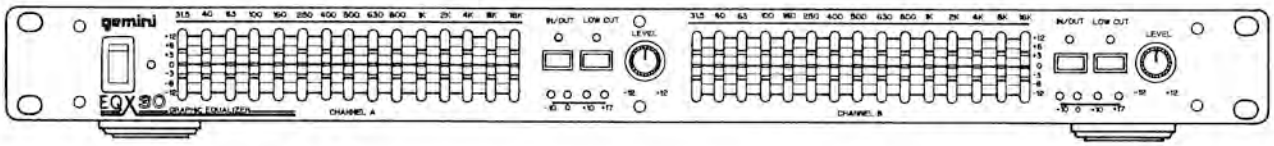
gemini™
SOUND PRODUCTS WITH SOUND IDEAS

SERVICE MANUAL

GRAPHIC EQUALIZER

MODEL EQX-30



CONTENTS

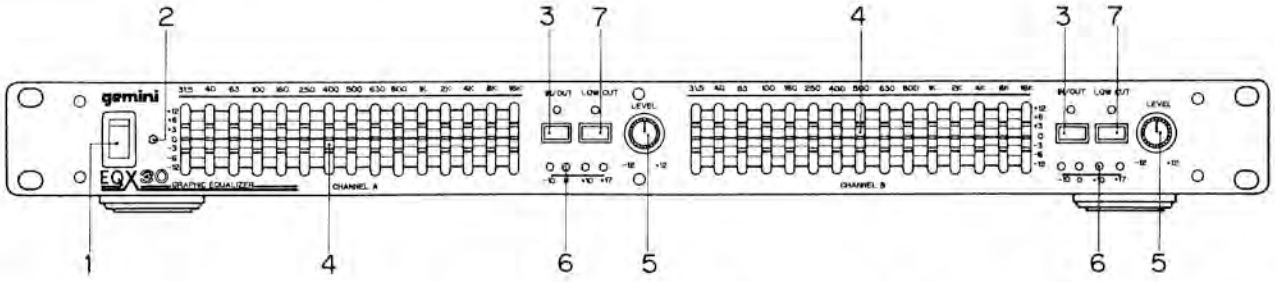
GEMINI SOUND PRODUCTS CORP.
1100 MILIK STREET CARTERET, NEW JERSEY 07008 U.S.A.
TEL:908-969-9000 FAX:908-969-9090

SPECIFICATIONS

EQX-30

Channels:	2 Channels	S/N Ratio:	90 dB
Bands:	15 Bands/Channel 31.5,40,63,100,160 250,400,500,630,800 1K,2K,4K,8K,16KHz	Distortion:	0.03%
		Other Features:	In/Out Pass Switch Low Cut Switch Level Display -10 --+17dB
Input Impedance:	1.2K ohm	Power:	120/230 volts
Output Impedance:	20K ohm	Power Consumption:	15 watts
Maximum Output Level:	5.5 volts	Dimensions:	19"(W)X2"(H)X101/2"(D)
Level Control:	+/- 12 dB	Weight:	8 1/4 LBS.

CONNECTION AND OPERATING INSTRUCTION



INSTRUCTIONS FOR CONNECTION

1. Be sure that POWER (1) is in the OFF position. All connections must be made with all equipment OFF.

2. Before plugging in the POWER CORD (8) make sure the VOLTAGE SELECTOR SWITCH (9) is set to the correct voltage. (The unit is preset to 110V). Insert the power cord into a proper source.

3. For best sound use only high quality audio cables when hooking up this equalizer. Make sure that all cable are pushed in securely.

4. Make sure you correctly attach the patch cable for the input source and output signal.

OPERATING INSTRUCTIONS

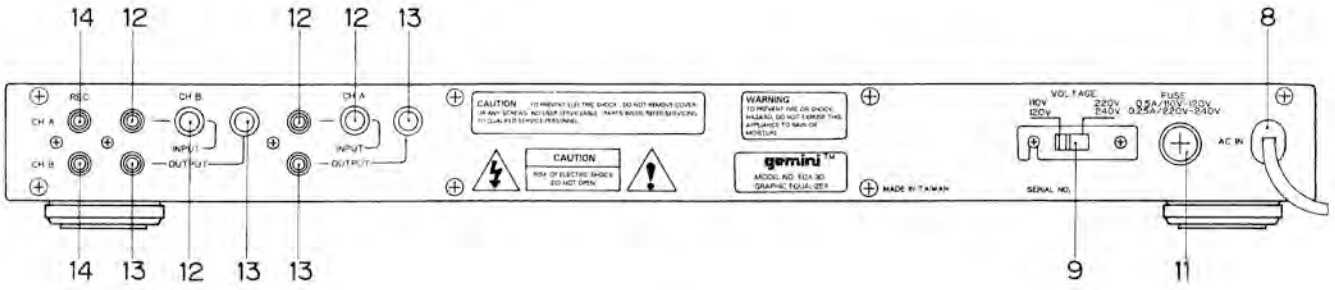
1. POWER ON (1)
Once you have made all source connections to your equalizer. Press the POWER (1) button. The POWER LED (2) will light up indicating that the equalizer is on. Press again to turn the power off.

2. IN/OUT PASSING SWITCH (3)
Press this switch in. The equalizer will be activated. Press it again to out. The signal will passed.

3. GRAPHIC EQUALIZER (4)
These sliders allow adjustment upto ± 12dB each octaves from 3.15 Hz (20 Hz) to 16 KHz (20 KHz)

4. LEVEL ADJUSTMENT CONTROL (5)
You can obtain a proper output signal level using this level control. The LEVEL DISPLAY LEDS (6) will indicate you the exact output level from -10 dB to +17 dB in 4-steps. When the +17 dB led light up. It tells you that there is too much output power calibrated to produced distortion, lower the level control gradually until this led goes off.

5. LOW CUT SWITCH (7)
The low-cut switch attenuattes the muddy and unwanted sound created by your source equipment especially form the record player.



DISASSEMBLY PROCEDURES

1. Removal of Top Case

(a) Remove 1 socket screw (A). (Fig.1)
(b) Remove 4 screws (B). (Fig.1)
(c) Remove 6 screws (C). (Fig.1)
(d) Remove 4 screws (D). (Fig.1)

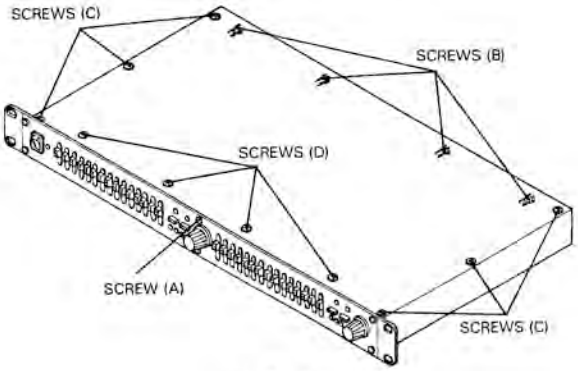


Fig. 1

2. Removal of Front Panel

(a) Remove 2 knobs (E). (Fig.2)
(b) Remove 30 knobs (F). (Fig.2)
(c) Remove 5 socket screws (G). (Fig.2)

