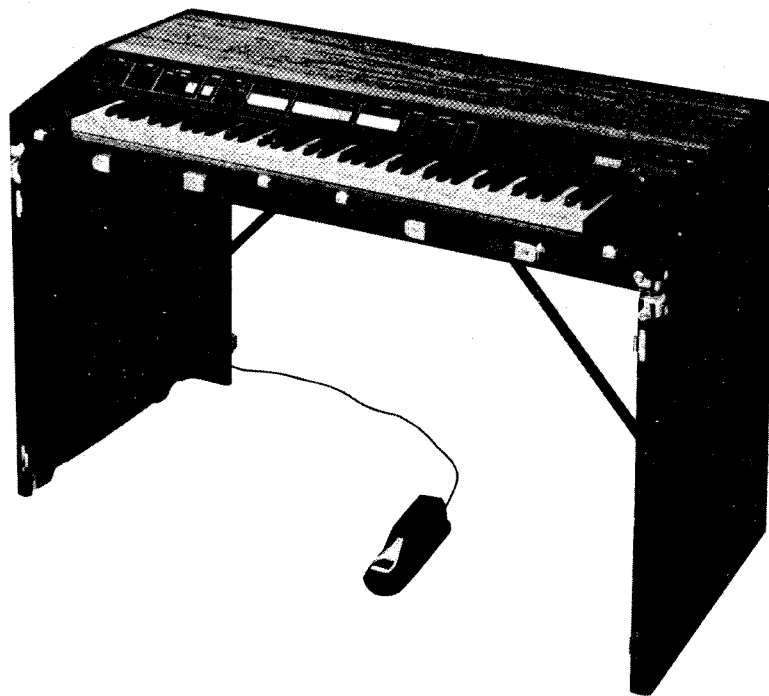


YAMAHA

ELECTRONIC PIANO

CP35



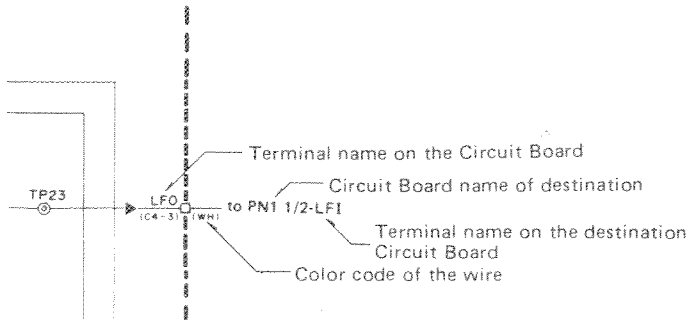
SERVICE MANUAL

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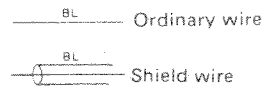
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CODING GUIDE

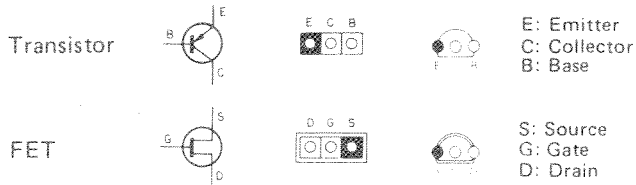
1 Wiring Notation



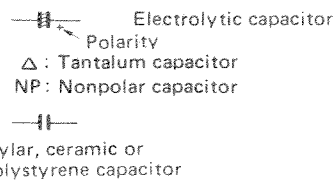
Note: Types of wire



2 Symbol Description



Capacitors



Diode



(Zener Diode)

Switch



B: Break
T: Transfer
M: Make

3 Abbreviations of Wire Color Codes

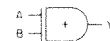
BLACK (クロ).....BL	BROWN (チャ).....BR	RED (アカ).....RE
ORANGE (タイ).....OR	YELLOW (キイ).....YE	GREEN (ミト).....GR
BLUE (アオ).....BE	VIOLET (ムラ).....VI	GRAY (ハイ).....GY
WHITE (シロ).....WH	GRASS GREEN (クサ).....GG	SKY BLUE (ソラ).....SB
PINK (モモ).....PK	TRANSPARENT (トウメイ).....TR	

4 Relation of Color Coding and Notes

C	C≠	D	D≠	E	F	F≠	G	G≠	A	A≠	B
BR	RE	OR	YE	GR	BE	VI	GY	WH	GG	SB	PK
(チャ)	(アカ)	(タイ)	(キイ)	(ミト)	(アオ)	(ムラ)	(ハイ)	(シロ)	(クサ)	(ソラ)	(モモ)

5 Logic Symbols

	MIL	YAMAHA
NOT		
NOR		
NAND		

Exclusive OR
(排他的論理和)

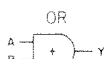
Truth Table

A	B	Y
L	L	L
H	L	H
L	H	H
H	H	L

NOT
(Inverter)

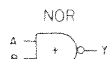
Truth Table

A	Y
L	H
H	L



Truth Table

A	B	Y
L	L	L
H	L	H
L	H	H
H	H	H



Truth Table

A	B	Y
L	L	H
H	L	L
L	H	L
H	H	L



Truth Table

A	B	Y
L	L	L
H	L	L
L	H	L
H	H	H



Truth Table

A	B	Y
L	L	H
H	L	H
L	H	H
H	H	L

SPECIFICATIONS

KEYBOARD

- 73 keys (E0 – E6)
- Velocity-sensitive touch response
- 16 note simultaneous output, max.

CONTROLS

PITCH I	
PITCH II	
DECAY I	..... 8 position switch
DECAY II	..... 8 position switch
TREMOLO SPEED	
TREMOLO DEPTH	
TREMOLO ON/OFF	
FLANGER ON/OFF	
WAVE I	..... 4 position switch (A,B,C,D)
WAVE II	..... 4 position switch (A,B,C,D)
FILTER I	..... 4 independent selectors (1,2,3,4)
FILTER II	..... 4 independent selectors (1,2,3,4)
5TH, 8TH	..... Independent 5th and 8th transpose selectors
PRESETS	..... 4 independent selectors (1,2,3,4)
BALANCE	..... I \leftrightarrow II
EQUALIZER	..... Continuously variable bass a treble controls

VOLUME

SIDE PANEL

KEY CODE OUTPUT
FOOT SW TREMOLO
FOOT SW SUSTAIN
BALANCED XLR type connectors
 OUTPUT 1 2
UNBALANCED 1/4" phone jacks
 OUTPUT 1 2
PHONES 8 ohms or high impedance
 headphones

LINE ON/OFF

POWER REQUIREMENTS U.S. & Canadian models
120V 50/60Hz 36 Watts
General model
Selectable (100, 120, 220 or
240V) 36 Watts

DIMENSIONS

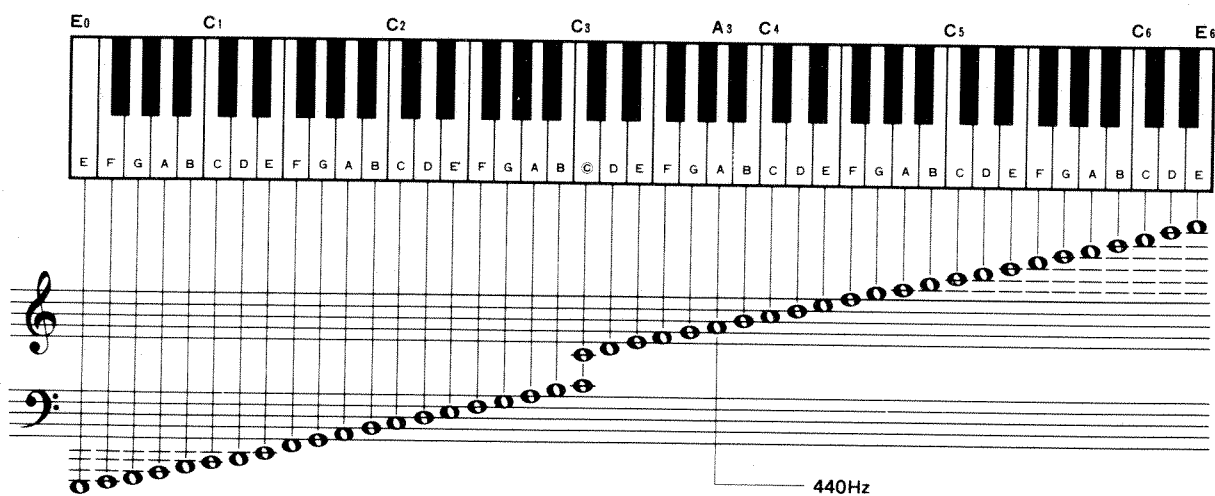
DIMENSIONS 50-1/4" x 31-1/4" x 23-1/2"
(W x H x D) (1,276 x 794 x 596 mm)

WEIGHT

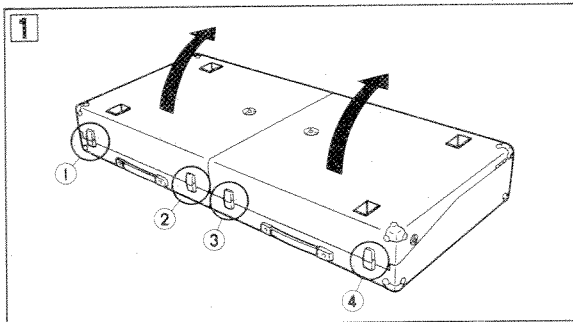
STANDARD FC-4 footswitch

ACCESSORY

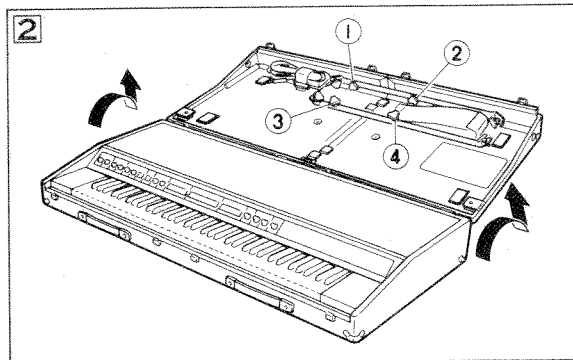
** Specifications are subject to change without notice.*



ASSEMBLY PROCEDURE



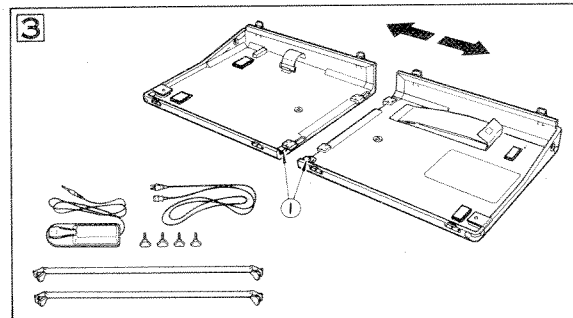
- Lay the CP35 on the floor as shown and open the lid fully by unlatching the four catches ① ~ ④.



- Detach the lid from the body by lifting it so as to slip it off its rear hinges.
Provided inside of the lid are the AC cord, leg braces and the sustain pedal.

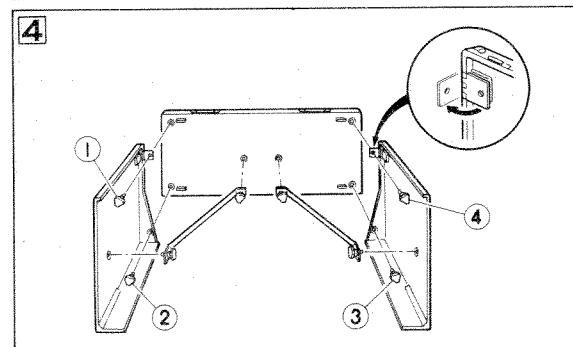
- Unscrew the thumbscrews ① ~ ④ and remove the leg braces.

