

# M1516

## SERVICE MANUAL

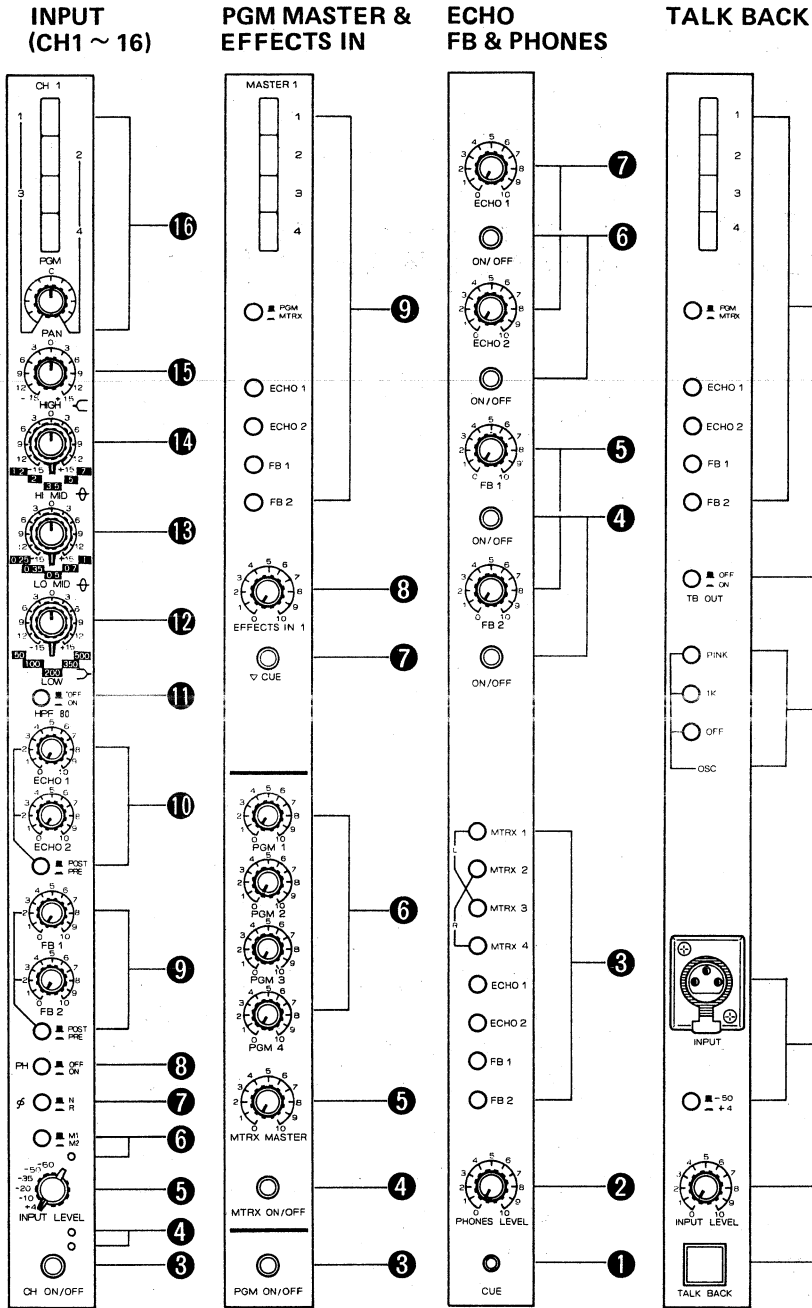
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# CONTROLS AND FUNCTIONS

## CONTROL PANELS



## CONTROL PANELS INPUT (CH1 ~ 16)

- 1 CUE
- 2 CHANNEL FADER
- 3 CH ON/OFF
- 4 PEAK INDICATORS
- 5 INPUT LEVEL
- 6 M1/M2: SWITCH
- 7 φ: PHASE SWITCH
- 8 PH: CH PHANTOM ON/OFF
- 9 FB1.2 VOLUME & PRE/POST
- 10 ECHO 1.2 VOLUME & PRE/POST
- 11 HPF 80
- 12 LOW EQUALIZER FREQUENCY SELECTOR SWITCH
- 13 LOW-MID EQUALIZER FREQUENCY SELECTOR SWITCH
- 14 HI-MID EQUALIZER FREQUENCY SELECTOR SWITCH
- 15 HIGH EQUALIZER
- 16 PAN/PGM ASSIGN SWITCHES

## PGM MASTER & EFFECTS IN

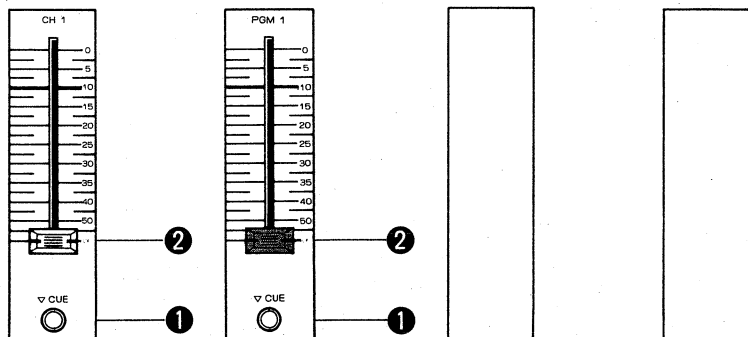
- 1 CUE (PGM)
- 2 PGM MASTER FADER (GROUP MASTER)
- 3 PGM ON/OFF
- 4 MTRX ON/OFF
- 5 MTRX MASTER VOLUME
- 6 PGM 1 ~ 4 MIX CONTROLS
- 7 CUE (EFFECTS IN)
- 8 EFFECTS IN VOLUME
- 9 EFFECTS IN ASSIGN SWITCHES

## ECHO/FB & PHONES

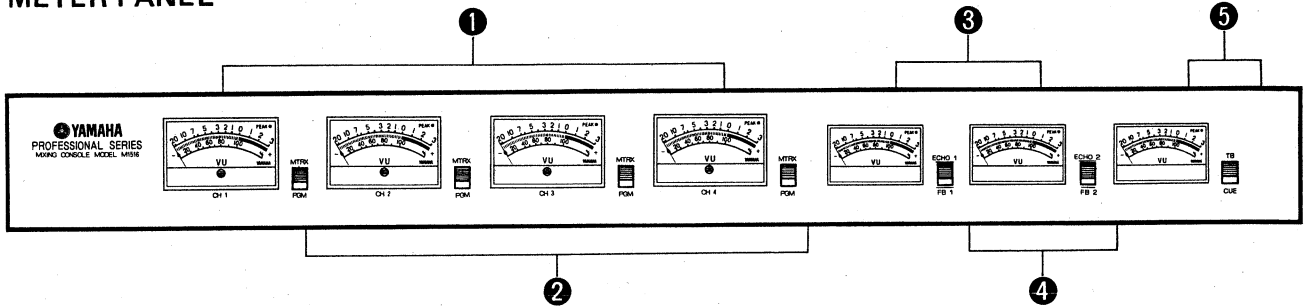
- 1 CUE INDICATOR
- 2 PHONES LEVEL VOLUME
- 3 HEADPHONE SELECTOR SWITCHES
- 4 FB ON/OFF SWITCHES
- 5 FB 1.2 MASTER VOLUME
- 6 ECHO ON/OFF
- 7 ECHO 1.2 MASTER VOLUME

## TALK BACK

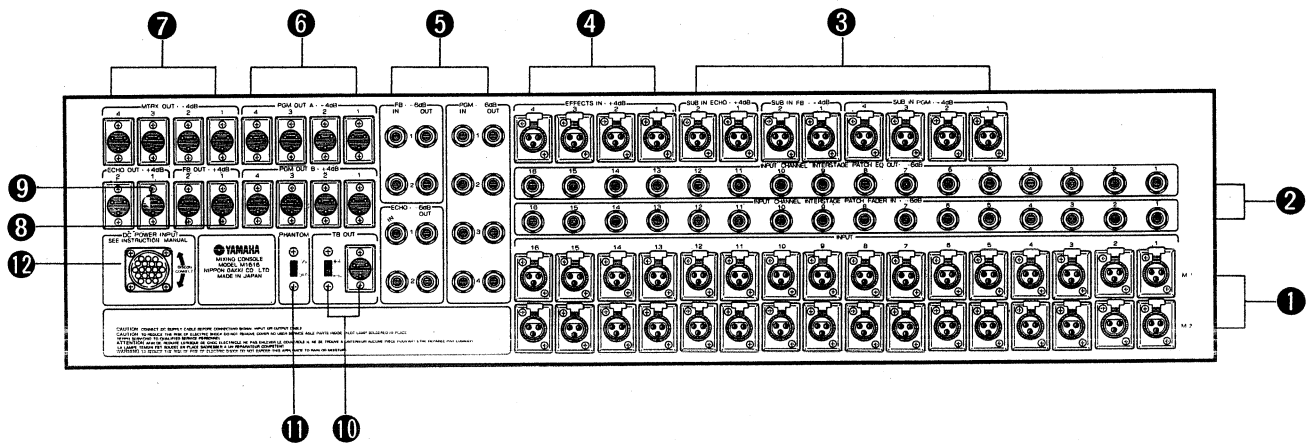
- 1 TALK BACK SWITCH
- 2 INPUT LEVEL VOLUME
- 3 INPUT/-50, +4 SELECTOR SWITCH
- 4 OSC FUNCTION SWITCHES
- 5 TB OUT ON/OFF
- 6 TALK BACK ASSIGN SWITCHES



METER PANEL



REAR PANEL



METER PANEL

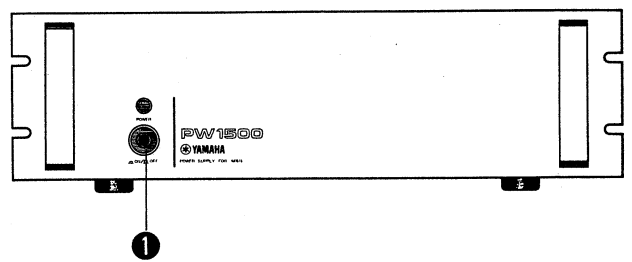
- ① VU METERS (PGM/MTRX)
- ② METER FUNCTION SWITCHES (PGM/MTRX)
- ③ VU METERS (FB/ECHO)
- ④ METER FUNCTION SWITCHES (FB/ECHO)
- ⑤ VU METER; METER FUNCTION SWITCH (CUE/TB)

REAR PANEL

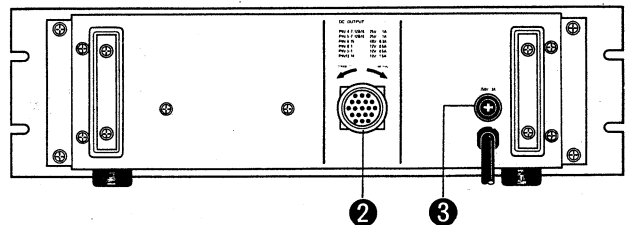
- ① INPUT M1/M2
- ② INTERSTAGE PATCH (EQ OUT/ FADER IN) · -6dB
- ③ SUB IN (PGM-FB-ECHO) · +4dB
- ④ EFFECTS IN · +4dB
- ⑤ MASTER INSERT OUT/IN (PGM-FB-ECHO) · -6dB
- ⑥ PGM OUT A/B · +4dB
- ⑦ MTRX OUT +4dB
- ⑧ FB OUT +4dB
- ⑨ ECHO OUT +4dB
- ⑩ TB OUT/-50, +4 OUTPUT SELECTOR SWITCH
- ⑪ PHANTOM MASTER SWITCH
- ⑫ POWER SUPPLY CONNECTOR

PW1500

FRONT PANEL



REAR PANEL



- ① POWER SWITCH
- ② POWER SUPPLY CONNECTOR
- ③ FUSE

## SPECIFICATIONS

### M1516

<b>Frequency Response</b>	20Hz ~ 20kHz $\frac{+0}{-3}$ dB 30Hz ~ 15kHz $\frac{+0}{-0.5}$ dB
<b>Total Harmonic Distortion</b>	Less than 0.5% +10dB/600Ω, 20Hz ~ 20kHz Less than 0.1% +20dB/600Ω, 50Hz ~ 20kHz
<b>Hum &amp; Noise*</b> (20Hz ~ 20kHz, $R_s = 150\Omega$ , INPUT LEVEL Switch "--60")	
Equivalent input noise	-128dB
Residual output noise	-95dB All Faders → down
<b>PGM OUT</b>	-73dB (77dB S/N) Master Fader → nominal All Channel Faders → down -64dB (68dB S/N) Master & One Channel Fader → nominal
<b>MTRX OUT</b>	-73dB (77dB S/N) Matrix mix & Master → max One Master Fader → nominal All Channel Faders → down -64dB (68dB S/N) Matrix mix & Master → max One Master Fader → nominal All Channel Faders → down
<b>FB or ECHO OUT</b>	-70dB (74dB S/N) FB or ECHO Master → nominal FB or ECHO mix → min -64dB (68dB S/N) FB or ECHO Master → nominal FB or ECHO mix → nominal PRE/POST switch → PRE
<b>Crosstalk (1kHz)</b>	
Adjacent inputs	-60dB
INPUT → OUTPUT	-60dB
<b>Maximum Voltage Gain (INPUT LEVEL Switch "--60")</b>	
INPUT → PGM OUT	84dB
INPUT → MTRX OUT	84dB
INPUT → FB OUT	94dB
INPUT → ECHO OUT	94dB
SUB IN → PGM OUT	10dB
EFFECTS IN → PGM OUT	20dB
<b>Equalization</b>	
LOW	± 15dB (50, 100, 200, 350, 500Hz Shelving)
LO-MID	± 15dB (250, 350, 500, 700, 1,000Hz Peaking)
HI-MID	± 15dB (1.2k, 2k, 3.5k 5k, 7kHz Peaking)
HIGH	± 15dB (10kHz Shelving)
<b>High pass Filter</b>	80Hz roll-off 18dB/oct
<b>Oscillator</b>	Sine Wave 1kHz (THD 1%, +4dB) Pink noise
<b>VU Meter (OVU = +4dB)</b>	PGM/MTRX x4 FB/ECHO x2 TB/CUE x1
<b>Peak Indicator</b>	
INPUT (Green)	LED is turned on at -13dB below clipping.
(Red)	LED is turned on at -3dB below clipping
VU (Red)	LED is turned on at -10dB below clipping

<b>INPUT Controls (CH1 ~ 16)</b>	Channel Fader, CUE, CH ON/OFF INPUT LEVEL Switch, Peak Indicators M1/M2 Switch, Phase Switch CH Phantom ON/OFF FB1, 2 Volume (PRE/POST Switch) ECHO 1, 2 Volume (PRE/POST Switch) HPF, Equalizer (LOW, LO-MID, HI-MID, HIGH, Frequency Selector Switch (except HIGH) PAN (PGM Assign Switch)
<b>MASTER Controls</b>	PGM Master Fader, CUE, PGM ON/OFF, MTRX MASTER Volume, MTRX ON/OFF PGM 1 ~ 4 Mix Controls EFFECTS IN, CUE, EFFECTS IN Volume EFFECTS IN Assign Switch FB1, 2 Master Volumes FB ON/OFF ECHO 1, 2 Master Volumes ECHO ON/OFF Headphone Selector Switches PHONES LEVEL Volume
<b>TALK BACK Controls</b>	TALK BACK Switch INPUT LEVEL Volume -50/+4 (MIC LINE) Switch INPUT Connector Oscillator (1kHz Sine Wave, Pink Noise) TB OUT ON/OFF -50/+4 Switch TB Assign Switch
<b>PHANTOM Power Supply</b>	U.S. & Canadian models 40V/DC General model 48V/DC
<b>Dimensions (W x H x D)</b>	909 x 355 x 926 mm (35-3/4" x 14" x 36-1/2")
<b>Weight</b>	60.4 kg (133.2 lbs)
<b>POWER SUPPLY PW1500</b>	
<b>Power Requirements</b>	U.S. & Canadian models 120V, 50/60Hz General model 110, 120, 220 or 240V, 50/60Hz
<b>Power Consumption</b>	U.S. model 110W Canadian model 150VA General model 130W
<b>Dimensions (W x H x D)</b>	480 x 140 x 335 mm (18-7/8" x 5-1/2" x 13-1/8")
<b>Weight</b>	9.6 kg (21.2 lbs)

\* Measured with 6dB/oct filter @12.47kHz equivalent to a 20kHz filter with infinite dB/oct attenuation.

• 0dB is referenced to 0.775V r.m.s.

• Specification subject to change without notice.



## INPUT / OUTPUT SPECIFICATIONS

CONNECTION	INPUT LEVEL SWITCH	ACTUAL LOAD IMPEDANCE	FOR USE WITH NOMINAL	SENSITIVITY* (at MAX. GAIN)	INPUT LEVEL		CONNECTOR***
					NOMINAL	MAX. BEFORE CLIP	
CHANNEL INPUTS (1-16)	-60dB*	900Ω	50 to 250Ω microphones or 600Ω line level sources	-80dB (0.08mV)	-60dB (0.78mV)	-30dB (24.5mV)	XLR-3-31
	-50dB	900Ω		-70dB (0.25mV)	-50dB (2.5mV)	-20dB (78mV)	
	-35dB	900Ω		-55dB (1.4mV)	-35dB (14mV)	-5dB (436mV)	
	-20dB	1kΩ		-40dB (7.8mV)	-20dB (78mV)	+10dB (2.45V)	
	-10dB	1.3kΩ		-30dB (24.5mV)	-10dB (245mV)	+20dB (7.75V)	
	+ 4dB	1.3kΩ		-16dB (123mV)	+ 4dB (1.23V)	+24dB (12.3V)	
EFFECTS IN (1-4)		5kΩ	600Ω lines	-16dB (123mV)	+ 4dB (1.23V)	+24dB (12.3V)	Phone Jack
SUB IN PGM (1-4) FB (1, 2) ECHO (1, 2)		1kΩ	600Ω lines	- 6dB (388mV)	+ 4dB (1.23V)	+24dB (12.3V)	Phone Jack
TALK BACK IN	-50dB	800Ω	50 to 250Ω microphones	-70dB (0.25mV)	-50dB (2.5mV)	-20dB (78mV)	XLR-3-31
	+ 4dB	5kΩ	600Ω lines	-16dB (123mV)	+ 4dB (1.23V)	+24dB (12.3V)	
CH PATCH FADER IN (1-16)		10kΩ	600Ω lines	-26dB (39mV)	- 6dB (388mV)	+24dB (12.3V)	Phone Jack
PGM MASTER IN (1-4)		10kΩ	600Ω lines	-16dB (123mV)	- 6dB (388mV)	+24dB (12.3V)	Phone Jack
FB MASTER IN (1, 2)							
ECHO MASTER IN (1, 2)							

## OUTPUT CHARACTERISTICS

CONNECTION	OUTPUT LEVEL SWITCH	ACTUAL SOURCE IMPEDANCE	FOR USE WITH NOMINAL	OUTPUT LEVEL		CONNECTOR***
				NOMINAL	MAX. BEFORE CLIP	
PGM OUT (1-4)		150Ω	600Ω lines	+ 4dB (1.23V)	+24dB (12.3V)	XLR-3-32
MTRX OUT (1-4)						
FB OUT (1, 2)						
ECHO OUT (1, 2)						
TALK BACK OUT	+ 4dB	150Ω	600Ω lines	+ 4dB (1.23V)	+24dB (12.3V)	XLR-3-32
	-50dB			-50dB (2.5mV)	-30dB (24.5mV)	
CH PATCH EQ OUT (1-16)		600Ω	10kΩ lines	- 6dB (388mV)	+24dB (12.3V)	Phone Jack
PGM MASTER OUT (1-4)						
FB MASTER OUT (1, 2)						
ECHO MASTER OUT (1, 2)						
PHONES		25Ω	8Ω Phones	- 6dB (388mV)	+ 4dB (1.23V)	Phone Jack
			600Ω lines	+ 8dB (1.95V)	+18dB (6.16V)	

\* 0dB is referenced to 0.775V r.m.s.

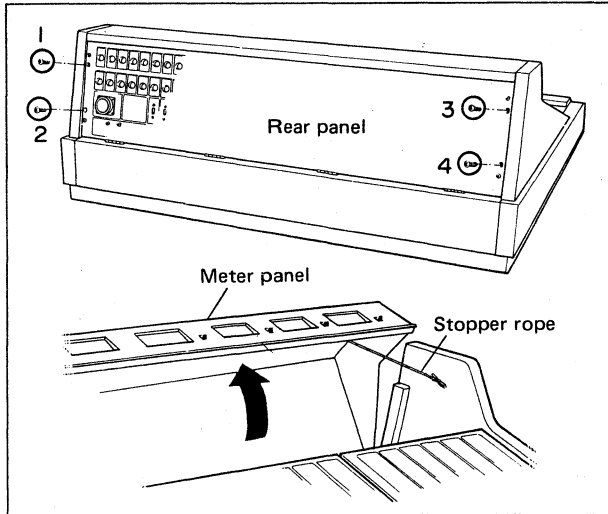
\*\* Sensitivity is the level required to produce a nominal output of +4dB (1.23V) or the specified nominal output level if other than +4dB.

\*\*\* All XER connectors are floating (balanced channel inputs) and transformer-isolated. TRS phone jacks are unbalanced, with separate audio common and chassis ground connections (except headphone jacks, wired Tip = Left, Ring = Right, Sleeve = Common).

## DISASSEMBLY

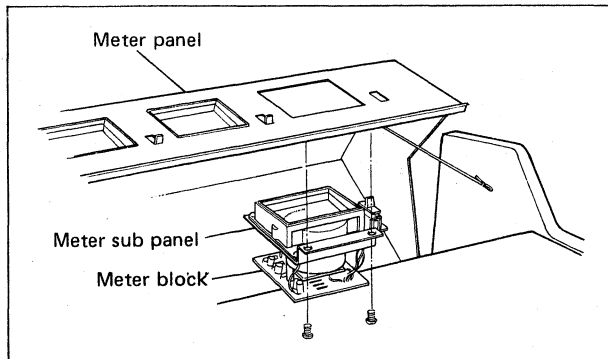
### 1. Opening the meter panel

Undo four screws ① ~ ④ at both ends of the rear panel, and the meter panel can be opened rearward.



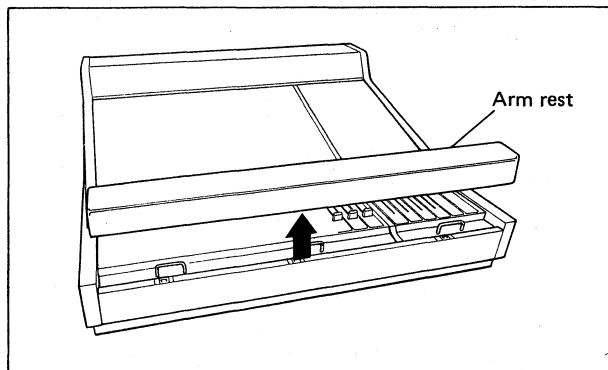
### 2. Replacing the VU meter

- Disconnect every wire connected to MT circuit board.
- Undo two screws fixing the meter sub panel and remove the meter block.

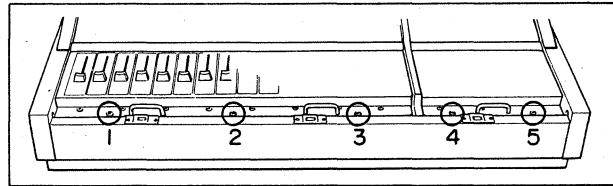


### 3. Opening the INPUT and MASTER panels

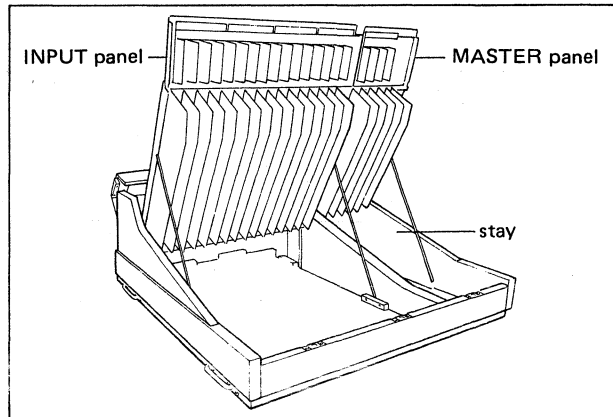
- Take the arm rest out of the main unit.



- Undo screws ① ~ ⑤ fixing INPUT and MASTER panels.



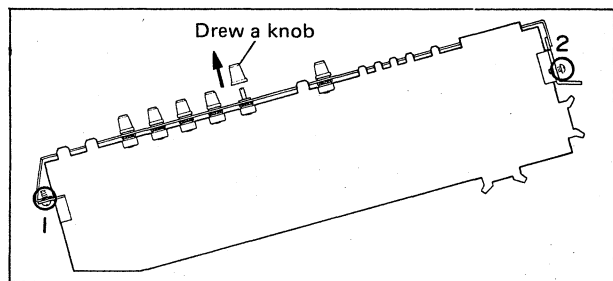
- Open the meter panel.
- Lift the INPUT panel open and hold it there with two stays provided in the bottom of the main unit. Likewise, the MASTER panel is held open with a stay.



### 4. Removing the circuit board

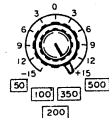
- Remove each connector connected to the circuit board.
- Remove each knob and then each hexagonal nut fixing the control.
- Undo screws ① and ②, and the circuit board can be removed.

\* If the flat cable connector of TB circuit board is disconnected, power is not supplied to each circuit board when checking for its conduction.



### Removing EQ control knob on IN C. Board

Set the Level control at "+15" position and frequency selecting switch at the second position from the Highest frequency position (350Hz in case of LOW) and loosen the screw of EQ control, and the control can be removed.



Align graduations on the upper and lower controls before loosening the screw.

## ■ GENERAL ADJUSTMENT AND CHECK SPECIFICATIONS

\* Use an oscilloscope and an AC voltmeter with an input impedance of over 500Ω for the measurement.

### I. GENERAL ADJUSTMENT

#### 1. Power Supply Adjustment (PW1500)

Be sure to have PW1500 and M1516 main unit connected for the voltage measurement.

##### a. ±25V adjustment

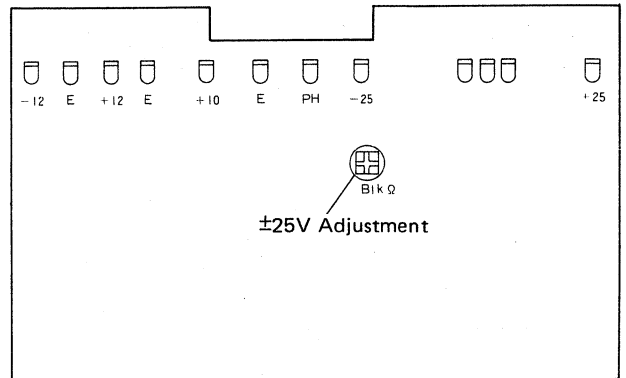
Adjust the pot (B1kΩ) so that the voltage across -25 terminal and E terminal on DC circuit board will be  $-25 \pm 0.1V$ .

##### b. Power supply voltage check

Check that the following voltages are obtained respectively across each terminal and E terminal on DC circuit board.

Terminal	Output Voltage	Terminal	Output Voltage
+25	$+25 \pm 0.8V$	+10	$+10 \pm 1.5V$
-25	$-25 \pm 0.5V$	+12	$+12 \pm 1.5V$
PH	$+48 \pm 2V$	-12	$-12 \pm 1.5V$

DC C. Board



#### 2. Oscillator Adjustment (TB Circuit Board)

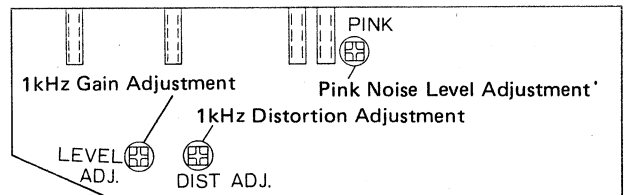
##### a. 1kHz adjustment

Adjust the pot (LEVEL ADJ) on TB circuit board so that TB OUT output level will be +4dB, and then adjust another pot (DIST ADJ) so that distortion will be minimized (T.H.D. less than 1%). The output level caused to vary at this time should be corrected by readjusting the GAIN control.

##### b. Pink noise adjustment

Adjust the pot (PINK) on TB circuit board so that TB OUT output level will be +4dB. If the indicator of the voltmeter keeps deflecting, perform adjustment based on the mean value of the deflection.