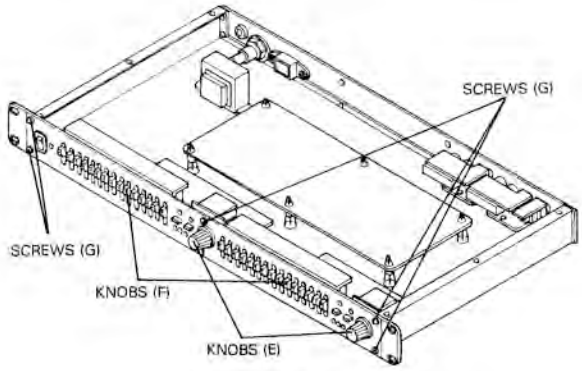


Fig. 2

3. Removal of each P. C. B.

(a) Removal of Main PCB. (Fig.3)
Press 6 spacer supports (J).
(b) Removal of Control PCB. (Fig.3)
Remove 6 screws (K).
(c) Removal of EQ VR PCB. (Fig.3)
Remove 4 screws (L).
(d) Removal of Transformer. (Fig.3)
Remove 2 screws (M).

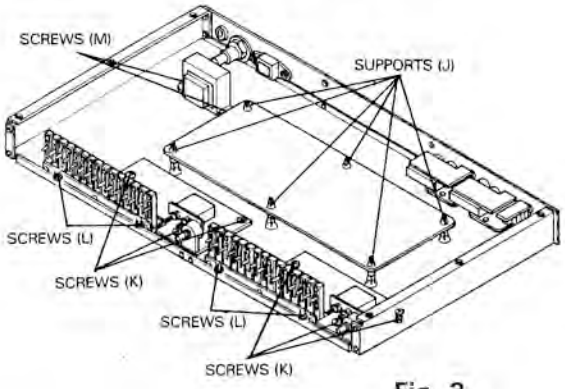


Fig. 3

4. Removal of Rear Panel and Others

(a) Removal of REC PCB. (Fig.4)
Remove 1 screw(N).
(b) Removal of IN/OUT Jack PCB. (Fig.4)
Remove 2 screws (O).
Remove 2 screws (P).
(c) Removal of Slide Switch (Fig.4)
Remove 2 screws (Q).
(d) Removal of Rear Panel (Fig.4)
Remove 4 screws (R).

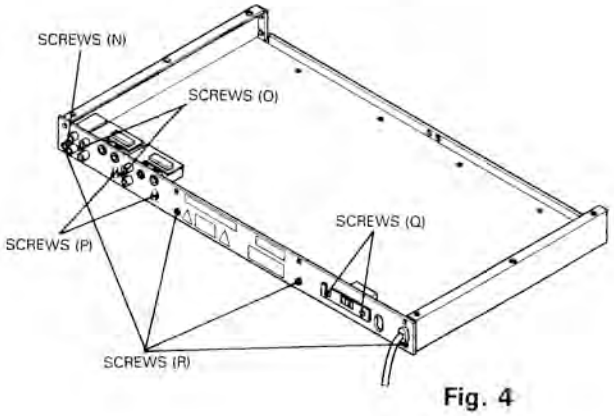
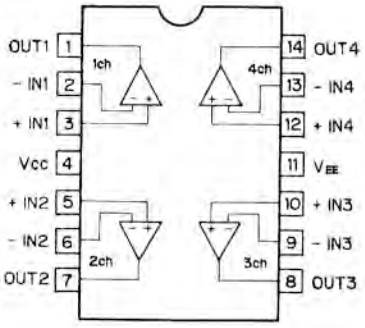
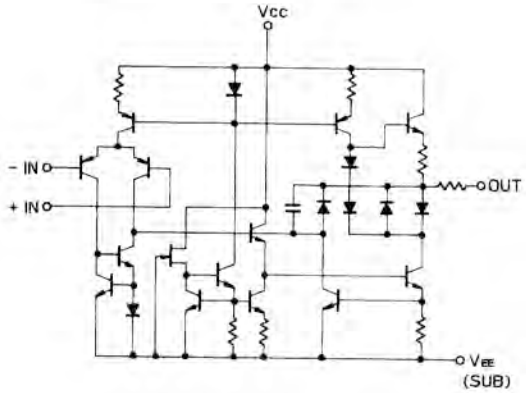


