED LEADS NON-THREADED	1	J6
21-16-0045	JACK RJ-45 8-PIN FEMALE PCB-MNT RT-ANG	1	J8
21-18-0005	TERM SCREW PCB MT RT ANGLE TH A5-1/2/3	1	H4
21-20-0202	HDR SIL PCB-MT 2-PIN x 2mm MALE SHRD VERT MT TH	1	H5
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-30-0015-1	CBL RIBBON SIL 6-COND 1.75 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP4 to JP5
21-30-0015-2	CBL RIBBON SIL 6-COND 2.0 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP3 to JP6
21-30-0015-3	CBL RIBBON SIL 6-COND 2.5 IN 2.54mm 26AWG w SPLIT ENDS S/T	1	JP7 to JP8
21-30-0016-1	CBL RIBBON SIL 4-COND 1.75 IN 2mm 26AWG w SPLIT ENDS S/T	1	JP1 to JP2
24-01-0003	SWITCH LATCHING PUSH BUTTON SPDT 3-PIN SIL HORIZONTAL TH	2	SW7,SW8
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	4	(U2,U3,U7,U10)
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U10)
30-12-2210	STANDOFF HEX .250 6-32 F-F .500 LG AL	3	(U2,U3,U7)
30-15-0004	SPACER .13THKx.63OD NYLON	3	(J2,J5,J7)
30-15-0007	INSULATOR XTAL 4.9mm C-C 11.8x5.6mm MYLAR	1	(Y1)
30-18-3030	CLIP GND PCB .30x.30x.07	5	GF1,GF2,GF3,GF4,GF5
30-51-0146	SHIELD PCB MT FOR 1/4 JACK 1.00 Hx1.25Wx.013THK BERYL COP	1	SH1
35-00-0165	PCB MAIN LOW DOWN REV C A5-1 A5-2 A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART
35-00-0168	PCB INPUT SHIELD LOW DOWN REV.A A5-1 A5-2 A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART
45-01-0023	IC PROGRAMMED MCU v1.00 LOW DOWN A5	1	U9
45-02-0032	IC PROGRAMMED FLASH v1.00 LOW DOWN A5-2/A5-3	1	U13

50-02-0173	Low Down 115 Pro, Power Supply PCBA		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-12-0242	RES CARBON FILM 2.4K 1/4W 5% TH	1	R3
01-12-0473	RES CARBON FILM 47K 1/4W 5% TH	1	R2
03-12-0688	CAP ELEC 6800uF 16V 20% RADIAL18/35.5/7.5	1	C8
03-16-0108	CAP ELEC 1000uF 35V 20% RADIAL12.5/20/5	2	C9,C12
03-18-1009	CAP ELEC 10000uF 50V 20% 85C RADIAL 25/50/10 SNAPIN	2	C4,C5
03-41-0224	CAP X-CAP 0.22uF 275VAC 20% POLYPROYPYLENE 18/9.5/17.5/15	1	C17
03-75-0102	CAP Y-CAP 1nF 250VAC 20% TH CER DISC 7D/7/7.5	2	C10,C11
06-04-4002	DIODE SMALL-SIGNAL 100V 30A DO-41 AXIAL TH 1N4002	8	D3,D4,D5,D6,D7,D8,D9,D10
06-16-0008	DIODE BRIDGE-RECT 8A 600V 4-PIN SIL TH KBU8J	1	D2
11-10-2020	CHOKE WIDE BAND 1-5 TURNS ISI LB2/1.5ZA	2	L3,L4
21-18-0250	CONN QUICK-CONNECT POST .250x.032-IN AMP 63824-1	2	H7,H8
21-20-0210	HDR SIL PCB-MT 10-PIN x 2mm MALE SHRD VERT MT TH	1	H5
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	2	H2,H4
21-20-3123	HDR SIL PCB-MT 3-PIN X 7.92mm MALE VERT-MNT FRIC-LOCK	2	H1,H3
21-48-9521	CLIP FUSE HOLDER	2	F1
35-00-0173	PCB POWER SUPPLY LOW DOWN-115PREV.A A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART

50-04-0055	Low Down 115 Pro, Power Amp PCBA		
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
01-04-02R2	RES 2.2R 5% 1206	1	R14
01-23-0510-1	RES METAL OXIDE 51R 3W 5% TH	3	R1,R3,R28
01-23-0510-2	RES METAL OXIDE 51R 5W 5% TH	1	R2
01-24-1002	RES 10.0K 1% 0805	6	R5,R6,R9,R19,R25,R26
01-24-1003	RES 100K 1% 0805	1	R21
01-24-10R0	RES 10.0R 1% 0805	1	R17
01-24-1132	RES 11.3K 1% 0805	1	R11
01-24-1211	RES 1.21K 1/8W 1% 0805	1	R18
01-24-1583	RES 158K 1% 0805	1	R8
01-24-1692	RES 16.9K 1% 0805	1	R23
01-24-2212	RES 22.1K 1% 0805	1	R15
01-24-3242	RES 32.4K 1% 0805	5	R4,R7,R22,R24,R27
01-24-4872	RES 48.7K 1% 0805	1	R12
01-24-6811	RES 6.81K 1% 0805	1	R20
01-70-0153	THERMISTOR NTC 15K @ 25C 3% TH4 x 4.4 x 2.5mm (2.54mm L.S.)	1	TH1
03-12-0477	CAP ELEC 470uF 16V 20% RADIAL 10/20/5	1	C12
03-18-0105	CAP ELEC 1uF 50V 20% RADIAL 5/11/5	2	C17,C18
03-18-0106	CAP ELEC 10uF 50V 20% RADIAL 5/11/5	1	C23

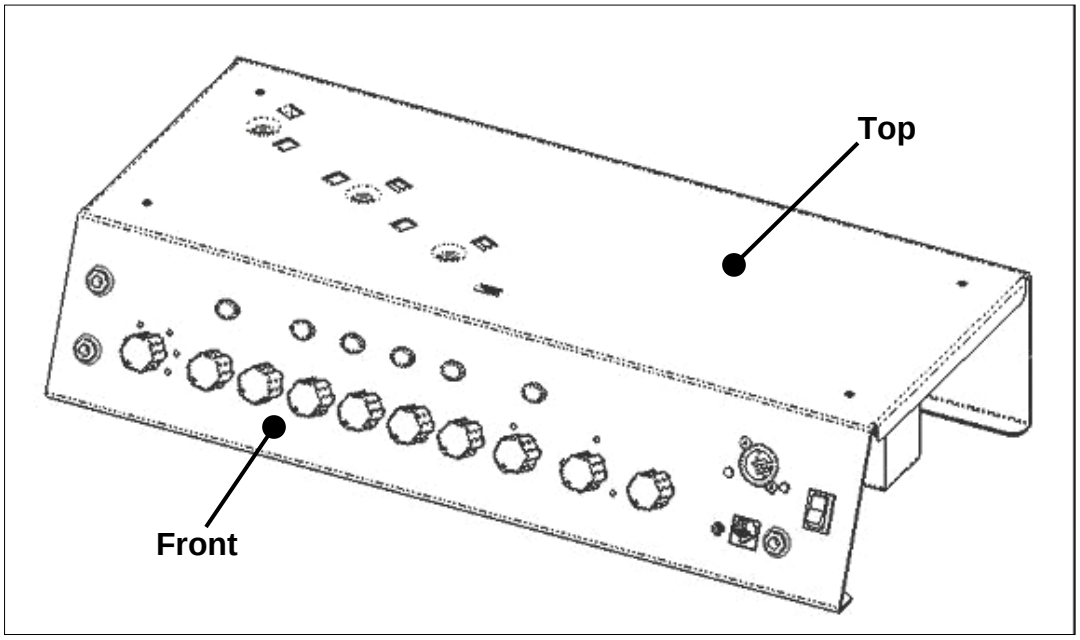
50-04-0055	Low Down 115 Pro, Power Amp PCBA		Continued…
Part Number	**Description**	**Qty. Per**	**Reference Designator(s)**
03-18-0225	CAP ELEC 2.2uF 50V 20% RADIAL 5/11/5	4	C21,C22,C32,C33
03-18-0227	CAP ELEC 220uF 50V 20% RADIAL 10/12.5/5	8	C9,C10,C19,C20,C28,C29,C30,C31
03-18-0336	CAP ELEC 33uF 50V 20% RADIAL 5/11/5	4	C14,C15,C24,C26
03-24-0564	CAP MET-POLY 0.56uF 100VDC 5% TH 4.5/7.5/7/5	2	C3,C39
03-36-0103	CAP ESTR 10nF 50V 5% TH 7.3/3.2/5/5	2	C5,C34
03-46-0225	CAP X7R 2.2uF 16V 20% 1206	1	C11
03-50-0101	CAP NPO 100pF 50V 5% 0805	4	C4,C6,C25,C27
03-52-0102	CAP X7R 1nF 50V 10% 0805	2	C1,C40
03-52-0104	CAP X7R 0.1uF 50V 10% 0805	8	C7,C8,C16,C35,C36,C37,C38
06-28-8418	DIODE ZENER 18V 5% 350mW SOT-23 SM BZX84C18	1	D1
06-34-0016	DIODE SWITCHING 75V 200mA 6nS SOT-23 SM BAS16LT1G	1	D3
06-34-0031	DIODE GEN PUR DUAL 120V 600mA 50nS SOT-23 SM BAS31	2	D4,D5
09-06-7002	TRANS MOSFET N-CHAN 60V 7R5 SOT-23 SM 2N7002	2	Q1,Q2
12-00-0317	IC VREG ADJ 1.2-37V 1.5 AMP TO-220 LM317/NOPB TH	1	U4
12-30-7293	IC POWER-AMP 100W TDA7293 TO-220/15 TH	4	U1,U3,U5,U6
12-54-0084	IC OP AMP QUAD TL084CD SM	1	U2
21-18-0002	TERMINAL SCREW PCB MOUNT RT ANGLE SNAP-IN TH	2	MT1,MT2
21-20-0202	HDR SIL PCB-MT 2-PIN x 2mm MALE SHRD VERT MT TH	2	H3,H4
21-20-0203	HDR SIL PCB-MT 3-PIN x 2mm MALE SHRD VERT MT TH	1	H1
21-20-1564	HDR SIL PCB-MT 4-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H5
21-20-1568	HDR SIL PCB-MT 8-PIN X .156 MALE VERT-MNT FRIC-LOCK	1	H2
30-00-0043	SCREW 6-32 x 5/16 w/LK WASH PPZ STL	1	(U4)
30-12-0632	STANDOFF HEX .250 6-32 F-F 1INF-F AL	1	(U4)
30-00-0010	SCREW 8-32 x 9/16 SKT-CAP S-STL	2	Mount Bracket to Heatsink
30-00-0610	SCREW 6-32 x 5/8 IN PPZ STL ZINC w/LOCK WASHER	2	Mount Rt Angle Screw Terminals (MT1,MT2)
30-03-0002	WASHER #8 .293 x.174x .040 STEEL	2	Between Bracket and Screw
30-51-0073	CLAMP HEATSINK TO-220 1.3x.45x.35" CR STEEL 1018	2	
30-51-0229-2	HEATSINK AL BLK ANODIZED 7IN A5-3	1	
30-63-0006	PAD THERMAL 6mil 25mm x 30mm w/ADHESIVE 4KVAC VTM-O	4	Between Power Amps and Heatsink
30-63-0020	GAP-PAD VO-SOFT .100" THK .35" x .35"	1	Between Thermistor and Heatsink
35-00-0172	PCB POWER AMP LOW DOWN 250W 115P REV.A A5-3	1	NOT AVAILABLE AS A REPLACEMENT PART

LD 150 LD 175 LD 300 Pro

Service Manual Assembly Instructions

CHASSIS ASSEMBLY INSTRUCTIONS

LOW DOWN A5-2
Rev C
L6D000081



Forward and Notes

The information in this booklet applies to the mechanical assembly of the Low Down chassis.

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.
- 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

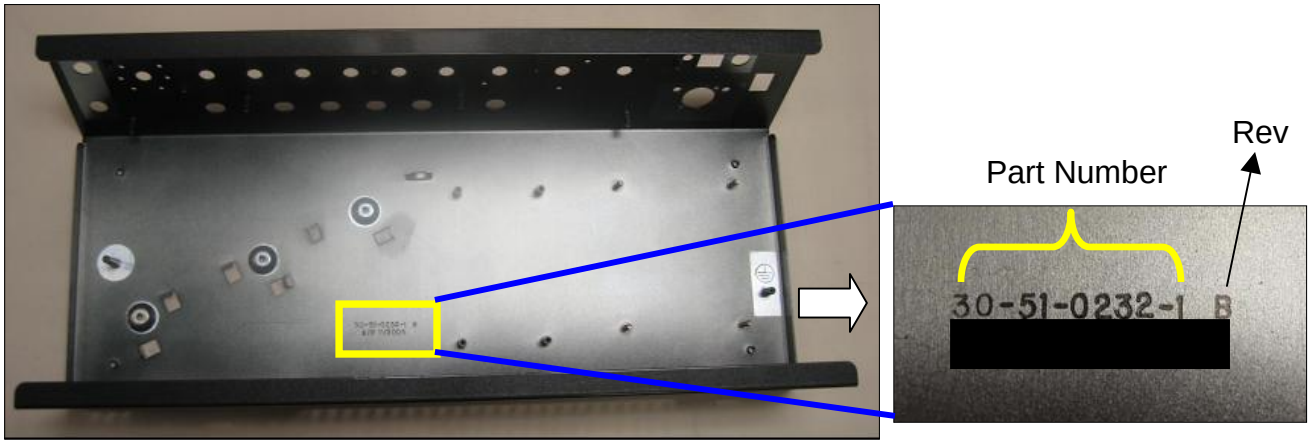
Revision	Changes
A	N/A
B	ECO 0535004 Step 2. Changed “on the ground” to “facing down”. Step 3. Added nut torque spec. Step 5. Corrected US unit conversion for A/C cable strain relief installation distance to 0.5 in. Step 7. Removed view showing silkscreen detail of Main PCB. Corrected Main PCB P/N to 50-02-0168. Step 9. Corrected Main PCB P/N to 50-02-0168. Step 11. Added clarification/additional detail of PCB installation. Step 14. Corrected screw qty in text box. Should be 4 PL. Step 16. Added nut torque spec. Step 22. Removed cable tie installation instruction. This is performed in step 27. Step 25. Added caution note. Revised cable P/N to 21-34-0014-6, per ECO 0532503. Step 26. Revised cable P/N to 21-34-0076-2, per ECO 0532502. Step 36. Revised POP topper P/N to 40-00-0097. Updated figure and installation instructions. Specified 50-03-0028-1 cabinet assy on figure. Step 37. Updated promo sticker location on figure. Specified 50-03-0028-1 cabinet assy on figure.

Revision Comment Sheet Cont'd

C	ECO 0603104
	Step 11. Removed 30-00-0043 screw and replaced with 30-00-1632.
	Step 14. Removed 35-00-0167 and replaced with 50-02-0167 Power Supply PCBA (Stuffed).
	Step 15. Revised 30-00-0092 part number descriptions to specify a screw with an external zinc tooth washer.
	Step 22. Revised 21-29-0012-2 cable color to black. Ref ECO 0601904.
	Step 27. Added cable tie location 5.
	Step 30a. (was Step 30). No other change.
	Step 30b. Added this step to indicate position of 40-25-0020 Inspection Label.
	Step 34. Added note to center chassis prior to tightening screws. Gap should be the same on both sides.
	Step 36. Modified shape of POP topper (ref ECO 0603102).
	Step 37. Added clarification to align bottom edge of promo sticker with top edge of footer and horizontal holes on grill.

STEP 1
Verify chassis part number as 30-51-0232-1. Chassis should have “Low Down LD175” silkscreened on the front panel and part marked on the inside surface.

30-51-0232-1 Chassis
Front Isometric View

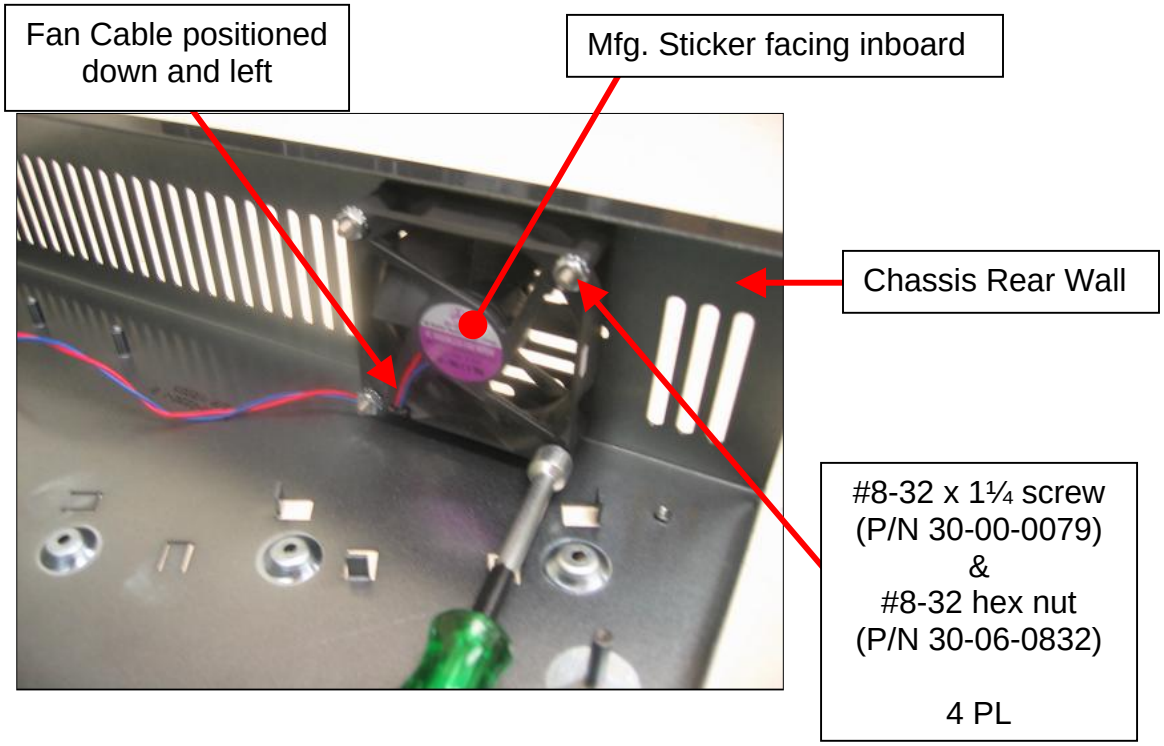


30-51-0232-1 Chassis
Bottom View

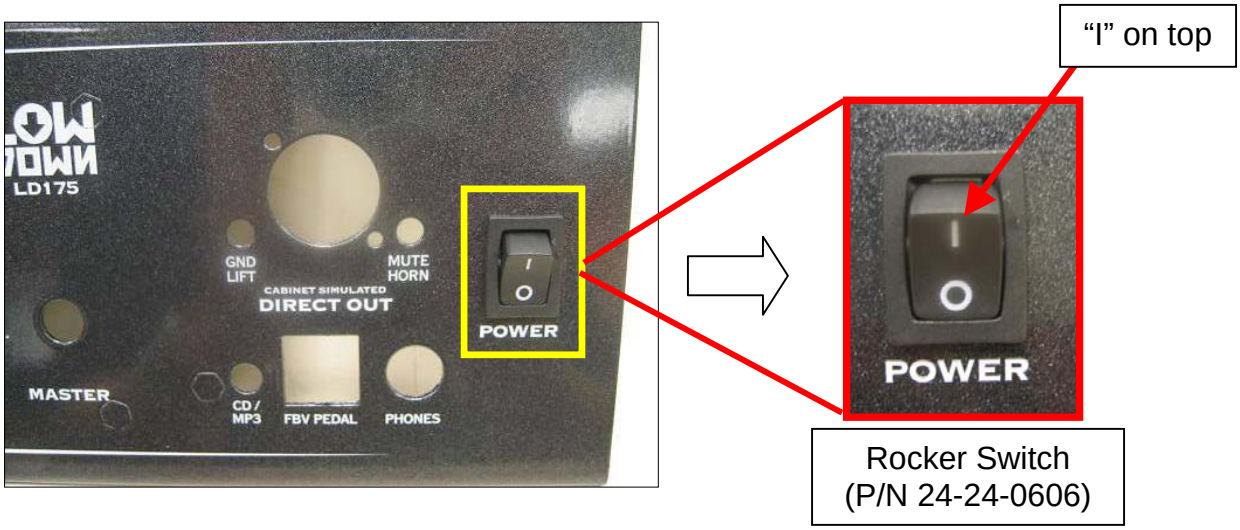
STEP 2
Position the chassis with the top facing down.

30-51-0232-1 Chassis
Bottom View

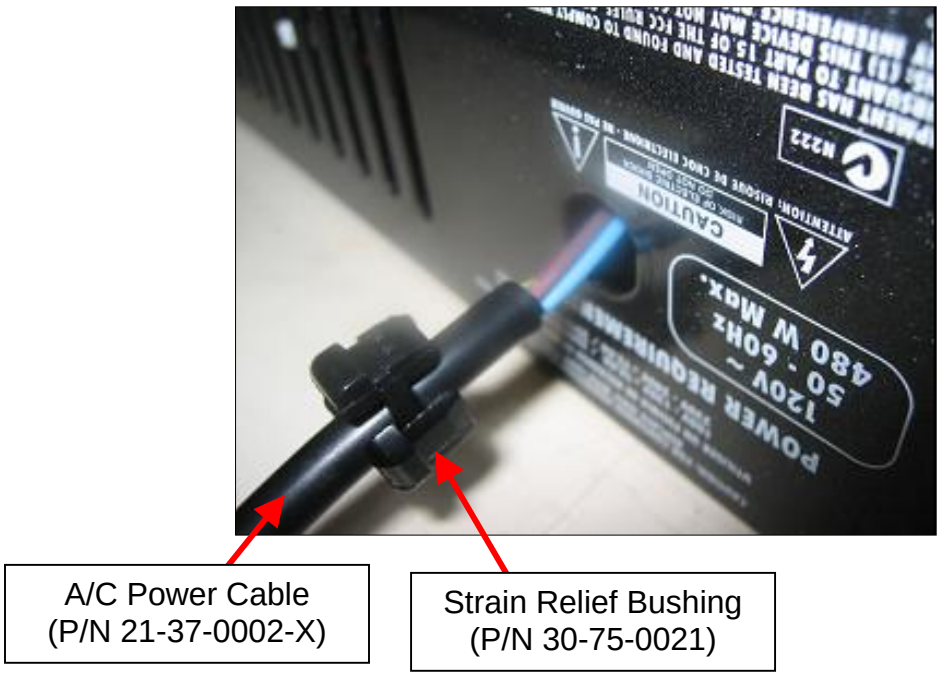
STEP 3:
Install fan (P/N 11-50-0813) as shown using four (4) #8-32 x 1¼ screws (P/N 30-00-0079) and four (4) #8-32 hex nuts with tooth washer (P/N 30-06-0832). Torque each nut to 8-10 in-lbs. Fan shall be oriented such that manufacturer sticker should is facing inboard and the fan cable is positioned down and to the left. See figure below.



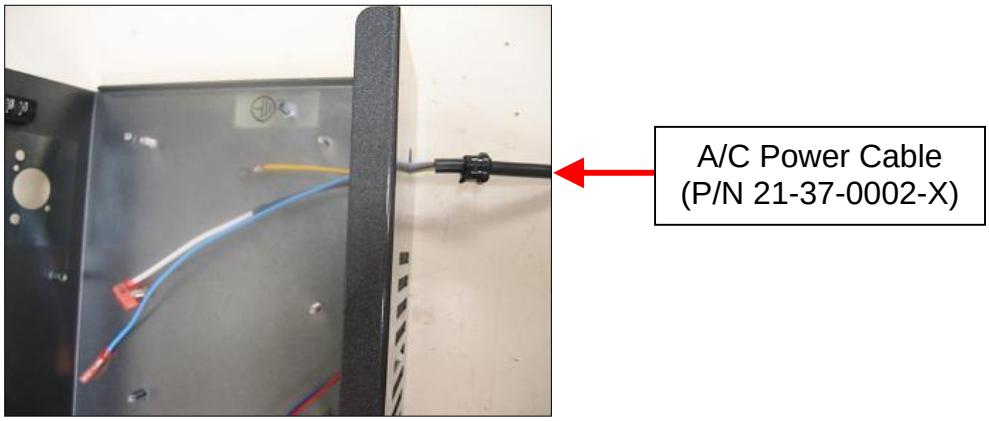
STEP 4:
Install rocker switch (P/N 24-24-0606) with the “I” above the “0”. The switch should snap securely into place.



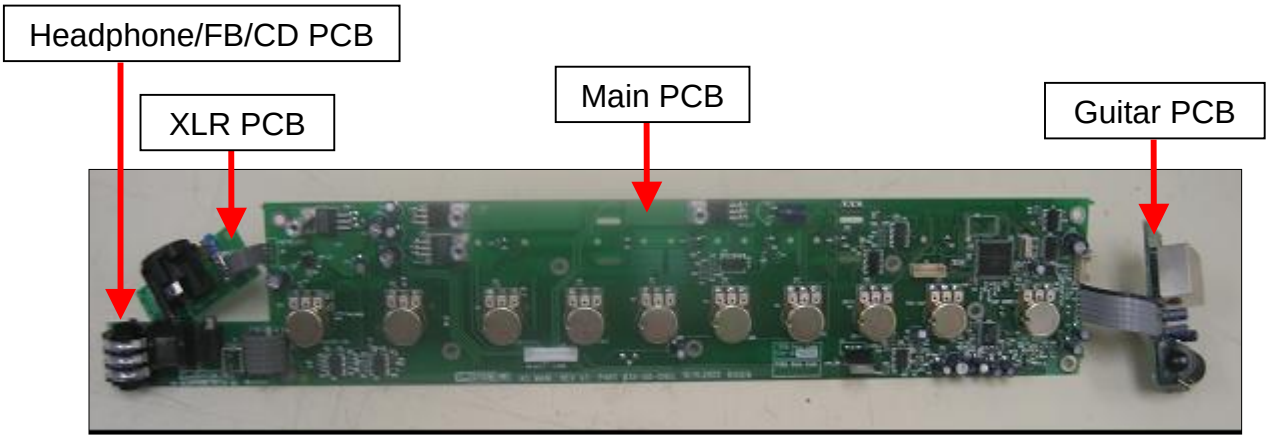
STEP 5:
Install strain relief bushing (P/N 30-75-0021) around A/C Power Cable (P/N 21-37-0002-X). Strain relief shall be 12.7mm(0.5 in) from the end of the cable. The “X” in the A/C cable assembly part number indicates the country where the A/C cable assembly is used. See Table 1 on the A/C Power Cable drawing 21-37-0002.



STEP 6:
Insert ends of the A/C Power Cable (P/N 21-37-0002-X) through the rear of the chassis. Compress strain relief, using appropriate tool and insert into chassis. The strain relief bushing must be oriented as shown below.



STEP 7:
Obtain one (1) PCB Assembly (P/N 50-02-0168). Break away the three (3) PCBs from the Main PCB. The three (3) breakaway PCBs are the headphone/FB/CD, XLR and Guitar Boards.



STEP 8:
Install one (1) Rubber Keypad (P/N 30-75-0027), one (1) LED Cover Effects (P/N 30-75-0028) and one (1) LED Cover Models (P/N 30-75-0029) to the Main PCB. Use pull-thru tabs on parts to secure to PCB.

