acoustic

B-4

BASS AMPLIFIER

OWNER'S MANUAL

Wagner Group, Inc.
8054 Lankershim Boulevard
North Hollywood, California 91605
(818) 765-0866

A WORD TO ACOUSTIC AMPLIFIER OWNERS

We would like to take this opportunity to thank you for choosing an ACOUSTIC Product and to assure you of our continuing interest in your musical pleasure and satisfaction

This manual has been prepared to acquaint you with the proper operation of your amplifier and to provide important information as to its many capabilities We urge you to examine it carefully and follow the recommandations contained to help insure the most enjoyable and trouble-free operation of your amplifier.

When it comes to service, remember that an authorized ACOUSTIC service center knows your amplifier best and is interested in your complete satisfaction.

To prevent fire or shock hazard do not expose this appliance to rain or moisture.

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GENERAL DESCRIPTION

Model B-4 is a single channel, 440 Watt RMS, dual powered(Bi-Amplified) bass amplifierengineered to provide the professional musician with the sound, features and reliability necessary for use in the recording studio, night club, concert hall or coliseum

The B-4 front panel features two input jacks (one low-level, one high-level), a gain control luminous clip indicator, four active tone controls, a volume control and a bright switch. An electronic crossover balance control has been added to allow the user the ability to adjust the relative levels between the high frequency and low frequency enclosures when the B-4 is used in the bi-amp mode*. A unique low distortion limiter can be switched in and adjusted to prevent the power amplifier from being driven to clipping. This allows full power to be produced without annoying distortion on the peaks.

A seven-band graphic equalizer, coupled with the four broadband tone controls and bright switch provide the ultimate in tonal flexibility without being overly difficult to operate.

Rear panel features include an effects loop for low noise use of external effects, pre-amp output, power amp input and a low-level low-impedance balanced preamp output (XLR connector). Electronic crossover frequency control and outputs (one high-frequency, one low-frequency) are provided for bi-amping capability.* An aditional low-level, low-impedance balanced line output (XLRconnector) is provided for direct stage feeds. A unique switching network on the rear panel allows the power amplifiers to be used in the Bi-Amp mode or the Full Range mode with out the use of patch cords.

The B-4 contains unique SELF-TEST circuitry which checks for the presence of proper operating conditions within the amplifier chasis each time the power is turned on or off. The B-4 produces no annoying thumps when turned on or off.

The masive internal power amplifiers deliver 320 Watts ? 4 ohms and 120 Watts ? 4 ohms cleanly and with very low measureable distortion.

As with all ACOUSTIC products, the Model B-4 reflects the highest standard of enginering and manufacturing to ensure top perfomance and reliability.

* With the addition of an ACOUSTIC Model TC 210 Top-End Enclosure.

FRONT PANEL FEATURES

INPUTS:

LOW-LEVEL... 0dB . A standard 1/4" phone jack is provided for connection of most instruments An input level of 30 mv is required for full output Input impedance is 500K ohms Signal levels of up to 3 2 Vrms can be handled safely

HIGH-LEVEL.. ... −12dB A standard 1/4" phone jack is provided for connection of high output instruments An input level of 90 mv is required for full output Input impadance is 50K ohms Signal levels of up to 50 Vrms can be handled safely

CONTROLS:

GAIN..... A continuously variable control that allows for accurate adjustment of the front-end gain to mach the output level of your bass guitar While playing, rotate this control clockwise until the clip indicator begins to illuminate, then rotate slightly counter-clockwise until the clip indicator remains extinguished

NOTE DO NOT USE THIS CONTROL AS A VOLUME CONTROL

CLIP..... ..... INDICATOR An indicator that illuminates the word "CLIP" as the preamplifier circuitry s driven to the point of clipping.

BASS..... A continuously variable center-detented control that adjusts the low frequencies allowed to pass through the tone circuits Center is flat, fully counter-clockwise is maximum bass cut and fully clockwise is maximum bass boost

MIDRANGE 1..... A continuously variable center-detented control that adjusts the lower mid frequencies allowed to pass through the tone circuits. Center is flat, fully counter-clockwise is maximum mid cut and fully clockwise is maximum mid boost

MIDRANGE 2. ... A continuously variable center-detented control that adjusts the upper mid, frequencies allowed to pass through the tone circuits Center is flat, fully counter-clockwise is maximum mid cut and fully clockwise is maximum mid boost.

