

NEC

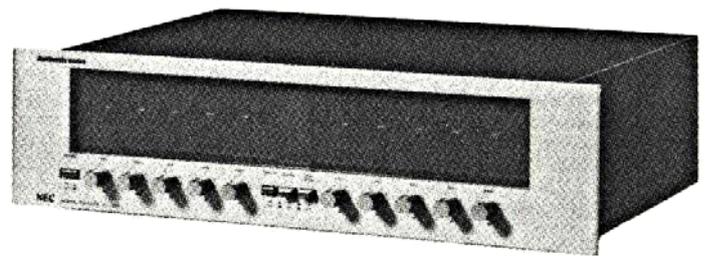
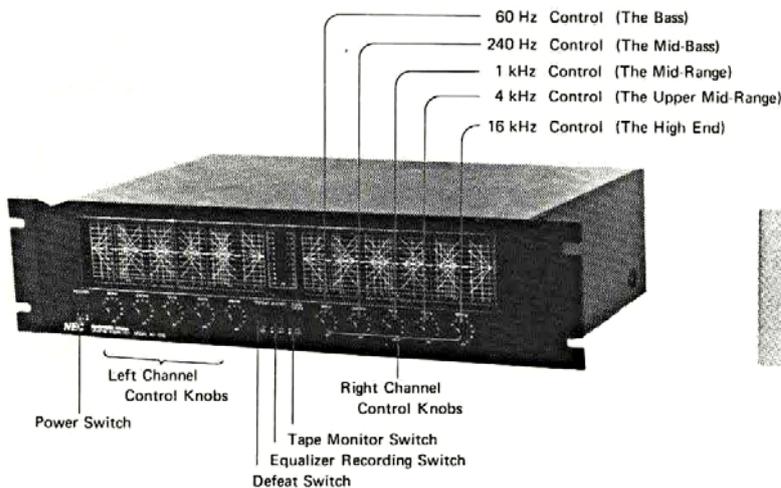
MODEL
AG-100E
TYPE(BC)/(SG)

STEREO GRAPHIC EQUALIZER SERVICE MANUAL

SER. NO. 4033



Better Service
Better Reputation
Better Profit



SPECIFICATIONS

Frequency Response +0, -1.5 dB
(20 Hz ~ 40 kHz)

Control Center Frequency 60 Hz
240 Hz
1 kHz
4 kHz
16 kHz

Control Range ± 10 dB

Gain (Tone Flat) 0 dB ± 1 dB

Output Voltage Distortion

(Tone Flat) 100 mV 0.03 %
1 V 0.01 %
3 V 0.02 %

Signal to Noise Ratio 90 dB
(IHF A-Network, short circuit) (Reference

Input Impedance 100 k Ω (Nominal)

Output Impedance 3 k Ω (Nominal)
Terminals Output Terminal

Input Terminal
Tape Play Terminal
Tape Rec. Terminal

Controls Tone Controls (10)

Power Switch
Defeat Switch
Tape Monitor Switch
Equalizer Rec. Switch

Indicators Graphic Display with 110 LEDs.

Power Requirements

(SG) AC 110/120/220/240 V, 50/60 Hz
(BC) AC 120 V, 60 Hz

Power Consumption 7 W

Dimensions (BC) 430(w) x 110(h) x 261(d)mm
(SG) 450(w) x 110(h) x 261(d)mm

Weight 4.8 kg

Nippon Electric Co., Ltd.

TOKYO, JAPAN

DISASSEMBLY INSTRUCTION

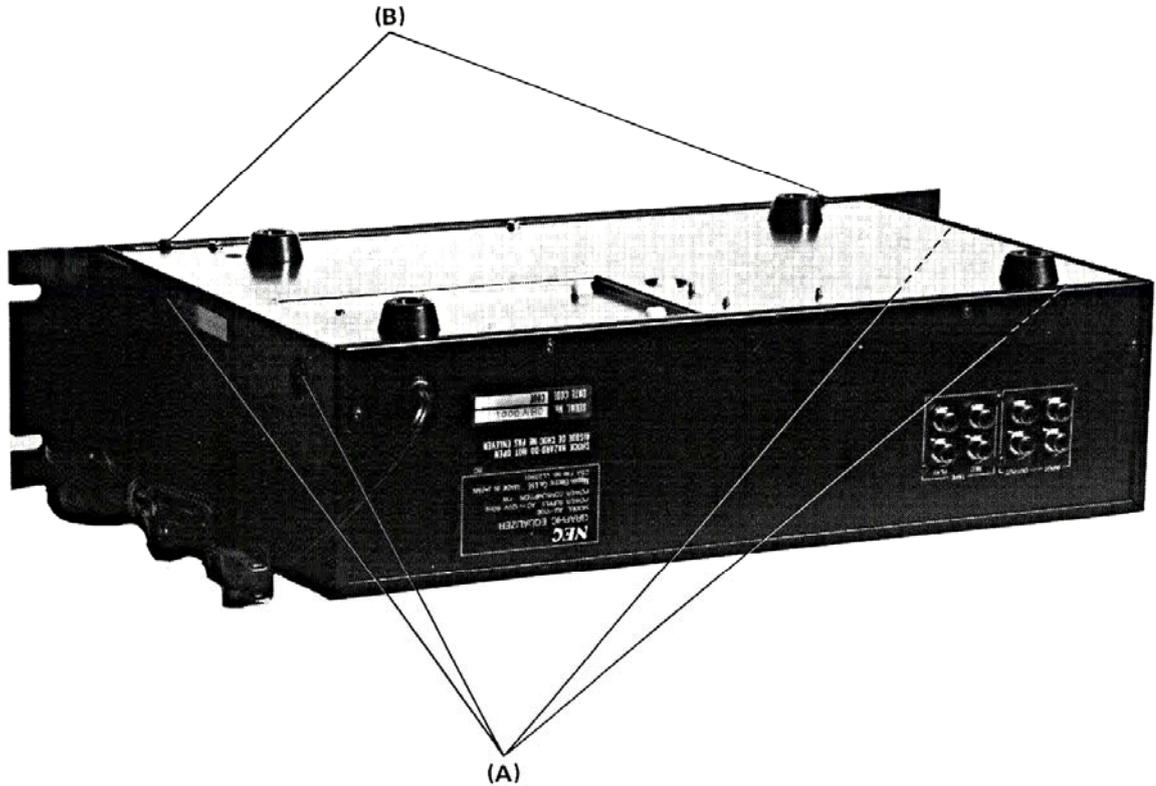


Figure 1

Removing Cabinet Top. See Figure 1.

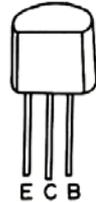
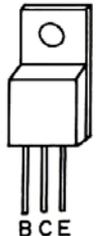
Remove four cabinet mounting screws (A) and lift off cabinet top.