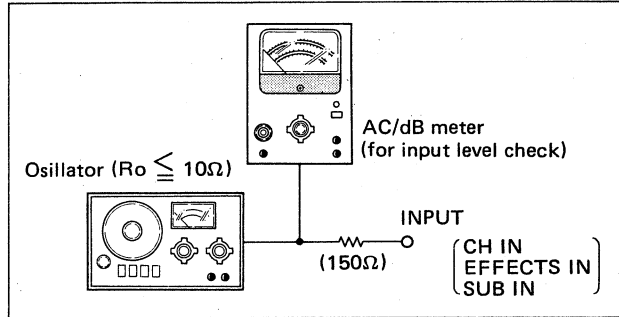
TB C. Board



II. CHECK SPECIFICATION

- Set the controls to the positions as given in Table 1 unless otherwise specified.
  - Connect an oscillator as shown in Fig. 1 for measurement.
  - Perform measurement with the following load resistance connected to catch output connectors.
- |                                     |                    |
|-------------------------------------|--------------------|
| CH/MASTER INSERT OUT                | 10kΩ               |
|                                     | (Only measurement) |
| PGM, FB, ECHO, MTRX,<br>TB EACH OUT | 600Ω               |
| PHONES OUT                          | 8Ω x 2 (STEREO)    |

• Fig. 1



• Table 1

Knob	Set position
<b>• CH INPUT (1 ~ 16ch)</b>	
FADER	Only measurement channel : max. All others : min.
CUE	OFF
CH ON/OFF	ON
INPUT LEVEL	-60
M1/M2	M1
φ	Normal (N)
PHANTOM Switch	OFF
FB Volumes (1, 2)	Only measurement channel : max. All others : min.
FB PRE/POST	POST
ECHO Volumes (1, 2)	Only measurement channel : max. All others : min.
ECHO PRE/POST	POST
HPF 80	OFF
EQ (LOW, LO-MID, HI-MID, HIGH)	Center (C)
EQ FREQUENCY Switch	Free
PAN	Center (C)
Assign Switches	Only measurement channel : 1 ~ 4 ON All others : OFF
<b>• MASTER (1 ~ 4)</b>	
PGM MASTER FADER	max. OFF
PGM CUE	OFF
PGM ON/OFF	ON
MTRX MASTER	max.
MTRX ON/OFF	ON
PGM Mix Controls (1 ~ 4)	Only measurement channel : max. All others : min.
EFFECTS IN Volume	Only measurement channel : max. All others : min.
Assign Switches	Only measurement : ON All others : OFF
<b>• FB/ECHO</b>	
PHONES LEVEL	Only measurement : max. All others : min.
HEADPHONE SELECTOR Switchs	All OFF
FB MASTER Volumes (1, 2)	max. ON
FB ON/OFF (1, 2)	max. ON
ECHO MASTER Volumes (1, 2)	max. ON
ECHO ON/OFF (1, 2)	max. ON
<b>• TALK BACK</b>	
INPUT LEVEL	Only measurement : max. All others : min.
-50/+4 SELECTOR Switch	-50
OSC	OFF
TB OUT ON/OFF	ON
Assign Switches	Only measurement : max. All others : min.
<b>• Rear Panel</b>	
PHANTOM MASTER Switch	OFF
TB OUT	+4

• Table 2 GAIN (INPUT)

INPUT LEVEL Switch	INPUT LEVEL	OUTPUT					
		PGM	FB	ECHO	CH INSERT IN	PGM MASTER INSERT IN	FB/ECHO MASTER INSERT IN
-60	-80	+ 4±2	+14±2	+14±2	-26±2	-16±2	-6±2
-50	-80	- 6±2	-	-	-	-	-
-35	-80	-21±2	-	-	-	-	-
-20	-40	+ 4±2	-	-	-	-	-
-10	-40	- 6±2	-	-	-	-	-
+ 4	-40	-20±2	-	-	-	-	-

(UNIT : dB, 0dB=0.775V r.m.s.)

\* As for FB/ECHO, the output level should be +4 ± 2dB when PRE/POST switch is set to PRE position.

• Table 3 GAIN (each INPUT)

INPUT	INPUT LEVEL	OUTPUT			TB OUT	
		PGM	FB	ECHO	+4	-50
CH INSERT IN	-16	+14±2	-	-	-	-
MASTER INSERT IN	-16	+ 4±2	+4±2	+4±2	-	-
EFFECTS IN	-16	+ 4±2	+4±2	+4±2	-	-
SUB IN	-16	- 6±2	-6±2	-6±2	-	-
TB IN	-50	-80	- 6±2	-6±2	-16±2	-70±2
	+ 4	-16	-	-	- 6±2	-

(UNIT : dB, 0dB=0.775V r.m.s.)

• Table 4 GAIN (MTRX)

INPUT	INPUT LEVEL	SPECIFIED FOR MAX.	MTRX OUT
CH 1	-80	PGM 1	+ 4 ± 2
		PGM 2	+ 4 ± 2
		PGM 3	+ 4 ± 2
		PGM 4	+ 4 ± 2
EFFECTS IN	-16	-	- 6 ± 2
TB IN	-80	-	-16 ± 2

(UNIT : dB, 0dB=0.775V r.m.s.)

• Table 5 GAIN (PHONES)

INPUT	INPUT LEVEL	Set position	PHONES OUT
CH INPUT	-80	CH CUE ON	-16 ± 2
		MASTER CUE ON	- 6 ± 2
		HEADPHONE SELECTOR SWITCHES	+ 4 ± 2
EFFECTS IN	-16	-	- 6 ± 2

(UNIT : dB, 0dB=0.775V r.m.s.)

\* Make sure not to push on 2 or more CUE switches at the same time.

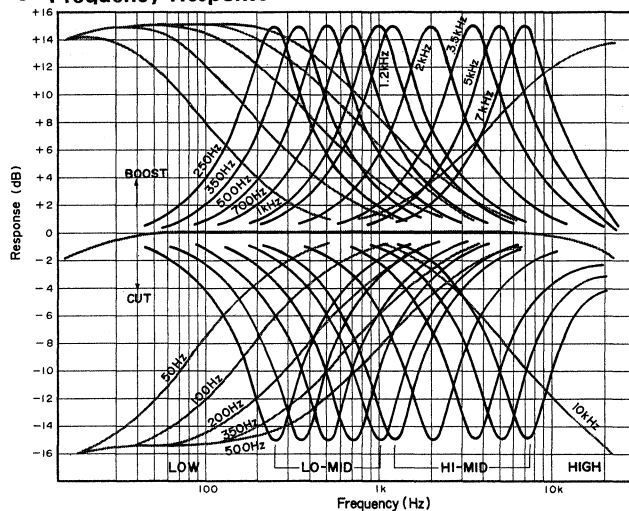
• Table 6 Equalizer Frequency Response

	Frequency	Set position				Variation Range
		LOW	LO-MID	HI-MID	HIGH	
LOW	50, 100 200, 350, 500Hz	MAX MIN	CENTER	CENTER	CENTER	+12±2 -12±2
LO-MID	250, 350, 500, 700, 1000Hz	CENTER	MAX MIN	CENTER	CENTER	+15±2 -15±2
HI-MID	1.2k, 2k, 3.5k, 5k, 7kHz	CENTER	CENTER	MAX MIN	CENTER	+15±2 -15±2
HIGH	10kHz	CENTER	CENTER	CENTER	MAX MIN	+12±2 -12±2

(UNIT : dB)

\* The frequency switch should be set to the signal frequency.

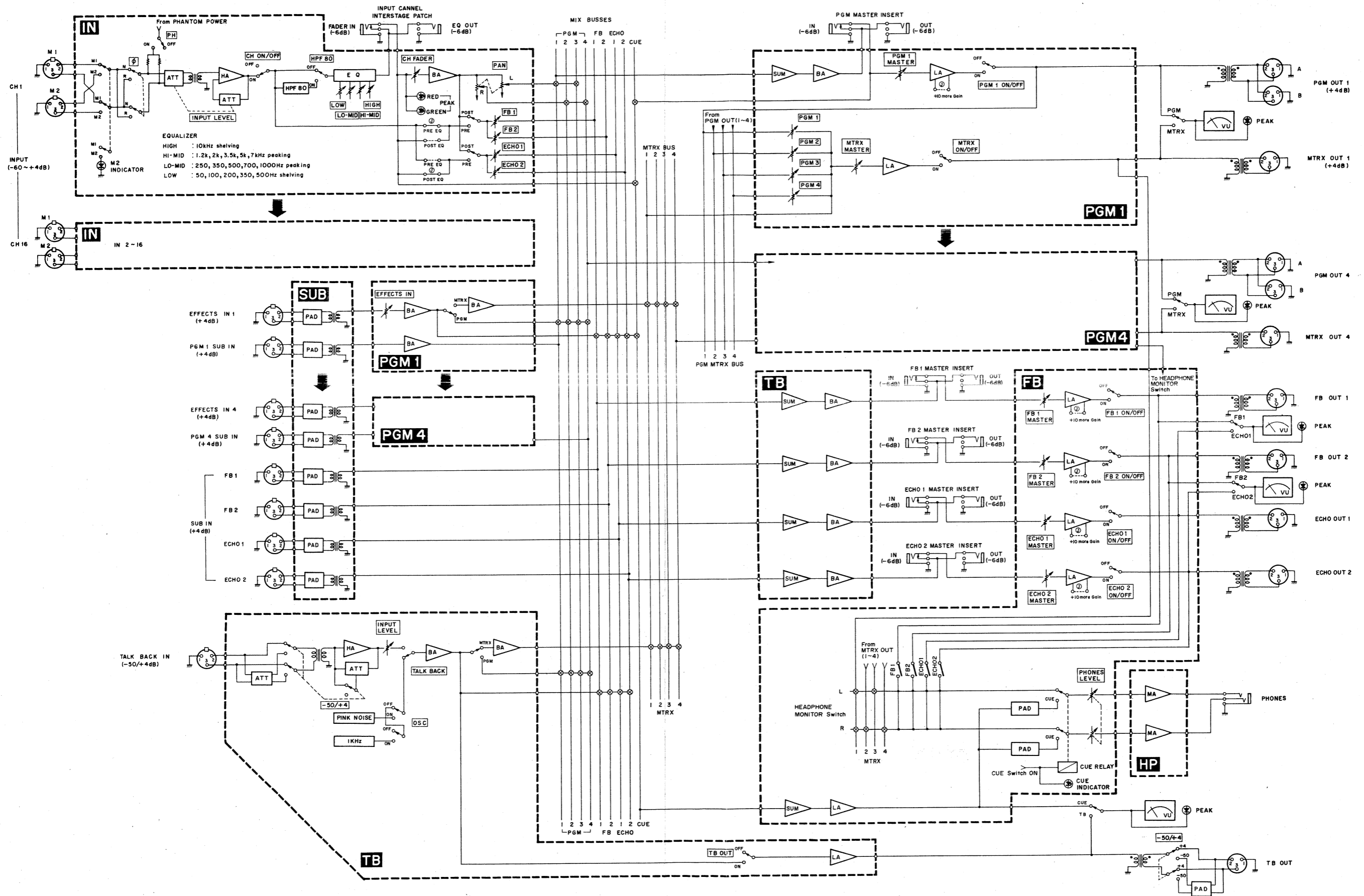
• Frequency Response



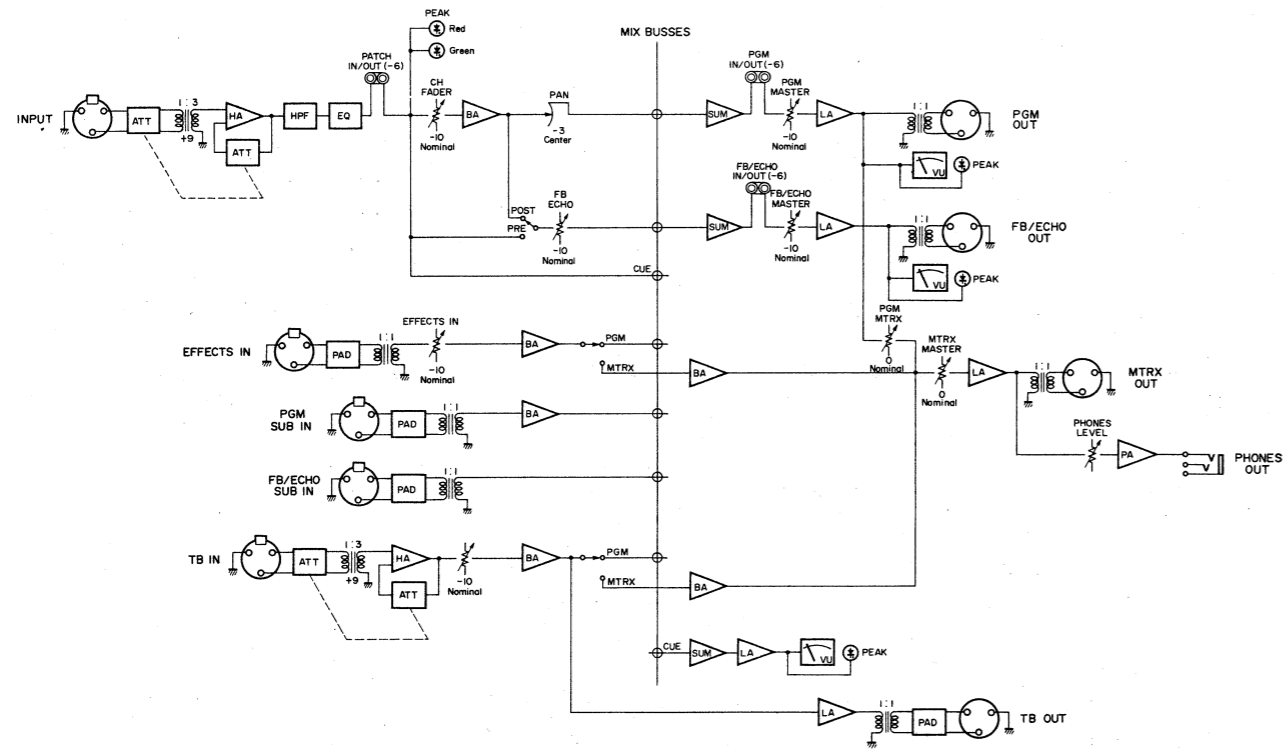
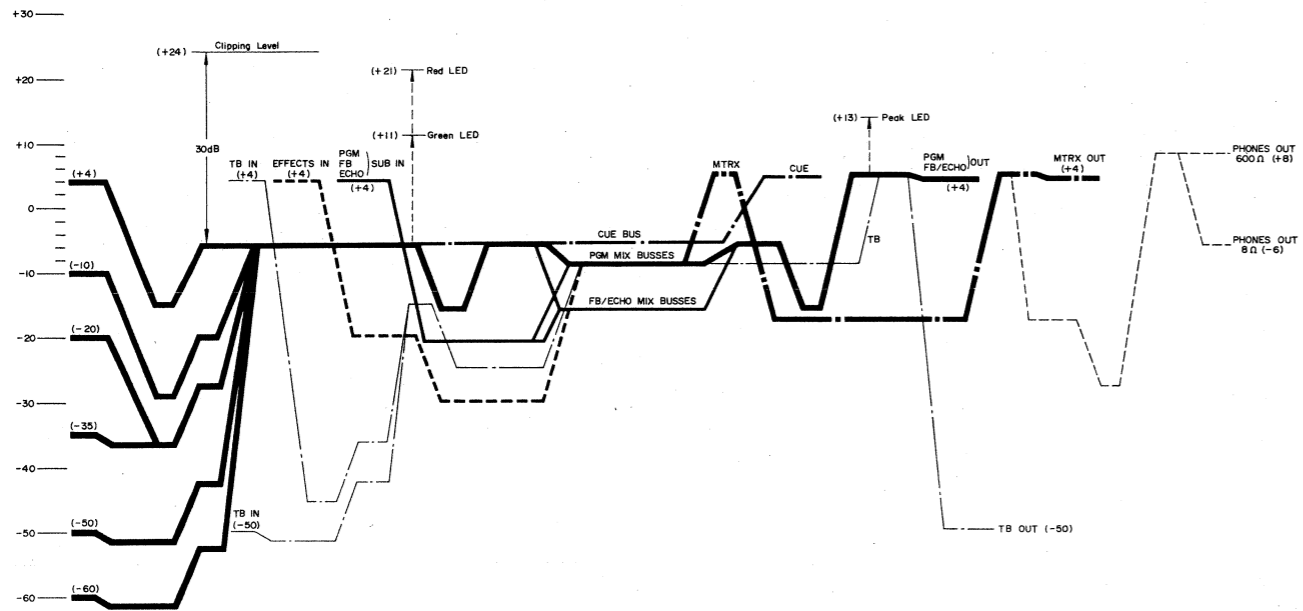
STEP	CHECK ITEM	SET POSITION OF CONTROL AND SWITCH	MEASUREMENT CONDITION	SPECIFICATIONS	REMARKS
1	Gain (INPUT)	Table 1	Apply a 1kHz sine wave signal to each of the INPUT connectors.	Output level obtained as listed in Table 2	• The difference in level must be; within 2dB between the channels for all the outputs, within 2dB between PGM1 ~ 4, within 1dB between M1 and M2.
2	Gain (CH INCERT MASTER INCERT EFFECTS IN SUB IN. TB IN)	Table 1	Apply a 1kHz sine wave signal to each of the INPUT connectors.	Output level obtained as listed in Table 3.	
3	Gain (MTRX)	Table 1 Set those controls specified for Max. setting to their maximum positions and the rest to their minimum positions.	Apply a 1kHz sine wave signal to each of the INPUT connectors.	Output level obtained as listed in Table 4.	
4	Gain (PHONES)	Table 1	Apply a 1kHz sine wave signal to each of the INPUT connectors.	Output level obtained as listed in Table 5.	
5	Distortion	Table 1 Each FADER, VOLUME to NOMINAL (-10dB) position	Apply a sine wave signal to each of the INPUT connectors so that each output level of PGM, ECHO, FB and MTRX will be +10dB.	T.H.D. less than 0.2%	
6	Frequency response	Table 1	Apply a 20Hz ~ 20kHz sine wave signal to each of the INPUT connectors.	With 1kHz output level as a standard, 20Hz; +0 dB 20Hz; +0 dB	
7	Equalizer response	Table 1	Apply a sine wave signal of the frequency given in Table 6 to each of the INPUT connectors.	With 1kHz (EQ FLAT) output level as a standard, the variation obtained as given in Table 6.	
8	Maximum output power	Table 1	Apply a 1kHz sine wave signal to CH1 INPUT connector.	+24dB output level obtained with T.H.D. less than 1%.	
9	Separation	Table 1 Turn the measurement channel PAN control to its extreme 1-3 side(L).	Apply a 1kHz sine wave signal to the measurement channel INPUT connector so that the output level of PGM1 and PGM3 will be +7dB.	The leakage level of PGM2 and PGM4: less than -53dB (separation 60dB)	Likewise, with PAN to 2-4 side(R), the leakage level of PGM1 and PGM3 must be as specified.

STEP	CHECK ITEM	SET POSITION OF CONTROL AND SWITCH	MEASUREMENT CONDITION	SPECIFICATIONS	REMARKS
10	Noise level	Table 1 CH FADER, FB, ECHO of the measurement channel only to maximum position	Input termination of 150Ω	PGM OUT (1 ~ 4): less than -44dB FB/ECHO OUT (1, 2): less than -34dB	
11	Residual noise	Table 1	CH FADER, FB/ECHO to minimum position	PGM OUT (1 ~ 4): less than -63dB FB/ECHO OUT (1, 2): less than -58dB	
			MASTER FADER, FB/ECHO MASTER to minimum position	PGM OUT (1 ~ 4): less than -95dB FB/ECHO OUT (1, 2): less than -95dB	
			MTRX MASTER to minimum position	MTRX OUT (1 ~ 4): less than -95dB	
			PHONES LEVEL to minimum position	PHONES OUT: less than -75dB	
12	PEAK indicator (INPUT)	Table 1 CH FADER to minimum position	Apply a 1kHz sine wave signal to each of the INPUT connectors.	Turned on at the output level: GREEN -43±2dB RED -33±2dB	
13	VU meter (PGM, MTRX (FB, ECHO, TB))	Table 1	Apply a sine wave signal to each of the INPUT connectors so that the output level of each output connector will be +4dB.	Meter indication: 0 ± 1VU	
	VU meter (CUE)	Table 1 CH CUE to ON position METER TB/CUE to CUE position	Apply a -60dB sine wave signal to each of the INPUT connectors.	Meter indication: 0 ± 1.5VU	
	PEAK indicator	Table 1	Apply a sine wave signal to each of the INPUT connectors.	Peak indicator is turned on at the output level: +14 ± 2dB	
14	PHANTOM power supply	PHANTOM MASTER switch to ON CH PH switch to ON	INPUT XLR connector Connect 10kΩ (more than 1W) between 1 and 2 pins and short between 2 and 3 pins.	XLR connector across 1 and 2 pins: 35 ± 3V	
15	HPF	Table 1 HPF80 switch to ON	Apply a -80dB 80Hz sine wave signal to each of the INPUT connectors.	With HPF switch to OFF output level as a standard PGM1 output level: -3 ± 1dB	
16	Oscillator	Table 1	Measure the TB OUT output level.	1kHz +4 ± 1dB	• -50 ± 1.5dB with TB OUT +4/-50 switch to "-50" position.
				PINK +4 ± 1dB	• When measuring pink noise, read the mean value of indicator deflection. Deflection mean value: ± 1.5 dB

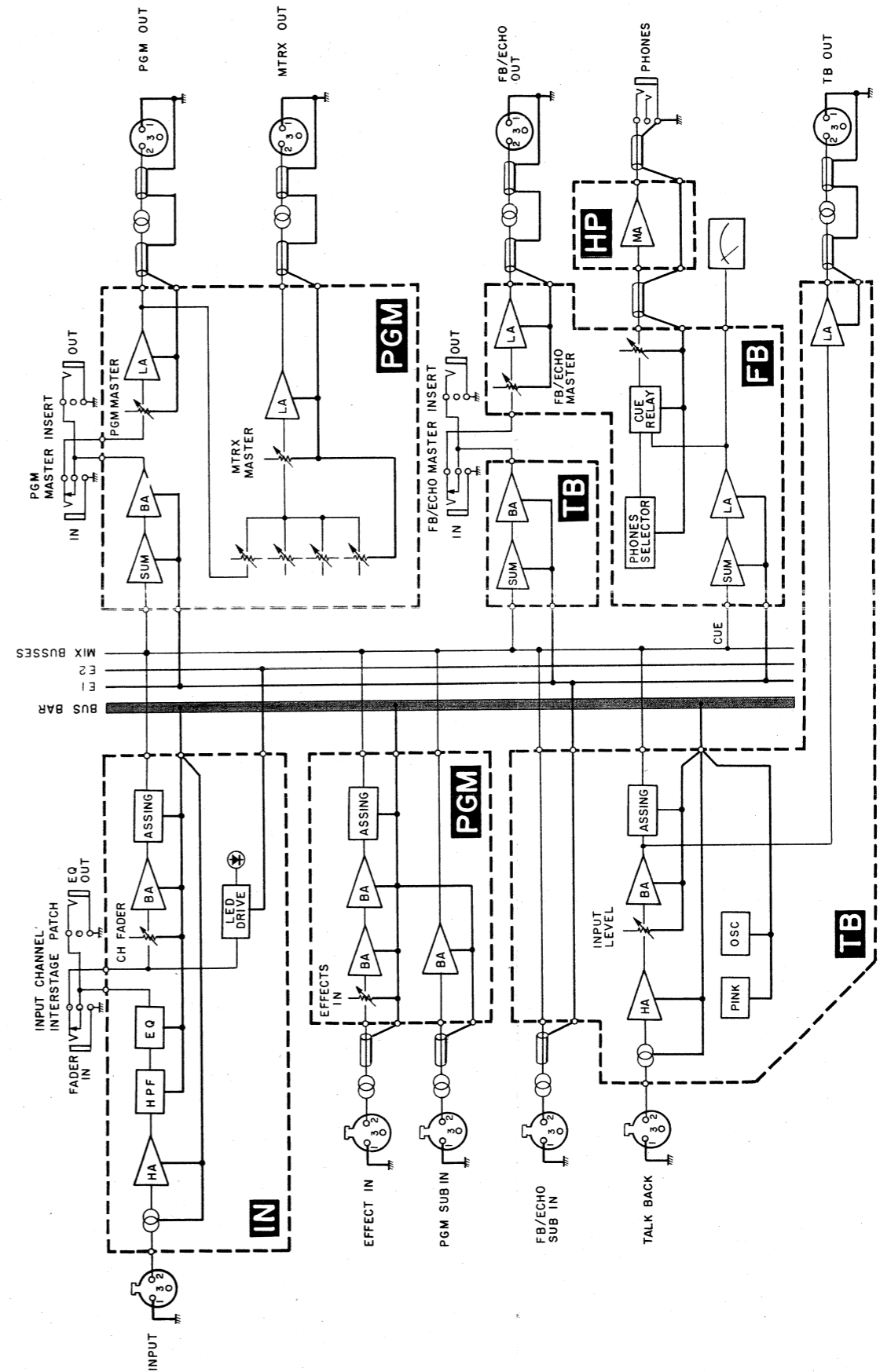
**BLOCK DIAGRAM**



### LEVEL DIAGRAM

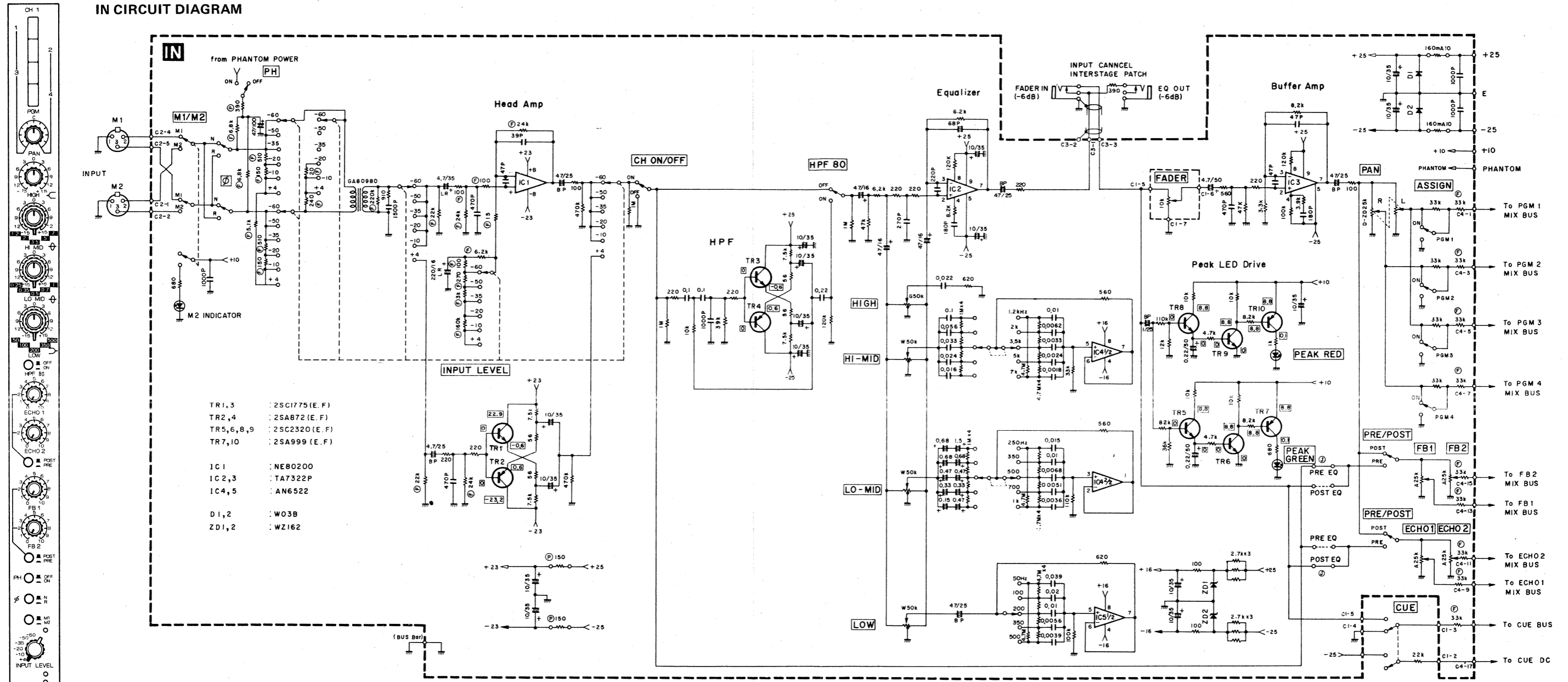


### GROUND CIRCUIT SCHEMATIC DIAGRAM

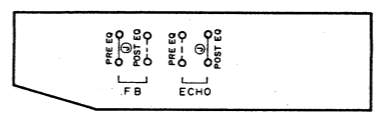
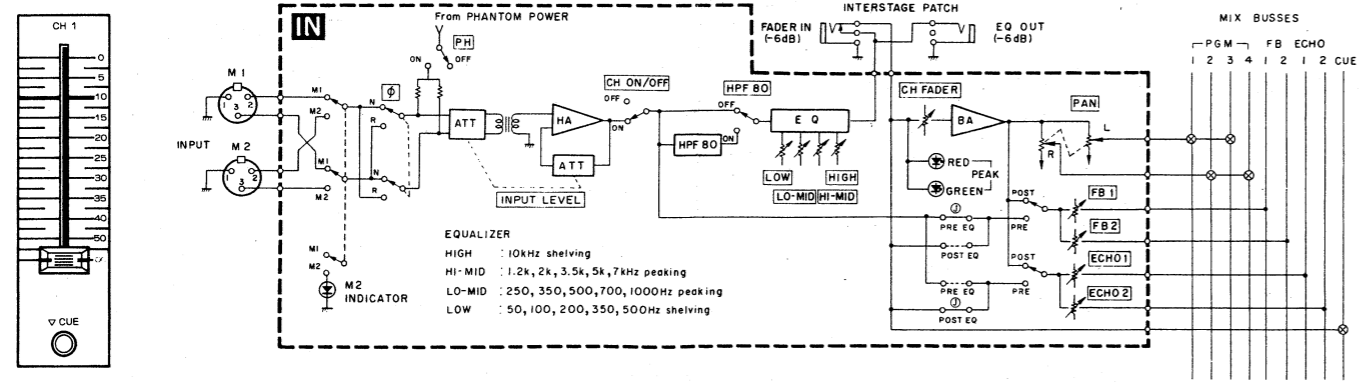