TREBLE ... .. (Pull Brihgt) A continuously variable center-detented control that adjusts the high frequencies allowed to pass through the tone circuits. Center is flat, fully counter-clockwise is maximum high cut and fully clockwise is maximum high boost Pulling this control out will produce an additional boost of high frequency output

FRONT PANEL FEATURES
(Continued)

MASTER VOLUME A continuosly variable control that adjusts the level of signal that exits the preamplifier circuits This control should be used as the only volume control once the front-end gain control has been properly adjusted

CROSSOVER BALANCE A continuously variable center-detented control that adjusts the balance between the low frequency output and the high frequency output of the electronic crossover This control is effective only when the B-3 is connected in the bi-amp mode Operation of this control is like the balance control on a stereo system but rather than adjusting levels left to right, it adjusts low frequency to high frequency balance The center position is balanced equally between both lows and highs

LIMITER THRESHOLD Pulling this control out activates the limiter circuit With this control set fully clockwise the threshold at which limiting action takes place is low Limiting action will be at its highest The power amp will only be allowed to produce about 2 3 of full power With the threshold control at mid position the limiting action will be such that full power will be produced without annoying distortion on the peaks The threshold range between mid position and fully counter-clockwise is valuable when using external power amplifiers of lesser sensitivities where usefull limiting action can still be achieved

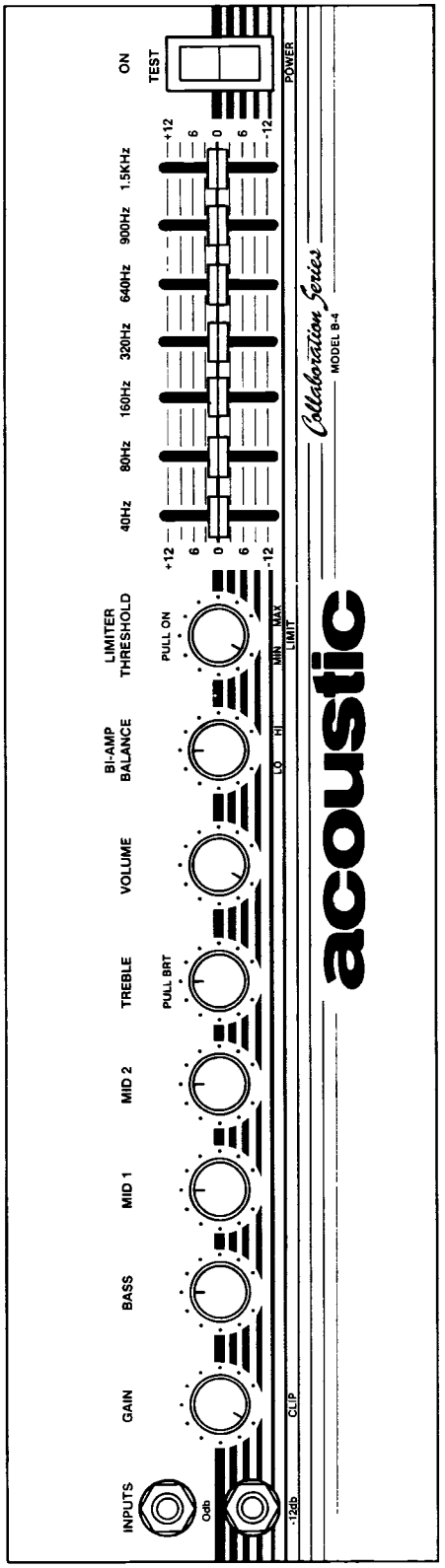
LIMIT INDICATOR An indicator that illuminates the word "LIMIT" in response to the action of the limiter circuit

GRAPHIC EQ A seven-band equalizer that allows increases or decreases in signals passing through at specific frequencies Use of the graphic equalizer can provide almost any tone shaping needed

POWER SWITCH An AC power on/off switch

TEST INDICATOR Following the application of AC power the word 'TEST" will illuminate indicating the amplifier is in the TEST mode During this time, operating conditions vital to proper amplifier operation are being tested When these conditions are met with successfully, the "TEST" indicator will extinguish, the ACOUSTIC logo will illuminate and the amplifier will be ready to play

FRONT PANEL DIAGRAM



REAR PANEL FEATURES

AC ACCESSORY OUTLET .. A non-switched AC accessory outlet for connection of an external accessory or powered cabinet DO NOT connect more than one external accessory or powered cabinet to this outlet or damage to the line cord will result

LINE CORD .... A three conductor line cord for connection to an AC outlet

AC FUSE ..... . A fuse that supplies the entire unit with AC power DO NOT REPLACE THIS FUSE WITH ANY OTHER TYPE OR RATING than is supplied or indicated on the panel Replacement of this fuse with a different type or rating will void the warranty and may cause severe damage to the unit.

