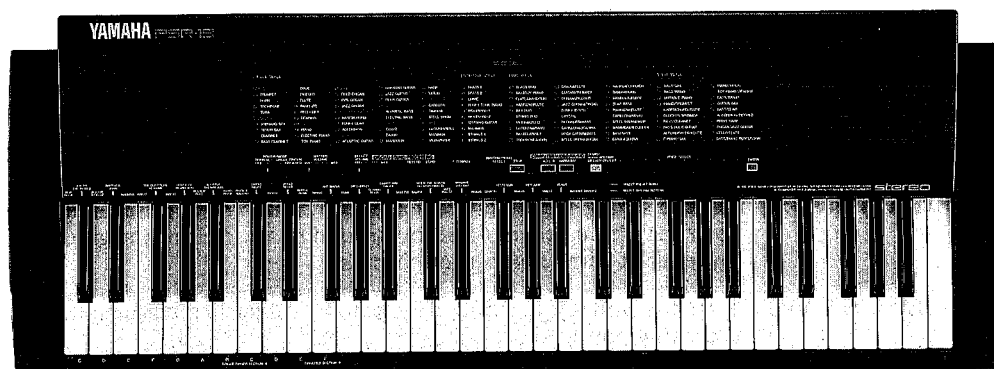


PORTATONE PSR-19

SERVICE MANUAL



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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ SPECIFICATIONS (総合仕様)

Keyboard:
61keys (C1-C6)

Voices:
100voices

SINGLE VOICE: TRUMPET, HORN, TROMBONE, TUBA, SOPRANO SAX, TENOR SAX, CLARINET, BASS CLARINET, OBOE, PICCOLO, FLUTE, PANFLUTE, RECORDER, OCARINA, PIANO, ELECTRIC PIANO, TOY PIANO, REED ORGAN, PIPE ORGAN, JAZZ ORGAN, HARPSICHORD, FUNKY CLAVI, ACCORDION, ACOUSTIC GUITAR, HAWAIIAN GUITAR, JAZZ GUITAR, ROCK GUITAR, ACOUSTIC BASS, ELECTRIC BASS, CELLO, BANJO, MANDOLIN, HARP, VIOLIN, CARILLON, TIMPANI, STEEL DRUM, GLOCKENSPIEL, MARIMBA, VIBRAPHONE

ENSEMBLE VOICE: BRASS 1, BRASS 2, CHIME, HONKY-TONK PIANO, WOODWIND 1, WOODWIND 2, 12STRING GUITAR, MARIMBA, STRINGS 1, STRINGS 2

DUAL VOICE: BRASS DUO, SAX & TOY PIANO, FLUTE & MANDOLIN, HARP & PANFLUTE, SAX DUO, STRING DUO, VIOLIN & CELLO, GLOCKEN & PIANO, SAX & CLARINET, TROMBONE & HORN, BANJO & FLUTE, GUITAR & TRUMPET, ORGAN & PICCOLO, JAZZ GUITAR & ORGAN, FUNKY SYNTH, CRYSTAL, RECORDER & BASS, CARILLON & OCARINA, ROCK GUITAR & BASS, STEEL DRUM & ORGAN, HARP & ACCORDION, BANJO & HORN, MANDOLIN & OBOE, SLAP BASS, PIANO & PANFLUTE, CARILLON & BANJO, STEEL DRUM & HARP, MARIMBA & RECORDER, SAX & BASS, BANJO & GUITAR

SPLIT VOICE: BASS/SAX, BASS/PIANO, GUITAR/E.PIANO, PIANO/TRUMPET, HARPSICHORD/FLUTE, GLOCKEN/MARIMBA, BASS/CLARINET, BASS/ROCK GUITAR, ACCORDION/PANFLUTE, E.PIANO/SAX, PIANO/VIOLIN, TOY PIANO/OCARINA, BASS/BANJO, GUITAR/SAX, BASS/CLAVI, ACCORDION/PICCOLO, PIANO/HARP, ORGAN/JAZZ GUITAR, CELLO/FLUTE, BASS/PIANO/PERCUSSION

Rhythm styles:

POP ROCK, BOOGIE WOOGIE, RHUMBA, 8BEAT, 16BEAT, ROCK'N'ROLL, HARD ROCK, ROCK-A-BALLAD, DISCO, BOSSA NOVA, SWING, FUNK, TECHNO ROCK, SHUFFLE, SAMBA, JAZZ WALTZ, REGGAE, COUNTRY, TANGO, WALTZ, MARCH 1, MARCH 2

Digital Sound Processing:

REVERB, ECHO, EFFECT VOLUME

Song Accompaniment:

JOY TO THE WORLD, BROTHER JOHN, THE OLD FOLKS AT HOME, HOUSE OF RISING SUN, A LITTLE BROWN JUG, SILENT NIGHT, JINGLE BELLS, AVE MARIA, DIE LORELEI, CAMPTOWN RACES, WHEN THE SAINTS GO MARCHING IN, BRAHMS' LULLABY, YESTERDAY, HEY JUDE, VENUS

Other Controls:

MASTER VOLUME, TEMPO, RHYTHM/SONG SELECT, STOP, AD-LIB, HARMONY, DEMO (SONG ACCOMP. MELODY ON/OFF), VOICE SELECT 1-0, ENTER, POWER/MODE (OFF, NORMAL, SINGLE FINGER, FINGERED)

Auxiliary Jacks:

HEADPHONES/AUX. OUT, DC 9-12V IN

Main Amplifiers:

2.1W x 2

Speakers:

12cm (4-3/4") x 2

Rated Voltage:

DC 9V (Six SUM-1, "D" size, R-20 or equivalent batteries), AC Power Adaptor (PA-3, PA-4 or PA-40)

Dimensions (W x D x H):

929mm x 328mm x 115mm
(36-9/16" x 12-15/16" x 4-1/2")

Weight:

4.6kg (10.1lbs.) excluding batteries

Supplied Accessory:

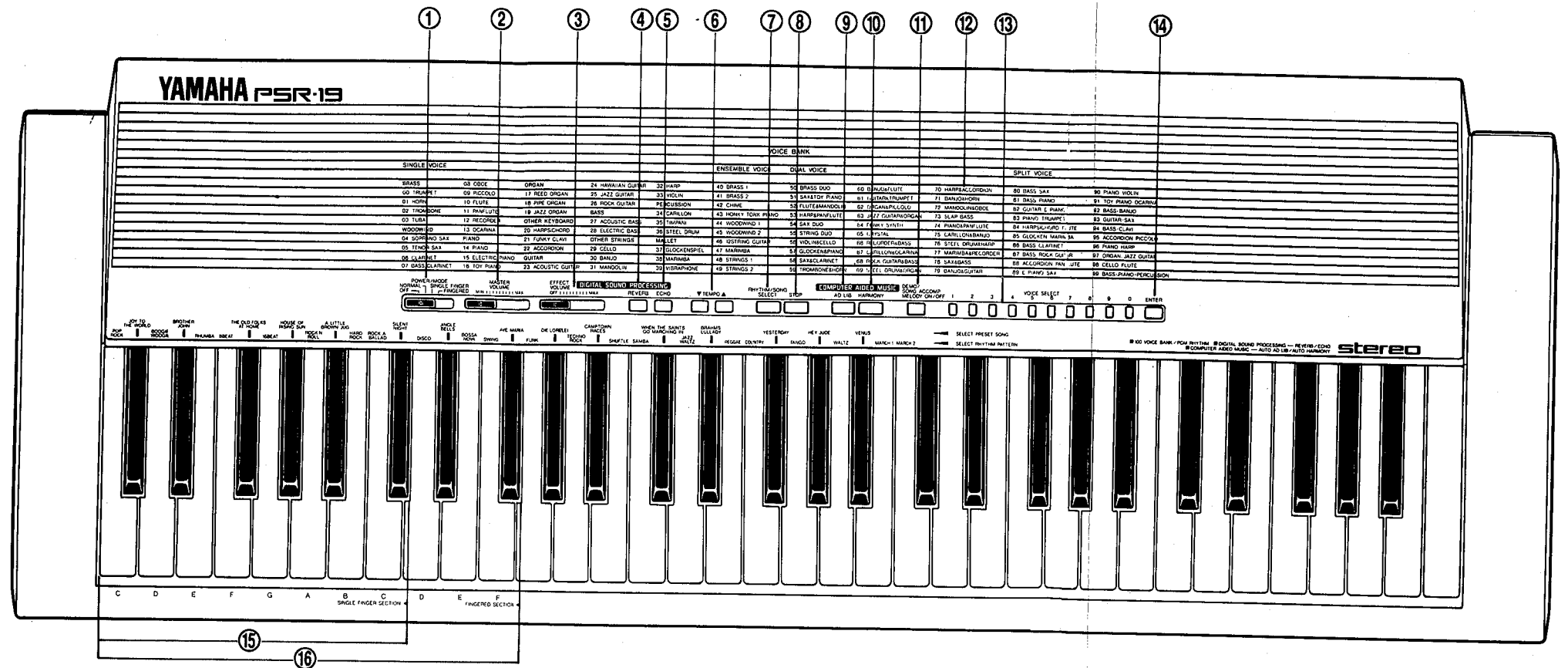
Music Stand

Output Level:

Speaker terminal : 1.5±2dBm (VOLUME: max.)
HEADPHONES jack: -3.0±2dBm (C3-F3 keys on VOICE: FLUTE)