Fig. 4

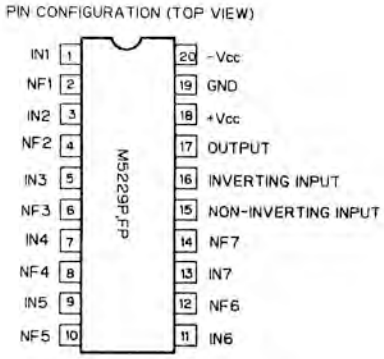
INTERNAL DIAGRAMS AND PINOUT OF EQUIVALENT CIRCUITS

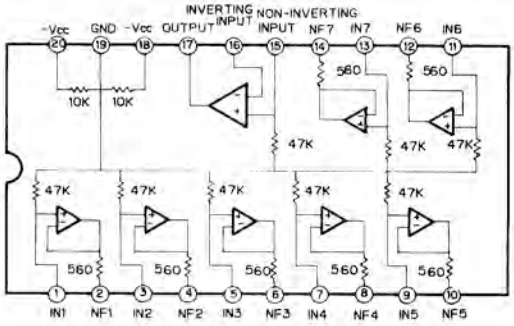
BA14741



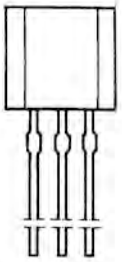


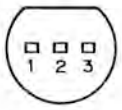
M5229P





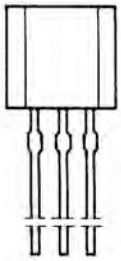
2SC945

