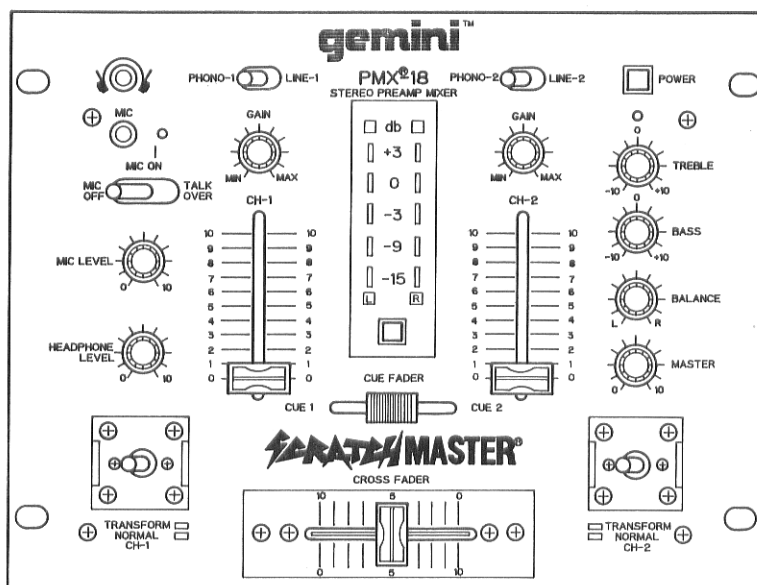


SERVICE MANUAL

STEREO PRE AMPLIFIER

MODEL PMX-16/PMX-18



CONTENTS

SPECIFICATIONS	2
CONNECTION AND OPERATING INSTRUCTIONS	3
DISASSEMBLY PROCEDURES	6
INTERNAL DIAGRAMS AND PINOUT OF INTEGRATED CIRCUITS	7
WIRING DIAGRAM	9
SCHEMATIC DIAGRAM	11
PRINTED CIRCUIT BOARDS	15
EXPLODED VIEW OF CABINET	17
CABINET PARTS LIST	19
PARTS LIST	19

GEMINI SOUND PRODUCTS CORP.

1100 MILIK STREET CARTERET, NEW JERSEY 07008 U.S.A.

TEL: 908-969-9000 FAX: 908-969-9090

SPECIFICATIONS

PMX-16

INPUTS:

DJ Mic: 1.5mV 2Kohm unbalanced
Phono: 3mV 47Kohm
Line: 150mV 27Kohm

OUTPUTS:

Amp: 0dB 775mV 400 ohm
Max: 10V Peak to Peak
Rec: 225mV 5Kohm

GENERAL:

Bass: +/-12dB
Treble: +/-12dB
Frequency Response: 20Hz-20KHz +/- 2dB
Distortion: 0.02%
S/N Ratio: better than 80dB
Talkover Attenuation: -16dB
Headphone Impedance: 16ohm
Power Source: 115/230V 50/60Hz 15W
Dimensions: 254mmx92mmx71mm
10"x7 1/2"x3"

PMX-18

INPUTS:

DJ Mic: 1.5 mV 2Kohm unbalanced
Phono: 3mV 47Kohm
Line: 150mV 27Kohm

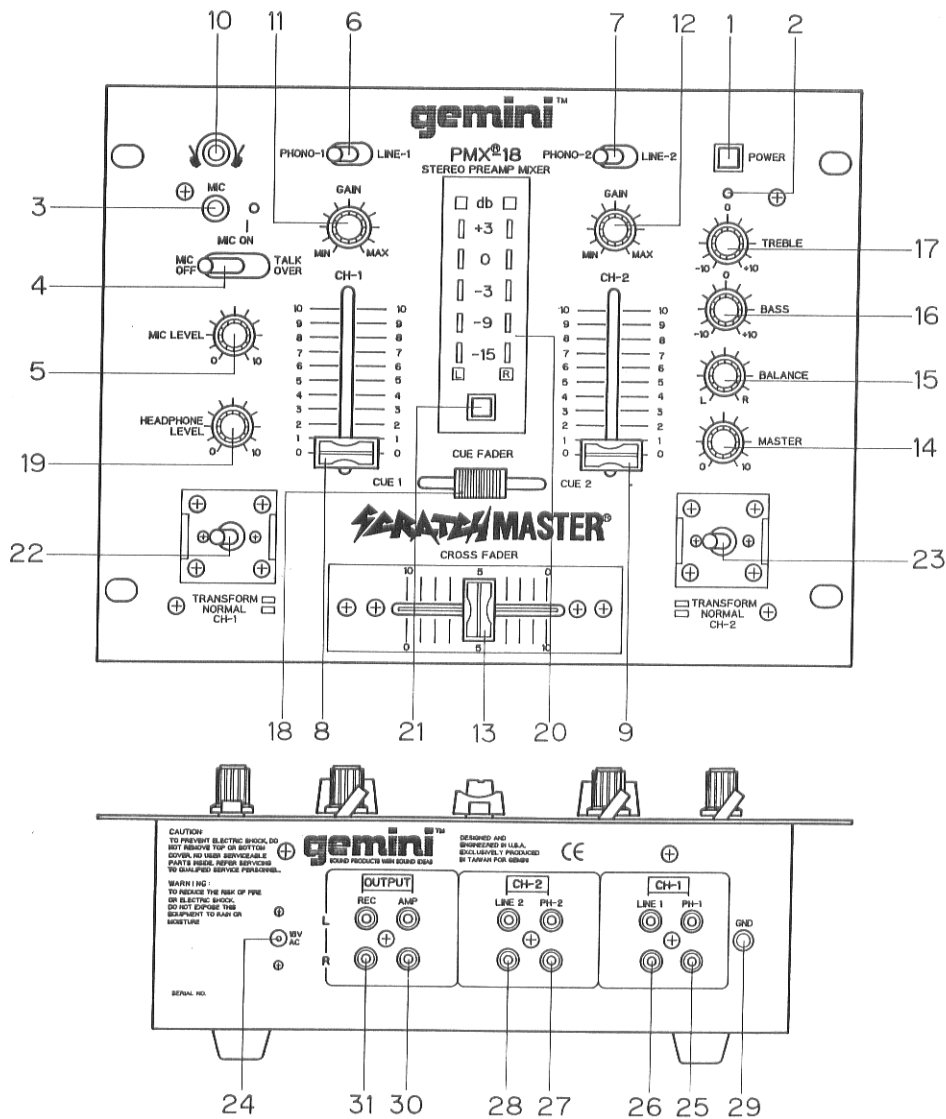
OUTPUTS:

Amp: 0dB 1V 400 ohm
Max: 20V Peak to Peak
Rec: 225mV 5Kohm

GENERAL:

Bass: +/-12dB
Treble: +/-12dB
Gain (Chnls 1-2): 0 to -20dB
Frequency Response: 20Hz-20KHz +/- 2dB
Distortion: 0.02%
S/N Ratio: better than 80dB
Talkover Attenuation: -16dB
Headphone Impedance: 16ohm
Power Source: 115/230V 50/60Hz 15W
Dimensions: 254mmx192mmx71mm
10"x7 1/2"x3"

CONNECTION AND OPERATING INSTRUCTIONS



INSTRUCTIONS FOR CONNECTIONS

1. Make sure that the POWER(I) switch is in the off position. The POWER LED(2) will be off.
2. This unit comes supplied with a 15 volt AC adaptor. Plug the male pin of the adaptor into the rear panel POWER JACK (24). Then plug the adaptor into a proper power source.
3. To connect the mixer to your amplifier, use the OUTPUT AMP (30) jacks on the rear panel.
4. If you desire to record your mix, connect the OUTPUT REC (31) jacks to the input of your reel to reel or cassette recorder. The record output level Will vary as you raise and lower the CHANNEL LEVEL (8,9) slides and/or the GAIN (11,12) controls. Tonal changes can be made by varying the BASS (16) and TREBLE (17) controls.
5. The unit is equipped with one microphone input. The MIC JACK (3) is a 1/4" (6.35 mm) and is located on the front panel.
6. On the rear panel are 2 stereo PHONO (25,27) inputs and 2 stereo LINE (26,28) inputs. The PHONO (25,27) inputs will accept turntable inputs only. A GROUND(29) screw for you to ground your turntables is located on the rear panel. The stereo LINE (26,28) inputs will accept any line level input like a CD player or a cassette player.
7. Headphones can be plugged into the front panel mounted HEADPHONE (10) jack.

OPERATING INSTRUCTIONS

1. POWER ON

Once you have made all the equipment connections to your mixer, press the POWER SWITCH (1). The power will turn on and the POWER LED(2) will glow RED.

2. CHANNEL 1

The GAIN (11) control and the CHANNEL LEVEL SLIDE (8) allow you to fully adjust the selected source. PHONO/LINE (6) switch allows you to select either line 1 or phono 1 to play on channel 1.

