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# AMPEG SERVICE MANUAL

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## SVT AMPLIFIER

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### SVT AMPLIFIER SPECIFICATIONS

**Power Output:**

300 watts RMS minimum continuous at less than 3% total harmonic distortion (T.H.D.) into a 4 or 2 ohm load over the 20 to 20,000 Hertz band

**Front Panel:**

Two channels

**Channel 1:**

Volume control  
Treble, midrange, bass controls  
Two-position ultra-hi switch  
Three-position ultra-lo switch

**Channel 2:**

Volume Control  
Treble and bass controls  
Two-position ultra-hi switch  
Two-position ultra-lo switch

Hum balance control (on power amp chassis behind grille cloth)

Power switch

Pilot light

**Rear Panel:**

Two 4 ohm speaker jacks with automatic impedance switching

Patching jacks

Standby switch

**Tone Control Range:**

Treble  $\pm 12$  dB @ 4,000 Hertz

Bass  $\pm 12$  dB @ 40 Hertz

Midrange  $\pm 20$  dB @ 220, 800 or 3,000 Hertz

Ultra-Hi + 20 dB @ 8,000 Hertz  
(dependent on volume control position)

Ultra-Lo -20 dB @ 40 Hertz

Ultra-Lo Boost -20 dB @ 600 Hertz

**Signal to Noise Ratio (S/N):**

-80 dB below full power

**Frequency Response (1 watt):**

$\pm 1$  dB at 20 to 20,000 Hertz

**Sensitivity:**

Input sensitivity for channels 1 and 2 is .019 volts for full power

**Patching Facilities:**

Power amplifier jack is high impedance with .25 volts for 300 watts.

**Power Supply Requirements:**

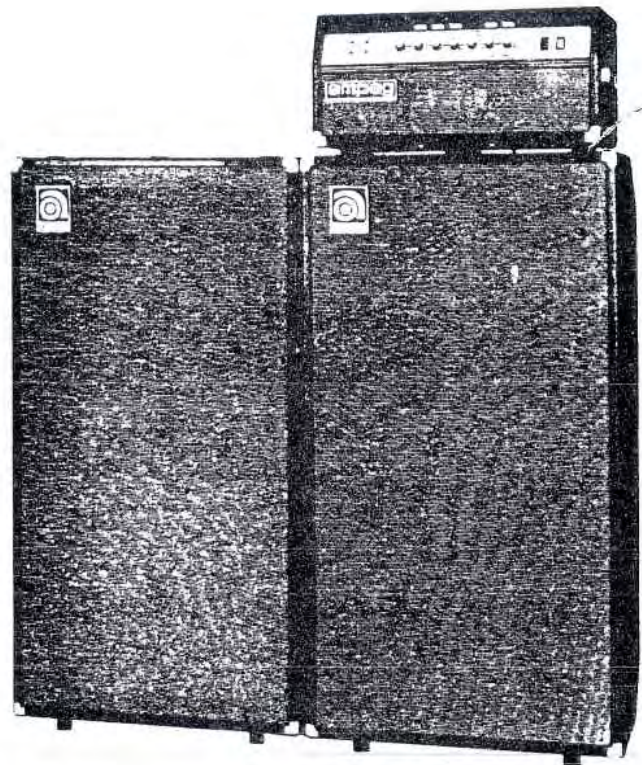
Power consumption 570 watts at rated output

**Weight:**

85 lbs. (39 Kg.)

**Dimensions:**

23 $\frac{5}{8}$ " W x 11" H x 14" D  
65 cm. x 23 cm. x 36 cm.



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### SVT SPEAKER ENCLOSURE SPECIFICATIONS

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**Power Handling:**

240 watts RMS per enclosure

**Impedance:**

4 ohms

**Enclosure Design:**

Totally sealed air suspension (four compartments with two speakers per compartment)

**Speaker Complement:**

Eight 10" speakers

**Weight:**

137 lbs. (62 Kg.)