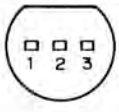




1. EMITTER
2. COLLECTOR
3. BASE

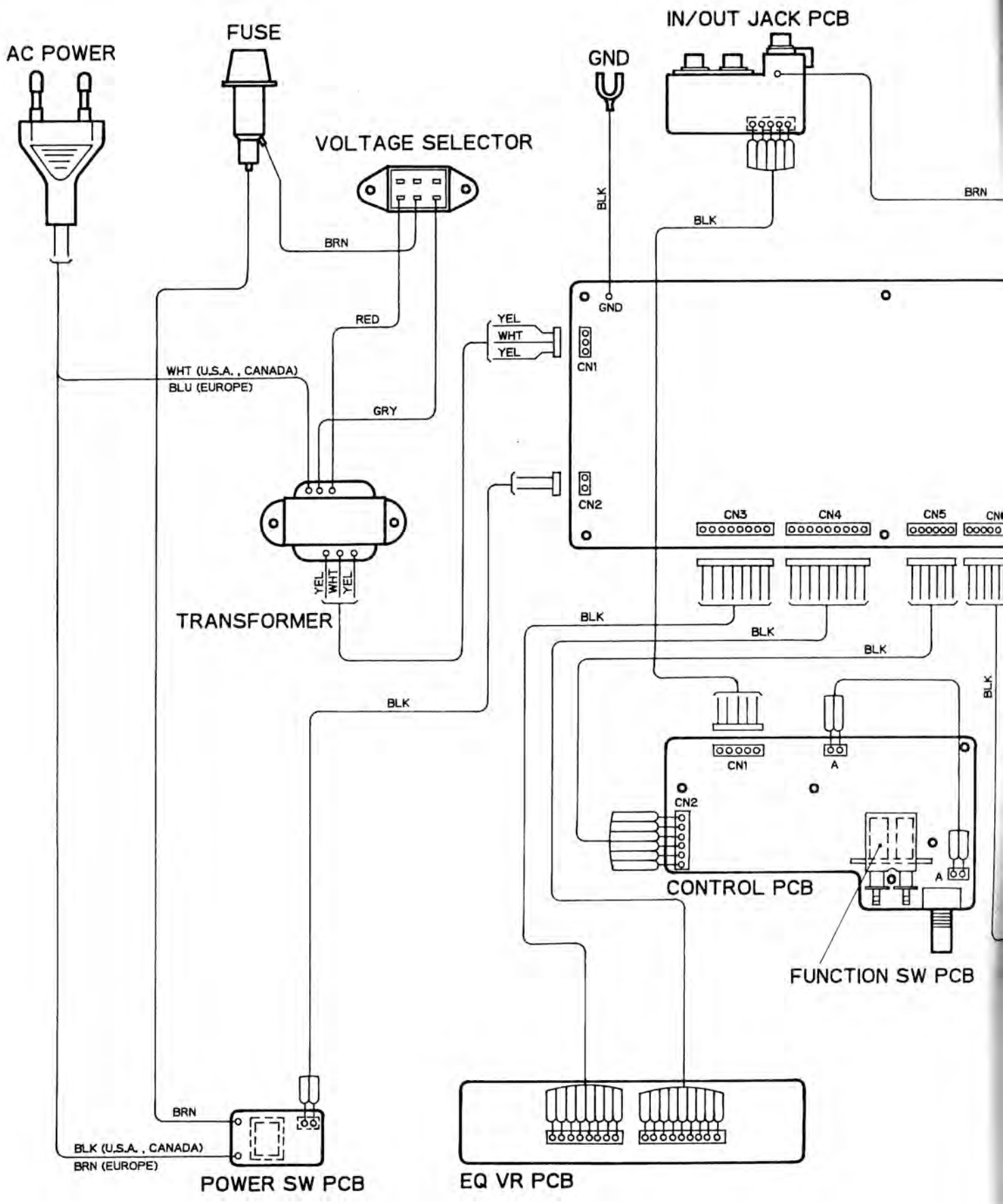
2SC2878

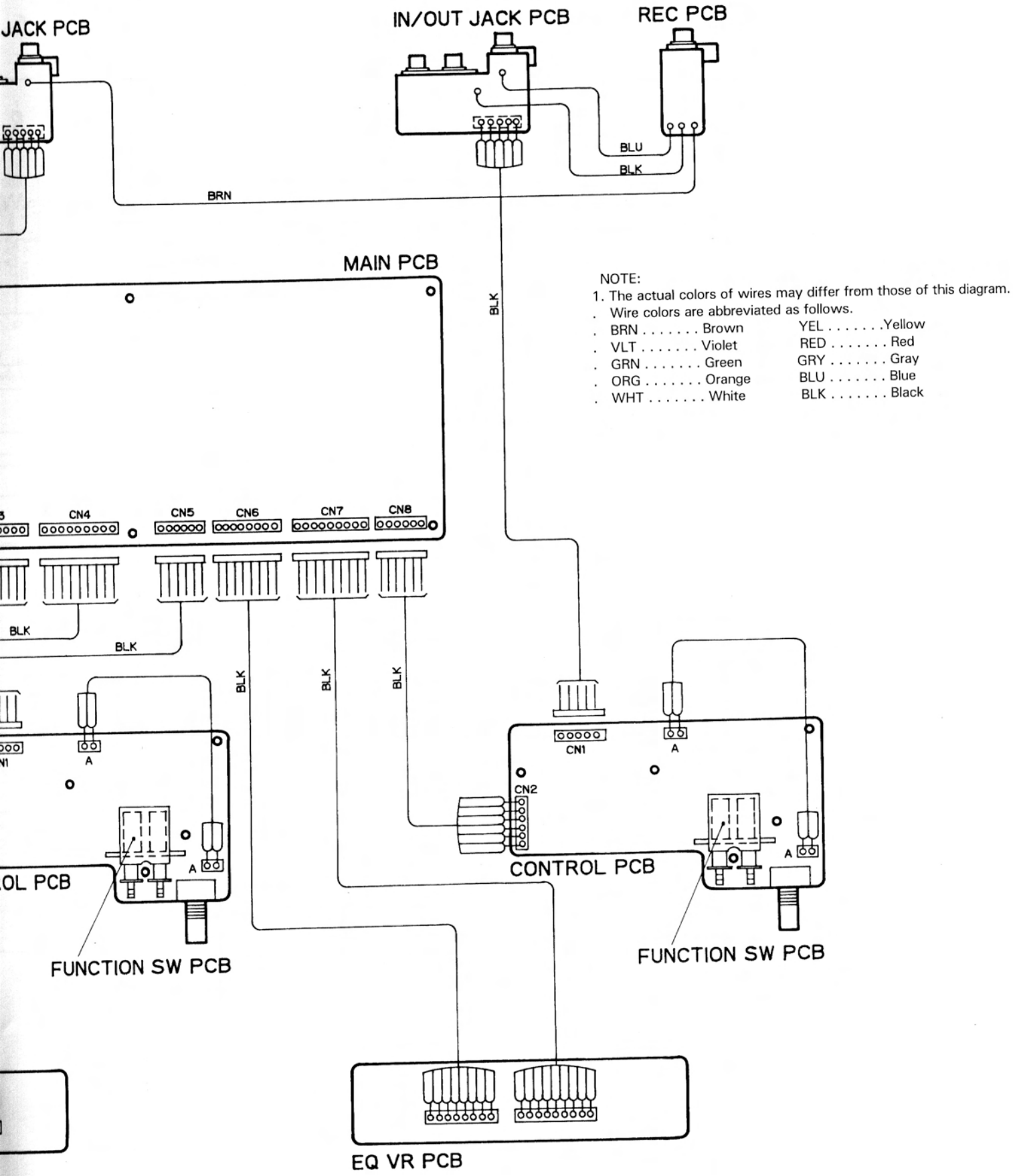




1. EMITTER
2. COLLECTOR
3. BASE

WIRING DIAGRAM



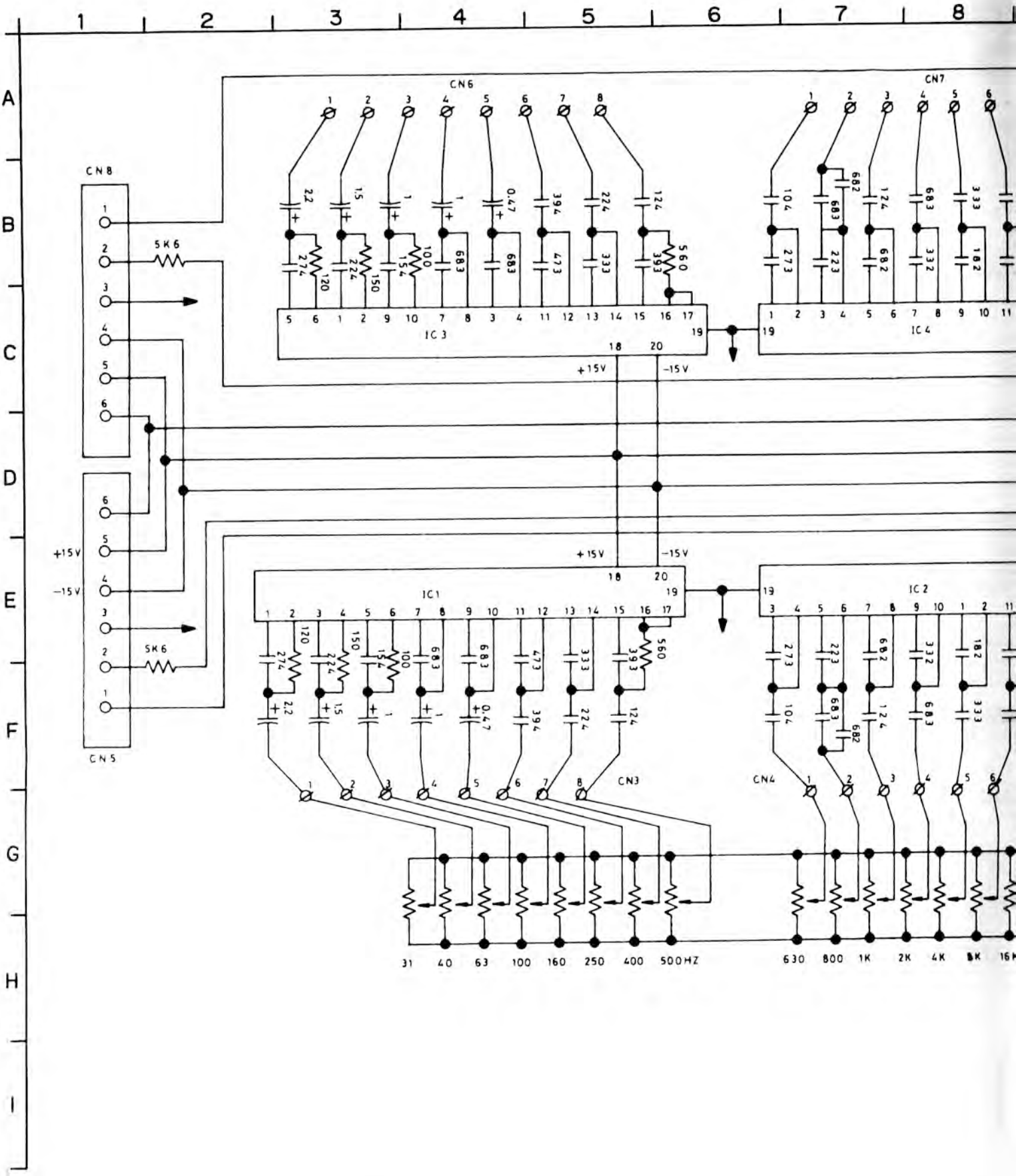


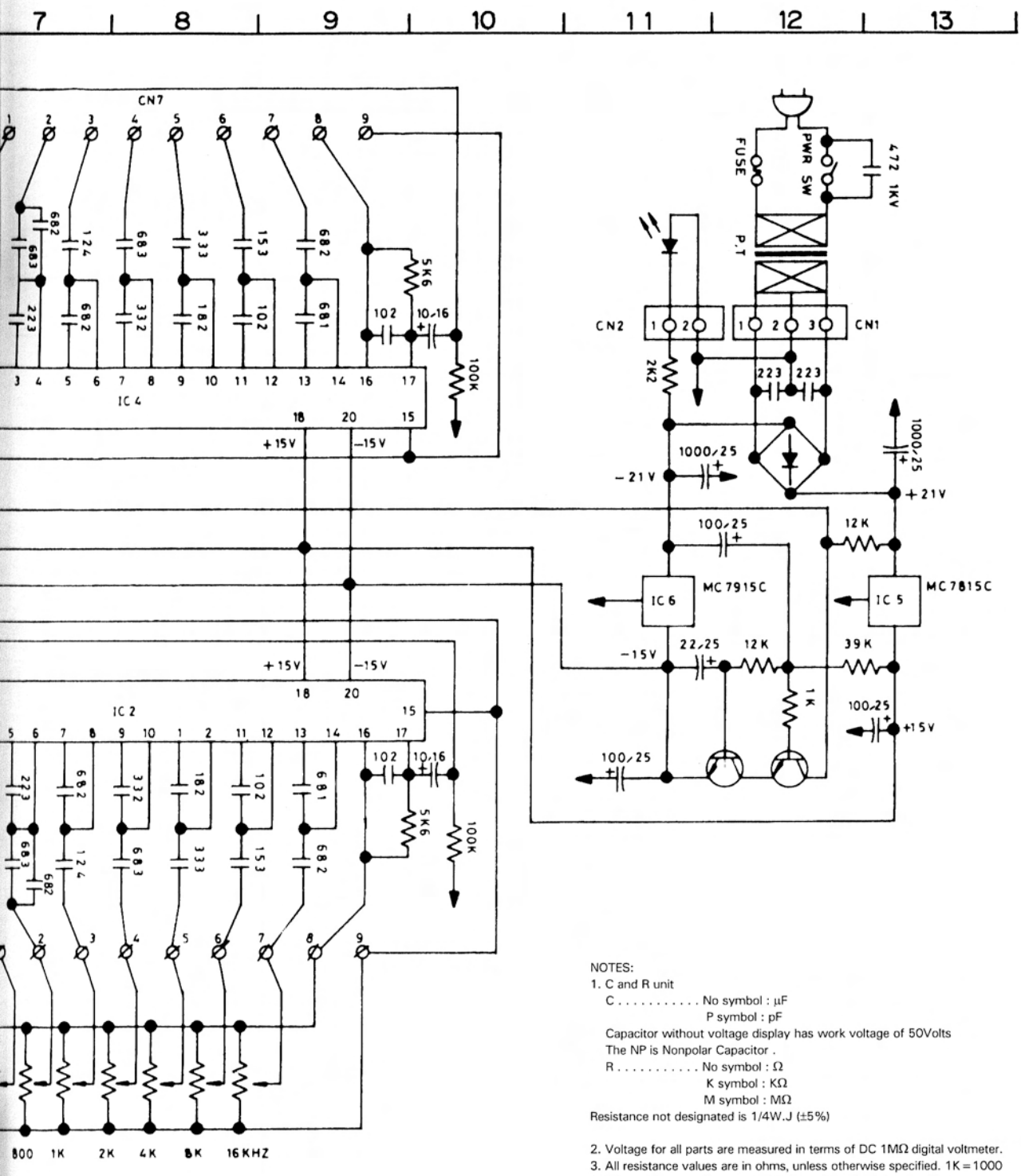
NOTE:

1. The actual colors of wires may differ from those of this diagram.
   . Wire colors are abbreviated as follows.

. BRN . . . . . Brown	YEL . . . . . .Yellow
. VLT . . . . . Violet	RED . . . . . Red
. GRN . . . . . Green	GRY . . . . . Gray
. ORG . . . . . Orange	BLU . . . . . Blue
. WHT . . . . . White	BLK . . . . . Black

SCHEMATIC DIAGRAM

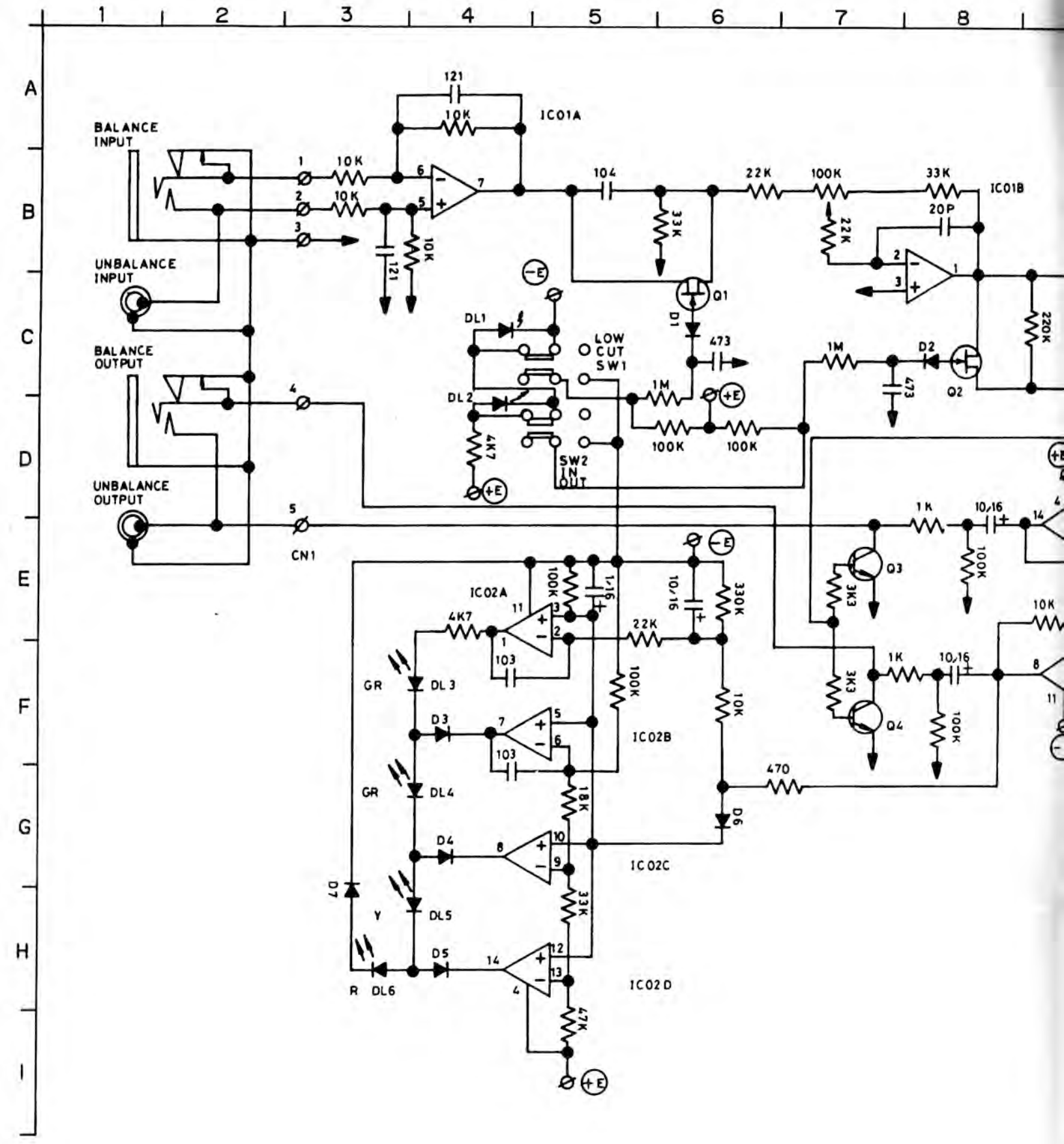


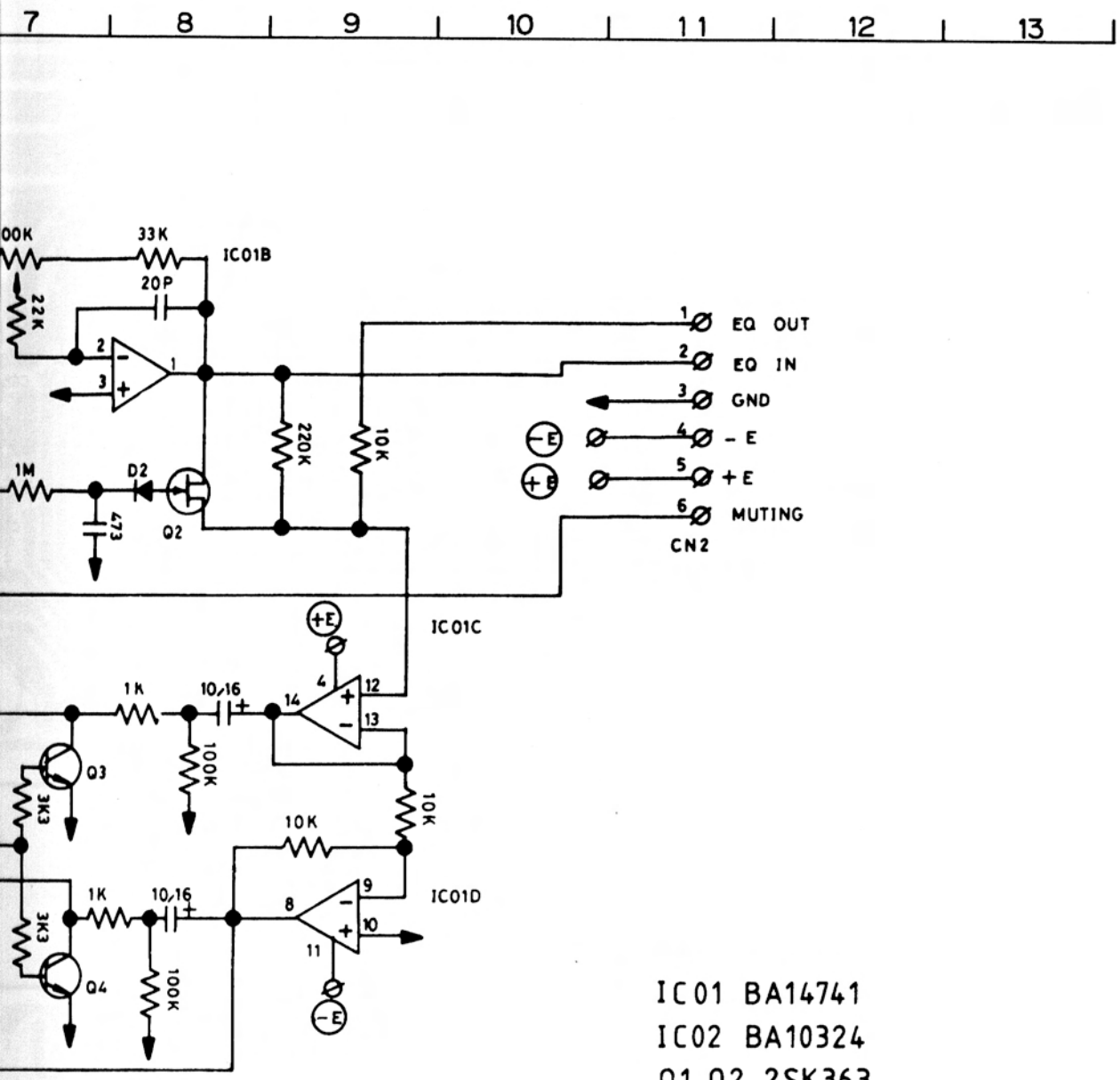


NOTES:

1. C and R unit
   C . . . . . No symbol : μF
   P symbol : pF
   Capacitor without voltage display has work voltage of 50Volts
   The NP is Nonpolar Capacitor .
   R . . . . . No symbol : Ω
   K symbol : KΩ
   M symbol : MΩ
   Resistance not designated is 1/4W.J (±5%)

2. Voltage for all parts are measured in terms of DC 1MΩ digital voltmeter.
3. All resistance values are in ohms, unless otherwise specified. 1K = 1000
4. All capacitance values are in farads, unless otherwise specified.
   $\mu = 10^{-6}$ $P = 10^{-12}$


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
BALANCE INPUT
UNBALANCE INPUT
BALANCE OUTPUT
UNBALANCE OUTPUT
CN1
IC01A
IC01B
IC02A
IC02B
IC02C
IC02D
Q1
Q2
Q3
Q4
D1
D2
D3
D4
D5
D6
D7
DL1
DL2
DL3
DL4
DL5
DL6
LOW CUT SW1
SW2 IN OUT
121
10K
104
22K
100K
33K
20P
220K
1M
473
4K7
100K
1K
10/16
330K
103
18K
47K
470
3K3
GR
Y
R
-E
+E