3. CHANNEL 2

The GAIN (12) control and the CHANNEL LEVEL SLIDE (9) allow you to fully adjust the selected source. PHONO/LINE (7) switch allows you to select either line 2 or phono 2 to play on channel 2.

4. CROSSFADER SECTION

The CROSSFADER (13) allows the mixing of one source into another. The left side of the CROSSFADER (13) is channel 1 and the right side is channel 2. The CROSSFADER (13) in your unit is REMOVABLE and if the need arises can be easily replaced. Crossfader units are available in two sizes. Part # RF-45 (which is identical to the crossfader supplied with the your unit) has a 45mm travel from side to side. Also available is part # RF-30 which has a 30 mm travel distance. Just purchase either of these crossfader units from your Gemini dealer

5. MICROPHONE SECTION

The MIC SWITCH (4) controls the microphone functions and the MIC LEVEL CONTROL (5) controls the microphone volume. The MIC

SWITCH (4) is a three position switch. When it is in the left position, the microphone is off, in the center position, the microphone is on, and in the right position, the microphone is on and talkover is activated. Talkover, when activated, will reduce the overall volume of the mix without effecting the microphone volume. You will find this feature very useful when you need to make announcements over the music.

6. OUTPUT CONTROL SECTION

The level of the AMP OUT (30) is controlled by the MASTER (14) control. The BALANCE (15) control will allow the Amp Out signal to be balanced between the left and right speakers. The BASS (16) and TREBLE (17) controls allow you to fine tune your output signal.

7. CUE SECTION

By connecting a set of headphones to the HEADPHONE(4) jack, you can monitor any or all of the channels. By sliding the CUE FADER (18) control to the left you will be able to monitor the channel 1 output. Sliding to the right will monitor the channel 2 output. The headphone volume can be raised or lowered by using the CUE LEVEL (19) control.

8. DISPLAY

The dual function DISPLAY (20) indicates either the MASTER (14) output left and right levels or the channel 1 and channel 2 levels as dictated by the GAIN (11,12) controls. You can choose the option you want by pressing the DISPLAY BUTTON (21).

9. TRANSFORMING SECTION (PMX-18)

A. Description

Most DJs use the Phono/Line switches on their mixer to do Transforming. By grasping the switch between two fingers, shaking back and forth would change the input from Phono to Line to Phono to Line, etc. This would result in a stuttering type effect. The problem with it is that the Phono/Line switches often break and repairing them is costly.

B. TRANSFORM SWITCHES

Your mixer is equipped with two removable Transforming Switches. These switches turn their channel from off to on to off, etc. This results in the same type stuttering effect. The TRANSFORM SWITCHES (22,23) have been positioned, by the factory, to move from side to side. By unscrewing the 4 screws from the TRANSFORM SWITCH (22,23) plate, you can turn the switch in 90 degree implements. This allows up/down, down/up, right/left or left/right positioning. TRANSFORM SWITCH (22) controls channel 1. TRANSFORM SWITCH (23) controls channel 2.

C. PROCEDURE

Set both CHANNEL LEVEL SLIDE (8,9) to your required levels. With the CROSSFADER (13) to the right (channel 2), moving TRANSFORM SWITCH (23) from white to orange to white will result in a stuttering effect. With the CROSSFADER (13) to the left, moving TRANSFORM SWITCH (22) will give the same results. You can vary the effect by flipping the switch faster or slower, longer or shorter.

D. ADDITIONAL EFFECTS

Set both CHANNEL LEVEL SLIDE (8,9) to your required levels. Place TRANSFORM SWITCH (22) in the orange position. Slide the CROSSFADER(13) from the right to a position approximately 1/3 of the way towards the left. (Channel 2 should still be playing through the speakers.) By moving TRANSFORM SWITCH (22) from orange to white to orange, you will turn channel 1 on and off (stuttering) while channel 2 continues to play to your audience.

E. REPLACEMENT

To replace a defective TRANSFORM SWITCH (22,23), remove the 4 screws from the plate and carefully lift up and unplug the cable. Plug the new switch into the cable and place it back in the mixer, turning it until the direction is proper. Screw the plate down with the 4 screws and you are ready to transform.

DISASSEMBLY PROCEDURES

1. Removal of Panel Control.

- (a) Remove 8 knobs(A). (Fig.1)
- (b) Remove 4 knobs(B). (Fig.1)
- (c) Remove 4 screws(C). (Fig.1)
- (d) Remove 2 screws(D). (Fig.1)

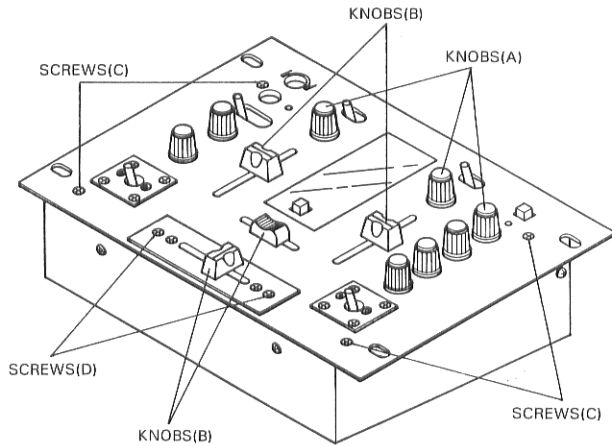


Fig. 1

3. Removal of Cover Bottom.

- (a) Remove 2 screws(I). (Fig.3)
- (b) Remove 2 screws(J). (Fig.3)

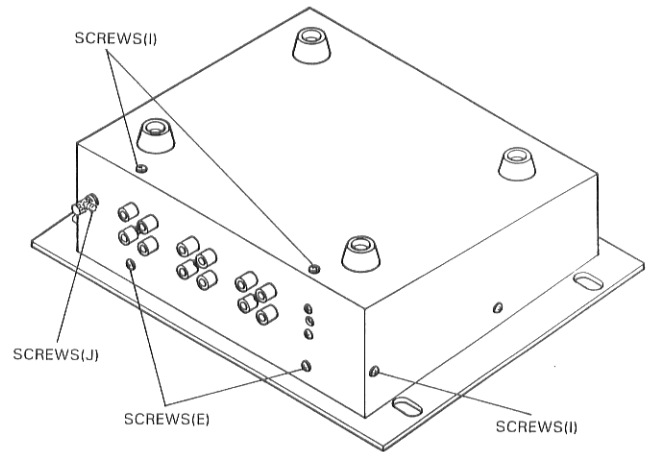


Fig. 3

2. Removal of Chassis and Main P.C.B.

- (a) Remove 6 screws(E). (Fig.2)(Fig.3)
- (b) Remove 8 nuts (F) (Fig.2)
- (c) Remove 12 screws (G). (Fig.2)
- (d) Remove 2 nuts(H). (Fig.2)

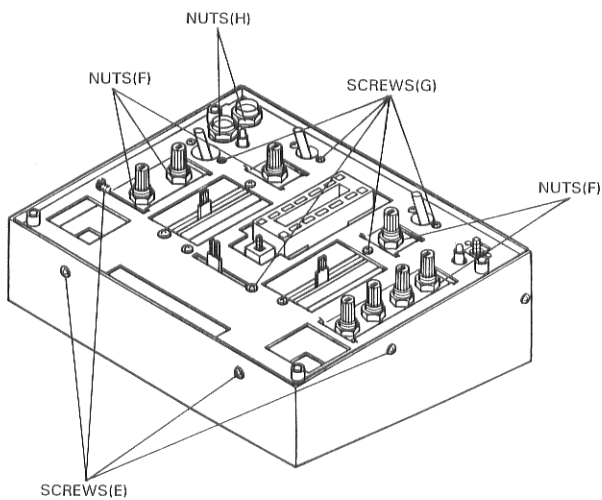


Fig. 2

4. Removal of IN/OUT P.C.B. and Power Switch.

- (a) Removal of IN/OUT P.C.B.
Remove 3 screws (K). (Fig.4)
- (b) Removal of Power Switch.
Remove 2 screws(L). (Fig.4)

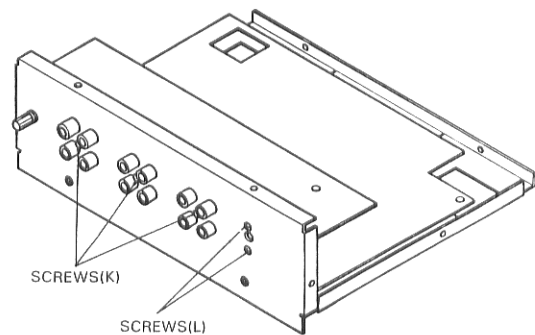
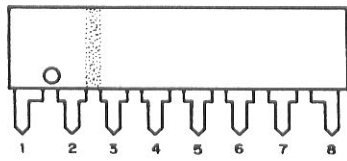