Note: Before removing cabinet top, be sure to take off two handles and ten knobs.

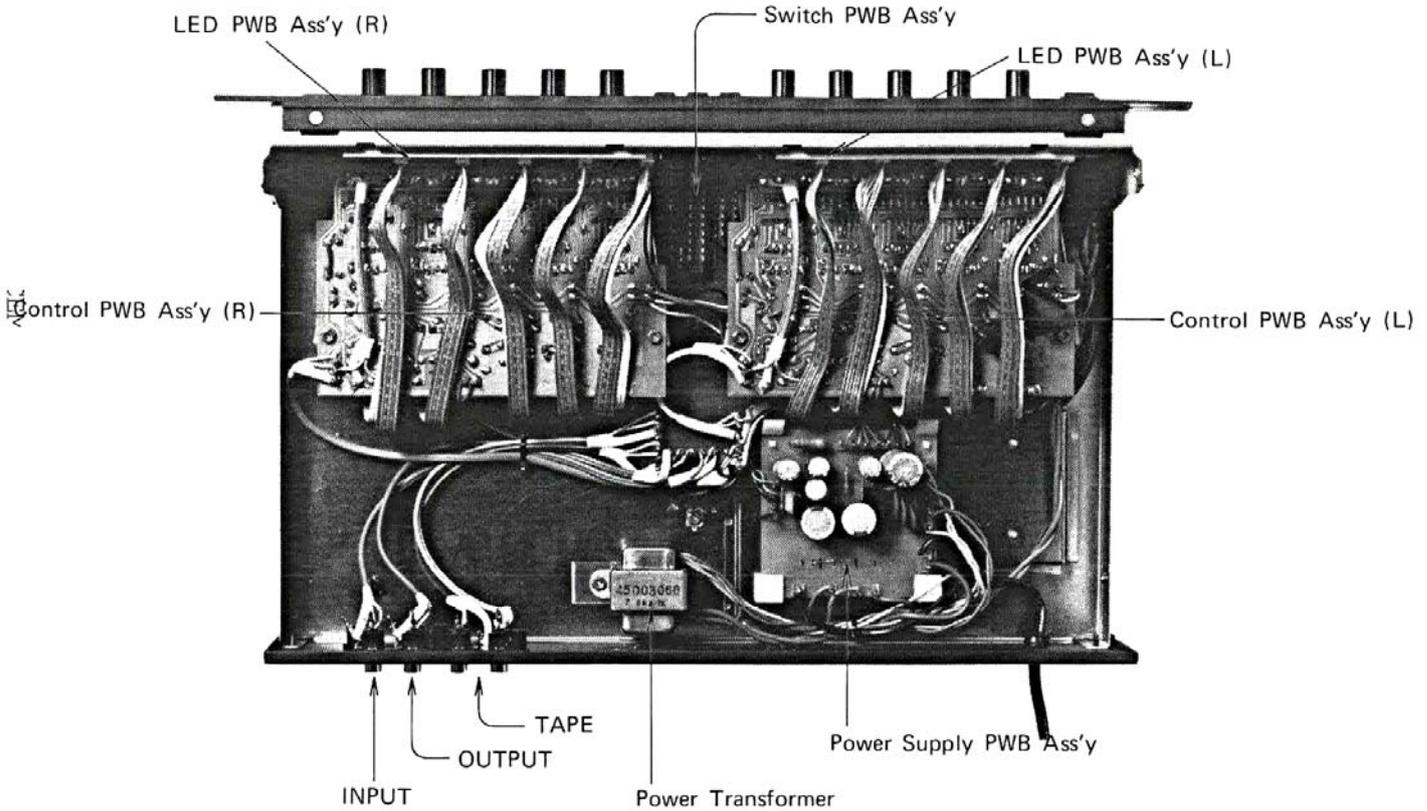
Removing Front Panel. See Figure 1.

Remove four front panel mounting screws (B) from top and bottom sides then lift off front panel.

TRANSISTOR LEAD CONNECTION

TR101 TR102 TR601 TR602	2SC1775 2SA872	
TR401 TR402	2SC1096 2SA634	

PARTS LOCATION

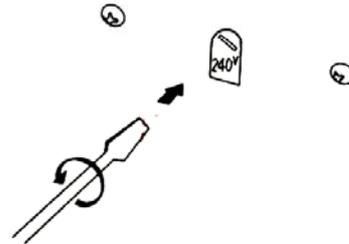


IMPORTANT (SG)

Your unit is factory preset for 240V. However, every unit has four voltage taps of 110/120/220/240V to suit your local voltage.

Should you move to an area where the voltage is different, it is required to reset the Voltage Selector Dial on the unit's rear panel.

This can be done simply by turning the screw type Voltage Selector Dial with a screwdriver until the desired voltage appears in the window, as illustrated.



HANDLE FITTING INSTRUCTION (BC)

2 side by side handles are attached to the front panel of specific models.

Please install the handles in the following manner.

- Make sure that power switch is turned off and power plug is disconnected at the wall socket.
- Remove 4 screws at the cabinet sides. (Turning the screws counter clockwise direction). These screws are marked with asterisk (*) in the side sketch. Use adequate size cross head screw driver only.
- Attach handle viewing the 2 holes to correspond holes of both cabinet side.
- Secure the handle with 2 screws packed with Owner's Manual. (Turning the screws clockwise direction). Fit the other side handle in the same manner.