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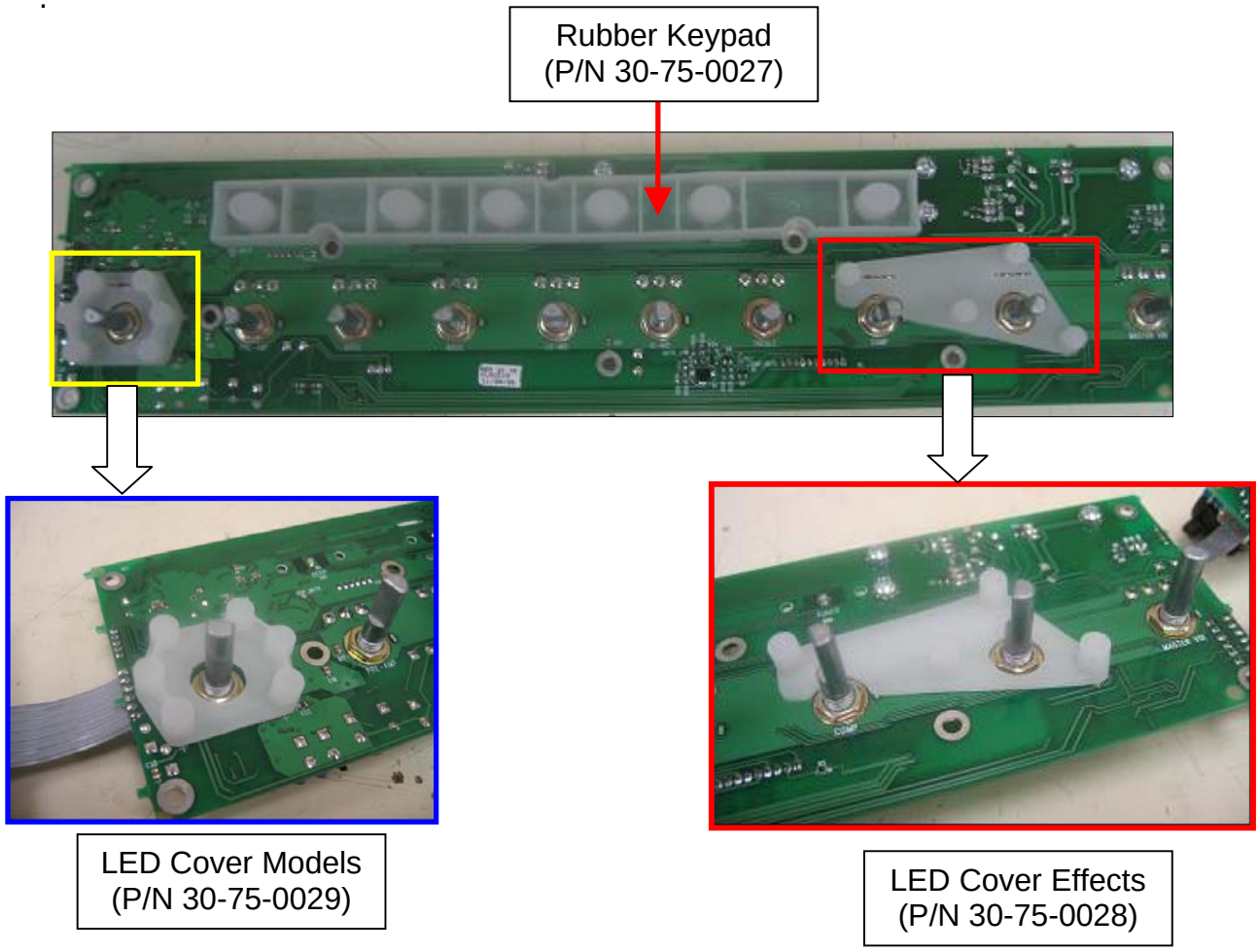
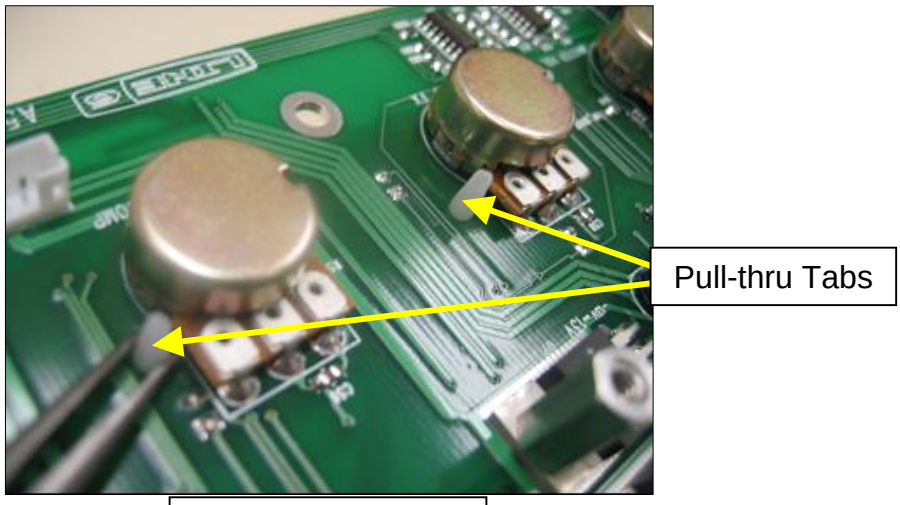
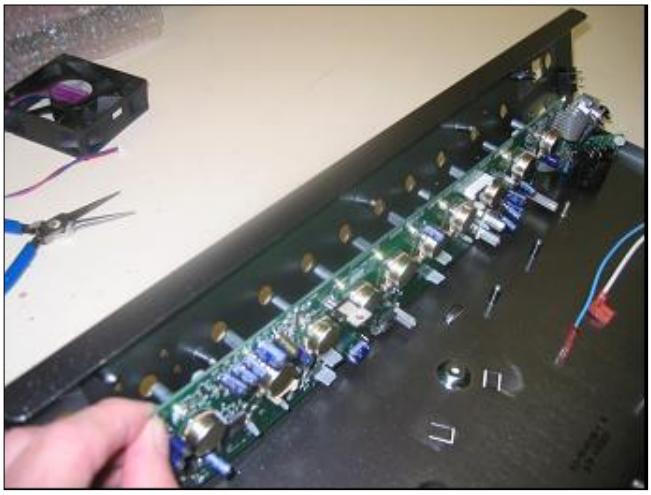




STEP 9:
Install Main PCB (P/N 50-02-0168) to chassis standoffs using nine (9) #6-32 screws (P/N 30-00-0043). Torque each screw to 8-10 in-lbs. Apply Loctite P/N 21463 (Threadlocker 222) or equivalent to exposed screw threads after assembly.

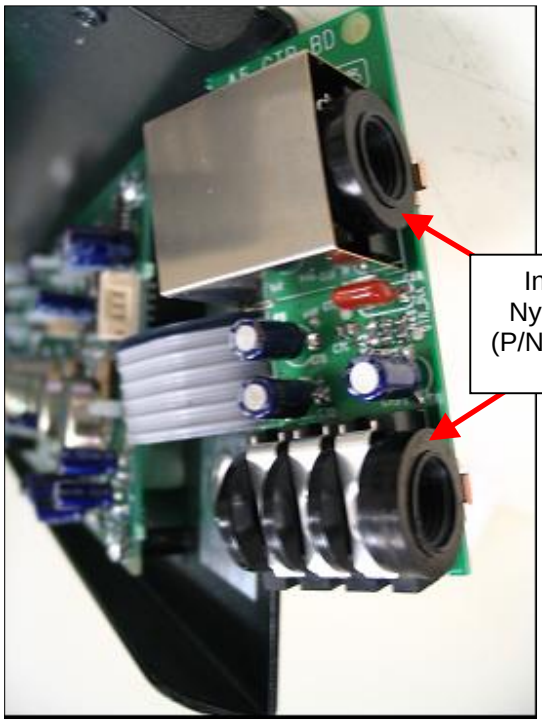
Note – LED cover tips should be flush with the front of the metal. Use dental pick or other special tooling if required to pull the LED cover tips through the hole.



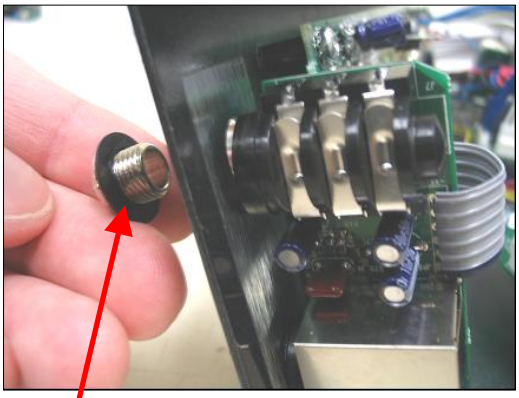
LED cover tips flush with front surface of metal (6 PL)

LED cover tips flush with front surface of metal (4 PL)

STEP 10:
Install Guitar breakaway PCB to chassis using two (2) each black nylon spacers (P/N 30-15-0004), black finishing washers and chrome nuts onto the ¼" jacks. The black finishing washers and chrome nuts are included with the ¼" jack (P/N 21-00-6617). The black nylon spacer shall be installed inside the metal against the ¼" jack. Torque chrome nuts to 5-6 in-lbs.



Install black
Nylon spacers
(P/N 30-15-0004)
2 PL



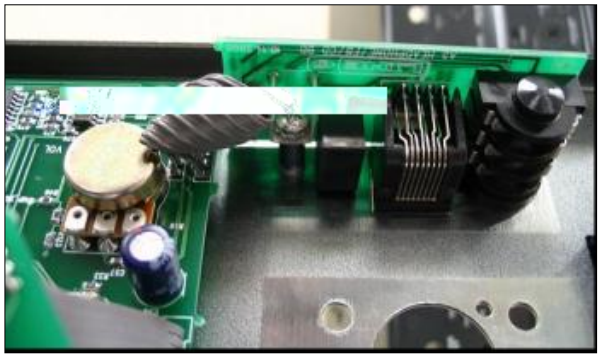
Install Black Finishing Washers
&
Chrome Nuts
2 PL
(Outside Metal)

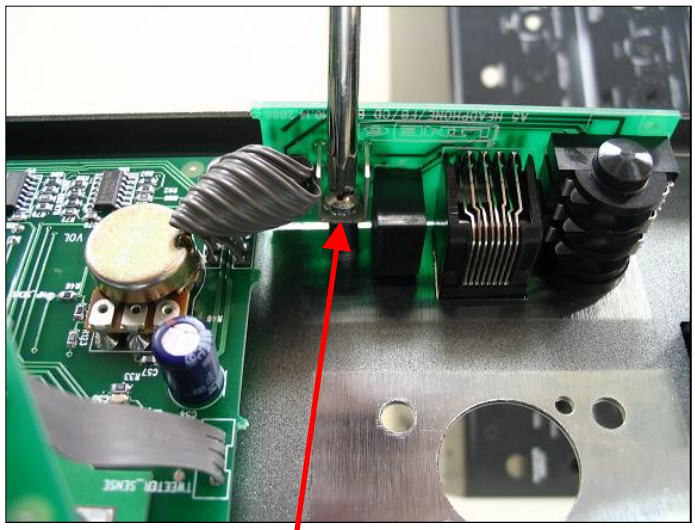
STEP 11:
Install the headphone/FB/CD breakaway PCB to the chassis.

The PCB is secured from the front using one (1) each black nylon spacer (P/N 30-15-0004), black finishing washer and chrome nut onto the ¼" jack. The black finishing washer and chrome nut are included with the ¼" jack (P/N 21-00-6617). The black nylon spacer shall be installed inside the metal against the ¼" jack. Torque chrome nuts to 5-6 in-lbs.

Install Black Finishing Washer
&
Chrome Nut
(Outside Metal)

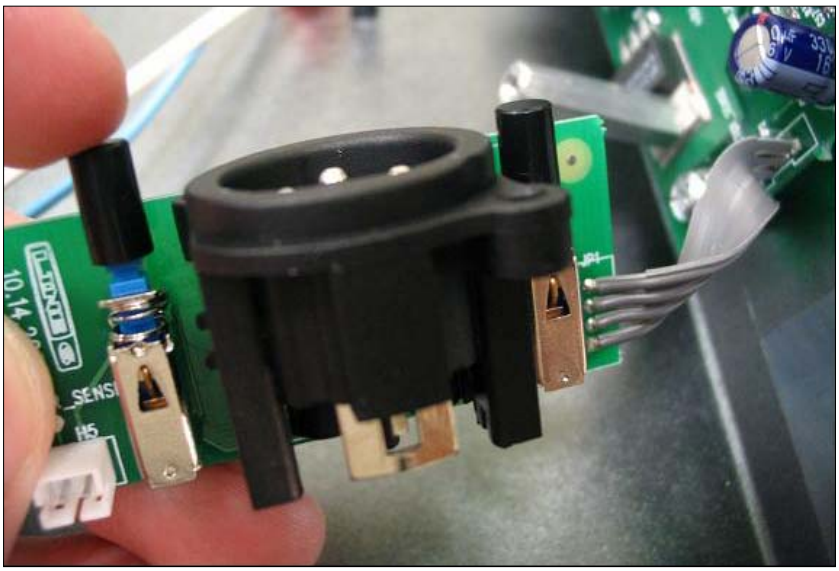
The PCB is secured from the inside using one (1) #6-32 screw (P/N 30-00-1632). Torque screw to 8-10 in-lbs. Apply Loctite P/N 21463 (Threadlocker 222) or equivalent to exposed screw threads after assembly.



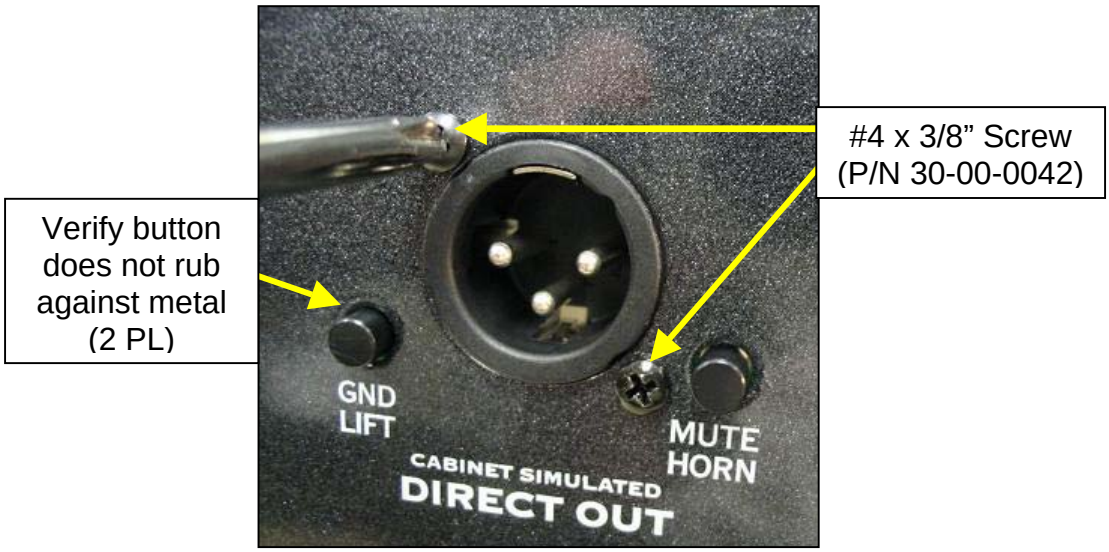


#6-32 x 3/8" Screw
(P/N 30-00-1632)

STEP 12:
On the XLR breakaway PCB, install one (1) switch cap (P/N 24-21-1124) on each push button switch as shown. Switch cap shall be completely seated on the button shaft after installation.

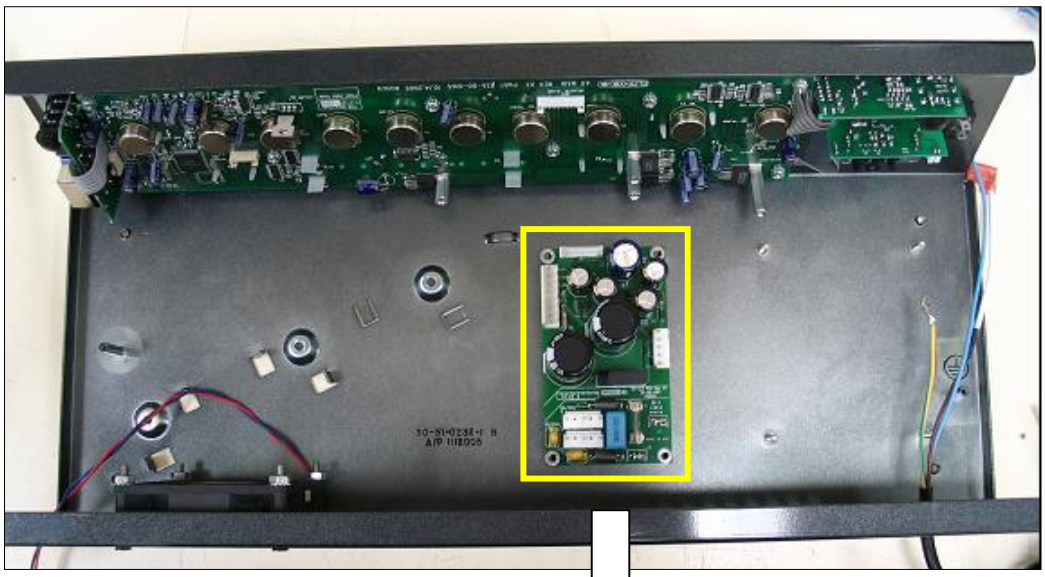


STEP 13:
Install the XLR breakaway PCB to the chassis. PCB should be positioned such that push buttons switch caps are concentric to the holes in the chassis. Verify the push buttons caps do not rub against the metal chassis. If buttons rub, rotate the PCB slightly until buttons move in and out freely. Use two (2) #4 x 3/8" (P/N 30-00-0042) to secure. Torque each screw to 6-8 in-lbs.



XLR Breakaway PCB Installation

STEP 14:
Install the Power Supply PCBA (P/N 50-02-0167) in the orientation shown below. Use four (4) #6-32 screws (P/N 30-00-0043) to secure to the chassis standoffs. Torque each screw to 8-10 in-lbs. Apply Loctite P/N 21463 (Threadlocker 222) or equivalent to exposed screw threads after assembly.



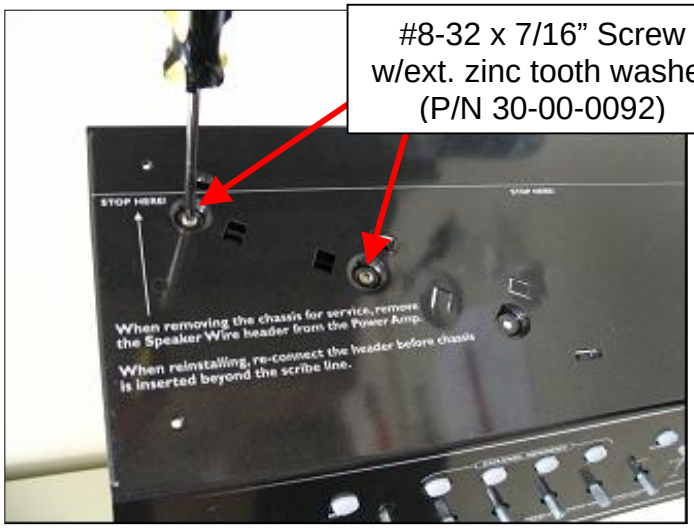
Chassis Front

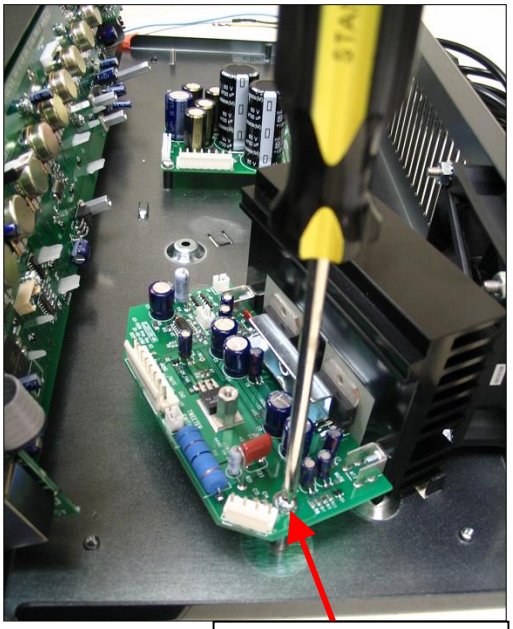
Chassis Rear

#6-32 Screw
(P/N 30-00-0043)
4 PL

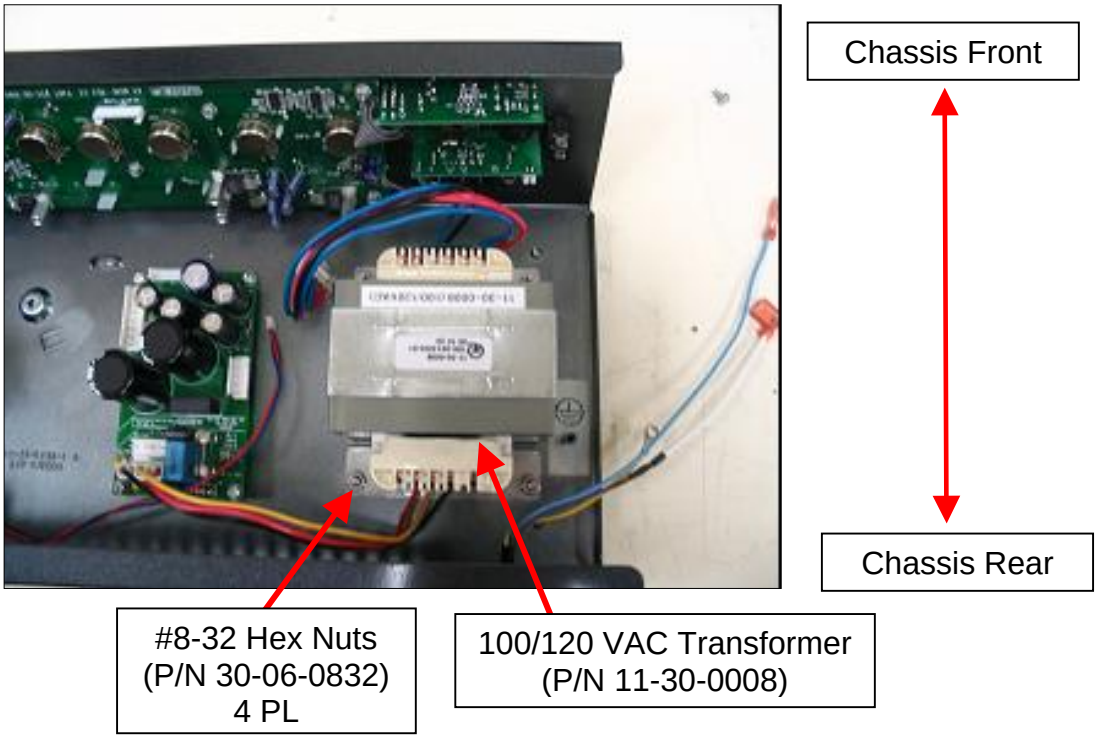
STEP 15:
THE NEXT STEP IN THE ASSEMBLY PROCESS REQUIRES THE ASSEMBLER TO TAKE PROPER ESD PRECAUTION DUE TO THE STATIC SENSITIVE DEVICES ASSOCIATED WITH THIS ASSEMBLY.

Install the Heatsink/Power Amp PCBA (P/N 50-04-0054) in the orientation shown below. Use folded tabs on the chassis to position the heatsink. Use two (2) #8-32 x 7/16" screws with ext. zinc tooth washer (P/N 30-00-0092) to secure through the chassis dimples. Use one (1) #6-32 screw (P/N 30-00-0043) to secure to the PCB chassis standoff. Torque each screw to 10-12 in-lbs.

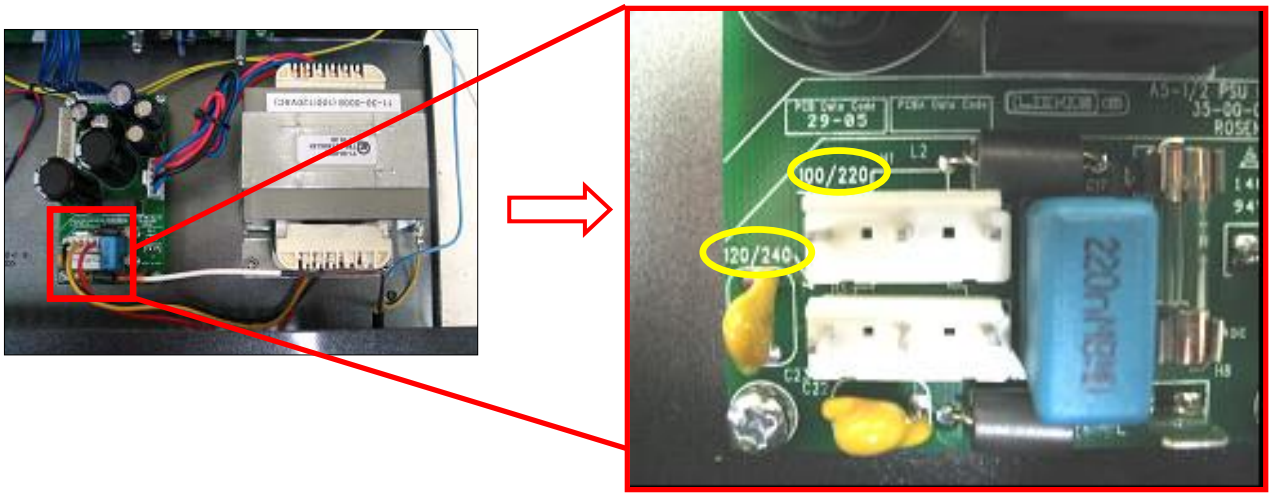




STEP 16:
Install the 100/120VAC transformer (P/N 11-30-0008) to the chassis in the orientation shown. The 3-pin cable should be oriented towards the back wall of the chassis. Use four (4) #8-32 hex nuts with tooth washer (P/N 30-06-0832) to secure to the chassis standoffs. Torque each nut to 8-10 in-lbs. Apply Loctite P/N 21463 (Threadlocker 222) or equivalent to exposed screw threads after assembly.

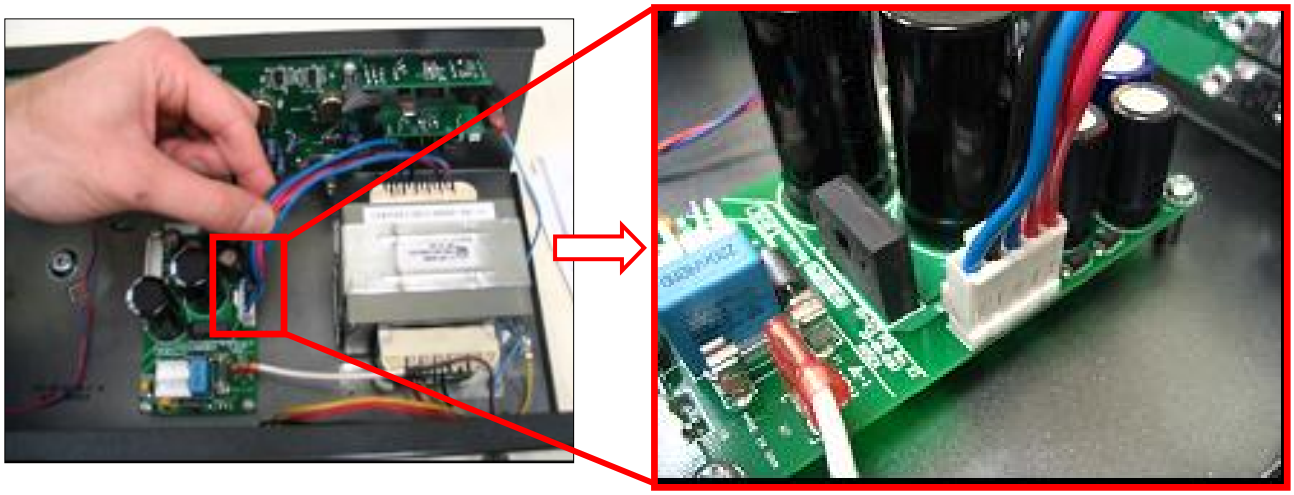


STEP 17:
Connect the 3-pin cable from the transformer to the correct header on the Power Supply PCB. Use table below to determine the correct Power Supply PCB header to install the cable to.