NOTE: Make sure not to lose these thumbscrews, for they will be used when connecting the main body and legs.

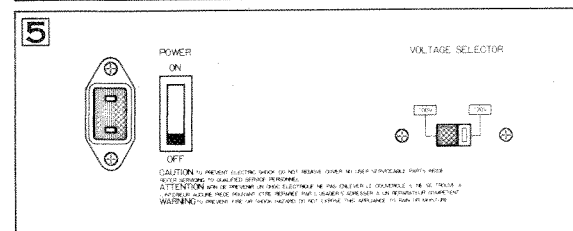


- Unlatch the catch ① found inside of the lid and pull the lid apart right and left.

NOTE: The two halves of the lid become the CP35's legs.



- Place the main body of the CP35 on its back edge and fasten one leg to each side of the body using two of the thumbscrews removed in step 2.
- Fix the main body and the legs securely with the leg braces.
- Set the CP35 upright and check each thumbscrew for tightness. This completes the physical assembly of the CP35.
- Connect both the output cord to the amplifier and the sustain pedal.



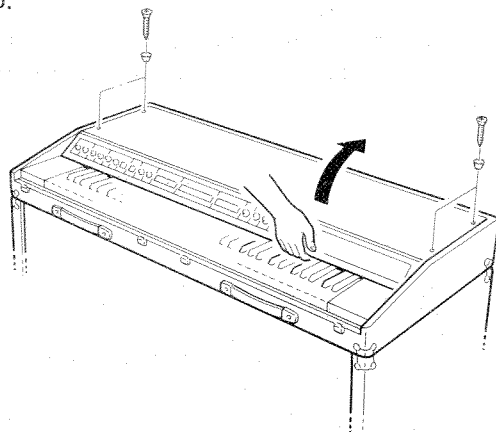
- Set the voltage selector to the proper line voltage of that area where CP35 is used and set the switches and controls. And then connect the AC cable to the AC INLET jack on the CP35 firmly.
(→ SEE PAGE 8)

(U.S. & CANADIAN MODELS)

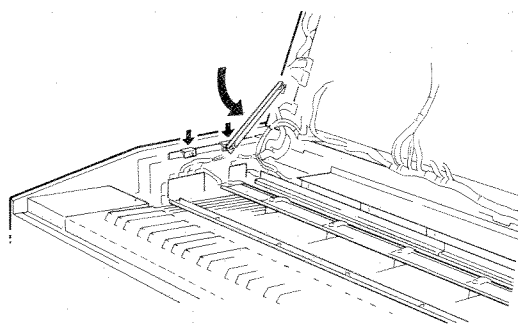
DISASSEMBLY PROCEDURE

1. Opening the lid

Remove the 4 screws holding the lid.
Grasp the panel just above the keyboard and lift up.

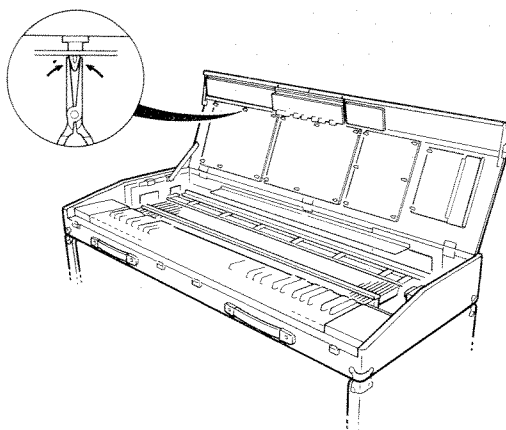


Use the stay provided to hold the lid. The stay provides two different lid angles.



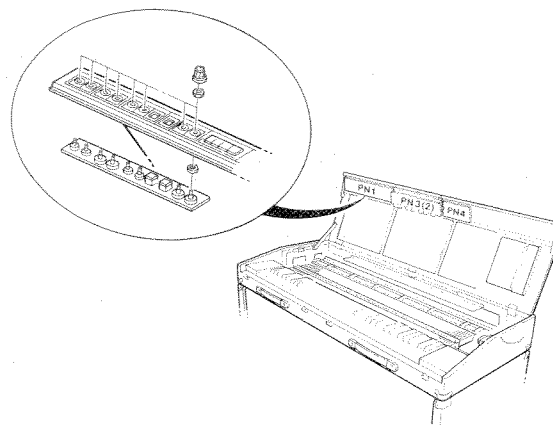
2. Removing circuit boards

Compress the board holders with pliers to release the boards.

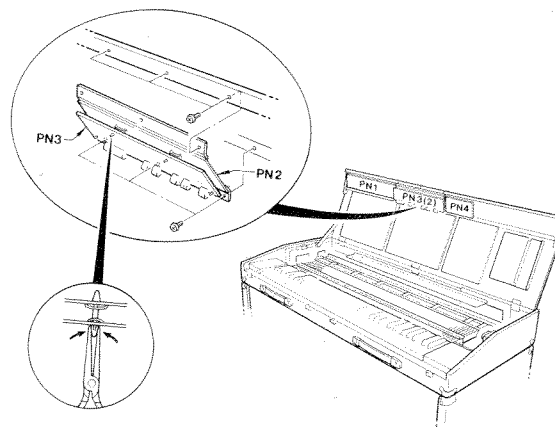


3. Removing panel boards

1) Remove all front panel knobs, hex nuts and washers.
(PN1, PN4 boards)



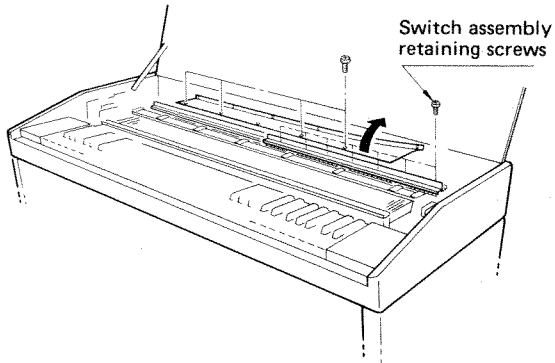
2) Removing the screws on the boards will allow them to be removed one at a time. Compress the PN3 circuit board holders with pliers to release them.
(PN2, PN3)



4. Removing the switch assembly (MK board)

Remove the shield plate.

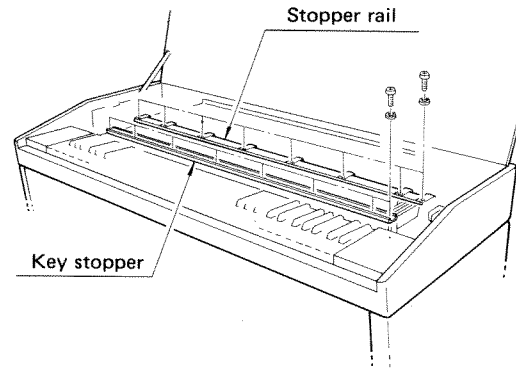
The switch assembly is divided into 3 separate parts. Remove the screws of the desired section or sections to be removed.



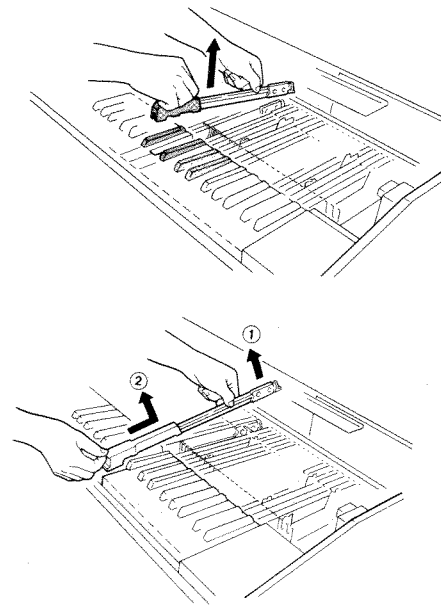
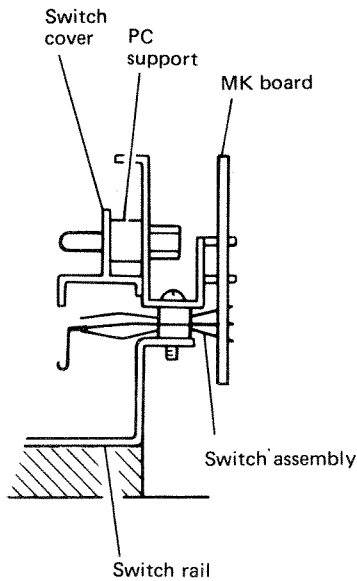
5. Removing the keys

Before removing any keys be sure to remove the switch assembly, being careful not to damage the switch contacts.

Remove the stopper rail and the key stopper screws. Reinforcing hardware is attached to the stopper rail.



Be sure to remove the black keys before removing the white keys.



TECHNICAL EXPLANATION

External specifications

The CP35 is an electronic piano with touch response, preset memories, and built-in filters. There are two independent channels of tone generation, and up to 16 notes can be played simultaneously.

Keyboard

There is a single keyboard with one make/break transfer switch for each key.

The touch-response effect is generated by counting the time between the make and break of the key switch and generating the level of the note according to the time difference (velocity sensitive).

Key assigner & channel processor

LSI YM636 (CPA) detects the pressed keys and assigns their keycode data in chronological order to the 16 note memories.

The 16 locations each contain touch response, sustain pedal, and other data. Also, because the successive notes are distributed among 16 locations, the IC calculates appropriate envelope times.

Wave Source

(Tone generator)

LSI YM722 (CPB) generates the music signal using the keycode data from YM636 (CPA) and touch response data.

The YM722 can only handle 8 notes, so two of them are used for each channel to handle 16.

16 notes are output in parallel from YM633, with 1–8 going to one YM722 (CPB) LSI and 9–16 going to another.

Applying Vdd (–15V) to the CS terminal of the YM722s (pin 10) selects 1–8, while Vss (0V) selects 9–16. In the CP35, IC16 and IC18 apply to channels 1 through 8 while IC15 and IC17 apply to channels 9 through 16. Because the system has two channels there are four YM722s altogether.

The octave blocks have two outputs with completely different envelopes for attack and sustain.

MEMO

This image shows a full page of white paper with horizontal dotted lines. The lines are evenly spaced and run across the width of the page, providing a guide for handwriting practice. There are no margins, text, or other markings on the page.

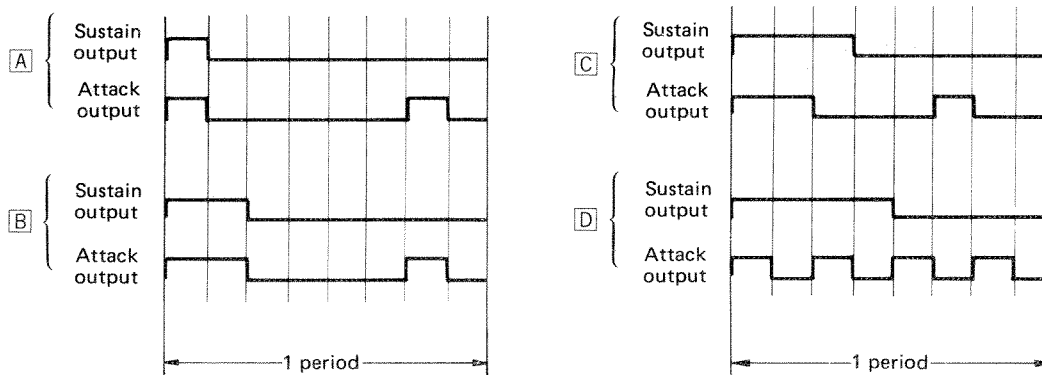
The table below gives the correspondence between output terminals, the notes output, and the output envelopes.