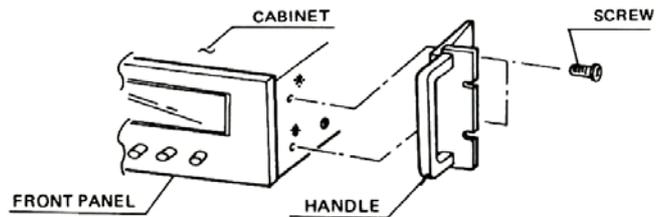


Figure 2

DIAGRAM OF CONNECTIONS

Connecting with Amplifier or Receiver and Tape Deck

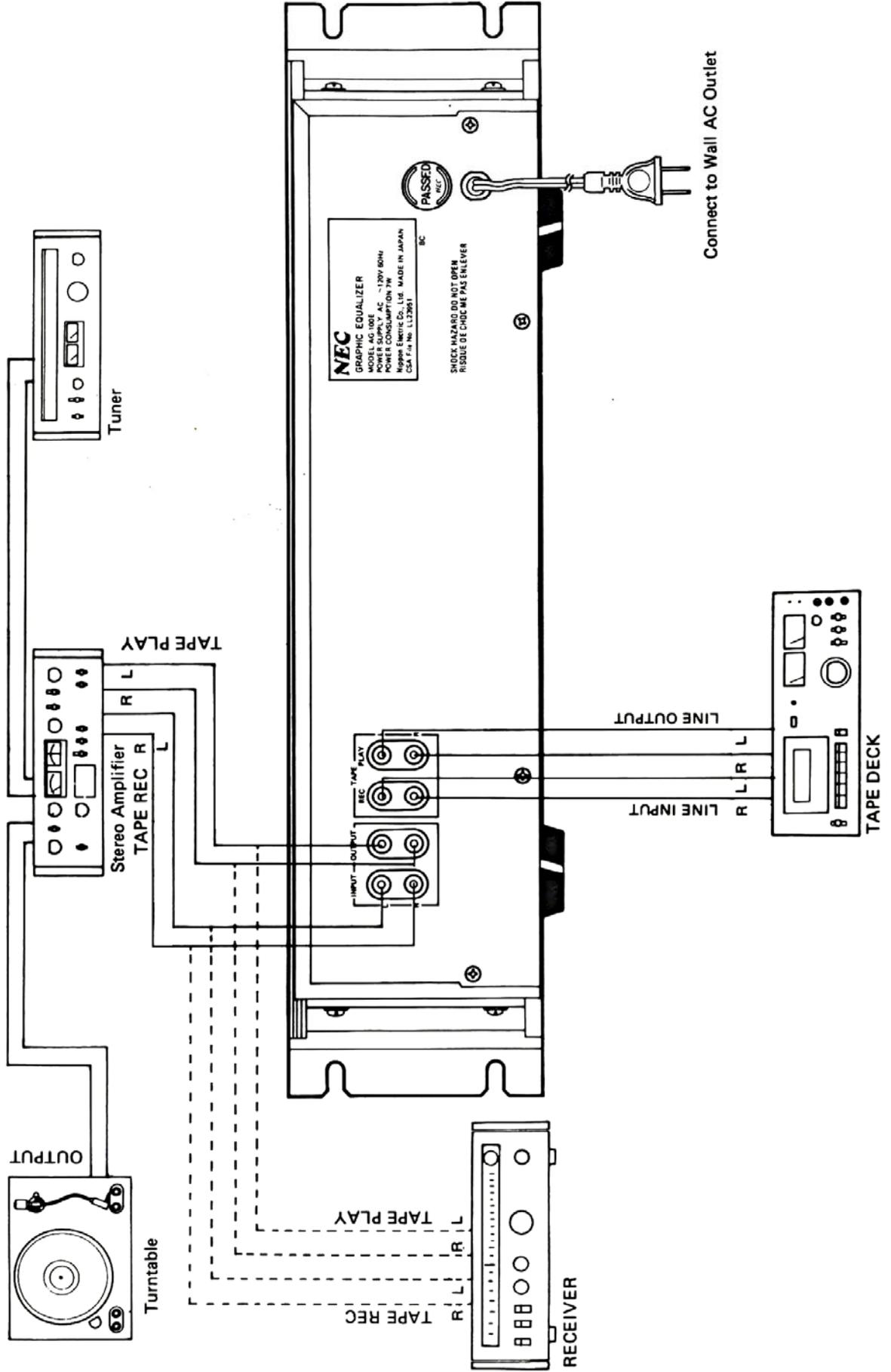


Figure 3

DIAGRAM OF CONNECTIONS

Connecting with Separate Pre and Main Amplifier or with Receiver having Pre-out and Main-in Terminals

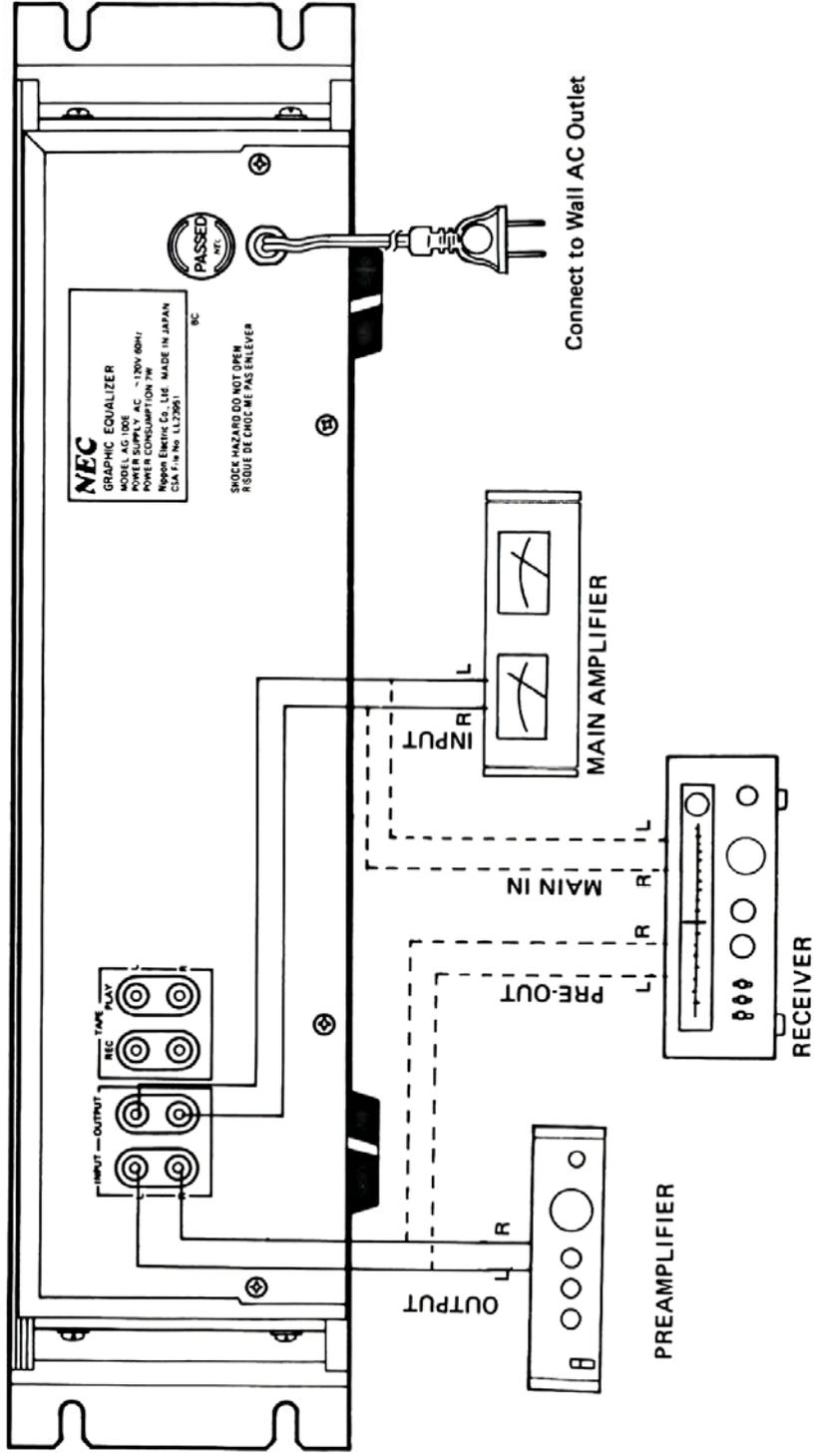


Figure 4

HOW TO USE THE GRAPHIC EQUALIZER

ELIMINATE DISTORTION FROM YOUR "ROOM COMPONENT"

Between your ears and the music, there are many important links; the microphone and tape recorder, the record manufacturing process, your cartridge and turntable, your tuner, amplifier and speaker system, etc.