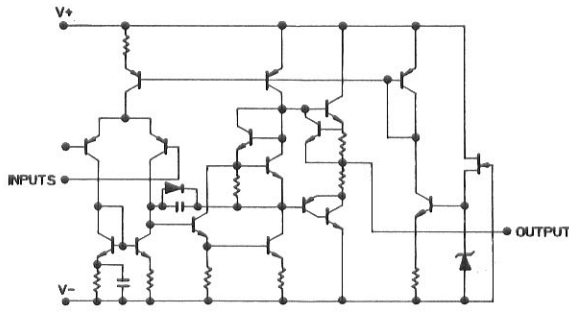
Fig. 4

INTERNAL DIAGRAMS AND PINOUT OF EQUIVALENT CIRCUITS

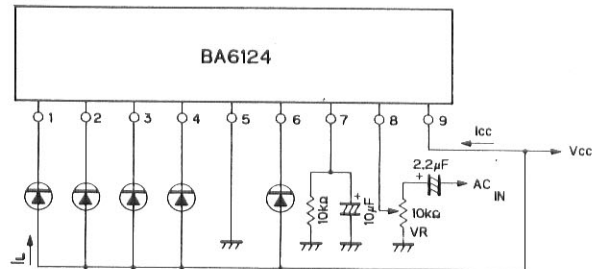
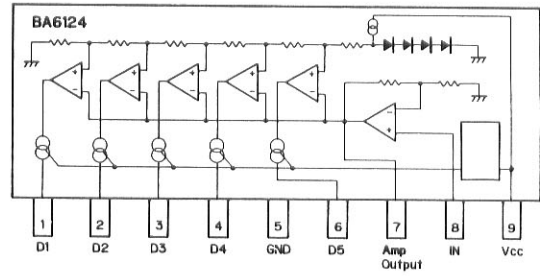
NJM4556L



- PIN FUNCTION**
 1. A OUTPUT
 2. A- INPUT
 3. A+ INPUT
 4. V-
 5. B+ INPUT
 6. B- INPUT
 7. B OUTPUT
 8. V+

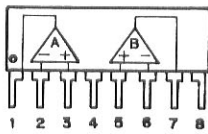


LB1403N

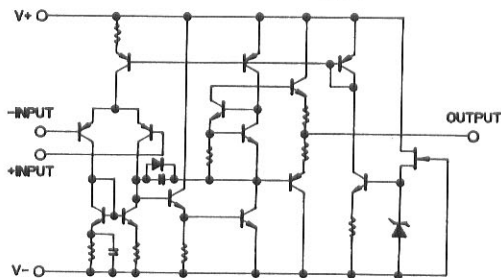


NJM2043

L-Type

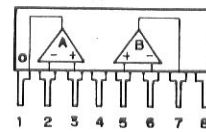


- PIN FUNCTION**
 1. A OUTPUT
 2. A- INPUT
 3. A+ INPUT
 4. V-
 5. B+ INPUT
 6. B- INPUT
 7. B OUTPUT
 8. V+

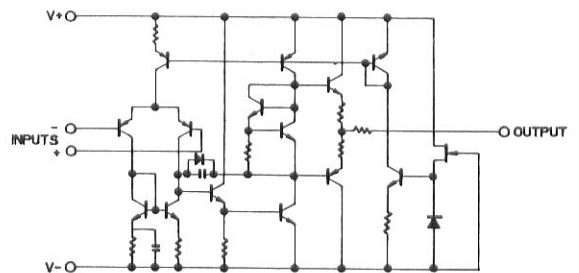


NJM4558L

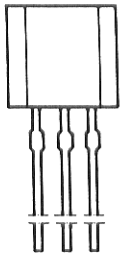
L-Type



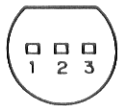
- PIN FUNCTION**
 1. A OUTPUT
 2. A- INPUT
 3. A+ INPUT
 4. V-
 5. B+ INPUT
 6. B- INPUT
 7. B OUTPUT
 8. V+



2SC2878



- 1. EMITTER
- 2. COLLECTOR
- 3. BASE



2SC1048
2SC1317



- 1. EMITTER
- 2. COLLECTOR
- 3. BASE



NJM78M00

(TO-220F)



- 1. GRD
- 2. OUT
- 3. IN

NJM79M00

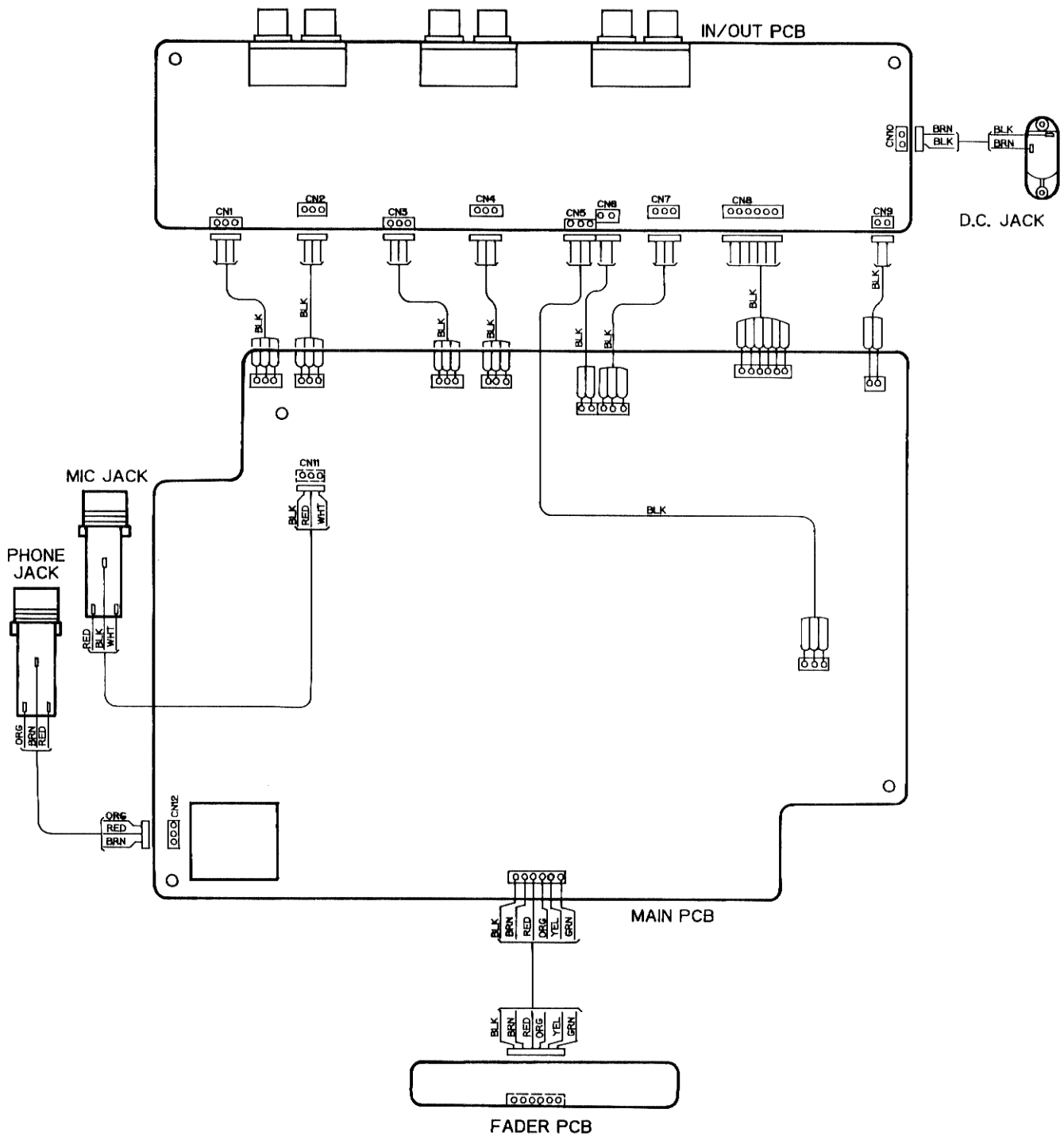
(TO-220F)