Terminal		Output note		Output envelope
		HS2 43	$E_0 \sim C_1 \quad C_1^\# \sim C_2$	<p>Sustain envelope</p> <p>Approx. 100mV</p>
		HS3 42	$C_2^\# \sim C_3$	
		HS4 41	$C_3^\# \sim C_4$	
		HS5 40	$C_4^\# \sim C_5$	
		HS6 39	$C_5^\# \sim E_6$	
		HA2 37	$E_0 \sim C_1 \quad C_1^\# \sim C_2$	<p>Attack envelope</p> <p>Approx. 50mV</p>
		HA3 36	$C_2^\# \sim C_3$	
		HA4 35	$C_3^\# \sim C_4$	
		HA5 34	$C_4^\# \sim C_5$	
		HA6 33	$C_5^\# \sim E_6$	

- So that the charge/discharge times of the capacitors which determine the envelopes of the 8 intervals of $C_1 \sim C_{16}$ will not have any effect on the note envelopes, two capacitors are used for each note and are switched alternately in and out.
- The basic waveform that will be used to produce all music signals is selected by the A, B, C and D positions of the **WAVE I, II** (PSW9, 10) switches as shown in the diagram.

WAVE I II

Output waveform



- By using the CH-II 5th and 8th (PSW19, 20) panel switches, the second channel can be shifted up a fifth, an octave, or a twelfth from the first channel.

	SET CONDITION	OUTPUT NOTE RANGE
Channel I		$E_0 \sim A_3 \sim E_6$
Channel II	• 5th On	$B_0 \sim E_4 \sim B_6$ (up a 5th)
	• 8th On	$E_1 \sim A_4 \sim E_7$ (up an octave)
	• 5th, 8th On	$B_1 \sim E_5 \sim B_7$ (up a twelfth)

Filters

The filter circuits are constructed entirely of capacitors, resistors, and Op amps, in both filter and mixer configurations. They combine the attack outputs HA2–HA6 and the sustain outputs HS2–HS6 and send them to the filter select circuit.

Filter select circuit

The select circuit is a Schmidt trigger combining an "On" switch, a NAND and an inverter, plus a flip flop, an indicator LED, and an LED driver with an op amp multivibrator (low-frequency oscillator) for LED flashing. FET gates (FET1–12, one for each voice) are turned on (0V) or off (–15V) to select the voice.

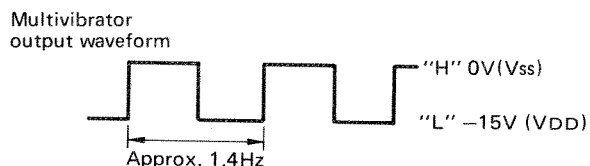
The select switches operate as follows:

- The four voices of the Filter I–1 to I–4 switches may be combined.
- The four voices of the Filter II–1 to II–4 switches may be combined.
- Only one of the Preset 1 to 4 voices may be selected.
- The Presets switches activate pre-selected settings for Wave I, II, 5th, 8th, and Balance.
- When power is first turned on, the Presets I LED lights and the Filter I–1 and Filter II–3 LEDs flash. Playing the keyboard produces the voice selected by Presets 1.
- To switch from the Preset voice to the Filter voice press the lit Preset switch.
- The Filter I or Filter II switch can be depressed in preparation for use while using a Preset voice. The selected switch will flash. In addition, the Wave switch and the Balance control may be preset at this time.
- To switch from the Filter I or II voice to a Preset voice, press the appropriate Preset switch. The selected switch will light, and the previous Filter I or II switch will flash.

The filter select circuit is shown in the diagram. (Refer to the SELECT circuit diagram on page 14)

The power-on reset sequence is as follows:

- Immediately after power on, –15V (VDD) from the 1 μ F capacitor and the 100K resistor sets the Preset I flip flop via pin S of IC16, the Filter I–1 flip flop (1/2 of IC9), and the Filter II–3 flip flop (1/2 of IC12).
- A high appears at pin 16 of the set of Preset 1 flip flop (half of IC16), passes through PR1 and turns on Preset 1 FET 9 gate. The Preset 1 voice goes through FP to the mixing terminal. At the same time, Filter I–1 and Filter II–3 gates FET1–FET7 are on, so the signal also passes through F1 and F2 to the Balance mixing circuit.
- The high at PR1 goes through diode D42 and an inverter (part of IC7) to become a low. The low turns off mixing gate FET1. This shows that the Preset 1 voice is to be given priority regardless of Preset 1, Filter I–1, and Filter I–3.
- The low at MS is inverted by IC7 to become a high, and the AND gate IC14 pin 13 becomes high. Then the Op amp IC15, a capacitor and a resistor form a multivibrator, which sends the waveform shown to pin 12 of AND gate IC14. Output at pin 11 of the AND gate (IC14) sends a low signal as shown in the timing diagram to turn on transistor Tr1.



The collector of Tr1 drives the common anode line of [Filter I-1 ~ 4], [Filter II-1 ~ 4], [5th] and [8th] indicator LEDs.

This causes [the Filter I-1] and [Filter II-3] LEDs to flash continuously.

e) 5th and 8th signals

The high from PR1 (see (b) above) passes through diode D35 to become a high at the 5th terminal, then passes through D38 to bring the 8th terminal high. In other words, [the Preset I] voice activated with power on has [5th] and [8th] turned on. Channel II has a pitch that is higher than channel I by an octave and a fifth. The LEDs don't flash after power on.

5th and 8th selected by Presets

PRESETS	I	2	3	4
channel II	[5TH] & [8TH]	[5TH] & [8TH]	Normal	[8TH]

f) Wave I and Wave II signals

The high from PR1 (see (b) above) goes to the PR1 terminals on the PN1 board, and sets channel 1WS1 to high and channel II 2WS0 and 2WS1 to high. When Preset 1 is selected, this shows that wave C is selected on channel I and wave D on channel II.

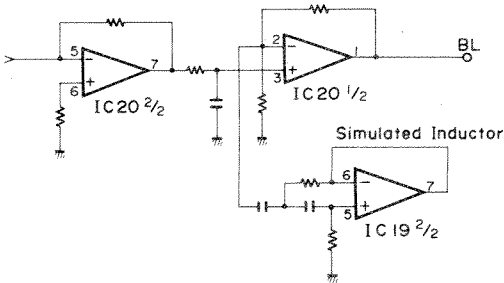
PRESET WAVE selection

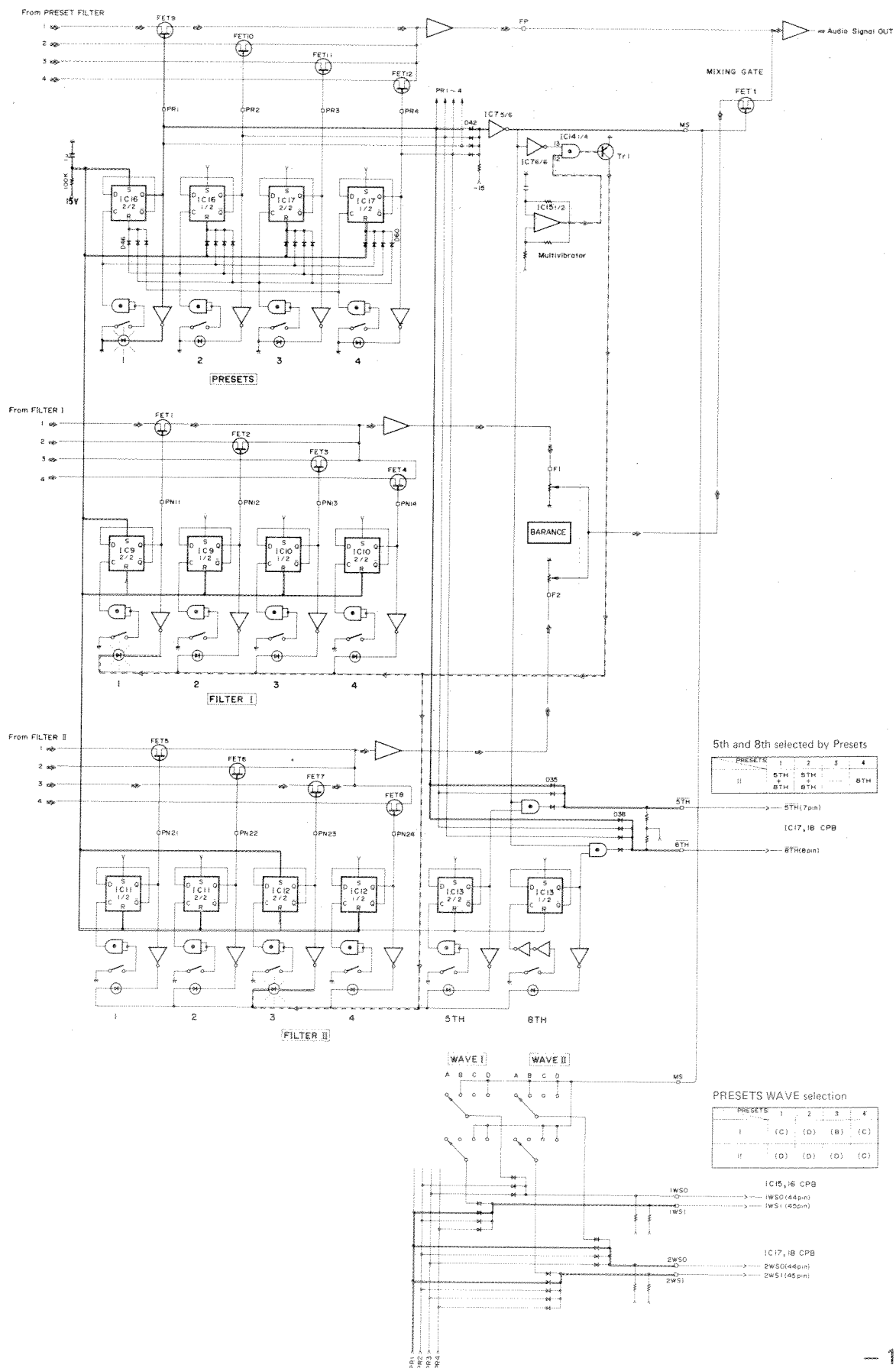
PRESETS	I	2	3	4
Channel I	WAVE [C]	WAVE [D]	WAVE [B]	WAVE [C]
WSO	L	H	H	L
WSI	H	H	L	H
Channel II	WAVE [D]	WAVE [D]	WAVE [D]	WAVE [C]
WSO	H	H	H	L
WSI	H	H	H	H

g) Diodes D46–D60 are used to select one preset voice and ignore the others. (no mixing performed).

MIXING

Overall timbre of the signal from the output of the filter select and preset select circuits is adjusted by equalization. A simulated semiconductor inductor is formed by IC19-2/2 which, combined with IC20-1/2, forms a peaking type equalizer. This equalizer creates a +10dB frequency boost at 560Hz.





KEY CODE OUT

This output is provided for connection to other keyboards having a KEY CODE INPUT connector, such as the CS70M. A special cable is used to connect the CP-35 KEY CODE OUTPUT to the peripheral keyboard's KEY CODE INPUT. With the CP35 connected to another keyboard in this manner, the CP35 keys directly control on/off switching of the respective keys on the peripheral keyboard.

