
AMPEG SERVICE MANUAL

V6B AMPLIFIER

V6B AMPLIFIER SPECIFICATIONS

Power Output:

240 watts RMS minimum continuous at less than 0.3% total harmonic distortion (T.H.D.) into a 4 ohms load over the 20 to 20,000 Hertz band; 160 watts into 8 ohms.

Front Panel:

Two inputs
Volume control, bass, midrange and treble controls, and ultra-hi switch
Power switch
Pilot light

Rear Panel:

Two speaker jacks (wired in parallel)
Patching jacks (in and out)

Tone Control Range:

Treble ± 17 dB @ 10,000 Hertz
Bass ± 20 dB @ 40 Hertz
Midrange ± 20 dB @ 300, 800 or 3,000 Hertz
Ultra-Hi +12 dB @ 8,000 Hertz

Signal to Noise Ratio (S/N):

-90 dB below full power

Frequency Response (1 Watt):

± 1 dB 20 to 20,000 Hertz

Sensitivity/Input Impedance:

Input sensitivity for high gain jack is .011 volts for full power.

Patching Facilities:

Power amplifier input jack is high impedance and 0.28 volts produces full power.

Power module:

Complete circuit self-protection is provided by automatic variable power programmed limiting. Shorted, mismatched or open loads have no adverse effect.

Power Supply Requirements:

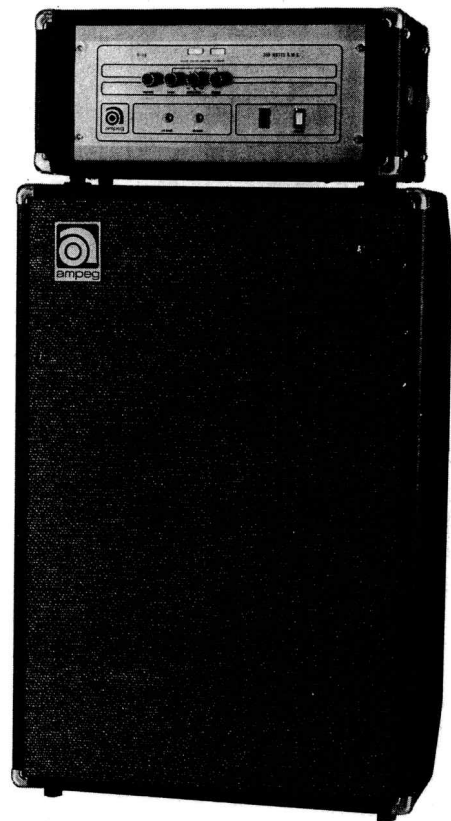
Power consumption at rated output is 383 watts maximum.

Dimensions:

24" W x 10.6" H x 13" D.
60.9 cm. x 27 cm. x 33 cm.

Weight:

53 pounds (24 Kg.)



V6B SPEAKER ENCLOSURE SPECIFICATIONS

Power Handling:

240 watts RMS per enclosure

Impedance:

4 or 16 ohms selectable

Enclosure Design:

Active ducted port

Speaker Complement:

Two 15" speakers

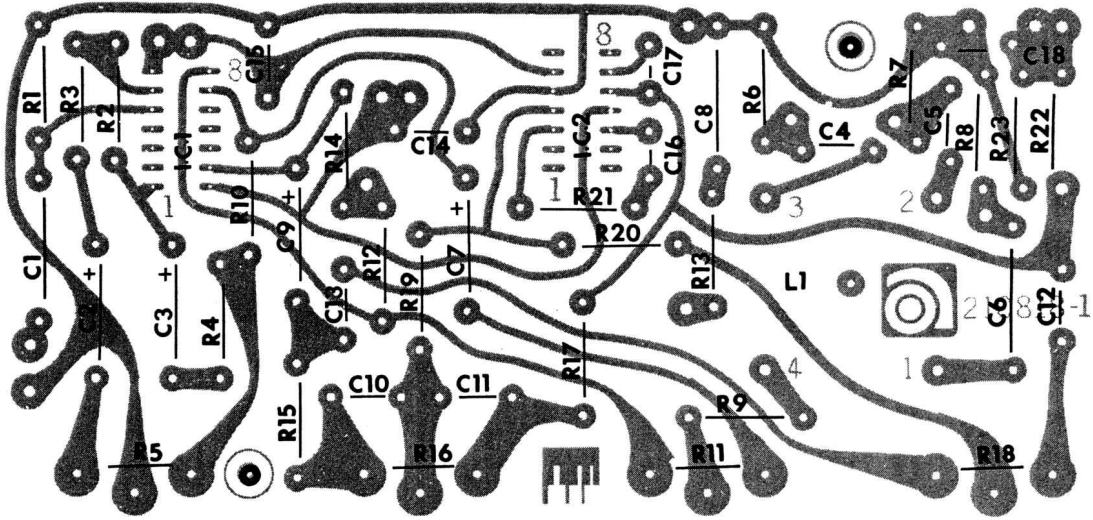
Dimensions:

26.7" W x 40.3" H x 15.1" D.
67.9 cm. x 102.4 cm. x 38.3 cm.

