

ELECTRIC VIOLIN

EV-204 / EV205

SERVICE MANUAL



EV-204AM



EV-205CB

■ CONTENTS

SPECIFICATIONS	3
PANEL LAYOUT	4
CIRCUIT BOARD LAYOUT	6
BLOCK DIAGRAM	7
DISASSEMBLY PROCEDURE	8
IC BLOCK DIAGRAM	12
CIRCUIT BOARDS	12
INSPECTIONS	13
.....	14
TUNING	15
OVERALL CIRCUIT DIAGRAM	
PARTS LIST	

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

NV 011636

EV-204: 20020420-129000
EV-205: 20020420-145000



YAMAHA

HAMAMATSU, JAPAN

0.944K-019 M ① Printed in Japan 2002.05

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.

■ WARNING

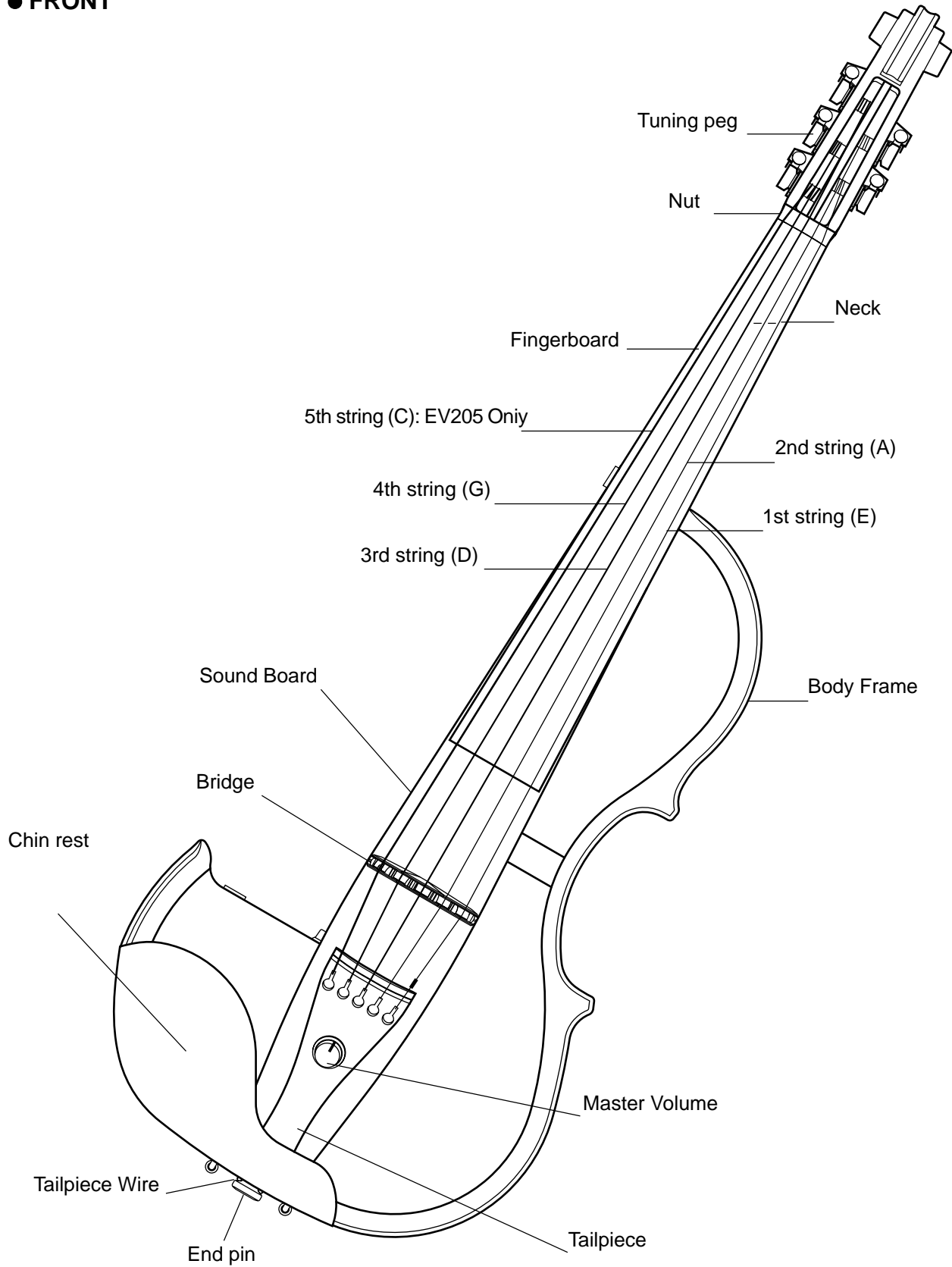
Components having special characteristics are marked \triangle and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

Neck	Hard Maple
Fingerboard/Nut	Ebony
Bridge	Single Unit with Pickup
Body Frame	Maple
Sound Board	Maple
Chin Rest	Ebony
Tailpiece	EV-204 : Ebony (4 hole type) EV-205 : Ebony (5 hole type)
Tuning Pegs	Gear Type
Strings	EV-204 : YAMAHA strings (EV4S) EV-205 : YAMAHA strings (EV5S)
Pickup	Individual high power output pickup for each string
Connectors/Controls	<ul style="list-style-type: none"> • MODE Select Switch (CONTROLLED (Active)/DIRECT (Passive)) • MASTER VOLUME • LINE OUT (with the power "ON" and a cable connected) • OUTPUT IMPEDANCE: LINE OUT 0~500kΩ • Pickup Level Controls (Available to 'CONTROLLED' mode) EV-204 : 4ch Mixer & Main Volume EV-205 : 5ch Mixer & Main Volume • PHONES (POWER ON when a plug is inserted.) • PHONES VOLUME
Power Supply	6F22 (S-006P) 9V battery x1
Battery Life	Used with headphones (MODE=CONTROLLED, Continuous Use)Manganese battery: approximately 6.5 hours Alkaline battery: approximately 15 hours Used without headphones Manganese battery: approximately 8 hours Alkaline battery: approximately 18 hours
String Length	328 mm (12-15/16")
Dimensions	EV-204 : 589 (L) x 206 (W) x 126 (H) mm 23-3/16" (L) x 8-1/8" (W) x 4-15/16" (H) EV-205 : 601 (L) x 206 (W) x 132 (H) mm 23-11/16" (L) x 8-1/8" (W) x 5-3/16" (H)
Weight (with battery)	EV-204: 700g (1 lbs. 8 oz.) EV-205: 717g (1 lbs. 9 oz.)
Color	AMBER, PEARL RED, COSMIC BLUE