KEY CODE INTERFACE

The key code interface circuit transforms the 4-bit CPA key code output data into the required parallel key code data format.

CPA OUTPUT KEY CODE DATA FORMAT

Transmitted key code

Channel	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
KC1	BR	B1	N1																																														
KC2	DP	B2	N2																																														
KC3	MK	B3	N3																																														
KC4	☆	CHG	N4																																														
Note timing 16CHs																																																	

Key code format (Block)

B1	H	L	H	L	H	L	H
B2	L	H	H	L	L	H	H
B3	L	L	L	H	H	H	H
73Keys	E ₀	C ₁ [#]	C ₂ [#]	C ₃ [#]	C ₄ [#]	C ₅ [#]	C ₆ [#]
	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	E ₆

Key code format (Note)

N1	L	H	L	L	H	L	L	H	L	L	H	L
N2	L	L	H	L	L	H	L	L	H	L	L	H
N3	L	L	L	H	H	H	L	L	L	H	H	H
N4	L	L	L	L	L	L	H	H	H	H	H	H
	C [♯]	D	D [♯]	E	F	F [♯]	G	G [♯]	A	A [♯]	B	C

KEY CODE OUT DATA

The format of the parallel key code data output from the key code data interface is as shown below.

Key Code Output Connector

Pin Name	Pin No.	Data · Condition
K2	(1)	Keyboard data "L" (fixed) Block data
K1	(2)	
		E ₀ ~C ₁ C ₁ [#] ~C ₂ C ₂ [#] ~C ₃ C ₃ [#] ~C ₄ C ₄ [#] ~C ₅ C ₅ [#] ~C ₆ C ₆ [#] ~E ₆
B3T	(3)	L L L H H H H
B2T	(4)	L H H L L H H
R1T	(5)	H L H L H L H
		C [#] D D [#] E F F [#] G G [#] A A [#] B C
N4T	(6)	L L L L L L H H H H H
N3T	(7)	L L L H H H L L L H H H
N2T	(8)	L L H L L H L L H L L H
N1T	(9)	L H L L H L L H L L H L
OCT	(16)	Octave data "L" (fixed)
CON	(17)	Connection data "L" (fixed)

端子名	端子No.	内 容・状 態
BRT	(18)	Touch response data "H" when the transfer point (T) is not connected with the break contact (BR), "L" when the transfer point is connected to the break contact.
MKT	(19)	Touch response data "H" when transfer point (T) is connected to the make contact (MK), "L" when envelope has ended and there is no connection with break point (BR).
DPT	(20)	Damp data "H" when the sustain pedal is pressed, "L" when released.
SYT	(21)	Syncro data Synchronization signal. Synchronization=48 microseconds.
CKT	(22)	Clock $\phi M/3$ Synchronized at 1/3 master clock.
Vss	(23)	Power
Vss	(24)	"

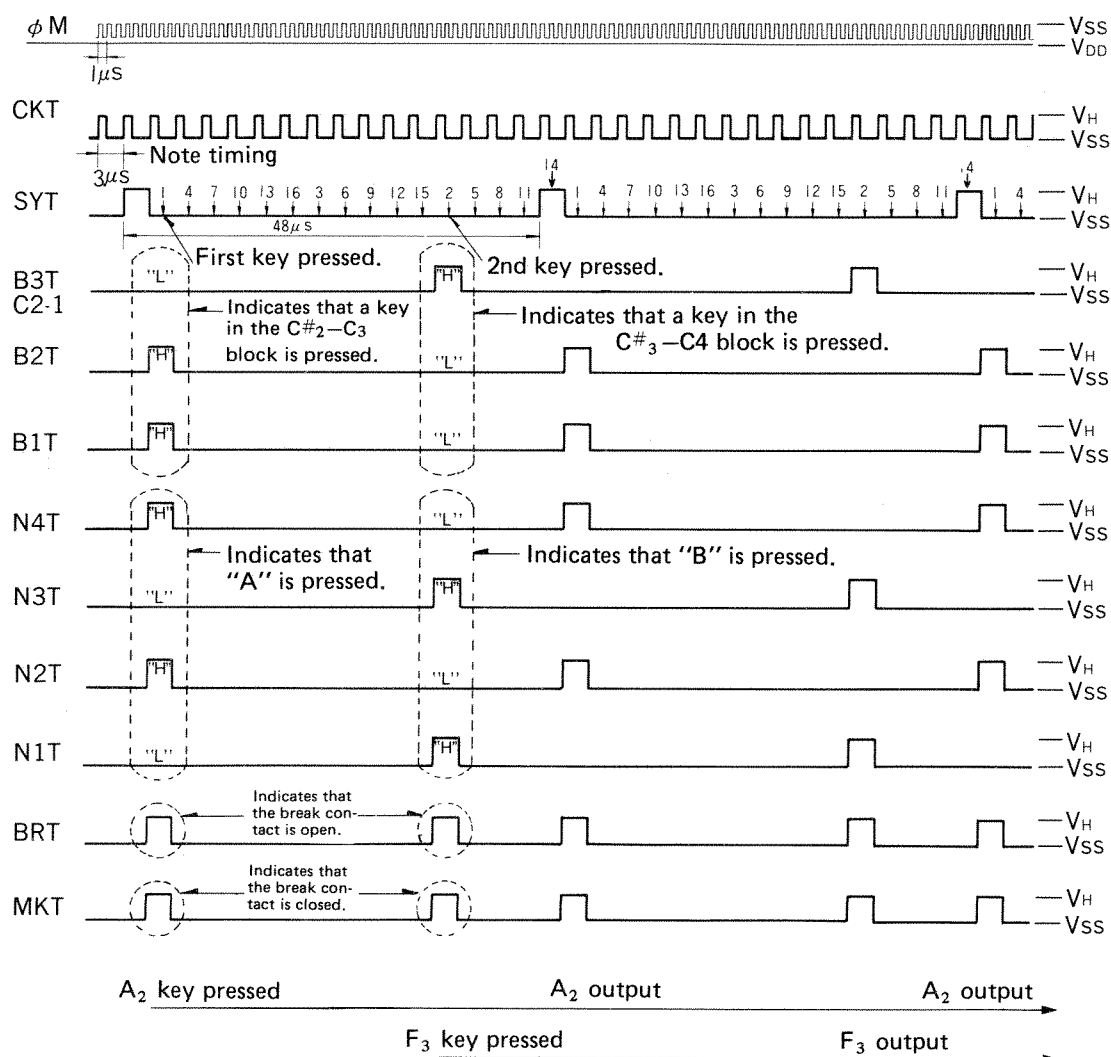
KEY CODE DATA OUT TIMING CHART

After power has been turned on, if the A_2 key is first pressed, then while A_2 is held F_3 is pressed, the following timing results.

$$V_H = +3.4 \pm_{0.7}^{2.1} \text{ VOLTS}$$

$$V_{SS} = 0 \text{ VOLTS}$$

$$V_{DD} = -15 \text{ VOLTS}$$

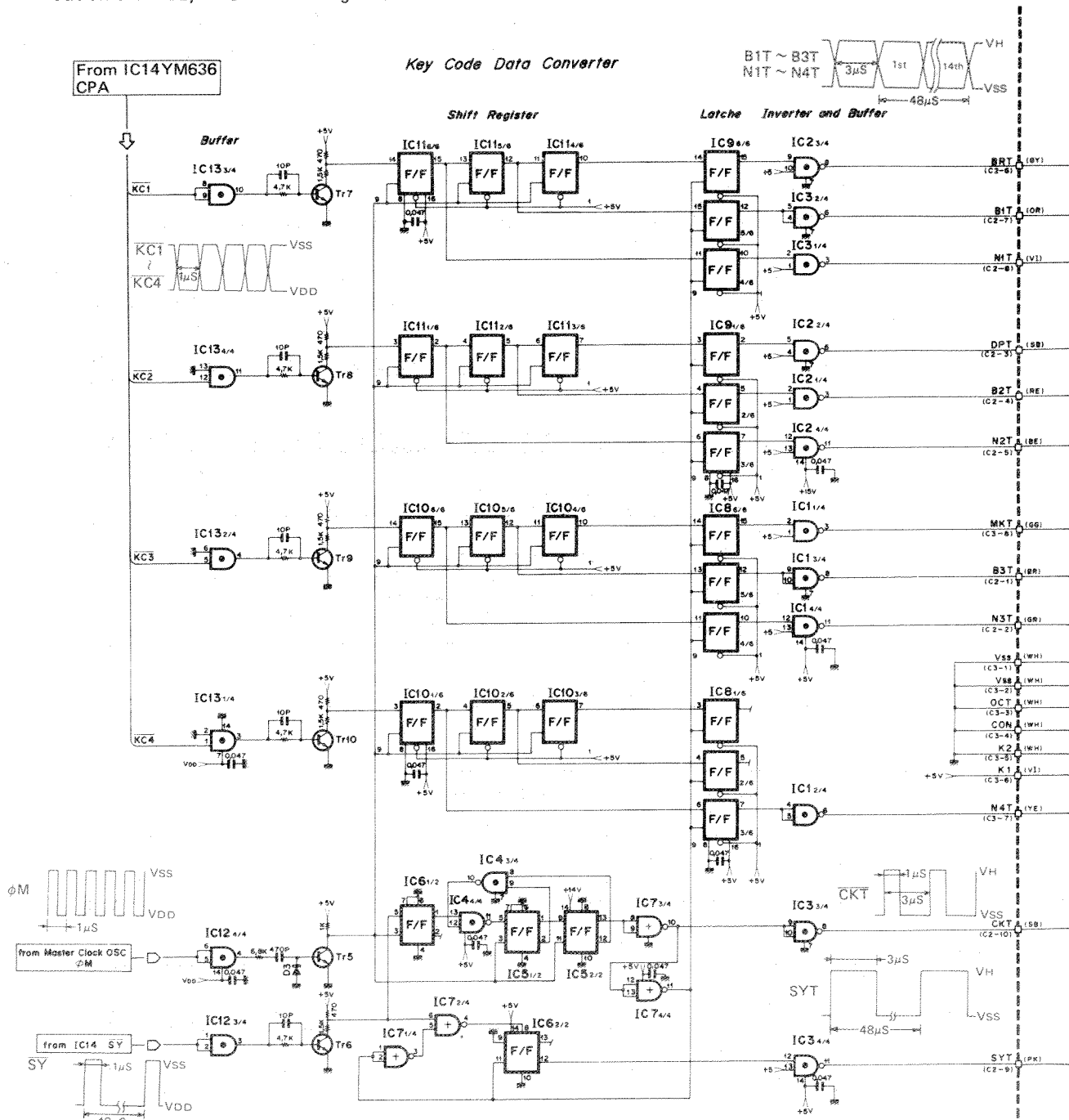


KEYCODE DATA CONVERSION CIRCUIT

Transistors Tr5-Tr10 convert the MOS output level [$V_{ss}(0V)$, $V_{dd}(-15V)$] from the key code channel processor IC, IC14(CPA), to TTL logic levels [$V_{ss}(0V)$, $V_{dd}(+5V)$]. An inverter is also included.

The data in $KC\bar{1}$ (BR, BI, NI) are synchronized to appear simultaneously using shift register IC11-4/6-6/6.