IC01 BA14741

IC02 BA10324

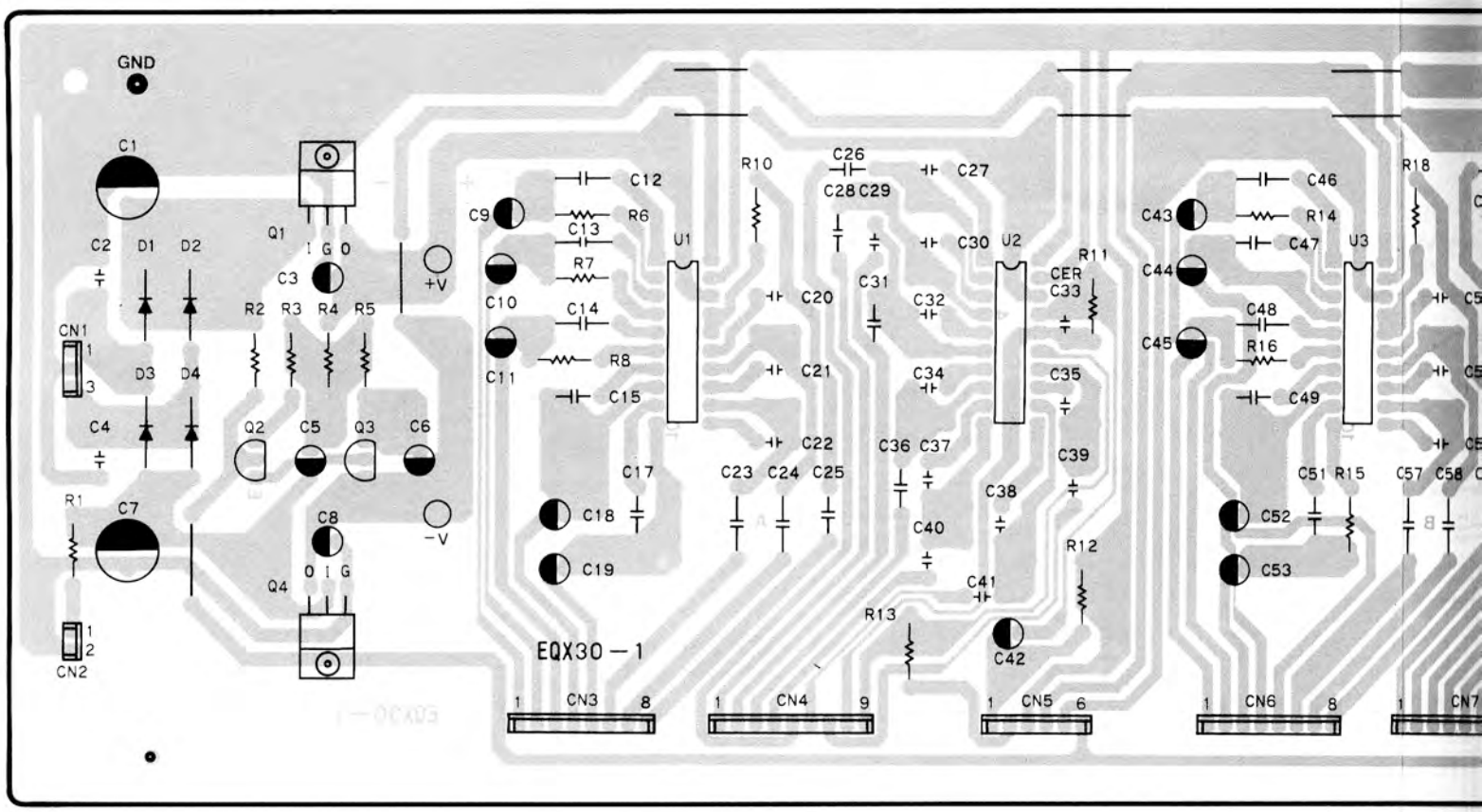
Q1,Q2 2SK363

Q3,Q4 2SC2878

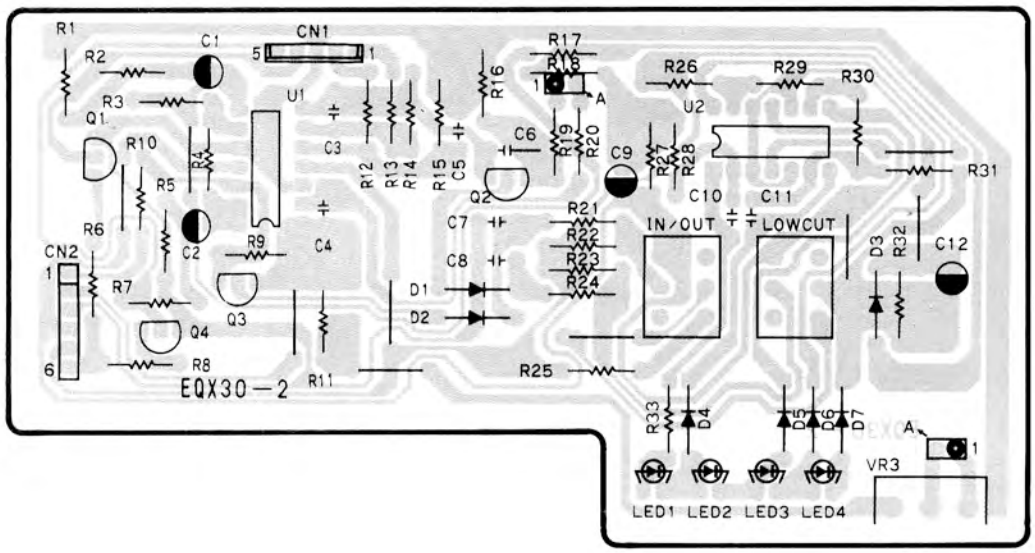
D1~D7 1N4148

PRINTED CIRCUIT BOARDS

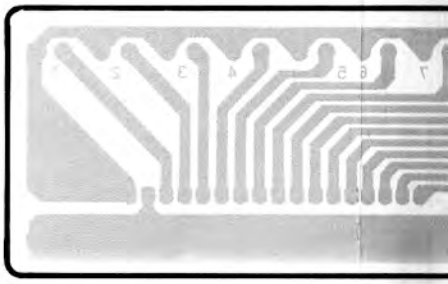
MIAN PCB

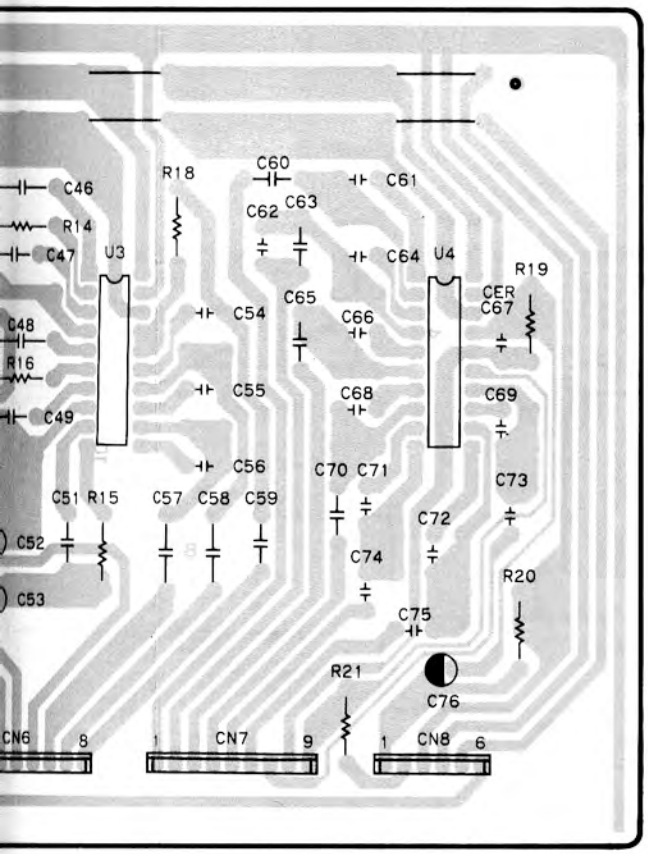


CONTROL PCB

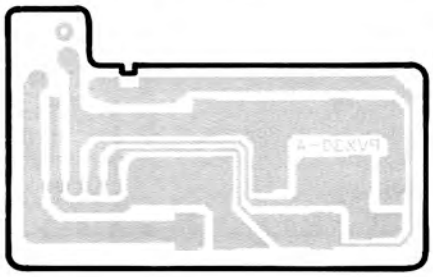


EQ VR PCB

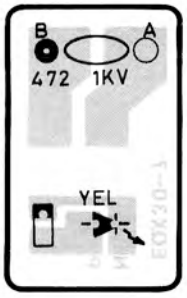




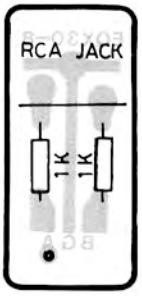
IN/OUT JACK PCB

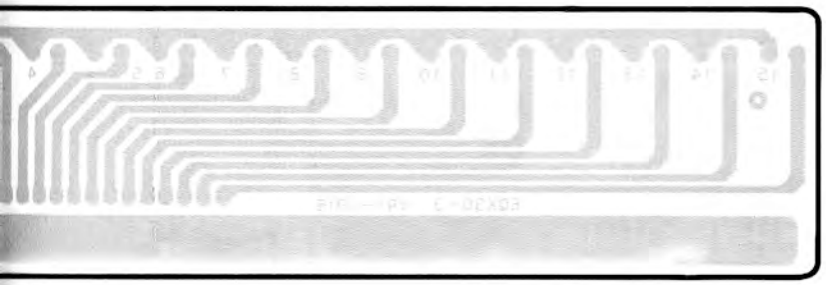


POWER SW PCB

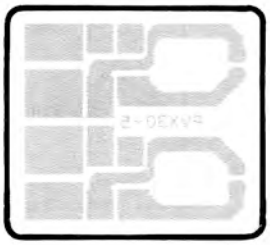


REC PCB

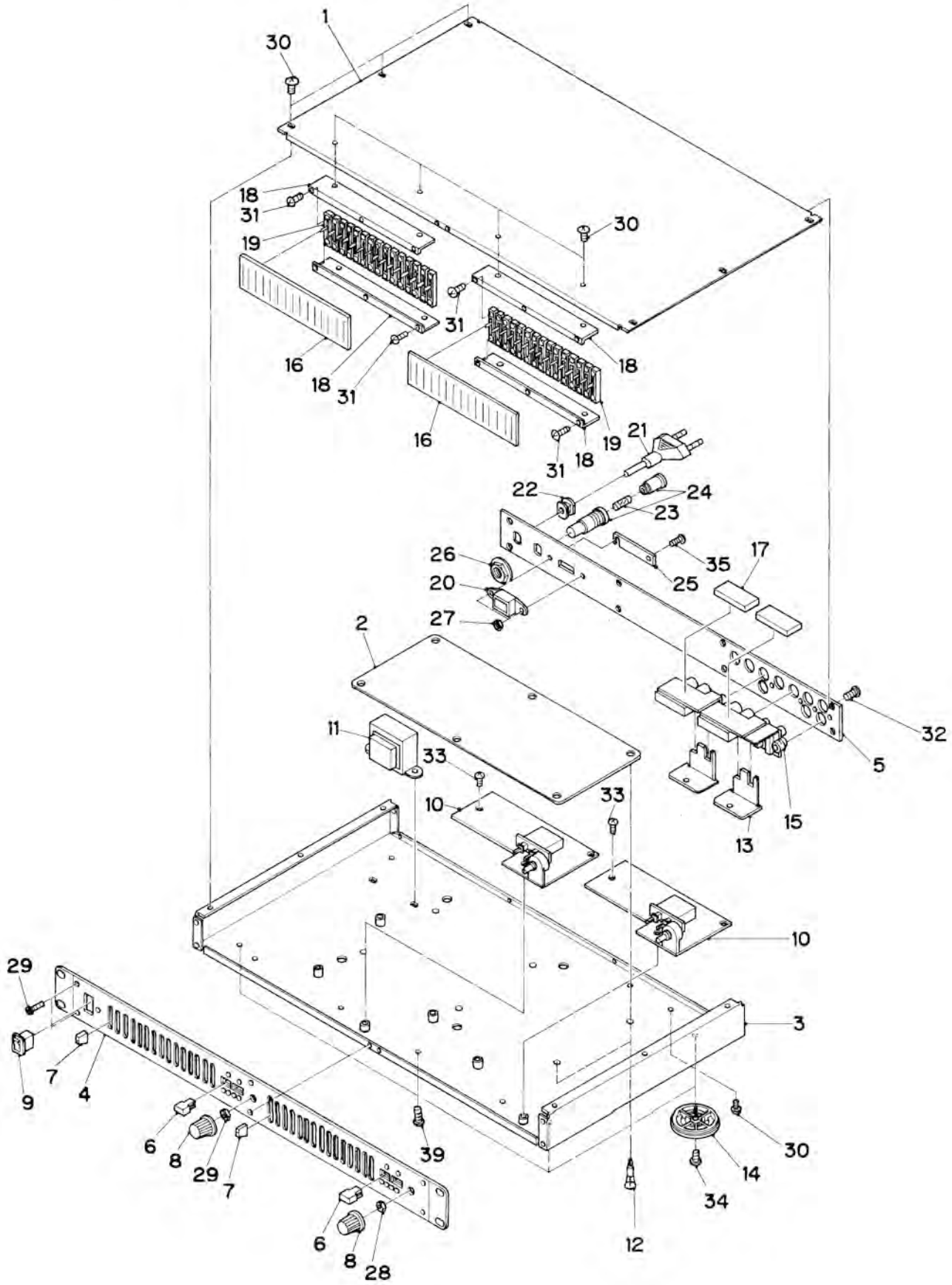




FUNCTION SW PCB



EXPLOED VIEW OF CABINET



CABINET PARTS LIST

Symbol No.	Parts No.	Description
1	021-124	TOP COVER
2	162-651	MAIN PCB
3	021-207	BOTTOM COVER
4	002-088	FRONT PANEL
5	021-816	REAR PANEL
6	002-536	KNOB PUSH
7	002-705	SLIDE KNOB
8	003-105	KNOB ROTARY
9	083-070	POWER SWITCH
10	162-652	CONTROL PCB
11	059-117	POWER TRANSFORMER
12	047-462	SPACER SUPPORTS
13	022-309	JACK BRACKET
14	049-192	FOOT RUBBER
15	162-658	REC PCB
16	003-559	VR DUST PROOF
17	003-557	EVA SPACER(10X30X4t)
18	022-308	VR BRACKET
19	162-653	EQ VR PCB
20	081-023	SLIDE SWITCH