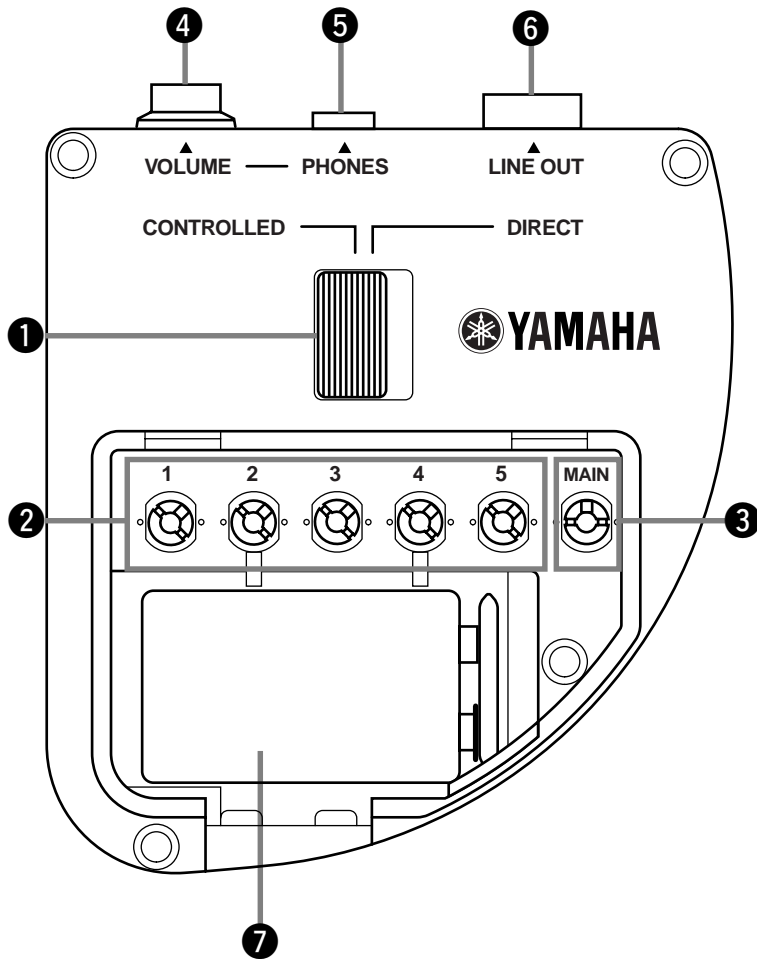
■ PANEL LAYOUT

● FRONT

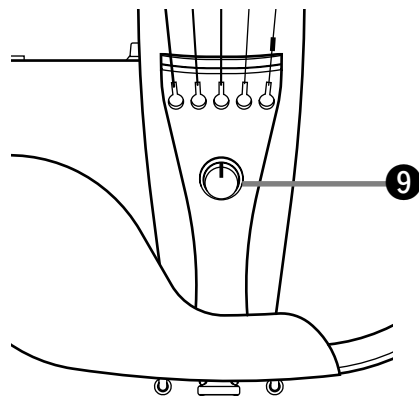
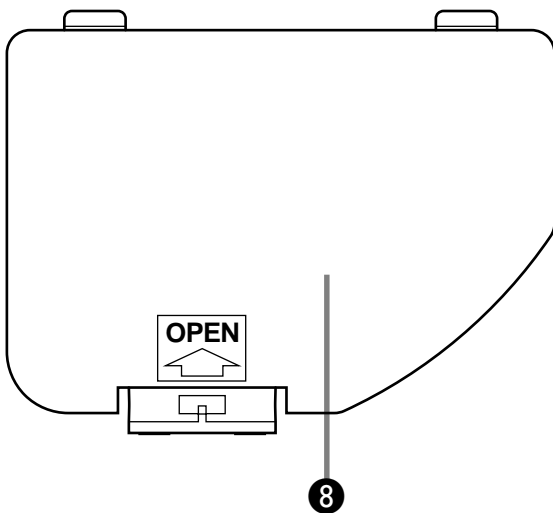


The EV-205 is the illustration.

