YAMAHA PORTABLE KEYBOARD PS-10 SERVICE MANUAL

YAMAHA

PORTABLE KEYBOARD

PS-10

SERVICE MANUAL

001126

'81.9 0.65K K·S ⊖ Printed in Japan

CONTENTS

SPECIFICATIONS

KEYBOARD
44 keys ($F_1 \sim C_5$)

ORCHESTRA TONES
ORGAN	PIANO
STRING	HARPSICHORD
CLARINET	VIBRAPHONE

EFFECT
SUSTAIN

AUTO RHYTHM SECTION
RHYTHM SELECTORS

WALTZ	ROCK
SWING	LATIN

RHYTHM CONTROLS

RHYTHM SYNCHRO START, TEMPO, VOLUME

TEMPO LIGHT

AUTO BASS CHORD SECTION
SINGLE FINGERD CHORD
VOLUME

OTHER CONTROLS AND INDICATORS
POWER Switch
Pilot Light
MASTER VOLUME

AUXILIARY TERMINALS
HEADPHONES
AUX-OUT (600Ω)
AUX-IN (30kΩ)
EXP. PEDAL
DC 9V IN

MAIN AMPLIFIER
5W (R.M.S) (4Ω impedance)

SPEAKER
12 cm (5") x 8 cm (3") (4Ω)

RATED VOLTAGE
DC 9V: Batteries (SUM-1, "D" size, R20 or EQU)
AC power adaptor
Car Battery adaptor (option)

POWER CONSUMPTION
11W (with AC power adaptor)

EXTERIOR
Main Unit: ABS resin
Finish: Polyurethane coating

DIMENSIONS
Width : 77.2 cm (30-1/2")
Depth : 29.3 cm (11-1/2") – 33.4 cm [12-3/4"] –
Height : 9.2 cm (3-1/2") – 25.1 cm [10"] –
* – [ ] – indicates the dimensions when the music rest is attached.

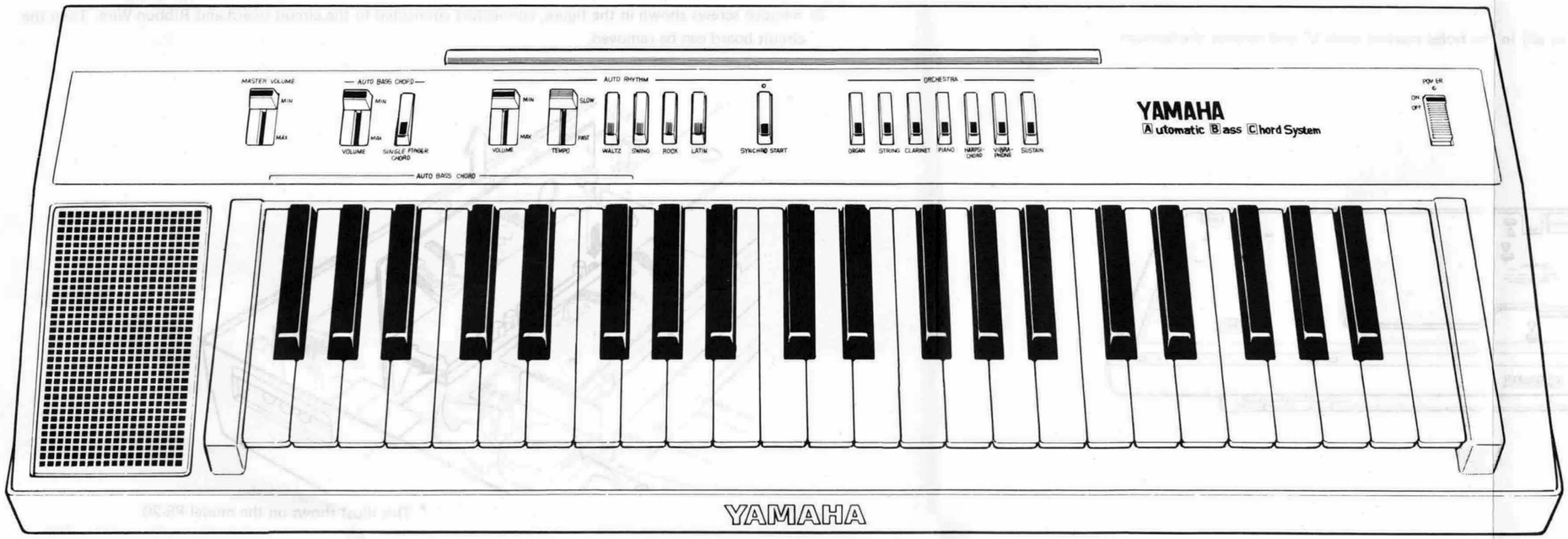
WEIGHT
5.4 kg (11 lbs. 14 oz)
* This weight does not include the weight of the dry-cell batteries.

Specifications subject to change without notice.

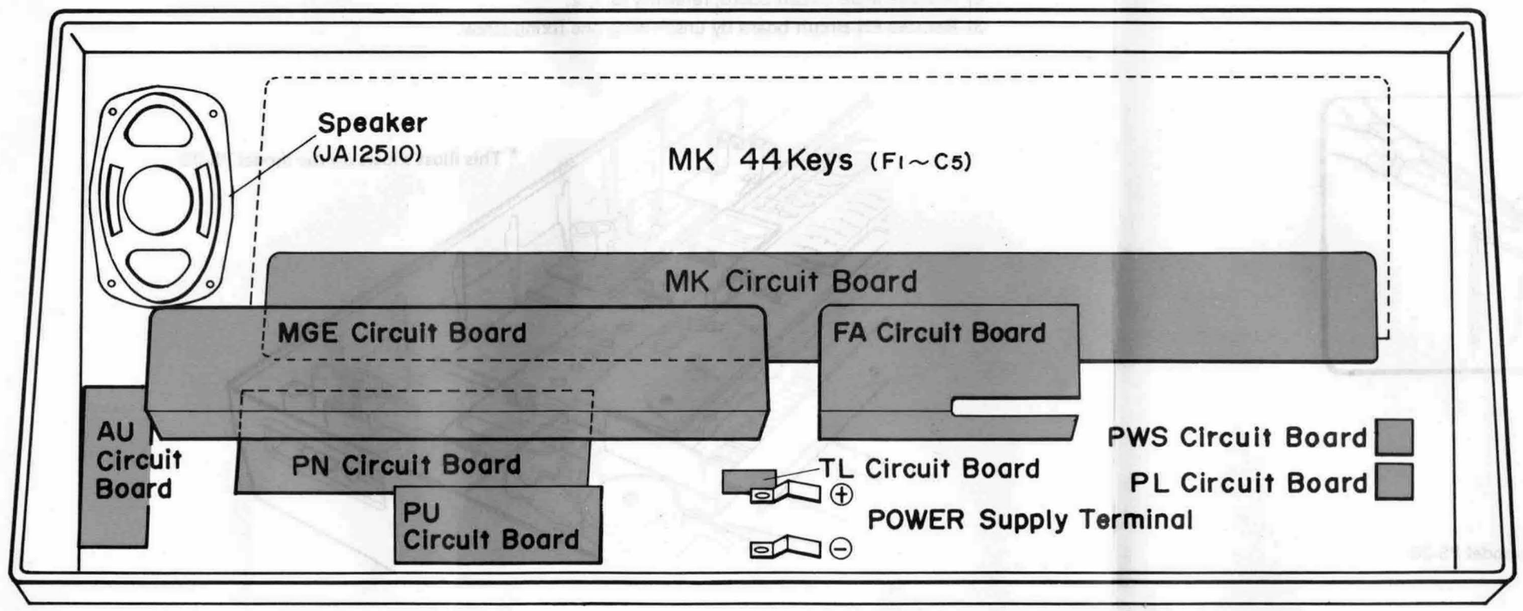
ACCESSORIES
DUST COVER	BATTERY PACK
MUSIC REST	AC POWER ADAPTOR

The maximum number of notes which can be simultaneously sounded on this instrument is shown below.
* Normaly . . . . . 8 notes (Melody)
* During ABC playing
  Melody notes 4
  Chord notes 3
  Bass note 1

PANEL LAYOUT

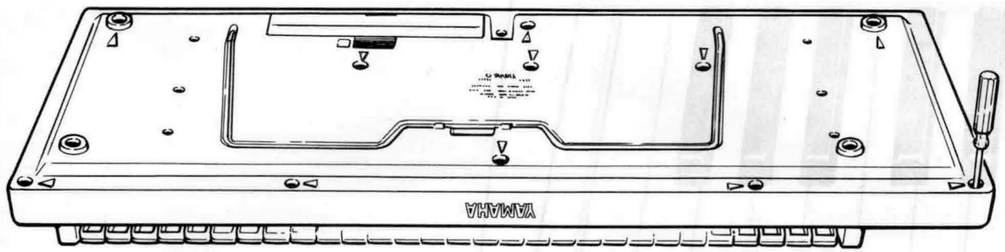


UNIT LAYOUT (Bottom View)



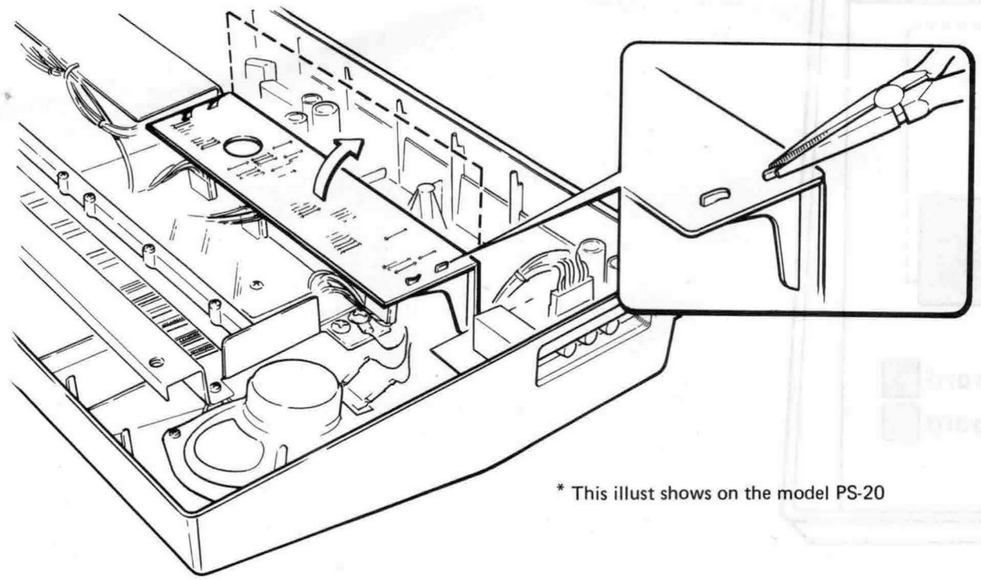
1. Removal of bottom case

Turn over the unit, unscrew the fixing screws (11 in all) in the holes marked with ▽ and remove the bottom case by pulling its four sides gradually.



2. Removal of MGE & FA circuit boards

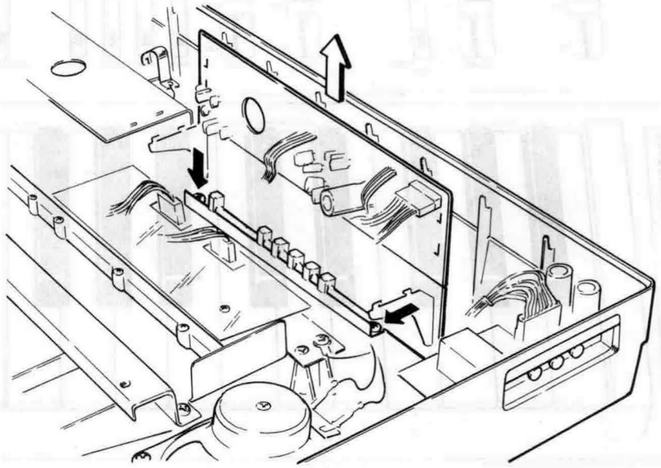
1) Straighten fastening plates fixing the circuit board with a Longnose pliers and raise the circuti board gently.