INPUT (CH1 ~ 16)

IN CIRCUIT DIAGRAM



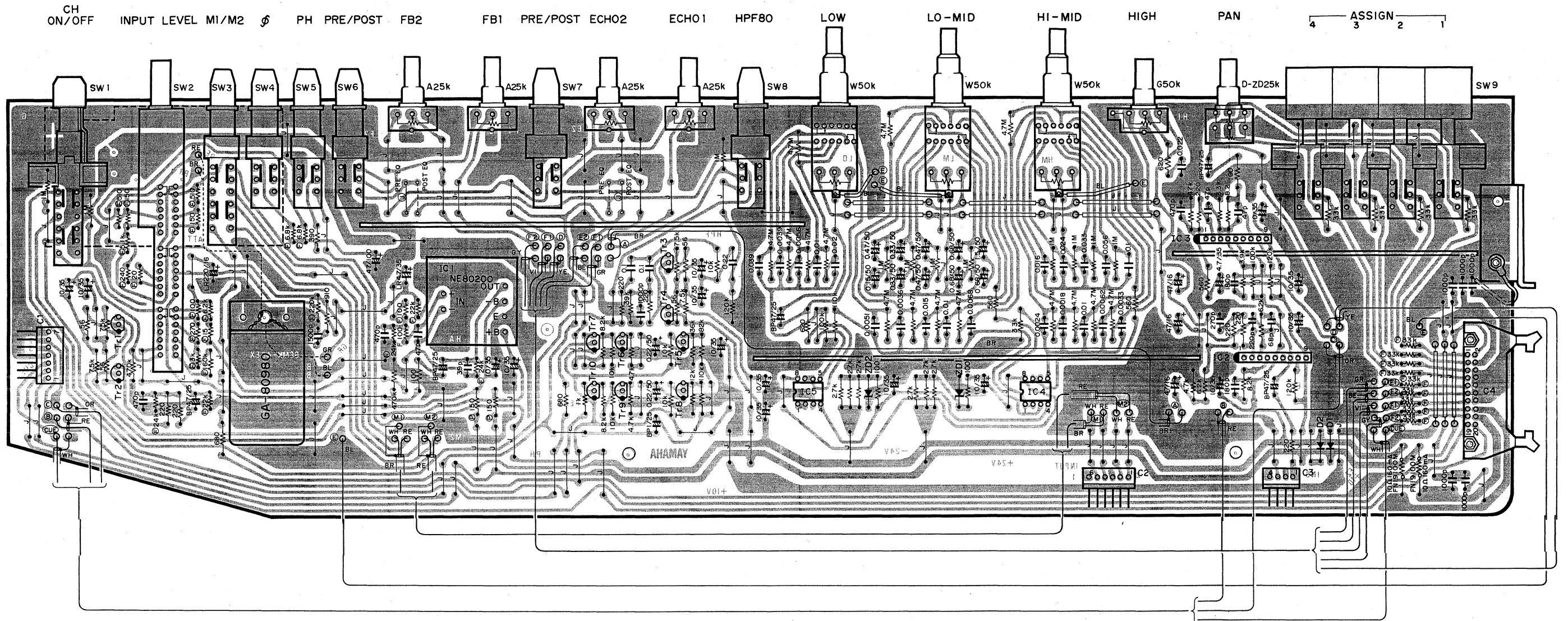
BLOCK DIAGRAM



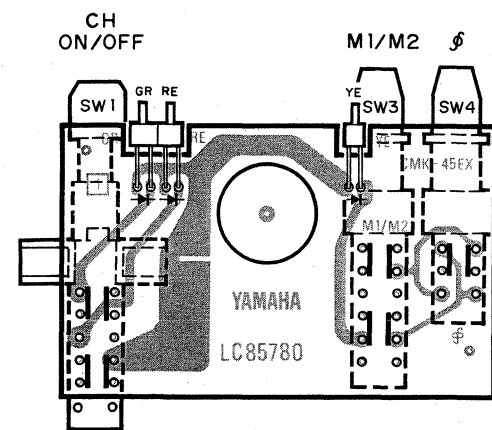
\*When PRE/POST switch in PRE position FB/ECHO signal feeding position, PRE-EQ or POST-EQ, can be altered by changing the jumper lead connection.



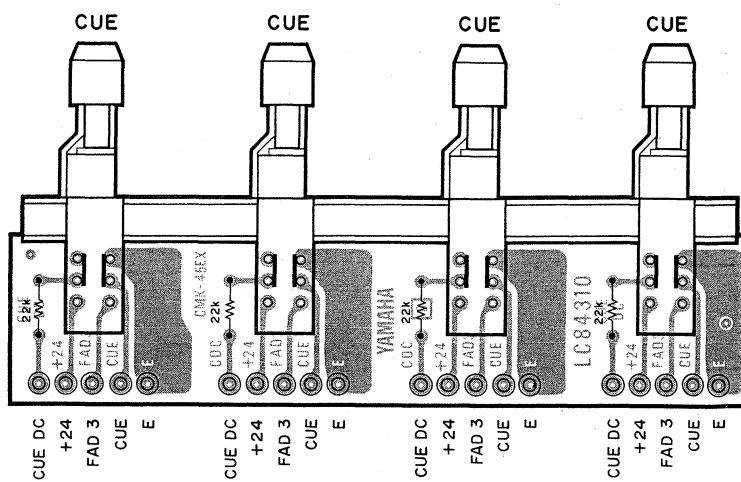
**IN C. BOARD NA80660**  
(Parts Side)



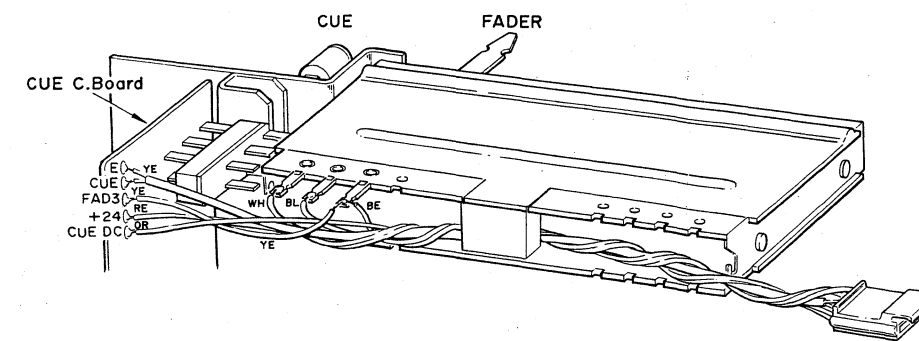
**IN C. BOARD DOTTED LINE PART**  
(Pattern Side)



**CUE C. BOARD NA80680**  
(Pattern Side)

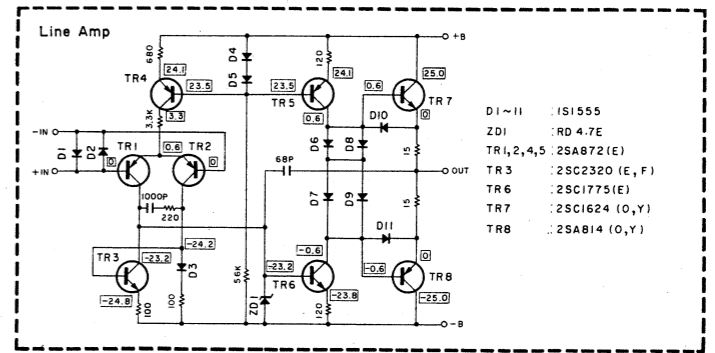
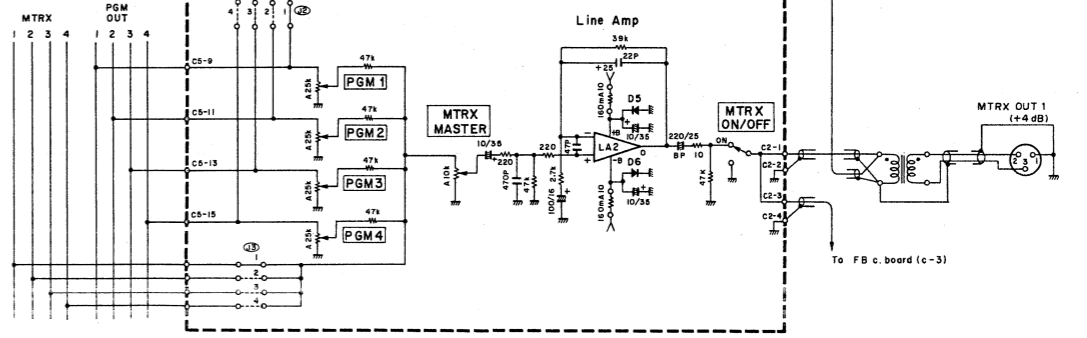
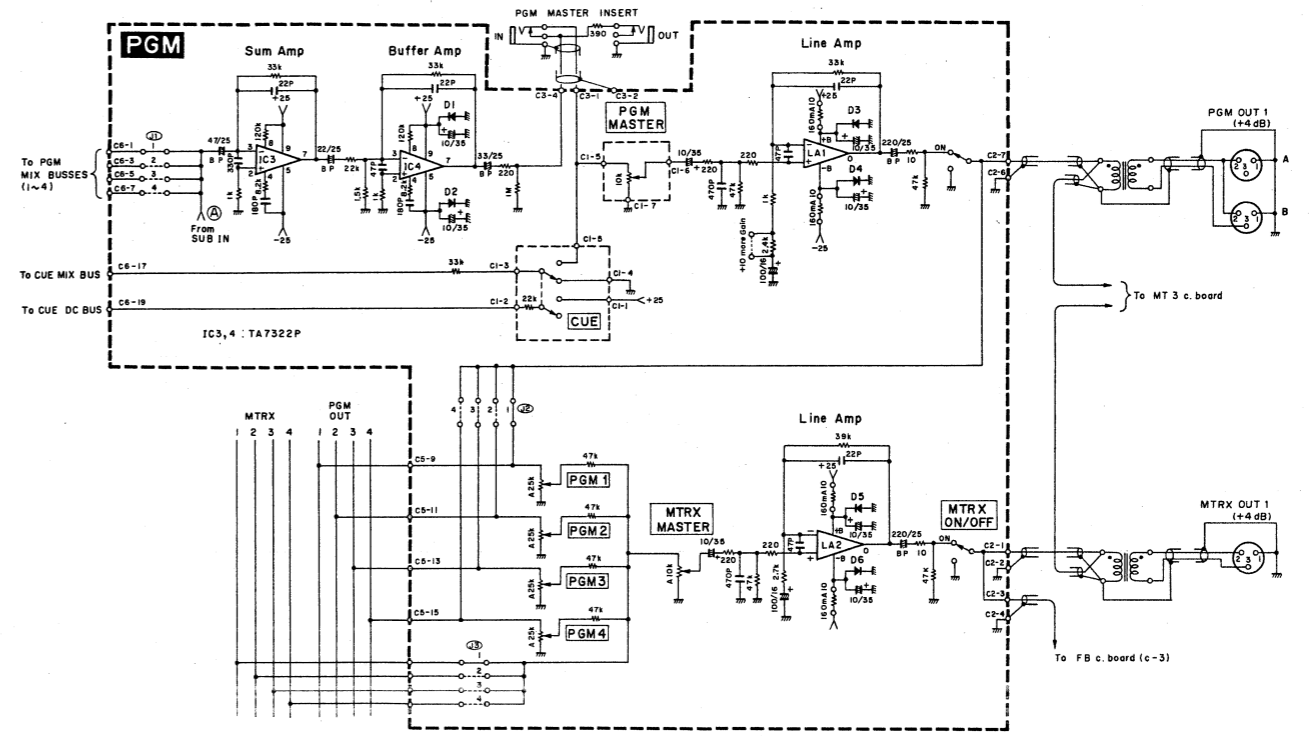
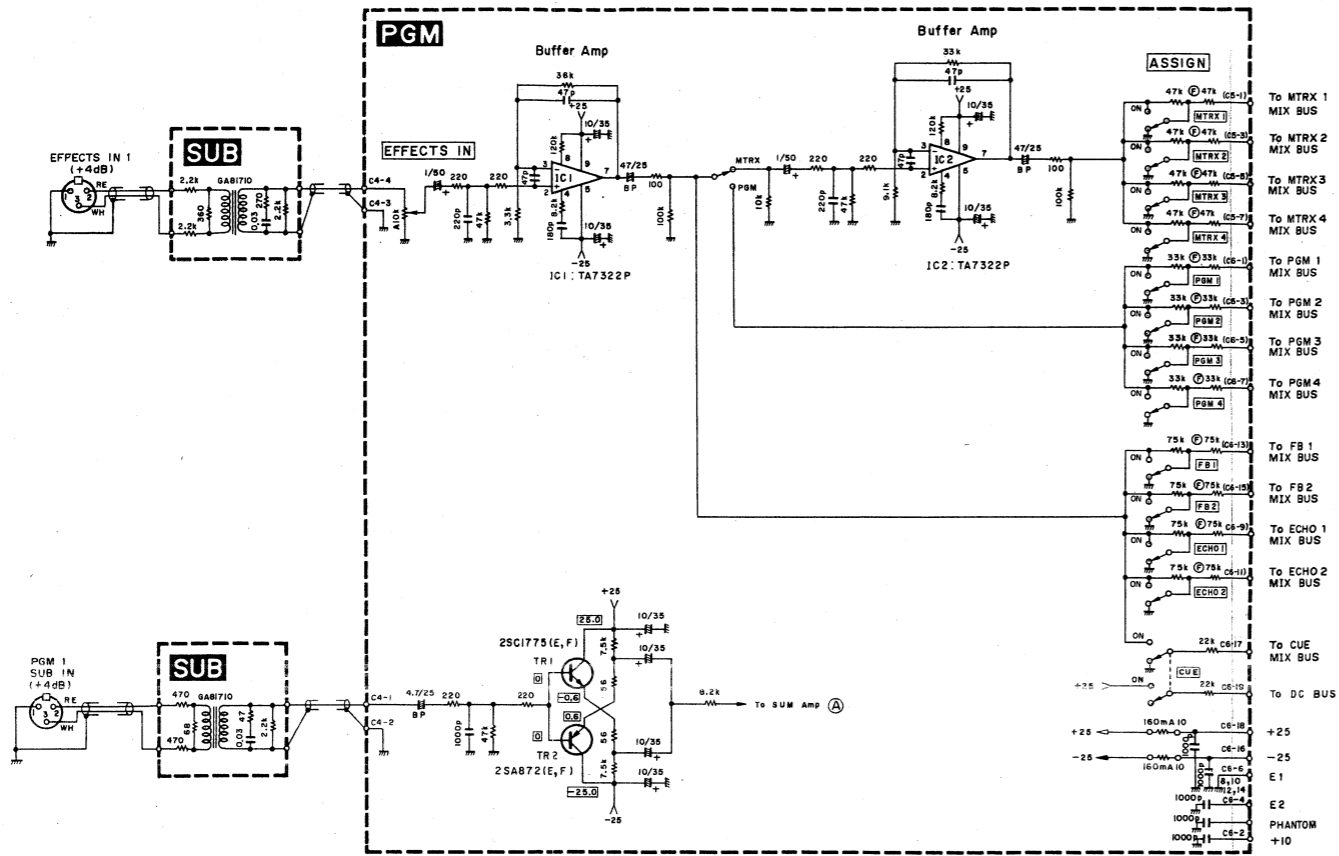


**CUE WIRING**



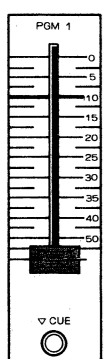
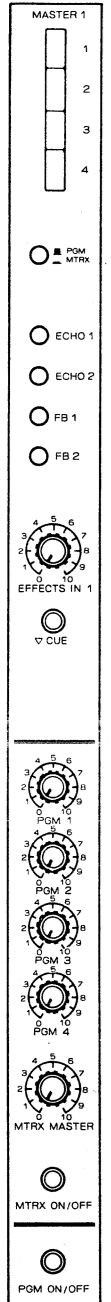
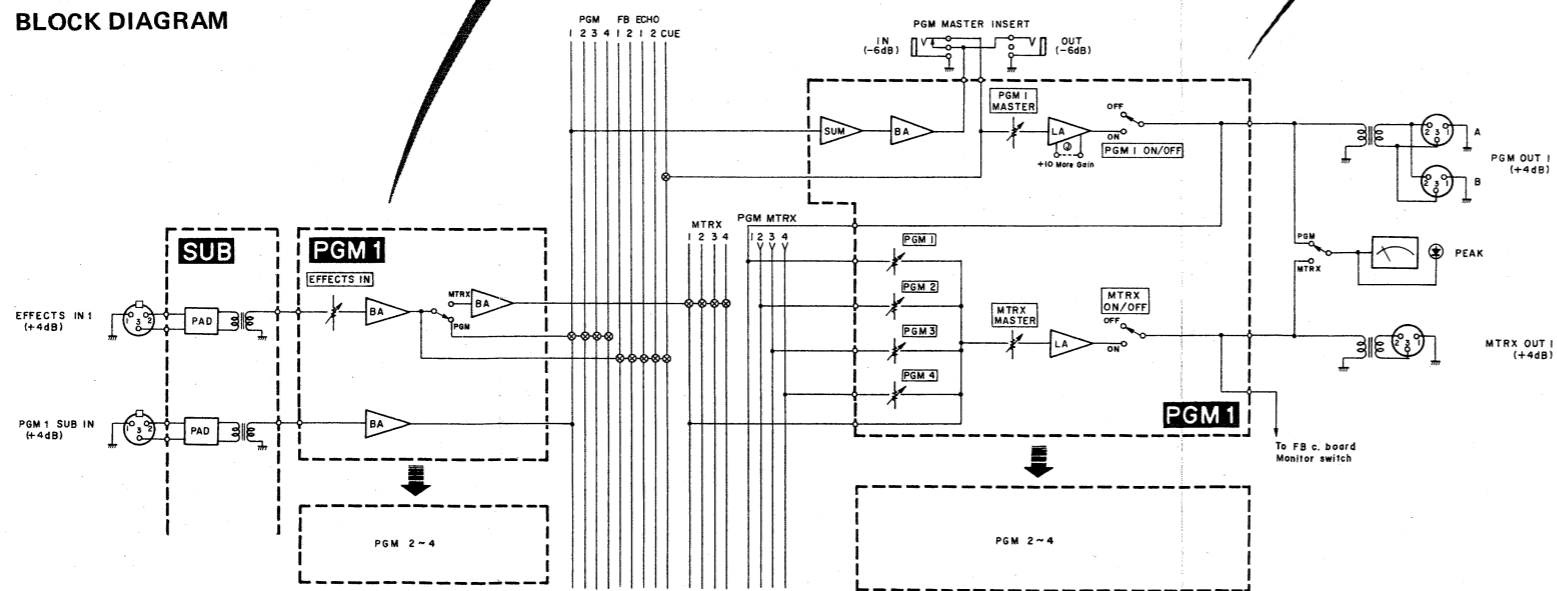
PGM MASTER & EFFECTS IN

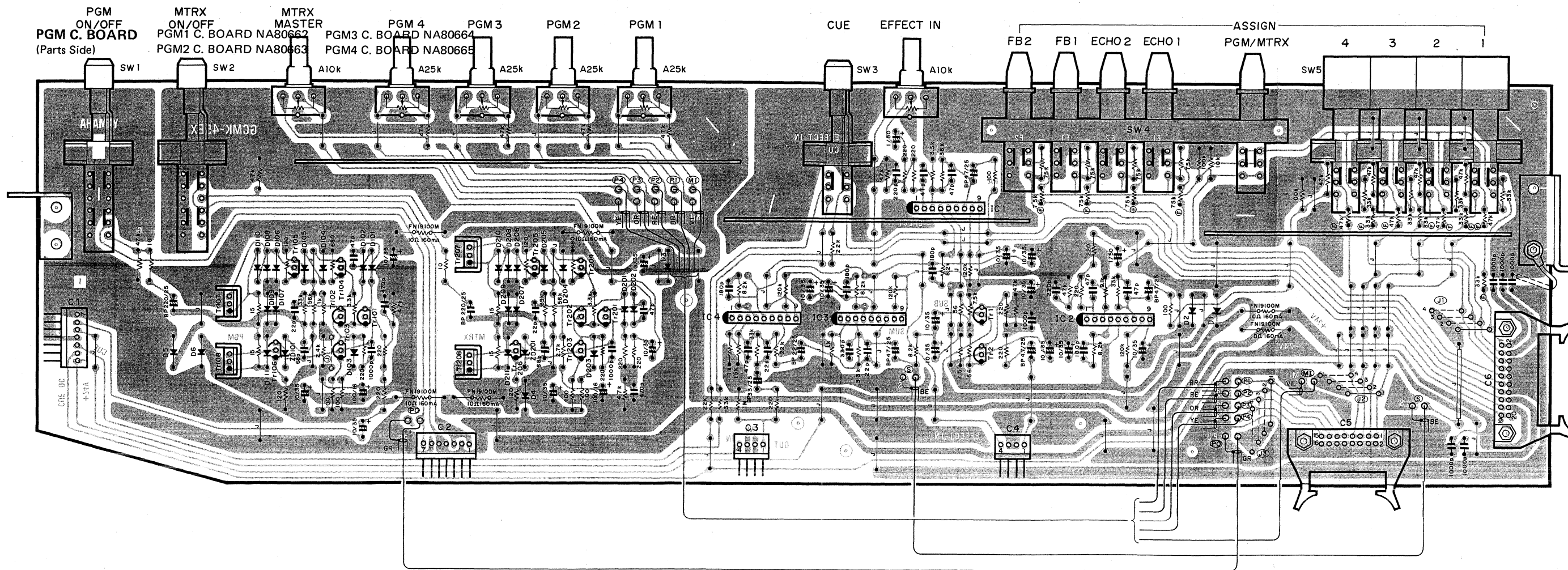
PGM CIRCUIT DIAGRAM



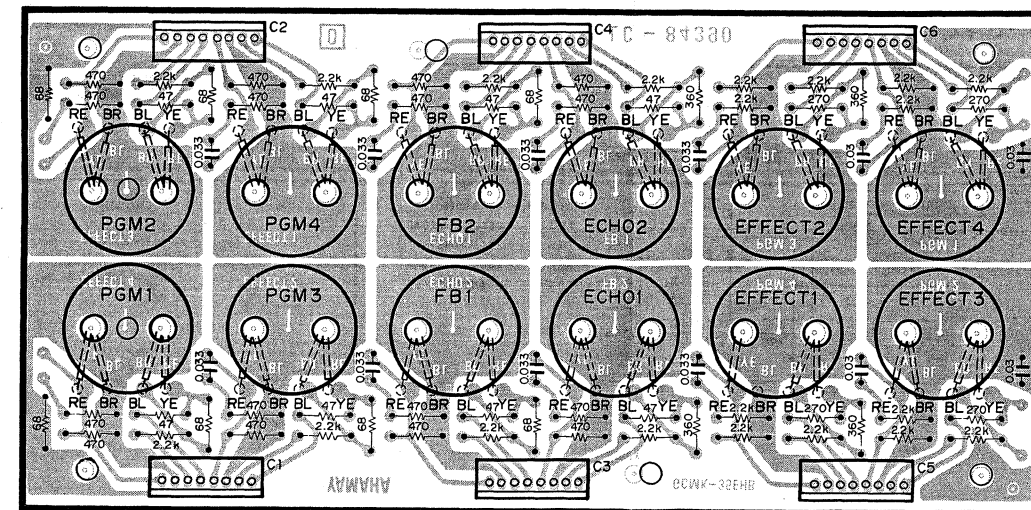
- D1 - D11 : 1S1555
- ZD1 : RD 4.7E
- TR1, 2, 4, 5 : 2SAB72 (E, F)
- TR3 : 2SC2320 (E, F)
- TR6 : 2SC1775 (E)
- TR7 : 2SC1624 (O, Y)
- TR8 : 2SAB14 (O, Y)