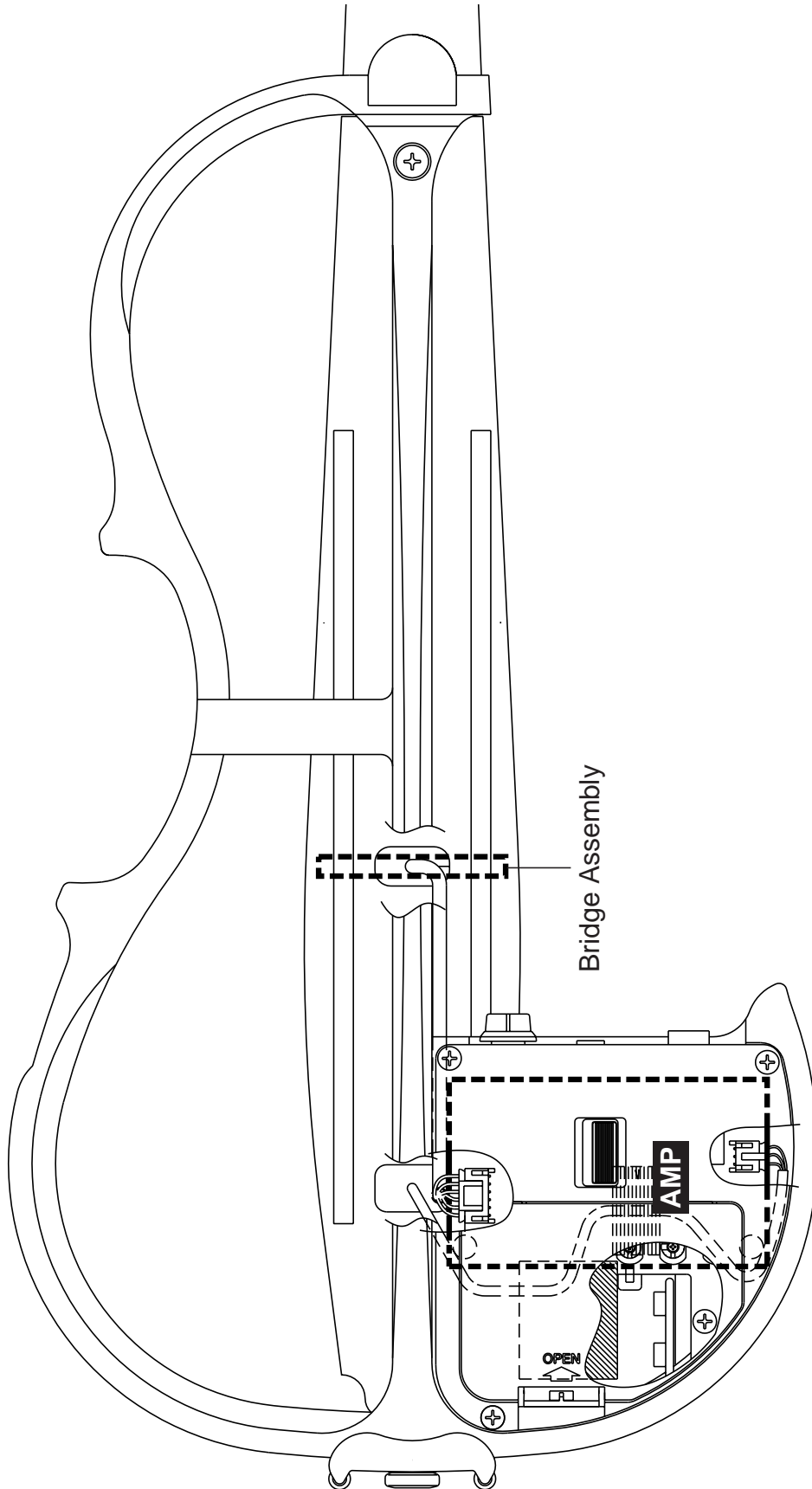
● CONTROL PANEL side



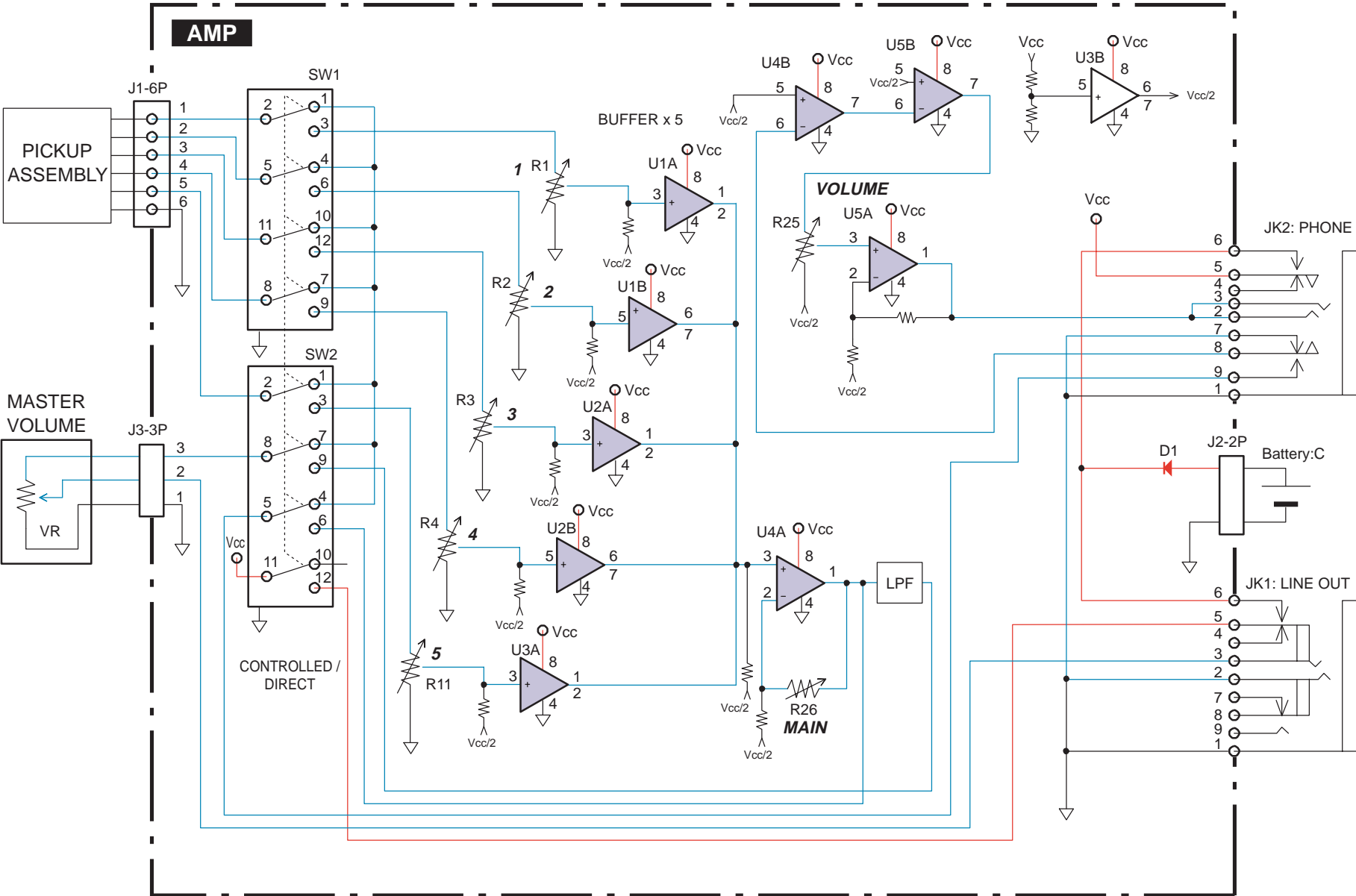
- ❶ Mode Select Switch [CONTROLLED / DIRECT]
- ❷ Pickup Level Control 1-5 (located inside)
- ❸ Pickup Level Control MAIN (located inside)
- ❹ PHONES VOLUME
- ❺ PHONES jack: Stereo mini type
- ❻ LINE OUT jack: Standard phone type
- ❼ Battery: 6F22(S-006P) 9V
- ❽ Battery Case Cover: 6F22(S-006P) 9V
- ❾ MASTER VOLUME



■ CIRCUIT BOARD LAYOUT



■ BLOCK DIAGRAM

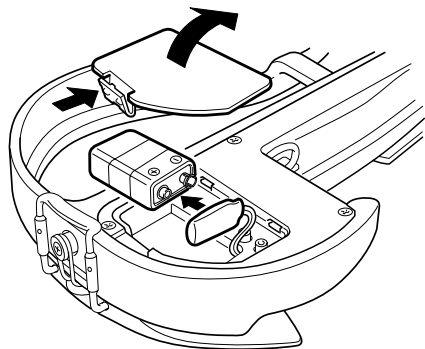


■ DISASSEMBLY PROCEDURE

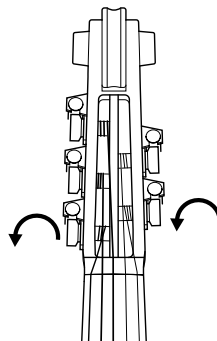
PREPARATION

Before disassembling the unit, confirm the following items.