* This illust shows on the model PS-20

DISASSEMBLY PROCEDURE

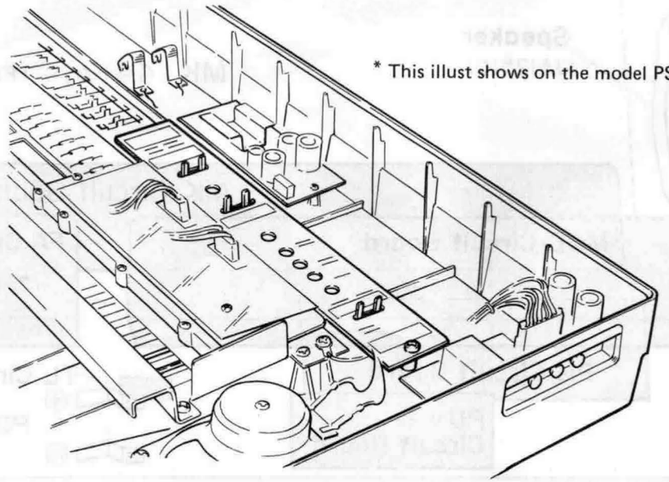
2) Remove screws shown in the figure, connectors connected to the circuit board and Ribbon Wire. Then the circuit board can be removed.



* This illust shows on the model PS-20

3. Removal of PN circuit board

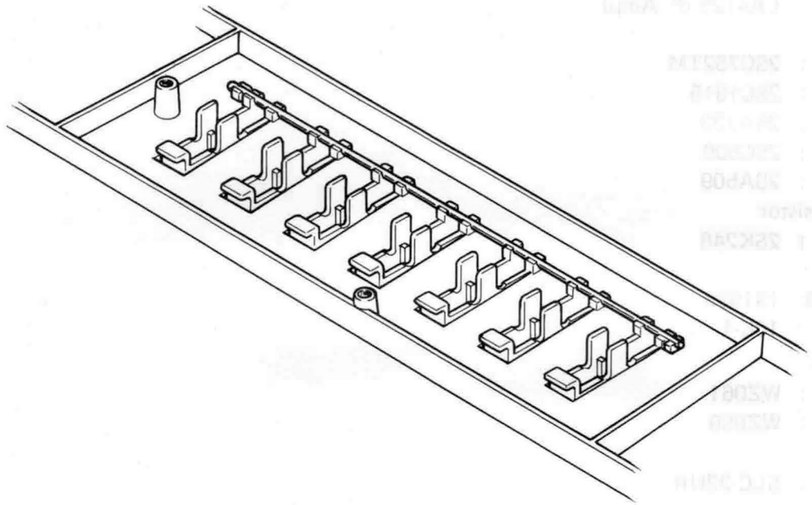
1) Remove slide volume knobs on the panel.
2) Remove MGE circuit board, referring to 1, 2.
3) Remove PN circuit board by unscrewing one fixing screw.



* This illust shows on the model PS-20

4. Removal of switches

1) Remove each circuit board referring to the removal instruction for each circuit board.
2) Push the shaft of switches with fingers from the front panel side, and the shaft will come off the bearings.
3) Each switch can be removed from the shaft easily.
4) When reinstalling them, fit the switches onto the shaft from the back side of the panel, place the shaft on the bearings and push its both ends until locked.

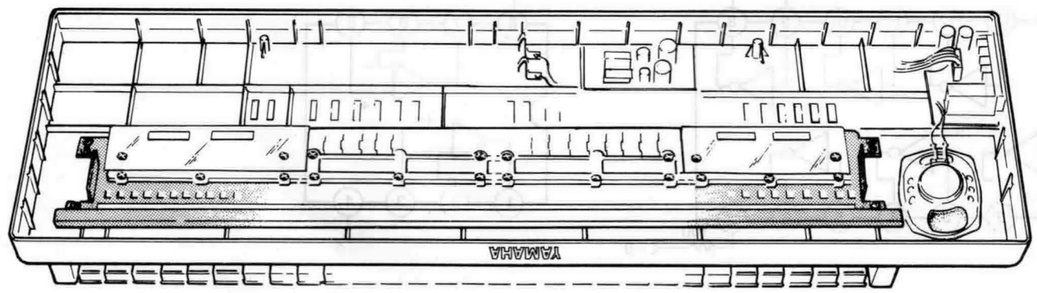


5. Removal of MK circuit board

1) Follow step 1) of **2** to raise each circuit board.
2) Remove the fixing screws (20 in all) and connectors connected to MK circuit board, and MK circuit board can be removed.

6. Removal of keyboard

1) Remove the entire keyboard by unscrewing six fixing screws.



7. Removing Keyboard

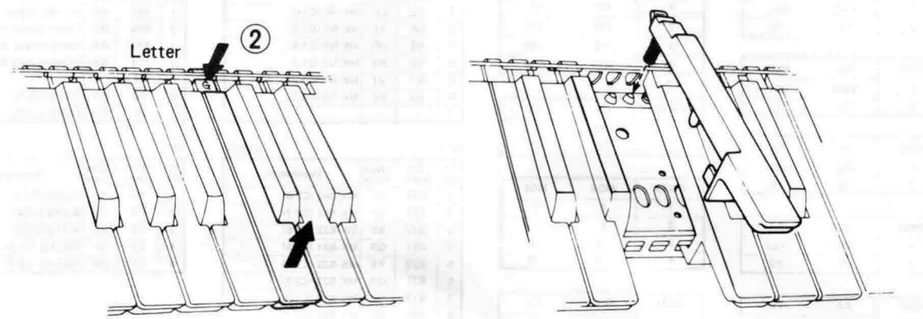
1) Remove botom case.
2) Remove MK fastening screws securing keyboard.
3) Raise the keyboard, and remove connectors.
4) Remove keyboard up.

8. Removing Keys

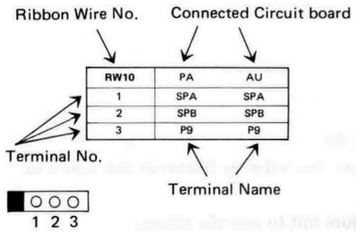
1) Remove white keys first, then black keys, making sure to mark their order.
2) Push the key down in the direction of arrow at the point marked with the letter as shown in the figure to release the key hook from its fulcrum.
3) Remove your finger from the key and then withdraw the key making sure not to lose the spring.

Installation Precautions

Insert the spring over the round peg as shown in the figure and push the key down so that the hook falls over the fulcrum. Install black keys before installing white keys.



• How to Read Wiring Table



• Wiring Table of Ribbon Wire

RW1	PN	AU
1	EXO	EXO
2	P9	P9

RW2	PN	MGE
1	VDD	VDD
2	TCL	TCL

RW3	PN	PA
1	MO	MI
2	P9	P9

RW4	AU	PA
1	AUI	AUI
2	P9	P9

RW5	FA	PL
1	PL	PL
2	PL	PL

RW6	MGE	FA
1	VI	VI
2	VG	VG

RW7	MGE	TL
1	VDD	VDD
2	TL	TL

RW8	MGE	PN
1	R0	RI
2	A0	AI

RW9	MGE	FA
1	–4.5	–4.5
2	8′	8′
3	4′ + 8′	4′ + 8′

RW10	PA	AU
1	SPA	SPA
2	SPB	SPB
3	P9	P9

RW11	MGE	FA
1	PF	PF
2	VIB	VIB
3	VIB	VIB
4	SUS	SUS

RW12	FA	PN
1	–4.5	–4.5
2	A1	A0

RW13	MGE	MGE
1	E	E
2	E	E
3	–9	–9
4	–9	–9

RW14	MGE	FA
1	E	E
2	E	E
3	–9	–9
4	–9	–9

RW15	MGE	FA
1	ST	ST
2	VDD	VDD
3	CL	CL

RW16	MGE	AU
1	PSE	PSE
2	–9	–9
3	–9	–9
4	E	E
5	E	E

RW17	FA	PN
1	P9	P9
2	M0	M1

RW18	PL ⟷	PWS
1	PSE	PSE
2	PSE	PSE

• Connector Table

C1 [MGE]

Pin No.	Pin Name	Wire Color	Destination
1	N5	GR	MK-N5 (C1-6)
2	N4	YE	MK-N4 (C1-5)
3	N3	OR	MK-N3 (C1-4)
4	N2	RE	MK-N2 (C1-3)
5	N7	VI	MK-N7 (C1-2)
6	N6	BE	MK-N6 (C1-1)
7	–	–	–

C2 [MGE]

Pin No.	Pin Name	Wire Color	Destination
1	$\overline{B42}$	GY	MK-B42 (C2-8)
2	$\overline{B41}$	VI	MK-B41 (C2-7)
3	$\overline{B32}$	BE	MK-B32 (C2-6)
4	$\overline{B31}$	GR	MK-B31 (C2-5)
5	$\overline{B22}$	YE	MK-B22 (C2-4)
6	$\overline{B21}$	OR	MK-B21 (C2-3)
7	$\overline{B12}$	RE	MK-B12 (C2-2)
8	$\overline{B11}$	BR	MK-B11 (C2-1)

C3 [AU]

Pin No.	Pin Name	Wire Color	Destination
1	BPE	RE	Power Supply Terminal +
2	BPE	RE	Power Supply Terminal +
3	P9	BE	PA-P9 (C5-1)
4	P9	BE	PA-P9 (C5-2)
5	P9	BE	PA-P9 (C5-3)
6	PSE	SB	PWS-PSE (C4-1)
7	BP9	BE	Power Supply Terminal –
8	BP9	BE	Power Supply Terminal –
9	PS1	VI	Speaker –
10	PS2	YE	Speaker +

C4 [PWS]

Pin No.	Pin Name	Wire Color	Destination
1	PSE	BE	AU-PSE (C3-6)
2	BPE	RE	Power Supply Terminal +
3	BPE	RE	Power Supply Terminal +
4	BPE	RE	Power Supply Terminal +
5	PE	–	–
6	PE	OR	PA-PE (C5-5)
7	PE	OR	PA-PE (C5-4)

C5 [PA]

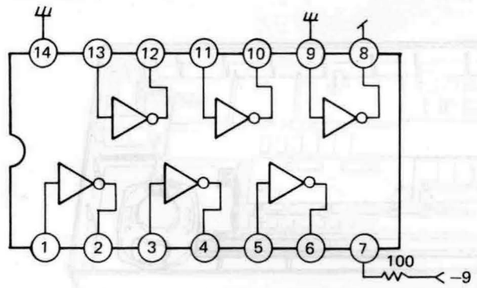
Pin No.	Pin Name	Wire Color	Destination
1	P9	BE	AU-P9 (C3-3)
2	P9	BE	AU-P9 (C3-4)
3	P9	BE	AU-P9 (C3-5)
4	PE	OR	PWS-PE (C4-7)
5	PE	OR	PWS-PE (C4-6)

WIRING TABLE & NOTES

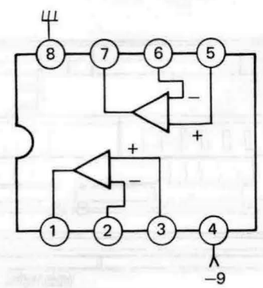
Notes)