Almost all sound system components have been improving year after year with latest technologies to the point that they are now amazingly precise.

There is, however, a potential hazard causing distortion the listening room.

The problem is that most listening rooms which are the final link are only listening rooms by accident. They were designed for other things like sitting or eating, or sleeping, and the conditions that make a room good for something else are likely to make it bad for listening to music.

Thick padded carpeting, overstuffed chairs, heavy drapes and hanging tapestries make for a very comfortable living room on one hand, but an acoustically dead listening experience on the other as these soft furnishings absorb stereo sound very effectively.

Another room; one with hard polished floor, lots of bare windows, mirrors and glass covered artwork would present different kinds of problems, becoming a virtual reverberation chamber for high notes and thereby making the overall sound so strident as to be unbearable.

As typical tone controls (usually bass and treble) of your receiver or amplifier control very wide frequency range applying boost or cut progressively toward the frequency extremes, it is impossible to compensate the room acoustic characteristics precisely.

The AG-100E graphic equalizer has five individual controls per channel dividing the audio frequency spectrum into five zones to achieve the most favourable acoustic characteristics of your room.

ARRANGE THE MUSIC TO YOUR TASTE

The professional recording engineer decides how to mix down and sonically balance the music he records. It is based on his personal interpretation for the music through his playback equipments, his listening room and his personal taste.

With AG-100E graphic equalizer, you can rearrange the music with your own interpretation to your taste.

ELIMINATE RUMBLE, HISS AND SURFACE NOISE

If you have the problems with rumble or low frequency overload, you can eliminate much of it without losing a lot of the music by bringing down the 60 Hz controls of your AG-100E graphic equalizer.

If you have problems with scratches and other record surface noises or even tape hiss, you can eliminate much of it without losing a lot of the music by bringing down the 16 kHz controls of your AG-100E.

RECORD YOUR MUSICS THROUGH THE GRAPHIC EQUALIZER

As the professional recording engineer records the live performance on a tape through the graphic equalizer, you can record the programs of records, AM/FM broadcasts and even pre-recorded tapes through the AG-100E graphic equalizer to your own taste.

ELIMINATE PROBLEMS OF "PEAKS" and "DIPS"

Cases are very common where good cartridges and good speaker systems, when played together, result in far less than good sound. Slight resonance peaks or response aberrations which considered separately would be insignificant, can combine to yield dips or peaks that are very displeasing.

One well-known "top-rated" speaker combined with a good "best-buy" cartridge sound unbarely harsh and strident, especially in an acoustically hard environment.

Answer is simple. Find the proper zone of control on your AG-100E graphic equalizer and move it down a few dB.

BRINGING LIFE BACK TO YOUR OLD RECORDS

It was not too long ago that the recording industry settled on the present RIAA standard for phonograph equalization.

When the industry was still fledging, there were several standards, each quite loosely adhered to and all decidedly inadequate on today's good high fidelity equipment.

Even the cutter head was a limiting factor because it usually had a resonance peak in the midrange, profoundly reduction bandwidth. The resultant complaint is always a lack of true bass or highs, a strident or droning midrange and an unbearable scratchiness up top.

The AG-100E graphic equalizer can correct for these problems, making your old records very listenable.

Also, if you want to make the improvement permanent, all you need do is make a recording using the AG-100E graphic equalizer.

OPERATING INSTRUCTIONS

HOW TO COMPENSATE THE FREQUENCY RESPONSE OF AM/FM BROADCAST SIGNALS AND PLAYBACK OF RECORDS:

By connecting your pre-main amplifier or receiver as illustrated in Figure 5, you can compensate overall frequency response by controlling each zone of the graphic equalizer individually with following procedures:

- Connect the graphic equalizer with the pre-main amplifier or receiver as illustrated.
- Set the defeat switch and tape monitor switch to the OFF position.
- Set the tape monitor switch of the pre-main amplifier or receiver to the MONITOR position.
- Adjust the tone controls of the graphic equalizer to perceive your favorite sound quality of reproduced sound.

HOW TO COMPENSATE THE FREQUENCY RESPONSE OF PRE-RECORDED TAPES:

By connecting your tape deck and pre-main amplifier or receiver as illustrated in Figure 5 and 6, you can compensate overall frequency response of your pre-recorded tapes by controlling each zone of the graphic equalizer individually with following procedures:

- Connect the graphic equalizer with the tape deck and pre-main amplifier or receiver as illustrated.
- Set the defeat switch and equalizer recording switch (EQ REC) to the OFF position.
- Set the tape monitor switch of the graphic equalizer to ON position.
- Set the tape monitor switch of the pre-main amplifier or receiver to the MONITOR position.
- Set the tape deck in play mode.
- Adjust the tone controls of the graphic equalizer to perceive your favorite sound quality of reproduced tape music.

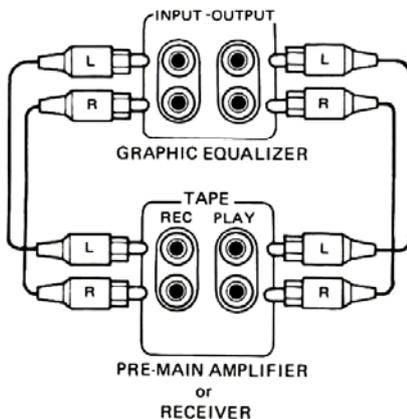


Figure 5

HOW TO COMPENSATE THE FREQUENCY RESPONSE OF RECORDING SIGNALS:

By connecting your tape deck and pre-main amplifier or receiver as illustrated in Figure 5 and 6, you can compensate overall frequency response of your recording signals by controlling each zone of the graphic equalizer individually with following procedures:

- Connect the graphic equalizer with the tape deck and pre-main amplifier or receiver as illustrated.
- Set the EQ REC switch of the graphic equalizer to ON.
- Set the defeat switch to the OFF position.
- Set the tape monitor switch of the pre-main amplifier or receiver to the MONITOR position.