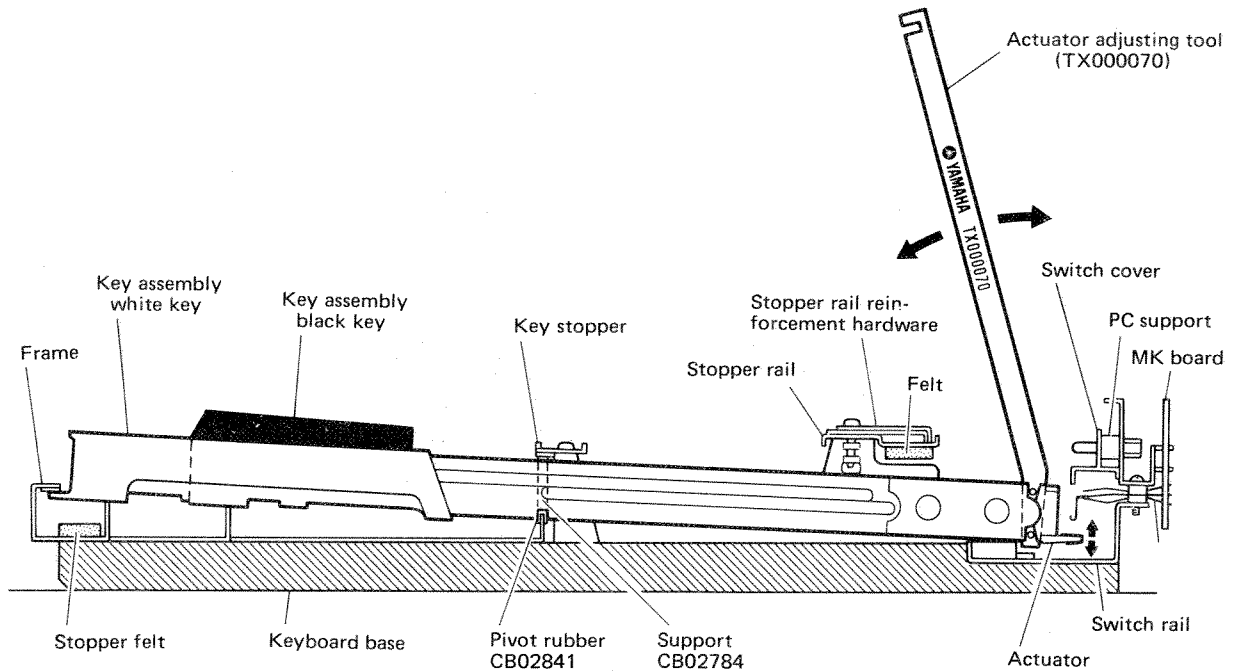
IC9-4/6-6/6 forms a latch circuit that stretches the data pulses to 3 microseconds. This operation is carried out on the $KC\bar{2}$, $KC\bar{3}$ and $KC\bar{4}$ signals.



ADJUSTING THE MECHANISM

● Adjusting the velocity keying actuator

*NOTE: Actuator adjustment is preset at the factory, so no adjustment is required unless the key assembly is replaced.



Use the actuator adjusting tool to adjust the level of each key to be the same as the adjacent keys.

* If the level of a note is too low, lower the actuator by moving the adjustment tool forward. Lowering the actuator results in higher velocity thereby increasing level.

* If the level of a note is high, raise the actuator by moving the adjustment tool back. Raising the actuator results in lower velocity thereby decreasing level.

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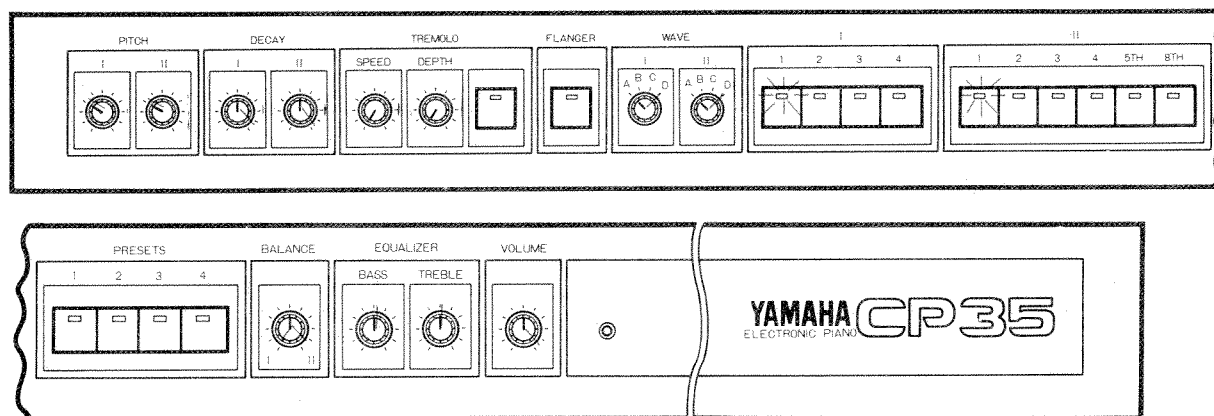
BASIC ADJUSTMENT PROCEDURE(ELECTRICAL)

1. Basic panel settings

Initial setting: When power is first turned on the following condition is obtained:

● Power indicator	LED	.....	ON
● Presets 1 (PSW21)	LED	.....	ON
● Filter I-1 (PSW11)	LED	.....	Flashing/Standby Mode
● Filter I-3 (PSW17)	LED	.....	Flashing/Standby Mode
● Other LEDs		.....	OFF

When performing adjustments, all controls should be set as shown in the illustration and chart below except as otherwise indicated.



PITCH I (PVR1)	10 o'clock position	II-1 (PSW15)	ON
PITCH II (PVR2)	10 o'clock position	II-2 (PSW16)	OFF
DECAY I (PSW3)	fully clockwise (DECAY MAX)	II-3 (PSW17)	OFF
DECAY II (PSW4)	fully clockwise (DECAY MAX)	II-4 (PSW18)	OFF
TREMOLO SPEED (PVR5)	MINIMUM	5TH (PSW19)	OFF
TREMOLO DEPTH (PVR6)	MINIMUM	8TH (PSW20)	OFF
TREMOLO ON-OFF (PSW7)	OFF	PRESETS 1 (PSW21)	OFF
FLANGER (PSW8)	OFF	PRESETS 2 (PSW22)	OFF
WAVE I (PSW9)	fully clockwise (D position)	PRESETS 3 (PSW23)	OFF
WAVE II (PSW10)	fully clockwise (D position)	PRESETS 4 (PSW24)	OFF
I-1 (PSW11)	ON	BALANCE (PVR25)	fully counter-clockwise when measuring channel I fully clockwise when measuring channel II
I-2 (PSW12)	OFF	EQUALIZER BASS (PVR26)	Centered
I-3 (PSW13)	OFF	EQUALIZER TREBLE (PVR27)	Centered
I-4 (PSW14)	OFF	VOLUME (PVR28)	MAXIMUM

2. Tuning

Test Equipment	Tuning scope
Control Settings	PITCH I, PITCH II at 10 o'clock.
Adjustment Specification	$A_3 = 440\text{Hz}$
Procedure	Adjust master oscillator coils "L1" and "L2" on the KC board for 440Hz while depressing the A_3 key

3. Procedures for adjusting individual boards

- Test equipment
tuning scope
digital voltmeter
oscilloscope
- Circuit Boards and Their Functions

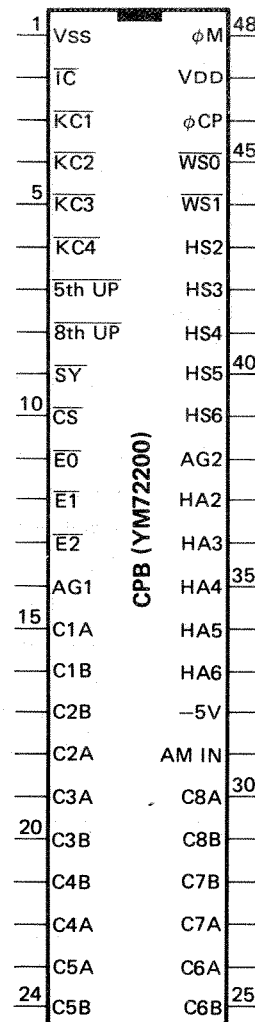
Circuit Board	Function
DM	clock generators I & II key assigner tone generators I & II keycode convertor initial clear circuit
FL	filters channel I – 1, 2, 3, 4, channel II – 1, 2, 3, 4 preset – 1, 2, 3, 4
PN2 PN3	filter selection switch filter I – 1 ~ 4 filter II – 1 ~ 4 preset – 1 ~ 4 5th, 8th select switch LED flasher
EFT	flanger effect circuit BBD device driver circuit comparer, expander circuits tremolo effect circuits (2) photo coupler driver circuits (2)

Circuit Board	Function
EFT	output circuits unbalanced output circuit balanced output circuit headphone output circuit muting circuit
PN1	Pitch control I & II circuits Decay switch I & II circuits tremolo switch speed depth flanger switch Wave switch I & II circuits
PN4	Balance control circuit equalizer (bass & treble) control circuits master volume circuit
DC	+5, -15V regulators (for digital circuits) +15, -15V regulators (for analog circuits)

IC DATA CHART

Part Name	YM722000	Function Name	CPB (Combo Piano—B) Tone Generator
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Terminal				Terminal			
Pin No.	Name	I/O	Description	Pin No.	Name	I/O	Description
1	VSS	I	Ground (0V)	48	ϕ M	I	Master Clock (1MHz)
2	$\overline{\text{IC}}$	I	Initial Clear	47	VDD	I	DC Supply (−15V)
3	$\overline{\text{KC1}}$	I	Key Code Data	46	ϕ CP	I	Pitch Clock
4	$\overline{\text{KC2}}$	I	— do. —	45	$\overline{\text{WS0}}$	I	Wave Select Data
5	$\overline{\text{KC3}}$	I	— do. —	44	$\overline{\text{WS1}}$	I	— do. —
6	$\overline{\text{KC4}}$	I	— do. —	43	HS2	O	Sound Source Waveform (Sustain) Block 0, 1,
7	5th UP	I	Transposition Data	42	HS3	O	— do. — 2
8	8th UP	I	— do. —	41	HS4	O	— do. — 3
9	SY	I	Synchro Data	40	HS5	O	— do. — 4
10	$\overline{\text{CS}}$	I	Chip Select ^{1~8ch, 9~16ch} Synchro Select.	39	HS6	O	— do. — 5, 6
11	$\overline{\text{E0}}$	I	Envelope Data	38	AG2	I	Analog Ground
12	$\overline{\text{E1}}$	I	— do. —	37	HA2	O	Sound Source Waveform (Attack) Block 0, 1,
13	$\overline{\text{E2}}$	I	— do. —	36	HA3	O	— do. — 2
14	AG1	I	Analog Ground	35	HA4	O	— do. — 3
15	C1A	I	Envelope Setting Capacitor	34	HA5	O	— do. — 4
16	C1B	I	— do. —	33	HA6	O	— do. — 5, 6
17	C2B	I	— do. —	32	−5V	I	DC Supply (≒ −10V)
18	C2A	I	— do. —	31	AMIN	I	Minimum Level Setting
19	C3A	I	— do. —	30	C8A	I	Envelope Setting Capacitor
20	C3B	I	— do. —	29	C8B	I	— do. —
21	C4B	I	— do. —	28	C7B	I	— do. —
22	C4A	I	— do. —	27	C7A	I	— do. —
23	C5A	I	— do. —	26	C6A	I	— do. —
24	C5B	I	— do. —	25	C6B	I	— do. —



