

MusicParts.Com

Technical Document Distribution

Brand:	Ampeg
Model	G-412
Product:	Amplifier
Description:	Schematic

Musicparts Document Number: 44738	TechTips: No	Pages: 17	Dated: 1973
-----------------------------------	--------------	-----------	-------------

Hello,

Welcome to MusicParts.Com, Inc. your online resource for technical documents and service information. This PDF package may contain information, schematics, parts lists, images, engineering changes, previous versions, circuit descriptions, and many other unique features about the product you have chosen. This document was assembled from a variety of sources and is the result of our many years in the music repair business.

TECHTIPS: Unique to Musicparts documents are **TECHTIPS** located in critical areas on the schematics. They contain useful information about that area of the schematic such as common problems that we have found and recommended changes. Not all documents will have TechTips.

NOTE: Large original over-sized drawings will need to be taped together. We feel this is better than reducing them and losing fine details.

VIEWING: This document is utilizing PAGE-ON-DEMAND downloading. This will let you navigate to any page without waiting for the entire file to download.

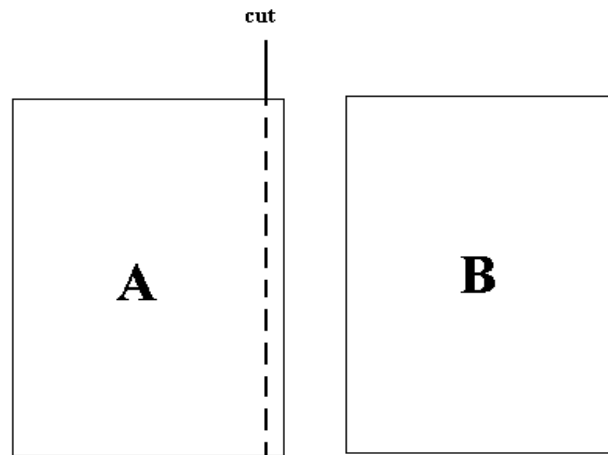
PRINTING: For the best quality, we highly recommend that when the print dialog appears, please **make sure "SHRINK OVERSIZED PAGES " is checked.**, otherwise you may cut off the edge of the page. Also please stay online while printing this document to make sure you get all the pages.

Visit us on the web at: <http://www.musicparts.com/>
Email us at: customerservice@musicparts.com

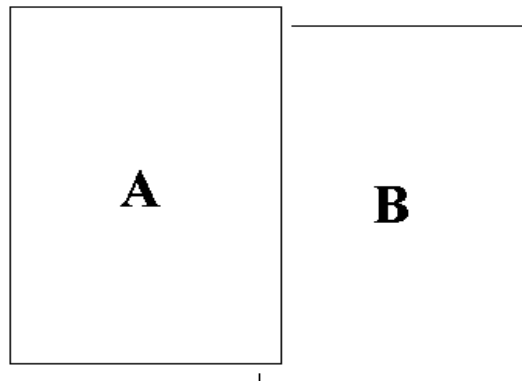
MusicParts.Com

Two Sheet Pasteup Guide

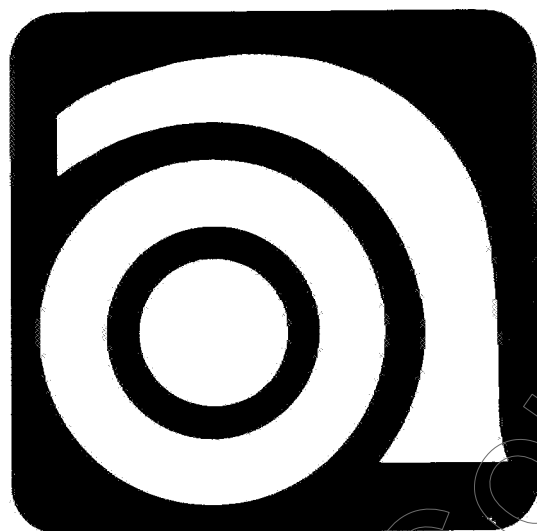
11x17" paper size



It's ok to slightly cut into the black print, as documents contain an intentional extended overlapping printed area.



Only one trim cut is needed, then overlay as shown and tape.



ampeg

SERVICE MANUAL

SOLID STATE MODEL

G-412

AMPEG DIVISION OF THE MAGNAVOX COMPANY
P.O. BOX 515
LINDEN, NEW JERSEY 07036
PHONE (201) 862-5700

All specifications subject to change without notice

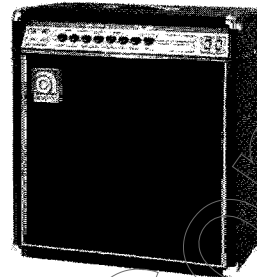
MODELS

G-212, G-410, G-412
 B-115, B-410
 V6B

Model Nos. B115, B410, G212, G410, G412

General Features:

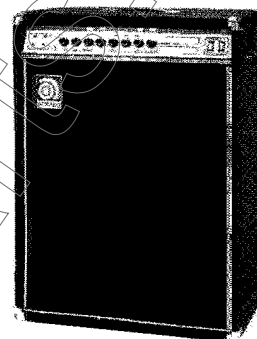
- 120 Watts RMS Minimum
- 300 Watts Peak Music Power
- Solid State Circuitry
- Volume, Treble, Midrange & Bass Controls
- Two Channels
- Four Inputs - Hi and Lo Gain
- Selective Midrange Switch
- Ultra Hi Switch
- Removable Power Module
- 8 OHM Impedance
- Power Switch
- Polarity Switch
- Extension Amplifier Jacks
- Cord Winder
- A.C. Outlet
- Tuff Rug Covering



One 15" Speaker 8 OHMS
 Tuned Bass Reflex Design

Dimensions:
 27 1/4 x 28 7/8 x 14 1/4

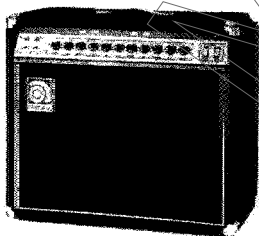
Wt. 85 lbs.



Four 10" Speakers 32 OHMS
 Infinite Baffle Totally Sealed
 Enclosure
 Mounted Wheels

Dimensions:
 27 1/4 x 36 1/8 x 14 1/4

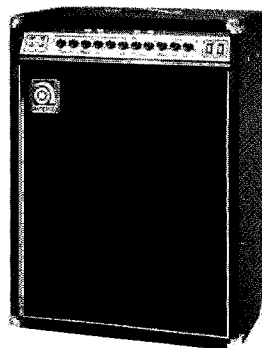
Wt. 108 lbs.



Two 12" Speakers 16 OHMS
 Reverb/Tremolo with
 Double Switch

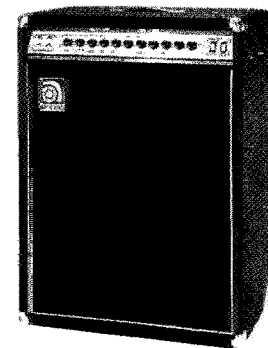
Dimensions:
 27 1/4 x 23 9/16 x 12 1/4

Wt. 75 lbs.



Four 10" Speakers 32 OHMS
 Reverb/Tremolo with
 Double Switch
 Open Back Design
 Mounted Wheels

Dimensions:
 27-1/4 x 36-1/8 x 14-1/4
 Wt. 110 lbs.



