

# DP90-SB(J)/MC(J)

# SERVICE NOTES

*Issued by RJA*

# DP90S-PE(J)/PW(J)

Digital Piano

DP90S-PE(J)



DP90S-PW(J)



DP90-MC(J)



DP90-SB(J)

### Revise Information

May 20, 2014 p. 11, p. 41

Changed supply unit.

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## Table of Contents

Cautionary Notes .....	2
Specifications .....	3
Location of Controls .....	6
Location of Controls Parts List .....	7
Exploded View (All) .....	8
Exploded View (Fig.A) .....	10
Exploded View (Fig.A) Parts List .....	11
Plane View (Fig.A) .....	12
Plane View (Fig.A) Parts List .....	13
Exploded View (Fig.B) (DP90-SB/MC) .....	14
Exploded View (Fig.B) (DP90-SB/MC) Parts List .....	15
Exploded View (Fig.B) (DP90S-PE/PW) .....	16
Exploded View (Fig.B) (DP90S-PE/PW) Parts List .....	17
Exploded View (Fig.C) .....	18
Exploded View (Fig.D) .....	19
Exploded View (Fig.E, F) .....	20
Exploded View (Fig.G) .....	22
Exploded View (Fig.G) Parts List .....	23
Plane View (Fig.G) .....	24
Keyboard Parts List (PHA3-C; for DP90) .....	26
Keyboard Parts List (PHA3-D; for DP90S) .....	27
Disassembly Procedure .....	28
Important Notes When Assembling .....	34
Lubrication Points (DP90S-PE/PW Only) .....	35
Assembling the DP90/DP90S .....	36
Wiring Diagram/Block Diagram .....	39
Wiring Diagram Parts List .....	40
Parts List .....	41
Verifying the Version .....	45
Data Backup and Restore Operations .....	45
Performing a Factory Reset .....	46
Updating the System .....	46
Test Mode .....	47
Circuit Board (Main Board) .....	52
Circuit Diagram (Main Board: 1/3) .....	54
Circuit Diagram (Main Board: 2/3) .....	56
Circuit Diagram (Main Board: 3/3) .....	58
Circuit Board (Panel L/R, D-Volume Board) .....	60
Circuit Diagram (Panel L Board) .....	62
Circuit Diagram (Panel R Board) .....	64
Circuit Diagram (D-Volume Board) .....	66
Circuit Board (JACKAMP-XMS, Phones, Pedal JK Board) .....	68
Circuit Diagram (JACKAMP-XMS Board: 1/2) .....	70
Circuit Diagram (JACKAMP-XMS Board: 2/2) .....	72
Circuit Diagram (Phones Board) .....	74
Circuit Diagram (Pedal JK Board) .....	74
Circuit Board (SW-Regulator Board) .....	75
Circuit Diagram (SW-Regulator Board) .....	75
Circuit Board (USB-HF Board) .....	76
Circuit Diagram (USB-HF Board) .....	76

## Cautionary Notes

**Before beginning the procedure, please read through this document. The matters described may differ according to the model.**

## Back Up User Data!

User data may be lost during the course of the procedure. Refer to **Data Backup and Restore Operations** (p. 45) in the Service Notes and save the data. After completing the procedure, restore the backed-up data to the product.

## Part Replacement

When replacing components near the power-supply circuit or a heat-generating circuit (such as a circuit provided with a heat sink or including a cement resistor), carry out the procedure according to the instructions with respect to the part number, direction, and attachment position (mounting so as to leave an air gap between the component and the circuit board, etc.).

## Parts List

A component whose part code is \*\*\*\*\* will not be supplied as a service part because one of the following reasons applies.

- Because it is supplied as an assembled part (under a different part code).
- Because a number of circuit boards are grouped together and supplied as a single circuit board (under a different part code).
- Because supply is prohibited due to copyright restrictions.
- Because reissuance is restricted.
- Because the part is made to order (at current market price).
- Because it is carried in electronic data on the Roland web site.
- Because it is a package or an accessory irrelevant to the function maintenance of the main body.
- Because it can be replaced with an article on the market. (battery or etc.)

## Circuit Diagram

In the circuit diagram, "NIU" is an abbreviation for "Not in Use," and "UnPop" is an abbreviation for "Unpopulated." They both mean non-mounted components. The circuit board and circuit board diagram show silk-screened indications, but no components are mounted.

# Specifications

## DP90/DP90S: Digital Piano

### Keyboard

#### Keyboard

DP90: 88 keys (PHA III Ivory Feel-S Keyboard with Escapement)

DP90S: 88 keys (PHA III Ivory Feel Keyboard with Escapement)

#### Touch Sensitivity

Key Touch: 5 levels, Fixed Touch

#### Keyboard Modes

Whole

Dual (volume balance adjustable)

Split (split point adjustable)

Twin Piano

#### Pedals

Damper (capable of continuous detection)

Soft (capable of continuous detection)

Sostenuto (function assignable)

### Sound Generator

#### Piano Sound

SuperNATURAL Piano Sound

#### Sound Generator

Conforms to GM2/GS/XG Lite

#### Max. Polyphony

128 voices

#### Tones

Grand Piano: 10 tones

Early Piano: 6 tones

E. Piano: 10 tones

Strings: 14 tones

Other: 307 tones (including 8 drum sets, 1 SFX set)

#### Temperaments

8 types, selectable temperament key

#### Stretched Tuning

On, Off

#### Master Tuning

415.3 Hz–466.2 Hz (adjustable in increments of 0.1 Hz)

### Transpose

Key Transpose: -6–+5 (in semitones)

Playback Transpose: -6–+5 (in semitones)

### Effects

Ambience (Off, 10 levels)

Brilliance (Off, -10–0–+10)

Only for Piano Tones:

Soundboard Behavior (Off, 10 levels), Cabinet Resonance (Off, 10 levels),

Damper Resonance (Off, 10 levels), String Resonance (Off, 10 levels),

Key Off Resonance (Off, 10 levels)

Only for Organ Tones:

Rotary Speaker Effect (Slow/Fast)

### Metronome

#### Tempo

Quarter note = 10 to 500

#### Beat

2/2, 0/4, 2/4, 3/4, 4/4, 5/4, 6/4, 7/4, 3/8, 6/8, 9/8, 12/8

#### Volume

11 levels

### SMF Recorder

#### Tracks

3 tracks

#### Song Save Format

Standard MIDI Files (Format 0)

#### Songs

Recorder section: 1 song

Internal Memory: Max. 99 songs

#### Note Storage

Approx. 30,000 notes

#### Controls

Song Select, Play/Stop, Rec, Rewinding, Fast-forwarding, Previous song, Next song, Part Mute, Mute Volume, Tempo, Tempo Mute, All Songs Play, Count-in, Song Balance, AB Repeat

#### Tempo

Quarter note = 10 to 500

#### Resolution

120 ticks per quarter note

## Audio/Audio CDs

### Playback

File Format: Audio File (WAV 44.1 kHz/16-bit linear format, when using optional USB Flash Memory)

Audio CDs (CD-DA) (when using optional CD drive)

### Recording

Possible (with Keyboard, SMF data)

File Format: Audio File (WAV 44.1 kHz/16-bit linear format, when using optional USB Flash Memory)

### Transpose

Playback Transpose: -6+5 (in semitones)

### Tempo

Audio Playback Speed: 75–125%

### Controls

Song Select, Play/Stop, Rec, Rewinding, Fast-forwarding, Previous song, Next song, Tempo, All Songs Play, Song Balance, AB Repeat  
Center Cancel

## Internal Memory

### Song Save Format

Standard MIDI Files (Format 0)

### Songs

Max. 99 songs

## External Memory

### External Storage

USB Flash Memory

### Playable Song Format

Standard MIDI Files (Format 0, 1)

Roland Original Format (i-Format)

Audio File (WAV 44.1 kHz/16-bit linear format, when using optional USB Flash Memory)

Audio CDs (CD-DA) (when using optional CD drive)

### Song Save Format

Standard MIDI Files (Format 0)

Audio File (WAV 44.1 kHz/16-bit linear format, when using optional USB Flash Memory)

## Other

### Internal Songs

Piano Masterpieces: 75 songs

Selections: 10 songs or greater

Hanon: 20 songs

Czerny #100: 100 songs

### Display

Custom LCD

### Control

Volume (Slider)

### Other Functions

Panel Lock, MIDI Visual Control, V-LINK

### Connectors

DC In jack

Pedal connector

Input jack: Stereo miniature phone type

Output jacks (L/Mono, R): 1/4-inch phone type

USB COMPUTER port: USB Type B

USB MEMORY port: USB Type A

MIDI connectors (In, Out)

Phones jack x 2: Stereo 1/4-inch phone type

### Rated Power Output

12 W x 2

### Volume Level (SPL)

110 dB

\* This figure was measured according to the method that is based on Roland's technical standard.

### Speakers

12 cm (5 inches) x 2

### Power Consumption

10 W (5 W to 33 W)

10 W: Average power consumption while piano is played with volume at center position

5 W: Power consumption immediately after power-up; nothing being played

33 W: Rated power consumption

### Dimensions (including piano stand)

(with lid close)

1,398 (W) x 344 (D) x 781 (H) mm

55-1/16 (W) x 13-9/16 (D) x 30-3/4 (H) inches

(with lid open)

1,398 (W) x 339 (D) x 974 (H) mm

55-1/16 (W) x 13-3/8 (D) x 38-3/8 (H) inches

\* Measurements include stabilizer components attached.

### Weight

DP90: 46.1 kg / 101 lbs 10 oz

DP90S: 47.4 kg / 104 lbs 8 oz

## Accessories (including piano stand)

Owner's Manual (#5100028379)

Internal Song List (#5100028624, #5100028625, #5100028623)

Assembling Leaflet (#\*\*\*\*\*)

AC Adaptor (#04236112)

Power Cord (for AC Adaptor) (#02562456, #5100012293, #01903356,  
#5100018086, #03785590)

Headphone Hook (#5100020982)

Stabilizer (left: #5100021794, right: #5100021795)

Cord Clamps (#03015001)

## Options (sold separately)

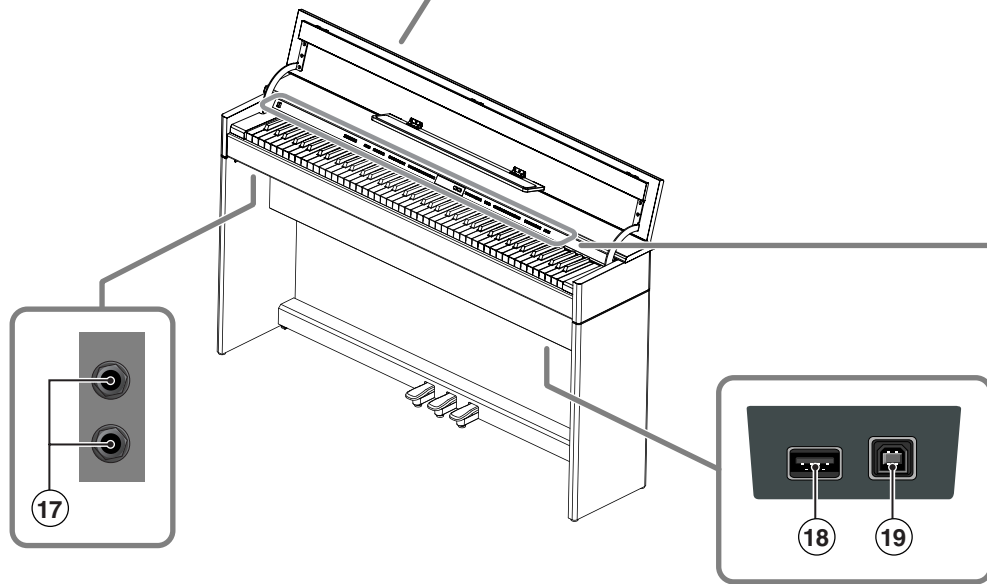
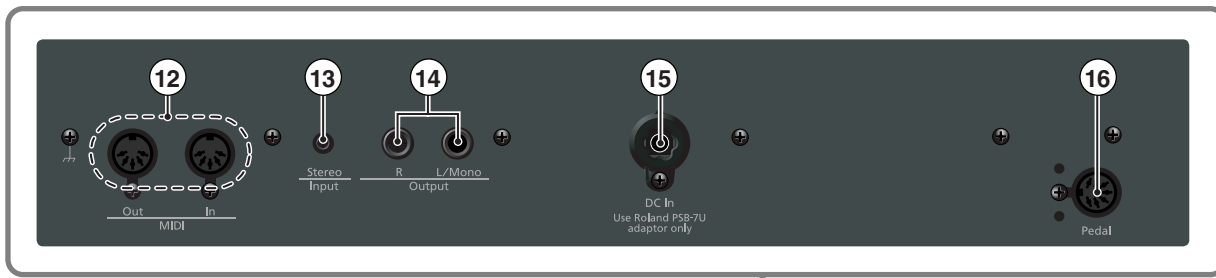
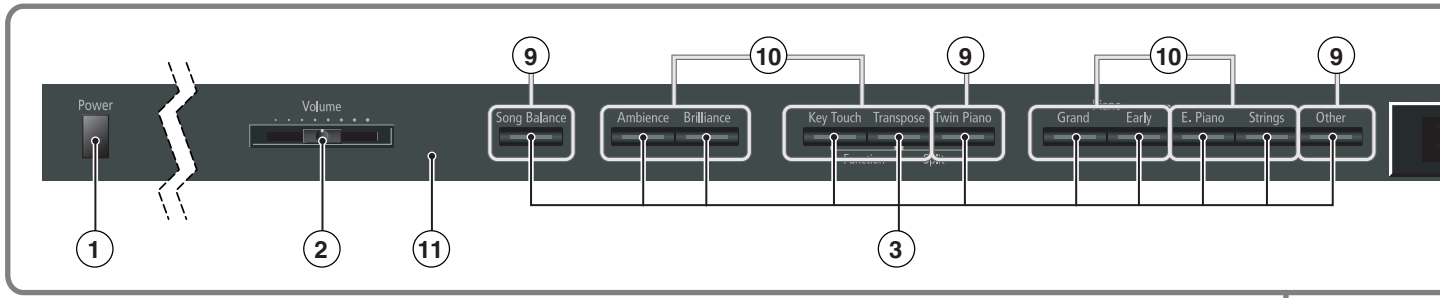
USB Flash Memory

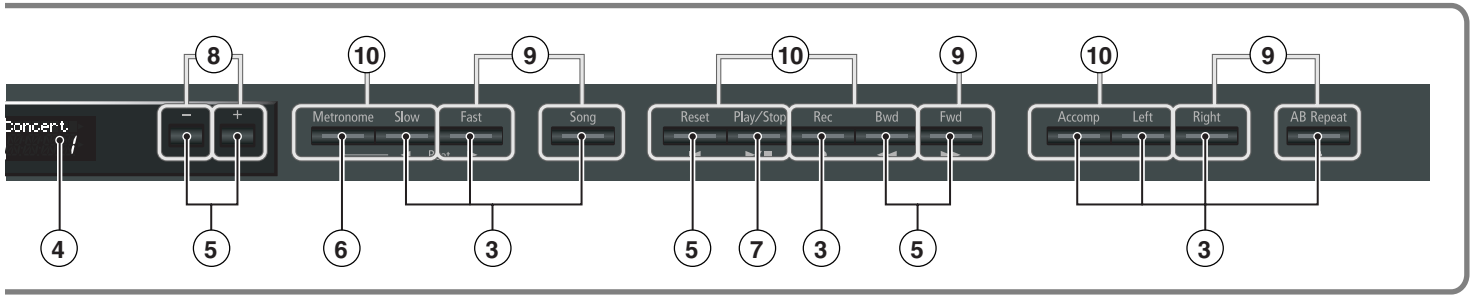
USB CD Drive

\* *Printed matters will not be supplied after the end of the production. Then,  
download the electronic file from the Roland web site.*

\* *In the interest of product improvement, the specifications and/or appearance of  
this unit are subject to change without prior notice.*

# Location of Controls

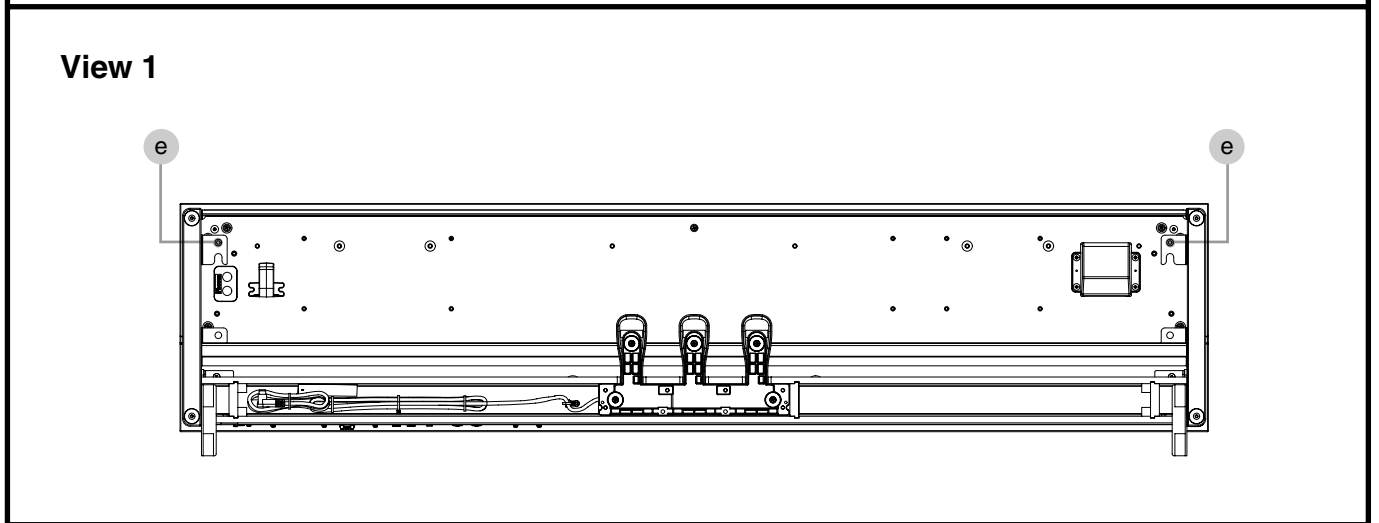
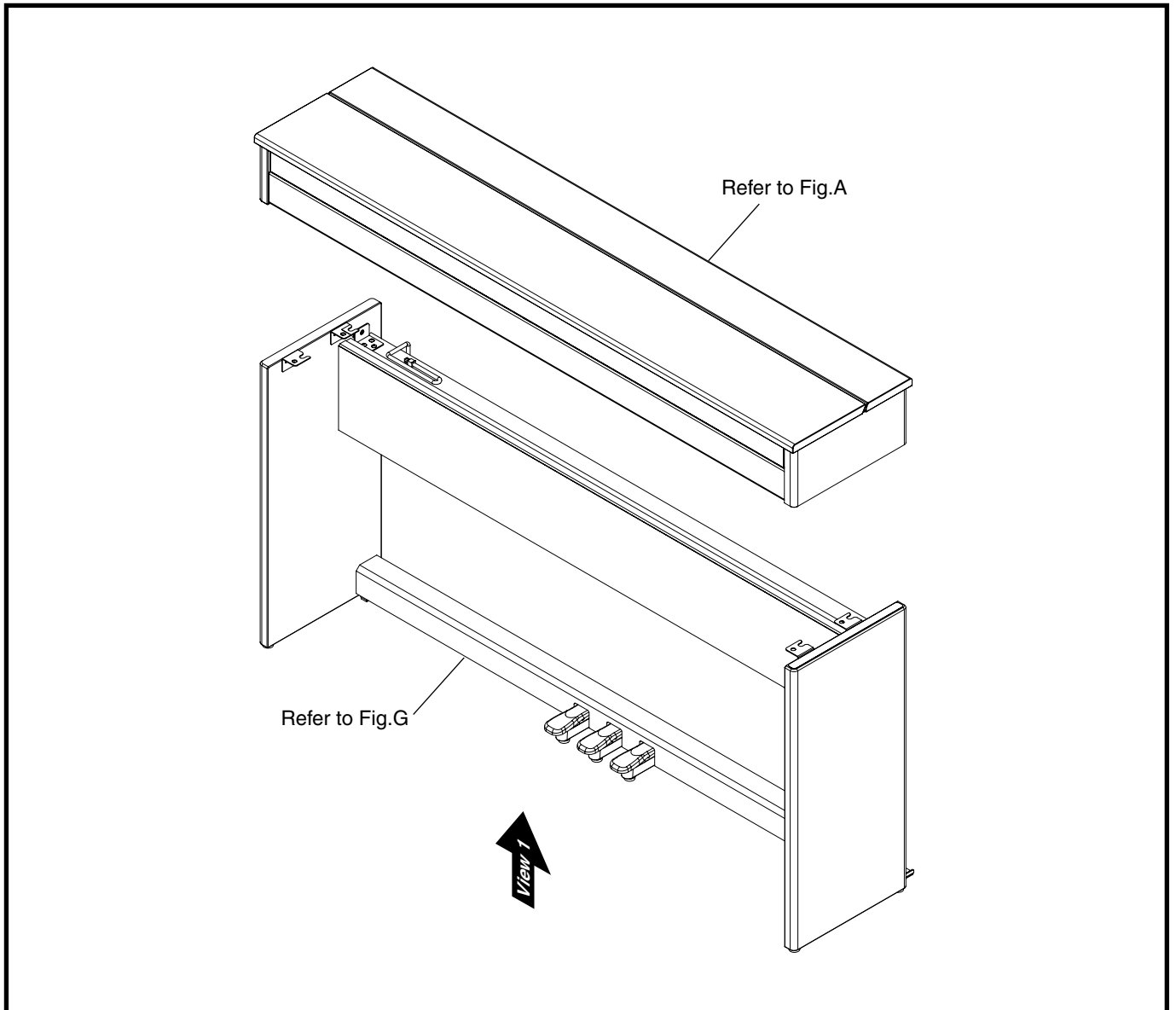




## Location of Controls Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100010764	PUSH SWITCH	SY16-5-4(U99S2)/T	1
	12499175	BUTTON	JSPUE0011A	1
2	5100015571	SLIDE POTENTIOMETER	RS30111FA002	1
	22485192	SLIDE KNOB	BLK/LCG	1
	5100028615	SLIDE KNOB	WHT/BLK	1
	5100008101	SLIDE KNOB ESCUTCHEON		1
	5100028617	SLIDE KNOB ESCUTCHEON	WHT	1
3	02781634	TACT SWITCH	SKRGAED010	19
	03230656	LED (RED)	SLR-343VCT32	19
4	5100023169	LCD	C-55612GNFU-LW-ADN	1
	5100028221	DISPLAY COVER		1
	5100028223	DISPLAY COVER		1
5	02781634	TACT SWITCH	SKRGAED010	5
6	02781634	TACT SWITCH	SKRGAED010	1
	04902023	LED (RED/GREEN)	SPI-325MUWT31	1
7	02781634	TACT SWITCH	SKRGAED010	1
	5100000443	LED	SLI-343MGT32	1
8	03126878	D S-KEYTOP	SX1H-B BLK	2
	5100028646	D S-KEYTOP	SX1H-B WHT	2
9	5100008100	ZL S-KEYTOP	MD1H BLK	8
	5100028621	ZL S-KEYTOP	MD1H WHT	8
10	5100008099	ZL S-KEYTOP	MD2H BLK	8
	5100028616	ZL S-KEYTOP	MD2H WHT	8
11	5100028158	FRONT PANEL		1
	5100028159	FRONT PANEL		1
	5100028160	FRONT PANEL		1
12	13429825	MIDI CONNECTOR	YKF51-5054V	1
13	02456390	3.5MM JACK	STEREO YKB21-5290	1
14	13449275	6.5MM JACK	YKB21-5074	2
15	02900312	DC JACK	HEC0470-01-640	1
	5100009656	DC PLUG SUPPORTER		1
16	00340223	DIN SOCKET	YKF51-5031	1
17	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)	2
	40783356	JACK NUT	M12 T2 //14 ZC	2
18	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N	1
19	5100009531	USB CONNECTOR B TYPE FEMALE	YKF45-0044N	1

# Exploded View (All)

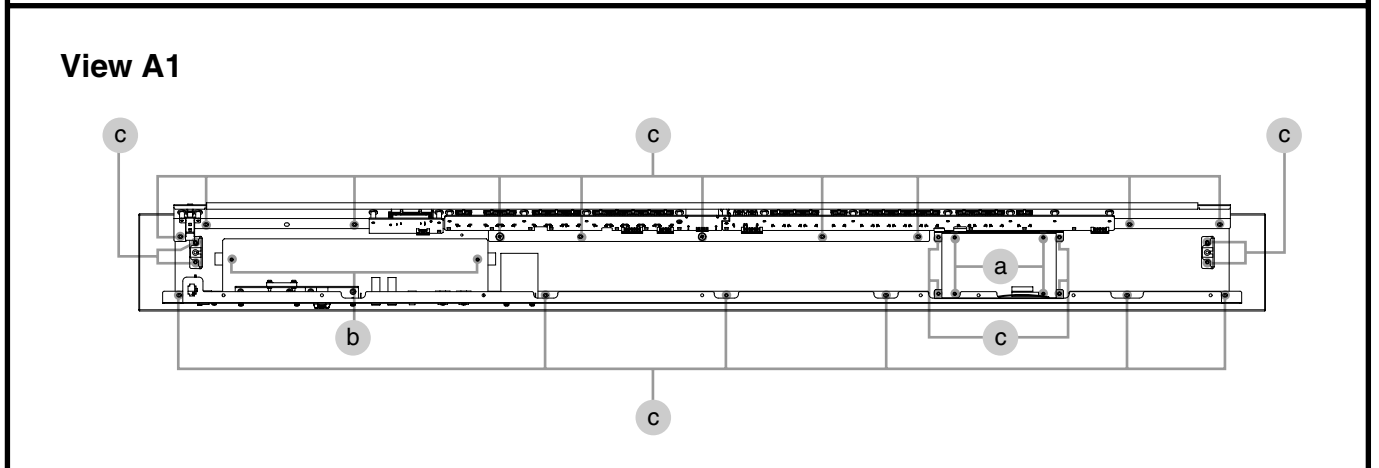
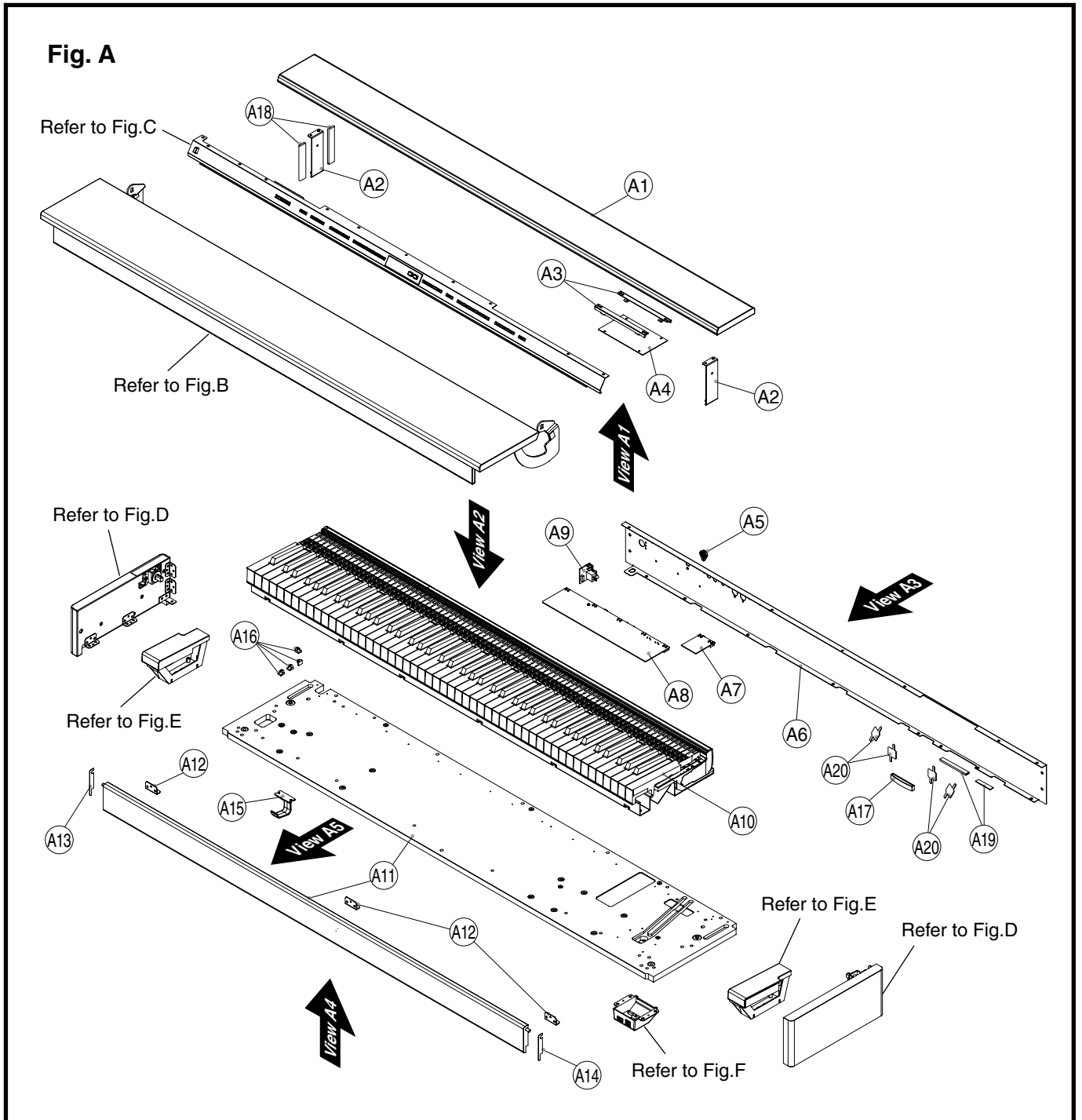


No.	Part Code	Part Name	Description	Q'ty
e	5100015690	SCREW M6X18	ORIGINAL TRUSS TC BZC	2





# Exploded View (Fig.A)



# Exploded View (Fig.A) Parts List

## Fig.A

No.	Part Code	Part Name	Description		Q'ty
A1	<del>5100028234</del>	<del>TOP BOARD</del>		<del>for SB</del>	<del>1</del>
	5100042201	TOP BOARD	W/VINYL TIE	for SB	1
	<del>5100028235</del>	<del>TOP BOARD</del>		<del>for MC</del>	<del>1</del>
	5100042202	TOP BOARD	W/VINYL TIE	for MC	1
	<del>5100028236</del>	<del>TOP BOARD</del>		<del>for PE</del>	<del>1</del>
	5100042203	TOP BOARD	W/VINYL TIE	for PE	1
	<del>5100028237</del>	<del>TOP BOARD</del>		<del>for PW</del>	<del>1</del>
	5100042204	TOP BOARD	W/VINYL TIE	for PW	1
A2	5100028166	TOP HOLDER			2
A3	5100028165	PWB HOLDER			2
A4	5100028437	MAIN BOARD ASSY			1
A5	5100009656	DC PLUG SUPPORTER			1
A6	5100028161	REAR PANEL		for SB, MC, PE	1
	5100028162	REAR PANEL		for PW	1
A7	5100023138	SW-REGULATOR BOARD			1
	5100028431	JACKAMP SHEET ASSY			
	* This unit includes the following parts.				
A8	*****	JACKAMP-XMS BOARD			1
A9	*****	PEDAL JK BOARD			1
	*****	PHONES BOARD	Refer to <b>Exploded View (Fig.F)</b> (p. 20)		
A10	5100017594	KEYBOARD ASSY	PHA3-C	for SB, MC	1
	5100021718	KEYBOARD ASSY	PHA3-D	for PE, PW	1
A11	5100030612	BOTTOM ASSY	BOTTOM + LOWER BLIND	for SB	1
	5100030613	BOTTOM ASSY	BOTTOM + LOWER BLIND	for MC	1
	5100030614	BOTTOM ASSY	BOTTOM + LOWER BLIND	for PE	1
	5100030615	BOTTOM ASSY	BOTTOM + LOWER BLIND	for PW	1
	* This unit includes the following parts.				
A12	04451989	ANGLE			3
A13	5100028293	LOWER BLIND CUSHION L		only for PE, PW	1
A14	5100028294	LOWER BLIND CUSHION R		only for PE, PW	1
A15	5100020982	PHONES HOOK			1
A16	03347856	CORD CLAMP	MN-2		4
A17	22365101	MINI FLAT CABLE CLIP	LFC-30N-O		1
A18	40232123	ACETATE TAPE	NITTO #5 BLACK W20MM 30M 20P		-
A19	40122612	ACETATE TAPE	NITTO #5 BLACK W10MM 30M 20P		-
A20	5100029330	CABLE CLIP			4

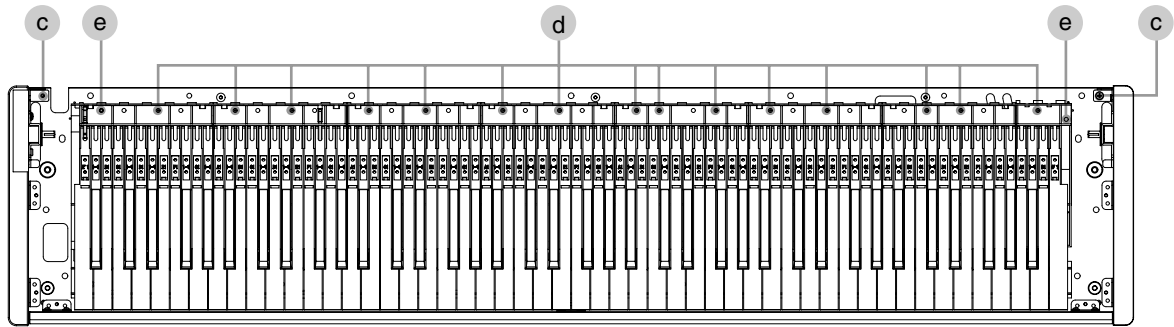
\* The Bottom Board and the Lower Blind of No.11 Bottom Assy (#5100030612, #5100030613, #5100030614, #5100030615) are glued together, so each part cannot be supplied.

## View A1

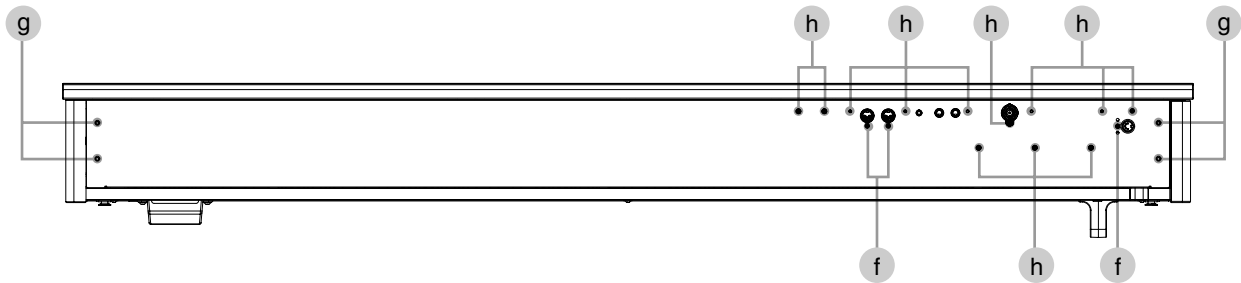
No.	Part Code	Part Name	Description	Q'ty
a	40011056	SCREW 3X6	BINDING TAPTITE B ZC	4
b	40010790	SCREW 3X16	BINDING TAPPING A BZC	2
c	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	24

# Plane View (Fig.A)

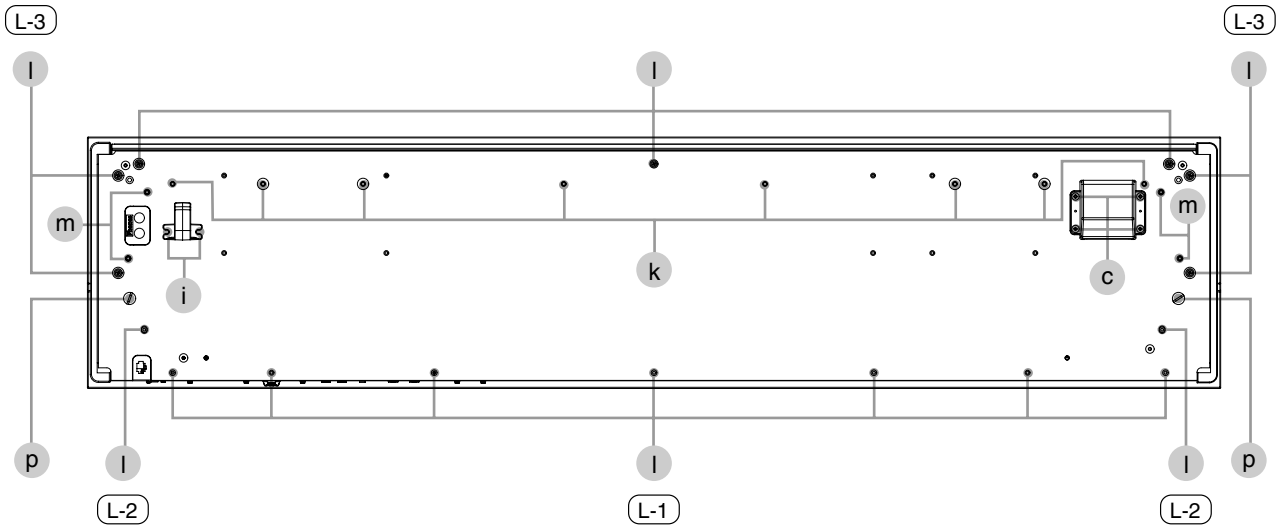
View A2



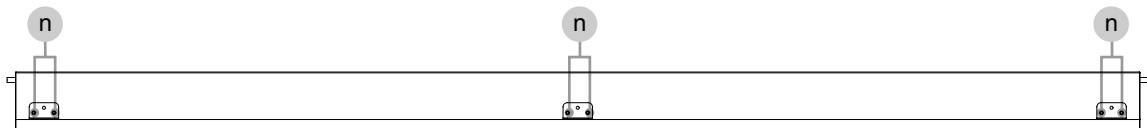
View A3



View A4



View A5



## Plane View (Fig.A) Parts List

### View A2

No.	Part Code	Part Name	Description	Q'ty
c	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	2
d	40012112	SCREW 4X20	TRUSS TAPPING A ZC	15
e	40012923	SCREW M4X25	PAN MACHINE W/SW+PW ZC	2

### View A3

No.	Part Code	Part Name	Description	Q'ty
f	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	3
g	40011378	SCREW 4X8	BINDING TAPTITE S FE BZC	4
h	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	12

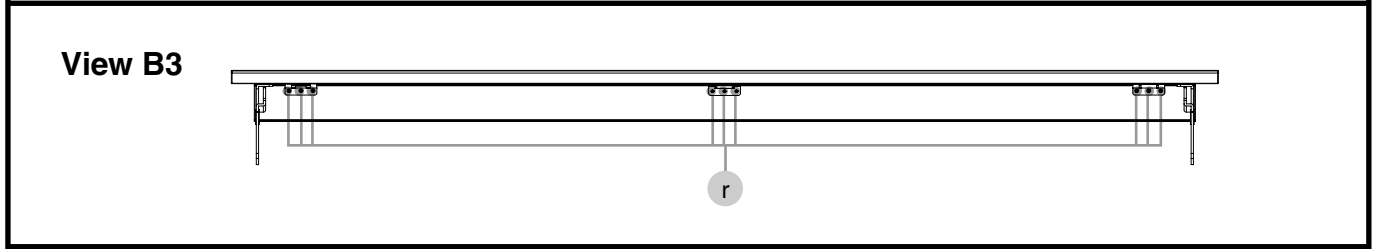
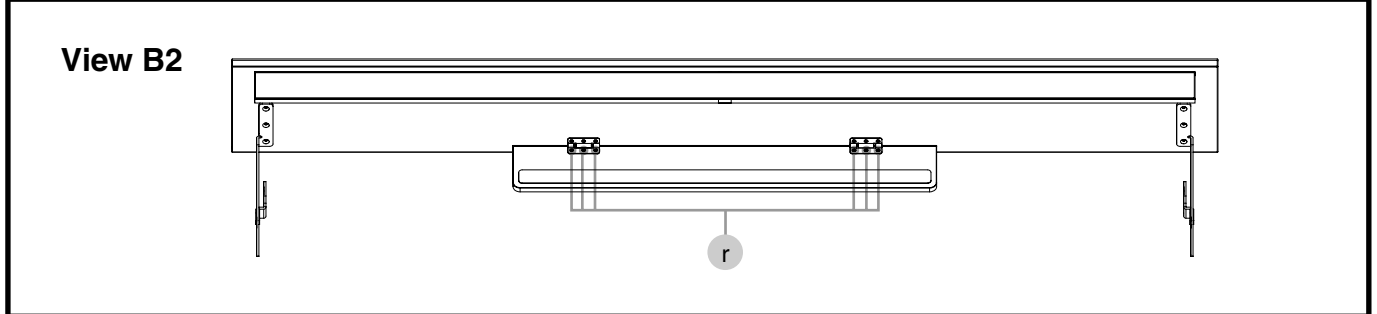
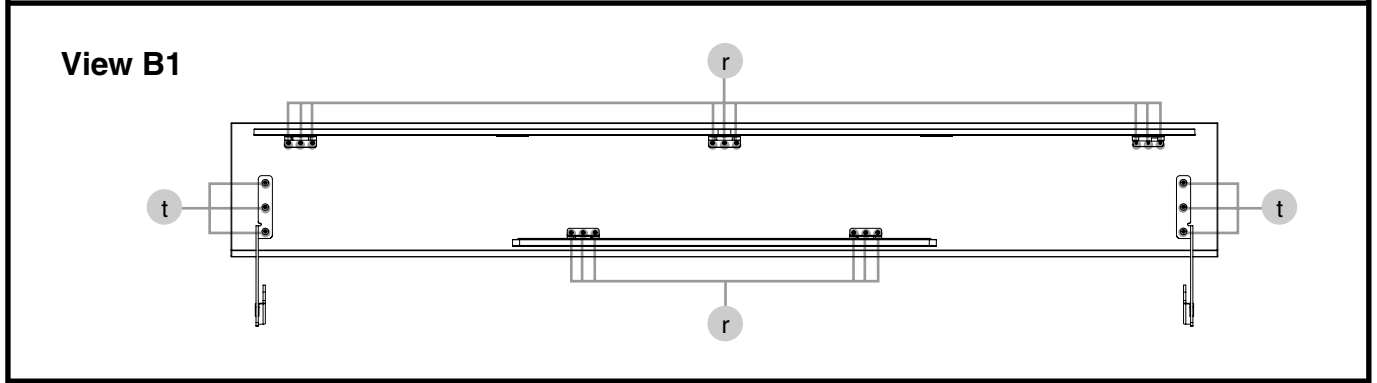
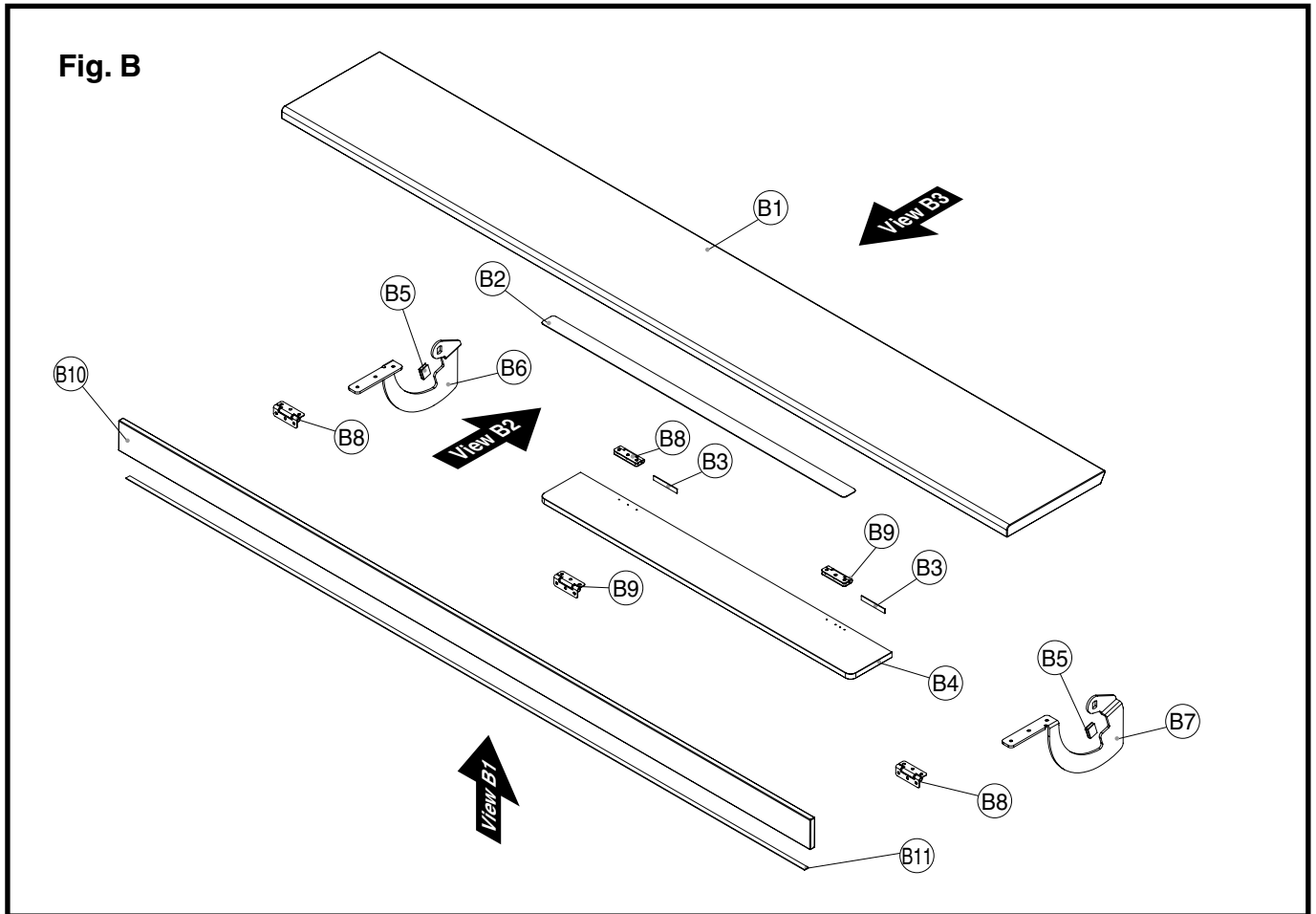
### View A4

No.	Part Code	Part Name	Description	Q'ty
c	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	4
i	40126267	SCREW M4X16	PAN MACHINE W/SW+PW FE BZC	2
k	40010134	SCREW M4X20	TRUSS MACHINE BZC	8
l	40128512	SCREW 4X25X20	PAN WASHER HEAD TAPTITE B BZC	16
m	40563345	SCREW H4X25X17	TAPTITE P W BZC W=12.5	4
p	22285342	CONNECTING PIN	228-342	2

### View A5

No.	Part Code	Part Name	Description	Q'ty
n	40127545	SCREW 4X10	TRUSS TAPPING A FE BZC	6

# Exploded View (Fig.B) (DP90-SB/MC)



## Exploded View (Fig.B) (DP90-SB/MC) Parts List

### Fig.B

No.	Part Code	Part Name	Description	Q'ty
B1	5100028239	LID BOARD		1
	5100028240	LID BOARD	for SB	1
B2	5100028594	MUSIC STOPPER CUSHION	for MC	1
	5100028598	MUSIC STOPPER CUSHION	for SB	1
B3	5100028609	MS CUSHION	for MC	2
	5100028611	MS CUSHION	for SB	2
B4	04788401	MUSIC STOPPER	for MC	1
	04788567	MUSIC STOPPER	for SB	1
B5	5100028291	LID STAY CUSHION		2
B6	5100005386	LID ARM L		1
B7	5100005387	LID ARM R		1
B8	04785534	HINGE		3
B9	04785523	TORQUE HINGE		2
B10	5100028244	LID BLIND	for SB	1
	5100028245	LID BLIND	for MC	1
B11	04232645	LID BLIND CUSHION	for SB	1
	04013412	LID BLIND CUSHION	for MC	1

### View B1

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	15
t	5100005413	SCREW 3.8X16	ROUND WOOD BZC	6

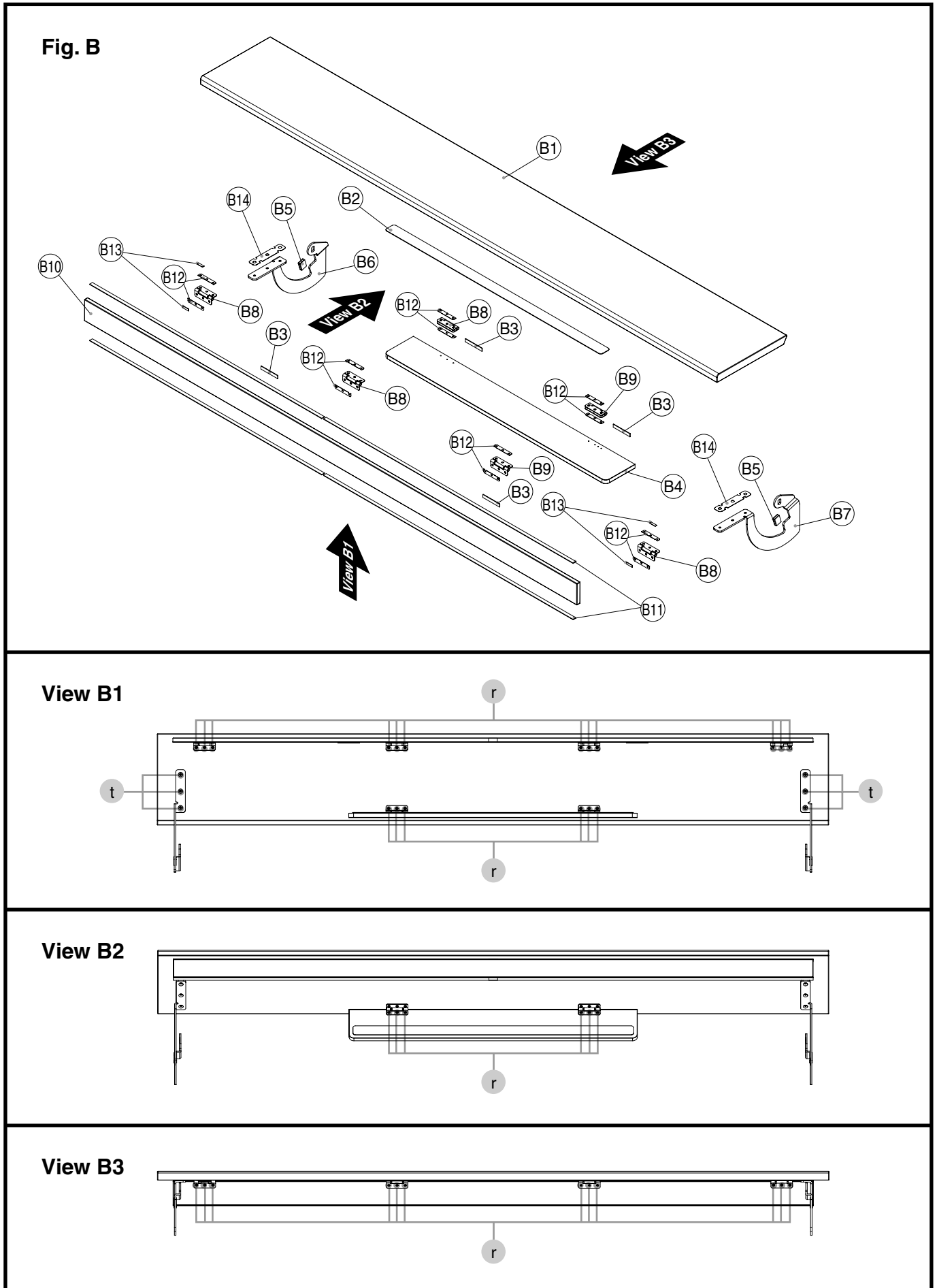
### View B2

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	6

### View B3

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	9

# Exploded View (Fig.B) (DP90S-PE/PW)





## Exploded View (Fig.B) (DP90S-PE/PW) Parts List

### Fig.B

No.	Part Code	Part Name	Description	Q'ty
B1	510005385	LID BOARD	for PE	1
	5100028243	LID BOARD	for PW	1
B2	5100028594	MUSIC STOPPER CUSHION	for PE	1
	5100028607	MUSIC STOPPER CUSHION	for PW	1
B3	5100028609	MS CUSHION	for PE	4
	5100028613	MS CUSHION	for PW	4
B4	510005390	MUSIC STOPPER	for PE	1
	5100028284	MUSIC STOPPER	for PW	1
B5	5100028291	LID STAY CUSHION		2
B6	510005386	LID ARM L	for PE	1
	5100028590	LID ARM L	for PW	1
B7	510005387	LID ARM R	for PE	1
	5100028591	LID ARM R	for PW	1
B8	04785534	HINGE		4
B9	04785523	TORQUE HINGE		2
B10	5100028246	LID BLIND	for PE	1
	5100028247	LID BLIND	for PW	1
B11	5100029060	LID BLIND CUSHION	for PE	4
	5100028592	LID BLIND CUSHION	for PW	2
B12	5100028289	HINGE CUSHION	only for PE, PW	12
B13	5100029170	HINGE CUSHION S	only for PE, PW	4
B14	5100028290	LID ARM CUSHION	only for PE, PW	2

### View B1

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	18
t	510005413	SCREW 3.8X16	ROUND WOOD BZC	6
	40782634	SCREW 3.8X16	ROUND WOOD NI	6

### View B2

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	6

### View B3

No.	Part Code	Part Name	Description	Q'ty
r	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	12

# Exploded View (Fig.C)

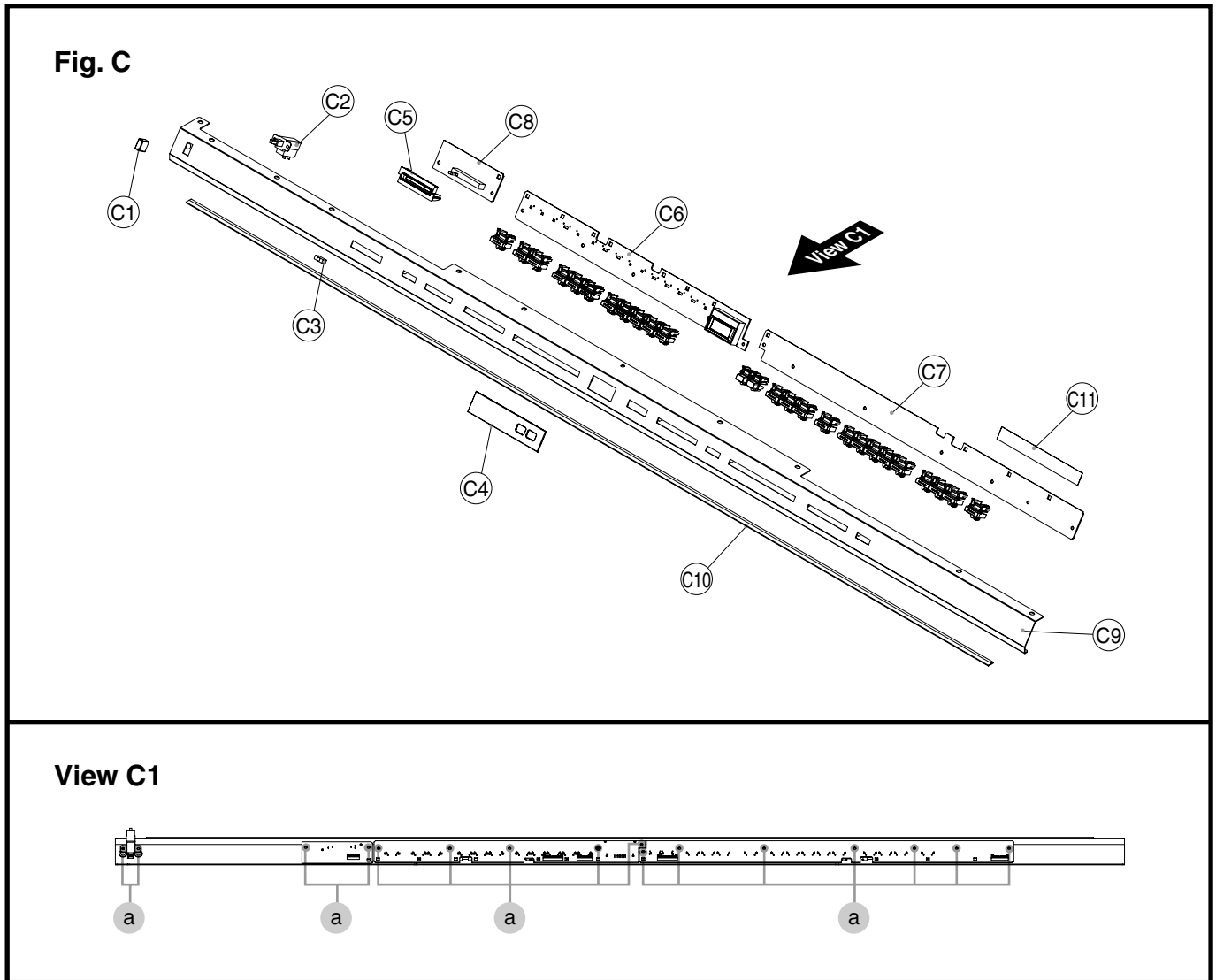


Fig.C

No.	Part Code	Part Name	Description	Q'ty
C1	12499175	BUTTON	JSPUE0011A	1
C2	5100010764	PUSH SWITCH	SY16-5-4(U99S2)/T	1
C3	22485192	SLIDE KNOB	BLK/LCG	1
	5100028615	SLIDE KNOB	WHT/BLK	1
C4	5100028221	DISPLAY COVER		1
	5100028223	DISPLAY COVER		1
C5	5100008101	SLIDE KNOB ESCUTCHEON		1
	5100028617	SLIDE KNOB ESCUTCHEON	WHT	1
	5100028442	PANEL SHEET ASSY		
		* This unit includes the following parts.		
C6	*****	PANEL L BOARD		1
C7	*****	PANEL R BOARD		1
C8	*****	D-VOLUME BOARD		1
C9	5100028158	FRONT PANEL	for SB, MC	1
	5100028159	FRONT PANEL	for PE	1
	5100028160	FRONT PANEL	for PW	1
C10	03450812	KEY FELT		1
C11	40567623	DOUBLE-FACED TAPE	#575 W15MM 30M	-

View C1

No.	Part Code	Part Name	Description	Q'ty
a	40011056	SCREW 3X6	BINDING TAPTITE B ZC	16

# Exploded View (Fig.D)

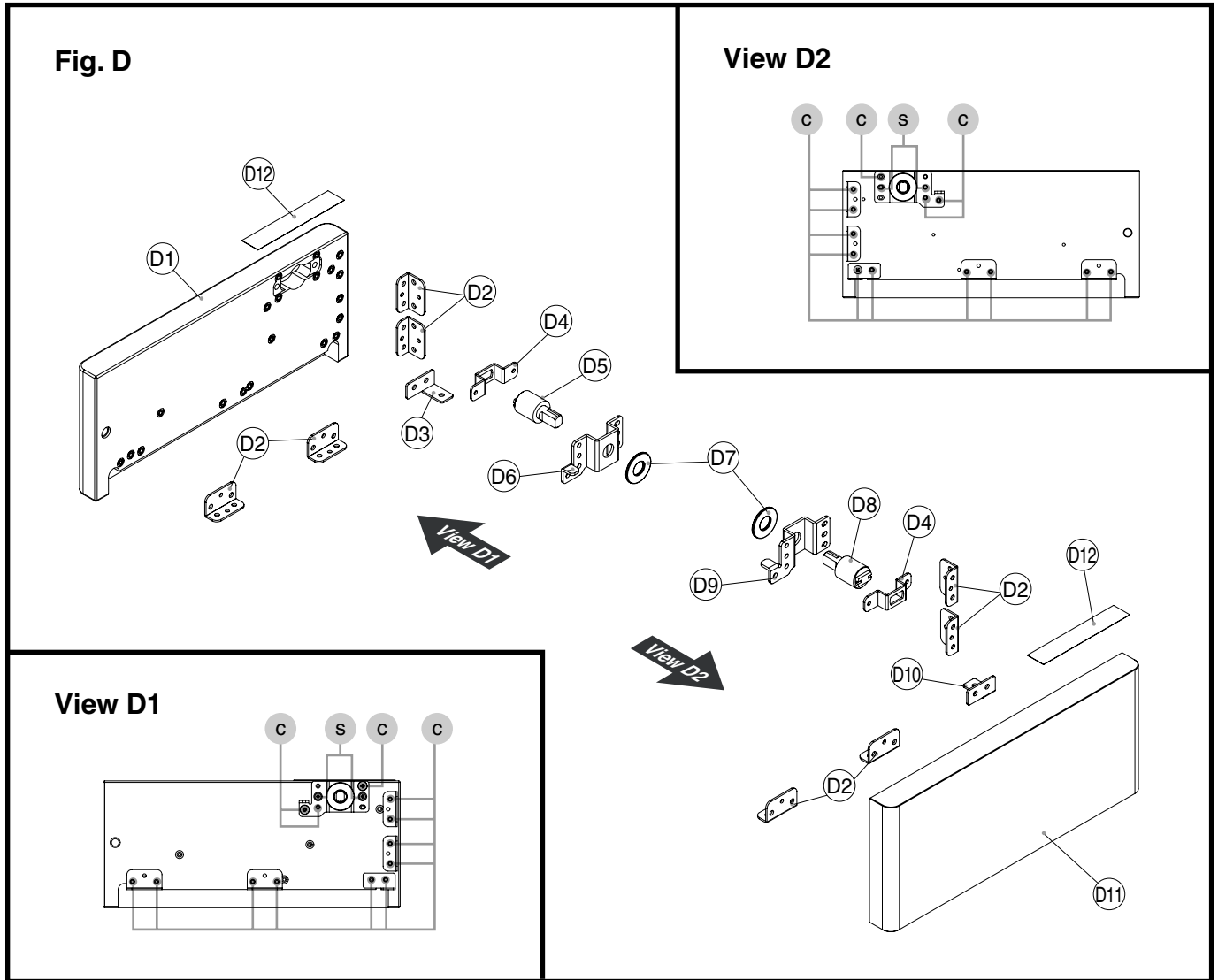


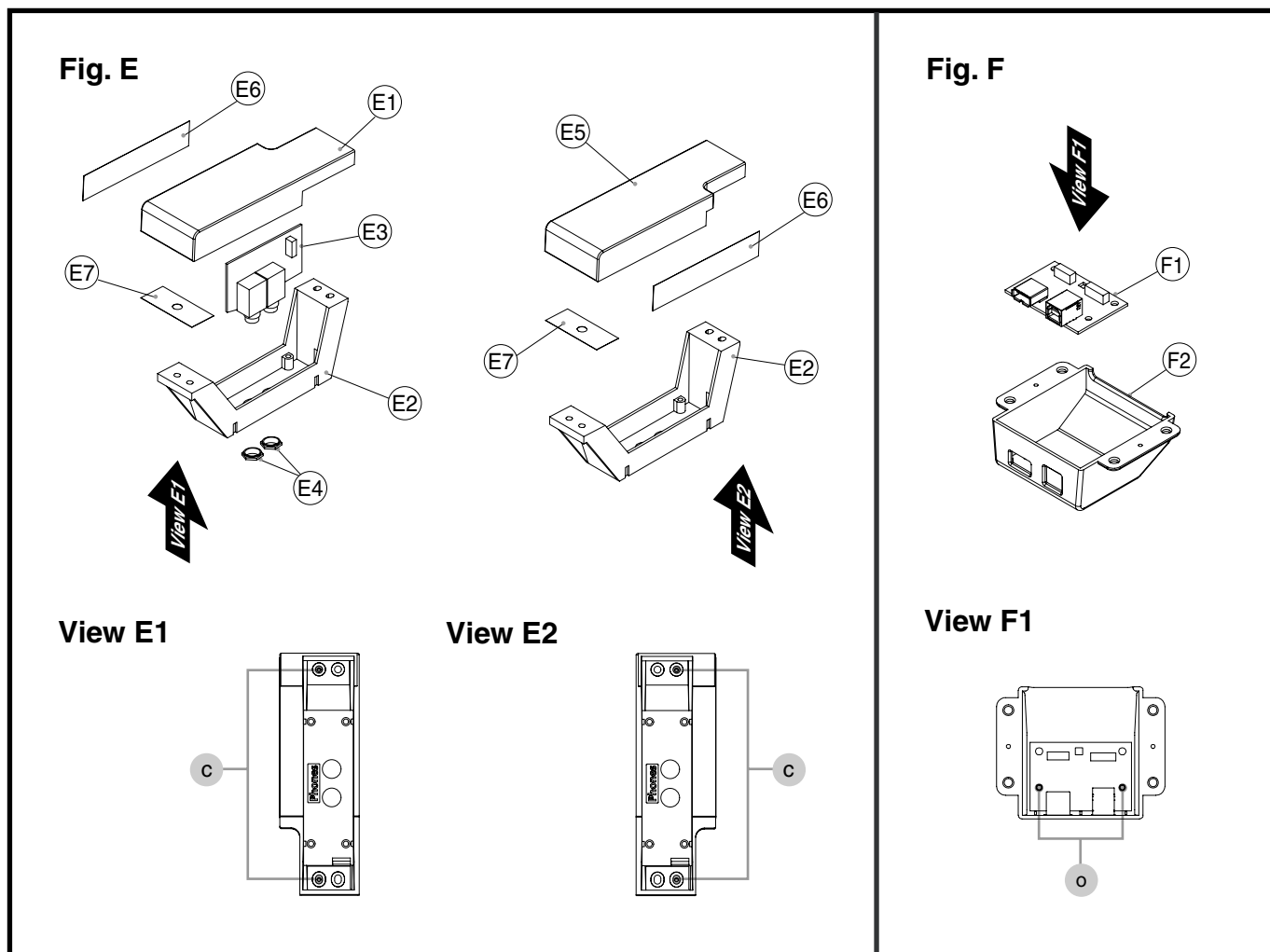
Fig.D

No.	Part Code	Part Name	Description	Q'ty
D1	5100028253	SIDE PANEL L	for SB	1
	5100028256	SIDE PANEL L	for MC	1
	5100028258	SIDE PANEL L	for PE	1
	5100028260	SIDE PANEL L	for PW	1
D2	04451989	ANGLE		8
D3	5100028163	REAR ANGLE L		1
D4	03347712	DAMPER HOLDER		2
D5	02892645	DAMPER	FYN-N1-L-RL1 for SB, MC	1
	5100005984	DAMPER	TD69B1-35K CCW for PE, PW	1
D6	03347723	DAMPER PLATE L		1
D7	5100028176	WASHER 12.5X28X2	POM	2
D8	02892656	DAMPER	FYN-N1-R-RL1 for SB, MC	1
	5100006041	DAMPER	TD69A1-35K CW for PE, PW	1
D9	03347734	DAMPER PLATE R		1
D10	5100028164	REAR ANGLE R		1
D11	5100028254	SIDE PANEL R	for SB	1
	5100028257	SIDE PANEL R	for MC	1
	5100028259	SIDE PANEL R	for PE	1
	5100028261	SIDE PANEL R	for PW	1
D12	40232123	ACETATE TAPE	NITTO #5 BLACK W20MM 30M 20P only for PE, PW	-

View D1, D2

No.	Part Code	Part Name	Description	Q'ty
c	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	26
s	40011123	SCREW 4X8	BINDING TAPTITE B FE BZC	4

# Exploded View (Fig.E, F)



**Fig.E**

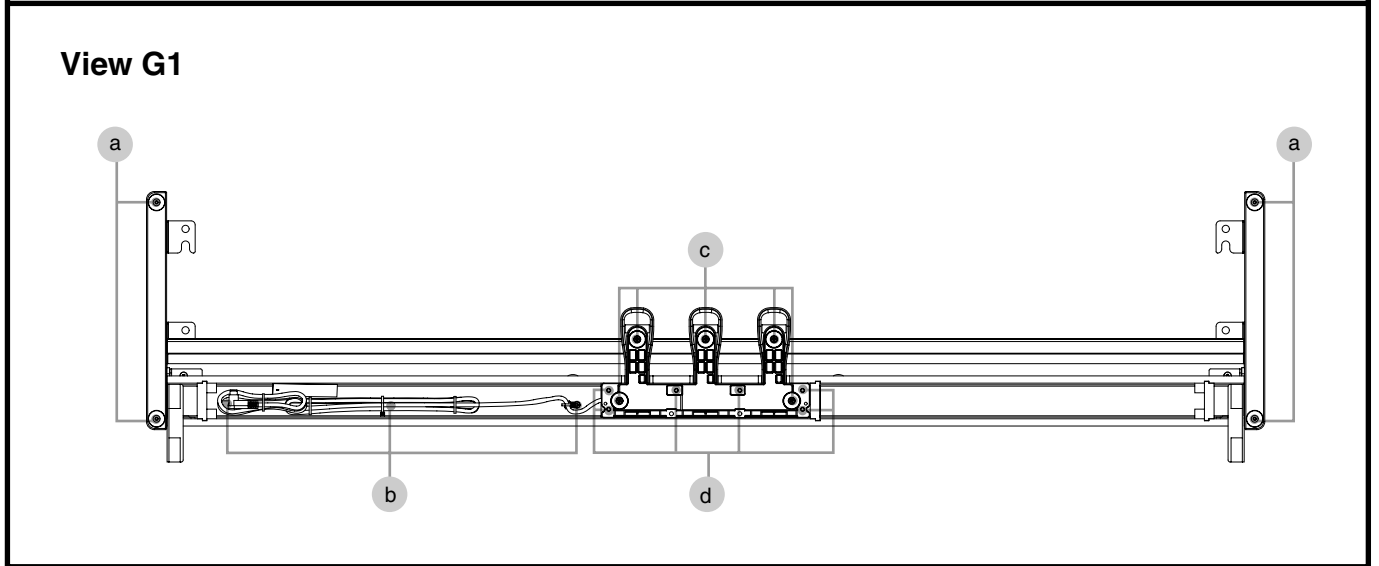
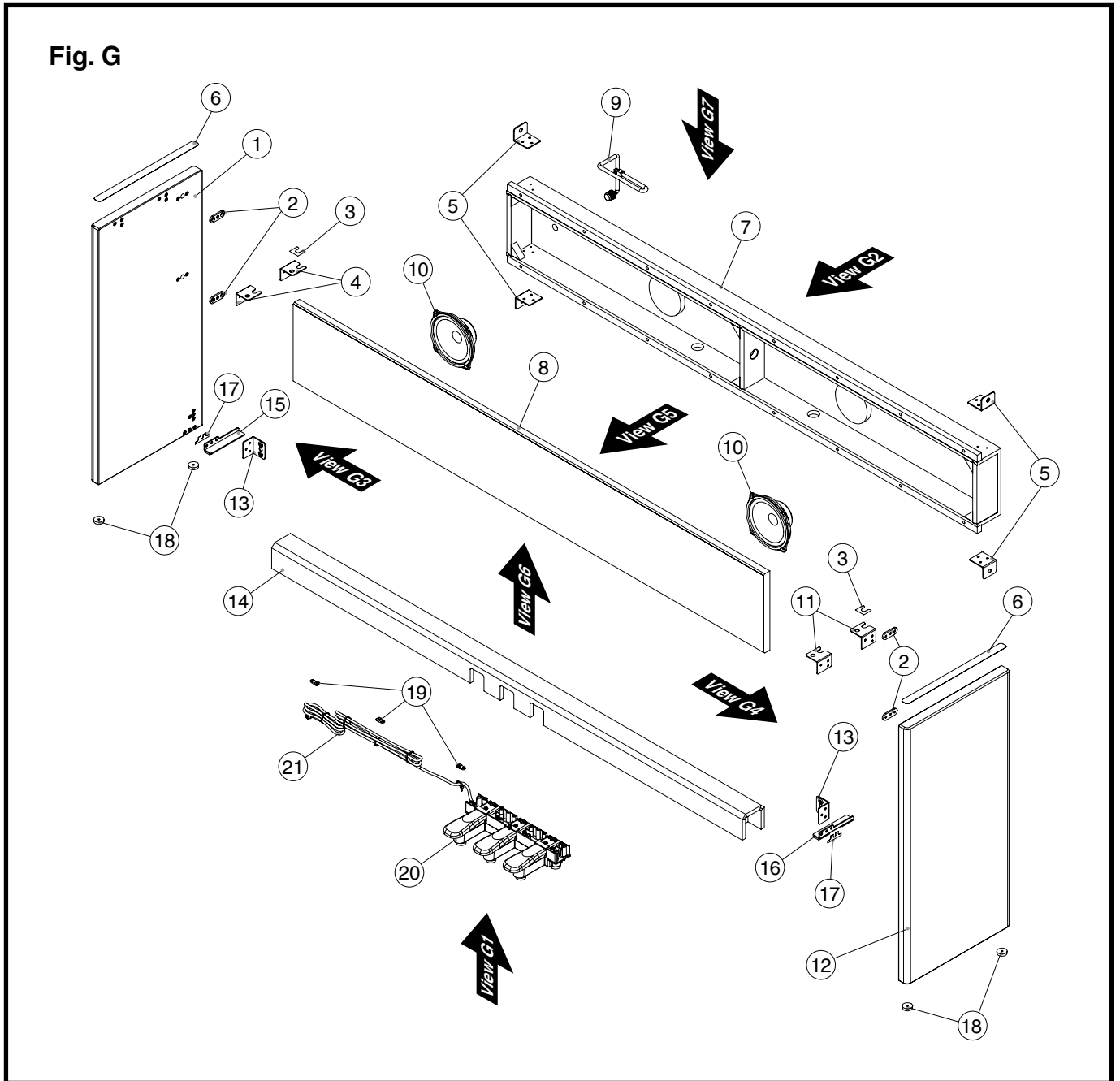
No.	Part Code	Part Name	Description	Q'ty
E1	04788656	END BLOCK L	for SB	1
	04788701	END BLOCK L	for MC	1
	510005394	END BLOCK L	for PE	1
	5100028282	END BLOCK L	for PW	1
E2	5100028167	END BLOCK HOLDER		2
E3	5100028431	JACKAMP SHEET ASSY		
	* This unit includes the following parts.			
	*****	PHONES BOARD		1
	*****	JACKAMP-XMS BOARD	Refer to <b>Exploded View (Fig.A)</b> (p. 10)	
	*****	PEDAL JK BOARD	Refer to <b>Exploded View (Fig.A)</b> (p. 10)	
E4	40783356	JACK NUT	M12 T2 //14 ZC	2
E5	04788678	END BLOCK R	for SB	1
	04788690	END BLOCK R	for MC	1
	510005395	END BLOCK R	for PE	1
	5100028283	END BLOCK R	for PW	1
E6	5100028292	SIDE PANEL CUSHION	only for PE, PW	2
E7	5100028295	END BLOCK CUSHION UNDER	only for PE, PW	2
c	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	4

**Fig.F**

No.	Part Code	Part Name	Description	Q'ty
F1	5100021745	USB-HF BOARD ASSY		1
F2	5100022599	USB CASE		1
o	40011301	SCREW 3X6	BINDING TAPTITE P FE BZC	2



# Exploded View (Fig.G)



## Exploded View (Fig.G) Parts List

### Fig.G

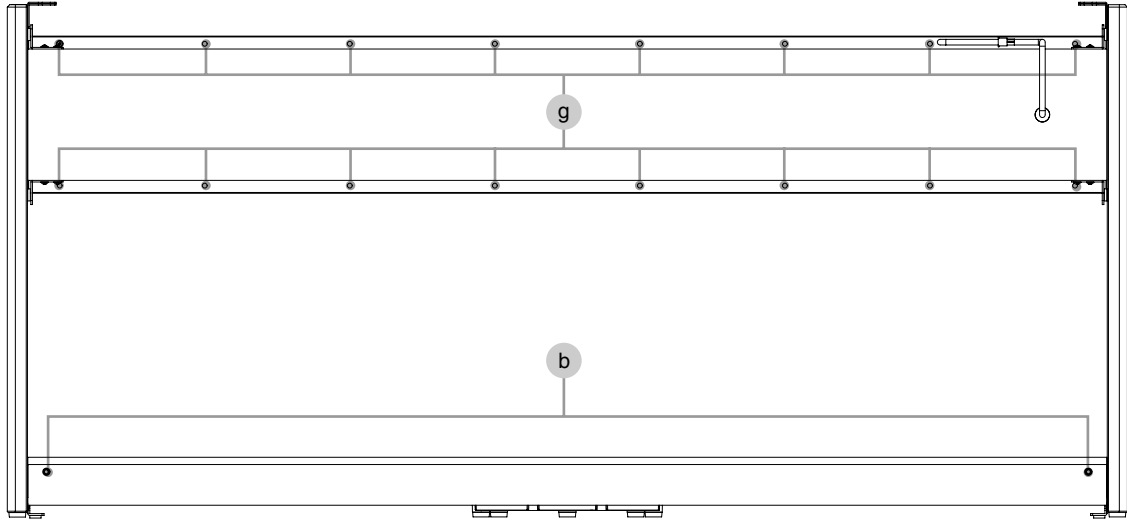
No.	Part Code	Part Name	Description		Q'ty
1	5100028272	SIDE BOARD L FOR STAND		for SB	1
	5100028274	SIDE BOARD L FOR STAND		for MC	1
	5100028276	SIDE BOARD L FOR STAND		for PE	1
	5100028278	SIDE BOARD L FOR STAND		for PW	1
2	5100015617	PLATE		for SB, MC, PE	4
	5100015618	PLATE		for PW	4
3	5100028297	HOLDER CUSHION			2
4	5100009206	JOINT HOLDER L		for SB, MC, PE	2
	5100028280	JOINT HOLDER L		for PW	2
5	5100015615	ANGLE		for SB, MC, PE	4
	5100015616	ANGLE		for PW	4
6	5100028298	SIDE BOARD CUSHION		only for PE, PW	2
	04012301	SP-BOX ASSY	411-521-3	for SB, MC, PE	1
	5100028492	SP-BOX ASSY		for PW	1
	* This unit includes the following parts.				
7	*****	SP-BOX			1
8	*****	BAFFLE BOARD			1
9	02674545	WIRING	SP-BOX W3		1
10	03347512	SPEAKER	FULL-RANGE		2
11	5100009207	JOINT HOLDER R		for SB, MC, PE	2
	5100028281	JOINT HOLDER R		for PW	2
12	5100028273	SIDE BOARD R FOR STAND		for SB	1
	5100028275	SIDE BOARD R FOR STAND		for MC	1
	5100028277	SIDE BOARD R FOR STAND		for PE	1
	5100028279	SIDE BOARD R FOR STAND		for PW	1
13	5100021793	PEDAL HOLDER			2
14	5100028270	PEDAL BOARD		for SB	1
	04788634	PEDAL BOARD		for MC	1
	5100005399	PEDAL BOARD		for PE	1
	5100028271	PEDAL BOARD		for PW	1
15	5100021794	STAND HOLDER L			1
16	5100021795	STAND HOLDER R			1
17	5100028296	STAND HOLDER CUSHION		only for PE, PW	2
18	02674578	S-PANEL FOOT			4
19	40016545	LOCKING TOOL FOR INSULOK TIE	SKM-1		3
20	5100006011	CP-3 DIN PEDAL UNIT (F-110)			1
	* This unit includes the following parts.				
21	5100005700	DIN PEDAL CABLE			1
	04781901	FELT			6

### View G1

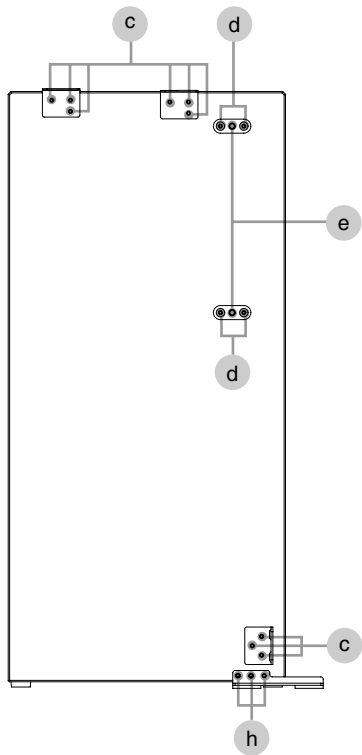
No.	Part Code	Part Name	Description	Q'ty
a	40675701	SCREW 3.5X16	BINDING TAPPING A FE BZC	4
b	40010645	SCREW 4X8	TRUSS TAPPING A FE BZC	3
c	40012501	SCREW 4X12	BINDING TAPTITE P FE BZC	3
d	40782023	SCREW M4X40	PAN MACHINE W/SW ZC	6

# Plane View (Fig.G)

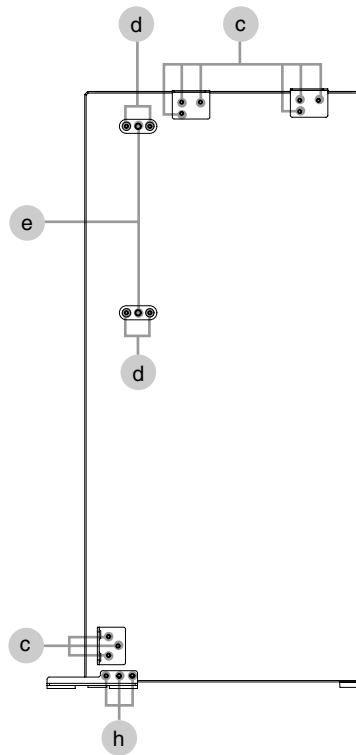
View G2



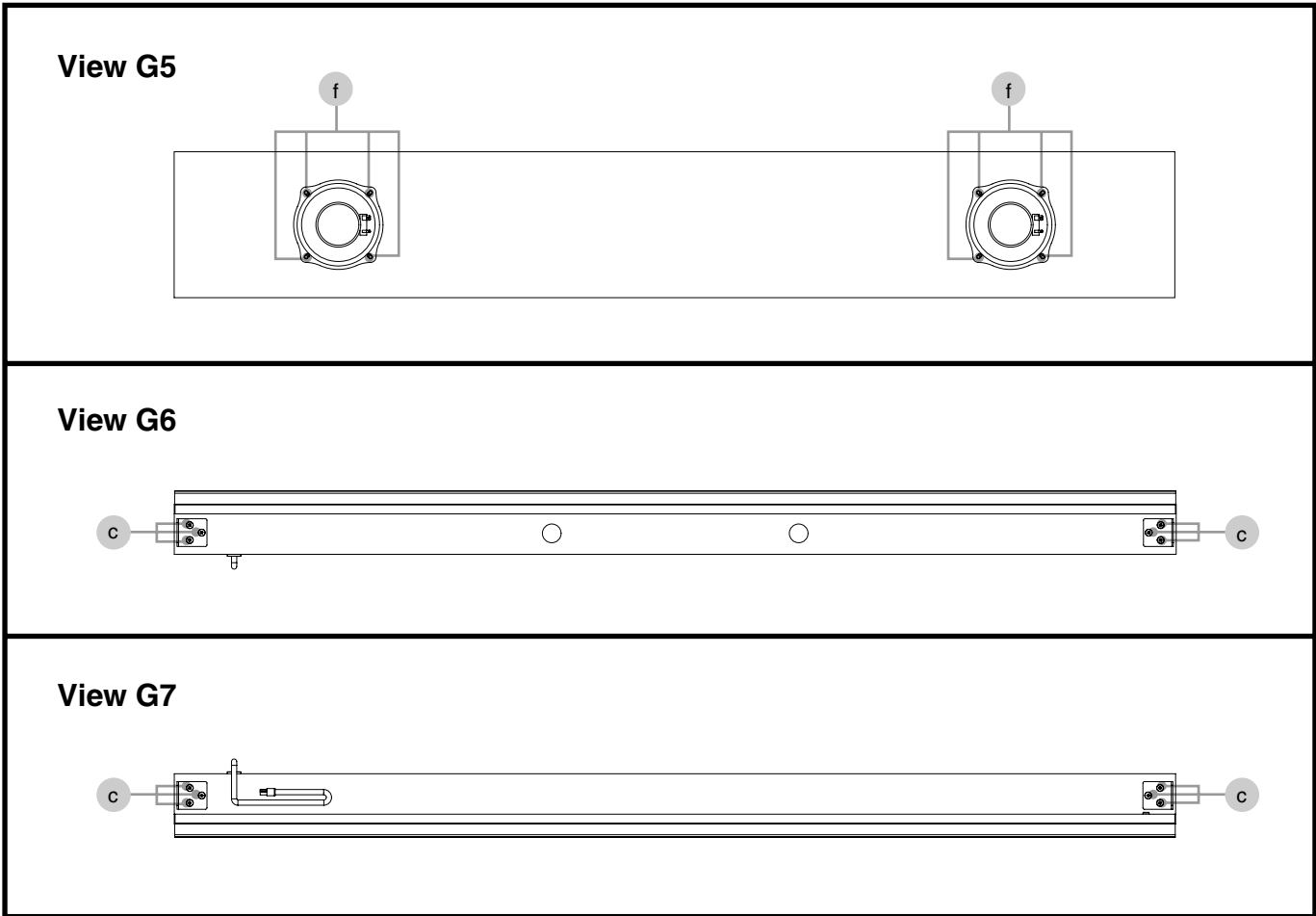
View G3



View G4







**View G2**

No.	Part Code	Part Name	Description	Q'ty
e	5100015690	SCREW M6X18	ORIGINAL TRUSS TC BZC	2
g	40237323	SCREW 4X25	BINDING TAPPING A BZC	16

**View G3, G4**

No.	Part Code	Part Name	Description	Q'ty
c	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	for SB, MC, PE 18
	40010634	SCREW 4X16	TRUSS TAPPING A FE ZC	for PW 18
d	40677190	SCREW 4X20	FLAT TAPPING A FE BZC	for SB, MC, PE 8
	40017678	SCREW 4X20	FLAT TAPPING A FE ZC	for PW 8
e	5100015690	SCREW M6X18	ORIGINAL TRUSS TC BZC	4
h	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	6

**View G5**

No.	Part Code	Part Name	Description	Q'ty
f	40125045	SCREW M4X35	SPEA BZC	8
	40344545	M4 FLANGE NUT ZC		8

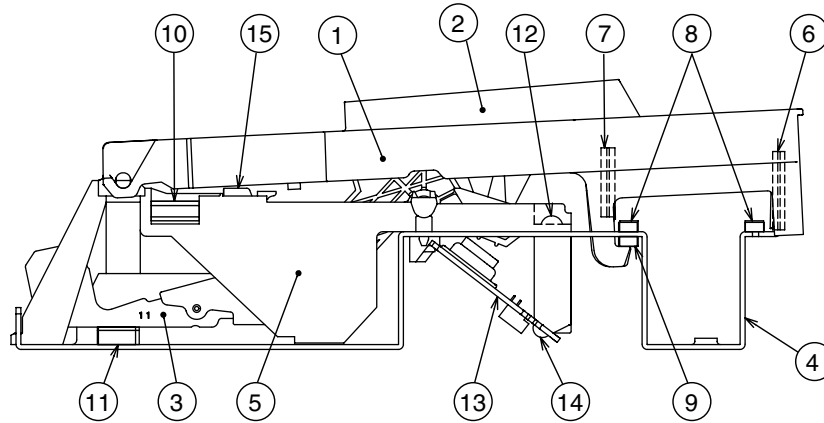
**View G6**

No.	Part Code	Part Name	Description	Q'ty
c	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	for SB, MC, PE 6
	40010634	SCREW 4X16	TRUSS TAPPING A FE ZC	for PW 6

**View G7**

No.	Part Code	Part Name	Description	Q'ty
c	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	for SB, MC, PE 6
	40010634	SCREW 4X16	TRUSS TAPPING A FE ZC	for PW 6

# Keyboard Parts List (PHA3-C; for DP90)

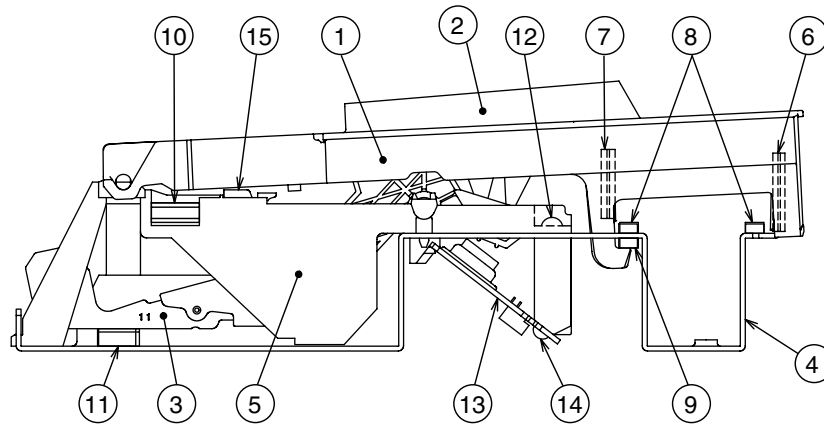


No.	Part Code	Part Name	Description	Q'ty
	5100017594	KEYBOARD ASSY	PHA3-C	
1	5100014796	N-KEY A	PHA3	7
	5100014797	N-KEY B	PHA3	8
	5100014798	N-KEY C	PHA3	7
	5100014799	N-KEY D	PHA3	7
	5100014800	N-KEY E	PHA3	7
	5100014801	N-KEY F	PHA3	7
	5100014802	N-KEY G	PHA3	7
	5100014803	N-KEY A'	PHA3	1
	5100014804	N-KEY C'	PHA3	1
2	5100015909	SHARP KEY	PHA3	36
3	73561001	HAMMER-1	PHA2	24
	73561012	HAMMER-2	PHA2	24
	73561023	HAMMER-3	PHA2	24
	73561034	HAMMER-4	PHA2	16
4	*****	PA-5 CHASSIS 88P		1
5	02895767	SUB CHASSIS	PA-5 12P	7
	02895778	SUB CHASSIS	PA-5 4P	1
6	01894923	GUIDE BUSHING C		52
7	00019912	GUIDE BUSHING S-KEY	PA-4	36
8	5100012563	KEY CUSHION A		2
9	02904401	KEY CUSHION B		1
10	02016945	HAMMER CUSHION B	PA-5	1
11	02904390	HAMMER CUSHION D	PA-5	1
12	40012256	SCREW 3X10	BINDING TAPTITE B FE ZC	37
13	5100014683	PWB ASSY SET	PHA3-B	1
14	40011267	SCREW 3X6	BINDING TAPTITE P FE ZC	22
15	04347623	JACK 12P	PHA2	8

\* The cables (#5100028618, #5100028619, #5100028620) aren't included in this unit (#5100017594).

\* For disassembly and maintenance of keyboard, refer to the Service Notes for PHA3.

# Keyboard Parts List (PHA3-D; for DP90S)

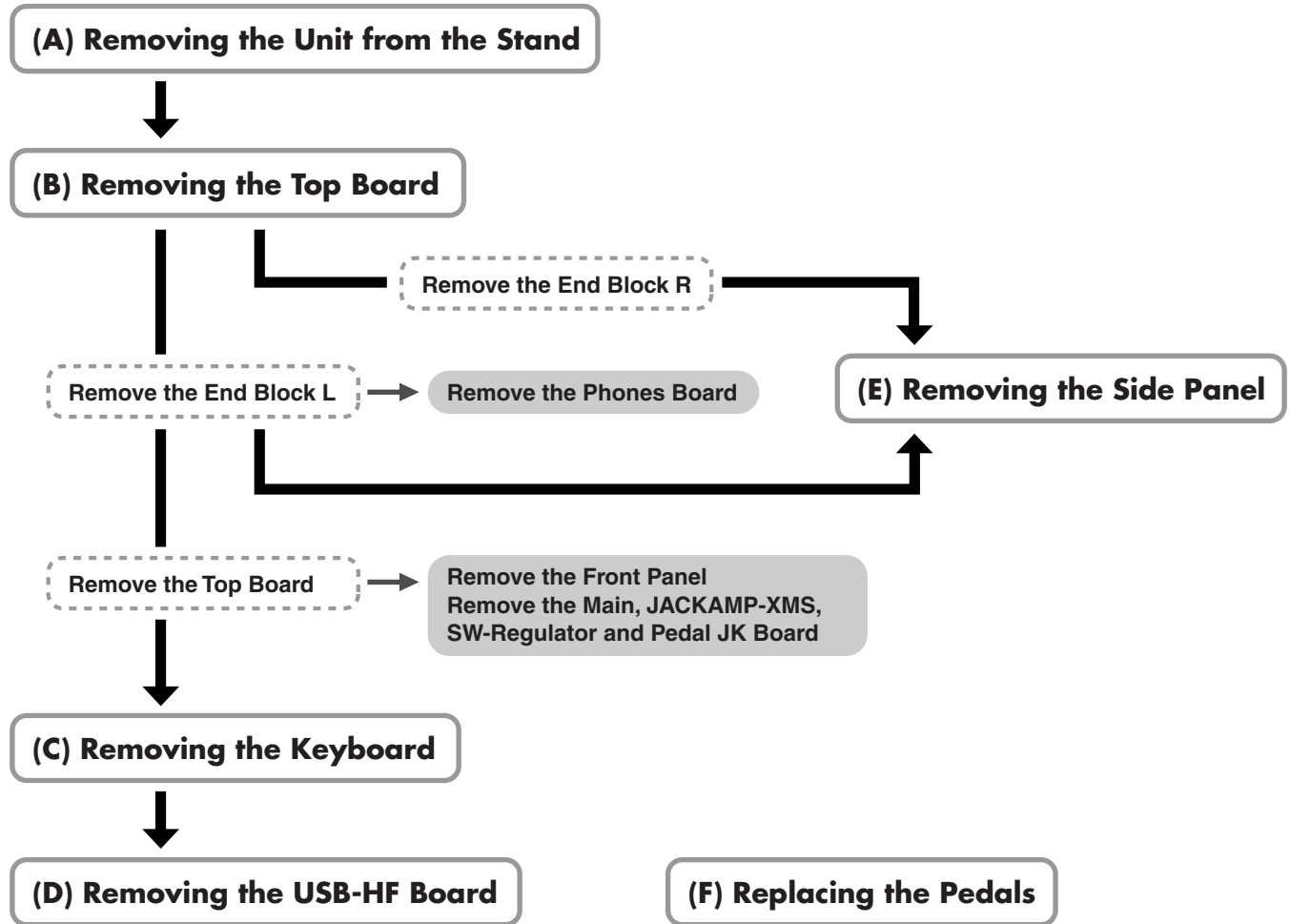


No.	Part Code	Part Name	Description	Q'ty
	5100021718	KEYBOARD ASSY	PHA3-D	
1	5100015632	N-KEY A	PHA3-D	7
	5100015633	N-KEY B	PHA3-D	8
	5100015634	N-KEY C	PHA3-D	7
	5100015635	N-KEY D	PHA3-D	7
	5100015641	N-KEY E	PHA3-D	7
	5100015642	N-KEY F	PHA3-D	7
	5100015643	N-KEY G	PHA3-D	7
	5100015644	N-KEY A-DASH	PHA3-D	1
	5100015645	N-KEY C-DASH	PHA3-D	1
2	04450812	SHARP KEY	PHA2	36
3	73561001	HAMMER-1	PHA2	24
	73561012	HAMMER-2	PHA2	24
	73561023	HAMMER-3	PHA2	24
	73561034	HAMMER-4	PHA2	16
4	*****	PA-5 CHASSIS 88P		1
5	02895767	SUB CHASSIS	PA-5 12P	7
	02895778	SUB CHASSIS	PA-5 4P	1
6	01894923	GUIDE BUSHING C		52
7	00019912	GUIDE BUSHING S-KEY	PA-4	36
8	5100012563	KEY CUSHION A		2
9	02904401	KEY CUSHION B		1
10	02016945	HAMMER CUSHION B	PA-5	1
11	02904390	HAMMER CUSHION D	PA-5	1
12	40012256	SCREW 3X10	BINDING TAPTITE B FE ZC	37
13	5100014683	PWB ASSY SET	PHA3-B	1
14	40011267	SCREW 3X6	BINDING TAPTITE P FE ZC	22
15	04347623	JACK 12P	PHA2	8

\* The cables (#5100028618, #5100028619, #5100028620) aren't included in this unit (#5100017594).

\* For disassembly and maintenance of keyboard, refer to the Service Notes for PHA3.

# Disassembly Procedure



## (A) Removing the Unit from the Stand

1. Detach the speaker cable, pedal cable and AC adaptor.



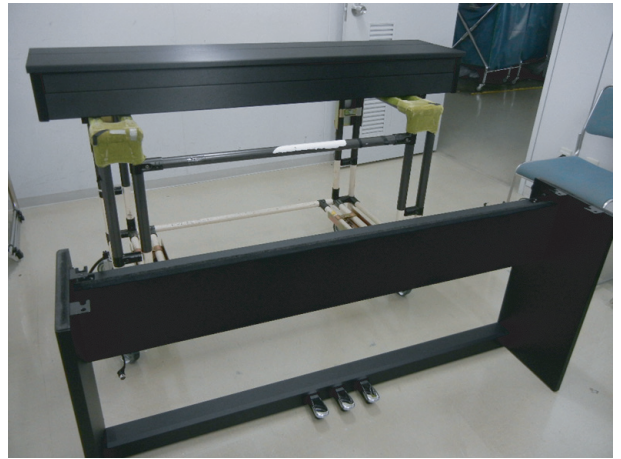
2. Remove the screws (1 each on the left and right) securing the unit and stand in place (**Exploded View (All)** (p. 8), **e** in **View 1**), and detach the unit from the stand.



\* An anti-tipover nut is installed on the underside of the unit. When detaching the unit, lift the front slightly, and pass it over this nut.



\* When detaching or installing the unit, take care not to damage the USB Case on the underside.



## (B) Removing the Top Board

1. Remove the screws (2 each on the left and right) securing the Rear Panel to the Side Panels (**Plane View (Fig.A)** (p. 12), **g** in **View A3**).



2. Remove the 7 screws securing the Rear Panel to the Bottom Board (**Plane View (Fig.A)** (p. 12), **L-1** in **View A4**).



3. Remove the screws (1 each on the left and right) securing the Top Holder to the Bottom Board (Plane View (Fig.A) (p. 12), L-2 in View A4).

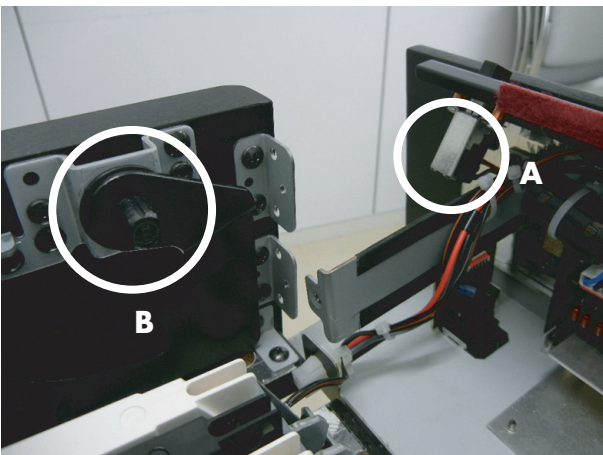


4. Slowly tilt the Top Board and Rear Panel toward the rear and remove them.



**NOTE**

Exercise care not to strike **A** and **B** in the figure. Strong impact may damage the switches.

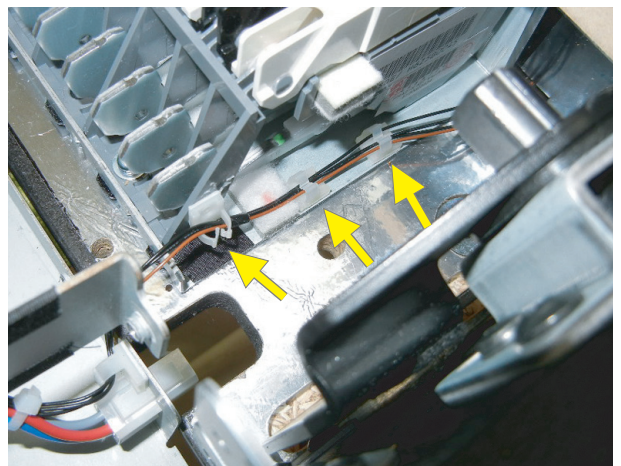


**Removing the End Block L**

1. Remove the 2 screws securing the End Block L.



2. Extract the Phones Board wiring from the cord clamps (3 locations).



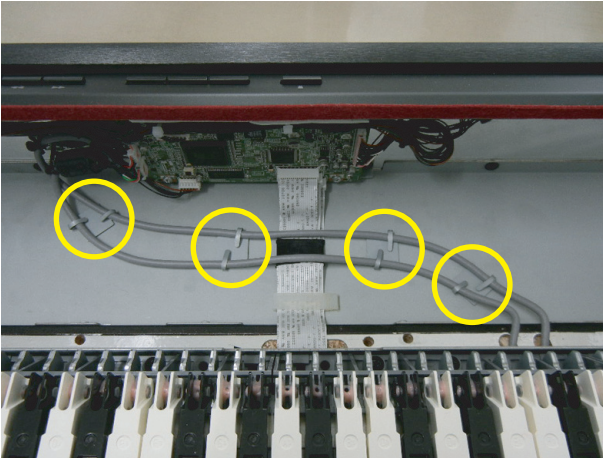
3. Stand the Lid Board and pass the End Block L through the gap of the Lid Board and the keyboard to the rear side.

\* Be careful not to scratch the End Block L.

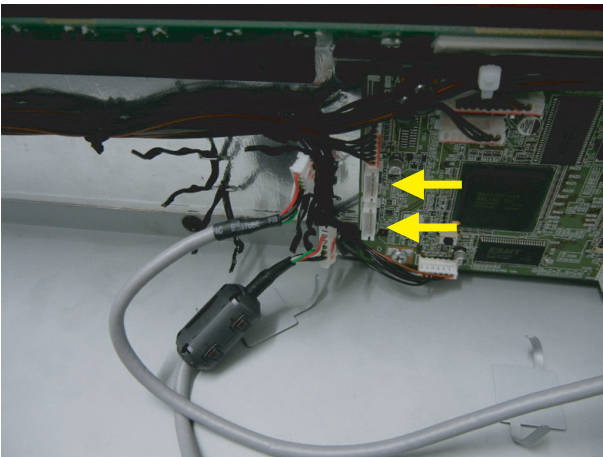
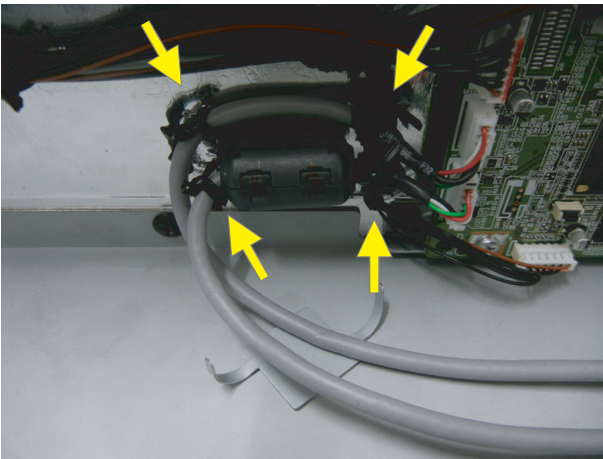


## Removing the Top Board

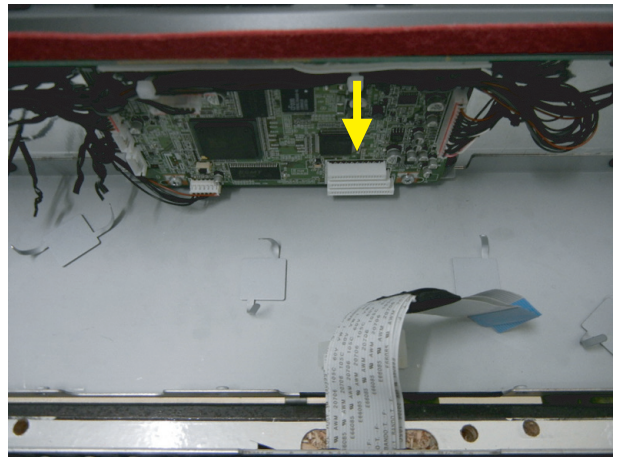
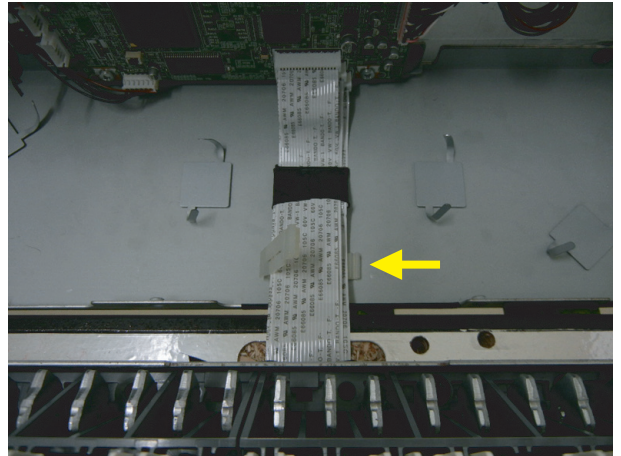
1. Loosen the cable clips (4 locations).



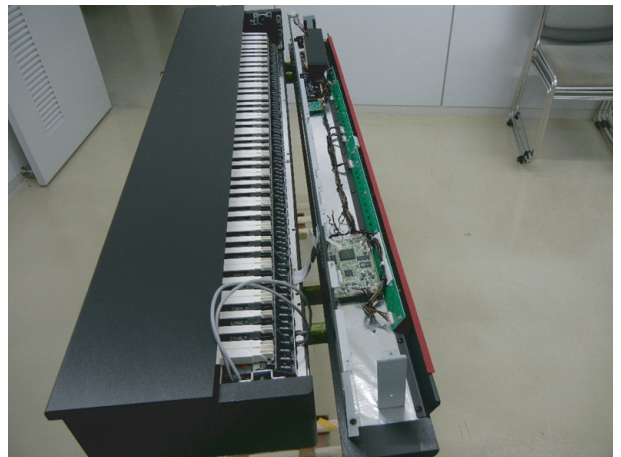
2. Loosen the vinyl ties (4 locations) around the ferrite-core, and detach the wirings (2 locations) from the Main Board.



3. Detach the Flat cable clip, and detach the flat cables for keyboard (3 locations) from the Main Board.

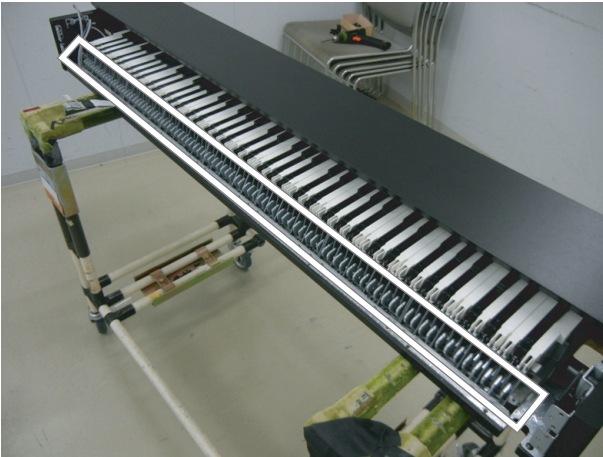


4. Leaving the Front Panel, Rear Panel, End Block L and various circuit boards attached, remove the Top Board.



### (C) Removing the Keyboard

1. Remove the Top Board (as described above).
2. Remove the 17 screws securing the keyboard in place from above (**Plane View (Fig.A)** (p. 12), **d** and **e** in **View A2**).



3. Remove the 8 screws securing the keyboard from below. (**Plane View (Fig.A)** (p. 12), **k** in **View A4**)



4. Remove the Keyboard.



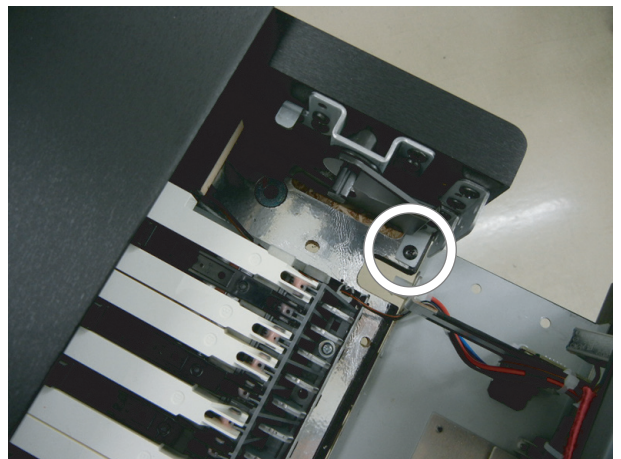
### (D) Removing the USB-HF Board

1. Remove the Top Board (as described above).
2. Remove the Keyboard (as described above).
3. Remove the 4 screws securing the USB Case.



### (E) Removing the Side Panel

1. Detach the Top Board (as described above).
2. Remove the End Block.
3. Remove the 1 screw securing the End Block in place from above (**Plane View (Fig.A)** (p. 12), **c** in **View A2**).

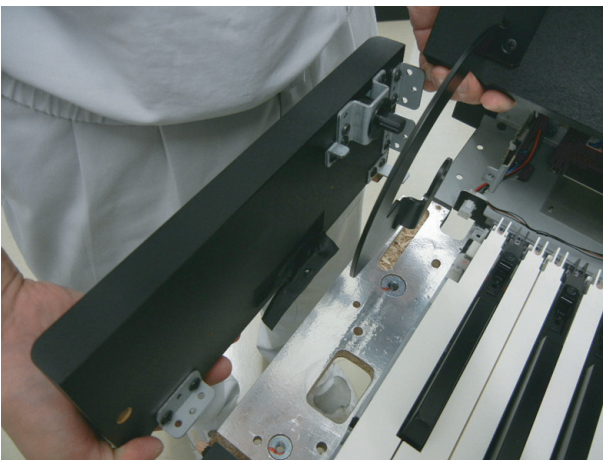




- 4. Remove the 2 screws securing the End Block in place from below (Plane View (Fig.A) (p. 12), L-3 in View A4).



- 5. While supporting the Lid Board, remove the Side Panel.

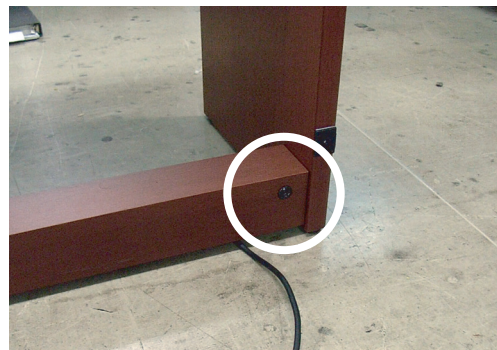


### (F) Replacing the Pedals

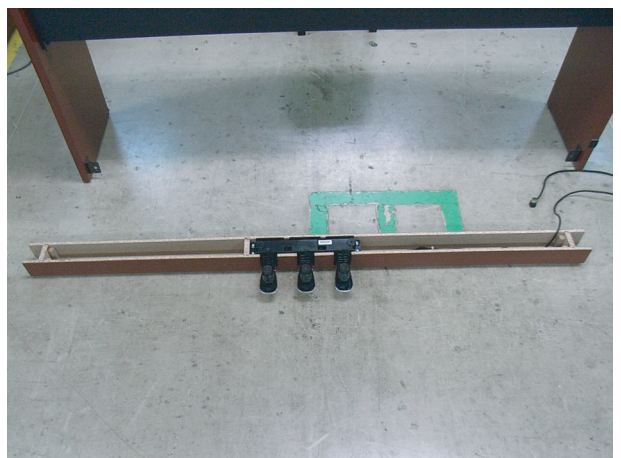
- 1. Detach the pedal cable.
- 2. Slightly loosen the 4 screws securing the Speaker Box to the stand.



- 3. Remove the 2 screws fastening the Pedal Board to the stand.



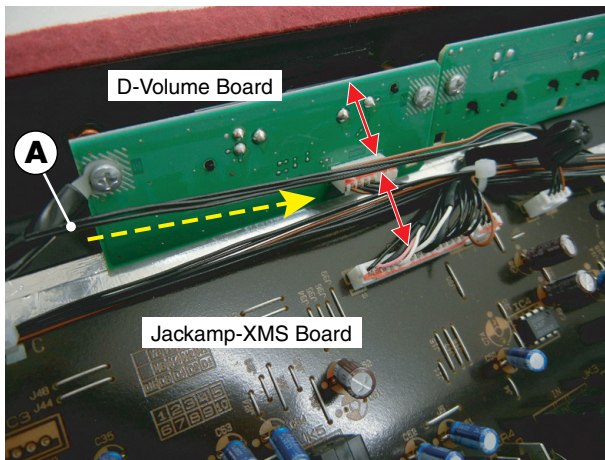
- 4. Open Side Boards L and R horizontally and remove the Pedal Board, then detach the pedals.



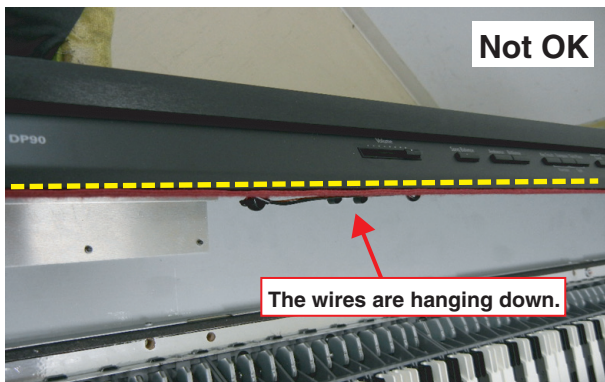
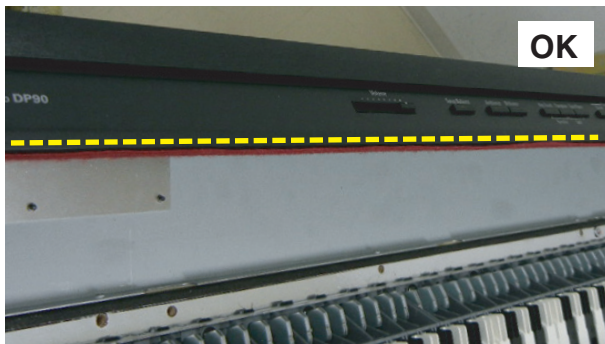
# Important Notes When Assembling

## When Arranging the Wiring

Keep wiring **A** shown in the figure away from the connectors for the D-volume Board and Jackamp-XMS Board.

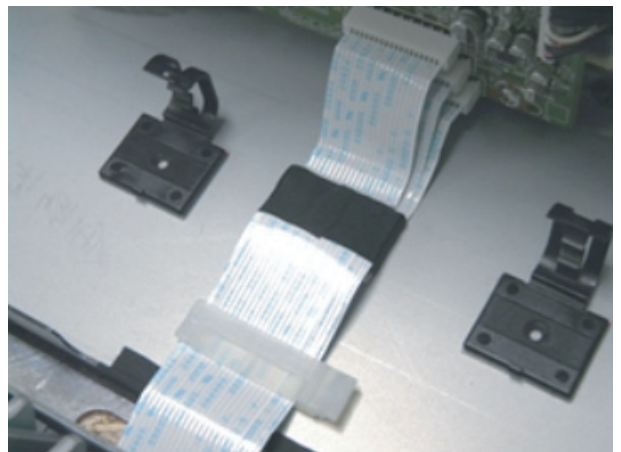
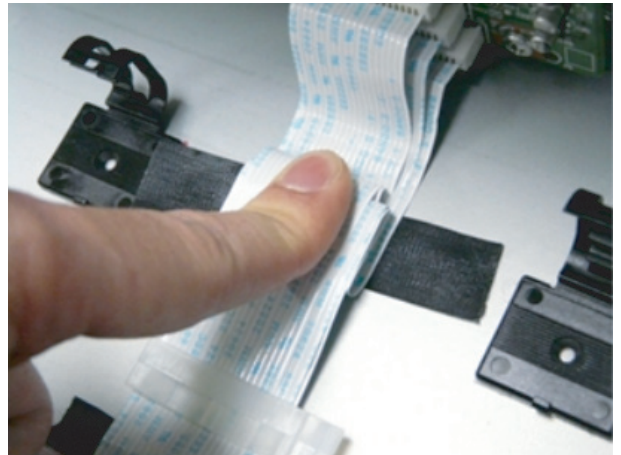


Take care to ensure that the wiring, when in its final arranged state, does not extend lower than the Front Panel when viewed from the front of the unit. If the unit is assembled while the wiring extends lower, the wiring will touch the keys and hammers.



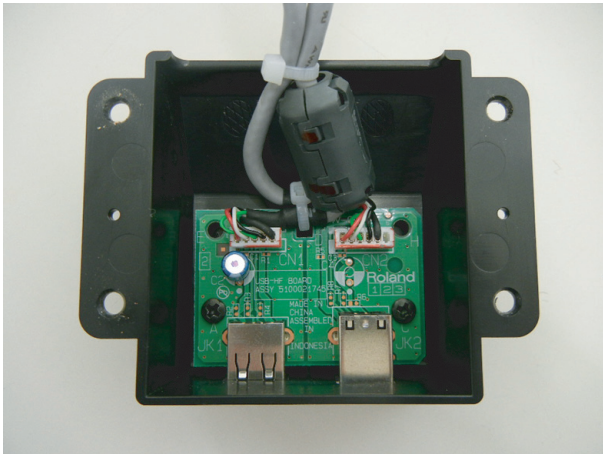
## Shaping the Keyboard Flat Cable

To ensure that the excess portion of the flat cable for the keyboard does not touch the hammers, bend the flat cable so that it is pressed against the Rear Panel, then wind acetate tape (#40232123) around it.



### Attaching the USB-HF Board

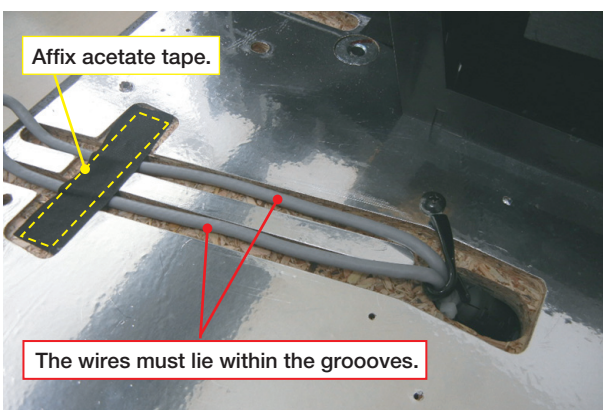
After arranging the USB Host wire and the USB Func wire so that they cross one another and clamping them to the circuit board, fasten a ferrite core to them at a location near the circuit board.



Fasten the ferrite core so that it occupies the recess in the Bottom Board, and arrange one wire (USB Host) bound by the ferrite core in the right groove and the other wire (USB Func) in the left groove.



Fit the wiring inside the groove so that it lies flat and is free of looseness, and secure it in place using acetate tape (#40232123).



### Lubrication Points (DP90S-PE/PW Only)

On the DP90S-PE/PW only, apply grease as required. The DP90-SB/MC requires no application.



Apply to the damper at 3 locations each on the left and right.  
GREASE FOR KEY FLOIL G-424F WHITE 100CC (#17049545)  
For more information on application locations, refer to the figures below.



Surface touching the Holder on the End-Block end of the Damper (Damper Holder)



Surface touching the Plates on the Lid End of the Damper (Damper Plates L and R)

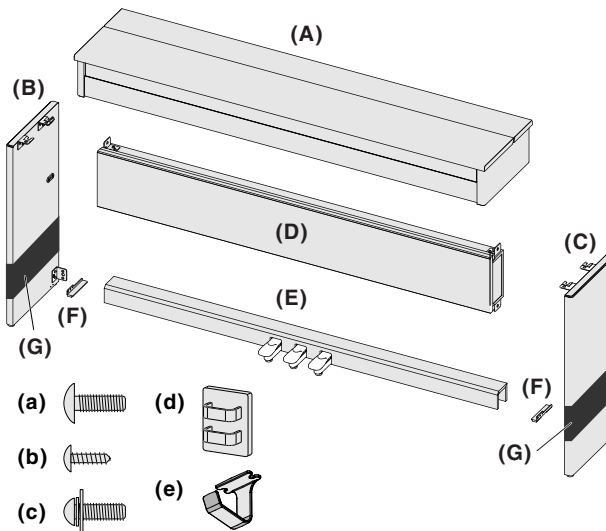


Inner sides of the holes in Lid Arms L and R

# Assembling the DP90/DP90S

- \* Keep this unit horizontal when lifting it during assembly or transport.
- \* Be careful not to pinch your hands or drop this unit on your foot during assembly or transport.
- \* You must obtain the assistance of at least one additional person when assembling or transporting this unit.
- \* The screwdriver needed for assembly is not included. You'll need have a Phillips screwdriver on hand.
- \* Hand-tighten the screws first, and then tighten them firmly. Start by tightening the screws until they are approximately half hidden. Do not use a power screwdriver when tightening the screws to their final position. Doing so may strip the threads.
- \* Tighten the screws firmly, and place the unit at a location that is level and sure to remain stable. Never place the unit on a shag carpet. If you do so, the pedal may be unstable, causing damage.
- \* Do not place the body of the piano directly on the floor. By doing so, you risk damaging the bottom of the piano, the jacks on the bottom of the piano, and the USB case.

## Check the Parts



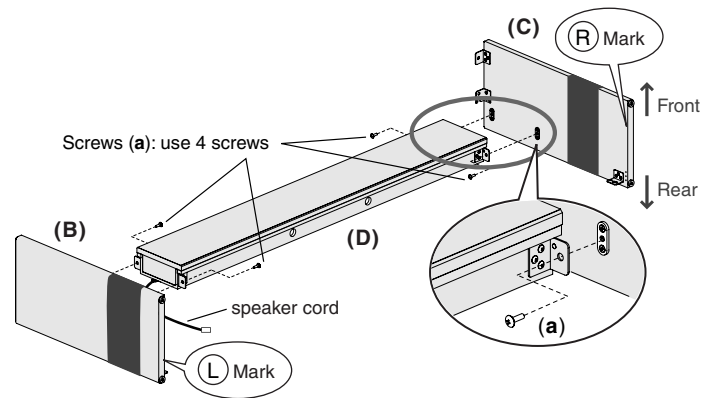
- A: Piano main unit
- B: Side board (left) (#\*\*\*\*\*)
- C: Side board (right) (#\*\*\*\*\*)
- D: Speaker box (#04012301, #5100028492)
- E: Pedal board (#\*\*\*\*\*)
- F: Stabilizers (left: #5100021794, right: #5100021795)
- G: Protective sheets (#\*\*\*\*\*)

- a: Screws (large) (M4 x 18mm) (#5100015690) x 8
- b: Screws (small) (4 x 16mm) (#40126267) x 2
- c: Screws (with washers) (M4 x 16mm) (#40126267) x 2
- d: Cord clamp (#03015001) x 2
- e: Headphone hook (#5100020982)

\* To prevent the side boards from getting scratched, do not remove the protective sheets until you are directed to do so.

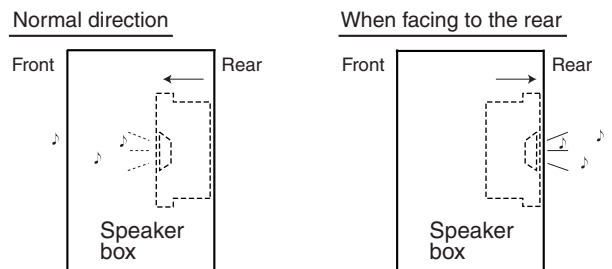
## Assembly Procedure

1. Attach the side board (left) and the side board (right) to the speaker box, and hand-tighten the screws **a** to fasten them provisionally (4 locations). Attach the speaker box so that the speaker cord is on the same side as the left side board (left).

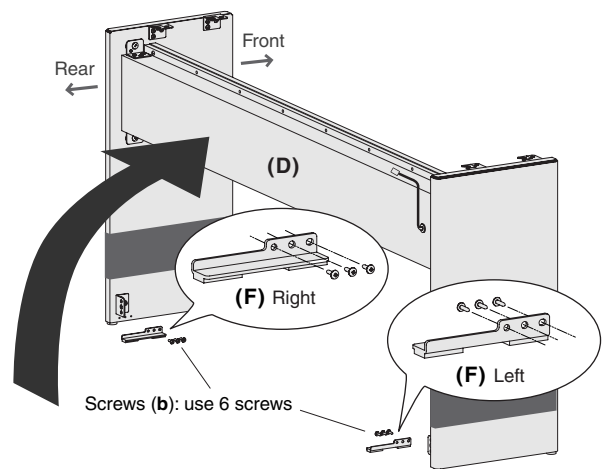


### MEMO

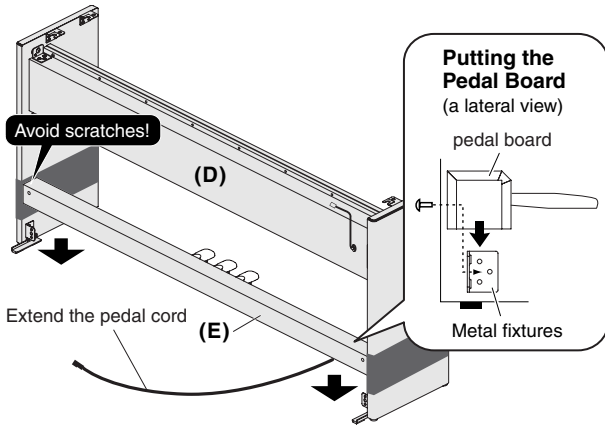
The speaker box can also be installed so that it faces toward the rear instead of toward the front. Having the speaker box face out the rear of the instrument allows the speakers to be directed toward listeners when the back of the instrument faces the audience.



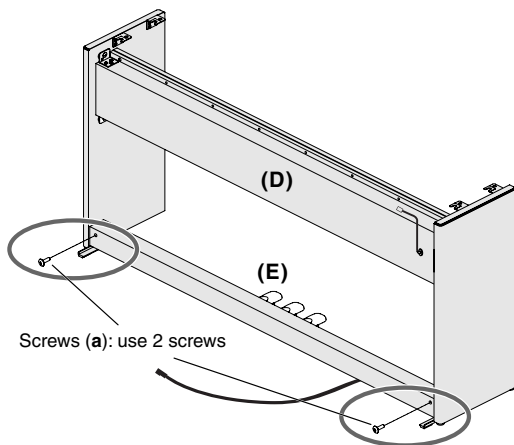
2. Place the unit upright, and use the screws **b** to fasten the stabilizers to the side boards (left, right) (6 locations). When standing the assembled unit up, grasp near the speaker box, and gently raise the assembly. Take care not to attach the left and right stabilizer to the wrong sides.



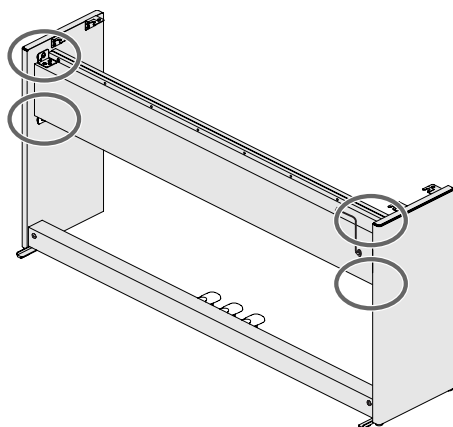
- Place the pedal board onto the metal fixtures.  
If you find it difficult to attach the pedal board, slightly loosen the speaker box screws **a** that you fastened provisionally in step 1.



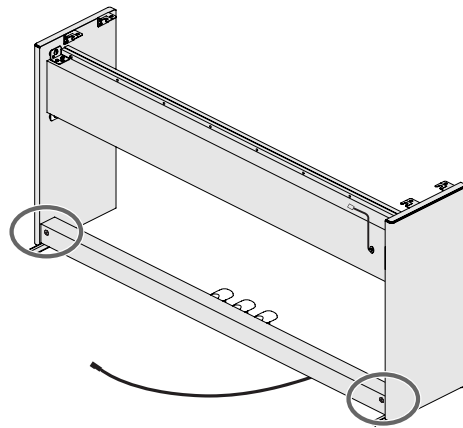
- Remove the protective sheets from each side board.
- Hand-tighten the screws **a** to provisionally fasten the pedal board to the side boards (left, right) (2 locations).



- Firmly tighten each of the side board screws (4 locations) that you provisionally tightened in step 1, making sure that they are secure.

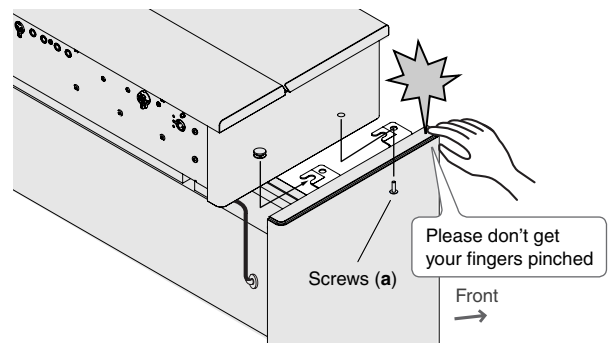


- Step on the pedals of the pedal board, and make sure that the rubber feet on the bottom of the pedals are in contact with the floor.  
Firmly tighten the pedal board screws (2 locations) that you provisionally tightened in step 5, making sure that they are secure.

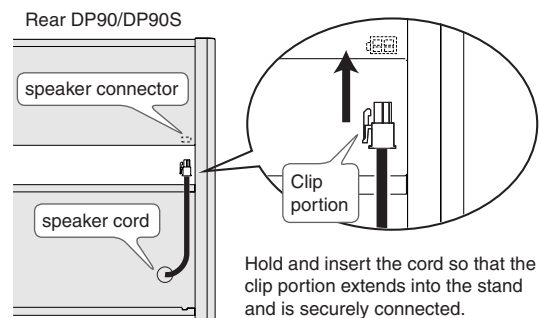


- Align the protruding screws (one each at right and left) on the bottom of the piano with the openings in the metal fittings on the side board (left, right), then slide the piano forward until the screws are held in place. Place the keyboard so that it is centered, both front to back and left to right.

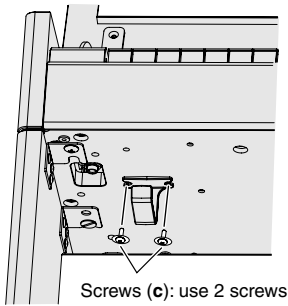
\* Grasp the piano in the middle at the front and rear, taking care not to pinch your hands.



- Use the screws **a** to fasten the piano main unit to the side boards (left, right) (one each for the right and left).  
Make sure to insert the screws **a** by hand and give them a few turns by hand before using a screwdriver to tighten them.
- Connect the speaker cord extending from the rear of the speaker box to the piano main unit's speaker connector.

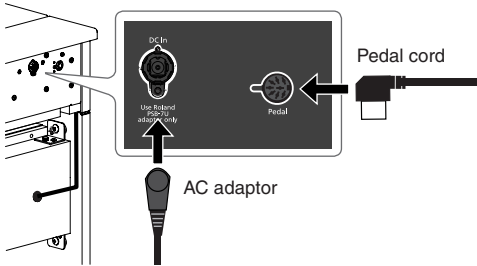


11. Use screws (with washers) **c** to fasten the headphone hook.

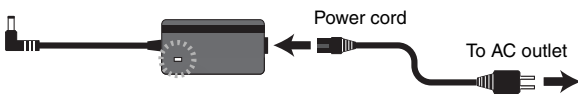


12. Connect the AC adaptor to the DC In jack, the pedal cord to the Pedal jack.

\* Firmly plug the AC adaptor and the pedal cord all the way into the sockets.



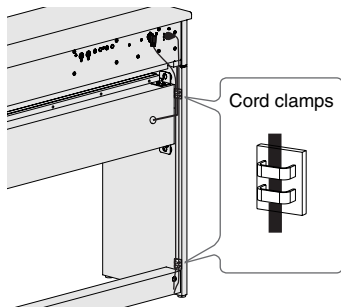
13. Connect the supplied AC adaptor and power cord.



\* Place the AC adaptor so the side with the indicator faces upwards and the side with textual information faces downwards. The indicator will light when you plug the AC adaptor into an AC outlet.

14. As necessary, affix cord clamps to fasten the pedal cord.

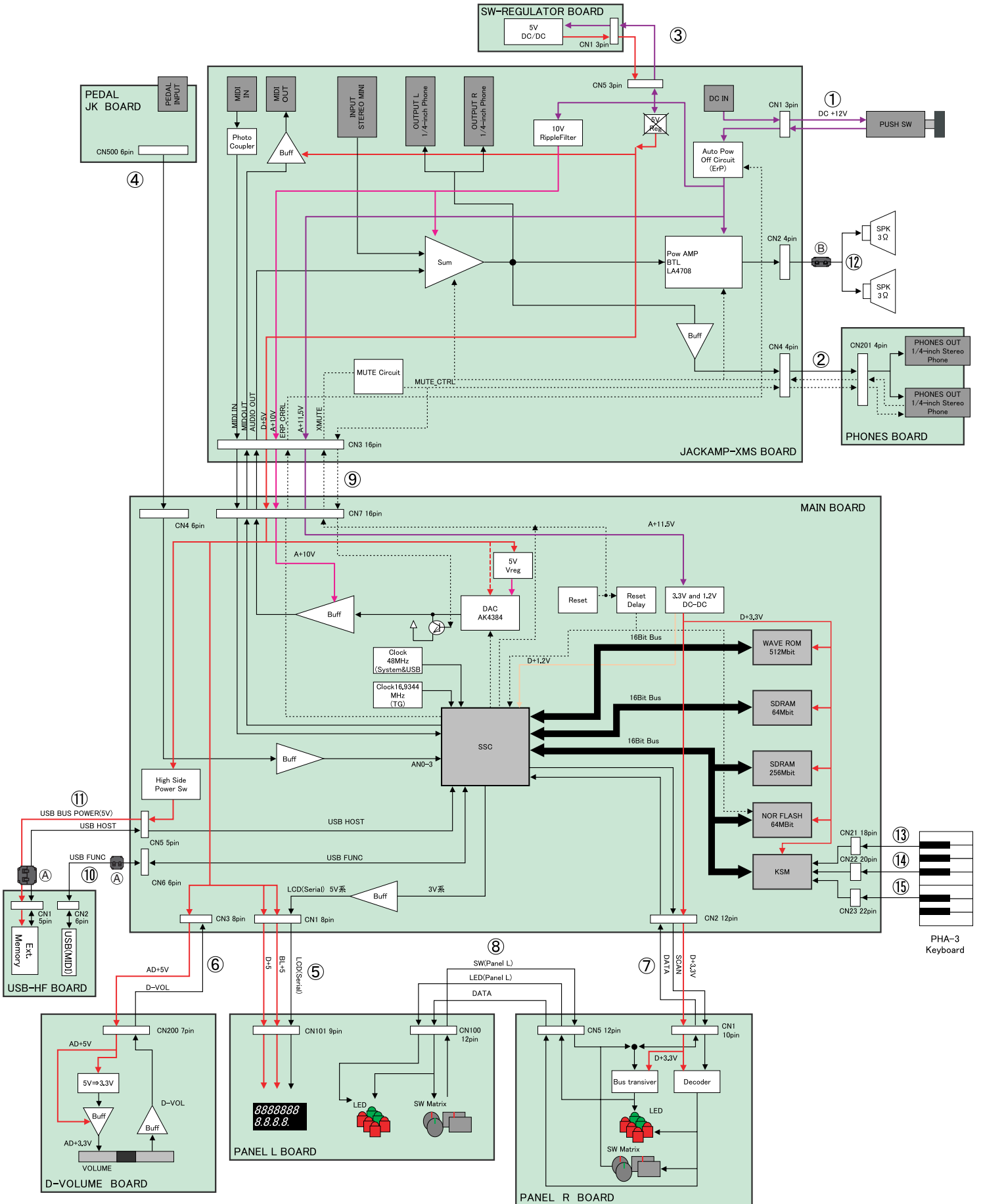
**Example attachment location**



## When moving the unit

If you need to move the unit, close the keyboard cover and disconnect the AC adaptor. With at least one other person helping you, lift the unit horizontally and carry it, taking care not to pinch your hands or drop the unit on your feet.

# Wiring Diagram/Block Diagram



## Wiring Diagram Parts List

No.	Part Code	Part Name	Description	Q'ty
1	5100028506	WIRING	W01(PW_SW)	1
2	5100028507	WIRING	1061#28 4X660-PHR-PHR-F	1
3	5100023594	WIRING	1061#28 3X150-PHR-PHR-F	1
4	5100028508	WIRING	1061#28 6X1090-51065-51065-F	1
5	5100028593	WIRING	W05(LCD)	1
6	5100028596	WIRING	W06(D-VOL)	1
7	5100028599	WIRING	W07(PANEL)	1
8	5100023089	WIRING	1061#28 12X200-PHR-PHR-F	1
9	5100028600	WIRING	W09(MAIN 16PIN-S)	1
10	5100021762	WIRING	W14(USB FUNC)	1
11	5100028601	WIRING	W11(USB-HOST)	1
12	5100028604	WIRING	W12(SP)	1
13	5100028620	WIRING	20706 FWR-P=1.25-K1-18-1130	1
14	5100028619	WIRING	20706 FWR-P=1.25-K1-20-750	1
15	5100028618	WIRING	20706 FWR-P=1.25-K1-22-450	1
A	03901078	FERRITE-CORE	ZCAT1730-0730A-BK	2
B	03670423	FERRITE CORE	ESD-SR-160(C0600004R0)	1



# Parts List

Safety Precautions:  
The parts marked  $\Delta$  have safety-related characteristics. Use only listed parts for replacement.

Due to one or more of the following reasons, parts with parts code \*\*\*\*\* cannot be supplied as service parts.

- Part supplied only as a component in a complete assembly
- Copyright does not permit the part to be supplied
- Part is sold commercially

Note: The parts marked # are new. (initial parts) The description "Q'ty" means a necessary number of the parts per one product.

## CASING

#	<del>5100028234</del>	<del>TOP BOARD</del>		for SB	1
#	5100042201	TOP BOARD	W/VINYL TIE	for SB	1
#	5100028239	LID BOARD		for SB	1
#	5100028244	LID BLIND		for SB	1
#	5100028158	FRONT PANEL		for SB, MC	1
#	5100028253	SIDE PANEL L		for SB	1
#	5100028254	SIDE PANEL R		for SB	1
	04788656	END BLOCK L		for SB	1
	04788678	END BLOCK R		for SB	1
#	5100030612	BOTTOM ASSY	BOTTOM + LOWER BLIND	for SB	1
#	5100028270	PEDAL BOARD		for SB	1
#	5100028272	SIDE BOARD L FOR STAND		for SB	1
#	5100028273	SIDE BOARD R FOR STAND		for SB	1
#	<del>5100028235</del>	<del>TOP BOARD</del>		for MC	1
#	5100042202	TOP BOARD	W/VINYL TIE	for MC	1
#	5100028240	LID BOARD		for MC	1
#	5100028245	LID BLIND		for MC	1
#	5100028256	SIDE PANEL L		for MC	1
#	5100028257	SIDE PANEL R		for MC	1
	04788701	END BLOCK L		for MC	1
	04788690	END BLOCK R		for MC	1
#	5100030613	BOTTOM ASSY	BOTTOM + LOWER BLIND	for MC	1
	04788634	PEDAL BOARD		for MC	1
#	5100028274	SIDE BOARD L FOR STAND		for MC	1
#	5100028275	SIDE BOARD R FOR STAND		for MC	1
#	<del>5100028236</del>	<del>TOP BOARD</del>		for PE	1
#	5100042203	TOP BOARD	W/VINYL TIE	for PE	1
	5100005385	LID BOARD		for PE	1
#	5100028246	LID BLIND		for PE	1
#	5100028159	FRONT PANEL		for PE	1
#	5100028258	SIDE PANEL L		for PE	1
#	5100028259	SIDE PANEL R		for PE	1
	5100005394	END BLOCK L		for PE	1
	5100005395	END BLOCK R		for PE	1
#	5100030614	BOTTOM ASSY	BOTTOM + LOWER BLIND	for PE	1
	5100005399	PEDAL BOARD		for PE	1
#	5100028276	SIDE BOARD L FOR STAND		for PE	1
#	5100028277	SIDE BOARD R FOR STAND		for PE	1
#	<del>5100028237</del>	<del>TOP BOARD</del>		for PW	1
#	5100042204	TOP BOARD	W/VINYL TIE	for PW	1
#	5100028243	LID BOARD		for PW	1
#	5100028247	LID BLIND		for PW	1
#	5100028160	FRONT PANEL		for PW	1
#	5100028260	SIDE PANEL L		for PW	1
#	5100028261	SIDE PANEL R		for PW	1
#	5100028282	END BLOCK L		for PW	1
#	5100028283	END BLOCK R		for PW	1
#	5100030615	BOTTOM ASSY	BOTTOM + LOWER BLIND	for PW	1
#	5100028271	PEDAL BOARD		for PW	1
#	5100028278	SIDE BOARD L FOR STAND		for PW	1
#	5100028279	SIDE BOARD R FOR STAND		for PW	1
#	5100028161	REAR PANEL		for SB, MC, PE	1
#	5100028162	REAR PANEL		for PW	1
#	5100022599	USB CASE			1

## CHASSIS

	5100015615	ANGLE		for SB, MC, PE	4
	5100009206	JOINT HOLDER L		for SB, MC, PE	2
	5100009207	JOINT HOLDER R		for SB, MC, PE	2
	5100005386	LID ARM L		for SB, MC, PE	1
	5100005387	LID ARM R		for SB, MC, PE	1
	5100015617	PLATE		for SB, MC, PE	4
	5100015616	ANGLE		for PW	4
#	5100028280	JOINT HOLDER L		for PW	2
#	5100028281	JOINT HOLDER R		for PW	2

CHASSIS					
#	5100028590	LID ARM L		for PW	1
#	5100028591	LID ARM R		for PW	1
	5100015618	PLATE		for PW	4
	5100006011	CP-3 DIN PEDAL UNIT (F-110)			1
	04451989	ANGLE			11
	03347712	DAMPER HOLDER			2
	03347723	DAMPER PLATE L			1
	03347734	DAMPER PLATE R			1
#	5100028167	END BLOCK HOLDER			2
	04785534	HINGE			3
	5100021793	PEDAL HOLDER			2
#	5100028165	PWB HOLDER			2
#	5100028163	REAR ANGLE L			1
#	5100028164	REAR ANGLE R			1
#	5100028166	TOP HOLDER			2
	04785523	TORQUE HINGE			2
KNOB, BUTTON					
	03126878	D S-KEYTOP	SX1H-B BLK	for SB, MC, PE	2
	5100008100	ZL S-KEYTOP	MD1H BLK	for SB, MC, PE	8
	5100008099	ZL S-KEYTOP	MD2H BLK	for SB, MC, PE	8
	22485192	SLIDE KNOB	BLK/LCG	for SB, MC, PE	1
	5100028646	D S-KEYTOP	SX1H-B WHT	for PW	2
	5100028621	ZL S-KEYTOP	MD1H WHT	for PW	8
	5100028616	ZL S-KEYTOP	MD2H WHT	for PW	8
	5100028615	SLIDE KNOB	WHT/BLK	for PW	1
	12499175	BUTTON	JSPUE0011A		1
SWITCH					
	5100010764	PUSH SWITCH	SY16-5-4(U99S2)/T		1
	02781634	TACT SWITCH	SKRGAED010		26
JACK, EXT TERMINAL					
	02456390	3.5MM JACK	STEREO YKB21-5290		1
	13449275	6.5MM JACK	YKB21-5074		2
	13449252	6.5MM JACK	YKB21-5006 (STEREO W/SW)		2
	02900312	DC JACK	HEC0470-01-640		1
	00340223	DIN SOCKET	YKF51-5031		1
	13429825	MIDI CONNECTOR	YKF51-5054V		1
	04459190	USB CONNECTOR A TYPE FEMALE	YKF45-0033N		1
	5100009531	USB CONNECTOR B TYPE FEMALE	YKF45-0044N		1
DISPLAY UNIT					
	5100023169	LCD	C-55612GNFU-LW-ADN		1
SPEAKER, BUZZER					
	△ 03347512	SPEAKER	FULL-RANGE		2
	04012301	SP-BOX ASSY	411-521-3	for SB, MC, PE	1
#	5100028492	SP-BOX ASSY		for PW	1
KEYBOARD ASSY					
	5100017594	KEYBOARD ASSY	PHA3-C	for SB, MC	1
	5100021718	KEYBOARD ASSY	PHA3-D	for PE, PW	1
PWB ASSY					
#	5100028437	MAIN BOARD ASSY			1
#	5100028442	PANEL SHEET ASSY			1
		<i>* This unit includes the following parts.</i>			
#	*****	PANEL L BOARD			1
#	*****	PANEL R BOARD			1
#	*****	D-VOLUME BOARD			1
#	5100028431	JACKAMP SHEET ASSY			1
		<i>* This unit includes the following parts.</i>			
#	*****	JACKAMP-XMS BOARD			1
#	*****	PHONES BOARD			1
#	*****	PEDAL JK BOARD			1
	5100023138	SW-REGULATOR BOARD			1
	5100021745	USB-HF BOARD ASSY			1
DIODE					
	5100000443	LED	SLI-343MGT32		1
	03230656	LED (RED)	SLR-343VCT32		19
	04902023	LED (RED/GREEN)	SPI-325MUWT31		1

POTENTIOMETER

5100015571	SLIDE POTENTIOMETER	RS30111FA002	1
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WIRING, CABLE

#	5100028506	WIRING	W01(PW_SW)	1
	02674545	WIRING	SP-BOX W3	1
#	5100028593	WIRING	W05(LCD)	1
#	5100028596	WIRING	W06(D-VOL)	1
#	5100028599	WIRING	W07(PANEL)	1
#	5100028600	WIRING	W09(MAIN 16PIN-S)	1
#	5100028601	WIRING	W11(USB-HOST)	1
#	5100028604	WIRING	W12(SP)	1
	5100021762	WIRING	W14(USB FUNC)	1
	5100023594	WIRING	1061#28 3X150-PHR-PHR-F	1
#	5100028507	WIRING	1061#28 4X660-PHR-PHR-F	1
#	5100028508	WIRING	1061#28 6X1090-51065-51065-F	1
	5100023089	WIRING	1061#28 12X200-PHR-PHR-F	1
#	5100028620	WIRING	20706 FWR-P=1.25-K1-18-1130	1
#	5100028619	WIRING	20706 FWR-P=1.25-K1-20-750	1
#	5100028618	WIRING	20706 FWR-P=1.25-K1-22-450	1
	5100005700	DIN PEDAL CABLE		1

SCREWS

	40563612	SCREW 2.6X8	FLAT TAPPING A BROWN BRONZE	30
	40011301	SCREW 3X6	BINDING TAPTITE P FE BZC	2
	40011056	SCREW 3X6	BINDING TAPTITE B ZC	20
	40011312	SCREW 3X8	BINDING TAPTITE P FE BZC	3
	40011101	SCREW 3X8	BINDING TAPTITE B BZC	4
	40010790	SCREW 3X16	BINDING TAPPING A BZC	2
	40675701	SCREW 3.5X16	BINDING TAPPING A FE BZC	4
	5100005413	SCREW 3.8X16	ROUND WOOD BZC	6
	40782634	SCREW 3.8X16	ROUND WOOD NI	6
	40127545	SCREW 4X10	TRUSS TAPPING A FE BZC	6
	40012501	SCREW 4X12	BINDING TAPTITE P FE BZC	3
	40012145	SCREW 4X14	TRUSS TAPPING A FE BZC	62
	40010667	SCREW 4X16	TRUSS TAPPING A FE BZC	30
	40010634	SCREW 4X16	TRUSS TAPPING A FE ZC	30
	40012112	SCREW 4X20	TRUSS TAPPING A ZC	15
	40677190	SCREW 4X20	FLAT TAPPING A FE BZC	8
	40017678	SCREW 4X20	FLAT TAPPING A FE ZC	8
	40237323	SCREW 4X25	BINDING TAPPING A BZC	16
	40128512	SCREW 4X25X20	PAN WASHER HEAD TAPTITE B BZC	25
	40010645	SCREW 4X8	TRUSS TAPPING A FE BZC	6
	40011378	SCREW 4X8	BINDING TAPTITE S FE BZC	8
	40011123	SCREW 4X8	BINDING TAPTITE B FE BZC	4
	40563345	SCREW H4X25X17	TAPTITE P W BZC W=12.5	4
	40237101	SCREW M3X8	PAN MACHINE W/SW+SMALL PW BZC	12
	40012889	SCREW M3X12	PAN MACHINE W/SW+PW FE ZC	2
	40010134	SCREW M4X20	TRUSS MACHINE BZC	8
	40012923	SCREW M4X25	PAN MACHINE W/SW+PW ZC	2
	40125045	SCREW M4X35	SPEA BZC	8
	40782023	SCREW M4X40	PAN MACHINE W/SW ZC	6
#	5100028176	WASHER 12.5X28X2	POM	2
	40783356	JACK NUT	M12 T2 //14 ZC	2
	40344545	M4 FLANGE NUT ZC		8
	22285342	CONNECTING PIN	228-342	2

MISCELLANEOUS

	04788401	MUSIC STOPPER		1
#	5100028594	MUSIC STOPPER CUSHION	for SB	1
	04232645	LID BLIND CUSHION	for SB	1
#	5100028609	MS CUSHION	for SB	2
	04788567	MUSIC STOPPER	for MC	1
#	5100028598	MUSIC STOPPER CUSHION	for MC	1
	04013412	LID BLIND CUSHION	for MC	1
#	5100028611	MS CUSHION	for MC	2
	5100005390	MUSIC STOPPER	for PE	1
	5100028594	MUSIC STOPPER CUSHION	for PE	1
	5100029060	LID BLIND CUSHION	for PE	1
	5100028609	MS CUSHION	for PE	2
#	5100028284	MUSIC STOPPER	for PW	1
#	5100028607	MUSIC STOPPER CUSHION	for PW	1
#	5100028592	LID BLIND CUSHION	for PW	1
#	5100028613	MS CUSHION	for PW	2
	02892645	DAMPER	FYN-N1-L-RL1	1
	02892656	DAMPER	FYN-N1-R-RL1	1
	5100005984	DAMPER	TD69B1-35K CCW	1
	5100006041	DAMPER	TD69A1-35K CW	1
	5100028221	DISPLAY COVER	for SB, MC, PE	1

MISCELLANEOUS

#	5100028223	DISPLAY COVER		for PW	1
	5100008101	SLIDE KNOB ESCUTCHEON		for SB, MC, PE	1
	5100028617	SLIDE KNOB ESCUTCHEON	WHT	for PW	1
#	5100028293	LOWER BLIND CUSHION L		only for PE, PW	1
#	5100028294	LOWER BLIND CUSHION R		only for PE, PW	1
#	5100028292	SIDE PANEL CUSHION		only for PE, PW	2
#	5100028289	HINGE CUSHION		only for PE, PW	12
#	5100028290	LID ARM CUSHION		only for PE, PW	2
#	5100028295	END BLOCK CUSHION UNDER		only for PE, PW	2
#	5100028296	STAND HOLDER CUSHION		only for PE, PW	2
#	5100028298	SIDE BOARD CUSHION		only for PE, PW	2
#	5100029170	HINGE CUSHION S		only for PE, PW	4
	5100009656	DC PLUG SUPPORTER			1
	02674578	S-PANEL FOOT			4
	03670423	FERRITE CORE	ESD-SR-160(C0600004R0)		1
	03901078	FERRITE-CORE	ZCAT1730-0730A-BK		2
	04781901	FELT			6
	03450812	KEY FELT			1
	03347856	CORD CLAMP	MN-2		4
#	5100029330	CABLE CLIP			4
	40017378	COATING CLIP	CS-7		5
	22365101	MINI FLAT CABLE CLIP	LFC-30N-O		1
	40016523	INSULOK TIE 100M/M T-18R	(1000 PCS ORDERING PER)		24
	40016545	LOCKING TOOL FOR INSULOK TIE	SKM-1		3
	40018790	VINYL TIE	120M/M BLK		-
#	5100028297	HOLDER CUSHION			2
#	5100028291	LID STAY CUSHION			2
#	5100028840	LABEL	JACKAMP SHEET ASSY NO		1
#	5100028841	LABEL	JACKAMP-XMS BOARD ASSY NO		1
#	5100028842	LABEL	PANEL SHEET ASSY NO		1
	40346189	PHONES LABEL			1
	12199584	GROUNDING TERMINAL	M1698		8
	40122612	ACETATE TAPE	NITTO #5 BLACK W10MM 30M 20P		-
	40232123	ACETATE TAPE	NITTO #5 BLACK W20MM 30M 20P		-
	40122490	DOUBLE-FACED TAPE	#500 W5MM 20M 40P		-
	40122534	DOUBLE-FACE TAPE #500	W3MM 20M 136P		-
	40122901	DOUBLE-FACED TAPE	#501F W10MM 20M 20P (CM)		-
	40122923	DOUBLE FACED ADHESIVE TAPE	NITTO NO.501F W20MM 20M		-
	40567623	DOUBLE-FACED TAPE	#575 W15MM 30M		-
	17049545	GREASE FOR KEY	FLOIL G-424F WHITE 100CC	only for PE, PW	-
	17041858	GREASE FOR KEY	MOLYKOTE G-1039 (50 GRAM)		-
	17049543	GREASE FOR KEY	FLOIL G-336A WHITE (93 GRAM)		-
	17041428	GREASE FOR KEY	FLOIL CR-125L WHITE 100CC		-

ACCESSORIES (Standard)

	5100021794	STAND HOLDER L			1
	5100021795	STAND HOLDER R			1
	5100020982	PHONES HOOK			1
	03015001	CORD CLAMP	BLK		2
△	04236112	AC ADAPTOR	PSB-7U(S)DC WITHOUT AC CORD		1
△	02562456	AC CORD SET	120V 1.0M (NON POLAR)	for 117VU, 117VU/CS	1
△	5100012293	AC CORD SET	117VBL 1.0M FOR PSB	for 117VBL	1
△	01903356	AC CORD SET	230V 1.0M FOR PSB	for 230VEU	1
△	5100018086	AC CORD SET	230VE 1.0M FOR EPS	for 230VE	1
△	03785590	AC CORD SET	SC-078-NA05 240VA	for 240VA	1
#	5100028379	OWNER'S MANUAL	ENGLISH		1
#	5100028624	LEAFLET SONG LIST	ENGLISH FOR US AND CA		1
#	5100028625	LEAFLET SONG LIST	ENGLISH FOR EU		1
#	5100028623	LEAFLET SONG LIST	ENGLISH FOR OTHER AREA		1

## Verifying the Version

Verification is possible in the Test Mode. For more information, refer to **Test Mode** (p. 47).

## Data Backup and Restore Operations

### Items Required

- USB memory devices x 2 (recommended: M-UF2G)
- \* Provide one each for backing up setting items and for backing up song data.

### Formatting a USB Memory Device

1. Connect the USB memory device to the unit's USB memory connector (on the right side of the unit's bottom panel).
2. Hold down the [Key Touch] button and press the [Transpose] button. The unit enters the Function mode.
3. Press the [Slow] or [Fast] button to choose **Format**.
4. Press the [Song] button.
5. Press the [+] button to choose **USB**.
6. Press the [Song] button. A confirmation message is displayed.
  - \* Pressing the [Slow] button returns the unit to the original screen without formatting.
7. Press the [Fast] button. Formatting of the USB memory device starts.
  - \* Never switch off the power or detach the USB memory device while the message **Working** is displayed on the screen.
  - \* If the message **Error** appears on the screen, refer to "Error Messages" (Owner's Manual, p. 51).
8. Press the [Key Touch] or [Transpose] button. The unit exits the Function mode.

### Backing Up Setting Items

Setting items stored in memory in the unit using the Memory Backup feature (Owner's Manual, p. 39) and setting items that are saved automatically (**Memos** on p. 44 through 47 of the Owner's Manual) are returned to their factory-default values by executing a factory reset, updating the system, or executing the Test Mode. Before you start, follow the procedure described below to back these up on a USB memory device.

1. Follow **Formatting a USB Memory Device** (p. 45) to format the USB memory device.
  2. While leaving the unit's power switched off, connect the formatted USB memory device to the unit's USB memory connector (on the right side of the unit's bottom panel).
  3. Hold down the [Grand] button and the [Other] button at the same time and switch on the power. When the unit starts up, the message **Ext Bkup** appears, and the [Play/Stop] button flashes.
  4. Press the [Play/Stop] button. The message **Backup?** appears.
  5. Press the [Song] button. The backup operation starts.
    - \* To cancel the backup, switch off the power without pressing the [Song] button.
    - \* Never switch off the power or detach the USB memory device while the message **Working** is displayed on the screen.
- When the message **Ext Bkup DONE** appears, the backup has finished.
6. Switch off the power.

### Backing Up Song Data

Song data saved in internal memory (**User**) is lost when a factory reset is executed in the Test Mode. Before you start, follow the procedure described below to back this up on a USB memory device.

1. Follow **Formatting a USB Memory Device** (p. 45) to format the USB memory device.
2. Connect the formatted USB memory device to the unit's USB memory connector (on the right side of the unit's bottom panel).
3. Hold down the [Key Touch] button and press the [Transpose] button. The unit enters the Function mode.
4. Press the [Slow] or [Fast] button to choose **CopySong**.
5. Press the [Song] button. The Copy Song screen appears.
6. Press the [-] button to choose **User -> USB**.
7. Press the [Fast] button. The copy source select screen appears.
8. Press the [-] button to choose **All**.
9. Press the [Fast] button. The copy destination select screen appears.
  - \* Pressing the [Metronome] button returns the unit to the function screen without executing copying.
10. Press the [Song] button. The song data is copied.
  - \* Never switch off the power or detach the USB memory device while the message **Working** is displayed on the screen.
  - \* If the message **Error** appears on the screen, refer to "Error Messages" (Owner's Manual, p. 51).
11. Press the [Key Touch] or [Transpose] button. The unit exits the Function mode.

## Restoring Setting Items

1. While leaving the unit's power switched off, connect the USB memory device containing the backed-up setting items to the unit's USB memory connector (on the right side of the unit's bottom panel).
  2. Hold down the [Early] button and the [Other] button at the same time and switch on the power.  
When the unit starts up, the message **Ext Rstr** appears and the [Rec] button flashes.
  3. Press the [Rec] button.  
The message **Restore?** is displayed.
  4. Press the [Song] button.  
The restore operation starts.
- \* To cancel the restore operation, switch off the power without pressing the [Song] button.
- \* Never switch off the power or detach the USB memory device while the message **Working.** is displayed on the screen.

When the message **Ext Rstr DONE** appears, the restore operation has finished.

5. Switch off the power.

## Restoring Song Data

1. Connect the USB memory device containing the backed-up song data to the unit's USB memory connector (on the right side of the unit's bottom panel).
  2. Hold down the [Key Touch] button and press the [Transpose] button.  
The unit enters the Function mode.
  3. Press the [Slow] button or the [Fast] button to choose **CopySong**.
  4. Press the [Song] button.  
The Copy Song screen appears.
  5. Press the [+] button to choose **USB -> User**.
  6. Press the [Fast] button.  
The copy source select screen appears.
  7. Press the [-] button to choose **All**.
  8. Press the [Fast] button.  
The copy destination select screen appears.
- \* Pressing the [Metronome] button returns the unit to the function screen without executing copying.
9. Press the [Song] button.  
The song data is copied.
- \* Never switch off the power or detach the USB memory device while the message **Working.** is displayed on the screen.
- \* If the message **Error** appears on the screen, refer to "Error Messages" (Owner's Manual, p. 51).
10. Press the [Key Touch] or [Transpose] button.  
The unit exits the Function mode.
- \* When the system update is carried out or the Main Board is replaced, the song data may not be restored because capacity of the internal memory varies according to the system version.

## Performing a Factory Reset

You can carry this out in the Test Mode. For more information, refer to **Test Mode** (p. 47).



Executing a Test-mode factory reset resets setting items stored in the unit's memory using the Memory Backup feature (Owner's Manual, p. 39) and setting items that are saved automatically (**Memos** on pages 44 through 47 of

the Owner's Manual) to their factory-default values, and causes all songs saved in the unit's memory to be lost. (Songs saved in internal memory when the unit is shipped from the factory are not deleted.) Follow the procedure in **Data Backup and Restore Operations** (p. 45) to save the data.

## Updating the System



Performing a system update might reset setting items stored in the unit's memory using the (Owner's Manual, p. 39) and setting items that are saved automatically (**Memos** on pages 44 through 47 of the Owner's Manual) to their factory-default setting values, and causes all songs saved in the unit's memory to be lost. (Songs saved in internal memory when the unit is shipped from the factory are not deleted.) Follow the procedure in **Data Backup and Restore Operations** (p. 45) to save the data.

## Items Required

- USB memory device (recommended: M-UF2G)
- Update program (obtained via Service Net)
- Computer

## Procedure

1. Using the computer, format the USB memory device as FAT.  
\* For more information on how to carry out formatting, refer to the documentation for the computer you're using.
2. Copy the entire folder that is the update program (the folder named **R047\_DP90**) to the root directory of the formatted USB memory device.
3. Connect the USB memory device just described to the unit's USB memory connector (on the right side of the unit's bottom panel).
4. According with the destinations, hold down the buttons shown in the following chart at the same time, then switch on the power to the unit.

Button	Destination	Update finished
[Rec] + [Accomp]	North America	COMP US
[Rec] + [Left]	Europe	COMP EUR
[Rec] + [Right]	Elsewhere than the above	COMP EXP

Continue to hold down the buttons until the message **LOADING, UPDATING** and **1/100** appear on the screen (approximately 13 seconds). The update starts, and a fraction display in the format of **n/100** indicates the progress.  
The update takes approximately 70 seconds to complete.

- \* Never switch off the power or detach the USB memory device while the update is in progress. Doing so may cause malfunction.

When the message **COMPLETE.** appears on the screen, then update has finished.

5. Detach the USB memory device and reset the power.

## Measures Against System Update Failure

If the update should happen to fail, first check the following.

- Are the update files correct?
- Is the USB memory device free of corruption?
- Is the USB memory device formatted as FAT?

If a check of the foregoing matters finds no problems, try performing the update again.

## Test Mode



Executing a Factory Reset resets setting items stored in the unit's memory using the Memory Backup feature (Owner's Manual, p. 39) and setting items that are saved automatically (**Memos** on pages 44 through 47 of the Owner's Manual) to their factory-default values, and causes all songs saved in the unit's memory to be lost. (Songs saved in internal memory when the unit is shipped from the factory are not deleted.) Follow the procedure in **Data Backup and Restore Operations** (p. 45) to save the data.

### Items Required

- MIDI cable
- USB cable
- USB memory device (supports high speed, recommended: M-UF1G or M-UF2G)
- Headphones (with 1/4-inch stereo phone plug)
- Audio cables
- Amp-equipped monitor speaker
- Audio device or electronic musical instrument equipped with audio output jacks (MT series device, etc.)

### Entering the Test Mode

Hold down the [Grand], [Early], and [Strings] buttons at the same time and switch on the power. Continue to hold down the buttons until the version appears on the LCD screen.



### Quitting the Test Mode

Switch off the power.

### Skipping Test Items

Holding down the [AB Repeat] button and pressing the [Song Balance] button quits the current test item and advances operation to the next test item.

Holding down the [AB Repeat] button and pressing the [Ambience] button quits the current test item and returns operation to the previous test item.

### Test Items

1. **Version Check** (p. 47)
2. **Factory Reset** (p. 47)
3. **DSP Test** (p. 47)
4. **Switch Test** (p. 48)
5. **LED-equipped Switch Test** (p. 48)
6. **Sound Test** (p. 48)
7. **USB/MIDI Test** (p. 49)
8. **Jacks Sense Test** (p. 49)
9. **Pedal Test** (p. 49)
10. **Volume Test** (p. 49)
11. **LCD Screen Display Test** (p. 49)
12. **Device Test** (p. 50)
13. **Destination and Version Check** (p. 50)
14. **Auto Off Function Check** (p. 50)

## 1. Version Check



Verify the program version.

Press the [Metronome] button to advance to the next test item.

## 2. Factory Reset



This item is executed automatically.

Executing a factory reset returns the parameters for which Memory Backup has been performed to their factory defaults.

To execute the factory reset, press the [Metronome] button.

When the factory reset has finished, execution automatically advances to the next test item.

To advance to the next test item without executing a factory reset, hold down the [AB Repeat] button and press the [Song Balance] button.

## 3. DSP Test



This tests the operation of the sound source.

If no error occurs, execution automatically advances to the next test item.

If an error occurs, **ERR** is displayed on the LCD screen and an applicable button flashes.



Flashing button	Error description
Grand	Sound-source chip internal-RAM checksum error
Early	Sound-source chip external-RAM checksum error

If an error occurs, then to advance to the next item, hold down the [AB Repeat] button and press the [Song Balance] button.

### 4. Switch Test

This tests the operation of switches with no LEDs.  
 All LEDs light up at this time.  
 Press buttons displayed on the LCD screen.



When testing of all switches has finished, execution automatically advances to the next test item.

### 6. Sound Test



Buttons written in the following table flash.

Connect the amp-equipped monitor speakers to the **Output L/Mono, R** jacks and the audio devices or digital instruments to the **Input Stereo** jack. Pressing each button shown below makes the corresponding sound play, and releasing the button makes the sound stop and the button lights up.

Button	Display	Tone	Output Destination
[Ambience]	DRCT	Piano (direct sound)	
[Brilliance]	REVB	Piano (reverb)	
[Key Touch]	L. SIN	Sine wave	<b>Output L/Mono</b> jack L channel of <b>Phones</b> jacks (x 2) L channel of speaker
[Transpose]	R. SIN	Sine wave	<b>Output R</b> jack R channel of <b>Phones</b> jacks (x 2) R channel of speaker
[Twin Piano]	C. SIN	Sine wave	<b>Output L/Mono, R</b> jack L/R channel of <b>Phones</b> jacks (x 2) L/R channel of speaker
[Song] (Mute Check)	Mute	-	-

\* Verify that the sine wave is free of audible distortion.

Input audio signal via the **Input Stereo** jack and verify that the audio is output from the built-in speakers.

Press the [Metronome] button to advance to the next test item.

### 5. LED-equipped Switch Test

This tests the operation of switches with LEDs.  
 The switches to test are indicated at random by a flashing LED. Press the buttons as instructed by the flashing LEDs. The number of remaining switches is displayed on the LCD screen.

**LEDs that light up red (left side of the panel; 11 LEDs)**



[Song Balance], [Ambience], [Brilliance], [Key Touch], [Transpose], [Twin Piano], [Grand], [Early], [E. Piano], [Strings] and [Other]

**LEDs that light up red (right side of the panel; 9 LEDs)**



[Metronome], [Slow], [Fast], [Song], [Rec], [Accomp], [Left], [Right] and [AB Repeat]

**LEDs that light up green (2)**



[Metronome] and [Play/Stop]

When testing of all switches and LEDs has finished, execution automatically advances to the next test item.



## 7. USB/MIDI Test



### MIDI Connector Test

Connect the **MIDI IN** and **MIDI OUT** connectors using the MIDI cable (loop connection).  
Verify that the right sign changes from \_ (disconnected) to **o** (connected) according to the state of the MIDI connectors.

### USB Connector Test

Connect the **USB (MIDI)** connector and the external memory connector using the USB cable.  
Verify that the sign of the middle changes from \_ (disconnected) to **o** (connected) according to the state of the USB connectors.

### USB Memory Device Test

Connect the USB memory device to the external memory connector.  
Verify that the left sign changes from \_ (disconnected) to **o** (connected) after a few seconds.  
*\* o does not appear if the USB memory device does not support high speed. In such cases, \* is displayed and execution does not advance to the next test item. To force execution to advance to the next test item, hold down the [AB Repeat] button and press the [Song Balance] button.*

When the required checks have finished, execution automatically advances to the next test item.

## 8. Jacks Sense Test



Insert a plug in succession to each jack of **Phones** (x 2).  
Verify that the sign of the right changes from \_ (disconnected) to **o** (connected) according to the state of the each jack.

Press the [Metronome] button to advance to the next test item.

## 9. Pedal Test



For each pedal, depress it slowly, then when it is fully depressed, slowly release it.  
Depending on how much the pedal is depressed, the value changes from **0** (not depressed) to **127** (fully depressed).

*\* Depressing pedals at two or more locations at the same time results in an error. If this happens, go back to the previous item ([AB Repeat] + [Ambience]) and redo the operation.*

When testing of all pedals has finished, execution automatically advances to the next test item.

## 10. Volume Test



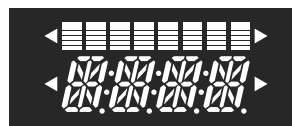
Operate the **Volume** control and confirm that a value displayed on the LCD screen changes **0** to **1023**.

When the maximum and minimum value are detected, execution automatically advances to the next test item.

## 11. LCD Screen Display Test



Press the [Grand], [Early], [E. Piano], [Strings] and [Other] buttons in succession and verify the state of the LCD screen.



Grand (all pixels on)



Early (all pixels off)



E. Piano (8s)



Strings (asterisks)



Other (dots)

Press the [Metronome] button to advance to the next test item.

### 12. Device Test



If no error occurs, the [Metronome] button flashes. Press the button to advance to the next test item.

If an error occurs, **ER** is displayed beside the device name with malfunction.

To advance to the next test item, hold down the [AB Repeat] button and press the [Song Balance] button.

### 13. Destination and Version Check



The destination is displayed again

Press the [Metronome] button to change the display to the localization information, program version and Boot version, and make sure they are correct.



When the Boot version is displayed, press the [Metronome] button to advance to the next test item.

### 14. Auto Off Function Check

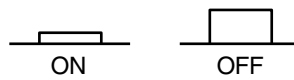


Press the [Rec] button to turn off the power.

If the Auto Off Function has some troubles, **Err** is displayed without being turned off the power.

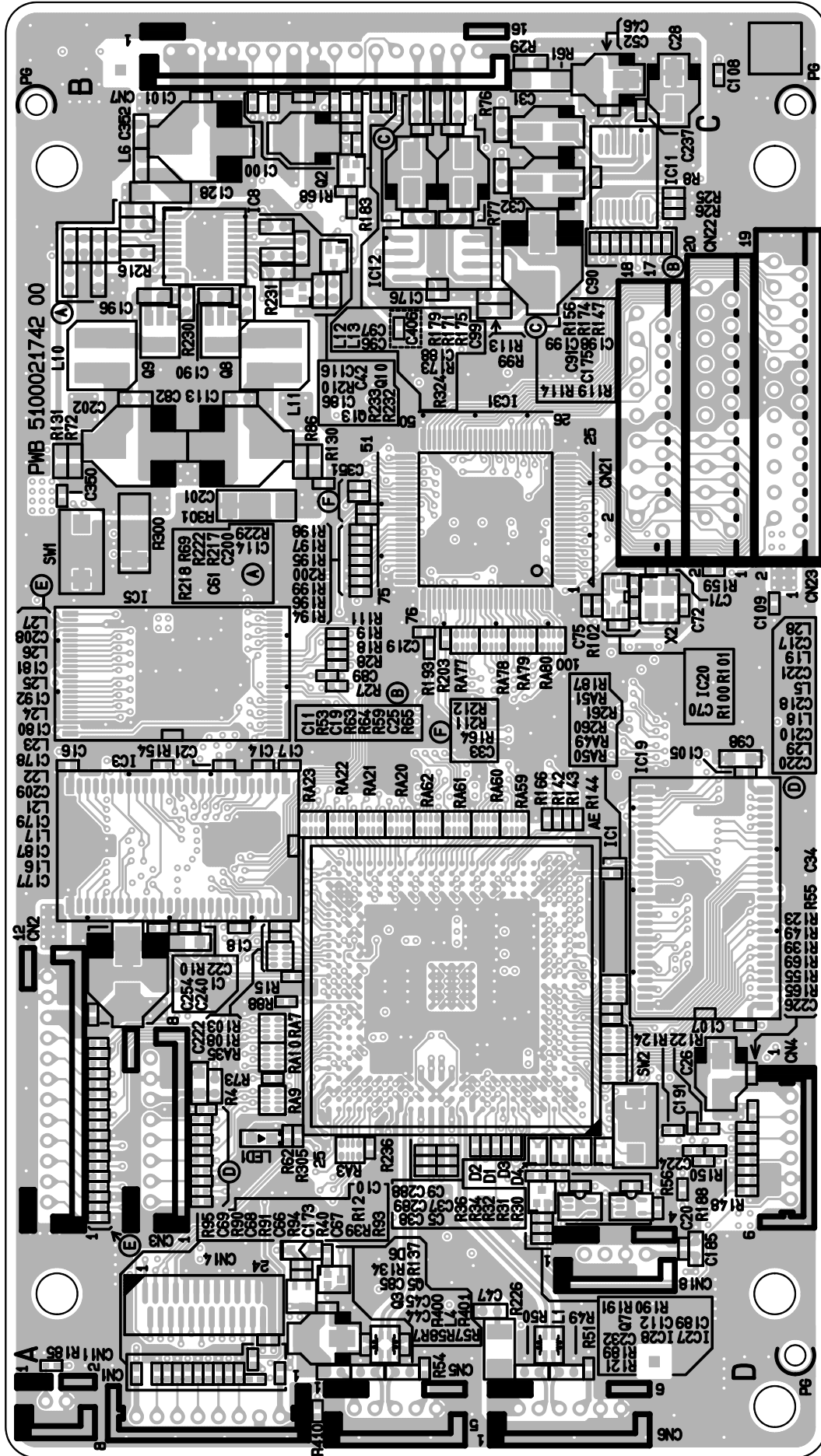


If the power is turned off correctly, the test mode is completed. Return the power button to the off position.



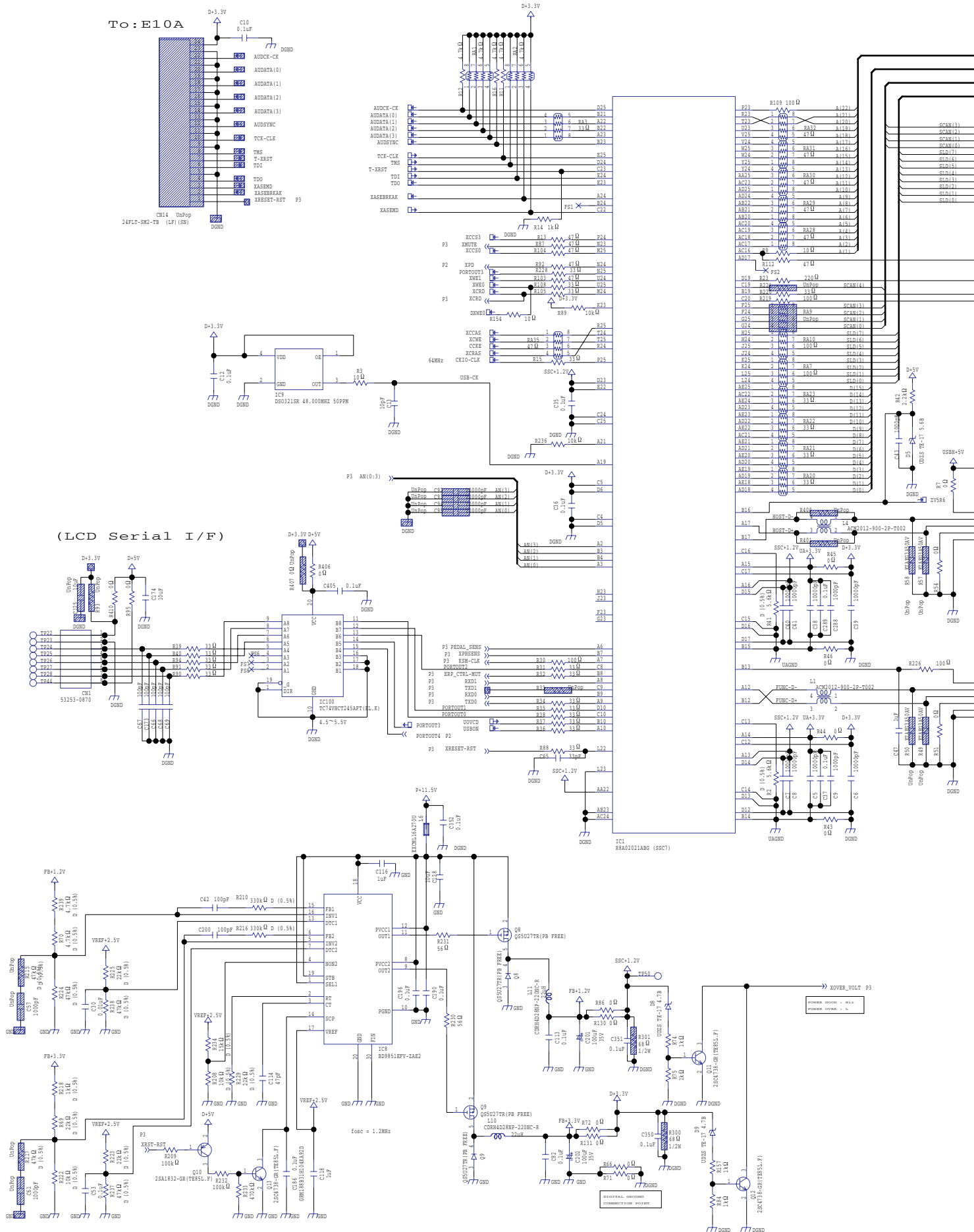


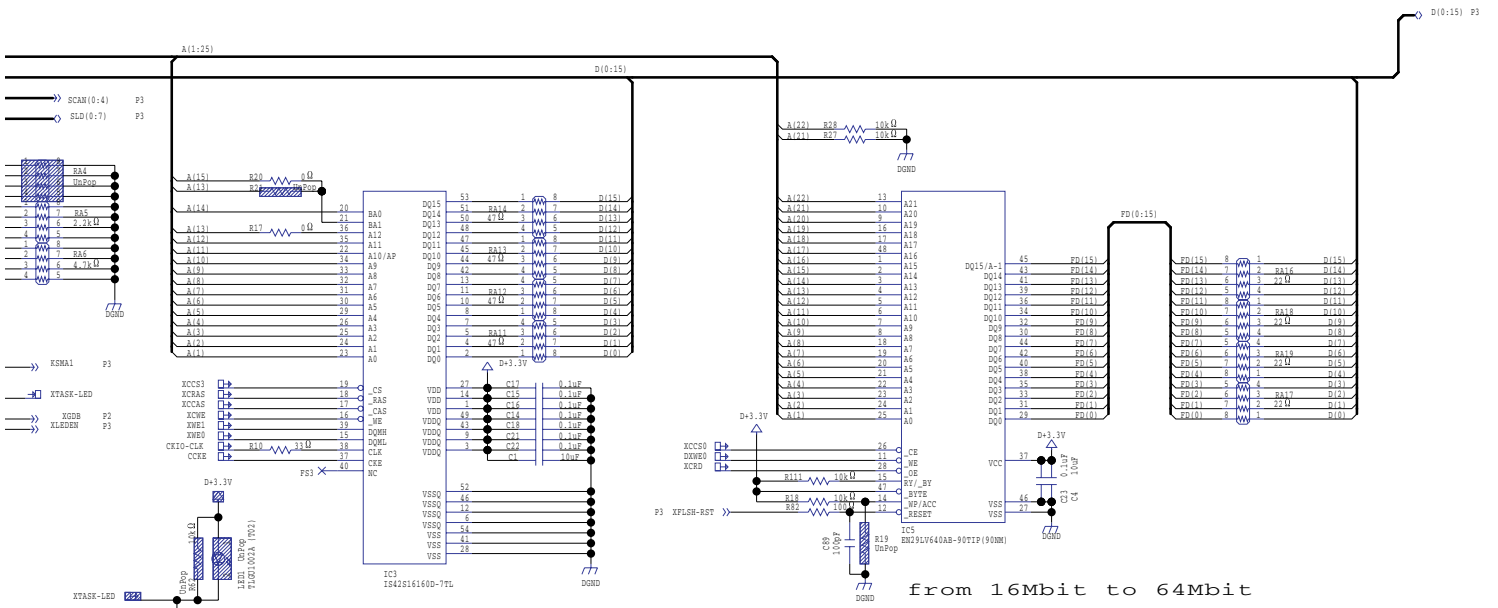
# Circuit Board (Main Board)





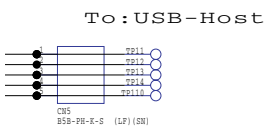
# Circuit Diagram (Main Board: 1/3)



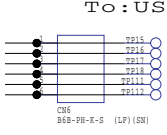


from 64M to 256Mbit

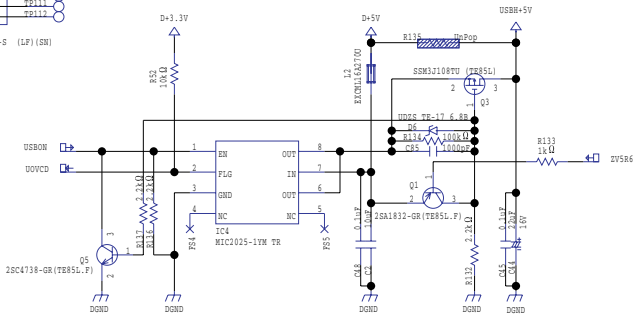
from 16Mbit to 64Mbit



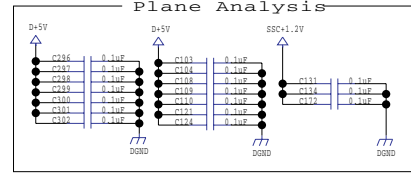
To:USB-Host



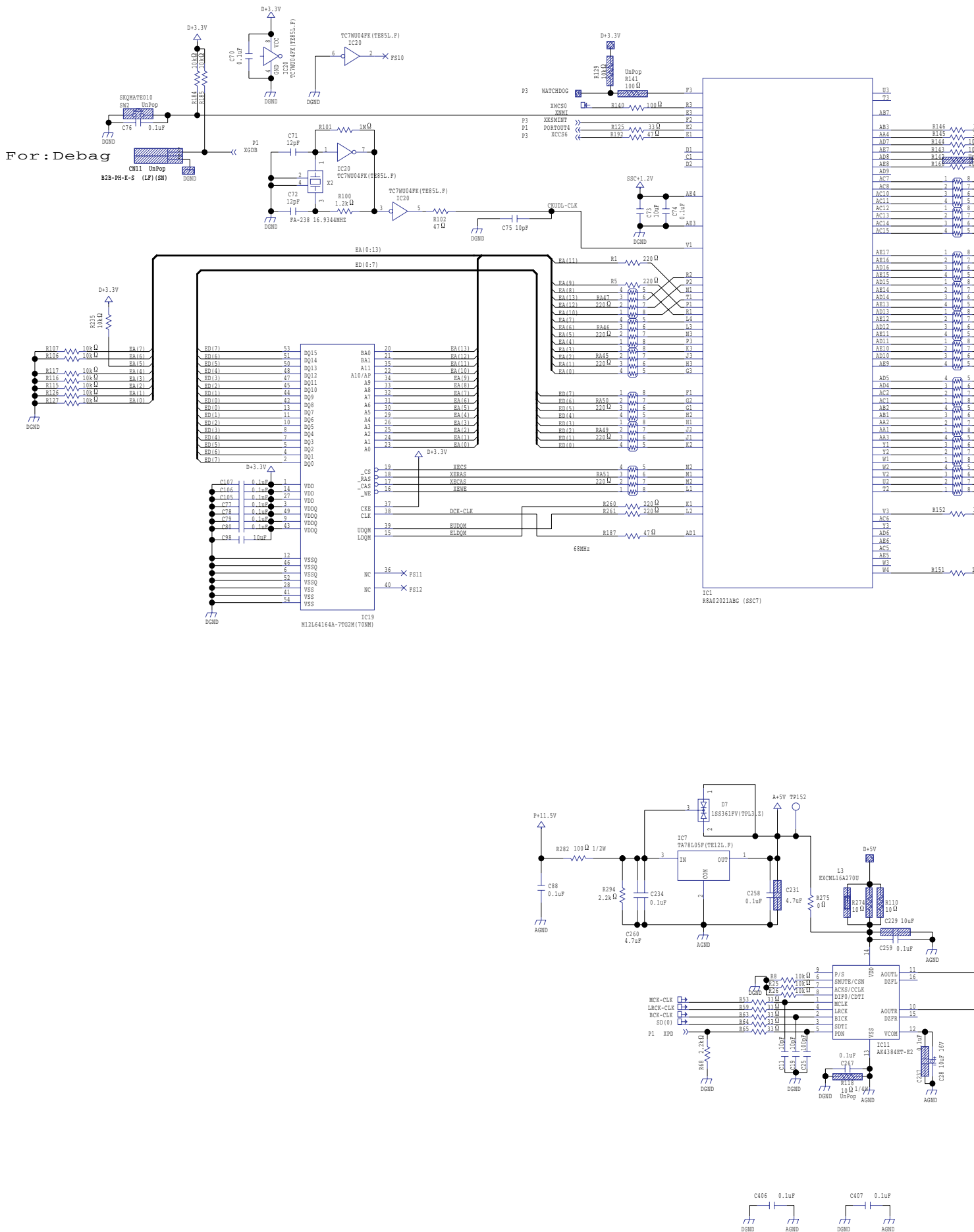
To:USB-Function



Plane Analysis



# Circuit Diagram (Main Board: 2/3)



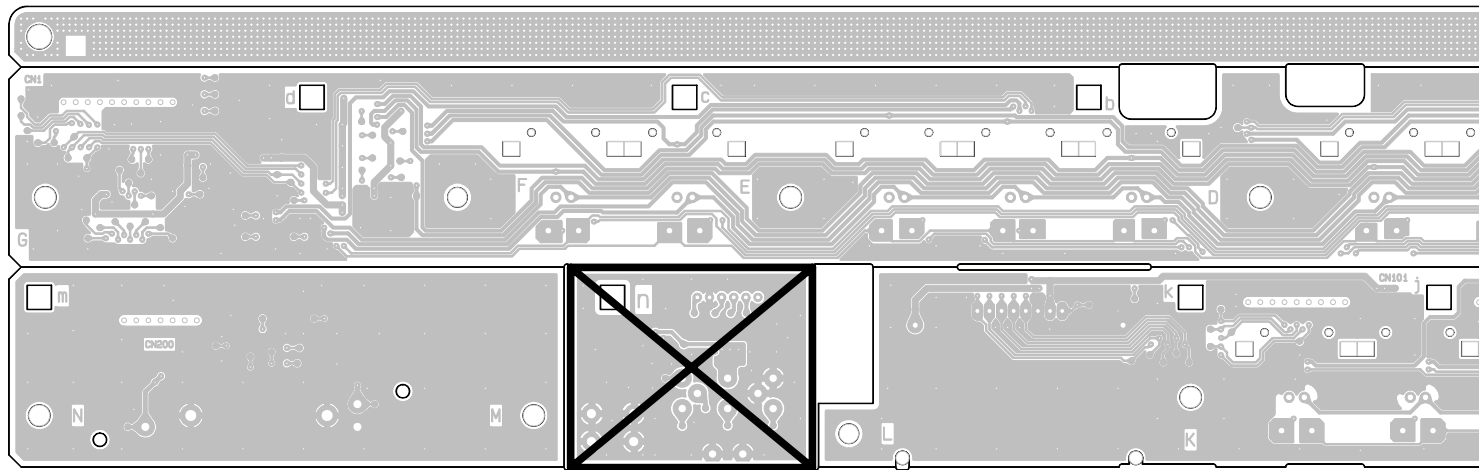
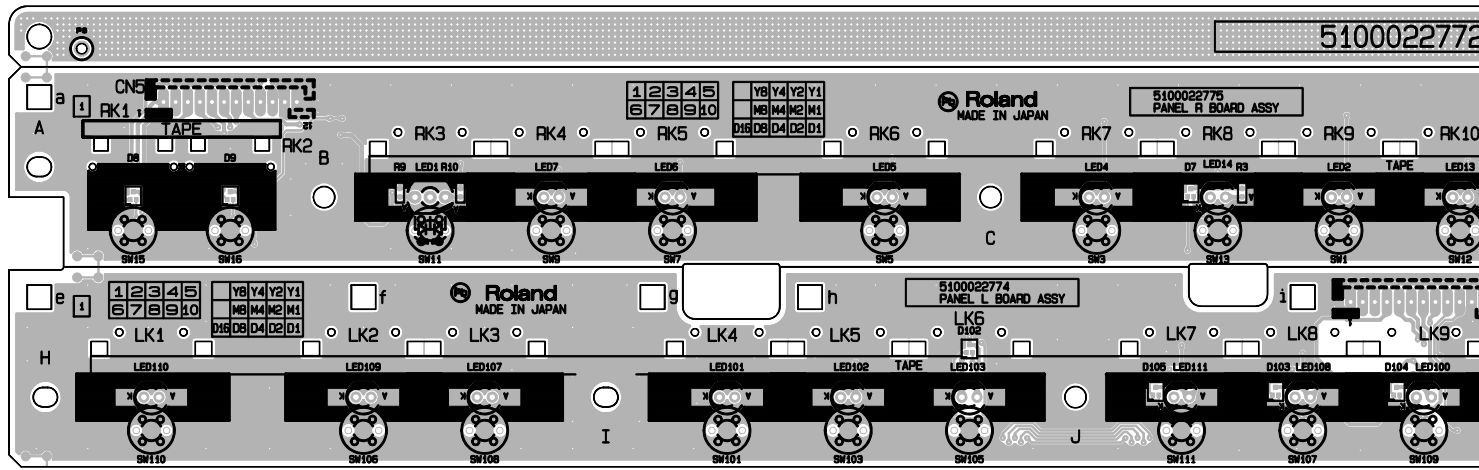


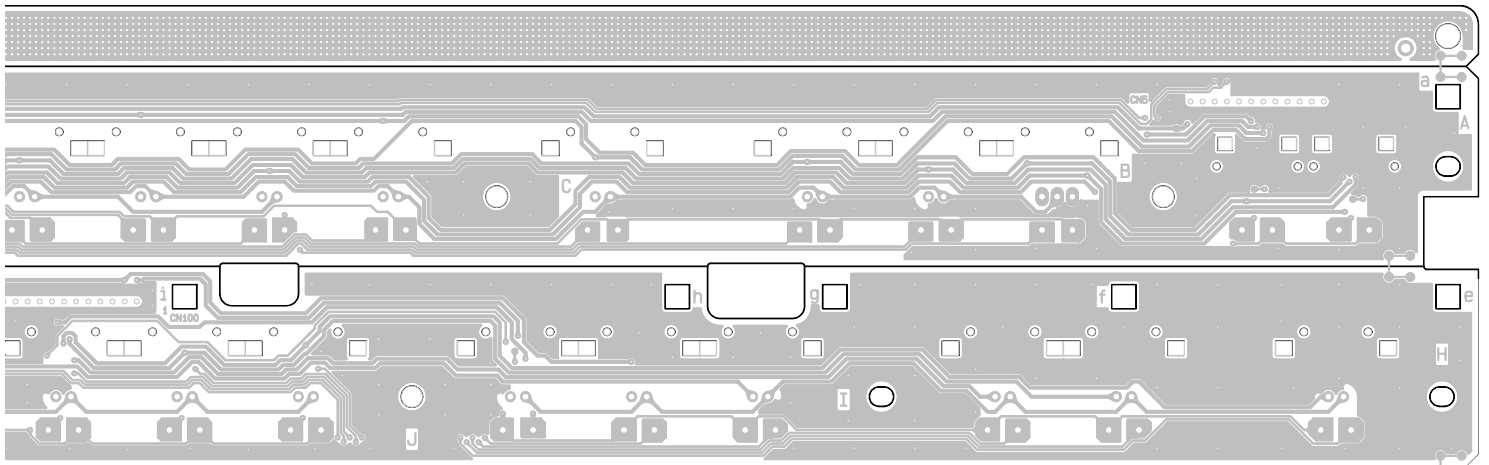
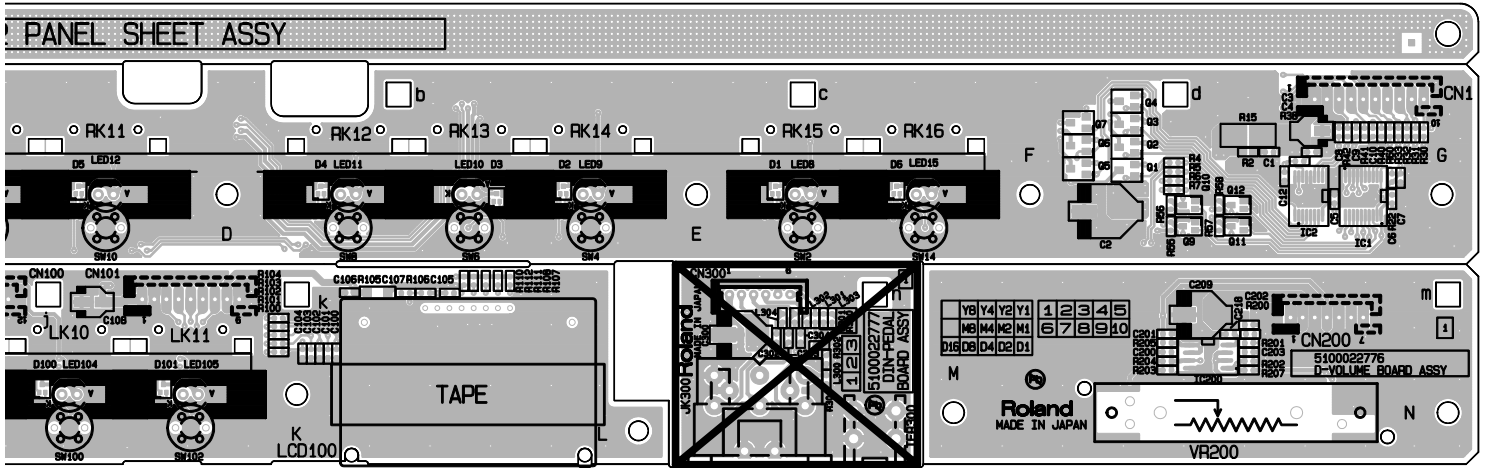




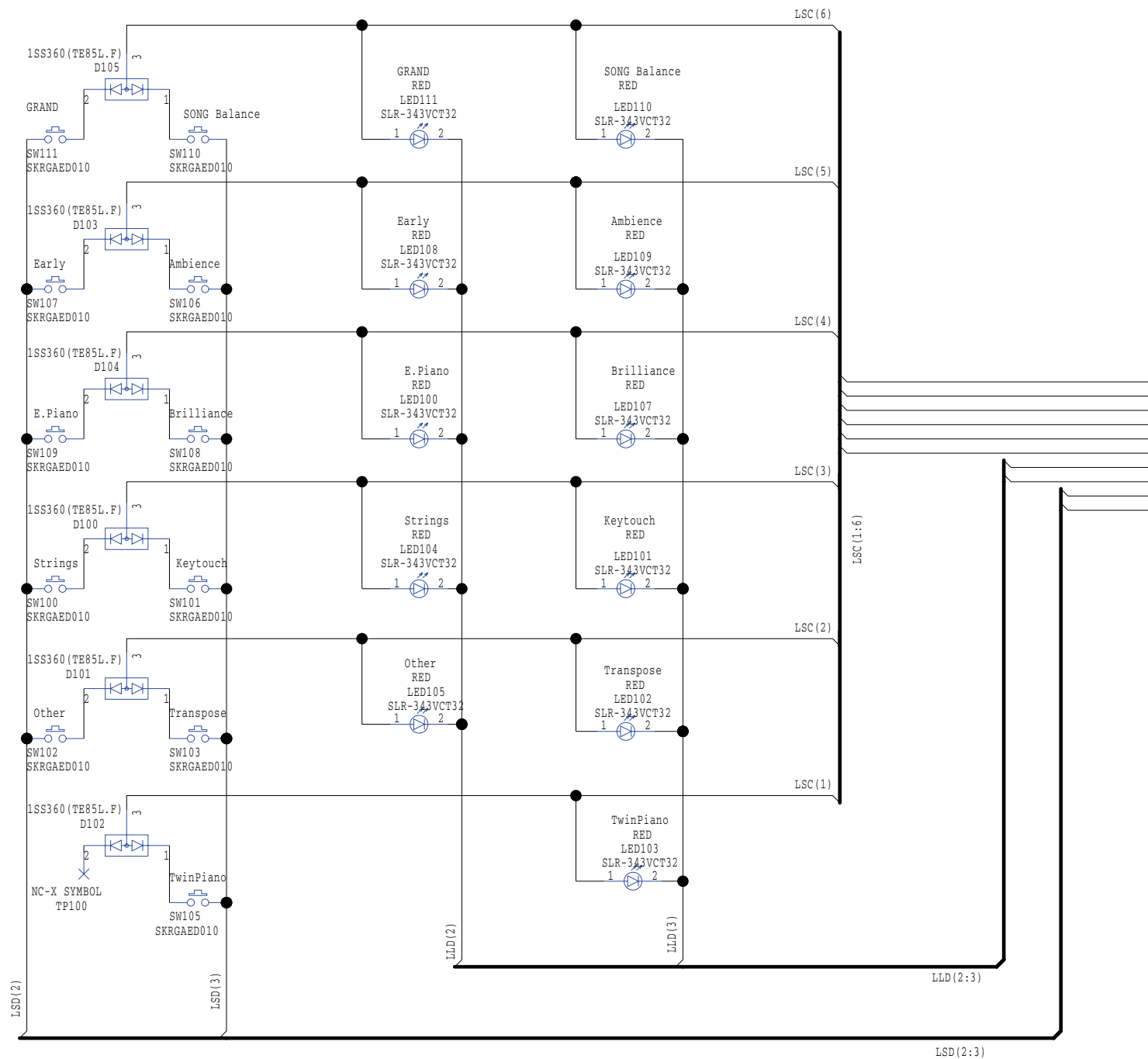


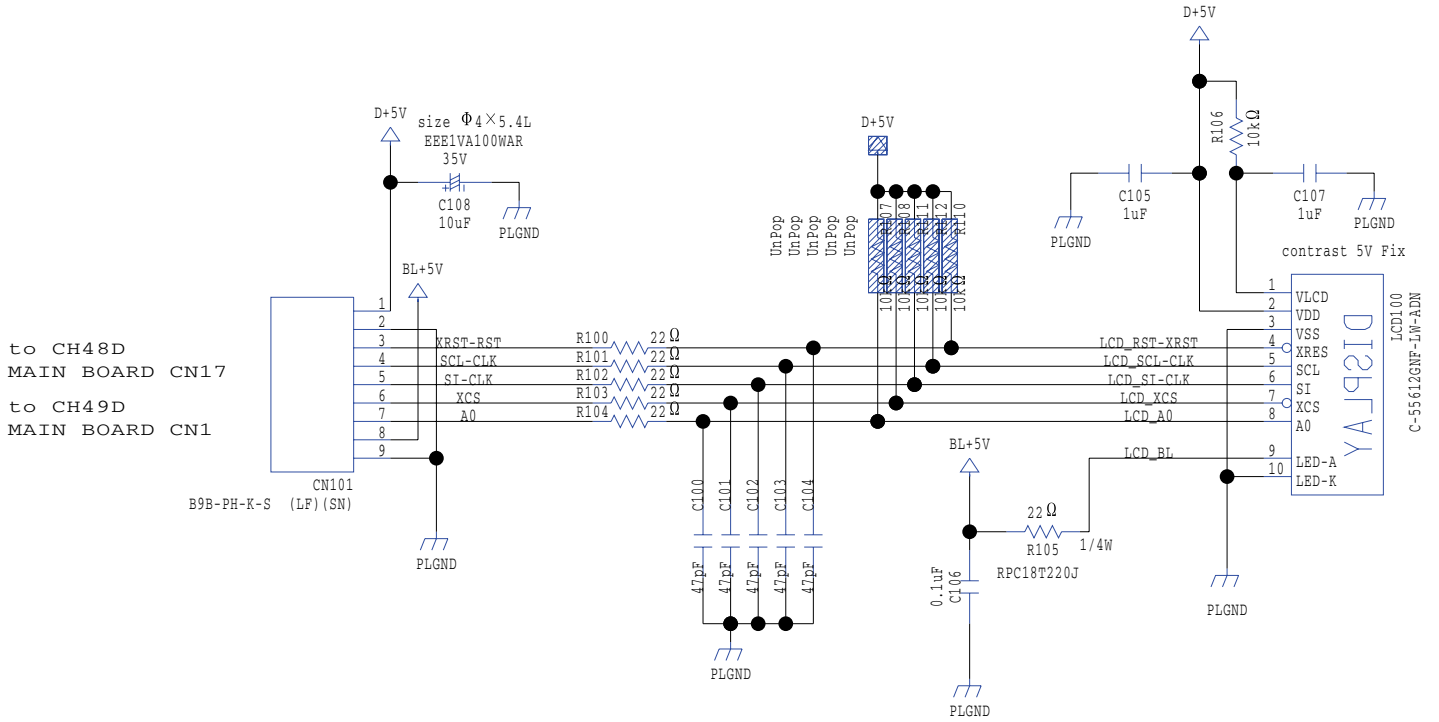
# Circuit Board (Panel L/R, D-Volume Board)



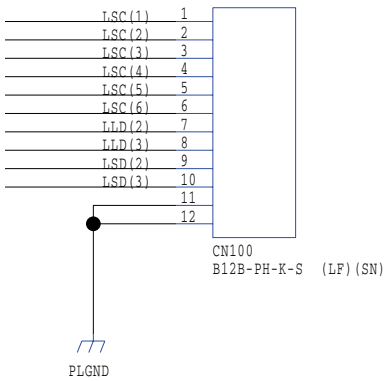


# Circuit Diagram (Panel L Board)

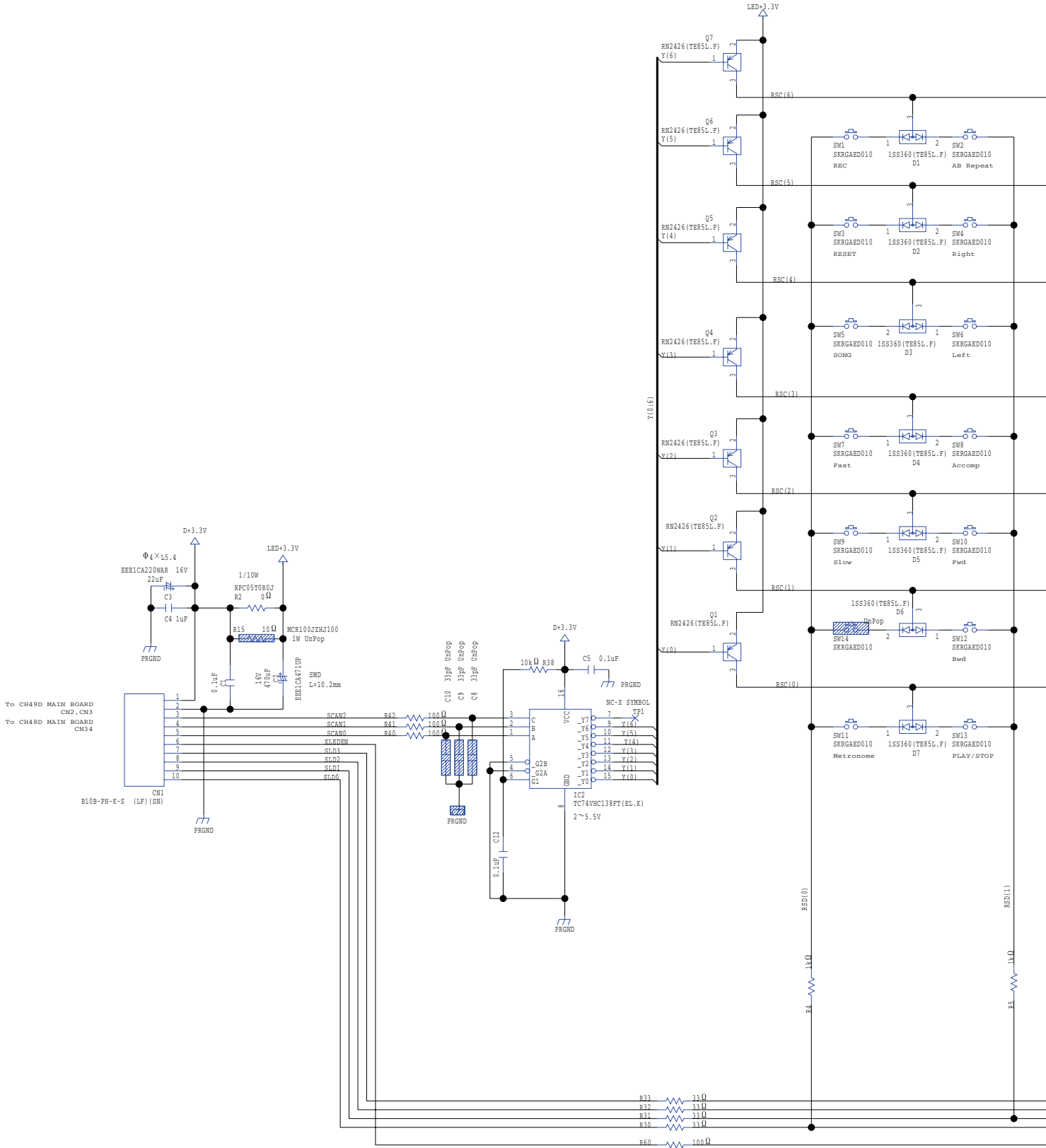




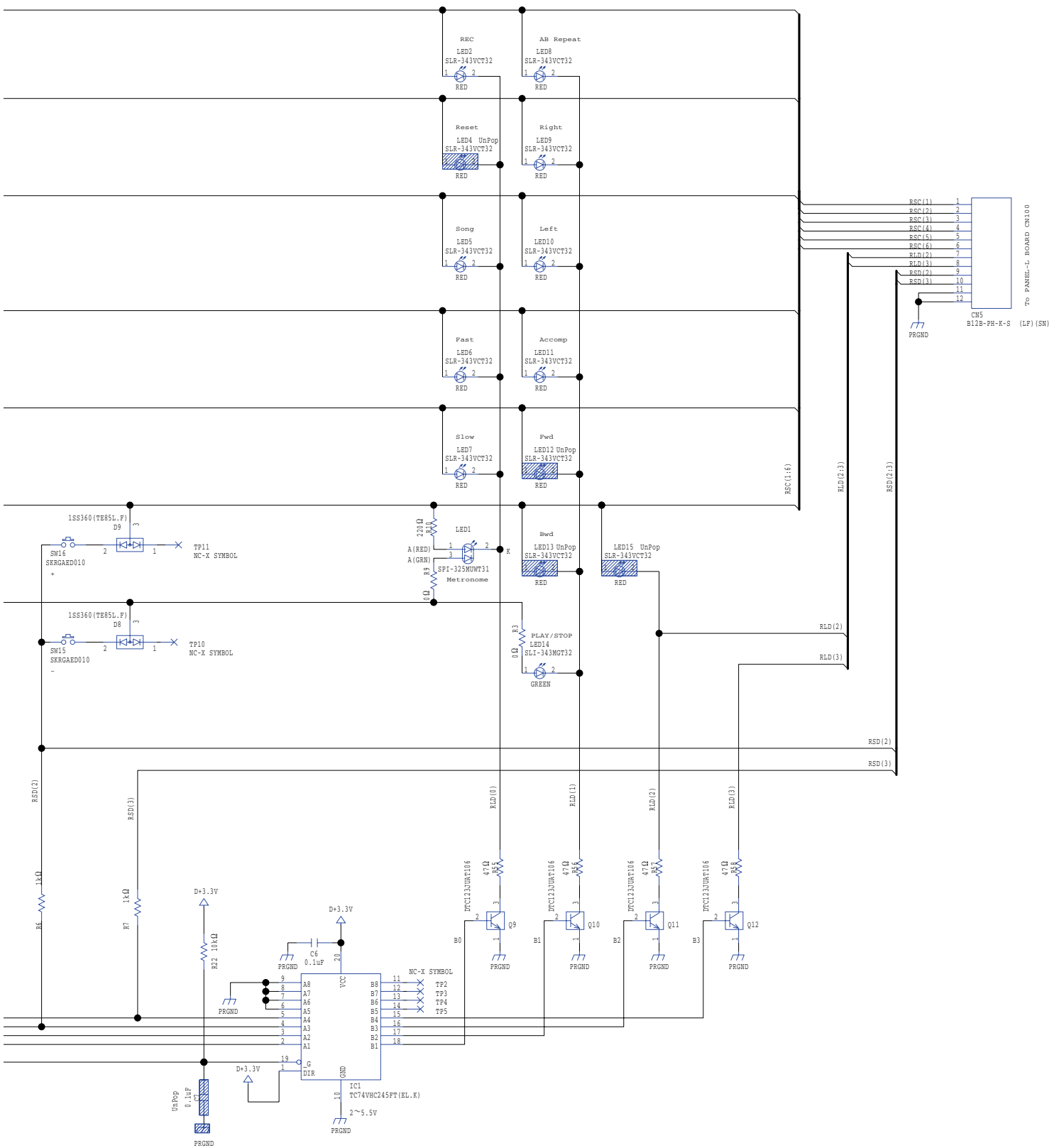
to PANEL-R BOARD CN5



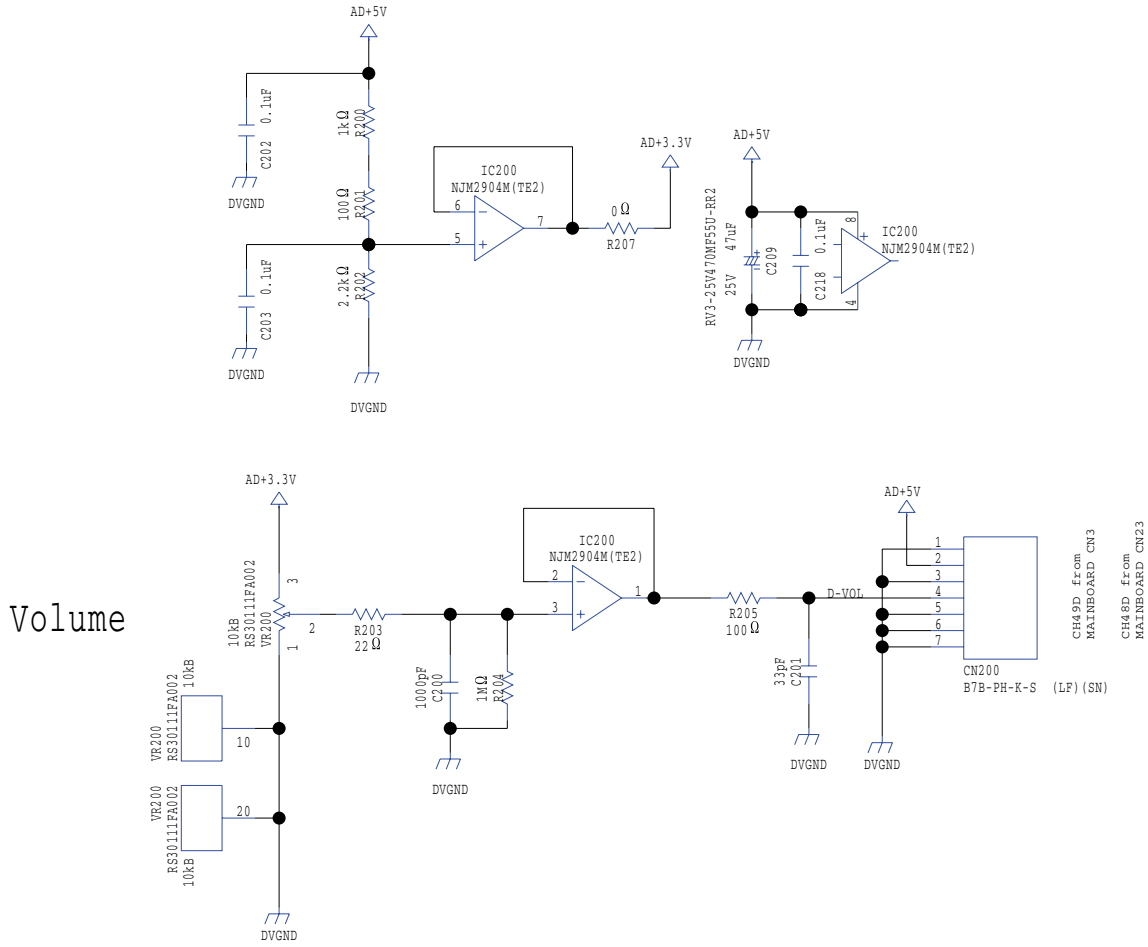
# Circuit Diagram (Panel R Board)





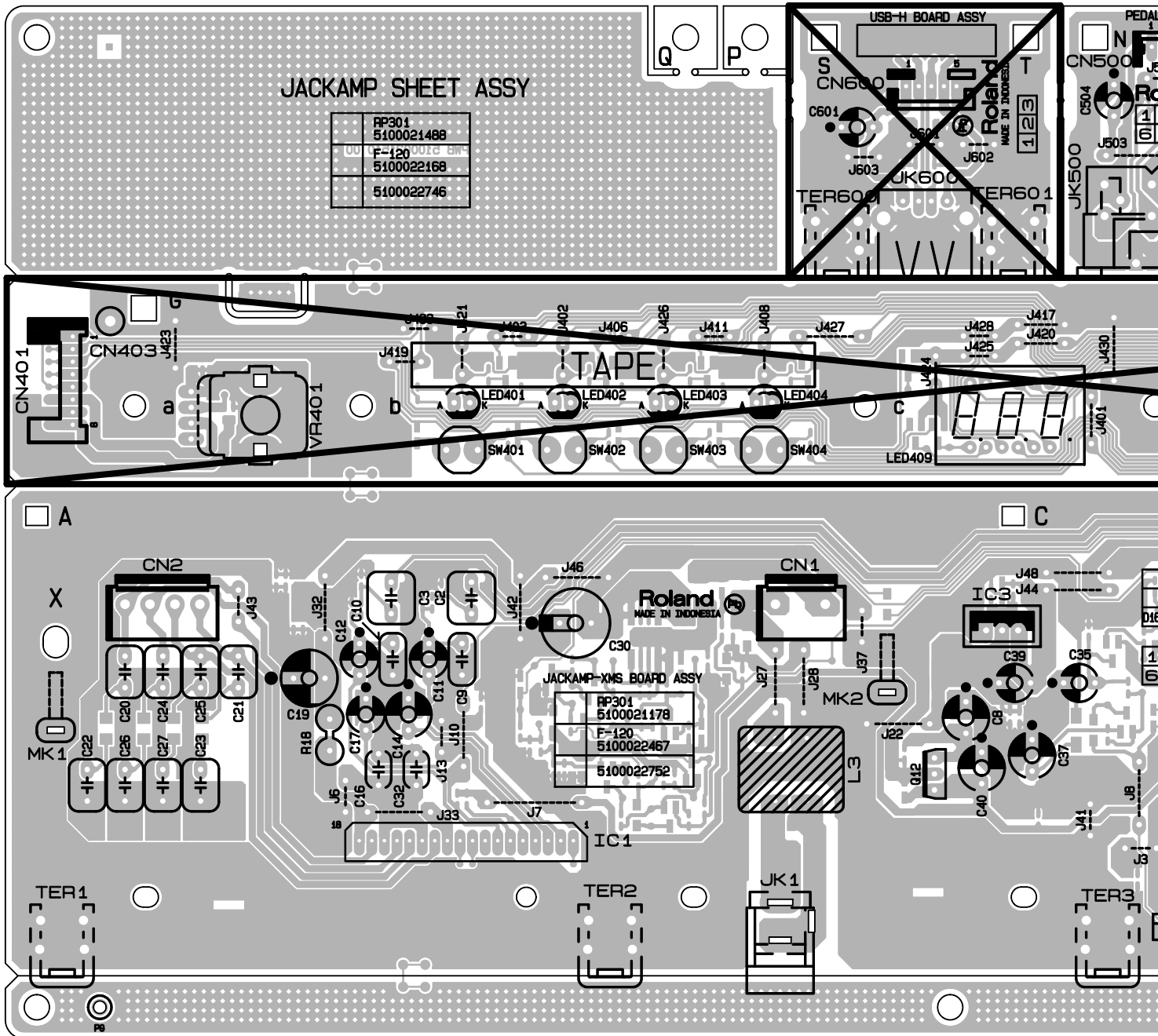


# Circuit Diagram (D-Volume Board)



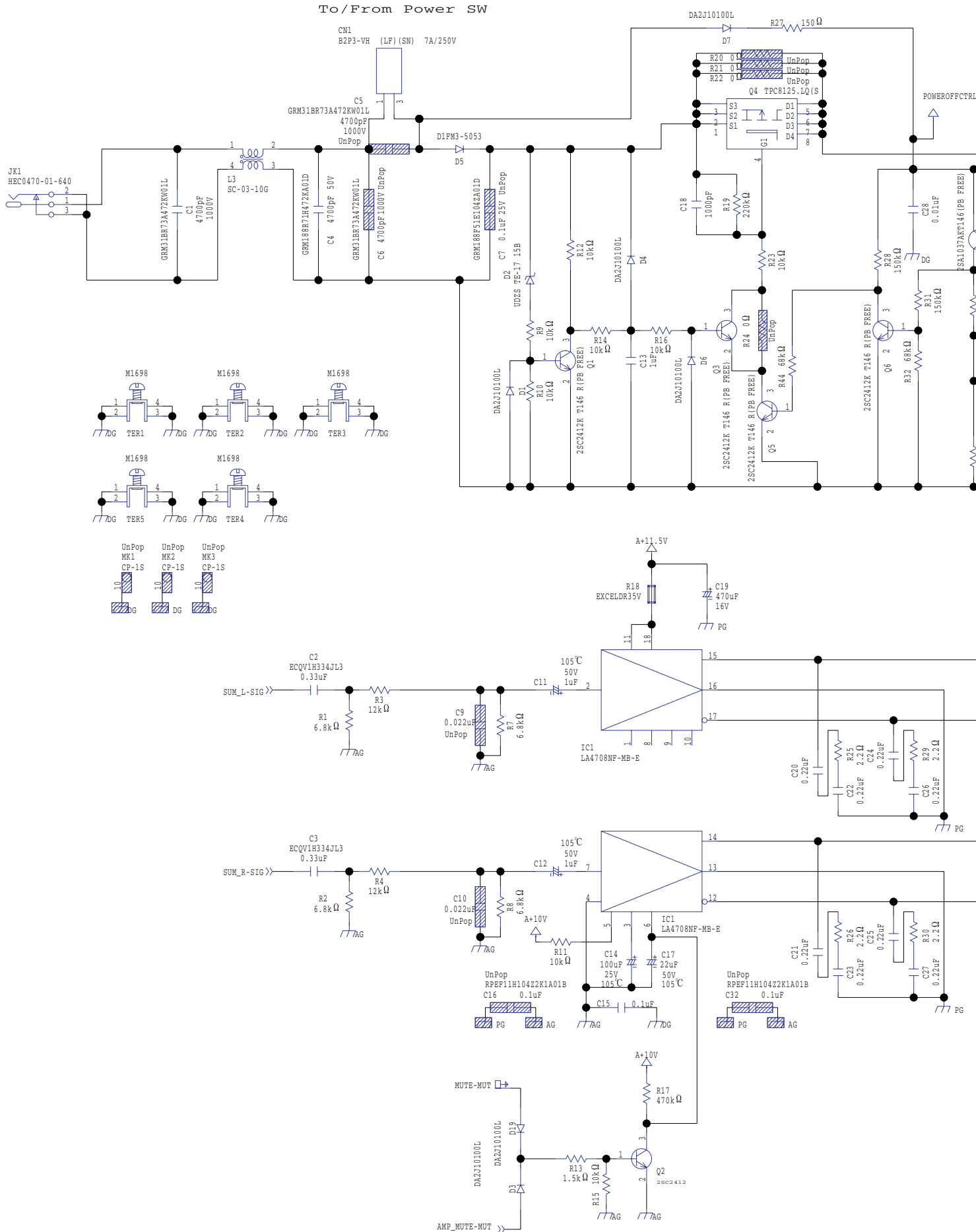


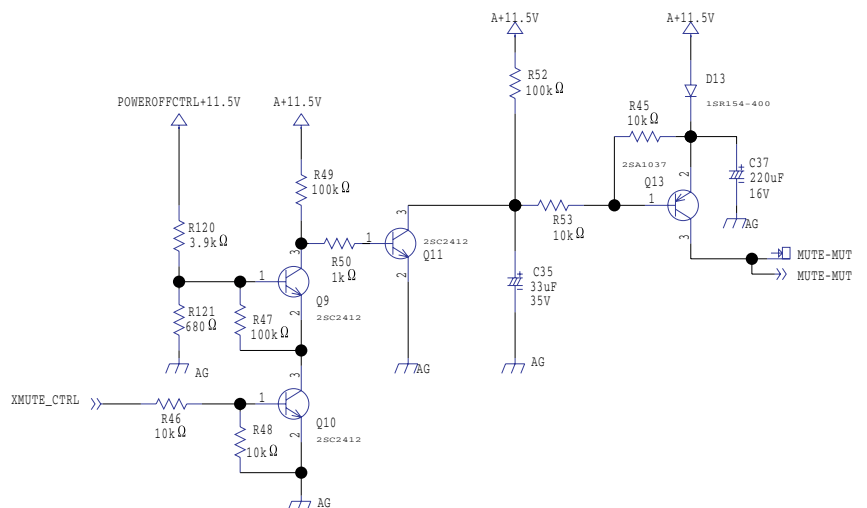
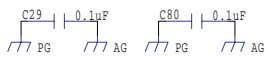
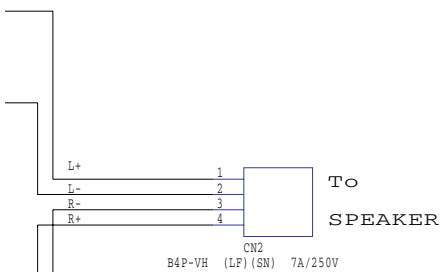
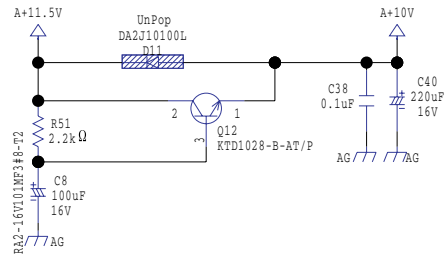
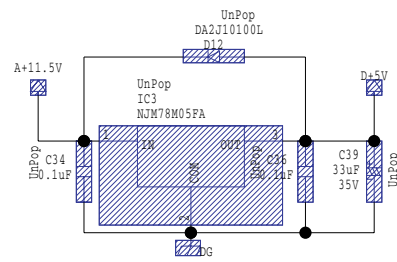
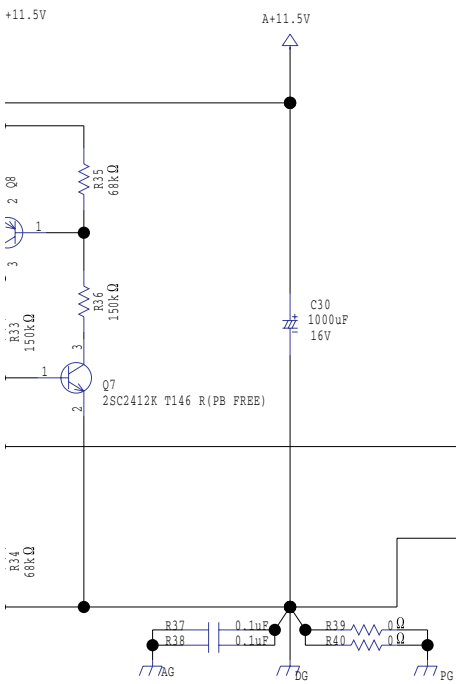
# Circuit Board (JACKAMP-XMS, Phones, Pedal JK Board)



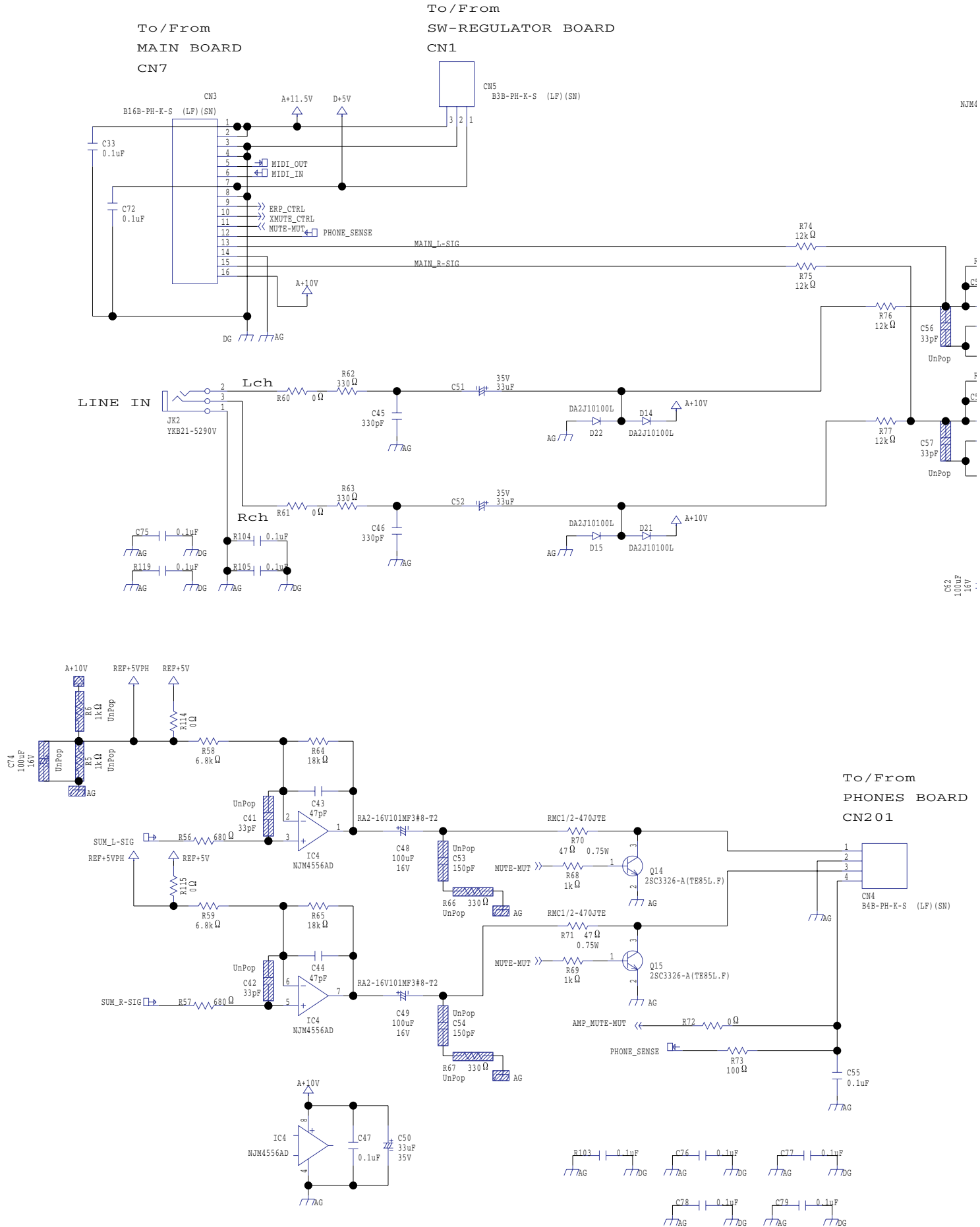


# Circuit Diagram (JACKAMP-XMS Board: 1/2)

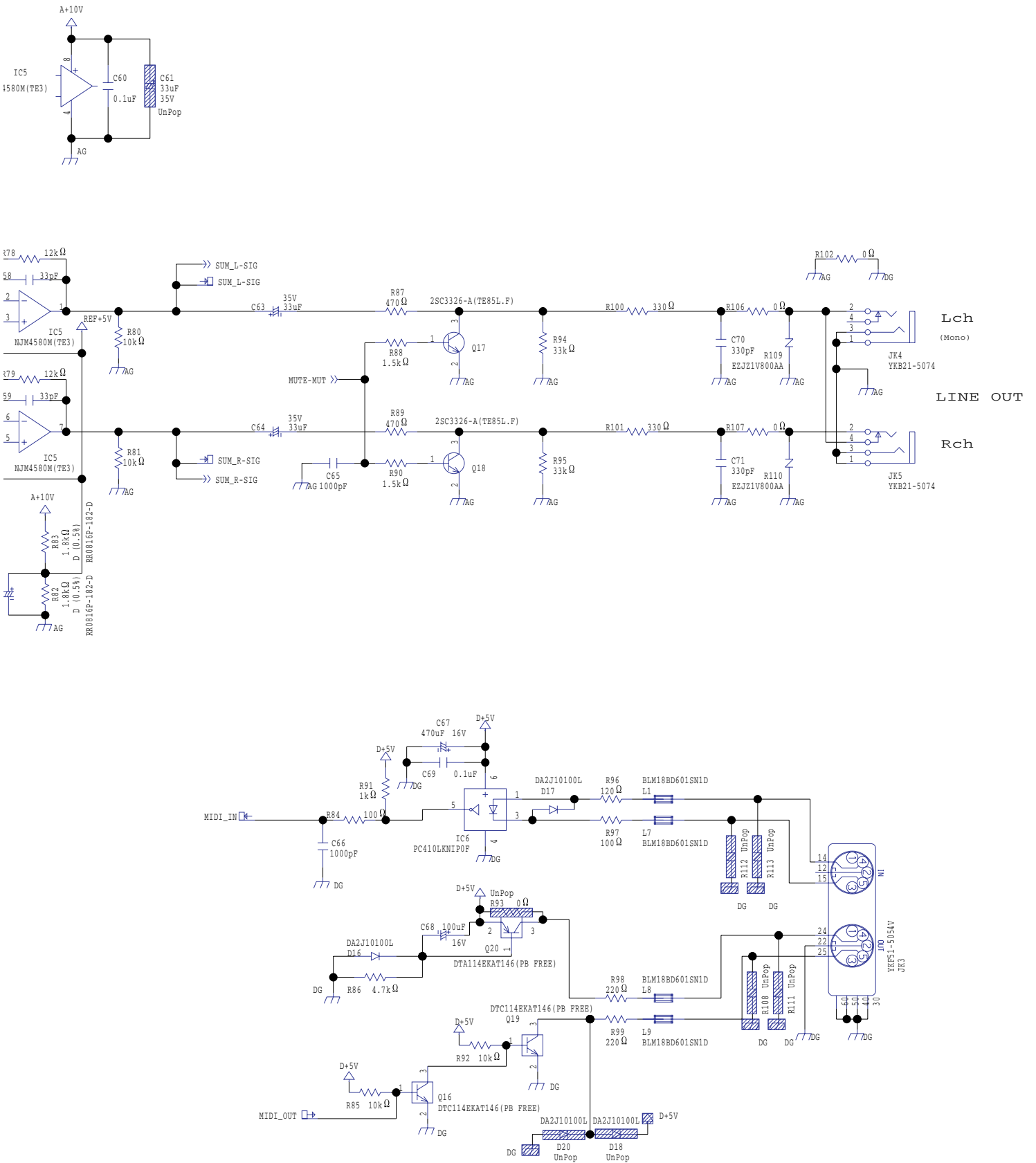




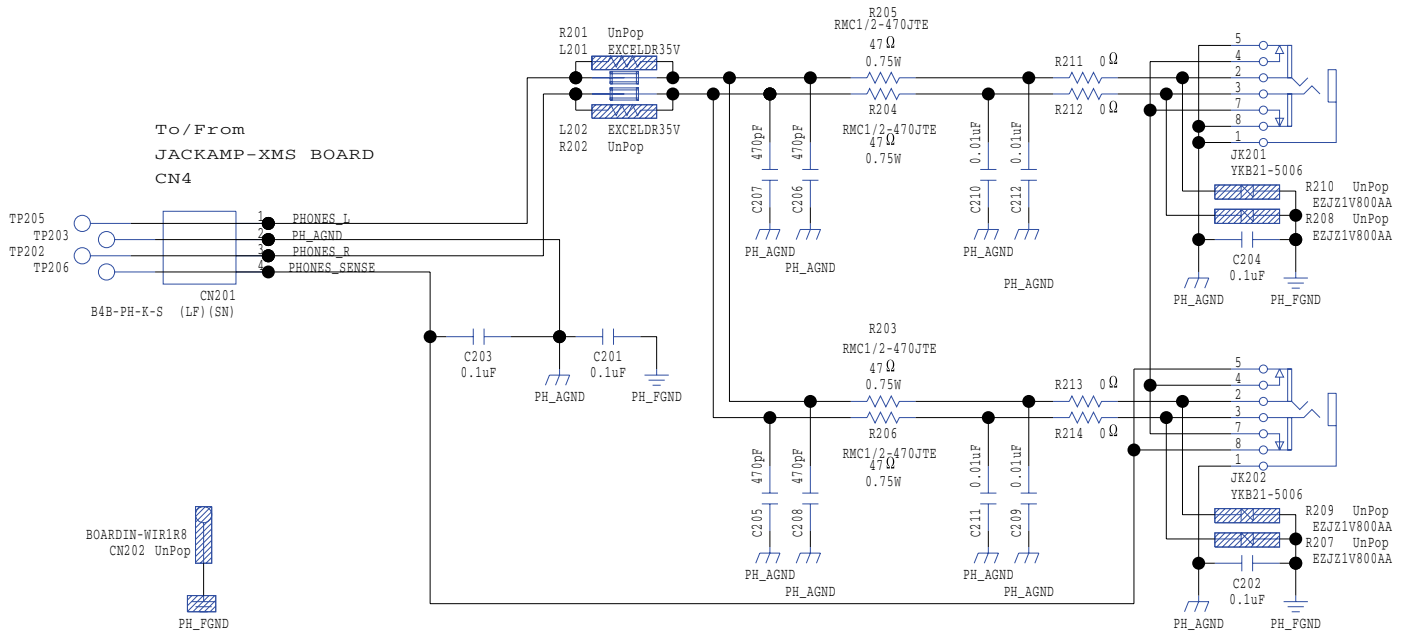
# Circuit Diagram (JACKAMP-XMS Board: 2/2)



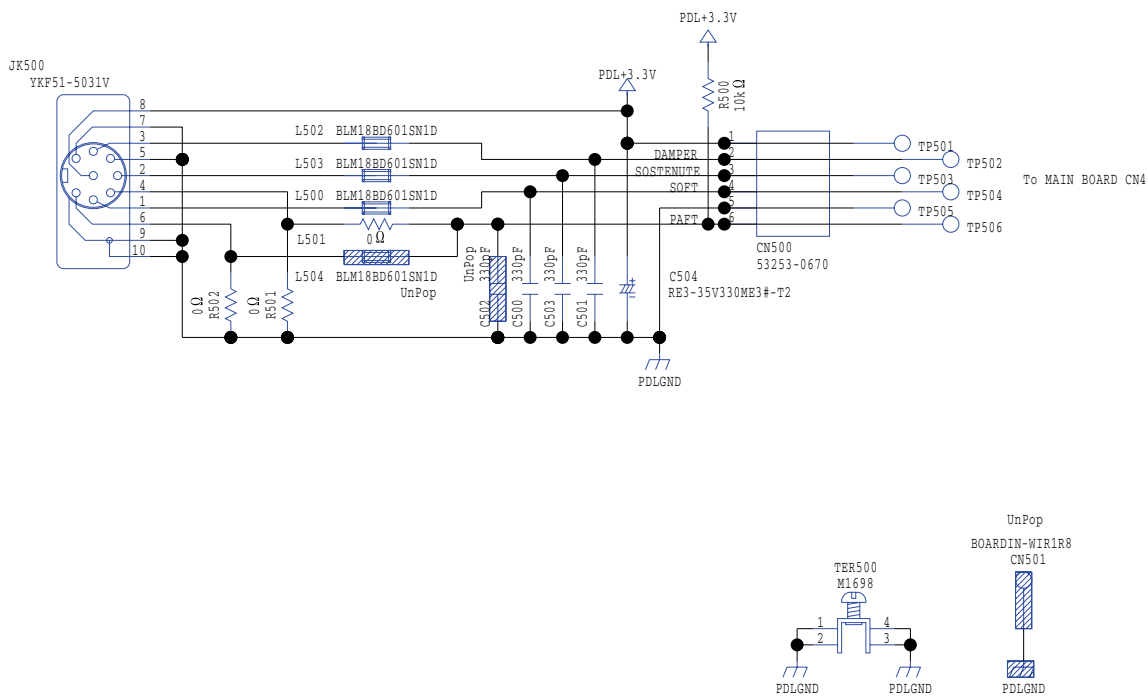




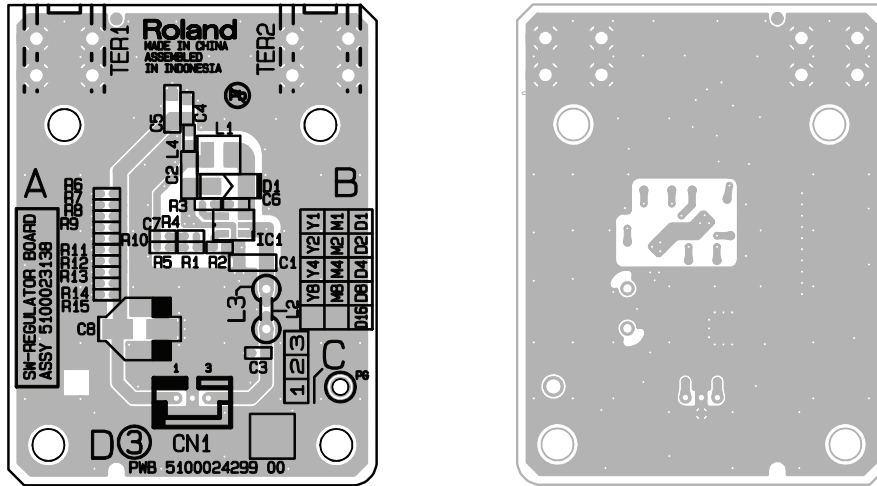
# Circuit Diagram (Phones Board)



# Circuit Diagram (Pedal JK Board)



# Circuit Board (SW-Regulator Board)



# Circuit Diagram (SW-Regulator Board)