- Remove the chin rest.
- Remove the battery from the battery box. (Fig.1)
- Loosen all the strings and remove them. (Fig.2)



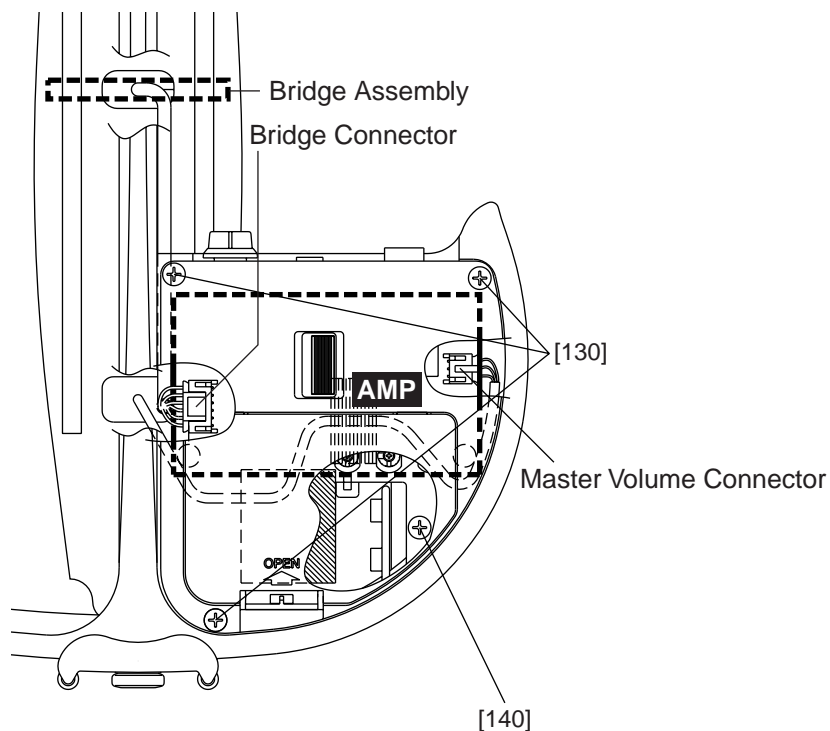
(Fig. 1)



(Fig. 2)

1. Amplifier Unit (Time required: about 1 min)

- 1-1 Open the battery cover, and remove the screw marked [140]. (Fig.3)
- 1-2 Remove the three (3) screws marked [130].
The amplifier unit can then be removed. (Fig.3)
- 1-3 Remove the bridge connector and the master volume connector from the AMP circuit board.
(Fig.3)



[130]: Oval Head Screw 3.0X25 MFZN2BL (V8829900)
 [140]: Oval Head Screw 3.0X16 MFZN2BL (V8830000)

(Fig. 3)

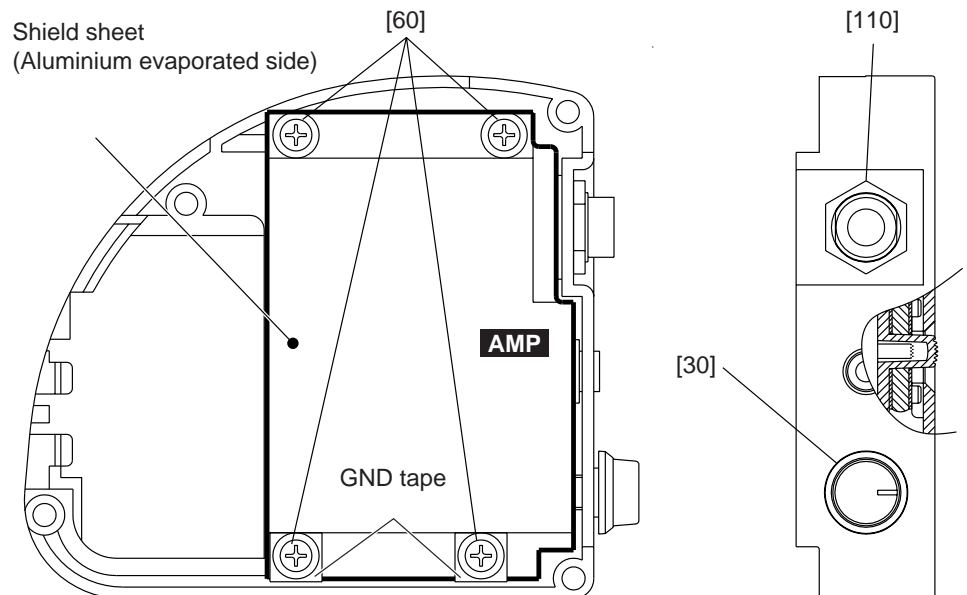
2. AMP Circuit Board (Time required: about 3 min)

- 2-1 Remove the amplifier unit. (See procedure 1)
- 2-2 Remove the four (4) screws marked [60]. (Fig.4)
- 2-3 Remove the hexagonal nut marked [110]. (Fig.4)
- 2-4 Remove the VR knob marked [30].

The AMP circuit board can then be removed.
(Fig.4)

- Note:**
- When reinstall the AMP circuit board, bundle the shield sheet (GND tape attached) by the same screw as shown in the illustration. (Fig.4)
 - When reinstall the slide button marked [C20] and the slider marked [C100], set the two slide switches on the AMP circuit board to the same direction. (Fig.5)

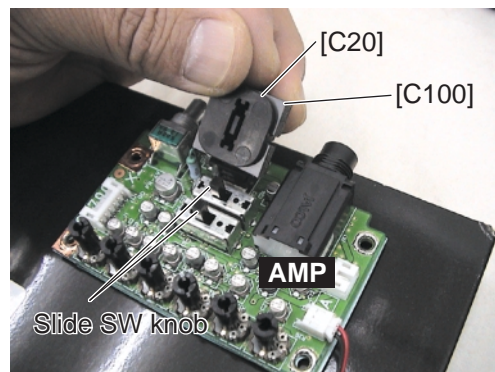
Apply the GND tape to aluminium evaporated side of the shield sheet, and fold it back to apply to ground pattern on the component side of the AMP circuit board



Fold back and apply to ground pattern on the component side of the AMP circuit board.