- 1. OUT
- 2. IN
- 3. COMMON

WIRING DIAGRAM

PMX-16



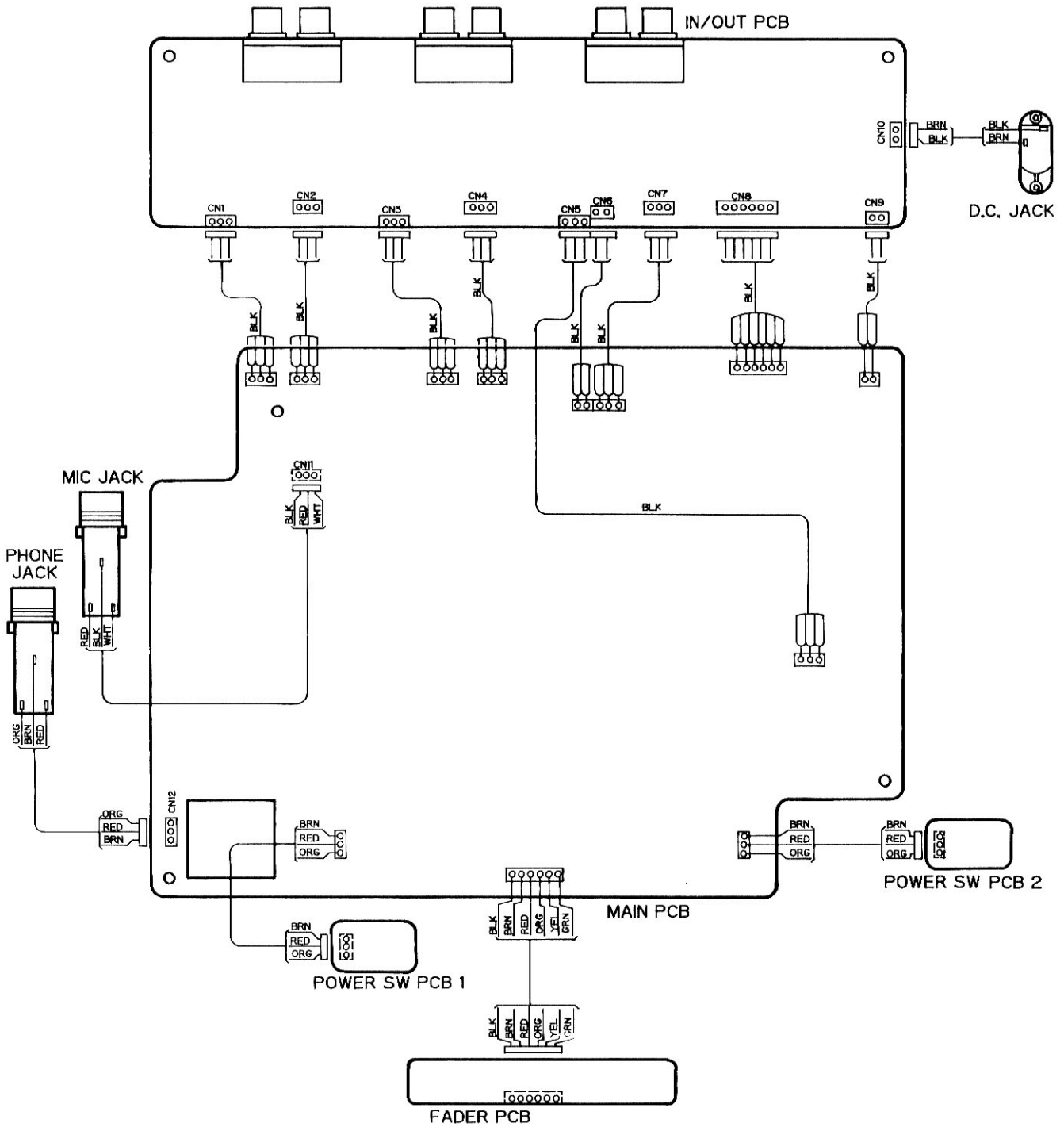
NOTE:

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 |

PMX-18



NOTE:

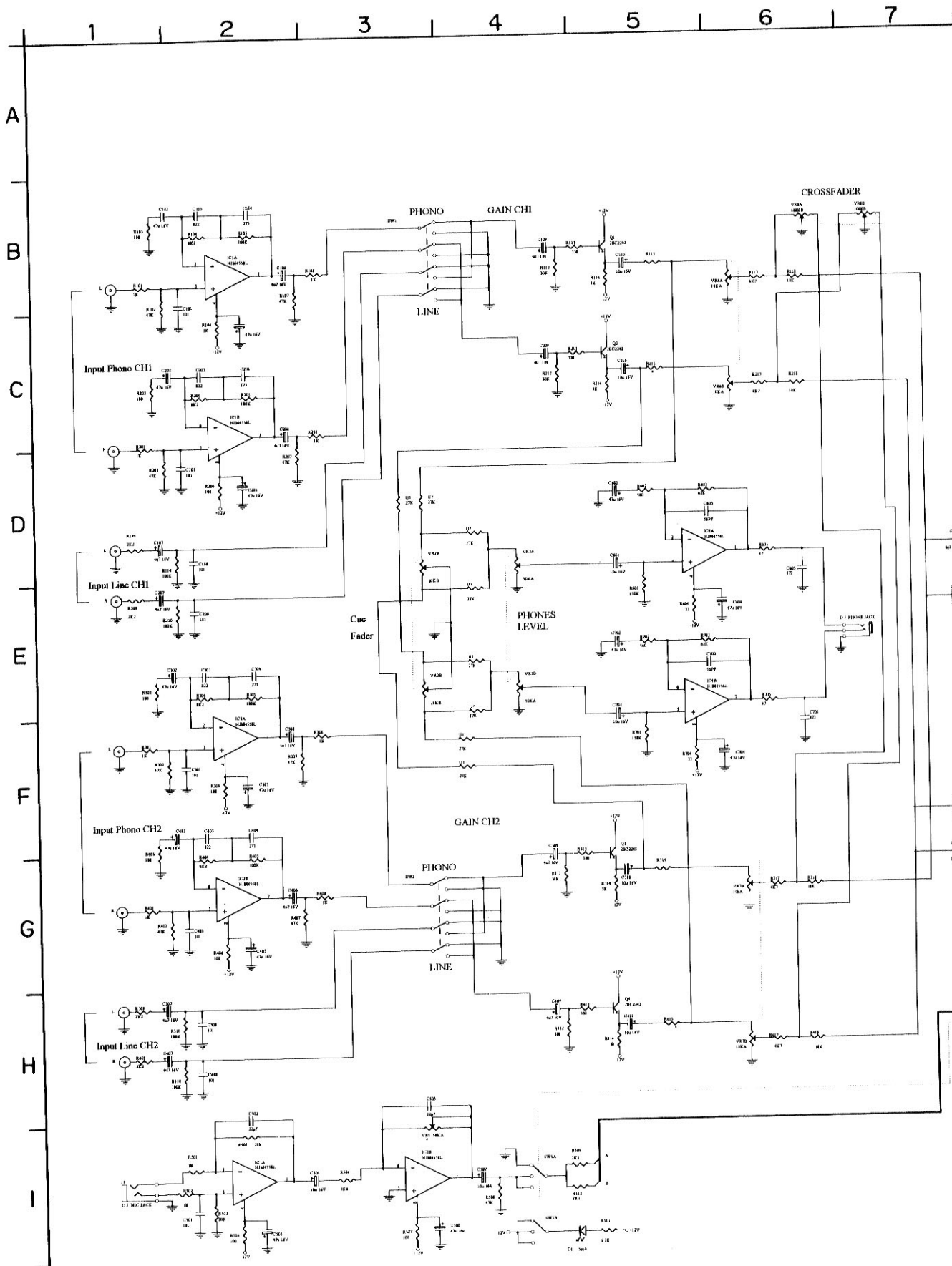
1. The actual colors of wires may differ from those of this diagram.

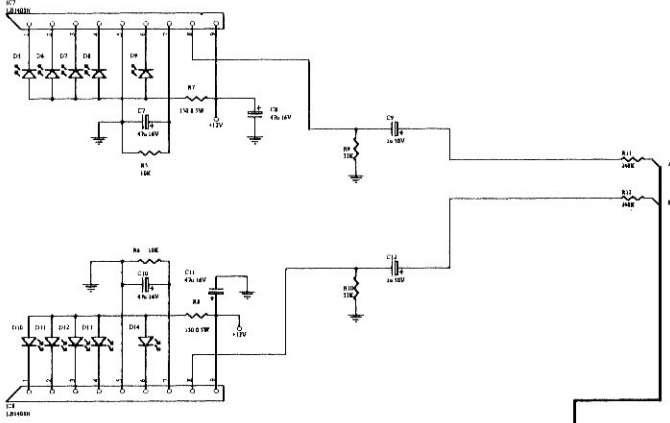
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SCHEMATIC DIAGRAM