**Dimensions:**

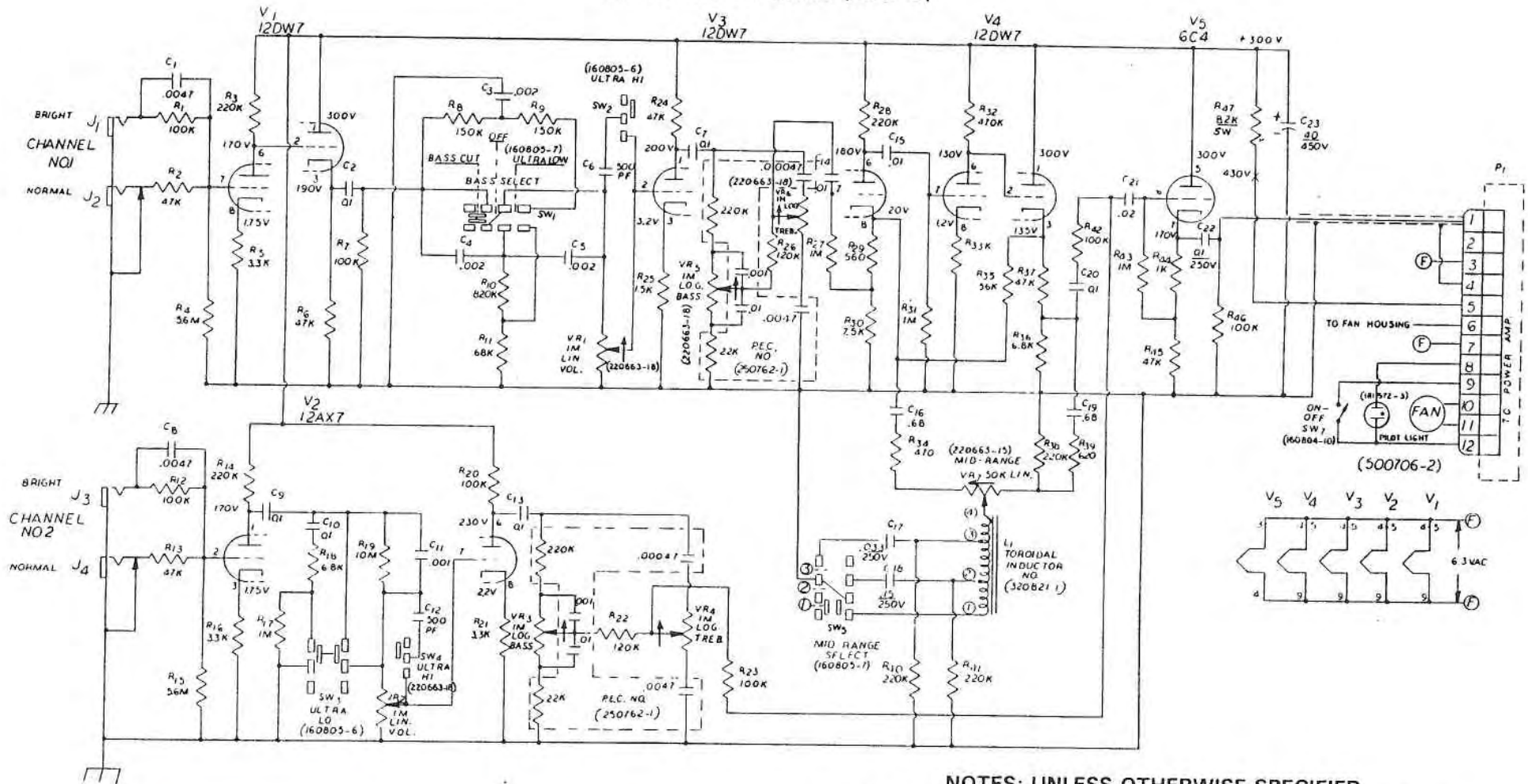
26" W x 48 $\frac{1}{4}$ " H x 15 $\frac{7}{8}$ " D  
66 cm. x 123 cm. x 40.2 cm

## MODEL SVT AMPLIFIER REPLACEMENT PARTS LIST

Note: Replacement parts may differ in part number or value from the factory installed part. In either event the replacement part has been chosen to provide equal or improved performance.