BLOCK DIAGRAM





**SUB C. BOARD NA806740**  
(Parts Side)



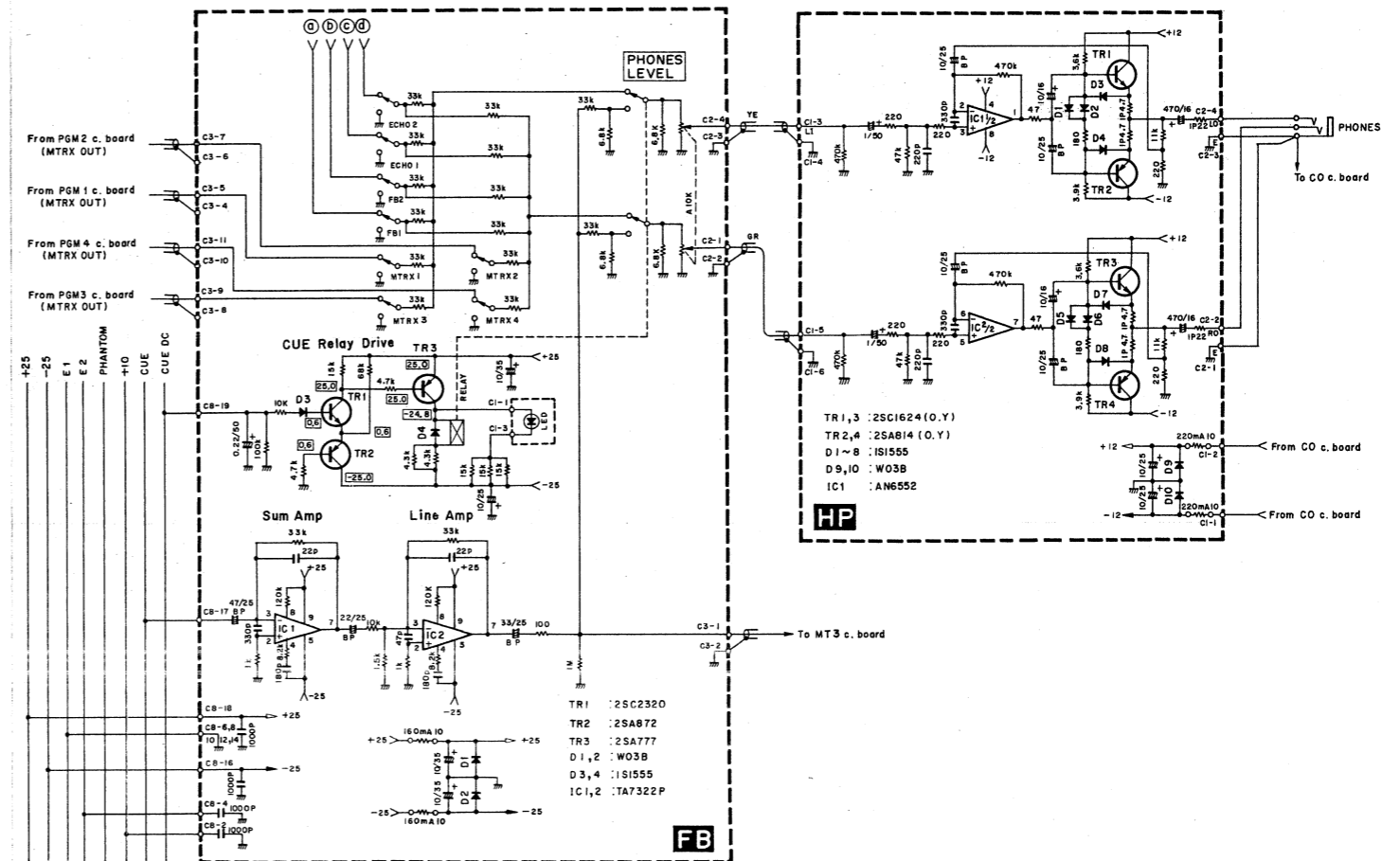
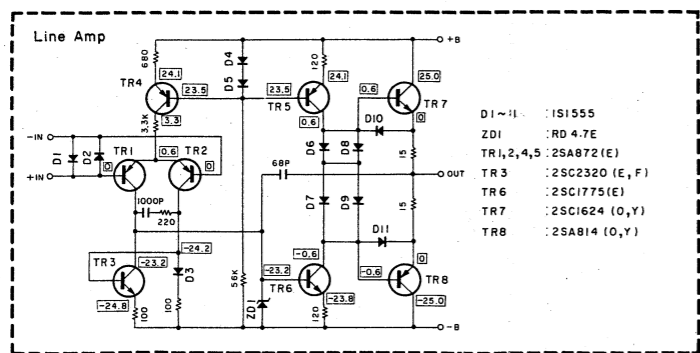
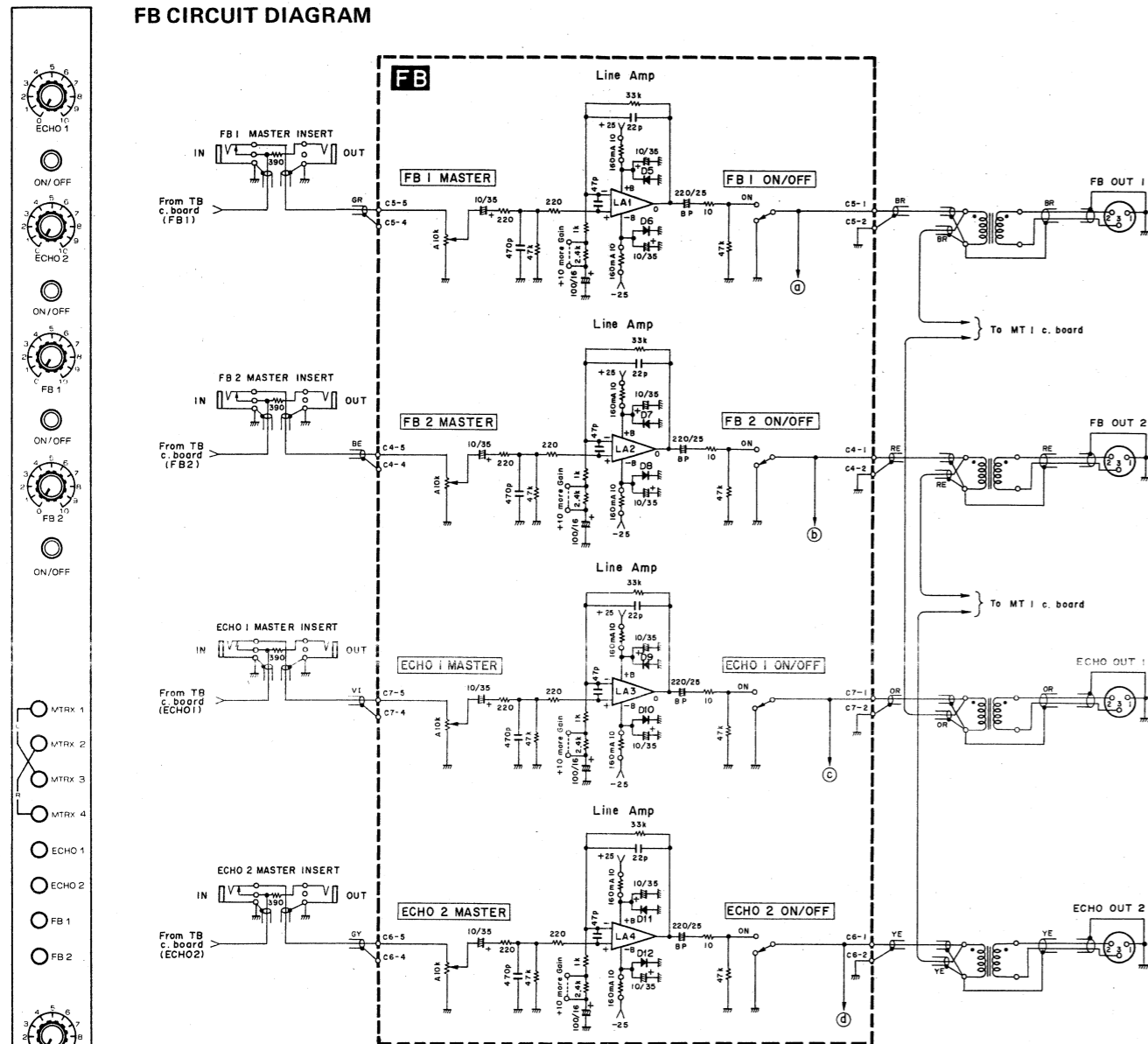
\*The circuit itself on each of the p.c boards 1 ~ 4 is one and the same. Only jumper leads J1, J2, J3 or each of them are differently wired. Therefore, any one of PGM 1 ~ 4 can be used for any other one by changing its wiring.

\*With a jumper lead connection, Gain of the Line amp can be raised by 10dB.

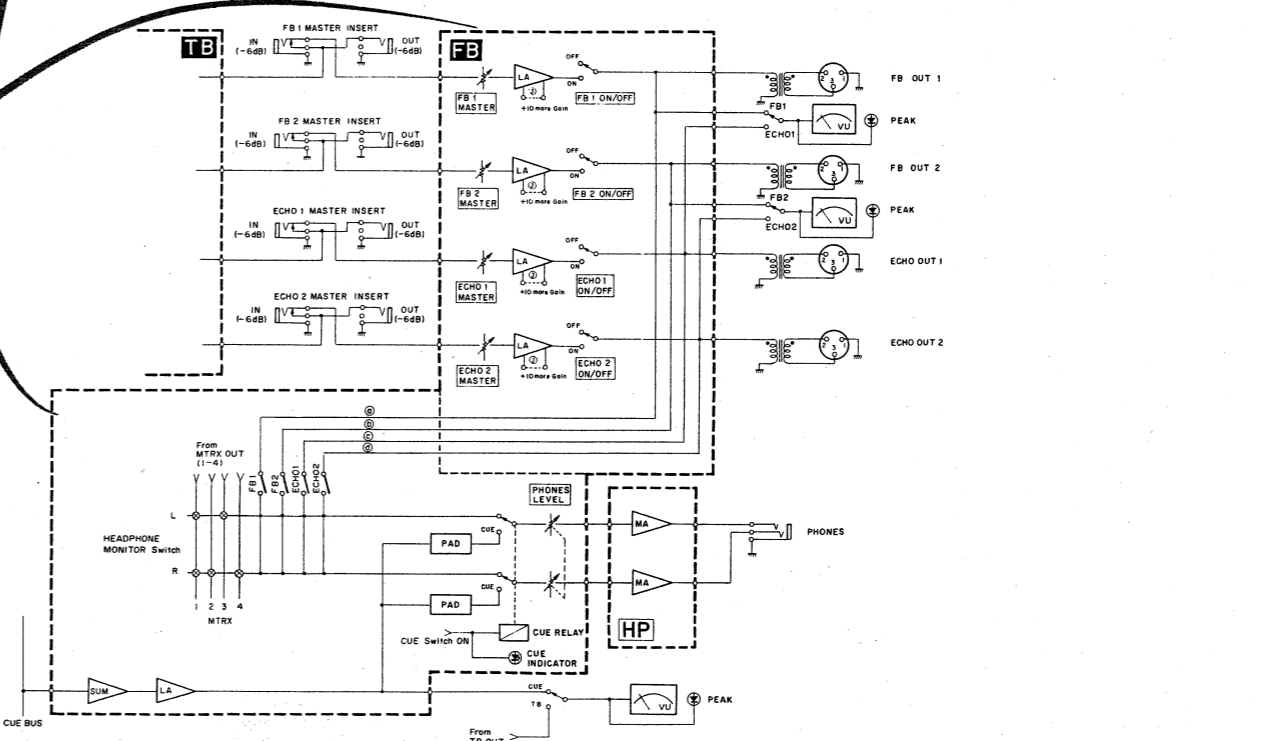


ECHO / FB & PHONES

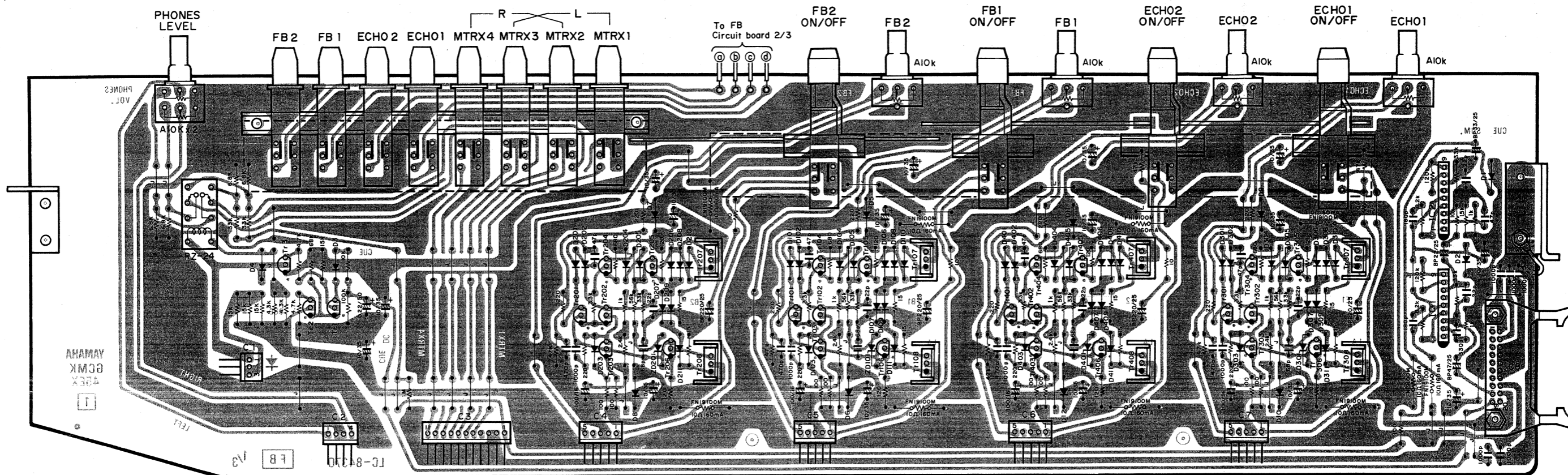
FB CIRCUIT DIAGRAM



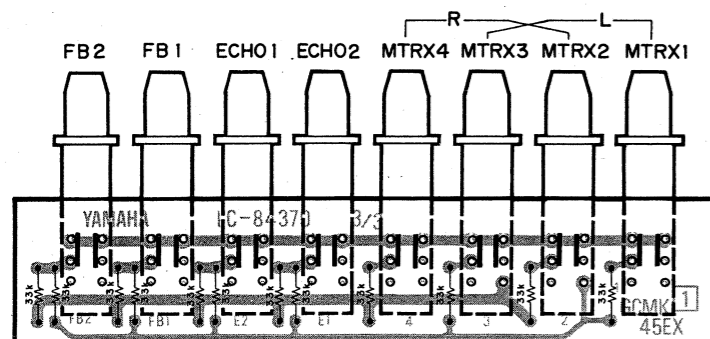
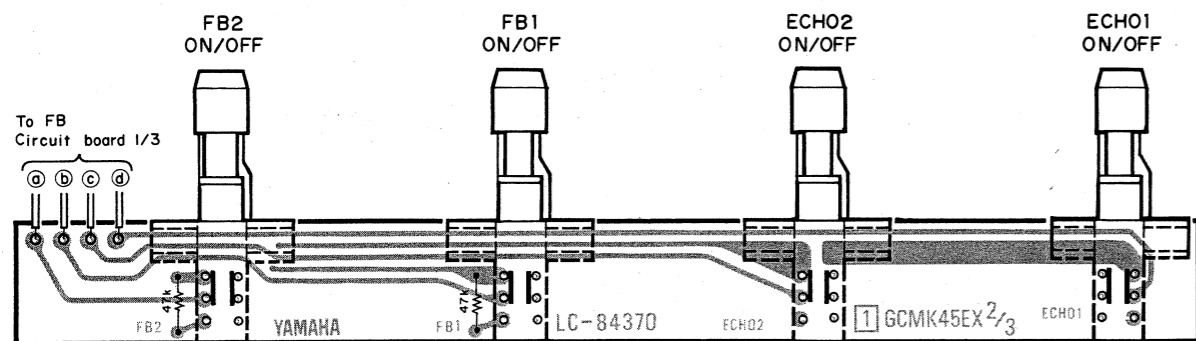
BLOCK DIAGRAM



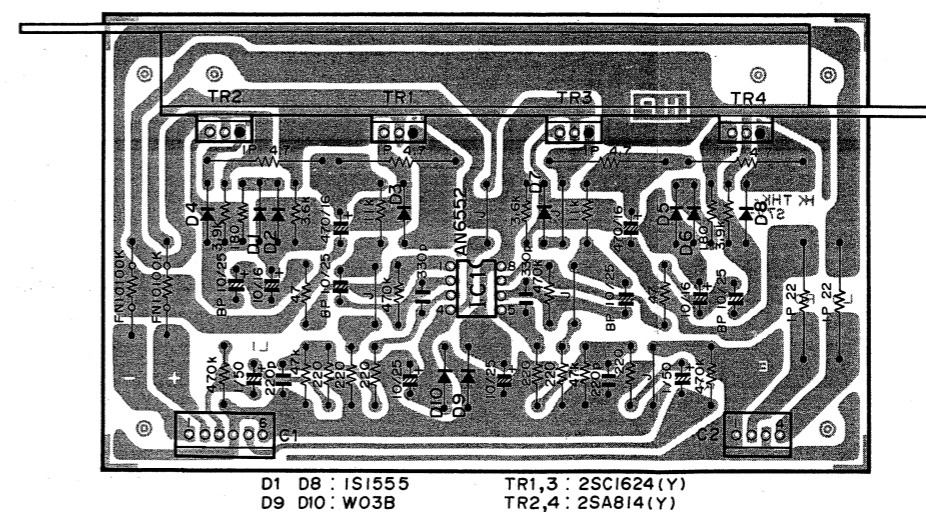
**FB C. BOARD NA80670**  
(Parts Side)



**FB C. BOARD DOTTED LINE PART**  
(Pattern Side)



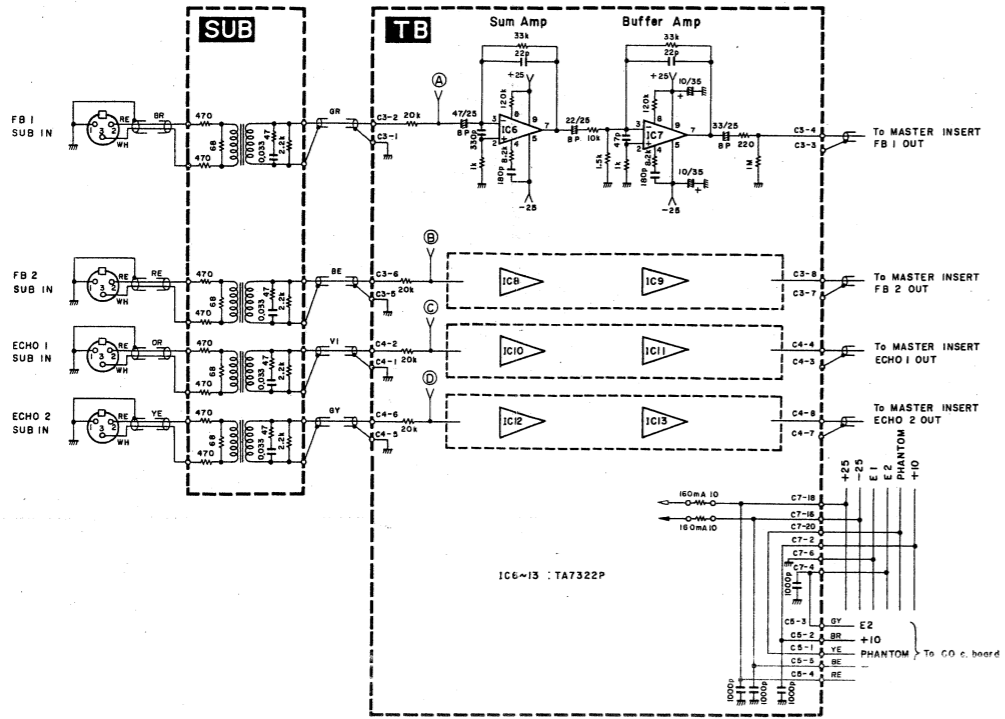
**HP C. BOARD NA80636**  
(Parts Side)



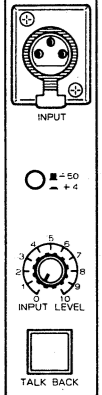
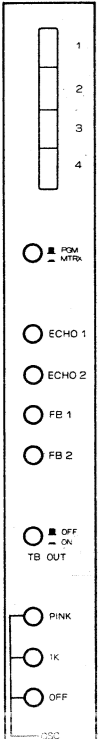
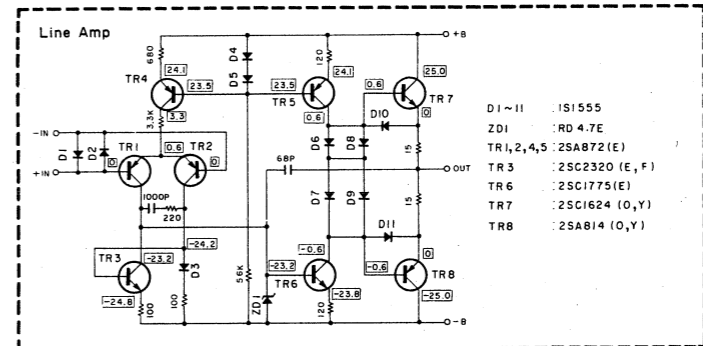
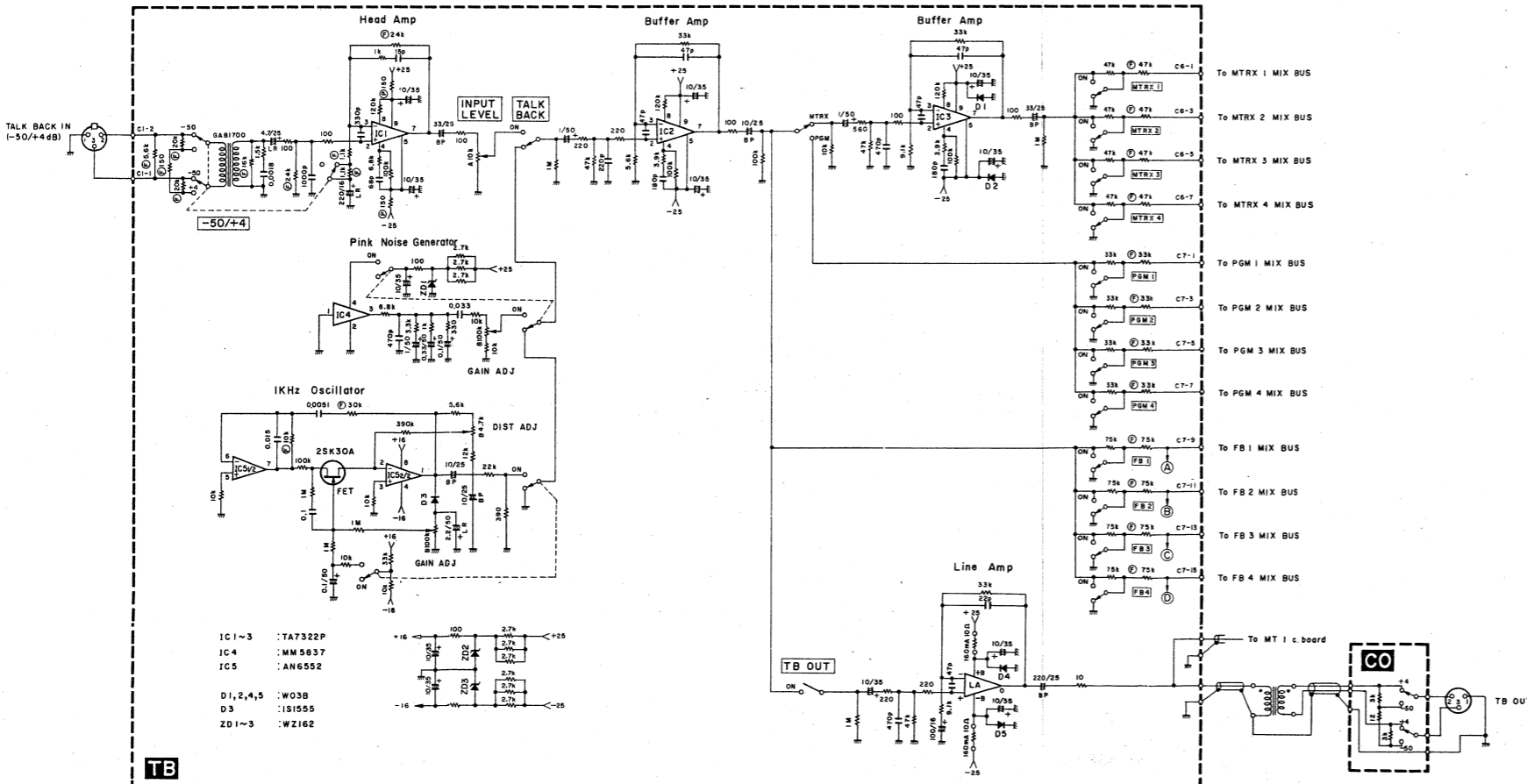
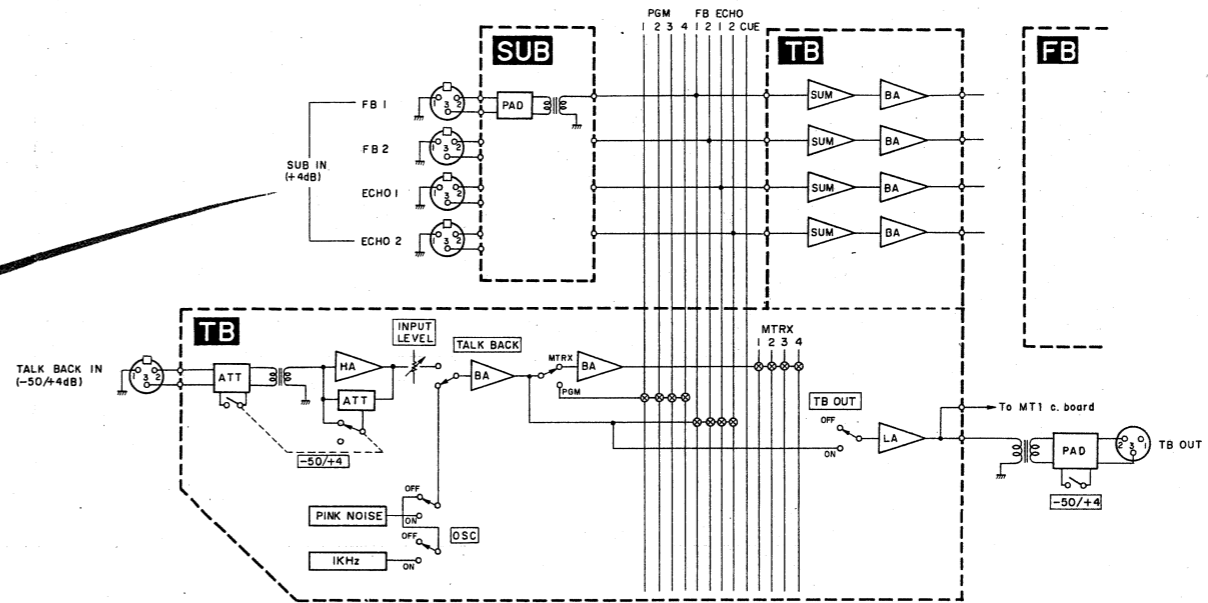
D1 D8 : 1S1555      TR1,3 : 2SC1624(Y)  
D9 D10 : W03B      TR2,4 : 2SA814(Y)

TALK BACK

TB CIRCUIT DIAGRAM

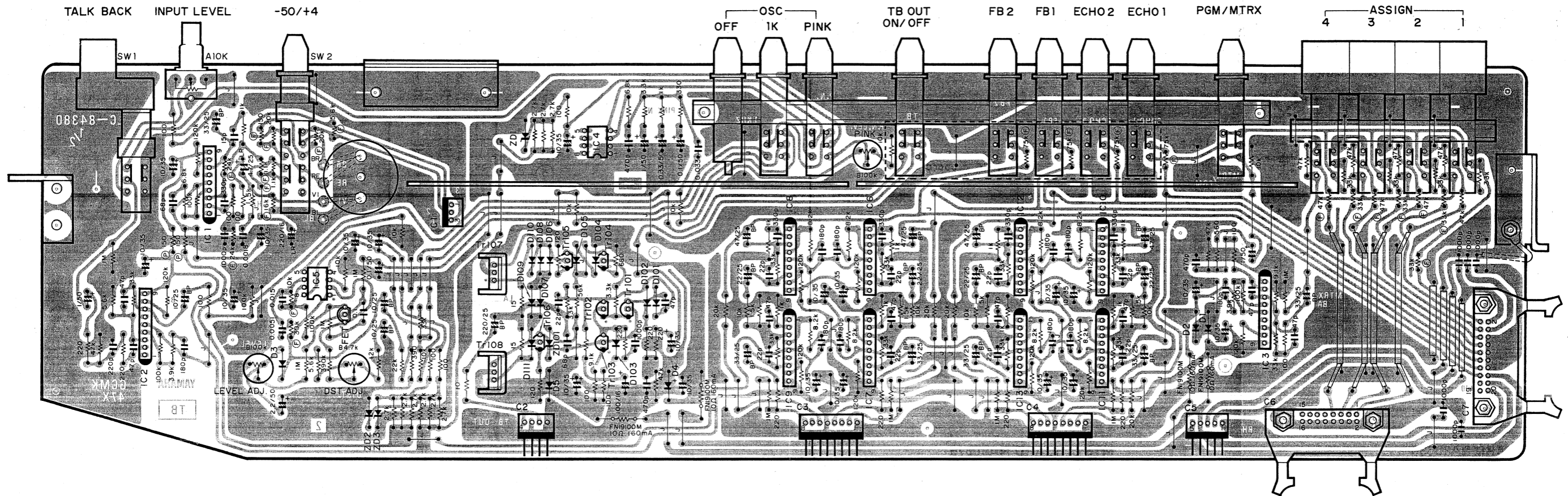


BLOCK DIAGRAM

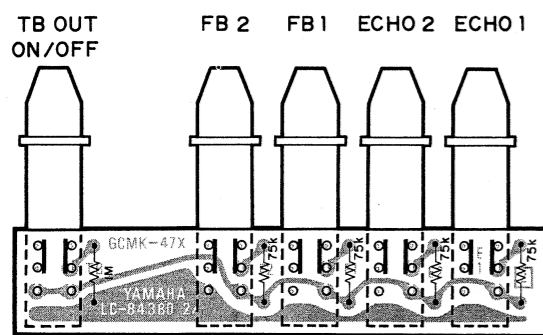




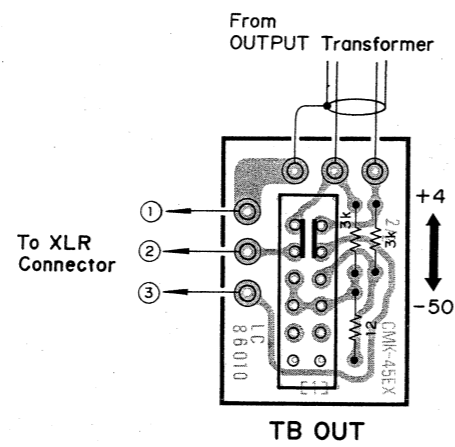
**TB C. BOARD NA80672**  
(Parts Side)