1. Integrated Circuit
   - IC1 : YM1104 (GE2)
   - IC2 : TC4069 (INV.)
   - IC3, 4, 5, 7, 8 : NJM4558 (OP. Amp)
   - IC6 : iG2602 (VCA)
   - IC9 : LA4125 (P. Amp)
2. Transistor
   - Tr1 : 2SC752TM
   - Tr2 ~ 5, 17, 20 : 2SC1815
   - Tr6 ~ 16, 18, 19 : 2SA733
   - Tr21 : 2SC509
   - Tr22 : 2SA509
3. Field Effect Transistor
   - FET1 ~ 4 : 2SK246
4. Diode
   - D1 ~ 13, 16 ~ 59: 1S1555
   - D14 : 10E-1
5. Zener Diode
   - ZD1 : WZ061
   - ZD2 : WZ056
6. LED
   - LED1, 2 : SLC-22UR

TC4069 (Inverter) : IC2

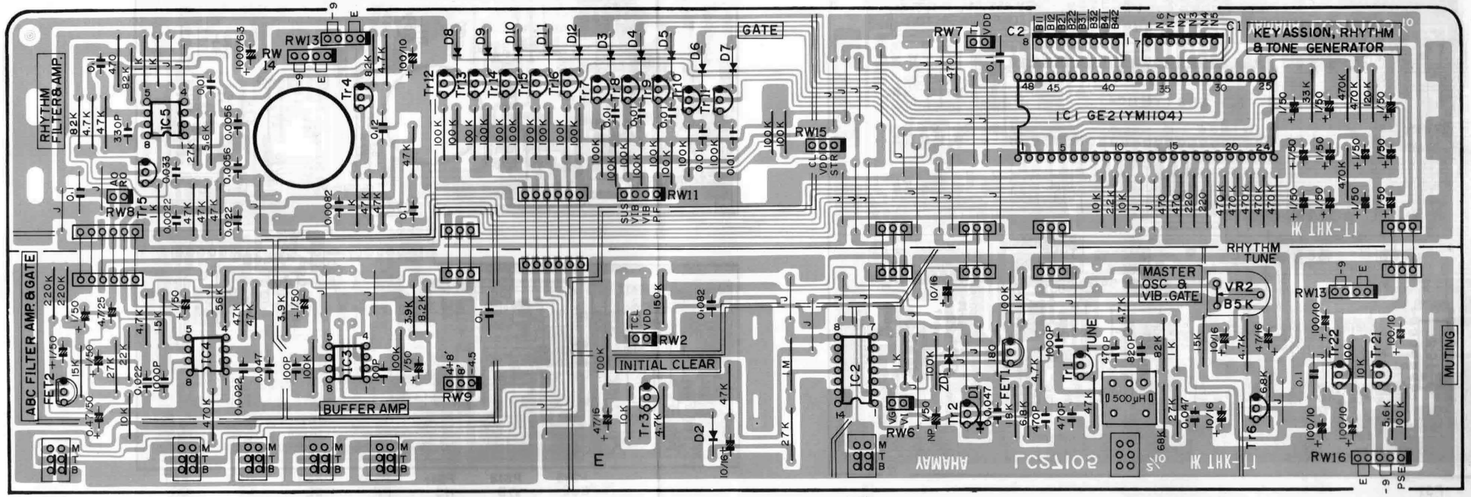


NJM4558 (OP. Amp) : IC3, 4, 5, 7, 8

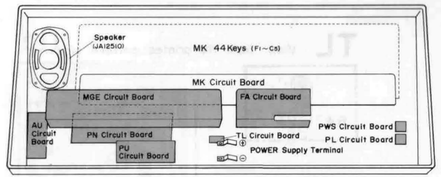


PS-10 CIRCUIT BOARD (S/# 3151 ~)

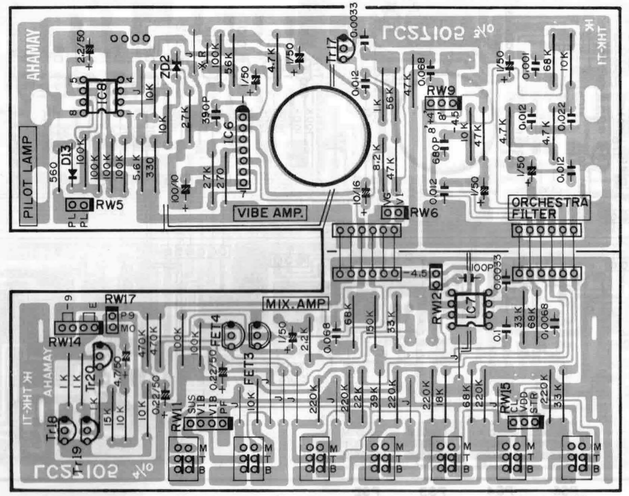
MGE



UNIT LAYOUT (Bottom View)



FA



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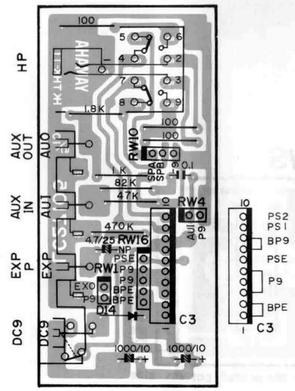
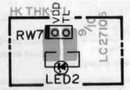
Gain Rank of IC6 (iG2602)	R
K	1.5 K
L	3.3 K
M	2.7 K

AU



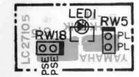
TL

View from the printed pattern side



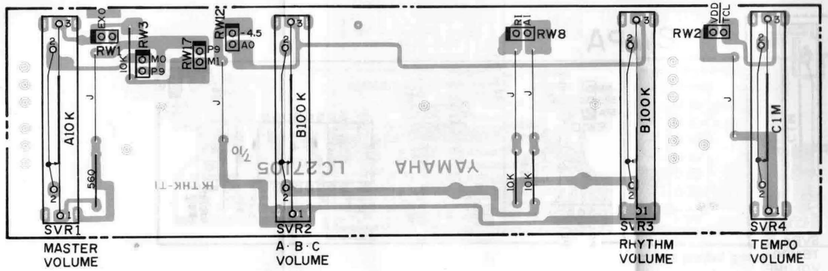
PL

View from the printed pattern side

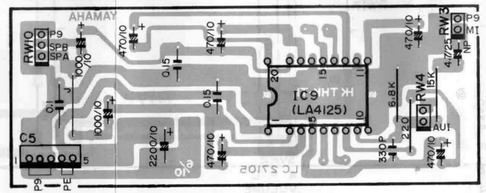


PN

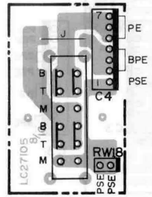
View from the printed pattern side



PA

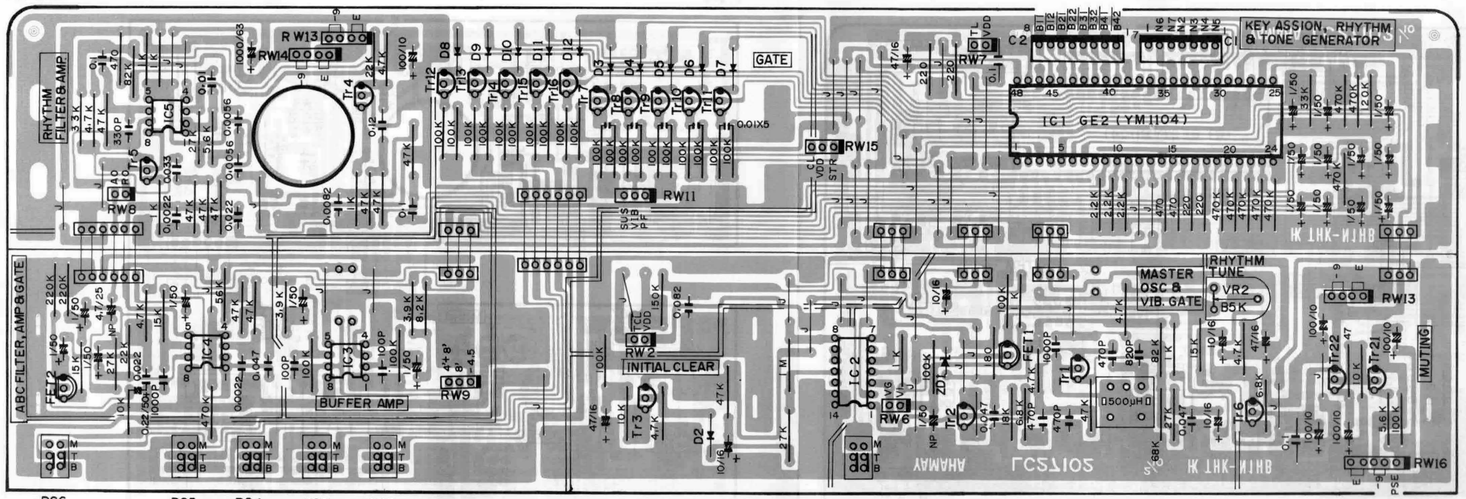


PWS



View from the printed pattern side

MGE



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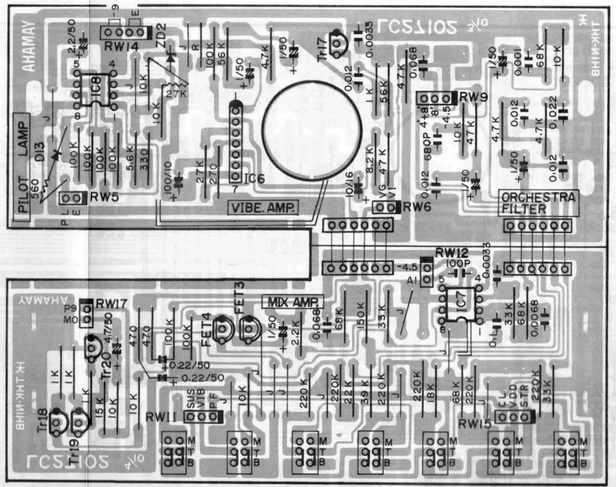
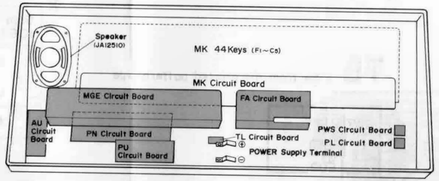
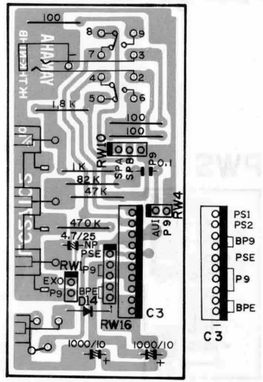


UNIT LAYOUT (Bottom View)

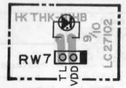


AU



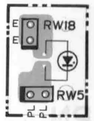
TL

View from the printed pattern side



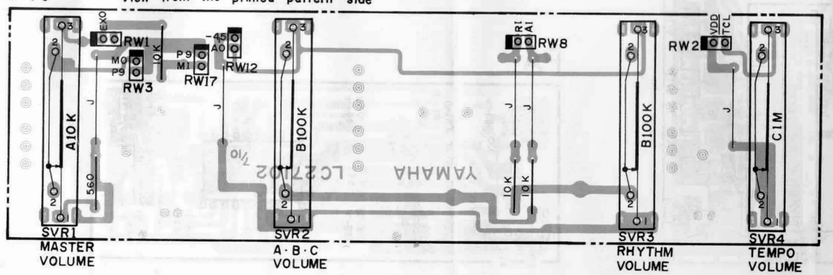
PL

View from the printed pattern side



PN

View from the printed pattern side



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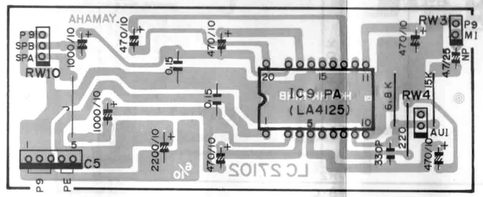
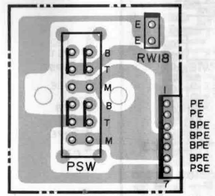