REF.	DESCRIPTION	PART NO.	REF.	DESCRIPTION	PART NO.
<b>PREAMP SWITCHES</b>			<b>SEMICONDUCTORS Con't.</b>		
SW1	Bass Select	160805-7	D9	1A 1000PIV	530555-2
SW2	Ultra Hi	160805-6	D10	1A 1000PIV	530555-2
SW3	Ultra Lo	160805-6	D11	1A 1000PIV	530555-2
SW4	Ultra Hi	160805-6	D12	1A 1000PIV	530555-2
SW5	Midrange	160805-7	D13	1A 1000PIV	530555-2
SW6	Power	160804-10	D14	1A 1000PIV	530555-2
<b>POWER AMP SWITCHES</b>			D15	1A 1000PIV	530555-2
SW1	Standby	160804-5	D16	1A 1000PIV	530555-2
<b>FUSES</b>			D17	1A 1000PIV	530555-2
	10 Amp	181574-5	D18	1A 1000PIV	530555-2
	15 Amp	181574-8	D19	1A 1000PIV	530555-2
	Fuse Holder	181576-1	D20	1A 1000PIV	530555-2
<b>PREAMP JACKS</b>			<b>PREAMP TUBES</b>		
J1	Bright Input	181573-2	V1	12DW7	610256-3
J2	Normal Input	181573-4	V2	12AX7	610256-2
J3	Bright Input	181573-2	V3	12DW7	610256-3
J4	Normal Input	181573-4	V4	12DW7	610256-3
<b>POWER AMP JACKS</b>			V5	6C4	610256-6
J1	Patch Out	181573-2	<b>POWER AMP TUBES</b>		
J2	Patch In	181573-4	V1	12DW7	610256-3
J3	Ext. Speaker	181573-2	V2	12BH7	610256-4
J4	Speaker	181583-1	V3	12BH7	610256-4
<b>PREAMP CONTROLS</b>			V4	6550	610257-4
VR1	Volume	220663-3	V5	6550	610257-4
VR2	Volume	220663-3	V6	6550	610257-4
VR3	Bass	220663-4	V7	6550	610257-4
VR4	Treble	220663-4	V8	6550	610257-4
VR5	Bass	220663-4	V9	6550	610257-4
VR6	Treble	220663-4	<b>MISCELLANEOUS</b>		
<b>POWER AMP CONTROLS</b>			L1	Grill Fastener	103471-3
VR1	Bias	220663-8		Glide	120976-4
VR2	Bias	220663-8		2 Tab Corner	121462-1
VR3	Balance	220663-8		Handle	121467-2
VR4	Hum	220664-1		Knob	142902-1
<b>WIREWOUND RESISTORS</b>				Logo	142910-2
R14	47K Ohm 1W	240609-1		9 Pin Socket (Pc.)	181570-1
R15	47K Ohm 1W	240609-1		9 Pin Socket (Shielded)	181570-3
R27	5 Ohm 5W	240608-1		Pilot Light	181572-4
R30	5 Ohm 5W	240608-1		8 Pin Socket	181580-2
R32	5 Ohm 5W	240608-1		AC Outlet	181581-2
R35	1 Ohm 5W	240080-1		7 Pin Socket (Pc.)	181586-1
R36	1 Ohm 5W	240080-1		Pec	250762-1
R38	5 Ohm 5W	240608-1		Toroidal Inductor	320821-1
R41	5 Ohm 5W	240608-1		Grill Cloth	400826-1
R44	5 Ohm 5W	240608-1		Fan	500706-2
R49	4.7K Ohm 15W	240611-2		Rubber Foot	643409-1
<b>ELECTROLYTIC CAPACITORS</b>			<b>MODEL SVT SPEAKER ENCLOSURE REPLACEMENT PARTS LIST</b>		
C8	90 MFD 200V	270562-4	REF.	DESCRIPTION	PART NO.
C9	100 x 40 MFD 450V	270561-8		Grill Fastener	103471-3
C10	100 MFD 450V	270562-5		2 Tab Corner	121462-1
C11	30 MFD 600V	270562-2		Glide	121465-1
C23	40 MFD 450V	270562-7		Foot Cup	121466-1
<b>TRANSFORMERS</b>				Caster	121468-1
	Filament	320829-1		Bar Handle	121469-1
	Power	300712-1		Logo	142911-2
	Output	320825-1		Jack	181573-3
<b>SEMICONDUCTORS</b>				Grill Cloth	400826-1
D1	IN456	530072-1011		10" 32 Ohm Speaker	580155-1
D2	IN456	530072-1011		Rubber Foot	643409-3
D3	1A 1000PIV	530555-2			
D4	1A 1000PIV	530555-2			
D5	1A 1000PIV	530555-2			
D6	1A 1000PIV	530555-2			
D7	1A 1000PIV	530555-2			
D8	1A 1000PIV	530555-2			