- [30]: Knob ABS (VP224600)
- [60]: PWHP Tapping Screw 3.0X8-8 MFZN2Y (VA122000)
- [110]: Hexagonal Nut 12.0 MFZN2BL (VB508600)

(Fig. 4)



(Fig. 5)

3. Tailpiece Assembly (Time required: about 4 min)

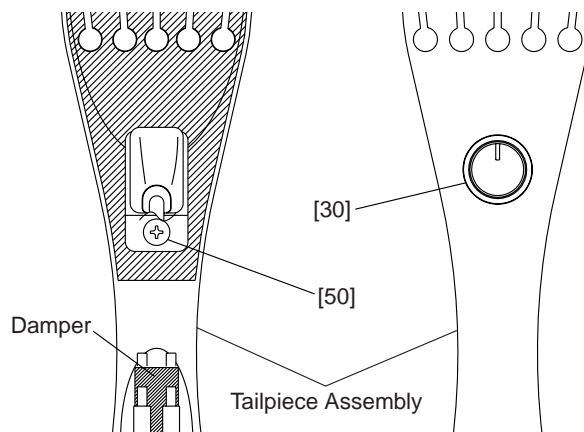
- 3-1 Remove the amplifier unit. (See procedure 1)
- 3-2 Remove the connector assembly from the AMP circuit board.

The tailpiece assembly can then be removed. (Fig.6)

4. Volume Assembly (Time required: about 5 min)

- 4-1 Remove the tailpiece assembly. (See procedure 3)
- 4-2 Remove the screw marked [50]. (Fig.6)
- 4-3 Remove the VR knob marked [30].

The volume assembly can then be removed. (Fig.6)



[30]: Knob ABS (VP224600)
 [50]: Bind Head Tapping Screw 2.6X5 MFZN2BL (EP620150)

(Fig. 6)

5. Bridge Assembly (Time required: about 4 min)

- 5-1 Remove the amplifier unit. (See procedure 1)
 (Remove the connector assembly from the AMP circuit board.)

- 5-2 Remove the bushing marked [80].

The bridge assembly can then be removed. (Fig.7)



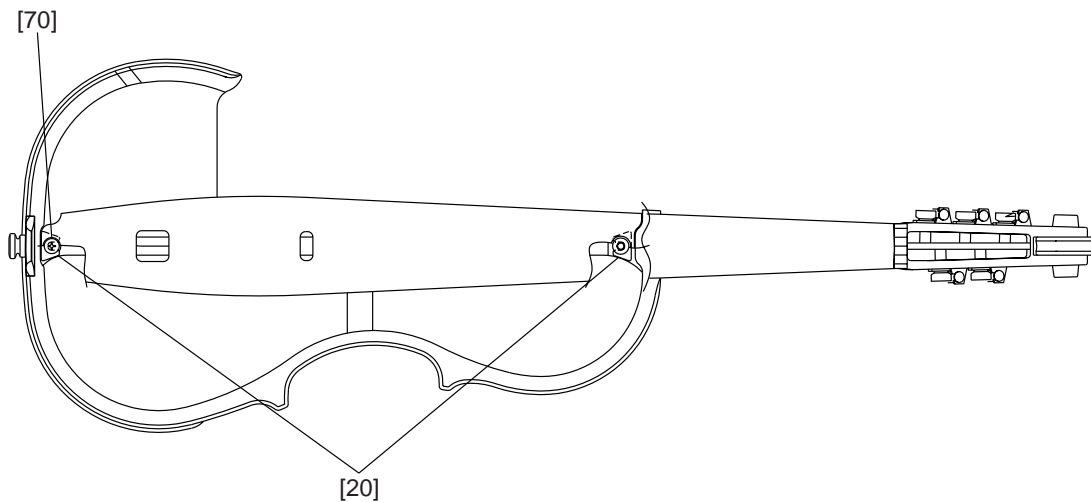
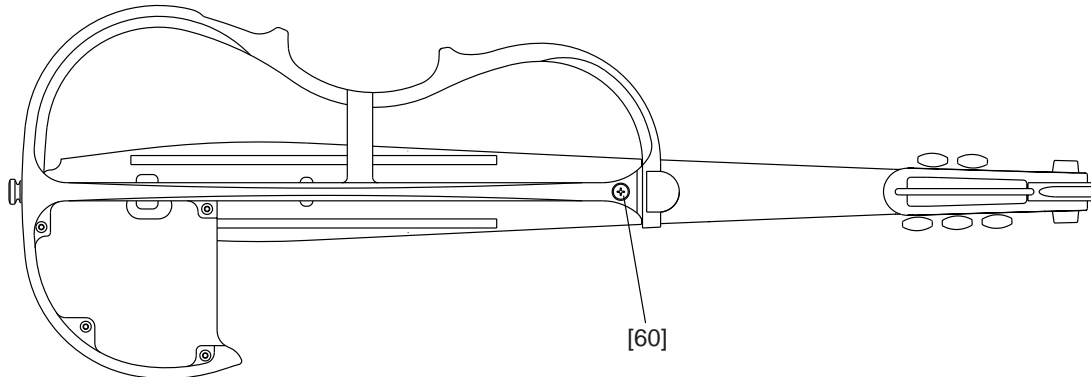
(Fig. 7)

6. Sound Plate Assembly (Time required: about 5 min)

- 6-1 Remove the tailpiece assembly. (See procedure 3)
- 6-2 Remove the bridge assembly. (See procedure 5)
- 6-3 Remove the screw marked [60] and the screw marked [70].