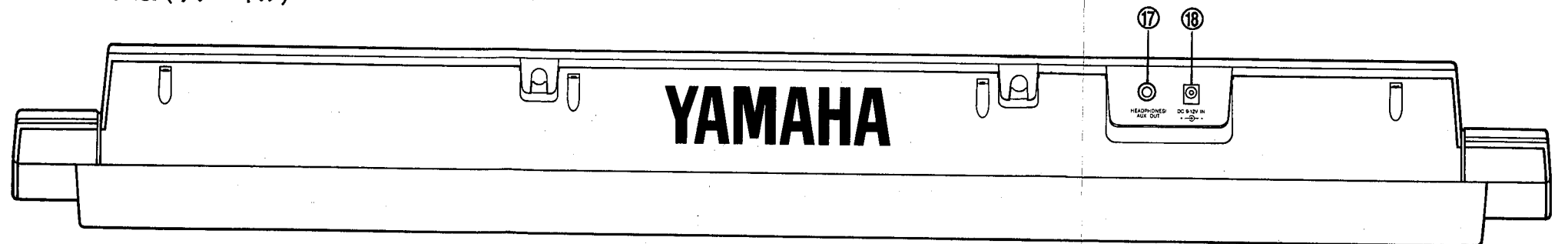
■ PANEL LAYOUT (パネルレイアウト)

● Front Panel (フロントパネル)



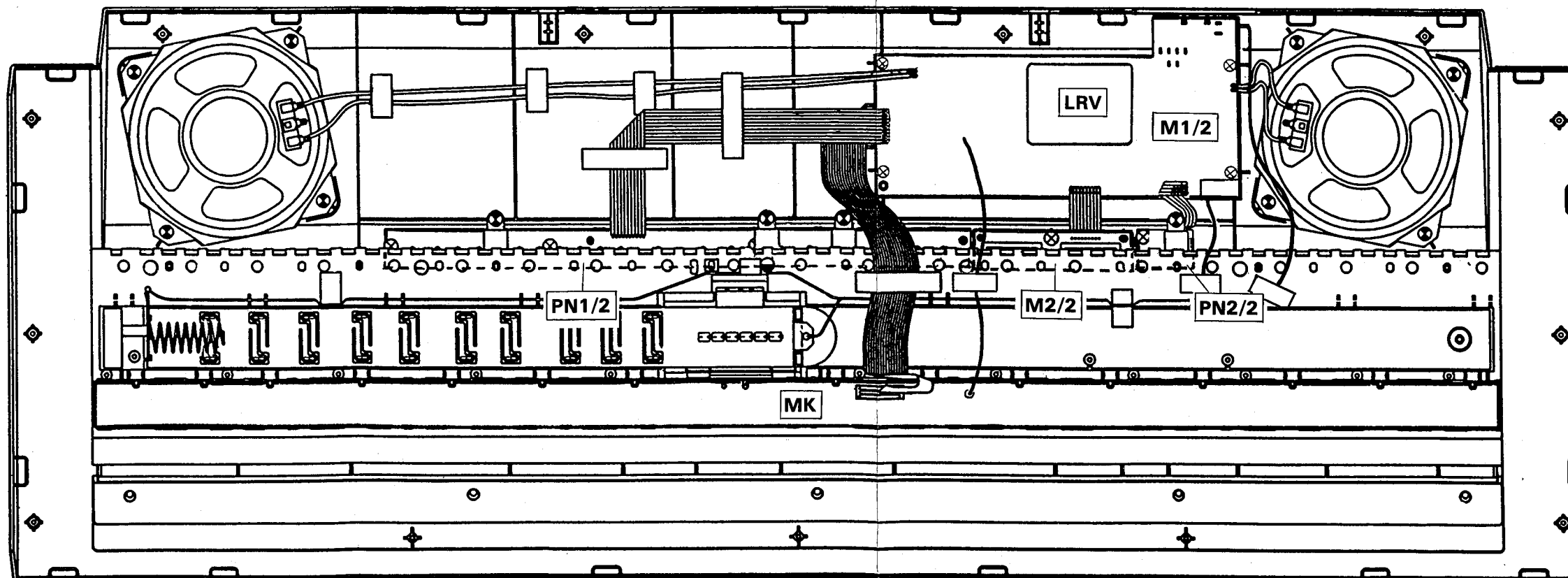
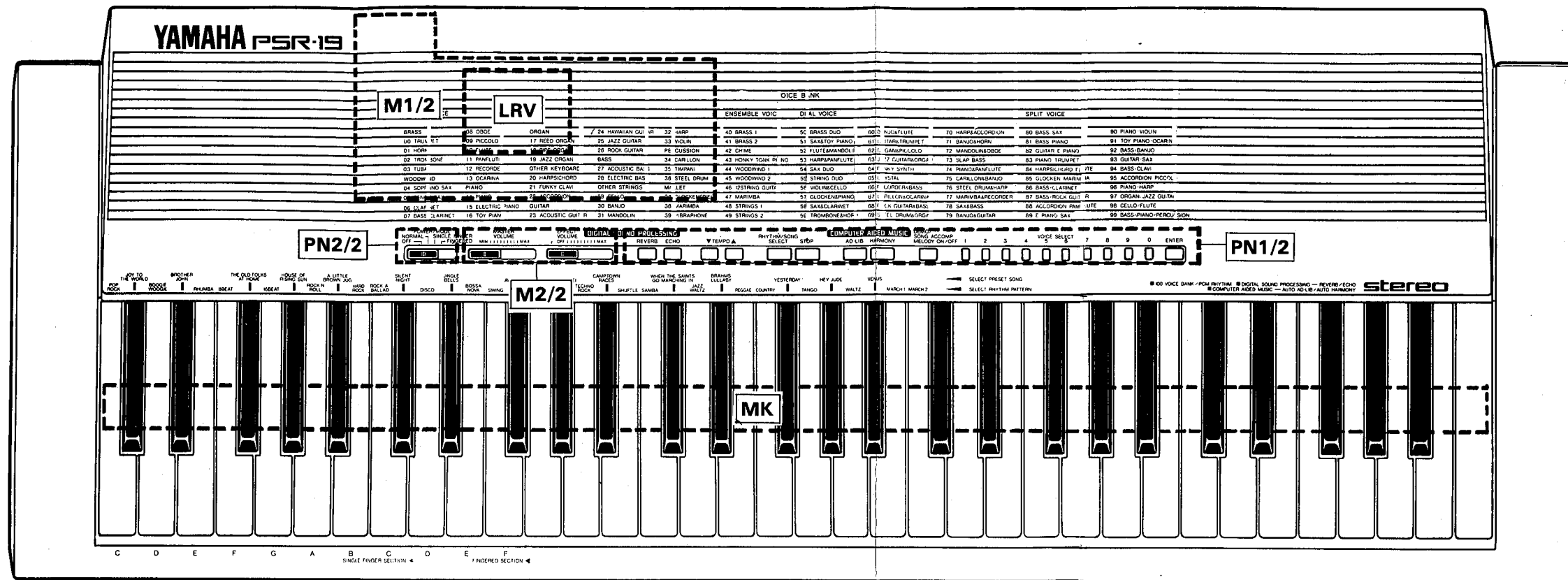
- ① POWER/MODE Switch
- ② MASTER VOLUME Control
- ③ EFFECT VOLUME Control
- ④ REVERB Button
- ⑤ ECHO Button
- ⑥ TEMPO Buttons
- ⑦ RHYTHM/SONG SELECT Button
- ⑧ STOP Button
- ⑨ AD-LIB Button
- ⑩ HARMONY Button
- ⑪ DEMO (SONG ACCOMP. MELODY ON/OFF) Button
- ⑫ VOICE BANK List
- ⑬ VOICE SELECT Buttons
- ⑭ ENTER Button
- ⑮ SINGLE FINGER SECTION
- ⑯ FINGERED SECTION

● Rear Panel (リアパネル)