## MODEL SVT PREAMP SCHEMATIC DIAGRAM (REV. D)

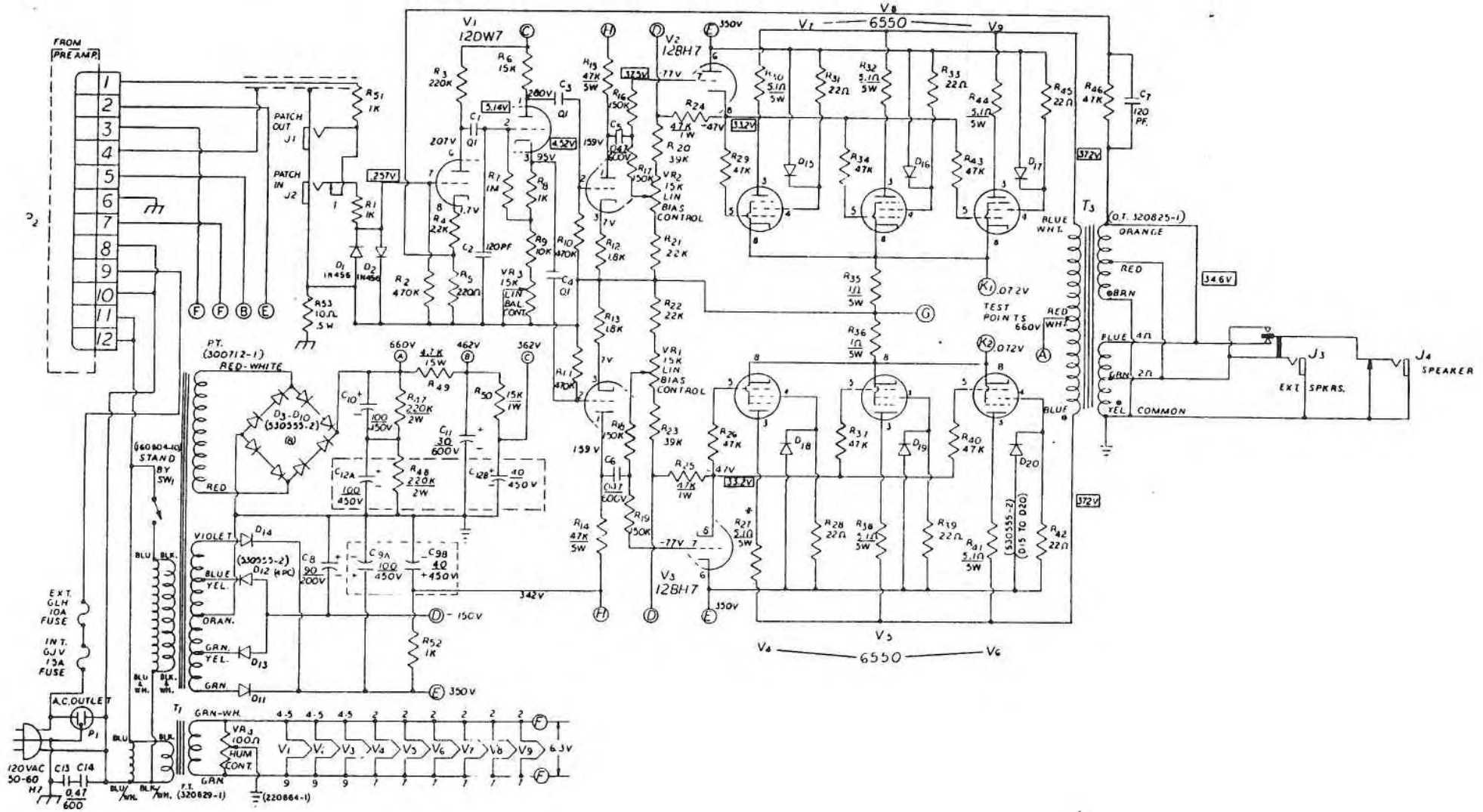


**WARNING**

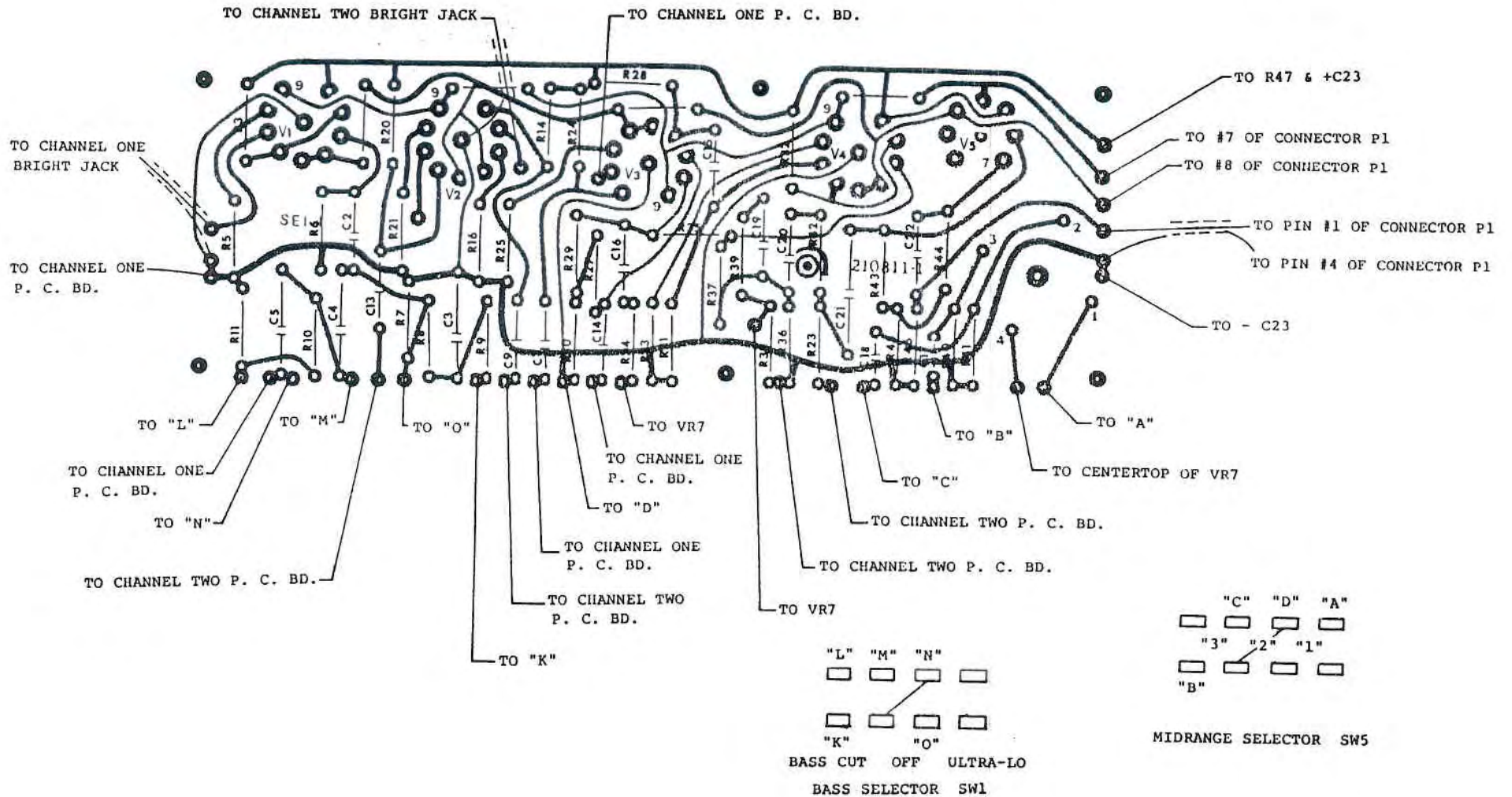
For maximum safety, reliability and performance, all parts must be replaced by those having identical specifications. Under no circumstances may the original design be modified or altered without permission from the Ampeg Company.

- NOTES: UNLESS OTHERWISE SPECIFIED**
1. Capacitance values are in Microfarads, 10%, 400V.
  2. Resistors are 1/2W, 10%, composition.
  3. DC voltages with no signal applied using a 20,000 Ohm/Volt Voltmeter.
  4. DC voltages for V<sub>1</sub> in the power amplifier are approximate and may vary with application.
  5. When connector P<sub>2</sub> is disconnected voltage at point "B" will rise to 600 volt.
  6. Typical AC voltages are shown in boxes.
  7. Actual circuit may vary slightly due to normal production changes.