The sound plate assembly can then be removed.
(Fig.8)

Note: When remove the sound plate assembly, take care not to lose the two spacers. (Fig.8)



[20]: Spacer (V8768400)

[60]: Bind Head Screw 4.0X30 MFZN2BL (VT229100)

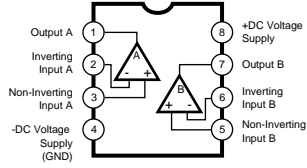
[70]: Bind Head Screw 4.0X20 MFZN2BL (VB403600)

(Fig. 8)

IC BLOCK DIAGRAM

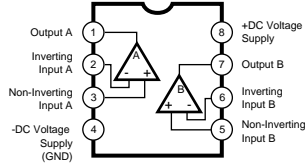
- **NJM4580AV (X2474A00)**
Dual Operational Amplifier

AMP: U1, U2, U3, U4



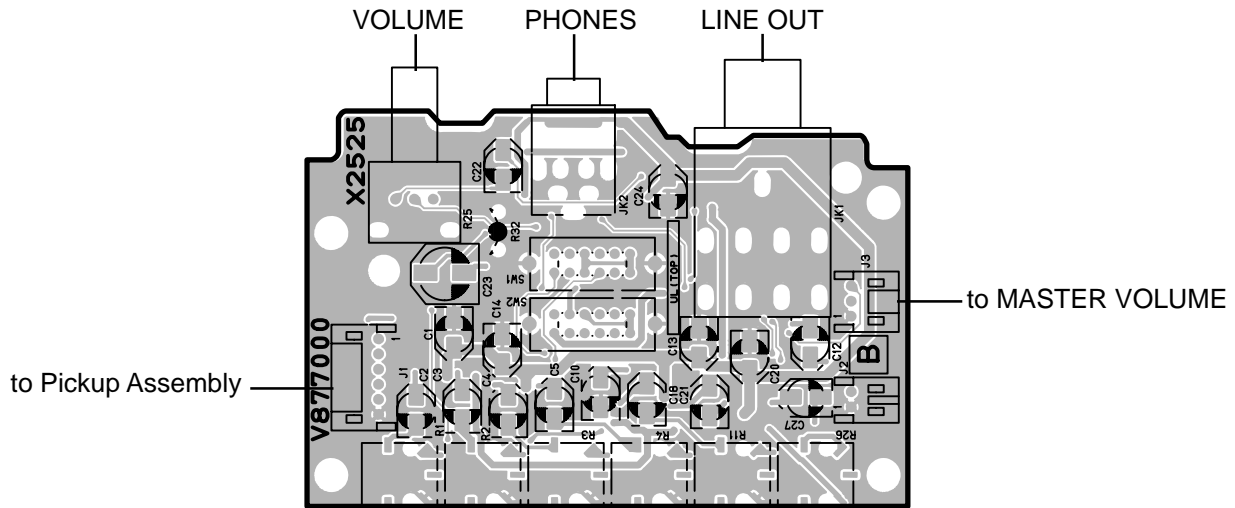
- **NJM4556V (X2473A00)**
Dual Operational Amplifier

AMP: U5

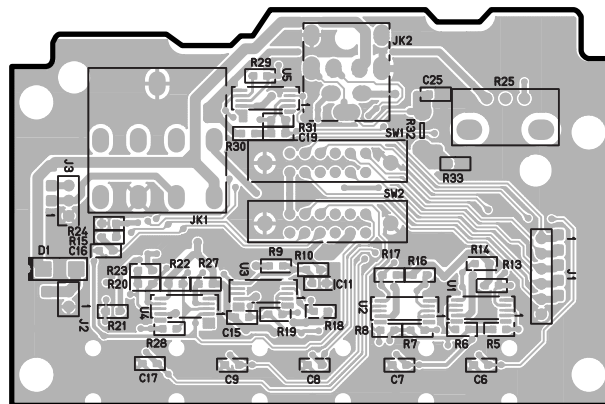


CIRCUIT BOARDS

- **AMP Circuit Board**



Component Side



Pattern Side

AMP: V877000

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

■ INSPECTION

1. Preparation

To check the unit, following jigs are required.

- Headphones
- Guitar Amplifier
- Battery (6F22Y or 6LR61)

Set each control as follows.

- Master Volume: Maximum
- [VOLUME] knob: Center
- MODE select switch: DIRECT
- Pickup Level Controls: See P.5 CONTROL PANEL Side ②, ③.

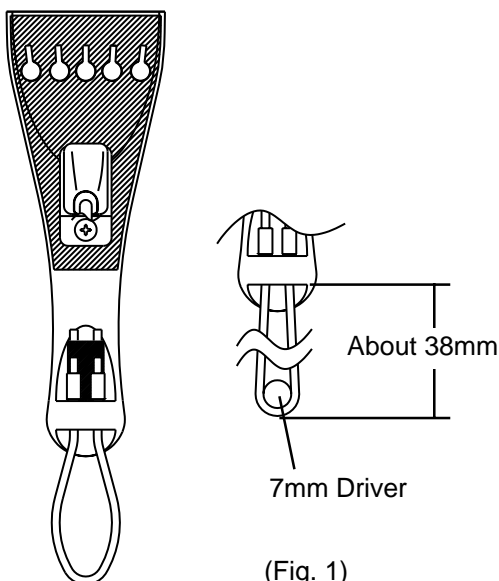
2. Inspection Procedure

- 2-1 Connect a guitar amplifier to {LINE OUT} jack.
- 2-2 Touch strings with a finger, and confirm that the hum noise decreases.
- 2-3 Play strings with a finger, and confirm the following items.
- Each string sounds normally.
 - The fluttering noise is not produced.
 - Each string has almost the same sound volume.
- 2-4 Confirm that the sound becomes larger according as turning the MASTER VOLUME knob to right, and that the sound becomes smaller according as turning to left.
After finishing this test, set the MASTER VOLUME knob to maximum.
- 2-5 Set the MODE select switch to 'CONTROLLED'.
- 2-6 Play strings with a finger, and confirm that each string has almost the same sound volume.
- 2-7 Connect headphones to [PHONES] jack.
- 2-8 Play strings with a finger, and confirm that the sound level from headphones is large enough.
- 2-9 Play strings with a bow, listen to sound from the guitar amplifier, and confirm the following items.
- The sound has a normal volume and tone.
 - The fluttering noise or mechanical noise are not produced.

To finish the inspection, set each control as follows.

- MASTER VOLUME: Maximum
- [VOLUME] knob: Minimum
- MODE select switch: DIRECT

■ POINTS TO CHECK WHEN NOISE HAS OCCURED



(Fig. 1)

When a fluttering noise or mechanical noise is produced, adjust the tailpiece wire as follows.

Pull the tailpiece wire with a screw driver which is 7mm in diameter so that the length of the tailpiece wire measures up to about 38mm as shown in the illustration. (Fig.1)

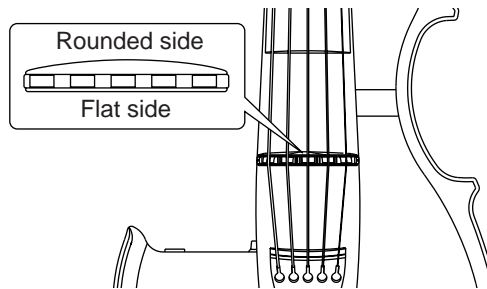
Then confirm that the volume assembly is settled in the hole of the sound plate and it does not touch the sound plate.