PMX-16

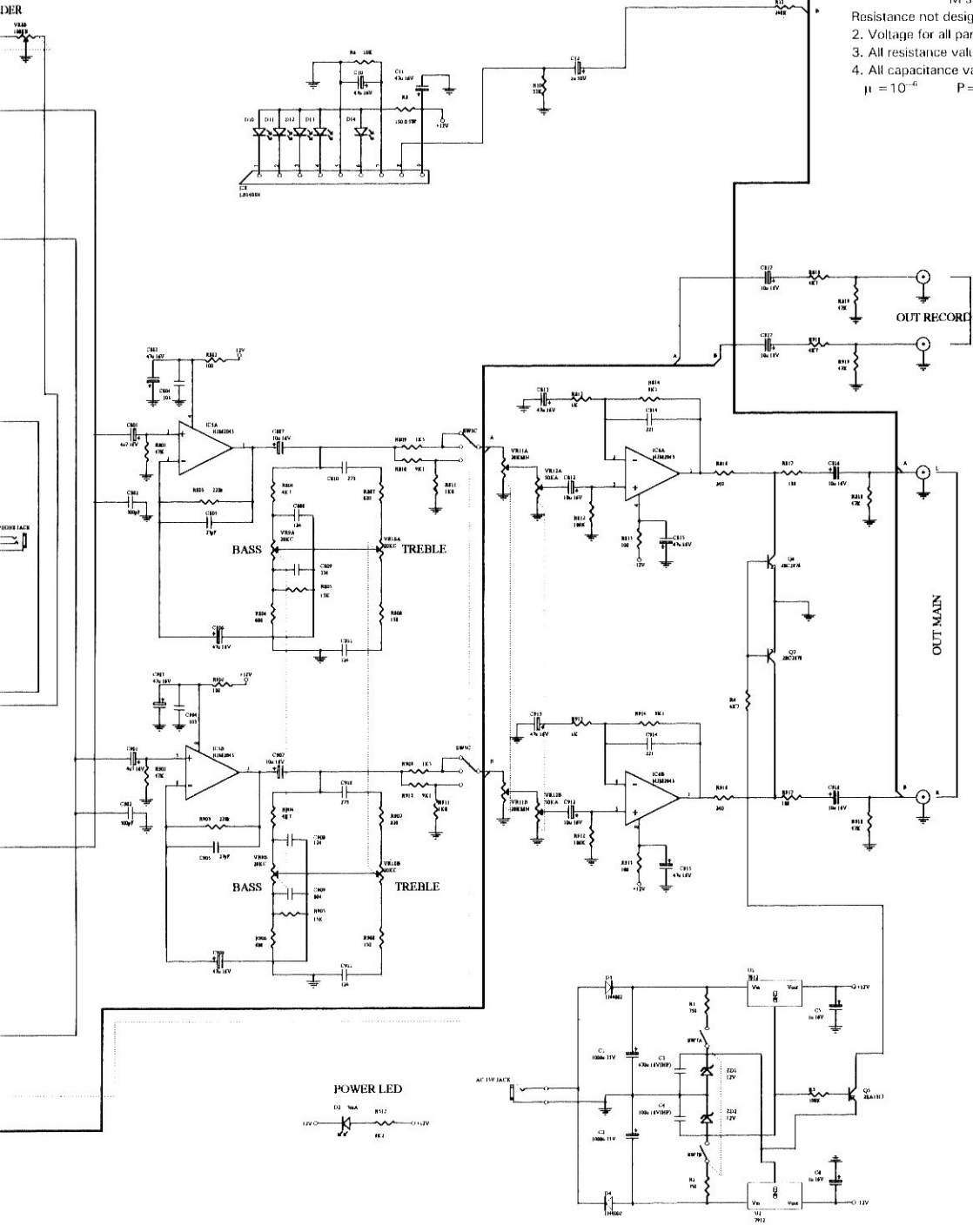


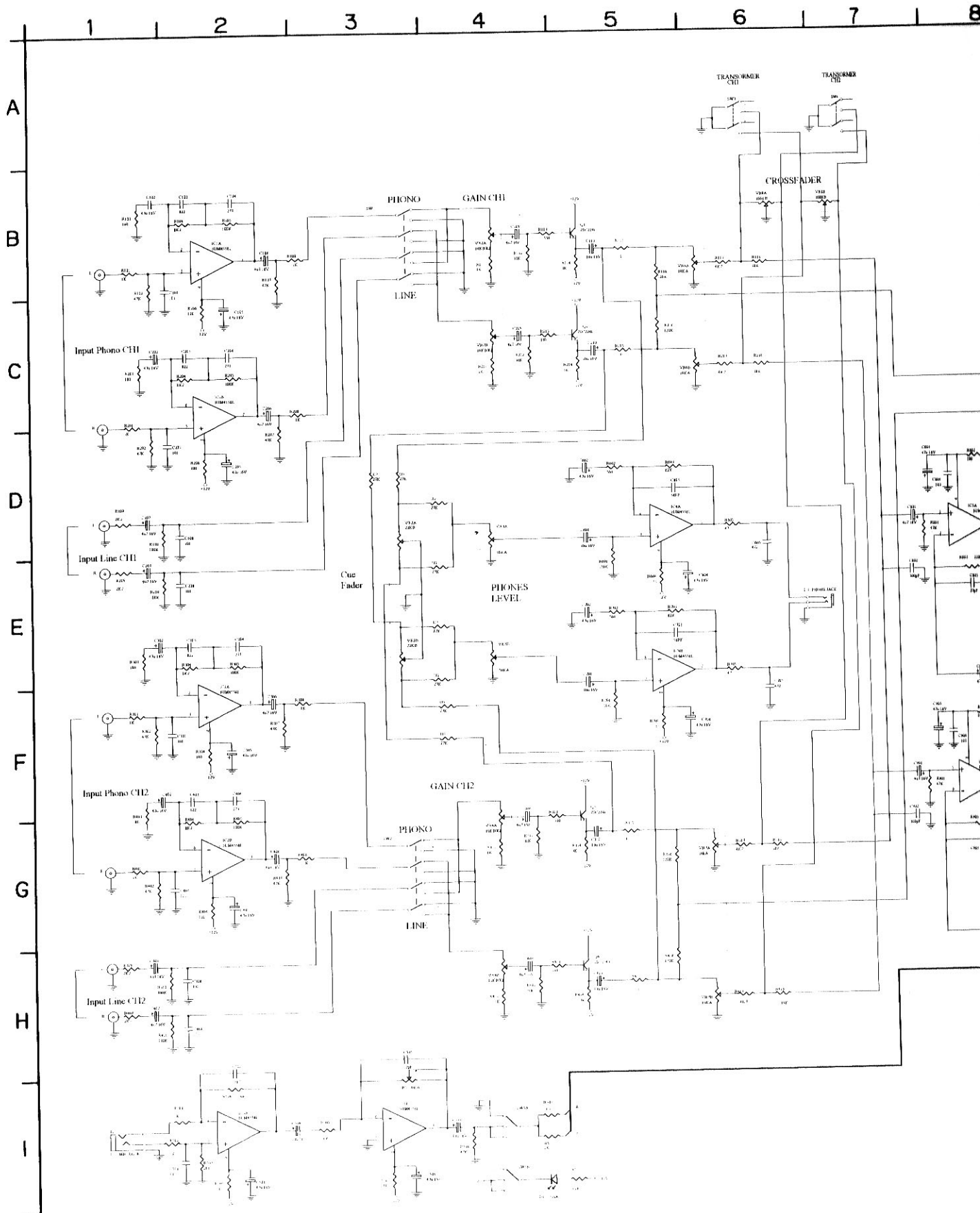


NOTES:
 1. C and R unit
 C No symbol : µF
 P symbol : pF
 Capacitor without voltage display has work voltage of 50Volts
 The NP is Nonpolar Capacitor .
 R No symbol : Ω
 K symbol : KΩ
 M symbol : MΩ
 Resistance not designated is 1/4W.J (+5%)
 2. Voltage for all parts are measured in terms of DC 1MΩ digital voltmeter.
 3. All resistance values are in ohms, unless otherwise specified. 1K=1000
 4. All capacitance values are in farads, unless otherwise specified.
 $\mu = 10^{-6}$ $P = 10^{-12}$