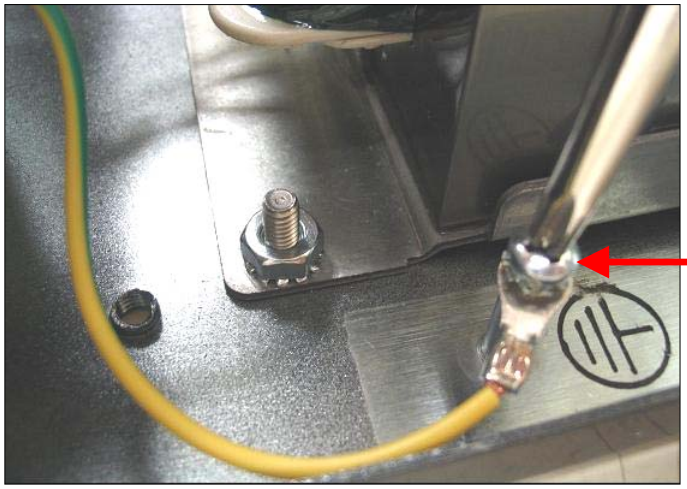


Finished Goods P/N	Description	Connect to Header
59-00-0016-1	ASSY UNIT COMPLETE BASS AMP US 115 LOW DOWN A5-2	120/240
59-00-0016-2	ASSY UNIT COMPLETE BASS AMP AU 115 LOW DOWN A5-2	120/240
59-00-0016-3	ASSY UNIT COMPLETE BASS AMP EU 115 LOW DOWN A5-2	100/220
59-00-0016-4	ASSY UNIT COMPLETE BASS AMP JA 115 LOW DOWN A5-2	100/220
59-00-0016-5	ASSY UNIT COMPLETE BASS AMP UK 115 LOW DOWN A5-2	120/240

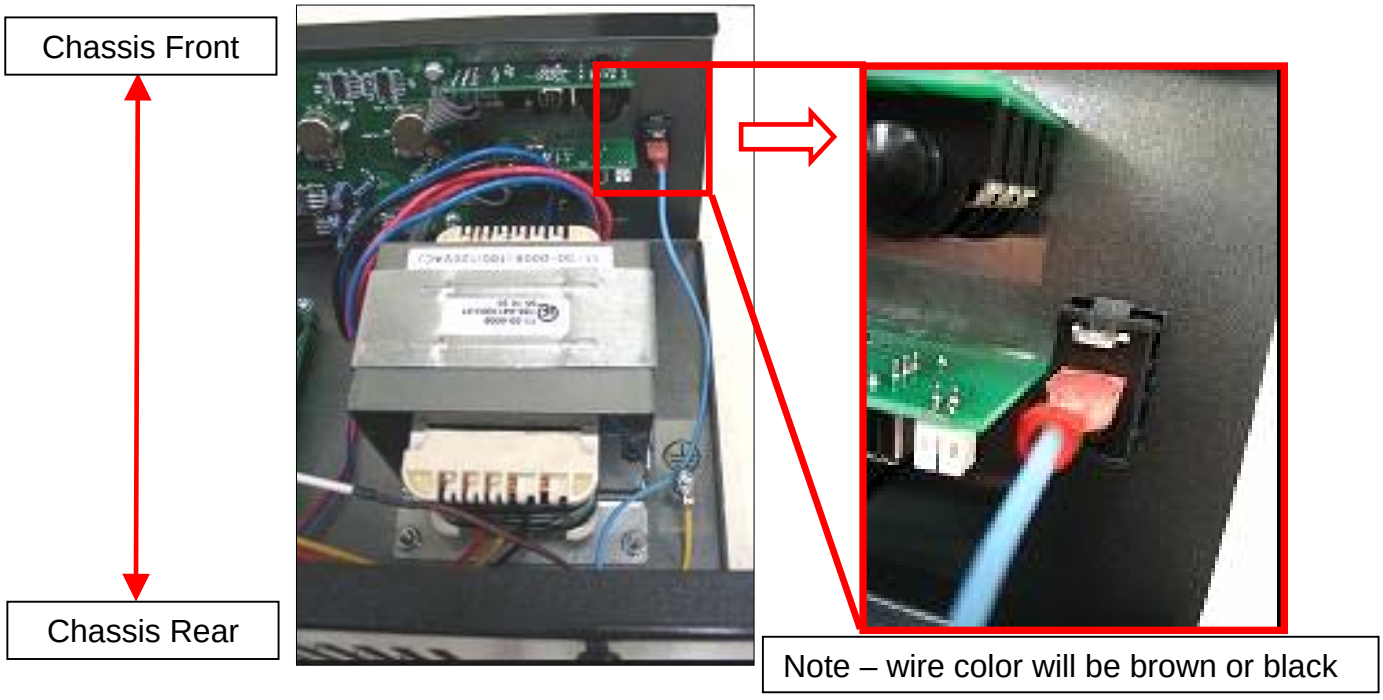
STEP 18:
Connect the transformer 5-pin cable to the correct header on the Power Supply PCB. See figure below.



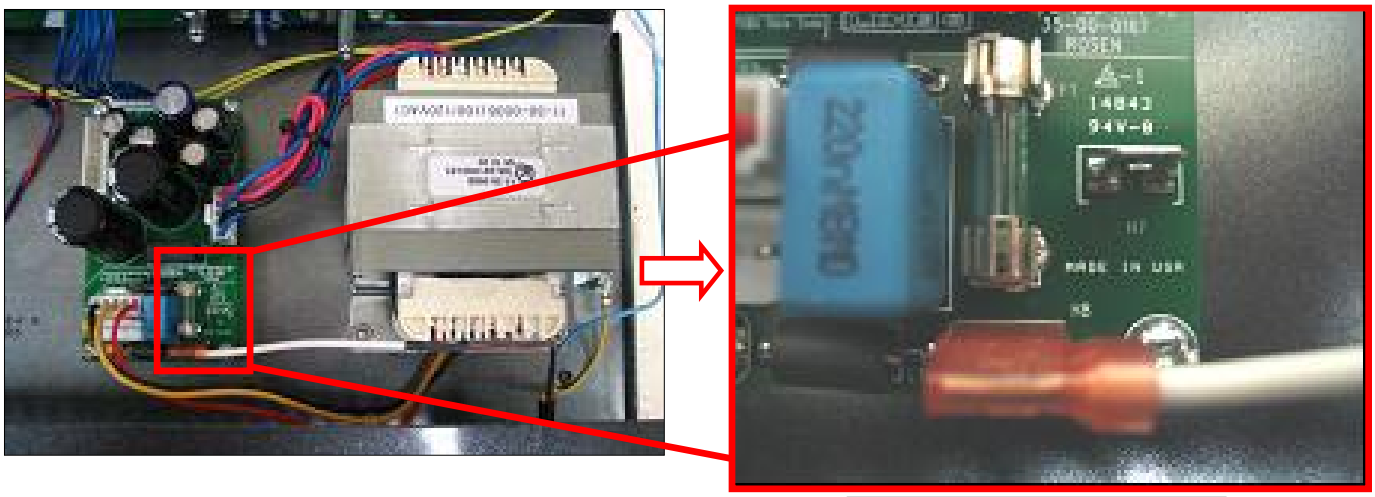
STEP 19:
Connect the green/yellow ground wire from the A/C power cable to the PEM stud in the chassis using a #6-32 screw (P/N 30-00-0043). Torque screw to 8-10 in-lbs. Apply Loctite P/N 21463 (Threadlocker 222) or equivalent to exposed screw threads after assembly.



STEP 20:
Connect the brown or black line wire from the A/C power cable to the bottom terminal on the rocker switch.

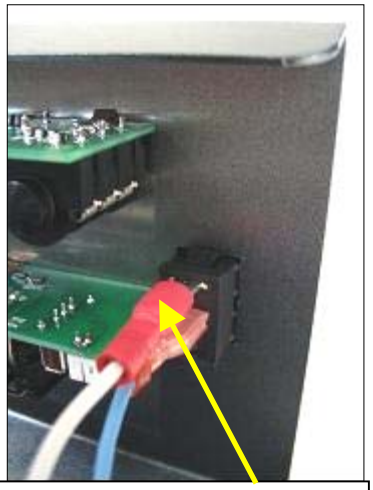


STEP 21:
Connect the blue or white neutral A/C Power cable wire to H8 on the Power Supply PCB.



Connect to Header H8

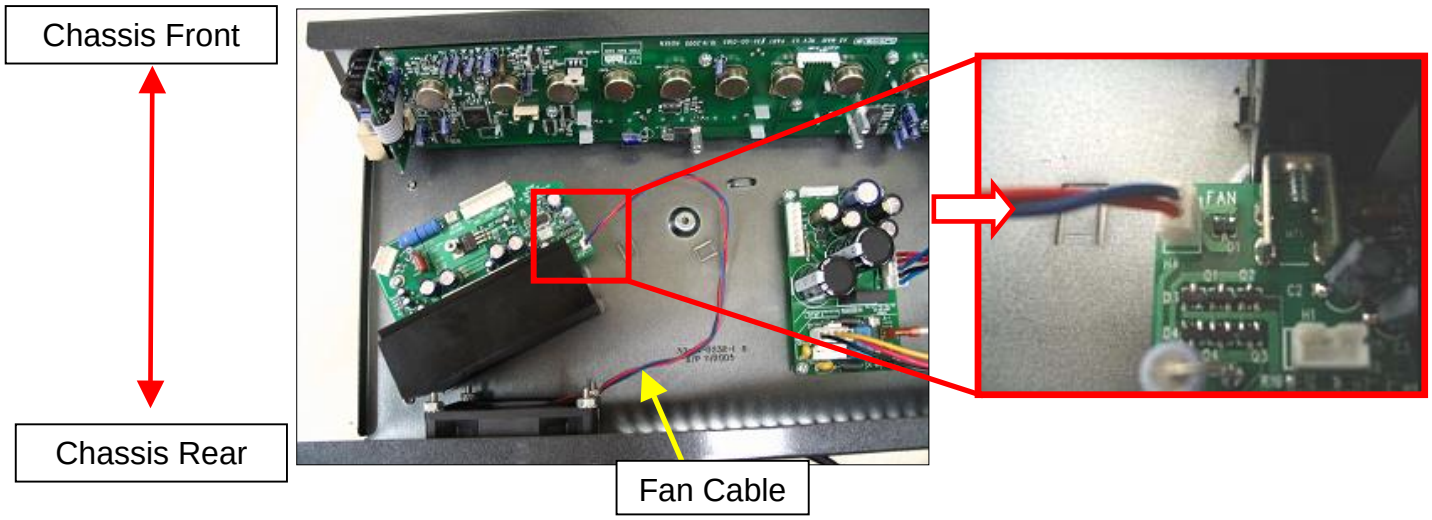
STEP 22:
Connect the 21-29-0012-2 black cable to the top rocker switch terminal and to H7 on the Power Supply PCB. Note – cable color will be black instead of white as shown in pictures.



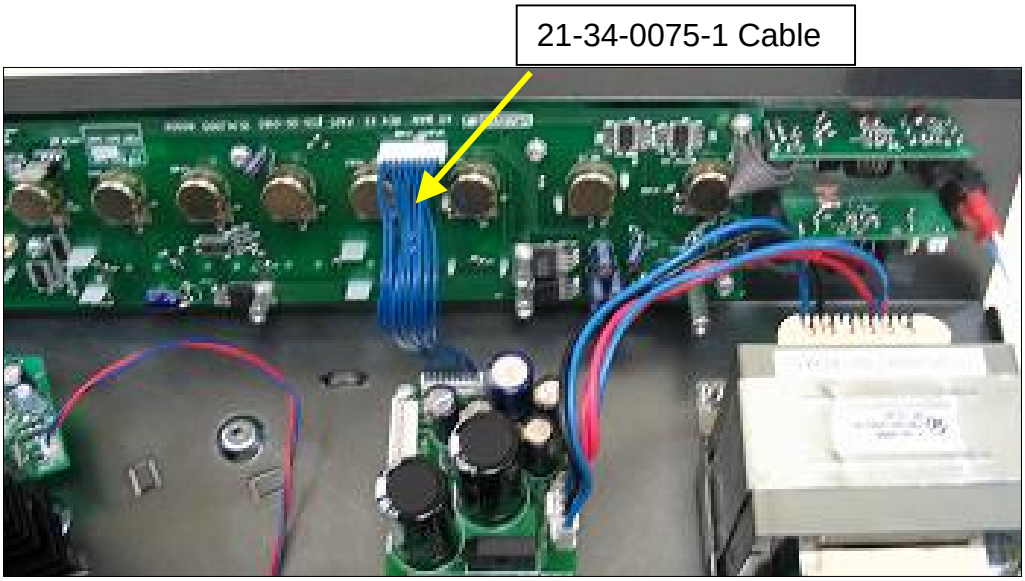
Connect to top terminal on Rocker switch

Connect at H7

STEP 23:
Connect fan cable to the header labeled “FAN” on the Power Amp PCB.



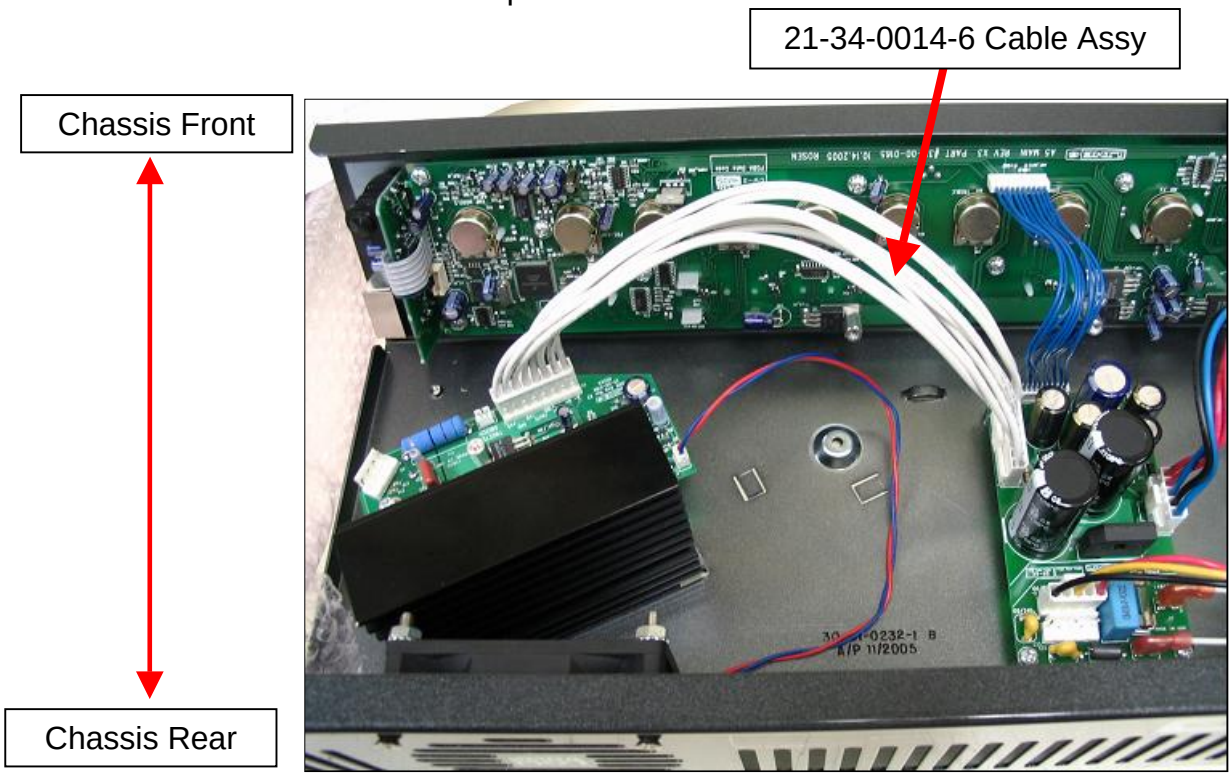
STEP 24:
Connect the 21-34-0075-1 blue, 10-pin cable to the header on Main PCB and to the header on the Power Supply PCB.



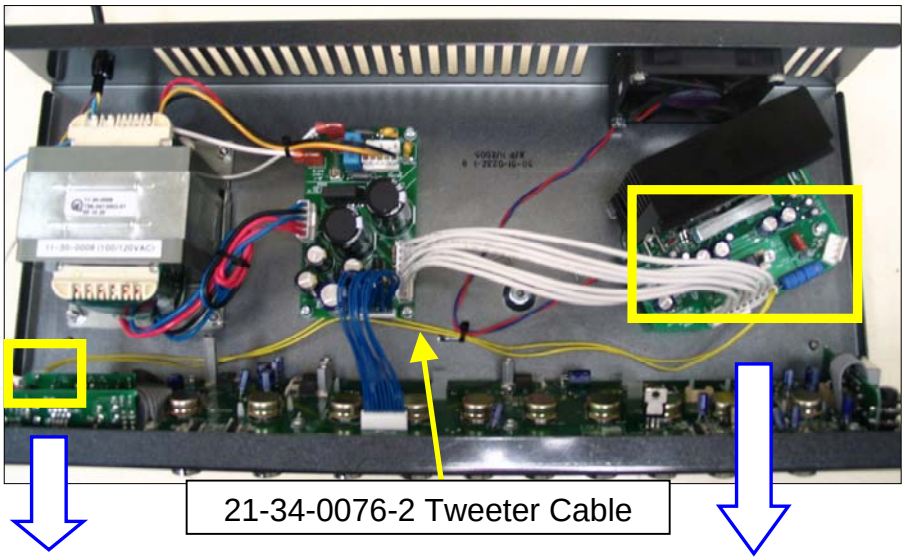
STEP 25:
NOTE - BEFORE PERFORMING THIS STEP, POWER SUPPLY CAPACITORS MUST BE COMPLETELY DISCHARGED to 0 Volts. OTHERWISE, DAMAGE TO POWER AMP ICs WILL RESULT. CAPACITORS TAKE 15 MINUTES TO SELF-DISCHARGE.

TO AVOID DAMAGE TO POWER AMP ICs, DO NOT SUBJECT THE UNIT TO AC POWER PRIOR TO PERFORMING THIS STEP.

Connect the 21-34-0014-6 white, 8-pin to the header on the Power Supply PCB to the header on the Power Amp PCB.

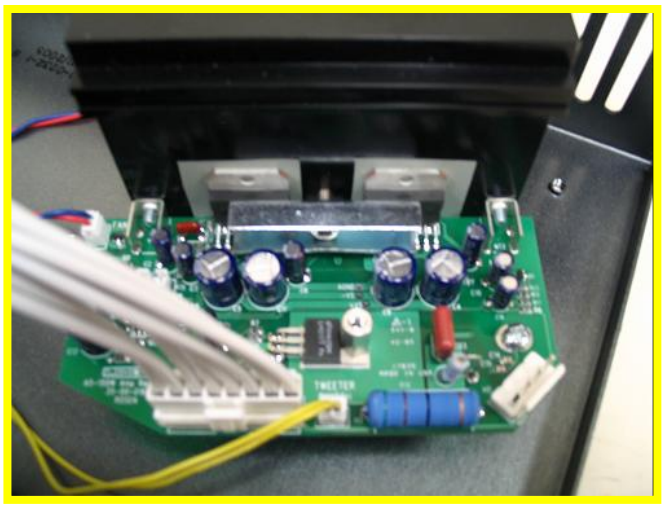


STEP 26:
Connect the 21-34-0076-2 yellow, 2-pin cable to the header on the Power Amp PCB labeled “TWEETER” to the header on the XLR PCB.



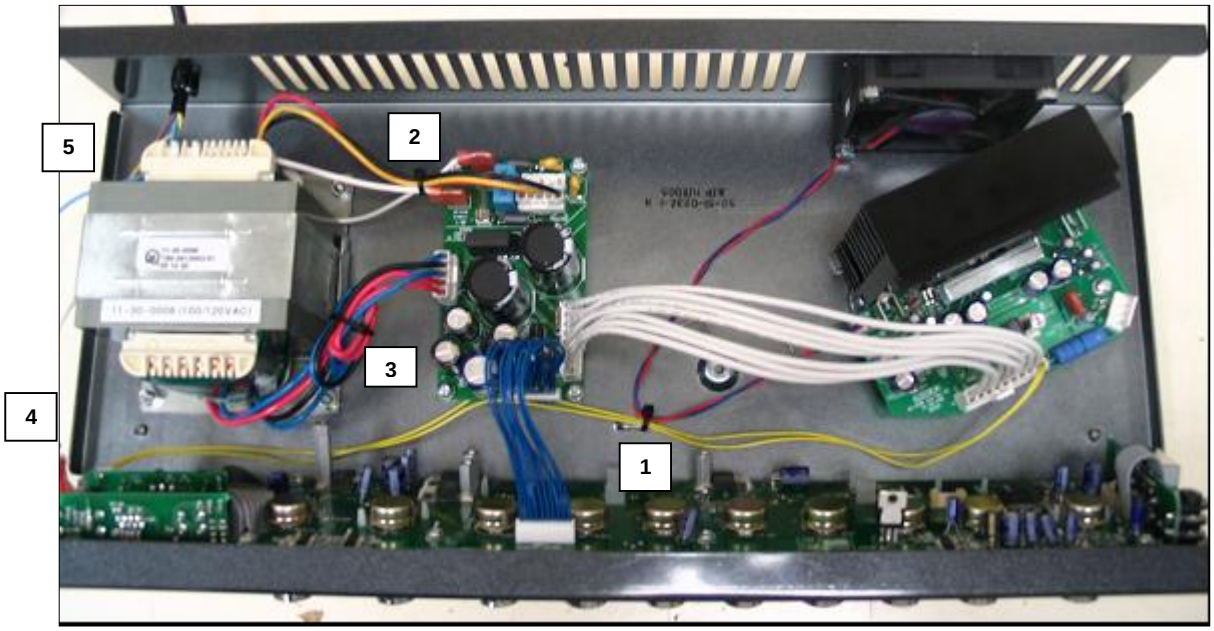
21-34-0076-2 Tweeter Cable

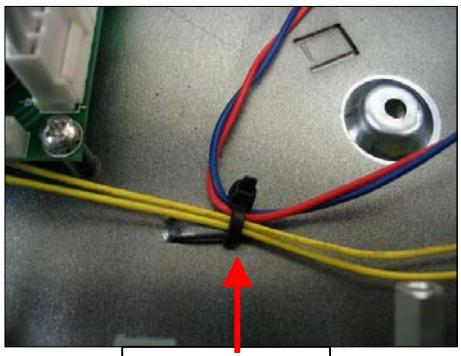
Connect on XLR Board



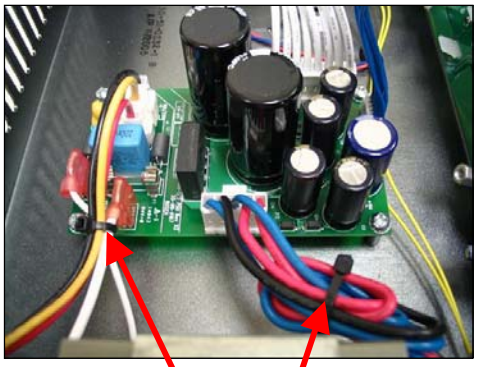
Connect on Power Amp PCB

STEP 27:
Install five (5) cable ties (P/N 30-24-0003) in areas indicated below.

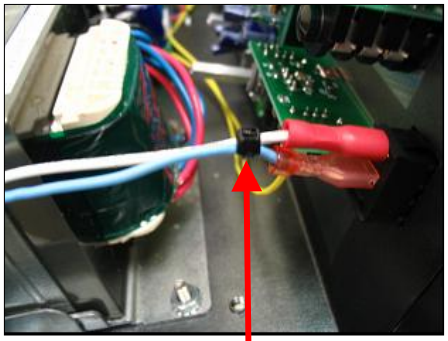




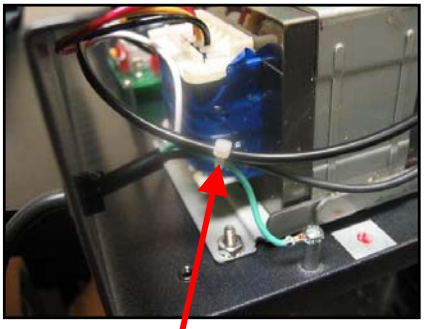
Location 1



Locations 2 & 3



Location 4



Location 5

STEP 28:
Install ten (10) plastic chrome knobs (30-45-0011) on all ten potentiometer shafts.

Plastic Chrome Knob
(P/N 30-45-0011)
10 PL

STEP 29:
Install UPC/Serial number label (P/N 40-25-0100) to the unit in the position specified below.

Chassis Back Panel
(Rear View)

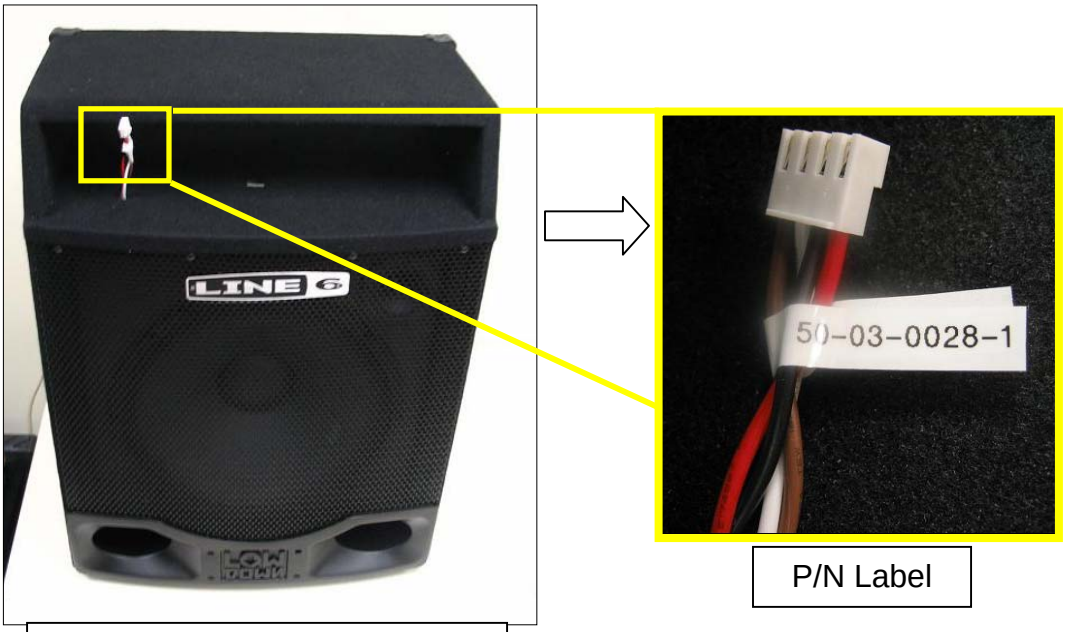
UPC/Serial Number
(P/N 40-25-0100)

STEP 30a:
Install ETL label (P/N 40-25-0030) to the unit in the position specified below.

Chassis Back Panel
(Rear View)

STEP 30b:
Install inspection label (P/N 40-25-0020) to the top of the chassis approximately in the position shown below.

STEP 31: Obtain one (1) completed 50-03-0028-1 cabinet assembly. Cabinet assembly should be identified with a label around the speaker cable, as should below.



50-03-0028-1 Cabinet Assy

P/N Label

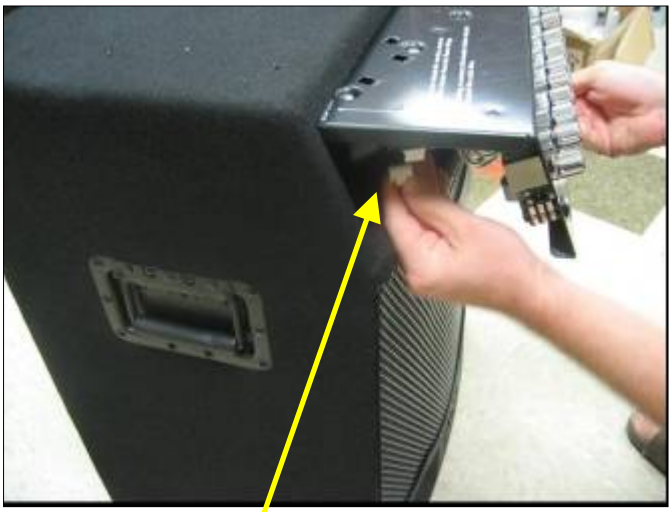
STEP 32:

NOTE - THIS IS CRITICAL PROCESS!
Perform speaker impedance test per separate L6D000080 Speaker Impedance Test Instructions.

If test indicates correct impedance, remove sticker label and proceed to next step.

STEP 33:
Remove P/N label from the speaker cable. Insert the chassis assembly into opening on the 50-03-0028-1 cabinet assembly from the front as shown. When chassis is inserted to the scribe line, install the speaker cable to the header on the Power Amp PCB.

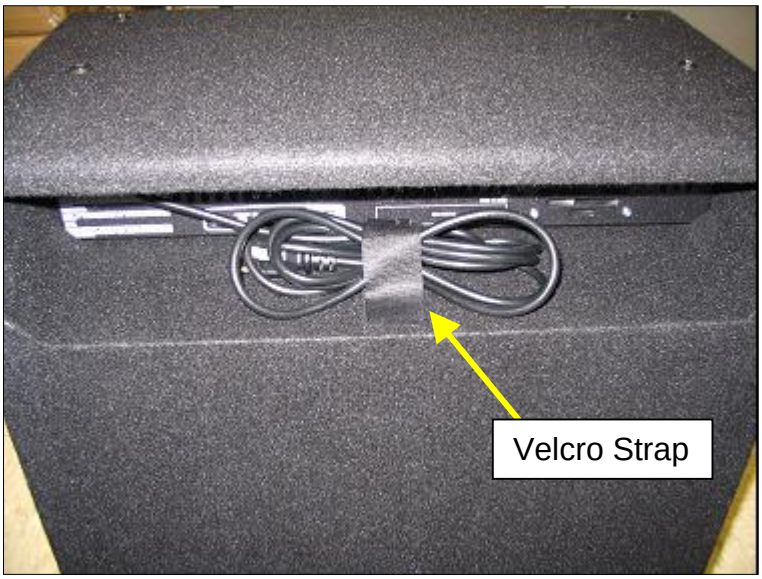
Insert Chassis Assy to Scribe Line



Connect Speaker Cable to Header on Power Amp PCB

STEP 34:
Secure chassis assembly to 50-03-0028-1 cabinet using four (4) #10-32 UNC x 1 ¾ inch screws (P/N 30-00-1128) and four (4) finishing washers (P/N 30-03-0112). Torque each screw to 10-12 in/lbs. **NOTE – CHASSIS MUST BE CENTERED ON CABINET BEFORE TIGHTENING SCREWS.**

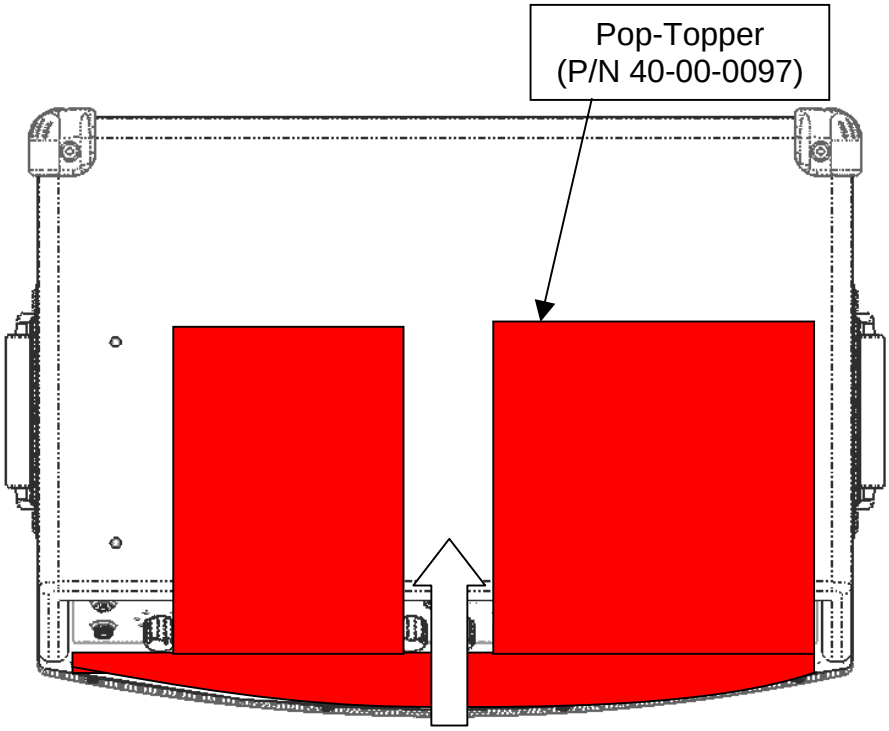
STEP 35: Install A/C Power cable in the Velcro strap on the cabinet as shown.