PWS



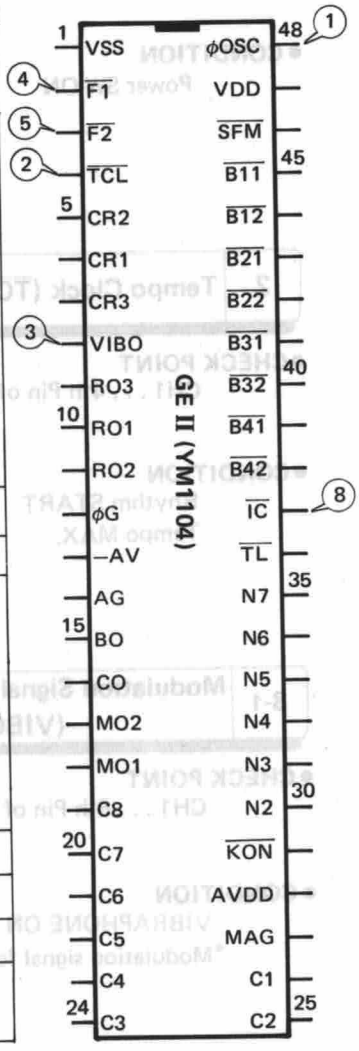
View from the printed pattern side

LSI DATA TABLE

Part Name	YM1104	Function Name	GE II (Generator 2)

Pin No.	Pin Name	Description
1	VSS	Ground (0V)
2	$\overline{F1}$	Function Block (⇐ Function SW)
3	$\overline{F2}$	
4	$\overline{TCL}$	C.R for tempo clock oscillation
5	CR2	SDN
6	CR1	HH — C.R for Rhythm Sound source envelope setting
7	CR3	HB/HC
8	VIBO	Vibrato data OUT
9	RO3	BD
10	RO1	HH/SDN — Rhythm sound source OUT
11	RO2	HB/HC
12	ϕG	C.R for Rhythm sound source clock oscillation
13	−AV	DC supply for sound source (−2V)
14	AG	Analog GND
15	BO	Auto Bass sound source OUT
16	CO	Auto Chord sound source OUT
17	MO2	8′ — Manual key sound source OUT
18	MO1	8′ + 4′
19	C8	C.R for Auto Bass/Manual Key Sound source envelope setting
20	C7	C.R for Auto Chord/Manual Key Sound source envelope setting
21	C6	
22	C5	
23	C4	C.R for Manual Key Sound source envelope setting
24	C3	

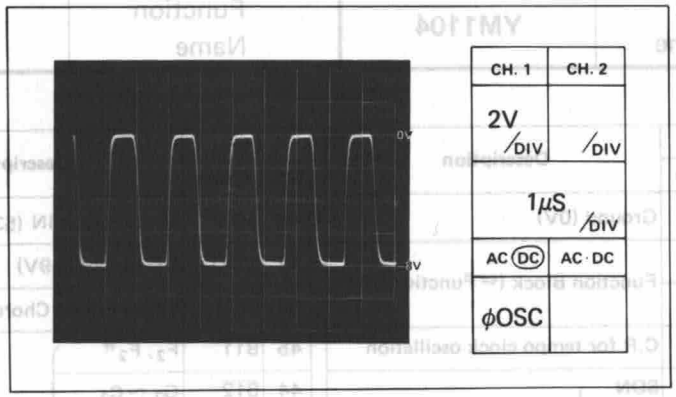
Pin No.	Pin Name	Description
48	ϕOSC	Master clock IN (530 kHz)
47	VDD	DC supply (−9V)
46	$\overline{SFM}$	Single Finger Chord ON data IN
45	$\overline{B11}$	F_2, $F_2^{\#}$
44	$\overline{B12}$	$G_2 \sim C_3$
43	$\overline{B21}$	$C_3^{\#} \sim F_3^{\#}$
42	$\overline{B22}$	$G_3 \sim C_4$ — Octave Block (⇐ Key SW)
41	$\overline{B31}$	$C_4^{\#} \sim F_4^{\#}$
40	$\overline{B32}$	$G_4 \sim C_5$
39	$\overline{B41}$	$C_5^{\#} \sim F_5^{\#}$
38	$\overline{B42}$	$G_5 \sim C_6$
37	$\overline{IC}$	Initial clear IN
36	$\overline{TL}$	Tempo lamp drive pulse IN
35	N7	$F^{\#}$, C
34	N6	F, B
33	N5	$A^{\#}$, E — Note Block (⇐ Key & Function SW)
32	N4	A, $D^{\#}$
31	N3	$G^{\#}$, D
30	N2	G, $C^{\#}$
29	$\overline{KON}$	Key ON data OUT
28	AVDD	DC supply for Analog (−9V)
27	MAG	Analog GND
26	C1	C.R for Manual Key Sound source envelope setting
25	C2	



WAVE SHAPE FIGURES

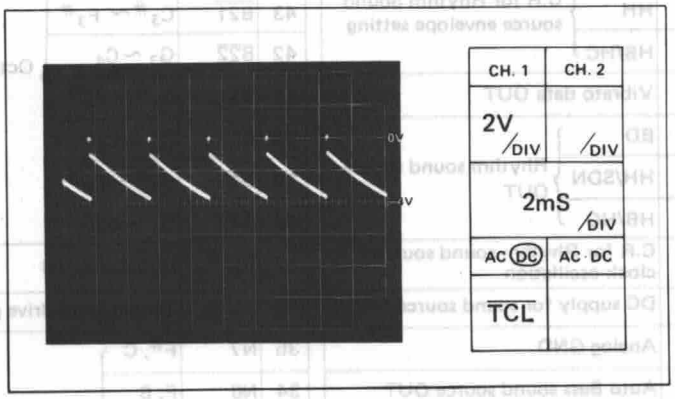
1 Master Clock (φOSC)

- **CHECK POINT** (MGE)
  CH1 . . . 48th Pin of IC1 (GE2)
- **CONDITION**
  Power SW-ON



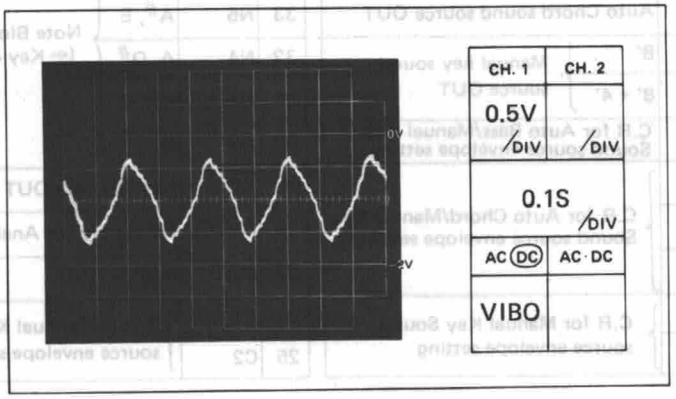
2 Tempo Clock ($\overline{TCL}$)

- **CHECK POINT** (MGE)
  CH1 . . . 4th Pin of IC1 (GE2)
- **CONDITION**
  Rhythm START
  Tempo MAX.



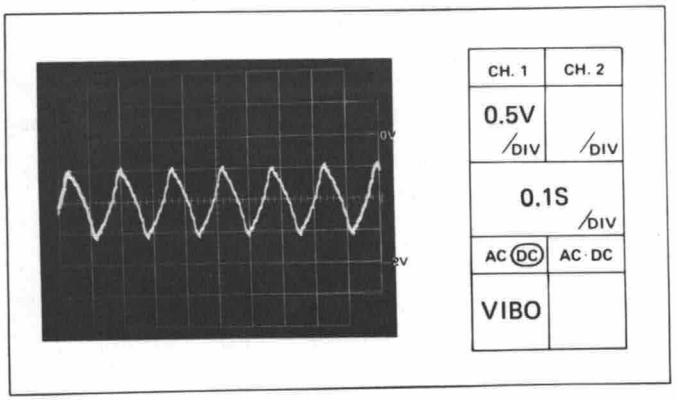
3-1 Modulation Signal (VIBO)

- **CHECK POINT** (MGE)
  CH1 . . . 8th Pin of IC1 (GE2)
- **CONDITION**
  VIBRAPHONE ON
  *Modulation signal for VCA



3-2 Modulation Signal (VIBO)

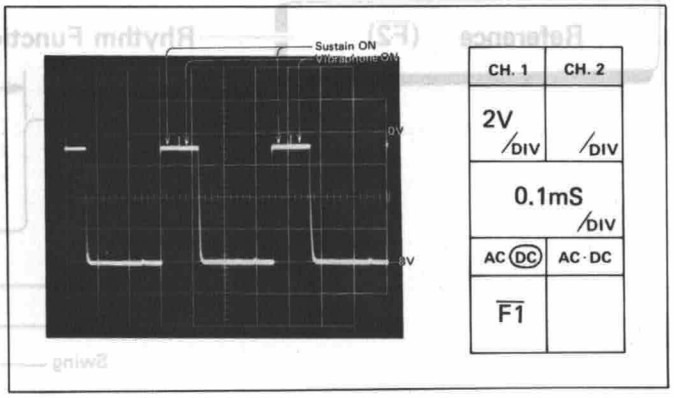
- **CHECK POINT** (MGE)
  CH1 . . . 8th Pin of IC1 (GE2)
- **CONDITION**
  STRING ON
  *Modulation signal for Vibrato



4-1 Orchestra Function Signal ($\overline{F1}$)

- **CHECK POINT** (MGE)
  CH1 . . . 2nd Pin of IC1 (GE2)

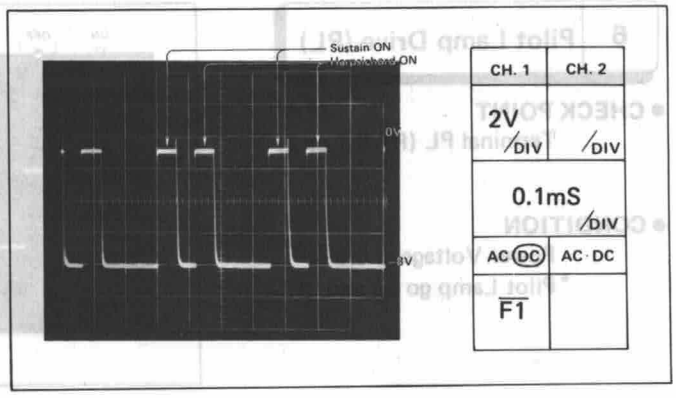
- **CONDITION**
  SUSTAIN ON
  VIBRAPHONE ON



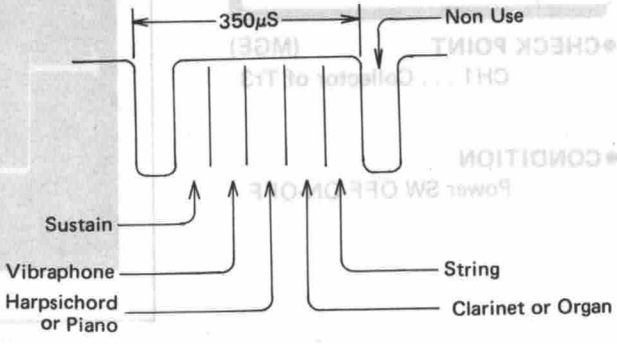
4-2 Orchestra Function Signal ($\overline{F1}$)