If the above conditions are not met, fine adjust the length of tailpiece wire.

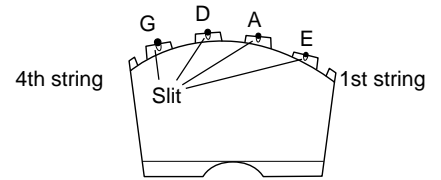
TUNING

First, set up the bridge and then proceed with tuning.

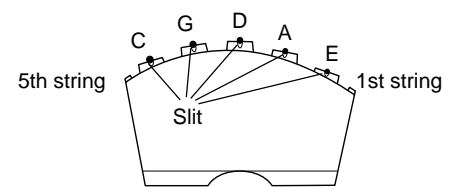
- The lower side of the bridge supports the 1st string (E), the higher side supports the 4th string (G) [EV205: the 5th string (C)]. Make sure the bridge is placed properly. (Make sure the flat side of the bridge is facing the tailpiece, and rounded side is facing the finger board.)



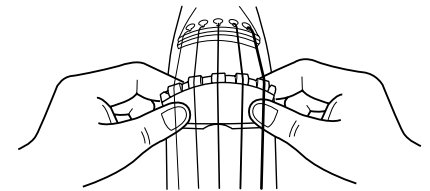
[EV-204]



[EV-205]

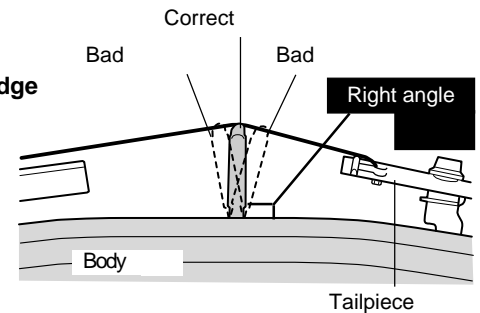


Looking from the tailpiece



- Ensure that the tailpiece side of the bridge stands vertically. If it leans to one side, use both hands to adjust. Make sure that each string passes over the corresponding slits in the bridge.

* **Playing the violin with a leaning bridge may result in damage to the bridge or a deterioration in sound quality.**

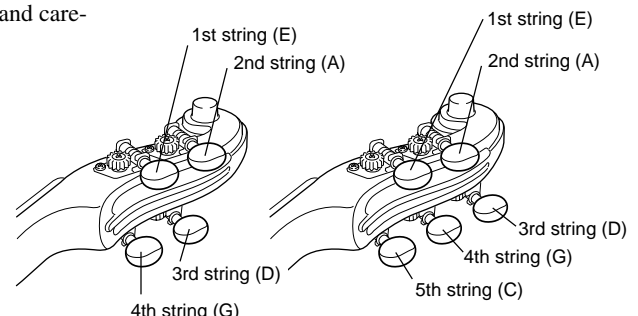


Bridge is placed vertically

Tuning

- The strings are tuned to the following pitches. The 1st string is tuned to E, the 2nd string to A, the 3rd string to D, the 4th string to G and the 5th string to C (EV-205). Use a piano, tuning fork, tuner, etc. and adjust the pitch of each string using the pegs.

- After tuning is complete, make sure that the tailpiece side of the bridge is still properly aligned. If the bridge is leaning in either direction, slightly loosen the strings and carefully re-align the bridge using both hands.



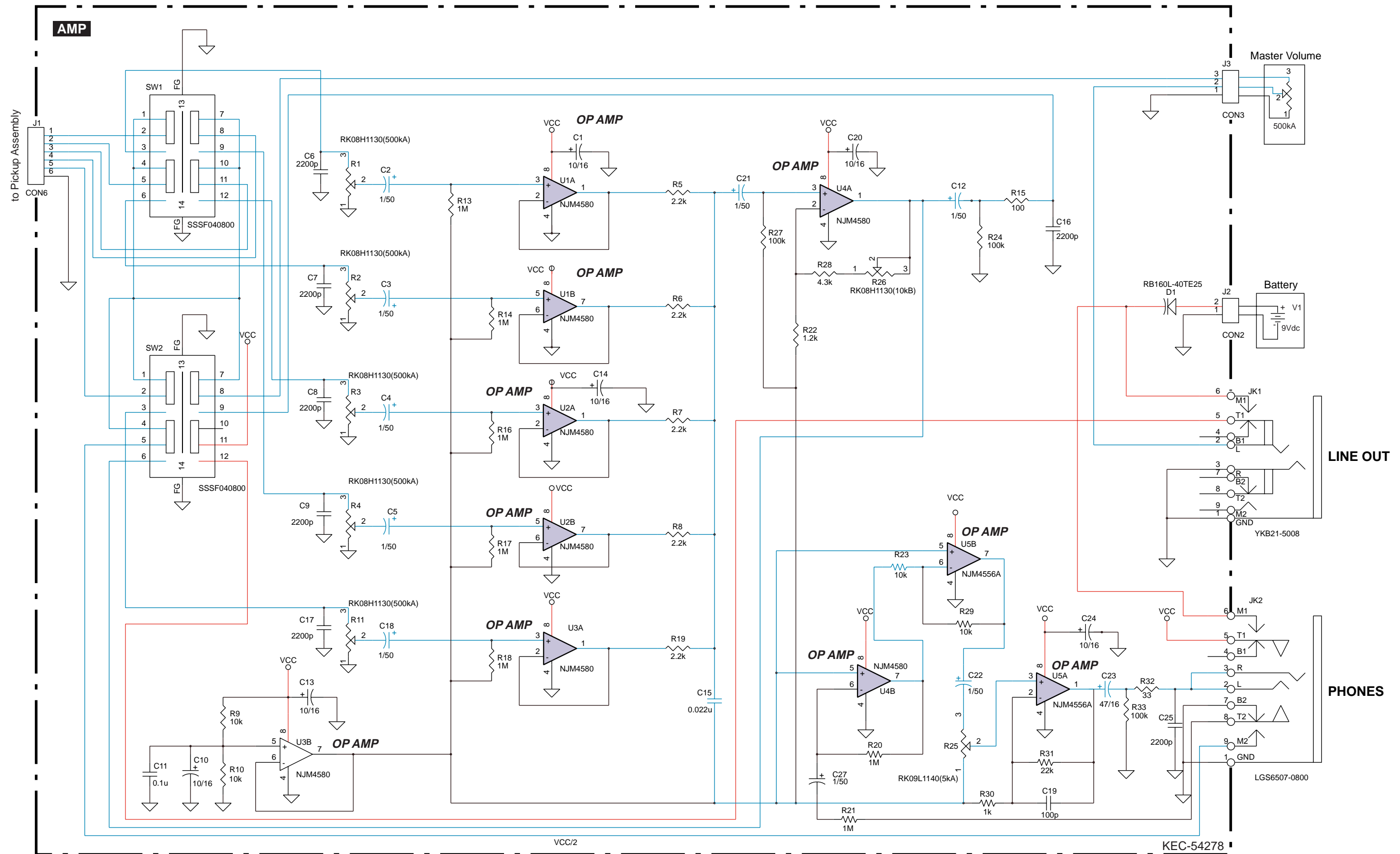
[EV-204]