**TB C. BOARD DOTTED LINE PART**  
(Pattern Side)

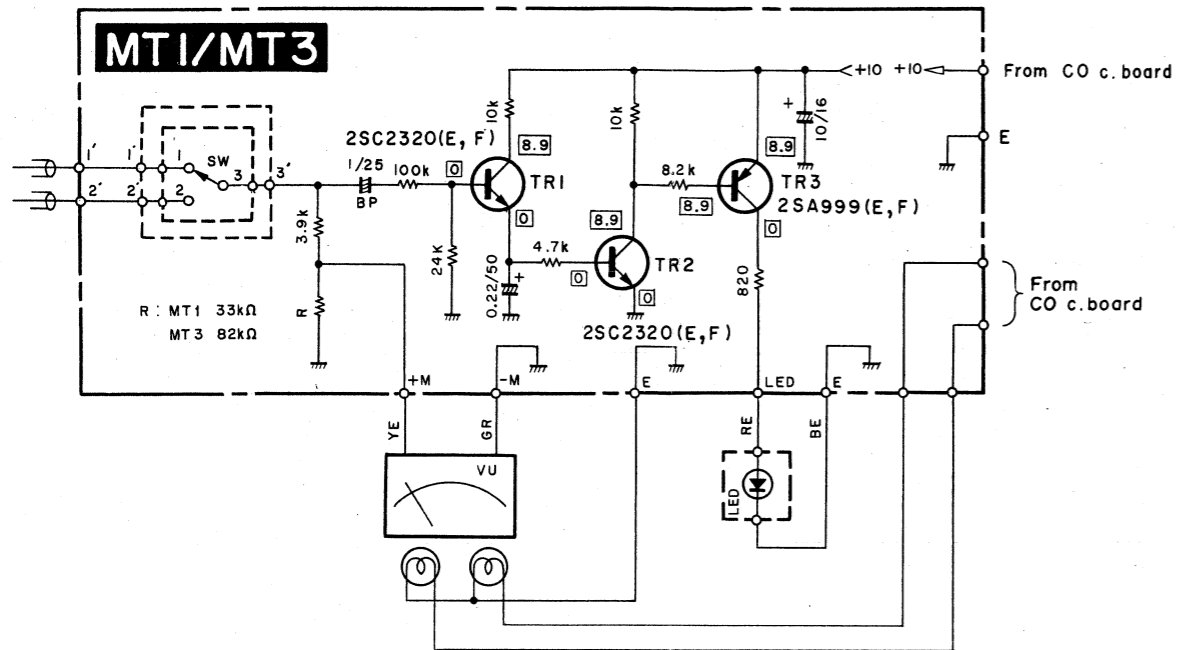


**CO C. BOARD 2/2 NA80679**  
(Parts Side)



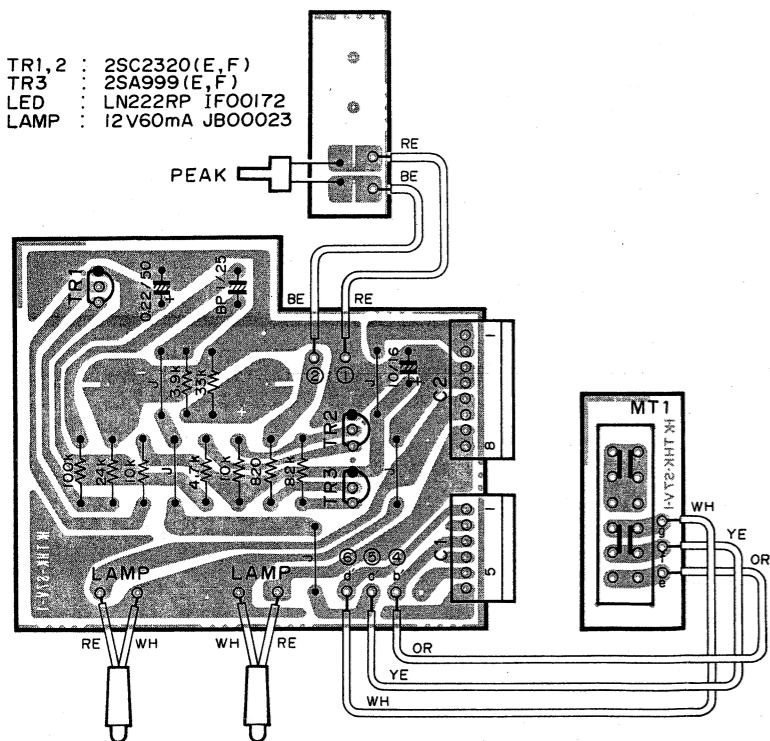
■ MT1 / MT3 CIRCUIT BOARDS

MT1/MT3 CIRCUIT DIAGRAM

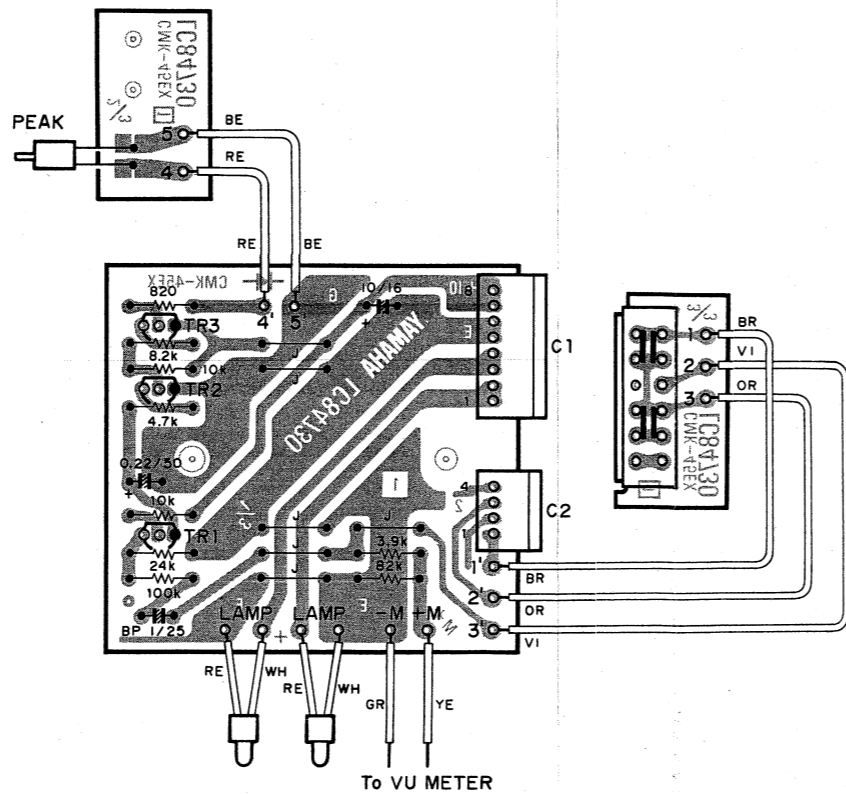


MT1 C. BOARD NA80638  
(Parts Side)

- TR1,2 : 2SC2320(E,F)
- TR3 : 2SA999(E,F)
- LED : LN222RP IFO0172
- LAMP : I2V60mA JB00023

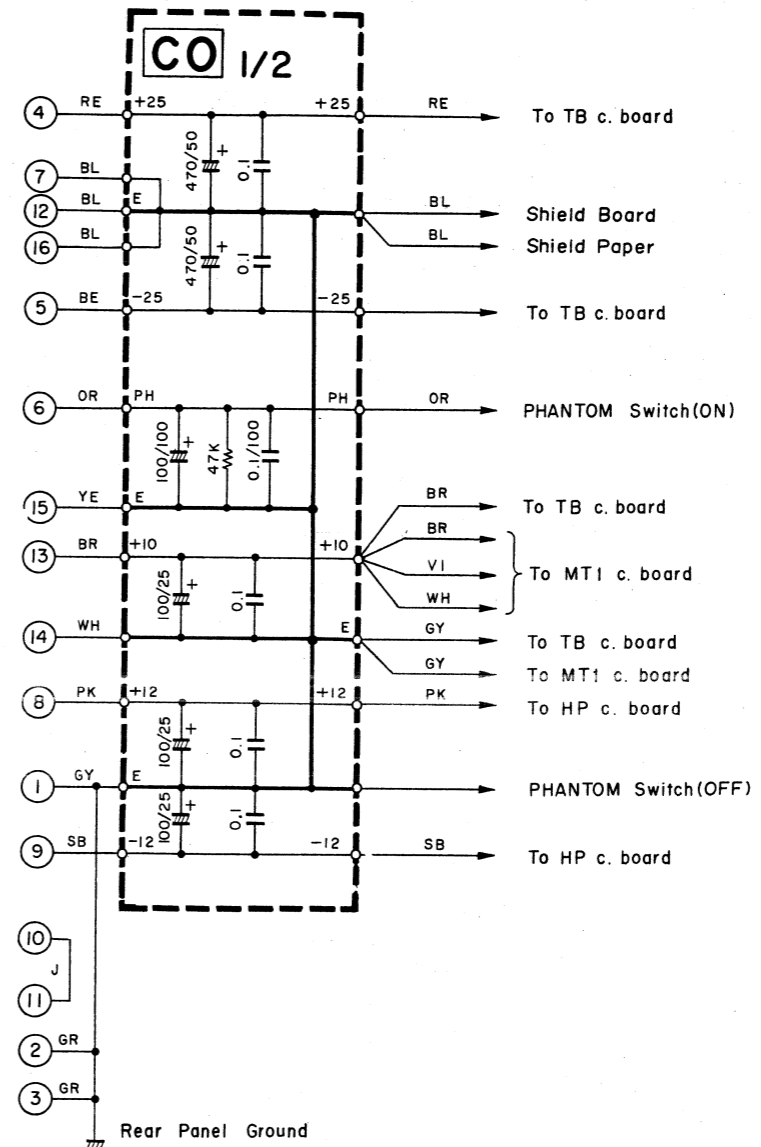


MT3 C. BOARD NA80675  
(Parts Side)

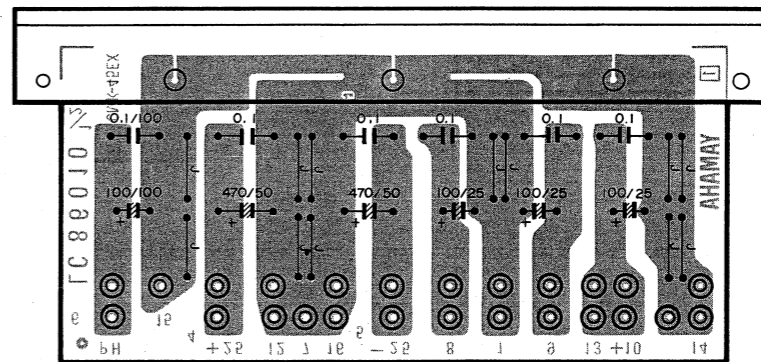


■ CO CIRCUIT BOARD

CO CIRCUIT DIAGRAM

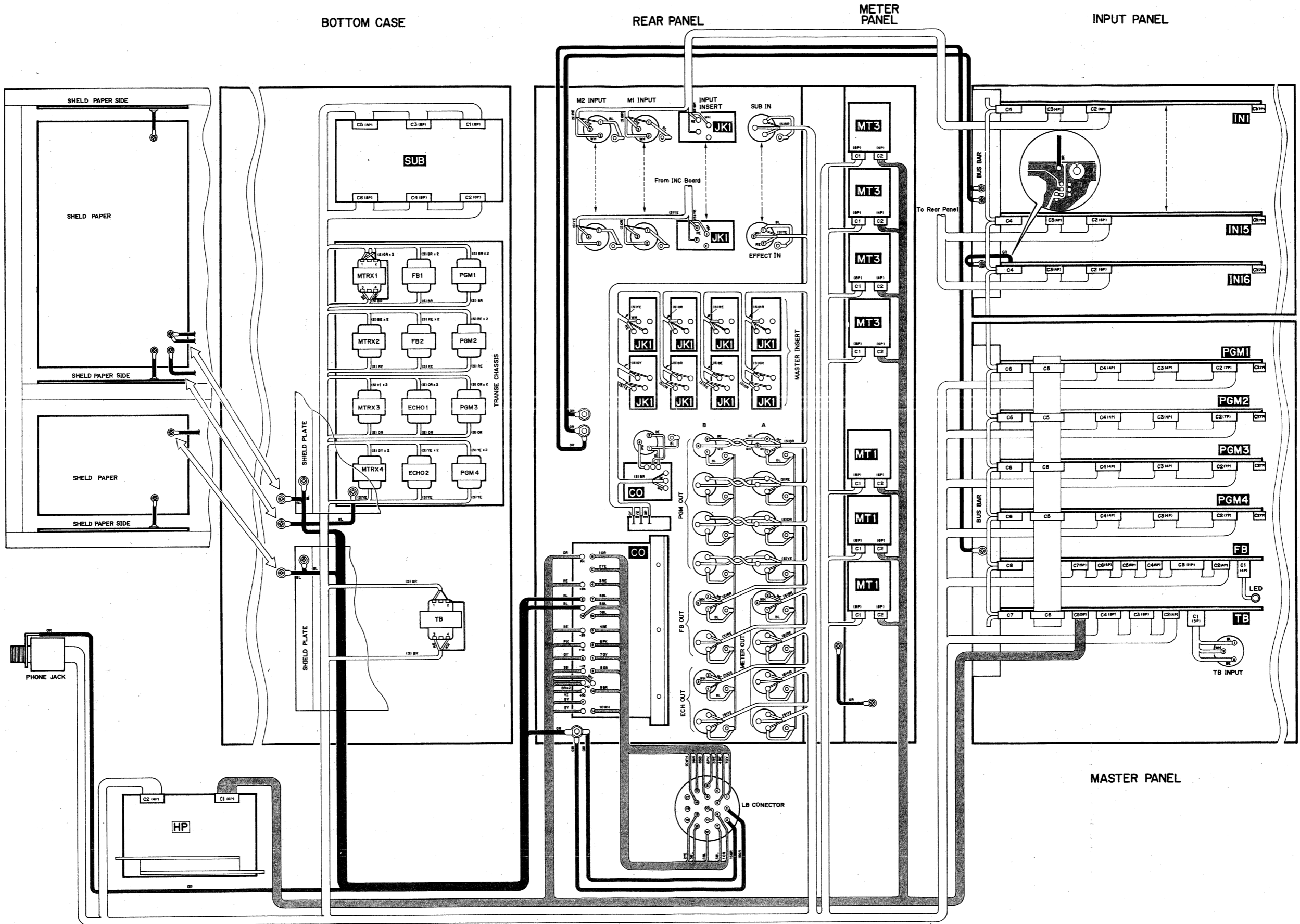


CO C. BOARD 1/2 NA80679





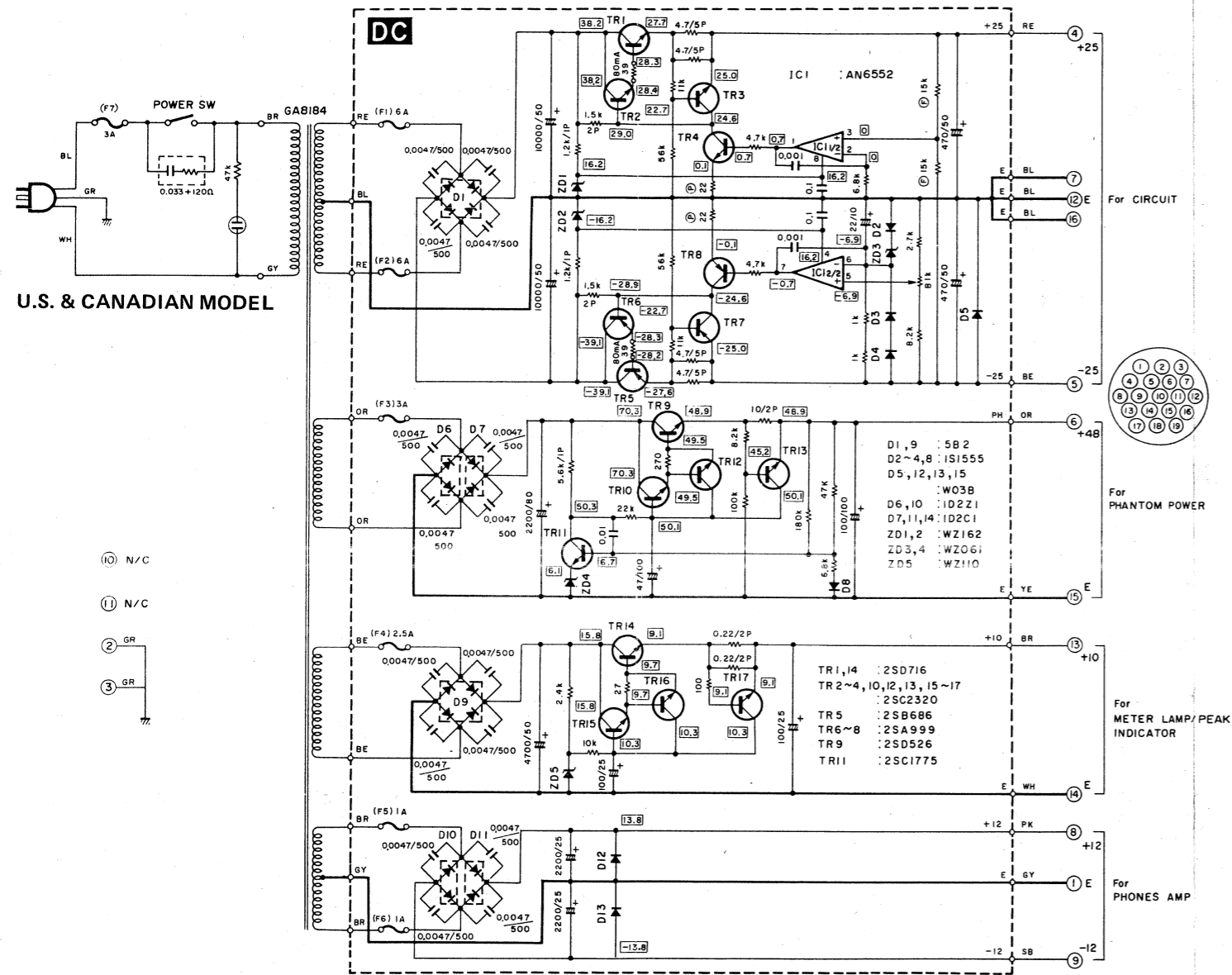
WIRING



**PW1500**

DC CIRCUIT DIAGRAM

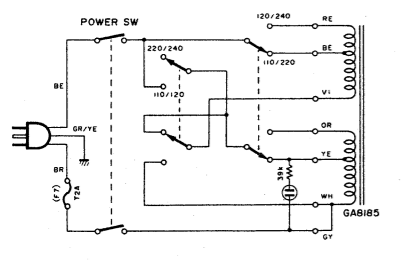
DC C. Board US & CANADIAN MODELS NA80677  
(Parts Side) GENERAL MODEL NA80678



U.S. & CANADIAN MODEL

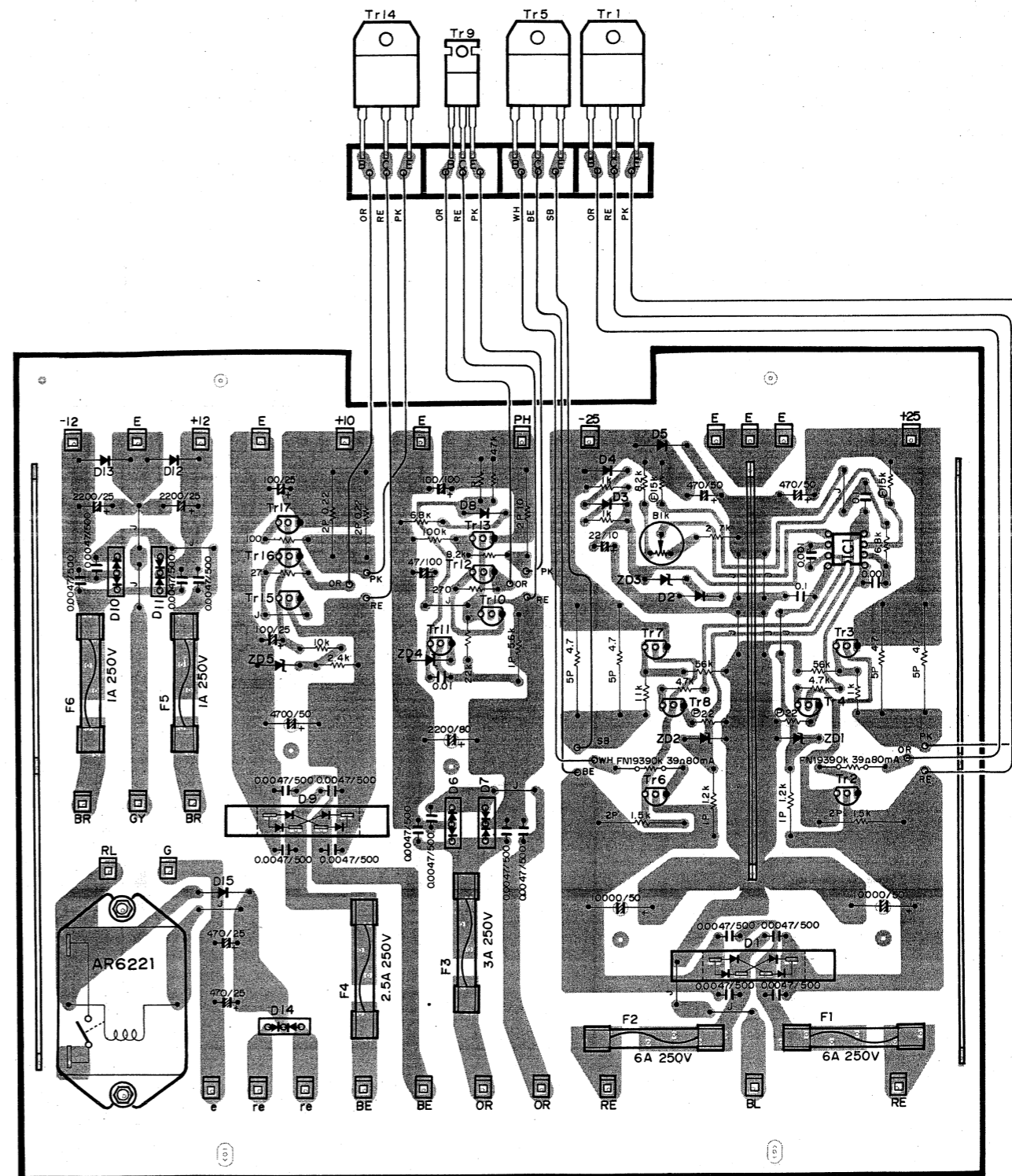
- (10) N/C
- (11) N/C
- (2) GR
- (3) GR

GENERAL MODEL



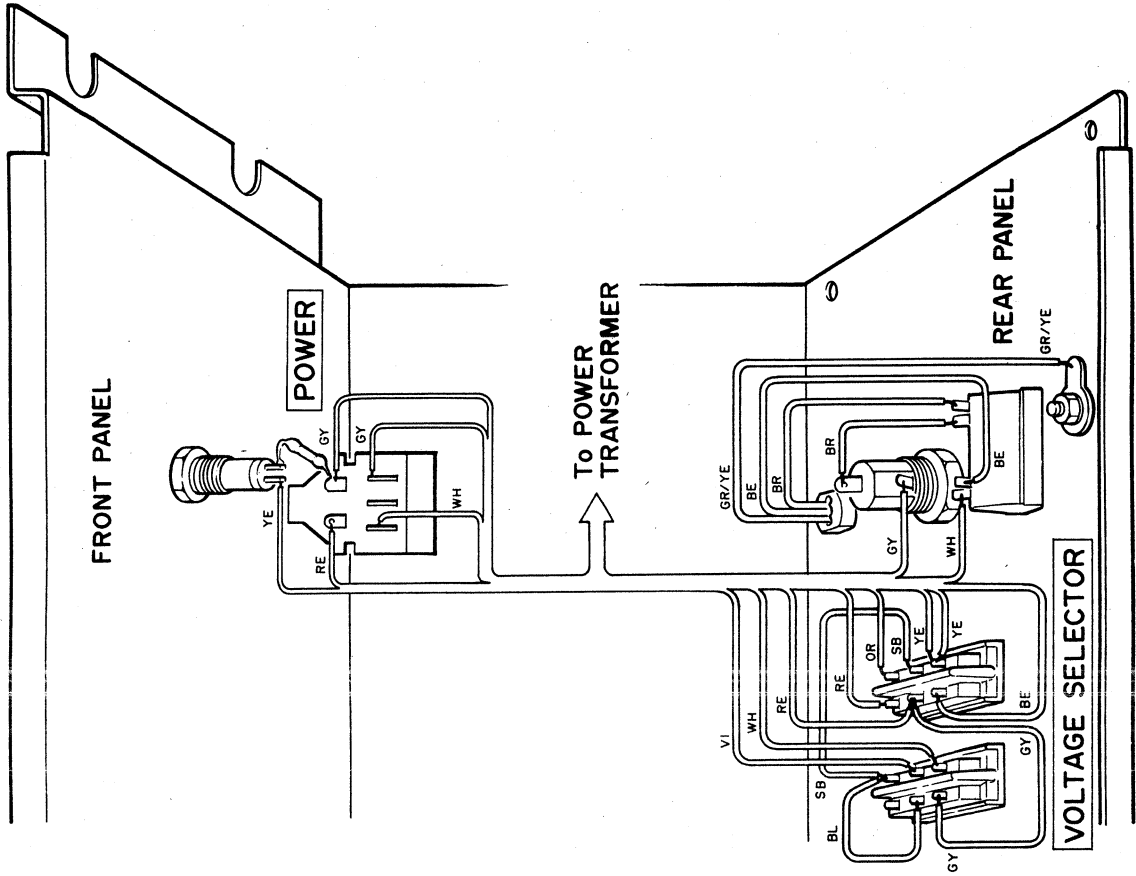
FUSE:

MODEL	F1, F2	F3	F4	F5, F6	F7
US & CANADIAN	6A 125V KB001790	3A 125V KB00200	2.5A 125V KB00144	1A 125V KB00106	3A 125V KB00200
GENERAL	T6.3A 250V KB000770	T3.15A 250V KB000760	T2.5A 250V KB000610	T630mA 250V KB00067	T2A 250V KB00075