MEMO

YAMAHA

ELECTRONIC PIANO

CP35

PARTS LIST

CONTENTS

A. Electronic Components	1
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A. Electronic Components

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
※	NA:10:69:20	Circuit Board, PN	# 2883	P N シ ー ト		
※	NA:10:69:30	— do. — , EFT	# 2884	E F T //		
※	NA:10:69:40	— do. — , DM	# 2885	D M //		
※	NA:10:69:50	— do. — , FL	# 2886	F L //		
※	NA:10:69:60	— do. — , JK	# 2887	J K //		
※	NA:10:69:70	— do. — , DC	# 2888	D C //		J
※	NA:10:69:80	— do. — , — do. —	— do. —	//		U,C
※	NA:10:69:90	— do. — , — do. —	— do. —	//		G
※	NA:10:70:30	— do. — , AC	# 2891	A C シ ー ト		J
※	NA:10:70:40	— do. — , — do. —	— do. —	//		U
※	NA:10:70:50	— do. — , — do. —	— do. —	//		G
※	NA:10:74:10	— do. — , — do. —	— do. —	//		C
※	NB:10:35:10	Power Transformer Assembly	# 8258	電 源 ト ラ ンス Ass'y		G
※	NB:10:41:50	— do. —	# 0393	//		J,U
※	NB:10:41:60	— do. —	# 0393	//		C
※	NB:81:76:90	Switch Assembly	33Key	ス イ ッ チ Ass'y		
※	NB:81:77:00	— do. —	40Key	//		
※	NB:80:76:00	Switch Unit	6Key	ス イ ッ チ ユ ニ ッ ト		
※	NB:80:76:10	— do. —	3Key	//		
※	NB:81:75:70	— do. —	4Key	//		
	IG:00:11:70	IC	TC4001BP	I C	2-input NOR	
	IG:00:11:80	— do. —	TC4013BP	//	D Flip-Flop	
	IG:00:12:40	— do. —	TC4011BP	//	2-input NAND	
	IG:00:12:60	— do. —	TC4049BP	//	Buffer/Converter	
	IG:00:13:90	— do. —	NJM4558DV	//	OP. Amp	
	IG:00:17:60	— do. —	TC4081BP	//	2-input AND	
	IG:02:74:00	— do. —	TA7220P	//	Amp	
	IG:02:87:00	— do. —	μPC14315H	//	+15V Regulator	
	IG:03:13:00	— do. —	NE570N	//	Noise Reduction	
	IG:03:29:00	— do. —	# 3290	//	BBD Driver	
	IG:03:33:00	— do. —	μPC14305H	//	+5V Regulator	
	IG:04:61:00	— do. —	MN3009	//	256 Stage BBD	
	IG:05:08:00	— do. —	TC40174BP	//	D Flip-Flop	
※	IG:05:34:00	— do. —	HD74LS37P	//	2-input NAND	
※	IT:63:60:00	— do. —	YM63600	//	CP-A (Key coder Channel Processor)	
※	IT:72:20:00	— do. —	YM72200	//	CP-B (Tone Generator)	
	IA:05:09:10	Transistor	2SA509 (Y)	ト ラ ン ジ ス タ		
	IA:10:15:70	— do. —	2SA1015 (O,Y)	//		
	IC:07:52:20	— do. —	2SC752 (Y)	//		
	IC:18:15:70	— do. —	2SC1815 (O,Y)	//		
	IE:10:12:00	FET	2SK105 (F)	F E T		
	IF:00:00:40	Diode	1S1555	ダ イ オ ー ド		
	IH:00:04:70	— do. —	1D4B1	//		
※	IK:00:03:40	Photo Coupler	P1501	フ ォ ト カ プ ラ ー		
	IL:00:05:80	Mica Base		マ イ カ ベ ー ス		
	CB:07:28:80	Insulation Bushing		絶 縁 ブ ッ シ ュ		

※ New Parts (新規部品) (J : Japan, U : US.American, C : Canadian, G : General)

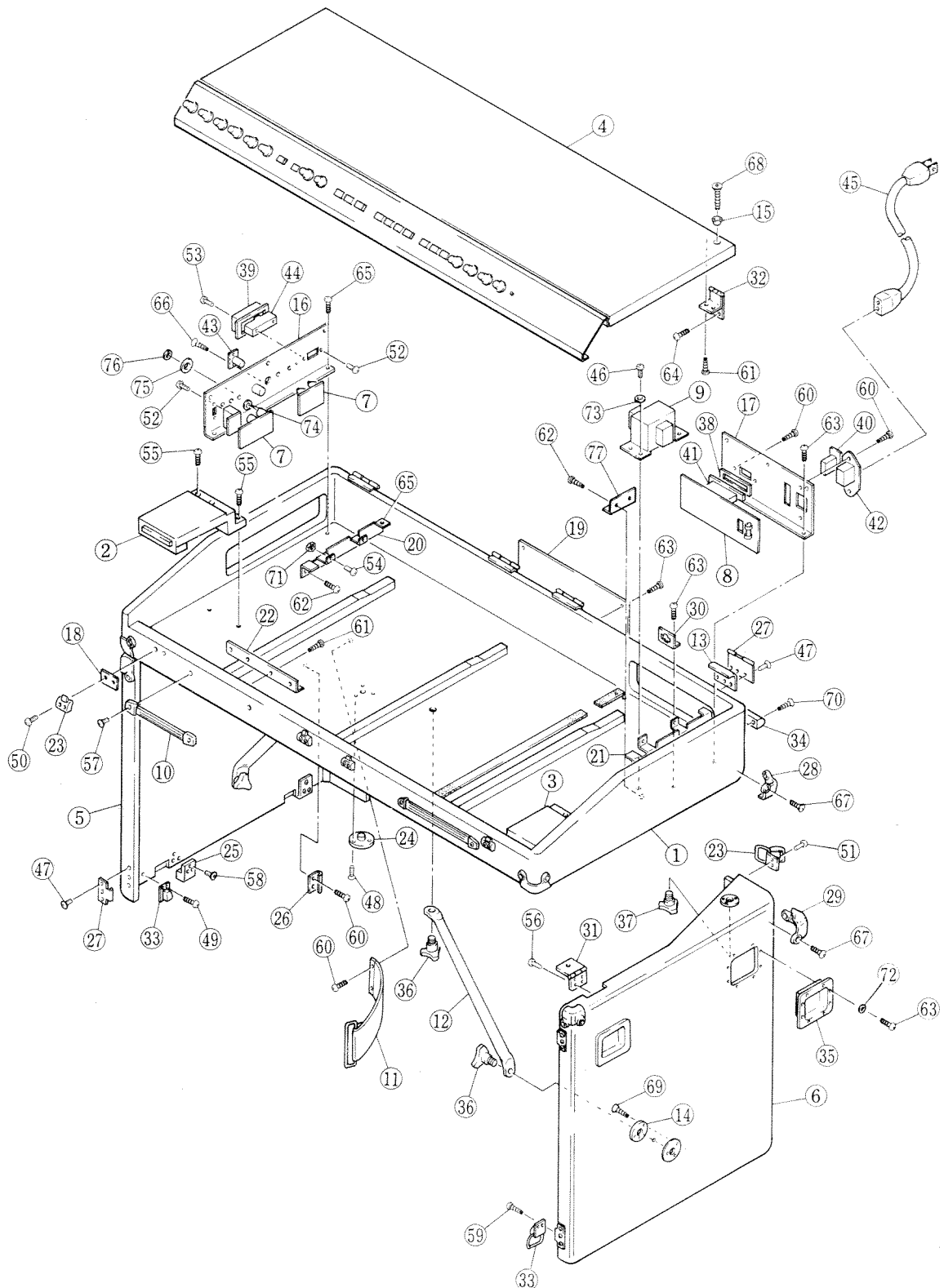
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
	HS 31 04 40	Variable Resistor	B50K Ω	ロータリーボリューム	TREBLE, BASS	
	HS 31 05 50	— do. —	A10K Ω	"	MASTER VOL.	
	HS 31 05 70	— do. —	B10K Ω	"	PITCH, TREMOLO DEPTH	
	HS 31 13 30	— do. —	C100K Ω	"	TREMOLO SPEED	
※	HS 31 14 20	— do. —	BH10K Ω x 2	"	BALANCE	
	HT 37 00 20	Semi Variable Resistor	B10K Ω	半 固 定 抵 抗		
	HT 37 01 00	— do. —	B50K Ω	"		
	HV 35 43 30	Flame-Proof Carbon Resistor	33 Ω	不 燃 化 カ ー ボ ン 抵 抗		
	HV 35 52 20	— do. —	220 Ω	"		
	HW99 45 60	Fuse Resistor	56 Ω	ヒ ュ ー ズ 抵 抗	FN19560	
	FD 65 22 70	Polystyrene Capacitor	270PF	スチロールコンデンサ		
	FD 65 26 80	— do. —	680PF	"		
	FL 63 64 70	B.P. Electrolytic Cap.	4.7 μ F/16V	B. P. ケ ミ コ ン		
	FL 63 71 00	— do. —	10 μ F/16V	"		
	FL 63 72 20	— do. —	22 μ F/16V	"		
	FL 66 64 70	— do. —	4.7 μ F/50V	"		
	FM 80 92 20	Electrolytic Capacitor	2200 μ F/35V	ケ ミ コ ン		
	UJ 15 91 00	— do. —	1000 μ F/35V	"		
	UJ 13 91 00	— do. —	1000 μ F/16V	"		
※	UL 14 66 80	— do. —	6.8 μ F/25V	"	Lo Noise	
	FZ 00 22 50	Spark Suppressor Cap.	0.022 μ F	スパークキラーコンデンサ		
	FZ 00 28 50	— do. —	0.0022 μ F	"		U
	KA 10 10 60	Power Switch		パ ワ ー ス イ ッ チ		
	KA 40 08 10	Slide Switch	4-2	ス ラ イ ド ス イ ッ チ	LINE SW	
	KA 40 08 30	Voltage Selector		電 圧 切 替 器		
	KA 50 17 20	Rotary Switch	1-8	ロータリースイッチ	DECAY I, II	
	KA 50 17 00	— do. —	3-4	"	WAVE I, II	
	KA 90 17 01	Push Switch W/LED	Gray	プッシュスイッチ	TREMOLO, FLANGER 5TH, 8TH UP	
	KA 90 17 11	— do. —	White	"	FILTER, PRESET	
	KB 00 03 10	Fuse	0.5A 250V	ヒ ュ ー ズ		J
	KB 00 03 30	— do. —	1A 250V	"		J
	KB 00 03 40	— do. —	1.5A 250V	"		J
	KB 00 07 10	— do. — (Miniature)	T500mA 250V	ミニチュアヒューズ		G
	KB 00 07 30	— do. — — do. —	T1A 250V	"		G
	KB 00 10 60	— do. —	1A 250V	ヒ ュ ー ズ		U,C
	KB 00 11 50	— do. —	0.5A 250V	"		U,C
	KB 00 15 90	— do. —	1.5A 250V	"		U,C
※	KC 00 13 00	Relay	RZ12	リ レ ー		
	GD 90 02 50	Line Transformer		ラ イ ン ト ラ ン ス		
	GE 30 03 50	Choke Coil	68 μ H	チ ョ ー ク コ イ ル		
	GE 90 03 40	OSC Coil	200 μ H	O S C コ イ ル		