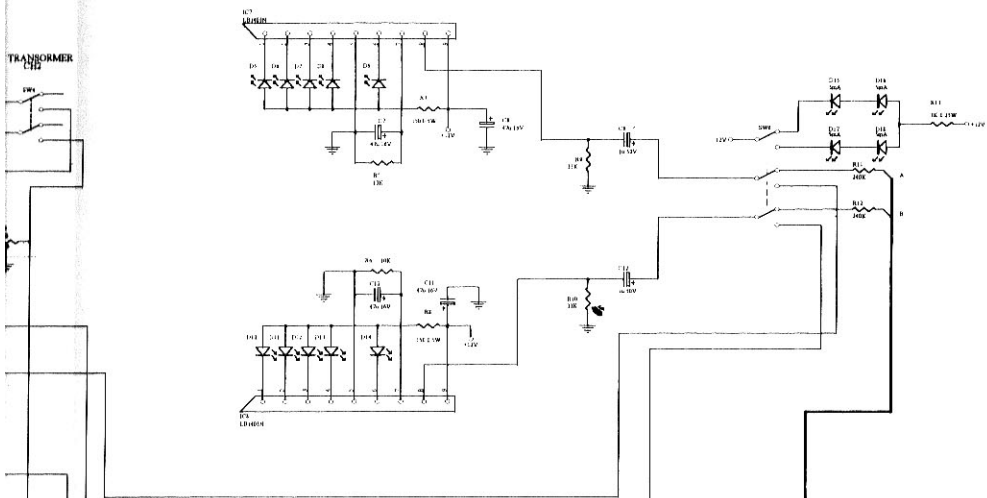
DER

HORN JACK

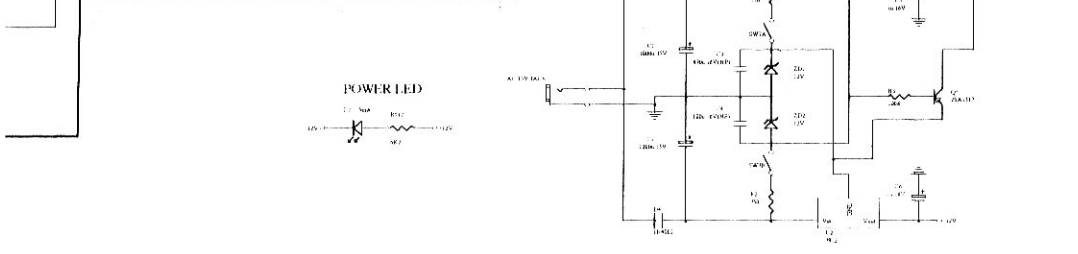
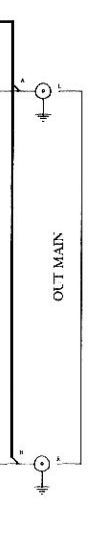
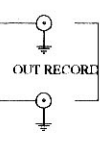
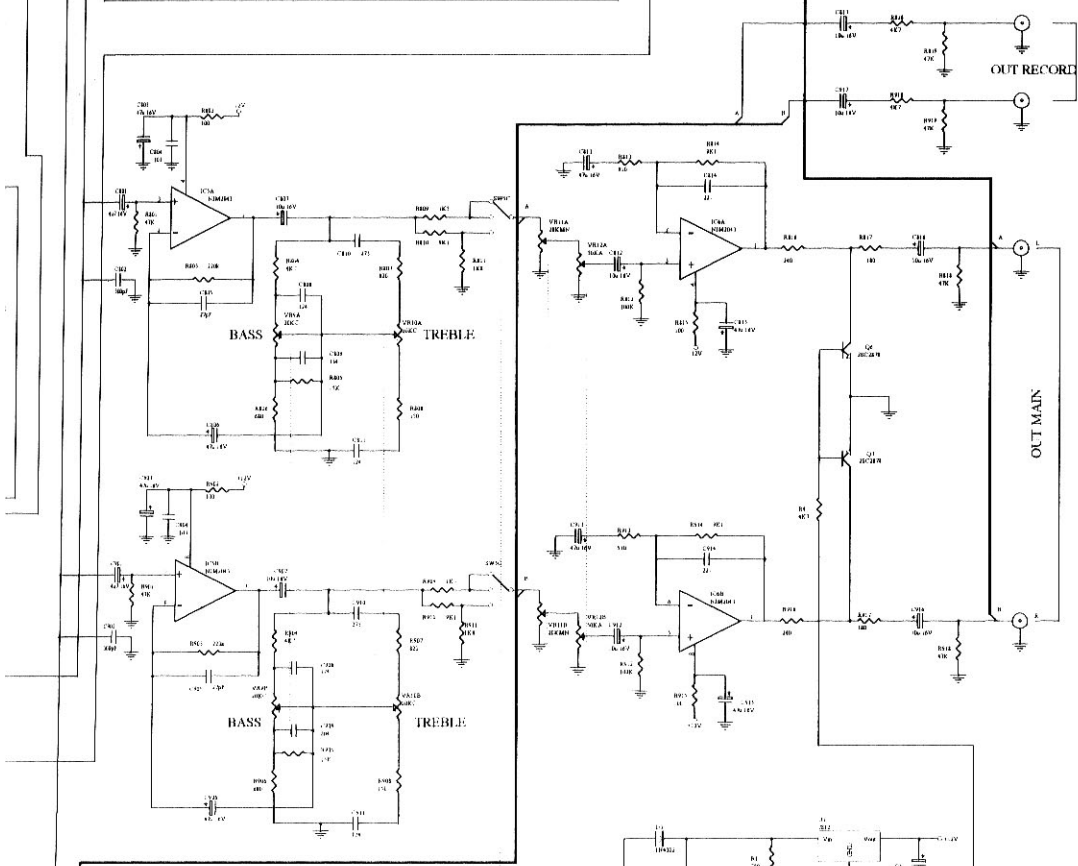




TRANSFORMER
L10

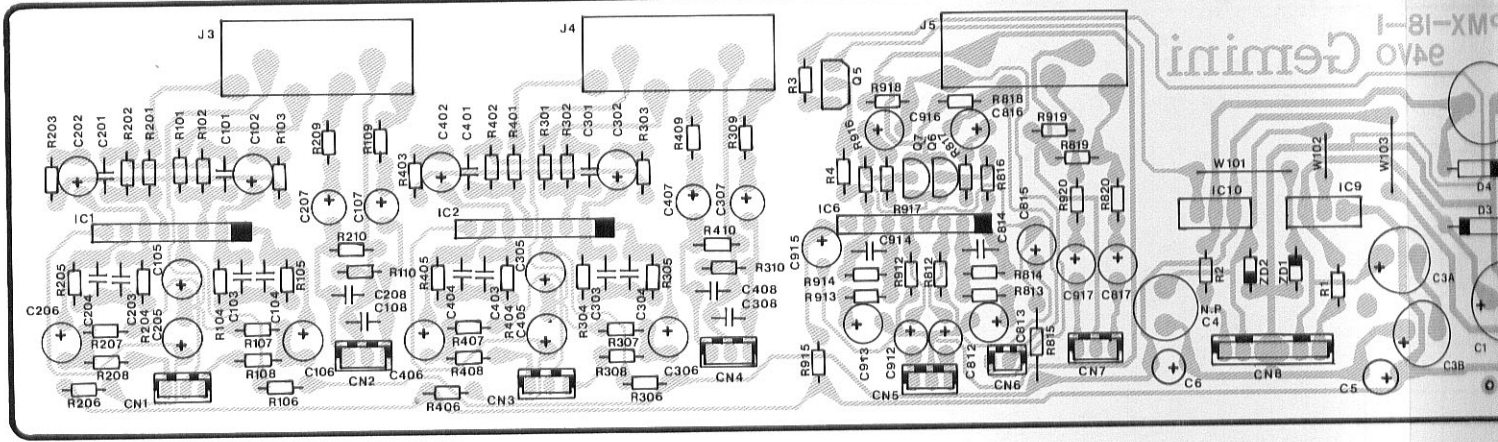


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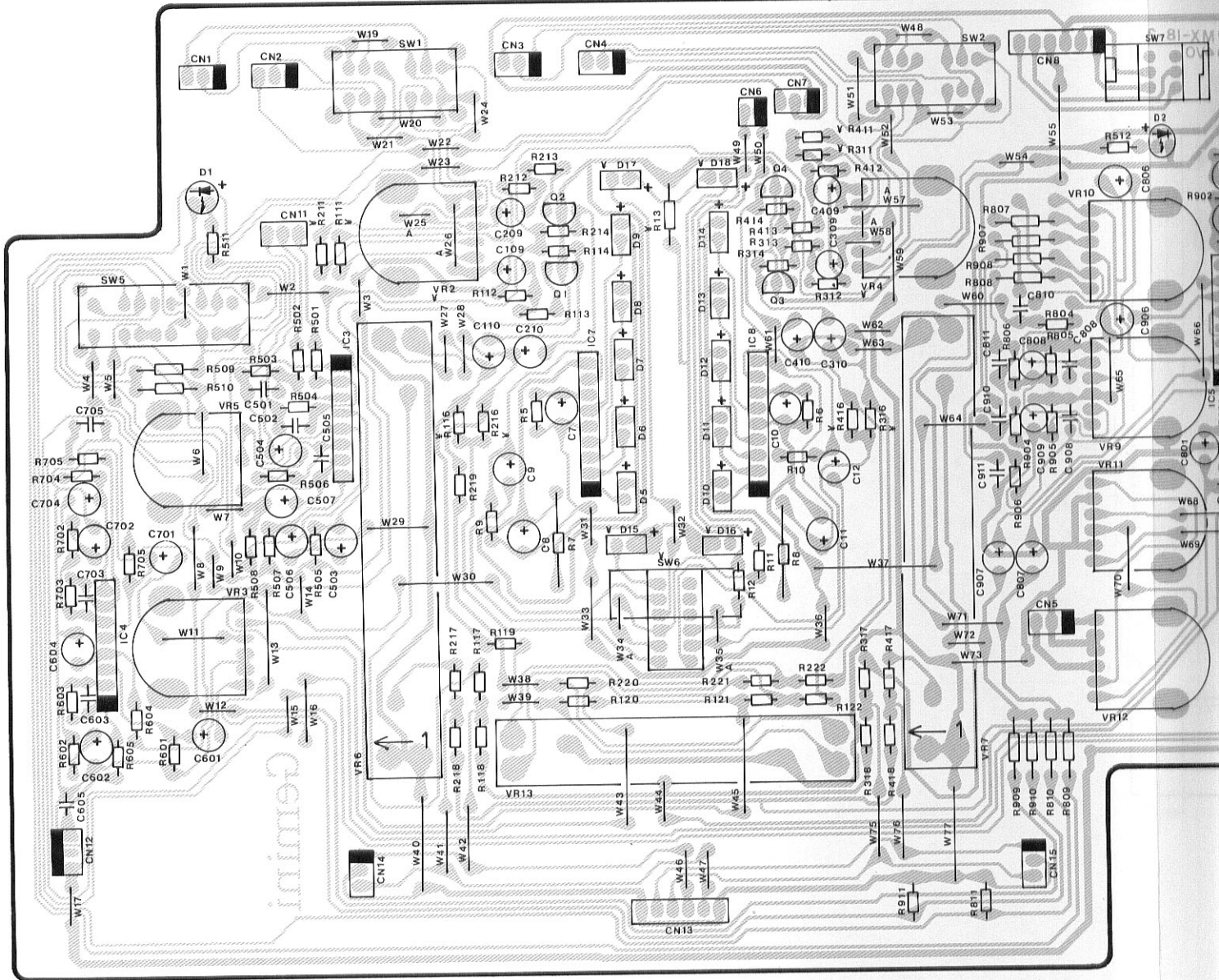