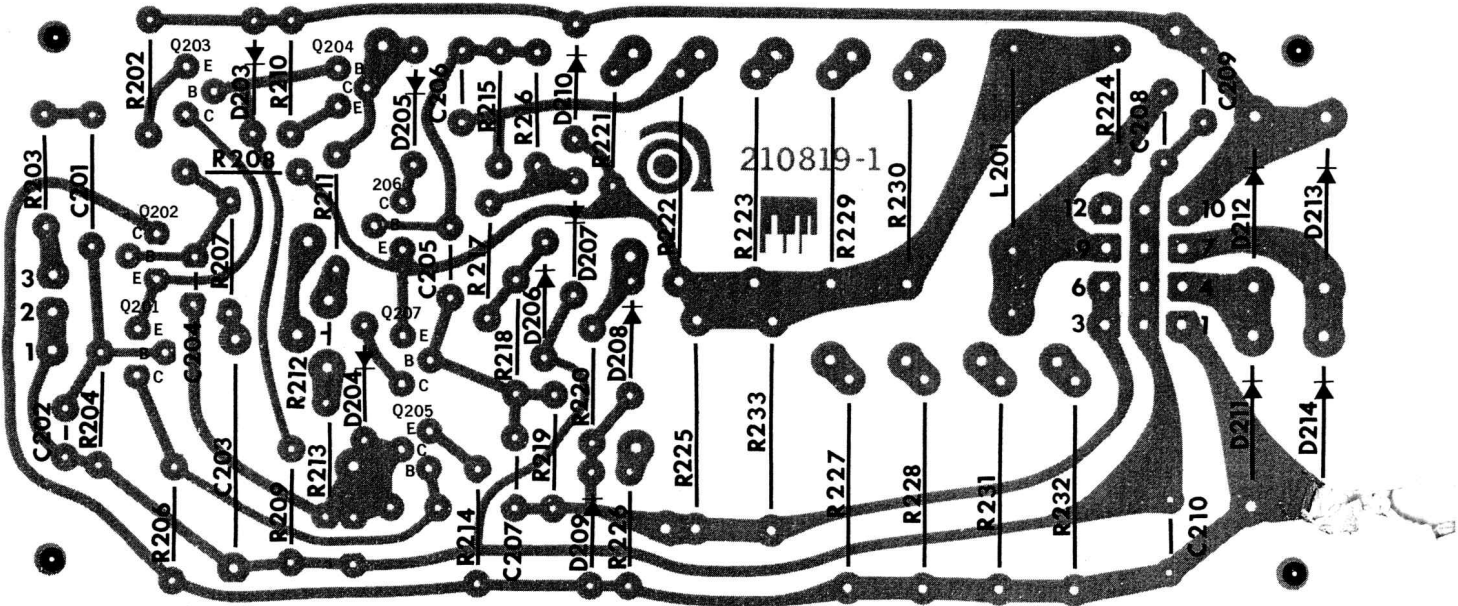
Weight:

118 pounds (54 Kg.)

V6B PREAMP P.C. BOARD
(VIEWED FROM COPPER SIDE)

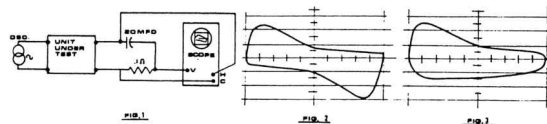


V6B POWER P.C. BOARD
(VIEWED FROM COPPER SIDE)



TEST PROCEDURE MODEL V6B

1. Connect 60W incandescent lamp in series with transformer primary winding. With no load connected dull glow is normal and bright glow indicates short circuit.
2. Remove lamp and set R212 for 0.011 VDC between pins 6 and 9 on connector P2.
3. Connect 8 ohm load and set tone controls for flat response. With 800hz 0.011 V RMS sine wave input signal, output should be 28.28 V RMS $\pm 10\%$.
4. Connect 0.5V RMS 800hz sine wave to external amp jack and raise line voltage to 130 V. Remove load for no less than 1 minute for open circuit test.
5. Reconnect load and check amplifier for normal operation.
6. Load line limiter test — verifies protection circuit operation.
 - a. Connect oscillator, oscilloscope, 0.1 ohm 10W resistor, and 20MFD oil capacitor capable of 20 amps. Ripple as shown in Figure 1.
 - b. Set the horizontal channel of oscilloscope at 10V/CM to monitor voltage across entire load. Set the vertical channel at 0.5V/CM to monitor current.
 - c. With a 0.5 VRMS 100 Hz sine wave input signal at the ext. amp jack the "Bowtie" trace in Figure 2 should appear. Figure 3 shows typical abnormal trace. **With normal trace do not operate more than one minute. With abnormal trace discontinue operation at once.**
7. With all controls ccw 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 0.003 V RMS.



SERVICE TIPS

SYMPTOM

Blows Fuses or has excessive high hum.

No output or large DC voltage at speaker terminals.

High Distortion.

R221 is burned.