IF YOUR TAPE DECK IS 2-HEAD TYPE:

- Set the tape monitor switch of the graphic equalizer to the OFF position.
- Adjust the tone controls of the graphic equalizer to perceive your favorite sound quality of your recording signals.
- Set the tape deck to recording mode.

IF YOUR TAPE DECK IS 3-HEAD TYPE:

- Set the tape monitor switch of the graphic equalizer to the ON position.
- Set the tape deck to recording mode and hold it in pause condition.
- Set the monitor switch of the tape deck to SOURCE position.
- Adjust the tone controls of the graphic equalizer to perceive your favorite sound quality of the recording signals.
- Release the pause of the tape deck and commence recording.
- If you set the monitor switch of the tape deck to TAPE position, you can monitor the recorded signals simultaneously whilst you are recording.

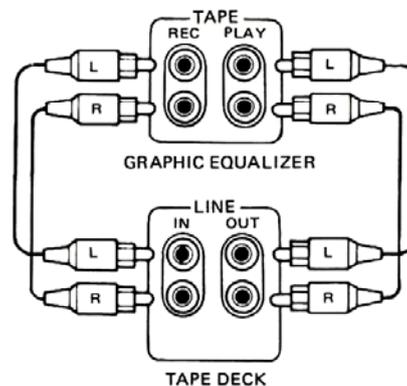
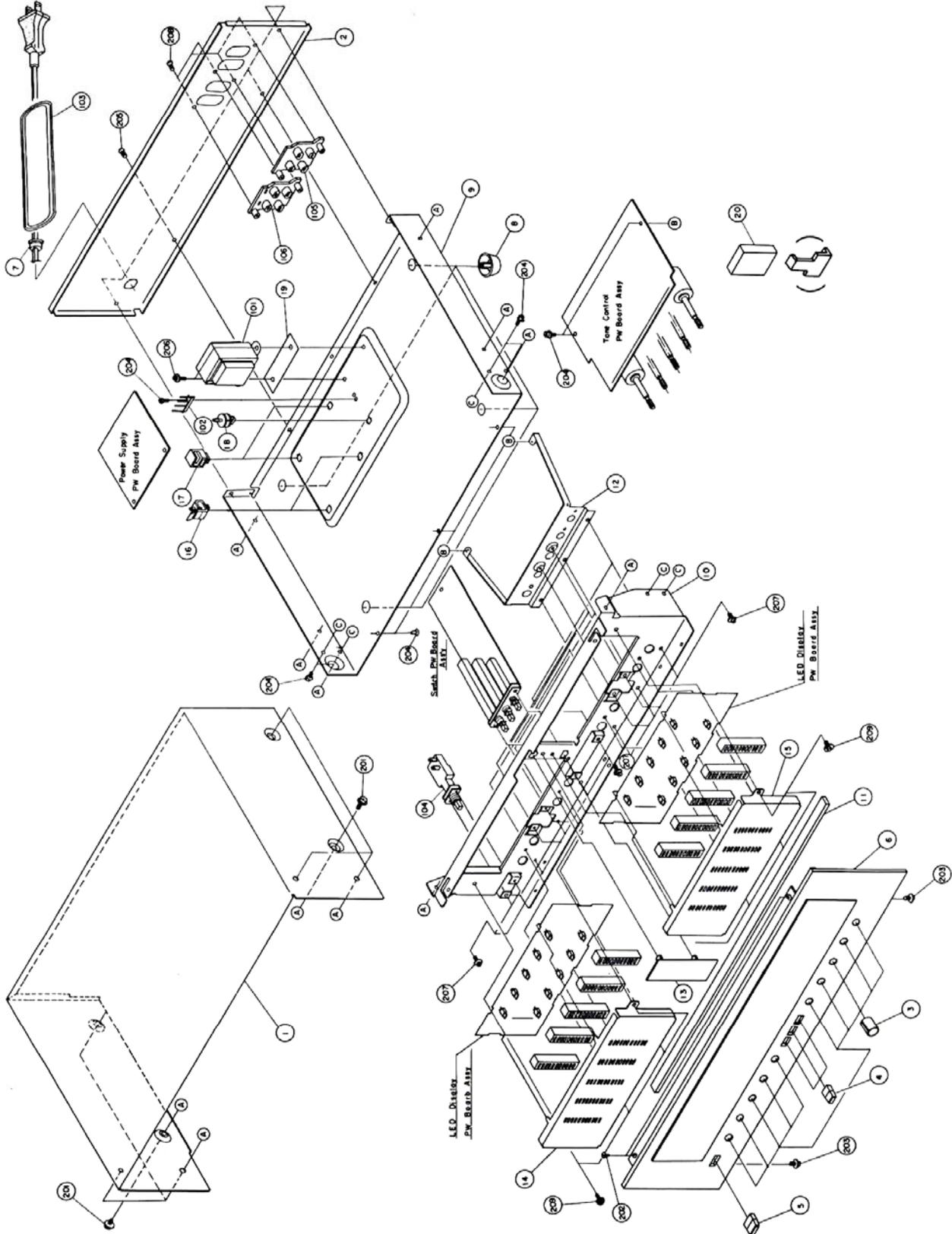
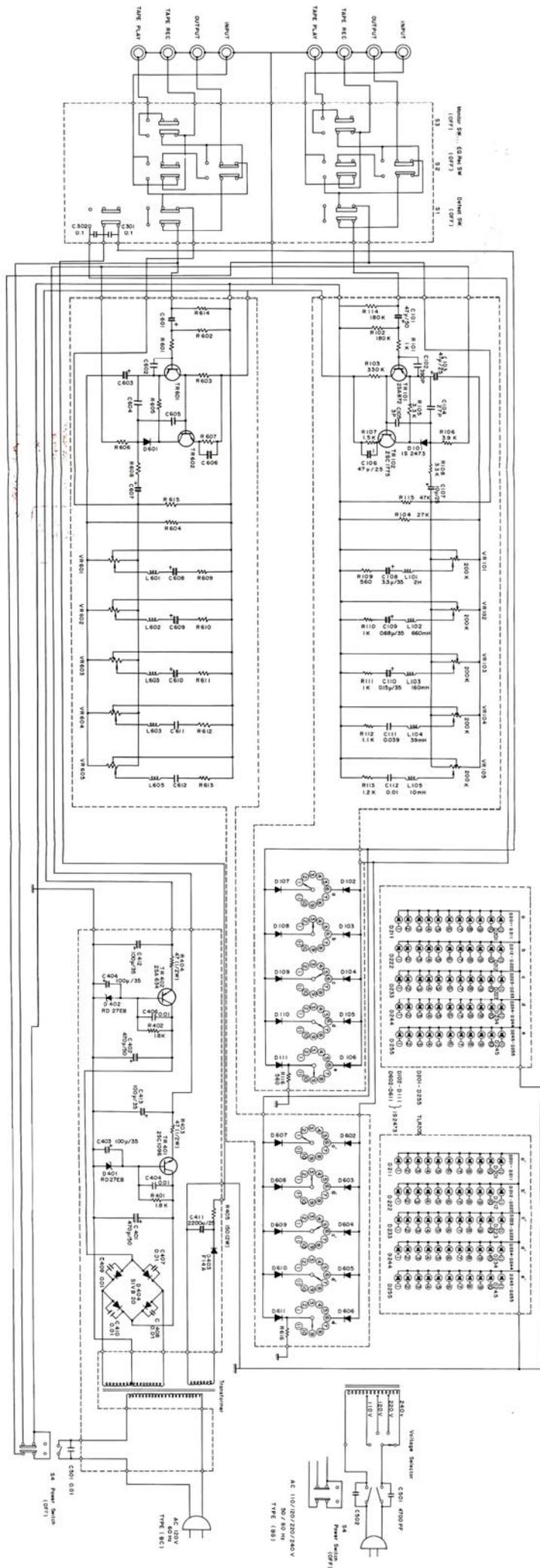