PRINTED CIRCUIT BOARDS

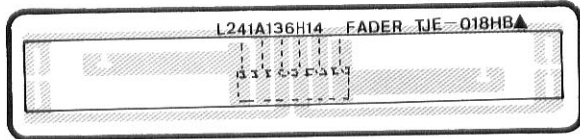
IN/OUT PCB



MAIN PCB

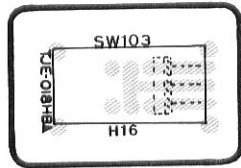


FADER PCB

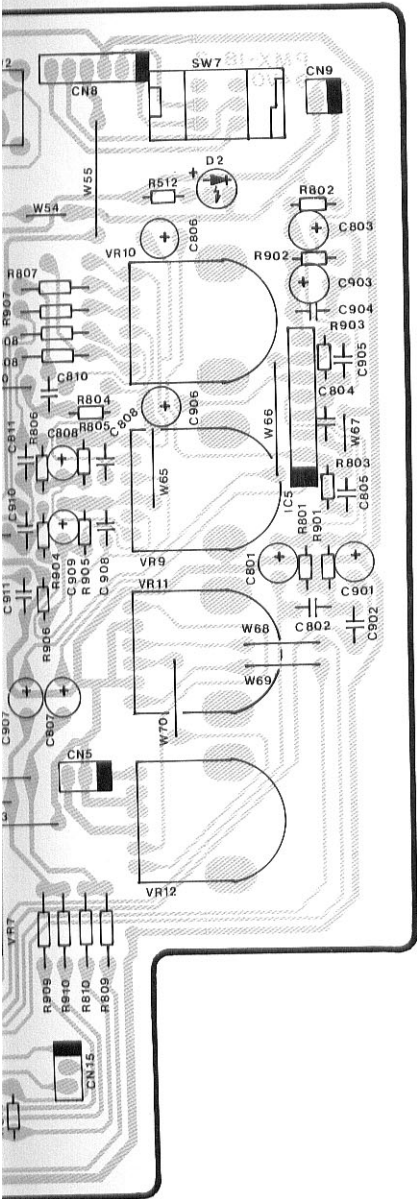
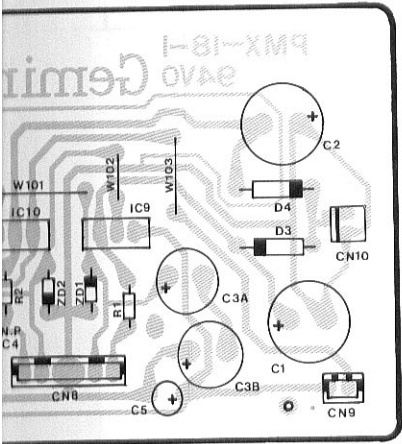
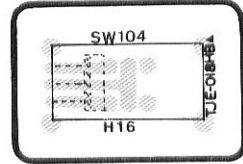


(PMX-18)