SPEAKER FUSE..... A fuse that is wired in series with the power amplifier output and speaker jacks DO NOT REPLACE THIS FUSE WITH ANY OTHER TYPE OR RATING than is supplied or indicated on the rear panel Replacement of this fuse with a different type or rating will void the warranty and may cause severe damage to the unit

SPEAKER JACKS.... A set of 1/4" jacks provided for access to the internal power amplifier speaker output
CAUTION· DO NOT USE THIS AMPLIFIER WITH LOADS LESS THAN 4 OHMS
Use only heavy gauge NON-SHIELDED cables for connection to these jacks

POWER AMP INPUT..... A 1/4" switching jack for external acces to the internal power amplifier input Insertion of a plug will break the signal coming from the internal preamplifier to the internal power amplifier. Use only a SHIELDED cable for connection to this jack.

PRE AMP OUTPUT.. A 1/4" jack provided for connection to any other power amplifier input enabling the preamplifier to drive the internal power amplifier and an external powered enclosure Use only a SHIELDED cable for connection to this jack

BALANCED OUT (PRE-AMP) .. An XLR-type jack provided for connection to any outside low impedance balanced or unbalanced low-level input (sound system feed) All front panel controls will affect the signal coming from this jack. Use only a SHIELDED cable for connection to this jack

REAR PANEL FEATURES
(Continued)

ELECTRONIC CROSSOVER

Low Frequency .. OUTPUTS A 1/4" jack provided for patching the low frequency output of the electronic crossover into an external power amp Use only a SHIELDED cable for connection to this jack

Crossover..... Frequency Control A continuously variable control that sets the crossover point between the low frequency and high frequency output jacks The frequency range of the crossover can be set anywhere between 100 and 1kHz Full counter -clockwise sets the crossover point at 100Hz, while full clockwise corresponds to 1kHz

High Frequency.... Output A 1/4" jack provided for patching the high frequency output of the electronic crossover into an external power amp. Use only a SHIELDED cable for connection to this jack.

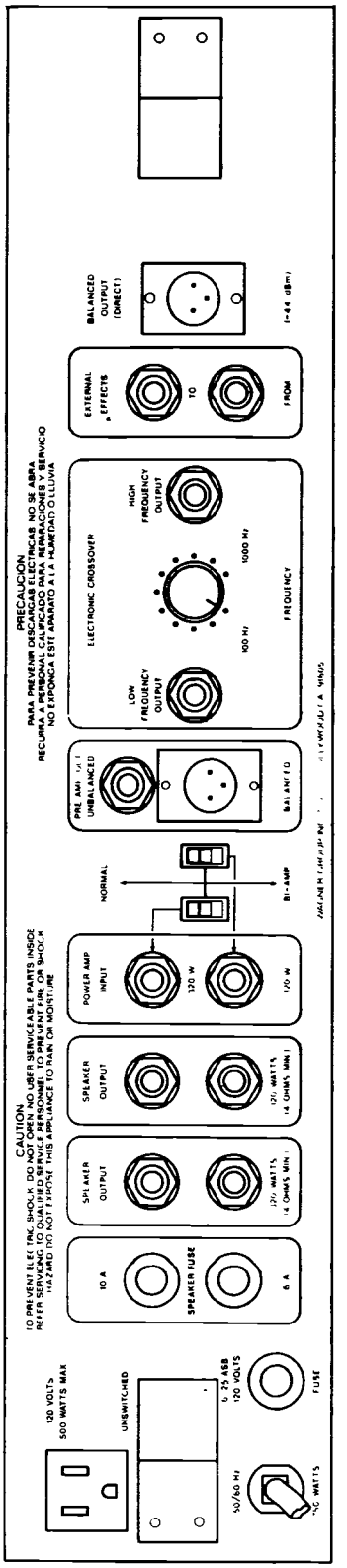
EFFECTS TO..... JACK A 1/4" jack provided for connection to an external accesory Use only a SHIELDED cable for connection to this jack.

EFFECTS FROM... JACK A 1/4" jack provided for connection from an external accesory Use only a SHIELDED cable for connection to this jack.

BALANCED OUT.. (Direct) An XLR-type jack provided for connection of the direct signal after the front-end and before the tone controls, and limiter to any external balanced or unbalanced low impedance input (stage feed). Use only a SHIELDED cable for connection to this jack.
Note Use of this connector replaces the need for a "Y" cable or external stage feed box

NORMAL... ... .. BI-AMP SWITCHES With both of these switches in the up position (normal) Both power amplifiers receive the full range signal from preamp. Either one or both power amplifiers can be used with no damage occurring to the power amplifier not connected to a speaker load. With both of the switches in the down position (Bi-Amp). The power amplifiers receive the signals from the electronic crossover outputs. The 320 Watt amp receives the low frequency output. The 120 Watt amp receives the high frequency output