- **CHECK POINT** (MGE)
  CH1 . . . 2nd Pin of IC1 (GE2)

- **CONDITION**
  SUSTAIN ON
  HARPSICHORD ON



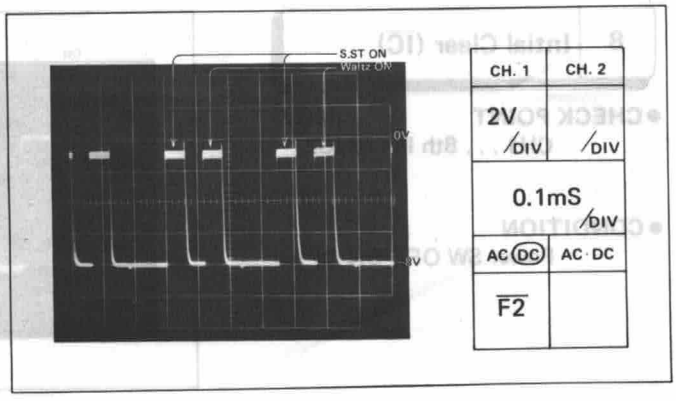
Reference ($\overline{F1}$) — Orchestra Function Signal



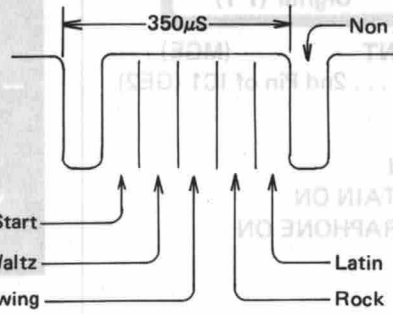
5 Rhythm Function Signal ($\overline{F2}$)

- **CHECK POINT** (MGE)
  CH1 . . . 3rd Pin of IC1 (GE2)

- **CONDITION**
  Rhythm START
  SWING ON
  (Refer to next Page)

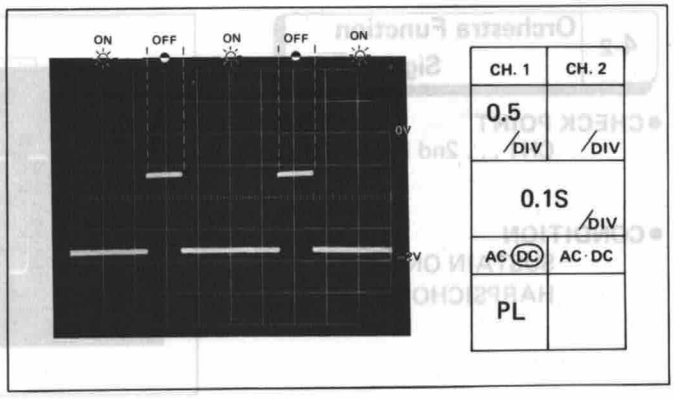


Reference ($\overline{F2}$) — Rhythm Function Signal



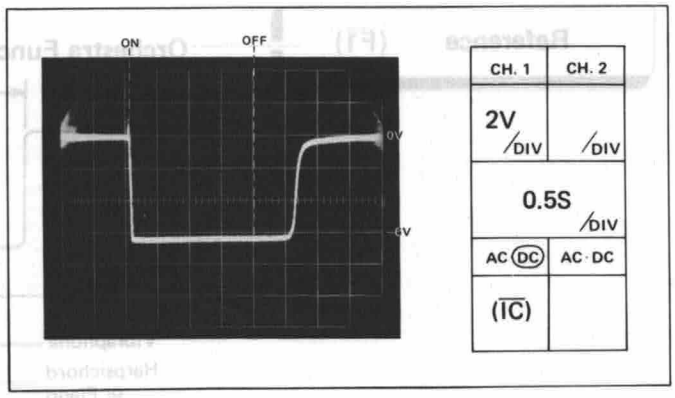
6 Pilot Lamp Drive (PL)

- **CHECK POINT** (FA)
  Terminal PL (RW5-1 or 2)
- **CONDITION**
  Power Voltage < 6.8V
  * Pilot Lamp go on and off.



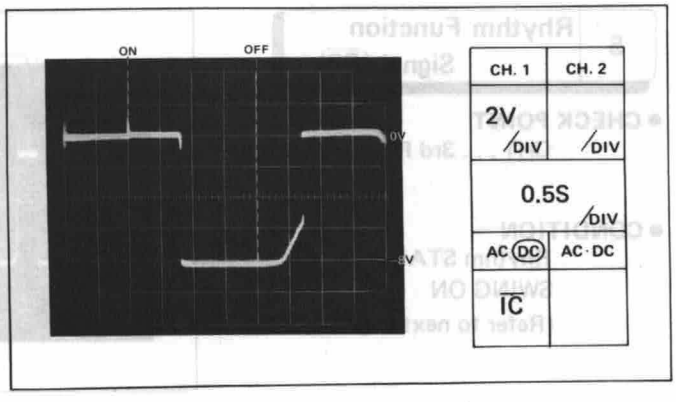
7 Initial Clear

- **CHECK POINT** (MGE)
  CH1 . . . Collector of Tr3
- **CONDITION**
  Power SW OFF-ON-OFF



8 Intial Clear ($\overline{IC}$)

- **CHECK POINT** (MGE)
  CH1 . . . 8th Pin of IC2
- **CONDITION**
  Power SW OFF-ON-OFF



YAMAHA

PORTABLE KEYBOARD

PS-10

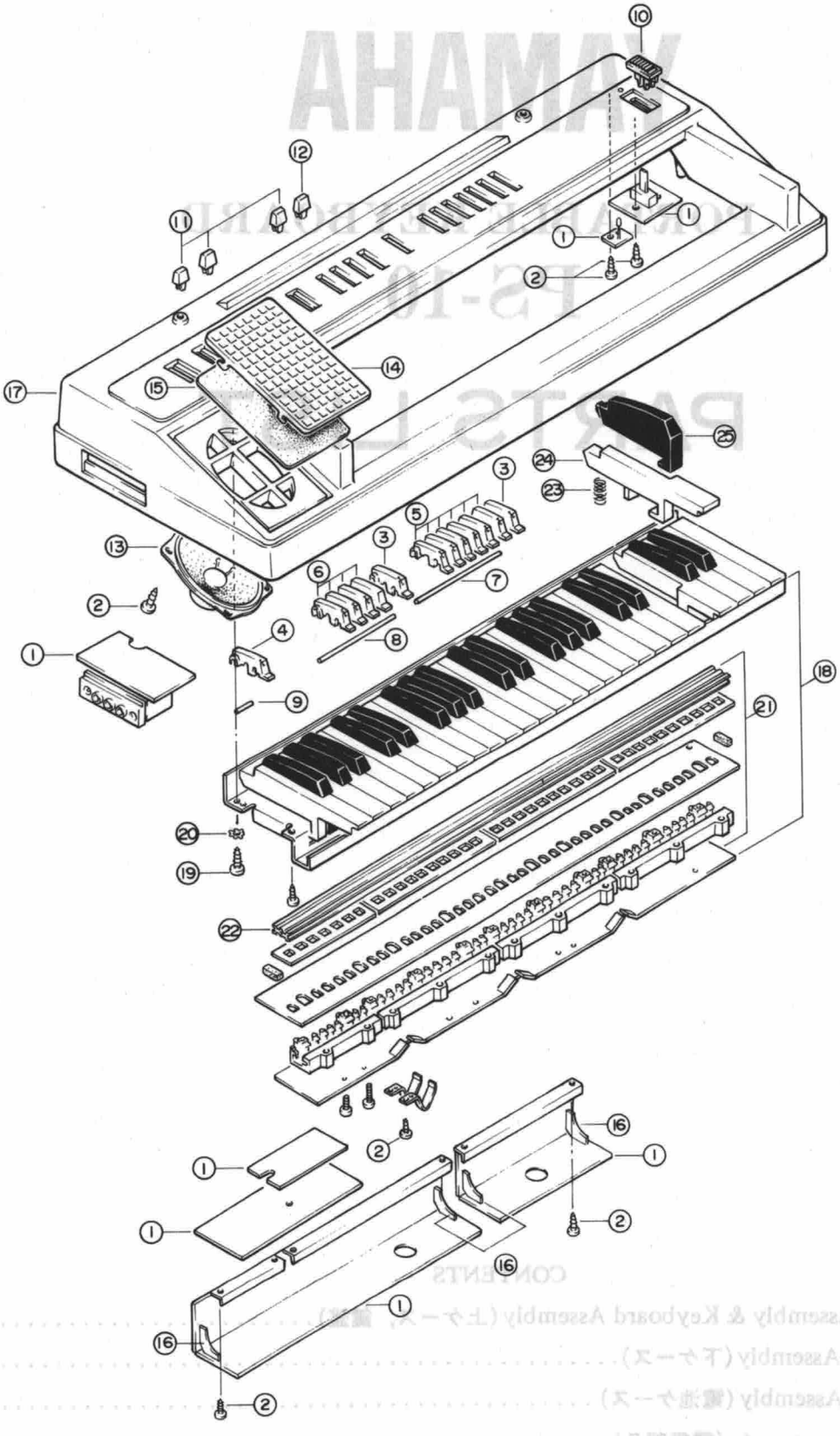
PARTS LIST

CONTENTS

001126

'80.11 1.1K K·S ㊀ Printed in Japan

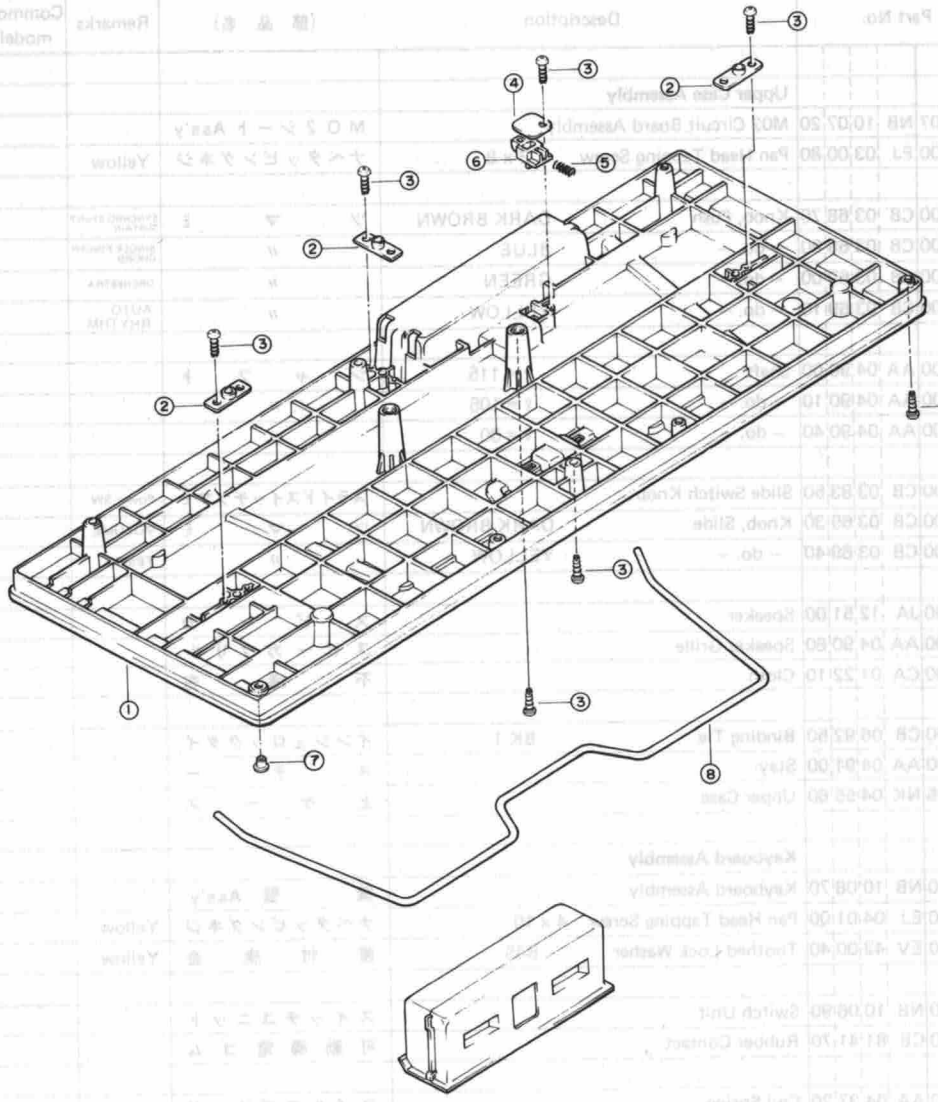
A. Upper Case Assembly & Keyboard Assembly (上ケース，鍵盤)