※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
	GE 90 05 00	Coil	CK4	コ イ ル		U
	GE 90 05 30	— do. —	CK6	〃		U
	MG 00 10 30	AC Cord		電 源 コ ー ド		J
	MG 00 10 40	— do. —		〃		U
	MG 00 10 50	— do. —		〃		G
	MG 00 12 80	— do. —		〃		C
	LB 20 18 20	AC Inlet	2P	A C イ ン レ ッ ト		J,U,C
	LB 20 18 60	— do. —	— do. —	〃		G
	LB 20 15 40	Phone Jack		ジ ャ ッ ク		
	LB 30 01 60	Connon Socket	XLR-3-32	キ ャ ノ ン ソ ケ ッ ト		
	LB 20 05 70	Fuse Holder Pin		ヒ ュ ー ズ ホ ル ダ ー ピ ン		
	LB 20 15 30	— do. —		〃		
	LB 50 02 50	Connector Base Pin	5P	2.5ピッチベースピン	Top Entry	
	LB 60 24 60	— do. —	7P	〃	— do. —	
	LB 60 24 90	— do. —	8P	〃	— do. —	
	LB 60 24 70	— do. —	10P	〃	— do. —	
	LB 40 05 90	— do. —	4P	〃	Side Entry	
	LB 50 02 70	— do. —	5P	〃	— do. —	
	LB 60 28 20	— do. —	6P	〃	— do. —	
	LB 60 30 20	— do. —	8P	〃	— do. —	
	LB 50 03 70	— do. —	5P	〃	Bottom Entry	
	LB 60 30 00	— do. —	7P	〃	— do. —	
	LB 60 30 70	— do. —	10P	〃	— do. —	
	LB 40 05 60	Connector Housing	4P	2.5ピッチハウジング		
	LB 50 02 40	— do. —	5P	〃		
	LB 60 28 10	— do. —	6P	〃		
	LB 60 24 40	— do. —	7P	〃		
	LB 60 24 80	— do. —	8P	〃		
	LB 60 24 50	— do. —	10P	〃		
	LB 60 15 40	Connector Plug	9P	9 P ブ ラ グ		
	LB 60 15 50	Connector Cap	9P	9 P キ ャ ッ プ		
	LB 60 40 40	Connector Housing	8P	ハ ウ ジ ン グ		
	LB 60 39 90	Connector	8P	コ ネ ク タ ー		
	LB 60 39 40	Connector Socket	24P	コ ネ ク タ ー ソ ケ ッ ト		
	BB 00 44 30	Pin Contact		ピ ン コ ン タ ク ト		
	BB 00 49 90	— do. —		〃		
	LB 60 16 70	— do. —		〃		
	LB 60 16 60	Socket Contact		ソ ケ ッ ト コ ン タ ク ト		

※ New Parts (新規部品)

B. Cabinet Assembly



Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
※ 1	DA:02:45:50	Bottom Case Assembly	底 枠 集 成			
※ 2	DA:02:45:70	End-Block Assembly (L)	拍 子 木 集 成 (左)			
※ 3	DA:02:45:80	— do. — (R)	” (右)			
※ 4	DA:02:45:90	Top-Board Assembly	屋 根 集 成			

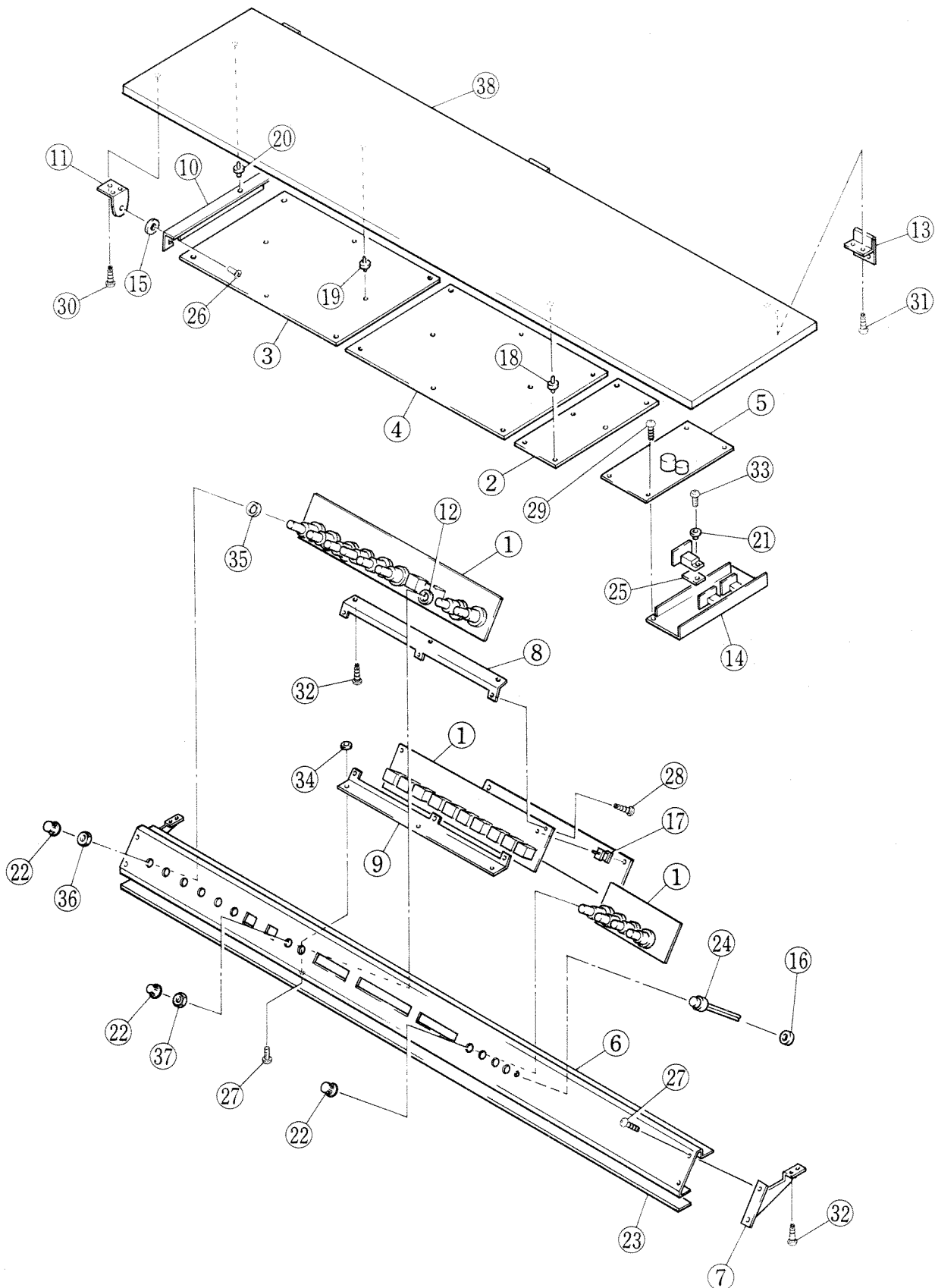
※ New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
※ 5	DA:02:46:00	Cover Assembly (L)	蓋 脚 集 成 (左)			
※ 6	DA:02:46:10	— do. — (R)	〃 (右)			
※ 7	NA:10:69:60	Circuit Board, JK # 2887	J K シ ー ト			
※ 8	NA:10:70:30	— do. — , AC # 2891	A C 〃			J
※	NA:10:70:40	— do. — , — do. — — do. —	〃			U
※	NA:10:70:50	— do. — , — do. — — do. —	〃			G
※	NA:10:74:10	— do. — , — do. — — do. —	〃			C
※ 9	NB:10:35:10	Power Transformer Assembly	電 源 ト ラ ン ス Ass'y			G
※	NB:10:41:50	— do. —	〃			J,U
※	NB:10:41:60	— do. —	〃			C
10	NB:80:59:50	Handle Assembly	取 手 Ass'y			
11	NB:80:59:60	Pedal Stopper Band	ペダル止めバンドAss'y			
12	NB:81:69:90	Stay Assembly	脚 柱 Ass'y			
13	AA:01:46:90	Corner Angle	コ ー ナ ー ア ン グ ル			
14	AA:01:58:70	Stay Washer	脚 受 座 金			
15	AA:02:90:40	Washer	皿 ワ ッ シ ャ ー			
※ 16	AA:05:25:40	I/O Panel	I / O パ ネ ル			
※ 17	AA:05:25:60	AC Panel	電 源 パ ネ ル			J,U,C
※	AA:05:25:70	— do. —	〃			G
※ 18	AA:05:32:40	Lock Plate	バ ッ チ ン 錠 プ レ ー ト			
※ 19	AA:05:26:20	Name Plate	ネ ー ム プ レ ー ト			
※ 20	AA:05:26:30	Top Board Holder (L)	屋 根 受 金 具 (左)			
※ 21	AA:05:26:40	— do. — (R)	〃 (右)			
※ 22	AA:05:32:00	Handle Plate	取 手 取 付 金 具			
23	AA:80:24:50	Lock	パ ッ チ ン 錠			
24	AA:80:42:70	Nut, Leg	脚 用 ナ ッ ト			
25	AA:80:42:90	Slip Fitting	滑 り 座			
26	AA:80:43:20	Pedal Stopper	引 掛 金 具			
27	AA:80:64:20	Latch Hinge	引 掛 蝶 番			
28	AA:80:90:50	Corner Metal	コ ー ナ ー 金 具			
29	AA:81:47:70	— do. —	〃			
30	AA:81:63:00	Connector Holder	コ ネ ク タ ホ ル ダ ー			
31	AA:81:66:30	Leg Hinge	脚 蝶 番			
32	AA:81:73:80	Top Board Hinge	蝶 番			
33	AA:99:00:00	Lock	バ ッ チ ン 錠			
34	CB:01:03:10	Case Leg	脚			
※ 35	CB:04:02:10	Handle	蓋 脚 取 手			
36	CB:80:83:30	Knob Bolt	ノ ブ ネ ジ			
37	CB:80:83:40	— do. — M8x30	〃			
38	CB:81:78:90	Spacer	ス ペ ー サ ー			
39	CB:81:79:10	Cover	カ バ ー			
40	KA:10:10:60	Power Switch	パ ワ ー ス イ ッ チ			
41	KA:40:08:30	Voltage Selector	電 圧 切 替 器			
42	LB:20:18:20	AC Inlet, 2P	2 P イ ン レ ッ ト			J,U,C
	LB:20:18:60	— do. — , — do. —	〃			G
43	LB:30:01:60	Cannon Socket XLR-3-32	キャノンソケット			
44	LB:60:39:40	Connector Socket 24P	コネクターソケット			
45	MG:00:10:30	AC Cord	電 源 コ ー ド			J
	MG:00:10:40	— do. —	〃			U
	MG:00:10:50	— do. —	〃			G
	MG:00:12:80	— do. —	〃			C
46	EA:34:01:50	Pan Head Screw M4x15 BL	ナ ベ 小 ネ ジ			
47	EB:23:01:40	Flat Head Screw M3x14 Cr	皿 小 ネ ジ			

※ New Parts (新規部品)