REAR PANEL DIAGRAM



SPECIFICATIONS

POWER OUTPUT (Power Amplifier #1)	
@ 4 Ohms	320 watts RMS (35 8 vrms)
@ 8 Ohms	215 watts RMS (41 5 vrms)
POWER OUTPUT (Power Amplifier #2)	
@ 4 OHMS	120 watts RMS (21 9 vrms)
@ 8 Ohms	92 watts RMS (27 1 vrms)
FRECUENCY RESPONSE	20 Hz to 10 kHz ±1 5dB
DISTORTION	Less than 1% THD
INPUT SENSITIVITY (For Full Rated Power @ 4 Ohms)	
OdB Input	-30dBm (25 5 mv rms)
−12dB Input	-18dBm (98 mv rms)
Effects Input	-23dBm (56 mv rms)
Power Amp Input	OdBm (775 mv rms)
INPUT IMPEDANCE	
OdB Input	500k Ohms
−12dB Input	50k Ohms
Effects Input	50k Ohms
Power Amp Input	100k Ohms
MAXIMUM INPUT LEVELS	
OdB Input	+12dBm (3 2 v rms)
−12 dB Input	+36dBm (50 v rms)
Effects Input	−3dBm (550 mv rms)
OUTPUT LEVEL (@Rated Input Sensitivity)	
Effects Output	−23dBm (56 mv rms)
Pre-amp Output	OdBm (775 mv rms)
X-Over Hi-Frequency Output	OdBm (775 mv rms)
X-Over Low-Frequency Output	OdBm (775 mv rms)
Balanced Output pre-Tone & EQ	−44dBm (4 9 rnv rms across 1200 Ohms Balanced −50dBm (2 45 mv rms across 600 Ohms Unbalanced)
Balanced Output post-Tone & EQ	−44dBm (4 9 mv rms across 1200 Ohms Balanced −50dBm (2.45 mv rms across 600 Ohms Unbalanced)
OUTPUT IMPEDANCE	
Effects Output	330 Ohms
Pre-amp Output	10k Ohms
X-Over Hi-Frequency Output	10k Ohms
X-Over Low-Frequency Output	10k Ohms
Balanced Output pre-Tone & EQ	1200 Ohms Balanced, 600 Ohms Unbalanced
Balanced Output post-Tone & EQ	1200 Ohms Balanced, 600 Ohms Unbalanced

SPECIFICATIONS
(Continued)

MAXIMUM OUTPUT LEVEL

Effects Output	−3dBm (550 mv rms)
Pre-amp Output	+10dBm (2 45 v rms)
X-Over Hi-Frequency	+10dBm (2.45 v rms)
X-Over Low-Frequency	+10dBm (2.45 v rms)
Balanced Output pre-Tone & EQ	−4dBm (490 mv rms across 1200 Ohms Balanced) −10dBm (245 mv rms across 600 Ohms Unbalanced)
Balanced Output post-Tone & EQ	−4dBm (490 mv rms across 1200 Ohms Balanced) −10dBm (245 mv rms across 600 Ohms Unbalanced)

TONE CONTROL INFLECTION & CENTER FREQUENCIES

Bass	±12dB@40Hz
Mid 1	±12dB@280Hz
Mid 2	±12dB@400Hz
Treble	±12dB@1 2kHz
Pull Bright	+12dB@2kHz

GRAPHIC EQUALIZER INFLECTION & CENTER FREQUENCIES

Band 1	±12dB@40Hz
Band 2	±12dB@80Hz
Band 3	±12dB@160Hz
Band 4	±12dB@320Hz
Band 5	±12dB@640Hz
Band 6	±12dB@900Hz
Band 7	±12dB @1.5kHz

HUM & NOISE ..... 86dB Below Rated Output Quiet Turn On and Turn Off

INTERNAL LIMITER ..... Adjustable Threshold with luminious LIMIT indicator

CROSSOVER FREQUENCY ..... 100Hz to1.0kHz Adjustable (12 dB/Octive Slope)

CROSSOVER BALANCE ADJUSTMENT ..... Front Panel Pan Hi/ Pan Low Control

POWER CONSUMPTION

Nominal	45 watts
@Full Power	600 watts

POWER REQUIREMENTS (Internally Switch Selectable) ..... 50/60Hz 120 VAC or 240 VAC

EXTERNAL A C. OUTLET (Maximum Power) ..... 750 watts

PHYSICAL DIMENSIONS ..... 21 5/8" X 15" x 8 1/2"

NET WEIGHT ..... 52 lbs

IMPORTANT WARRANTY INFORMATION*

It is necessary for your new ACOUSTIC product to be registered in the event it should even require warranty service In order to register your new ACOUSTIC product and receive warranty converage, you must complete the warranty card and return it to the Wagner Group, Inc , Attn Warranty Departament, 8054 Lankershim boulevard, North Hollywood, CA 91605, within fifteen (15) days of the date of purchase Please print legible

If you have any questions regarding your new ACOUSTIC product or your warranty, please feel free to contact the Wagner Group, Inc at the above address or by calling 818-765-0866, monday through friday, between 8 00 and 5 00pm, Pacific Time

Thank you for your support and interest in ACOUSTIC.