Figure 6

EXPLODED VIEW OF SET



SCHEMATIC DIAGRAM



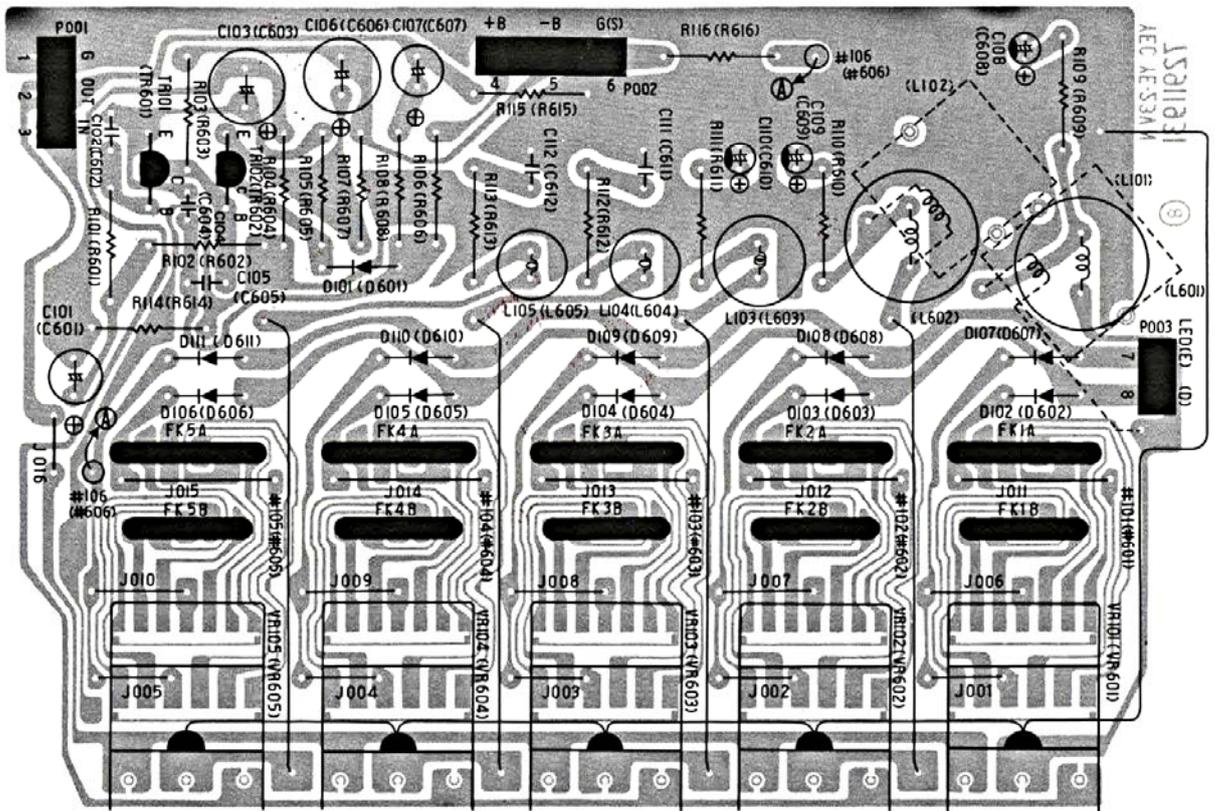
REPLACEMENT PARTS LIST

Control PWB Ass'y (L) & (R)