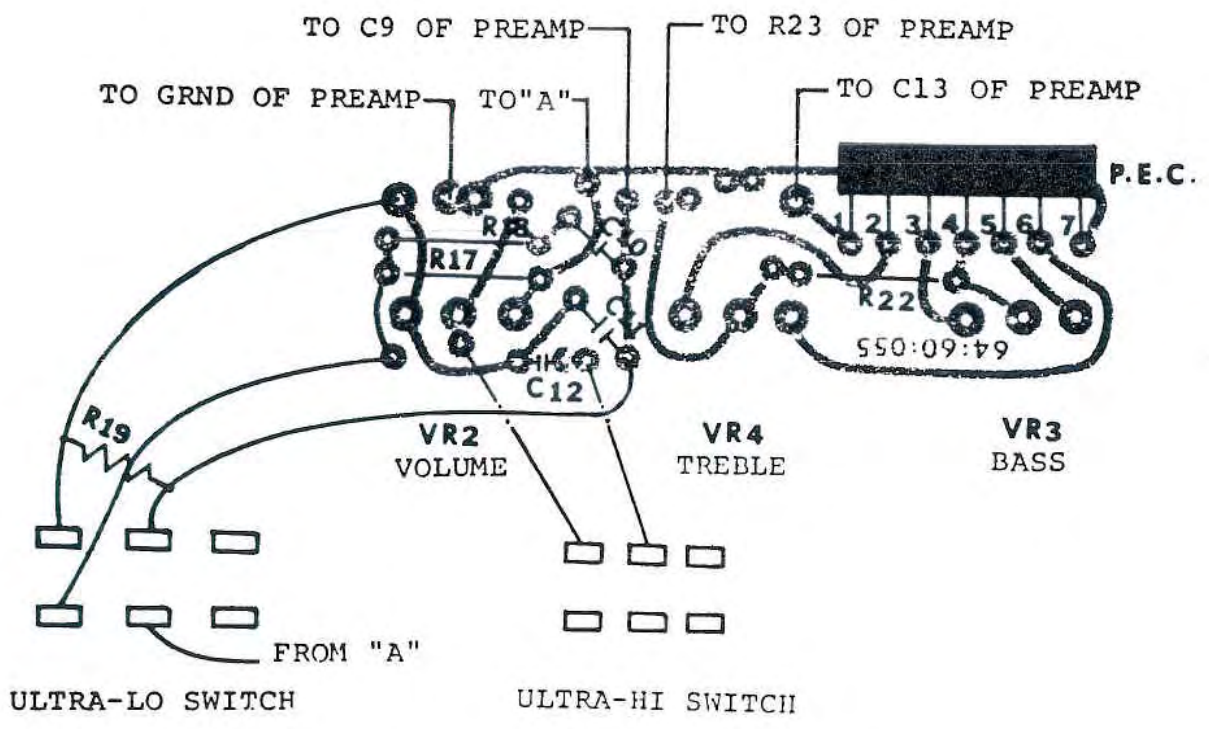
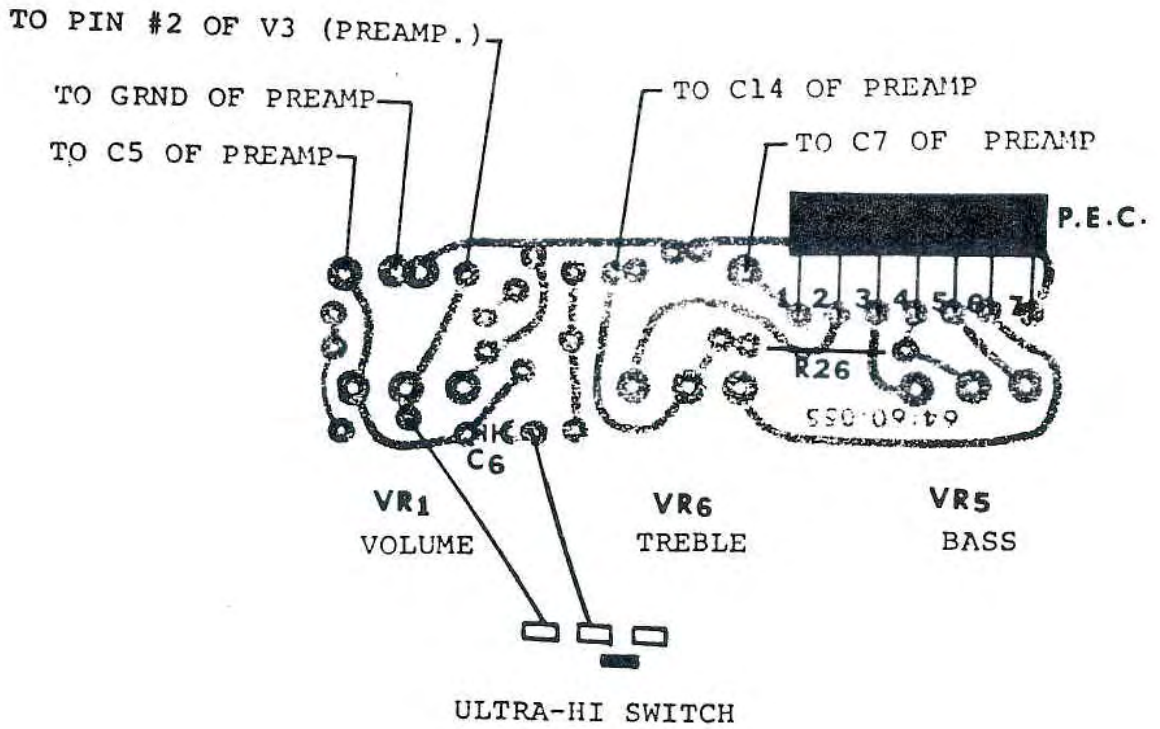
## MODEL SVT POWER AMPLIFIER SCHEMATIC DIAGRAM (REV. J)