Cabinet - Back View 1

Cabinet - Back View 2

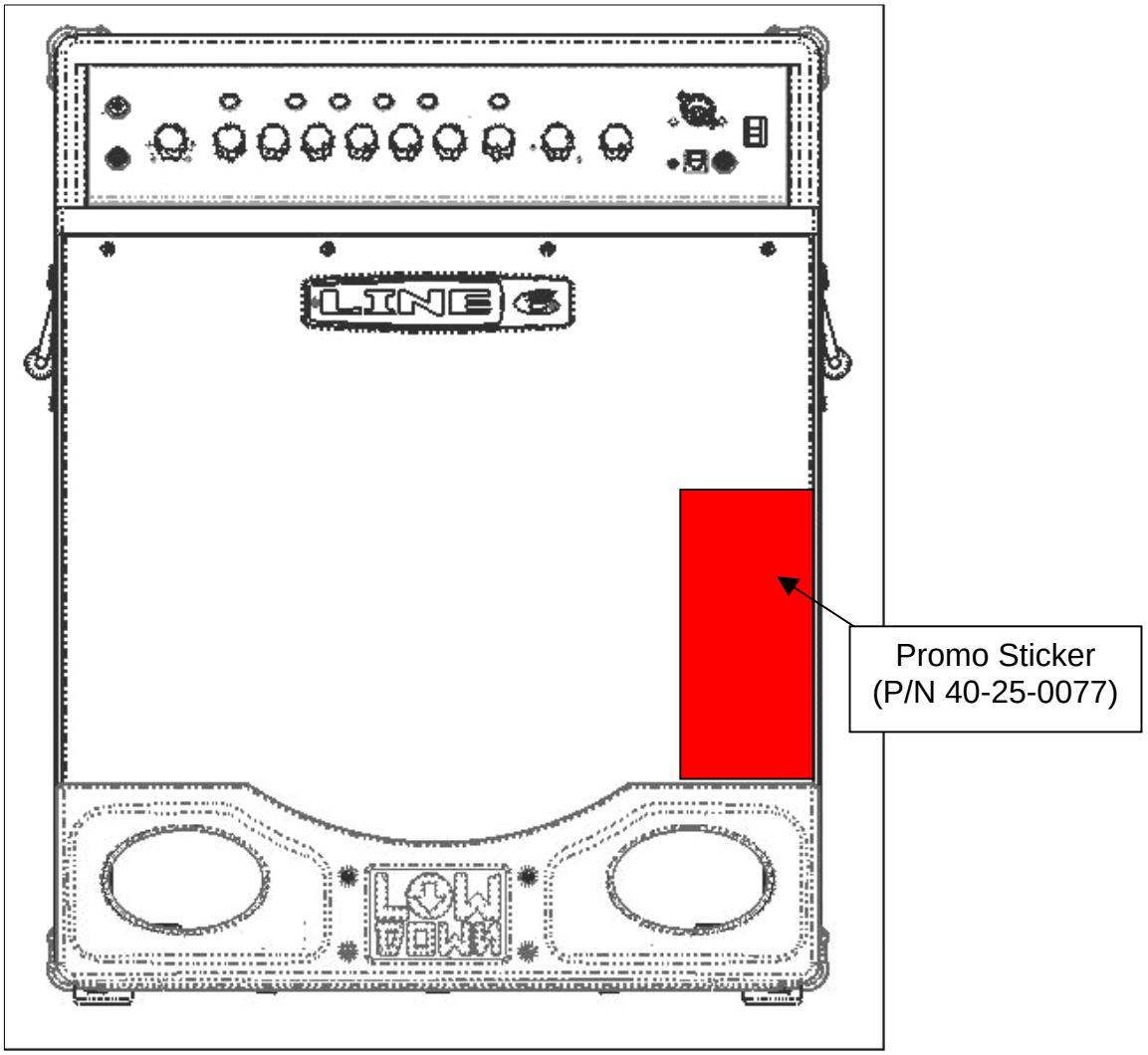
STEP 36: Install Pop-Topper (P/N 40-00-0097) underneath chassis to the position approximately indicated below.



Install POP topper from front
(Underneath chassis)

50-03-0028-1 Cabinet Assy – Top View

STEP 37: Install Promo Sticker (P/N 40-25-0077) to grill in the position indicated below. Align bottom edge of sticker with the top edge of the footer and horizontal holes on the grill.



50-03-0028-1 Cabinet Assy – Front View

Engineering

LOW DOWN A5-1 A5-2 A5-3
MAIN PCB SPECIAL ASSEMBLY NOTES
Rev.A

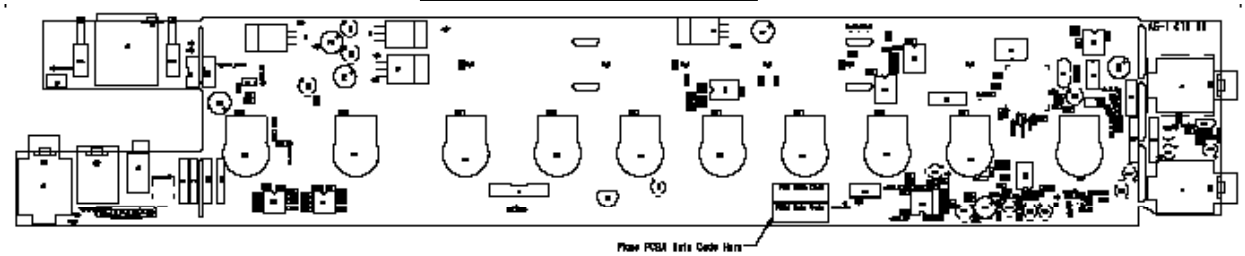
Revision:	Notes:	Date:	Released By:
A	Initial Release for Beta Build	12/01/05	Justin Brennan

!!!!!CAUTION!!!!!

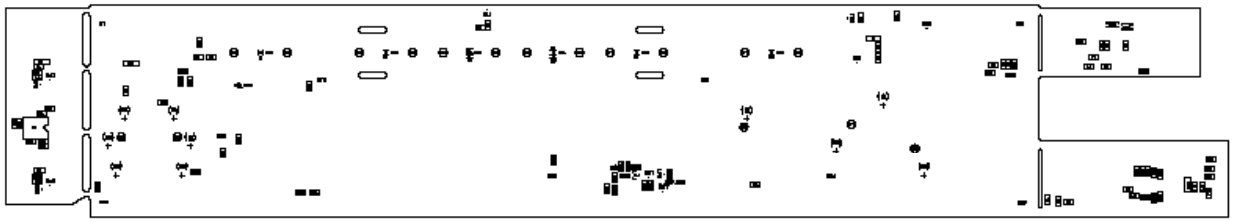
ELECTROSTATICALY-SENSITIVE PARTS!
WEAR ESD PROTECTIVE CLOTHING!
ASSEMBLE IN AN ESD CONTROLLED ENVIRONMENT!

A5-1 LOW DOWN MAIN PCB ASSY: 50-02-0165 (Refers To PCB, Rev.A 35-00-0165)
A5-2 LOW DOWN MAIN PCB ASSY: 50-02-0168 (Refers To PCB, Rev.A 35-00-0165)
A5-3 LOW DOWN MAIN PCB ASSY: 50-02-0168 (Refers To PCB, Rev.A 35-00-0165)

COMPONENT SIDE



SOLDER SIDE

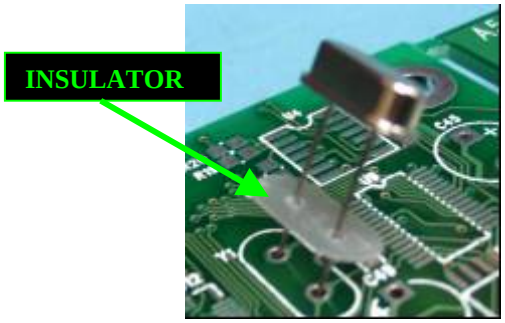


1. **“DO NOT INSTALL” COMPONENTS:**
   R84, R85, R96, C2, C94, Q6-7, U5, *H2-3
   *** Install H2 and H3 for Beta Build Only!**

2. **“DO NOT INSTALL” COMPONENTS: (FOR A5-1 ONLY)**
   R122, D27, D31, H5, SW8

3. **BREAKAWAY SECTIONS:**
   DO NOT BREAK APART the 3 Sections of the PCB until after stuffing.

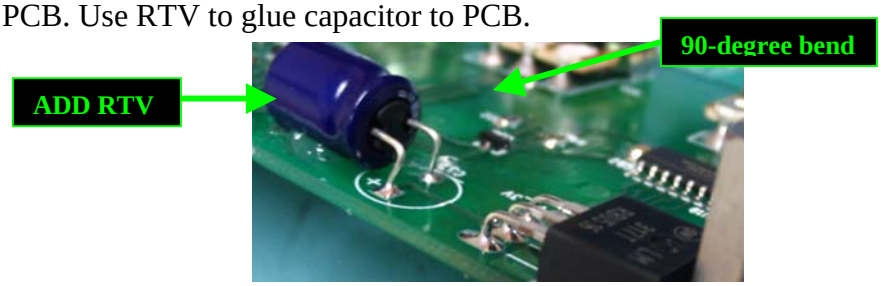
4. **CRYSTAL AND INSULATOR:**
   Crystal Y1 is to be installed with the insulator (30-15-0007) and must be mounted flush with the PCB.



BE SURE TO INSTALL INSULATOR

CRYSTAL INSTALLED WITH INSULATOR

5. **CAPACITOR C37:**
   Mount Horizontally to PCB. Leads should form a 90 degree angle from cap bottom to PCB. Use RTV to glue capacitor to PCB.

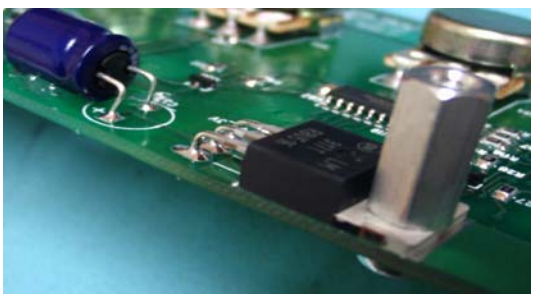


6. **POTENTIOMETERS:**
   Make sure that each pot (10 total) is securely mounted to the PCB with it's respective nut and washer before soldering.

   Torque each nut to 3-4 in-lbs.
   This will ensure proper alignment of the pot, and reduce strain on the pot leads. The pot shafts should be perpendicular to the solder-side of the PCB.

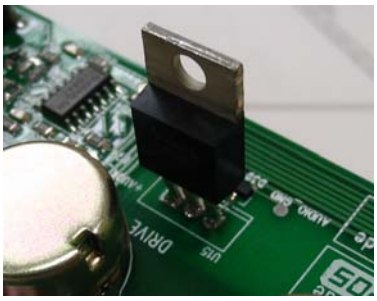
7. **DO NOT WATER WASH THE BOARD:**
   The potentiometers are sensitive to water washing. If wave soldering is preferred, we recommend using a no-clean flux wave soldering process, rather than a process that requires washing. The fluxing process wave must be controlled so as not to have flux migrate inside the pot through the top of the housing. Good venting is required. No-clean flux vapors can enter the switch if adequate venting is not available. The vapors will condense on the internal contacts and become an insulator when they solidify.

8. **REGULATOR IC's:**
   Make sure that Regulator IC's U2, U3, U7, and U10 are mounted to the PCB with their respective heat sinks (standoffs) before soldering. This will ensure proper alignment of the regulator, and reduce strain on the regulator leads.
   Torque each screw/standoff to 10-12 in-lbs.



U2, U3, and U7 are installed with a 0.5” heat sink (30-12-2210) and screw (30-00-0043). U10 is installed with a 1.0” heat sink (30-12-0632) and one screw (30-00-0043).

U15 has no heat sink and should be mounted perpendicular to the PCB and as close to the PCB as the leads will allow.



9. **JACKS**:

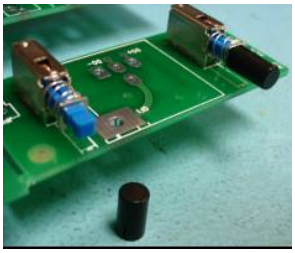
Make sure all jacks:

TRS: 21-00-6617
XLR: 21-08-0013
RJ45: 21-16-0045
3.5mm: 21-12-0035

are mounted flush with the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. All jacks are mounted on the Solder-Side of the PCB.

10. **SWITCHES**

Make sure the Push-Button switch (21-12-0035) is mounted flush with the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. The positioning of this

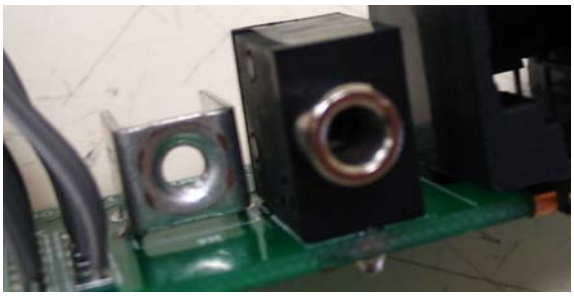


switch is critical due to the small tolerance of it’s respective chassis cut-outs. The switch is mounted on the Solder-Side of the PCB.

Install the switch cap onto the switch(s) (24-21-1124).

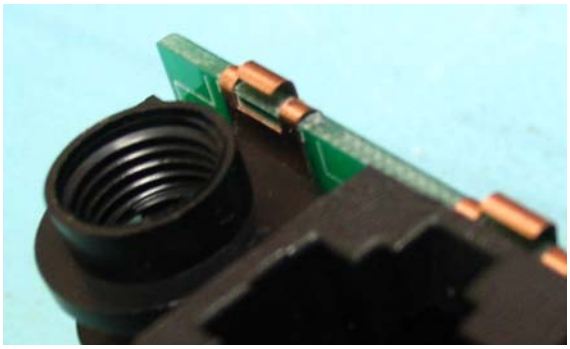
11. **RIGHT ANGLE TERMINAL**

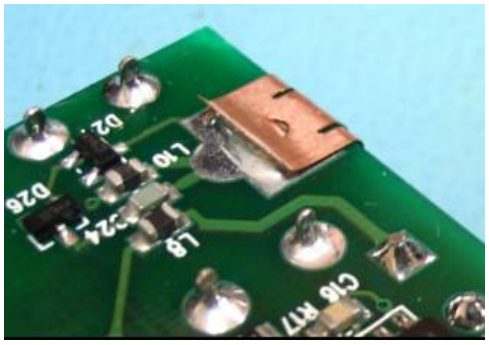
Make sure the Right Angle Terminal (21-12-0035) is completely inserted into the PCB and lined up with the silkscreen outline within +/-1 degree of accuracy. Place on the Solder-Side of the PCB with the screw hole the same direction as the 3.5mm, RJ45, and TRS jacks.



12. **GROUNDING FINGERS:**

Grounding fingers GF1-5 (30-18-3030) are mounted flush against the PCB edge with the center clip hole on the **SOLDER SIDE** of the PCB. The "curl" of the grounding finger

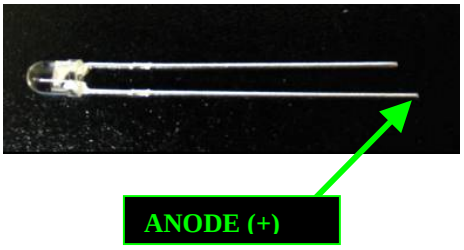




should curve toward the Top side of the PCB. **It should then be manually soldered on the SOLDER SIDE.**

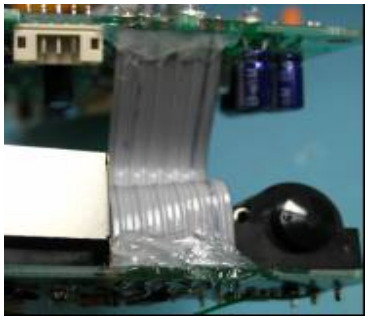
13. LED's:

All Thru-Hole LED's (18-02-0001) are to be vertically mounted on the **SOLDER SIDE** of the PCB as close to the PCB as possible. Ensure that each LED is installed with the correct orientation on the PCB. The longer anode lead of the LED should go through the **round** (+) pad of the PCB.



14. **RIBBON CABLES:**

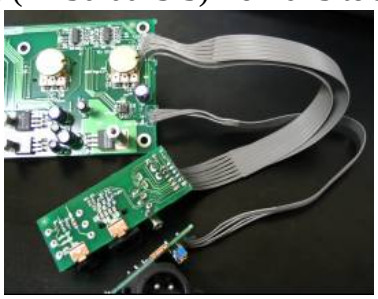
Install 6-pin ribbon cable (21-30-0015-**3**) from JP7 to JP8.
Add RTV to each end of the cable.

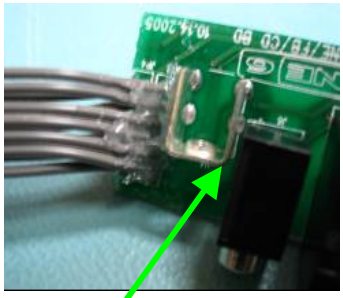


The RTV should run along the entire width of the cable.

A5-1 ONLY:

Install 6-pin ribbon cable (21-30-0015-**4**) from JP4 to JP5 **BEFORE** installing 6-pin ribbon cable (21-30-0015-**5**) from JP3 to JP6.





Add RTV to each end of both cables.

Be careful to not get RTV in the right angle mount!

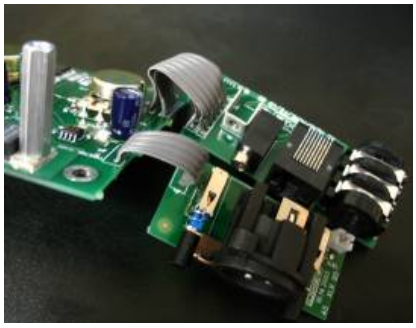
A5-1 ONLY:

Install 4-pin ribbon cable (21-30-0016-**2**) from JP1 to JP2.

Add RTV at both ends of cable.

A5-2 & A5-3 ONLY:

Install 6-pin ribbon cable (21-30-0015-**1**) from JP4 to JP5 **BEFORE** installing 6-pin ribbon cable (21-30-0015-**2**) from JP3 to JP6.

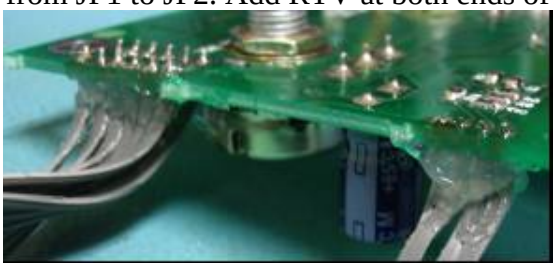


Add RTV to the ends.

Be careful to not get RTV in the right angle mount!

A5-2 & A5-3 ONLY:

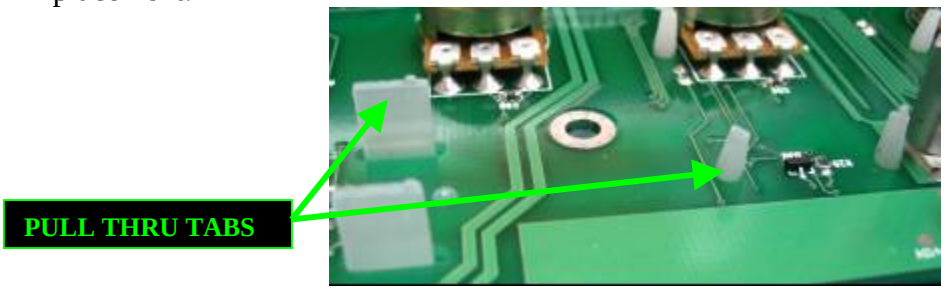
Install 4-pin ribbon cable (21-30-0016-**1**) from JP1 to JP2. Add RTV at both ends of cable.



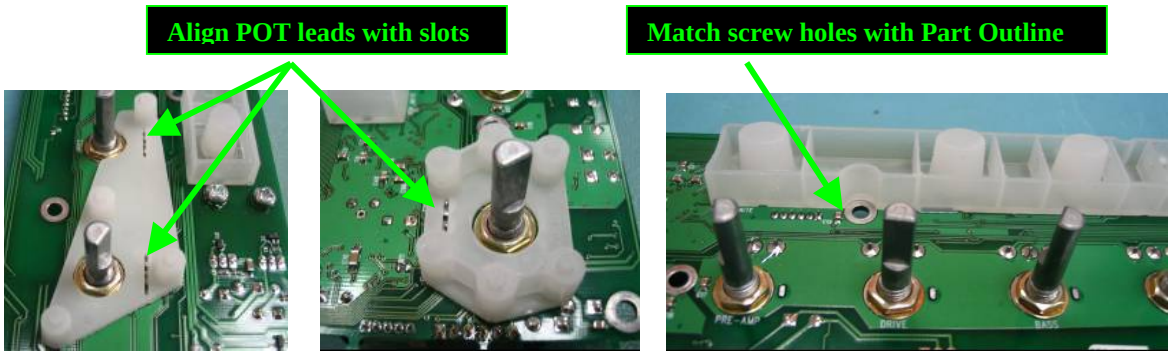
15. RUBBER PARTS:

The rubber keypad and both Cover LED Rubber parts are to be mounted on the **SOLDER SIDE** of the PCB.

Make sure to pull the rubber legs completely through the PCB to guarantee proper placement.



The Cover LED Rubber parts (30-75-0028 & 30-75-0029) should be installed so that they fit over their respective LED's. The POT leads should align within their respective slots as shown in the picture.



The rubber keypad (30-75-0027) should be installed so that all screw holes on the PCB match the outline of the rubber.

- END OF MAIN PCB SPECIAL ASSEMBLY NOTES -

Engineering

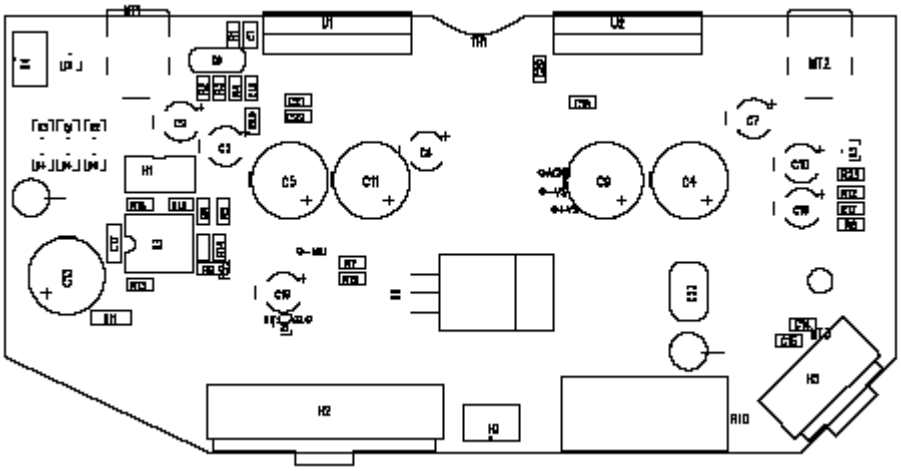
LOW DOWN A5-1 A5-2 A5-3
POWER AMP PCB SPECIAL ASSEMBLY NOTES
Rev.A

Revision:	Notes:	Date:	Released By:
A	Initial Release for Beta Build	12/01/05	Justin Brennan

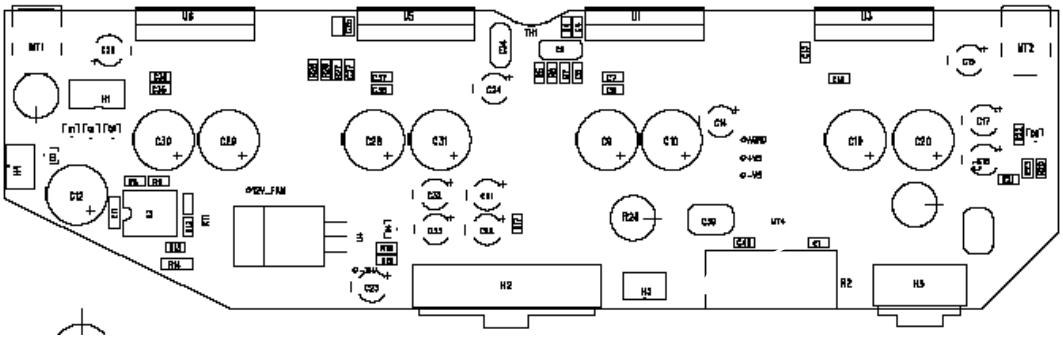
!!!!!CAUTION!!!!!

ELECTROSTATICALY-SENSITIVE PARTS!
WEAR ESD PROTECTIVE CLOTHING!
ASSEMBLE IN AN ESD CONTROLLED ENVIRONMENT!

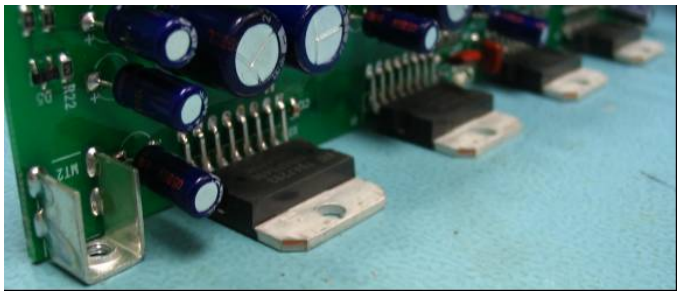
A5-1 LOW DOWN POWER AMP PCBA: 50-02-0167 (Refers To PCB, Rev.A 35-00-0167)
A5-2 LOW DOWN POWER AMP PCBA: 50-02-0167 (Refers To PCB, Rev.A 35-00-0167)

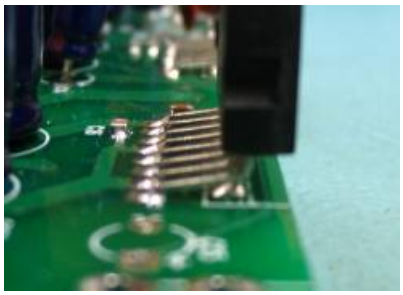


A5-3 LOW DOWN POWER AMP PCBA: 50-02-0173 (Refers To PCB, Rev.A 35-00-0173)



1) **POWER COMPONENTS**
Be sure that each Power Amp IC (12-30-7293) is mounted to the PCB with the bend of the leads stuffed completely into the PCB, then solder into place.





Each Power Amp should be perpendicular to the PCB with a slant of no more than +/- 2 degrees. Lay the assembled PCB on a reference flat surface to confirm the front face of the IC's and the front of the right angle terminal lie flat on the surface.

3) **REGULATOR HEATSINK**

Make sure the Regulator IC is mounted to the PCB with a 1-inch heat sink/standoff (30-12-0632) and one screw (30-00-0043) before soldering.

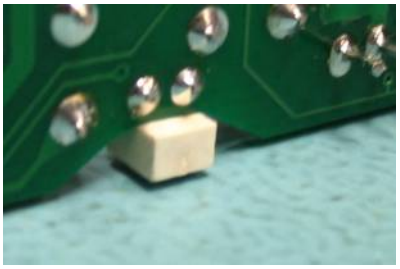
For PCB 35-00-0166 (A5-1 A5-2): Regulator is IC U6

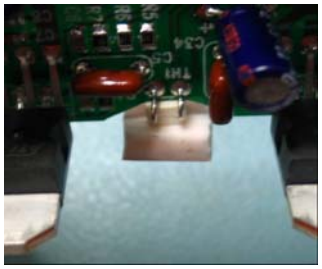
For PCB 35-00-0172 (A5-3): Regulator is IC U4

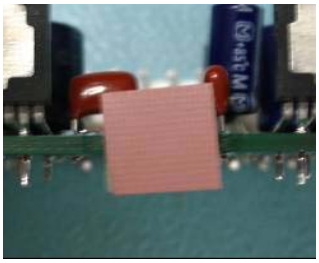
Torque each screw/standoff to 10-12 in.-lbs.