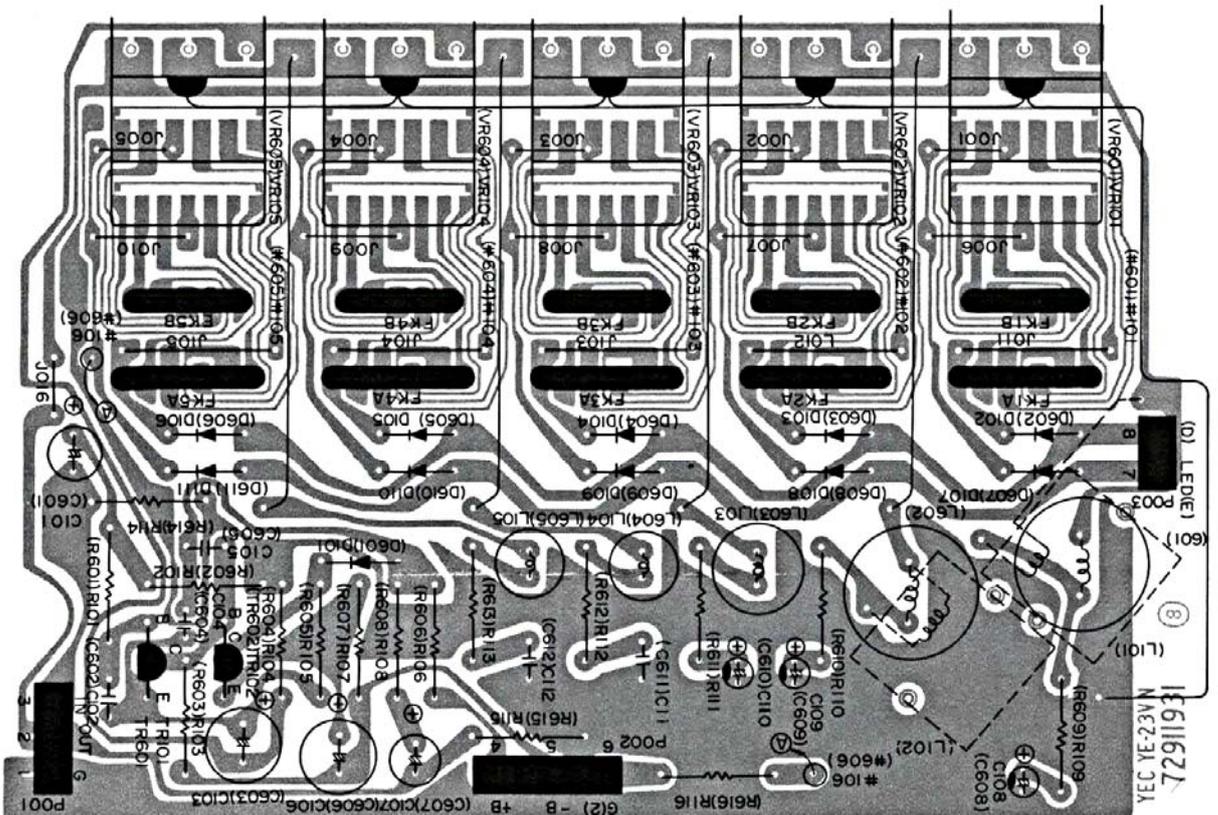
SYMBOL	PART NO.	DESCRIPTION	Q'TY PER UNIT	REMARKS
	87343101	Control PWB Ass'y	2	
	18513731	Bracket, Volume Control	2	
L101, 601	61911089	Filter Coil, 2H	2	
L102, 602	61911090	Filter Coil, 660 mH	2	
TR101, 601	35901405	TR. 2SA-872E	2	
TR102, 602	35946006	TR. 2SC-1775F	2	
D101 ~ 111, 601 ~ 611	36001009	Diode IS2473	22	
R109, 116, 609, 616	40102167	R. Carbon, 560 Ω 1/4 W	4	
R101 ~ 111, 601 ~ 611	40102173	R. Carbon, 1 k Ω 1/4 W	6	
R112, 612	40102174	R. Carbon, 1.1 k Ω 1/4 W	2	
R113, 613	40102175	R. Carbon, 1.2 k Ω 1/4 W	2	
R107, 607	40102177	R. Carbon, 1.5 k Ω 1/4 W	2	
R105, 108, 605, 608	40102185	R. Carbon, 3.3 k Ω 1/4 W	4	
R106, 606	40102187	R. Carbon, 3.9 k Ω 1/4 W	2	
R104, 604	40102207	R. Carbon, 27 k Ω 1/4 W	2	
R115, 615	40102213	R. Carbon, 47 k Ω 1/4 W	2	
R102, 114, 602, 614	40102227	R. Carbon, 180 Ω 1/4 W	4	
R103, 603	40102233	R. Carbon, 330 k Ω 1/4 W	2	
VR101, 102, 601, 602	41950286	Volume Control Switch 200 k Ω	4	
VR103 ~ 105, 603 ~ 605	41950286	C. Ceramic, 390 pF	6	
C102, 602	42130208	C. Ceramic, 390 pF	2	
C105, 605	42331003	C. Ceramic, 3 pF 50 V	2	
C104, 604	42331062	C. Ceramic, 27 pF 50 V	2	
C112, 612	42754063	C. Poly., 0.01 μ F 50 V	2	
C111, 611	42754070	C. Poly., 0.039 μ F 50 V	2	
C110, 610	43950085	C. Elec., 0.15 μ F 35 V	2	
C109, 609	43950089	C. Elec., 0.68 μ F 35 V	2	
C108, 608	43950093	C. Elec., 3.3 μ F 35 V	2	
C107, 607	43980030	C. Elec., 10 μ F 25 V	2	
C101, 601	43980057	C. Elec., 4.7 μ F 50 V	2	
C103, 603	43991046	C. Elec., 47 μ F 25 V	2	
C106, 606	43991046	C. Elec., 47 μ F 25 V	2	
L105, 605	61911016	Filter Coil, 10 mH	2	
L103, 603	61911092	Filter Coil, 160 mH	2	
L104, 604	61911092	Filter Coil, 39 mH	2	

CONTROL PWB ASS'Y

Component Side

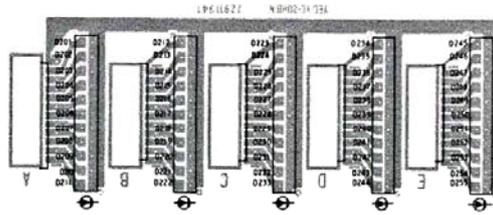


Solder Side

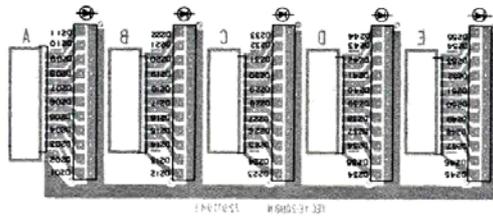


LED PWB ASS'Y

Component Side



Solder Side

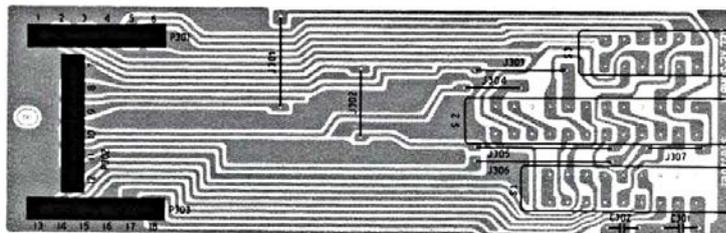


SW PWB Ass'y

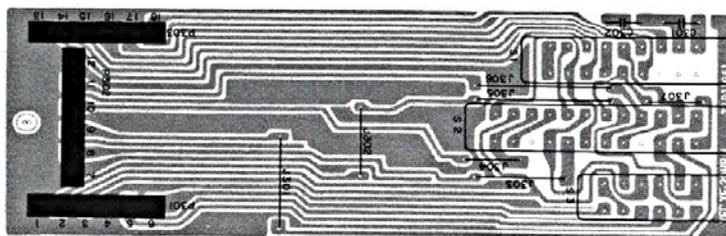
SYMBOL	PART NO.	DESCRIPTION	Q'TY PER UNIT	REMARKS
	87343301	LED PWB Ass'y	1	
	18403071	LED Holder	1	
	36904037	LED TLR205	1	