Ref. No.	Part No.	Description		(部 品 名)	Remarks	Common model	Markets
		Upper Case Assembly					
※ 1	30 10 07 NB 10 07 20	M02 Circuit Board Assembly		M02シート Ass'y			
2	40 10 00 EJ 03 00 80	Pan Head Tapping Screw	3 x 8	ナベタッピングネジ	Yellow		
※ 3	30 10 00 CB 03 68 70	Knob, Push	DARK BROWN	ツ マ ミ	SYNCHRO START SUSTAIN		
※ 4	30 10 00 CB 03 68 90	– do. –	BLUE	〃	SINGLE FINGER CHORD		
※ 5	30 10 00 CB 03 69 00	– do. –	GREEN	〃	ORCHESTRA		
※ 6	30 10 00 CB 03 69 10	– do. –	YELLOW	〃	AUTO RHYTHM		
※ 7	30 10 00 AA 04 90 00	Shaft	ℓ = 115	シ ャ フ ト			
※ 8	30 10 00 AA 04 90 10	– do. –	ℓ = 105	〃			
※ 9	30 10 00 AA 04 90 40	– do. –	ℓ = 30	〃			
※ 10	30 10 00 CB 03 83 50	Slide Switch Knob		スライドスイッチツマミ	Power SW.		
※ 11	30 10 00 CB 03 69 30	Knob, Slide	DARK BROWN	ツ マ ミ	VOLUME		
※ 12	30 10 00 CB 03 69 40	– do. –	YELLOW	〃	TEMPO		
※ 13	40 10 00 JA 12 51 00	Speaker		ス ピ ー カ			
※ 14	30 10 00 AA 04 90 60	Speaker Grille		スピーカグリル			
※ 15	40 10 00 CA 01 22 10	Cloth		不 織 布			
	40 10 00 CB 06 92 50	Binding Tie	BK-1	インシュロックタイ			
※ 16	30 10 00 AA 04 91 00	Stay		ス テ ー			
※ 17	30 10 05 NK 04 55 60	Upper Case		上 ケ ー ス			
		Keyboard Assembly					
※ 18	30 10 00 NB 10 06 70	Keyboard Assembly		鍵 盤 Ass'y			
19	40 10 00 EJ 04 01 00	Pan Head Tapping Screw	4 x 10	ナベタッピングネジ	Yellow		
20	40 10 00 EV 42 00 40	Toothed Lock Washer	B4S	歯 付 座 金	Yellow		
21	30 10 00 NB 10 06 90	Switch Unit		スイッチユニット			
22	40 10 00 CB 81 41 70	Rubber Contact		可動導電ゴム			
23	30 10 00 AA 04 37 20	Coil Spring		コイルスプリング			
24	30 10 00 CB 03 22 10	White Key	C,F	白 鍵			
	30 10 00 CB 03 22 20	– do. –	D	〃			
	30 10 00 CB 03 22 30	– do. –	B,E	〃			
	30 10 00 CB 03 22 40	– do. –	G	〃			
	30 10 00 CB 03 22 50	– do. –	A	〃			
	30 10 00 CB 03 22 60	– do. –	C	〃			
25	30 10 00 CB 03 22 70	Black Key		黒 鍵			
	40 10 00 CC 02 17 40	Felt		フ ェ ル ト			
	40 10 00 LB 60 24 90	Bass Post, Top Type	8P	トップ型ベースポスト			
	40 10 00 LB 60 29 40	– do. –	6P	〃			

※ New Parts (新規部品)

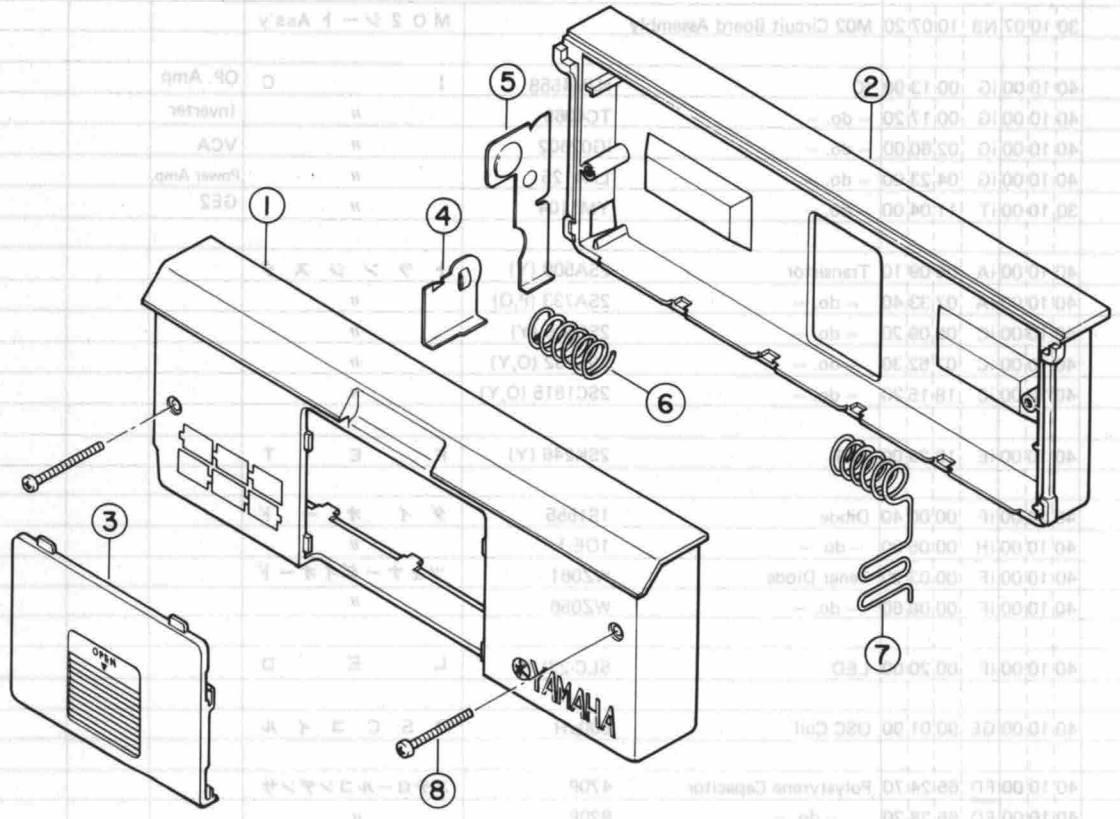
B. Bottom Case Assembly (下ケース)



	Ref. No.	Part No.	Description	(部 品 名)	Remarks	Common model	Markets
	1	30 10 00 NB 10 07 60	Bottom Case Assembly	下 ケ ー ス Ass'y			
※	2	30 10 00 AA 04 90 70	Stand Holder	脚 取 付 金 具			
	3	40 10 00 EJ 04 01 00	Pan Head Tapping Screw 4 x 10	ナベタッピングネジ			
※	4	30 10 00 AA 04 90 80	Hook Stopper	ツ メ 押 え 板			
※	5	30 10 00 AA 04 90 90	Spring	バ ネ			
※	6	30 10 00 CB 03 70 30	Hook	ツ メ			
	3	40 10 00 EJ 04 01 00	Pan Head Tapping Screw 4 x 10	ナベタッピングネジ			
※	7	30 10 00 CB 03 80 00	Leg	ゴ ム 脚			
※	8	30 10 00 AA 04 89 80	Music Rest	フ メ ン ワ イ ヤ ー			

※ New Parts (新規部品)

C. Battery Case Assembly (電池ケース)



Ref. No.	Part No.	Description		(部 品 名)	Remarks	Common model	Markets
※ 1	30 10 00 CB 03 70 80	Battery Case A	#03078	電 池 ケ ー ス A			
※ 2	30 10 00 CB 03 70 90	Battery Case B	#03079	〃 B			
※ 3	30 10 00 CB 03 71 00	Battery Case Lid	#03710	電池ケース蓋(クッション付)			
※ 4	30 10 00 BB 00 49 10	Battery Terminal A	#00491	電 池 端 子 A			
※ 5	30 10 00 BB 00 49 20	Battery Terminal B	#00492	〃 B			
※ 6	30 10 00 AA 04 92 30	Spring Terminal A		接 点 バ ネ A			
※ 7	30 10 00 AA 04 92 40	Spring Terminal B		〃 B			
8	40 10 00 EJ 03 03 00	Pan Head Tapping Screw	3 x 30	ナベタッピンネジ 2種	Yellow		

※ New Parts (新規部品)