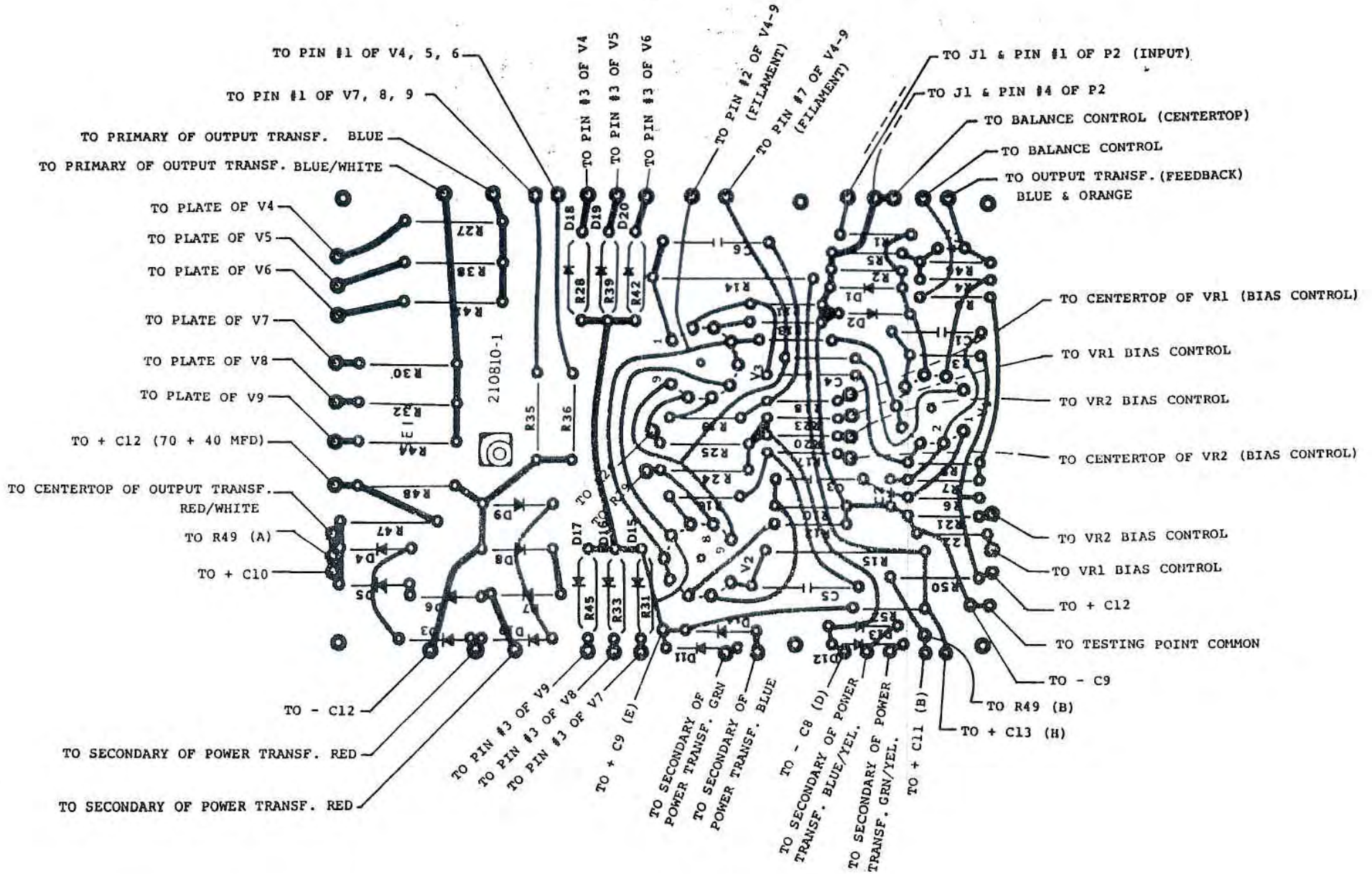
**SVT PREAMP PC BOARD  
(VIEWED FROM COPPER SIDE)**