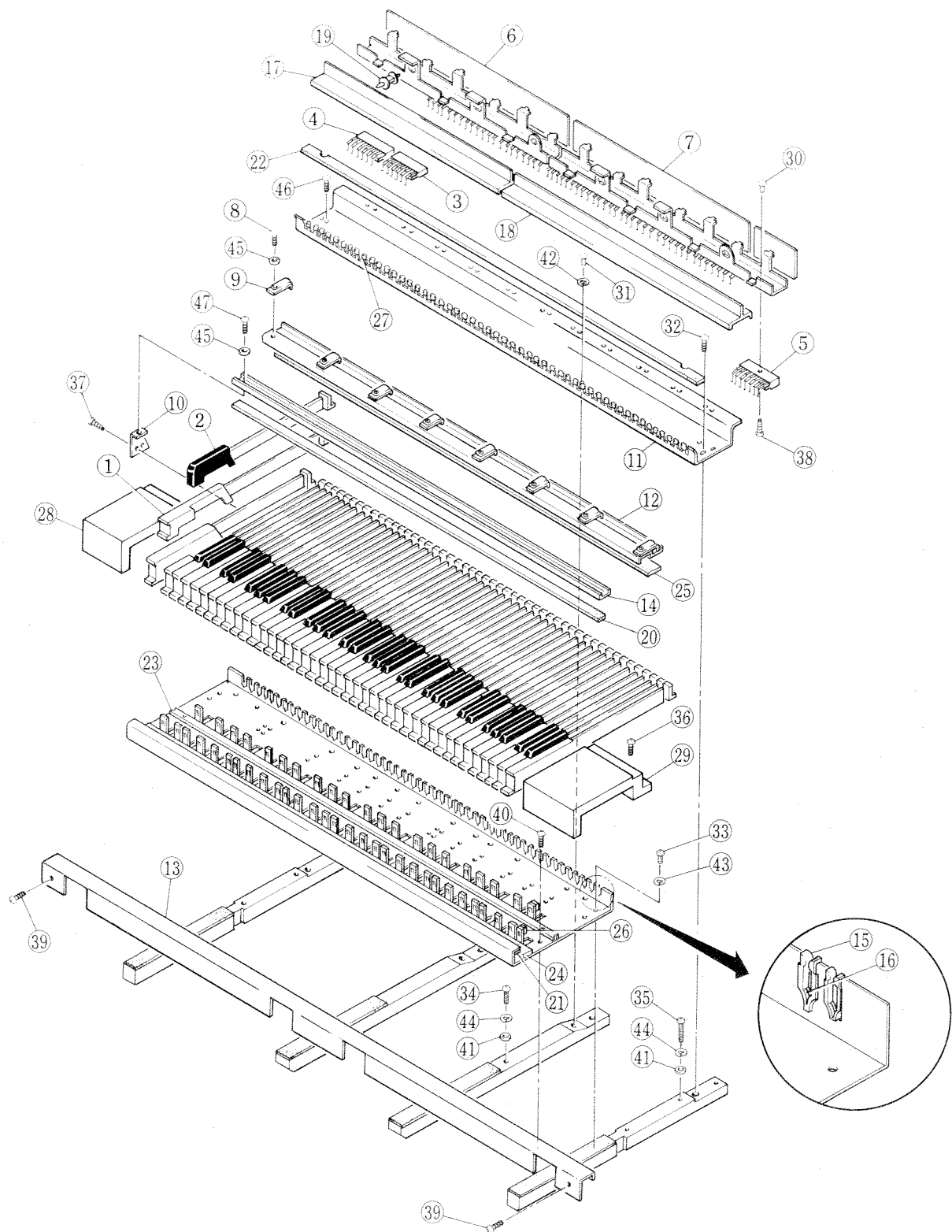


C. Top Board Assembly



※ New Parts (新規部品)

D. Keyboard Assembly



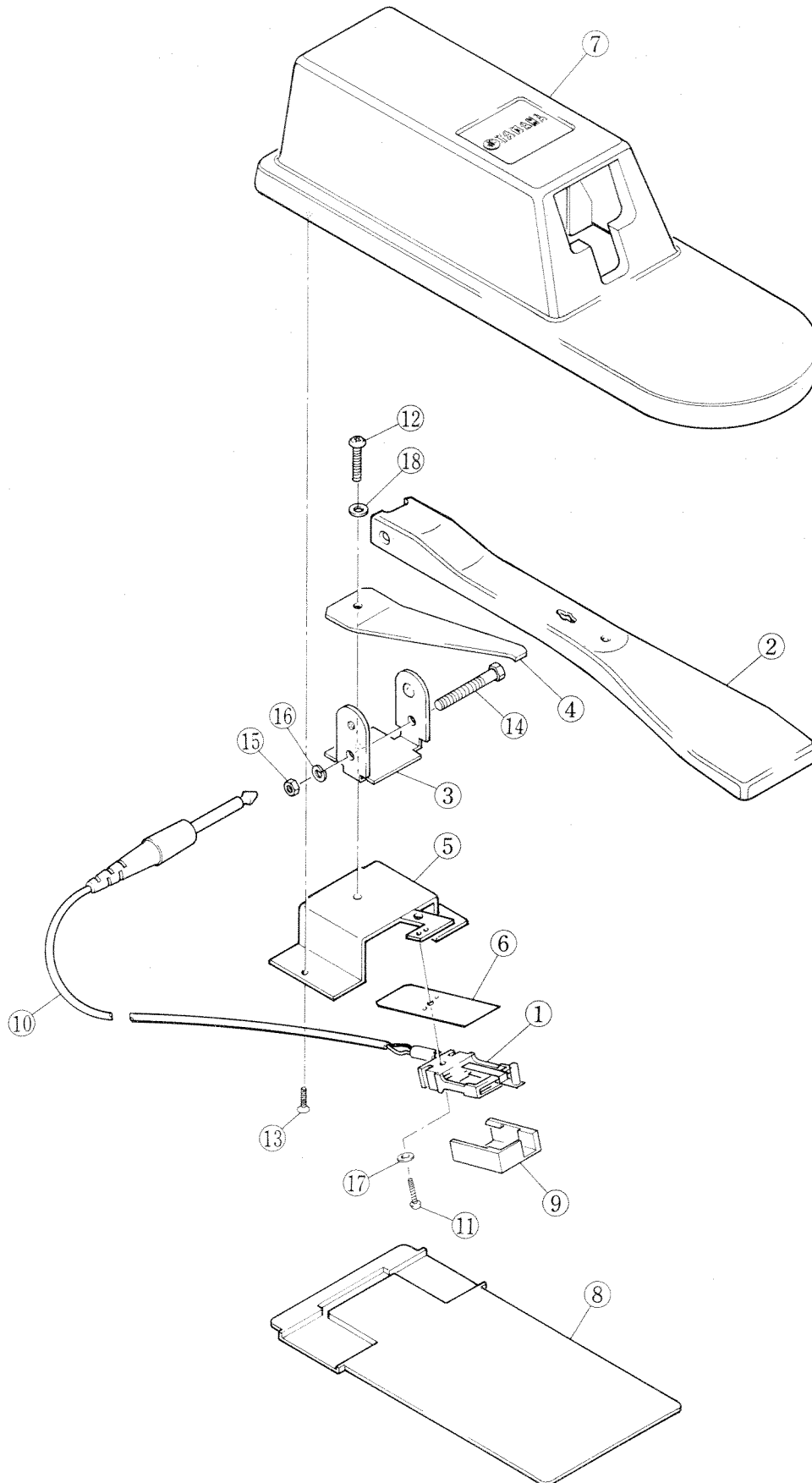
Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets
1	NB:04:51:00	White Key Assembly	E'	白 鍵 Ass'y		
	NB:04:34:30	— do. —	C, F	"		
	NB:04:34:40	— do. —	D	"		
	NB:04:34:50	— do. —	E, B	"		

* New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名		Remarks	Common Model	Markets
	NB:04:34:60	White Key Assembly	G	白 鍵 Ass'y			
	NB:04:34:70	— do. —	A	〃			
2	NB:04:35:10	Black Key Assembly		黒 鍵 Ass'y			
3	NB:80:76:00	Switch Unit	6Key	スイッチユニット			
4	NB:80:76:10	— do. —	3Key	〃			
※ 5	NB:81:75:70	— do. —	4Key	〃			
※ 6	NB:81:76:90	Switch Assembly	33Key	ス イ ッ チ Ass'y			
※ 7	NB:81:77:00	— do. —	40Key	〃			
8	ES:04:02:00	Tap Tight Screw	4 X 20	Ye	タ ッ プ タ イ ト ネ ジ		
9	AA:80:46:40	Guard, Stopper Rail			ストッパーレール補強金具		
10	AA:80:46:50	Stay (B)			ス テ ー (B)		
※ 11	AA:81:67:80	Switch Rail			ス イ ッ チ レ ー ル		
※ 12	AA:81:68:00	Stopper Rail			ストッパーレール		
※ 13	AA:05:32:10	Front Rail			ロ 金		
※ 14	AA:81:68:40	Key Stopper			キ ー ス ト ッ パ ー		
15	CB:02:78:40	Support			サ ポ ー ト		
16	CB:02:84:10	Pivot Rubber			ピ ボ ッ ト ゴ ム		
※ 17	CB:03:97:80	Switch Cover			ス イ ッ チ カ バ ー		
※ 18	CB:03:97:90	— do. —			〃		
19	CB:81:78:10	PC Support			P C サ ポ ー ト		
※ 20	CB:81:87:30	Key Stopper Rubber			キ ー ス ト ッ パ ー ゴ ム		
※ 21	CC:02:19:50	Stopper Felt			ストッパーフェルト		
※ 22	CC:07:04:40	— do. —			〃		
※ 23	CC:07:04:60	— do. —			〃		
※ 24	CC:07:04:80	— do. —			〃		
※ 25	CC:07:05:00	— do. —			〃		
26	CD:01:00:50	Key Guide Cloth			キ ー ガ イ ド ク ロ ス		
27	CH:00:02:90	Tube	Between White & White Key		ヒ シ チ ュ ー ブ		
	CH:00:03:00	— do. —	Between White & Black Key		〃		
※ 28	DA:02:45:70	End Block Assembly (L)			拍 子 木 集 成 (左)		
※ 29	DA:02:45:80	— do. — (R)			〃 (右)		
30	EA:03:01:20	Pan Head Screw	M3x12	Ye	ナ ベ 小 ネ ジ		
31	EA:04:01:60	— do. —	M4x16	Ye	〃		
32	EA:05:01:60	— do. —	M5x16	Ye	〃		
33	EA:05:02:00	— do. —	M5x20	Ye	〃		
34	EA:35:03:00	— do. —	M5x30	BL	〃		
35	EA:35:03:50	— do. —	M5x35	BL	〃		
36	Ei:33:52:00	Bind Tapping Screw	3.5x20	BL	バ イ ン ド タ ッ ピ ン グ ネ ジ		
37	EJ:03:00:60	Pan Head Tapping Screw	3x6	Ye	ナ ベ タ ッ ピ ン グ ネ ジ		
38	EJ:03:01:20	— do. —	3x12	Ye	〃		
39	EH:33:51:20	Truss Tapping Screw	3.5x12	BL	ト ラ ス タ ッ ピ ン グ ネ ジ		
40	EQ:03:51:30	Round Head Wood Screw	3.5x13	Ye	丸 木 ネ ジ		
41	EV:20:30:50	Flat Washer	5S	BL	平 座 金		
42	EV:30:00:40	Spring Lock Washer	4S	Ye	バ ネ 座 金		
43	EV:30:00:50	— do. —	5S	Ye	〃		
44	EV:30:30:50	— do. —	5S	BL	〃		
45	EV:42:00:40	Toothed Lock Washer	B4S	Ye	歯 付 座 金		
46	ES:04:01:20	Tap Tight Screw	4x12	Ye	タ ッ プ タ イ ト ネ ジ		
47	ES:04:01:50	— do. —	4x15	Ye	〃		

※ New Parts (新規部品)

E. Sustainer Pedal



* New Parts (新規部品)

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