Heat Sink Too Hot.

POSSIBLE CAUSE

Any transistor or diode may be shorted or open. Especially check drive transistors Q302 and Q303, Power Transistors Q304 to Q311 and Bridge Rectifier.

Open transistors Q201, Q202, or Q203.

Defective 1.9 volt reference diode D203.

Shorted D204 or D205.

R202 open.

Q302 or Q303 open.

Bias out of adjustment.

Open R222, R223, R229, R230, and Q301, Q302, Q303, Q304, Q305, Q310, Q311.

Bias is misadjusted.

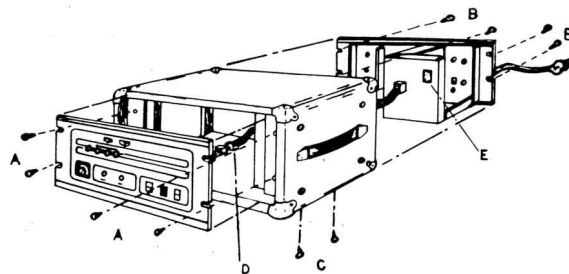
MECHANICAL DISASSEMBLY

1. To remove front panel (preamp) for servicing:

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



MODEL V6B 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.
SWITCHES		
SW301	Midrange	160805-7
SW302	Ultra Hi	160805-6
SW303	Interlock	160809-1
SW305	Power	160804-10
FUSES		
	8 Amp	181021-1800
	8 Amp Internal Fuse Holder	180865-1800 181576-1
JACKS		
J301	Hi Gain Input	181573-2
J302	Lo Gain Input	181573-4
J303	Ext. Amp	181573-3
J304	Ext. Amp	181573-3
J305	Speaker	181573-3
J306	Speaker	181573-3
CONTROLS		
R5	Volume	220663-10
R11	Midrange	220663-12
R16	Bass	220663-12
R18	Treble	220663-12
R212	Bias Adjust	220299-4723
WIREWOUND RESISTORS		
R222	0.33 Ohm 5W	240080-513
R223	0.33 Ohm 5W	240080-513
R225	0.16 Ohm 5W	240080-506
R227	0.33 Ohm 5W	240080-513
R228	0.33 Ohm 5W	240080-513
R229	0.33 Ohm 5W	240080-513
R230	0.33 Ohm 5W	240080-513
R231	0.33 Ohm 5W	240080-513
R232	0.33 Ohm 5W	240080-513
R233	0.16 Ohm 5W	240080-506
R301	680 Ohm 5W	240080-69
R302	680 Ohm 5W	240080-69
ELECTROLYTIC CAPACITORS		
C2	33MFD 10V	270117-3110
C3	10MFD 16V	270117-1116
C7	2.2MFD 25V	270117-2025
C9	2.2MFD 25V	270117-2025
C201	2.2MFD 25V	270117-2025
C203	330MFD 10V	270117-3210
C302	10,000MFD 60V	270564-2
C303	10,000MFD 60V	270564-2
TRANSFORMERS		
	Power	300715-1

REF.	DESCRIPTION	PART NO.
SEMICONDUCTORS		
	Bridge Rectifier	530558-1
D203	1.9V Ref. Diode	530556-2
D204	IN456 Diode	530072-1011
D205	IN456 Diode	530072-1011
D206	IN456 Diode	530072-1011
D207	IN456 Diode	530072-1011
D208	1 Amp 800PIV Diode	530555-1
D209	1 Amp 800PIV Diode	530555-1
D210	1 Amp 800PIV Diode	530555-1
D301	16V Zener Diode	530163-160
D302	16V Zener Diode	530163-160
Q201	Differential Amp	610270-1
Q202	Differential Amp	610270-1
Q203	Current Source	610270-1
Q204	Current Source	610264-2
Q205	Voltage Amp	610264-1
Q206	Protection	610263-3
Q207	Protection	610263-4
Q301	Bias	610263-6
Q302	Driver	610262-3
Q303	Driver	610262-4
Q304	Power	610259-2
Q305	Power	610259-2
Q306	Power	610259-2
Q307	Power	610259-2
Q308	Power	610259-2
Q309	Power	610259-2
Q310	Power	610259-2
Q311	Power	610259-2
IC1	RC4739	610265-1
IC2	N5709A	610265-2
MISCELLANEOUS		
	2 Tab Corner	121462-1
	Glide	121465-1
	Handle	121467-3
	Knob	142902-2
	AC Outlet	181581-2
L1	Torroidal Inductor	320821-1
L201	5MH Inductor	361602-2
	Rubber Foot	643409-1

MODEL V6B SPEAKER ENCLOSURE REPLACEMENT PARTS LIST

	Grill Fastener	103471-3
	2 Tab Corner	121462-1
	Glide	121465-1
	Foot Cup	121466-1
	Rigid Caster	121468-1
	Bar Handle	121469-1
	Logo	142911-2
	Impedance Switch	160807-3
	Phono Jack	181573-3
	Grill Cloth	400826-1
	15" Speaker	580165-3
	Rubber Foot	643409-3