Four 10" Speakers 32 OHMS
 Reverb/Tremolo with
 Double Switch
 Infinite Baffle
 Totally Sealed Enclosures
 Mounted Wheels

Dimensions:
 27-1/4 x 36-1/8 x 14-1/4
 Wt. 118 lbs.

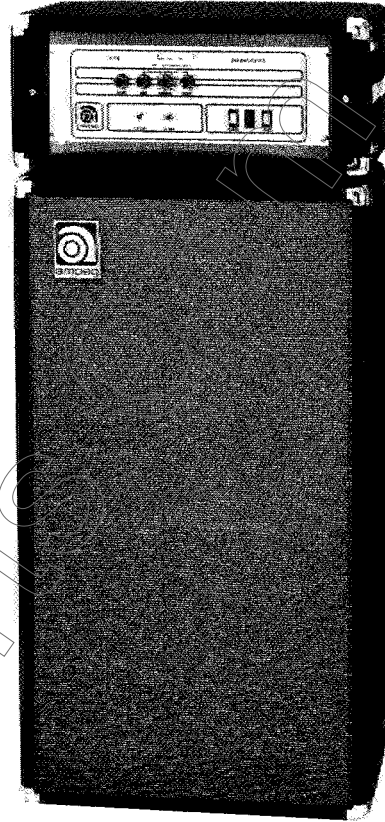
MODEL NO. V-6B**General Features:**

240 Watts RMS Minimum
600 Watts Peak Music Power
Solid State Circuitry
Volume, Treble, Midrange & Bass Controls
One Channel
Two Inputs – Hi and Lo Gain
Selective Midrange Switch
Ultra Hi Switch
Removable Power Module
4 OHM Impedance
Power Switch
Polarity Switch
Extension Amplifier Jacks
A.C. Outlet
Tuffrugg Covering

Two 15" Speakers
Active Ducted Port Bass Reflex
Enclosure
Mounted Wheels & Bar Handle

Dimensions

Head: 13 1/8" x 24" x 10 5/8"
Speaker Cabinet: 15" x 24" x 44"
Wt. Head. 53 lbs.
Speaker Cabinet: 118 lbs.



REPLACEMENT PARTS

RESISTORS

Fixed Compositions

Part No.	OHM	Watts	Tolerance	Crkt Symbol No.	Part No.	OHM	Watts	Tolerance	Crkt Symbol No.
230144-38	10	0.5W	±10%	R107, 214, 224	230144-70	4.7K	0.5W	±10%	R209, 19 103, 116
230144-42	22	0.5W	±10%	R220, 221, 226	230144-71	5.6K	0.5W	±10%	R12
230144-50	100	0.5W	±10%	R105, 106, 109, 114	230144-72	6800	0.5W	±10%	R10, 132
230144-51	120	0.5W	±10%	R210	230144-74	10K	0.5W	±10%	R213, 101, 108 111, 134
230144-52	150	0.5W	±10%	R207	230144-77	18K	0.5W	±10%	R204, 208, 211
230144-57	390	0.5W	±10%	R115, 13	230144-78	22K	0.5W	±10%	R102, 104
230144-58	470	0.5W	±10%	R202, 206, 405, 406	230144-82	47K	0.5W	±10%	R301, 302, 303, 304 117, 125, 129, 131
230144-60	680	0.5W	±10%	R141, 3	230144-84	68K	0.5W	±10%	R137, 2
230144-62	1000	0.5W	±10%	R118, 135	230144-86	100K	0.5W	±10%	R1
230144-63	1.2K	0.5W	±10%	R14	230144-90	220K	0.5W	±10%	R6, 7, 8
230144-64	1.5K	0.5W	±10%	R21, 110, 136	230144-156	750	0.5W	±10%	R9
230144-65	1800	0.5W	±10%	R203, 113, 119, 120, 20, 22, 23, 121, 124, 133, 138, 140	230144-180	7500	0.5W	±5%	R217
230144-66	2200	0.5W	±10%	R4, 15, 17					
230144-67	2700	0.5W	±10%	R128					
230144-69	3.9K	0.5W	±10%	R122, 123					
230145-69	3.9K	1W	±10%	R402, 403					

RESISTORS

Metal Film

Flame Proof

Part No.	OHM	Watts	Tolerance	Crkt Symbol No
230190-1625	1.6K	0.5W	±5%	R216, 218
230190-6805	68	0.5W	±5%	R215, 219
Wire Wound				
240080-61	330	5W	±10%	R401, 404
240080-69	680	5W	±10%	R305, 306
240080-506	0.16	5W	±10%	R225, 233
240080-513	.33	5W	±10%	R222, 223, 227, 228 229, 230, 231, 232

CAPACITORS

CERAMICS

Part No.	MFD	Volt	Crkt Symbol No.
250551-1519	150 P.F.	500V	C202, 204
250551-1029	1000 P.F.	500V	C108
250552-4719	470 P.F.	500V	C120
250552-4709	47 P.F.	500V	C17, 116
250553-2229	2200 P.F.	500V	C124, 16

SUB-ASSEMBLIES

701820-1 Special Effects P.C. Board with Parts

701821-1 Preamp P.C. Board with Parts - Channel 1 Bass

701821-2 Preamp P.C. Board with Parts - Channel 2 Bass

701821-3 Preamp P.C. Board with Parts - Channel 1 Guitar

701821-4 Preamp P.C. Board with Parts - Channel 2 Guitar

701821-5 Preamp P.C. Board with Parts - V6B

701822-1 Power P.C. Board with Parts (Common for G212,
G410, G412, B115, B410)

701822-2 Power P.C. Board with Parts - V6B only

701825-1 Regulated Preamp P.C. Board with Parts (Common
to Guitar Amps)

1A6007 Power Module for 120 Watt Models

1A6609 Power Module for 240 Watt Model V6B

CAPACITORS

FLAT FOIL

Part No.	MFD	Volt	Crkt Symbol No.
250581-1043	0.01	250V	C18
250581-2243	0.022	250V	C103
250581-3343	0.033	250V	C4, 12, 13
250581-4743	0.047	250V	C205, 206, 207
250581-1053	0.1	250V	C104, 122, 123, 14, 15, 208, 209, 210
250581-1553	0.15	250V	C5
250581-2253	0.22M.F.	250V	C121
250581-4753	0.47	250V	C1, 8
250581-6853	0.68	250V	C6, 10, 11
250581-6843	.068	250V	C10, 11