/WGI

*Valid in USA and CANADA Only

AMPLIFIER VOLTAGE REQUIREMENTS

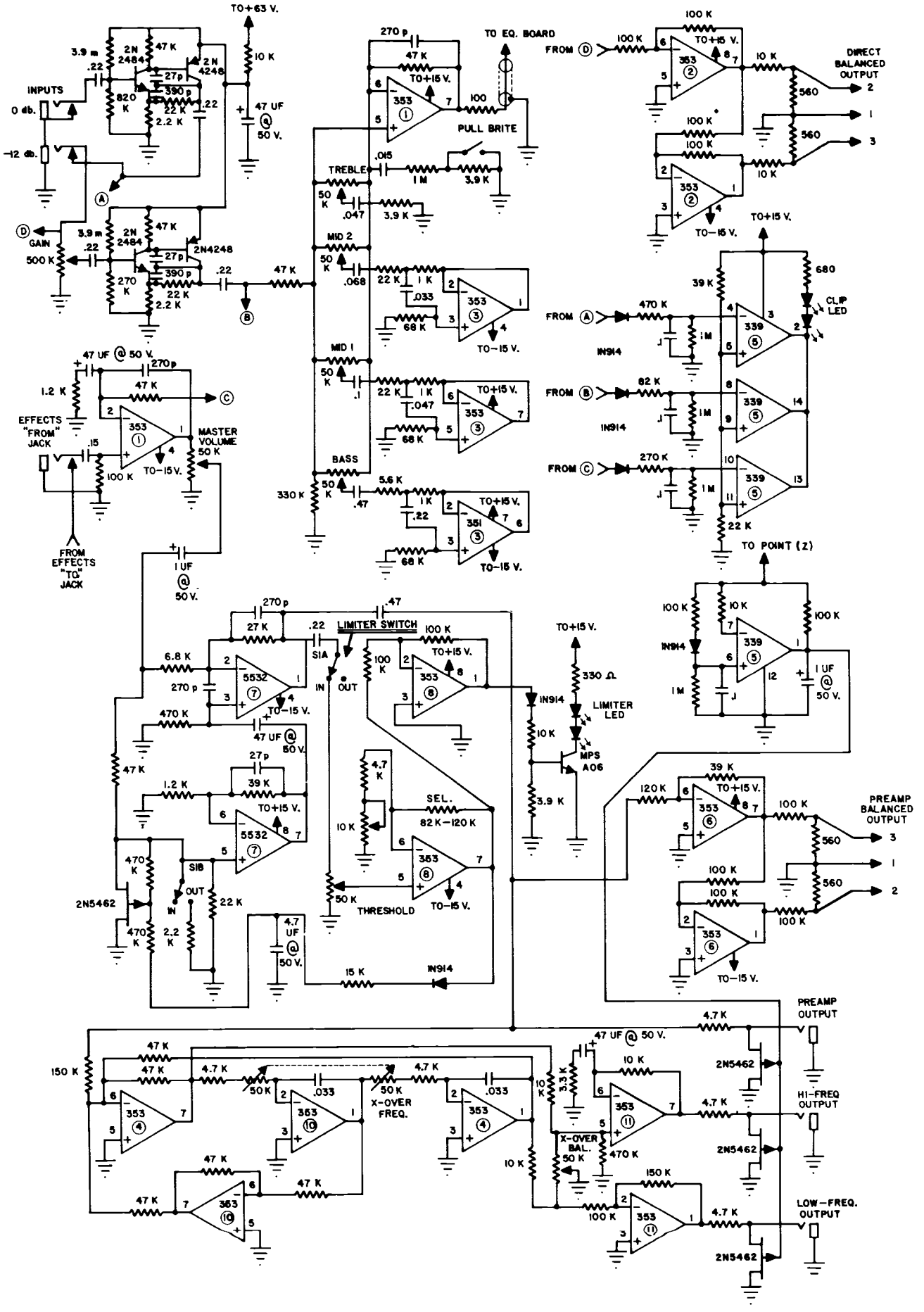
(For Operation in the USA and Foreign Countries)