21	093-356	AC CORD SVT(US)
21	093-255	AC CORD 220V(VDE)
21	093-361	AC CORD BS1
22	049-194	AC BUSHING (US)
22	049-162	AC BUSHING (EU)
23	100-050	FUSE 0.5A AC250V(UL)
23	100-060	FUSE 0.25A AC250V(VDE)
24	047-528	FUSE HOUDER MARUSHIN
25	022-305	SWITCH PROTECT PLATE
26		NUT
27		NUT
28		NUT
29	110-158	SCREW 3X8 DT
30	110-111A	SCREW 3X6(AB)
31	102-004	SCREW 2X3(B)
32	110-153A	SCREW 3X8(B) DT
33	107-004	SCREW 3X4(B)
34	110-150A	SCREW 3X8(AB)
35	102-067	SCREW 3X8(B)

PARTS LIST

Symbol No.	Parts No.	Description
		Diodes
D1	079-001	RECTIFIER DIODE 1N4001
D2	079-001	RECTIFIER DIODE 1N4001
D3	079-001	RECTIFIER DIODE 1N4001
D4	079-001	RECTIFIER DIODE 1N4001
D1	079-003	SILICON DIODE 1N4148
D2	079-003	SILICON DIODE 1N4148
D3	079-003	SILICON DIODE 1N4148
D4	079-003	SILICON DIODE 1N4148
D5	079-003	SILICON DIODE 1N4148
D6	079-003	SILICON DIODE 1N4148
D7	079-003	SILICON DIODE 1N4148
DL1	080-003	LIGHT EMITTING DIODE RED
DL2	080-003	LIGHT EMITTING DIODE RED
DL3	080-003	LIGHT EMITTING DIODE RED
DL4	080-063	LIGHT EMITTING DIODE GREEN
DL5	080-062	LIGHT EMITTING DIODE YELLOW
DL6	080-003	LIGHT EMITTING DIODE RED
D	080-062	LIGHT EMITTING DIODE YELLOW
		ICs