**SVT TONE PC BOARDS  
(VIEWED FROM COPPER SIDE)**



**SVT POWER PC BOARD  
(VIEWED FROM COPPER SIDE)**



## CALIBRATION PROCEDURE

1. Connect a 4 Ohm 330W minimum load to speaker terminals.
2. Output stage bias current adjustment. (The bias can be adjusted by removing the head cabinet baffle. Use a long rod and tap the baffle free from the headlock retainers. Gain access from the rear of the cabinet by using the space available through the cooling fan blades.)
  - A. Adjust  $VR_1$  for 0.072 VDC between  $K_1$  and ground.
  - B. Adjust  $VR_2$  for  $0 \pm 0.01$  VDC between  $K_1$  and  $K_2$ .
3. Phase inverter balance control adjustment:
  - A. Harmonic distortion meter method:  
Drive amplifier to 25 volts RMS output at 40 Hz and connect distortion meter to load resistor. Adjust  $VR_3$  for minimum distortion.
  - B. Volt meter method:  
Adjust output as in Step 3-A and connect D.C. volt meter between testing points  $K_1$  &  $K_2$ , adjust  $VR_3$  for zero  $\pm .01$  volts.

## DISASSEMBLY OF SVT HEAD CABINET

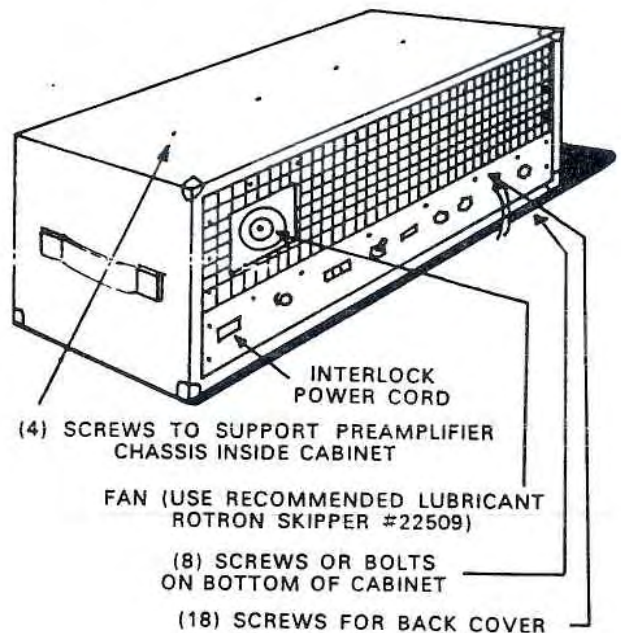
**BACK PANEL** a. Release perforated back panel by means of 18 screws. Then pull near the A.C. Power Cord until the Interlock is released. b. Un-plug the fan before completely removing the back cover.

**POWER CHASSIS** a. Turn chassis on its side. b. Remove 8 screws or bolts from the bottom of the cabinet. c. Remove pre-amp wire harness by disconnecting plastic plug. d. Return cabinet to its normal position and remove power chassis.

**PRE-AMP** a. Remove the 4 screws from the inside of head cabinet. b. Push pre-amp forward from inside of head cabinet.

### BAFFLE

1. On older models the baffle is removable only by un-screwing the nuts from the single screws on either side of the baffle. The baffle is then removable if a slight tap is given from the inside to release the plastic head lock.
2. On new models the baffle is removable without removing the back panel. Use a long rod and tap the baffle free from the headlock retainers. Gain access from the rear of the cabinet by using the space available through the cooling fan blades. The removal of the baffle will enable the bias to be adjusted without the necessity of disassembling the entire head cabinet.





Replacement of 12DW7 with 12AX7A/ECC83 tube in AMPEG SVT-HD.

Pre-Amp section:

1st 12DW7 (V1):

- a. Cathode to ground resistor (R6) 47K change to 220K.
- b. The 100K ohm resistor (R7) to ground after C2 (0.1) is removed.
- c. Now replace with 12AX7A/ECC83.

2nd 12DW7 (V3):

- a. Cathode resistor (R25 , 1.5 K ohm) is changed to 4.7K ohm.
- b. Now replace with 12AX7A/ECC83.

3rd 12DW7 (V4):

- a. DIRECT REPLACEMENT WITH 12AX7A/ECC83.

Power Amp section:

Power amp pre-drive 12DW7 (V1):

- a. DIRECT REPLACEMENT WITH 12AX7A/ECC83.

4 5r Sw  
CAP