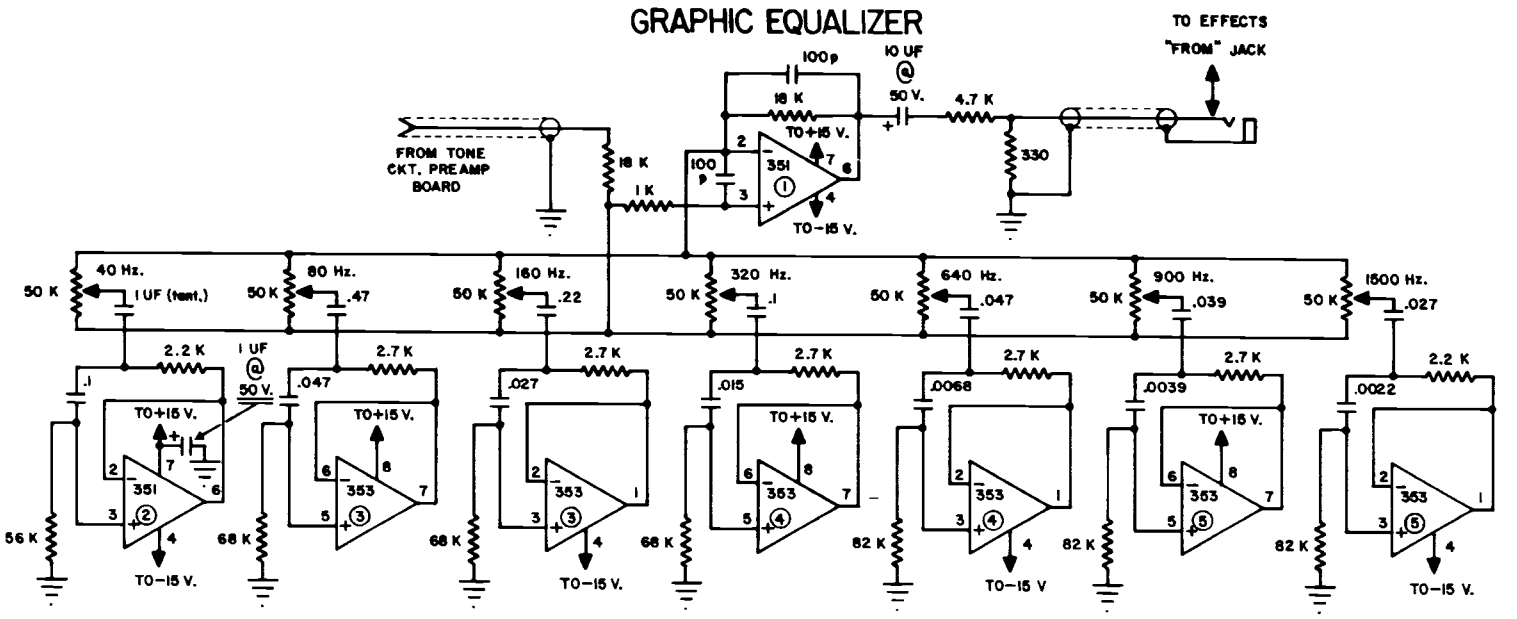
120 Volts Line	Used in United States or where Line Voltage is specified as 110V or 120V - 50/60Hz
220 Volts Line	Used where Line Voltage is specified as 210V or 220V - 50/60Hz (Most European Countries)

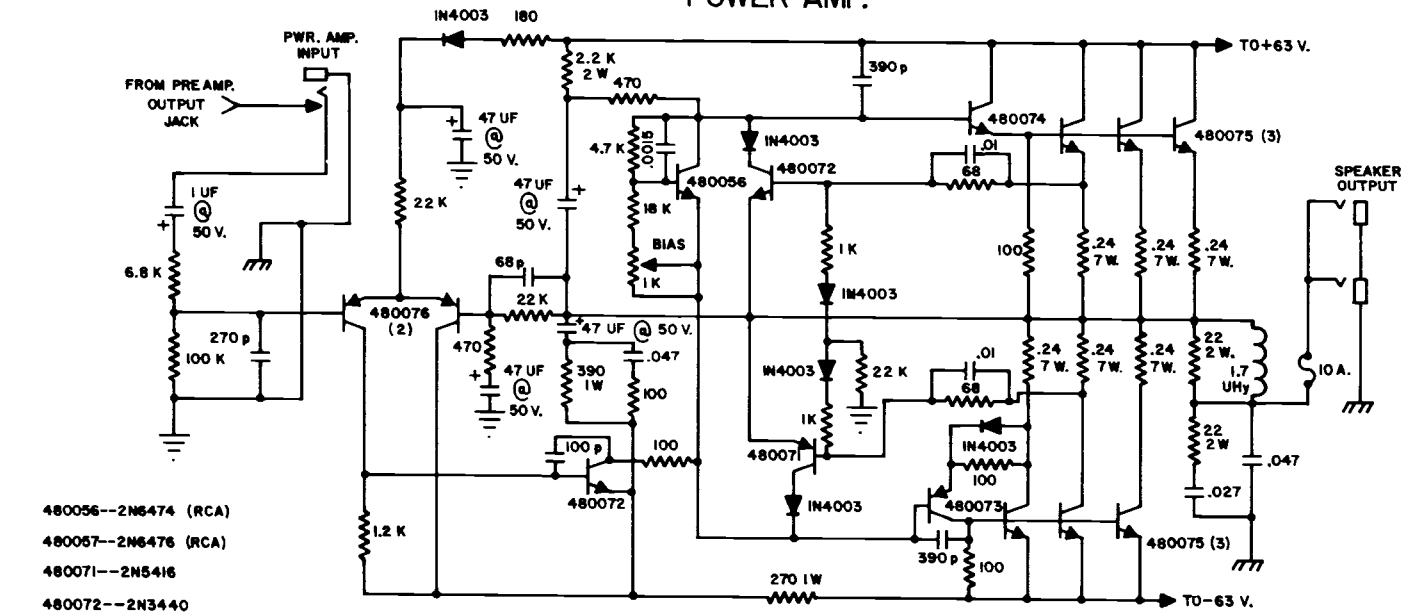
Note: Voltage switch is located inside equipment and should be serviced by qualified technician only