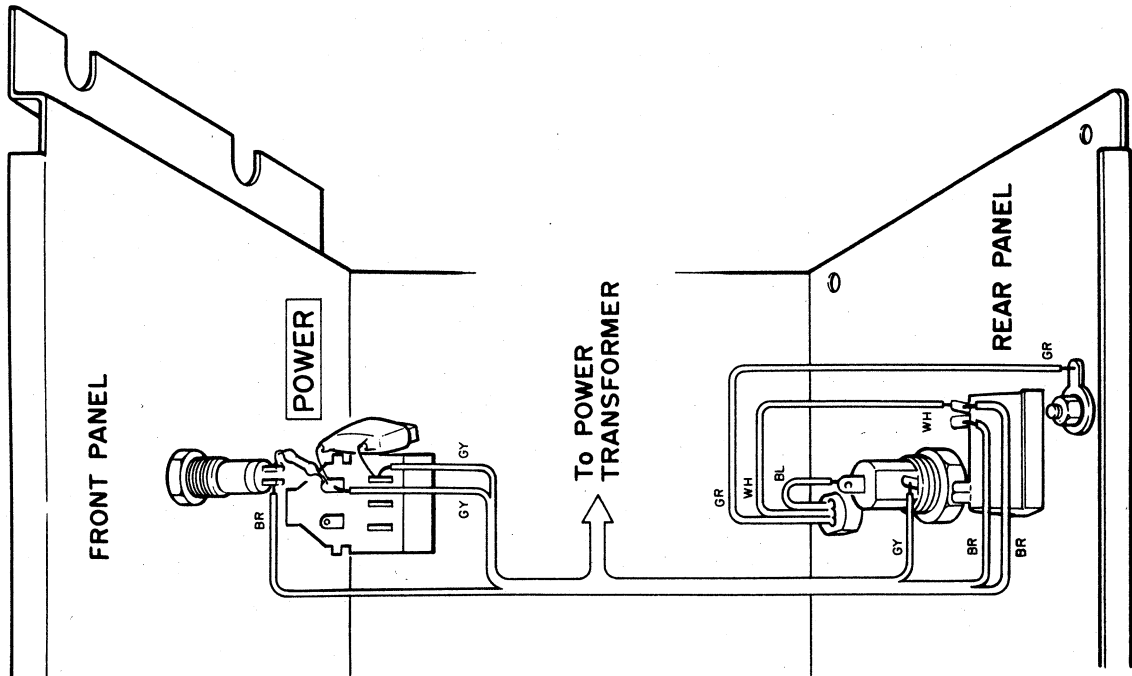


WIRING

GENERAL MODEL



U.S. & CANADIAN MODEL



# PARTS LIST

## M1516

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#### <PW1500>

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SINCE 1887



**YAMAHA**

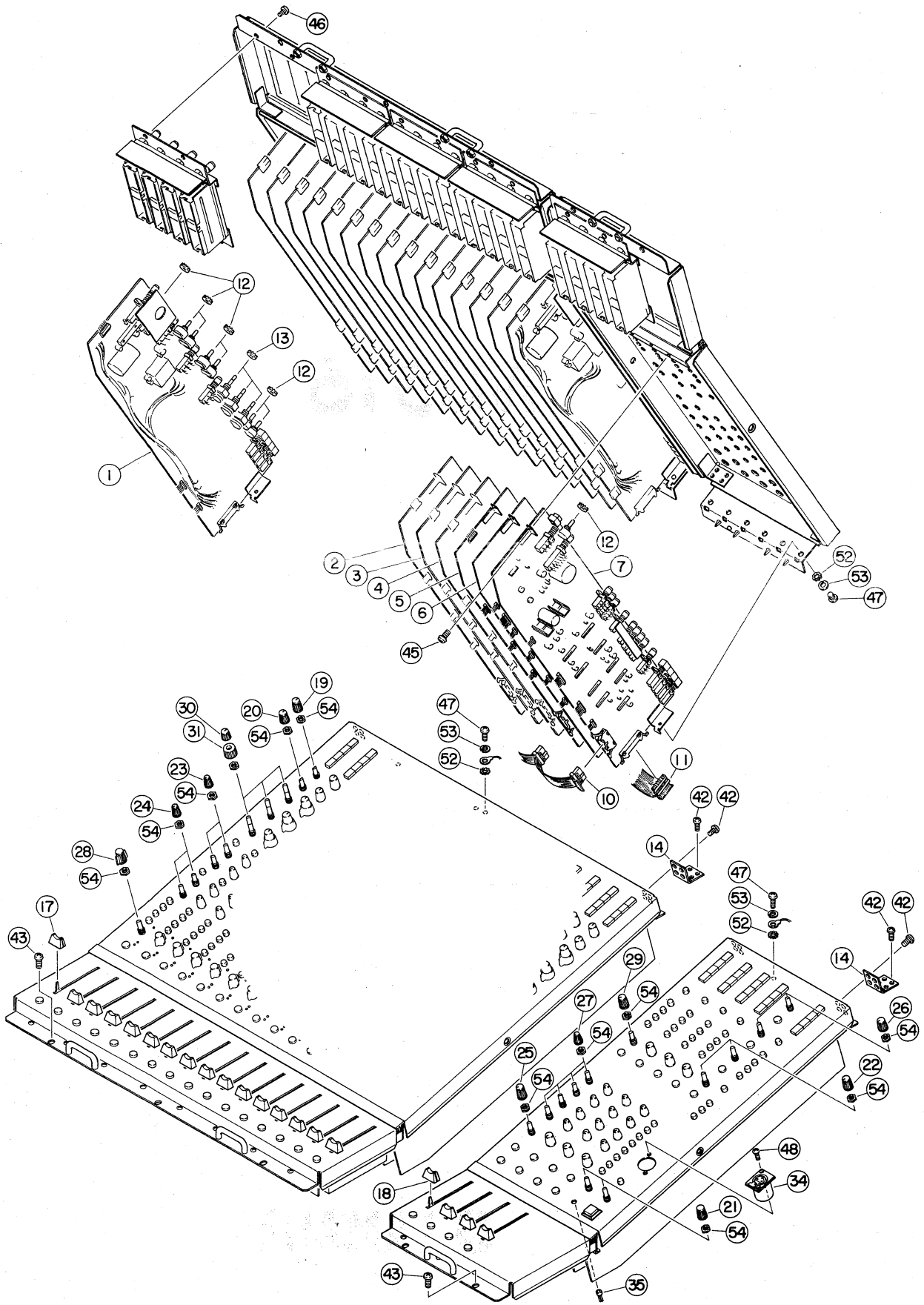
NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN

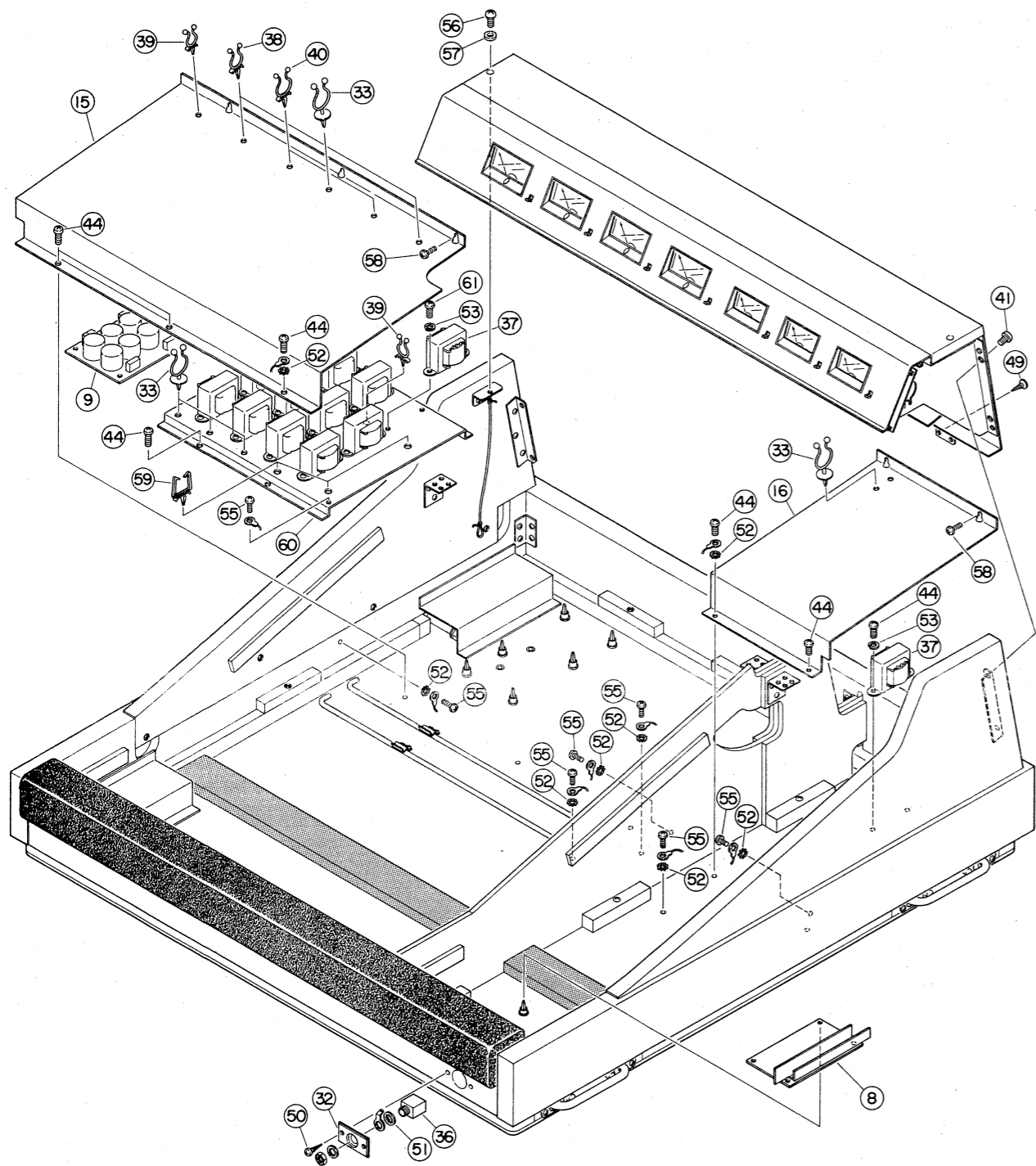
006442

M1516

<M1516>

FRONT PANEL & BOTTOM





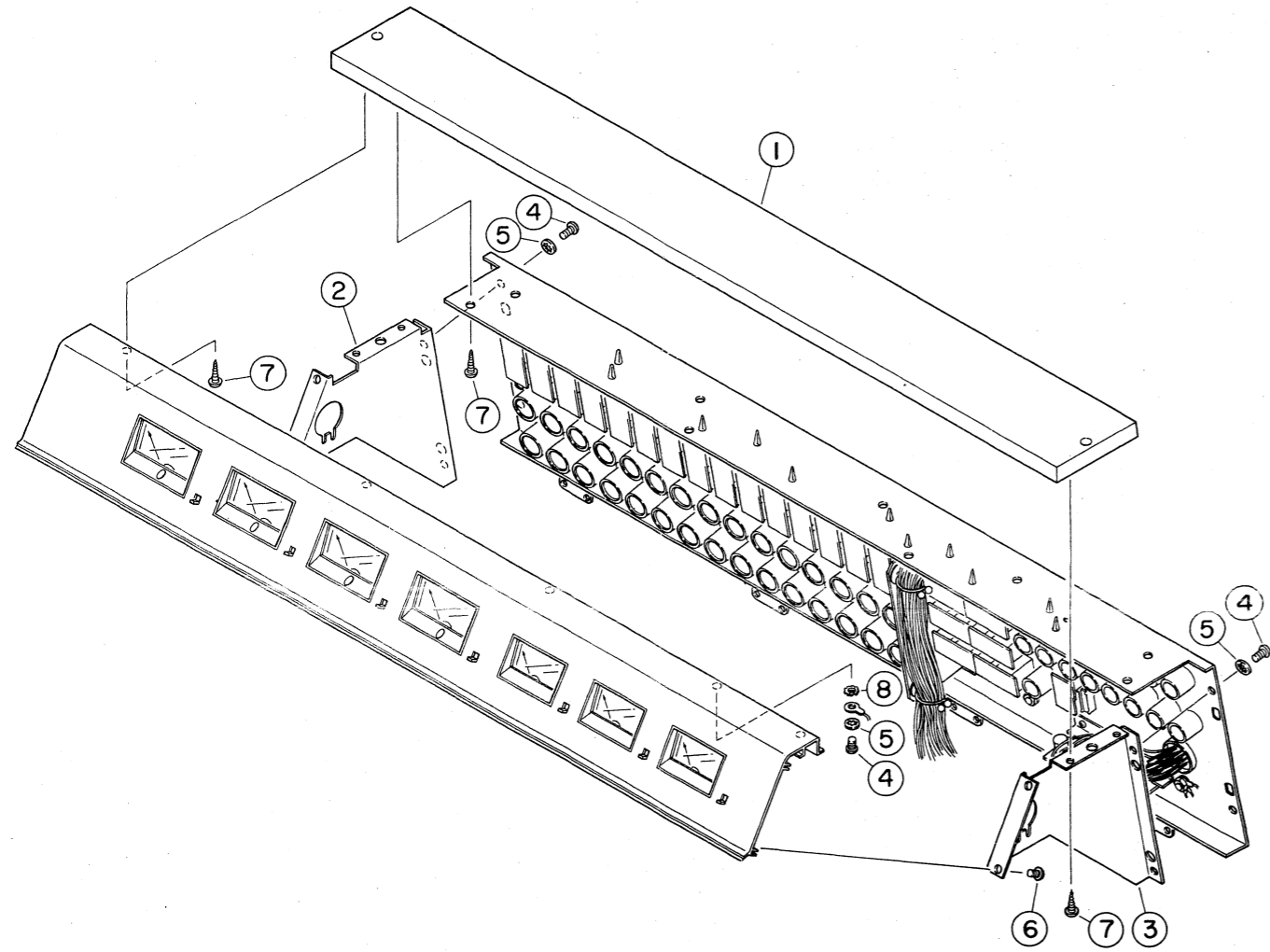
Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
* 1	30'54'00'NA'80'66'00	IN C. Board	I N シ ー ト		
* 2	30'54'00'NA'80'66'20	PGM 1 C. Board	P G M 1 シ ー ト		
* 3	30'54'00'NA'80'66'30	PGM 2 C. Board	P G M 2 シ ー ト		
* 4	30'54'00'NA'80'66'40	PGM 3 C. Board	P G M 3 シ ー ト		
* 5	30'54'00'NA'80'66'50	PGM 4 C. Board	P G M 4 シ ー ト		
* 6	30'54'00'NA'80'67'00	FB C. Board	F B シ ー ト		
* 7	30'54'00'NA'80'67'20	TB C. Board	T B シ ー ト		
* 8	30'54'00'NA'80'63'60	HP C. Board	H P シ ー ト		M916

\* NEW PARTS

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
* 9	30'54'00'NA'80'67'40	SUB C. Board	S U B シ ー ト		
* 10	40'10'00'Mi'80'11'70	Flate Cable Ass'y 16P	フ ラ ッ ト ケ ー ブ ル A s s ' y		
* 11	40'10'00'Mi'80'11'80	" 20P	"		
12	30'54'00'AA'80'49'50	Spacer	ス ペ ー サ ー		
13	30'10'00'AA'80'58'20	"	"		
* 14	30'54'00'AA'81'43'80	Hinge	蝶 番		
* 15	30'54'00'AA'81'43'90	Shield Board (L)	シ ー ル ド 板 (大)		
* 16	30'54'00'AA'81'44'00	" (S)	" (小)		
17	30'54'00'CB'02'38'30	Knob (Black)	ツ マ ミ		
18	30'56'00'CB'81'22'60	" (Red)	"		
19	30'54'00'CB'81'59'10	" (L) (Orange)	" (大)		
20	30'54'00'CB'81'59'20	" (L) (Green)	" (大)		
21	30'54'00'CB'81'59'30	" (L) (Gray)	" (大)		
22	30'54'00'CB'81'59'40	" (L) (Ivory)	" (大)		
23	30'54'00'CB'81'59'50	" (L) (Blue)	" (大)		
24	30'54'00'CB'81'59'60	" (S) (Ivory)	" (小)		
25	30'54'00'CB'81'61'70	" (L) (Red)	" (大)		
26	30'54'00'CB'81'61'80	" (L) (Blue)	" (大)		
27	30'54'00'CB'81'61'90	" (S) (Gray)	" (小)		
28	30'54'00'CB'81'62'20	" (Green)	"		
29	30'54'00'CB'81'62'30	" (L) (Yellow)	" (大)		
30	30'54'00'CB'80'99'30	"	" (上)		
31	30'54'00'CB'80'99'40	"	" (下)		
32	30'54'00'CB'81'58'70	Headphone Panel	ヘ ッ ド ホ ン パ ネ ル	M512	
* 33	30'54'00'CB'81'68'30	Cable Clip	ケ ー ブ ル ク リ ッ プ		
34	40'10'00'LB'30'01'50	Cannon Socket XLR-3-31	キャ ノ ン ソ ッ ケ ッ ト		
35	40'10'00'iF'00'13'10	LED (CUE)	L E D (CUE)		
36	40'10'00'LB'20'15'40	Jack	ホ ー ン ジャ ッ ク		
37	40'10'00'GA'81'72'00	Output Transformer	ア ウ ト プ ッ ト ト ラ ン ス		
38	30'10'00'CB'81'29'20	Cable Clip	ケ ー ブ ル ク リ ッ プ		
39	30'54'00'CB'81'68'40	"	"		
40	30'54'00'CB'81'68'50	"	"		
41	40'10'00'ED'35'01'00	Bind Head Screw 5 x 10 FCM3-Bℓ	バ イ ン ド 小 ネ ジ		
42	40'10'00'ED'34'00'80	" 4 x 8 FCM3-Bℓ	"		
43	40'10'00'ED'34'01'60	" 4 x 16 FCM3-Bℓ	"		
44	40'10'00'ED'34'01'20	" 4 x 12 FCM3-Bℓ	"		
45	40'10'00'ED'33'00'80	" 3 x 8 FCM3-Bℓ	"		
46	40'10'00'Ed'33'00'60	Bind Head Tapping Screw 3 x 6 FCM3-Bℓ	バ イ ン ド タ ッ ピ ン グ ネ ジ		
47	40'10'00'ED'34'01'00	Bind Head Screw 4 x 10 FCM3-Bℓ	バ イ ン ド 小 ネ ジ		
48	40'10'00'EM'23'01'00	Oval Head Tapping Screw 3 x 10 FNM3-3g	丸 皿 タ ッ ピ ン グ ネ ジ		
49	40'10'00'EP'33'11'30	Flat Head Wood Screw 3.1 x 13 FCM3-Bℓ	皿 木 ネ ジ		
50	40'10'00'ER'33'11'30	Oval Head Wood Screw 3.1 x 13 FCM3-Bℓ	丸 皿 木 ネ ジ		
51	40'10'00'EW'31'90'20	Toothed Lock Washer A9SW 3/8 ZMC2-Y	歯 付 座 金		
52	40'10'00'EV'42'30'40	" B4S ZMC2-Bℓ	"		
53	40'10'00'EV'30'30'40	Spring Lock Washer 4S ZMC2-Bℓ	バ ネ 座 金		
54	40'10'00'EZ'30'70'10	Hexagonal Nut 7S FCM3-Bℓ	特 殊 六 角 ナ ッ ト		
55	40'10'00'Ed'33'01'00	Bind Head Tapping Screw 3 x 10 ZMC2-Y	バ イ ン ド タ ッ ピ ン グ ネ ジ		
56	40'10'00'EF'35'02'50	Oval Head Screw M5 x 24 FCM3-Bℓ	丸 皿 小 ネ ジ		
57	40'10'00'EK'80'00'30	Washer φ5 FCM3-Bℓ	山 型 ワ ッ シ ャ		
58	40'10'00'Ed'33'01'60	Bind Head Tapping Screw 3 x 16 FCM3-Bℓ	バ イ ン ド タ ッ ピ ン グ ネ ジ		
* 59	30'54'00'CB'81'80'20	Cable Strap	ケ ー ブ ル ス ト ラ ッ プ		
* 60	30'54'00'AA'81'59'60	Chassis	ト ラ ン ス シ ャ ー シ		
* 61	40'10'00'Ed'34'01'00	Bind Head Tapping Screw 4 x 10 FCM3-Bℓ	バ イ ン ド タ ッ ピ ン グ ネ ジ		

\* NEW PARTS

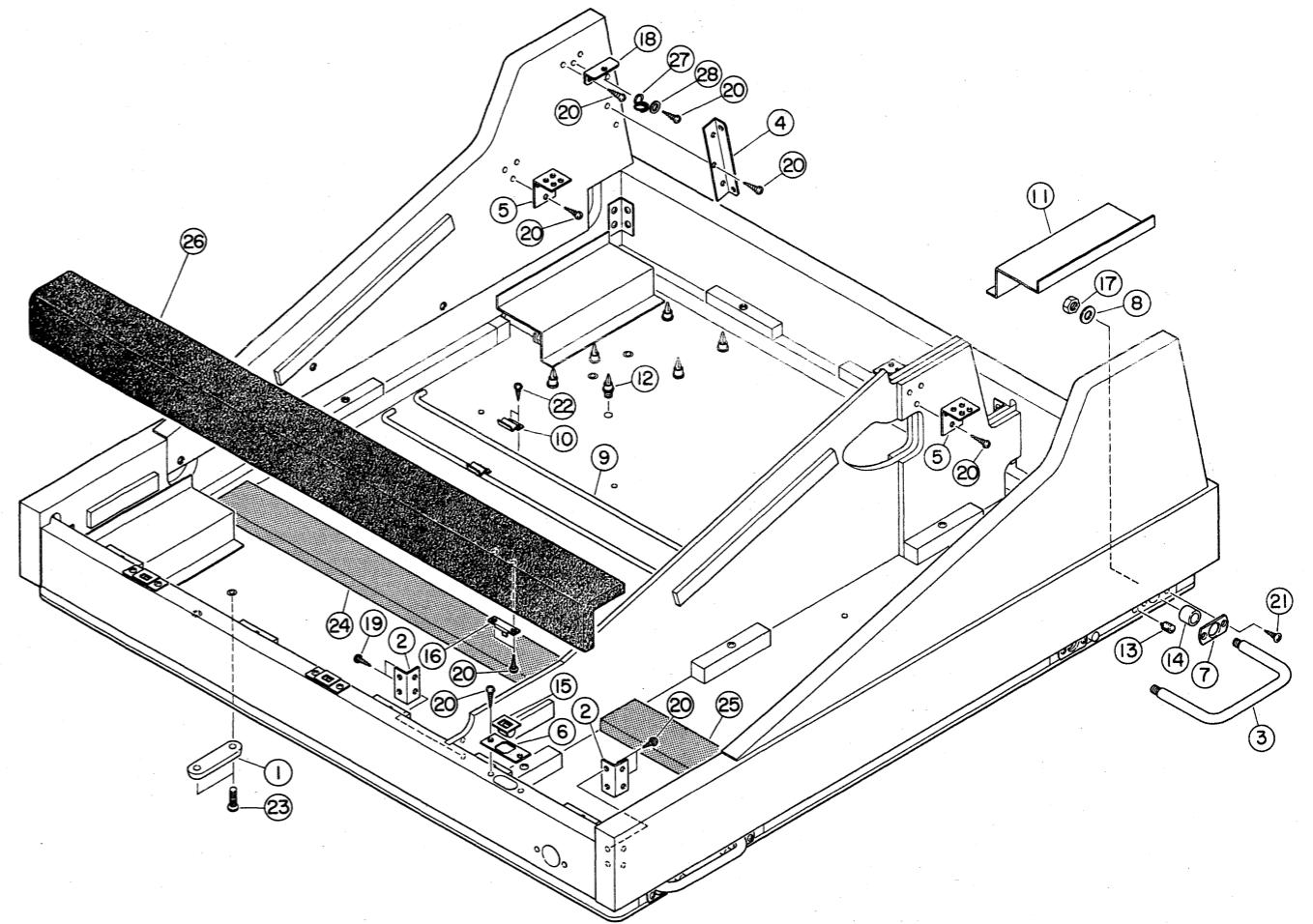
TOP BOARD Ass'y



Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
* 1	30,54,59,DB,81,55,60	Top Board	天 板		
* 2	30,54,00,AA,81,44,30	Side Angle (Left)	サイドアングル (左)		
* 3	30,54,00,AA,81,44,40	" (Right)	" (右)		
4	40,10,00,ED,34,00,80	Bind Head Screw 4 x 8 (FCM3-BL)	バインド小ネジ		
5	40,10,00,EV,40,30,40	Toothed Lock Washer A4S (FCM3-BL)	歯付座金		
6	40,10,00,Ei,34,00,80	Bind Head Tapping Screw 4 x 8 (FCM3-BL)	バインドタッピングネジ		
7	40,10,00,EQ,03,51,30	Round Head Wood Screw 3.5 x 13 (ZMC2-Y)	丸木ネジ		
8	40,10,00,EV,42,30,40	Toothed Lock Washer B4S (ZMC2-BL)	歯付座金		

\* NEW PARTS

CABINET



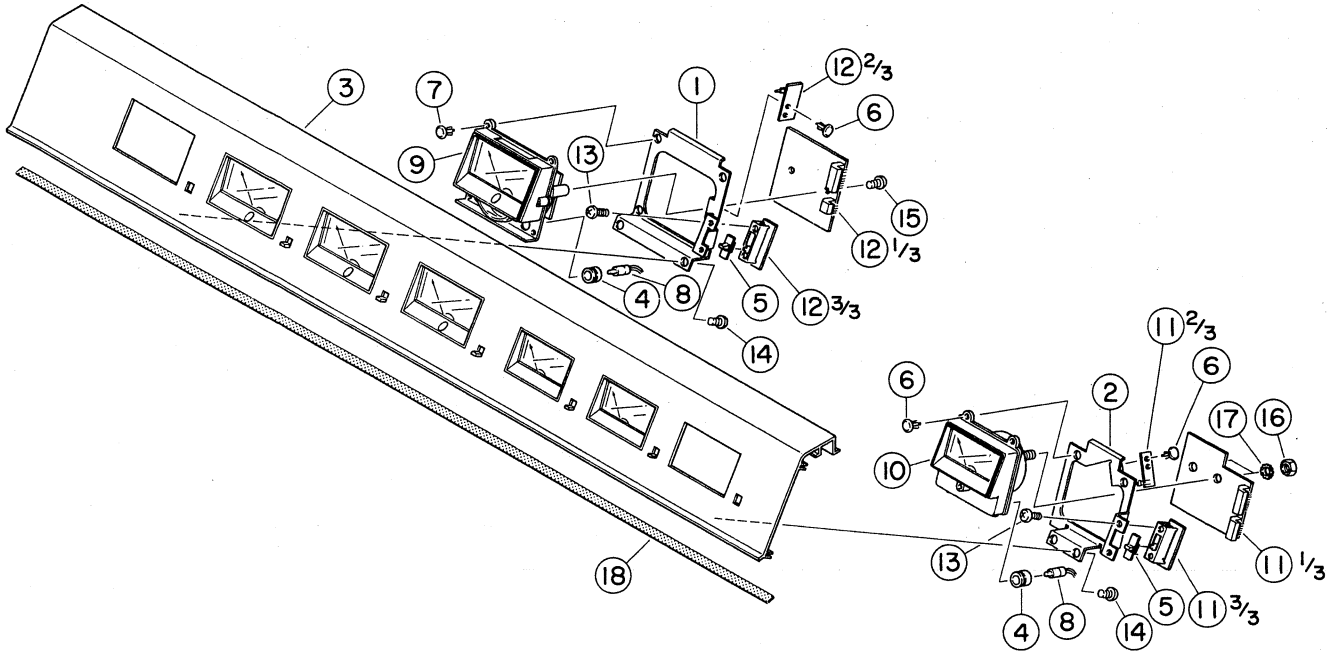


Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
1	30.54.00.AA.01.81.80	Leg	スベリ金具		
2	30.54.00.AA.80.69.20	Support Angle	補強アングル		
3	30.54.00.AA.80.75.40	Handle	把手本体		
※	4	30.54.00.AA.81.43.00	Rear Panel Holder	リアパネル受金具	
※	5	30.54.00.AA.81.43.10	L Angle	Lアングル	
※	6	30.54.00.AA.81.43.20	Ratch Panel	ラッチプレート	
※	7	30.54.00.AA.81.43.30	Handle Flange	把手フランジ	
※	8	30.54.00.AA.81.43.40	Stopper	ストッパー	
※	9	30.54.00.AA.81.43.50	Stay	ステイ	
※	10	30.54.00.AA.80.25.40	Stay Pressure Holder Bracket	ステイ押え金具	
※	11	30.54.00.CA.80.23.40	Handle Cover	把手カバー	
	12	30.56.00.CB.08.70.00	Circuit Board Holder	シートホルダー	
	13	30.54.00.CB.81.15.40	Rubber Button	ゴムボタン	
	14	30.54.00.CB.81.15.50	Handle Collar	把手カラー	
※	15	30.54.00.CB.81.67.60	Ratch	ラッチ	
※	16	30.54.00.CB.81.67.70	Strike	ストライク	
	17	40.10.00.EV.10.01.00	Hexagonal Nut M10 ZMC2-Y	六角ナット	
	18	30.54.00.AA.81.59.30	Top Board Holder	天板受金具	
	19	40.10.00.EQ.33.51.00	Round Head Wood Screw 3.5 x 10 FCM3-Bk	丸木ネジ	
	20	40.10.00.EQ.33.51.60	" 3.5 x 16 FCM3-Bk	"	
	21	40.10.00.ER.33.51.60	Oval Head Wood Screw 3.5 x 16 FCM3-Bk	丸皿木ネジ	
	22	40.10.00.EQ.33.11.00	Round Head Wood Screw 3.1 x 10 FCM3-Bk	丸木ネジ	
	23	40.10.00.EB.34.02.50	Flat Head Screw M4 x 25 FCM3-Bk	皿小ネジ	
	24	40.10.00.CB.81.79.90	Circuit Board Pressure	シート押え	
	25	40.10.00.CB.81.80.00	"	"	
※	26	30.54.59.DA.80.54.10	Pad Ass'y	パッド集成	
	27	30.54.00.AA.81.46.30	D Rack Hook	Dラックフック	
	28	40.10.00.EV.20.00.40	Flat Washer $\phi$ 4 ZMC2-Y	平座金	
※	30.54.59.00.82.41.00	Cabinet	外装本体		