103471-3	Headlock
110605-3	Scr. 10-32x1-9/32 Power Module Support Dramlug
121462-2	2 Tab Corner
121463-1	3 Tab Corner
121465-1	Glides
121467-2	Handle
121469-1	Bar Handle
142902-2	Knob
151518-14	Overlay G212
151518-15	Overlay B115
151518-16	Overlay B410
151518-17	Overlay G410
151518-18	Overlay G412
151521-1	Overlay V6B
160804-10	Power on-off Switch
160804-11	Polarity Switch
160805-6	Rocker Switch DPDT - Ultra Hi
160805-7	Rocker Switch DP3T - Midrange
160806-1	Footswitch
160807-4	A-C Line Selector Switch
160809-1	Interlock Switch (Safety)
181021-1200	Fuse 2A
181021-1400	Fuse 4A
181021-1800	Fuse 8A
181572-1	Pilot Light - Common Red
181572-4	Pilot Light - V6B Only
181572-1	Jack Phono J302, 304
181573-3	Jack Phono J306, 307, 308
181573-3	Jack Phono J303, 304, 305, 306 (V6B only)
181573-9	Jack Phono J301, 303
181573-10	Jack Phono J305
181574-6	Fuse 10A GTV
181574-7	Fuse 6A Pigtail
181576-1	Fuseholder
181578-1	Socket Speaker (C4M Audio Connector)
181581-2	Outlet AC 3 Prong
300714-4	Transformer Power 120 Volt Version 120 Watt Models
300714-5	Transformer Power 240 Volt Version 120 Watt Models
300715-1	Transformer Power 120 Volt Version V6B
300715-2	Transformer Power 240 Volt Version V6B
320821-1	Toroidal Inductor L1
361601-4	Reverb Unit
361602-1	Inductor L201 10 MH on 701822-1 Power P.C. Board 120 Watt Models
361602-2	Inductor L201 5 MH on 701822-2 Power P.C. Board V6B
461521-2	A.C. Line Cord
461524-6	12" Reverb Cable Green
461524-10	17" Reverb Cable Black
461526-1	Speaker Connector Right Angle Phono Plug
580151-1	Speaker for G412
580152-1	Speaker Altec 421A 8 Ohm for B115
580152-2	Speaker Altec 421H 8 Ohm for V6B
580155-1	Speaker for B410
580157-1	Speaker for B115 & V6B
580158-1	Speaker for G212
580159-1	Speaker for G410
580161-1	Speaker for Altec 417 8 Ohm for G412
580161-3	Speaker Altec 417 16 Ohm for G212
580162-1	Speaker Altec 425A 8 Ohm for G410 and B410
400826-2	Cloth Grill Black
400826-1	Cloth Grill Std

CAPACITORS

ELECTROLYTICS

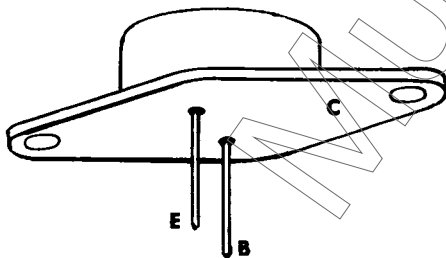
Part No.	MFD	Volt	Crkt Symbol No.	Part No.	MFD	Volt	Crkt Symbol No.
270115-1050	1	50V	C117, 118, 401, 402	270115-2115	22	16V	C114
270117-2025	2.2	25V	C7, 9, 201	270115-3110	33	10V	C115
270115-2050	2.2	50V	C106	270117-3110	33	10V	C2
270120-6859	6.8	15V	C110	270115-5106	47	6.3V	C112, 113
270117-1116	10	15V	C3	270111-1225	100	25V	C105
270115-1125	10	25V	C119	270115-2210	220	10V	C109, 111
270115-1150	10	50V	C101, 102	270117-3210	330	10V	C203
270120-1569	15	15V	C107	270564-1	4800	60V	C303,304

CONTROLS

Part No.	Description	Crkt Symbol No.	Part No.	Description	Crkt Symbol No.
220217-6	15K Tremolo Modulator D.C. offset null	R126	220663-10	18K Special D Speed	R112
220217-13	5K Tremolo Modulator Gain Adjust.	R127	220663-10	18K Special D Intensity	R130
220217-13	5K Bias Adjust.	R212	220663-10	18K Special D Dimension	R139
220663-10	18K Special D Volume	R5	220663-12	50K Special D Midrange	R11
			220663-10	50K Special D Bass	R16
			220663-12	50K Special D Treble	R18

SEMICONDUCTORS

Part No.	Description	Crkt Symbol No.	Drg No.	Part No.	Description	Crkt Symbol No.	Drg No.
530145-160	Diode Zener 16V 500 MW	D401, 402	7	610262-3	Transistor	Q302	1
530157-689	Diode Zener 6.8V 500 MW	D102	7	610262-4	Transistor	Q303	1
530163-180	Diode Zener 18V 1W	D101, 301, 302		610262-5	Transistor 40391	Q402	4
530555-1	Diode F8	D208, 209, 210		610262-6	Transistor 40389	Q401	4
53055-4	Diode 3A400S	D211, 212, 213, 214		610263-3	Transistor 2N3568	Q101,206	8
530556-1	Diode 1N456	D204, 205, 206, 207		610263-4	Transistor 2N3638	Q207	8
530556-2	Diode 1 9V	D203		610263-6	Transistor 2N3403	Q301	10
530558-1	Rectifier Bridge			610264-1	Transistor MJE340	Q205	9
610259-2	Transistor 2N4348	Q304, 305, 306, 307, 308, 309, 310, 311	1	610264-2	Transistor MJE350	Q204	9
610262-1	Transistor 2N5680	Q303	3	610265-1	I.C. RC4139P	I.C. 1	
610262-2	Transistor 2N5682	Q302	3	610265-2	I.C. N5709A	I.C. 103, 2	
				610266-1	I.C. NE540L	I.C. 101	
				610267-1	I.C. NE566	I.C. 102	
				610268-1	I.C. CA3080	I.C. 104	
				610269-1	I.C. CA3046	I.C. 105	
				610270-1	Transistor 2N4249	Q201,202, 203	2
				610271-1	Transistor 2N3856A	Q102, 103	6