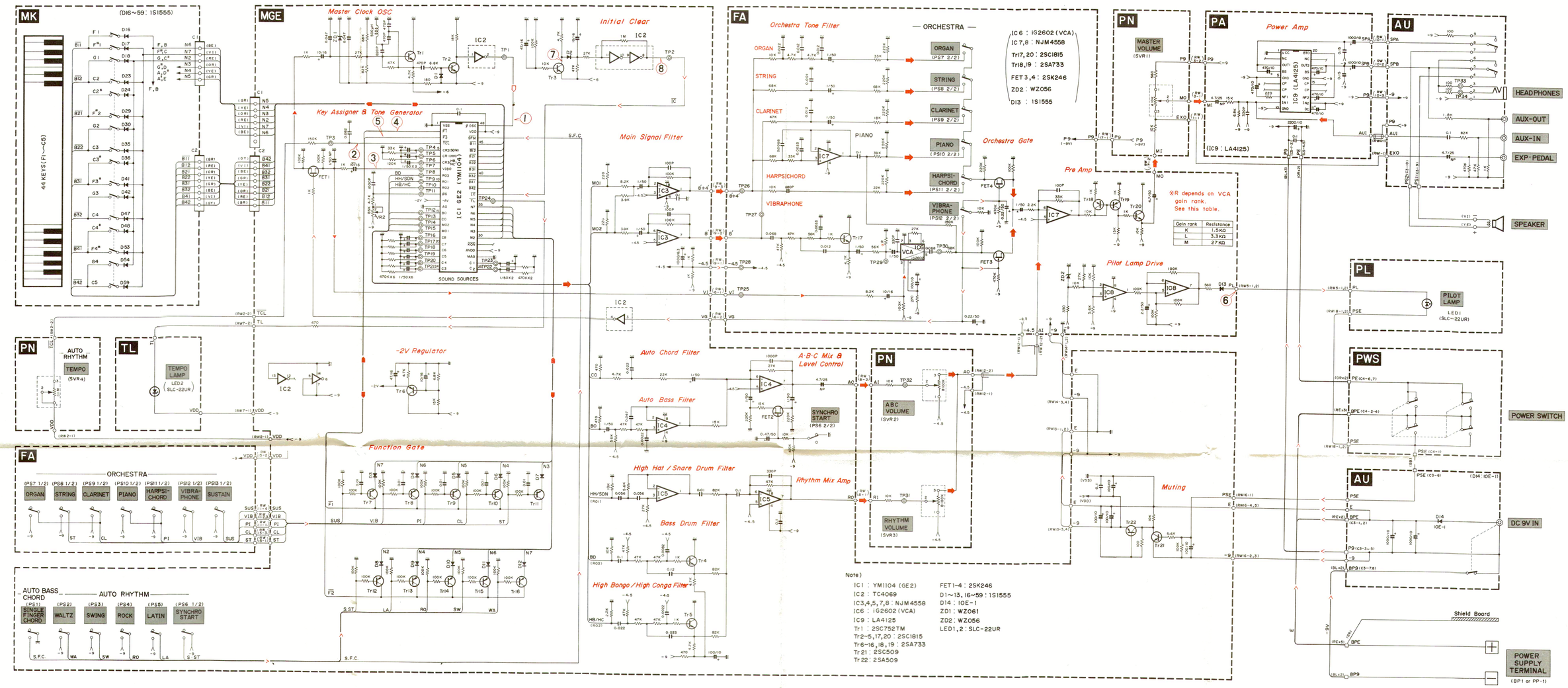
D. Electronic Components (電気部品)

Ref. No.	Part No.	Description		(部 品 名)	Remarks	Common model	Markets
	30 10 07 NB 10 07 20	M02 Circuit Board Assembly		M O 2 シート Ass'y			
	40 10 00 iG 00 13 90	IC	NJM4558	I C	OP. Amp		
	40 10 00 iG 00 17 20	– do. –	TC4069	〃	Inverter		
	40 10 00 iG 02 60 00	– do. –	iG02602	〃	VCA		
	40 10 00 iG 04 23 00	– do. –	LA4125	〃	Power Amp.		
※	30 10 00 iT 11 04 00	– do. –	YM1104	〃	GE2		
	40 10 00 iA 05 09 10	Transistor	2SA509 (Y)	トランジスタ			
	40 10 00 iA 07 33 40	– do. –	2SA733 (P,Q)	〃			
	40 10 00 iC 05 09 20	– do. –	2SC509 (Y)	〃			
	40 10 00 iC 07 52 30	– do. –	2SC752 (O,Y)	〃			
	40 10 00 iC 18 15 20	– do. –	2SC1815 (O,Y)	〃			
	40 10 00 iE 10 26 00	FET	2SK246 (Y)	F E T			
	40 10 00 iF 00 00 40	Diode	1S1555	ダイオード			
	40 10 00 iH 00 05 90	– do. –	1OE-1	〃			
	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 60	– do. –	WZ056	〃			
	40 10 00 iF 00 20 00	LED	SLC-22UR	L E D			
	40 10 00 GE 90 01 90	OSC Coil	500μH	O S C コイル			
	40 10 00 FD 65 24 70	Polystyrene Capacitor	470P	スチロールコンデンサ			
	40 10 00 FD 65 28 20	– do. –	820P	〃			
※	40 10 00 HQ 60 02 10	Slide Variable Resistor	A10K	スライドボリウム			
※	40 10 00 HQ 60 02 20	– do. –	B100K	〃			
※	40 10 00 HQ 60 02 40	– do. –	C1M	〃			
※	40 10 00 KA 40 08 50	Slide Switch		スライドスイッチ	Power Switch		
※	30 10 00 BA 01 43 80	Heat Sink		放熱板			
	40 10 00 LB 50 02 50	Bass Post, Top Type	5P	トップ型ベースポスト			
	40 10 00 LB 60 24 60	– do. –	7P	〃			
	40 10 00 LB 60 24 90	– do. –	8P	〃			
	40 10 00 LB 60 24 70	– do. –	10P	〃			
※	40 10 00 LB 60 30 00	Bass Post, Bottom Type	7P	ボトム型ベースポスト			
	40 10 00 KA 80 20 70	Push Switch	1	プッシュスイッチ	A·B·C Switch		
	40 10 00 KA 80 20 80	– do. –	5	〃	RHYTHM Switch		
	40 10 00 KA 80 20 90	– do. –	7	〃	Orchestra Switch		
	40 10 00 LB 10 05 90	Terminal Plate		ジャック板			

※ New Parts (新規部品)

PS-10 OVERALL CIRCUIT DIAGRAM 002654

OVERALL CIRCUIT DIAGRAM PS-10



Note)

IC1 : YM1104 (GE2)
IC2 : TC4069
IC3,4,5,7,8 : NJM4558
IC6 : IG2602 (VCA)
IC9 : LA4125
Tr1 : 2SC752TM
Tr2~5,17,20 : 2SC1815
Tr6~16,18,19 : 2SA733
Tr21 : 2SC509
Tr22 : 2SA509

FET1~4 : 2SK246
D1~13,16~59 : 1S1555
D14 : 10E-1
ZD1 : WZ061
ZD2 : WZ056
LED1,2 : SLC-22UR

● Wiring Table of Ribbon Wire

RW1	PN	AU
1	EXO	EXO
2	P9	P9

RW2	PN	MGE
1	VDD	VDD
2	TCL	TCL

RW3	PN	FA
1	MO	MI
2	P9	P9

RW4	AU	PA
1	AUI	AUI
2	P9	P9

RW5	FA	PL
1	FL	FL
2	FL	FL

RW6	MGE	FA
1	VI	VI
2	VG	VG

RW7	MGE	TL
1	VDD	VDD
2	TL	TL

RW8	MGE	PN
1	RI	RI
2	AO	AI

RW9	MGE	FA
1	-4.5	-4.5
2	E	E
3	4'+8'	4'+8'

RW10	PA	AU
1	SPA	SPA
2	SPB	SPB
3	P9	P9

RW11	MGE	FA
1	PF	PF
2	VIB	VIB
3	VIB	VIB
4	SUS	SUS

RW12	FA	PN
1	-4.5	-4.5
2	A1	AO

RW13	MGE	MGE
1	E	E
2	E	E
3	-9	-9
4	-9	-9

RW14	MGE	FA
1	E	E
2	E	E
3	-9	-9
4	-9	-9

RW15	MGE	FA
1	ST	ST
2	VDD	VDD
3	CL	CL

RW16	MGE	AU
1	PSE	PSE
2	-9	-9
3	-9	-9
4	E	E
5	E	E

RW17	FA	PN
1	P9	P9
2	MO	MI

RW18	PL	PWS
1	PSE	PSE
2	PSE	PSE

● Connector Table

C1 [MGE]

Pin No.	Pin Name	Wire Color	Destination
1	N5	GR	MK-N5 (C1-6)
2	N4	YE	MK-N4 (C1-5)
3	N3	OR	MK-N3 (C1-4)
4	N2	RE	MK-N2 (C1-3)
5	N7	VI	MK-N7 (C1-2)
6	N6	BE	MK-N6 (C1-1)
7	—	—	—

C2 [MGE]

Pin No.	Pin Name	Wire Color	Destination
1	B42	GY	MK-B42 (C2-8)
2	B41	VI	MK-B41 (C2-7)
3	B32	BE	MK-B32 (C2-6)
4	B31	GR	MK-B31 (C2-5)
5	B22	YE	MK-B22 (C2-4)
6	B21	OR	MK-B21 (C2-3)
7	B12	RE	MK-B12 (C2-2)
8	B11	BR	MK-B11 (C2-1)

C3 [AU]

Pin No.	Pin Name	Wire Color	Destination
1	BPE	RE	Power Supply Terminal +
2	BPE	RE	Power Supply Terminal +
3	P9	BE	PA-P9 (C5-1)
4	P9	BE	PA-P9 (C5-2)
5	P9	BE	PA-P9 (C5-3)
6	PSE	SB	PWS-PSE (C4-1)
7	BP9	BE	Power Supply Terminal —
8	BP9	BE	Power Supply Terminal —
9	PS1	VI	Speaker —
10	PS2	YE	Speaker +

C4 [PWS]

Pin No.	Pin Name	Wire Color	Destination
1	PSE	BE	AU-PSE (C3-6)
2	BPE	RE	Power Supply Terminal +
3	BPE	RE	Power Supply Terminal +
4	BPE	RE	Power Supply Terminal +
5	PE	—	—
6	PE	OR	PA-PE (C5-5)
7	PE	OR	PA-PE (C5-4)

C5 [PA]

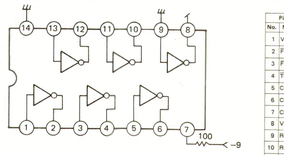
Pin No.	Pin Name	Wire Color	Destination
1	P9	BE	AU-P9 (C3-3)
2	P9	BE	AU-P9 (C3-4)
3	P9	BE	AU-P9 (C3-5)
4	PE	OR	PWS-PE (C4-7)
5	PE	OR	PWS-PE (C4-6)

Wiring Table & Notes

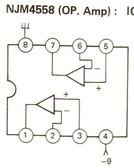
Notes)

1. Integrated Circuit
   - IC1 : YM1104 (GE2)
   - IC2 : TC4069 (INV.)
   - IC3, 4, 5, 7, 8 : NJM4558 (OP. Amp)
   - IC6 : iG2602 (VCA)
   - IC9 : LA4125 (P. Amp)
2. Transistor
   - Tr1 : 2SC752TM
   - Tr2 ~ 5, 17, 20 : 2SC1815
   - Tr6 ~ 16, 18, 19 : 2SA733
   - Tr21 : 2SC509
   - Tr22 : 2SA509
3. Field Effect Transistor
   - FET1 ~ 4 : 2SK246
4. Diode
   - D1 ~ 13, 16 ~ 59: 1S1555
   - D14 : 10E-1
5. Zener Diode
   - ZD1 : WZ061
   - ZD2 : WZ056
6. LED
   - LED1, 2 : SLC-22UR

TC4069 (Inverter) : IC2



NJM4558 (OP. Amp) : IC3, 4, 5, 7, 8



LSI DATA TABLE

YM1104 (GEII)

Pin No.	Pin Name	Description
1	VSS	Ground (0V)
2	F1	Function Block (※ Function SW)
3	F2	
4	TCL	C-R for tempo clock oscillation
5	CR2	SDN
6	CR1	HH — C-R for Rhythm Sound source envelope setting
7	CR3	HB/HC
8	VIBO	Vibrato data OUT
9	RO3	BD
10	RO1	HH/SDN — Rhythm sound source OUT
11	RO2	HB/HC
12	oG	C-R for Rhythm sound source clock oscillation
13	—AV	DC supply for sound source (—2V)
14	AG	Analog GND
15	BO	Auto Bass sound source OUT
16	CO	Auto Chord sound source OUT
17	MO2	8' — Manual key sound source OUT
18	MO1	8' + 4'
19	CB	C-R for Auto Bass/Manual Key Sound source envelope setting
20	C7	
21	C6	C-R for Auto Chord/Manual Key Sound source envelope setting
22	C5	
23	C4	C-R for Manual Key Sound source envelope setting
24	C3	

