

Clavinova[®] CLP-110

SERVICE MANUAL



CLP-110

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This document is printed on chlorine free (ECF) paper with soy ink.

IMPORTANT NOTICE

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

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

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

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

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

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

WARNING: CHEMICAL CONTENT NOTICE!

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

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

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

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

IMPORTANT NOTICE FOR THE UNITED KINGDOM

Connecting the Plug and Cord

IMPORTANT. The wires in this mains lead are coloured in accordance with the following code:

BLUE : NEUTRAL
BROWN : LIVE

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:

The wire which is coloured BLUE must be connected to the terminal which is marked with the letter N or coloured BLACK.


The wire which is coloured BROWN must be connected to the terminal which is marked with the letter L or coloured RED.

Making sure that neither core is connected to the earth terminal of the three pin plug.

(2 wires)

- This applies only to products distributed by Yamaha-Kemble Music (U.K.) Ltd.

■ WARNING

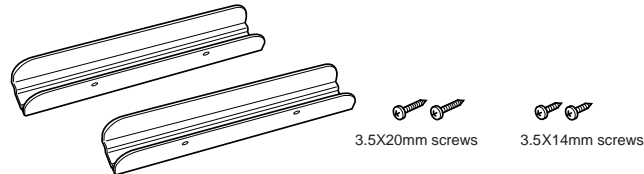
Components having special characteristics are marked  and must be replaced with parts having specification equal to those originally installed.

ATTACHING THE KEYBOARD STAND STABILIZERS (U Only)

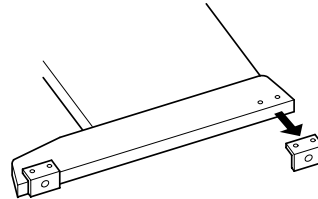
IMPORTANT! Be sure to attach the stabilizers to the keyboard stand prior to use to ensure maximum stability.

Be sure to attach the stabilizers to the keyboard stand feet prior to assembly of the keyboard stand.

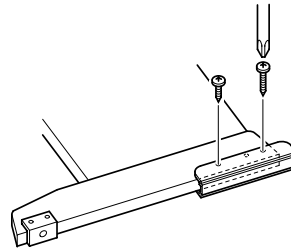
1. Make sure that you have two stabilizers and four screws (one stabilizer for each of the keyboard stand feet and one 3.5X20mm screw and one 3.5X14mm screw for each of the stabilizers).



2. Remove the anti-skid bracket from the rear side of the keyboard stand feet. Keep the anti-skid bracket and screws for future use.



3. Position the stabilizer on the keyboard stand foot so the rear of the stabilizer extends beyond the end of the foot. Align the rear foot hole with the rear stabilizer hole. Insert and tighten one of the 3.5X20mm screws. Then insert one of the 3.5X14mm screw in the front hole, and tighten it. Tighten the screw very firmly since there is no front screw hole on the feet. See the illustration below.



Do not slide the unit on the floor with the stabilizers attached to the feet. Otherwise, the floor will be scratched.

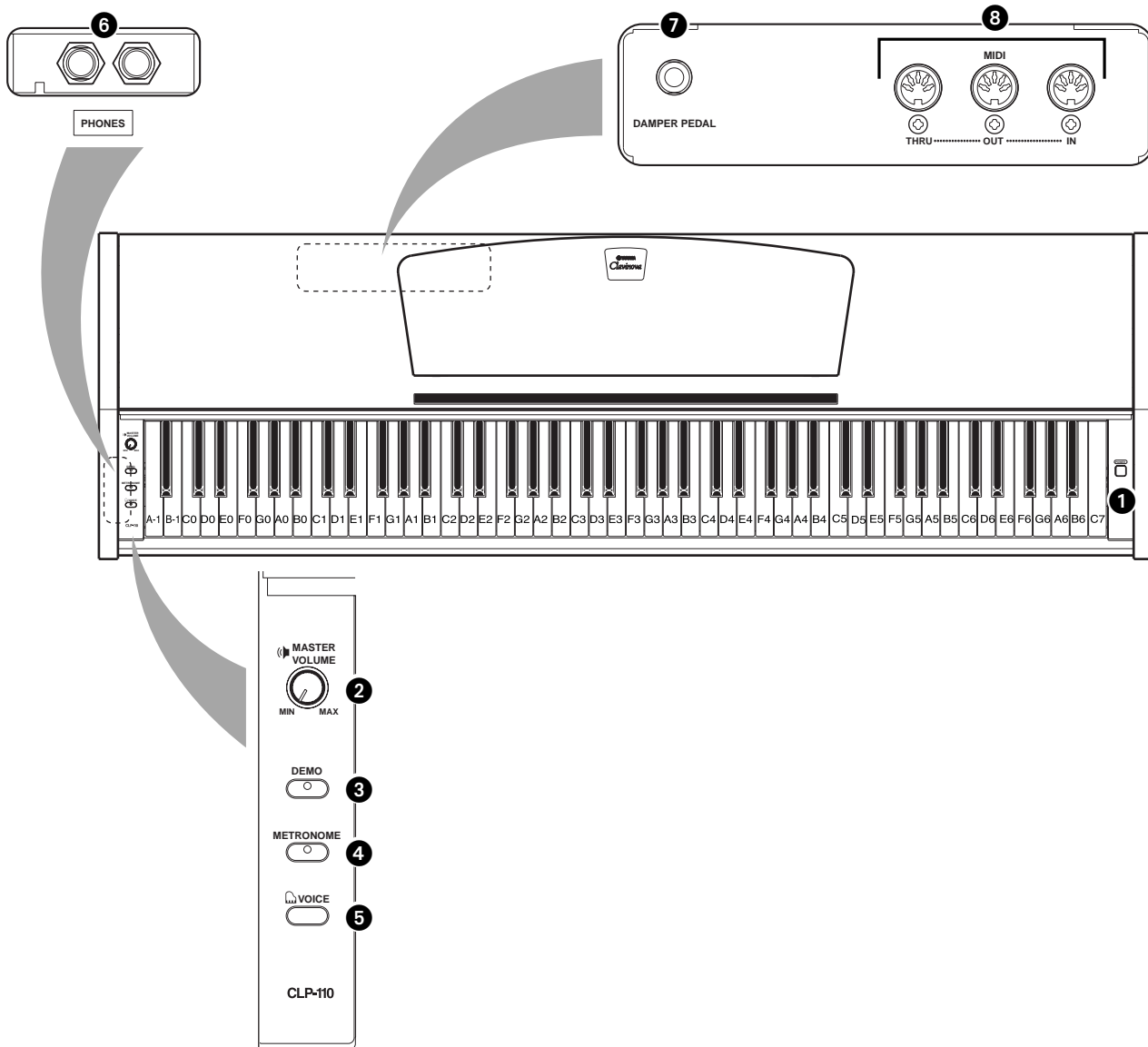
MAKE SURE THAT ALL SCREWS ARE TIGHTENED FIRMLY.

■ SPECIFICATIONS

Keyboard	88 keys (A-1 - C7)
Sound Source	AWM Stereo Sampling
Polyphony	32 Notes Max.
Voice Selection	10
Effect	Reverb
Volume	Master Volume
Controls	Dual, Metronome, Transpose
Pedal	Damper
Demo Songs	10 voice Demo Songs, 50 preset Songs
Jacks/Connectors	MIDI (IN/OUT/THRU), PHONES x 2, DAMPER PEDAL
Main Amplifiers	20W x 2
Speakers	Oval (12cm x 6cm) x 2
Power Consumption	48W
Dimensions (W x D x H)	1345mm x 426mm x 814mm [52-15/16" x 16-3/4" x 32-1/2"]
(with music stand)	1345mm x 426mm x 967mm [52-15/16" x 16-3/4" x 38-11/16"]
Weight	36kg (79lbs. 6oz)
Accessories	Owner's Manual, "50 greats for the Piano" (Music Book), Bench (included or optional depending on locale), Quick Operation Guide, Damper Pedal

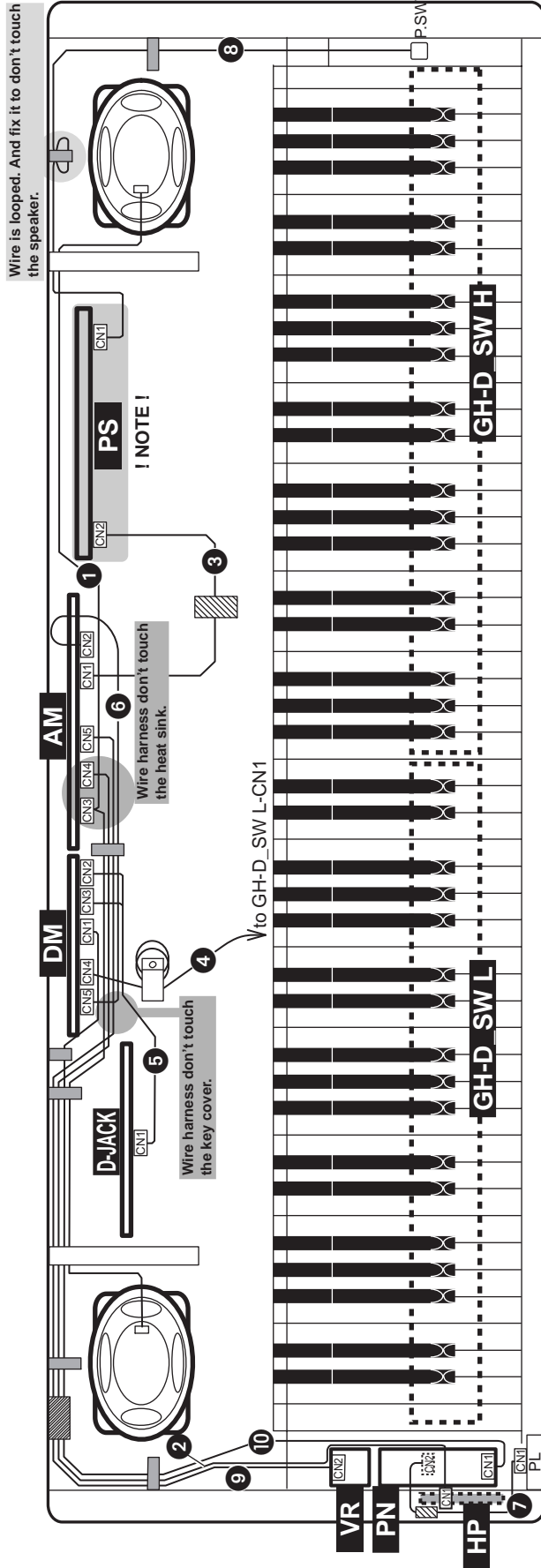
■ PANEL LAYOUT

• Top Panel



- 1** [POWER] button
- 2** [MASTER VOLUME] control
- 3** [DEMO] button
- 4** [METRONOME] button
- 5** [VOICE] button
- 6** [PHONES] jack
- 7** [DAMPER PEDAL] jack
- 8** MIDI [IN] [OUT] [THRU] connector

CIRCUIT BOARD LAYOUT



NOTE: 3, 8 wire harness shall be around as the following drawing . (U/C model only)

- : Code Binder
- : Ferrite Core
- : Filament Tape (12 x 50)
- : Aluminum Tape (40 x 50)

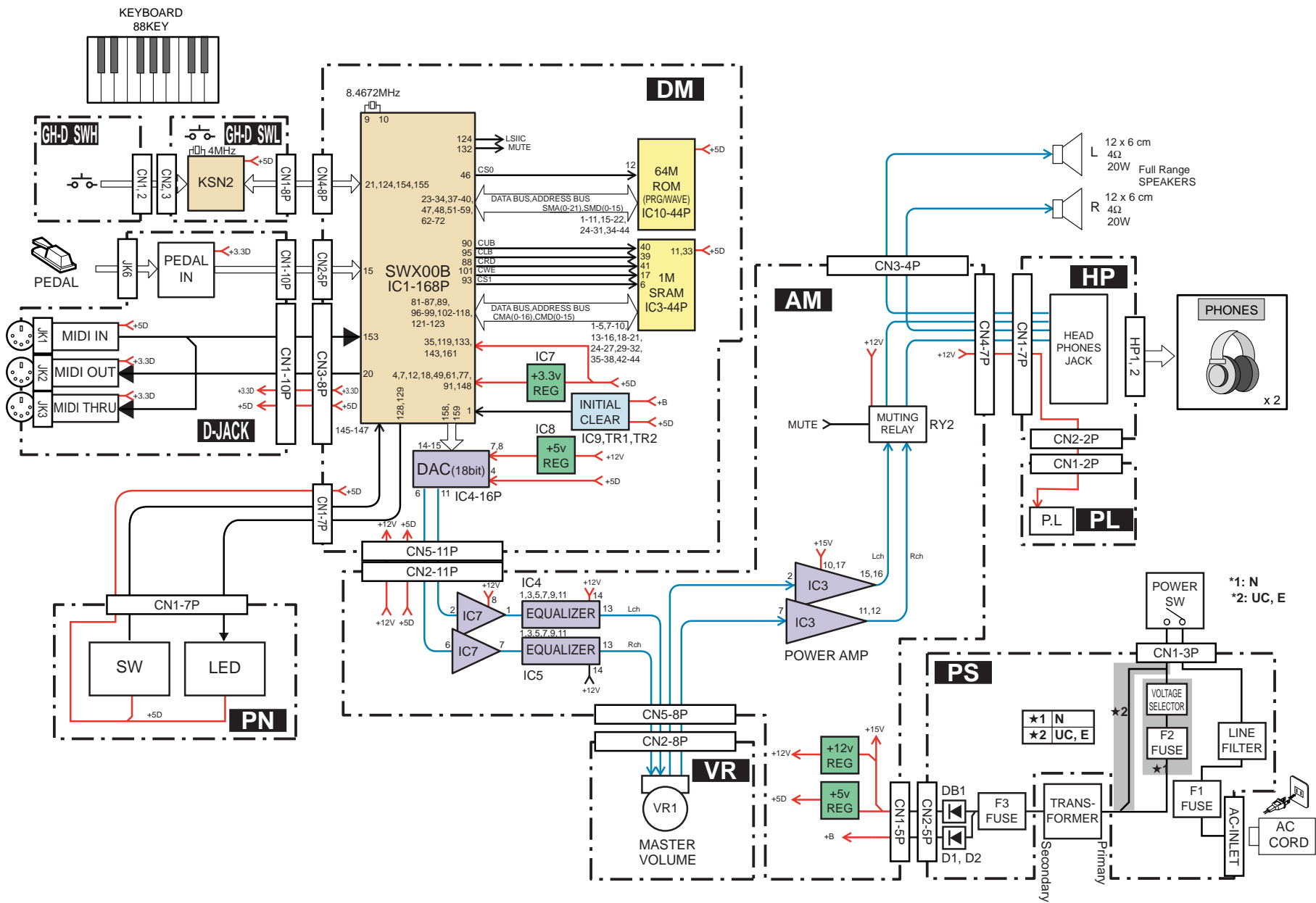


: Connector Direction

Location	Part Number	Part Name	Destination
1	(V909110)	AMSP Wire Harness	AM-CN3 SP Lch WH/BL SP Rch RE/BL
2	(V908680)	AMHP Wire Harness	AM-CN4 HP-CN1
3	(V004510)	PSAM Wire Harness	PS-CN2 AM-CN1
4	V9401000	MK Wire Harness	DM-CN4 AEXL88L-CN1
5	(V908650)	KRD-KRD Wire Harness	DM-CN2 DM-CN3 D-JACK-CN1
6	(VK10860)	KRD-KRD Wire Harness	AM-CN2 DM-CN5
7	VK099600	KRD-KRD Wire Harness	HP-CN2 PL-CN1
8	V5353700	PSW Wire Harness	POWER SW PS-CN1
9	(V909180)	VOL Wire Harness	AM-CN5 VR-CN002
10	(V908660)	KRD-KRD Wire Harness	DM-CN1 PN-CN001

2NC-V851290

■ BLOCK DIAGRAM

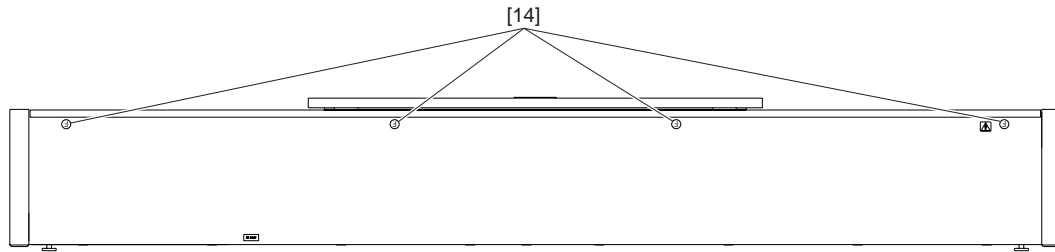


■ DISASSEMBLY PROCEDURE

1. Top Board Assembly

(Time required: about 1 min)

- 1-1 Remove the four (4) screws marked [14]. (Fig.1)
 1-2 Slide the top board assembly forward and lift it out.



(Fig.1)

[14]: Truss Head Tapping Screw-1 4.0X25 MFZN2BL (EN640160)

2. Circuit Boards or Units in the Main Unit (Time required: about 6 min)

- 2-1 Remove the top board assembly. (See procedure 1)
 2-2 Remove the following screws to remove each circuit board or unit. (Fig.2)

Circuit Board or Unit	Ref No.	Screw	Quantity
DM	31	Bind Head Tapping Screw-B 3.0X6 MFZN2Y (EP600130)	4
AM Sheet Assembly	40a	Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)	4
D-JACK Assembly	40b	Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)	4
Power Supply Unit	103	Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)	5
Speaker L, R	10	Truss Head Tapping Screw-1 4.0X16 MFZN2Y (03747340)	8

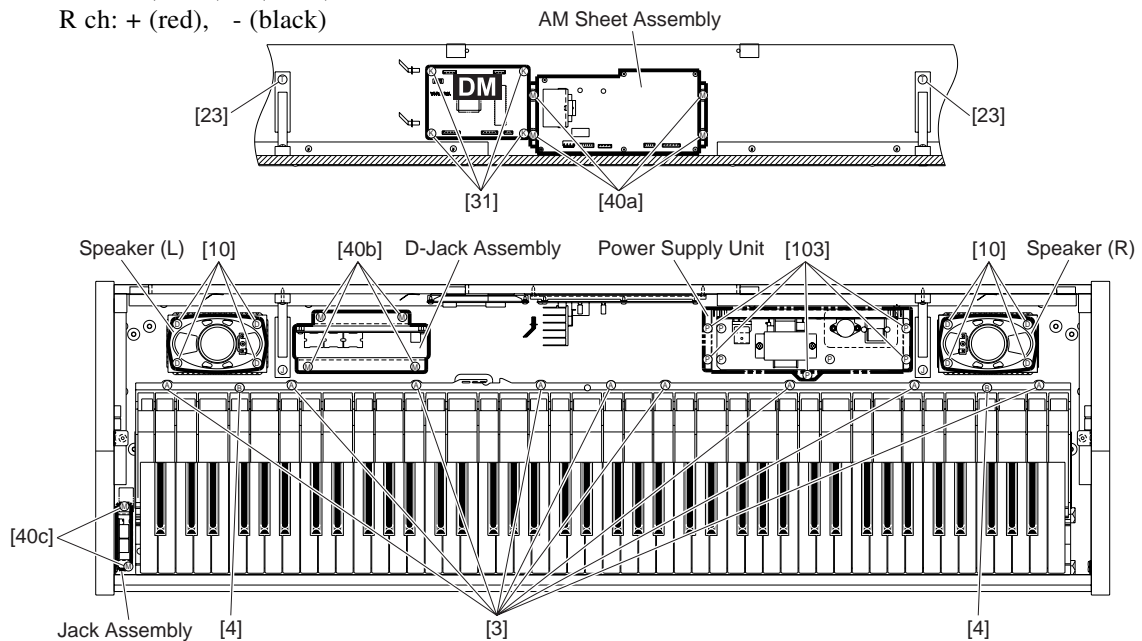
* To remove the DM circuit board or AM sheet assembly, use a screw driver which is shorter than a clearance between the circuit board and the keyboard assembly.

In using a longer screw driver by necessity, remove the keyboard assembly before removing these circuit boards. (See procedure 8)

* In connecting the speaker cables again, take care of polarity.

L ch: + (white), - (black)

R ch: + (red), - (black)



(Fig.2)

[3]: Pan Head Screw 5.0X25 MFZN2Y PW (VV040700)

[4]: Bind Head Tapping Screw-1 4.0X14 MFZN2Y (EP040230)

[10]: Truss Head Tapping Screw-1 4.0X16 MFZN2Y (03747340)

[23]: Truss Head Tapping Screw-1 3.5X20 MFZN2Y (EN630260)

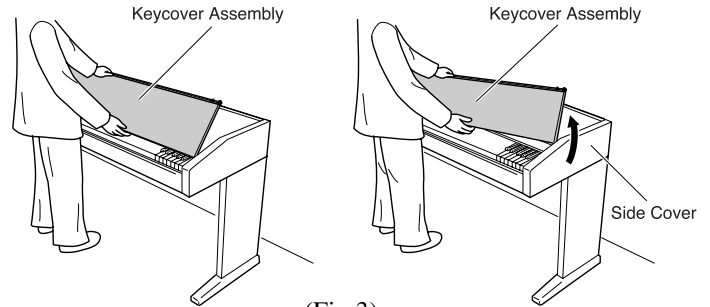
[31]: Bind Head Tapping Screw-B 3.0X6 MFZN2Y (EP600130)

[40]: Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)

[103]: Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)

**3. Key Cover Assembly
(Time required: about 1 min)**

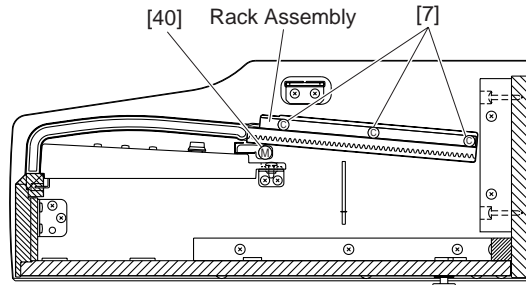
- 3-1 Remove the top board assembly. (See procedure 1)
- 3-2 Cover the keyboards completely with the key cover assembly, and lift up the rear of it. (Fig.3)
- 3-3 Lean the key cover assembly slightly and remove the guide pin from the guide rail. (Fig.3)
- * Don't lean the key cover too much not to let the sash F scratch the front rail.



(Fig.3)

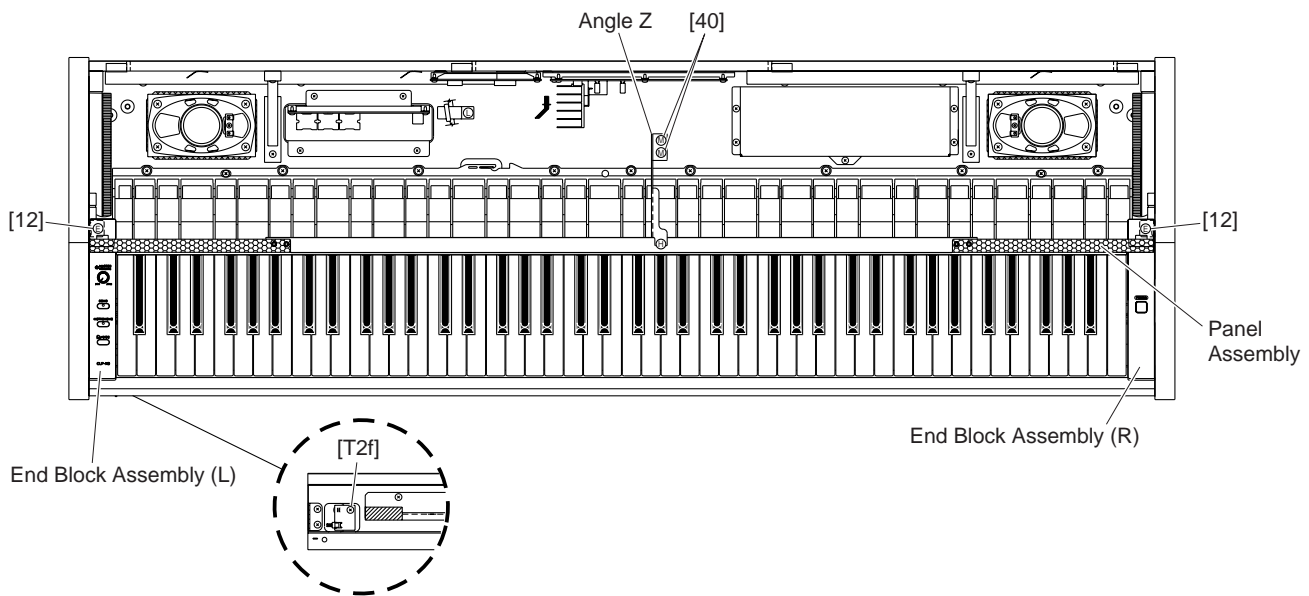
4. End Block Assembly (L, R) (Time required: about 3 min)

- 4-1 Remove the top board assembly. (See procedure 1)
- 4-2 Remove the key cover assembly. (See procedure 3)
- 4-3 Remove the two (2) screws marked [40] to remove the angle Z. (Fig.4)
- 4-4 Remove the screw marked [40] for each side to remove the panel assembly. (Fig.4)
- 4-5 Remove the three (3) screws marked [7] for each side to remove the rack (L, R). (Fig.4)
- 4-6 Remove the screw marked [12] for each side. The end block assembly (L, R) can then be removed. (Fig.5)



(Fig.4)

- [7]: Bind Head Tapping Screw-1 3.5X20 MFZN2Y (EP030470)
- [40]: Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)



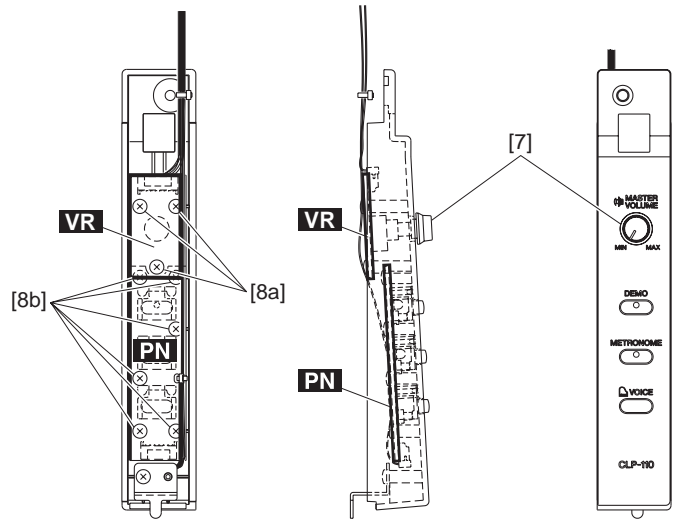
(Fig.5)

- [T2f]: Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)
- [12]: Bind Head Tapping Screw-B 4.0X10 MFZN2Y (EP640130)
- [40]: Bind Head Tapping Screw-1 3.5X12 MFZN2Y (EP030240)

5. PN and VR Circuit Board (Time required: about 5 min)

- 5-1 Remove the top board assembly. (See procedure 1)
- 5-2 Remove the key cover assembly. (See procedure 3)
- 5-3 Remove the end block assembly L. (See procedure 4)
- 5-4 Remove the nine (9) screws marked [8]. (Fig.6)
- 5-5 Remove the VR knob marked [7]. The PN circuit board can then be removed. (Fig.6)

* When removing the VR circuit board alone, remove the three (3) screws marked [8a]. (Fig.6)
The PN circuit board can not be removed without removing the VR circuit board.

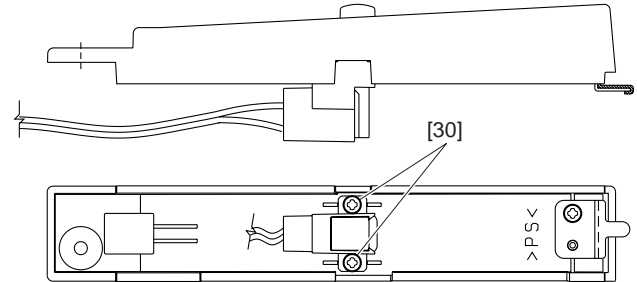


(Fig.6)

- [7]: Knob Black (V2300100)
- [8]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)

6. Power Switch Assembly (Time required: about 5 min)

- 6-1 Remove the top board assembly. (See procedure 1)
- 6-2 Remove the key cover assembly. (See procedure 3)
- 6-3 Remove the end block assembly R. (See procedure 4)
- 6-4 Remove the two (2) screws marked [30]. The power switch assembly can then be removed. (Fig.7)



(Fig.7)

- [30]: Bind Head Tapping Screw-B 3.0X8 MFZN2Y (EP600250)

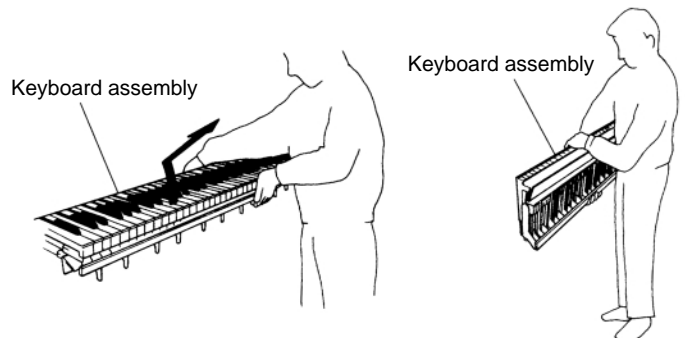
7. Headphones Jack Assembly (Time required: about 4 min)

- 7-1 Remove the top board assembly. (See procedure 1)
- 7-2 Remove the key cover assembly. (See procedure 3)
- 7-3 Remove the end block assembly L. (See procedure 4)
- 7-4 Remove the two (2) screws marked [40c]. The headphones jack assembly can then be removed. (Fig.2)

8. Keyboard Assembly (Time required: about 7 min)

- 8-1 Remove the top board assembly. (See procedure 1)
- 8-2 Remove the key cover assembly. (See procedure 3)
- 8-3 Remove the end block assembly (L, R). (See procedure 4)
- 8-4 Remove the two (2) screws marked [40] to remove the angle Z. (Fig.5)
- 8-5 Remove the screw marked [40] for each side to remove the panel assembly. (Fig.4)
- 8-6 Remove the nine (9) screws marked [3] and the two (2) screws marked [4]. (Fig.2)
- 8-7 Move the keyboard assembly backward, hold central area of it and get it upright to remove. (Fig.8)

* It may twist and damage the frame to hold both side ends of keyboard assembly or remove it in a horizontal position.



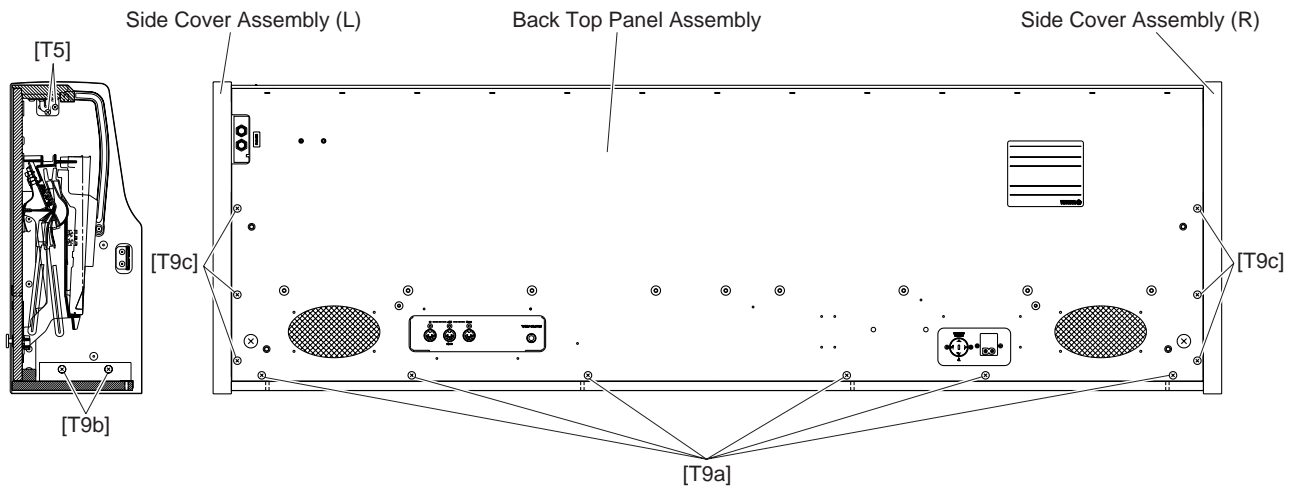
(Fig.8)

**9. PL Circuit Board
(Time required: about 7 min)**

- 9-1 Remove the top board assembly. (See procedure 1)
- 9-2 Remove the key cover assembly. (See procedure 3)
- 9-3 Remove the end block assembly (L, R). (See procedure 4)
- 9-4 Remove the keyboard assembly. (See procedure 8)
- 9-5 Remove the screw marked [T2f]. The PL circuit board can then be removed. (Fig.5)

**10. Back Top Board Assembly
(Time required: about 5 min)**

- 10-1 Remove the top board assembly. (See procedure 1)
- 10-2 Remove the screw marked [23] for each side. (Fig.2)
- 10-3 Remove the six (6) screws marked [T9a] and the two (2) screws marked [T9b] for each side. The back top board assembly can then be removed. (Fig.9)

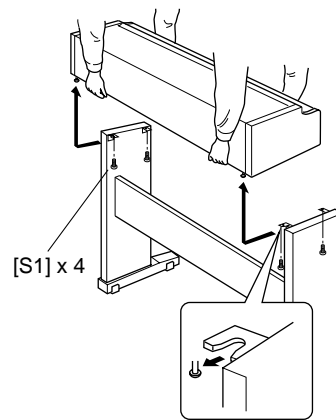


(Fig.9)

- [T5]: Bind Head Tapping Screw-1 3.5X16 MFZN2Y (EP030190)
- [T9]: Truss Head Tapping Screw-1 3.5X25 MFZN2Y (EN630080)

11. Main Unit (Time required: about 2 min)

- * For safety, this process should be done by two personnel.
- * Previously, spread soft cloth on where the main unit will be laid after it is removed.
- * In removing the main unit, take great care not to catch fingers between the main unit and the stand.
- 11-1 Remove the two (2) screws marked [S1] for each side. (Fig.10)
- 11-2 Move the main unit backward and lift it out. (Fig.10)

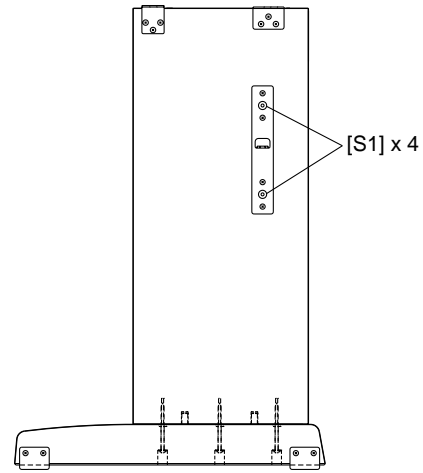


(Fig.10)

- [S1]: Bind Head Screw 6.0X16 MFZN2BL (EG360020)

12. Side Cover Assembly (L, R) (Time required: about 10 min)

- * For safety, this process should be done by two personnel.
 - * To remove screws from the bottom, prepare a worktable or bolsters to set the main unit.
- 12-1 Remove the top board assembly. (See procedure 1)
 - 12-2 Remove the key cover assembly. (See procedure 3)
 - 12-3 Remove the end block assembly (L, R). (See procedure 4)
 - 12-4 Remove the keyboard assembly. (See procedure 8)
 - 12-5 Remove the main unit and set it on the worktable or the bolsters. (See procedure 11)
 - 12-6 Remove the two (2) screws marked [T9b] for each side, three (3) screws marked [T9c] for each side and two (2) screws marked [T5] for each side. The side cover assembly (L, R) can then be removed. (Fig.9)

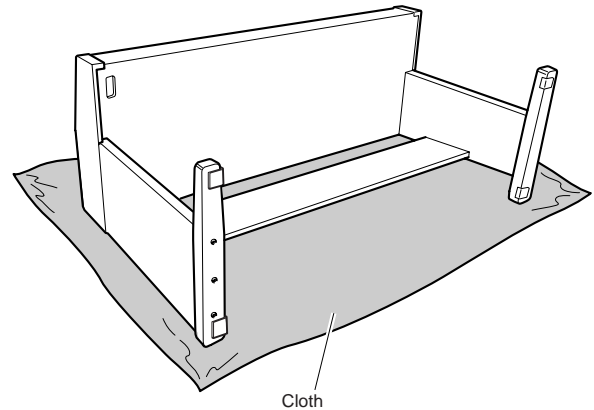


(Fig.11)

[S1]: Bind Head Screw 6.0X16 MFZN2BL (EG360020)

13. Side Board Assembly (L, R) and ST Board Assembly (Time required: about 3 min)

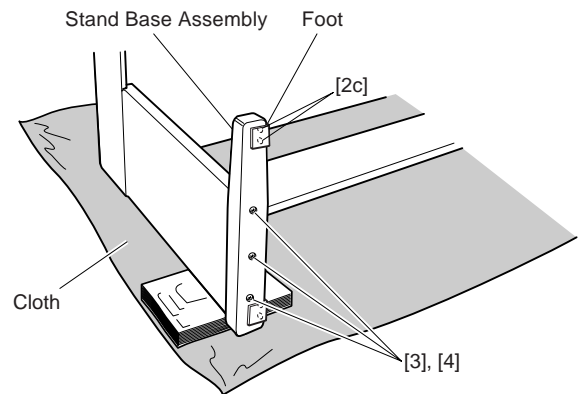
- * For safety, this process should be done by two personnel.
- 13-1 Remove the main unit. (See procedure 11)
 - 13-2 Remove the two (2) screws marked [S1] for each side. The side board assembly (L, R) and the ST board assembly can then be removed. (Fig.11)



(Fig.12)

14. Stand Base Assembly (L, R) and Foot (Time required: about 4 min)

- * For safety, this process should be done by two personnel.
 - * The foot can be removed without removing the stand base.
 - * The side board and the two projections (dowels) on the stand base assembly are joined with bond, so remove the stand base assembly with a little more force than usual.
- Before reinstalling the stand base assembly, remove the dried bond on the projections (dowels) completely and apply new bond to them.
- 14-1 Spread soft cloth on the floor and lay down the product carefully on its back. (Fig.12)
 - 14-2 Put bolsters under the both side boards to float the stand bases from the floor. (Fig.13)
 - 14-3 Remove the three (3) screws marked [4] for each side. The stand base assembly (L, R) can then be removed. (Fig.13)
 - 14-4 Remove the four (4) screws marked [2c]. The foot can then be removed. (Fig.13)



(Fig.13)

[2c]: Flat Head Tapping Screw-1 3.5X20 MFZN2BL (EM030180)
 [3]: Flat Washer 4.0X12X1.0 MFZN2Y (VK287600)
 [4]: Pan Head Tapping Screw 4.0X90 MFZN2Y (V9761000)

**15. Disassembling the GHD Keyboard
(Time required: about 20 min)**

* After inserting a round stick (Rod: TX000670) between the frame and keys, remove the circuit boards. (Fig.16)

15-1 Remove the keyboard assembly. (See Procedure 8)

15-2 GH-D_SW L circuit board.

Remove the seven (7) screws marked [260a]. The GH-D_SW L circuit board can then be removed. (Fig.14)

15-3 GH-D_SW H circuit board.

Remove the ten (10) screws marked [260b]. The GH-D_SW H circuit board can then be removed. (Fig.14)

* Keys can be removed without removing the circuit boards.

* The rubber contact can be removed, after GH-D_SW L circuit board and GH-D_SW H circuit board are removed.

15-4 White Key

Insert a thin plate between the white keys, near the triangle mark around the fulcrum of the key, and press down the stopper marked [A] to remove the key. (Fig.15, 16)

* Take care not to damage the key spring when removing a key.

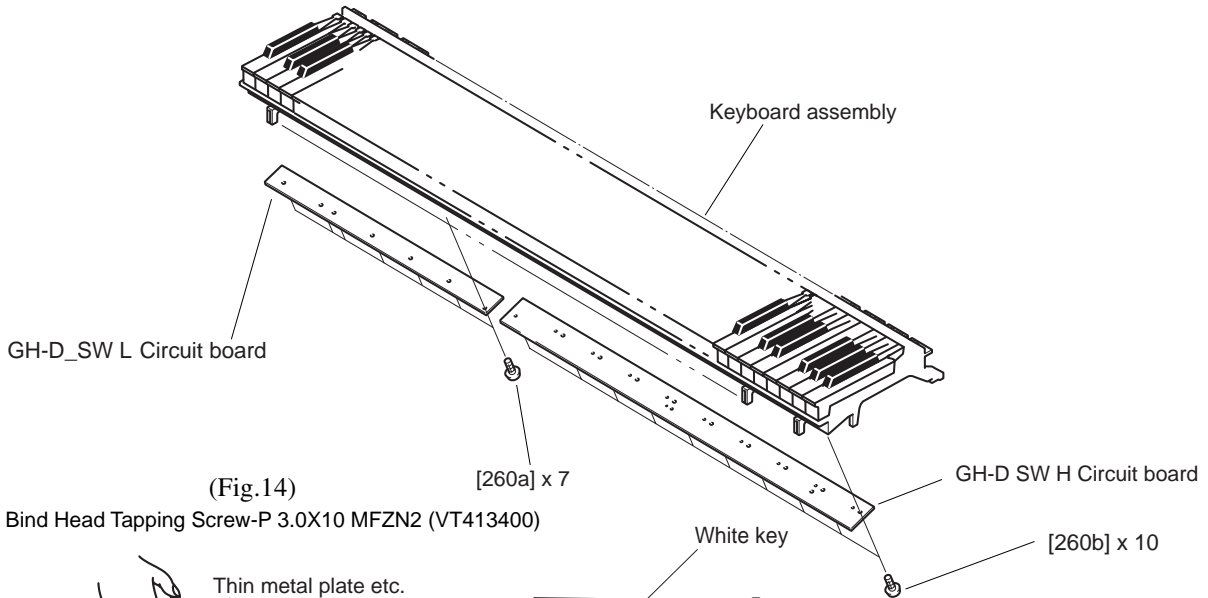
* A black key can be removed after both adjacent white keys have been removed.

15-5 Hammer, White Key

After a key has been removed, push the key spring down once to take it out of the hook. (Fig.17)

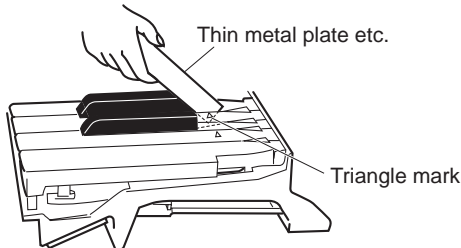
Place the GH keyboard assembly upside down and peel away then stopper L88W. The hammer of the white key can then be removed. (Fig.18)

* The hammer of a black key can be removed in the same manner.

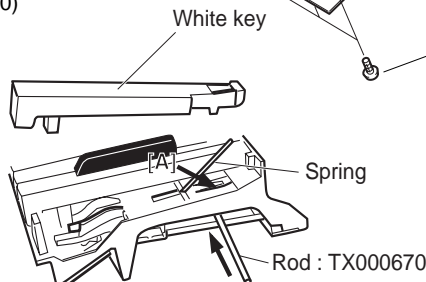


(Fig. 14)

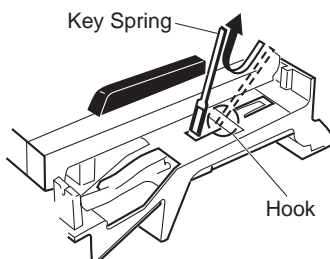
[260]: Bind Head Tapping Screw-P 3.0X10 MFZN2 (VT413400)



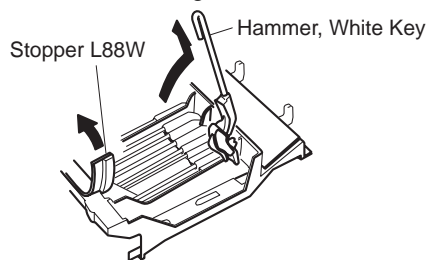
(Fig. 15)



(Fig. 16)



(Fig. 17)



(Fig. 18)

16. Assembling the GHD Keyboard

16-1 Hammer of White (Black) Key

Place the keyboard assembly upside down, insert a hammer assembly into the frame, and put the stopper L88W on. (Fig.19)

* There are four kinds of hammers that differ in weight.

16-2 Key Spring

Place the keyboard assembly right side up, and fix a key spring to the frame by setting it at the slit and pushing it down once. (Fig.20)

* Be careful of the direction of the spring.

16-3 White (Black) Key

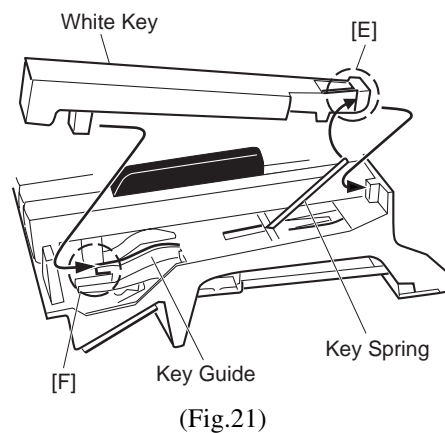
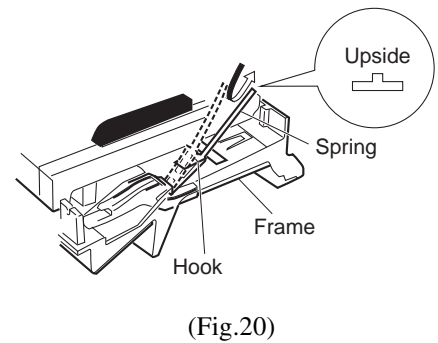
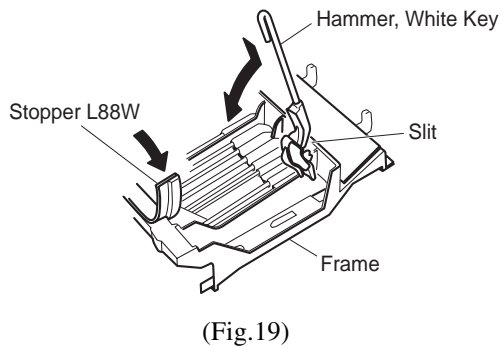
After a key has been fit to part [F] and the key guide, make sure that the spring is fixed to the key. Then press part [E] of the key down. (Fig.21)

16-4 GH-D_SW L circuit board.

Tighten the seven [7] screws marked [260a] to fix the GH-D_SW L circuit board. (Fig.14)

16-5 GH-D_SW H circuit board.

Tighten the ten [10] screws marked [260b] to fix the GH-D_SW H circuit board. Set the slits of the rubber contact at the marks on the frame. (Fig.14)



■ LSI PIN DESCRIPTION

CONTENTS

•HG73C205AFD XU947C00 SWX00B (TONE GENERATOR).....	15
•UPD63200GS-E1 XP867A00 (D/A CONVERTER)	16
•YMZ702-D XR632A00 (KEY SCANNER)	16

● HG73C205AFD (XU947C00) SWX00B TONE GENERATOR

DM : IC001

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION	
1	ICN	I	Initial clear	85	CMA3	O	Program address bus	
2	RFCLKI	I	PLL Clock	86	CMA8	O		
3	TM2	I	PLL Control	87	CMA2	O		
4	AVDD_PLL		Power supply	88	CRD	O	read signal	
5	AVSS_PLL		Ground	89	CMA1	O	Program address bus	
6	MODE0	I	SWX dual mode	90	CUB	O	high byte effective signal	
7	VCC7		Power supply	91	VCC91		Power supply	
8	GND8		Ground	92	GHND92		Ground	
9	XIN	I	crystal oscillator	93	CS1	O	CS signal	
10	XOUT	O	crystal oscillator	94	CMA0	O	Program address bus	
11	MODE1	I	SWX separate mode	95	CLB	O	low byte effective signal	
12	TEST0	I	TEST pin	96	CMA12	O	Program address bus	
13	TESTON	I	TEST pin	97	CMA11	O		
14	AN0-P40	I	A/D converter	98	CMA10	O		
15	AN1-P41	I						
16	AN2-P42	I						
17	AN3-P43	I		99	CMA9	O		
18	AVDD_AN		Power supply	100	GND100		Ground	
19	AVSS_AN		Ground	101	CWE	O	write signal	
20	TXD0	O	for MIDI or TO-HOST	102	CMA16	O	Program address bus	
21	TXD1	O	for MIDI	103	CMA15	O		
22	EXCLK	I	Crystal oscillator	104	CMA14	O		
23	SMD11	I/O	Wave memory data bus	105	CMA13	O		
24	SMD4	I/O			106	CMD8	I/O	Program memory Data bus
25	SMD3	I/O			107	CMD7	I/O	
26	SMD12	I/O			108	CMD9	I/O	
27	SMD10	I/O			109	CMD6	I/O	
28	SMD5	I/O			110	CMD10	I/O	
29	SMD2	I/O			111	CMD5	I/O	
30	SMD13	I/O			112	CMD11	I/O	
31	SMD9	I/O			113	CMD4	I/O	
32	SMD6	I/O			114	CMD12	I/O	
33	SMD1	I/O		115	CMD3	I/O		
34	SMD14	I/O		116	CMD13	I/O		
35	VCC35		Power supply	117	CMD2	I/O		
36	GND36		Ground	118	CMD14	I/O		
37	SMD8	I/O	Wave memory data bus	119	VCC119		Power supply	
38	SMD7	I/O			120	GND115		Ground
39	SMD0	I/O			121	CMD1	I/O	Program memory Data bus
40	SMD15	I/O			122	CMD15	I/O	
41	SOE	O	read signal	123	CMD0	I/O	Program address bus	
42	SWE	O	write signal	124	CMA21	O		
43	SRAS	O	RAS signal	125	PDT15	I/O	SWX access data bus	
44	SCAS	O	CAS signal	126	PDT14	I/O		
45	REFRESH	O	REFRESH signal	127	PDT13	I/O		
46	CS0	O	CS signal	128	PDT12	I/O		
47	SMA0	O	Memory address bus	129	PDT11	I/O		
48	SMA16	O			130	PDT10		I/O
49	VCC49		Power supply	131	PDT9	I/O		
50	GND50		Ground	132	PDT8	I/O		
51	SMA1	O	Memory address bus	133	VCC133		Power supply	
52	SMA15	O			134	GND134		Ground
53	SMA2	O			135	PDT7	I/O	SWX access data bus
54	SMA14	O			136	PDT6	I/O	
55	SMA3	O			137	PDT5	I/O	
56	SMA13	O			138	PDT4	I/O	
57	SMA4	O			139	PDT3	I/O	
58	SMA12	O			140	PDT2	I/O	
59	SMA5	O		141	PDT1	I/O		
60	GND60		Ground	142	PDT0	I/O		
61	VCC61		Power supply	143	VCA143		Power supply	
62	SMA11	O	Memory address bus	144	GND144		Ground	
63	SMA6	O			145	PAD2	I	SWX access address bus
64	SMA10	O			146	PAD1	I	
65	SMA7	O			147	PAD0	I	
66	SMA9	O			148	VCC148		Power supply
67	SMA17	O			149	GND149		Ground
68	SMA8	O			150	PCS	I	Chip select
69	SMA18	O			151	PWR	I	write enable
70	SMA19	O			152	PRD	I	read enable
71	SMA20	O			153	RXD0	I	for Midi or TO-HOST
72	SMA21	O		154	RXD1	I	for Midi or Key scan	
73	SMA22	O		155	SCLKI	I	EXT Clock	
74	SMA23	O		156	ADIN	I	A/D converter	
75	CMA20	O	Program address bus	157	ADLR	O	A/D converter LR clock	
76	CMA19	O			158	DO0	O	DAC
77	VCC77		Power supply	159	DO1	O		
78	GND78		Ground	160	SYCLK	O	1/2 clock	
79	CMA18	O	Program address bus	161	VCC161		Power supply	
80	CMA17	O			162	GND162		Ground
81	CMA5	O			163	WCLK	O	for DAC LR clock
82	CMA6	O			164	QCLK	O	1/12 clock
83	CMA4	O			165	BCLK	O	IIS-DAC clock
84	CMA7	O			166	SYI	I	Synch signal
				167	IRQ0	I	Interrupt request	
				168	NMI	I		

● **UPD63200GS-E1 (XP867A00) DAC (Digital to Analog Converter)**

DM: IC004

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	4/8	I	4/8 Fs selection	9	R.REF		Channel R voltage reference
2	D.GND		Digital ground	10	L.REF		Channel L voltage reference
3	16 BIT	I	16bit/18bit selection	11	L.OUT	O	Channel L output
4	D.GND		Digital power supply	12	A.GND	I	Analog ground
5	A.GND		Analog ground	19	WDCK	I	Word clock
6	R.OUT	O	Channel R output	20	RSI	I	Channel R series input
7	A.VDD		Analog power supply	21	SI/LSI	I	Series input/Channel L series input
8	A.VDD			22	CLK	I	Clock

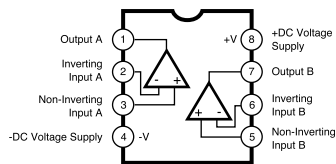
● **YMZ702-D (XR632A00) KSN2 (Key Scanner)**

GHDcl SW L: KSN2

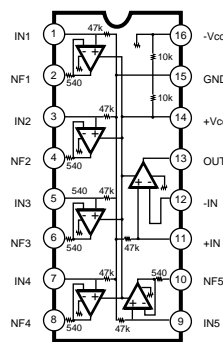
PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	BK5	O	Key block (open drain)	21	GND		Ground
2	BK4	O		22	VDD		Power supply
3	BK3	O		23	SO	O	Serial data
4	BK2	O		24	ACK	I	Acknowledge/mode select
5	BK1	O		25	XCK	I	Clock for serial data
6	BK0	O		26	/IC	I	Initial clear
7	MK15	I	First make contact	27	TST1	I	Test mode
8	MK14	I		28	TST2	I	(L,L: normal mode, others: test)
9	MK13	I		29	XCKINH	I	Inhibit of serial clock
10	MK12	I		30	BK14	O	Key block (open drain)
11	MK11	I		31	BK13	O	
12	MK10	I		32	BK12	O	
13	MK05	I	33	BK11	O		
14	MK04	I	34	BK10	O		
15	MK03	I	35	BK9	O		
16	MK02	I	Second make contact	36	BK8	O	
17	MK01	I		37	BK7	O	
18	MK00	I		38	BK6	O	
19	XIN	I	Crystal osc. input (4 MHz)	39	GND		Ground
20	XOUT	O	Crystal osc. output (4 MHz)	40	VDD		Power supply

■ **IC BLOCK DIAGRAM**

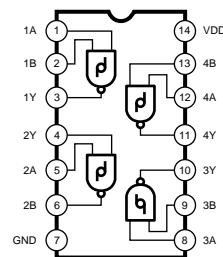
- **μPC4570G2 (XF291A00)**
Dual Operational Amplifier
AM: IC007



- **M5227FP (XT773A00)**
Graphic Equalizer
AM: IC004, 005



- **SN74HC132NSR (XW792A00)**
MM74HC132SJX (XY352A00)
Quad 2 Input NAND
DM: IC009

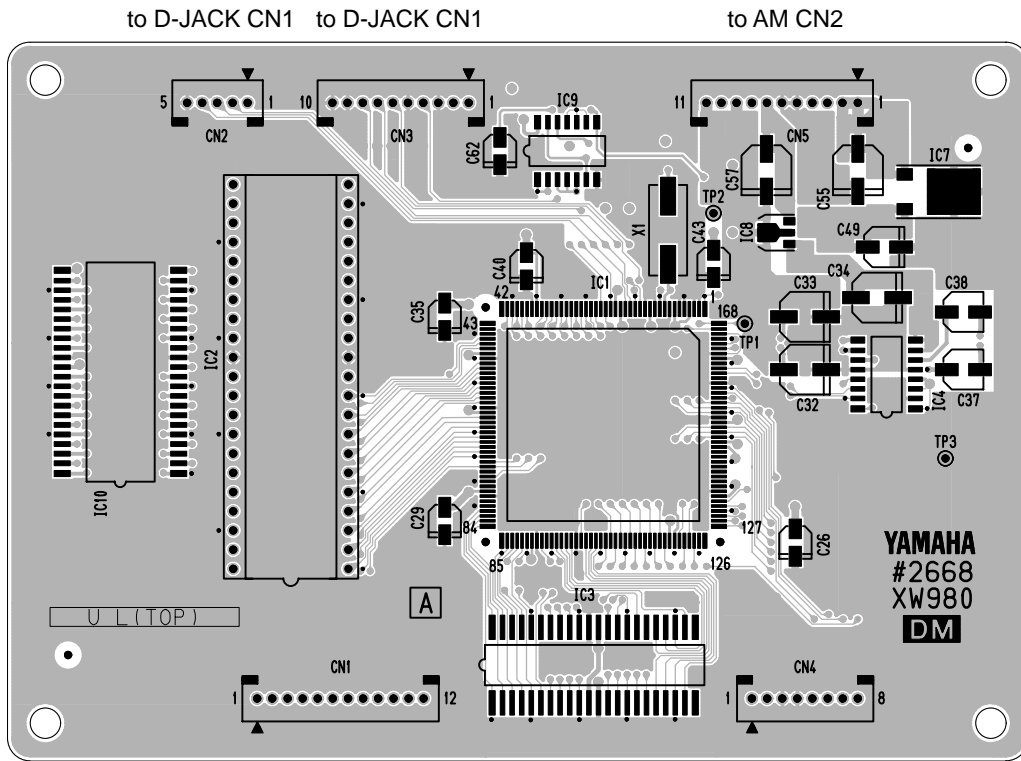


■ CIRCUIT BOARDS

CONTENTS

- DM Circuit Board (2NA-V891010) 18
- AM Circuit Board (2NA-V891020) 19, 20
- D-JACK Circuit Board (2NA-V891030) 21
- HP Circuit Board (2NA-V541570) 22
- PN Circuit Board (2NA-V891040) 22
- PL Circuit Board (2NA-VN63760) 22
- VR Circuit Board (2NA-V902190) 22
- PS Circuit Board (2NA-V001080) 23

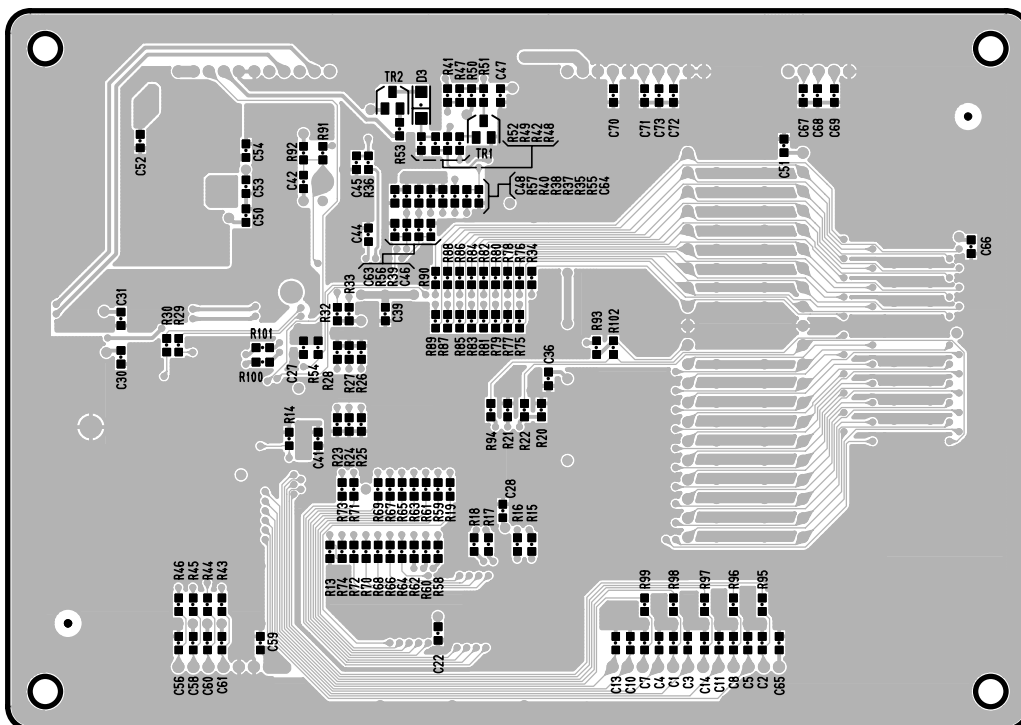
• DM Circuit Board



to PN CN001

to GH-D_SW L CN1

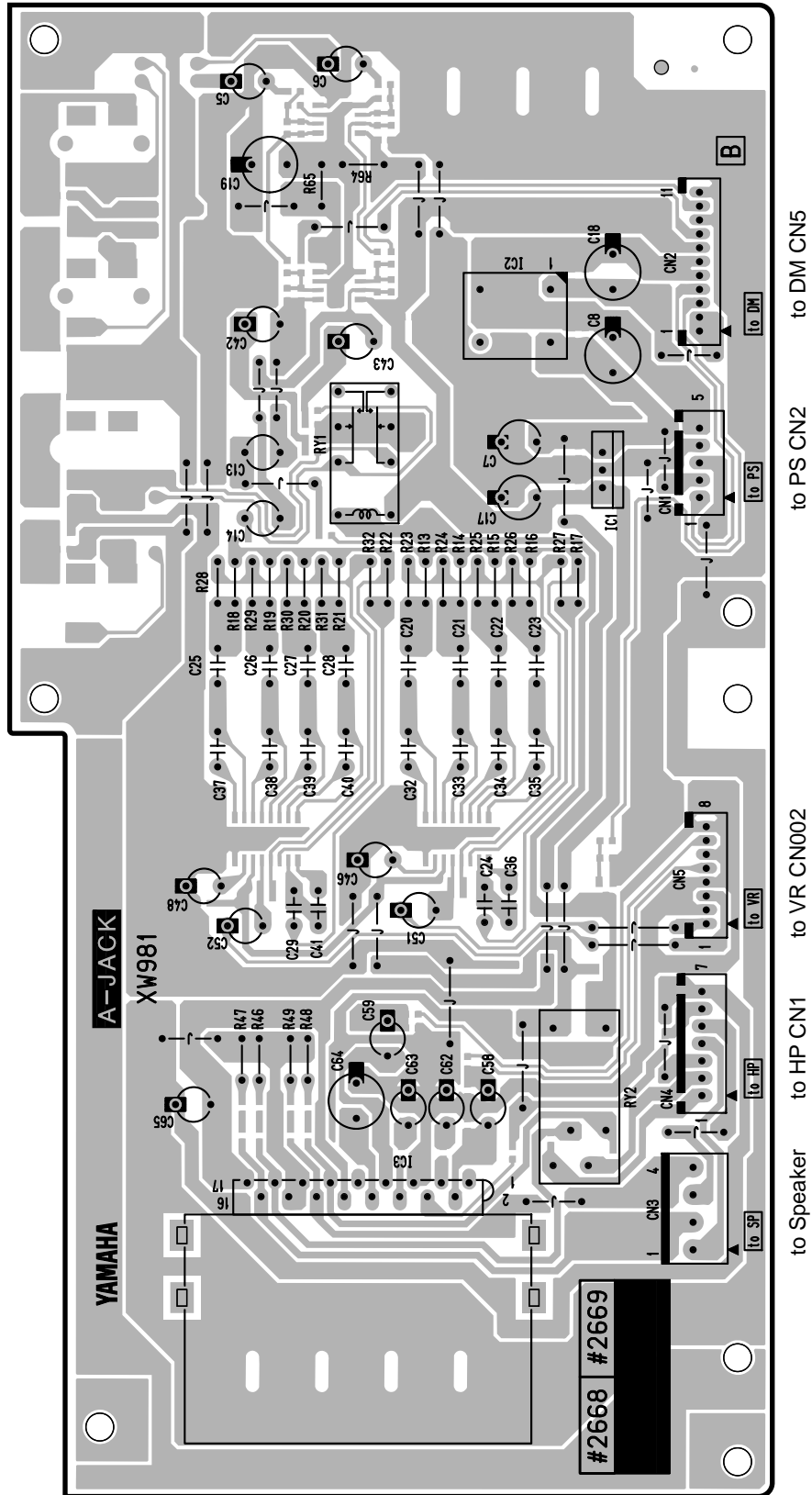
Component Side



Pattern Side

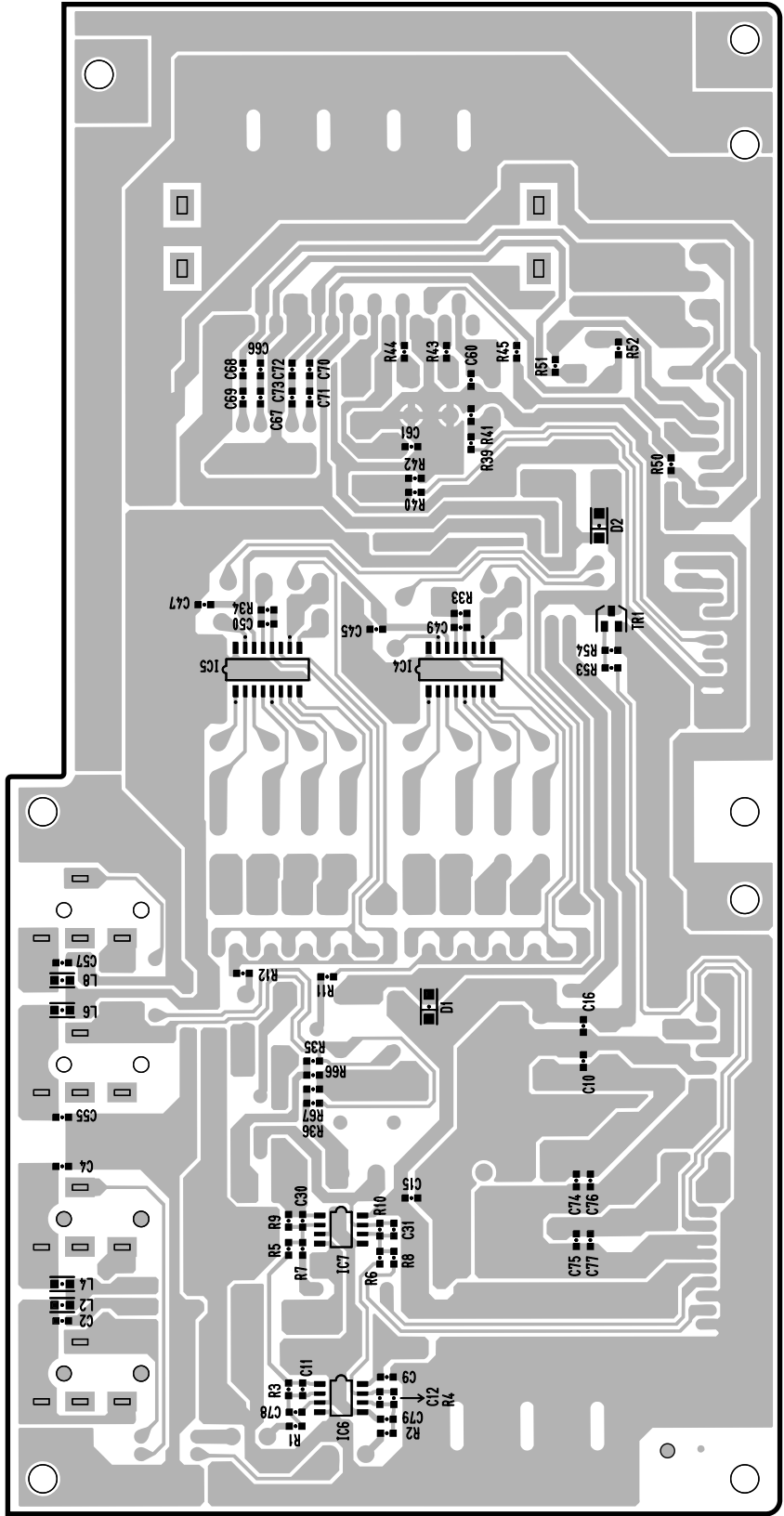
2NA-V891010

• AM Circuit Board



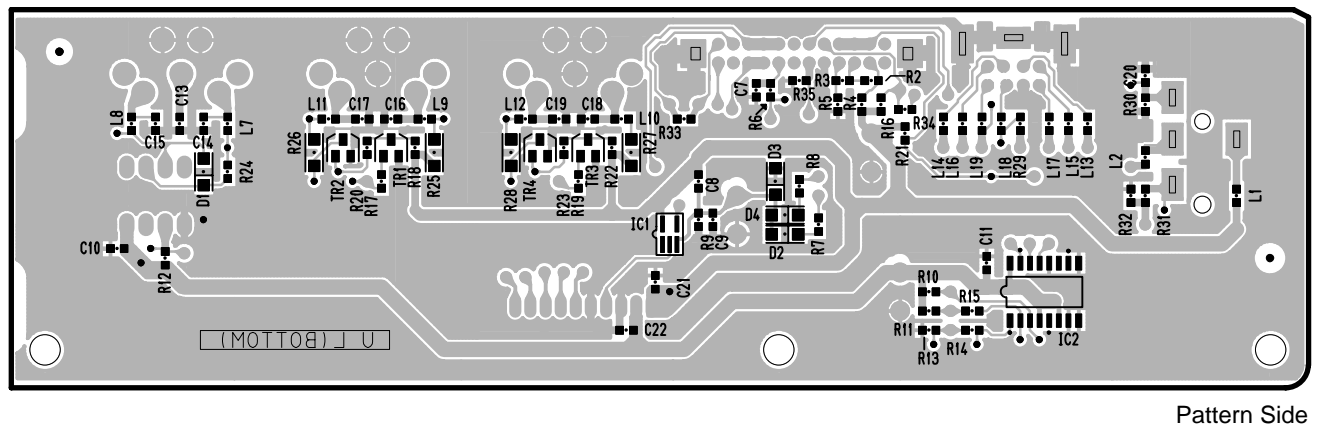
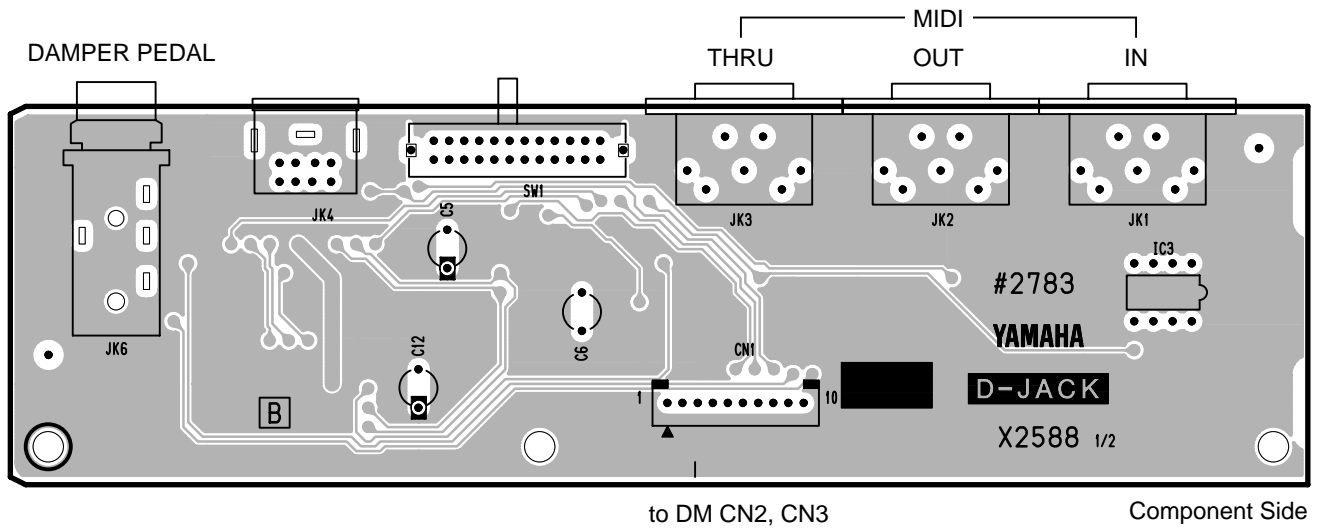
Component Side

• AM Circuit Board

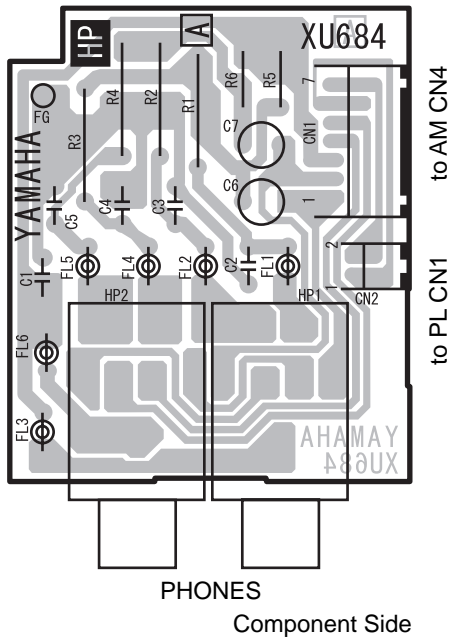


Pattern Side

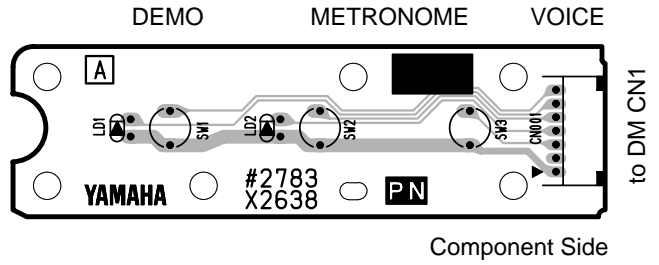
• D-JACK Circuit Board



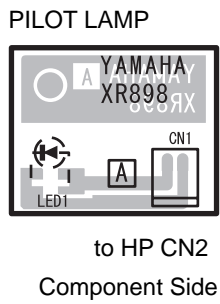
• HP Circuit Board



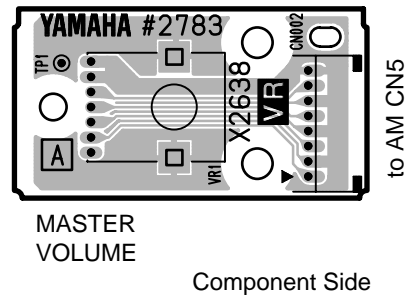
• PN Circuit Board



• PL Circuit Board

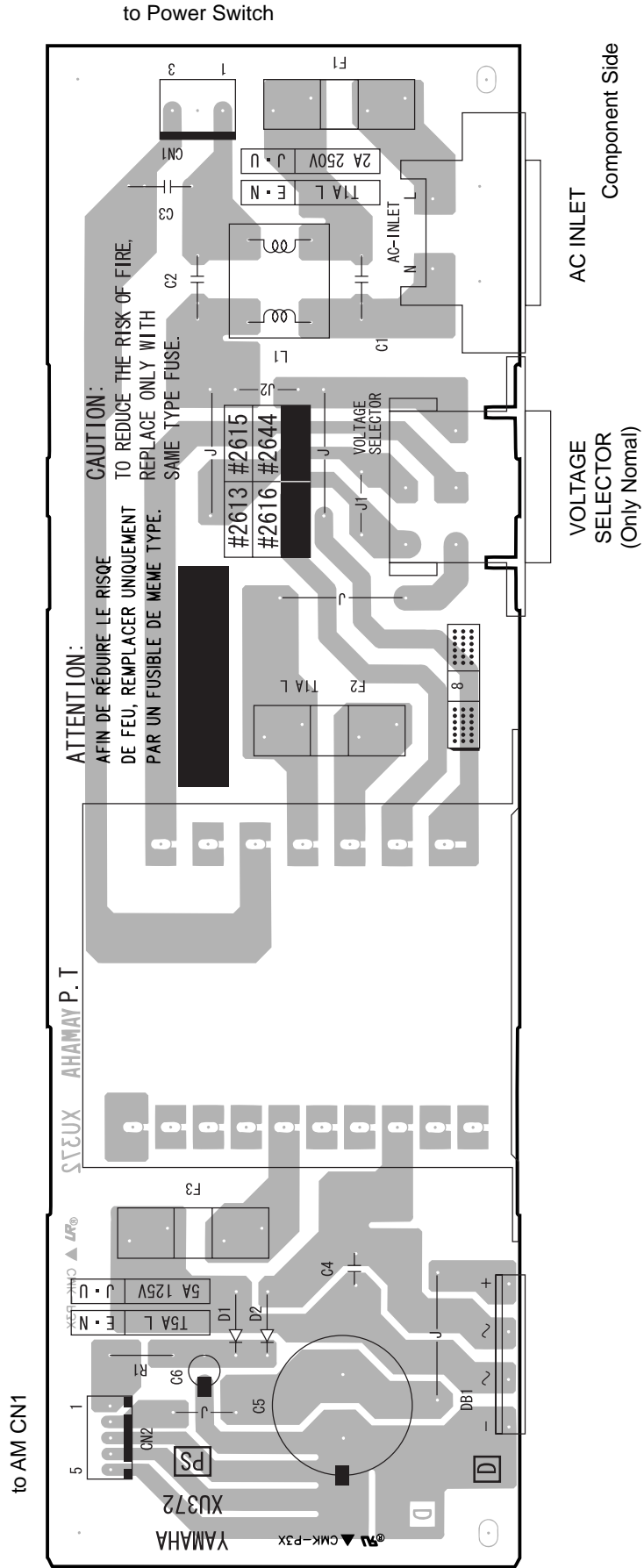


• VR Circuit Board



HP: 2NA-V541570 PL: 2NA-VN63760
 PN: 2NA-V891040 VR: 2NA-V902190

• PS Circuit Board

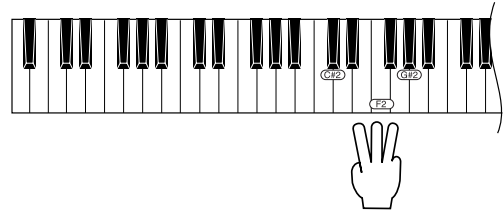


PS: 2NA-V001080

■ INSPECTION

1. Preparation

- To check the unit, following jigs are required.
Level meter (with JIS-C Filter)
Frequency counter
Foot Pedal
MIDI cable
- Set each control as follows.
MASTER VOLUME: Max
PEDAL: OFF
Except above: Default state of startup



(Fig.1)

Connect the measurement plug to the HEADPHONES jack. (33)

2. To enter test program

Turn on the power with (C2#), (F2), (G2#) keys pressed and held. (Fig.1)

When the test program starts to run, sine wave of A3 sounds. Press any key to stop the sound.

3. To proceed the test

See the table 1 for each test item.

Press the corresponding key to select and execute each test.

Table 1 Test Items

No.	Key	Item	Test Function and Judgment criteria
1	C1-A1, C2-A2	ROM Version	Confirm that the sine wave of C4 sounds. C1-A1 :integer (0-9) <example> C2-A2 :decimal (0-9) ver. 1.0=[C1#,C2]
2	C3	ROM 1	Confirm that the sine wave of C4 sounds.
3	C3#	RAM 1	Confirm that the sine wave of C4 sounds.
11	D3	Tone Generator	The sine waves from F3 to C6 automatically sounds in sequence. Confirm that no abnormal sound or noise is generated.
13	D3#	Pitch	Confirm that the sine wave of 440.0±0.2 Hz sounds.
14	E3	OUTPUT LEVEL R	The sine wave of C5 sounds. Confirm that the output level of each jack is as follows. (Unit [dBm]) PHONES L R - 40 or less PHONES R -3.0
15	F3	OUTPUT LEVEL L	The sine wave of C5 sounds. Confirm that the output level of each jack is as follows. (Unit [dBm]) PHONES L -1.5 PHONES R L - 40 or less
16	F3#	EQ Low	The sine wave of C1 sounds. Confirm that the output level of each jack is as follows. (Unit [dBm]) PHONES L, R +4.0

Table 1 Test Items

No.	Key	Item	Test Function and Judgment criteria
17	G3	EQ Mid	The sine wave of C4 sounds. Confirm that the output level of each jack is as follows. (Unit [dBm]) PHONES L, R -1.5
18	G3#	EQ High	The sine wave of C6 sounds. Confirm that the output level of each jack is as follows. (Unit [dBm]) PHONES L, R 0
19	A3	D/A noise	Press any key and confirm that no D/A noise is generated. * Before proceeding to next test, press C7 key to exit the D/A noise test.
20	A3#	SW, LED	Confirm that all LEDs light up.
33	C4#	Damper Pedal	Confirm that the sine wave of C3 sounds when the damper pedal is depressed and that C4 sounds when the pedal is released.
37	D4	MIDI	Connect the [MIDI IN] and [MIDI OUT] jack via MIDI cable and confirm that the sine wave of C4 sounds.
41	D4#	ROM 2	For factory test only.
42	E4	RAM 2	For factory test only.
48	C7	TEST MODE Exit	Exit the test program and return to play mode.

■ MIDI IMPLEMENTATION CHART

YAMAHA [Clavinova]

Date: 18 January, 2002

Model: CLP-110

MIDI Implementation Chart

Version: 1.0

Function	Transmitted	Recognized	Remarks
Basic Channel Default Changed	1 1 - 16	1 1 - 16	
Mode Default Messages Altered	3 X *****	1 X X	*1 Poly Mode only
Note Number : True voice	9 - 120 *****	0 - 127 0 - 127	
Velocity Note ON Note OFF	O 9nH, v=1 - 127 O 9nH, v=0	O 9nH, v=1 - 127 O 9nH, v=0 or 8nH	
After Touch Key s Ch s	X X	X X	
Pitch Bender	X	X	
Control Change 0, 32 7 11 64 66 67 91 94	O O X O X X O X	O O O O O O O O	Bank Select Volume Expression Damper Sostenuto Soft pedal Reverb Depth Effect Depth
Program Change : True #	O *****	O	
System Exclusive	O	O	
Common : Song Position : Song Select : Tune	X X X	X X X	
System Real Time : Clock : Commands	O O	O O	
Aux Messages : All sounds off : Reset All Controllers : Local ON/OFF : All Notes OFF : Active Sense : Reset	O O X O O X	O (120, 126, 127) O (121) O (122) O (123 - 125) O X	
Notes : *1 = Receive Mode is always multi timbre and Poly mode.			

Mode 1: OMNI ON, POLY
Mode 3: OMNI OFF, POLY

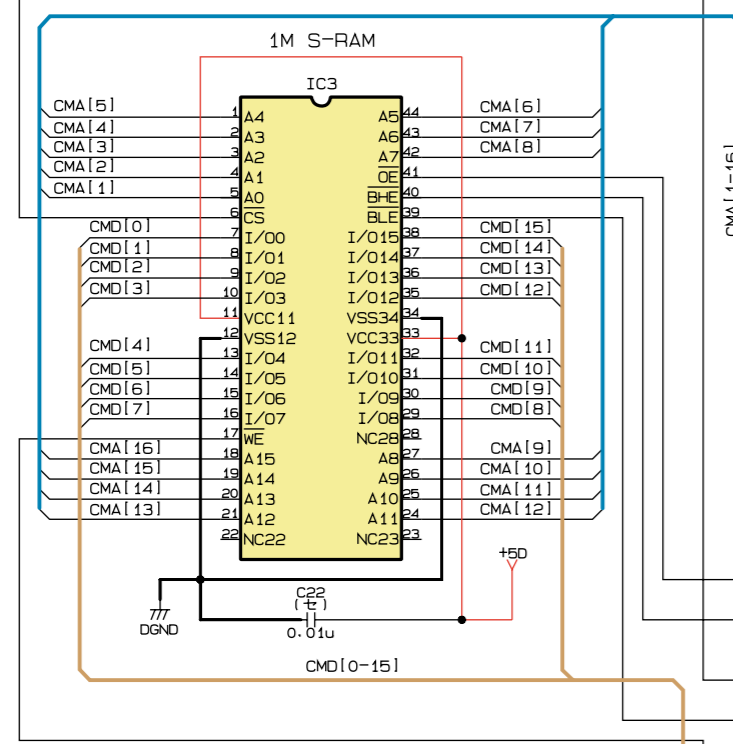
Mode 2: OMNI ON, MONO
Mode 4: OMNI OFF, MONO

O : Yes
X : No

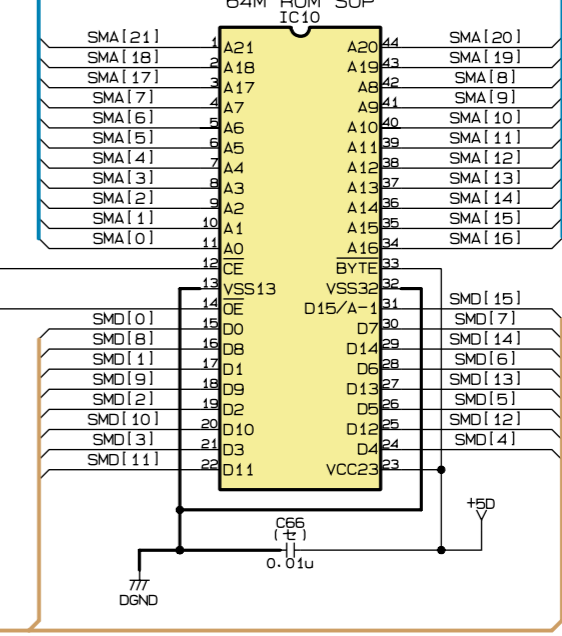
CLP-110 CIRCUIT DIAGRAM (DM 1/1)

DM

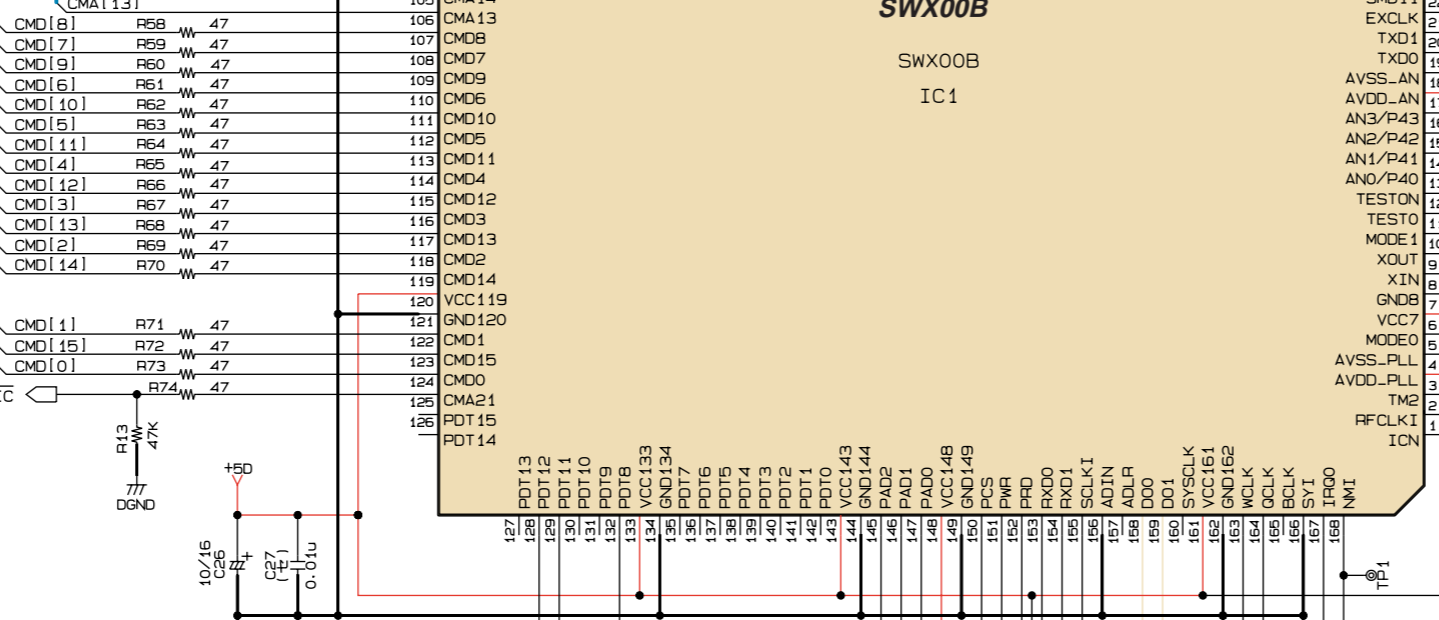
SRAM 1M



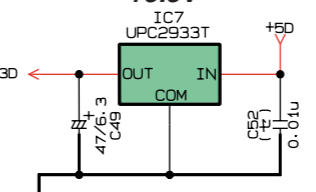
MASKROM 64M



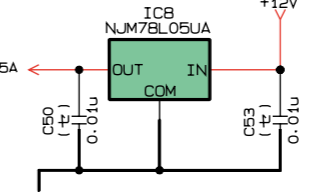
SWX00B



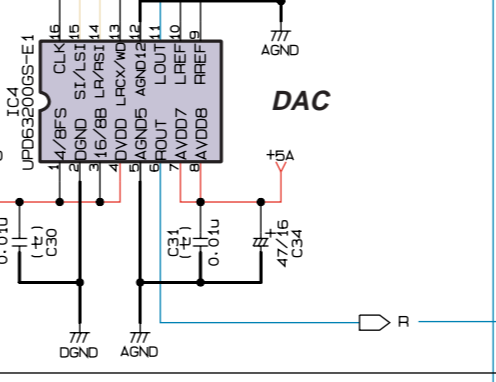
REGULATOR +3.3V



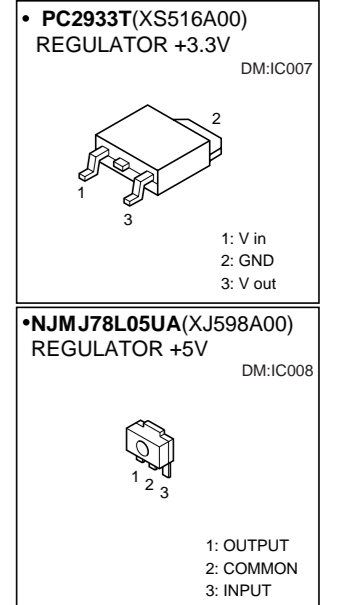
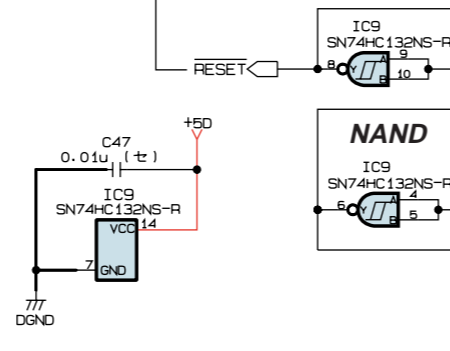
REGULATOR +5.0V



DAC



NAND



NC to D-JACK-CN1 9pin

NC to D-JACK-CN1 10pin

to D-JACK-CN1 1-8pin

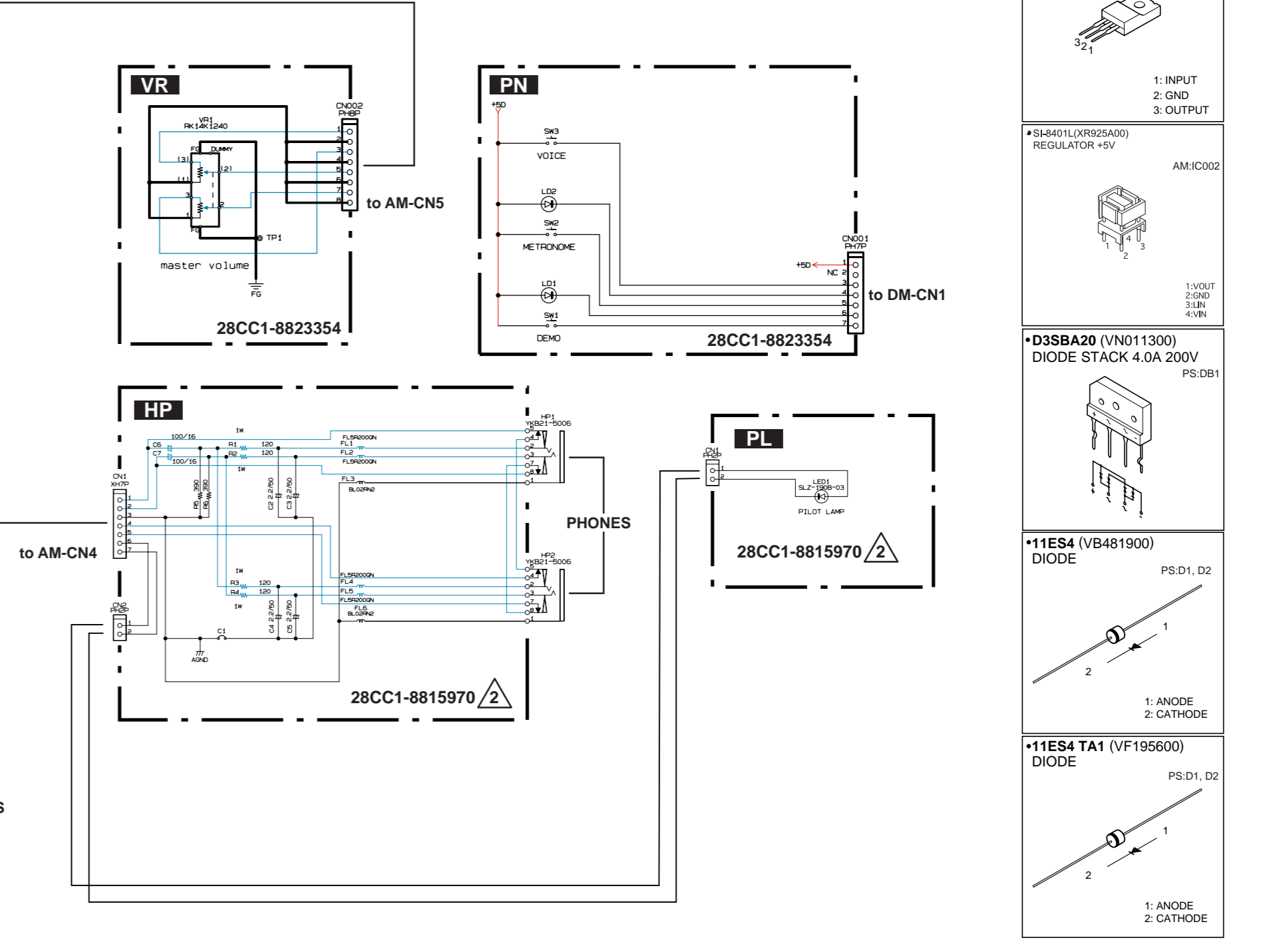
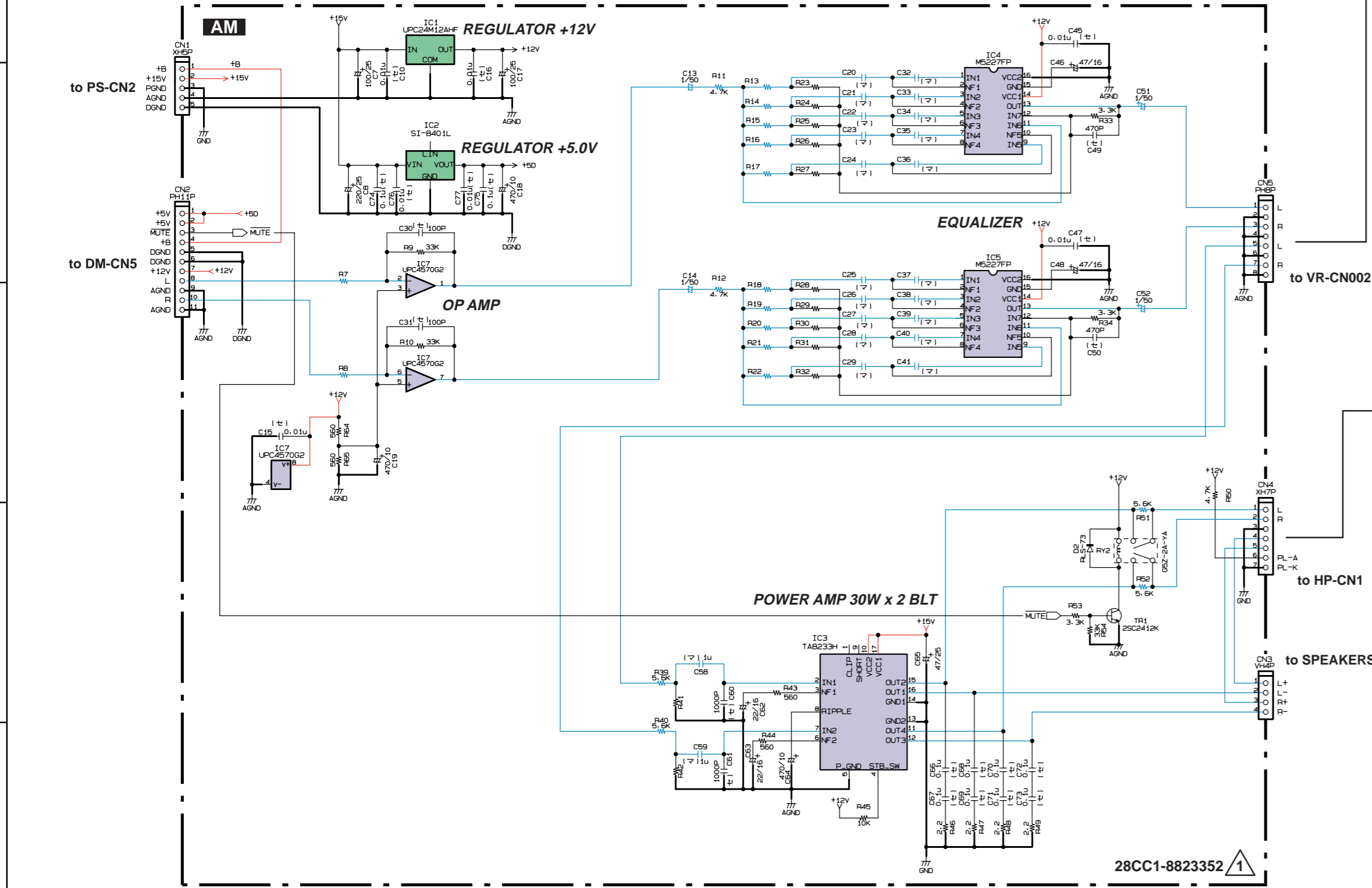
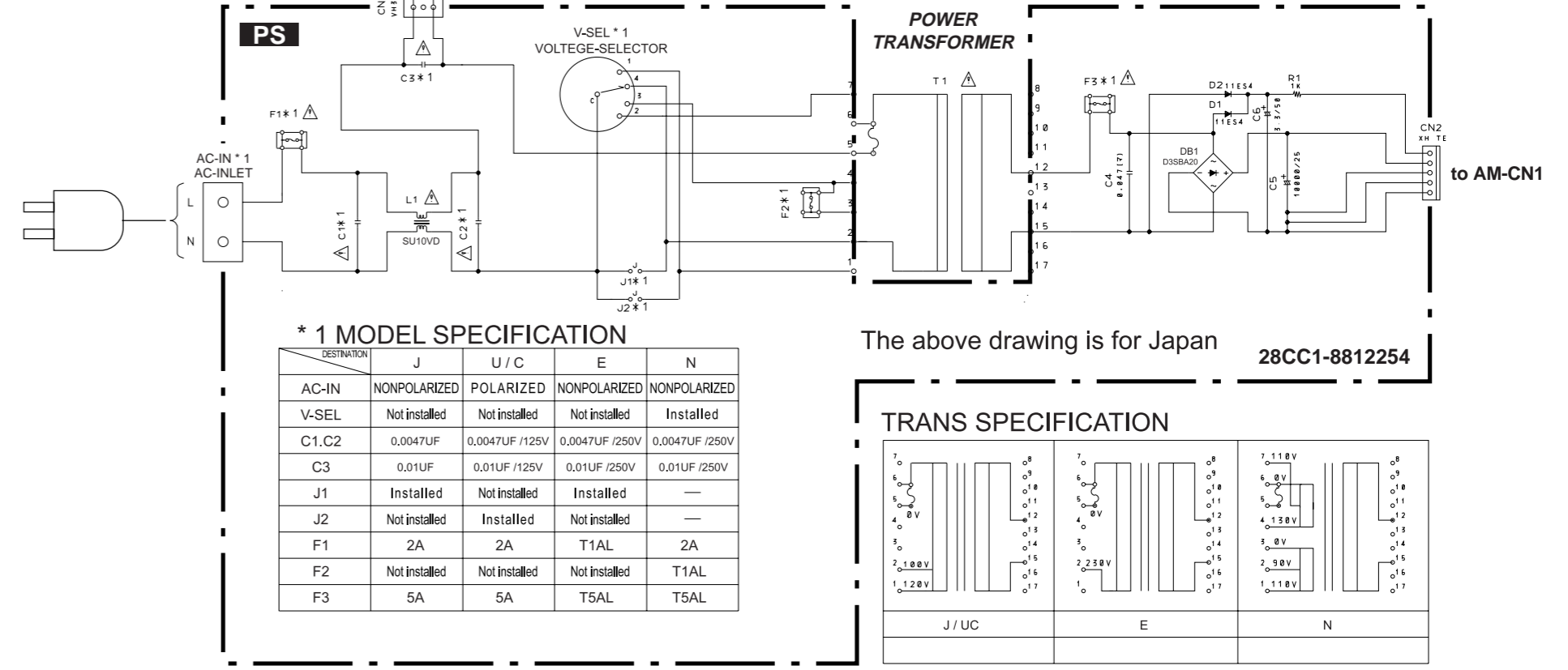
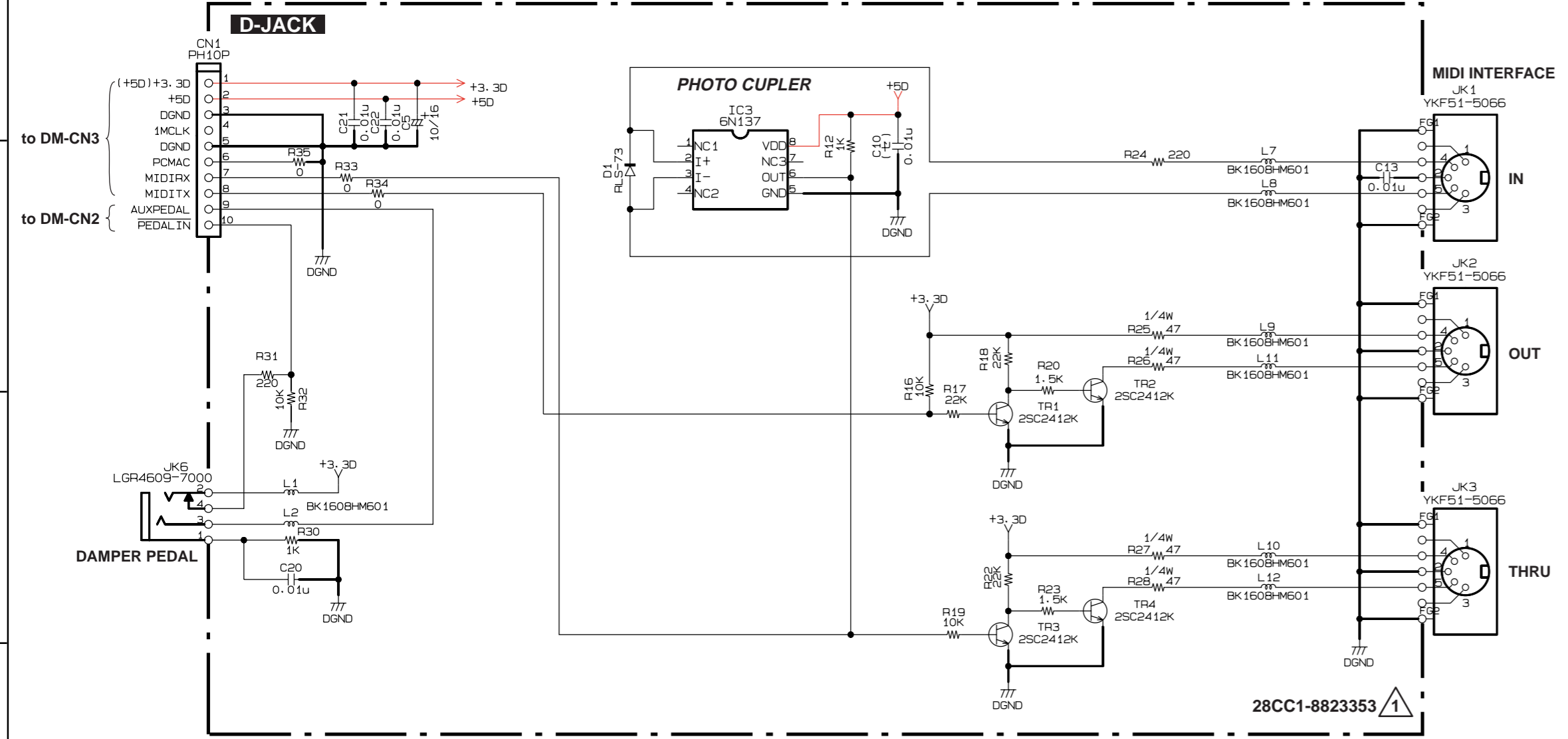
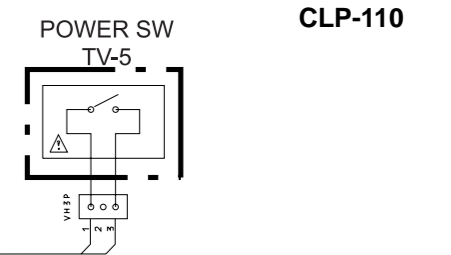
to GH-D_SW L-CN1

to AM-CN2

28CC1-8823351

(τ): Ceramic Capacitor

CLP-110 CIRCUIT DIAGRAM (D-JACK, AM, PS, PN, VR, HP, PL)



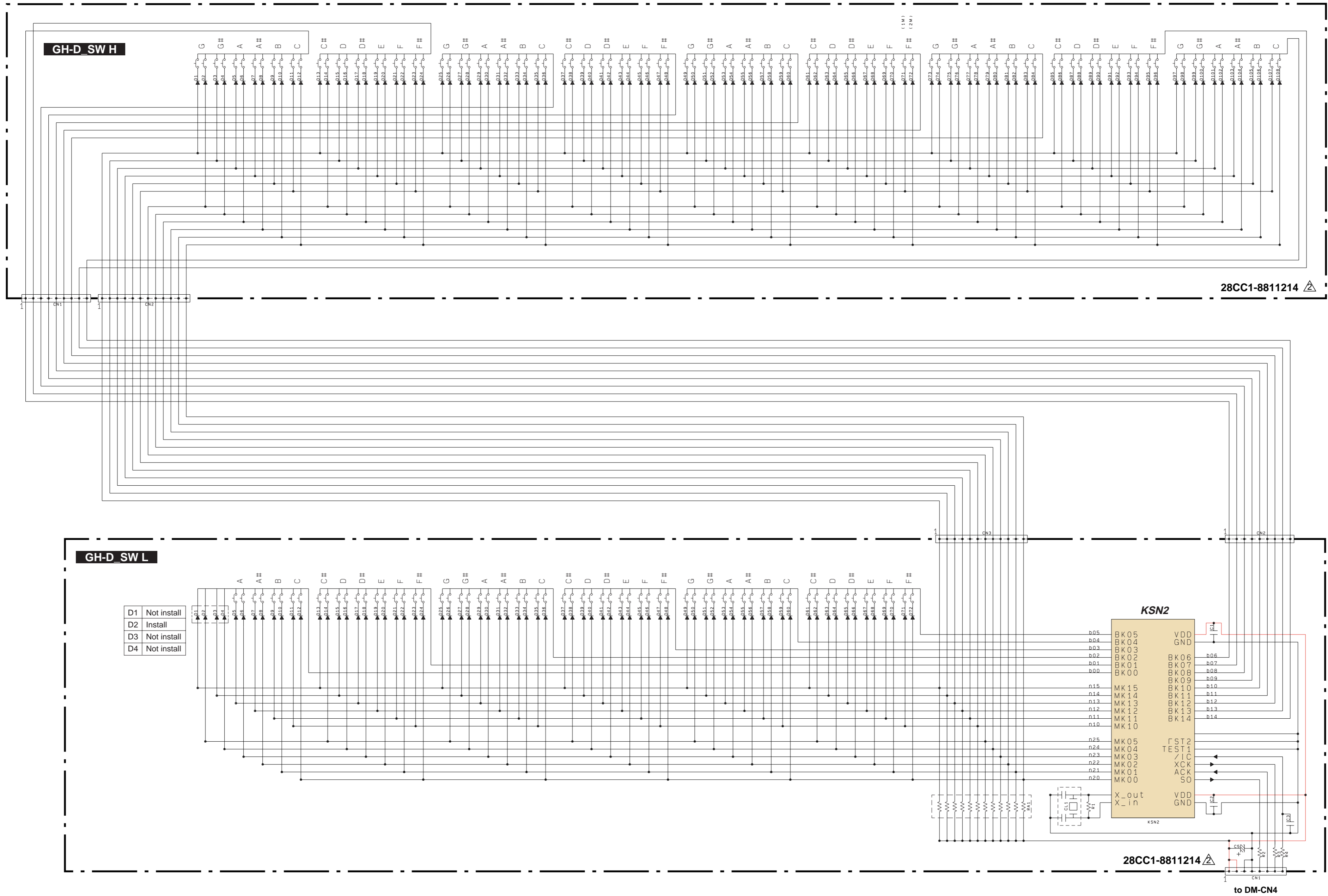
- μPC24M12AHF(XU387A00) REGULATOR +12V AM:IC001
- SI-8401L(XR925A00) REGULATOR +5V AM:IC002
- D3SBA20 (VN011300) DIODE STACK 4.0A 200V PS:DB1
- 11ES4 (VB481900) DIODE PS:D1, D2
- 11ES4 TA1 (VF195600) DIODE PS:D1, D2

Note: See parts list for details of circuit board component parts.

WARNING
 Components having special characteristics are marked Δ and must be replaced with parts having specification equal to those originally installed.

(ϵ): Ceramic Capacitor
 (M): Mylar Capacitor

CLP-110 CIRCUIT DIAGRAM (GH-D_SW H, GH-D_SW L)



Note: See parts list for details of circuit board component parts.

Clavinova[®]

CLP-110

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY	2	POWER SUPPLY UNIT	15
MAIN UNIT	4	KEYBOARD ASSEMBLY	16
SIDE BOARD ASSEMBLY	8	A SHEET ASSEMBLY	18
TOP BOARD ASSEMBLY	9	D-JACK ASSEMBLY	18
MUSIC REST ASSEMBLY	10	HEADPHONES JACK ASSEMBLY	19
SIDE COVER ASSEMBLY	11	SUSTAIN PEDAL	20
END BLOCK ASSEMBLY	12	BENCH	21
PANEL ASSEMBLY	13	ELECTRICAL PARTS	22
KEY COVER ASSEMBLY	14		

Note) DESTINATION ABBREVIATIONS

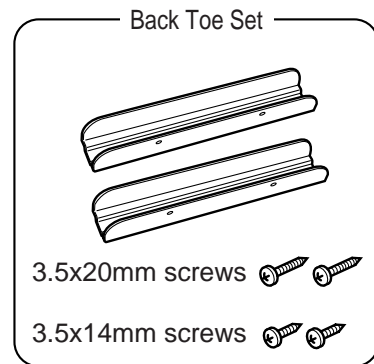
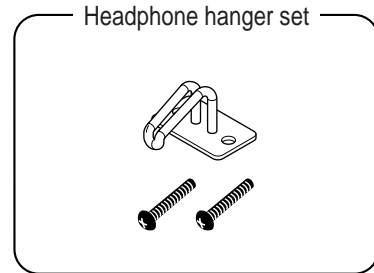
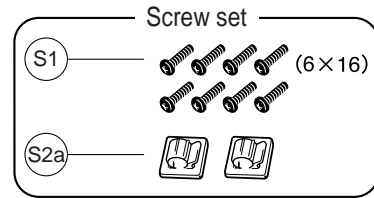
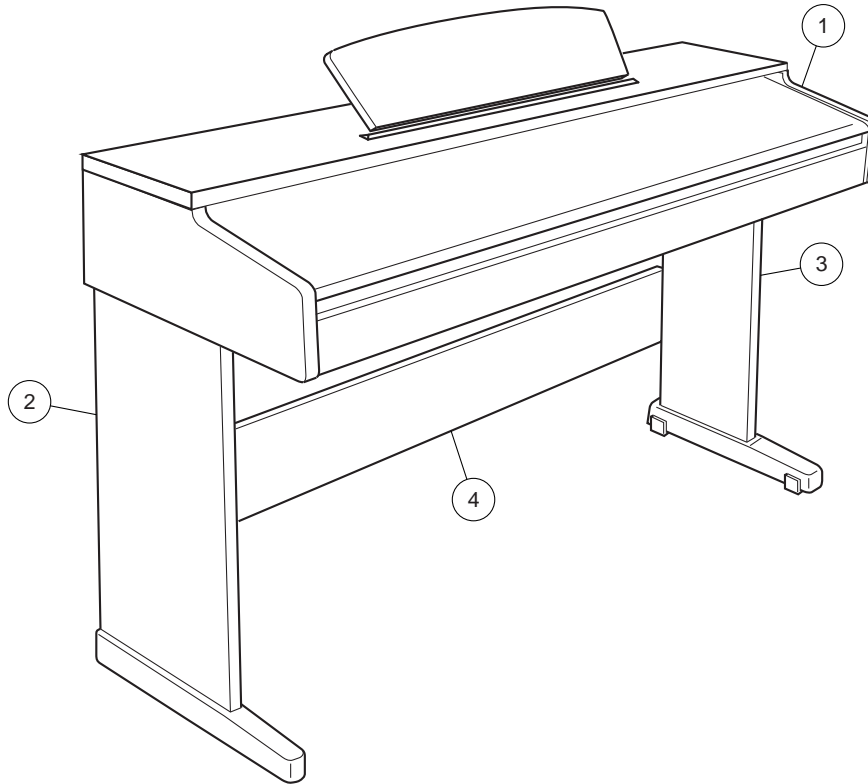
A: Australian model	M: South African model
B: British model	O: Chinese model
C: Canadian model	Q: South-east Asia model
D: German model	T: Taiwan model
E: European model	U: U.S.A. model
F: French model	V: General export model (110V)
H: North European model	W: General export model (220V)
I: Indonesian model	N,X: General export model
J: Japanese model	Y: Export model

■ WARNING

Components having special characteristics are marked \triangle and must be replaced with parts having specifications equal to those originally installed.

- The numbers in "QTY" shows quantities for each unit.
- The parts with "--" in "Part No." are not available as spare parts.
- The second letter of the shaded () part number is I, not one.
- The second letter of the shaded () part number is O, not zero.

OVERALL ASSEMBLY



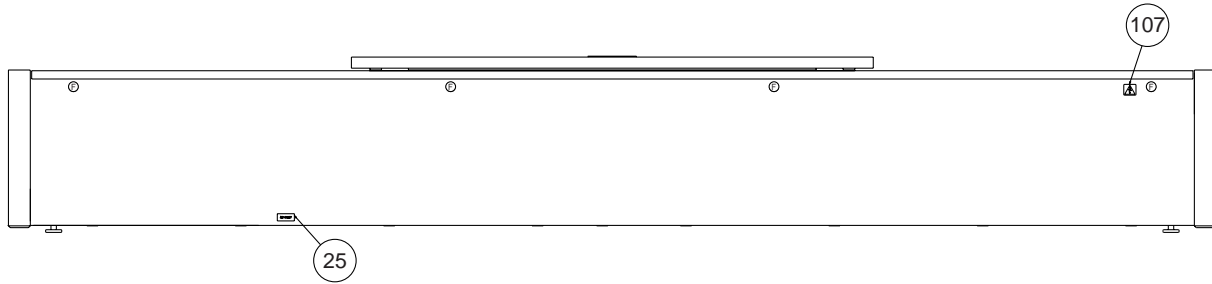
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		OVERALL ASSEMBLY		CLP-110 U,E,G,N		
1	--	Main Unit	U	(V851290)		
1	--	Main Unit	E	(V851300)		
1	--	Main Unit	N	(V851310)		
2	--	Side Board Assembly-L	CL LEFT	(V862020)		
3	--	Side Board Assembly-R	CL RIGHT	(V862030)		
*	4	V8618100 ST Board Assembly				
	4a	-- ST Board		(V861590)		
	4b	VN634400 Holder, Back Top Board	LG-PF100		2	06
	4c	EP030260 Bind Head Tapping Screw-1	3.5X16 MFZN2BL		6	01
*		V8604000 Screw Set	CL			
	S1	EG360020 Bind Head Screw	6.0X16 MFZN2BL		8	01
	S2	VR410300 Cord Clamp Set		With Plastic Bag		03
	S2a	VP592100 Cord Clamper	DKN-5B (VHB)		2	03
		ACCESSORIES				
*		V8604000 Screw Set	CL	U		
		V9261900 Back Toe Set		U		03
		VK726100 Connector	CCT5902	U		06
		VT015800 AC Cord Set	U 2 2.44m 7A	U		06
		V2917000 AC Cord Set	UC 2 7A 2.44m	U		06
		V3126400 AC Cord Set	U 2 2.5m	U		05
		VT015900 AC Cord Set	E 2 2.5m	E,N		05
		V2917100 AC Cord Set	E 2 2.5m 2.5A	E,N		05

*: New Parts

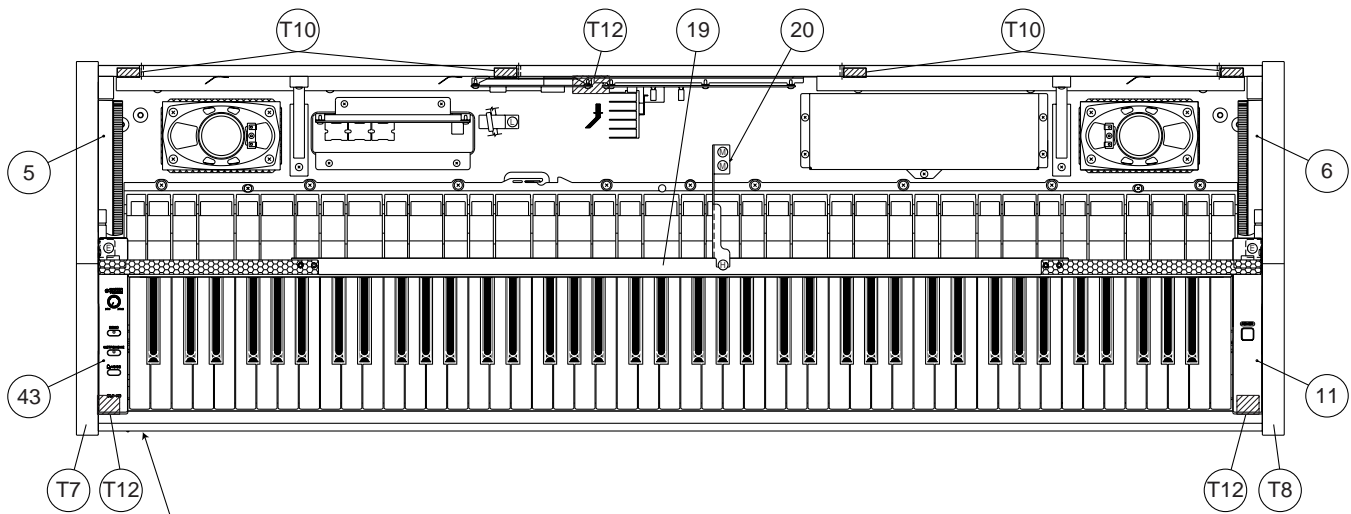
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MAIN UNIT

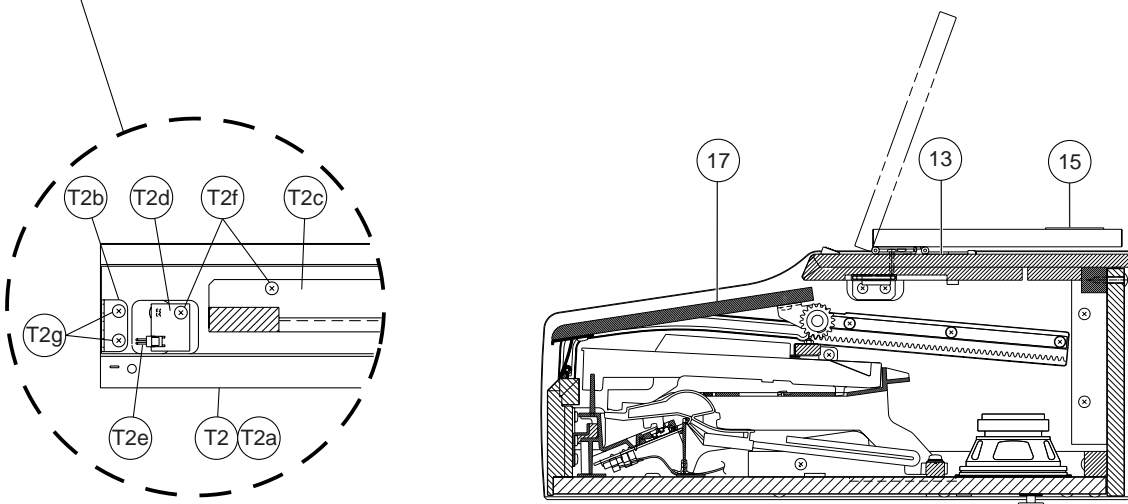
• Rear view



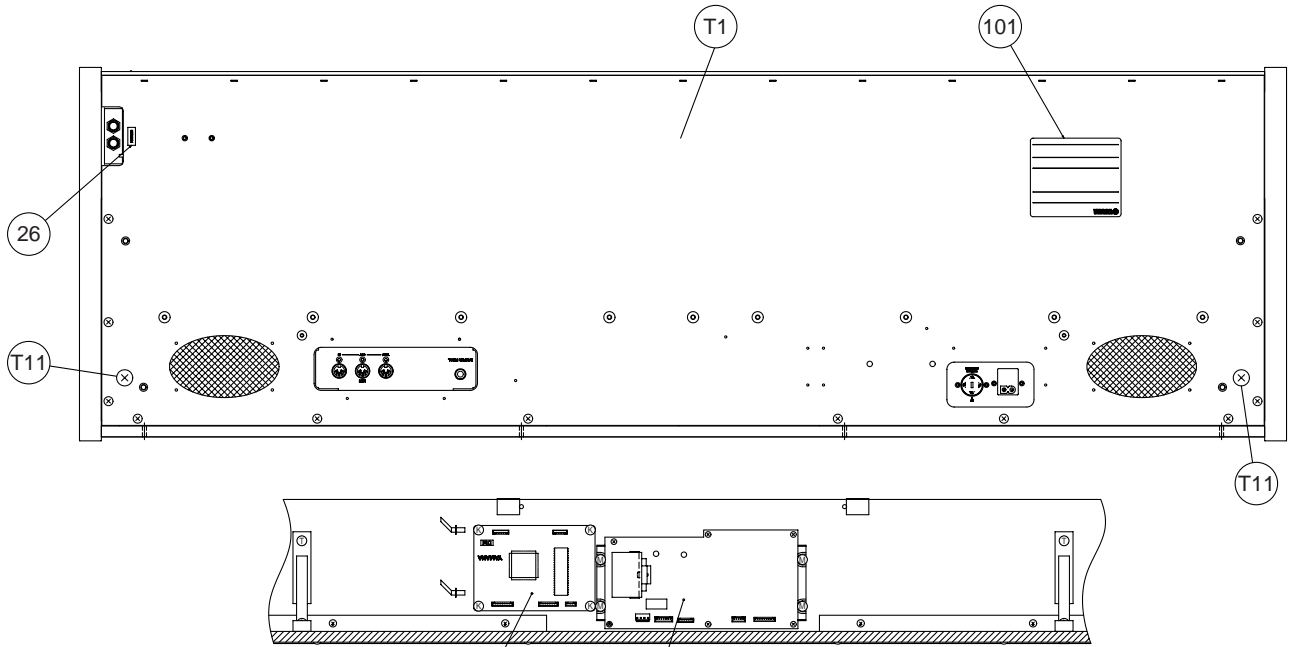
• Top view 1



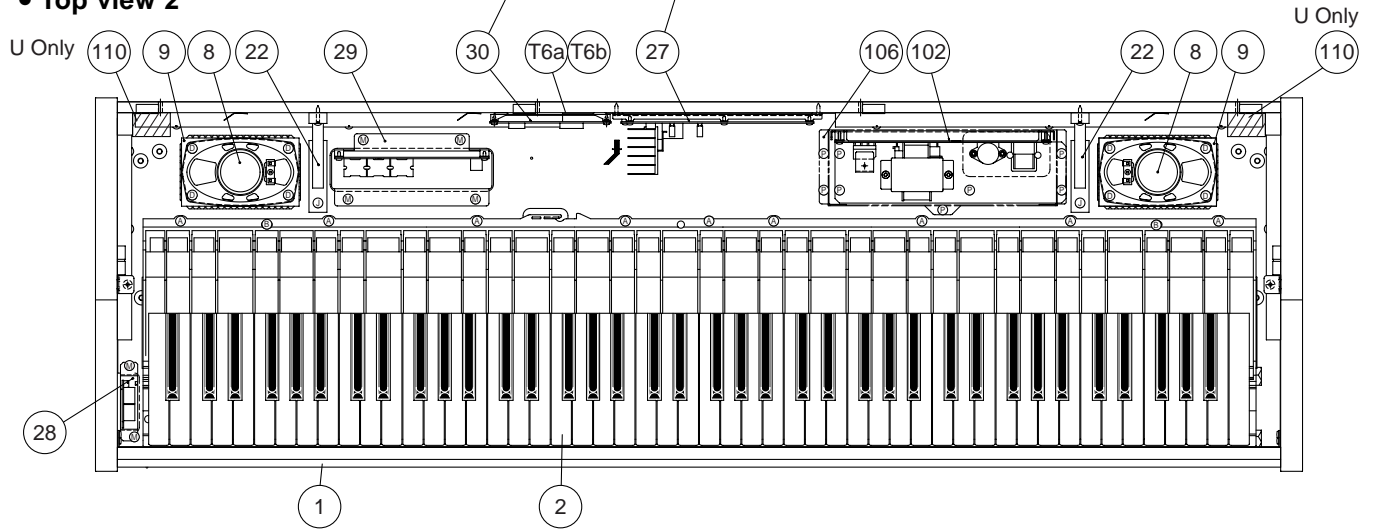
• Side view



• Bottom view



• Top view 2

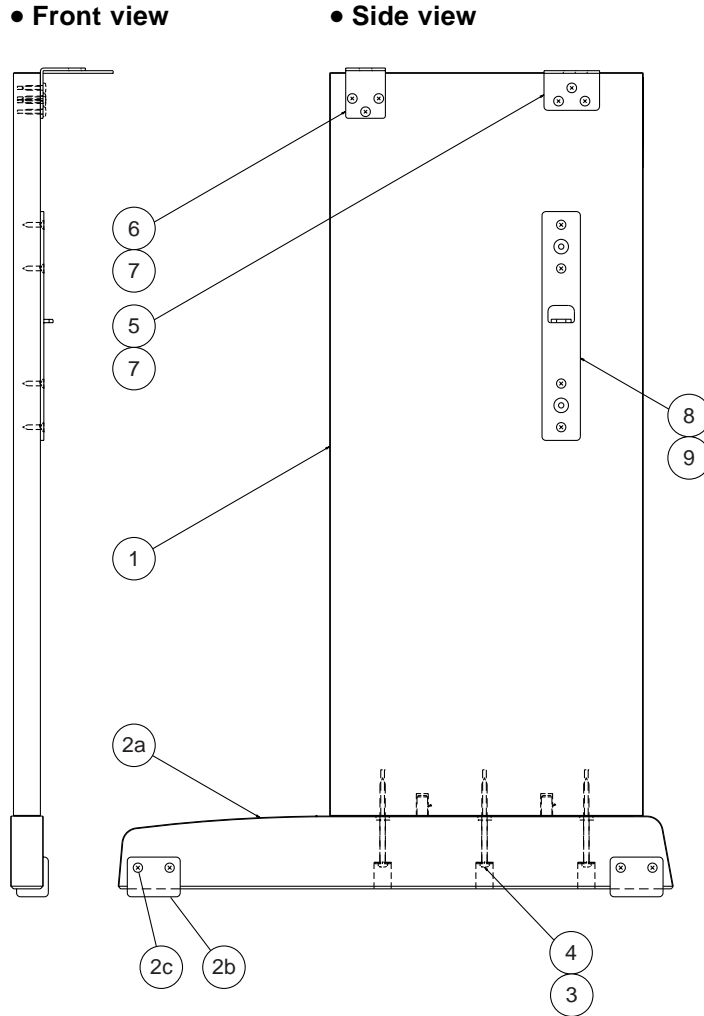


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	MAIN UNIT		CLP-110		
	--	Main Unit	U	(V851290)		
	--	Main Unit	E	(V851300)		
	--	Main Unit	N	(V851310)		
	--	Main Unit Sub Assembly		(V851320)		
101	--	Name Plate	U	(V861970)		
101	--	Name Plate	E	(V861980)		
101	--	Name Plate	N	(V862000)		
102	V0010300	Power Supply Unit				14
102	V0010400	Power Supply Unit				14
102	V0010500	Power Supply Unit				22
103	EP030240	Bind Head Tapping Screw-1	3.5X12 MFZN2Y			8 01
103	EP030240	Bind Head Tapping Screw-1	3.5X12 MFZN2Y			5 01
106	--	Cover Assembly, PS Unit		(V955970)		
106a	V2035900	Cover, Power Supply Unit				07
106b	V9559800	Felt				
107	VB951400	Graphic Mark	MKX-5 UL			03
107	--	Graphic Mark	YMMA	(V846210)		
110	--	Conductive Adhesive tape	TC-A40E 40X20M	(V604530)		
	--	Main Unit Sub Assembly		(V851320)		
1	--	Top Unit Assembly		(V861270)		
2	VZ705400	Keyboard Assembly	A88 K6			63
3	VV040700	Pan Head Screw	5.0X25 MFZN2Y PW			9 01
4	EP040230	Bind Head Tapping Screw-1	4.0X14 MFZN2Y			2 01
* 5	V8518500	Rack L	LEFT			
* 6	V8518600	Rack R	RIGHT			
7	EP030470	Bind Head Tapping Screw-1	3.5X20 MFZN2Y			6 01
8	X0657A00	Speaker	13.0cm 4ohm 10W			2 06
9	--	Speaker Cushion		(V861680)		2
10	03747340	Truss Head Tapping Screw-1	4.0X16 MFZN2Y			8
* 11	V8733300	End Block Assembly	CL RIGHT			
12	EP640130	Bind Head Tapping Screw-B	4.0X10 MFZN2Y			2 01
* 13	V8513300	Top Board Assembly	CL			
14	EN640160	Truss Head Tapping Screw-1	4.0X25 MFZN2BL			4 01
* 15	V8514200	Music Rest Assembly	CL			
16	EP030310	Bind Head Tapping Screw-1	3.0X16 MFZN2BL			4 01
* 17	V8516800	Key Cover Assembly	CL			
* 19	V8614600	Panel Assembly				
20	--	Angle Z		(V907120)		
21	03753500	Bind Head Screw	3.0X8 MFZN2Y			01
22	--	Partition Assembly		(V908210)		2
23	EN630260	Truss Head Tapping Screw-1	3.5X20 MFZN2Y			2 01
24	VL445800	Truss Head Screw	4.0X20 MFZN2Y			2 01
25	VT501000	Label				03
26	--	Label, PHONES		(VS47810)		
27	--	A Sheet Assembly		(V907410)		
* 28	--	Headphones Jack Assembly		(V969120)		
29	--	D-Jack Assembly		(V890860)		
* 30	V8910100	Circuit Board	DM			
31	EP600130	Bind Head Tapping Screw-B	3.0X6 MFZN2Y			4 01
32	--	Connector Assembly	10P-5P-8P-250	(V908650)		
33	--	Connector Assembly	11P-350	(VK10860)		
* 34	V9401000	Connector Assembly	# 2783			
35	VK099600	Connector Assembly	2P-150			02
36	--	Connector Assembly	AMSP	(V909110)		
37	--	Connector Assembly	AMHP	(V908680)		
38	--	Connector Assembly	PWR	(V004510)		
39	EN630230	Truss Head Tapping Screw-1	3.5X14 MFZN2Y			01
40	EP030240	Bind Head Tapping Screw-1	3.5X12 MFZN2Y			14 01
42	VP834600	Adhesive Tape	12X50			2 02
43	--	End Block Assembly	LEFT	(V869920)		
	--	Top Unit Assembly		(V861270)		
*	AAX34240	Keybed & F.Rail Assembly				
T1	--	Keybed Assembly		(V907320)		
T2	--	Front Rail Assembly		(V907300)		
T2a	--	Front Rail		(V907310)		
* T2b	V5263500	Angle, K	1.6 L			2
* T2c	V5130600	Holder Assembly, Keyboard	CL			

*: New Parts

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■ SIDE BOARD ASSEMBLY



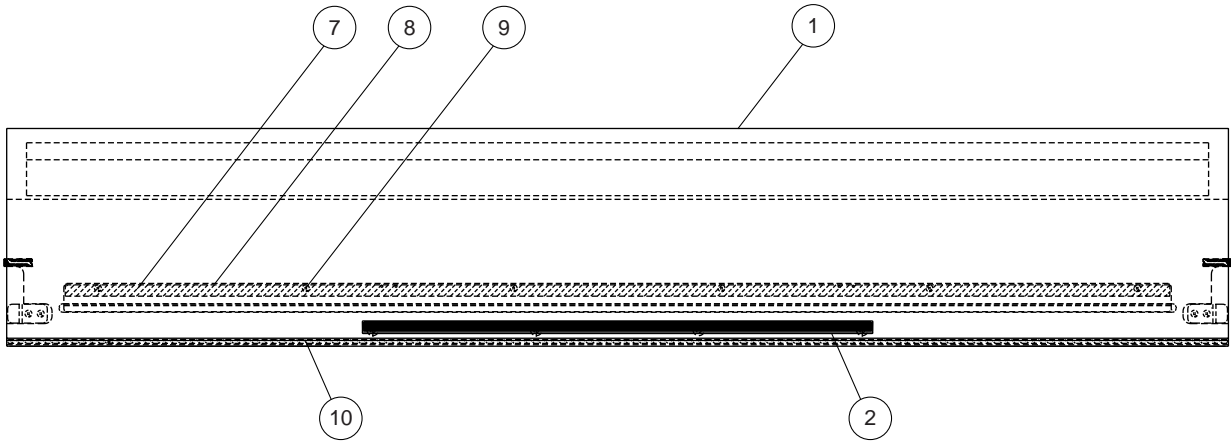
REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
	V8620200	SIDE BOARD ASSEMBLY	CLP-110		
*					
1	--	Side Board Assembly-L	CL LEFT		
2	--	Side Board	LEFT		(V862040)
2a	--	Stand Base Assembly	CL LEFT		(V862090)
2a	--	Stand Base	CL LEFT		(V862110)
2b	VR930600	Foot		2	01
2c	EM030180	Flat Head Tapping Screw-1	3.5X20 MFZN2BL	4	01
3	VK287600	Flat Washer	4.0X12X1.0 MFZN2Y	3	01
4	V9761000	Pan Head Tapping Screw	4.0X90 MFZN2Y	3	01
5	VS295500	Holder, Stand	LEFT		05
6	VN973100	Angle Bracket, ST			04
7	EP030260	Bind Head Tapping Screw-1	3.5X16 MFZN2BL	6	01
8	VN634300	Holder, Side Board	LG-PF100		07
9	03740480	Flat Head Tapping Screw-1	3.5X16 MFZN2BL	4	01
*					
1	V8620300	Side Board Assembly-R	CL RIGHT		
2	--	Side Board	RIGHT		(V862050)
2a	--	Stand Base Assembly	CL RIGHT		(V862100)
2a	--	Stand Base	CL RIGHT		(V862120)
2b	VR930600	Foot		2	01
2c	EM030180	Flat Head Tapping Screw-1	3.5X20 MFZN2BL	4	01
3	VK287600	Flat Washer	4.0X12X1.0 MFZN2Y	3	01
4	V9761000	Pan Head Tapping Screw	4.0X90 MFZN2Y	3	01
5	VS295600	Holder, Stand	RIGHT		05
6	VN973100	Angle Bracket, ST			04
7	EP030260	Bind Head Tapping Screw-1	3.5X16 MFZN2BL	6	01
8	VN634300	Holder, Side Board	LG-PF100		07
9	03740480	Flat Head Tapping Screw-1	3.5X16 MFZN2BL	4	01

*: New Parts

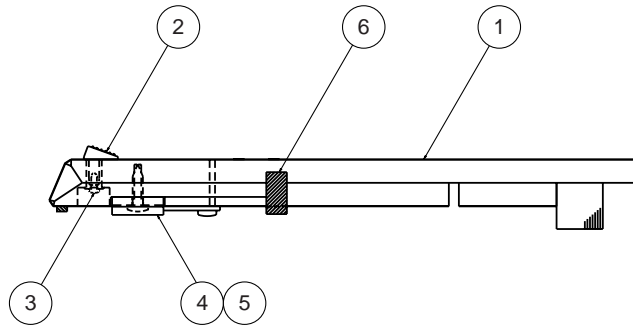
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TOP BOARD ASSEMBLY

• Top view



• Side view



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	V8513300	TOP BOARD ASSEMBLY		CLP-110		
*		Top Board Assembly	CL			
1	--	Top Board Assembly	CL	(V851340)		
2	V2780400	Stopper Rail, Music Score				05
3	VZ179200	PW Head Screw	2.2X5.8 MFZN2Y		4	01
4	VQ485700	Holder, Top Board			2	03
5	EP040230	Bind Head Tapping Screw-1	4.0X14 MFZN2Y		4	01
6	VS349600	Felt	40X8X3		2	03
7	--	Tape	#500 W12	(VE36310)		
8	--	Keyboard Rail		(V513070)		
*	9	EP030190	Bind Head Tapping Screw-1	3.5X16 MFZN2Y		01
10	--	Felt		(V991700)	6	

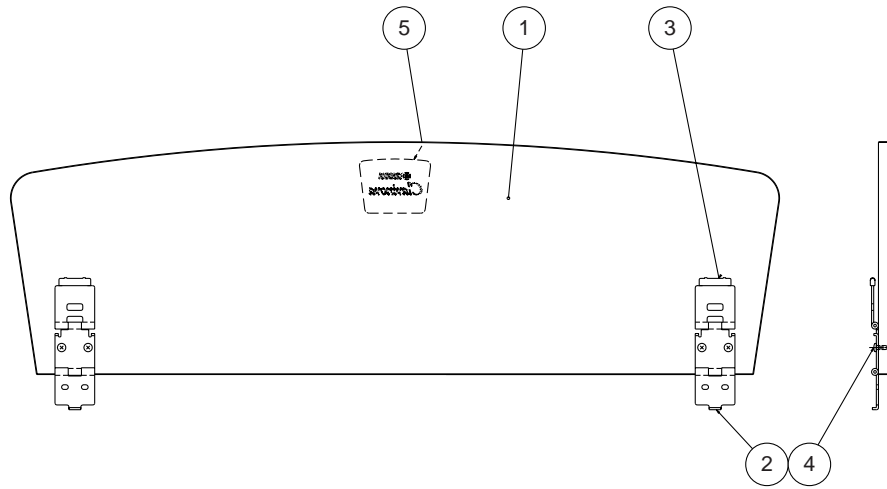
*: New Parts

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■ MUSIC REST ASSEMBLY

• Rear view

• Side view



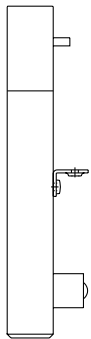
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V8514200	MUSIC REST ASSEMBLY		CLP-110		
1	--	Music Rest Assembly	CL			
		Music Rest	CL	(V851430)		
2	V8437600	Hinge	1STEP 1.6mm YMMA		2	
3	VV965900	Hinge Cap	T=1.6mm		2	03
4	20404200	Bind Head Tapping Screw-1	3.0X10 MFZN2BL		4	
5	V5782300	Badge	BRASS			05

*: New Parts

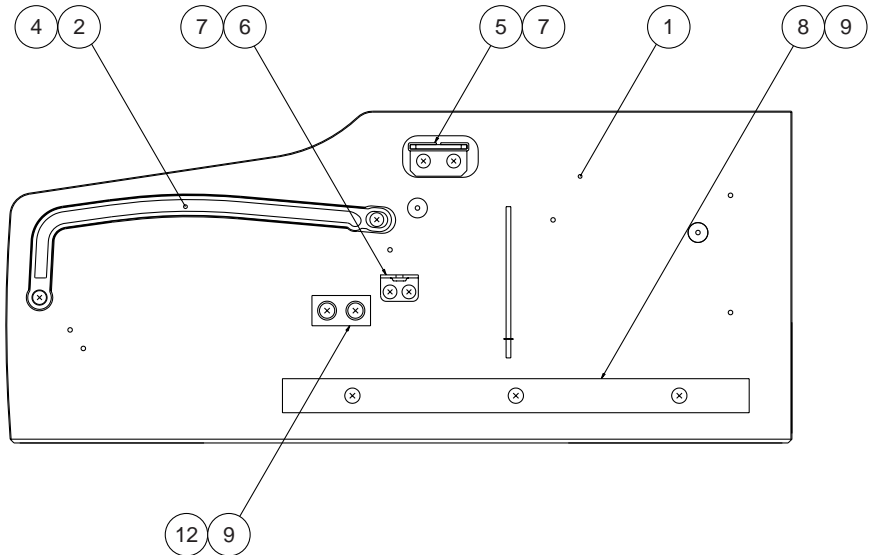
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■ SIDE COVER ASSEMBLY

● Front view



● Side view



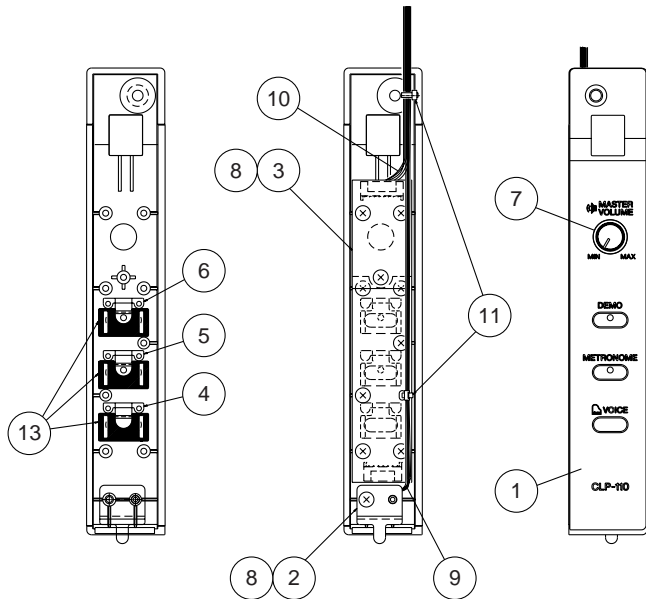
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	V8517300	SIDE COVER ASSEMBLY		CLP-110		
*	1	Side Cover Assembly	CL LEFT			
	--	Side Cover	LEFT	(V851760)		
*	2	Guide Rail	LEFT			
	V8518100					
	4	Bind Head Tapping Screw-1	3.5X12 MFZN2Y		2	01
	V7534400	Holder Assembly, Top Board				03
	6	Angle Bracket				03
	7	Bind Head Tapping Screw-1	3.5X16 MFZN2Y		4	01
	8	Cleat-T		(V851960)		
	9	Truss Head Tapping Screw-1	3.5X30 MFZN2Y		3	01
	V8517500	Side Cover Assembly	CL RIGHT			
*	1	Side Cover	RIGHT	(V851770)		
*	2	Guide Rail	RIGHT			
	V8518200					
	4	Bind Head Tapping Screw-1	3.5X12 MFZN2Y		2	01
	V7534400	Holder Assembly, Top Board				03
	6	Angle Bracket				03
	7	Bind Head Tapping Screw-1	3.5X16 MFZN2Y		4	01
	8	Cleat-T		(V851960)		
	9	Truss Head Tapping Screw-1	3.5X30 MFZN2Y		5	01
	12	Cleat-P		(V968280)		

*: New Parts

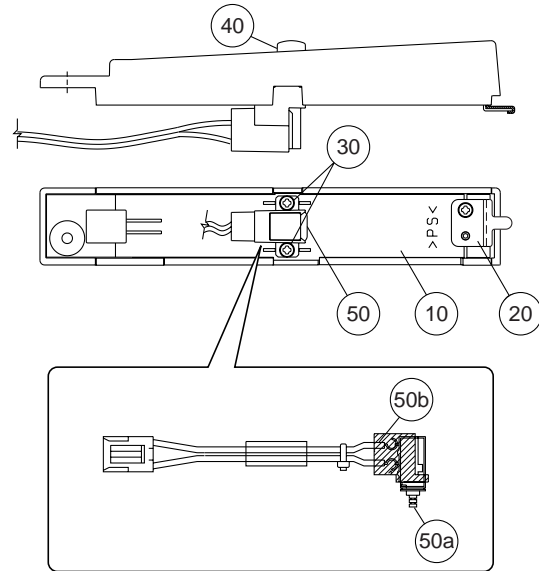
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■ END BLOCK ASSEMBLY

• END BLOCK ASSEMBLY (L)



• END BLOCK ASSEMBLY (R)



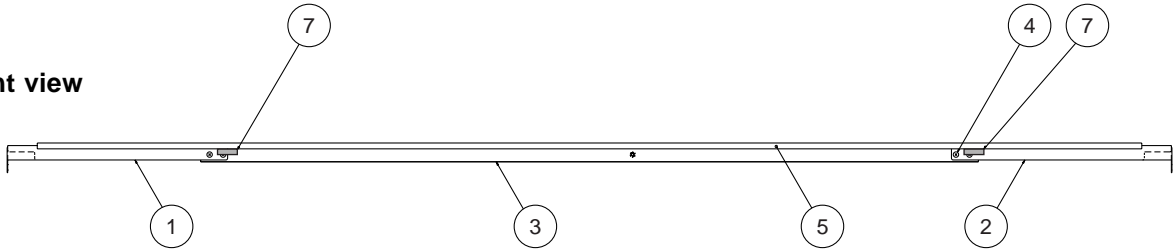
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	END BLOCK ASSEMBLY		CLP-110		
*	1	End Block Assembly	LEFT	(V869920)		
	2	End Block Sub Assembly-L	LEFT Sub	(V861560)		
*	3	Angle P				
	3	Circuit Board	PN			
*	4	Button		VOICE		04
	5	Button	GREEN	METRONOME		
*	6	Button	BLOWN	DEMO		
	7	Knob		MASTER VOLUME		04
	8	Bind Head Tapping Screw-B	3.0X8 MFZN2Y		10	01
	9	Connector Assembly	7P L=920	(V908660)		
	10	Connector Assembly	VOL L=880	(V909180)		
	11	Cord Holder	BK-1		2	01
	13	Dust Proof Cloth		(V926650)	3	
	--	End Block Assembly	CL RIGHT	(V873330)		
*	10	End Block Sub Assembly	RIGHT Sub			
	20	Angle P		(V861560)		
	30	Bind Head Tapping Screw-B	3.0X8 MFZN2Y		3	01
	40	Knob	BLACK	POWER		02
	50	Power Switch Assembly		POWER		08
	50a	Push Switch	SDDL1216A J.U.C.S			03
	50b	Switch Cover	IVORY, BLACK			01

*: New Parts

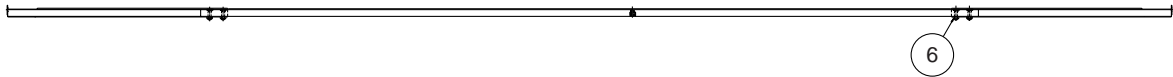
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■ PANEL ASSEMBLY

● Front view



● Top view



● Rear view



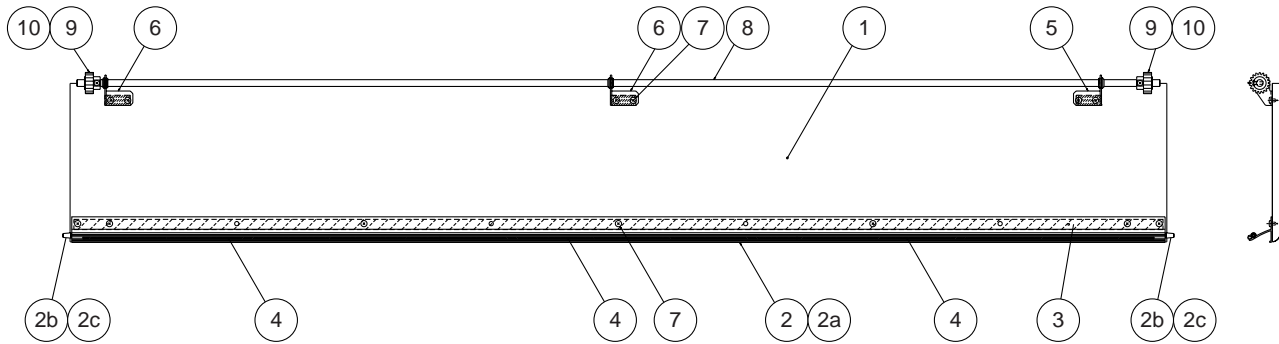
REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
*	V8614600	PANEL ASSEMBLY	CLP-110		
	--	Panel Assembly			
1	--	Panel	LEFT (V904060)		
2	--	Panel	RIGHT (V904070)		
3	--	Panel C Assembly	CENTER (V955960)		
4	V5993400	Flat Head Screw	3.0X12 MFZN2BL	4	01
5	VT196300	Felt	MK		04
5	VU638700	Felt	MK		05
6	ES200030	Hexagonal Nut	#1 3.0 MFZN2BL	4	01
7	--	Cusion	2X6X20 (V991240)	2	

*: New Parts

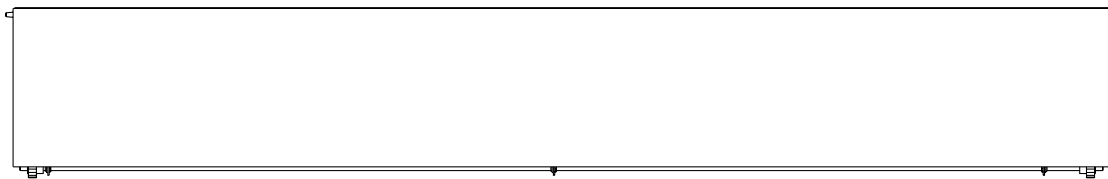
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■ KEY COVER ASSEMBLY

• Bottom view



• Top view



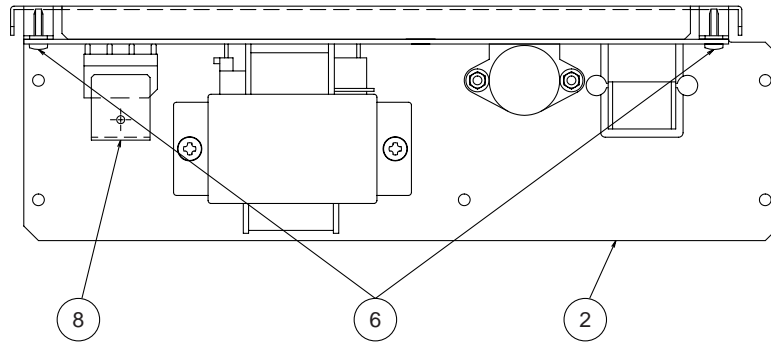
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V8516800	KEY COVER ASSEMBLY		CLP-110		
1	--	Key Cover Assembly	CL			
2	V4961900	Slide Cover	9 1300	(V851690)		
2a	--	Sash Assembly	FRONT			10
2b	V4964400	Sash	FRONT	(V496430)		
2c	--	Guide Pin			2	
3	--	Spacer		(V549580)	2	
4	--	Adhesive Tape	#500 W=12	(VE36310)		
4	V9465400	Cushion	H-32 426X2.5XT4		3	03
5	V8901400	Supporting Holder Assembly	LEFT			
6	V8901500	Supporting Holder Assembly	RIGHT		2	
7	VN920900	Bind Head Tapping Screw-1	3.5X8 MFZN2BL		13	01
8	V8517000	Rod				
9	VT190400	Gear			2	03
10	EG330060	Bind Head Screw	3.0X10 MFZN2Y		2	01

*: New Parts

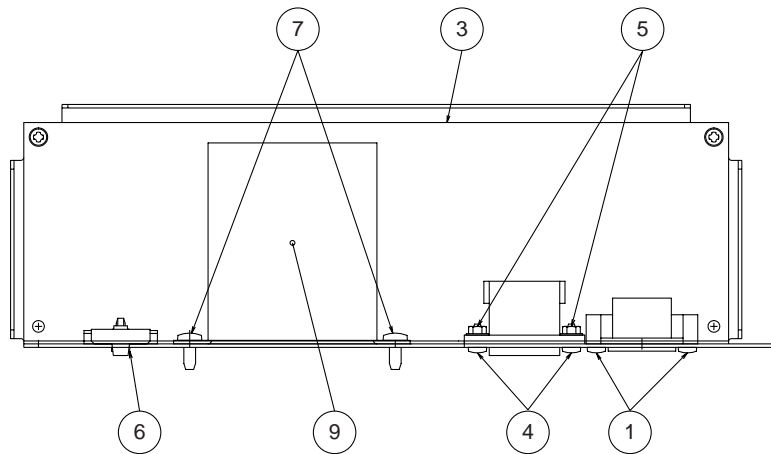
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POWER SUPPLY UNIT

• Top view



• Front view

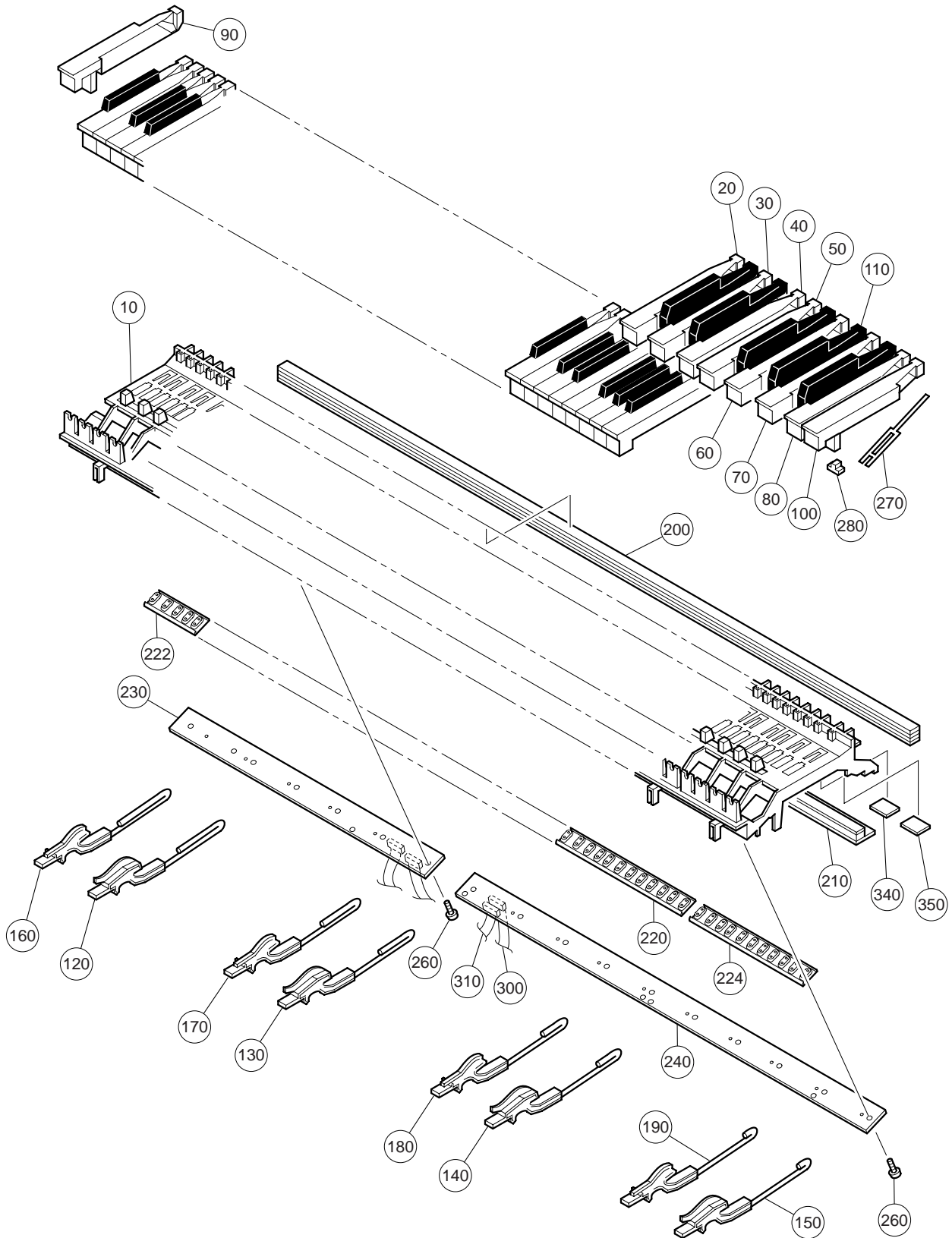


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	POWER SUPPLY UNIT			CLP-110		
	V0010300	Power Supply Unit		U		14
	V0010400	Power Supply Unit		E,G		14
	V0010500	Power Supply Unit		N		22
1	EP600140	Bind Head Tapping Screw-B	3.0X10 MFZN2BL		2	01
2	VZ958800	Plate, AC Inlet		U,E,G		07
2	VZ958900	Panel, AC Inlet		N		08
3	V0010800	Circuit Board	PS	U		11
3	V0011000	Circuit Board	PS	E,G		11
3	V0011100	Circuit Board	PS	N		12
4	EG330320	Bind Head Screw	3.0X12 MFZN2BL	N	2	01
5	VA211900	Hexagonal Nut	3.0 MFZN2Y	N	2	01
6	VE683000	Bind Head Tapping Screw-B	3.0X12 MFZN2Y		3	01
7	EP600240	Bind Head Tapping Screw-B	4.0X10 MFZN2BL		2	01
8	VT461100	Transistor Holder				03
9	XU445A00	Power Transformer	J/UL/CSA A	U		09
9	XU446A00	Power Transformer	IEC65 E	E,G		09
9	XU447A00	Power Transformer	N IEC65 E	N		09

*: New Parts

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KEYBOARD ASSEMBLY



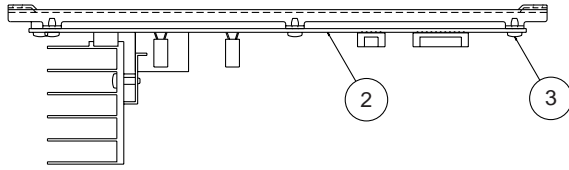
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	VZ705400	KEYBOARD ASSEMBLY		CLP-110		
10	--	Keyboard Assembly	A88 K6			63
20	VU101000	White Key	WHITE C			7 05
30	VU101100	White Key	WHITE D			7 05
40	VU101200	White Key	WHITE E			7 05
50	VU101300	White Key	WHITE F			7 05
60	VU101400	White Key	WHITE G			7 05
70	VU101500	White Key	WHITE A			7 05
80	VU101600	White Key	WHITE B			8 05
90	VU101700	White Key	WHITE A'			05
100	VU101800	White Key	WHITE C'			05
110	VU102100	Black Key	BLACK			36 05
120	VY828500	Hammer Assembly, White Key	WHITE			13 05
130	VY828600	Hammer Assembly, White Key	WHITE			13 05
140	VY828700	Hammer Assembly, White Key	WHITE			13 05
150	VY828800	Hammer Assembly, White Key	WHITE			13 05
160	VY828900	Hammer Assembly, Black Key	BLACK			9 05
170	VY829000	Hammer Assembly, Black Key	BLACK			9 05
180	VY829100	Hammer Assembly, Black Key	BLACK			9 05
190	VY829200	Hammer Assembly, Black Key	BLACK			9 05
200	VU342100	Stopper	1229X12X14.8T			09
210	V7640100	Stopper Felt	1239.5X28X10.1T			07
220	VY846700	Rubber Contact	GH 2M OCT			6 08
222	VY846800	Rubber Contact	GH 2M OCT	D0-C#1,D1-C#2,D2-C#3, D3-C#4,D4-C#5,D5-C#6		08
224	VY846900	Rubber Contact	GH 2M OCT	A-1-C#0 D6-C7		08
230	VZ705200	Circuit Board	GH 2M			10
240	VZ705300	Circuit Board	GH 2M			13
260	VT413400	Bind Head Tapping Screw-P	3.0X10 MFZN2			17 01
260	EP600270	Bind Head Tapping Screw-P	3.0X10 MFZN2Y			17 01
270	VZ417900	Spring R	GH			88 03
270	V2798500	Spring R	GH			88
280	VU237500	Rubber				88 03
280	V2211300	Rubber 2	GH,GHD,HE			88 03
300	VU341800	Connector Assembly	9P			06
310	VU341900	Connector Assembly	12P			07
340	VV467900	Stopper Support A	35.5 20 *			7 03
350	VV468100	Stopper Support B	24 20 -			12 03

*: New Parts

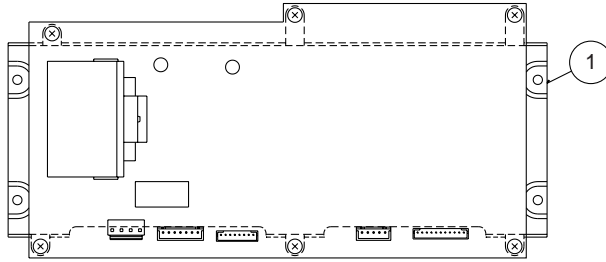
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■ A SHEET ASSEMBLY

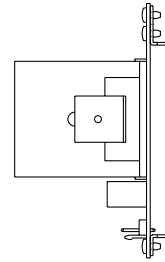
• Top view



• Front view



• Side view



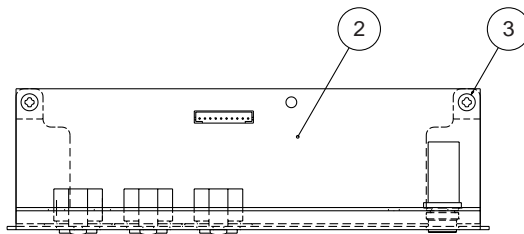
REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	A SHEET ASSEMBLY		CLP-110		
	--	A Sheet Assembly		(V907410)		
1	--	Holder, A Sheet		(V906990)		
2	V8910200	Circuit Board	AM			
3	EP600130	Bind Head Tapping Screw-B	3.0X6 MFZN2Y		6	01

*: New Parts

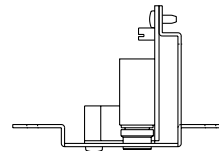
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■ D-JACK ASSEMBLY

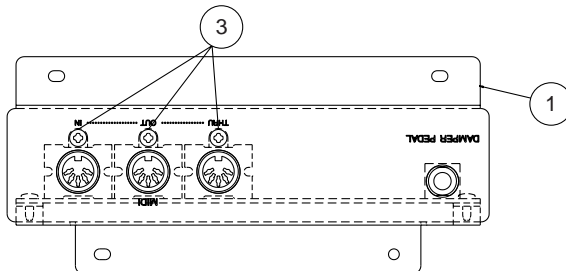
• Front view



• Side view



• Bottom view

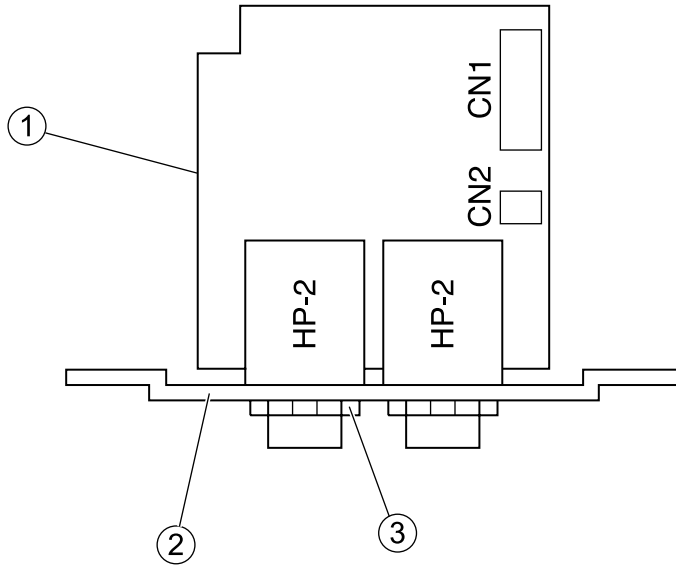


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	D-JACK ASSEMBLY		CLP-110		
	--	D-Jack Assembly		(V890860)		
1	V8908700	Angle, D-JACK				
2	V8910300	Circuit Board	D-JACK			
3	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL		5	01

*: New Parts

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■ HEADPHONES JACK ASSEMBLY

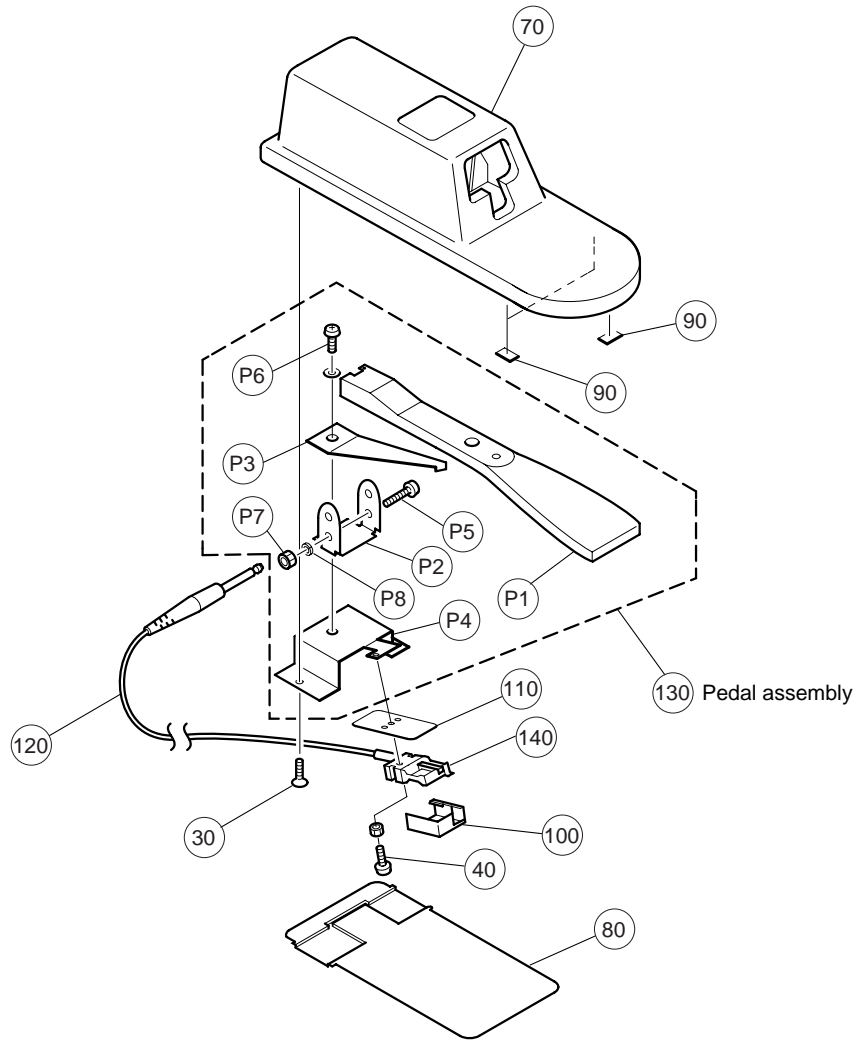


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		HEADPHONES JACK ASSEMBLY		CLP-110		
	--	Headphones Jack Assembly		(V969120)		
1	V5415700	Circuit Board	HP			07
2	VN631800	Angle, Headphone				04
3	VB508600	Hexagonal Nut	12.0 14X2 MFZN2BL		2	01

*: New Parts

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■ SUSTAIN PEDAL

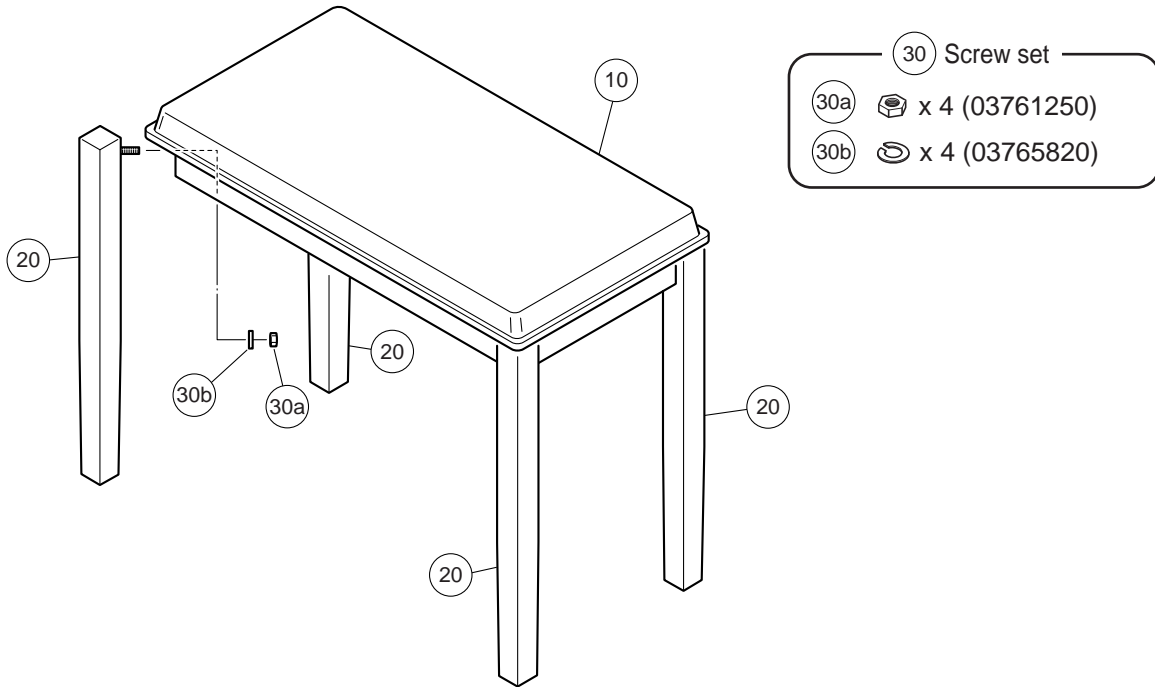


REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	VT373000	SUSTAIN PEDAL		CLP-110		
10	--	Sustain Pedal	FC4			
20	--	Tube	4.1 AWG#6	(CH00217)		
30	--	Tube	5.2 AWG#4	(CH00219)		
30	EC030070	Flat Head Screw	3.0X8 MFZN2Y			01
40	EE630060	Pan Head Screw	3.0X12 MFZN2Y			07
70	CB806740	Pedal Box	FC4			04
80	CB806750	Bottom Board	FC4			01
90	CB808790	Stopper	FC4		3	01
100	CB808360	Switch Cover	FC4			01
110	CA800450	Fiber Washer			2	01
120	MI801570	Cord Assembly	1.9m 6.3			05
130	NB805010	Pedal Assembly	FC4			10
140	NB037140	Switch Assembly				05
	NB805010	Pedal Assembly	FC4			10
P1	AA803240	Pedal				05
P2	AA803250	Holder, Pedal				02
P3	AA803260	Spring				04
P4	AA803270	Frame	FC4			05
P5	VE439100	Hexagonal Bolt	5.0X40 MFZN2Y			01
P6	03751460	Pan Head Screw	5.0X20 MFZN2Y			
P7	03760300	Hexagonal Nut	#1 JIS 5.0 MFZN2Y			01
P8	03766870	Spring Washer	#2 5.0 MFZN2B		2	

*: New Parts

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■ BENCH



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	BENCH		CLP-110		
10	V5532900	Bench	BC-100DR	(V553140)		16
10a	--	Bench Board Assembly	BC-100DR			
10b	--	Bench Board Assembly	ROSE	(V553350)		
10c	VC969300	Bench Side Frame Unit	BC-100DR	(V553380)		
10d	EP030170	Holder, Bench Board			4	03
10e	EP030170	Bind Head Tapping Screw-1	3.5X14 MFZN2Y		16	01
10f	V6886800	Wrench				
10g	--	Staple	1010J	(VA04670)	12	
20	V8176300	Leg			4	
30	VS530500	Screw Set	BC-XX			03
30a	03761250	Hexagonal Nut	#1 10.0X1.25 MFZN2		4	01
30b	03765820	Spring Washer	#2 10.0 MFZN2Y		4	01

*: New Parts

RANK: Japan only

■ ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		ELECTRICAL PARTS		CLP-110		
*	V8910200	Circuit Board	AM	(XW981B0)		
*	V8910100	Circuit Board	DM	(XW980A0)		
*	V8910300	Circuit Board	D-JACK	(V903460)(X2588B0)		
	V7817100	Circuit Board	GHDcl SW L	(XT240A0)		10
	VZ705300	Circuit Board	GH-D_SW H	(XT241A0)		13
*	V9626700	Circuit Board	HP	(XU684A0)(XV858A0)		07
*	V8910400	Circuit Board	PN	(V891070)(X2638A0)		
	VN637600	Circuit Board	PL	(VN63740)(XL151B0)		03
	VU659100	Circuit Board	PL	(VU65900)(XR898A0)		03
	V0010800	Circuit Board	PS	U (V001140)(XU372E0)		11
	V0011000	Circuit Board	PS	E,G (V001150)(XU372E0)		11
	V0011100	Circuit Board	PS	N (V001160)(XU372E0)		12
	V9021900	Circuit Board	VR	(V891070)(X2638A0)		
	V8910200	Circuit Board	AM	(XW981B0)		
	VE683000	Bind Head Tapping Screw-B	3.0X12 MFZN2Y			01
	--	Grease	X-113A G746	(VA79810)		
	--	Jumper Wire	0.55	(VD04170)		
C7	UR848100	Electrolytic Cap.	100.00 25.0V			01
C8	UR848220	Electrolytic Cap.	220.00 25.0V			01
C10	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C13	UN866100	Electrolytic Cap.-BP	1.00 50.0V			01
C14	UN866100	Electrolytic Cap.-BP	1.00 50.0V			01
C15	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C16	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C17	UR848100	Electrolytic Cap.	100.00 25.0V			01
C18	UR828470	Electrolytic Cap.	470.00 10.0V			01
C19	UR828470	Electrolytic Cap.	470.00 10.0V			01
C20	VR169400	Monolithic Mylar Capacitor	ECQ-V1H684JL3			
C21	VR169300	Monolithic Mylar Capacitor	ECQ-V1H564JL3			01
C22	UA354390	Mylar Capacitor	0.0390 50V J			01
C23	UA354220	Mylar Capacitor	0.0220 50V J			
C24	UA353560	Mylar Capacitor	5600P 50V J			
C25	VR169400	Monolithic Mylar Capacitor	ECQ-V1H684JL3			
C26	VR169300	Monolithic Mylar Capacitor	ECQ-V1H564JL3			01
C27	UA354390	Mylar Capacitor	0.0390 50V J			01
C28	UA354220	Mylar Capacitor	0.0220 50V J			
C29	UA353560	Mylar Capacitor	5600P 50V J			
C30	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C31	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C32	VR167100	Monolithic Mylar Capacitor	ECQ-V1H184JLW			01
C33	UA354220	Mylar Capacitor	0.0220 50V J			
C34	UA354680	Mylar Capacitor	0.0680 50V J			01
C35	UA354390	Mylar Capacitor	0.0390 50V J			01
C36	UA653180	Mylar Capacitor	1800P 50V J			01
* C37	VR167100	Monolithic Mylar Capacitor	ECQ-V1H184JLW			
C38	UA354220	Mylar Capacitor	0.0220 50V J			
C39	UA354680	Mylar Capacitor	0.0680 50V J			01
C40	UA354390	Mylar Capacitor	0.0390 50V J			01
C41	UA653180	Mylar Capacitor	1800P 50V J			01
C45	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C46	UR837470	Electrolytic Cap.	47.00 16.0V			01
C47	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C48	UR837470	Electrolytic Cap.	47.00 16.0V			01
C49	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C50	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C51	UR866100	Electrolytic Cap.	1.00 50.0V			01
C52	UR866100	Electrolytic Cap.	1.00 50.0V			01
C58	VE327200	Monolithic Mylar Capacitor	1.0 50V J			02
C58	VU838100	Monolithic Mylar Capacitor	1.0000 50V J			
C59	VE327200	Monolithic Mylar Capacitor	1.0 50V J			02
C59	VU838100	Monolithic Mylar Capacitor	1.0000 50V J			
C60	US063100	Ceramic Capacitor-B (chip)	1000P 50V K			01
C61	US063100	Ceramic Capacitor-B (chip)	1000P 50V K			01
C62	UR837220	Electrolytic Cap.	22.00 16.0V			01
C63	UR837220	Electrolytic Cap.	22.00 16.0V			01
C64	UR828470	Electrolytic Cap.	470.00 10.0V			01
C65	UR847470	Electrolytic Cap.	47.00 25.0V			01
C66	US035100	Ceramic Capacitor-B (chip)	0.1000 16V K			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
-73	US035100	Ceramic Capacitor-B (chip)	0.1000 16V Z			01
C74	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z			01
C75	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z			01
C76	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C77	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
CN1	LB918050	Base Post Connector	XH 5P TE			01
CN2	VB390700	Connector Base Post	PH-11P TE			01
CN3	LB932040	Base Post Connector	VH- 4P TE			01
CN4	LB918070	Base Post Connector	XH 7P TE			01
CN5	VB390400	Connector Base Post	PH- 8P TE			01
D2	VV925900	Diode	RLS-73 TE-11			01
HS	--	Heatsink		(V506910)		
IC1	XU387A00	IC	UPC24M12AHF	REGULATOR +12V		03
IC2	XR925A00	IC	SI-8401L	REGULATOR +5.0V		05
IC3	XU131A00	IC	TA8233H	POWER AMP 30W*2 BTL		06
IC4	XT773A00	IC	M5227FP	EQUALIZER		03
IC5	XT773A00	IC	M5227FP	EQUALIZER		03
IC7	XF291A00	IC	UPC4570G2	OP AMP		03
MFA	V5184100	Holder, A				03
R7	RD356680	Carbon Resistor (chip)	6.8K 63M J			01
R8	RD356680	Carbon Resistor (chip)	6.8K 63M J			01
R9	RD357330	Carbon Resistor (chip)	33.0K 63M J			01
R10	RD357330	Carbon Resistor (chip)	33.0K 63M J			01
R11	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R12	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R13	HF457180	Carbon Resistor	18.0K 1/4 J			01
R14	HF455180	Carbon Resistor	180.0 1/4 J			01
R15	HF456270	Carbon Resistor	2.7K 1/4 J			01
R16	HF456150	Carbon Resistor	1.5K 1/4 J			01
R17	HF457180	Carbon Resistor	18.0K 1/4 J			01
R18	HF457180	Carbon Resistor	18.0K 1/4 J			01
R19	HF455180	Carbon Resistor	180.0 1/4 J			01
R20	HF456270	Carbon Resistor	2.7K 1/4 J			01
R21	HF456150	Carbon Resistor	1.5K 1/4 J			01
R22	HF457180	Carbon Resistor	18.0K 1/4 J			01
R23	HF456180	Carbon Resistor	1.8K 1/4 J			01
R24	HF457150	Carbon Resistor	15.0K 1/4 J			01
R25	HF457220	Carbon Resistor	22.0K 1/4 J			01
R26	HF457180	Carbon Resistor	18.0K 1/4 J			01
R27	HF456100	Carbon Resistor	1.0K 1/4 J			01
R28	HF456180	Carbon Resistor	1.8K 1/4 J			01
R29	HF457150	Carbon Resistor	15.0K 1/4 J			01
R30	HF457220	Carbon Resistor	22.0K 1/4 J			01
R31	HF457180	Carbon Resistor	18.0K 1/4 J			01
R32	HF456100	Carbon Resistor	1.0K 1/4 J			01
R33	RD356330	Carbon Resistor (chip)	3.3K 63M J			01
R34	RD356330	Carbon Resistor (chip)	3.3K 63M J			01
R39	RD356560	Carbon Resistor (chip)	5.6K 63M J			01
R40	RD356560	Carbon Resistor (chip)	5.6K 63M J			01
R41	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R42	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R43	RD355560	Carbon Resistor (chip)	560.0 63M J			01
R44	RD355560	Carbon Resistor (chip)	560.0 63M J			01
R45	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R46	HF453220	Carbon Resistor	2.2 1/4 J			01
-49	HF453220	Carbon Resistor	2.2 1/4 J			01
R50	RD356470	Carbon Resistor (chip)	4.7K 63M J			01
R51	RD356560	Carbon Resistor (chip)	5.6K 63M J			01
R52	RD356560	Carbon Resistor (chip)	5.6K 63M J			01
R53	RD356330	Carbon Resistor (chip)	3.3K 63M J			01
R54	RD357330	Carbon Resistor (chip)	33.0K 63M J			01
R64	HF455560	Carbon Resistor	560.0 1/4 J			01
R65	HF455560	Carbon Resistor	560.0 1/4 J			01
RY2	VK881200	Relay	DC G5Z-2A-YA			04
TR1	VV556400	Transistor	2SC2412K Q,R,S			01
*	V8910100	Circuit Board	DM	(XW980A0)		
C2	RD350000	Carbon Resistor (chip)	0 63M J			01
C3	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C5	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
C8	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C11	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C14	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C22	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C26	UF037100	Electrolytic Cap. (chip)	10 16V			01
C27	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C28	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C29	UF037100	Electrolytic Cap. (chip)	10 16V			01
C30	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C31	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C32	UF037470	Electrolytic Cap. (chip)	47 16V			01
-34	UF037470	Electrolytic Cap. (chip)	47 16V			01
C35	UF037100	Electrolytic Cap. (chip)	10 16V			01
C36	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C37	UF246470	Electrolytic Cap.-BP (chip)	4.7 25V			01
C38	UF246470	Electrolytic Cap.-BP (chip)	4.7 25V			01
C39	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C40	UF037100	Electrolytic Cap. (chip)	10 16V			01
C41	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C42	US062220	Ceramic Capacitor-SL(chip)	220P 50V J			01
C43	UF037100	Electrolytic Cap. (chip)	10 16V			01
C44	US061220	Ceramic Capacitor-CH(chip)	22P 50V J			01
C45	US061220	Ceramic Capacitor-CH(chip)	22P 50V J			01
C46	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z			01
C47	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C48	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C49	UF017470	Electrolytic Cap. (chip)	47 6.3V			01
C50	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C52	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C53	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C54	US135100	Ceramic Capacitor-F (chip)	0.1000 16V Z			01
C55	UF037470	Electrolytic Cap. (chip)	47 16V			01
C56	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C57	UF037470	Electrolytic Cap. (chip)	47 16V			01
C58	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C59	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C60	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C61	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C62	UF037100	Electrolytic Cap. (chip)	10 16V			01
C63	RD350000	Carbon Resistor (chip)	0 63M J			01
C65	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C66	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C67	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C68	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C69	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C70	RD350000	Carbon Resistor (chip)	0 63M J			01
C71	RD350000	Carbon Resistor (chip)	0 63M J			01
C72	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C73	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
CN1	VB390300	Connector Base Post	PH- 7P TE			01
CN2	VB390100	Connector Base Post	PH- 5P TE			01
CN3	VB390400	Connector Base Post	PH- 8P TE			01
CN4	VB390400	Connector Base Post	PH- 8P TE			01
CN5	VB390700	Connector Base Post	PH-11P TE			01
D3	VV925900	Diode	RLS-73 TE-11			01
IC1	XU947C00	IC	HG73C205AFD	SWX00B		09
IC3	XZ635A00	IC	IS61C6416-15K	SRAM 1M		07
IC3	X0087A00	IC	CY7C1021-12VCT	SRAM 1M		
IC3	X0088B00	IC	K6R1016C1D-JC12	SRAM 1M		
IC4	XP867A00	IC	UPD63200GS-E1	DAC		07
IC7	XS516A00	IC	UPC2933T-E1	REGULATOR +3.3V		03
IC8	XJ598A00	IC	NJM78L05UA	REGULATOR +5.0V		02
IC9	XW792A00	IC	SN74HC132NSR	NAND		01
IC9	XY352A00	IC	MM74HC132SJX	NAND		02
IC10	X2565100	IC	PROG/WAVE	MASK ROM 64M		
R13	RD357470	Carbon Resistor (chip)	47.0K 63M J			01
R14	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R15	RD354470	Carbon Resistor (chip)	47.0 63M J			01
-19	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R20	RD357470	Carbon Resistor (chip)	47.0K 63M J			01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R21	RD357470	Carbon Resistor (chip)	47.0K 63M J			01
R22	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R23	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
-25	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R26	RD350000	Carbon Resistor (chip)	0 63M J			01
-28	RD350000	Carbon Resistor (chip)	0 63M J			01
R29	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R30	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R32	RD357470	Carbon Resistor (chip)	47.0K 63M J			01
R33	RD357470	Carbon Resistor (chip)	47.0K 63M J			01
R34	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R35	RD355100	Carbon Resistor (chip)	100.0 63M J			01
R36	RD355330	Carbon Resistor (chip)	330.0 63M J			01
R37	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R38	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R39	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R40	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R41	RD358470	Carbon Resistor (chip)	470.0K 63M J			01
R42	RD358470	Carbon Resistor (chip)	470.0K 63M J			01
R43	RD355100	Carbon Resistor (chip)	100.0 63M J			01
-46	RD355100	Carbon Resistor (chip)	100.0 63M J			01
R47	RD357220	Carbon Resistor (chip)	22.0K 63M J			01
R48	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R49	RD357220	Carbon Resistor (chip)	22.0K 63M J			01
R50	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R51	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R52	RD356820	Carbon Resistor (chip)	8.2K 63M J			01
R53	RD356270	Carbon Resistor (chip)	2.7K 63M J			01
R54	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R58	RD354470	Carbon Resistor (chip)	47.0 63M J			01
-90	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R91	RD355220	Carbon Resistor (chip)	220.0 63M J			01
R93	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R96	RD355390	Carbon Resistor (chip)	390.0 63M J			01
R97	RD355390	Carbon Resistor (chip)	390.0 63M J			01
R100	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R101	RD354470	Carbon Resistor (chip)	47.0 63M J			01
R102	RD350000	Carbon Resistor (chip)	0 63M J			01
TR1	VV556400	Transistor	2SC2412K Q,R,S			01
TR2	VJ927200	Transistor	2SA1162 O,Y			01
X1	VZ703600	Quartz Crystal Unit	8.4672M SMD-49			03
	V8910300	Circuit Board	D-JACK	(V903460)(X2588B0)		
C05	UR837100	Electrolytic Cap.	10.00 16.0V			01
C10	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C13	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
C20	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
-22	US064100	Ceramic Capacitor-B (chip)	0.0100 50V K			01
CN1	VB390600	Connector Base Post	PH-10P TE			01
D1	VV925900	Diode	RLS-73 TE-11			01
IC3	VD473200	Photo Coupler	6N137			05
JK1	VT202500	DIN Connector	5P YKF51-50	MIDI IN		01
JK2	VT202500	DIN Connector	5P YKF51-50	MIDI OUT		01
JK3	VT202500	DIN Connector	5P YKF51-50	MIDI THRU		01
JK6	VS115400	Phone Jack	BL LGR4609-7000	DAMPER PEDAL		01
L1	VY657200	Chip Inductance	600 BK1608HM601			01
L2	VY657200	Chip Inductance	600 BK1608HM601			01
L7	VY657200	Chip Inductance	600 BK1608HM601			01
-12	VY657200	Chip Inductance	600 BK1608HM601			01
R12	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R16	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R17	RD357220	Carbon Resistor (chip)	22.0K 63M J			01
R18	RD357220	Carbon Resistor (chip)	22.0K 63M J			01
R19	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R20	RD356150	Carbon Resistor (chip)	1.5K 63M J			01
R22	RD357220	Carbon Resistor (chip)	22.0K 63M J			01
R23	RD356150	Carbon Resistor (chip)	1.5K 63M J			01
R24	RD355220	Carbon Resistor (chip)	220.0 63M J			01
R25	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01
-28	RD154470	Carbon Resistor (chip)	47.0 1/4 J			01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
R30	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R31	RD355220	Carbon Resistor (chip)	220.0 63M J			01
R32	RD357100	Carbon Resistor (chip)	10.0K 63M J			01
R33	RD350000	Carbon Resistor (chip)	0 63M J			01
-35	RD350000	Carbon Resistor (chip)	0 63M J			01
TR1	VV556400	Transistor	2SC2412K Q,R,S			01
-4	VV556400	Transistor	2SC2412K Q,R,S			01
	V7817100	Circuit Board	GHDcl SW L	(XT240A0)		10
	--	Dust Proof Cloth		(VU45960)		
C1	FG644100	Electrolytic Cap.	0.0100 50V Z			01
C2	FG644100	Electrolytic Cap.	0.0100 50V Z			01
C3	FG644100	Electrolytic Cap.	0.0100 50V Z			01
C5	VF760000	Electrolytic Cap.-KS	100.00 10.0V			01
CL1	VI653000	Ceramic Resonator	CST4.00MGW040			01
CN1	VB390400	Connector Base Post	PH- 8P TE			01
CN2	VB390500	Connector Base Post	PH- 9P TE			03
CN3	VB390800	Connector Base Post	PH-12P TE			01
D1	VB941200	Diode	1SS133,1SS176			01
D2	VB941200	Diode	1SS133,1SS176			01
D5	VB941200	Diode	1SS133,1SS176			01
-72	VB941200	Diode	1SS133,1SS176			01
J1	--	Jumper Wire	0.55	(VD04170)		
J2	--	Jumper Wire	0.55	(VD04170)		
KSN2	XR632A00	IC	YMZ702-D	KSN2		09
R1	HF759100	Carbon Resistor	1.0M 1/4 J			01
R2	HF755100	Carbon Resistor	100.0 1/4 J			01
R3	HF755100	Carbon Resistor	100.0 1/4 J			01
R4	HF756100	Carbon Resistor	1.0K 1/4 J			01
RA1	VU483500	Resistor Array	RGLD12X103J			01
	VZ705300	Circuit Board	GH-D_SW H	(XT241A0)		13
	--	Dust Proof Cloth		(VU45980)		
CN1	VB390500	Connector Base Post	PH- 9P TE			03
CN2	VB390800	Connector Base Post	PH-12P TE			01
D1	VB941200	Diode	1SS133,1SS176			01
-108	VB941200	Diode	1SS133,1SS176			01
	V9626700	Circuit Board	HP	(XU684A0)(XV858A0)		07
	VT890700	Earth Wire	GND L=150		2	01
C1	--	Jumper Wire	0.55	(VD04170)	2	
C2	UN866220	Electrolytic Cap.-BP	2.20 50.0V		2	01
-5	UN866220	Electrolytic Cap.-BP	2.20 50.0V		2	01
C6	UN838100	Electrolytic Cap.-BP	100.00 16.0V		2	01
C7	UN838100	Electrolytic Cap.-BP	100.00 16.0V		2	01
CN1	LB919070	Base Post Connector	XH 7P SE		2	01
CN2	VB858100	Connector Base Post	PH- 2P SE		2	01
FL1	VB971100	Coil	FL5R200QN		2	01
FL2	VB971100	Coil	FL5R200QN		2	01
FL3	GE300670	Ferrite Bead	BL02RN2-R62T4		2	02
FL3	VB871100	Ferrite Bead	BL02RN2-R62		2	01
FL4	VB971100	Coil	FL5R200QN		2	01
FL5	VB971100	Coil	FL5R200QN		2	01
FL6	GE300670	Ferrite Bead	BL02RN2-R62T4		2	02
FL6	VB871100	Ferrite Bead	BL02RN2-R62		2	01
HP1	LB101870	Phone Jack	YKB21-5006	PHONES	2	03
HP2	LB101870	Phone Jack	YKB21-5006	PHONES	2	03
R1	VC731500	Metal Oxide Film Resistor	120.0 1W J		2	01
-4	VC731500	Metal Oxide Film Resistor	120.0 1W J		2	01
R5	HF455390	Carbon Resistor	390.0 1/4 J		2	01
R6	HF455390	Carbon Resistor	390.0 1/4 J		2	01
	V8910400	Circuit Board	PN	(V891070)(X2638A0)		
	V9021900	Circuit Board	VR	(V891070)(X2638A0)		
CN001	VB858600	Connector Base Post	PH- 7P SE			01
CN002	VB858700	Connector Base Post	PH- 8P SE			01
LD001	VU067800	LED	SEL6210S-TP5 RE	DEMO		01
LD002	VU067800	LED	SEL6210S-TP5 RE	METRANOME		01
SW001	VV439800	Tact Switch	SKQNAJ	DEMO		01
SW002	VV439800	Tact Switch	SKQNAJ	METRANOME		01

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REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
SW003	VV439800	Tact Switch	SKQNAJ	VOICE		01
VR001	V0075800	Rotary Variable Resistor	A10.0K RK14K1240	MASTER VOLUME		03
	VN637600	Circuit Board	PL	(VN63740)(XL151B0)		03
	VB858100	Connector Base Post	PH- 2P SE			01
	VD180000	LED	SLZ-190B-03 RE	POWER		01
	VU659100	Circuit Board	PL	(VU65900)(XR898A0)		03
	VB858100	Connector Base Post	PH- 2P SE			01
	VD180000	LED	SLZ-190B-03 RE	POWER		01
	V0010800	Circuit Board	PS	U (V001140)(XU372E0)		11
	V0011000	Circuit Board	PS	E,G (V001150)(XU372E0)		11
	V0011100	Circuit Board	PS	N (V001160)(XU372E0)		12
	VT308200	AC Inlet	CCT9302-0201	U		02
	VT308100	AC Inlet	CCT9302-0101M	E,G,N		02
	LB201530	Fuse Holder	PC-PH1			01
	--	Jumper Wire	0.55	(VD04170)		
	VT139600	Voltage Selector	M1684-E	N		04
C1	FI383470	Capacitor	4700P 400V U.C.S.V			01
C1	VY675100	Capacitor	4700P 250V J.U.C.S			01
C2	FI383470	Capacitor	4700P 400V U.C.S.V			01
C2	VY675100	Capacitor	4700P 250V J.U.C.S			01
C3	VT575200	Capacitor	0.01 400V J.U.C.S			01
C3	VY675000	Capacitor	0.010 250V J.U.C.S			01
C4	UA654470	Mylar Capacitor	0.0470 50V J			01
C5	V2126200	Electrolytic Cap.	10000 25.0V			04
C6	UJ866330	Electrolytic Cap.	3.30 50.0V			01
CN1	LB932030	Base Post Connector	VH- 3P TE			01
CN2	LB918050	Base Post Connector	XH 5P TE			01
D1	VB481900	Diode	11ES4			01
D1	VF195600	Diode	11ES4 TA1			01
D1	V7803100	Diode	1T4-T/A52			
D1	V9362200	Diode	1T4-T/A26			
D2	VB481900	Diode	11ES4			01
D2	VF195600	Diode	11ES4 TA1			01
D2	V7803100	Diode	1T4-T/A52			
D2	V9362200	Diode	1T4-T/A26			
DB1	VN011300	Diode Stack	D3SBA20 4.0A 200V			03
F1	KB003570	Fuse	2.00A JU	U,N		01
F1	KB003040	Fuse	1.00A S	E,G		01
F2	KB003040	Fuse	1.00A S	N		01
F3	KB003630	Fuse	5.00A JU	U		01
F3	KB003240	Fuse	5.00A S	E,G,N		01
J1	--	Jumper Wire	0.55	E,G (VD04170)		
J2	--	Jumper Wire	0.55	U (VD04170)		
L1	VF790900	Coil	SU10V-D20010			03
R1	HF456100	Carbon Resistor	1.0K 1/4 J			01
R1	HF756100	Carbon Resistor	1.0K 1/4 J			01
	VK726100	Connector	CCT5902	N		03
	VT015800	AC Cord Set	U 2 2.44m 7A	U		06
	V2917000	AC Cord Set	UC 2 7A 2.44m	U		06
	V3126400	AC Cord Set	U 2 2.5m	U		
	VT015900	AC Cord Set	E 2 2.5m	E,N		05
	V2917100	AC Cord Set	E 2 2.5m 2.5A	E,N		05
	V3126300	AC Cord Set	E 2 2.5m	E,N		
	VT016000	AC Cord Set	B 2 2.5m	G		08
	V3126500	AC Cord Set	B 2 2.5m	G		
	V0010300	Power Supply Unit		U		14
	V0010400	Power Supply Unit		E,G		14
	V0010500	Power Supply Unit		N		22
	X0657A00	Speaker	13.0cm 4ohm 10W			06
	NB037140	Switch Assembly				05
	VC843500	Push Switch	SDDL1216A J.U.C.S	POWER		03

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