SW PWB ASS'Y

Component Side



Solder Side



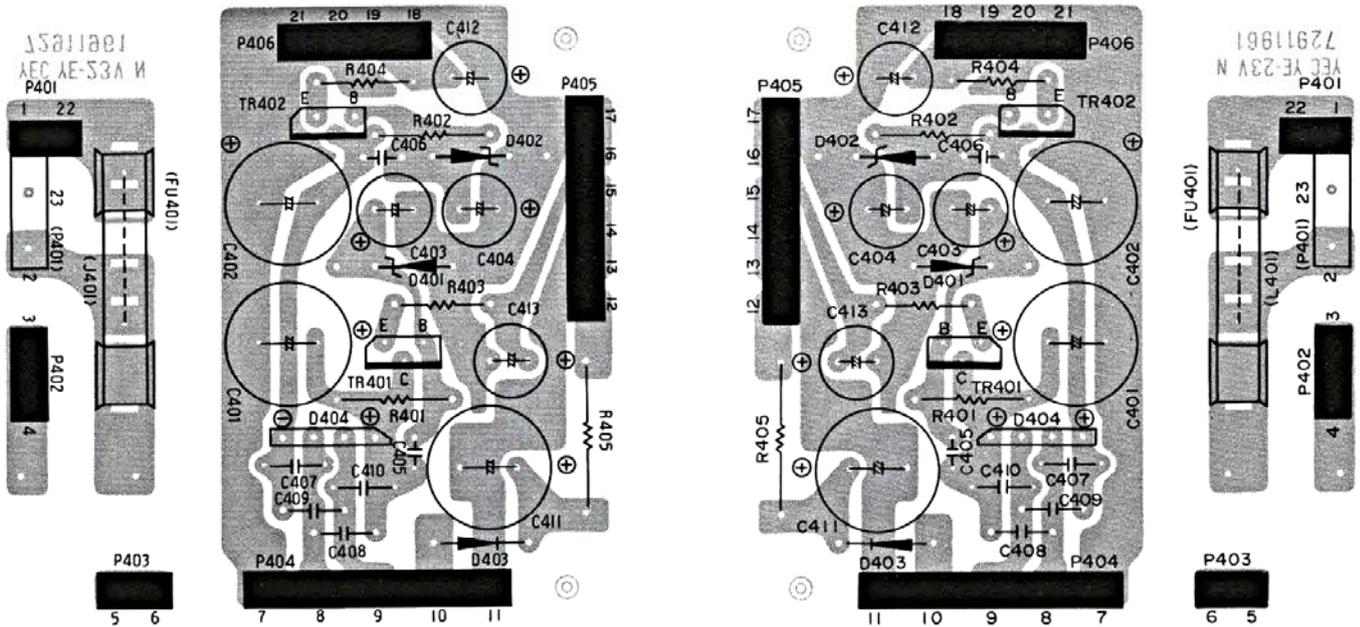
SW PWB Ass'y

C301	42754075	C. Mylar, 0.1 μ F 50 V	1	
C302	65904108	Push Switch 3 gangs	1	

POWER SUPPLY PWB ASS'Y

Component Side

Solder Side



Power Supply PWB Ass'y

SYMBOL	PART NO.		DESCRIPTION	Q'TY PER UNIT	REMARKS
	(BC)	(SG)			
	87343501	87381501	Power Supply PWB Ass'y	1	
TR402		35003212	TR. 2AS-634L	1	
TR401		35047512	TR. 2SC-1096L	1	
D403		36107065	Rectifier F14A	1	
D404		36902050	Rectifier Block SIVB20	1	
D401, 402		36905008	Diode Zener, RD27EB	2	
R401, 402		40102179	R. Carbon, 1.8 k Ω 1/4 W	2	
R403, 404	40930049	40913141	R. Metal, 47 Ω 1/2 W R. Carbon 47 Ω 1/4 W	2	
R405		40930050	R. Metal, 150 Ω 2 W	1	
C407, 408, 409, 410		42019575	C. Ceramic, 0.01 μ F	4	
C405, 406		42110425	C. Ceramic, 0.01 μ F	2	
C403, 404, 412, 413		43991060	C. Elec., 100 μ F 50 V	4	
C401, 402		43991077	C. Elec., 470 μ F 50 V	2	
C411		43993046	C. Elec., 2200 μ F 35 V	1	
C501, 502	42910007	42606007	C. Ceramic, 0.01 pF 4700 pF	1 2	

Packing Materials

	—	70599039	Conversion Plug 2P	—	1	
	18403231	—	Rack Mounting Handle	1		
		18753101	Label	1		
	18754761	—	Label (Caution)	1		
		18801391	Bag, Polyethylene	1		
	18804921	18805382	Carton Box	1		
		18804932	Spacer	1		
		19800672	Bag, Polyethylene B	1		
		18801032	Bag, Polyethylene (1/12)	1		
		70906056	Pin Plug Cord 1.2 PL	2		
	78951161	78911722	Instruction Book	1		

SYMBOL	PART NO.		DESCRIPTION	Q'TY PER UNIT	REMARKS
	(BC)	(SG)			
1	18355221		Cabinet Assembly	1	
2	18513721	18514272	Rear Panel	1	
3	18456911	18457351	Tone Knob	10	
4	18456921	18457371	Push Knob (A)	3	
5	18456931	18457381	Push Knob (B)	1	
6	88343631	88381631	Front Panel Sassy	1	
7	24280261		Cord Clamper	1	
8	18284951		Foot	4	
9	18513711	18513712	Chassis Base	1	
10	18513701		Sub Chassis	1	
11	18603541		Deadlight Piece	1	
12	18513731		VR Bracket	2	
13	18403211	18403411	LED Plate	1	
14	18710071	18710821	LED Display Board (L)	1	
15	18710081	18710831	LED Display Board (R)	1	
16	18286762		PWB Holder A	2	
17	18286771		PWB Holder B	2	
18	24280291		Plastic Bushing	1	
19	18603601	18603681	Insulator Sheet	1	
20	18603661	18514611	Cushion Piece	2	
101	45003068	45027087	Power Transformer	1	
102	71905069		Earth Terminal	1	
103	79759115	79759123	Power Supply Cord	1	
104	65904109	65904117	Power Switch	1	
105	71905067		Jack Plate 4P	1	
106	71905073		Terminal Plate 4P	1	
201	18853701		Special Screw M4 x 6	8	
202	91053022		Flat Head Screw M3 x 5	2	
203	18852751		Assembled Screw M3 x 8	2	
204	24851541		Tapping Screw 3 x 6	12	
205	18852251		Round Head Screw M3 x 8	4	
206	91284011		Tapping Screw 4 x 8	2	
207	23850871		Assembled Screw M3 x 5	14	
208	18852811		Round Head Tapping Screw 3 x 12	4	
209	24852411		Tapping Screw 3 x 8	8	
	—	65901039	Voltage Selector	1	