5) **THERMISTOR & GAP PAD**

Position thermistor through Top-Side of the PCB and Bend Leads until thermistor is positioned as in picture, than solder. The side of the thermistor facing the PCB should lay flat and center against the Board.



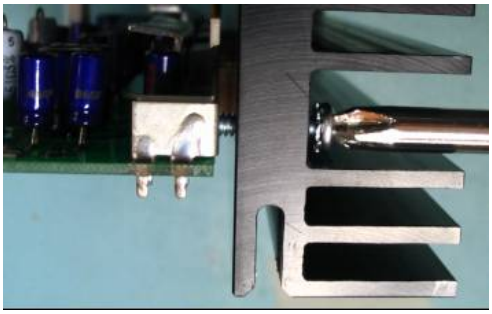




Remove Blue adhesive cover from Gap pad (30-63-0020) and apply the same adhesive side to the thermistor (01-70-0153).

6) **MOUNT HEAT SINK WITH SCREWS**

Carefully place the PCB onto the heat sink and partially install both screws (30-00-0610) while

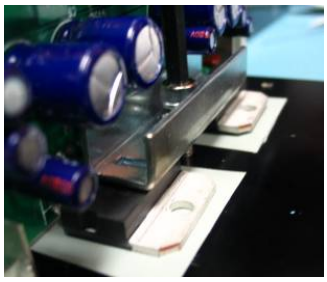


paying close attention to the position of the gap pad. Both screws install from the finned side of the heat sink through to the right angle terminals (21-18-0002) of the PCB.

7) **THERMAL PADS**

Add the thermal pads (30-63-0006) to the Heat Sink under each of the Power Amp IC's. Ensure the Gap pad is still center with the thermistor.

Torque the 2 loose heat sink screws to 10-12 in-lbs.



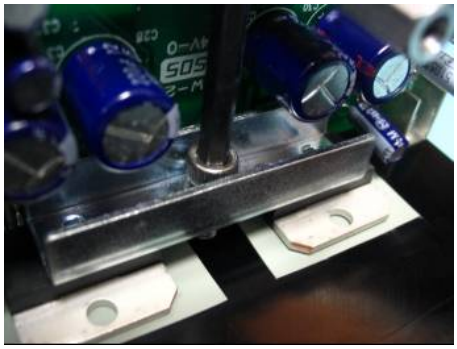
Make sure each power amp IC is completely isolated from the heat sink with the thermal pads!

Make sure the gap pad is completely covering the thermistor!

8) **MOUNTING BRACKETS**

Attach the mounting bracket(s) (30-51-0073) with respective screw (30-00-0010) and washer (30-03-0002). The bracket should mount parallel to both Power Amp IC's to within +/- 2 degrees. A minimum 4mm gap should exist between the ends of the bracket (closest to the PCB) and the PCB. **Torque each mounting bracket screw to 12 in-lbs.**

Make sure the mounting bracket is not shorting any of the Power Amp pins!



- END OF POWER AMP PCB SPECIAL ASSEMBLY NOTES -

Engineering

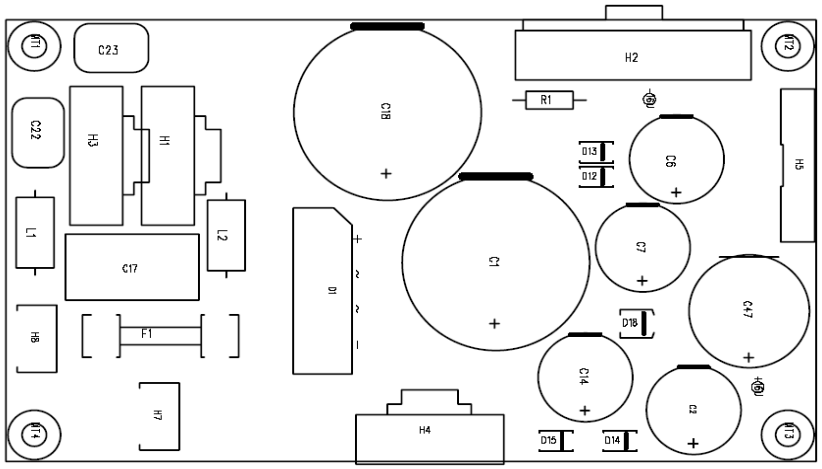
LOW DOWN A5-1 A5-2 A5-3
POWER SUPPLY PCB SPECIAL ASSEMBLY NOTES
Rev.A

Revision:	Notes:	Date:	Released By:
A	Initial Release for Beta Build	12/01/05	Justin Brennan

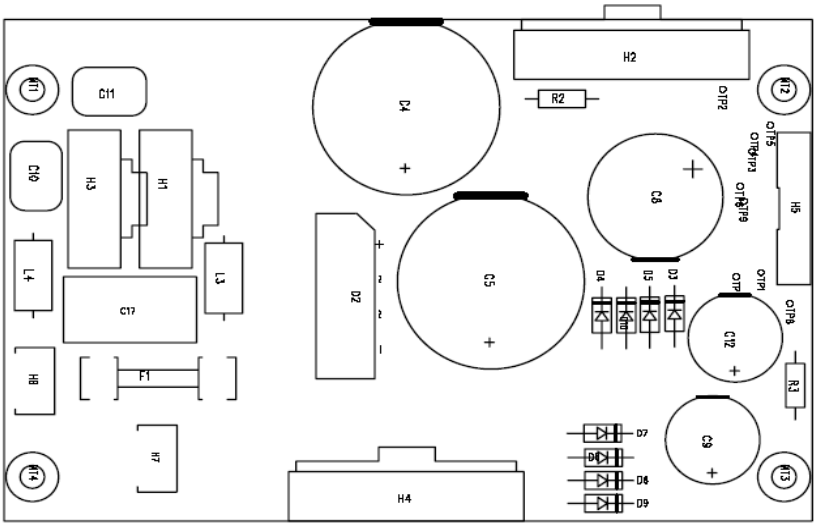
!!!!!CAUTION!!!!!

ELECTROSTATICALY-SENSITIVE PARTS!
WEAR ESD PROTECTIVE CLOTHING!
ASSEMBLE IN AN ESD CONTROLLED ENVIRONMENT!

A5-1 LOW DOWN POWER SUPPLY PCB: 50-02-0167 (Refers To PCB, Rev.A 35-00-0167)
A5-2 LOW DOWN POWER SUPPLY PCB: 50-02-0167 (Refers To PCB, Rev.A 35-00-0167)



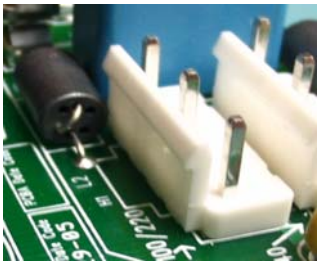
A5-3 LOW DOWN POWER SUPPLY PCB: 50-02-0173 (Refers To PCB, Rev.A 35-00-0173)

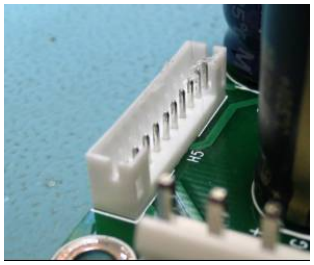


1) **INSTALLATION OF HEADERS** **(A5-1 & A5-2 ONLY)**

Check orientation of all headers.

- The open side of H5 should face the center of the PCB.
- The edged tab of H1, H3-4 should face towards the center of the PCB.
- The edged tab of H2 (8-pin) should face the outside edge of the PCB.

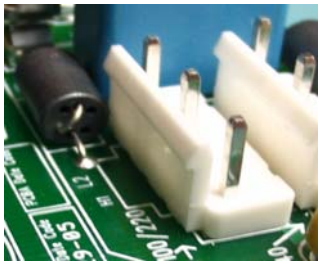




2) **INSTALLATION OF HEADERS (A5-3 ONLY)**

Check orientation of all headers.

- The edged tab of H5 should face the outside edge of the PCB
- The edged tab of H1, H3-4 should face towards the center of the PCB.
- The edged tab of H2 (8-pin) should face the outside edge of the PCB.



3) **INSTALL FUSE (FOR 35-00-0167 PCB ONLY): A5-1 & A5-2**

Install 4A 125V (24-19-4025) fuse for the following Models only!

US Assy. Unit: 59-00-0015-1
JA Assy. Unit: 59-00-0015-4

Install 2A 250V (24-18-2251) for:

AU Assy. Unit: 59-00-0015-2
EU Assy. Unit: 59-00-0015-3
UK Assy. Unit: 59-00-0015-5

4) **INSTALL FUSE (FOR 35-00-0173 PCB ONLY): A5-3**

Install 6.3A 250V (24-19-6326) fuse for the following Models only!

US Assy. Unit: 59-00-0015-1
JA Assy. Unit: 59-00-0015-4

Install 4A 250V (24-19-4251) for:

AU Assy. Unit: 59-00-0015-2
EU Assy. Unit: 59-00-0015-3
UK Assy. Unit: 59-00-0015-5

5) **INSTALLATION OF DIODES AND CAPACITORS**

Check orientation of all diodes and capacitors.

Make sure the angled side of the diode bridge matches it's respective silk-screen.

6) **ELECTROLYTIC CAPS: (FOR 35-00-0167 PCB ONLY): A5-1 & A5-2**

Add RTV between C6-7, C2-C47, and C2-C14

Be careful to avoid getting any RTV on adjacent Headers!

7) **ELECTROLYTIC CAPS: (FOR 35-00-0173 PCB ONLY): A5-3**
Add RTV between C4-5, C9-C12, and to 2 sides of C8.

Be careful to avoid getting any RTV on adjacent Headers!

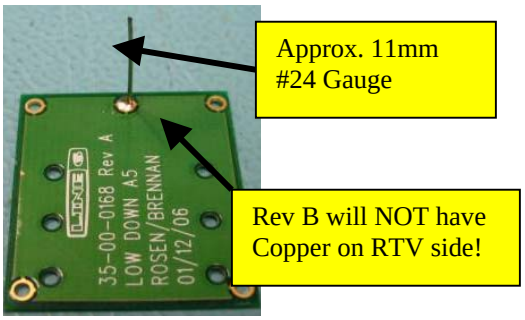
- END OF POWER SUPPLY PCB SPECIAL ASSEMBLY NOTES -

Engineering

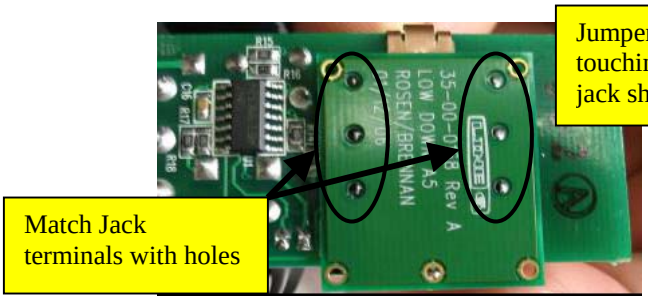
LOW DOWN A5-1 A5-2 A5-3
SHIELD PCB SPECIAL ASSEMBLY NOTES Rev. A

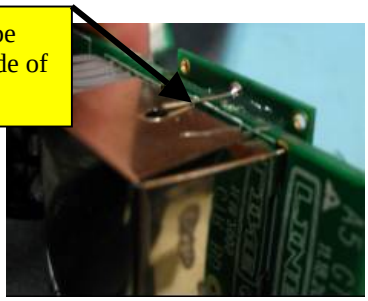
1.) BREAKAWAY INPUT SECTION OF MAIN PCBA. Remove remaining PCB tab, if necessary.

2.) Solder #24 gauge jumper wire through the center hole of the Shield PCB. The jumper should extend from the non-metallic side of the PCB. Cut the jumper at approx. 11mm.



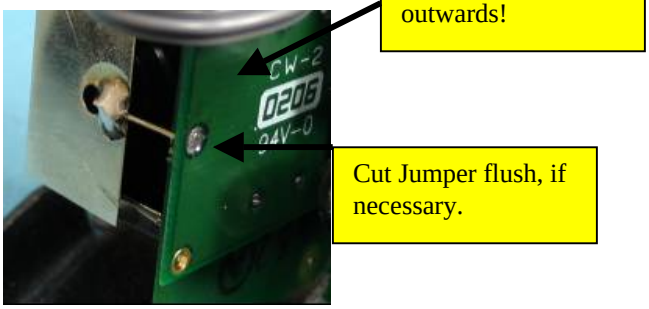
3.) Add RTV to the PCB on the opposite side of Active Input Jack J2 (21-00-6617), located on the input section of the Main PCBA. The RTV should be center with the jack terminals and be sufficient quantity to cover the entire Shield PCB.

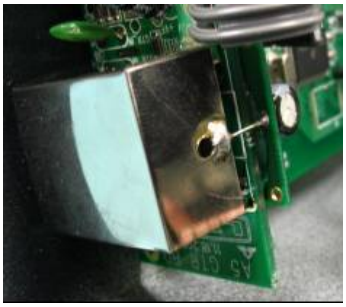




4.) Immediately add Input PCB Shield (35-00-0168) with cut jumper to RTV. Make sure to line up the 6 holes with the jack terminals. The jumper wire should be touching the rear side of the Active Input Shield (30-51-0146). Let RTV dry for 5 minutes.

5.) Solder Jumper to jack cover.

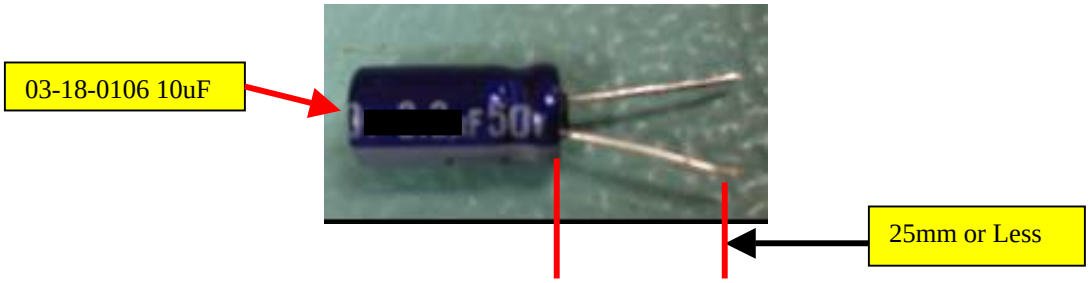




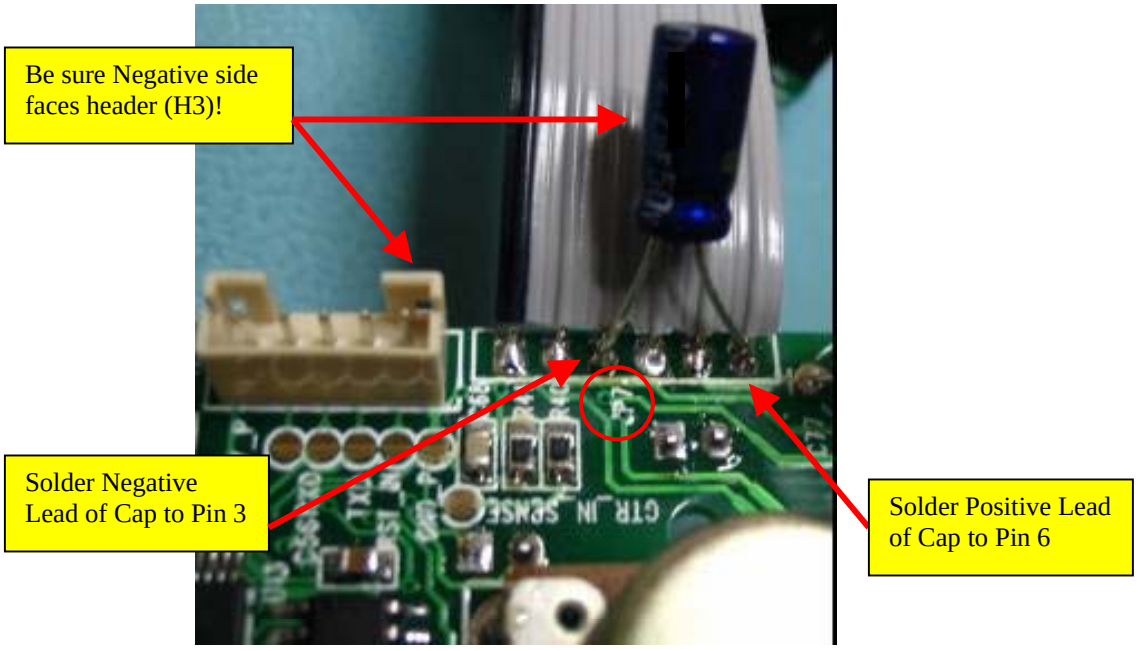
Engineering

LOW DOWN A5-1 A5-2 A5-3
INPUT CAP SPECIAL ASSEMBLY NOTES
Rev. B

1.) Cut both leads of a 10uF 50V electrolytic capacitor (03-18-0106) to no more than 25mm. Cap must be ROHS Compliant.



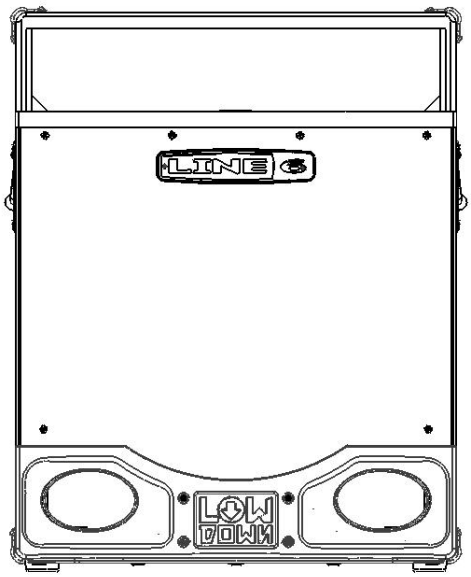
2.) Locate the 2.54mm Ribbon Cable Connecting JP7 to JP8 (21-30-0015-3). Solder the positive lead of the cap to pin #6 and the negative lead to pin #3. Check for any shorts between pins.

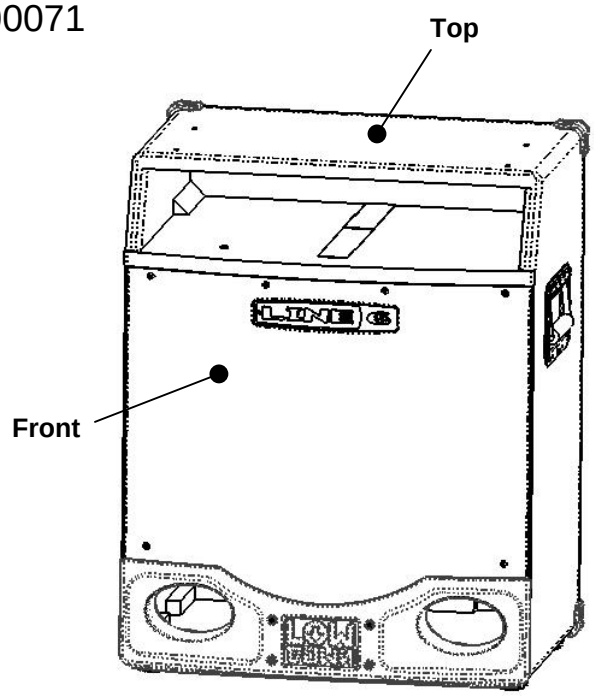


3.) Proceed with step #14 of "MAIN PCB SPECIAL ASSEMBLY NOTES."

CABINET ASSY INSTRUCTIONS

LOW DOWN A5-2, A5-3
Rev C
L6D000071





Special Notes

These instructions apply to the mechanical assembly of the Low Down 15 inch speaker cabinet. This document supplements the 50-03-0028 engineering drawing. This document is intended for the cabinet vendor and does not include any chassis assembly details.

The instructions begin with a carpeted box sub-assembly and specify the installation of all mating cosmetic 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.
- 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.

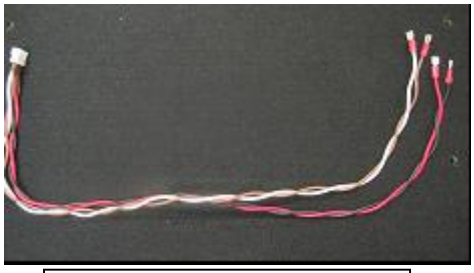
Revision Comment Sheet

Revision	Changes
A	N/A
B	ECO 0534006 Step 3. Corrected +/- callouts on figure text boxes. Step 9. Corrected Logo P/N callout to 30-60-0004 (3 PL). Step 16. Corrected screw P/N callout in picture text box. Added note and figures detailing acceptable gap condition. Step 18. Specified hook strip length of 101.6mm (4.0 inch) and loop strip length of 152mm (6.0 inch). Revised overlap distance from 38.1mm (1.5 inch) to 25.4 (1.0 inch). Step 19. Inserted new staple locations figure (from 50-03-0028 Rev C Drawing, ref ECO 0534004)

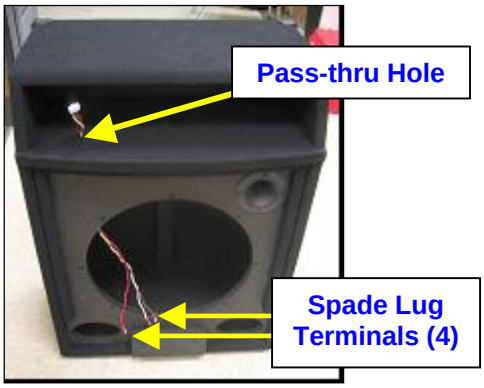
C	ECO 0603109	
	Step 12.	Added instruction to orient flat edge of ring down (toward the bottom of the footer. Ref ECO 0601601.
	Step 15a.	Was old Step 15. Deleted socket head cap screw installation (moved to new Step 16).
	Step 15b.	Added push requirement to outside edges of footer.
		Added requirement to pre-drill holes.
	Step 15c.	Added installation of 30-00-0095 screw and 30-03-0806 washer, qty 5 each (was old Step 16). Ref ECO 0603311.
	Step 16.	Deleted maximum allowable edge gap requirement and installation of 30-00-0812 Screws and 30-03-0806 washers, qty 5 each (moved to new Step 15b).
		Added socket head cap screw installation (was old Step 15).
	Step 17a.	Was old Step 17. Added outboard screw edge spacing requirement and figure. Removed torque spec.
	Step 17b.	Added installation of two (2) screws 30-00-0812 to lower outboard edges of grill.
	Steps 18a-c	Revised Velcro installation steps to include new Velcro Hook part numbers and staple configuration. Ref ECO 0603304 and ECO 0603311.
	Steps 19a-d	Revised Velcro installation steps to include new Velcro Loop part numbers and staple configuration. Ref ECO 0603304 and ECO 0603311.
		Added requirement to paint exposed staples black (19c)

STEP 1:
Obtain one (1) Foam with adhesive tweeter seal (P/N 30-63-0021). Remove the adhesive cover and bond to cabinet baffle board as shown. Align mounting holes on seal with holes on cabinet.

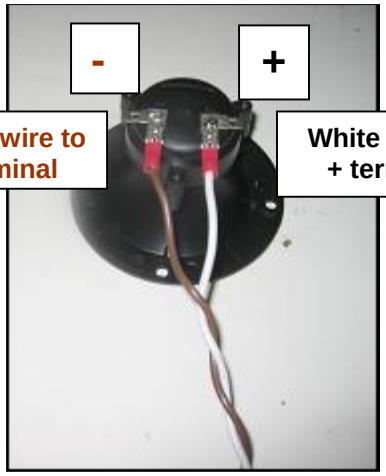
STEP 2:
Obtain one (1) 21-36-0270 Speaker Cable Assy. Insert the four (4) spade lug terminals through the pass-thru hole in the cabinet panel as shown below.



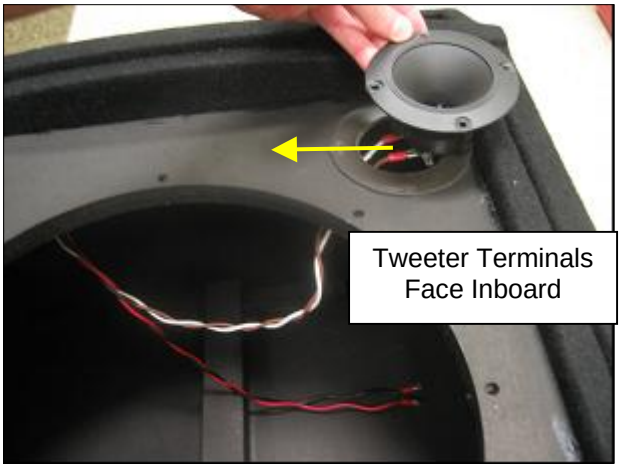
21-36-0270
Speaker Cable Assy

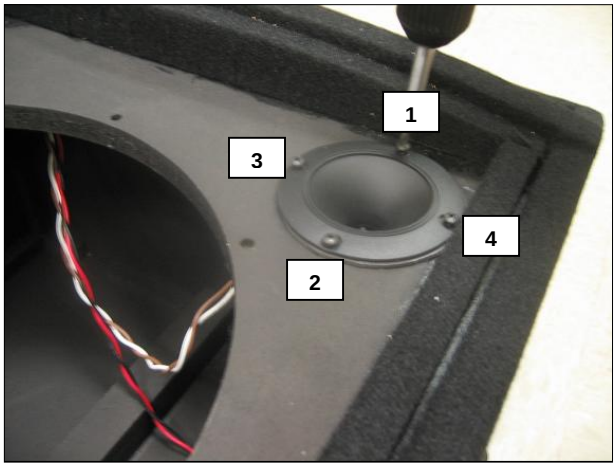


STEP 3:
Obtain one (1) Piezo Tweeter (P/N 11-20-1217). Pull the brown and white speaker wires thru the tweeter hole on the cabinet and secure the spade lugs to the tweeter terminals. The brown wire shall be connected to the negative terminal on the tweeter. The white wire shall be connected to the positive terminal on the tweeter.



STEP 4:
Install the Piezo Tweeter (P/N 11-20-1217) with four (4) 30-00-0675 screws in the order indicated. Tweeter terminals shall be positioned towards the center of the cabinet. Torque each screw to 8-10 in/lbs.