Pin No.	Pin Name	Description
48	oOSC	Master clock IN (630 kHz)
47	VDD	DC supply (—9V)
46	SFM	Single Finger Chord ON data IN
45	B11	F_1, F_2
44	B12	$G_2 \sim C_3$
43	B21	$C_3^{\#} \sim F_3^{\#}$
42	B22	$G_3 \sim C_4$ — Octave Block (※ Key SW)
41	B31	$C_4^{\#} \sim F_4^{\#}$
40	B32	$G_4 \sim C_5$
39	B41	$C_5^{\#} \sim F_5^{\#}$
38	B42	$G_5 \sim C_6$
37	IC	Initial clear IN
36	TL	Tempo lamp drive pulse IN
35	N7	$F^{\#}, C$
34	N6	F, B
33	N5	$A^{\#}, E$
32	N4	$A, C^{\#}$ — Note Block (※ Key & Function SW)
31	N3	$G^{\#}, D$
30	N2	$G, C^{\#}$
29	KON	Key ON data OUT
28	AVDD	DC supply for Analog (—9V)
27	MAG	Analog GND
26	C1	C-R for Manual Key Sound source envelope setting
25	C2	

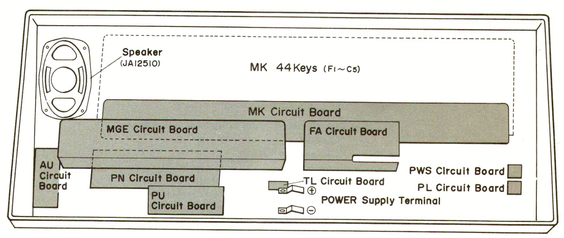
- Key code data (possible to measure with an osilloscope)
- Clock pulse (— do. —)
- Pulse form signal (— do. —)
- Trigger pulse (— do. —)
- Audio signal (possible to measure with signal tracer)
- Low frequency modulation signal (possible to measure with VOM)
- DC control signal (possible to measure with VOM)

NOTES:

1. All Resistors are 1/4 watt unless otherwise specified.
2. All Capacitors are in microfarads unless otherwise specified.
3. All Keyswitches, Tabswitches and Pushbutton Switches shown in "off" position.
4. Capacitors
   - △ mark : Tantalum Capacitor
   - ○ mark : Polystyrene Capacitor
   - K mark : Ceramic Capacitor 1000pF
5. ABBREVIATIONS OF WIRE COLOR IN ELECTONE

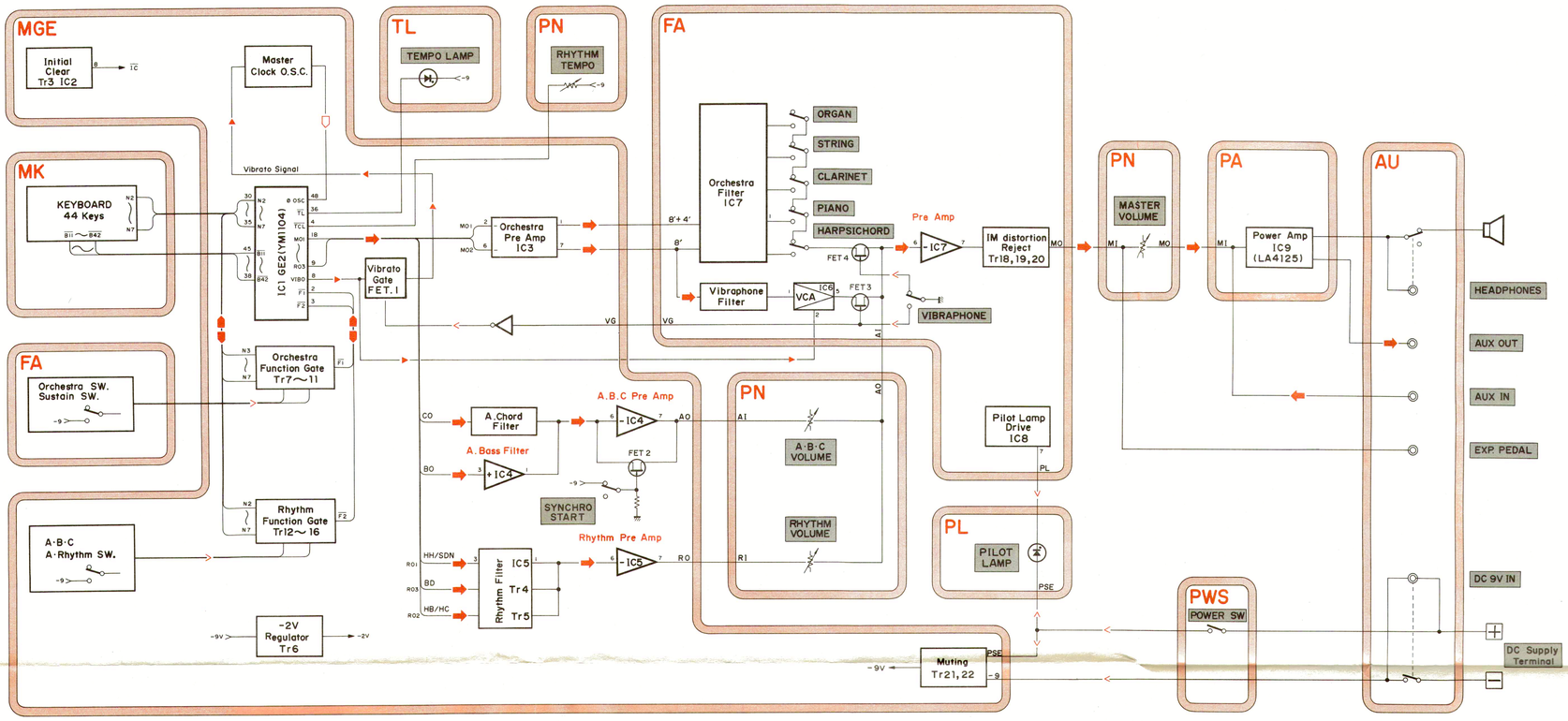
BL	BLACK	RE	RED
YE	YELLOW	BE	BLUE
GY	GRAY	GG	GRASS GREEN
PK	PINK	OR	ORANGE
BR	BROWN	VI	VIOLET
GR	GREEN	SB	SKY BLUE
WH	WHITE	TP	TIN PLATED WIRE
TR	TRANSPARENT		
SOR	Shielding orange wire		
SGRS	Earthing conductor of shielding green wire		

UNIT LAYOUT

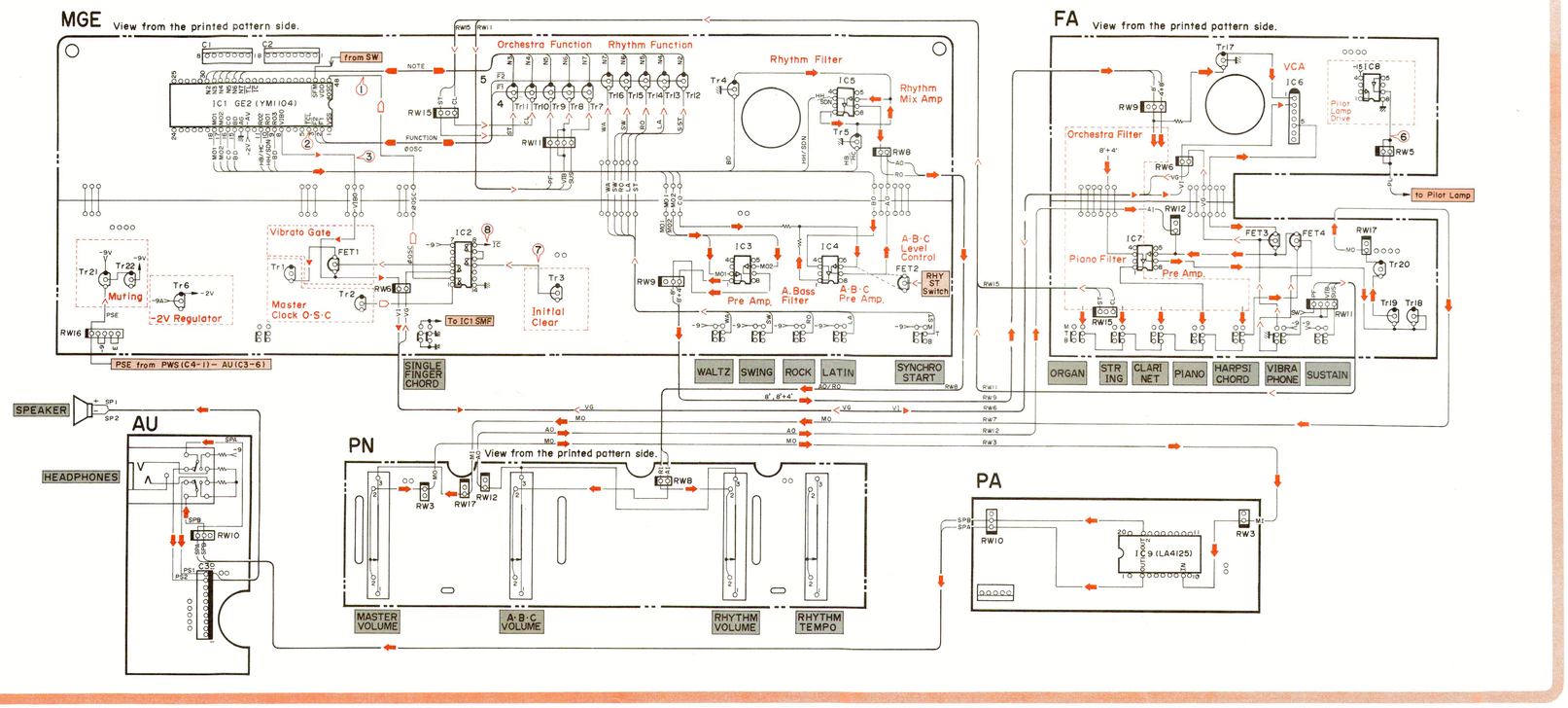


OVERALL CIRCUIT DIAGRAM PS-10

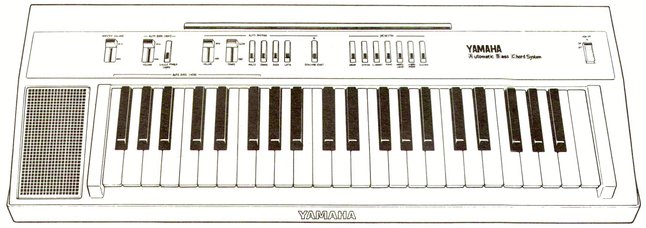
PS-10 BLOCK DIAGRAM



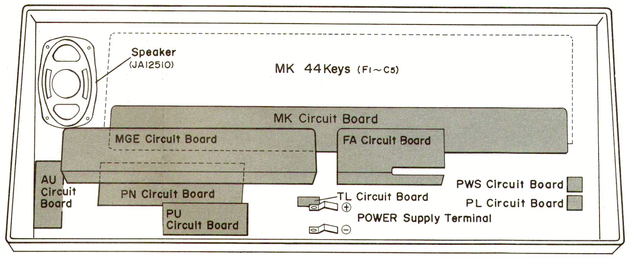
PS-10 MAIN SIGNAL FLOW



PANEL LAYOUT



UNIT LAYOUT (Bottom View)



- Key code data (possible to measure with an osilloscope)
- Clock pulse (— do. —)
- Pulse form signal (— do. —)
- Trigger pulse (— do. —)
- Audio signal (possible to measure with signal tracer)
- Low frequency modulation signal (possible to measure with VOM)
- DC control signal (possible to measure with VOM)

PS-10 SERVICE MANUAL

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