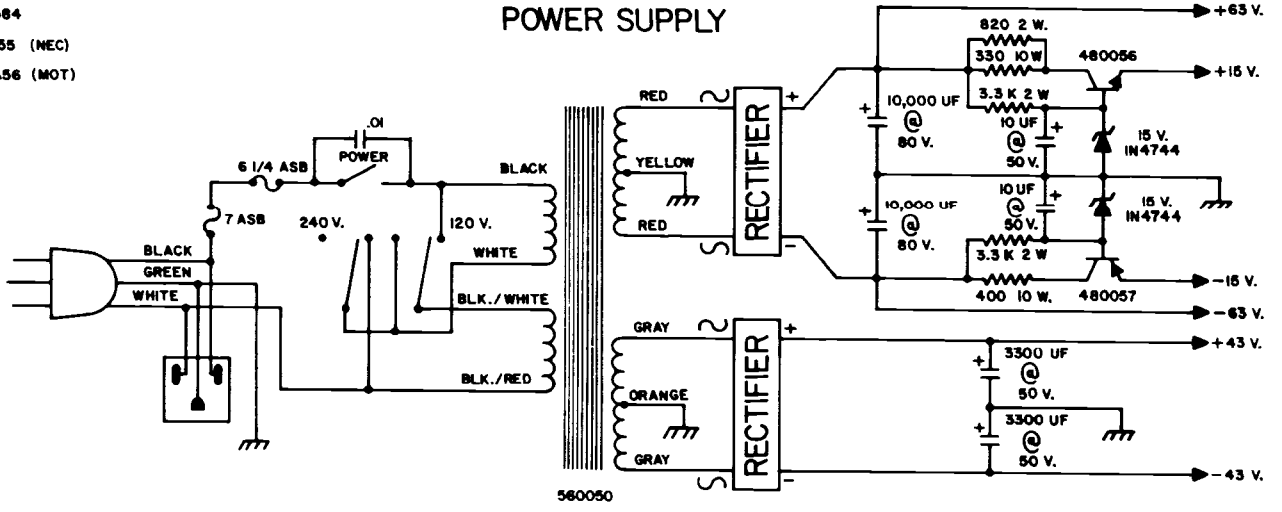
CAUTION!