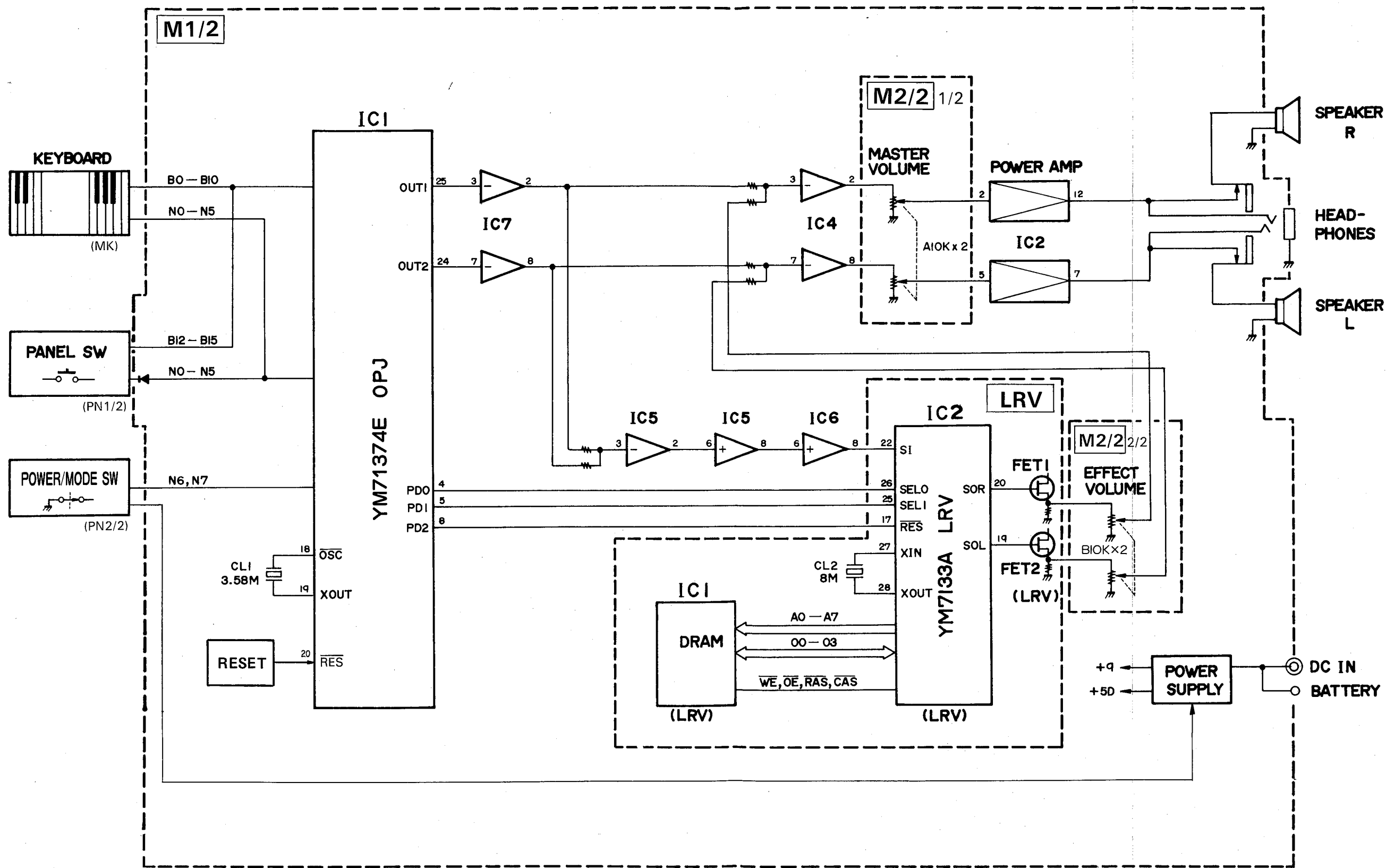


- ⑰ HEADPHONES/AUX.OUT Jack
- ⑱ DC(9-12V)IN Jack

CIRCUIT BOARD LAYOUT (ユニットレイアウト)



■BLOCK DIAGRAM (ブロックダイアグラム)



■ DISASSEMBLY PROCEDURE (分解手順)

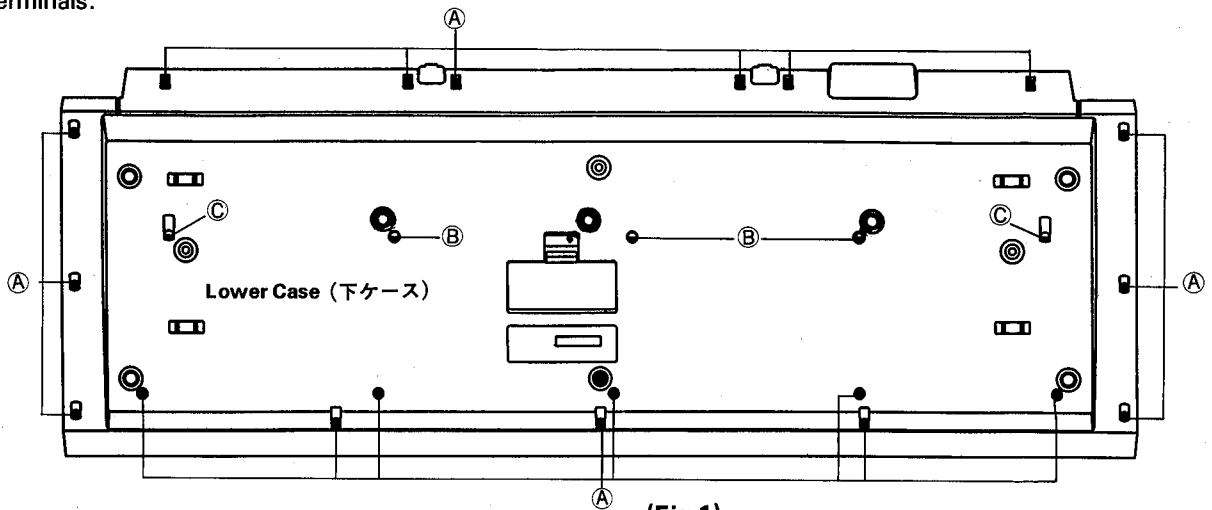
1. Lower Case Removal

1-1 There are twenty five (25) screws which hold the Lower case. Remove these screws, twenty (20) screws marked in the figure as ①(bind tapping screw 3.0×12) around the outer edge, and three (3) screws marked ②(bind tapping screw 3.0×20) and two (2) screws marked ③(bind tapping screw 3.0×25). (Fig. 1)

Note : Located on the Lower case are battery terminals.

1. 下ケースの外し方

1-1 下ケースを止めているネジ ① (バインドタッピングネジ 3.0×12) 20本とネジ ② (バインドタッピングネジ 3.0×20) 3本とネジ ③ (バインドタッピングネジ 3.0×25) 2本を外すと、下ケースを外すことができます。(図1参照)



(Fig.1)

2. Keyboard Assembly Removal

2-1 Remove the Lower case. (see procedure 1 - Lower Case Removal)

2-2 Remove the one (1) screw marked ④ (bind tapping screw 3.0×20). (Fig. 2)

2-3 After the connector on the MK circuit board has been pulled out, the keyboard assembly can be taken out of the unit. (Fig. 2)

2. 鍵盤Ass'yの外し方

2-1 下ケースを外します。(1項参照)

2-2 鍵盤Ass'yを止めているネジ ④ (バインドタッピングネジ 3.0×20) 1本を外すと、鍵盤Ass'yが外れます。(図2参照)

3. M1/2 Circuit Board Removal

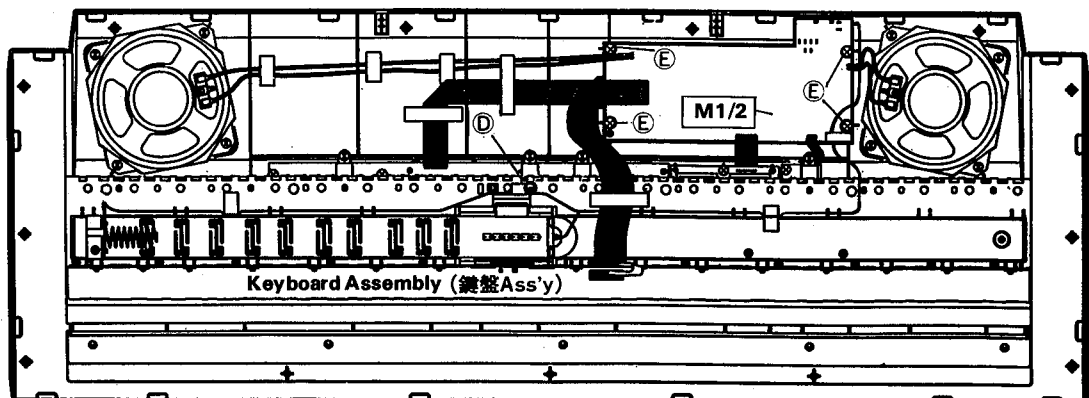
3-1 Remove the Lower case. (see procedure 1.)

3-2 The M1/2 circuit board can be removed by removing the four (4) screws marked ⑤ (bind tapping screw 2.0×6). (Fig. 2)

3. M1/2シートの外し方

3-1 下ケースを外します。(1項参照)

3-2 M1/2シートを止めているネジ ⑤ (バインドタッピングネジ 2.0×6) 4本を外すと、M1/2シートが外れます。(図2参照)



(Fig.2)

4. M2/2 Circuit Board Removal

- 4-1 Remove the two (2) volume control knobs located on the Upper case.
- 4-2 Remove the Lower case. (see procedure 1.)
- 4-3 Remove the Keyboard assembly. (see procedure 2.)
- 4-4 The M2/2 circuit board can be removed by removing the three (3) screws marked ⑥ (bind tapping screw 2.0×6). (Fig. 3)

5. PN1/2 Circuit Board Removal

- 5-1 Remove the Lower case. (see procedure 1.)
- 5-2 Remove the Keyboard assembly. (see procedure 2.)
- 5-3 The three (3) angle brackets can be removed by removing the six (6) screws marked ③ (trus tapping screw 3.0×8). (Fig. 3)
- 5-4 After the nine (9) screws marked ④ (bind tapping screw 2.0×6) have been removed, the PN1/2 circuit board can be removed. (Fig. 3)

6. PN2/2 Circuit Board Removal

- 6-1 Remove the power switch knob located on the Upper case.
- 6-2 Remove the Lower case. (see procedure 1.)
- 6-3 Remove the Keyboard assembly. (see procedure 2.)
- 6-4 The angle bracket can be removed by removing the two (2) screws marked ① (trus tapping screw 3.0×8). (Fig. 3)
- 6-5 To remove the PN2/2 circuit board, remove the two (2) screws marked ② (bind tapping screw 2.0×6). (Fig. 3)

4. M2/2シートの外し方

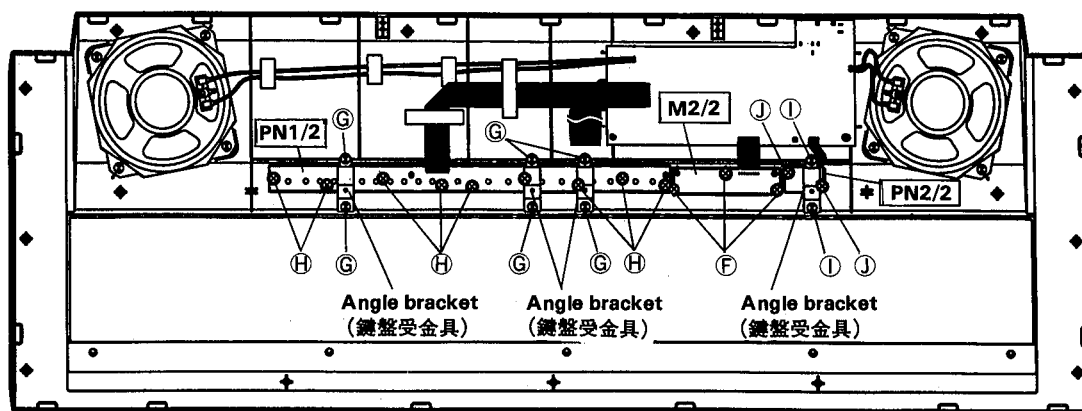
- 4-1 ボリュームツマミ2個を外します。
- 4-2 下ケースを外します。(1項参照)
- 4-3 鍵盤Ass'yを外します。(2項参照)
- 4-4 M2/2シートを止めているネジ⑥(バインドタッピングネジ 2.0×6) 3本を外すと、M2/2シートが外れます。(図3参照)

5. PN1/2シートの外し方

- 5-1 下ケースを外します。(1項参照)
- 5-2 鍵盤Ass'yを外します。(2項参照)
- 5-3 ネジ③(トラスタッピングネジ3.0×8)6本を外し、鍵盤受け金具3個を外します。(図3参照)
- 5-4 PN1/2シートを止めているネジ④(バインドタッピングネジ 2.0×6) 9本を外すと、PN1/2シートが外れます。(図3参照)

6. PN2/2シートの外し方

- 6-1 パワースイッチツマミを外します。
- 6-2 下ケースを外します。(1項参照)
- 6-3 鍵盤Ass'yを外します。(2項参照)
- 6-4 ネジ①(トラスタッピングネジ3.0×8)2本を外し、鍵盤受け金具1個を外します。(図3参照)
- 6-5 PN2/2シートを止めているネジ②(バインドタッピングネジ 2.0×6) 2本を外すと、PN2/2シートが外れます。(図3参照)



(Fig.3)

7. Disassembling the Keyboard Assembly

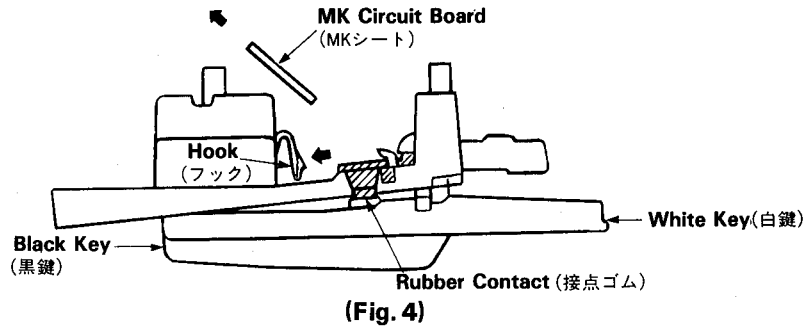
7-1. MK Circuit Board and Rubber Contact Removal (Fig.4)

Remove the 15 MK circuit board retaining hooks by pressing them in the direction of the arrow, and then remove the MK circuit board. The rubber contact can be removed by pulling it up.

7. 鍵盤Ass'yの分解

7-1. MKシートと接点ゴムの外し方 (図4 参照)

MKシートをとめているフック15個を矢印の方向に押し外して、MKシートを取り外します。接点ゴムは上へ引くと外れます。

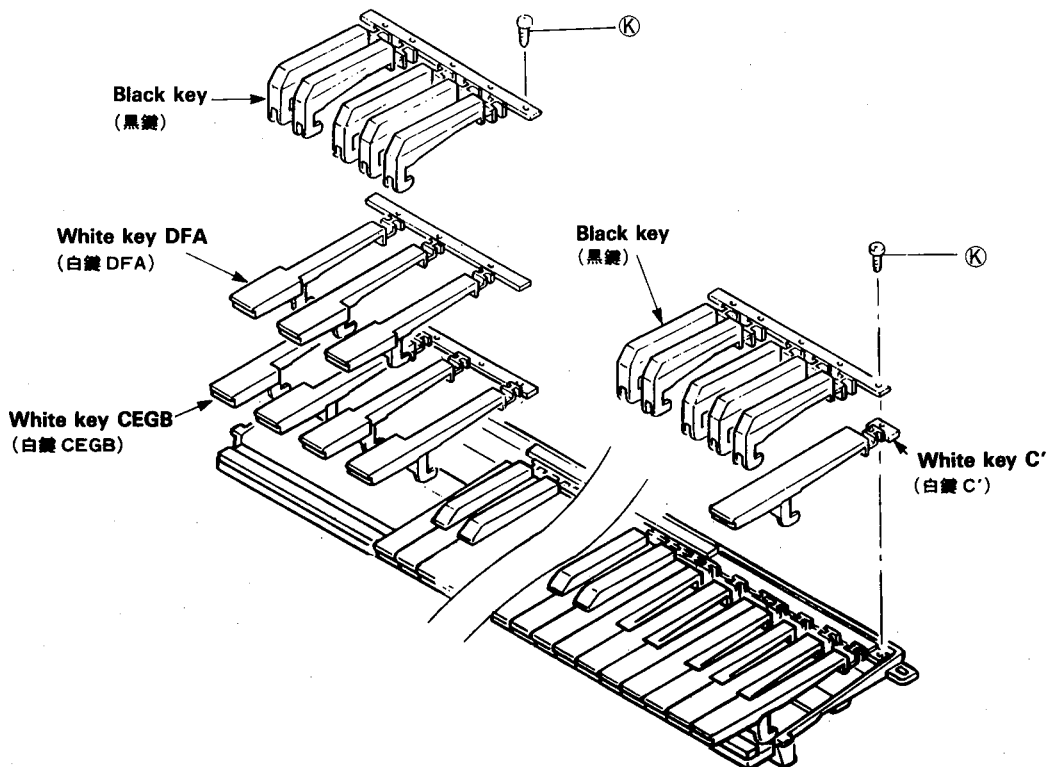


7-2. White and Black keys Removal (Fig.5)

Remove the 21 white and black keys retaining screws ⑧ (3x16 Bind head tapping screw). Remove the black keys in order of lower notes. Then remove the white keys DFA and C' and finally remove the white keys C E G B in order of higher notes. When removing keys, lift the front end and slide it toward you.

7-2. 白鍵、黒鍵の外し方 (図5 参照)

白鍵、黒鍵をとめている⑧のネジ21本(3×16バインドタッピングネジ)を外します。黒鍵を音程の低い方から外します。次に白鍵DFAと白鍵C'を外し、最後に白鍵CEGBを音程の高い方から外します。この時、鍵盤の手前を持ち上げ、手前にスライドさせて取り外して下さい。



(Fig. 5)

8. Assembling the Keyboard Assembly

8-1. Fitting the White and Black keys (Fig.5)

Fit the white keys CEGB in order of lower notes.
Fit the white keys DFA and C'.
Then, fit the black keys in order of higher notes
and tighten the 21 screws ㊤ (3x16 Bind head
tapping screw).

8-2. Fitting the Rubber Contact and MK Circuit Board (Fig.6,7,8)

Fit the rubber contact by pushing the keys up
as shown in Fig.6.

Securely fit the arrow-indicated area of the
rubber contact as shown in Fig.7.

When fitting the rubber contact, raise both
ends of the frame so that keys of the keyboard
does not push up the rubber contact.

Then fit the MK circuit board into the hooks as
shown in Fig.8.

8. 鍵盤 Ass'y の組み立て方

8-1. 白鍵、黒鍵のはめ方 (図5参照)

白鍵CEGBを、音程の低い方からはめ込みます。
白鍵DFAと白鍵C'をはめ込みます。
黒鍵を音程の高い方からはめ込みます。
白鍵、黒鍵をとめていた㊤のネジ21本(3×16バイ
ンドタッピングネジ)をとめます。

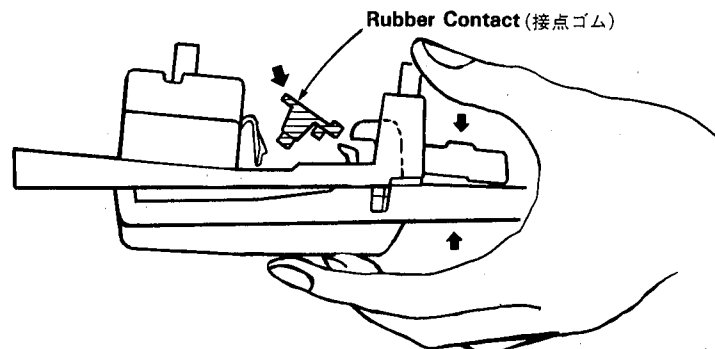
8-2. 接点ゴムとMKシートの取り付け方

(図6, 7, 8参照)

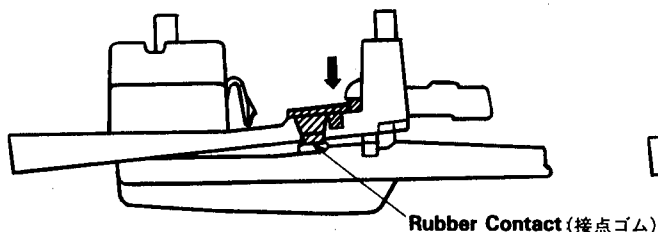
接点ゴムは図6の様に、鍵盤を押し上げながらは
め込みます。図7の様に矢印の所をしっかりとめ
込んで下さい。

この時、鍵盤が接点ゴムを押し上げて接点ゴムが
浮かない様に、MKフレームの両端を上げて作業
を行って下さい。

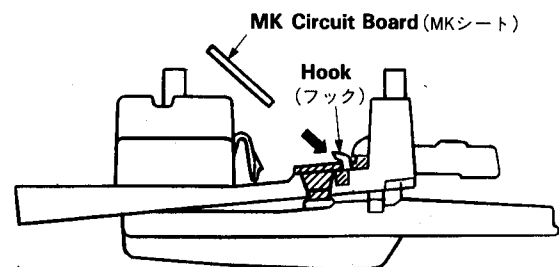
MKシートは、図8の様にフックにはめ込みます。



(Fig.6)



(Fig.7)



(Fig.8)

■TEST PROGRAM(テストプログラム)

1. HOW TO ENTER THE TEST PROGRAM

While pressing C6 and B5 keys of keyboard, turn on the POWER switch. The volume control must be set at comfortable listening level for the test.

To exit the test program, turn off the power and then on again.

2. KEYBOARD SWITCH TEST

If a key of keyboard is pressed, the corresponding note will sound on VOICE 00 - TRUMPET with HARMONY off.

3. PANEL SWITCH TEST

If a panel switch is pressed, VOICE 00 - TRUMPET will sound as follows:

switch	note	switch	note
REVERB	C2	1	A#2
ECHO	C#2	2	B2
TEMPO ▼	D2	3	C3
TEMPO ▲	D#2	4	C#3
RHYTHM/SONG SELECT	E2	5	D3
STOP	F2	6	D#3
AD-LIB	F#2	7	E3
HARMONY	G2	8	F3
DEMO	G#2	9	F#3
0	A2	ENTER	G3

4. POWER/MODE SWITCH TEST

If the POWER/MODE switch is operated, a percussion will sound as follow:

NORMAL : Bass drum
 SINGLE FINGER : Snare drum
 SINGLE FINGER + FINGERED : Cymbal
 FINGERED : Hi-hat

1. テストプログラムの起動

C6キーとB5キーを押しながら電源スイッチをONすると、テストプログラムのモードに入ります。

テスト中、聞きやすいレベルになるように、ボリュームコントロールを調整してください。

テストモードから抜けるには、電源をOFFします。

2. 鍵盤スイッチテスト

鍵盤スイッチを押すと、トランペットの音色、ハーモニーOFFで各音が発音します。

3. パネルスイッチテスト

パネルスイッチを押すと、下表に示した音程で発音します。(音色・トランペット。ハーモニーOFF)

4. POWER/MODEスイッチテスト

切換え時に次のリズム音源を発音します。

NORMAL : B D
 SINGLE FINGER : S D
 SINGLE FINGER + FINGERED : CYM
 FINGERED : H H

■ LSI PIN DESCRIPTION (LSI 端子機能表)

● YM71374E (XI262A00) OPJ (FM Tone Generator)

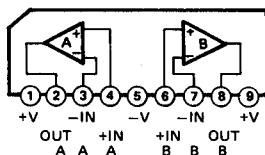
Pin No.	Name	I/O	Function	Pin No.	Name	I/O	Function
1	PB6	O	Port B	21	M0	I	Mode select
2	PB7	O		22	M1	I	
3	VSS			23	AGND		Analog ground
4	PD0	O	Port D	24	OUT2	O	Analog signal output
5	PD1	O		25	OUT1	O	Analog signal output
6	PD3	O		26	VDD		Power supply
7	PD4	O	Port A	27	PA0	I	
8	PD2	O		28	PA1	I	
9	PD5	O		29	PA2	I	
10	PC0	I/O		30	PA3	I	
11	PC1	I/O		31	PA4	I	
12	PC2	I/O		32	PA5	I	
13	PC3	I/O		33	PA6	I	
14	PC4	I/O	34	PA7	I		
15	PC5	I/O	35	PB0	O	Port B	
16	PC6	I/O	36	PB1	O		
17	PC7	I/O	37	PB2	O		
18	OSC	I	38	PB3	O		
19	XOUT	O	39	PB4	O		
20	RES	I	Reset	40	PB5	O	

● YM7133A (XH250A00) LRV (Digital Reveberator)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	WE	O	Write enable	15	A6	O	Address buss
2	OE	O	Output enable	16	A7	O	
3	RAS	O	Row address strobe	17	RES	I	Initial clear
4	CAS	O	Column address strobe	18	VDD		Power supply
5	O3	I/O	Data bus	19	SOL	O	Signal output L channel
6	O2	I/O		20	SOR	O	Signal output R channel
7	O1	I/O		21	CV	O	Center V
8	O0	I/O		22	SI	I	Signal input
9	A0	O		23	CH		C Hold
10	A1	O	Address bus	24	VSS		Ground
11	A2	O		25	SEL1	I	Mode select
12	A3	O		26	SEL0	I	
13	A4	O		27	XIN	I	Clock
14	A5	O		28	XOUT	O	

■ IC BLOCK DIAGRAM (IC ブロック図)

● μPC4570HA (XB247A00)
Dual Operational Amplifier

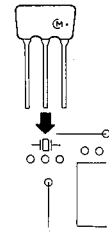


■CIRCUIT BOARDS (シート基板図)

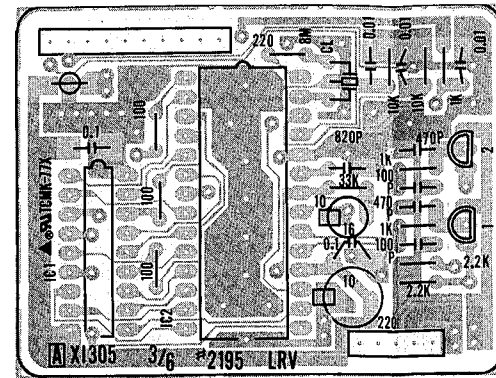
●M¹/₂ Circuit Board

* When you replace the CL1, ceramic resonator, be sure to install it as shown right.

(セラミック共振子CL1を交換する際は、右図の方向で取付けて下さい。)



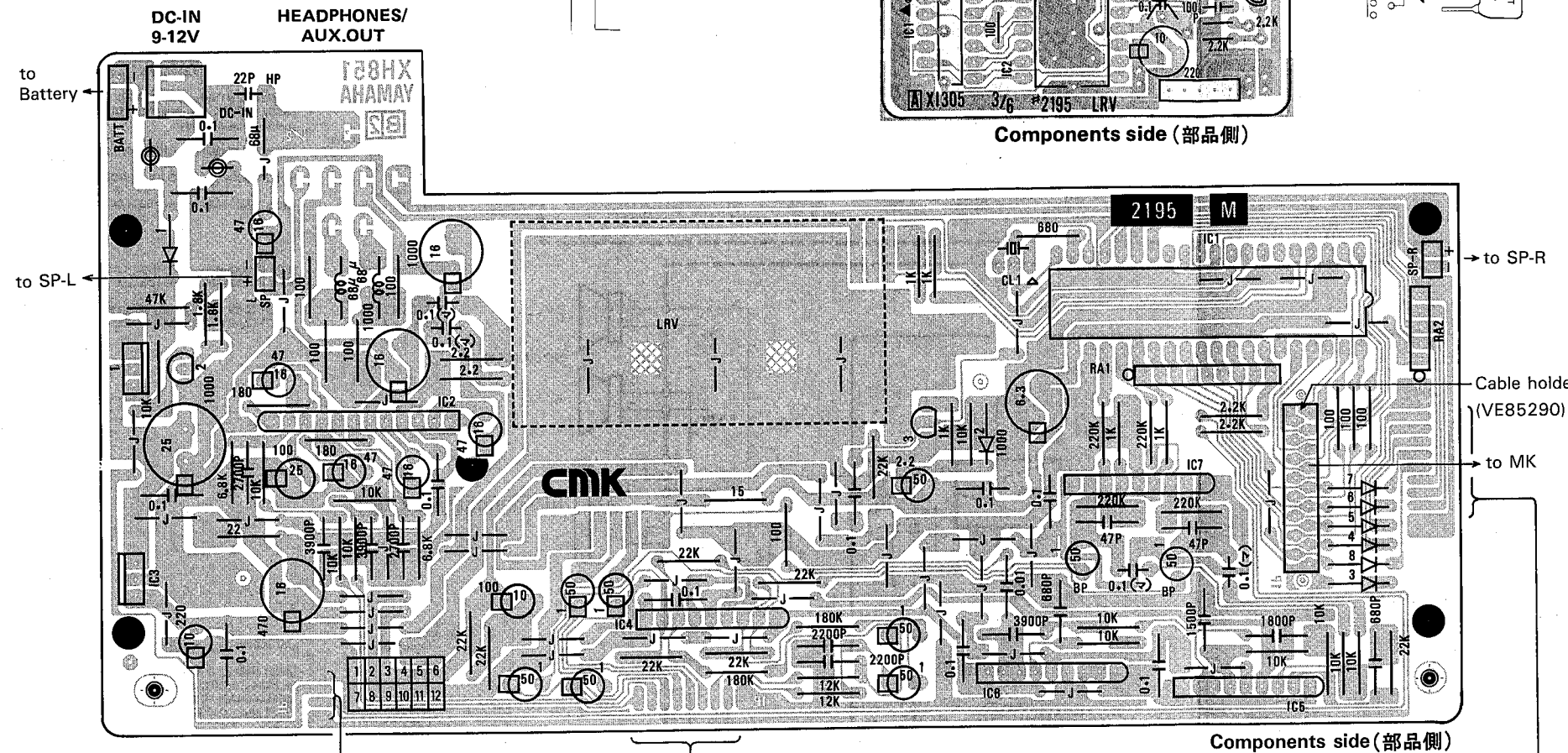
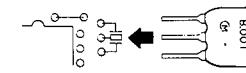
●LRV Circuit Board



Components side (部品側)

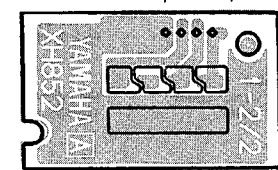
* When you replace the ceramic resonator, be sure to install it as shown below.

(セラミック共振子を交換する際は、下図の方向で取付けて下さい。)



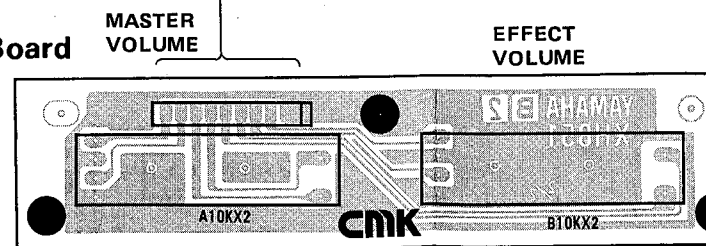
Components side (部品側)

●PN²/₂ Circuit Board



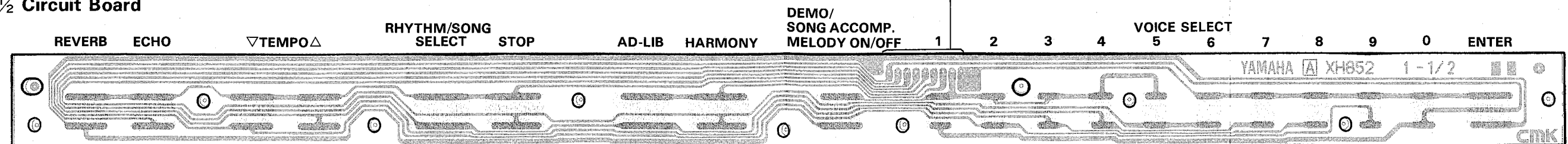
Pattern side (パターン側)

●M²/₂ Circuit Board



Components side (部品側)

●PN¹/₂ Circuit Board



Pattern side (パターン側)

Notes

- Circuit Board :
- M1/2 (NX005060) XH851B0 (B,X)
 - M1/2 (NX004980) XH85120 (U,D-FCC,F)
1. IC
IC 1: YM71374E (XI262A00) OPJ
IC 2: AN7148 (XE417A00) P AMP. 2.1W 2CH
IC 3: AN78M05F (XB646001) REG. +5V 0.5A
IC 4-7: μ PC4570HA (XB247A00) OP AMP.
 2. Transistor
Q 1: 2SB1416(TA) Q,R (VH481100)
Q 3: 2SC2603 E,F (IC260320)
 3. Digital Transistor
Q 2: DTC114ES (VD678700)
 4. Diode
D 1: 1SR35-100A (IH001420)
D 2-8: 1SS133 (IF003450)
 5. Resistor Array
RA 1: RGLD8X473J (VE445600) 47K \times 8
RA 2: RGLD4X473J (VE443900) 47K \times 4
 6. Electrolytic Cap.
470/16: 470 μ 16V (UJ838470)
1000/6.3: 1000 μ 6.3V (VJ529300)
1000/16: 1000 μ 16V (VJ651100)
1000/25: 1000 μ 25V (VF606700)
 7. Coil
C: FL5R200QNT 20 μ (VB835000)
marked 68 μ : LAL02TB680K 68 μ (VG469900) U,D (FCC,F) only
-J: Jumper Wire B,X only
 8. Ceramic Resonator
CL 1: CST3.58MGW207 (VH612200) 3.58MHz
 9. Phone Jack
HP: YKB21-5006 (LB101870) HEADPHONES/AUX.OUT
 10. Connector
DC-IN: HEC2305-01-050 (VC664500) DC 9-12V IN

Notes

- Circuit Board :
- M2/2 (NX005070) XH851B0 (B,X)
 - M2/2 (NX004990) XH85120 (U,D -FCC,F)
1. Slide Pot.
A10K \times 2: RS20112A9 (VJ635100) MASTER VOLUME
B10K \times 2: RS20112A9 (VJ807600) EFFECT VOLUME

Notes

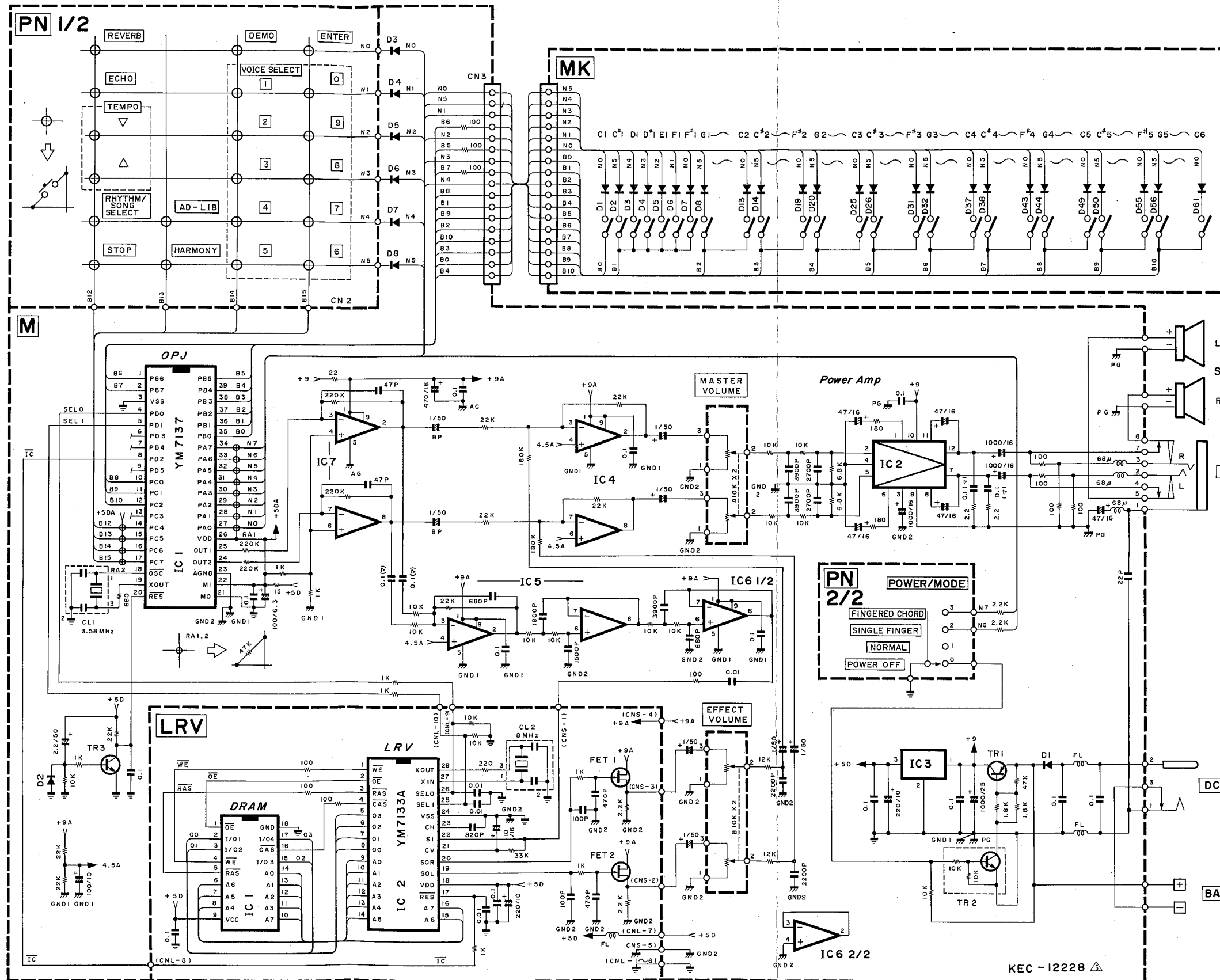
- Circuit Board :
- LRV (NX005100) XI305A00
1. IC
IC 1: MB81464-12 (XA457A00) DRAM 256K or LH2464-12 (XD281A00) DRAM 256K or M5M4464AP-10 (XF981A00) DRAM 256K YM7133A (XH250A00) LRV
 2. FET
Q 1,2: 2SK1104-Q,R (TA) (VJ094300)
 3. Semiconductive Cera. Cap.
marked 0.1: 0.1 μ 25V Z (VC694800)
 4. Ceramic Resonator
CL: CST8.00MTW040 (VI951700) 8MHz
 5. Coil
C: FL5R200QNT 20 μ H (VB835000)

Notes

- Circuit Board :
- PN1/2 (NX005000) XH852A0
 - PN2/2 (NX005010) XH852A0

M: 2NA-VJ29890 Δ
PN: 2NA-VJ61920 Δ
LRV: 2NA-VJ93120

OVERALL CIRCUIT DIAGRAM (総回路図)



- Notes)
Circuit Board :
- IC
IC 1: YM71374E (X1262A00) OPJ
IC 2: AN7148 (XE417A00) P AMP. 2.1W 2CH
IC 3: AN78M05F (XB646001) REG. +5V 0.5A
IC 4-7: μ PC4570HA (XB247A00) OP AMP.
 - Transistor
TR 1: 2SB1416(TA) Q, R (VH481100)
TR 3: 2SC2603 E, F (IC260320)
 - Digital Transistor
TR 2: DTC114ES (VD678700)
 - Diode
D 1: 1SR35-100A (IH001420)
D 2-8: 1SS133 (IF003450)
 - Resistor Array
RA 1: RGLD8X473J (VE445600) 47K \times 8
RA 2: RGLD4X473J (VE443900) 47K \times 4
 - Coil
FL: FL5R200QNT 20 μ (VB835000)
marked 68 μ : LAL02TB680K 68 μ (VG469900) U, D (FCC, F) only
Jumper Wire B, X only
 - Ceramic Resonator
CL 1: CST3.58MGW207 (VH612200) 3.58MHz
 - Phone Jack
HP: YKB21-5006 (LB101870) HEADPHONES/AUX. OUT
 - Connector
DC-IN: HEC2305-01-050 (VC664500) DC 9-12V IN

- Notes)
Circuit Board :
- Slide Pot.
A10K \times 2: RS20112A9 (VJ635100) MASTER VOLUME
B10K \times 2: RS20112A9 (VJ807600) EFFECT VOLUME

- Notes)
Circuit Board :
- IC
IC 1: M8B1464-12 (XA457A00) DRAM 256K or LH2464-12 (XD281A00) DRAM 256K or M5M4464AP-10 (XF981A00) DRAM 256K YM7133A (XH250A00) LRV
 - IC 2:
FET 1, 2: 2SK1104-Q, R (TA) (VJ094300)
 - Semiconductive Cera. Cap.
marked 0.1: 0.1 μ 25V Z (VC694800)
 - Ceramic Resonator
CL: CST8.00MTW040 (V1951700) 8MHz
 - Coil
FL: FL5R200QNT 20 μ H (VB835000)

- Notes)
Circuit Board :
- PN 1/2 (NX005000) XH852A0
PN 2/2 (NX005010) XH852A0

- Notes)
Circuit Board :
- Diode:
MK (VH182400)
1SS133 (IF003450)

PORTATONE

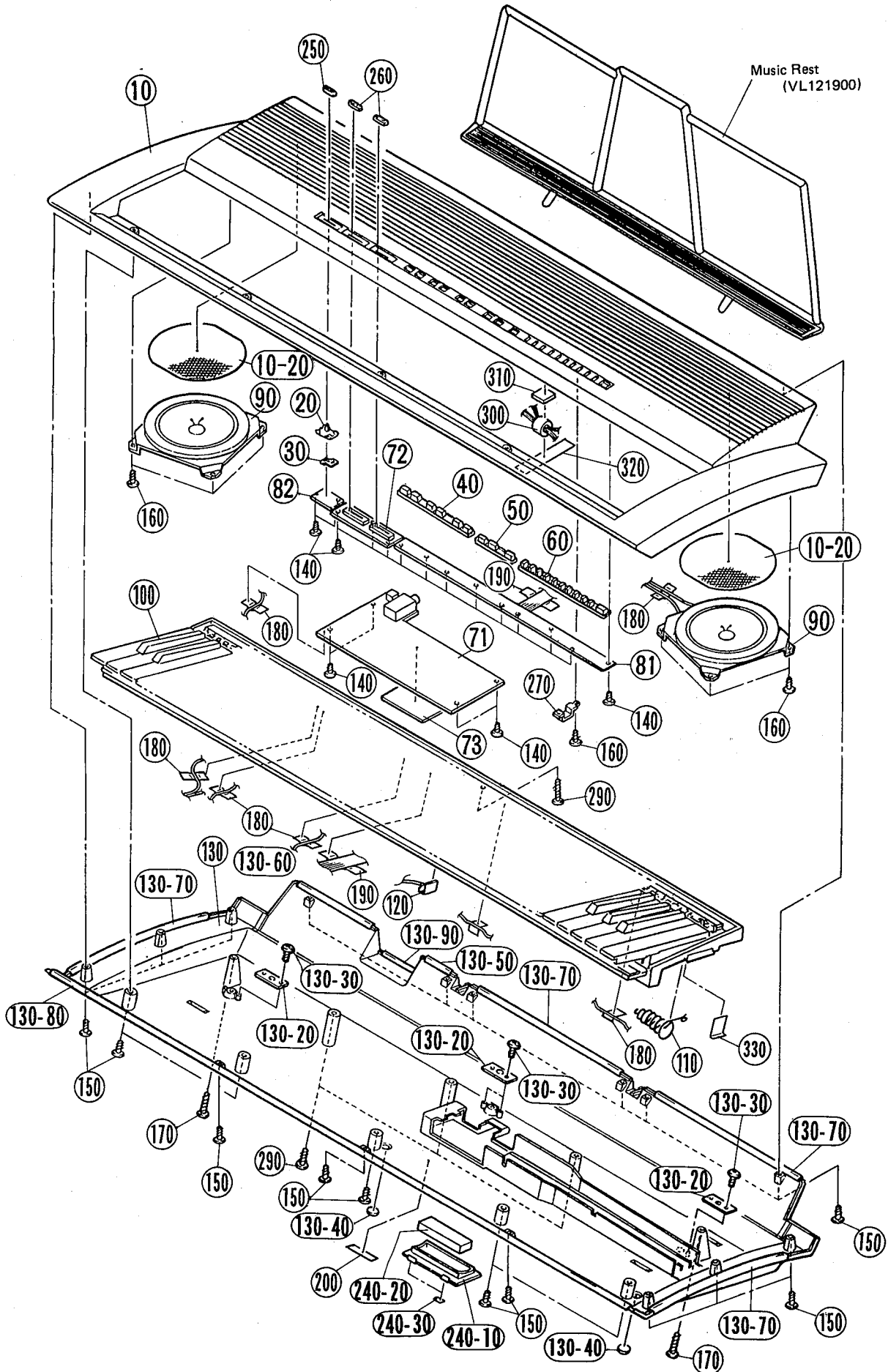
PSR-19

PARTS LIST

Notes DESTINATION ABBREVIATIONS

J : Japanese model	A : Australian model
U : U.S. model	E : European model
C : Canadian model	D : German model
X : General model	B : British model
M : South African model	I : Indonesian model
H : North European model	

OVERALL ASSEMBLY (総組立)

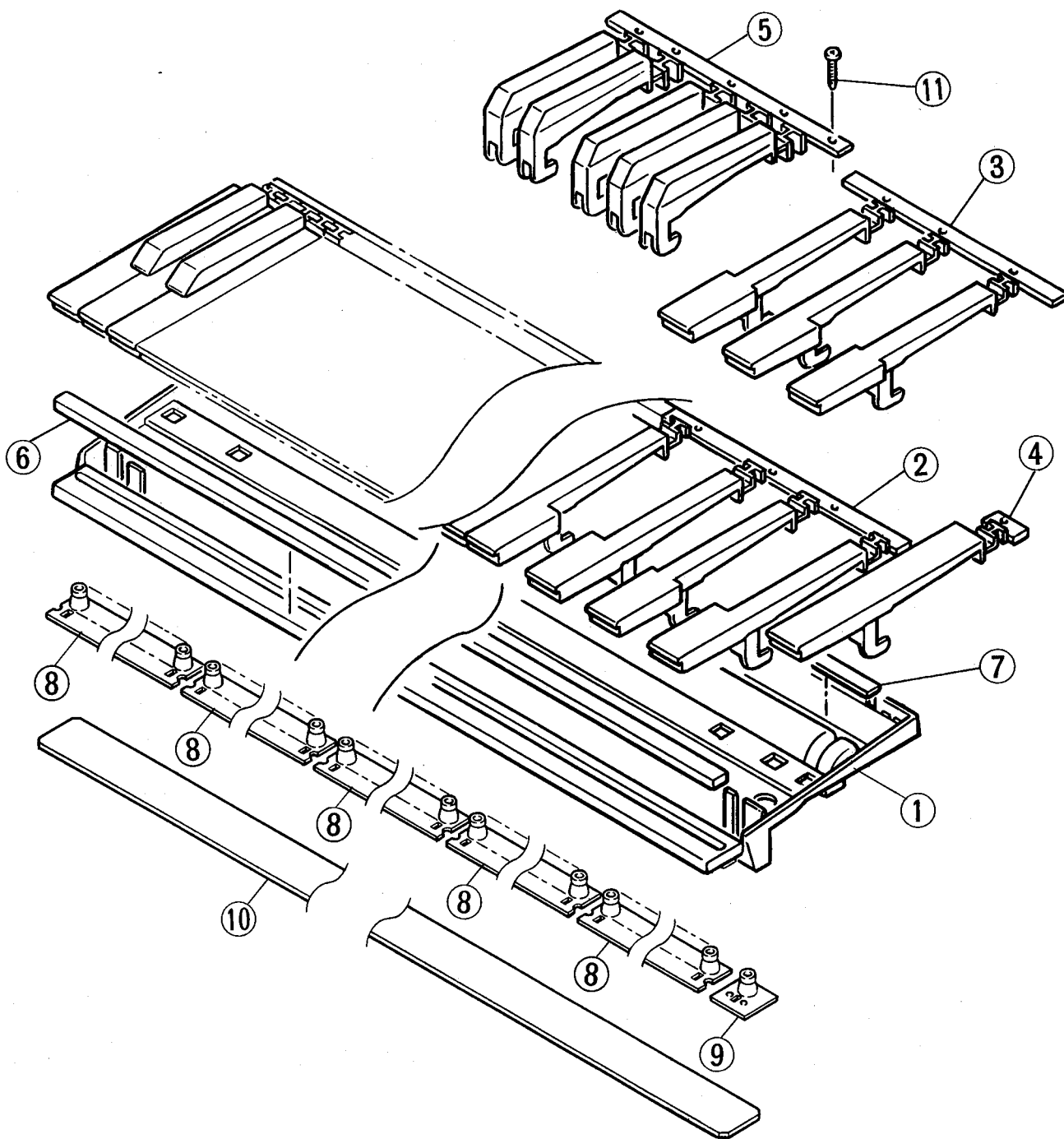


Ref. No.	Part No.	Description	部品名	Remarks	ランク
		< OVERALL ASSEMBLY >		PSR19	
10	VL087500	Upper Case Assembly	LC	<総組立> 上ケース Ass'y	01
20	VF073800	Slider		スライダー	01
30	BB005650	Brush		ブラシ	01
40	VL087600	Rubber Contact	A2 (BL-GY)	P N ラバー (A 2)	03
50	VL087700	Rubber Contact	D2 (GR-YE)	P N ラバー (D 2)	REV. -STOP (6keys)
60	VL087800	Rubber Contact	C2 (BL-GY)	P N ラバー (C 2)	AD, HARMONY, DEMO
71	NX004980	Circuit Board	M1/2	M 1 / 2 シート	1-0, ENTER (11key)
71	NX005060	Circuit Board	M1/2	M 1 / 2 シート	U, D (FCC, F)
72	NX004990	Circuit Board	M2/2	M 2 / 2 シート	B, X (NC)
72	NX005070	Circuit Board	M2/2	M 2 / 2 シート	U, D (FCC, F)
73	NX005100	Circuit Board	LRV	L R V シート	B, X (NC)
81	NX005000	Circuit Board	PN1/2	P N 1 / 2 シート	
82	NX005010	Circuit Board	PN2/2	P N 2 / 2 シート	
90	XG134A00	Speaker	12cm 4Ω 3W	スピーカー	2pcs
100	VH180700	Keyboard Assembly	C61 K6	1 6 L 鍵盤 Ass'y	
110	VF001000	Spring Terminal		接点バネ	
120	BB005490	Terminal		端子板	
130	VL107800	Lower Case Assembly		下ケース Ass'y	
140	EI020066	Bind Head Tapping Screw	2.0×6 ZMC2Y	ハインドタッピングネジ	18pcs
150	EI030126	Bind Head Tapping Screw	3.0×12 ZMC2Y	ハインドタッピングネジ	20pcs
160	EK090020	Trus Head Tapping Screw	3.0×8 ZMC2Y	トラスタッピングネジ	16pcs
170	EI030256	Bind Head Tapping Screw	3.0×25 ZMC2Y	ハインドタッピングネジ	2pcs
180	VA119300	Adhesive Tape	12×25	粘着テープ	9pcs
190	--	Adhesive Tape	12×50	粘着テープ	U, D: 2pcs B, X: 3p
200	--	Label		規格製番ラベル	
240	VF117700	Battery Cover Assembly	GY	バッテリーカバー Ass'y	
250	VH090700	Slide Knob	WH	スライドつまみ	POWER/MODE
260	VH090800	Slide Knob	WH	スライドつまみ	2pcs VOLUME
270	VH087400	Angle Bracket, Keyboard	J	鍵盤受け金具 (I)	4pcs
290	EI330206	Bind Head Tapping Screw	3.0×20 FCM3BL	ハインドタッピングネジ	4pcs
300	VJ935700	Ferrite Core	BP59RB160100N4M	フェライトコア	U, D (FCC, F) only
310	--	Cushion	GY	クッション	U, D (FCC, F) only
320	--	Adhesive Tape	19×90	粘着テープ	U, D (FCC, F) only
330	--	Vibro-isolating Tape	18×25	防振テープ	
20	VL087500	< UPPER CASE ASSEMBLY > Speaker Cloth		<上ケース Ass'y> スピーカークロス	2pcs
20	VL107800	< LOWER CASE ASSEMBLY >		<下ケース Ass'y>	
AA056250	Angle Bracket, Leg		脚取り付け金具	3pcs	01
EI030086	Bind Head Tapping Screw	3.0×8 ZMC2Y	ハインドタッピングネジ	6pcs	01
VF215800	Foot	BL	ゴム足	8pcs	01
50	--	Vibro-isolating Tape	10×40×0.5	防振テープ	
60	--	Vibro-isolating Tape	10×120×0.5	防振テープ	
70	--	Vibro-isolating Tape	10×230×0.5	防振テープ	4pcs
80	--	Vibro-isolating Tape	10×900×0.5	防振テープ	
90	--	Vibro-isolating Tape	10×64×0.5	防振テープ	
10	VF117700	< BATTERY COVER ASSEMBLY >		<バッテリーカバー Ass'y>	
CB101310	Battery Cover	GY	バッテリーカバー		03
CB047750	Battery Cushion	GY	バッテリークッション		02
30	--	Vibro-isolating Pad	BL	防振パッド	2pcs
VL121900	* ACCESSORY Music Rest	GY	* 付属品 譜面立て		01

* : New Parts (新規部品) NR

ランク : Japan Only

KEYBOARD ASSEMBLY (鍵盤 Ass'y)



Ref. No.	Part No.	Description		部品名	Remarks	ランク
	VH180700	Keyboard Assembly	C61 K6	16 L 鍵盤 Ass'y	PSR19	19
1	--	Frame	C61	フレーム		
2	VH180900	White Key	C, E, G, B	白鍵 C, E, G, B	5pcs	03
3	VH181000	White Key	D, F, A	白鍵 D, F, A	5pcs	03
4	VH181100	White Key	C'	白鍵 C'		01
5	VH181200	Black Key		黒鍵	5pcs	03
6	VH181300	Felt		フェルト		03
7	VH181400	Rubber Sheet		ゴムシート		01
8	VE975200	Rubber Contact	12keys	接点ゴム	5pcs	03
9	VE975300	Rubber Contact	1key	接点ゴム		01
10	VH182400	Circuit Board	MK	MKシート		
11	EI330166	Bind Head Tapping Screw	3.0×16 FCM3BL	ハインドタップネジ	21pcs	01

* : New Parts (新規部品) NR

ランク : Japan Only

ELECTRICAL PARTS (電気部品)

Ref. No.	Part No.	Description		部品名	Remarks	ランク
	NX004980	Circuit Board	M1/2	M 1/2 シート	U, D (FCC, F) PSR19	20
	NX005060	Circuit Board	M1/2	M 1/2 シート	B, X (NC)	20
	NX004990	Circuit Board	M2/2	M 2/2 シート	U, D (FCC, F)	07
	NX005070	Circuit Board	M2/2	M 2/2 シート	B, X (NC)	07
	NX005100	Circuit Board	LRV	L R V シート		12
	NX005000	Circuit Board	PN1/2	P N 1/2 シート		04
	NX005010	Circuit Board	PN2/2	P N 2/2 シート		02
	VH182400	Circuit Board	MK	M K シート		
	NX004980	Circuit Board	M1/2	M 1/2 シート	U, D (FCC, F)	20
	NX005060	Circuit Board	M1/2	M 1/2 シート	B, X (NC)	20
	XB646001	IC	AN78M05F	I C	+5V 0.5A	03
	XB247A00	IC	μ PC4570HA	I C	OP AMP.	01
	XE417A00	IC	AN7148	I C	AMP. 2.1W 2CH	04
	XI262A00	IC	YM71374E	I C	OPJ	11
	VH481100	Transistor	2SB1416(TA) Q, R	トランジスタ		01
	IC260320	Transistor	2SC2603 E, F	トランジスタ		01
	VD678700	Digital Transistor	DTC114ES	デジタルトランジスタ		03
	IF003450	Diode	1SS133	ダイオード		01
	IH001420	Diode	1SR35-100A	ダイオード		01
	VE443900	Resistor Array	RGLD4X473J	抵抗アレイ		01
	VE445600	Resistor Array	RGLD8X473J	抵抗アレイ		01
	UJ838470	Electrolytic Cap.	470 μ 16V	ケミコン		01
	VJ529300	Electrolytic Cap.	1000 μ 6.3V	ケミコン		01
	VJ651100	Electrolytic Cap.	1000 μ 16V	ケミコン		01
	VF606700	Electrolytic Cap.	1000 μ 25V	ケミコン		02
	VB835000	Coil	FL5R200QNT	コイル	20 μ H	01
	VG469900	Coil	LAL02TB680K	コイル	68 μ H (U, D only)	01
	VH612200	Ceramic Resonator	CST3.58MGW207	セラミック振動子	3.58MHz	01
	LB101870	Phone Jack	YKB21-5006	ホンジャック	PHONES/AUX.OUT	03
	VC664500	DC-IN Connector	HEC2305-01-050	電源コネクタ	DC 9-12V IN	01
	--	Wire Harness, CN3	10P L=290mm	C N 3 束線	--> MK	
	--	Lead Wire, Speaker L		S P L 束線		
	--	Lead Wire, Speaker R		S P R 束線		
	--	Lead Wire, Battery	Red	電池束線(赤)		
	--	Lead Wire, Battery	Black	電池束線(黒)		
	--	Lead Wire, Keyboard GND	1	K B アース線		
	--	Lead Wire, Keyboard GND	2	K B アース線		
	--	Cable Holder		ケーブルホルダー	CN3	
	NX004990	Circuit Board	M2/2	M 2/2 シート	U, D (FCC, F)	07
	NX005070	Circuit Board	M2/2	M 2/2 シート	B, X (NC)	07
	VJ635100	Slide Pot.	A10K × 2	二連スライドボリューム	MASTER VOLUME	03
	VJ807600	Slide Pot.	B10K × 2	二連スライドボリューム	EFFECT VOLUME	03
	--	Wire Harness, VR	9P	V R 束線	--> M1/2	
	NX005100	Circuit Board	LRV	L R V シート		12
	XH250A00	IC	YM7133A	I C	LRV	08
	XA457A00	IC	MB81464-12	I C	DRAM 256K	08
	XD281A00	IC	LH2464-12	I C	DRAM 256K	08
	XF981A00	IC	M5M4464AP-10	I C	DRAM 256K	08
	VJ094300	FET	2SK1104 Q, R (TA)	F E T		01
	VC694800	Semiconductive Cera. Cap.	0.1 μ 25V Z	半導体セラコン		01
	VB835000	Coil	FL5R200QNT	コイル	20 μ H	01
	VI951700	Ceramic Resonator	CST8.00MTW040	セラミック振動子	8MHz	02
	NX005000	Circuit Board	PN1/2	P N 1/2 シート		04
	--	Wire Harness, CN2	10P	C N 2 束線	--> M1/2	
	NX005010	Circuit Board	PN2/2	P N 2/2 シート		02
	--	Wire Harness, CN1	4P	C N 1 束線	--> M1/2	
	VH182400	Circuit Board	MK	M K シート		
	IF003450	Diode	1SS133	ダイオード		01
	XG134A00	Speaker	12cm 4 Ω 3W	スピーカー		06