IC1	074-115	IC M5229P
IC2	074-115	IC M5229P
IC3	074-115	IC M5229P
IC4	074-115	IC M5229P
IC5	074-088	IC M7815P
IC6	074-089	IC M7915P
IC01	074-039	IC BA14741
IC02	074-011	IC BA10324
		Transistor
Q2	076-002	TRANSISTOR 2SC945
Q3	076-002	TRANSISTOR 2SC945
Q1	076-096	FET 2SK 363GR
Q2	076-096	FET 2SK 363GR
Q3	076-095	TRANSISTOR 2SC2878
Q4	076-095	TRANSISTOR 2SC2878
		Electrical Parts
SW	081-023	SLIDE SWITCH 2S6P
SW	083-070	POWER SWITCH UL
SW	083-071	2KEY 2 POLE PUSH SW (EQX30-5)
VR	072-082	SLIDE VR 100KW (EQX30-3)
VR	071-090	ROTARY VR 100KW (EQX30-2)
CN1	092-037	3P CONNECTOR BASE JST
CN2	092-022	2P CONNECTOR BASE JST
CN3	092-036	8P CONNECTOR BASE JST

PARTS LIST

CN4	092-035	9P CONNECTOR BASE JST
CN5	092-024	6P CONNECTOR BASE JST
CN6	092-036	8P CONNECTOR BASE JST
CN7	092-035	9P CONNECTOR BASE JST
CN	092-033	5P CONNECTOR BASE JST
CN1	091-883	5P CONNECTOR &WIRE EHR-5
CN1	091-882	5P CONNECTOR &WIRE EHR-5
CN2	091-885	6P CONNECTOR &WIRE EHR-6
CN2	091-884	6P CONNECTOR &WIRE EHR-6
CN	091-886	8P CONNECTOR &WIRE EHR-8
CN	091-887	9P CONNECTOR &WIRE EHR-9
J	161-107	2P RCA JACK
		Packing
101	157-674	OWNER'S MANUAL
102	155-791	GIFT BOX
103	153-137	POLYFORM