USE OF EQUIPMENT WITH ANY VOLTAGES OTHER THAN LISTED ABOVE MAY SERVERLY DAMAGE UNIT

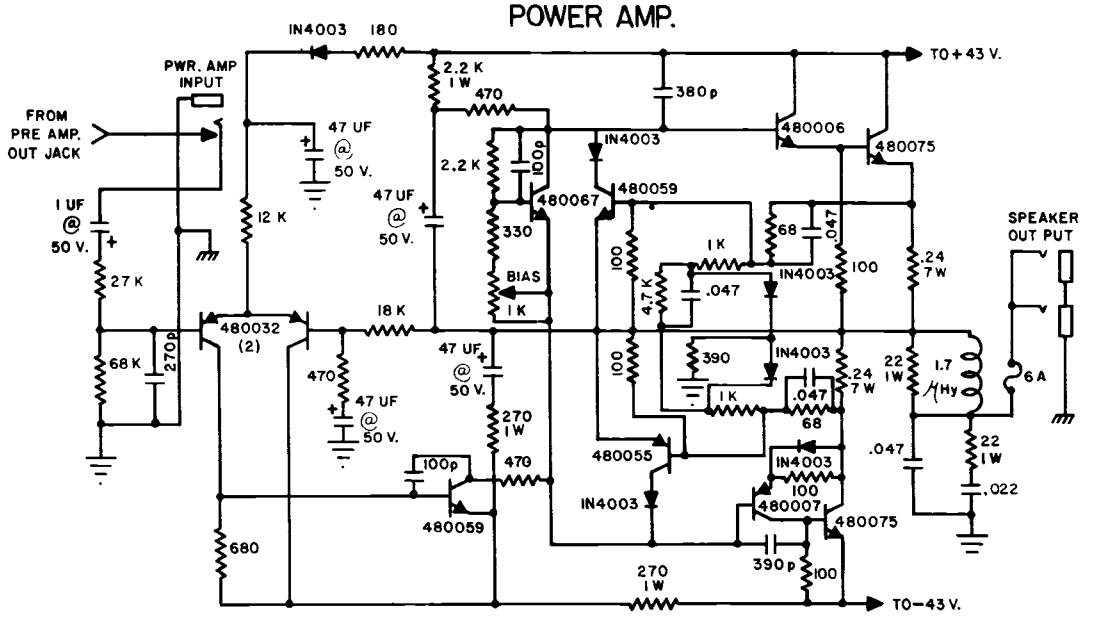

INPUTS
0 db.
-12 db.
GAIN
500 K
2N 2484
2N 4248
2N4248
47 K
27 p
390 p
820 K
270 K
22 K
2.2 K
3.9 m
.22
10 K
47 UF @ 50 V.
TO+63 V.
TO EQ. BOARD
PULL BRITE
100
270 p
TREBLE
50 K
.045
1 M
3.9 K
.047
MID 2
.068
MID 1
.1
BASS
.47
330 K
5.6 K
1 K
.033
68 K
.22
.047
TO+15 V.
TO−15 V.
353
351
339
5532
FROM A
FROM B
FROM C
FROM D
IN914
CLIP LED
680
39 K
470 K
82 K
270 K
1 M
22 K
DIRECT BALANCED OUTPUT
560
1.2 K
EFFECTS "FROM" JACK
EFFECTS "TO" JACK
MASTER VOLUME
50 K
100 K
.15
1 UF @ 50 V.
TO POINT (Z)
LIMITER SWITCH
SIA
SIB
IN
OUT
6.8 K
27 K
LIMITER LED
330 Ω
10 K
3.9 K
MPS A06
SEL.
82 K−120 K
4.7 K
THRESHOLD
2N5462
2.2 K
4.7 UF @ 50 V.
15 K
PREAMP BALANCED OUTPUT
120 K
PREAMP OUTPUT
150 K
X-OVER FREQ.
X-OVER BAL.
HI-FREQ OUTPUT
LOW−FREQ. OUTPUT


GRAPHIC EQUALIZER
TO EFFECTS "FROM" JACK
FROM TONE CKT. PREAMP BOARD
100p
10 UF @ 50 V.
18 K
TO+15 V.
4.7 K
330
100 p
1 K
351
TO-15 V.
50 K
40 Hz.
1 UF (tant.)
80 Hz.
.47
160 Hz.
.22
320 Hz.
.1
640 Hz.
.047
900 Hz.
.039
1500 Hz.
.027
2.2 K
2.7 K
.1
.047
.027
.015
.0068
.0039
.0022
56 K
68 K
82 K
353


POWER AMP.
IN4003
180
PWR. AMP. INPUT
FROM PREAMP. OUTPUT JACK
TO+63 V.
2.2 K 2 W
470
390p
480074
480075 (3)
47 UF @ 50 V.
4.7 K
.015
IN4003
480072
480056
.01
68
SPEAKER OUTPUT
1 UF @ 50 V.
6.8 K
22 K
BIAS
18 K
1 K
100
.24 7 W.
68p
480076 (2)
270p
100 K
22 K
470
390 1W
.047
100
22 2 W.
1.7 UHy
10 A.
100p
480071
480073
1.2 K
270 1W
TO-63 V.
480056--2N6474 (RCA)
480057--2N6476 (RCA)
480071--2N5416
480072--2N3440
480073--2N6211
480074--2N3584
480075--2SD555 (NEC)
480076--MPSA56 (MOT)


POWER SUPPLY
+63 V.
820 2 W.
330 10W
480056
+15 V.
3.3 K 2 W
10,000 UF @ 80 V.
10 UF @ 50 V.
15 V. IN4744
-15 V.
400 10 W.
480057
-63 V.
+43 V.
3300 UF @ 50 V.
-43 V.
.01
POWER
6 1/4 ASB
7 ASB
240 V.
120 V.
BLACK
GREEN
WHITE
BLK./WHITE
BLK./RED
RED
YELLOW
GRAY
ORANGE
RECTIFIER
560050

POWER AMP.



TIMER CIRCUIT