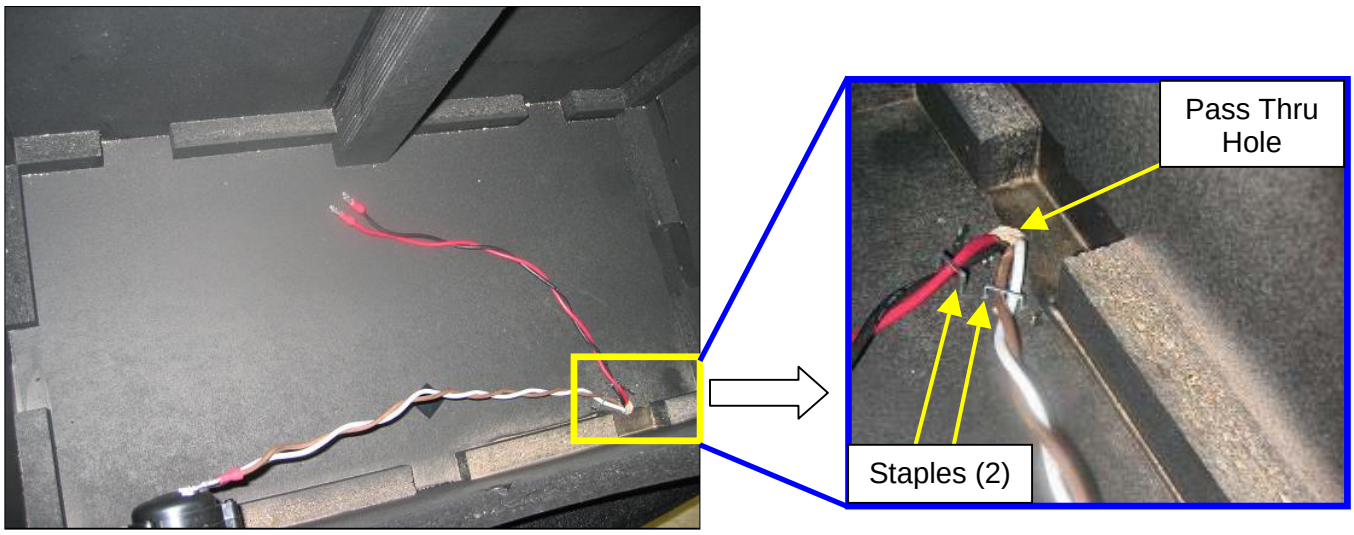




Fastening Order Indicated

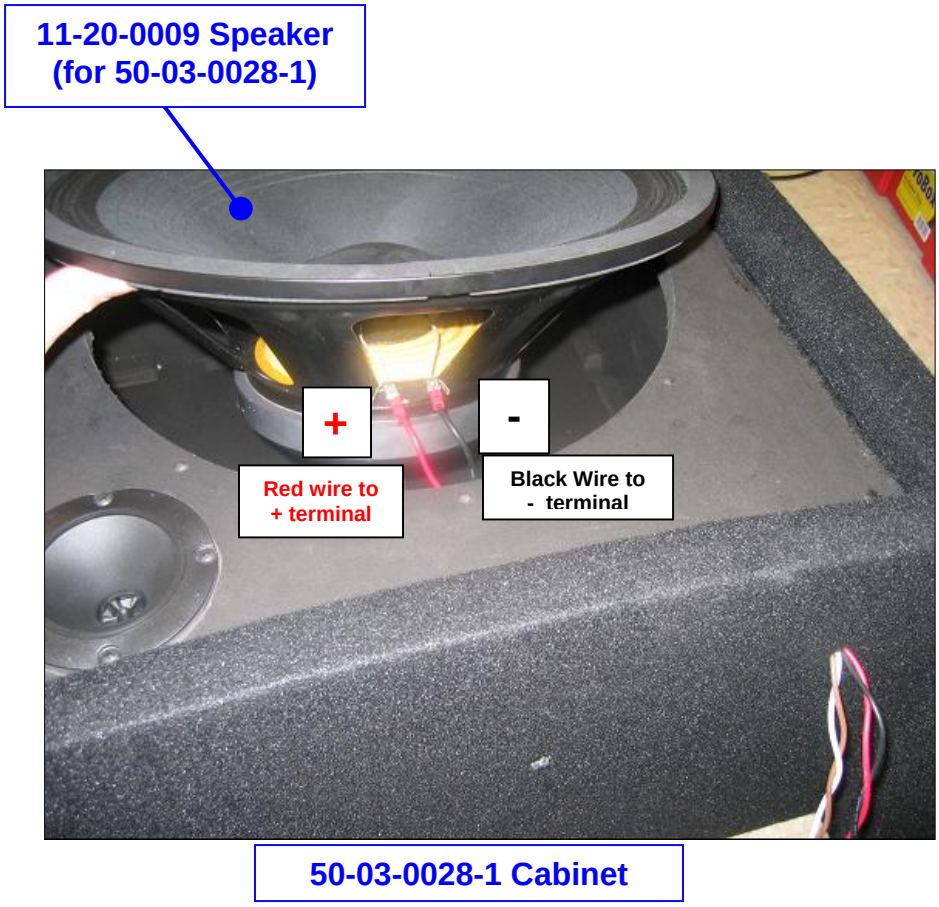
STEP 5:
Position the cabinet with the top on the ground. Pull header end of 21-36-0270 Speaker Cable Assy through pass-thru hole until 127 mm (5.0 inches) of cable is remaining out of the cabinet. On inside of cabinet, staple each wire pair as shown. Use one (1) SENCO F06-BAA staple or equivalent to secure each wire pair. Staples should be located ~38.1mm (1.5 in) from the pass thru hole.

Position the cabinet with the top on the ground



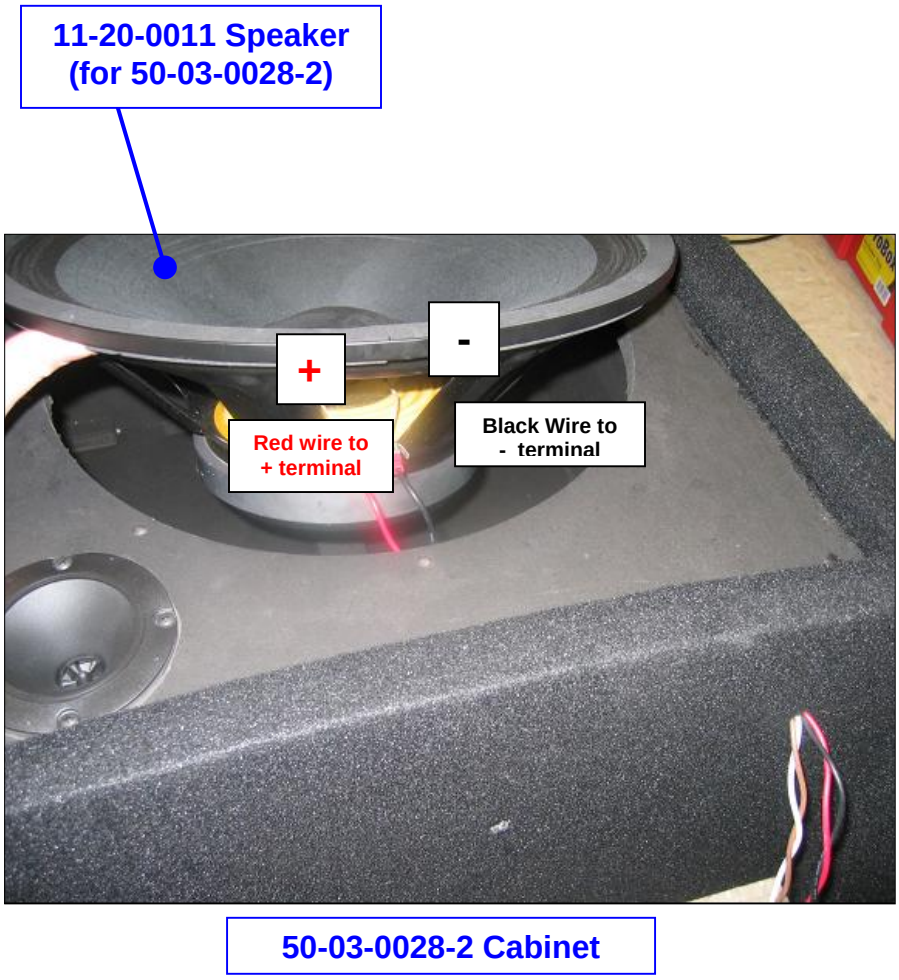
STEP 6a:
Note: Follow step 6a if building a **50-03-0028-1** speaker cabinet (175 Watt). If building a 50-03-0028-2 speaker cabinet (300 Watt), skip step 6a and proceed to step 6b.

Obtain one (1) 11-20-0009 Speaker. Verify part number on back of magnet. Attach the two (2) speaker wires to the terminals on the speakers as shown. Attach the Red wire to the + (positive) terminal on the speaker. Attach the Black wire to the – (negative) terminal on the speaker.



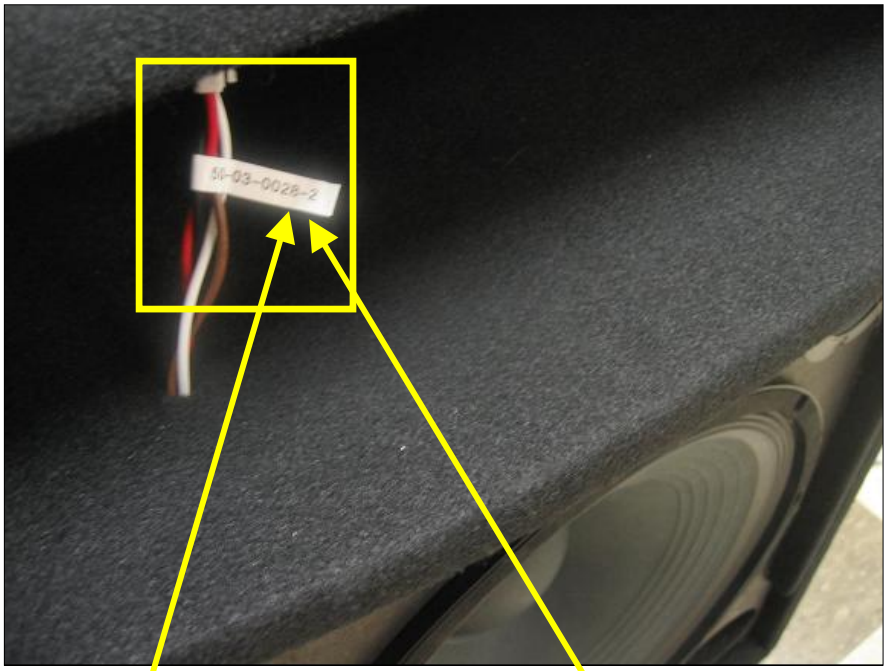
STEP 6b:
Note: Follow step 6b **only if building a 50-03-0028-2** speaker cabinet (300 Watt).

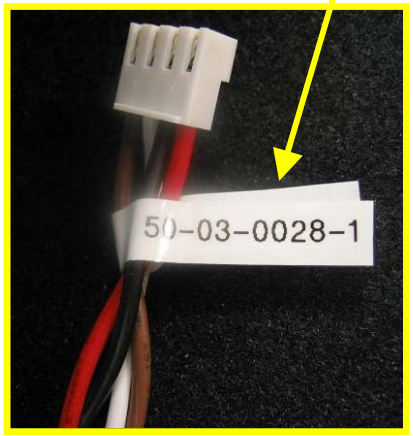
Obtain one (1) 11-20-0011 Speaker. Verify Line 6 part number on back on magnet. Attach the two (2) speaker wires to the terminals on the speakers as shown. Attach the Red wire to the + (positive) terminal on the speaker. Attach the Black wire to the – (negative) terminal on the speaker. Place 50-03-0028-2 adhesive label around 21-36-0270 speaker cable ~38.1mm (1.5 in) below header.



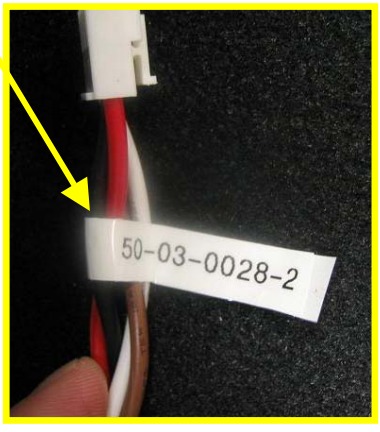
STEP 7:
NOTE - THIS IS CRITICAL PROCESS!
Perform speaker impedance test per separate L6D000080 Speaker Impedance Test Instructions.

After speaker impedance has been confirmed, place the appropriate adhesive label around the speaker cable as shown below. Install label ~38.1mm (1.5 in) below header.

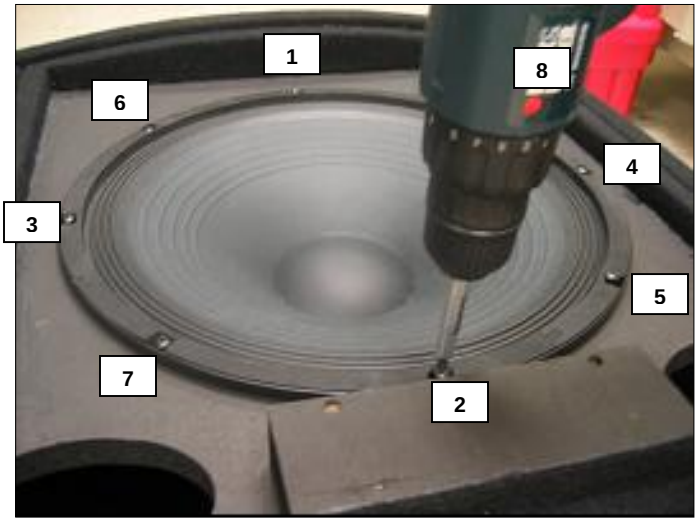




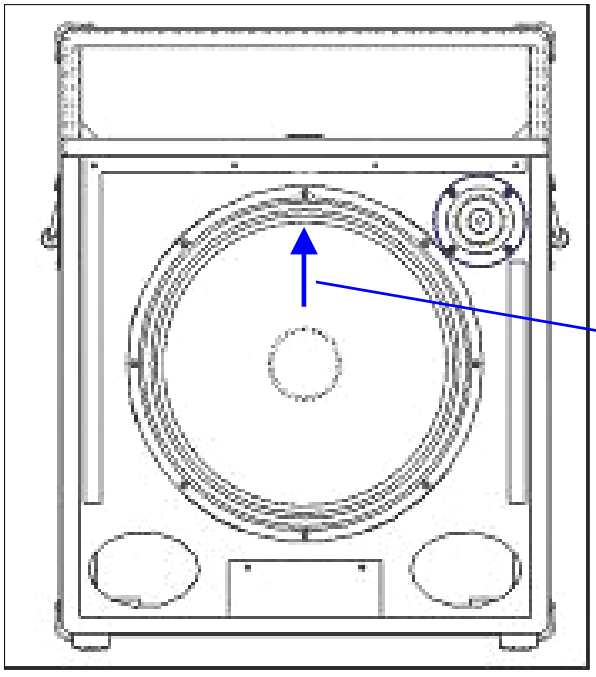
Label speaker cable either
50-03-0028-1 **OR**
50-03-0028-2



STEP 8:
Assemble speaker to cabinet baffle board. Position the speaker such that the terminals on the speaker face up. Use eight (8) screws (P/N 30-00-1016) to secure in the order indicated. **Caution - ensure T-nuts do not become loose or pop out during installation.** Torque each screw to 14-16 in/lbs.



Secure speaker with 8
30-00-1016 screws in order shown



Note - speaker terminals shall face up

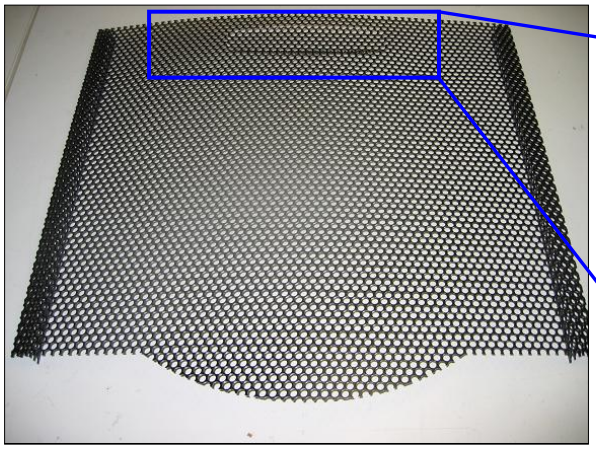
STEP 9:
Obtain one (1) logo (P/N 30-60-0004). Install two (2) adhesive foam strips (P/N 30-63-0600-1) to the back surface of the logo as shown.

Logo (30-60-0004)
Top View

Adhesive Foam Strip
(30-63-0600-1)
2 PL

Logo (30-60-0004)
Bottom View

STEP 10:
Obtain one (1) grill (P/N 30-51-0227). Caution – handle grill carefully, as burrs might be present. Place one (1) logo with two (2) adhesive foam strips into recessed area on the grill as shown.

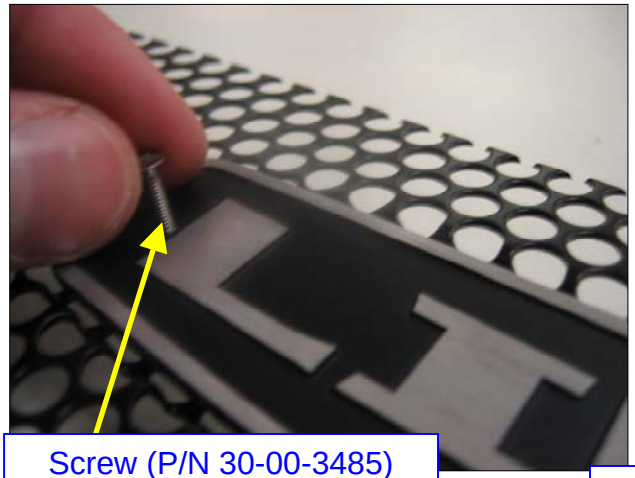


Recessed area on grill

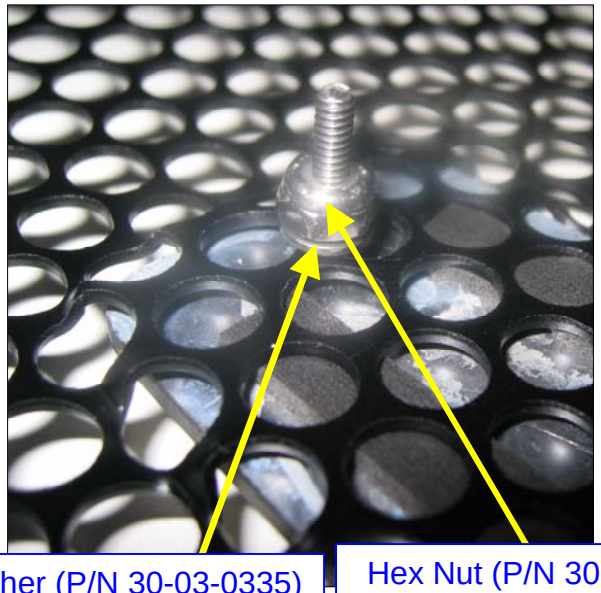
Grill (P/N 30-51-0227)

STEP 11:
Secure logo to grill with two (2) screws (P/N 30-00-3485), two (2) washers (P/N 30-03-0335) and two (2) hex nuts (P/N 30-06-0014). Verify logo is centered on grill. Torque each screw to 8-10 in/lbs.

Note – all fasteners shall be black



Screw (P/N 30-00-3485)
2 PL

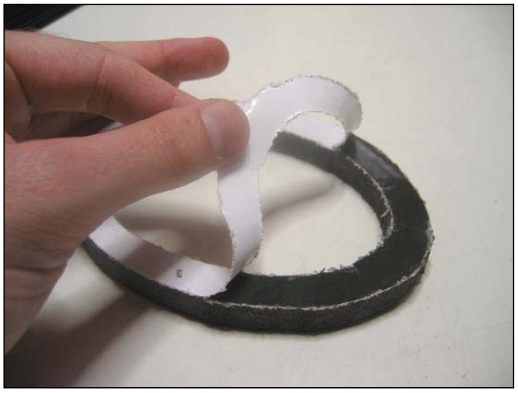


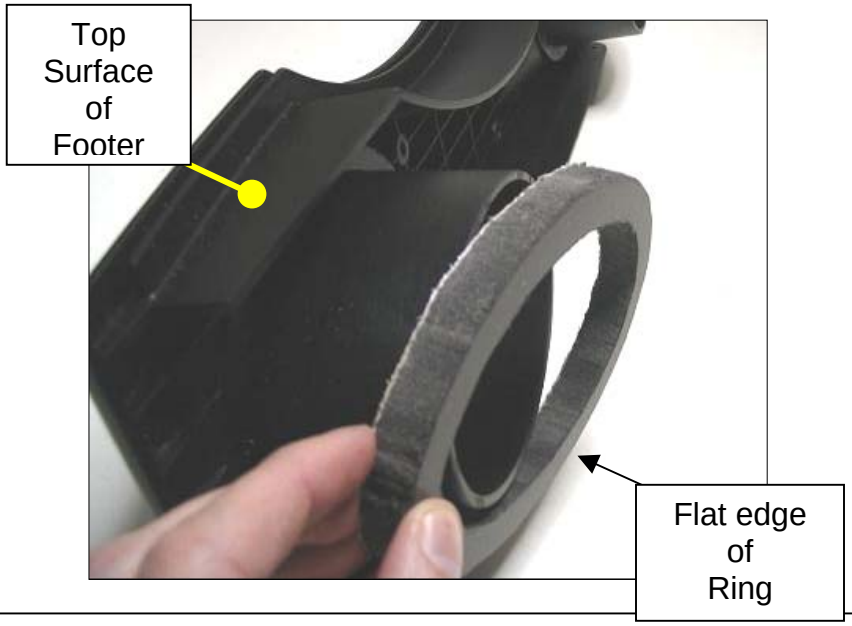
Washer (P/N 30-03-0335)
2 PL

Hex Nut (P/N 30-06-0014)
2 PL

Completed Grill with Logo
(logo shall be centered)

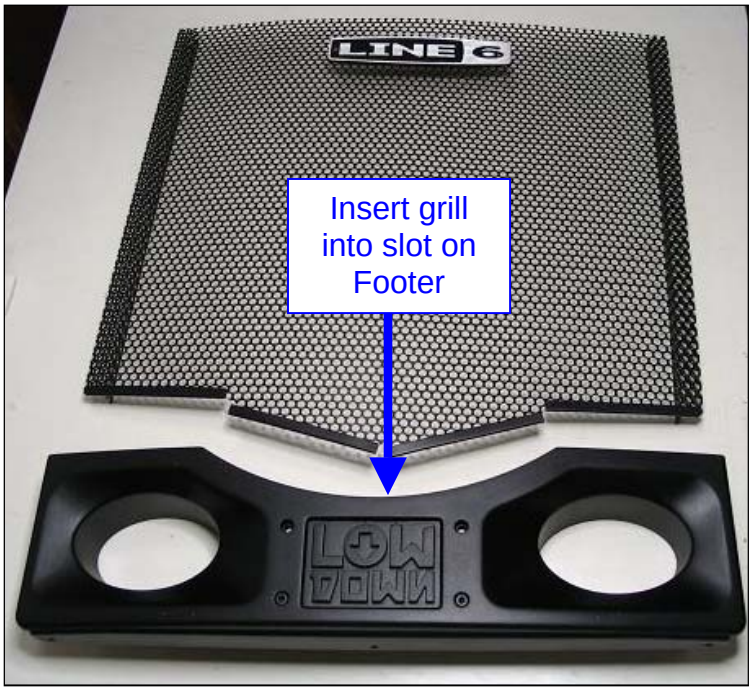
STEP 12:
Obtain two (2) Foam with adhesive port sealing rings (P/N 30-63-0022) and one (1) Footer (P/N 30-27-0153). Remove the adhesive covers and install the two (2) sealing rings over the ports with the adhesive surface facing the front of the footer. The flat edge on the ring should be oriented towards the bottom of the footer.



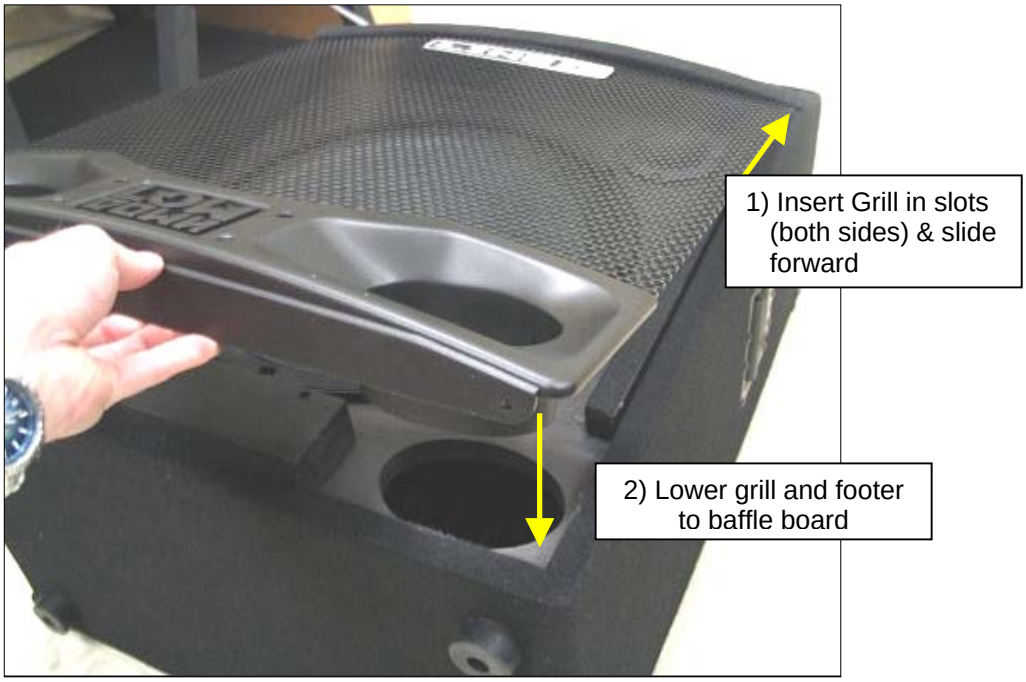


STEP 13:
Obtain four (4) Rubber U-channels (P/N 30-75-0032) and the 30-51-0227 grill with logo. Install rubber U-channels over the bottom of the grill approximately as shown. Use double-back tape if required to secure temporarily.

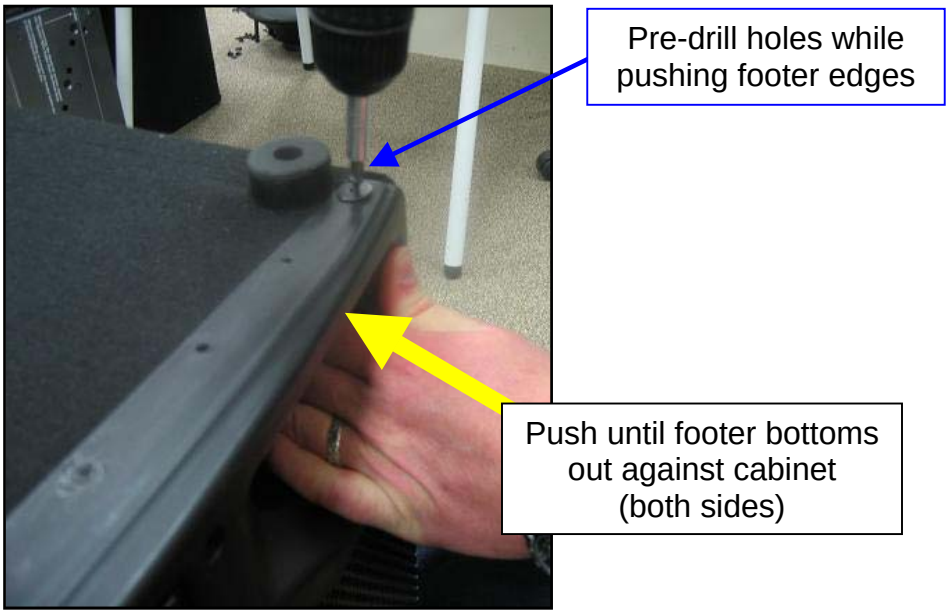
STEP 14:
Insert grill with rubber U-channels into slot on the Footer (P/N 30-27-0153).
When grill is completely seated, the rubber U-channels should not be visible.



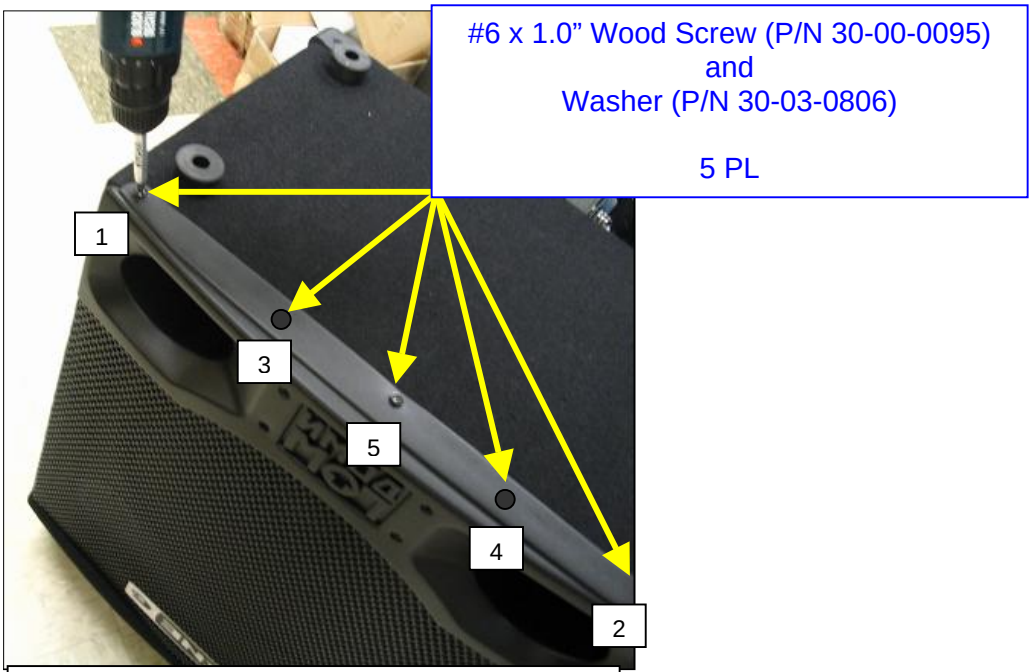
STEP 15a:
Install grill and footer onto cabinet as shown. Insert grill bend in slots on sides of cabinet. Slide grill up as far as possible, then lower grill and footer to baffle board.



STEP 15b:
Position the cabinet with the top on the ground. Push the outside edges of the footer until they bottom out against the cabinet (both sides). With the footer bottomed out while pushing the edges, pre-drill fastener holes perpendicular to bottom panel.