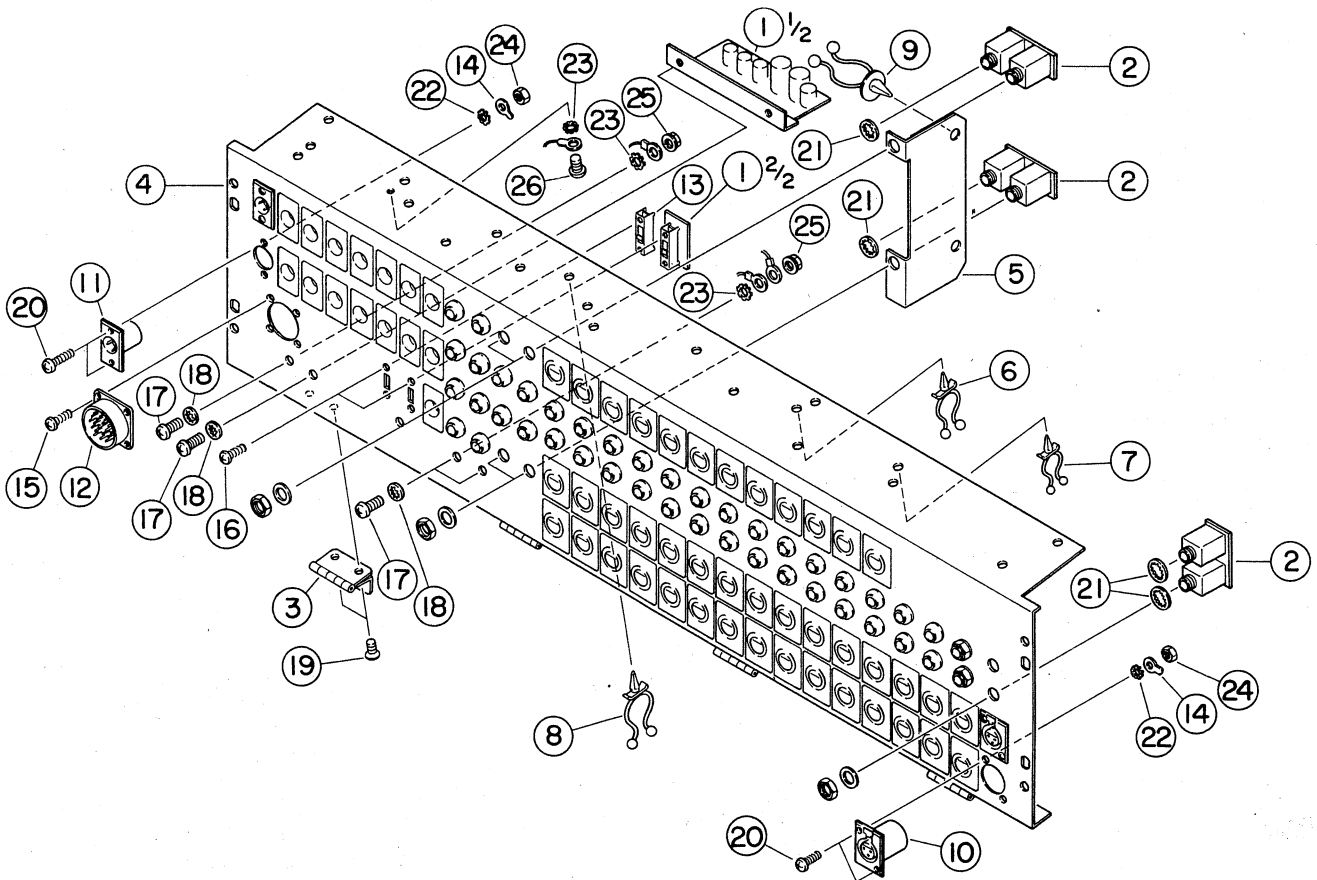
※ NEW PARTS



**METER PANEL Ass'y**



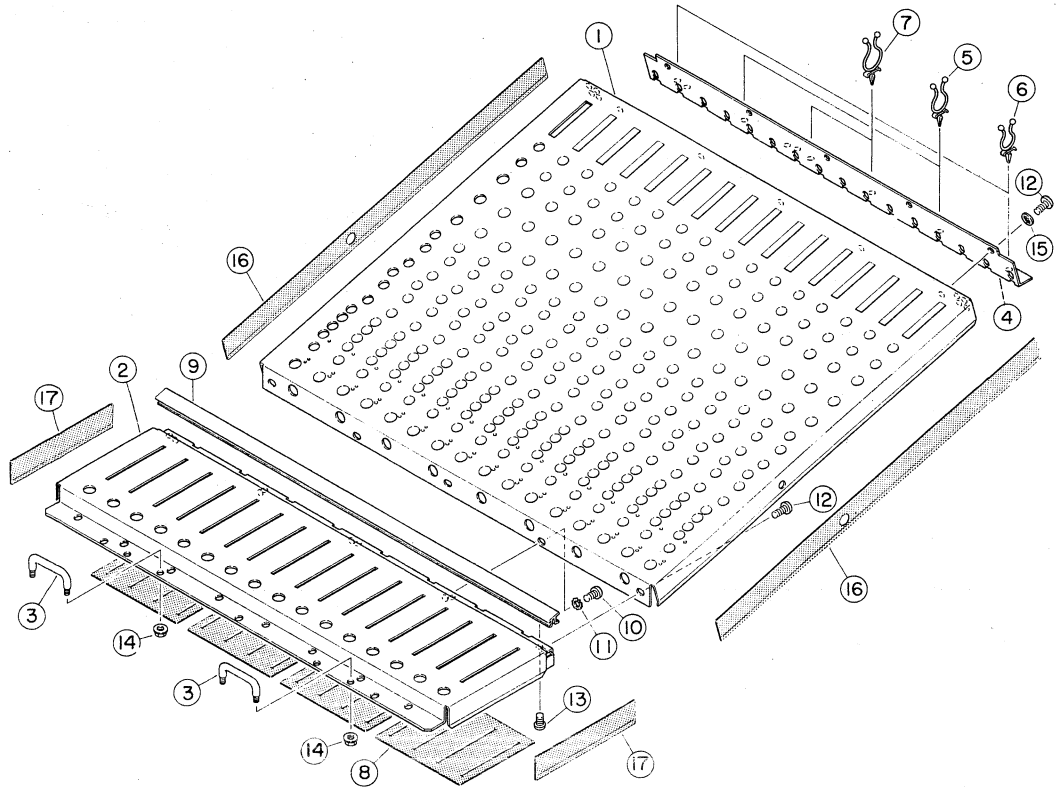
**REAR PANEL Ass'y**



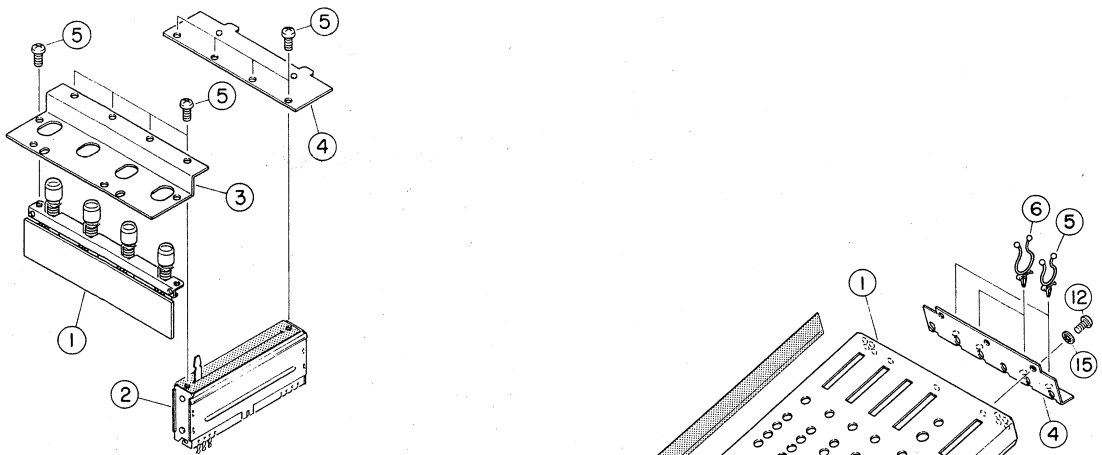
Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model	
		メーターパネルAss'y				
* 1	30,54,00,AA,81,44,10	Meter Sub Panel (L)	メーターサブパネル(大)			
* 2	30,54,00,AA,81,44,20	" (S)	" (小)			
* 3	30,54,00,BA,80,48,80	Meter Panel	メーターパネル			
4	30,54,00,CB,06,86,20	Lamp Holder	ランプホルダー			
5	30,54,00,CB,80,52,30	Knob	ツマミ			
6	30,10,00,CB,06,88,80	Plastic Rivet	プラスチックリベット			
* 7	30,54,00,CB,81,68,90	"	"			
8	40,10,00,JB,00,02,30	Lamp 12V 60 mA	リード付ランプ			
9	40,10,00,JI,00,03,90	Meter	メーター			
10	40,10,00,JI,00,11,90	VU Meter	VUメーター		M512	
11	30,54,00,NA,80,63,80	MT 1 C. Board	MT1シート		M916	
* 12	30,54,00,NA,80,67,50	MT 3 C. Board	MT3シート			
13	40,10,00,ED,32,60,40	Bind Head Screw 2.6 x 4 FCM3-Bℓ	バインド小ネジ			
14	40,10,00,EI,34,00,80	Bind Head Tapping Screw 4 x 8 FCM3-Bℓ	バインドタッピングネジ			
15	40,10,00,EI,33,00,80	" 3 x 8 FCM3-Bℓ	"			
16	40,10,00,EV,10,00,40	Hexagonal Nut M4 ZMC2-Y	六角ナット			
17	40,10,00,EV,42,30,40	Toothed Lock Washer B4S ZMC2-Bℓ	歯付座金			
* 18	40,10,00,CC,01,48,70	Felt	フェルト			
		リアパネルAss'y				
* 1	30,54,00,NA,80,67,90	CO C. Board	COシート			
2	30,54,00,NA,80,63,90	JK 1 C. Board	JK1シート		M916	
3	30,54,00,AA,81,35,50	Hinge	蝶番			
* 4	30,54,00,AA,81,44,50	Rear Panel	リアパネル			
5	30,54,00,AA,81,44,60	Shield Board	ジャックシールド板			
6	30,10,00,CB,81,29,20	Cable Clip	ケーブルクリップ			
* 7	30,54,00,CB,81,68,40	"	"			
* 8	30,54,00,CB,81,68,50	"	"			
9	30,54,00,CB,81,68,30	"	"			
10	40,10,00,LB,30,01,50	Cannon Socket XLR3-31	キャノンソケット			
11	40,10,00,LB,30,01,60	" XLR3-32	"			
12	40,10,00,LB,60,23,20	Cannon Connector	キャノンコネクター		PM-2000	
13	40,10,00,KA,40,07,50	Slide Switch	スライドスイッチ			
14	40,10,00,LA,00,02,80	Ground Lug φ3	アースラグ			
15	40,10,00,EA,22,60,80	Pan Head Screw 2.6 x 8 FCRM3-3g	ナベ小ネジ			
16	40,10,00,ED,32,60,40	Bind Head Screw 2.6 x 4 FCM3-Bℓ	バインド小ネジ			
17	40,10,00,ED,34,01,20	" 4 x 12 FCM3-Bℓ	"			
18	40,10,00,EV,40,30,40	Toothed Lock Washer A4S FCM3-Bℓ	歯付座金			
19	40,10,00,EB,33,00,60	Flat Head Screw 3 x 6 FCM3-Bℓ	皿小ネジ			
20	40,10,00,EM,33,01,00	Oval Head Tapping Screw 3 x 10 FCM3-Bℓ	丸皿タッピングネジ			
21	40,10,00,EW,31,90,20	Toothed Lock Washer A9SW 3/8 ZMC2-Y	歯付座金			
22	40,10,00,EV,42,30,30	" B3S ZMC2-Bℓ	"			
23	40,10,00,EV,42,30,40	" B4S ZMC2-Bℓ	"			
24	40,10,00,EV,10,00,30	Hexagonal Nut 3S ZMC2-Y	六角ナット			
25	40,10,00,EK,80,06,20	Hexagonal Flange Nut M4 ZMC2-Y	六角フランジナット			
26	40,10,00,ED,34,00,80	Bind Head Screw 4 x 8 FCM3-Bℓ	バインド小ネジ			

\* NEW PARTS

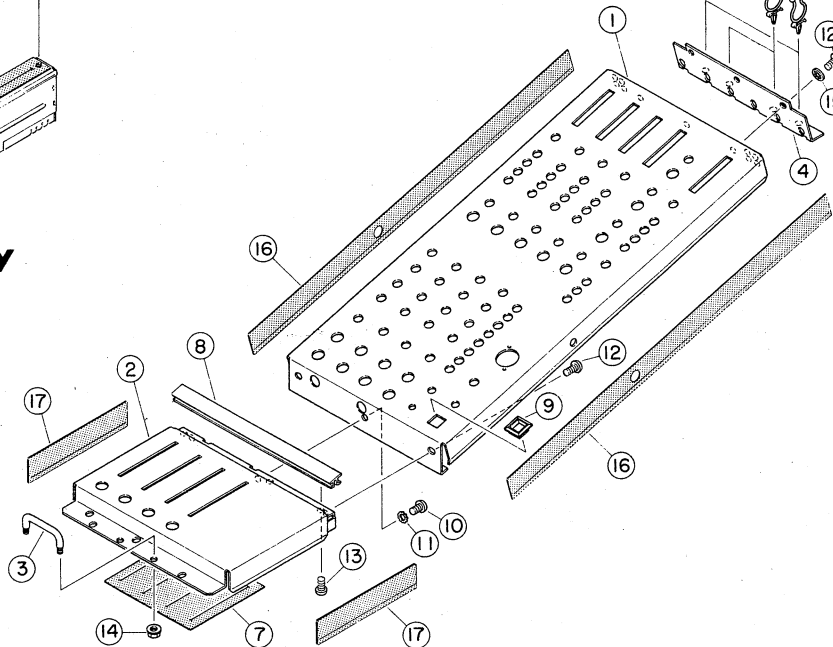
■ INPUT PANEL Ass'y



■ FADER UNIT



■ MASTER PANEL Ass'y



Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
		<b>INPUTパネルAss'y</b>			
* 1	30:54:00:AA:81:44:70	Input Panel	INPUT パネル		
* 2	30:54:00:AA:81:44:80	I.F. Panel	I. F パネル		
* 3	30:54:00:AA:81:44:90	Handle	パネル 把手		
* 4	30:54:00:BA:80:49:90	Ground Board	アース板 (下)		
5	30:10:00:CB:81:29:20	Cable Clip	ケーブルクリップ		
6	30:54:00:CB:81:68:40	"	"		
7	30:54:00:CB:81:68:50	"	"		
8	40:10:00:CB:81:66:40	Dust Proof Cover	防塵クロス		M916
* 9	30:54:00:CB:81:66:90	Indication Chip	表示チップ		
10	40:10:00:ED:34:00:80	Bind Head Screw 4 x 8 FCM3-Bℓ	バインド小ネジ		
11	40:10:00:EV:42:30:40	Toothed Lock Washer B4S FCM3-Bℓ	歯付座金		
12	40:10:00:EI:34:01:00	Bind Head Tapping Screw 4 x 10 FCM3-Bℓ	バインドタッピングネジ		
13	40:10:00:EI:33:00:80	" 3 x 8 FCM3-Bℓ	"		
14	40:10:00:EK:80:06:30	Hexagonal Flange Nut M3 ZMC2-Y	六角フランジナット		
15	40:10:00:EV:42:00:40	Toothed Lock Washer B4S ZMC2-Y	歯付座金		
* 16	40:10:00:CC:01:50:30	Felt	フェルト		
* 17	40:10:00:CC:01:50:40	"	"		
		<b>フェーダーユニット</b>			
* 1	30:54:00:NA:80:68:00	CUE C. Board	C U E シート		
2	40:10:00:HQ:43:00:10	Slide V.R	スライドボリューム		
* 3	30:54:00:AA:81:41:70	Fader Angle	フェーダーアングル(大)		
4	30:54:00:AA:81:41:90	"	" (R)		M916
5	40:10:00:ED:33:00:60	Bind Head Screw 3 x 6 FCM3-Bℓ	バインド小ネジ		
		<b>マスターパネルAss'y</b>			
* 1	30:54:00:AA:81:45:00	Master Panel	マスターパネル		
* 2	30:54:00:AA:81:45:10	M.F. Panel	M. F パネル		
* 3	30:54:00:AA:81:44:90	Handle	パネル 把手		
* 4	30:54:00:BA:80:50:00	Ground Board	アース板 (小)		
5	30:10:00:CB:81:29:20	Cable Clip	ケーブルクリップ		
6	30:54:00:CB:81:68:50	"	"		
7	40:10:00:CB:81:66:40	Dust Proof Cover	防塵クロス		M916
* 8	30:54:00:CB:81:67:00	Indication Chip	表示チップ		
9	30:54:00:CB:81:68:20	SW Escutcheon	スイッチエスカッション		M916
10	40:10:00:ED:34:00:80	Bind Head Screw 4 x 8 FCM3-Bℓ	バインド小ネジ		
11	40:10:00:EV:42:30:40	Toothed Lock Washer B4S FCM3-Bℓ	歯付座金		
12	40:10:00:EI:34:01:00	Bind Head Tapping Screw 4 x 10 FCM3-Bℓ	バインドタッピングネジ		
13	40:10:00:EI:33:00:80	" 3 x 8 FCM3-Bℓ	"		
14	40:10:00:EK:80:06:30	Hexagonal Flange Nut M3 FCM3-Bℓ	六角フランジナット		
15	40:10:00:EV:42:30:40	Toothed Lock Washer B4S ZMC2-Bℓ	歯付座金		
* 16	40:10:00:CC:01:50:30	Felt	フェルト		
* 17	40:10:00:CC:01:50:40	"	"		

\* NEW PARTS

## ■ PARTS LIST (ELECTRICITY)

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model		
	30'54'00'NA'80'66'00	IN C. Board #8436	I N シ ー ト				
	40'10'00'UK'34'61'00	Bipolar Electrolytic Cap. 1 $\mu$ F 25V	バイポーラケミコン				
	40'10'00'UK'34'64'70	" 4.7 $\mu$ F 25V	"				
	40'10'00'UK'34'74'70	" 4.7 $\mu$ F 25V	"				
	40'10'00'UL'13'82'20	Electrolytic Cap. (Low Noise Type) 220 $\mu$ F 16V	ケミコン(ローノイズ)				
*	40'10'00'UL'15'64'70	" 4.7 $\mu$ F 35V	"				
	40'10'00'HU'07'41'50	Metal Film Resistor 15 $\Omega$	金 属 被 膜 抵 抗				
	40'10'00'HU'07'42'00	" 20 $\Omega$	"				
	40'10'00'HU'07'51'00	" 100 $\Omega$	"				
	40'10'00'HU'07'51'50	" 150 $\Omega$	"				
	40'10'00'HU'07'52'40	" 240 $\Omega$	"				
	40'10'00'HU'07'52'70	" 270 $\Omega$	"				
	40'10'00'HU'07'55'10	" 510 $\Omega$	"				
	40'10'00'HU'07'63'00	" 3k $\Omega$	"				
	40'10'00'HU'07'65'10	" 5.1k $\Omega$	"				
	40'10'00'HU'07'66'20	" 6.2k $\Omega$	"				
	40'10'00'HU'07'66'80	" 6.8k $\Omega$	"				
	40'10'00'HU'07'72'20	" 22k $\Omega$	"				
	40'10'00'HU'07'72'40	" 24k $\Omega$	"				
	40'10'00'HU'07'73'30	" 33k $\Omega$	"				
*	40'10'00'HU'47'81'60	" 160k $\Omega$	"				
	40'10'00'HU'47'82'20	" 220k $\Omega$	"				
	40'10'00'HW'79'51'50	Plate Resistor 150 $\Omega$ 1/4W	ブ レ ー ト 抵 抗				
	40'10'00'HW'79'53'90	" 390 $\Omega$ 1/4W	"				
	40'10'00'HW'99'41'00	Fuse Resistor FN19100M 10 $\Omega$ 160mA	ヒ ュ ー ズ 抵 抗				
	40'10'00'HS'31'10'20	Variable Resistor A25k $\Omega$	可 変 抵 抗 器				
	40'10'00'HS'31'10'40	" D-2D25k $\Omega$	"				
	40'10'00'HS'31'10'50	" G50k $\Omega$	"				
*	40'10'00'KA'50'15'80	Rotary Switch W50k	ポ リ ュ ー ム 付 ロ ー タ リ ー ス イ ッ チ				
	40'10'00'iA'08'72'30	Transistor 2SA872 (E)	ト ラ ン ジ ス タ				
	40'10'00'iA'09'99'10	" 2SA999 (E,F)	"				
	40'10'00'iC'17'75'00	" 2SA1775 (E,F)	"				
	40'10'00'iC'23'20'40	" 2SC2320 (F)	"				
	40'10'00'iH'00'07'20	Diode W03B	ダ イ オ ー ド				
	40'10'00'iF'00'06'50	Zener Diode WZ162	ツ ェ ナ ー ダ イ オ ー ド				
	40'10'00'iF'00'17'20	LED LN222RP	L E D				
	40'10'00'iF'00'21'80	" LN322GP	"				
	40'10'00'iF'00'21'90	" LN422YP	"				
	40'10'00'iG'03'99'00	IC TA7322P	I C				
	40'10'00'iG'00'13'90	" AN6552 $\Rightarrow$ (NJM4558DV)	"				
	30'54'00'NE'80'20'00	IC Module	I C モ ジ ュ ー ル				
*	40'10'00'KA'50'15'70	Rotary Switch INPUT LEVEL	ロ ー タ リ ー ス イ ッ チ				
*	40'10'00'KA'80'19'70	Push Switch CH ON/OFF	プ ッ シ ュ ス イ ッ チ				
	40'10'00'KA'80'19'10	" M1/M2 (YE)	"				
	40'10'00'KA'80'18'80	" $\phi$ , FB PRE/POST (IV)	"				
	40'10'00'KA'80'18'90	" PHANTOM (OR)	"				
	40'10'00'KA'80'18'70	" ECHO PRE/POST(BL)	"				
	40'10'00'KA'80'18'60	" HPF (GR)	"				
*	40'10'00'KA'80'18'50	Switch ASSIGN	ウ イ ン キ ー ス イ ッ チ				
	40'10'00'GA'80'98'00	Input Transformer	イ ン プ ッ ト ト ラ ン ス				
	40'10'00'ED'03'00'60	Bind Head Screw M3 x 6 (ZMC2-Y)	バ イ ン ド 小 ネ ジ				
	40'10'00'EV'10'00'30	Hexagonal Nut 3S (ZMC2-Y)	六 角 ナ ッ ト				
	40'10'00'EV'42'00'30	Toothed Lock Washer B3S (ZMC2-Y)	歯 付 座 金				
*	30'54'00'AA'81'42'80	Angle for Input Transformer	ト ラ ン ス 取 付 金 具				

\* NEW PARTS

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
	30:54:00:AA:81:42:40	LED Holder	L E D ホ ル ダ ー		
*	30:54:00:BA:80:49:80	Ground Angle	ア ー ス 金 具		
	40:10:00:EV:42:00:40	Toothed Lock Washer B4S (ZMC2-Y)	歯 付 座 金		
	40:10:00:ED:04:01:00	Bind Head Screw M4 x 10 (ZMC2-Y)	バ イ ン ド 小 ネ ジ		
	40:10:00:ED:04:06:00	" M4 x 16 (ZMC2-Y)	"		
	40:10:00:EV:10:00:40	Hexagonal Nut 4S (ZMC2-Y)	六 角 ナ ッ ト		
	40:10:00:EB:32:61:20	Flat Head Screw M2.6 x 12 (FCM3-B $\phi$ )	サ ラ 小 ネ ジ		
	40:10:00:EV:10:02:60	Hexagonal Nut 2.6S (ZMC2-Y)	六 角 ナ ッ ト		
	40:10:00:LB:40:05:90	Connector 4P	コ ネ ク タ ー		
	40:10:00:LB:60:28:20	" 6P	"		
	40:10:00:LB:60:25:00	" 7P	"		
	40:10:00:LB:90:32:00	Connector Socket 20P	フ ラ ッ ト ケ ー ブ ル コ ネ ク タ ー		
*	30:54:00:NA:80:66:20	PGM 1 C. Board #84361	P G M 1 シ ー ト		
*	30:54:00:NA:80:66:30	PGM 2 C. Board #84361	P G M 2 シ ー ト		
*	30:54:00:NA:80:66:40	PGM 3 C. Board #84361	P G M 3 シ ー ト		
*	30:54:00:NA:80:66:50	PGM 4 C. Board #84361	P G M 4 シ ー ト		
	40:10:00:UK:34:64:70	Bipolar Electrolytic Cap. 4.7 $\mu$ F 25V	バ イ ポ ー ラ ケ ミ コ ン		
	40:10:00:UK:34:73:30	" 33 $\mu$ F 16V	"		
	40:10:00:UK:34:74:70	" 47 $\mu$ F 25V	"		
	40:10:00:UK:34:82:20	" 220 $\mu$ F 25V	"		
	40:10:00:UK:34:72:20	" 22 $\mu$ F 25V	"		
	40:10:00:HU:07:73:30	Metal Film Resistor 33k $\Omega$	金 属 被 膜 抵 抗		
	40:10:00:HU:07:74:70	" 47k $\Omega$	"		
	40:10:00:HU:07:77:50	" 75k $\Omega$	"		
	40:10:00:HW:99:41:00	Fuse Resistor FN19100M 10 $\Omega$ 160mA	ヒ ュ ー ズ 抵 抗		
	40:10:00:HS:31:10:30	Variable Resistor A10k $\Omega$	可 変 抵 抗 器		
	40:10:00:HS:31:10:20	" A25k $\Omega$	"		
	40:10:00:iA:08:14:00	Transistor 2SA814 (O,Y)	ト ラ ン ジ ス タ		
	40:10:00:iC:16:24:00	" 2SC1624 (O,Y)	"		
	40:10:00:iA:08:72:30	" 2SA872 (E)	"		
	40:10:00:iC:23:20:40	" 2SC2320 (E,F)	"		
	40:10:00:iC:17:75:00	Transistor 2SC1775 (E)	"		
	40:10:00:iF:00:00:40	Diode 1S1555	ダ イ オ ー ド		
	40:10:00:iH:00:07:20	" W03B	"		
	40:10:00:iF:00:08:30	Zener Diode RD4.7E	ツ ェ ナ ー ダ イ オ ー ド		
	40:10:00:iG:03:99:00	IC TA7322P	I C		
*	40:10:00:KA:80:18:50	Switch	ウ イ ン キ ー ス イ ッ チ		
*	40:10:00:KA:80:19:30	Push Switch	プ ッ シ ュ ス イ ッ チ		
*	40:10:00:KA:80:19:90	"	"		
*	40:10:00:KA:80:19:70	"	"		
	40:10:00:LB:40:05:90	NH Connector 4P	N H コ ネ ク タ ー		
	40:10:00:LB:60:25:00	" 7P	"		
	40:10:00:LB:90:31:60	Connector Socket 16P	フ ラ ッ ト ケ ー ブ ル コ ネ ク タ ー		
	40:10:00:LB:90:32:00	" 20P	"		
*	30:54:00:AA:81:42:90	Circuit Board Holder	シ ー ト ホ ル ダ ー		
*	30:54:00:BA:80:49:80	Ground Angle	ア ー ス 金 具		
	30:54:00:BA:01:18:70	Heat Sink	放 熱 板		
	40:10:00:ED:03:00:60	Bind Head Screw M3 x 6 (ZMC2-Y)	バ イ ン ド 小 ネ ジ		
	40:10:00:ED:04:01:60	" M4 x 16 (ZMC2-Y)	"		
	40:10:00:ED:04:01:00	" M4 x 10 (ZMC2-Y)	"		
	40:10:00:EB:32:61:20	Flat Head Screw M2.6 x 12 (FCM3-B $\phi$ )	サ ラ 小 ネ ジ		
	40:10:00:EV:20:00:30	Flat Washer 3S (ZMC2-Y)	平 座 金		