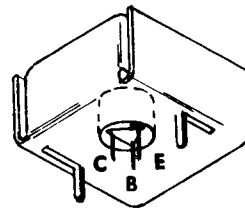
DWG. 1



DWG. 2



DWG. 3



DWG. 4



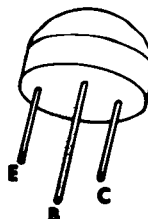
DWG. 5



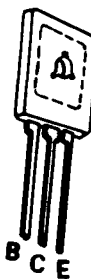
DWG. 6



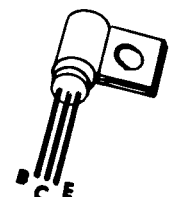
DWG. 7



DWG. 8

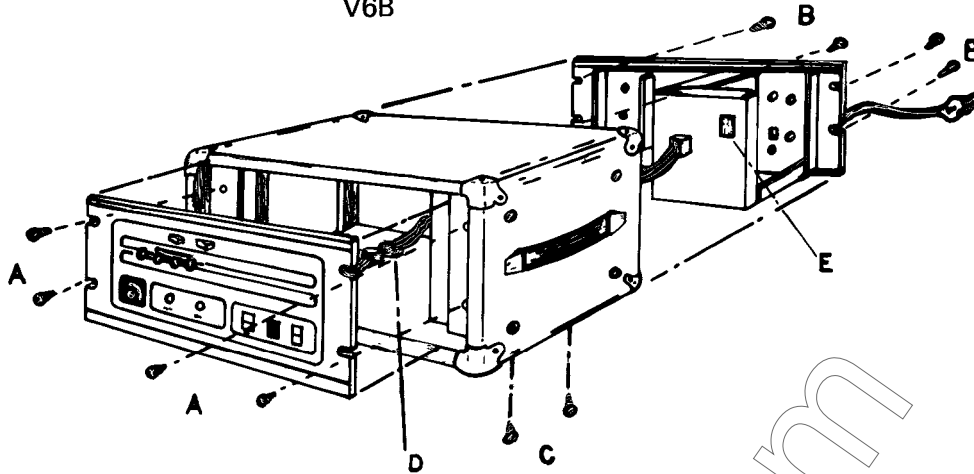


DWG. 9



DWG. 10

V6B



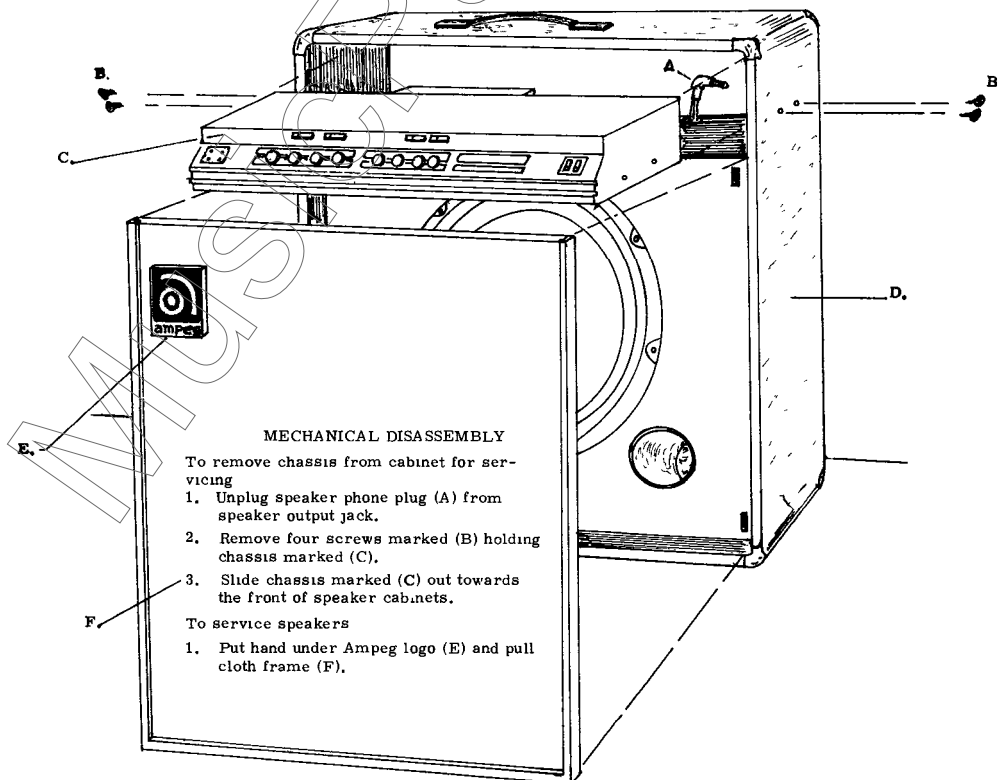
MECHANICAL DISASSEMBLY

1. To remove front panel (preamp) for servicing

Remove four screws marked (A) from cabinet and pull panel out, then disconnect Molex connectors D & E.

2. To remove power amp chassis from cabinet for servicing

Remove four screws marked (B) and two screws marked (C) from cabinet and slide chassis out.



MECHANICAL DISASSEMBLY

To remove chassis from cabinet for servicing

1. Unplug speaker phone plug (A) from speaker output jack.
2. Remove four screws marked (B) holding chassis marked (C).
3. Slide chassis marked (C) out towards the front of speaker cabinets.

To service speakers

1. Put hand under Ampeg logo (E) and pull cloth frame (F).

G212, G410, G412

B115, B410

REPLACING AMPEG POWER MODULES

1. Unplug amplifier.
2. Loosen drum lug 'A' on right side of 120 watt power module and completely remove drum lug 'B' on left side with a drum key or slot head screwdriver.
3. Remove power module from chassis by sliding it to the left and out, to allow for disassembly of connectors.
4. Disconnect small connector on right hand side first.
5. Then turn the right hand side of module out until it is approximately 75° from the chassis. With the space made available between the module and the chassis, the larger connector can be easily disconnected. If this connector is firmly seated, use small up and down rocking motions to loosen the connector from the printed circuit board.

Note: 240 watt power module is removed in a like manner, except that there are two drum lugs on each side of a module.

6. Reassemble the unit with a new module using the above steps in reverse. If drum lugs are lost, replacements are available from the Ampeg Service Department, or replace with any 10-32 x 7/8" screw.
7. If replacement of the power module fails to correct the problem in the amplifier, please contact the nearest authorized Ampeg Service Center, or the Factory Service Center in Linden, New Jersey.

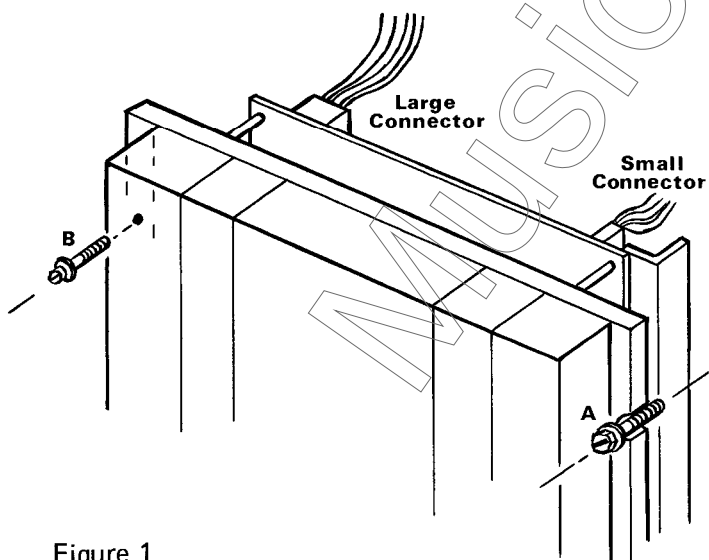


Figure 1

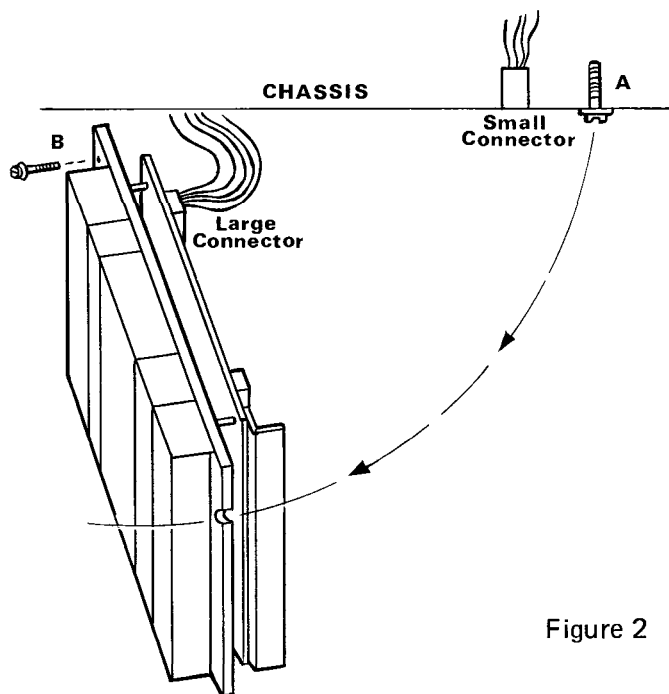


Figure 2

TEST PROCEDURE

- (1) Perform short test with a 60 watt incandescent lamp wired in series between the power line and the primary circuit of the unit to be tested. No load should be connected, and R212 should be set approximately at mid-position. A dull glow is normal.
- (2) Short circuit the lamp or remove it from line completely, and adjust R212 until .011 Volts D.C. is measured between pins 6 (low) and 9 (high), of P-2.
- (3) Connect an eight ohm load to the speaker jack, and a 0.257 Volt R.M.S. 400 Hz sine wave, to the external amplifier jack. Acceptable output limits are 25.452 Volts to 31.108 Volts, with 28.28 Volts R.M.S. being normal.
- (4) Remove external load resistor and raise external Amp input to 0.5 Volt R.M.S. Raise the line voltage to 131.9 Volts for no less than one minute (open circuit test).
- (5) Reconnect eight ohm load and verify condition of power amplifier, if normal, short circuit load resistor for one minute minimum. Remove short and re-evaluate. Reduce line voltage to 120 Volts R.M.S. for remainder of tests.
- (6) Perform intermittent test by tapping set with rubber hammer.
- (7) Special effects circuit adjustment procedure (Models G212, G412 and G410).
 - (a) Set all tone controls at flat 12 o'clock (midpoint). Set ultra hi switches to off position. Set speed, intensity, and dimension controls fully counterclockwise (CCW). Set tremolo foot switch in the open position (on). Set R127 fully counterclockwise (CCW) as seen from the bearing knob. Set channel one (1) volume control fully counterclockwise (CCW). Set channel two (2) volume control for 10 Volts R.M.S. out with a 0.010 Volt 400 Hz signal into the hi-gain jack.
 - (b) Close the tremolo foot switch and turn the intensity control fully clockwise (CW) and adjust R127 for 5 Volts R.M.S. at the lead. (This portion of the test matches the transconductance of the tremolo circuit and sets the operating point.)
 - (c) Set the speed control fully clockwise (CW), open the tremolo foot switch (on position), remove the input signal and set the channel 2 volume control fully counterclockwise (CCW).
 - (d) Adjust R126 for minimum oscillator signal at the load. (This adjustment determines minimum P.C. offset for the tremolo circuit which yields the lowest noise.)
 - (e) Verify speed range of 1 Hz to 10 Hz by measuring across the foot switch jack. After familiarization with this range, it can be set by ear.

- (8) With intensity and dimension fully counterclockwise (CCW) volume at maximum, tone controls and ultra hi switch set at 12 o'clock, apply a 0.0115 Volts 400Hz signal to hi gain jack of channel 2 and measure the output (28.28 Volts nominal). Move input to low jack (1o gain), and verify a 6dB decrease.
- (9) Verify tone control and ultra hi operation.
- (10) With all controls counterclockwise and the ultra hi switches in the off position, measure the noise with an unweighted filter. Adjust polarity switch, if necessary, to reduce noise. Verify hum and noise limit of .00282 Volts R.M.S.

SERVICE SCOOPS

CHASSIS

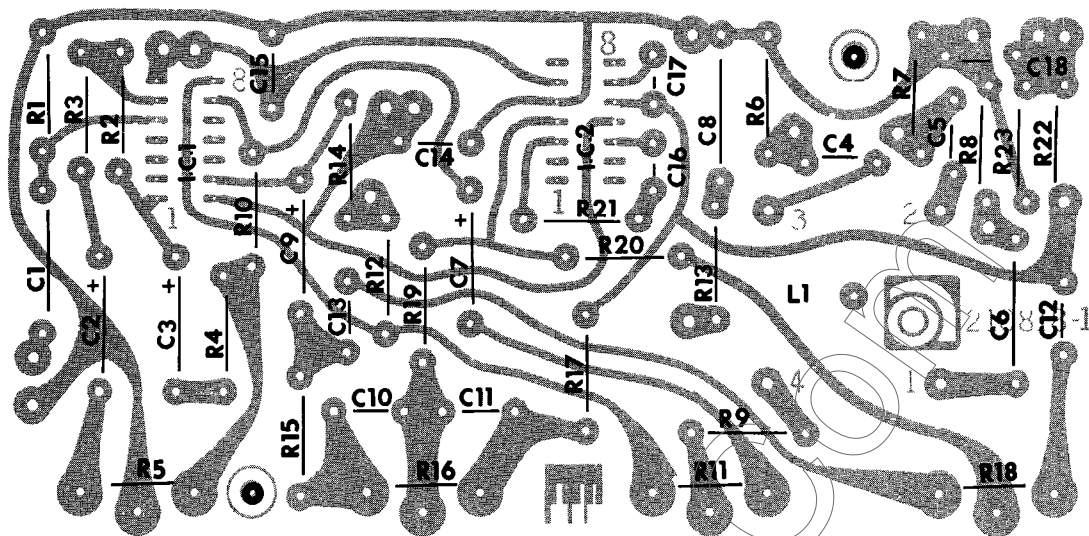
- (1) No output, but fuse is okay; check interlock switch.
- (2) Oscillation in either channel, high frequency distortion, weak or no signal; check IC101 and IC103.
- (3) No output channel 2, but signal with reverb control turned up; check transistors Q101 or Q103.
- (4) Crackling or intermittent operation; check solder connections and for broken/damaged wires attached to preamplifier PC boards.
- (5) Crackling; check zener diodes on regulator board with freeze mist or by placing soldering iron near diode.

POWER MODULE:

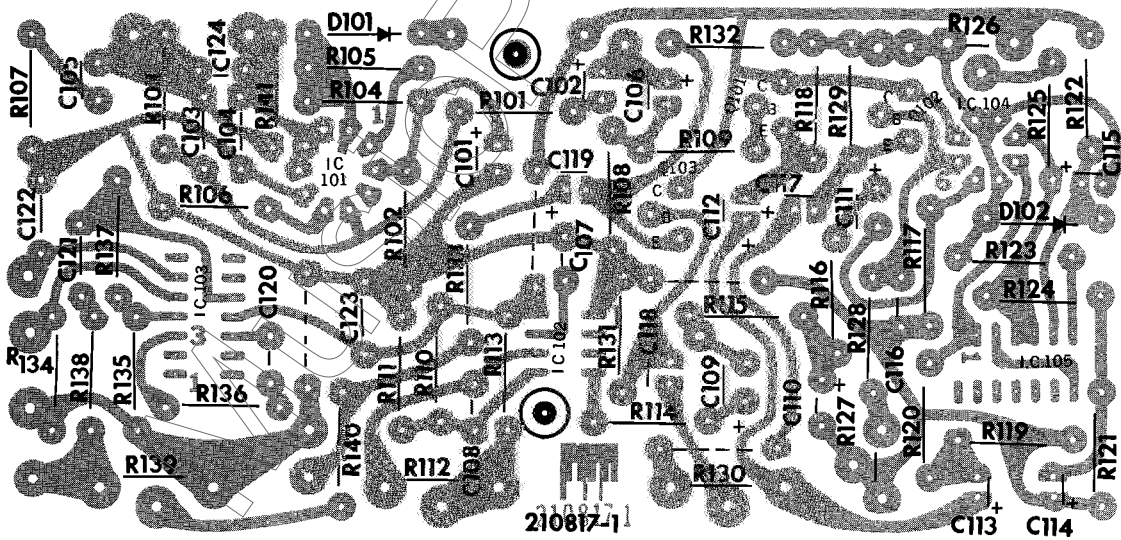
- (1) Blows fuse or has very high hum; check driver transistors Q302 and Q303 first, if okay continue to check power module completely.
- (2) No output; check for open transistors Q201, Q202 and Q203.
- (3) High distortion; check for shorted D205 or D204 and for Bias out of adjustment.
- (4) Bias will not adjust; check for collector to emitter short on Q202.
- (5) R221 burns; check for R215, R222, R223 open – Q304, Q305, Q302 and Q301 shorted and Q303 open.
- (6) After 30 minutes with amplifier on and no signal applied, check heat sink temperature. If heat sink is hot to touch bias is misadjusted.

NOTE:

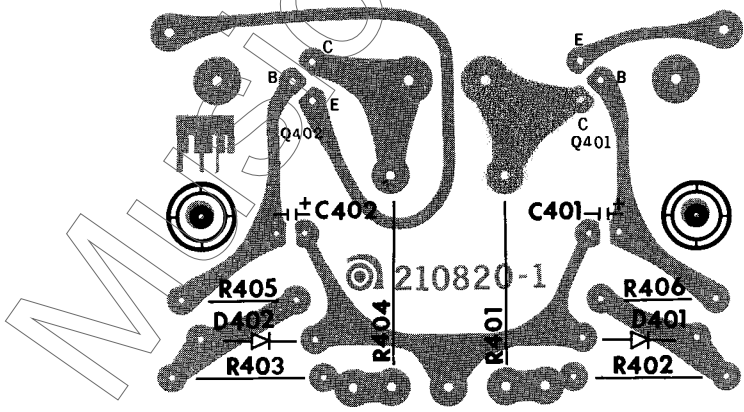
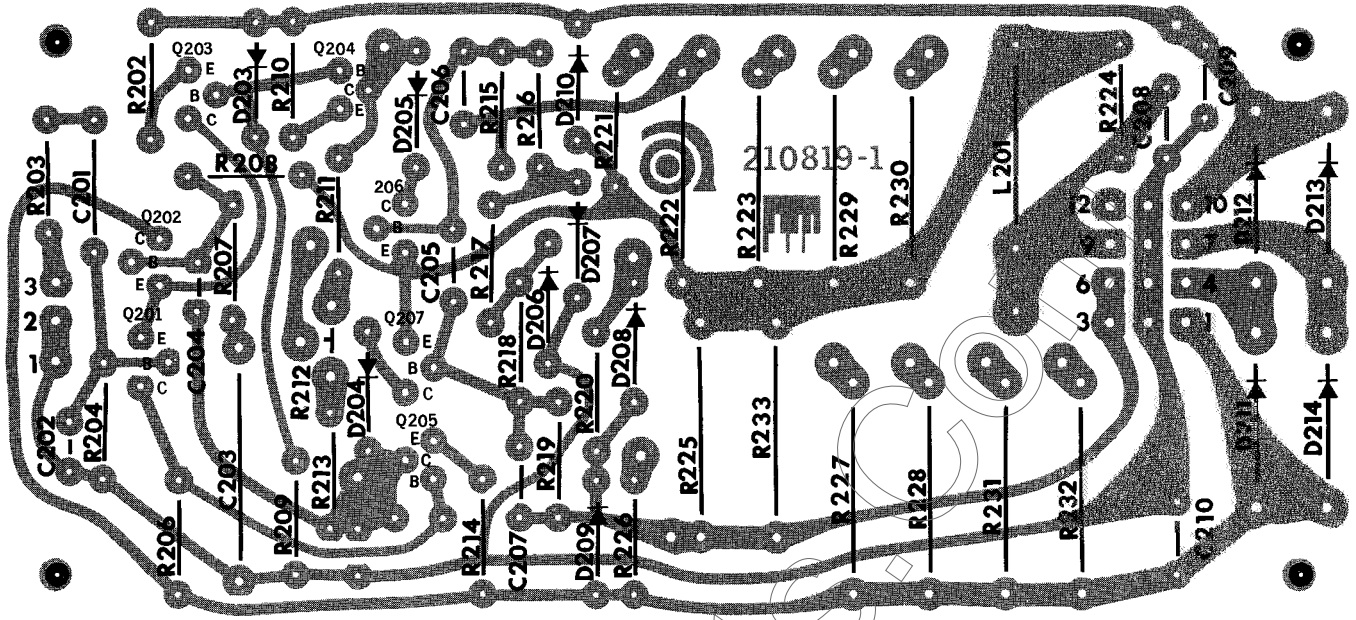
Make use of the extension amplifier jacks to locate "no output condition" (preamp or power amp.).



Nomenclature Copper Side
PC Bd. #210818-1



210817-1

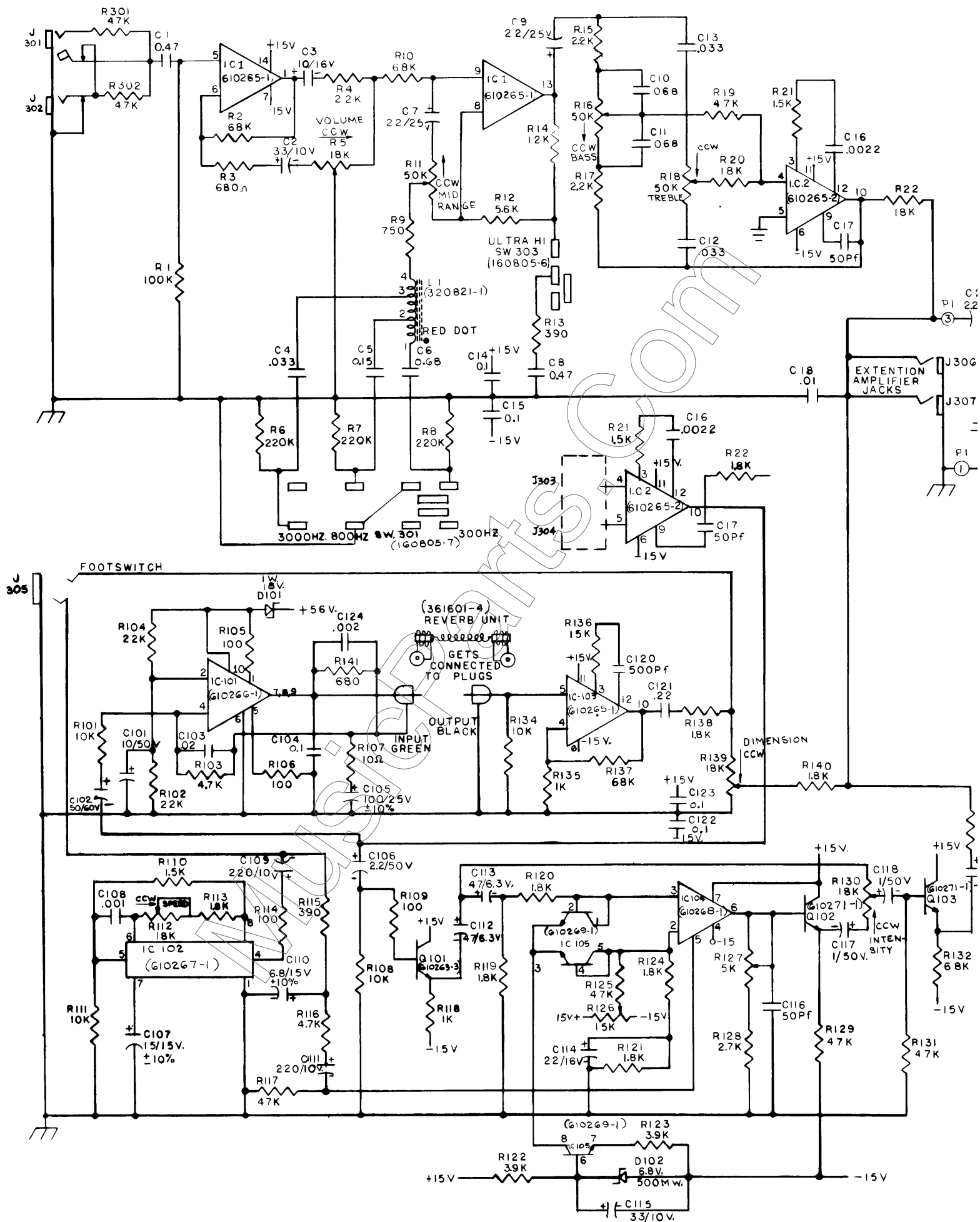


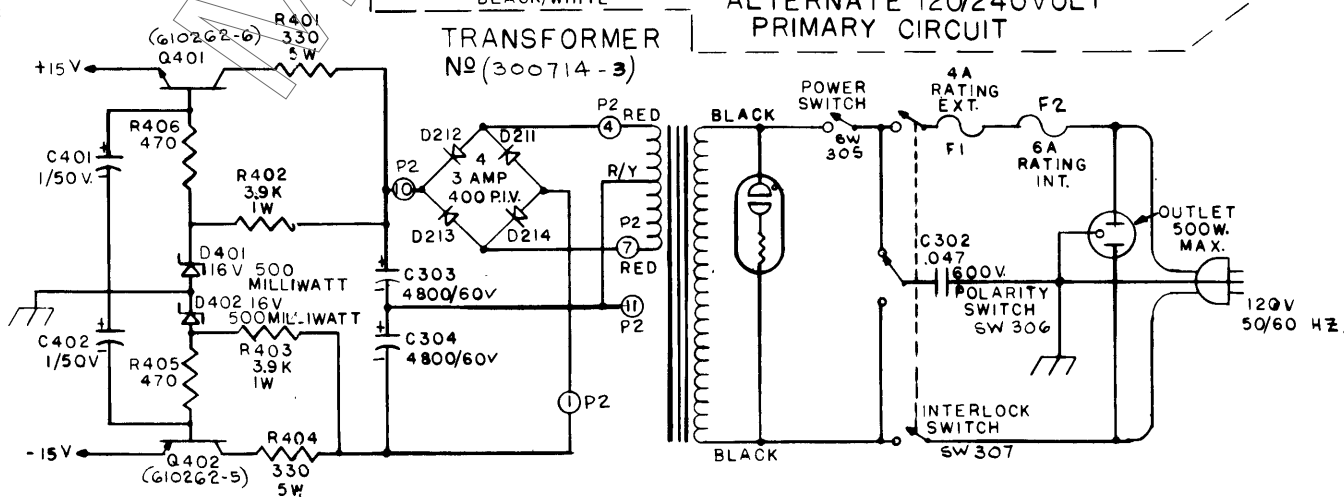
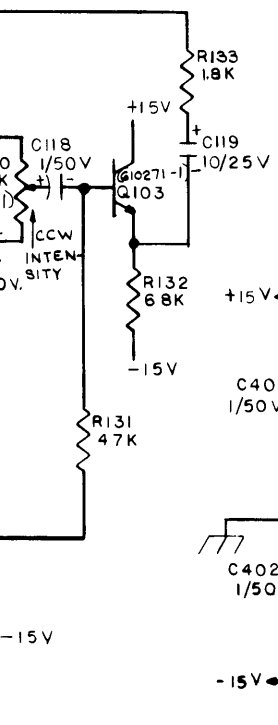
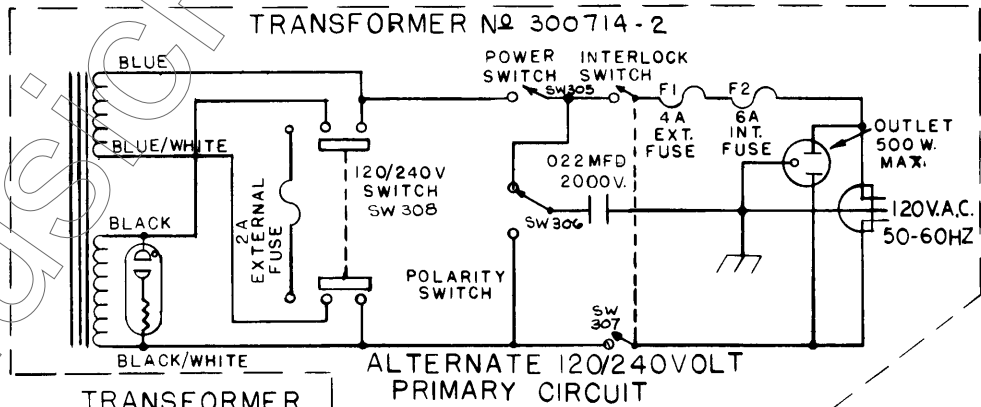
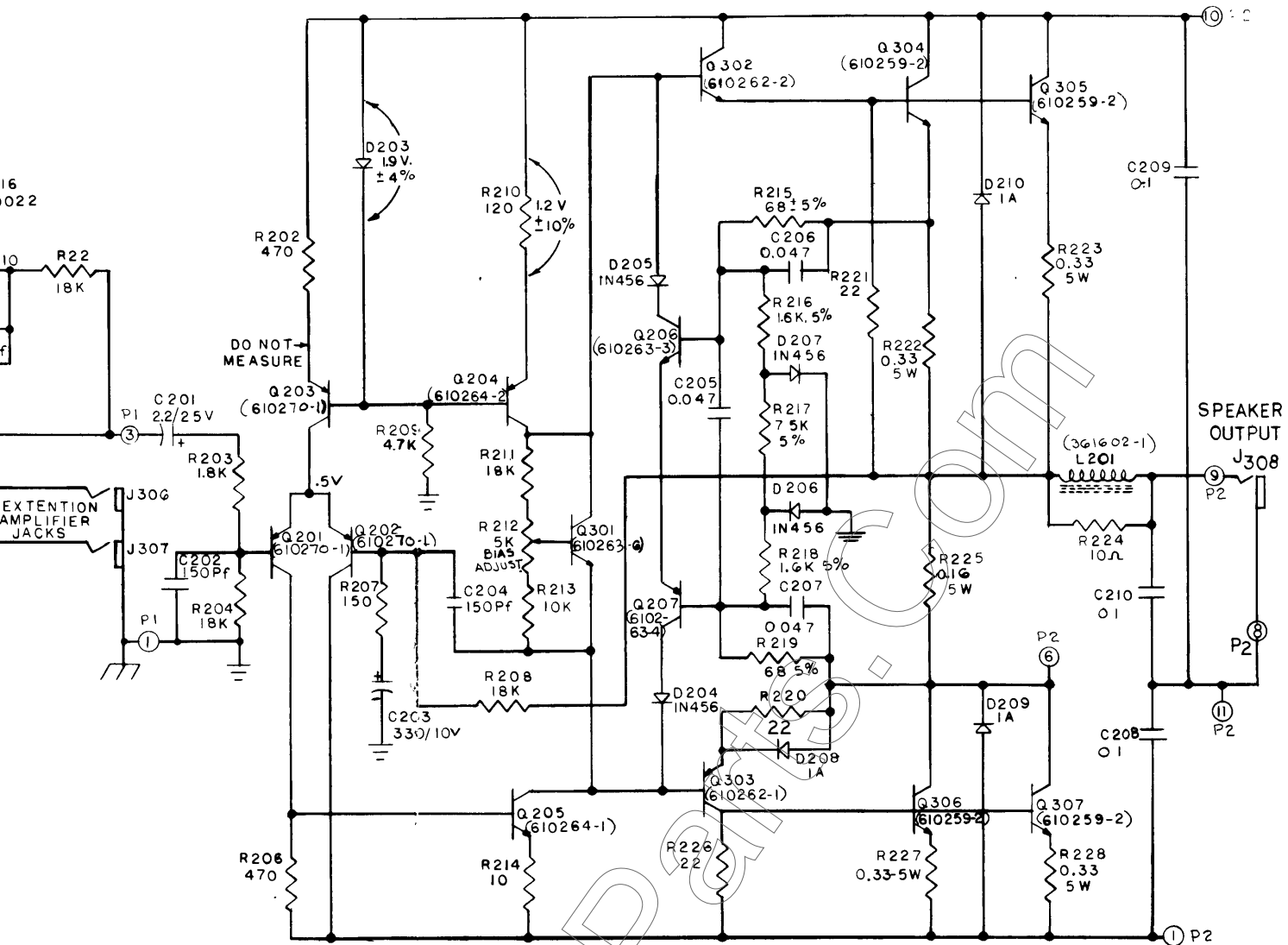
NOTES:

- ALL RESISTORS IN OHMS 1/2 W 10% UNLESS OTHERWISE SPECIFIED.
- ALL CAPACITORS IN MFD. AND 250 VOLT UNLESS OTHERWISE SPECIFIED.
- SEMICONDUCTORS ARE SELECTED. FACTORY REPLACEMENTS RECOMMENDED. UNSELECTED SEMICONDUCTORS MAY EXHIBIT IMPROPER OPERATION OR SHORT LIFE.
- CIRCUIT OF CHASSIS MAY VARY SLIGHTLY FROM THAT SHOWN HERE DUE TO NORMAL PRODUCTION CHANGES.
- NUMBERS IN PARENTHESIS REFER TO MAGNAVOX PART NUMBERS.
- D.C. VOLTAGE READINGS WITH NO SIGNAL APPLIED USING A 20,000 OHM PER VOLT VOLTMETER AND ARE POSITIVE WITH RESPECT TO CHASSIS GROUND UNLESS OTHERWISE SPECIFIED.
- ADJUST R212 BIAS POT. TO READ .011 VOLTS D.C. WITH NO LOAD CONNECTED AND NO SIGNAL APPLIED ACROSS PINS 6 AND 9 OF OUTPUT CONNECTOR.
- INPUT SENSITIVITY WITH CONTROLS SET FOR FLAT FREQUENCY RESPONSE, IS 11.5 MILLIVOLTS RMS IN, FOR 28.28 VOLTS NOMINAL OUT WITH VOLUME AT MAXIMUM. ACCEPTABLE OUTPUT LIMITS ARE 25.4 VOLTS TO 31.1 VOLTS.
- POWER OUTPUT SHOULD BE AT LEAST 120 WATTS RMS CONTINUOUS AT LESS THAN 0.2% T.H.D.
- TREMELO ADJUSTMENT PROCEDURE:
 1. SET TONE CONTROLS FLAT; SPEED, INTENSITY, DIMENSION & R127 CCW; OPEN TREMELO FOOT SWITCH (ON); WITH .01V/400 Hz. INTO HIGH GAIN JACK CHANNEL 2; SET OUTPUT FOR 10 VOLTS RMS.
 2. CLOSE TREMELO FOOT SWITCH; TURN INTENSITY CW; ADJUST R127 FOR 5 VOLTS RMS.
 3. SET SPEED CW; OPEN TREMELO SWITCH; REMOVE INPUT SIGNAL; SET VOLUME CONTROL CCW; ADJUST R126 FOR MINIMUM AT LOAD.

SEMICONDUCTOR CROSS REFERENCE:

IC 1	RCA 739P	610265-1	RAYTHEON
IC 2, IC 103	N5709A	610265-2	FAIRCHILD
IC 101	NE540L	610266-1	SIGNETICS
IC 102	NE566V	610267-1	SIGNETICS
IC 104	CA3080	610268-1	RCA
IC 105	CA3046	610269-1	RCA
Q101, Q206	2N3568	610263-3	FAIRCHILD
Q 102, Q103	2N3856A	610271-1	GE
Q201, Q202, Q203	2N4249	610270-1	FAIRCHILD
Q204	MJE350	610264-2	MOTOROLA
Q205	MJE340	610264-1	MOTOROLA
Q207	2N3638	610263-4	FAIRCHILD
Q301	2N3403	610263-6	GE
Q302	2N5682	610262-2	MOTOROLA
Q303	2N5680	610262-1	MOTOROLA
Q304, Q305, Q306, Q307	2N4348	610259-2	RCA
Q401	40389	610262-6	RCA
Q402	40391	610262-5	RCA







Bulletin

Number 1

FOR AUTHORIZED AMPEG SERVICE CENTERS

P. O. BOX 310 • ELKHART, INDIANA 46514 • (219) 264-4141

October 28, 1975

PROTECTION OF INPUT IC IN SOLID STATE MODELS

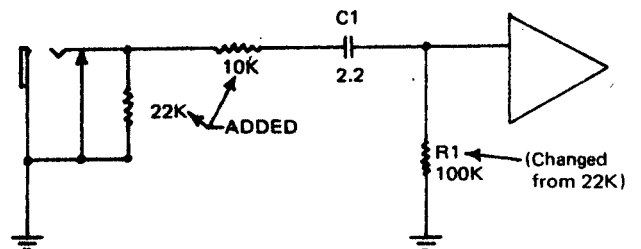
After receiving reports of field failures of the input IC's used in our solid state models, the Ampeg engineering staff has made a slight circuit modification on new models to help protect these IC's.

We need your assistance to incorporate this modification in older models. When an older model is brought in for warranty repair, make the following changes at the input to each channel:

SR-6 Console:

1. Substitute a 100K resistor for RI on PC board.
2. At the jack, add a 22K resistor from the input to ground.
3. At the jack, also add a 10K resistor between the input and capacitor C1.

Circuit Modification Schematic:

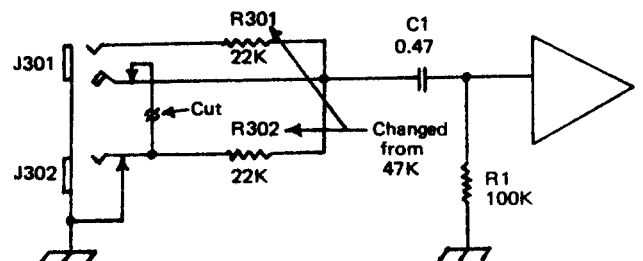


Bass & Guitar Solid State Models:

(G212, G-410, G-412, B115, B410, V6B):

1. Substitute a 22K resistor for R301 and also R302.
2. Remove or cut the jumper between jack J301 and J302.

Circuit Modification Schematic:



For units under warranty, reimbursement for making these modifications for the SR-6 will be \$11.00 and for other models \$10.50, which covers parts and labor. This will be in addition to reimbursements for any other warranty repairs. Please indicate on the warranty claim form "also changed per Service Bulletin No.1" in order to receive credit for the above modification.