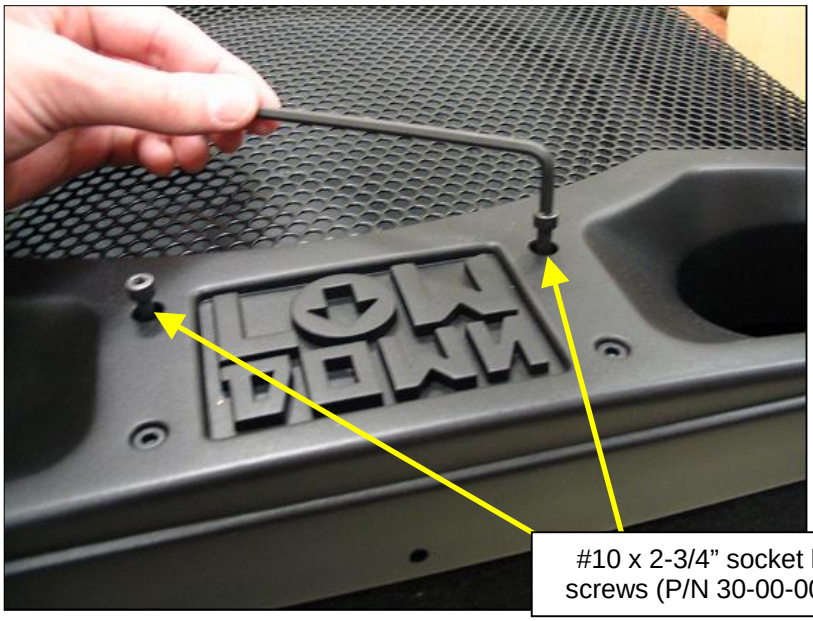


Step 15c:
While pushing footer edges (as described in step 15b), secure the bottom of the footer with five (5) washers (P/N 30-03-0806) and five (5) #6 x 1.0" wood screws (P/N 30-00-0095) in the order indicated. Turn screws until fully seated.

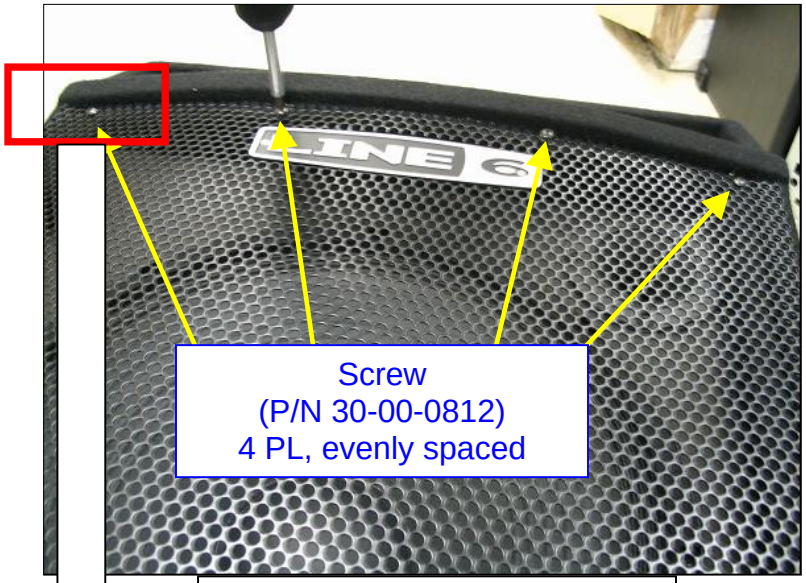


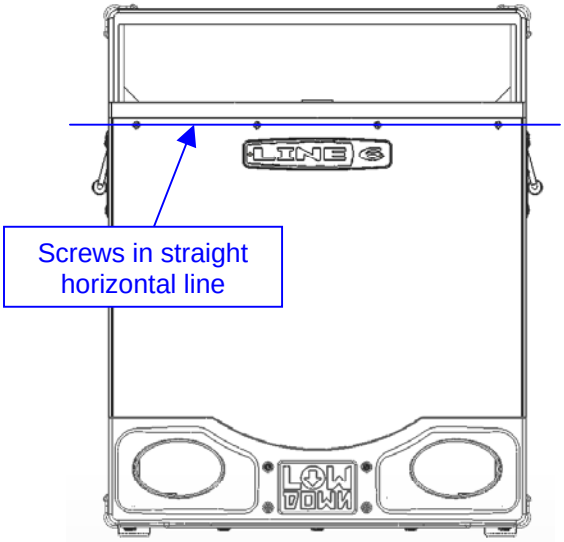
Position Cabinet with the Top on the ground

STEP 16:
Secure the front of the footer with two (2) #10 x 2-3/4” socket head cap screws (P/N 30-00-0078). Torque each screw to 10-12 in/lbs.

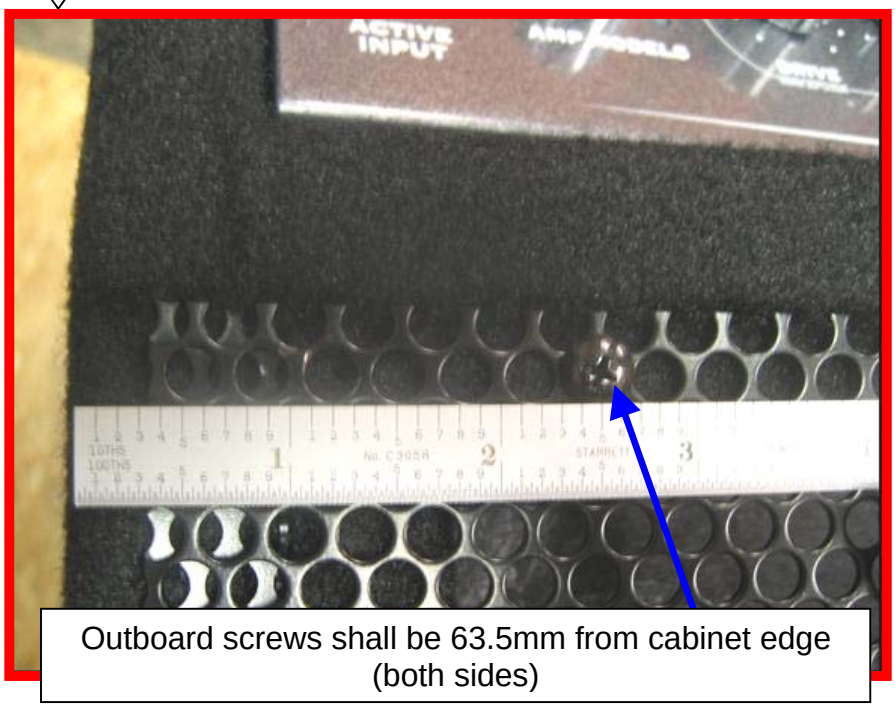


STEP 17a:
Lay cabinet on back panel with baffle board facing up. Secure the top of the grill with four (4) screws (P/N 30-00-0812) evenly spaced across the top cleat. Screws shall be installed in a straight line across the grill. Install the outboard screws 63.5mm [2.5in] from cabinet edge. Pre-drill holes perpendicular to grill surface.

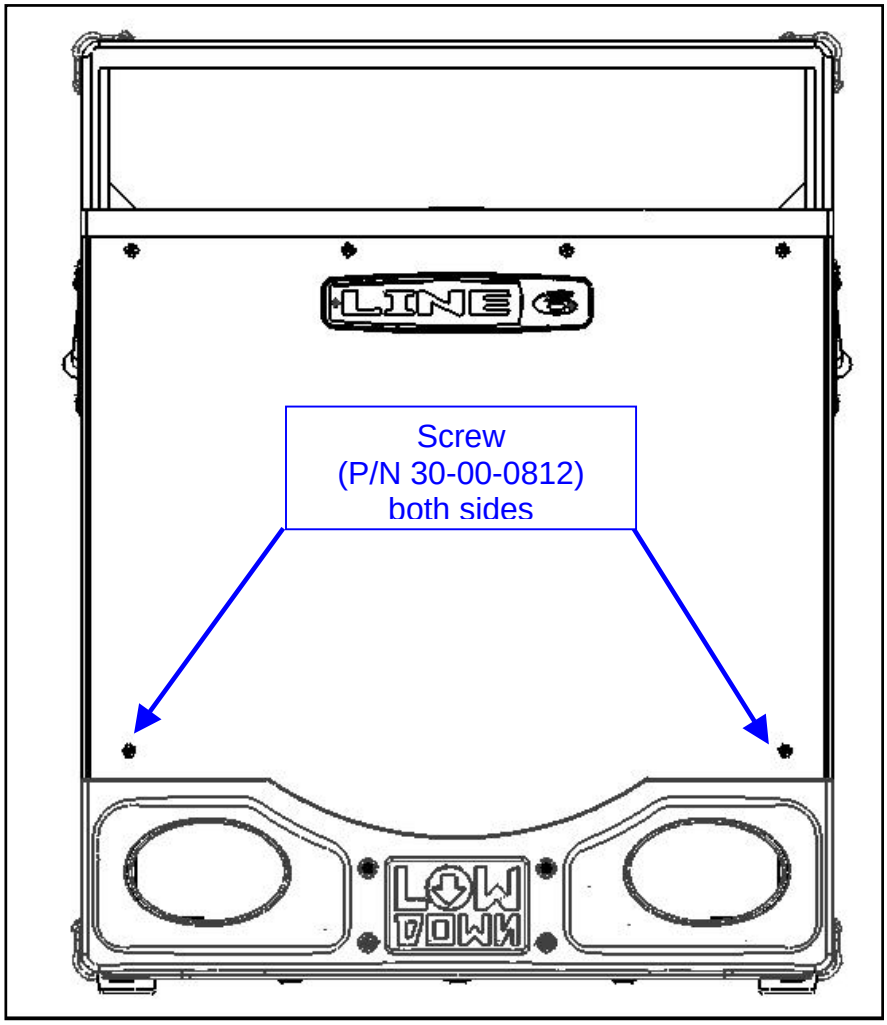


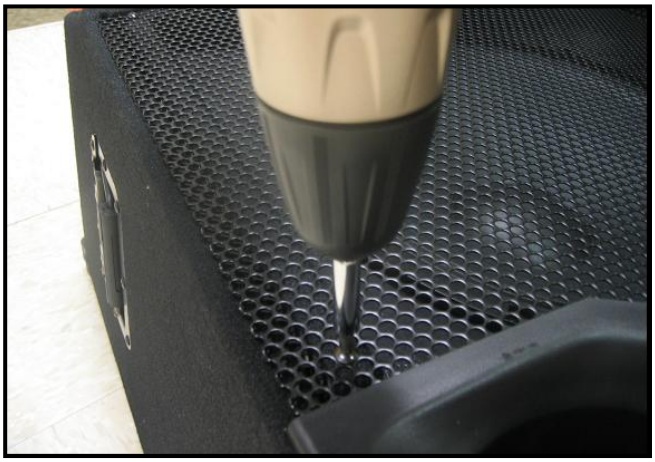


Lay cabinet down on back panel



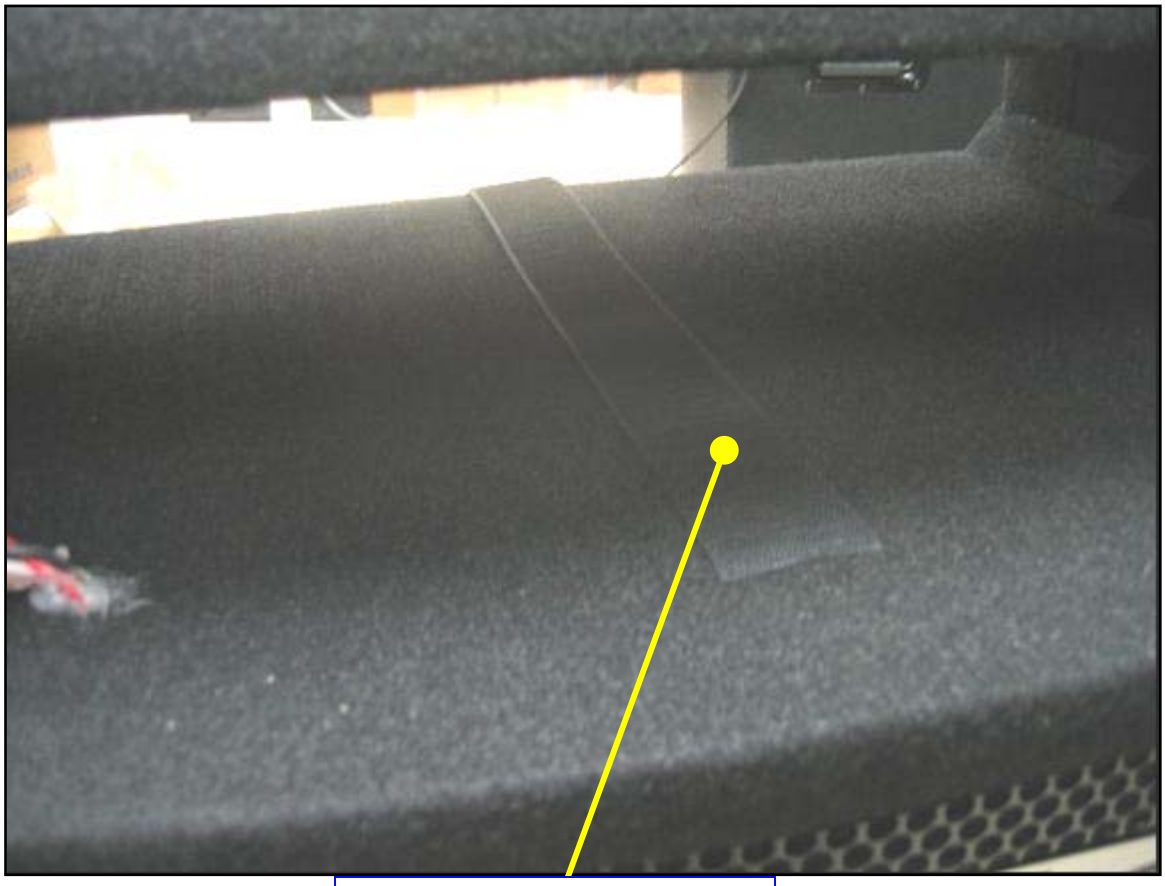
STEP 17b:
Secure the bottom of the grill with two (2) screws (P/N 30-00-0812) installed into side cleats. Pre-drill holes perpendicular to grill surface. Screws should be centered on side cleats and ~12.7mm (0.5in) above bottom edge of cleat (both sides).





Screw centered on side cleat

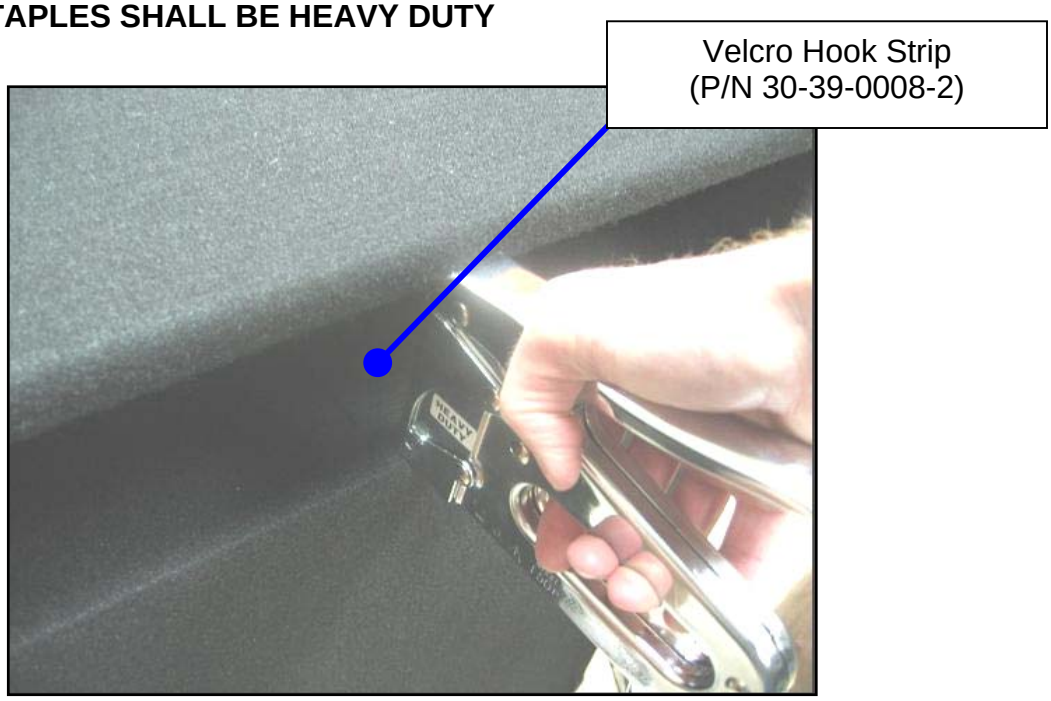
STEP 18a:
Obtain one (1) Velcro Hook strip (P/N 30-39-0008-2). Place into cabinet with hook element facing up as shown. Back edge of Velcro strip shall be flush with back panel of cabinet.

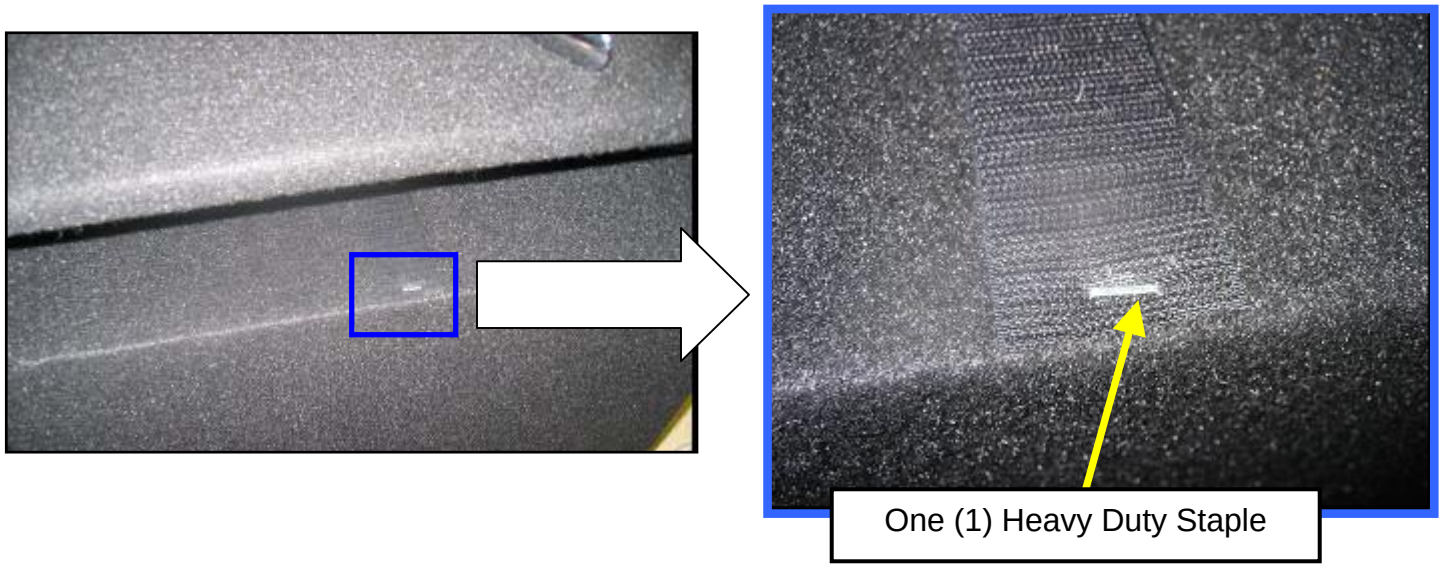


Velcro Hook Strip
(P/N 30-39-0008-2)

STEP 18b:
Align back edge of Velcro Hook strip (P/N 30-39-0008-2) with back panel of cabinet. Install one (1) heavy-duty staple to secure. Note that heavy-duty staple gun will not fit into cabinet opening. Staple gun can be angled slightly to install staple as shown.

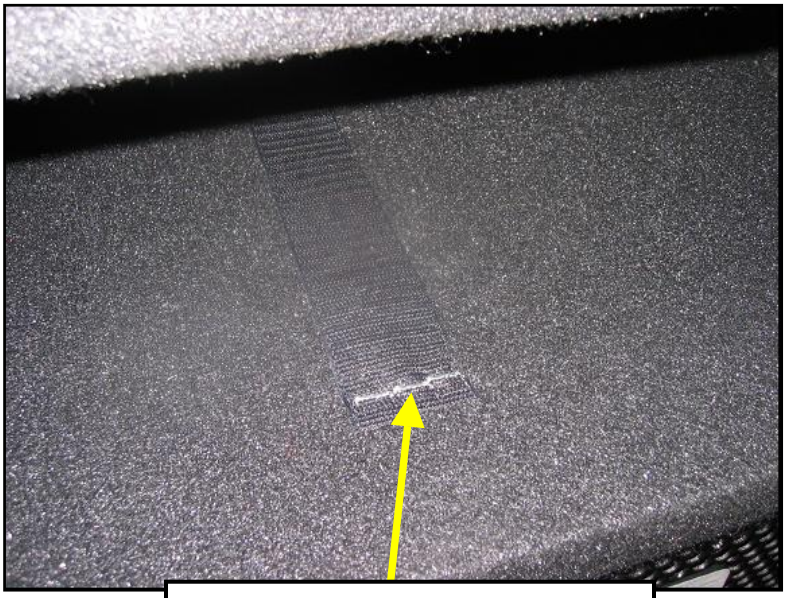
NOTE – STAPLES SHALL BE HEAVY DUTY





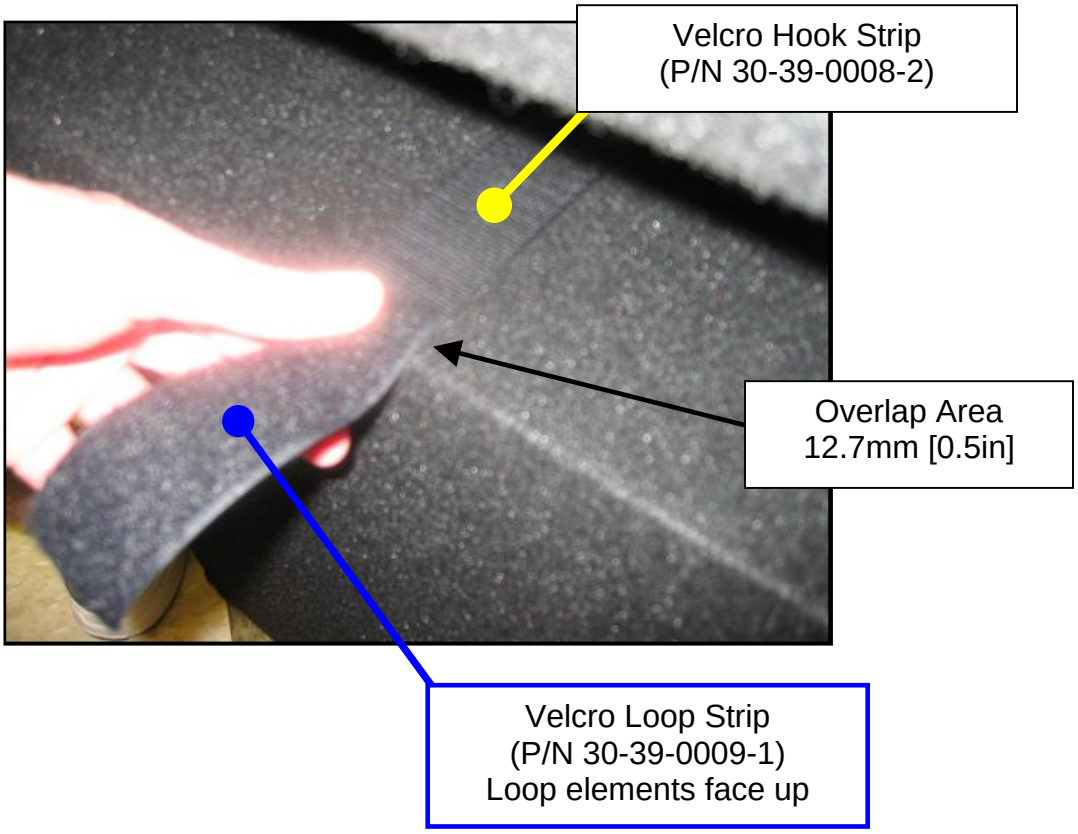
STEP 18c:
Pull front end of Velcro Hook strip (P/N 30-39-0008-2) tight and install three (3) heavy-duty staples as shown. Staples shall be applied in the positions indicated on the 50-03-0028 drawing (see Sh 7, Section View L-L and Detail View N).

NOTE – STAPLES SHALL BE HEAVY DUTY.



Three (3) Heavy Duty Staples

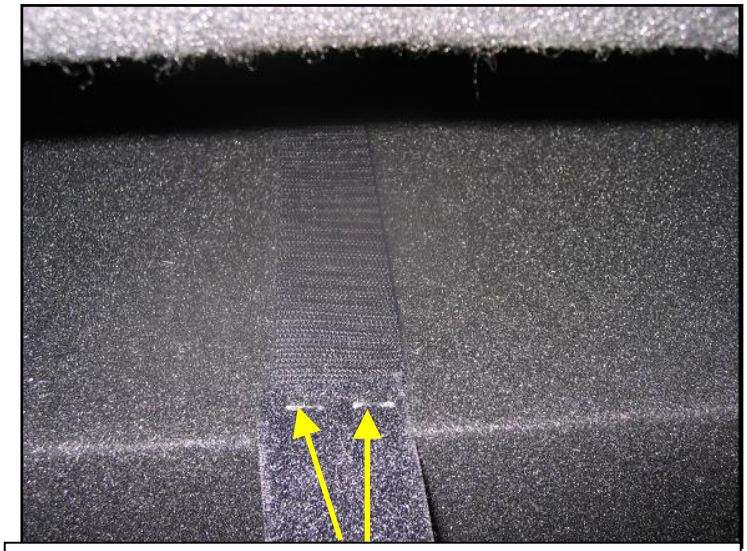
STEP 19a:
Obtain one (1) Velcro Loop strip (P/N 30-39-0009-1). Place into cabinet over the hook strip with loop element facing up as shown. The forward edge of 30-39-0009-1 loop strip shall be 12.7mm (0.5in) in from the edge of the cabinet back panel.



STEP 19b:
Maintaining the 12.7mm (0.5in) overlapped area, install a minimum of two (2) staples in the overlapped area. Note that heavy-duty staple gun will not fit into cabinet opening. Staple gun can be angled slightly to install staple as shown.

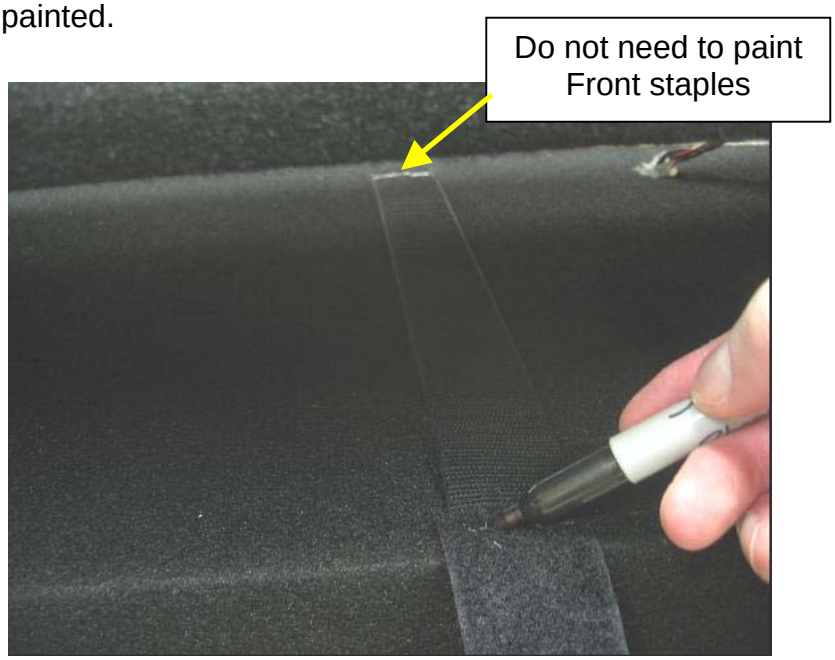
Staples shall be applied in the positions indicated on the 50-03-0028 drawing (see Sh 7, Section View L-L and Detail View M).

NOTE – STAPLES SHALL BE HEAVY DUTY.



Minimum of two (2) staples in overlap area

STEP 19c:
Paint over all rear exposed staples with black sharpie or black permanent marker. Note that the three (3) staples securing the front of the hook strip do not need to be painted.

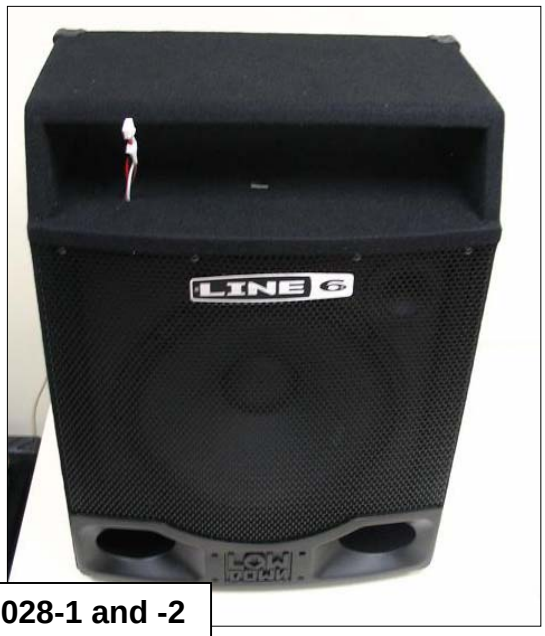


STEP 19d:
After staples are painted (per step 19c), fold loop strip over hook strip and adhere as shown below.