\* NEW PARTS

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
	40 10 00 EV 42 00 40	Toothed Lock Washer B4S (ZMC2-Y)	歯 付 座 金		
	40 10 00 EV 10 02 60	Hexagonal Nut 2.6S (ZMC2-Y)	六 角 ナ ッ ト		
	40 10 00 EV 10 00 30	" 3S (ZMC2-Y)	"		
	40 10 00 EV 10 00 40	" 4S (ZMC2-Y)	"		
*	30 54 00 NA 80 67 00	FB C. Board #84371	F B シ ー ト		
	40 10 00 UK 34 72 20	Bipolar Electrolytic Cap. 22 $\mu$ F 25V	バイポーラケミコン		
	40 10 00 UK 34 73 30	" 33 $\mu$ F 16V	"		
	40 10 00 UK 34 82 20	" 220 $\mu$ F 25V	"		
	40 10 00 UK 34 74 70	" 47 $\mu$ F 25V	"		
	40 10 00 HW 99 41 00	Fuse, Resistor FN19100M 10 $\Omega$ 160mA	ヒ ュ ー ズ 抵 抗		
	40 10 00 iA 08 72 30	Transistor 2SA872 (E)	ト ラ ン ジ ス タ		
	40 10 00 iC 23 20 40	" 2SC2320 (E,F)	"		
	40 10 00 iC 17 75 00	" 2SC1775 (E)	"		
	40 10 00 iA 08 14 00	" 2SA814 (O,Y)	"		
	40 10 00 iC 16 24 00	" 2SC1624 (O,Y)	"		
	40 10 00 iC 23 20 40	" 2SC2320 (E,F)	"		
	40 10 00 iA 07 77 30	" 2SA777 (O,R)	"		
	40 10 00 iF 00 00 40	Diode 1S1555	ダ イ オ ー ド		
	40 10 00 iH 00 07 20	" W03B	"		
	40 10 00 iF 00 08 30	Zener Diode RD4.7E	ツェナーダイオード		
	40 10 00 iG 03 99 00	IC TA7322P	I C		
	40 10 00 HS 31 10 30	Variable A10k $\Omega$ FB, ECHO	可 変 抵 抗 器		
	40 10 00 HS 31 10 60	" A10k $\Omega$ x 2 PHONES	"		
*	30 54 00 AA 81 42 90	Circuit Board Holder	シ ー ト ホ ル ダ ー		
*	40 10 00 KA 80 19 00	Push Switch	プッシュスイッチ		
*	40 10 00 KA 80 19 40	"	"		
	40 10 00 KC 00 10 30	Relay RZ24	リ レ ー		
	40 10 00 LB 42 05 90	NH Connector 4P (S,E)	N H コ ネ ク タ ー		
	40 10 00 LB 60 31 00	" 11P (S,E)	"		
	40 10 00 LB 50 02 70	" 5P (S,E)	"		
	40 10 00 LB 30 07 50	" 3P (S,E)	"		
	40 10 00 LB 90 32 00	Connector Socket 20P	フ ラ ッ ト ケ ー ブ ル コ ネ ク タ ー		
	30 54 00 BA 01 18 70	Heat Sink	放 熱 板		
	30 54 00 BA 80 49 80	Ground Angle	ア ー ス 金 具		
	40 10 00 EB 32 61 20	Flat Head Screw M2.6 x 12 (FCM3-B $\ell$ )	サ ラ 小 ネ ジ		
	40 10 00 ED 33 00 60	Bind Head Screw M3 x 6 (FCM3-B $\ell$ )	バ イ ン ド 小 ネ ジ		
	40 10 00 ED 34 01 00	" M4 x 10 (FCM3-B $\ell$ )	"		
	40 10 00 ED 34 01 60	" M4 x 16 (FCM3-B $\ell$ )	"		
	40 10 00 EV 42 30 40	Toothed Lock Washer B4S (ZMC2-B $\ell$ )	歯 付 座 金		
	40 10 00 EV 20 00 30	Flat Washer 3S (ZMC2-Y)	平 座 金		
	40 10 00 EV 10 02 60	Hexagonal Nut S2.6 (ZMC2-Y)	六 角 ナ ッ ト		
	40 10 00 EV 10 00 30	" S3 (ZMC2-Y)	"		
	40 10 00 EV 10 00 40	" S4 (ZMC2-Y))	"		
*	30 54 00 NA 80 67 20	TB C. Board #84381	T B シ ー ト		
	40 10 00 UK 34 71 00	Bipolar Electrolytic Cap. 10 $\mu$ F 25V	バイポーラケミコン		
*	40 10 00 UK 34 72 20	" 22 $\mu$ F 25V	"		
	40 10 00 UK 34 73 30	" 33 $\mu$ F 16V	"		
	40 10 00 UK 34 74 70	" 47 $\mu$ F 25V	"		
	40 10 00 UK 34 82 20	" 220 $\mu$ F 25V	"		
*	40 10 00 UL 13 82 20	Electrolytic Cap. (Low Noise Type) 220 $\mu$ F 16V	ケミコン(ローノイズ)		
*	40 10 00 UL 14 64 70	" 4.7 $\mu$ F 25V	"		
*	40 10 00 UL 16 62 20	" 2.2 $\mu$ F 50V	"		
	40 10 00 HU 07 51 50	Metal Film Resistor 150 $\Omega$	金 属 被 膜 抵 抗		

\* NEW PARTS

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
	40:10:00:HU:07:61:10	Metal Film Resistor	1.1k $\Omega$	金 属 被 膜 抵 抗	
	40:10:00:HU:07:65:60	"	5.6k $\Omega$	"	
	40:10:00:HU:07:71:00	"	10k $\Omega$	"	
	40:10:00:HU:07:71:60	"	16k $\Omega$	"	
	40:10:00:HU:07:72:00	"	20k $\Omega$	"	
	40:10:00:HU:07:72:40	"	24k $\Omega$	"	
	40:10:00:HU:07:73:00	"	30k $\Omega$	"	
	40:10:00:HU:07:73:30	"	33k $\Omega$	"	
	40:10:00:HU:07:74:70	"	47k $\Omega$	"	
	40:10:00:HU:07:77:50	"	75k $\Omega$	"	
	40:10:00:HW:79:51:50	Fuse Resistor	150 $\Omega$	ヒ ュ ー ズ 抵 抗	
	40:10:00:HW:99:41:00	" 19100M	10 $\Omega$ 160mA	"	
	40:10:00:IA:08:72:30	Transistor	2SA872 (E)	ト ラ ン ジ ス タ	
	40:10:00:IC:23:20:40	"	2SC2320 (E,F)	"	
	40:10:00:IC:17:75:00	"	2SC1775	"	
	40:10:00:IA:08:14:00	"	2SA814 (O,Y)	"	
	40:10:00:IC:16:24:00	"	2SC1624 (O,Y)	"	
	40:10:00:IE:00:00:10	FET	2SK30A (Y)	F E T	
	40:10:00:IF:00:00:40	Diode	1S1555	ダ イ オ ー ド	
	40:10:00:iH:00:07:20	"	W03B	"	
	40:10:00:IF:00:06:50	Zener Diode	WZ162	ツ ェ ナ ー ダ イ オ ー ド	
	40:10:00:IF:00:08:30	"	RD4.7E	"	
	40:10:00:IG:03:99:00	IC	TA7322P	I C	
	40:10:00:IG:03:40:00	"	MM5837	"	
	40:10:00:IG:00:13:90	"	AN6552 = (NJM4558DV)	"	
	40:10:00:GA:81:70:00	Transformer		ト ラ ン ス	
	40:10:00:HT:41:00:40	Semi-Fixed Variable Resistor	4.7k $\Omega$	半 固 定 抵 抗	
	40:10:00:HT:41:00:90	"	100k $\Omega$	"	
	40:10:00:HS:31:10:30	Variable Resistor	A10k $\Omega$	可 変 抵 抗 器	
※	40:10:00:KA:80:18:50	Push Switch	ASSIGN	プ ッ シ ュ ス イ ッ チ	
※	40:10:00:KA:80:19:50	"	ASSIGN (FB', ECHO)	"	
	40:10:00:KA:80:19:20	"	+4/-50	"	
	40:10:00:KA:80:19:60	"	TB	"	
	30:54:00:CB:81:11:10	Push Button		プ ッ シ ュ ボ タ ン	
	40:10:00:LB:30:07:30	NH Connector	3P	N H コ ネ ク タ ー	
	40:10:00:LB:40:05:90	"	4P	"	
	40:10:00:LB:50:02:70	"	5P	"	
	40:10:00:LB:60:30:20	"	8P	"	
	40:10:00:LB:90:31:60	Connector Socket	16P	コ ネ ク タ ー ソ ケ ッ ト	
	40:10:00:LB:90:32:00	"	20P	"	
	30:54:00:AA:81:42:60	Connector Plate		キャ ノ ン 取 付 金 具	
	30:54:00:AA:81:42:90	Circuit Board Holder		シ ー ト ホ ル ダ ー	
	30:54:00:BA:01:18:70	Heat Sink		放 熱 板	
※	30:54:00:BA:80:49:80	Ground Angle		ア ー ス 金 具	
※	30:54:00:CB:81:79:80	Circuit Board Support		P C サ ポ ー ト	
	40:10:00:ED:03:00:60	Bind Head Screw	M3 x 6 (ZMC2-Y)	バ イ ン ド 小 ネ ジ	
	40:10:00:EB:02:61:20	Flat Head Screw	M2.6 x 12 (ZMC2-Y)	サ ラ 小 ネ ジ	
	40:10:00:EV:42:30:40	Toothed Lock Washer	B3S (ZMC2-B $\ell$ )	歯 付 座 金	
	40:10:00:EV:20:30:30	Flat Washer	3S (ZMC2-B $\ell$ )	平 座 金	
	40:10:00:EV:10:02:60	Hexagonal Nut	M2.6 (ZMC2-Y)	六 角 ナ ッ ト	
	40:10:00:EV:10:00:30	"	M3 (ZMC2-Y)	"	
	40:10:00:EV:10:00:40	"	M4 (ZMC2-Y)	"	
	40:10:00:EV:42:30:40	Toothed Lock Washer	B4S (ZMC2-B $\ell$ )	歯 付 座 金	

※ NEW PARTS



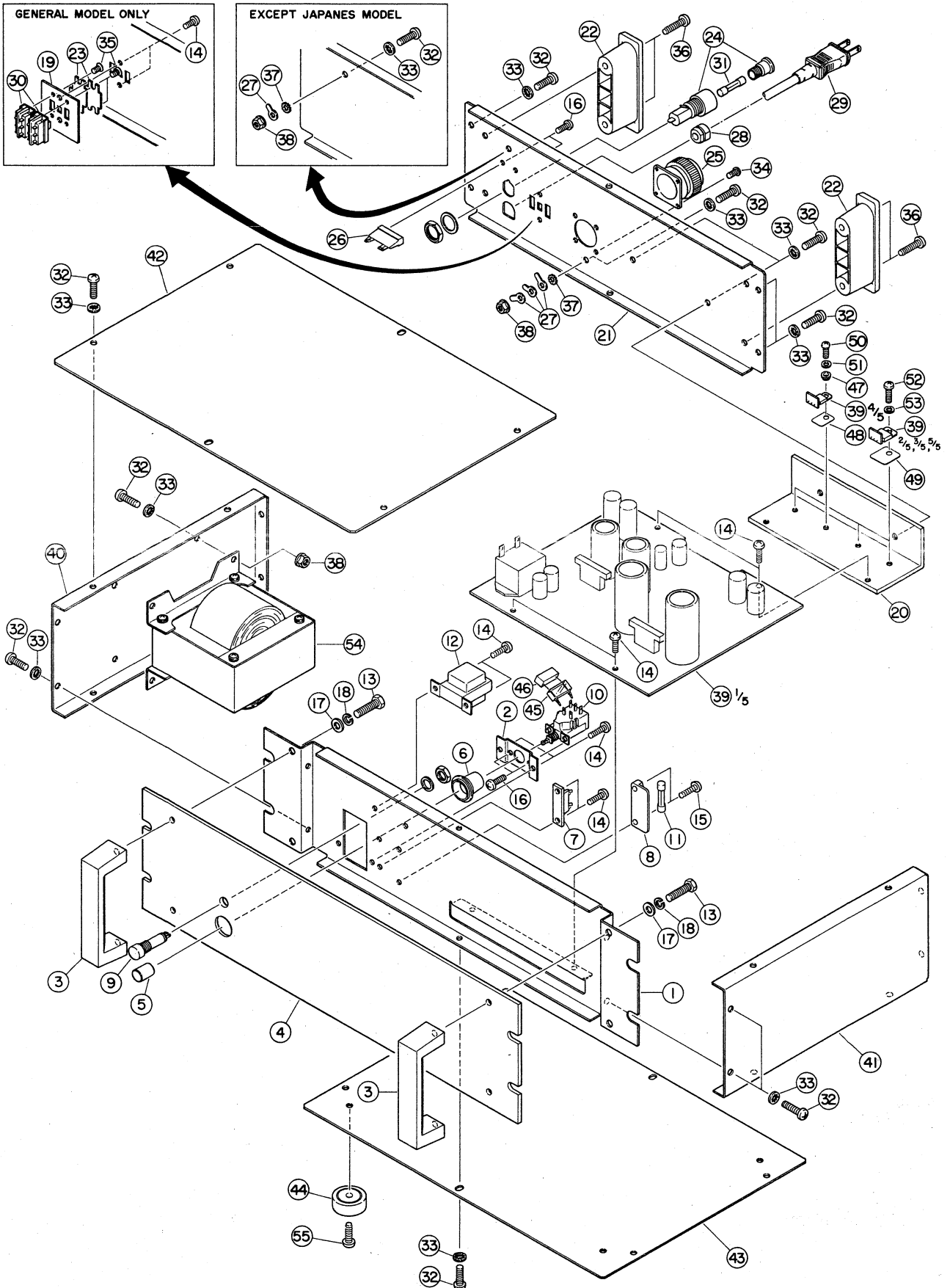
Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
	40'10'00'ED'34'01'00	Bind Head Screw M4 x 10 (ZMC2-B $\ell$ )	バインド小ネジ		
	40'10'00'ED'34'01'60	" M4 x 16 (ZMC2-B $\ell$ )	"		
*	30'54'00'AA'81'58'90	Shield Plate	シールド板アース金具		
	30'54'00'NA'80'63'80	MT 1 C. Board #8523	M T 1 シ ー ト		M916
*	40'10'00'UK'34'61'00	Bipolar Electrolytic Cap. 1 $\mu$ F 25V	バイポーラケミコン		
	40'10'00'iA'09'99'10	Transistor 2SA999 (E,F)	トランジスタ		
	40'10'00'iC'23'20'40	" 2SC2320 (F)	"		
	40'10'00'iF'00'17'20	LED LN222RP	L E D		
	40'10'00'JB'00'02'30	Lamp with Leed 12V 60mA	リード付ランプ		
	40'10'00'KA'40'03'90	Slide Switch	スライドスイッチ		
	40'10'00'LB'60'29'90	Connector 6P (B,E)	2.5 ピッチベースピン		
	40'10'00'LB'60'30'10	" 8P (B,E)	"		
	30'54'00'NA'80'67'50	MT 3 C. Board #84731	M T 3 シ ー ト		
	40'10'00'UK'34'61'00	Bipolar Electrolytic Cap. 1 $\mu$ F 25V	バイポーラケミコン		
	40'10'00'iA'09'99'10	Transistor 2SA999 (E,F)	トランジスタ		
	40'10'00'iC'23'20'40	" 2SC2320 (F)	"		
	40'10'00'KA'40'03'90	Slide Switch	スライドスイッチ		
	40'10'00'iF'00'17'20	LED LM222RP	L E D		
	40'10'00'LB'40'06'30	NH Connector 4P	N H コ ネ ク タ ー		
	40'10'00'LB'60'30'10	" 8P	"		
	40'10'00'JB'00'02'30	Lamp with Leed 12V 60mA	リード付ランプ		
*	30'54'00'NA'80'67'40	SUB C. Board #84390	S U B シ ー ト		
*	40'10'00'GA'81'71'00	INPUT Transformer	インプットトランス		
	40'10'00'LB'60'24'90	NH Connector 8P	N H コ ネ ク タ ー		
	40'10'00'EV'41'00'30	Toothed Lock Washer 3S (ZMC2-Y)	歯付座金		
	40'10'00'EV'10'00'30	Hexagonal Nut 3S (ZMC2-Y)	六角ナット		
	30'54'00'NA'80'63'60	HP C. Board #8524	H P シ ー ト		M916
	40'10'00'UK'34'71'00	Bipolar Electrolytic Cap. 10 $\mu$ F 25V	バイポーラケミコン		
	40'10'00'HL'31'34'70	Metal Oxide Film Resistor 1P 47 $\Omega$	酸金抵抗		
	40'10'00'HL'31'42'20	" 1P 22 $\Omega$	"		
	40'10'00'HW'90'41'00	Fuse Resistor FN10100	ヒューズ抵抗		
	40'10'00'iA'08'14'00	Transistor 2SA814 (O,Y)	トランジスタ		
	40'10'00'iC'16'24'00	" 2SC1624 (O,Y)	"		
	40'10'00'iF'00'00'40	Diode 1S1555	ダイオード		
	40'10'00'iH'00'07'20	" W03B	"		
	40'10'00'iG'00'13'90	IC AN6552	I C		
	40'10'00'iL'00'02'70	Mica Base	マイカベース		
	30'54'00'CB'07'28'80	Bush	絶縁ブッシュ		
	40'10'00'EA'02'60'80	Pan Head Screw 2.6 x 8 (ZMC2-Y)	ナベ小ネジ		
	40'10'00'EV'30'02'60	Spring Lock Washer $\phi$ 2.6 (ZMC2-Y)	バネ座金		
	40'10'00'Ei'33'00'80	Bind Head Tapping Screw 3 x 8 (FCM3-B $\ell$ )	バインドタッピングネジ		
	40'10'00'LB'40'05'70	NH Connector 4P	N H コ ネ ク タ ー		
	40'10'00'LB'60'29'40	" 6P	"		
*	30'54'00'BA'80'48'50	Heat Sink	放 熱 板		
	30'54'00'NA'80'67'90	CO C. Board	C O シ ー ト		
	40'10'00'FA'51'51'00	Mylar Cap. 0.1 $\mu$ F 50V	マイラーコン		
	40'10'00'FC'02'51'00	" 0.1 $\mu$ F 100V	"		
	40'10'00'KA'40'07'60	Slide Switch	スライドスイッチ		

\* NEW PARTS



<PW1500>

■EXPLODED VIEW



## PARTS LIST

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
* 1	30,54,00,AA,81,45,70	Sub-Panel	サブパネル		
* 2	30,54,00,AA,81,45,80	Power Switch Sub-Panel	P. SW 金具		
3	30,54,00,BA,80,19,50	Handle	アンプハンドル		P2100
* 4	30,54,00,BA,80,48,90	Panel	パネル		
5	30,54,00,CB,06,65,10	Push Button	プッシュボタン		
6	30,56,00,CB,81,00,80	Push Switch Guide	プッシュSWガイド		EM120
7	40,10,00,LA,00,29,50	Terminal 2P	2 P 端子板	J	
8	40,10,00,LB,20,12,10	Fuse Holder	ヒューズホルダー	J	
9	40,10,00,JB,00,03,60	Neon Lamp	ネオンランプ		
10	40,10,00,KA,80,02,20	Push Switch	プッシュスイッチ	J	
"	40,10,00,KA,80,02,00	"	"	U,C	
"	40,10,00,KA,80,06,90	"	"	G	
11	40,10,00,KB,00,03,10	Fuse 0.5A 250V	ヒューズ	J	
12	40,10,00,GA,81,37,00	Transformer	トランス	J	PM2000
13	40,10,00,EV,98,04,50	Hexagonal Bolt 5 x 15 (FCM3-Bℓ)	六角ボルト		
14	40,10,00,Ei,33,00,80	Bind Head Tapping Screw 3 x 8 (FCM3-Bℓ)	バインドタッピングネジ		
15	40,10,00,Ei,33,01,50	" 3 x 15 (FCM3-Bℓ)	"	J	
16	40,10,00,ED,33,00,60	Bind Head Screw 3 x 6 (FCM3-Bℓ)	バインド小ネジ		
17	40,10,00,EV,20,00,50	Flat Washer 5S (ZMC2-Bℓ)	平座金		
18	40,10,00,EV,30,00,50	Spring Lock Washer 5S (ZMC2-Bℓ)	バネ座金		
19	30,54,00,AA,81,36,00	Slide Switch Sub-Panel	スライドスイッチサブパネル	G	M512
* 20	30,54,00,BA,80,49,00	Heat Sink	放熱板		
* 21	30,54,00,BA,80,49,10	Rear Panel	リアパネル	J	
"	30,54,00,BA,80,49,20	"	"	U,C	
"	30,54,00,BA,80,49,30	"	"	G	
22	30,54,00,CB,80,86,50	Cord Reel	コードリール		P2100
23	40,10,00,CB,81,60,60	Dial Plate	文字板	G	M512
24	40,10,00,LB,20,04,90	Fuse Holder	ヒューズホルダー	J,U,C	
"	40,10,00,LB,20,05,90	"	"	G	
25	40,10,00,LB,60,23,10	Cannon Connector	キャノンコネクタ		PM2000
26	40,10,00,LA,00,07,60	Lug Terminal	ラグ端子板		
27	40,10,00,LA,00,02,90	Ground Lug φ4	アースラグ		
28	40,10,00,CB,80,68,50	Cord Stopper	コードストッパー	J,U,C	
"	40,10,00,CB,03,28,40	"	"	G	
29	40,10,00,MG,00,06,10	AC Cord	電源コード	J	
"	40,10,00,MG,00,02,70	"	"	U,C	
"	40,10,00,MG,00,04,50	"	"	G	
30	40,10,00,KA,40,07,40	Slide Switch	スライドスイッチ	G	M512
31	40,10,00,KB,00,03,60	Fuse 3A 250V	ヒューズ	J	
"	40,10,00,KB,00,20,00	" 3A 125V	"	U,C	
"	40,10,00,KB,00,07,50	" T2.0A 250V	"	G	
32	40,10,00,ED,34,01,20	Bind Head Screw 4 x 12 (FCM3-Bℓ)	バインド小ネジ		
33	40,10,00,EV,40,30,40	Toothed Lock Washer A4S (FCM3-Bℓ)	歯付座金		
34	40,10,00,EA,22,60,80	Pan Head Screw 2.6 x 8 (FCM3-3g)	ナベ小ネジ		
35	40,10,00,EB,33,00,60	Flat Head Screw 3 x 6 (FCM3-Bℓ)	皿小ネジ	G	
36	40,10,00,Ei,34,01,60	Bind Head Tapping Screw 4 x 16 (FCM3-Bℓ)	バインドタッピングネジ		
37	40,10,00,EV,42,30,40	Toothed Lock Washer B4S (ZMC2-Bℓ)	歯付座金		
38	40,10,00,EK,80,06,20	Flange Nut M4 (ZMC2-Y)	六角フランジナット		
* 39	30,54,00,NA,80,67,60	DC C. Board #85984	D C シート	J	
"	30,54,00,NA,80,67,70	" #85994	"	U,C	
"	30,54,00,NA,80,67,80	" #85984	"	G	
* 40	30,54,00,AA,81,45,50	Side Panel (L)	サイドパネル (左)		
* 41	30,54,00,AA,81,45,60	" (R)	" (右)		

\* NEW PARTS

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
* 42	30,54,00,AA,81,45,30	Top Cover	トップカバー		
* 43	30,54,00,AA,81,45,40	Bottom Cover	ボトムカバー		
44	30,54,00,CB,80,65,90	Amp Leg	アンプレッグ		P2200
45	40,10,00,CB,07,21,90	Condenser Cover	コンデンサーカバー	U	
"	40,10,00,CB,07,98,90	"	"	C	
46	40,10,00,FZ,00,01,10	Spark Quencher 0.33μF + 120Ω 500V	スパークキラー	U	
"	40,10,00,FZ,00,09,50	" S1201	"	C	
47	30,54,00,CB,07,28,80	Bush	絶縁ブッシュ		
48	40,10,00,iL,00,02,70	Mica Base	マイカベース		
49	40,10,00,iL,00,04,60	"	"		
50	40,10,00,EA,02,60,80	Pan Head Screw 2.6 x 8 (ZMC2-Y)	ナベ小ネジ		
51	40,10,00,EV,30,02,60	Spring Lock Washer φ2.6 (ZMC2-Y)	バネ座金		
52	40,10,00,EA,03,00,80	Pan Head Screw 3 x 8 (ZMC2-Y)	ナベ小ネジ		
53	40,10,00,EV,20,00,30	Flat Washer φ3 (ZMC2-Y)	平座金		
* 54	40,10,00,GA,81,83,00	Power Transformer	電源トランス	J	
"	40,10,00,GA,81,84,00	"	"	U,C	
"	40,10,00,GA,81,85,00	"	"	G	
* 55	40,10,00,Ei,34,01,20	Bind Head Tapping Screw 4 x 12 (FCM3-Bℓ)	バインドタッピングネジ		

\* NEW PARTS

## PARTS LIST (ELECTRICITY)

Ref No.	Part No.	Description	(部 品 名)	Remarks	Common model
*	30'54'00'NA'80'67'60	DC C. Board	#85984	D C シ ー ト	J
*	30'54'00'NA'80'67'70	"	#85994	"	U,C
*	30'54'00'NA'80'67'80	"	#85984	"	G
	40'10'00'FH'22'34'70	Ceramic Cap.	0.0047 $\mu$ F 500V	セ ラ コ ン	
	40'10'00'FM'46'94'70	Electrolytic Cap.	4700 $\mu$ F 50V	ケ ミ コ ン	
*	40'10'00'FZ'00'23'80	"	10000 $\mu$ F 50V	"	
	40'10'00'FM'48'92'20	"	2200 $\mu$ F 80V	"	
	40'10'00'HL'31'61'20	Metal Oxide Film Resistor	1P 1.2k $\Omega$	酸 金 抵 抗	
	40'10'00'HL'31'65'60	"	1P 5.6k $\Omega$	"	
	40'10'00'HL'32'41'00	"	2P 10 $\Omega$	"	
	40'10'00'HL'32'61'50	"	2P 1.5k $\Omega$	"	
	40'10'00'HM'52'22'20	Cement Moded Resistor	2P 0.22 $\Omega$	セ メ ン ト 抵 抗	
	40'10'00'HM'55'34'70	"	5P 4.7 $\Omega$	"	
	40'10'00'HU'57'71'50	Metal Film Resistor	15k $\Omega$	金 属 被 膜 抵 抗	
*	40'10'00'HW'79'42'20	Plate Resistor	22 $\Omega$	プ レ ー ト 抵 抗	
	40'10'00'HW'99'43'90	Fuse Resistor	FN19390K	ヒ ュ ー ズ 抵 抗	
	40'10'00'iA'09'99'10	Transistor	2SA999 (E,F)	ト ラ ン ジ ス タ	
	40'10'00'iB'06'86'10	"	2SB686 (R,O)	"	
	40'10'00'iC'17'75'00	"	2SC1775	"	
	40'10'00'iC'23'20'40	"	2SC2320 (F)	"	
	40'10'00'iD'05'26'10	"	2SD526 (R,O)	"	
	40'10'00'iD'07'16'10	"	2SD716 (R,O)	"	
	40'10'00'iF'00'00'40	Diode	1S1555	ダ イ オ ー ド	
	40'10'00'iH'00'01'10	"	5B2	"	
	40'10'00'iH'00'02'80	"	1D2C1	"	
	40'10'00'iH'00'02'90	"	1D2Z1	"	
	40'10'00'iH'00'07'20	"	W03B	"	
	40'10'00'iF'00'03'20	Zener Diode	WZ061	ツ ェ ナ ー ダ イ オ ー ド	
	40'10'00'iF'00'08'50	"	WZ110	"	
	40'10'00'iF'00'06'50	"	WZ162	"	
	40'10'00'iG'04'06'00	IC	AN6552	I C	
	40'10'00'HT'41'00'20	Semi Fixed Variable Resistor	B1k $\Omega$	半 固 定 抵 抗	
	40'10'00'KB'00'03'30	Fuse	1A 250V	ヒ ュ ー ズ	J
	40'10'00'KB'00'03'60	"	3A 250V	"	J
	40'10'00'KB'00'04'20	"	2.5A 250V	"	J
	40'10'00'KB'00'12'80	"	6A 250V	"	J
	40'10'00'KB'00'10'60	"	1A 250V	"	U,C
	40'10'00'KB'00'20'00	"	3A 125V	"	U,C
	40'10'00'KB'00'14'40	"	2.5A 125V	"	U,C
	40'10'00'KB'00'17'90	"	6A 125V	"	U,C
	40'10'00'KB'00'06'70	"	T630mA 250V	"	G
	40'10'00'KB'00'06'90	"	T2.5A 250V	"	G
	40'10'00'KB'00'07'70	"	T6.3A 250V	"	G
	40'10'00'KB'00'07'60	"	T3.15A 250V	"	G
	40'10'00'LB'20'15'30	Fuse Holder Pin		ヒ ュ ー ズ ホ ル ダ ー ピ ン	
	40'10'00'ED'03'01'00	Bind Head Screw	M3 x 10 (ZMC2-Y)	バ イ ン ド 小 ネ ジ	J,U,C
	40'10'00'EV'20'30'30	Flat Washer	3S (ZMC2-Y)	平 座 金	J,U,C
	40'10'00'EV'10'00'30	Hexagonal Nut	M3 (ZMC2-Y)	六 角 ナ ッ ト	J,U,C
	40'10'00'KC'00'07'40	Power Relay	AR6221	パ ワ ー リ レ ー	J

\* NEW PARTS

## YAMAHA MUSIKINSTRUMENTE

DIN A4: 30  
DIN A3: 14  
DIN A2:  
DIN A1:

TYP: 1/1516  
LFDNR: 403  
VORRAT:

PREIS SCHALTPLÄNE :  
PREIS GESAMTANLEITUNG:

HZ:

PRODUKTION: