ORDER NO. EMID931432
A4

Service Manual

PCM Digital Piano

SX-PX103/PX103M

(M), (MC), (XM), (EN), (EH), (EF), (EZ), (EW), (EA), (EP), (EK), (XL), (XR), (XS), (XD), (X), (XT)

Photo: SX-PX103M

AREAS

(M):	U.S.A.	(EK):	the United Kingdom
(MC):	Canada	(XL):	New Zealand
(XM):	Mexico	(XR):	Australia
(EN):	Norway, Sweden, Denmark, Finland	(XS):	Malaysia, Singapore, South Africa
(EH):	Holland	(XD):	Saudi Arabia, Kuwait
(EF):	France, Italy, Belgium	(X):	the Middle East, Indonesia, Hong Kong, the Philippines, Thailand
(EZ):	Germany		
(EW):	Switzerland		
(EA):	Austria		
(EP):	Spain, Portugal, Greece	(XT):	Taiwan

■ Specifications

CABINET	SX-PX103: BLACK, SX-PX103M: WALNUT
KEYBOARD	88 KEYS (MAX. POLYPHONIC 32 NOTES)
SOUNDS	GRAND PIANO, UPRIGHT PIANO, ROCK PIANO, E PIANO 1, E PIANO 2, HARPSI, VIBES, PIPE ORGAN
PEDAL	SOFT, SOSTENUTO, SUSTAIN
BRILLIANCE	MELLOW, BRIGHT (5 STEPS)
DIGITAL CELESTE	○
DIGITAL REVERB	ROOM, STAGE, HALL, CONCERT
TOUCH SENSITIVITY	LIGHT, NORMAL, HEAVY
TRANSPOSE	G~C~F♯
METRONOME	○ (TIME SIGNATURE: OFF 2/4, 3/4, 4/4, 5/4, 6/8)
SEQUENCER	TRACK (1, 2), STORAGE CAPACITY: APPROX. 4000 NOTES, RECORDING MODE: REAL TIME
DISPLAY	○
DEMO	○
MIDI	MULTI TIMBRE, LOCAL CONTROL, OMNI ON, PROGRAM CHANGE, TRANSPOSE, PEDAL, EFFECT
MODE SET	PIANO TUNING, MINIMUM RANGE
OTHERS	POWER SWITCH, MAIN VOLUME, TUNE, TEMPO, MIDI TERMINALS (IN, OUT, THRU), PEDAL IN, LINE OUT (R/R+L, L), AUX IN (R/R+L, L), PHONES×2, AC IN, INITIAL KEY
OUTPUT	40 W × 2
SPEAKERS	14 cm × 2, 6.5 cm × 2
POWER REQUIREMENT	190 W, 115 W (NORTH AMERICA AND MEXICO)
	AC120/220/240V 50/60 Hz AC120V 60 Hz (NORTH AMERICA AND MEXICO) AC230V 50/60 Hz (EUROPE EXCEPT FOR UNITED KINGDOM)
DIMENSIONS (W×H×D)	137.3 cm × 100.3 cm × 48.0 cm (54-1/16" × 39-1/2" × 18-29/32")
NET WEIGHT	60.7 kg (133.8 lbs)
ACCESSORIES	AC CORD, STAND

* Specifications are subject to change without notice for further improvement.

Technics

CONTENTS

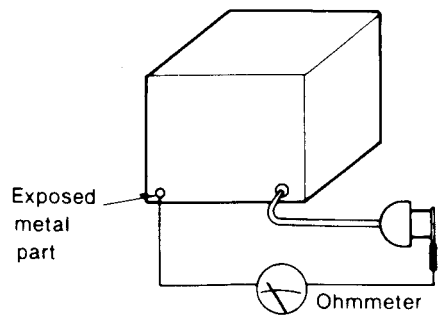
SAFETY PRECAUTION (This "safety precaution" is for the U.S.A. only)

• Safety Precaution

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only the manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• Insulation Resistance Test

1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screw heads, connectors, control shafts, handle brackets, etc. Measurements should range from 4 MΩ to infinity for all exposed parts.

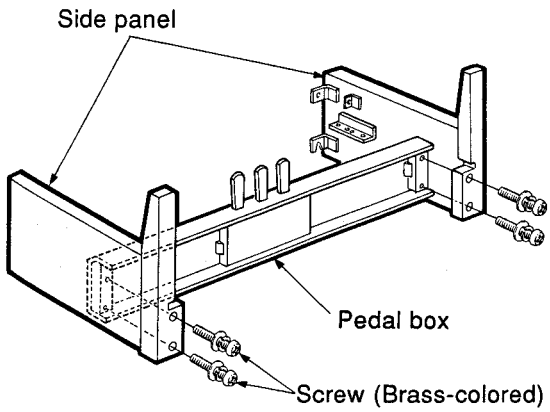


Resistance = 4 MΩ to ∞

HOW TO ASSEMBLE THE PIANO

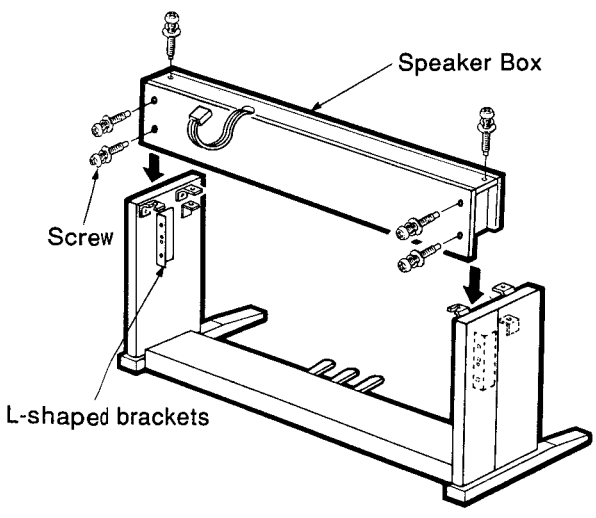
- To prevent the piano unit from falling off the stand, secure it firmly with the screws.

1 Assemble the side panels and the pedal box with the 4 brass-colored screws.



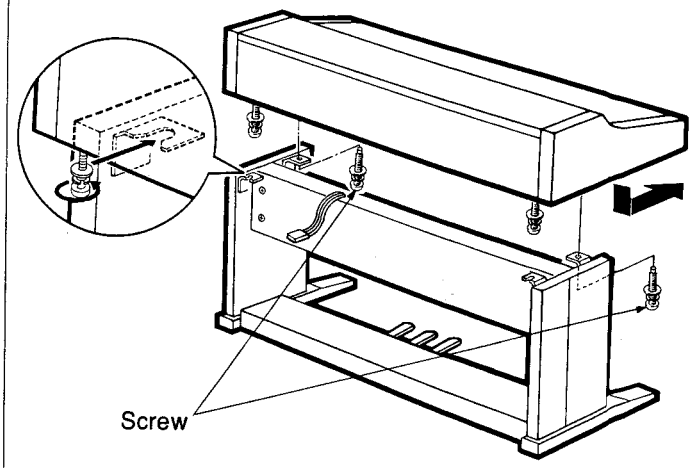
[Fig. 1]

2 Place the stand upright and mount the speaker box onto the L-shaped brackets with the 4 screws. (Black screws for model SX-PX103, Brown screws for model SX-PX103M)



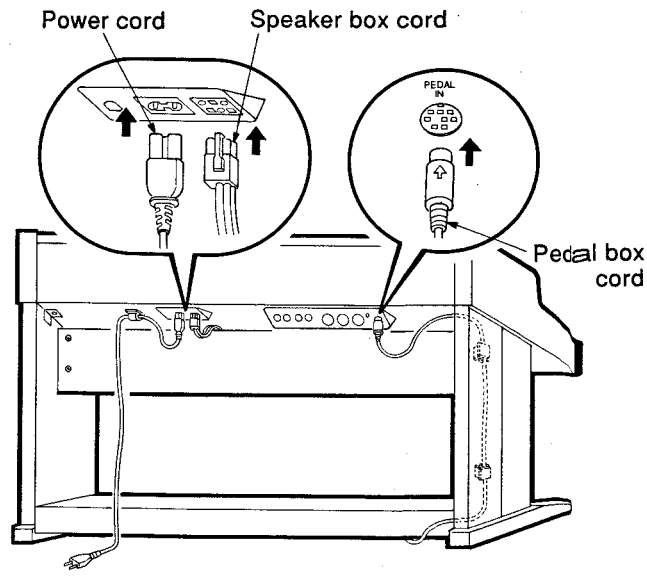
[Fig. 2]

3 Place the piano unit on the stand and secure it to the stand. (Black screws for model SX-PX103, Brown screws for model SX-PX103M)



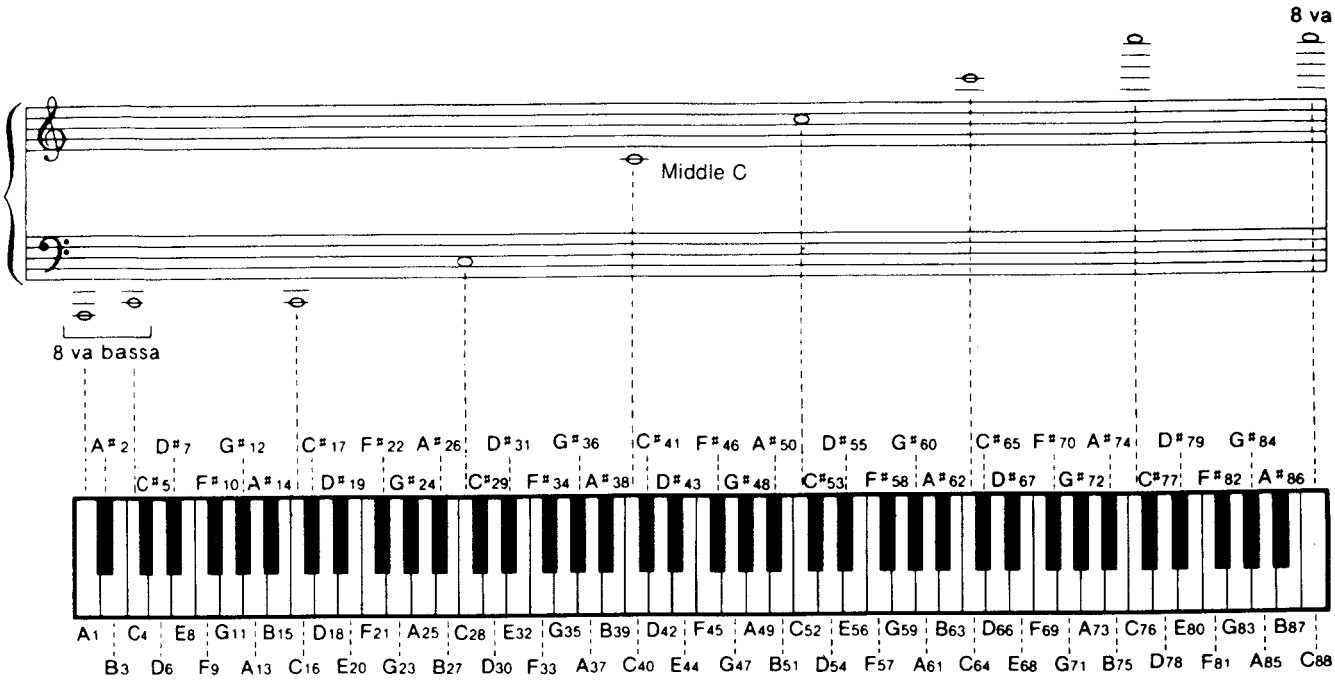
[Fig. 3]

4 Connect the pedal cord, speaker cord and power cord to their sockets located rear of the piano unit as shown below.



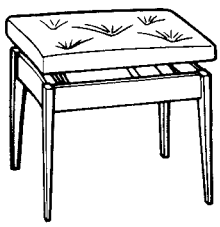
[Fig. 4]

KEYBOARD RANGES

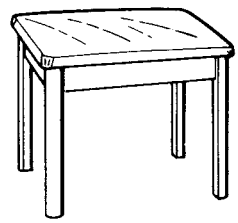


OPTIONS

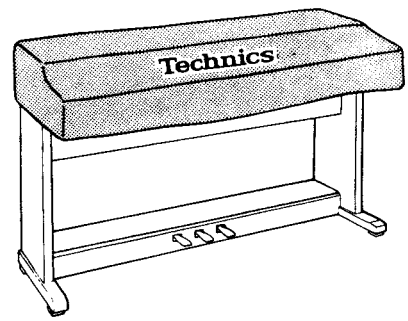
PRODUCTS FOR SX-PX103



SZ-CP1
Bench

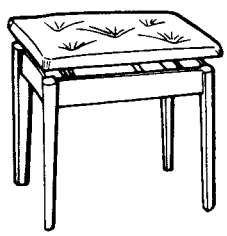


SZ-CP3
Bench

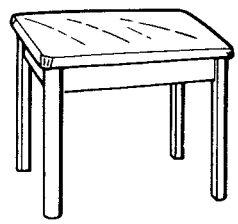


SZ-DC5
Dust Cover

PRODUCTS FOR SX-PX103M

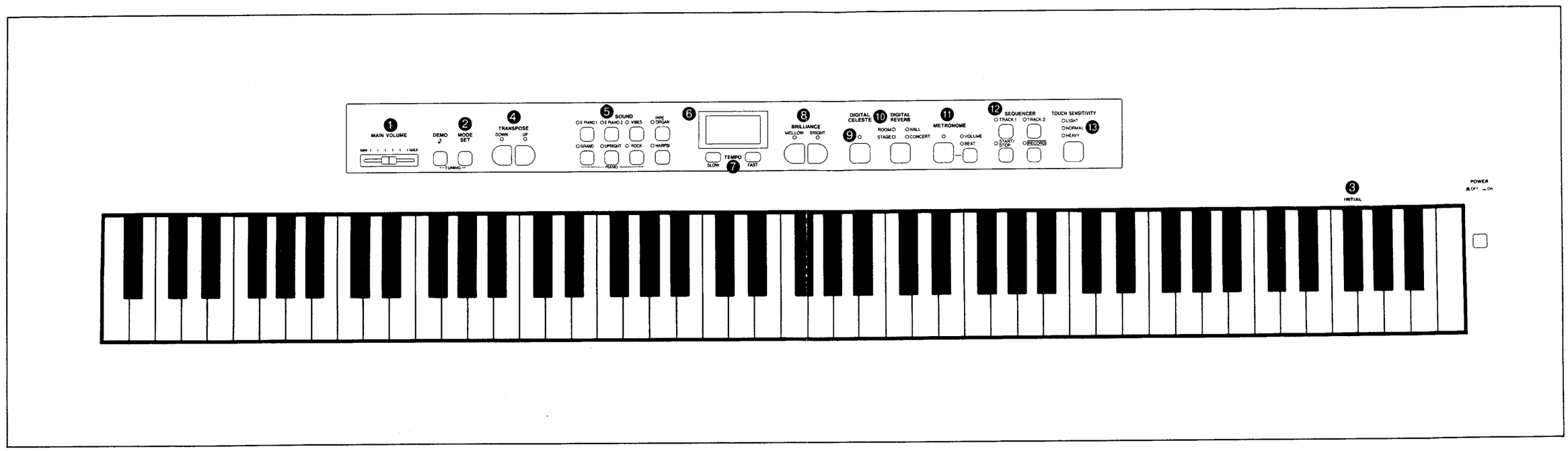


SZ-CP4M
Bench



SZ-CP3M
Bench

ARRANGEMENT OF CONTROL PANEL



BASIC FUNCTIONS

1 DEMO
Automatic demonstration performances stored in the piano's memory introduce the various sounds available. Listen to all the demonstration tunes in order, or listen to the demo tune of a specific sound.

2 MODE SET, 3 INITIAL KEY
Used when selecting functions to set or adjust, including type of piano tuning, minimum range (volume), initialization, plus all settable MIDI functions. Also used when erasing **SEQUENCER** tracks.
- If the INITIAL KEY is pressed while the MODE SET button is depressed, the settings of the buttons, etc. will return to the initialized settings made by the manufacturer.

4 TRANSPOSE
C is the standard setting, but you can raise or lower the key of the entire instrument within a one-octave range with these two buttons. The buttons are also used for adjusting the volume balance of mixed sounds.

5 SOUND
Select from 8 different sounds for the piano. You can mix sounds by selecting two simultaneously. All sounds feature Touch Response.

6 Display
Various information is shown on the display, including **SEQUENCER** information (remaining memory capacity, error indication) and MIDI information (selected MIDI CHANNEL, PROGRAM CHANGE number).

7 TEMPO
Use to adjust the tempo and volume of the metronome and the playback tempo of the **SEQUENCER**.

8 BRILLIANCE
Select the brightness of the sound from five settings. The setting is memorized independently for each sound.

9 DIGITAL CELESTE
Apply a celeste effect to give the sound greater depth. The setting is memorized independently for each sound.

10 DIGITAL REVERB
Add a reverb effect to the sound. Choose one of four different echo types. The setting is memorized independently for each sound.

11 METRONOME
You can play in time with a metronome sound. The metronome volume and speed are adjustable, and you can accent the metronome sound to match the time signature of the music.

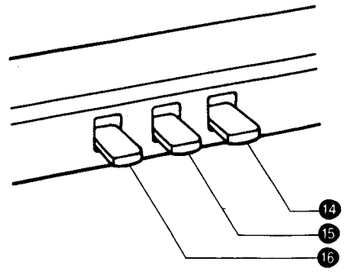
12 SEQUENCER
Record your performance and have it automatically played back on the two-track sequencer. The memory capacity is about 4000 notes.

13 TOUCH SENSITIVITY
Choose **LIGHT**, **NORMAL** or **HEAVY** keyboard touch (Touch Response) to match your type of playing.

14 Sustain pedal
The sound is sustained when a key is released while this pedal is depressed. The length of the sustain is controlled by the degree to which the pedal is depressed (four stages). For **GRAND PIANO**, **UPRIGHT PIANO** and **ROCK PIANO** sounds, the tones of the 17 rightmost keys are automatically sustained.

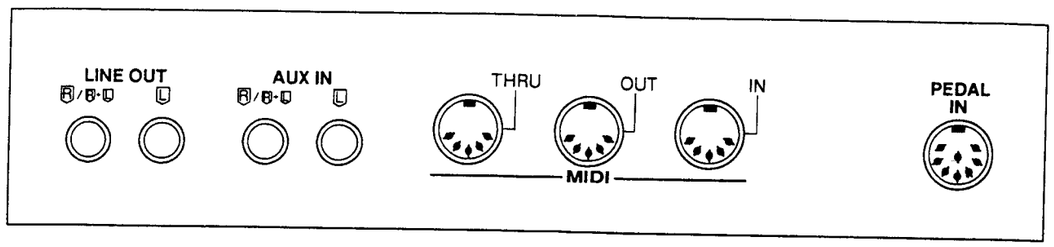
15 Sostenuto pedal
Sustain is added only to the notes played while the pedal is depressed.

16 Soft pedal
Press the pedal for softer, muted sound.



TERMINALS

(On the back of piano)



LINE OUT (output level 1.5 Vrms, 600 Ω)
By plugging into an external high-power amplifier, the sound can be reproduced at a high volume. Or connect a tape recorder and use them as recording terminals. To output monaural sound, connect the external equipment to the **R/R+L** terminal. (Do not connect the **L** terminal.)

AUX IN (input level 0.5 Vrms, 6 kΩ)
Other instruments such as a rhythm machine or sound module can be connected to the piano so that the sound is output from the piano. To receive monaural sound, connect the other instrument to the **R/R+L** terminal. (Do not connect the **L** terminal.)

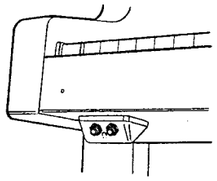
PEDAL IN
Connect the cord from the included stand to this terminal.

MIDI (Musical Instrument Digital Interface)
MIDI is the standard specification that enables connection to equipment such as synthesizers and personal computers. Data transmission and reception are possible between the Technics Digital Ensemble and instruments provided with MIDI terminals.

IN: The terminal that receives data from external equipment.
OUT: The terminal that transmits data from the piano to external equipment.
THRU: The terminal that transfers data from the **IN** terminal directly to other equipment.

- Use a 5-pin DIN cord (less than 15m long) for these connections.

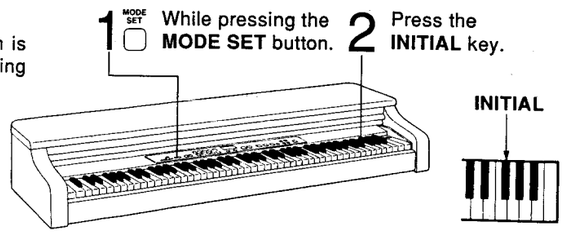
PHONES (∩) ×2
For silent practice headphones may be used. When plugged in, the speaker system is automatically switched off, and sound is heard only through the headphones.



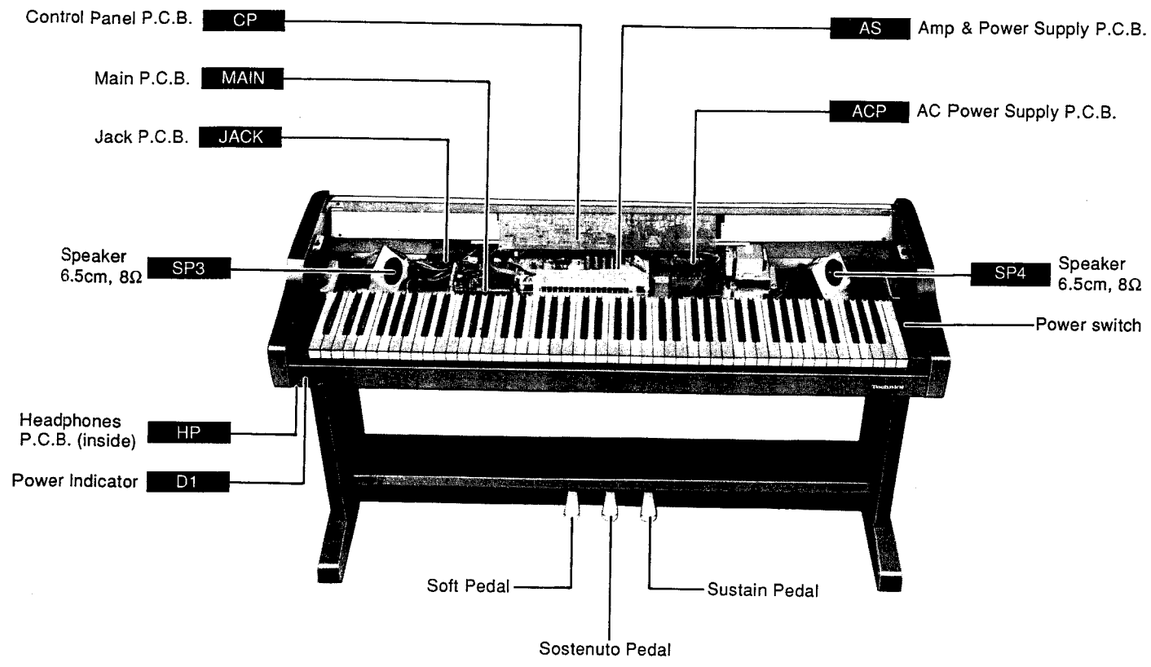
INITIAL SETTING

The initial setting function is used to return to the original factory settings, and to reset the customer settings and misoperations. The selected sound and various functions, MIDI settings and **SEQUENCER** contents are initialized with this operation.

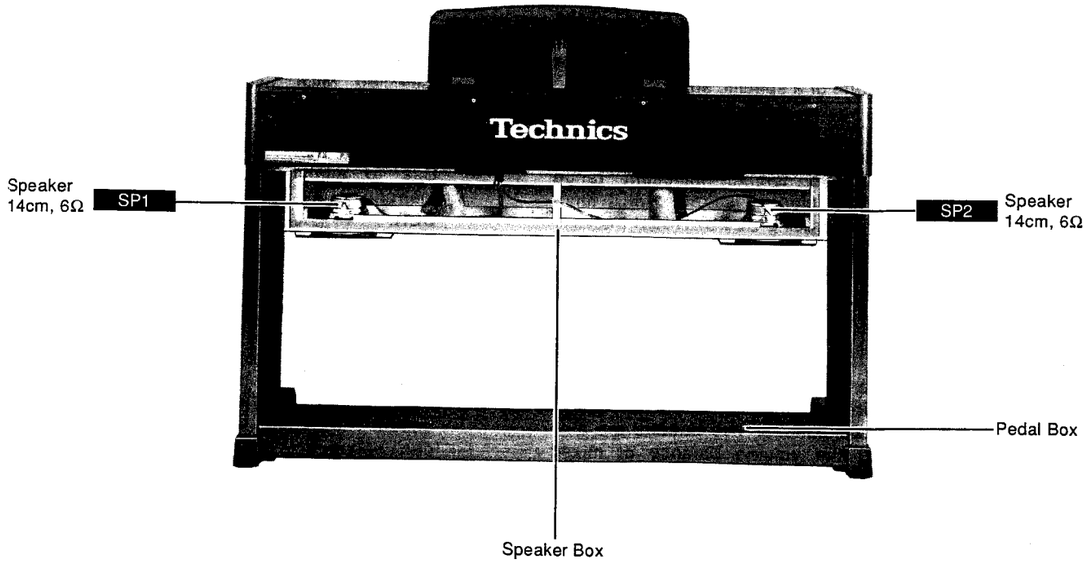
■ **INITIAL SETTING**
Press the **INITIAL** key while the **MODE SET** button is pressed. Or turn on the **POWER** switch while pressing the **INITIAL** key.



PARTS LOCATION



[Photo-1]



[Photo-2]

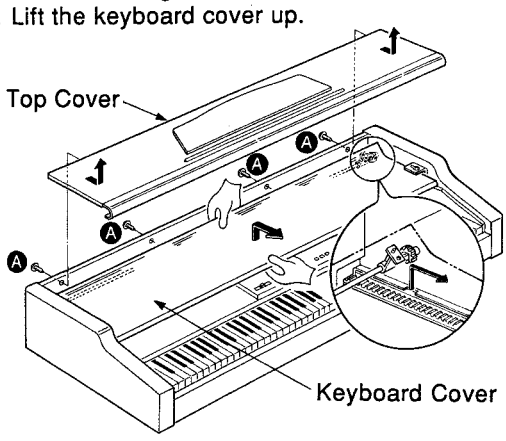
DISASSEMBLY INSTRUCTIONS

1 Removing the top cover (Fig. 5)

1. Remove the top cover holding screws (Ⓐ 4 pcs.).
2. Slide the top cover forward and lift up. (As shown by the arrow.)

2 Removing the keyboard cover

1. Remove the top cover (see step 1).
2. Close the keyboard cover completely so that the gears at the rear of the keyboard cover become free from the guide rails.
3. Lift the keyboard cover up.



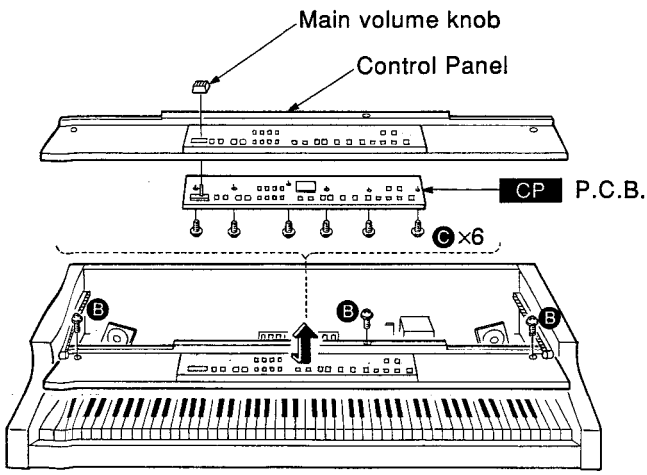
[Fig. 5]

3 Removing the control panel (Fig. 6)

1. Remove the keyboard cover (see step 2).
2. Remove the control panel holding screws (Ⓑ 3 pcs.).
3. Remove the control panel as shown in Figure 6.

4 Removing the CP P.C.B.

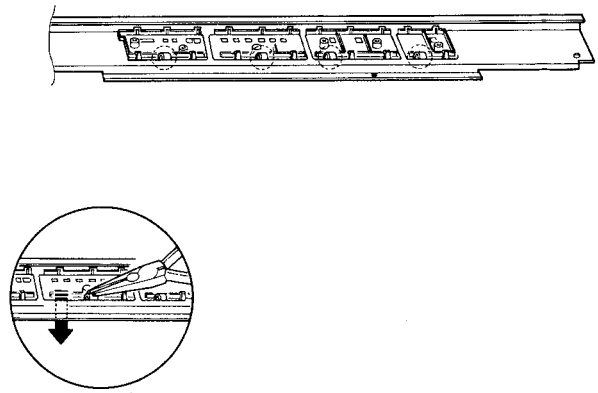
1. Remove the control panel (see step 3).
2. Remove the main volume knob.
3. Remove the CP P.C.B. mounting screws (Ⓒ 6 pcs.).



[Fig. 6]

5 Removing the control panel ornament

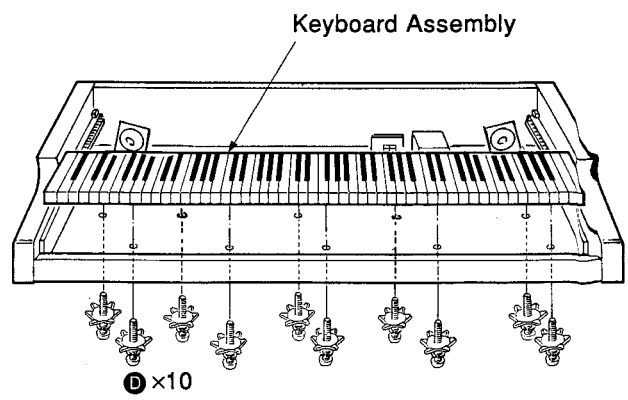
1. Remove the control panel (see step 3).
2. Remove the CP P.C.B. (see step 4).
3. Release the control panel ornament holding claws.



[Fig. 7]

6 Removing the keyboard assembly

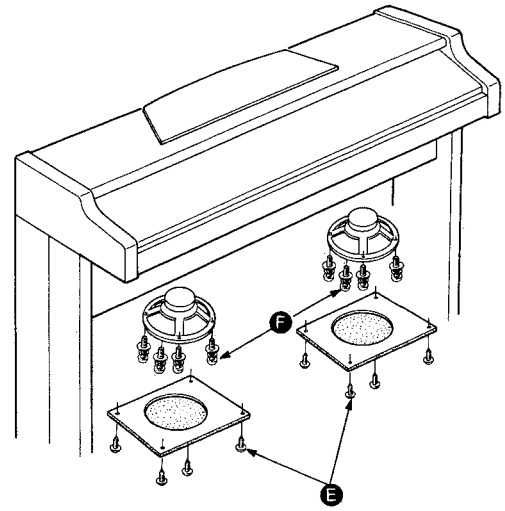
1. Remove the control panel (see step 3).
2. Remove the keyboard ass'y holding screws located on the bottom of the cabinet (Ⓓ 10 pcs.).



[Fig. 8]

7 Removing the speakers

1. Remove the speaker nets mounting screws (Ⓔ 4 pcs. each).
2. Remove the 14cm speakers mounting screws (Ⓕ 4 pcs. each).
   - Be careful that the 14cm speakers does not fall off, since it comes free of the speaker box.



[Fig. 9]

8 Key(s)

Disassembly

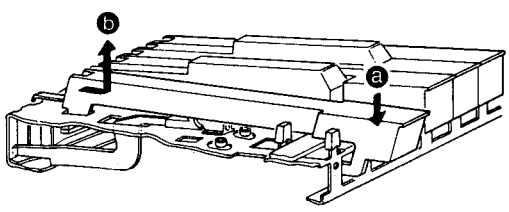
1. Remove the keyboard assembly (see step 6).
2. To release the key claw.
   ⓐ Press the front of the key downward slightly.
   ⓑ Press the rear of the key forward gently.
3. To remove the key, lift as shown in Figure 10.

NOTE:

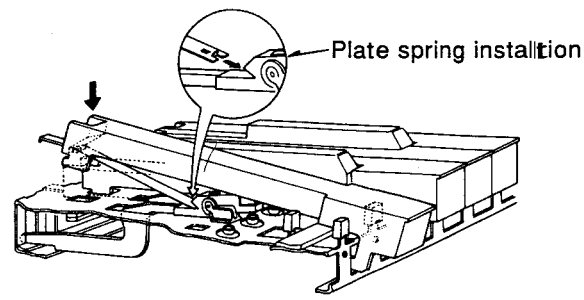
- The key claw is easily broken. Do not apply undue force. Should a key claw break, it can still be used; however, a replacement is recommended.
- If a black key is to be replaced it is necessary to remove both adjacent white keys.

Assembly

1. Insert the front part of the key into the chassis.
2. Insert the plate spring into the hammer notch as shown in Figure 11.
3. While slowly lowering the key into the chassis, insert the plate spring into the notch at the rear of the key.
4. Carefully insert the key into the opening in the chassis and slide the key towards the rear to lock it in place.



[Fig. 10]



[Fig. 11]

9 Removing the printed circuit boards.

• Remove the top cover (see step 1).

MAIN P.C.B.

1. Disconnect the connectors.
2. Remove the MAIN P.C.B. mounting screws (G 2 pcs.).
3. Release the claws of the P.C.B. holders.

AS P.C.B.

1. Disconnect the connectors.
2. Remove the AS P.C.B. mounting screws (H 2 pcs.).
3. Release the claws of the P.C.B. holder.

JACK P.C.B.

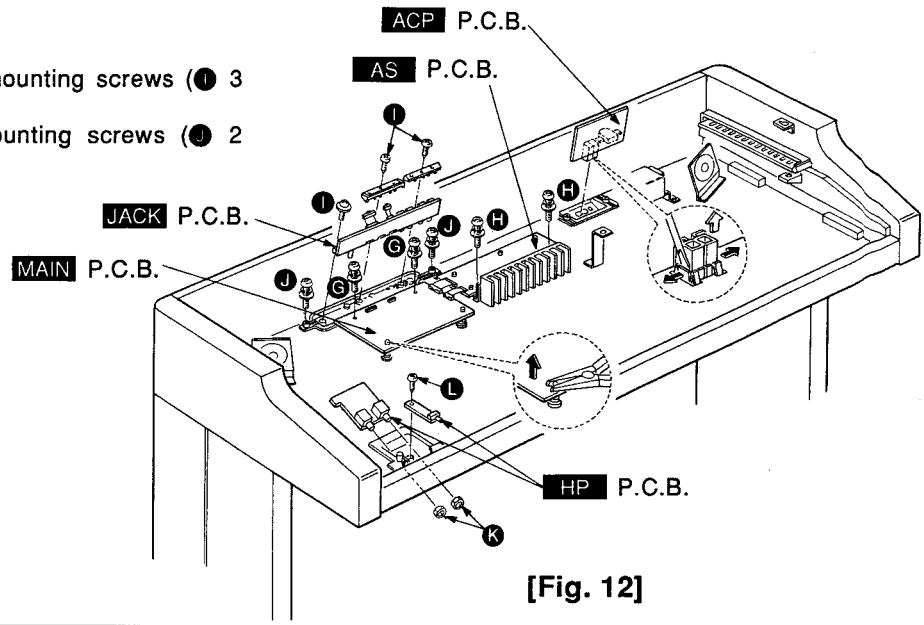
1. Disconnect the connectors.
2. Remove the JACK P.C.B. mounting screws (I 3 pcs.).
3. Remove the jack panel mounting screws (J 2 pcs.).

ACP P.C.B.

1. Release the claws of the AC IN connector bracket.

HP P.C.B.

1. Remove the keyboard assembly (see step 6).
2. Remove the headphone jack mounting nuts (K 2 pcs.).
3. Remove the HP P.C.B. mounting screw (L 1 pcs.).



[Fig. 12]

SYMPTOMS WHICH APPEAR TO BE SIGNS OF TROUBLE

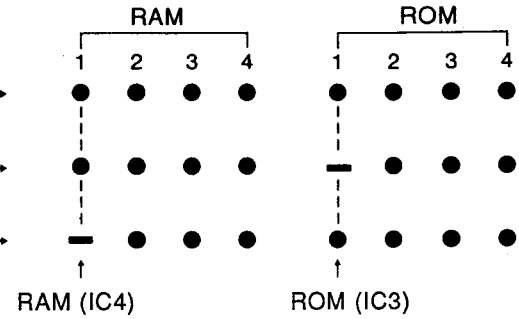
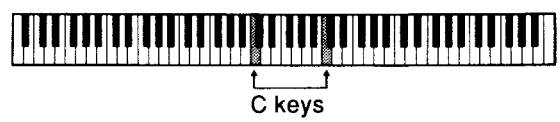
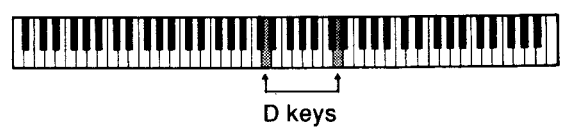
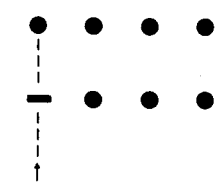
Phenomenon	Remedy
No sound is produced when the keyboard is played.	• No sound is produced if the **MAIN VOLUME** is set to **MIN**. Use the sliding control to set the volume to an appropriate level. • If the MIDI LOCAL CONTROL is set to off, set it to on.
Nothing is shown on the display.	• The metronome, **SEQUENCER** tempo, etc. are indicated on the display. During normal performance, however, the display is off.

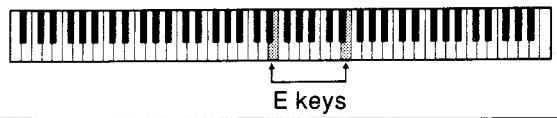
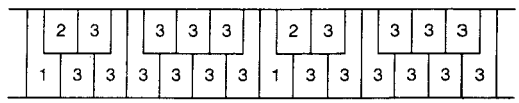
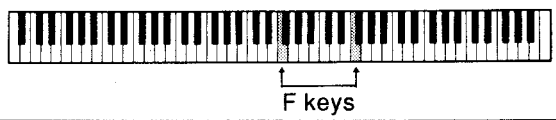
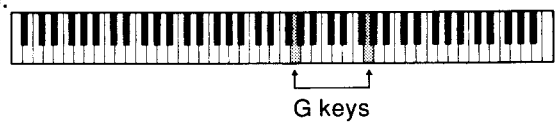
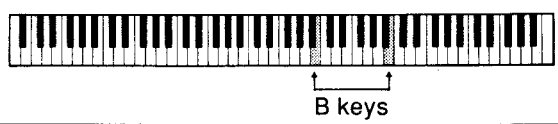
■ About the back-up memory

The selected sound and various functions, MIDI settings remain in the memory for about 1 week after the **POWER** is turned off. If you wish to return all memories and settings to their initialized status, while pressing the **MODE SET** button, press the **INITIAL** key on the keyboard. Or you can turn on the **POWER** while pressing the **INITIAL** key.

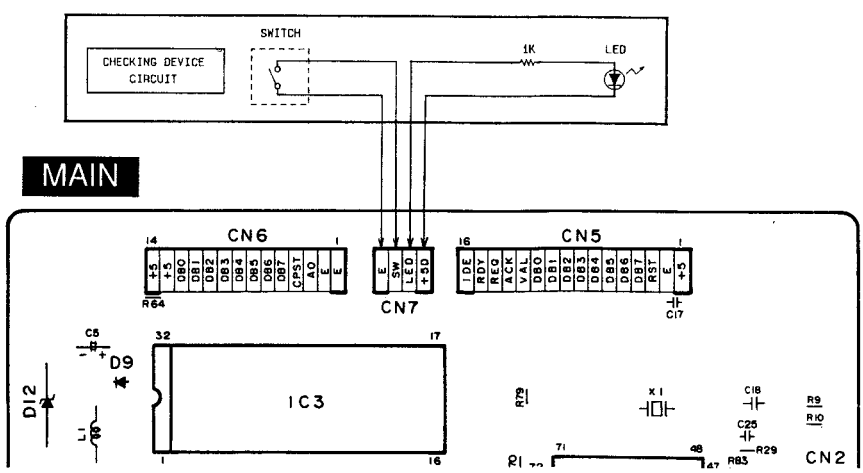
ABOUT THE SELF-DIAGNOSTIC FUNCTION

This model has a self-diagnostic function. When set to the self-diagnostic mode, the quality can be assessed when the diagnostic procedures in the chart below are followed.

<table>
<tr><th>No.</th><th>PCB</th><th>Diagnosis item</th><th>Procedure</th></tr>
<tr><td>1</td><td>MAIN</td><td>RAM (IC4), ROM (IC3) check</td><td>1. Connect the CHECKING DEVICE (refer to page I-12) to CN7 on the MAIN PCB, and turn on the CHECKING DEVICE switch.
2. Turn on the power switch.</td></tr>
<tr><td></td><td></td><td colspan="2">When the power switch is turned on, the LED of the CHECKING DEVICE flashes on and off. The first 4 flashes are for the RAM check, and the latter 4 flashes are for the ROM check. The flash number corresponds to the RAM number and ROM number; since one RAM and one ROM are used in this model, flash 1 of the first 4 flashes corresponds to the RAM (IC4) check, and flash 1 of the second 4 flashes corresponds to the ROM (IC3) check. If the part is defective, the flash time for that part becomes longer.
Examples
1. RAM OK, ROM OK
2. RAM OK, ROM defective
3. RAM defective, ROM OK
Note: ▬ indicates long flash time.
 
</td></tr>
<tr><td>2</td><td>MAIN</td><td>Gate array (IC2) check</td><td>While pressing two C keys simultaneously, turn on the power switch.
 
</td></tr>
<tr><td></td><td></td><td colspan="2">Monitor pins 46~48 (DL6~DL4) of IC2 on an oscilloscope, and check whether incremental data (see figure) is output.
 
</td></tr>
<tr><td>3</td><td>CP</td><td>Gate array (IC1) check</td><td>1. Connect the CHECKING DEVICE to CN7 on the MAIN PCB. (The Checking Device switch should be off.)
2. While pressing two D keys simultaneously, turn on the power switch.
 
</td></tr>
<tr><td></td><td></td><td colspan="2">When the power switch is turned on, the LED of the CHECKING DEVICE flashes. The LED flashes 4 times, the first flash corresponding to the IC1 check. If IC1 is defective, the first flash will be longer.
1. IC1 OK
2. IC1 defective
 
</td></tr>
</table>

No.	PCB	Diagnosis item	Procedure
4	MAIN	Wave ROM (IC7, IC8, IC9) check	1. While pressing two E keys simultaneously, turn on the power switch. 2. Select the GRAND PIANO sound.  E keys
		When set to the self-diagnostic mode, the Wave ROM outputs a sine wave. The Wave ROMs correspond to the keyboard keys as shown in the diagram to the right. When a key is pressed, the corresponding sine wave sound is produced. If no sound is produced, or if the sound is distorted, the Wave ROM corresponding to that key is defective.	• The key number indicates the Wave ROM number (1: IC7, 2: IC8, 3: IC9). 
5	CP	Control panel LED check	While pressing two F keys simultaneously, turn on the power switch.  F keys
		Press the buttons on the control panel and confirm that the corresponding LEDs light.	
6	CP	7-segment LED (display) check	While pressing two G keys simultaneously, turn on the power switch.  G keys
		When set to the self-diagnostic mode, the test pattern is shown on the display. Monitor the display to confirm that the characters appear correctly. Examples: 000 → 111 → 222 - - - - - - - - - - - - - - - 888 → 999	
7	MKB	Keyboard ROM (IC2) check	While pressing two B keys simultaneously, turn on the power switch.  B keys
		If the keyboard ROM (IC2) is OK, one confirming beep will sound. If it is defective, several consecutive error beeps will sound.	

■ Connection between serving CHECKING DEVICE and MAIN PCB



MIDI IMPLEMENTATION CHART

Function		Transmitted	Recognized	Remarks
Basic Channel	Default	1~16	1~16	memorized
	Changed	1~16	1~16	
Mode	Default	3	1, 3	memorized
	Messages	×	×	
	Altered	—	—	
Note Number		*21~108	0~127	
	True voice	—	*0~127	
Velocity	Note ON	○	○	
	Note OFF	× (9nH: V=0)	×	
After Touch	Key's	×	×	
	Ch's	×	×	
Pitch Bender		×	×	
Control Change	7	×	**○	volume
	64	○×	○×	sustain pedal
	66	○×	○×	sostenuto pedal
	67	○×	○×	soft pedal
	93	○×	○×	chorus (digital celeste)
Prog Change		○×	○×	
	True #	0~127	0~7	
System Exclusive		×	×	
System Common	Song Pos	×	×	
	Song Sel	×	×	
	Tune	×	×	
System Real Time	Clock	×	×	
	Commands	×	×	
Aux Messages	Local ON/OFF	×	×	
	All Notes OFF	×	○	
	Active Sense	○	○	
	Reset	×	×	
Notes		○× .....Whether or not the data for each of these items is transmitted or received can be set. * Changes depending on the **TRANSPOSE** setting. ** Effective only in the MULTI TIMBRE mode.		

Mode 1: OMNI ON, POLY **Mode 2:** OMNI ON, MONO ○: Yes
Mode 3: OMNI OFF, POLY **Mode 4:** OMNI OFF, MONO ×: No

- This product adheres to MIDI specifications as published by the Japan MIDI Association.

PRECAUTIONS BEFORE SERVICING

■ Precautions for measuring of the output waveforms.

1. The waveform was measured with a "National Digital Storage Oscilloscope VP-5730A". Therefore the waveforms of musical tone signals shown may differ somewhat due to the difference in the timing of triggering.
2. Since the 1/10 test probe is used, the indicated voltage value on the bottom part of each waveform photo is 1/10 of the actual value (e.g. 0.2V/cm should be 2.0V/cm).
3. To measure the waveforms, first set this unit to the self-diagnostic mode (refer to page I-12, No. 4). The WAVE ROM output will then be output as a sine wave to facilitate the servicing check.

■ Important safety notice:

Components identified by a ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

■ Symbolic Marks

The symbolic marks for resistors and capacitors which used in this circuits are classified as following TABLE-1 and TABLE-2.

1. RESISTORS
   - Resistors without symbolic mark are FIXED CARBON FILM RESISTORS (ERD-type).
   - All resistors are 1/4WATT, ±5% TOLERANCE unless otherwise designated in the schematic diagrams.

(TABLE-1)

SYMBOL	SPECIFICATION	SYMBOL	SPECIFICATION
Ⓕ	Fixed Carbon Film Resistors "FLAME-PROOF" (ERD—F—type)	Ⓕ	Fixed Metal Film Resistors "FLAME-PROOF" (ERX—type)
Ⓕ	Fixed Wire Wound Resistors "FLAME-PROOF" (ERF—type)	[F]	Fuse Type Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERQ—type)
Ⓕ	Fixed Metal Oxide Film Resistors "FLAME-PROOF" (ERG—type)	[F]	Fuse Type Fixed Carbon Film Resistors "FLAME-PROOF" (ERD2FC—type)
Ⓖ	Fixed Metal Film Resistors (Precision and High Stability) (ERO—type)		

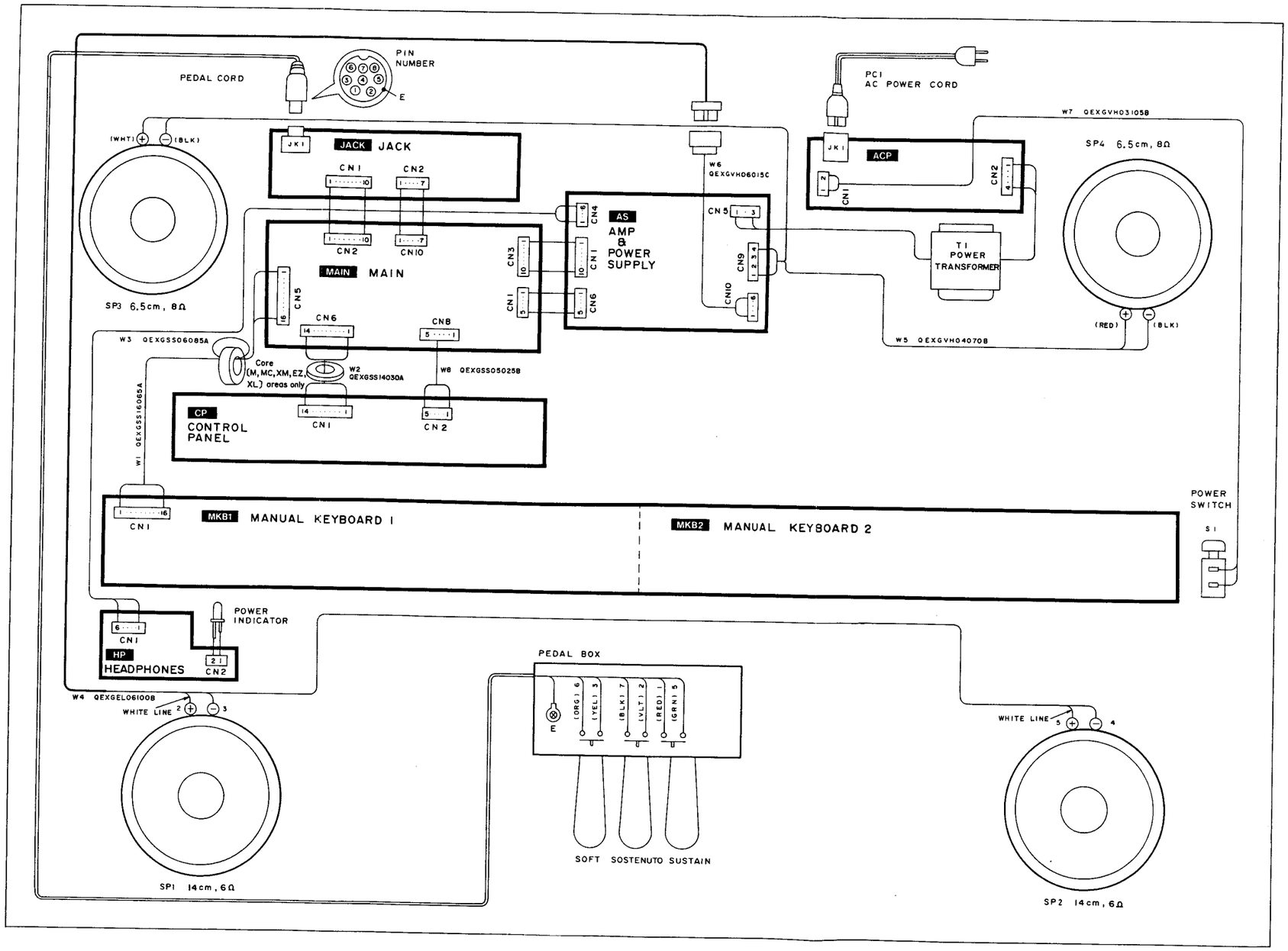
2. CAPACITORS
   - Capacitors without symbolic mark are POLYESTER CAPACITORS. (ECQM-type, ECQG-type, ±10% Tolerance)
   - Polarized capacitors without symbolic mark are Aluminum Electrolytic Capacitors. (ECEA—type, ±20% Tolernace)

(TABLE-2)

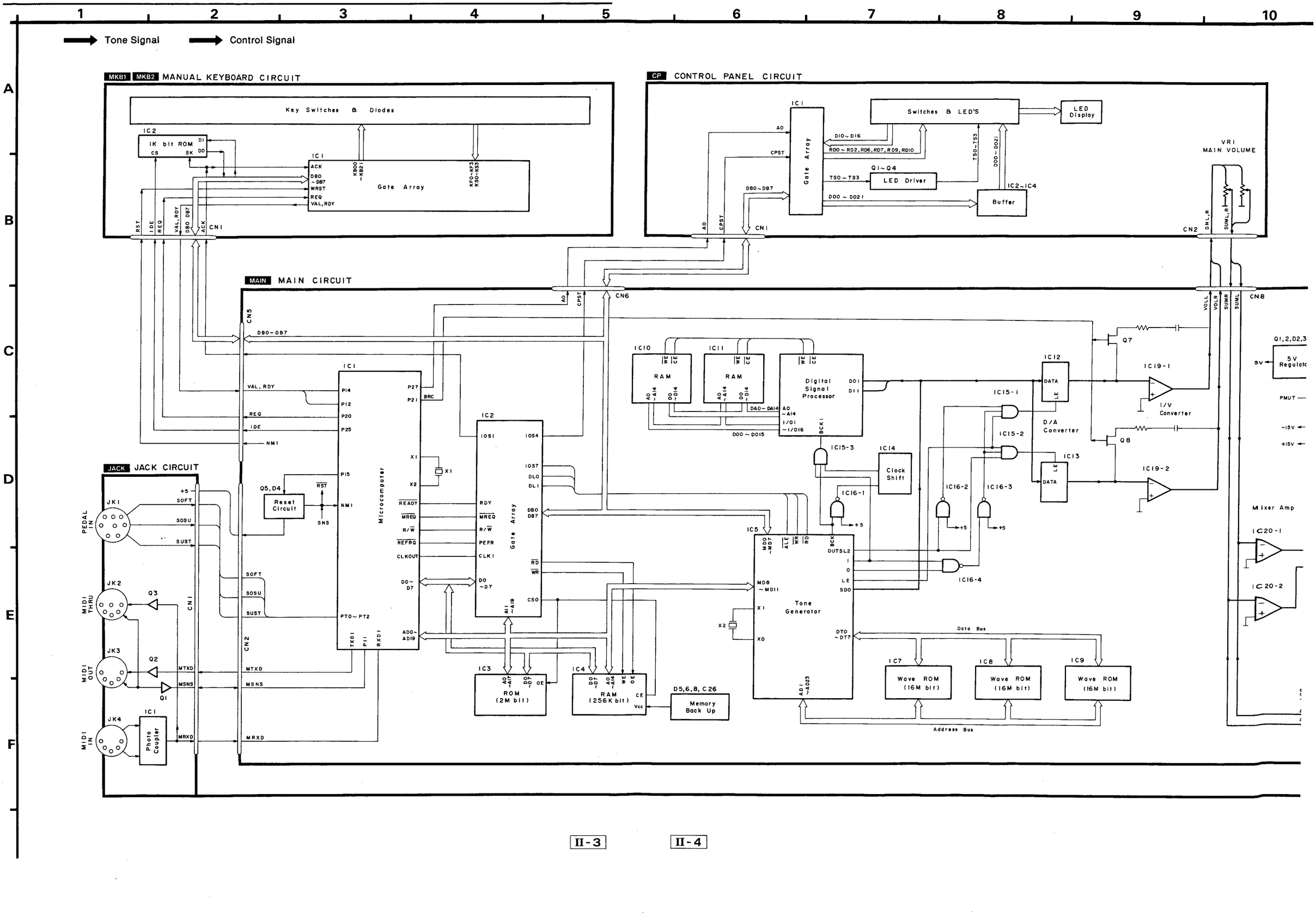
SYMBOL	SPECIFICATION	TYPE
Ⓝ	Non-Polarized Electrolytic Capacitors	ECEA__KN__type
Ⓨ	Non-Polarized Electrolytic (for Network System)	ECEA__Y__type
Ⓣ	Tantalum Solid Electrolytic Capacitors	ECS__type
(TF)	Metalized Plastic Film Capacitors (TF Series)	ECQV__type
	Polyester Film Capacitors	ECQB__type
○	Temperature Compensating Ceramic Capacitors	ECC__type
	High-Dielectric Constant Ceramic Capacitors	ECK__type ECR__type
	Metalized Polyester Film Capacitors for Across the Line	ECQ__EW__type
	Aluminum Electrolytic Capacitors for Smoothing Circuit	ECES__type
	Multilayer Ceramic Chip Capacitors	ECUV__type

MEMO

WIRING CONNECTION DIAGRAM



BLOCK DIAGRAM



5 6 7 8 9 10 11 12 13 14

CP CONTROL PANEL CIRCUIT

IC1 Gate Array
Switches & LED'S
LED Display
AO
DI0~DI6
RD0~RD2, RD6, RD7, RD9, RDI0
CPST
TS0~TS3
DI00~DI021
Q1~Q4
LED Driver
DB0~DB7
IC2~IC4
Buffer
DO0~DO21
CN1
CN2
VR1 MAIN VOLUME
DINL, R
SUML, R

ACP AC POWER SUPPLY CIRCUIT

PC1 AC IN
S1 Power Switch
Power Transformer

AS AMP & POWER SUPPLY CIRCUIT

CN6
CN8
VOLL
VOLR
SUMR
SUML
Q1,2,D2,3,9
5V Regulator
CN1
Rectifier
+Vcc
-Vcc
CN9,CN10
SP3
SP1
SP2
SP4
PMUT
Muting Circuit
-15V
+15V
±15V Regulator
Mixer Amp
CN3
IC5,6
Equalizing Circuit
IC10,Q18~21
Power Amplifier (Lch)
IC20-1
IC20-2
AMPL
AMPR
IC7,8
Equalizing Circuit
IC10,Q14~7
Power Amplifier (Rch)
IC9,Q1~4
CN4
JACK
LOL
LOR
AUXL
AUXR
CN10
CN2
R/R+L
L
R/R+L
L
AUX IN
LINE OUT
CN1
LEDA
LEDK
HPR
HPL
JK1
JK2
Headphones
CN2
D1
Power Indicator
HP HEADPHONES

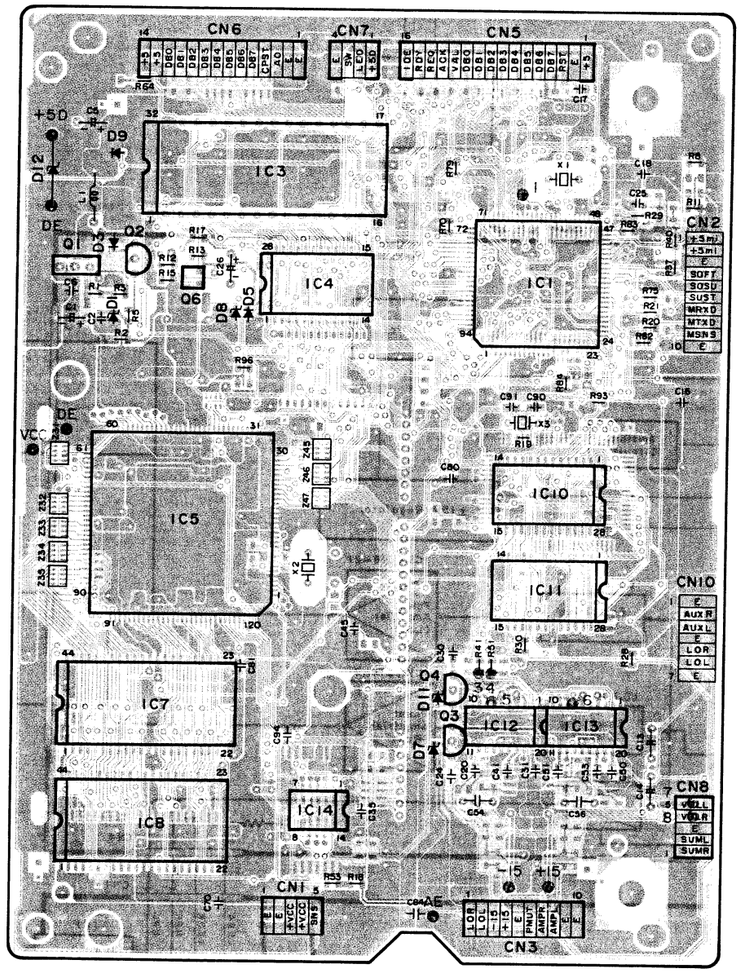
IC10 RAM
IC11 RAM
Digital Signal Processor
DA0~DA14
AO~A14
DO0~DO15
I/O1~I/O16
BCK1
DO1
DI1
IC12
DATA
LE
D/A Converter
IC19-1
I/V Converter
Q7
Q8
IC19-2
IC15-1
IC15-2
IC15-3
IC14 Clock Shift
IC13
IC16-1
IC16-2
IC16-3
IC16-4
+5
IC5
MD0~MD7
ALE
WR
RD
BCK
OUTSL2
I
O
LE
SDO
MD8~MD11
Tone Generator
X1
X2
XO
DTO~DT7
Data Bus
IC4 RAM (256K bit)
D5,6,8, C26 Memory Back Up
IC7 Wave ROM (16M bit)
IC8 Wave ROM (16M bit)
IC9 Wave ROM (16M bit)
AD1~AD23
Address Bus

II-3 II-4 II-5

MAIN MAIN CIRCUIT BOARD

MAIN COMPONENT SIDE

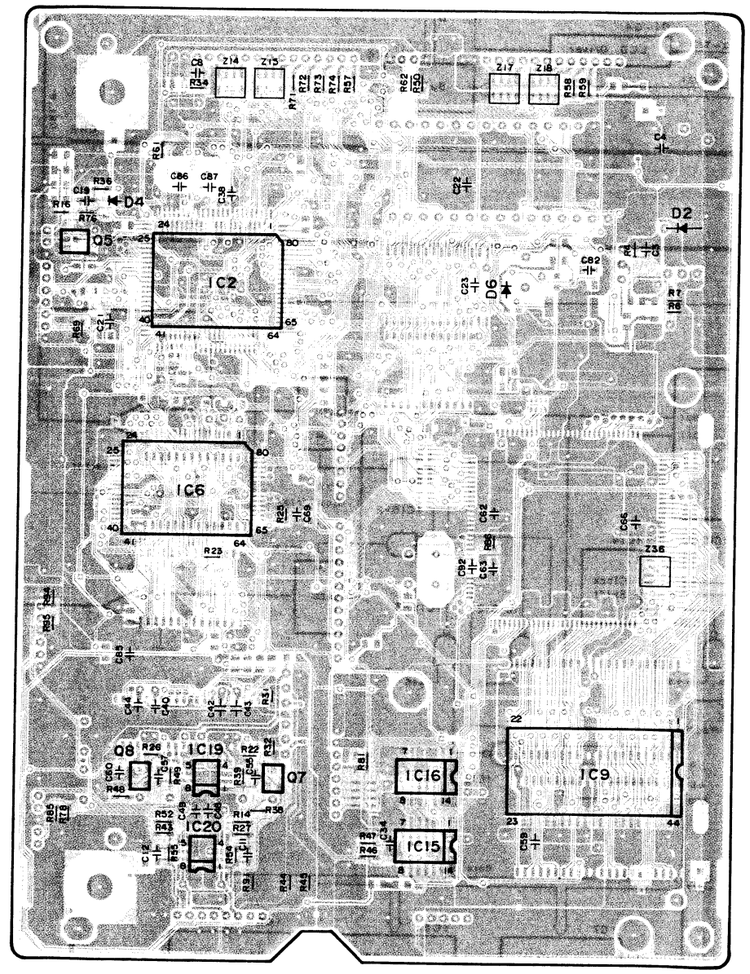
Component Side
Foil Side



MAIN FOIL SIDE

Component Side
Foil Side

SXPG214611



MAIN

NOTES:

- IC'S
  - IC1: SVIGD70320GJ
  - IC2: D65012GF-A79
  - IC3: QSIGBX103AX
  - IC4: ATT7C256BF85
  - IC5: TC25540AF006
  - IC6: D6382GF-3B9
  - IC7: QSIGH3C16D48
  - IC8: QSIGM3C16179
  - IC9: QSIGH3C16D49
  - IC10, 11: HM65256BLF10
  - IC12, 13: PCM1702U
  - IC14: D74HC164GS
  - IC15: D74HC11GS
  - IC16: D74HC00GS
  - IC19, 20: M5218AFP
- TRANSISTORS
  - Q1: 2SA1643
  - Q2, 3: 2SC1815GR
  - Q4: 2SA1015-GR
  - Q5: 2SB709ARTW
  - Q6: 2SD601AQTW
  - Q7, 8: 2SJ106TE85
- DIODES
  - D1: MA8047HTW
  - D2: MA701ATW
  - D3~6, 9: MA110TW
  - D7, 11: MA8062MTW
  - D8: MA8056MTW
  - D12: MA2062LF

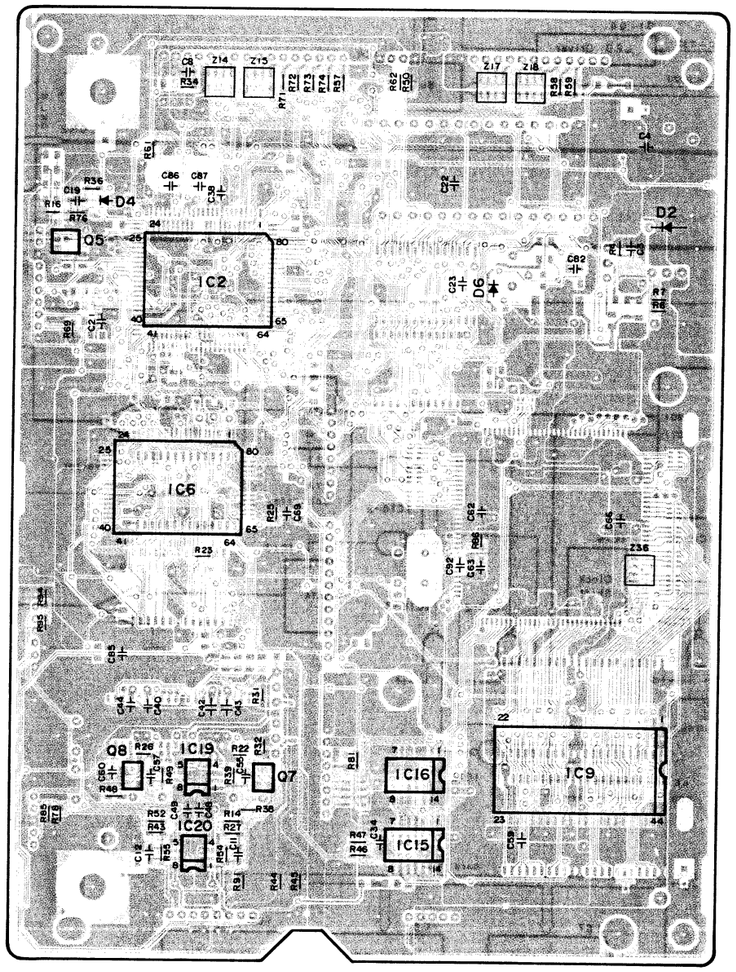
■ Measur

Check F
Set to
• W
pc
• S
• M
• K

② A1

Check F
Set th
• S
• M

MAIN **FOIL SIDE** Component Side / Foil Side **SXPG214611**



MAIN

NOTES:

- IC'S
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  - IC3: QSIGBX103AX
  - IC4: ATT7C256BF85
  - IC5: TC25540AF006
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  - IC7: QSIGH3C16D48
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  - IC12, 13: PCM1702U
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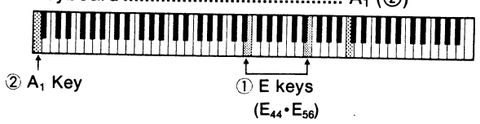
  - D2: MA701ATW
  - D3~6, 9: MA110TW
  - D7, 11: MA8062MTW
  - D8: MA8056MTW
  - D12: MA2062LF

■ Measuring Condition

Check Point ❸~❿

Set to the self-diagnostic mode followings.

- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND..... GRAND PIANO
- Main Volume..... Center
- Keyboard ..... A_1 (②)

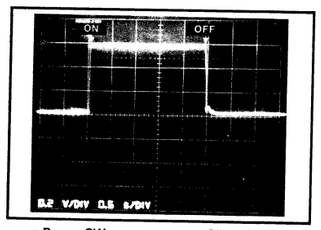


Check Point ❶

Set the initial setting mode (Refer to page I −6)

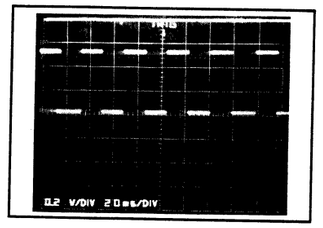
- SOUND..... GRAND PIANO
- Main Volume..... Center

❶ $\overline{\text{RESET}}$

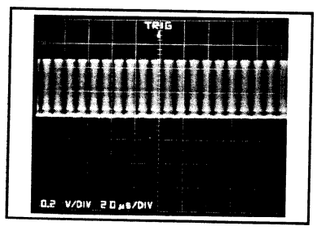


- Power SW ..... ON → OFF

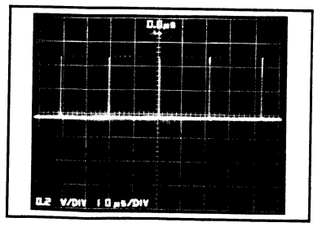
❸



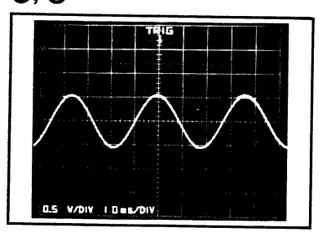
❹



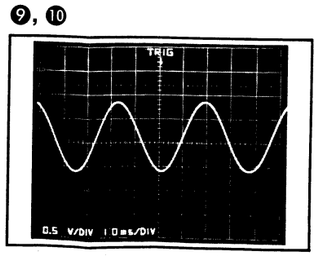
❺, ❻



❼, ❽

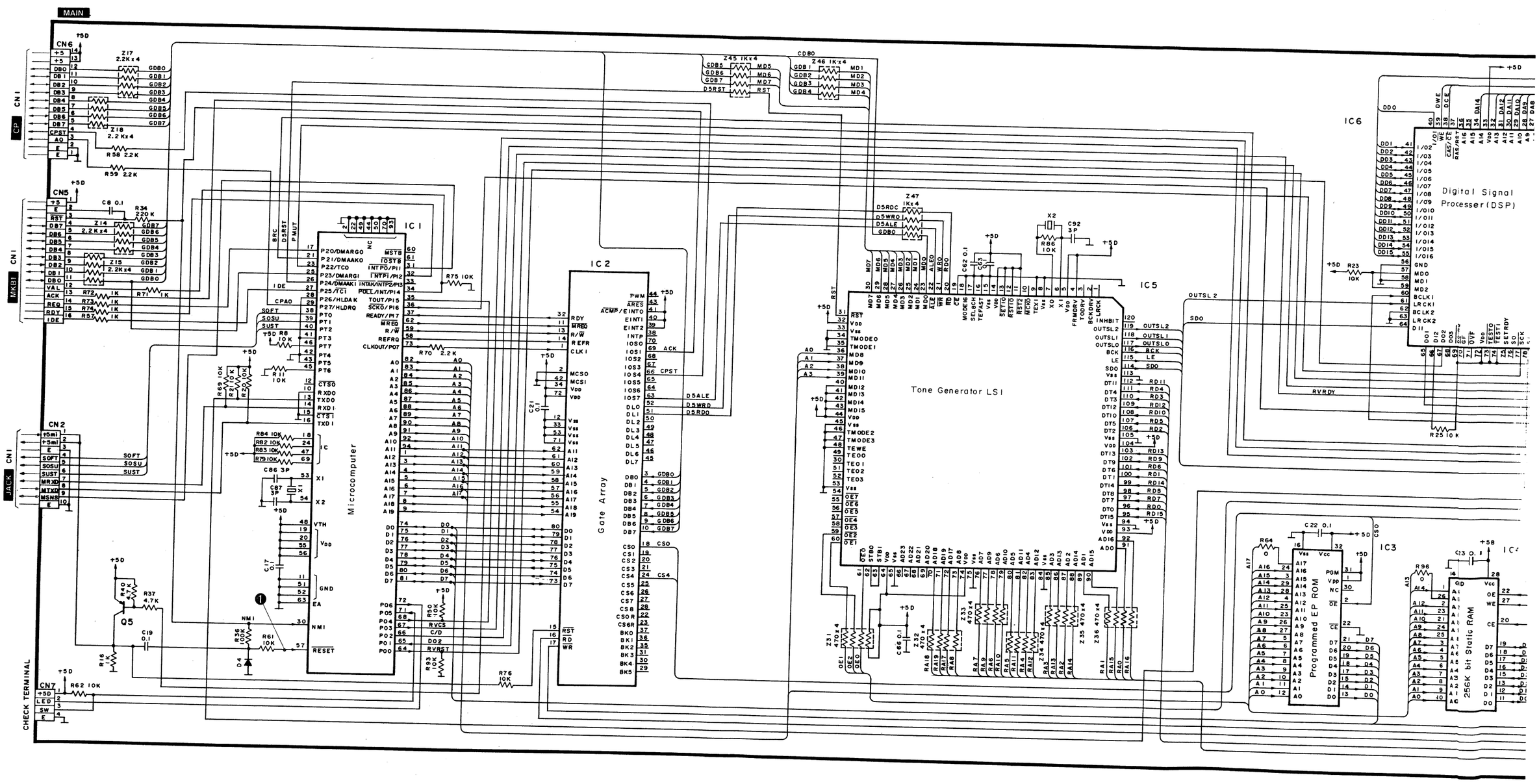


❾, ❿



MAIN

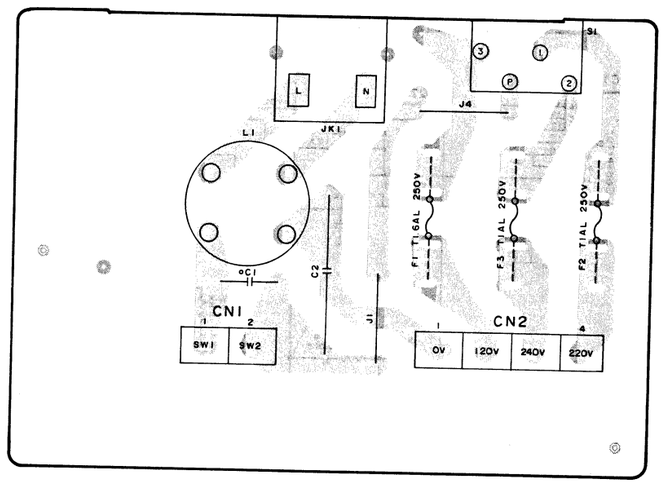
MAIN CIRCUIT DIAGRAM



IC6
Digital Signal Processer (DSP)
IC10
256K bit Static RAM
IC11
256K bit Static RAM
IC14
Shift Register
IC12
D-A Converter
IC13
D-A Converter
IC15-1
IC15-2
IC15-3
IC16-1
IC16-2
IC16-3
IC16-4
IC19-1
IC19-2
IC20-1
IC20-2
CN8
CN2
CN10
CN3
CN1
CN6
JACK
Q1
Q2
Q3
Q4
Q6
Q7
Q8
DC Power Supply
IC3
Programmed EP ROM
IC4
256K bit Static RAM
IC7
Wave ROM (16M bit)
IC8
Wave ROM (16M bit)
IC9
Wave ROM (16M bit)

ACP AS HP AC POWER SUPPLY, AMP & POWER SUPPLY AND HEADPHONES CIRCUIT BOARD

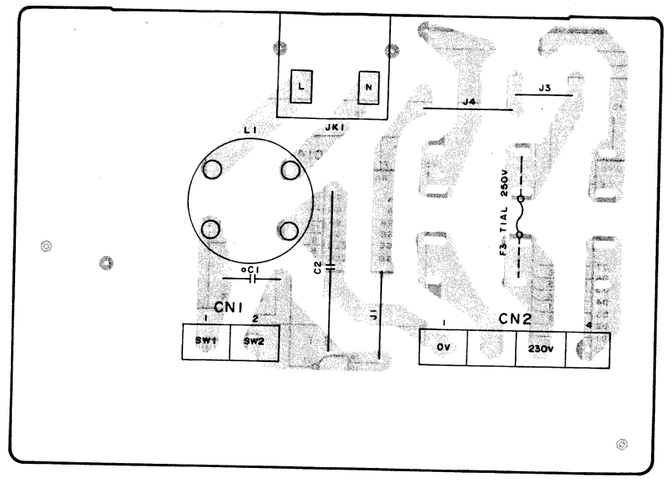
ACP [M] [MC] [XM] areas — SXPG215531



ACP

NOTE:
- FUSE
  F1: XBA1C40NU100

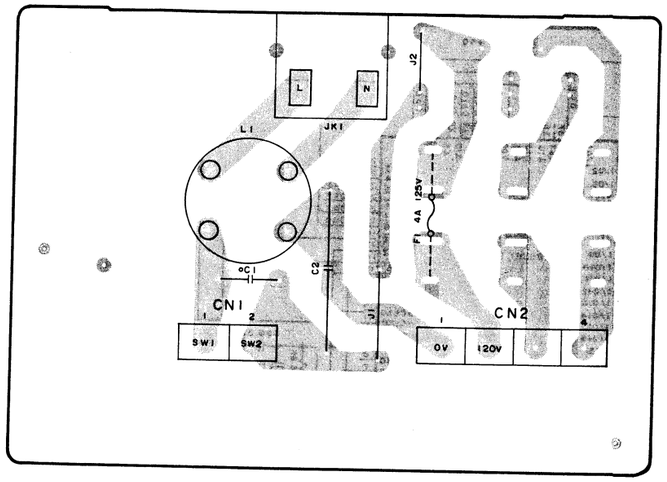
ACP [EK] [X] [XR] [XS] [XD] [XT] areas — SXPG215541



ACP

NOTE:
- FUSE
  F1: XBA2C16TBO
  F2, 3: XBA2C10TBO

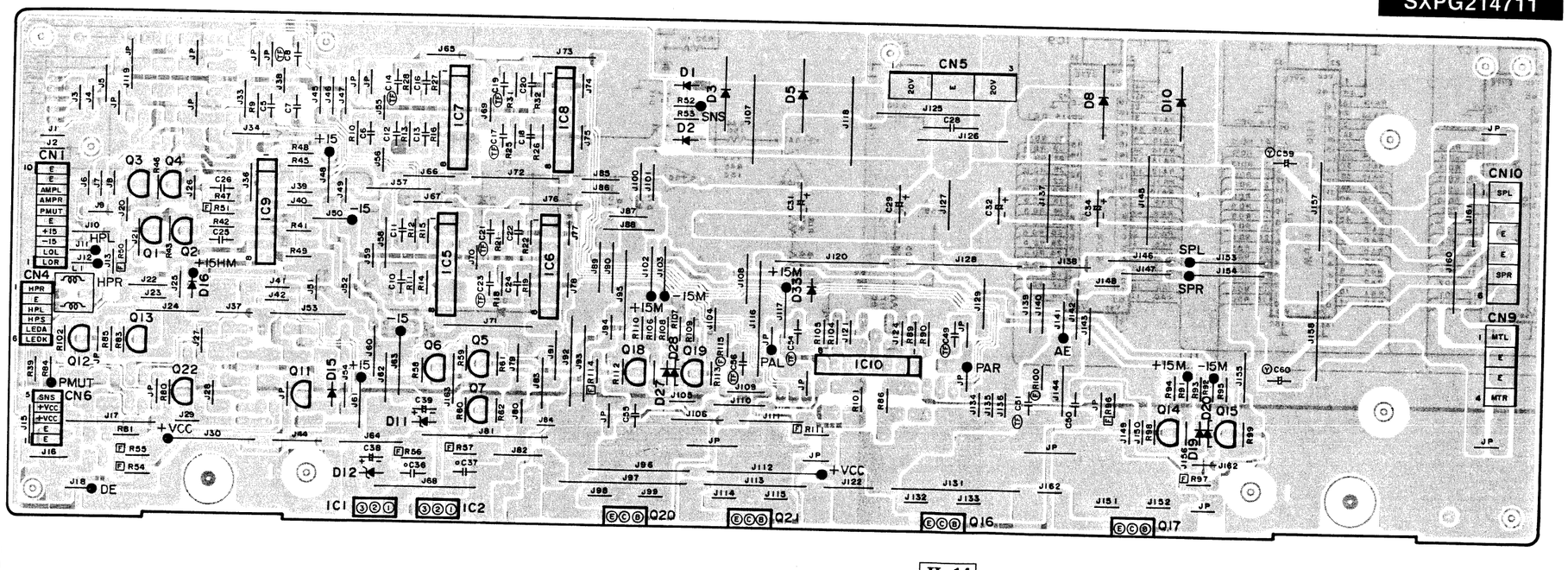
ACP Other areas — SXPG215511



ACP

NOTE:
- FUSE
  F3: XBA2C10TBO

AS — SXPG214711

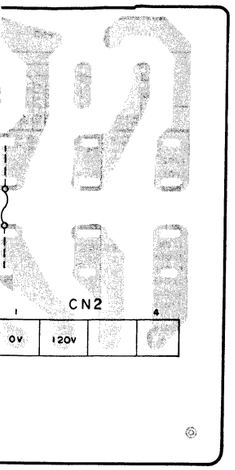


AS

NOTES:
- IC'S
  IC1: SVIGM5F7815
  IC2: SVIGM5F7915
  IC5～10: SVIGM5218L
- TRANSISTORS
  Q1, 3: 2SC3940ARS
  Q2, 4: 2SA1534AR
  Q5, 6, 13, 15, 19, 22: 2SA1015-GR
  Q7, 11, 12, 14, 18: 2SC1815GR
  Q16, 20: 2SB946P
  Q17, 21: 2SD1271P
- DIODES
  D1, 2: SVDGERA1502
  D3, 5, 8, 10: SVDS3V20
  D11, 12: MA4180TA
  D15, 19, 20, 27, 28: MA165TA5
  D16, 33: EKO4

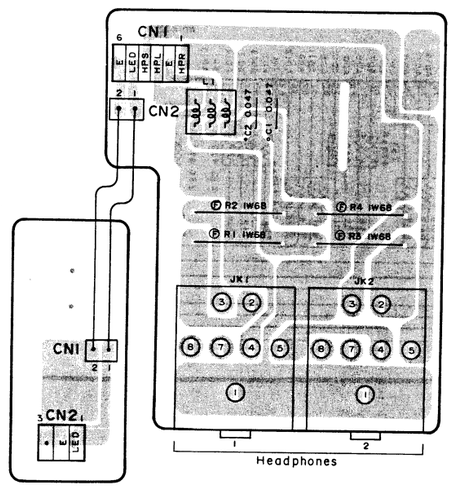
10 11 12 13 14 15 16 17 18 19

SXPG215511



HP

SXPG210811



M5F7815
M5F7915
M5218L

40ARS
34AR
15-GR

15GR

6P
71P

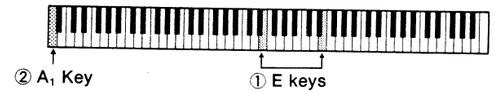
ERA1502
8V20
30TA
6TA5

■ Measuring Condition

Check Point ❸~❺

Set to the self-diagnostic mode followings.

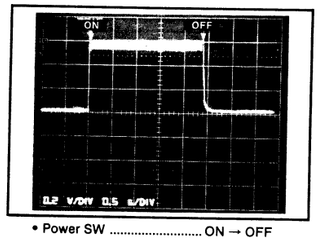
- While pressing two E keys (①) simultaneously, turn on the power switch.
- SOUND..... GRAND PIANO
- Main Volume..... Center
- Keyboard ..... A_1 (②)



Check Point ❶, ❷

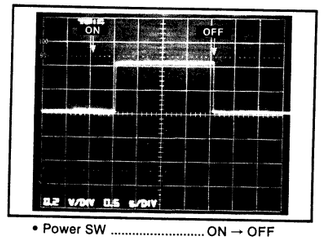
Set the initial setting mode (Refer to page I −6)

❶ SNS



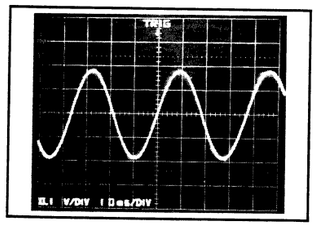
• Power SW ..... ON → OFF

❷ PMUT

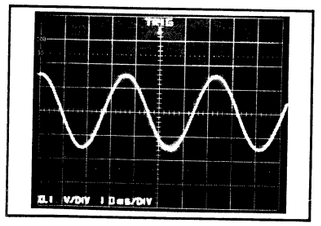


• Power SW ..... ON → OFF

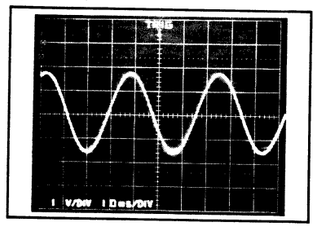
❸ HPL, HPR



❹ PAL, PAR

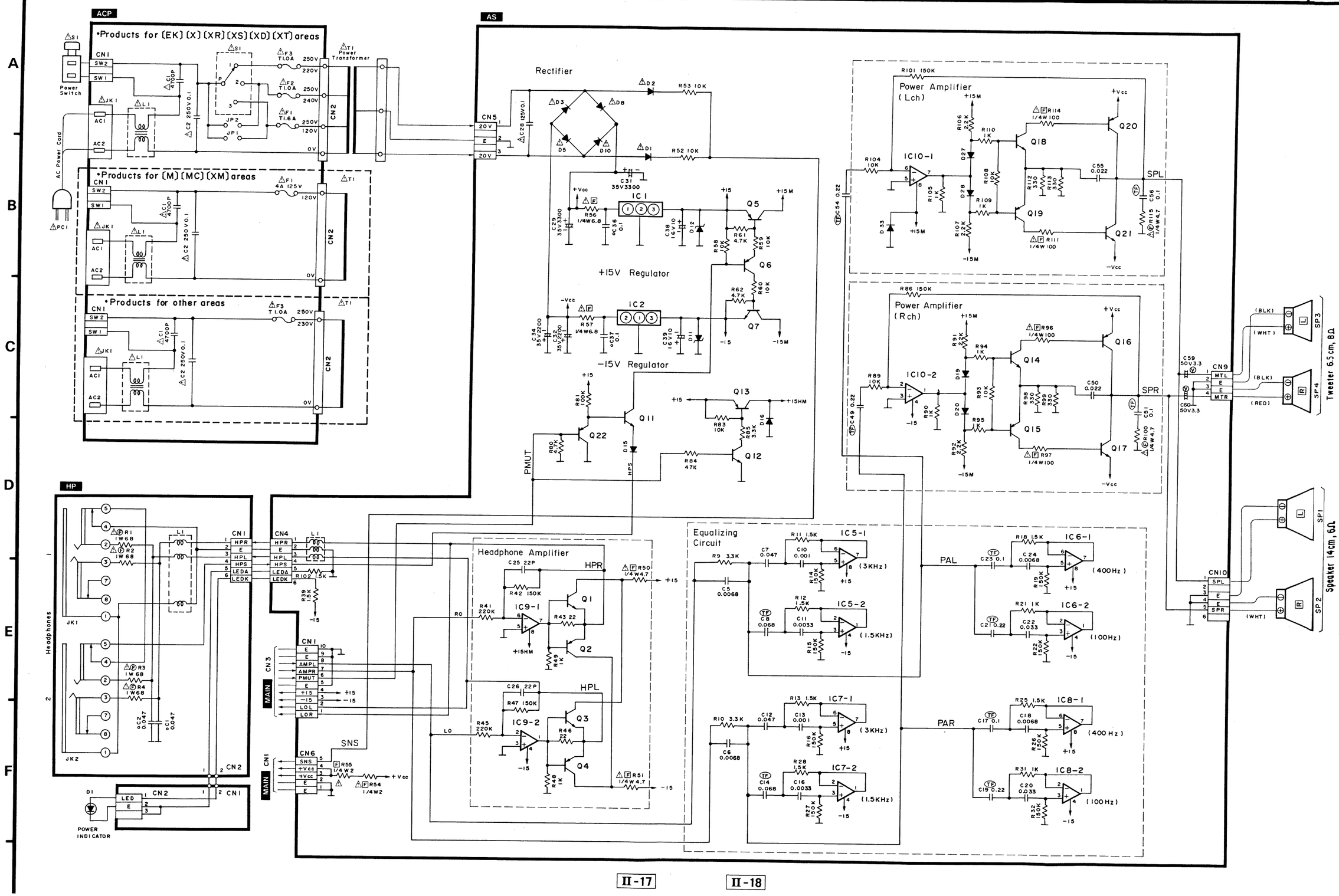


❺ SPL, SPR

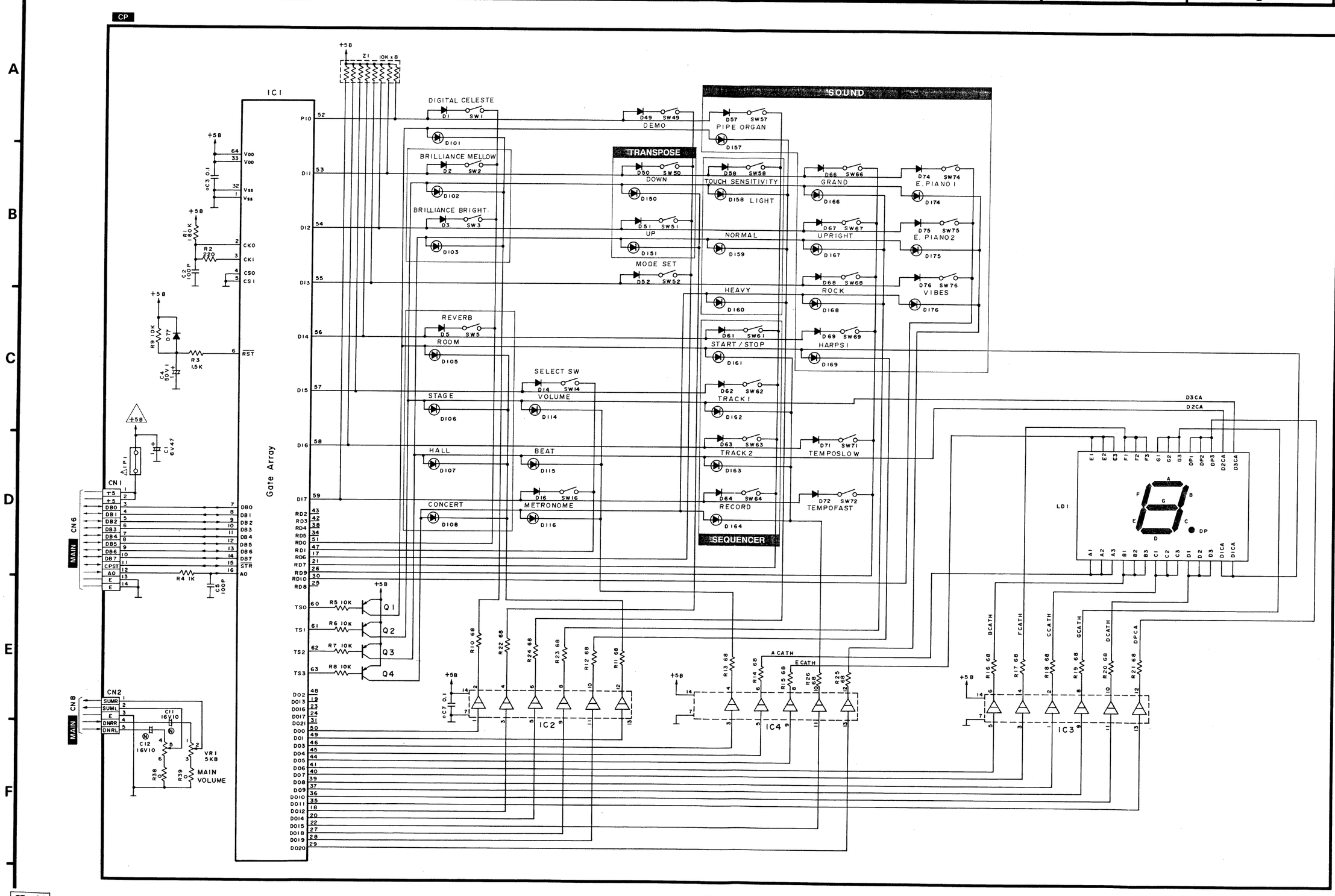


ACP | AS | PC | HP

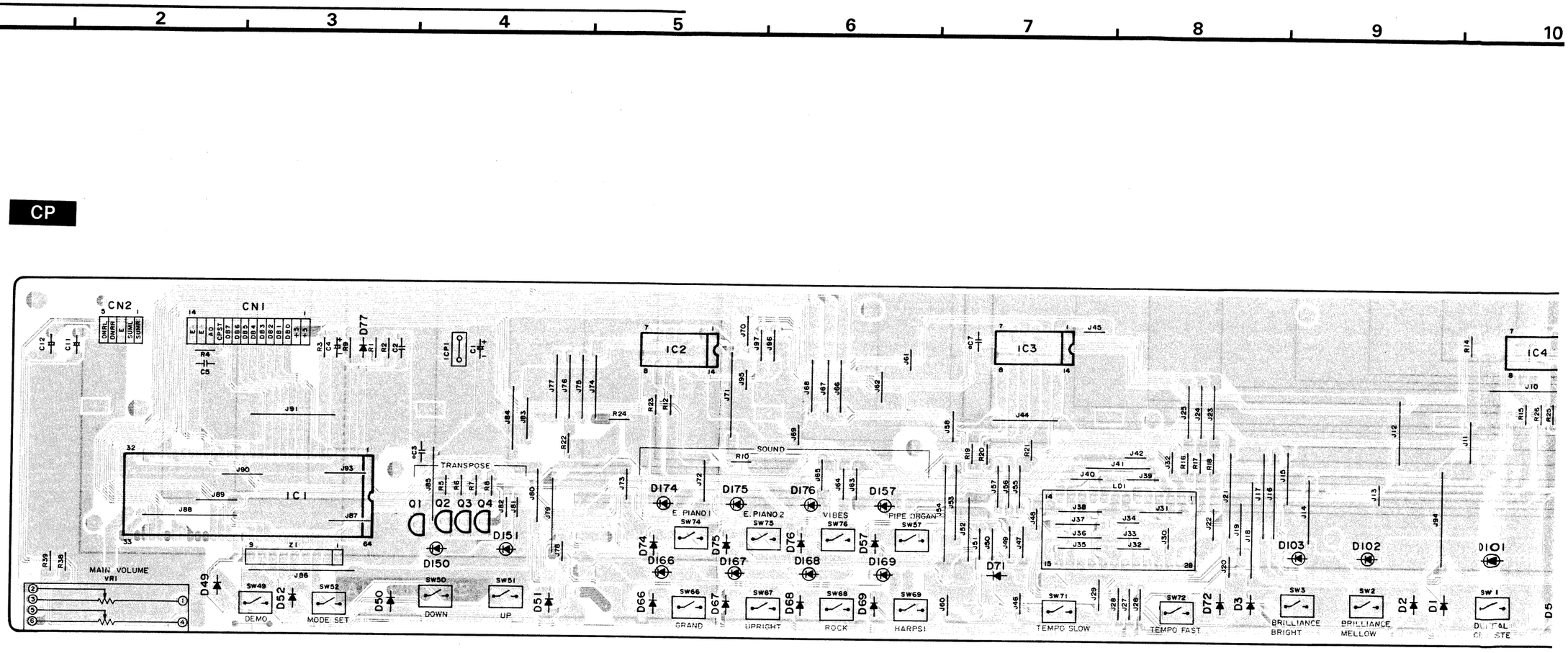
AC POWER SUPPLY, AMP & POWER SUPPLY AND HEADPHONES CIRCUIT DIAGRAM



CP CONTROL PANEL CIRCUIT DIAGRAM



CONTROL PANEL CIRCUIT BOARD

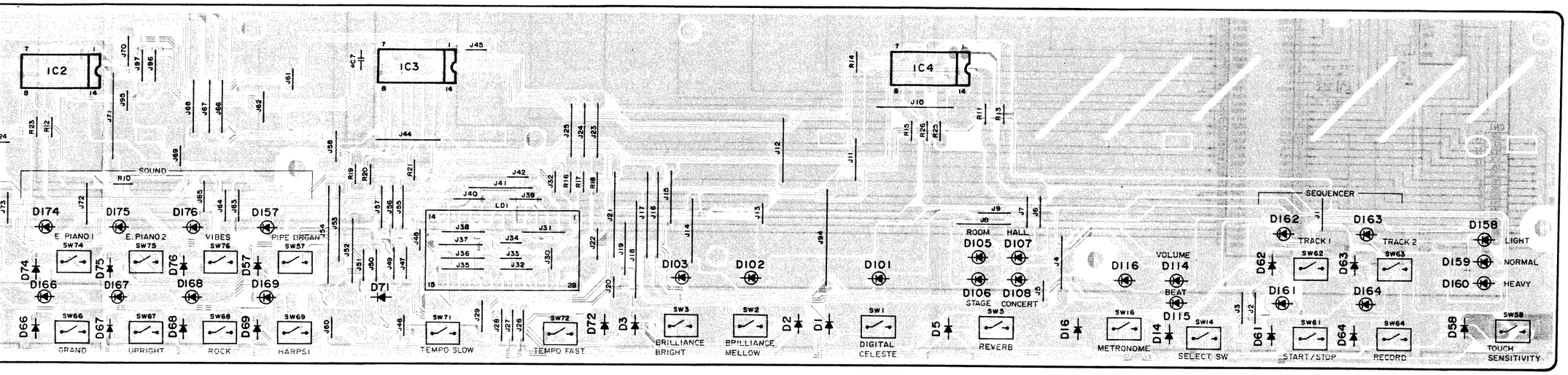


CP

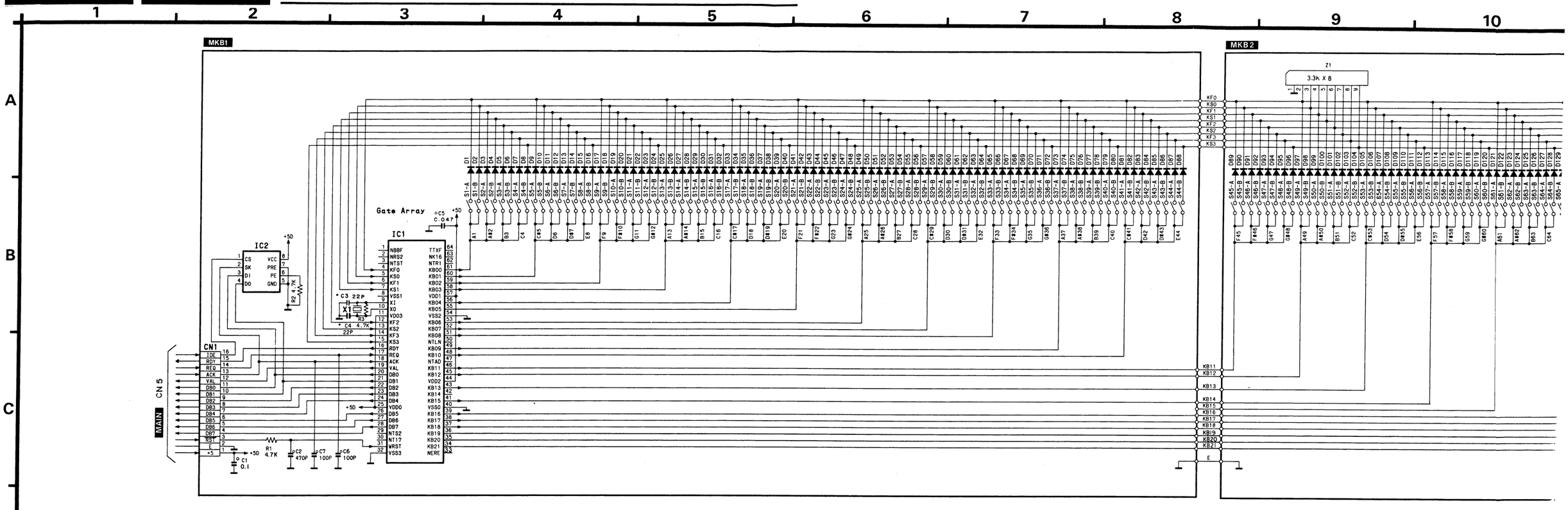
NOTES

- IC'S
  - IC1: SVIGM603A121
  - IC2: HD74LS07P
- TRANSISTORS
  - Q1~4: 2SB830SB
- DIODES
  - D1~3, 5, 14, 16, 49~52, 57, 58, 61~64, 66~69, 71, 72, 74~76, 77: MA165TA5
  - D101~103, 105~108, 114~116, 150, 151, 157~164, 166~169, 174~176: LN282R

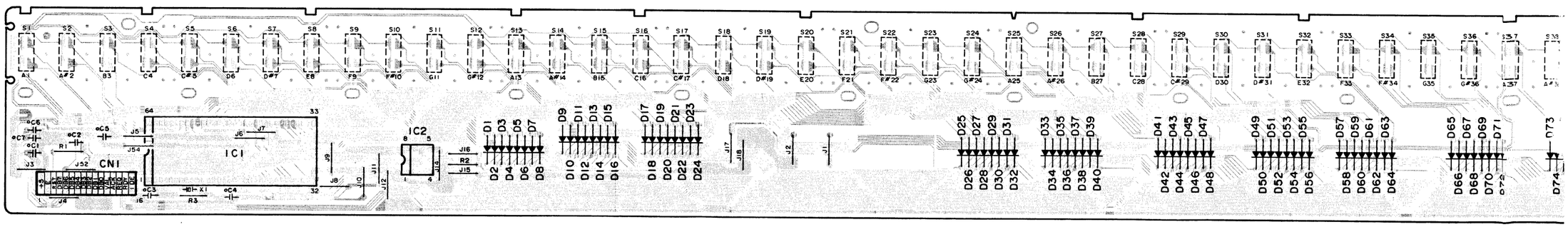
SXPG214811


IC2
IC3
IC4
SOUND
E. PIANO 1
E. PIANO 2
VIBES
PIPE ORGAN
GRAND
UPRIGHT
ROCK
HARPSI
TEMPO SLOW
TEMPO FAST
BRILLIANCE BRIGHT
BRILLIANCE MELLOW
DIGITAL CELESTE
REVERB
ROOM
HALL
STAGE
CONCERT
VOLUME
BEAT
METRONOME
SELECT SW
SEQUENCER
TRACK 1
TRACK 2
START/STOP
RECORD
LIGHT
NORMAL
HEAVY
TOUCH SENSITIVITY

MKB1 MKB2 MANUAL KEYBOARD 1 AND 2 CIRCUIT

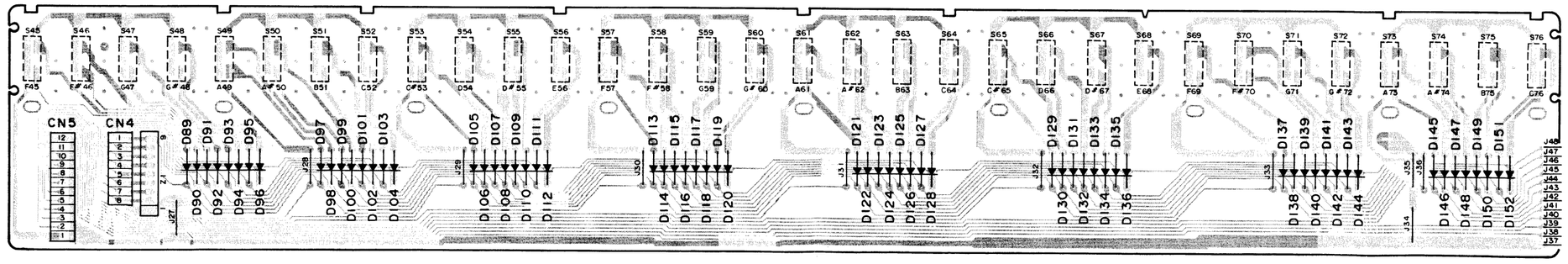


MKB1

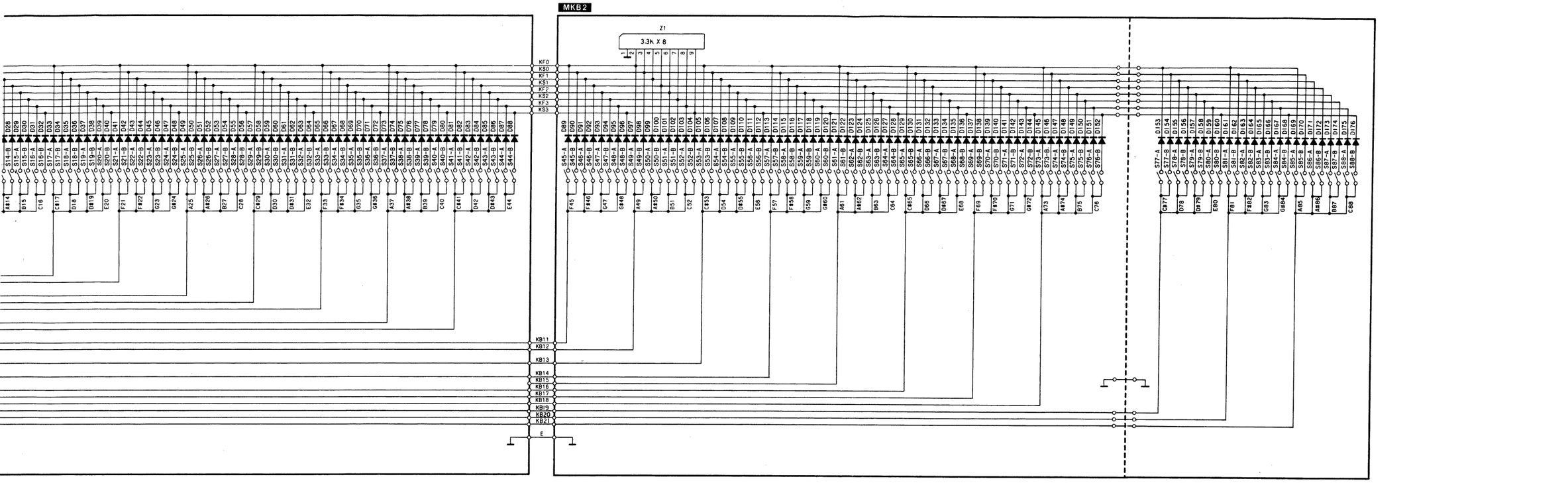


MKB2

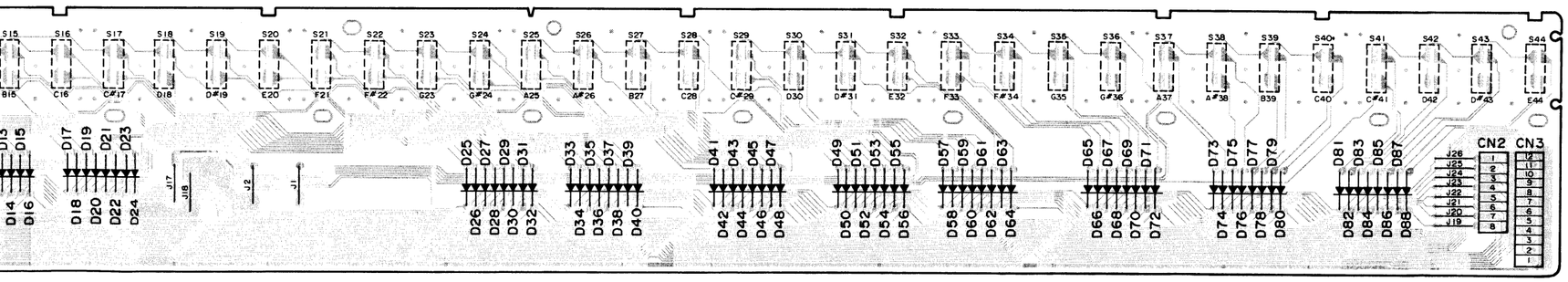
SXPG209741B



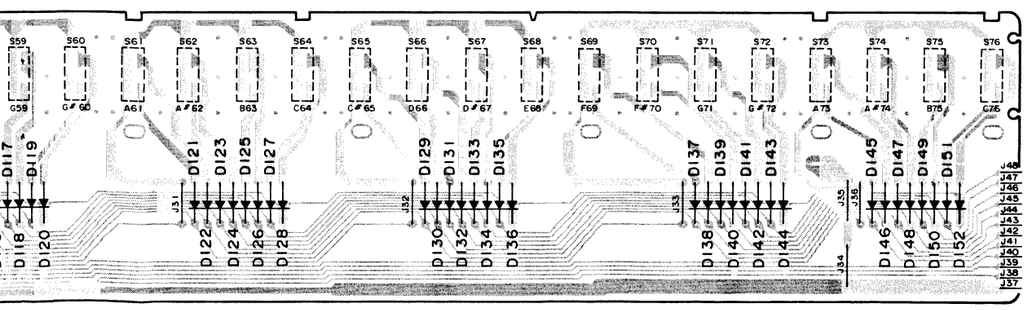
CIRCUIT



SXPG209741A



SXPG209741B



MKB1

NOTES:

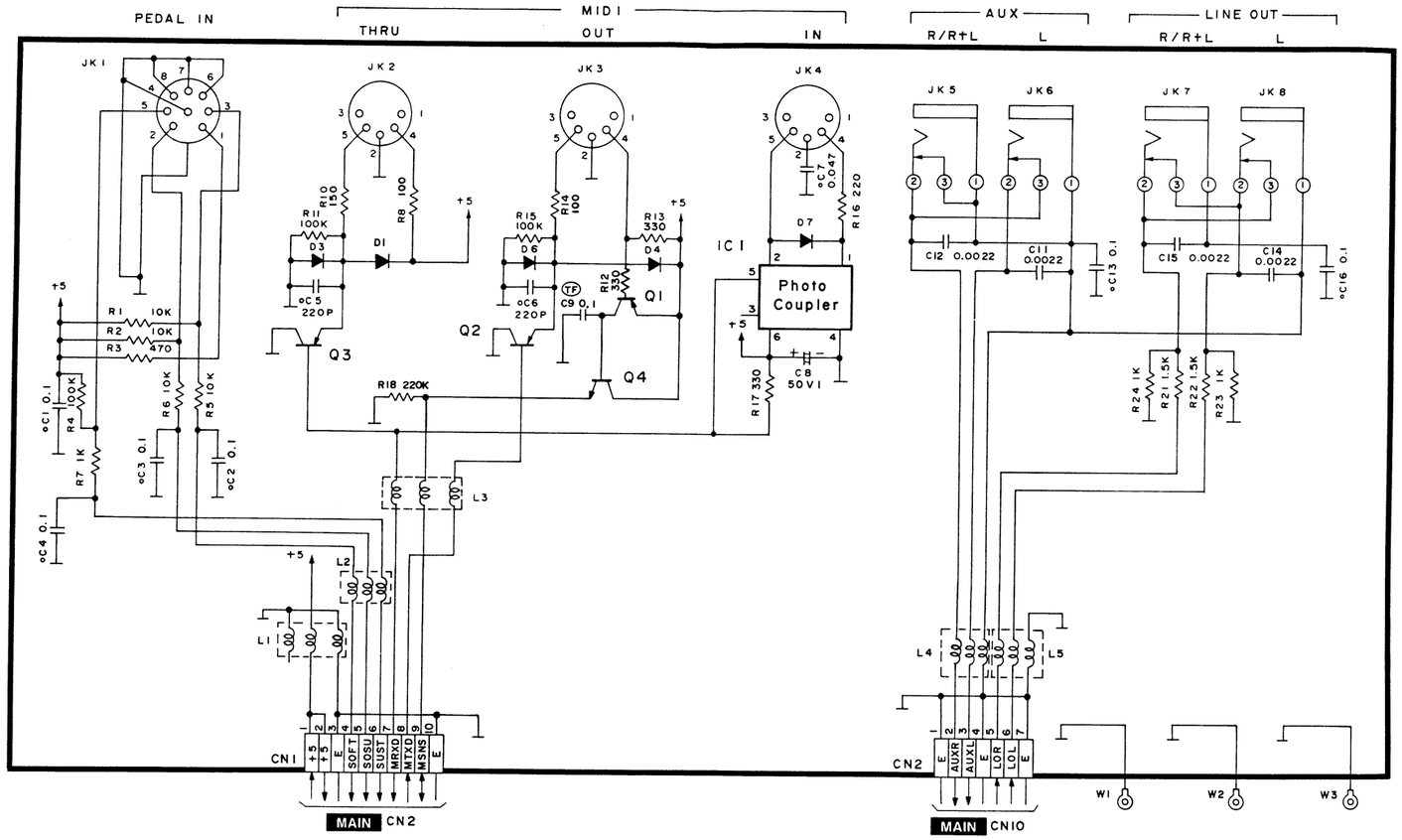
- IC'S
  - IC1: MSM7U042016
  - IC2: BR93LC46
- DIODES
  - D1~88: MA162A

MKB2

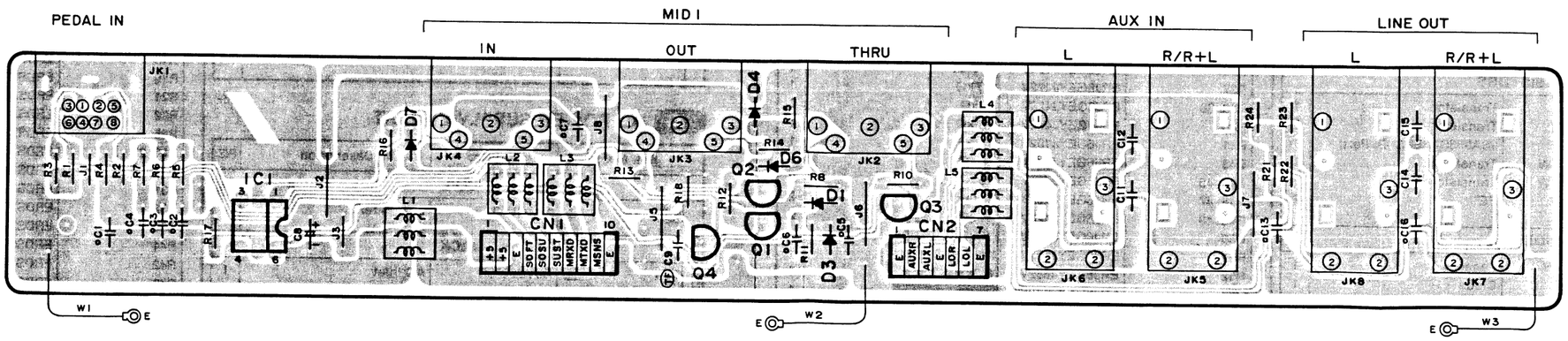
NOTES:

- DIODES
  - D1~88: MA162A

JACK CIRCUIT



SXPG214911



JACK

NOTES:

- IC
  - IC1: SVIGTLP513
- TRANSISTORS
  - Q1~3: 2SA1015-GR
  - Q4: 2SC1815GR
- DIODES
  - D1~7: MA165TA5

REPLACEMENT PARTS LIST.....P.C.B. and Wiring Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The "S" mark is service standard parts and may differ from production parts.
4. ○ mark are new parts.
5. For part No. with area mark, check the area when placing an order.

■ PRINTED CIRCUIT BOARD

	RTL	Area	Part No.	Description	P/S
○	RTL		SXPG214611	MAIN	1
○	RTL	Others	SXPG215511	ACP	1
○	RTL	M MC XM	SXPG215531	ACP	1
○	RTL	EK X XR XS XD XT	SXPG215541	ACP	1
○	RTL		SXPG214711	AS	1
	RTL		SXPG210811	HP	1
○	RTL		SXPG214811	CP	1
○	RTL		SXPG209741A	MKB1	1
○	RTL		SXPG209741B	MKB2	1
○	RTL		SXPG214911	JACK	1

MAIN MAIN CIRCUIT

	Ref. No.	Part No.	Description	P/S
		INTEGRATED CIRCUITS		
	IC1	SVIGD70320GJ	16 bit Microcomputer	1
	IC2	D65012GF-A79	Gate Array	1
○	IC3	QSIGBX103AX	2M bit Programmed EP ROM	1
	IC4	ATT7C256BF85	256K bit Static RAM	1
	IC5	TC25540AF006	Tone Generator LSI	1
	IC6	D6382GF-3B9	Digital Signal Processor	1
○	IC7	QSIGH3C16D48	16M bit Wave ROM	1
○	IC8	QSIGM3C16179	16M bit Wave ROM	1
○	IC9	QSIGH3C16D49	16M bit Wave ROM	1
	IC10, 11	HM65256BLF10	256K bit Pseudo Static RAM	2
○	IC12, 13	PCM1702U	D-A Converter	2
○	IC14	D74HC164GS	Shift Registor	1
○	IC15	D74HC11GS	3input AND GATES	1
○	IC16	D74HC00GS	Quad 2 input NAND GATES	1
	IC19, 20	M5218AFP	Operational Amplifier	2
		TRANSISTORS		
	Q1	2SA1643	Transistor	1
S	Q2, 3	2SC1815GR	Transistor	2
S	Q4	2SA1015-GR	2SA933STRS (SUB. Part)	1
	Q5	2SB709ARTW	Transistor	1
○	Q6	2SD601AQTW	Transistor	1
○	Q7, 8	2SJ106TE85	FET	2
		DIODES		
○	D1	MA8047HTW	Zener, 4.7V	1
○	D2	MA701ATW	Diode	1
	D3~6, 9	MA110TW	Diode	5
○	D7, 11	MA8062MTW	Zener, 6.2V	2
	D8	MA8056MTW	Zener, 5.6V	1
	D12	MA2062LF	Zener, 6.2V	1

Ref. No.	Part No.	Description	P/S
	OSCILLATORS		
X1	QSXG1A1400A	14MHz, Quartz Oscillator	1
○ X2	QSXG1I4915A	49MHz, Quartz Oscillater	1
X3	QSXG2F2500A	25MHz, Ceramic Oscillator	1
	COMPONENT COMBINATIONS		
○ Z14, 15, 17, 18	EXBS8V222J	2.2kΩ×4	4
○ Z31~36	EXBS8V471J	470Ω×4	6
Z45~47	EXBS8V102J	1kΩ×4	3
	COIL		
L1	QLCGTJR10KA	Coil	1
	RESISTORS		
R1	ERJ6GEYJ101V	100Ω	1
R2	ERJ6GEYJ103V	10kΩ	1
○ R3	ERJ6GEY0R00V	0Ω	1
R4	ERJ6GEYJ104V	100kΩ	1
○ R5	ERJ6GEYJ471V	470Ω	1
○ R6, 7	ERJ6GEYJ331V	330Ω	2
R8	ERJ6GEYJ103V	10kΩ	1
R11~13	ERJ6GEYJ103V	10kΩ	3
○ R14	ERJ6GEYJ333V	33kΩ	1
R15	ERJ6GEYJ472V	4.7kΩ	1
R16	ERJ6GEYJ102V	1kΩ	1
R17	ERJ6GEYJ101V	100Ω	1
○ R18	ERJ6GEYJ471V	470Ω	1
R19	ERJ6GEYJ682V	6.8kΩ	1
R20, 21	ERJ6GEYJ103V	10kΩ	2
○ R22	ERJ6GEYJ105V	1MΩ	1
R23, 25	ERJ6GEYJ103V	10kΩ	2
○ R26	ERJ6GEYJ105V	1MΩ	1
R27	ERJ6GEYJ682V	6.8kΩ	1
R28, 29	ERJ6GEYJ104V	100kΩ	2
R30~32	ERJ6GEYJ102V	1kΩ	3
○ R34	ERJ6GEYJ224V	220kΩ	1
R36	ERJ6GEYJ104V	100kΩ	1
R37	ERJ6GEYJ472V	4.7kΩ	1
○ R38, 39	ERJ6GEYJ123V	12kΩ	2
R40	ERJ6GEYJ472V	4.7kΩ	1
R41	ERJ6GEYJ102V	1kΩ	1
○ R43	ERJ6GEYJ333V	33kΩ	1
○ R44, 45	ERJ6GEYJ151V	150Ω	2
R46, 47	ERJ6GEYJ102V	1kΩ	2
○ R48, 49	ERJ6GEYJ123V	12kΩ	2
R50	ERJ6GEYJ103V	10kΩ	1
R51	ERJ6GEYJ102V	1kΩ	1
R52	ERJ6GEYJ682V	6.8kΩ	1
○ R53	ERJ6GEYJ471V	470Ω	1
R54, 55	ERJ6GEYJ473V	47kΩ	2
R57	ERJ6GEYJ102V	1kΩ	1
R58, 59	ERJ6GEYJ222V	2.2kΩ	2
R61, 62	ERJ6GEYJ103V	10kΩ	2

Ref. No.	Part No.	Description	P/S
○ R64	ERJ6GEY0R00V	0Ω	1
R69	ERJ6GEYJ103V	10kΩ	2
R70	ERJ6GEYJ222V	2.2kΩ	1
R71~74	ERJ6GEYJ102V	1kΩ	4
R75, 76	ERJ6GEYJ103V	10kΩ	2
R78	ERJ6GEYJ332V	3.3kΩ	1
R79	ERJ6GEYJ103V	10kΩ	1
R81	ERJ6GEYJ102V	1kΩ	1
R82~84	ERJ6GEYJ103V	10kΩ	3
R85	ERJ6GEYJ332V	3.3kΩ	1
R86	ERJ6GEYJ103V	10kΩ	1
R91	ERJ6GEYJ221V	220Ω	1
R93	ERJ6GEYJ103V	10kΩ	1
○ R94, 95	ERJ6GEYJ224V	220kΩ	2
○ R96	ERJ6GEY0R00V	0Ω	1
	CAPACITORS		
C1	ECEA1VU470	47μF, 35V	1
C2	ECUV1H104ZFX	0.1μF	1
C3	ECUV1H101JG	100pF	1
C4	ECUV1H104ZFX	0.1μF	1
C5	ECEA0JU102	1000μF, 6.3V	1
C6, 8	ECUV1H104ZFX	0.1μF	2
C11, 12	ECUV1H101JG	100pF	2
C13, 14	ECEA1HKN010	1μF, 50V	2
C16~19	ECUV1H104ZFX	0.1μF	4
C20~25	ECUV1H104ZFX	0.1μF	6
C26	EECS5R5V105	1F, 5.5V, Memory Back-up	1
C30, 31	ECUV1H104ZFX	0.1μF	2
C34, 35	ECUV1H104ZFX	0.1μF	2
C38	ECUV1H104ZFX	0.1μF	1
C40~45	ECUV1H104ZFX	0.1μF	6
C48~51	ECUV1H104ZFX	0.1μF	4
C53	ECUV1H104ZFX	0.1μF	1
C54	ECQB1H153JF	0.015μF	1
C55	ECUV1H471JG	470pF	1
C56	ECQB1H153JF	0.015μF	1
C57	ECUV1H471JG	470pF	1
C59, 60	ECUV1H104ZFX	0.1μF	2
C62, 63	ECUV1H104ZFX	0.1μF	2
C66	ECUV1H104ZFX	0.1μF	1
C69, 70	ECUV1H104ZFX	0.1μF	3
C80, 81	ECUV1H104ZFX	0.1μF	2
○ C82	ECUV1H220JN	22pF	1
○ C84, 85	ECUV1H102JX	0.001μF	2
C86, 87	ECUV1H030CCN	3pF	2
○ C90	ECUV1H330JCN	33pF	1
○ C91	ECUV1H150JCN	15pF	1
C92	ECUV1H030CCN	3pF	1
C94	ECUV1H104ZFX	0.1μF	1

ACP AC POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	P/S
		COIL		
	L1 ⚠	SLTGLF3	Line Filter	1
		JACK		
	JK1 ⚠	SJVD0203B	AC Inlet	1
		SWITCH		
	S1 ⚠	SSRG100A	Voltage Selector, EK X XR XS XD XT	1

Ref. No.	Part No.	Description	P/S
	FUSES		
F1 ⚠	XBA1C40NU100	4A, 125V, M MC XM	1
F1 ⚠	XBA2C16TB0	T1.6A, 250V, EK X XR XS XD XT	1
F2 ⚠	XBA2C10TB0	T1.0A, 250V, EK X XR XS XD XT	1
F3 ⚠	XBA2C10TB0	T1.0A, 250V, except M MC XM areas	1
	CAPACITORS		
C1 ⚠	ECKCVA1472MF	4700pF, Line Capacitor	1
C2 ⚠	ECQU2A104MN	0.1μF, 250V, Across-the Line Capacitor	1

AS AMP & POWER SUPPLY CIRCUIT

	Ref. No.	Part No.	Description	P/S
		INTEGRATED CIRCUITS		
	IC1	SVIGM5F7815	+15V Voltage Regulator	1
	IC2	SVIGM5F7915	−15V Voltage Regulator	1
S	IC5~10	SVIGM5218L	Operational Amplifier	6
		TRANSISTORS		
	Q1, 3	2SC3940ARS	Transistor	2
	Q2, 4	2SA1534AR	Transistor	2
S	Q5, 6, 13, 15, 19, 22	2SA1015-GR	2SA933STRS (SUB. Part)	6
S	Q7, 11, 12, 14, 18	2SC1815GR	Transistor	5
	Q16, 20	2SB946P	Transistor	2
	Q17, 21	2SD1271P	Transistor	2
		DIODES		
	D1, 2 ⚠	SVDGERA1502	Rectifier	2
	D3, 5, 8, 10 ⚠	SVDS3V20	Rectifier	4
○	D11, 12	MA4180TA	Zener, 18V	2
	D15, 19, 20, 27, 28	MA165TA5	Diode	5
	D16, 33	EK04	Diode	2
		COIL		
	L1	QLQGT3T150SA	Coil	1
		RESISTORS		
	R9, 10	ERDS2TJ332	3.3kΩ	2
	R11~13	ERDS2TJ152	1.5kΩ	3
	R14~16	ERDS2TJ154	150kΩ	3
	R18	ERDS2TJ152	1.5kΩ	1
	R19	ERDS2TJ154	150kΩ	1
	R21	ERDS2TJ102	1kΩ	1
	R22	ERDS2TJ154	150kΩ	1
	R25	ERDS2TJ152	1.5kΩ	1
	R26, 27	ERDS2TJ154	150kΩ	2
	R28	ERDS2TJ152	1.5kΩ	1
	R31	ERDS2TJ102	1kΩ	1
	R32	ERDS2TJ154	150kΩ	1
	R39	ERDS2TJ152	1.5kΩ	1
	R41	ERDS2TJ224	220kΩ	1
	R42	ERDS2TJ154	150kΩ	1
	R43	ERDS2TJ220	22Ω	1
	R45	ERDS2TJ224	220kΩ	1
	R46	ERDS2TJ220	22Ω	1
	R47	ERDS2TJ154	150kΩ	1
	R48, 49	ERDS2TJ102	1kΩ	2

Ref. No.	Part No.	Description	P/S
R50, 51 ⚠	ERD2FCVJ4R7	4.7Ω, 1/4W, Fuse Type	2
R52, 53	ERDS2TJ103	10kΩ	2
R54, 55 ⚠	ERQ14AJ2R0	2Ω, 1/4W, Fuse Type	2
○ R56, 57 ⚠	ERD2FCVJ6R8	6.8Ω, 1/4W, Fuse Type	2
R58~60	ERDS2TJ103	10kΩ	3
R61, 62	ERDS2TJ472	4.7kΩ	2
R80	ERDS2TJ472	4.7kΩ	1
R81	ERDS2TJ104	100kΩ	1
R83	ERDS2TJ103	10kΩ	1
R84	ERDS2TJ473	47kΩ	1
R85	ERDS2TJ332	3.3kΩ	1
R86	ERDS2TJ154	150kΩ	1
R89	ERDS2TJ103	10kΩ	1
R90	ERDS2TJ102	1kΩ	1
R91, 92	ERDS2TJ222	2.2kΩ	2
R93	ERDS2TJ103	10kΩ	1
R94, 95	ERDS2TJ102	1kΩ	2
R96, 97 ⚠	ERD2FCVG101	100Ω, 1/4W, Fuse Type	2
R98, 99	ERDS2TJ331	330Ω	2
R100 ⚠	ERD25FVJ4R7	4.7Ω, 1/4W, Flame-Proof	1
R101	ERDS2TJ154	150kΩ	1
R102	ERDS2TJ152	1.5kΩ	1
R104	ERDS2TJ103	10kΩ	1
R105	ERDS2TJ102	1kΩ	1
R106, 107	ERDS2TJ222	2.2kΩ	2
R108	ERDS2TJ103	10kΩ	1
R109, 110	ERDS2TJ102	1kΩ	2
R111 ⚠	ERD2FCVG101	100Ω, 1/4W, Fuse Type	1
R112, 113	ERDS2TJ331	330Ω	2
R114 ⚠	ERD2FCVG101	100Ω, 1/4W, Fuse Type	1
R115 ⚠	ERD25FVJ4R7	4.7Ω, 1/4W, Flame-Proof	1
CAPACITORS			
C5, 6	ECQG1H682KZ	0.0068μF	2
C7	ECQB1H473JF	0.047μF	1
C8	ECQV1H683JM	0.068μF	1
C10	ECQG1H102KZ	0.001μF	1
C11	ECQG1H332KZ	0.0033μF	1
C12	ECQB1H473JF	0.047μF	1
C13	ECQG1H102KZ	0.001μF	1
C14	ECQV1H683JM	0.068μF	1
C16	ECQG1H332KZ	0.0033μF	1
C17	ECQV1H104JM	0.1μF	1
C18	ECQG1H682KZ	0.0068μF	1
C19	ECQV1H224JM	0.22μF	1
C20	ECQB1H333JF	0.033μF	1
C21	ECQV1H224JM	0.22μF	1
C22	ECQB1H333JF	0.033μF	1
C23	ECQV1H104JM	0.1μF	1
C24	ECQG1H682KZ	0.0068μF	1
C25, 26	ECCF1H220J	22pF	2
C28 ⚠	ECQE1A104M6	0.1μF, 125V	1
C29, 31	ECEA1VU332	3300μF, 35V	2
C32, 34	ECEA1VU222	2200μF, 35V	2
C36, 37	ECRF1H104ZF	0.1μF	2
C38, 39	ECEA1CKA100	10μF, 16V	2
C49	ECQV1H224JM	0.22μF	1
C50	ECQB1H223JF	0.022μF	1
C51	ECQV1H104JM	0.1μF	1
C54	ECQV1H224JM	0.22μF	1
C55	ECQB1H223JF	0.022μF	1
C56	ECQV1H104JM	0.1μF	1
C59, 60	ECEA50Y3R3	3.3μF, 50V	2

HP HEADPHONES CIRCUIT

Ref. No.	Part No.	Description	P/S
COIL			
L1	QLQGT3T150SA	Coil	1
JACKS			
JK1, 2	SJJG100A	Jack	2
RESISTORS			
R1~4 ⚠	ERG1ANJP680S	68Ω, 1W, Flame-Proof	4
CAPACITORS			
C1, 2	ECKR1E473ZV	0.047μF	2

CP CONTROL PANEL

Ref. No.	Part No.	Description	P/S
INTEGRATED CIRCUITS			
IC1	SVIGM603A121	Gate Array	1
IC2, 3, 4	HD74LS07P	Hex Buffers	3
TRANSISTORS			
Q1~4	2SA830SB	Transistor	4
DIODES			
D1~3, 5, 14, 16, 49~52, 57, 58, 61~64, 66~69, 71, 72, 74~76, 77	MA165TA5	Diode	26
D101~103, 105~108, 114~116, 150, 151, 157~164, 166~169, 174~176	LN282R	LED (Red)	27
DISPLAY			
LD1	LB603VF	Triple 8 Segments Display	1
COMPONENT COMBINATION			
Z1	EXBPI8103JM	10kΩ×8	1
SWITCHES			
S1~3, 5, 14, 16, 49~52, 57, 58, 61~64, 66~69, 71, 72, 74~76	EVQ21507K	Push Switch	25
IC PROTECTOR			
IP1 ⚠	ICP-N10T104	IC Protector	1
VARIABLE RESISTOR			
○ VR1	QRVG25P01B53	5kΩ B, Main Volume	1

	Ref. No.	Part No.	Description	P/S
		RESISTORS		
	R1	ERDS2TJ184	180kΩ	1
	R2	ERDS2TJ221	220Ω	1
	R3	ERDS2TJ152	1.5kΩ	1
	R4	ERDS2TJ102	1kΩ	1
	R5~9	ERDS2TJ103	10kΩ	5
	R10~26	ERDS2TJ680	68Ω	17
○	R38, 39	ERDS2T0	0Ω 1/4W	2
		CAPACITORS		
	C1	ECEA0JKA470	47μF, 6.3V	1
	C2	ECBA1H101KB	100pF	1
	C3	ECRF1H104ZF	0.1μF	1
	C4	ECEA1HKA010	1μF, 50V	1
	C5	ECBA1H101KB	100pF	1
	C7	ECRF1H104ZF	0.1μF	1
	C11, 12	ECEA1CKN100	10μF, 16V	2

MKB1 MANUAL KEYBOARD 1 CIRCUIT

	Ref. No.	Part No.	Description	P/S
		INTEGRATED CIRCUITS		
	IC1	MSM7U042016	Gate Array	1
	IC2	BR93LC46	1k bit Programmed EEPROM	1
		DIODES		
S	D1~88	MA162A	MA150IR (SUB. Part)	88
		OSCILLATOR		
	X1	SVQGA20MX040	20MHz, Ceramic Oscillator	1
		RESISTORS		
	R1~3	ERDS2TJ472	4.7kΩ	3
		CAPACITORS		
	C1	ECRF1H104ZF	0.1μF	1
	C2	ECCW1H471J5	470pF	1
	C3, 4	ECCW1H220J5	22pF	2
	C5	ECKR1E473ZV	0.047μF	1
	C6, 7	ECCW1H101J5	100pF	2

MKB2 MANUAL KEYBOARD 2 CIRCUIT

	Ref. No.	Part No.	Description	P/S
		DIODES		
S	D89~176	MA162A	MA150IR (SUB. Part)	88
		COMPONENT COMBINATION		
	Z1	EXBPI8332JM	3.3kΩ×8	1

JACK JACK CIRCUIT

	Ref. No.	Part No.	Description	P/S
		INTEGRATED CIRCUIT		
	IC1	SVIGTLP513	Photo Coupler	1

	Ref. No.	Part No.	Description	P/S
		TRANSISTORS		
S	Q1~3	2SA1015-GR	2SA933STRS (SUB. Part)	3
S	Q4	2SC1815GR	Transistor	1
		DIODES		
	D1, 3, 4, 6, 7	MA165TA5	Diode	5
		COILS		
	L1~5	QLQGT3T150SA	Coil	5
		JACKS		
	JK1	QJSG002AA	PEDAL IN	1
	JK2~4	SJSG1370A	MIDI THRU, OUT, IN	3
	JK5~8	QJJG003AA	LINE OUT, AUX IN	4
		WIRES		
○	W1~3	QEXGRA01005A	Wire	3
		RESISTORS		
	R1, 2	ERDS2TJ103	10kΩ	2
	R3	ERDS2TJ471	470Ω	1
	R4	ERDS2TJ104	100kΩ	1
	R5, 6	ERDS2TJ103	10kΩ	2
	R7	ERDS2TJ102	1kΩ	1
	R8	ERDS2TJ101	100Ω	1
	R10	ERDS2TJ151	150Ω	1
	R11	ERDS2TJ104	100kΩ	1
	R12, 13	ERDS2TJ331	330Ω	2
	R14	ERDS2TJ101	100Ω	1
	R15	ERDS2TJ104	100kΩ	1
	R16	ERDS2TJ221	220Ω	1
	R17	ERDS2TJ331	330Ω	1
	R18	ERDS2TJ224	220kΩ	1
	R21, 22	ERDS2TJ152	1.5kΩ	2
	R23, 24	ERDS2TJ102	1kΩ	2
		CAPACITORS		
	C1~4	ECRF1H104ZF	0.1μF	4
	C5, 6	ECCF1H221J	220pF	2
	C7	ECKF1E473ZV	0.047μF	1
	C8	ECEA1HKA010	1μF, 50V	1
	C9	ECQV1H104JM	0.1μF	1
	C11, 12	ECBA1C222MR	0.0022μF	2
	C13	ECRF1H104ZF	0.1μF	1
	C14, 15	ECBA1C222MR	0.0022μF	2
	C16	ECRF1H104ZF	0.1μF	1

■ WIRING PARTS

	Ref. No.	Part No.	Description	P/S
	W1	QEXGSS16065A	Connector with Wire	1
○	W2	QEXGSS14030A	Connector with Wire	1
	W3	QEXGSS06085A	Connector with Wire	1
○	W4	QEXGEL06100B	Connector with Wire	1
○	W5	QEXGVH04070B	Connector with Wire	1
○	W6	QEXGVH06015C	Connector with Wire	1
	W7	QEXGVH03105B	Connector with Wire	1
○	W8	QEXGSS05025B	Connector with Wire	1

CABINET PARTS LOCATION

1 2 3 4 5 6 7 8 9 10

A B C D E F

CABINET

MANUAL KEYBOARD

STAND

CP P.C.B.

ACP P.C.B.

JACK P.C.B.

AS P.C.B.

MAIN P.C.B.

HP P.C.B.

MKB1 P.C.B.

MKB2 P.C.B.

※QYKG117BA (SX-PX103)
※QYKG117BB (SX-PX103M)

Note: The marking (※) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time.

REPLACEMENT PARTS LIST.....Cabinet and Chassis Parts

Notes:

1. The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retension period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention.
   After the end of this period, the assembly will no longer be available.
2. ○ mark are new parts.
   Cabinet Colour
   • SX-PX103..... Black
   • SX-PX103M ..... Walnut
3. Important safety notice
   Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
4. For part No. with area mark, check the area when placing an order.
5. The raw material indication for synthtic resin
   In order to facilitate classification of parts of synthetic resin manufacture and to promote the recycling of natural resources, a raw material symbol for such parts is indicated in the Ref. No./Material column.

SX-PX103 CABINET & CHASSIS PARTS

Ref. No.		Part No.	Description	P/S
		SWITCH		
	S1 ⚠	ESB823V	Power Switch	1
		DIODE		
	D1	SEL4214RLC05	LED, Power Indicator	1
		SPEAKERS		
○	SP1, 2	EAS14PL93A	14cm, 6Ω	2
	SP3, 4	EAS65PH31A3	6.5cm, 8Ω	2
		TRANSFORMER		
○	T1 ⚠	QTPG1M024A	Power Transformer, Others	1
○	T1 ⚠	QTPG1M022A	Power Transformer, M MC XM	1
○	T1 ⚠	QTPG1M025A	Power Transformer, EK X XR XS XD XT	1
		POWER CORD & PLUG		
	PC1 ⚠	SJAG65	Power Cord, Others	1
	PC1 ⚠	SJAG61	Power Cord, XL XR only	1
○	PC1 ⚠	QJAG013AA	Power Cord, M MC XM only	1
	PC1 ⚠	VJA0733	Power Cord, EK XD only	1
	PC2 ⚠	SJP5213-1	Attachment Plug, X XT only	1
		CABINET PARTS		
○	1	QGAG1022BA	Music Rack	1
	2	SBLG7-2	Stay	2
	3	SBHG5003-2	Hinge	2
○	4	QKQGA058BA	Top Cover Ass'y	1
○	4-1	⎡QGKG0100AA	Ornament	1
○	5	QKQGF012AA	Keyboard Cover Ass'y	1
○	5-1	⎡QGKG0095AA	Ornament	1
	5-2	⎢QXQG007AA	Axletree	1
	5-3	⎢QMRG7026AA	Holder	1
	5-4	⎢QWBG002AA	Holder	1
	5-5	⎢QMRG7026BA	Holder	1
	5-6	⎢QMRG7031AA	Protector	1
	5-7	⎣QMRG7032AA	Protector	1
○	6 PS	QGPG0053AB	CP Ornament	1
○	7	QGPG0055AA	Control Panel	1
○	8	QQLG066AA	Initial Label	1
○	9	QMFG1107AA	Felt (Red)	1
	10	SBNG7050A	Knob	1
○	11	QGUG1191AA	Button	1

SX-PX103M CABINET & CHASSIS PARTS

Ref. No.		Part No.	Description	P/S
		SWITCH		
	S1 ⚠	ESB823V	Power Switch	1
		DIODE		
	D1	SEL4214RLC05	LED, Power Indicator	1
		SPEAKERS		
○	SP1, 2	EAS14PL93A	14cm, 6Ω	2
	SP3, 4	EAS65PH31A3	6.5cm, 8Ω	2
		TRANSFORMER		
○	T1 ⚠	QTPG1M024A	Power Transformer, Others	1
○	T1 ⚠	QTPG1M022A	Power Transformer, M MC XM	1
○	T1 ⚠	QTPG1M025A	Power Transformer, EK X XR XS XD XT	1
		POWER CORD & PLUG		
	PC1 ⚠	SJAG65	Power Cord, Others	1
	PC1 ⚠	SJAG61	Power Cord, XL XR only	1
○	PC1 ⚠	QJAG013AA	Power Cord, M MC XM only	1
	PC1 ⚠	VJA0733	Power Cord, EK XD only	1
	PC2 ⚠	SJP5213-1	Attachment Plug, X XT only	1
		CABINET PARTS		
○	1	QGAG1022BB	Music Rack	1
	2	SBLG7	Stay	2
	3	SBHG5003	Hinge	2
○	4	QKQGA058BB	Top Cover Ass'y	1
○	4-1	⎡QGKG0100AB	Ornament	1
○	5	QKQGF012AB	Keyboard Cover Ass'y	1
○	5-1	⎡QGKG0095AB	Ornament	1
	5-2	⎢QXQG007AA	Axletree	1
	5-3	⎢QMRG7026AA	Holder	1
	5-4	⎢QWBG002AA	Holder	1
	5-5	⎢QMRG7026BA	Holder	1
	5-6	⎢QMRG7031AB	Protector	1
	5-7	⎣QMRG7032AB	Protector	1
○	6 PS	QGPG0053AB	CP Ornament	1
○	7	QGPG0055AA	Control Panel	1
○	8	QQLG066AA	Initial Label	1
○	9	QMFG1107AA	Felt (Red)	1
	10	SBNG7050A	Knob	1
○	11	QGUG1191AA	Button	1

SX-PX103

Ref. No.		Part No.	Description	P/S
○	12	QGUG1193CA	Button	1
○	13	QGUG1189AA	Button	1
○	14	QGUG1192AA	Button	1
○	15	QGUG1190AA	Button	1
○	16	QGPG0057AA	LED Panel	1
○	17 PS	QMRG7028AC	Bracket	1
○	18 PS	QMRG7029AC	Bracket	1
○	19 PS	QGKG0076BB	External Jack Panel	1
○	20 PS	QGKG0096AB	AC Jack Panel, Others	1
○	20 PS	QGKG0096BA	AC Jack Panel, EK X XR XS XD	1
	21 PS ⚠	SJS9231A	AC Inlet Cover, Others	1
	21 PS ⚠	SJS9334A	AC Inlet Cover, M MC XM XL XR	1
○	22 PS	QKSGG010AA	Keyboard Cover Guide, Left	1
○	23 PS	QKSGG011AA	Keyboard Cover Guide, Right	1
	24 PS	QGKG0080AA	Headphone Jack Case	1
	25	SGKG3040B	Label (Headphone)	1
	26	SGBG160B	Badge	1
	29	QLZG005A	Core, M MC XM EZ only	1
	30	QLZG006A	Core, M MC XM EZ only	1
		STAND		
○	40	QKUG1023AAK	Rear Board	1
○	41	QYKG121AAK	Speaker Box	1
○	42	QKQGB225AA	Left Plank Ass'y	1
	42-1	⎡QKSGB006AA	Leg, Left	1
	42-2	⎣SHRG2130B	Foot	2
○	43	QKQGB226AA	Right Plank Ass'y	1
	43-1	⎡QKSGB007AA	Leg, Right	1
	43-2	⎣SHRG2130B	Foot	2
○	44	QKQGM040AAK	Pedal Box Ass'y	1
	44-1	⎡QGKG0036AAK	Ornament	3
	45 PP	SHRG1230A	Cord Clamper	2
	46 PP	SHRG9620A	Cord Clamper	3
○	47	QJLG006AA	Pedal Cord	1
○	48	QKQGH026AA	Speaker Net	2
	50	SRDSMLS-2	Switch	3
	51	QMWG8005AB	Switch Cover	3
	52	STBG3119A	Pedal Arm	3
	53	SUSG441A	Spring	3
	54	SHSG2750A	Felt	3
	55	SHSG2770A	Felt	3
	56	SHSG2790A	Felt	3
	57	SUWG219	Binder	2
	58	SKLG160A	Foot	1
	59	STBG4090A	Arm Guide	3
	60	QMKG001AA	Pedal Chassis	1
	61	SHRG1130A	Cord Clamper	1
		MANUAL KEYBOARD		
	70 PP	SHRG8390A	Cover, Power SW.	1
	71	QGUG1040AA	Button, Power Switch	1
	72 PS	QGPG0042AB	End Cover Panel, Left	1
○	73 PS	QGPG0041BD	End Cover Panel, Right	1
○	74	QMFG1104AA	Felt	2
○	75 AS	QMWG1001AA	White Key (First Octave A Key)	1
○	76 AS	QMWG1002AA	White Key (B Key)	8
○	77 AS	QMWG1003AA	White Key (C Key)	7
○	78 AS	QMWG1004AA	White Key (D Key)	7
○	79 AS	QMWG1005AA	White Key (E Key)	7
○	80 AS	QMWG1006AA	White Key (F Key)	7
○	81 AS	QMWG1007AA	White Key (G Key)	7
○	82 AS	QMWG1008AA	White Key (A Key)	7

SX-PX103M

Ref. No.		Part No.	Description	P/S
○	12	QGUG1193CA	Button	1
○	13	QGUG1189AA	Button	1
○	14	QGUG1192AA	Button	1
○	15	QGUG1190AA	Button	1
○	16	QGPG0057AA	LED Panel	1
○	17 PS	QMRG7028AC	Bracket	1
○	18 PS	QMRG7029AC	Bracket	1
○	19 PS	QGKG0076BB	External Jack Panel	1
○	20 PS	QGKG0096AB	AC Jack Panel, Others	1
○	20 PS	QGKG0096BA	AC Jack Panel, EK X XR XS XD	1
	21 PS ⚠	SJS9231A	AC Inlet Cover, Others	1
	21 PS ⚠	SJS9334A	AC Inlet Cover, M MC XM XL XR	1
○	22 PS	QKSGG010AA	Keyboard Cover Guide, Left	1
○	23 PS	QKSGG011AA	Keyboard Cover Guide, Right	1
	24 PS	QGKG0080AA	Headphone Jack Case	1
	25	SGKG3040B	Label (Headphone)	1
	26	SGBG160B	Badge	1
	29	QLZG005A	Core, M MC XM EZ only	1
	30	QLZG006A	Core, M MC XM EZ only	1
		STAND		
○	40	QKUG1023ABK	Rear Board	1
○	41	QYKG121ABK	Speaker Box	1
○	42	QKQGB225AB	Left Plank Ass'y	1
	42-1	⎡QKSGB006AB	Leg, Left	1
	42-2	⎣SHRG2130B	Foot	2
○	43	QKQGB226AB	Right Plank Ass'y	1
	43-1	⎡QKSGB007AB	Leg, Right	1
	43-2	⎣SHRG2130B	Foot	2
○	44	QKQGM040ABK	Pedal Box Ass'y	1
	44-1	⎡QGKG0036AAK	Ornament	3
	45 PP	SHRG1230A	Cord Clamper	2
	46 PP	SHRG9620A	Cord Clamper	3
○	47	QJLG006AA	Pedal Cord	1
○	48	QKQGH026AA	Speaker Net	2
	50	SRDSMLS-2	Switch	3
	51	QMWG8005AB	Switch Cover	3
	52	STBG3119A	Pedal Arm	3
	53	SUSG441A	Spring	3
	54	SHSG2750A	Felt	3
	55	SHSG2770A	Felt	3
	56	SHSG2790A	Felt	3
	57	SUWG219	Binder	2
	58	SKLG160A	Foot	1
	59	STBG4090A	Arm Guide	3
	60	QMKG001AA	Pedal Chassis	1
	61	SHRG1130A	Cord Clamper	1
		MANUAL KEYBOARD		
	70 PP	SHRG8390A	Cover, Power SW.	1
	71	QGUG1040AA	Button, Power Switch	1
	72 PS	QGPG0042AB	End Cover Panel, Left	1
○	73 PS	QGPG0041BD	End Cover Panel, Right	1
○	74	QMFG1104AA	Felt	2
○	75 AS	QMWG1001AA	White Key (First Octave A Key)	1
○	76 AS	QMWG1002AA	White Key (B Key)	8
○	77 AS	QMWG1003AA	White Key (C Key)	7
○	78 AS	QMWG1004AA	White Key (D Key)	7
○	79 AS	QMWG1005AA	White Key (E Key)	7
○	80 AS	QMWG1006AA	White Key (F Key)	7
○	81 AS	QMWG1007AA	White Key (G Key)	7
○	82 AS	QMWG1008AA	White Key (A Key)	7

SX-PX103

Ref. No.		Part No.	Description	P/S
○ 83	AS	QMWG1009AA	White Key (Top Octave C Key)	1
○ 84	AS	QMWG2001AA	Black Key	36
85		SUSG534A	Spring	88
○ 86		QMWG8019AA	Hammer (Black Key)	36
○ 87		QMWG8017AA	Hammer (White Key)	52
88		SHGG9121A	Rubber Cap (Hammer)	88
89	PA	SHRG9900B	Key Guide Rubber	88
○ 90	ABS	QMWG8022AA	Fulcurum (4 pcs. on one)	1
○ 91	ABS	QMWG8021AA	Fulcurum (12 pcs. on one)	7
92		SHRGA9080A	Sponge	2
93		QMFG1073AA	Felt	2
94		SHSG3461A	Felt	1
○ 95		QMFG1101AA	Felt	2
96		QMFG1061AA	Felt	2
97		QMFG1060AA	Felt	2
98		QMFG1086AA	Felt	2
99		QMWG6006AA	Rubber Switch (8 pcs. on one)	11
100		SHRG9751A	P.C.B. Holder	24
○ 101		QMWG3003BA	Chassis	1
102		SUWG3154A	Angle	2

SCREWS & WASHERS

N1	XTB3+10AFZ	Screw	3
N2	XTS3+10AFZ	Screw	10
N3	XTT4+10A	Screw	8
N4	XTB4+10B	Screw	2
N5	XTB35+12AFZ	Screw	1
N6	XTB35+10A	Screw	6
N7	XTT4+10AFZ	Screw	2
N8	XTW3+10Q	Screw	9
N9	XTW3+10JFZ	Screw	1
N10	XYN4+F25	Screw with Washer	6
N11	XTWSG2	Screw with Washer	1
N12	XTB35+12A	Screw	8
N13	XYN4+F16	Screw with Washer	4
N14	SNEG2660A	Screw	3
N15	XTT4+30AFZ	Screw	4
N16	XNS12FZ	Nut	2
N17	XTB35+16A	Screw	10
N18	XTN4+50AFZ	Screw	2
N19	XTW3+8J	Screw	8
N20	QHDG021AA	Screw with Washer	10
○ N21	XYN4+C20	Screw with Washer	8
N22	XTB35+16AFZ	Screw	8
○ N23	XYN4+F20K	Screw with Washer	2
N24	QHDG016AB	Screw with Washer	10
N25	XYN6+F40	Screw with Washer	4
N26	XYN4+F16FZ	Screw with Washer	3
N27	XTB35+14A	Screw	4
N28	XTB4+16A	Screw	8
N29	XTT4+25AFZ	Screw	4
N30	XTT4+30AFZ	Screw	10
N31	XTW3+8C	Screw	5
N32	XTW3+8E	Screw	6
N33	XSN4+6	Screw	3
N34	XYN4+C25	Screw with Washer	1
N35	XTB3+6C	Screw	1
N36	XTB3+10A	Screw	2
N37	QHWG007AA	Nut	2
N40	XTV3+10C	Screw	2
N41	XTB4+12A	Screw	4
N42	XTW3+10T	Screw	24

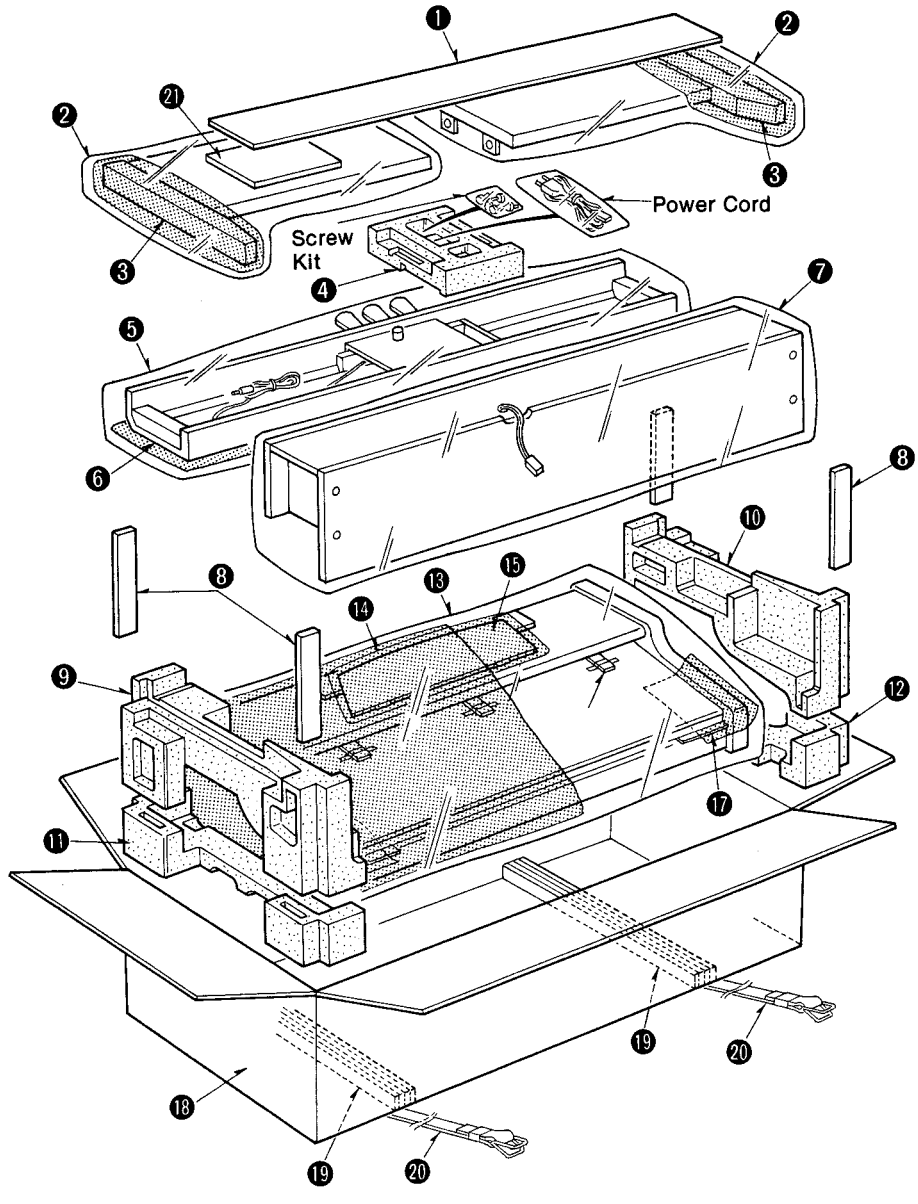
SX-PX103M

Ref. No.		Part No.	Description	P/S
○ 83	AS	QMWG1009AA	White Key (Top Octave C Key)	1
○ 84	AS	QMWG2001AA	Black Key	36
85		SUSG534A	Spring	88
○ 86		QMWG8019AA	Hammer (Black Key)	36
○ 87		QMWG8017AA	Hammer (White Key)	52
88		SHGG9121A	Rubber Cap (Hammer)	88
89	PA	SHRG9900B	Key Guide Rubber	88
○ 90	ABS	QMWG8022AA	Fulcurum (4 pcs. on one)	1
○ 91	ABS	QMWG8021AA	Fulcurum (12 pcs. on one)	7
92		SHRGA9080A	Sponge	2
93		QMFG1073AA	Felt	2
94		SHSG3461A	Felt	1
○ 95		QMFG1101AA	Felt	2
96		QMFG1061AA	Felt	2
97		QMFG1060AA	Felt	2
98		QMFG1086AA	Felt	2
99		QMWG6006AA	Rubber Switch (8 pcs. on one)	11
100		SHRG9751A	P.C.B. Holder	24
○ 101		QMWG3003BA	Chassis	1
102		SUWG3154A	Angle	2

SCREWS & WASHERS

N1	XTB3+10AFVC	Screw	3
N2	XTS3+10AFVC	Screw	10
N3	XTT4+10A	Screw	8
N4	XTB4+10B	Screw	2
N5	XTB35+12AFZ	Screw	1
N6	XTB35+10A	Screw	6
N7	XTT4+10AFZ	Screw	2
N8	XTW3+10Q	Screw	9
N9	XTW3+10JFZ	Screw	1
N10	XYN4+F25	Screw with Washer	6
N11	XTWSG2	Screw with Washer	1
N12	XTB35+12A	Screw	8
N13	XYN4+F16	Screw with Washer	4
N14	SNEG2660A	Screw	3
N15	XTT4+30AFVC	Screw	4
N16	XNS12FZ	Nut	2
N17	XTB35+16A	Screw	10
N18	XTN4+50AFZ	Screw	2
N19	XTW3+8J	Screw	8
N20	QHDG021AA	Screw with Washer	10
○ N21	XYN4+C20	Screw with Washer	8
N22	XTB35+16AFZ	Screw	8
○ N23	XYN4+F20K	Screw with Washer	2
N24	QHDG016AA	Screw with Washer	10
N25	XYN6+F40	Screw with Washer	4
N26	XYN4+F16FZ	Screw with Washer	3
N27	XTB35+14A	Screw	4
N28	XTB4+16A	Screw	8
N29	XTT4+25AFZ	Screw	4
N30	XTT4+30AFVC	Screw	10
N31	XTW3+8C	Screw	5
N32	XTW3+8E	Screw	6
N33	XSN4+6	Screw	3
N34	XYN4+C25	Screw with Washer	1
N35	XTB3+6C	Screw	1
N36	XTB3+10A	Screw	2
N37	QHWG007AA	Nut	2
N40	XTV3+10C	Screw	2
N41	XTB4+12A	Screw	4
N42	XTW3+10T	Screw	24

PACKING



■ PACKING PARTS

Ref. No.		Part No.	Description	P/S
		PACKING PARTS		
○	1	QPNG0358AA	Top Cardboard	1
	2 PE	SPHG2050A	Polyethylene Bag	1
	3 PE	SPHG1730A	Protection Sheet	2
○	4 PS	QPNG0364AA	Pad	1
	5 PE	QPFG026AA	Polyethylene Bag	1
	6 PE	QPHG020AA	Protection Sheet	1
	7 PE	QPFG012AA	Polyethylene Bag	1
○	8	QPQG024AA	Prop	4
○	9 PS	QPNG0360AA	Pad	1
○	10 PS	QPNG0362AA	Pad	1
○	11 PS	QPNG0372AA	Pad	1
○	12 PS	QPNG0373AA	Pad	1
	13 PE	SPHG2200A	Polyethylene Bag	1
○	14 PE	QPHG058AA	Protection Sheet	1
	15 PE	SPHG1490A	Protection Sheet	1
	16	SPNG5161A	Spacer	5
	17	QPHG018AA	Protection Sheet	2

Ref. No.		Part No.	Description	P/S
○	18 SX-PX103	QPGG0233AA	Carton	1
○	18 SX-PX103M	QPGG0233AB	Carton	1
○	19	QPNG0380AA	Pad	2
	20	SPSG40A	Band	2
		OPERATING INSTRUCTION MANUAL		
○	21	QQFGPX103AA	Operating instruction manual, EN	1
○	21	QQFGPX103BA	Operating instruction manual, M	1
○	21	QQFGPX103CA	Operating instruction manual, Others	1
○	21	QQFGPX103DA	Operating instruction manual, EA EZ	1
○	21	QQFGPX103EA	Operating instruction manual, EW	1