POWER SW PCB.1

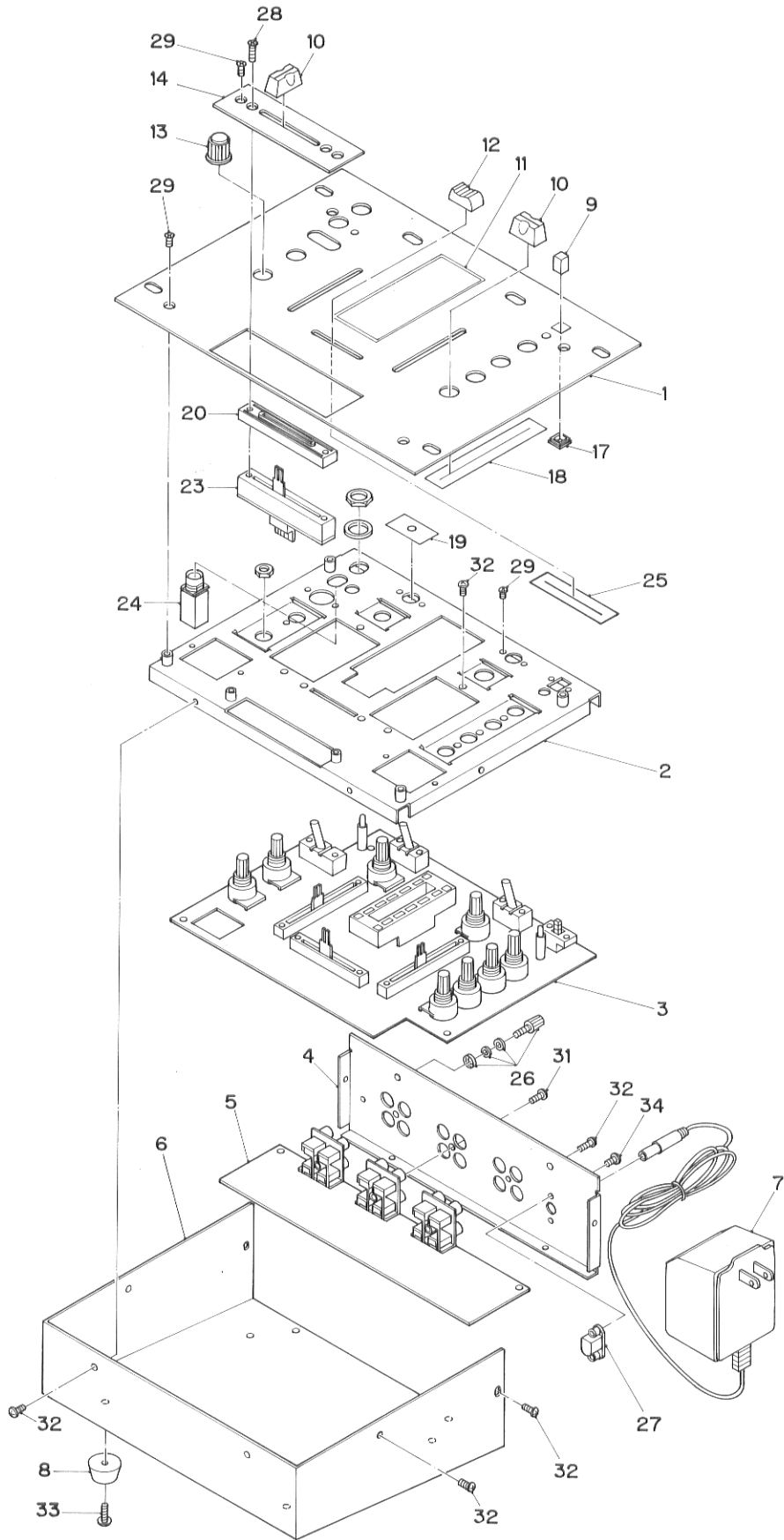


POWER SW PCB.2

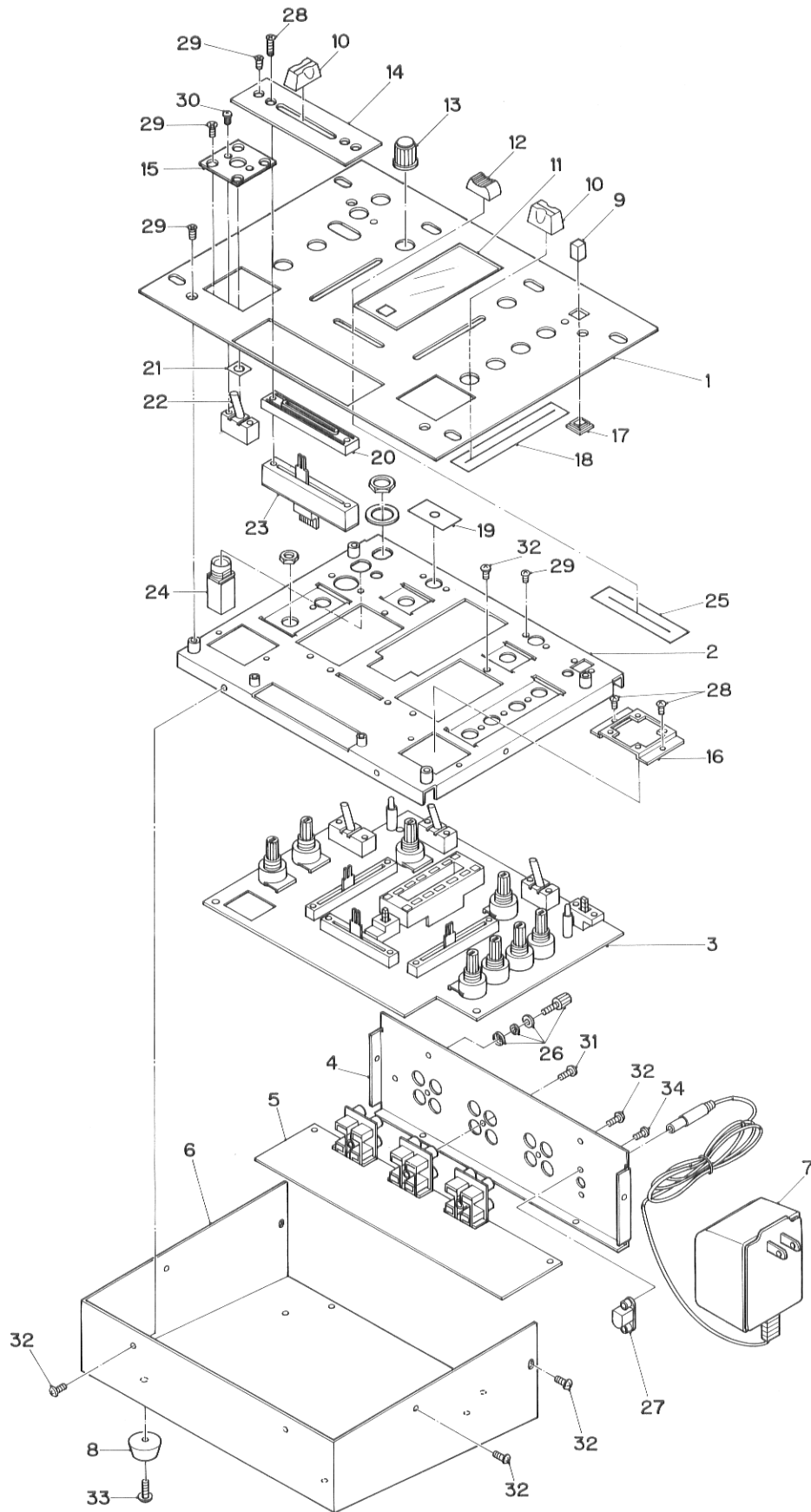


EXPLODED VIEW OF CABINET

PMX-16



PMX-18



CABINET PARTS LIST

Symbol No.	Parts No.	Description
1	002-122	PLNEL CONTROL(PMX-16)
1	002-123	PLNEL CONTROL(PMX-18)
2	021-733	BRACKET VR
3	162-766	MAIN PCB
4	021-860	PANEL REAR
5	162-765	IN/OUT PCB
6	021-247	BOTTOM COVER
7	059-139	AC ADAPTER 60HZ 15A(UL)
7	059-140	AC ADAPTER 50HZ 15A(CE)
7	059-149	AC ADAPTER 50HZ 15A(UK)
7	059-151	AC ADAPTER 60HZ 15A(JAPAN)
8	049-189	PAD FOOT
9	002-531	KNOB PUSH(SMALL)
10	002-704	KNOB SLIDE(BIG)
11	003-358	PLATE LED
12	002-703	KNOB SLIDE(SMALL)
13	003-110	KNOB ROTARY(B TYPE)
14	022-322	HOLDER FADER
15	022-321	HOLDER SWING(PMX-18)
16	022-342	HLODER SWITCH(PMX-18)
17	002-532	KNOB BUSHING(SMALL)
18	159-171	DUST PROOF CLOTH-VR
19	159-168	DUST PROOF CLOTH-SWING
20	003-970	TRIM VR
21	159-169	DUST PROOF CLOTH-SWING (SMALL)(PMX-18)
22	023-675	KNOB SWING(SHORT)(PMX-18)
23	162-627	FADER PCB
24	092-078	PHONE/MIC JACK
25	159-167	DUST PROOF CLOTH-VR
26	146-709	GND SCREW
27	092-074	DC JACK
28	111-049A	SCREW FTS-3 3X12(AB)
29	111-043A	SCREW FTS-3 3X6(AB)
30	102-025	SCREW PMS M2.6X4(B)
31	110-172A	SCREW BTS-2 3X8(AB)
32	111-051A	SCREW BTS-2 3X5(AB)
33	110-128	SCREW PTSS-2 3X12(B)
34	110-166	SCREW BTS-2 3X6(B) TWIN

PARTS LIST

Symbol No.	Parts No.	Description
Diodes		
D1	080-091	LED(RED)3.15φ
ZD1	079-012	ZENER DIODE 1/2 12V
D2	080-091	LED(RED)3.15φ
ZD2	079-012	ZENER DIODE 1/2 12V
D3	079-027	RECTIFIER DIODE 1N4002
D4	079-027	RECTIFIER DIODE 1N4002
D5	080-079	LED(GREEN)2.5X6.5mm
D6	080-079	LED(GREEN)2.5X6.5mm
D7	080-079	LED(GREEN)2.5X6.5mm
D8	080-078	LED(RED)2.5X6.5mm
D9	080-078	LED(RED)2.5X6.5mm
D10	080-079	LED(GREEN)2.5X6.5mm
D11	080-079	LED(GREEN)2.5X6.5mm
D12	080-079	LED(GREEN)2.5X6.5mm
D13	080-078	LED(RED)2.5X6.5mm
D14	080-078	LED(RED)2.5X6.5mm
D15	080-090	LED(GREEN)5X5mm
D16	080-090	LED(GREEN)5X5mm
D17	080-090	LED(GREEN)5X5mm
D18	080-090	LED(GREEN)5X5mm
ICs		
IC1	074-104	IC NJM4558L
IC2	074-104	IC NJM4558L
IC3	074-104	IC NJM4558L
IC4	074-113	IC NJM4556L
IC5	074-130	IC NJM2043L
IC6	074-130	IC NJM2043L
IC7	074-022	IC LB1403N
IC8	074-022	IC LB1403N
Transistors		
Q1	076-092	TRANSISTOR 2SC2240
Q2	076-092	TRANSISTOR 2SC2240
Q3	076-092	TRANSISTOR 2SC2240
Q4	076-092	TRANSISTOR 2SC2240
Q5	076-104	TRANSISTOR 2SA1048
Q6	076-095	TRANSISTOR 2SC2878
Q7	076-095	TRANSISTOR 2SC2878
Electrical Parts		
SW1	082-019	LEVER SW 4P2C PHONE/LINE
SW2	082-019	LEVER SW 4P2C PHONE/LINE
SW6	083-081	PUSH SW 4P4C LED SW
SW7	083-069	PUSH SW 2P2C POWER ON/OFF
VR2	071-137	ROTARY VR 16φ L = 20mm10KBX2 CH GAIN

PARTS LIST

Symbol No.	Parts No.	Description
VR3	071-084	ROTARY VR 16φ L = 20mm50KA CUE MASTER
VR4	071-137	ROTARY VR 16φ L = 20mm10KBX2 CH GAIN
VR5	071-066	ROTARY VR 16φ L = 20mm50KA MIC LEVEL
VR6	072-091	SLIDE VR 45mm L = 20mm
VR7	072-091	SLIDE VR 45mm L = 20mm
VR9	071-138	ROTARY VR 16φ L = 20mm20KCX2 CC CH TONE
VR10	071-138	ROTARY VR 16φ L = 20mm20KCX2 CC CH TONE
VR11	071-136	ROTARY VR 16φ L = 20mm20KMN X2 CC BALANCE
VR12	071-084	ROTARY VR 16φ L = 20mm50KA CUE MASTER
VR13	072-092	SLIDE VR 30mm L = 15mm
CN2	092-026	3P CONNECTOR BASE 180° B3B-XH-A
CN3	092-026	3P CONNECTOR BASE 180° B3B-XH-A
CN4	092-026	3P CONNECTOR BASE 180° B3B-XH-A
CN5	092-026	3P CONNECTOR BASE 180° B3B-XH-A
CN6	092-030	2P CONNECTOR BASE 180° B2B-XH-A
CN7	092-026	3P CONNECTOR BASE 180° B3B-XH-A
CN8	092-027	6P CONNECTOR BASE 180° B62B-XH-A
CN9	092-030	2P CONNECTOR BASE 180° B2B-XH-A
Packing		
101	157-746	OWNER'S MANUAL(PMX-16)
101	157-747	OWNER'S MANUAL(PMX-18)
102	156-067	WARRANTY CARD(PMX-16)
102	156-068	WARRANTY CARD(PMX-18)
103	153-135	POLYFORM(PMX-16/PMX-18)
104	155-865	GIFT BOX(PMX-16)
104	155-866	GIFT BOX(PMX-18)