STEP 20:

Pull speaker cable until 127mm (5.0 inches) of cable remain outside of the cabinet. Seal the hole with RTV adhesive. Remove any excess RTV above the hole. Allow RTV to cure undisturbed for minimum of 30 minutes before handling the unit.

RTV Application



Completed 50-03-0028-1 and -2 (Reference Views)

LINE 6

LOWDOWN

Pilot's Guide

Manuel de pilotage

Pilotenhandbuch

Pilotenhandboek

40-00-0300 Electrophonic Limited Edition available @ www.line6.com Rev C

All product names referred to in this manual are trademarks of their respective owners, which are in no way associated or affiliated with Line 6. These trademarks of other manufacturers are used solely to identify the products of those manufacturers whose tones and sounds were studied during Line 6's sound model development.

You should read these Important Safety Instructions. Keep these instructions in a safe place.

Before using your LowDown, carefully read the applicable items of these operating instructions and the safety suggestions.

1. Obey all warnings on the amp and in the Spider II Manual.
2. Connect only to AC power outlets rated 100-120V or 200-240V 47-63Hz (depending on voltage range of the unit; refer to back panel).
3. Do not perform service operations beyond those described in the Spider II Manual. Service is required when the apparatus has been damaged in any way, such as:
   - power-supply cord or plug is damaged
   - liquid has been spilled or objects have fallen into the apparatus
   - the unit has been exposed to rain or moisture
   - the unit does not operate normally or changes in performance in a significant way
   - the unit is dropped or the enclosure is damaged.
4. The bottom of the metal chassis can get hot during operation. Do not touch during operation or shortly after.
5. Do not place near heat sources, such as radiators, heat registers, or appliances which produce heat. Keep the rear of the unit at least three inches from walls or other items that might block heat radiation.
6. Do not block any of the ventilation openings or use in an enclosed space.
7. Guard against objects or liquids entering the enclosure. Do not use or place unit near water.
8. Do not step on power cords. Do not place items on top of power cords so that they are pinched or leaned on. Pay particular attention to the cord at the plug end and the point where it connects to the amp.
9. Unplug the amp when not in use for extended periods of time. Unplug the amp during lightning storms.
10. Clean only with a damp cloth.
11. Do not defeat the safety purpose of the grounding type plug. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
12. Only use attachments/accessories specified by the manufacturer.
13. Prolonged listening at high volume levels may cause irreparable hearing loss and/or damage. Always be sure to practice “safe listening.”

CAUTION: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

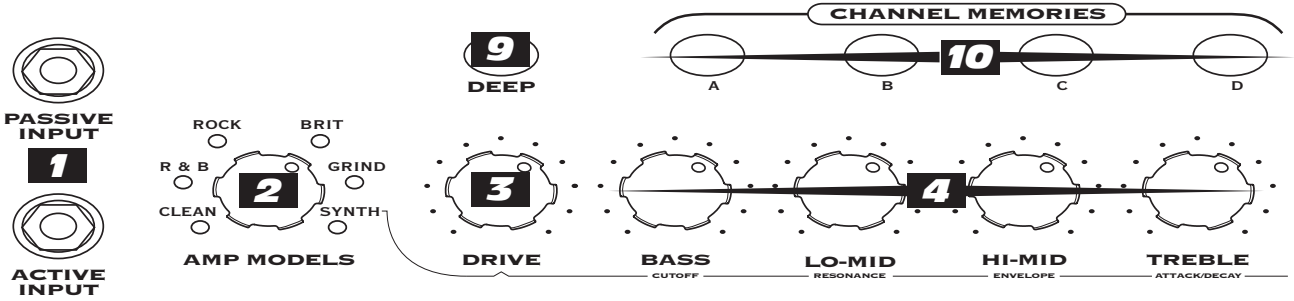
WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION: To reduce the risk of fire or electric shock, do not remove screws. No user-serviceable parts inside. Refer servicing to qualified service personnel.

The exclamation point within a triangle means "caution!" Please read the information next to all caution signs.

The lightning symbol within a triangle means "electrical caution!" It indicates the presence of information about operating voltage and potential risks of electrical shock.

This symbol within a triangle means "caution! hot surface!" It is placed in areas that may become to hot to touch when device is in operation.



1. Passive & Active Input - Start by using the passive input. If your bass's output distorts the input section, switch to the active input. You are clipping the input when the TUNER/CLIP (see 11) button lights up. (A "passive" instrument has no built-in preamp and does not use a battery. Active Input - An "active" bass utilizes a battery operated preamp.)

2. Amp Models - Spin this knob to select one of 5 groovealicious Amp Models or Synth Bass. All the LowDown controls will automatically dial in to sound great with that Amp Model, so you can just play!

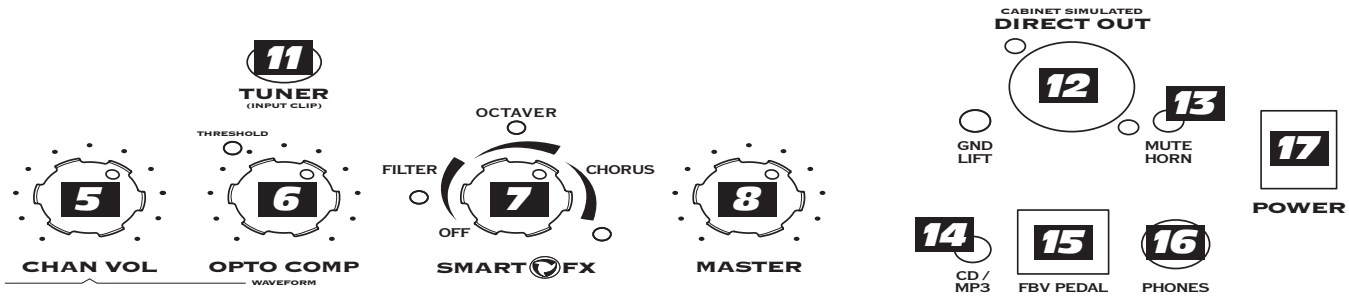
3. Drive - Like the volume or gain knob on other amps; controls how much "dirt" you get in your sound.

4. Tone Controls – Bass, Low Mid, Hi Mid and Treble controls are customized for each Amp Model to give you optimal tonal control.

5. Channel Volume - Without affecting your tone, this control helps you balance the volumes of different amp-and-effect setups that you store in your LowDown's channel memories (see 10). Start with it at 2 o'clock then adjust the Drive and Tone Controls to get the sound you want, and then use Channel Volume to make your presets even in volume.

6. Opto Comp - Turn clockwise to even out your playing dynamics (more compression). Watch for the Threshold light, and set the knob so that it comes on just at the point where you play with your typical intensity.

7. Smart FX - Spin this knob to get great FX, fast and easy: This knob selects Envelope Filter, Octaver, or Chorus, with a range of settings – from subtle to overpowering – for each effect. The LED shows the active effect.



8. Master Volume - You can choose the overall volume of the amplifier, without affecting your tone.

9. Deep - Selecting Deep will kick in a special tone shaping eq that will dial in the model for supreme fatness.

10. Channel Memories - Four programmable channels come pre-loaded with great factory presets but can be used to save your own custom settings.

11. Tuner/Clip button - engages the built in tuner. (Watch the Amp Model LED's to see what note you're tuning.)

12. XLR Direct Out - This gives the sound man a simulation of a mic'd cabinet that is model specific. To the left of the input is a ground lift.

13. Mute Horn - Mutes the horn for those of you who are adverse to high frequencies.

14. CD/MP3 - Plug in any audio source and it feeds directly into the LowDown's speaker or headphones so you can jam with your favorite music or a drum machine. Use the input devices output control to adjust it's volume.

15. Foot Control - Plug in an FVB Shortboard, FBV Express or FBV2 foot switch to access some very exciting functions to be explained later in this manual. See the "Using Your Feet" for more information.

16. Headphone - Listen with headphones to your LowDown mixed with what ever you would like to input into the CD/MP3 jack.

17. Power - on or off. The amp sounds better on.

Here's the LowDown...

Hey. Thanks for choosing the Line 6 LowDown. We're excited to welcome you to the Line 6 community. We've spent tons of time dialing in your new amp with artists and technicians to deliver a fabulous range of critical bass tones. The LowDown was inspired by some classic bass amps that shaped the tone of rock and roll such as the Ampeg SVT, Ampeg B-15, or the Marshall Super Bass - amps that deliver tone that will rearrange your insides. These were, and still are the standard for professional bass players the world over. Unfortunately, many of them are incredibly heavy and can very quickly empty your checking account or max out your credit card, so most of us working stiffs gravitate to one of many fine portable utility combo amps with fairly generic tone . Until now…

With LowDown we have worked hard to bring to you, for the first time serious stadium bass rig tone in a portable/affordable combo. We have spent countless hours modeling the best of the best and faithfully reproducing them on the very amp you're probably sitting on or fondly staring at right now. Whether you are looking for that mind bending funk tone or that classic rock tone heard round the world, Line 6's LowDown brings it to you. The endless search for the perfect small gigging amp has come to an end… Now let's get started!

Some sage advice...

Here are a couple bits of wisdom that will hopefully make your LowDown experience a happy and productive one. Before you position your amp in your rehearsal space or venue, consider a couple of things:

• Getting closer to a wall will increase the amount of perceived low end from your amp, and for an added bonus, get in a corner for even more pronounced low end. (Or move away from the walls if your tone is too boomy!)

• What sounds like great tone on stage doesn't always translate to the audience in the rest of the room. After you set up and get your tone, it is a good idea to walk 20 feet out into the room, if your cord will allow, and listen to what your amp sounds like. Adjust your tone to achieve the compromise of what you need to hear on stage, and what sounds good in the room. Happiness will abound!

If you purchased the LowDown 150 with the 12" speaker and kick back design, note that the perceived tone will be change when the amp is tilted back. When you tilt it back and use it as your monitor you lose a bit of low end but gain volume and clarity. This is good when you are in a small club/church environment. If you are in the garage jamming with friends or a medium size club you may want to keep the amp in an upright position to fill the room with your sound.

Amp Model Details

Just as a great artist has many colors to paint with, you to will be able to paint your music in many colors, thanks to the wide range of tone available in the LowDown. Each of these models when selected automatically dials up a great useable default sound that you can then change to your liking and save into a preset using the channel memories the front panel or with an FBV foot controller.

Some helpful hints

We have given you model specific tone controls. They react as the actual amp would in a given situation. For instance turning the treble up all the way is a very different experience on each model. We would suggest that you pull up an amp and start with these controls at 12 o'clock and the drive down, then decide what you want to hear from there.

If you want more low end, ask yourself if you want more round thick low end or do you want punchy low end. This will help you determine if you should add Bass or Low Mid to your sound. Sometimes adding Low Mid gives you the bottom you want with a punchier sound. The same goes for the high end, are you looking for clarity for your note or a percussive attack? If you want clarity many times Hi Mid will give that to you without adding the percussive attack. Experiment with the tone controls because we have given you a range of tone that has never been available in a combo before.

Drive

This control is used to overdrive the preamp in order to get various distorted sounds. In the fully counter clockwise position is the cleanest least distorted sound and as you turn it clockwise you bring in distortion. Adjust to your taste.

Tone Controls

Bass, Low Mid, Hi Mid and Treble controls are customized for each Amp Model to give you optimal tonal control. These controls will help you to shape the tone you hear in your head.

Opto Comp - The compressor control adjusts the threshold of the compressor. The farther the control is rotated clockwise, the more dramatic the compression becomes which brings a more even dynamic to your sound. When completely in the counter-clockwise position, the compressor circuit is off. As you turn the knob clockwise, the threshold at which the compressor kicks in is lowered. The LED to the left of this control will light when the compressor hits –5db of gain reduction, which is a very good place to start.

Amp Model Descriptions

Clean
This model is all about clean, funk and fusion bass tone. It'll give you all the warm lows and punchy highs you need. This sound was crafted during our studies of the Eden Traveler.

R & B
This Amp Model is a tribute to those late 60's and early 70's clean fat bass tones. It is the kind of tone you here on most Motown recordings, as played by a pioneering young James Jamerson. This Amp Model draws on our analysis of a 1968 B-15 Flip Top.

Rock
This sound was crafted during our studies of the '74 Ampeg SVT. This workhorse has appeared on innumerable recordings and arena stages worldwide. And now all the tone of the 300 lbs behemoth 8X10 and head is available in your combo!

Brit
'68 Marshall Super Bass. Enough said. The Super Bass covers the kind of overdriven bass sound brought to us by late '60's British rock pioneers such as Cream and The Who as well as '70's giants Yes and Rush.

Grind
As the name would suggest, this is for you modern rock lovers, Alice in Chains, Mudvayne and Rage against the Machine. This model is based on a distorted SansAmp PSA-1 into an SVT with direct clean bass signal mixed in for that angry, clear and punchy aggression that takes your sound to DEFCON 1.

Synth
Remember the Gap Band or the Dazz Band? How bout Marilyn Manson or NIN? They all incorporate Synth Bass into their music and now you can too with this synth that we based on the classic synths of the 70's. See the following page for a breakdown on Synth controls.

About the Synth:

Selecting the Synth re-works the amp controls to give you Analog Synth control over the Bass Synth. Here's what happens:

Drive
Adds post filter distortion. Start with this knob at 10 o'clock for a little dirt.

Cutoff (Bass)
Filter Frequency Cutoff. Start with this at 10 o'clock for deeper synth tones.

Resonance (Low Mid)
As you turn this knob clockwise you bring in resonance, think laser sounds.

Envelope (High Mid)
Filter Envelope Depth. The Filter Envelope is triggered every time you play a new and clear note. The Envelope amount controls how much the filter will open each time you play a note.

Attack/Decay (Treble)
Filter Envelope Rate. Controls the speed of the Filter envelope from fast to slow. Start with this control at 9 o'clock for typical Synth bass sounds.

Waveform (Opto Comp)
A number of Waveforms are offered on this knob:

The waveforms are split into 2 parts. Part 1 goes from sawtooth to triangle. Part 2 square wave to square wave with lots of pulse width modulation. Start at 9 o'clock for a fat tone.

Deep
Adds a octave down triangle wave for even fatter Synth bass tone.

Note: Each of the Low Down's Smart Effects unlock even more hidden features and tonal secrets buried in the Bass Synth. Do take some time to dial around to uncover the tonal riches within!

Smart FX:

The Smart FX knob gives you a trio of the most popular and usable bass effects known to man:

Envelope filter

Modeled after a Electro-Harmonix Q-Tron, this is the baddest envelope filter on the planet. You have heard this on your favorite P-Funk and Red Hot Chili Pepper recordings. An envelope filter is a wah-wah type effect that is controlled by the dynamics of your bass note instead of being controlled by your feet.

Octaver

Modeled after the EBS OctaBass, this effect produces a single note one octave below the pitch of the played note, adding a powerful new vibe to your sound.

Chorus

Modeled after the much loved TC Electronics Chorus, this is the most transparent, smooth and expressive chorus for bass ever built. Using it does not reduce your low end. It is especially beautiful on fretless bass.

For each of these effects you can choose anything from a subtle hint of change to total tone-bending sounds. While turning the knob, LowDown adjusts all the individual controls of the modeled effect to automatically give you a complete range of sounds, without having to mess with multiple knobs and switches. (We figured you would appreciate making music instead.)

Channel Memories:

CAUTION!! Pressing one of these buttons could result in a tonal assault of epic proportions, proceed with caution. In all seriousness though, we have preloaded these four buttons with very popular and usable presets. But you can also store your own presets here as well. You can always get the factory presets back so don't worry, change them to your hearts content.

To store your own "snapshot" of all knob positions (except Master Volume), press and hold one of these four buttons for two seconds. The LED flashes twice when the save is complete. To copy from one channel to another, press the button for the channel you want to copy from; now press and hold the button of the new channel location until the LED flashes twice. But wait, there's more! If you would like to access more than four presets, buy an FBV Shortboard and you can access 36 custom delicious tones or store 36 of your own.

Manual Mode: What You See Is What You Get
Press A, B, C or D to recall one of the 4 Channel Memories, press that button again and the channel light will go out and you will be in "manual mode." When you are in manual mode none of the Channel Memory buttons are lit.

When LowDown is operating in Manual Mode, all of the controls are active and the sound of the amp is determined by the current knob settings. Just like a regular amplifier.

Tuner Mode

Press the Tuner button and you get an instant digital tuner. The volume is muted during tuning. Press any button to exit Tuner Mode.

The Amp Model LEDs correspond to the following strings on the bass guitar:

Clean = B string
R & B = E string
Rock = A string
Brit = D string
Grind = G string
Synth = C string

The Channel memory LEDs will indicate when the string you are playing is in tune. Channel B and C should both light GREEN when the string is in tune. If channel A or B LED is lit AMBER then the sting is flat. If channel C or D LED is lit AMBER then the string is sharp.

XLR Direct Output

This is your Direct Out for recording or sending your sound to a house sound system when you're playing live. This output utilize Line 6's exclusive A.I.R. processing which has made Line 6 products like POD the undisputed standard for recording direct. The level of this output is set via Channel Volume and has a ground lift switch to lift the ground if your direct out is causing a buzz in the sound/recording system you are connected to. A bit of advice, many pro sound engineers here at Line 6 have made the direct out experience from this amp a beautiful one. Many sound engineers prefer to take a Pre Amplifier Direct Signal via a Direct Box. This is the de facto technique for getting basic bass tone in the house PA. When playing a gig in a club, ask the sound guy to consider using your direct out for amp and cabinet tone - they will not be disappointed!

Important
When using the direct out, there can be a 'pop' on the output on power up or power down. We recommend that you either disconnect the direct out or mute whatever the direct out is connected to before powering your LowDown on or off.

Mute Horn

Use this to bypass the horn. Why would you want to bypass the horn you ask? Well, the horn has become a hotly disputed feature on modern bass amps. There are two schools of thought – Some go for the old school rock bass tone, with lots of sustain and a little distortion. Turns out that adding a horn to this kind of tone just makes it sound fizzy and cheap, so most Rock players prefer cabs without horns, or at least with the horn off. The second school of thought is the more modern jazz/funk/fusion/metal, (essentially everyone else) kind of player. They appreciate the articulation a horn can add to their tone, it emphasizes the attack of your tone, and makes for great R&B/slap tone! TIP: The LowDown knows where you've got the horn switch set, so we've done our work to make sure the Brit and Rock models don't get fizzy even when the horn is engaged.

CD/MP3

Connect a CD player, MP3 player, drum machine or other device here, and you'll hear it from LowDown's speaker or headphone output. Very handy for jamming along! Use the output volume control on the connected device to set its level.

Phones

Connect your stereo headphones here to listen to your bass and/or your favorite CD and jam along for working on your favorite licks. Plugging in headphones disables your speaker output.

Factory Reset of all Presets

You can reset all 36 of your LowDown's programmable channels to their factory-programmed states by holding down the Channel A button as you turn on the power. Warning: This will erase ALL custom sounds you might have created. Ask yourself, "Do I really want to do this?" If your answer is yes, then go for it!

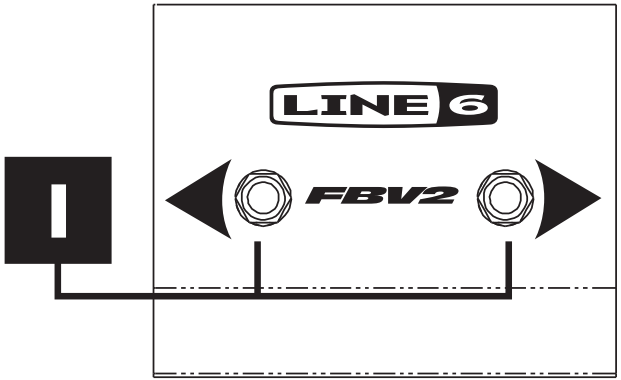
Using Your Feet

The FBV Shortboard includes all the controls needed to make your LowDown experience the best possible. Also available are the FBV Express for channel switching and Vol/Wah control and FBV2 for channel scroll. Note that the Line 6 Floor Board and FB4 foot controllers will not work with LowDown.

FBV foot controllers come with an included RJ-45 cable. Connect this cable between the LowDown and the side of the FBV. If you ever need a replacement cable, look for a Category 5, 10 Base-T or RJ-45 cable with male connectors on both ends. These can be found at almost any computer supply retailer.

FBV2

1. Functions as a two button channel scroll foot switch. This foot switch allows you to scroll through the 4 channels (the A,B,C & D buttons) of your LowDown.

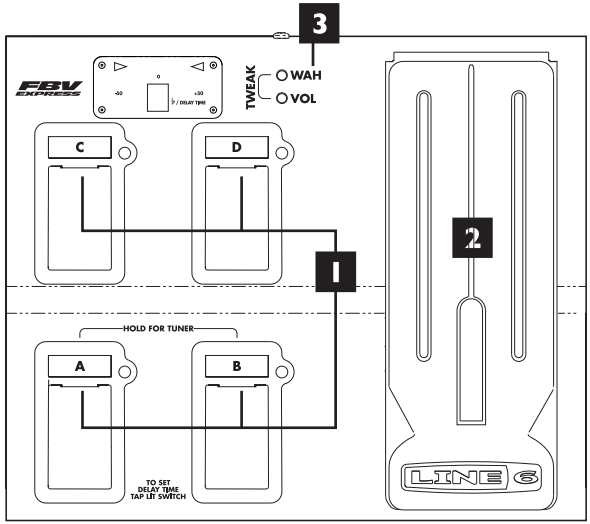


FBV Express

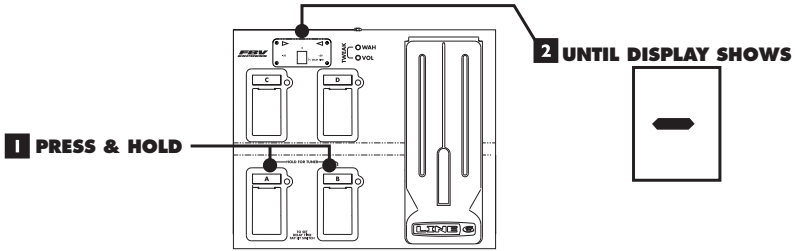
1. Channel A, B, C & D: Select from the four Channel Memories. Manual mode: Press and hold lit channel.

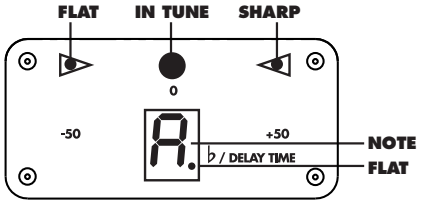
2. FBV Pedal: Press the pedal forward to click the toe-switch, turning the pedal from Volume to Wah. The Wah is modeled after a vintage Tycobrahe ParaPedal Wah. You can use it as a wah that sounds like a foot controlled envelope filter or park it at a desired sound for some Sub Dub sounds.

3. Wah and Volume Lights: These light to show that a pedal is ready to control Wah or Volume.

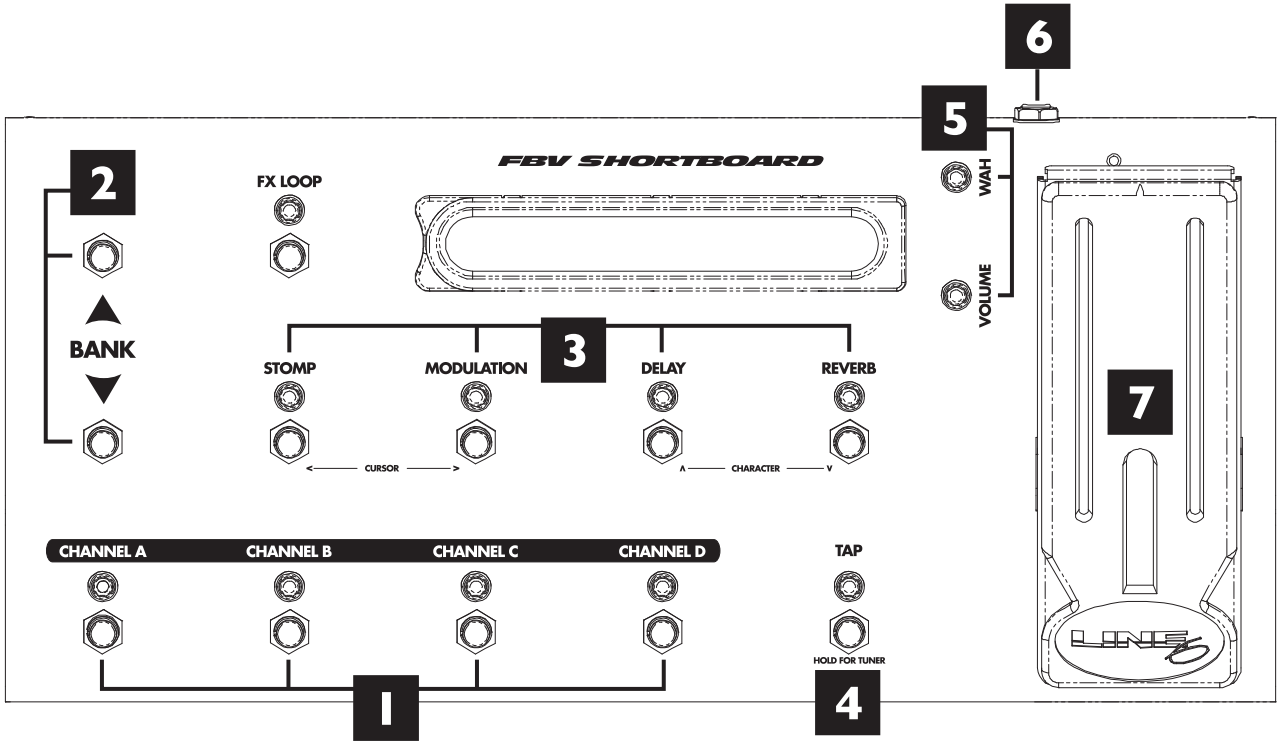


Using your FBV Express Tuner





3 DONE TUNING?
PRESS ANY OF THE A,B,C OR D FOOTSWITCHES


FBV SHORTBOARD
FX LOOP
2
BANK
3
STOMP
MODULATION
DELAY
REVERB
< CURSOR >
^ CHARACTER v
5
6
WAH
VOLUME
7
CHANNEL A
CHANNEL B
CHANNEL C
CHANNEL D
1
TAP
HOLD FOR TUNER
4

FBV Shortboard

1. Channel A, B, C & D: Select from the four Channel Memories

2. Bank Up - Bank Down: The FBV Shortboard gives you 9 banks of 4 channels each. Bank 1 is the same 4 memories you get from the LowDown front panel A,B,C, and D buttons when no FBV is connected. Also, the LowDown front panel A,B,C, and D buttons are the 4 presets from the currently selected bank on Shortboard.

3. Stomp/Mod/Delay/Reverb: You guessed it! These switch the LowDown effects on and off as if they were stomp boxes on a pedal board. We have included stickers to re-label your Shortboard.

STOMP turns the Smart FX on and off.
MOD turns the compressor on and off.
DELAY turns the Deep switch on and off.
REVERB does nothing; it is just there for you to stomp on, if you want to, so the crowd will think you are cool.

4. Tap/Tuner: LowDown does not use a delay so this is just to kick in the tuner. Hold this switch until you see the tuner on the pedal's display. Press it again to exit tuner mode.

5. Wah and Volume Lights: These light to show that a pedal is ready to control Wah or Volume. **Note:** Pressing the pedal fully forward to click the toe-switch selects its control between Wah or Volume. If a separate expression pedal is connected to the rear panel 1/4-inch jack, the pedal controls Wah only, with the toe switch toggling the Wah on/off.

6. External Pedal Jack: You can connect an expression pedal (such as the Line 6 EX-1) to the Shortboard's rear panel 1/4-inch jack, and the connected pedal will control Volume.

7. FBV Pedal: Press the pedal forward to click the toe-switch, turning the pedal from Volume to Wah. The Wah is modeled after a vintage Tycobrahe ParaPedal Wah.

Saving with FBV Shortboard

To prepare for saving, it's a good idea to browse through the various factory-stored preset sounds to decide which you can do without. Make a note of their Bank number and Channel letter so you can save your own sounds there instead.

Save

Step and hold on the FX LOOP switch until "NAME EDIT" is displayed. The Shortboard's STOMP and MOD switches then select one of the characters of the channel name so you can edit it. The DELAY and REVERB switches choose from the available letters, numbers and symbols. The Bank Up and Bank Down switches then pick a Bank you'd like to save within.

Complete the Save

Press the A, B, C or D switch to store to that Channel Memory in the selected Bank. The display will show "SAVING". Congratulations, you're all done!