[EV-205]

<P.1>

EV204 / EV205 OVERALL CIRCUIT DIAGRAM (AMP)

EV-204 / EV205



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

ELECTRIC VIOLIN

EV-204 / EV205

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY	2
ELECTRICAL PARTS	5

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 " show quantities for each unit.
- The parts with " - - " in " PART NO. " are not available as spare parts.
- The mark " } " in the remarks column indicates that these parts are interchangeable.
- The second letter of the shaded () part number is O, not zero.
- The second letter of the shaded () part number is I, not one.

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		OVERALL ASSEMBLY		EV-204/EV-205		
	--	Overall Assembly	AM	EV-205 AM (V876660)		
	--	Overall Assembly	CB	EV-205 CB (V904410)		
	--	Overall Assembly	PR	EV-205 PR (V904420)		
	--	Overall Assembly	AM	EV-204 AM (V904450)		
	--	Overall Assembly	CB	EV-204 CB (V904460)		
	--	Overall Assembly	PR	EV-204 PR (V904470)		
10	--	Body Assembly	AM	EV-205 AM (V876030)		
10	--	Body Assembly	CB	EV-205 CB (V904340)		
10	--	Body Assembly	PR	EV-205 PR (V904350)		
10	--	Body Assembly	AM	EV-204 AM (V904480)		
10	--	Body Assembly	CB	EV-204 CB (V904490)		
10	--	Body Assembly	PR	EV-204 PR (V904500)		
*	20	V8757700 Bridge Assembly		EV-205		
*	20	V9045400 Bridge Assembly		EV-204		
*	30	V8757800 String, E	E RE			
*	40	V8757900 String, A	A BL			
*	50	V8758000 String, D	D SL			
*	60	V8758100 String, G	G GR			
*	70	V8758200 String, C	C BR	EV-205		
	80	V8758400 Bushing				
	90	V8767300 Battery Cover				
*	100	V9460800 Chin Rest				
	110	-- Amplifier Unit		(V876720)		
	120	-- Tailpiece Assembly		EV-205 (V875830)		
	120	-- Tailpiece Assembly		EV-204 (V904550)		
*	130	V8829900 Oval Head Screw	3.0X25 MFZN2BL			3
*	140	V8830000 Oval Head Screw	3.0X16 MFZN2BL			
	150	-- Name Plate		EV-205 (V924230)		
	150	-- Name Plate		EV-204 (V924240)		
	160	22764900 Adhesive Tape	12X50m			
*	170	V9460700 Spacer	C-309			
*	180	V9460500 Wood Screw	2.7X16 MFZN2BL			
	190	V9281600 Cushion	30X25			
		ACCESSORIES				
	--	Battery	6F22Y(NR)	(PC10008)		
	--	Body Assembly	AM	EV205 AM (V876030)		
	--	Body Assembly	CB	EV205 CB (V904340)		
	--	Body Assembly	PR	EV205 PR (V904350)		
	--	Body Assembly	AM	EV204 AM (V904480)		
	--	Body Assembly	CB	EV204 CB (V904490)		
	--	Body Assembly	PR	EV204 PR (V904500)		
*	A10	V8760400 Wooden Unit Assembly	AM	EV205 AM		
*	A10	V9043700 Wooden Unit Assembly	CB	EV205 CB		
*	A10	V9043800 Wooden Unit Assembly	PR	EV205 PR		
*	A10	V9045100 Wooden Unit Assembly	AM	EV204 AM		
*	A10	V9045200 Wooden Unit Assembly	CB	EV204 CB		
*	A10	V9045300 Wooden Unit Assembly	PR	EV204 PR		
*	A20	V8768400 Spacer				2
*	A30	V8769000 Peg Unit	1st L14.5 2nd L13.5 3rd, 4th R13.5 5th R14.5	EV205		
*	A30	V8778200 Peg Unit	1st L14.5 2ndL13.5 3rd R13.5 4th R14.5	EV204		
*	A40	V8761200 End Pin				
*	A50	V8832100 Round Head Wood Screw	2.1X6.3 MFNI33	EV204		8
*	A50	V8832100 Round Head Wood Screw	2.1X6.3 MFNI33	EV205		10
	A60	VT229100 Bind Head Screw	4.0X30 MFZN2BL			01
	A70	VB403600 Bind Head Screw	4.0X20 MFZN2BL			01
*	A80	V8830800 Oval Head Wood Screw	3.5X25 MFZN2BL			
*	A90	V8760500 Sound Plate Assembly	AM	EV204 AM, EV205 AM		
*	A90	V9043900 Sound Plate Assembly	CB	EV204 CB, EV205 CB		
*	A90	V9044000 Sound Plate Assembly	PR	EV204 PR, EV205 PR		
	A100	-- Nut		EV205 (V930110)		
	A100	-- Nut		EV204 (V930120)		

* : New parts

RANK : Japan only

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
	--	Amplifier Unit		(V876720)		
* C10	V8767400	Amplifier Case				
* C20	V8767500	Slide Button		CONTROLLED-DIRECT		
C30	VP224600	Knob	ABS	VOLUME		04
* C40	V8767600	Balance Knob		1,2,3,4,5,MAIN	6	
* C50	V8758500	Shield Sheet				
* C60	VA122000	PWH Tapping Screw-P	3.0X8-8 MFZN2Y		4	
* C70	V8830600	Precision Screw	1.4X3 MFZN2BL		6	
* C80	V8769200	Wiring Assembly	BATTERY			
* C90	V8770000	Circuit Board	AMP			
* C100	V8896400	Slider	BL			
C110	VB508600	Hexagonal Nut	12.0 14X2 MFZN2BL			01
* C120	V9064000	GND Tape			2	
	--	Tailpiece Assembly		EV205 (V875830)		
	--	Tailpiece Assembly		EV204 (V904550)		
D10	AAX34640	Tailpiece Sub Assembly		EV204		
D10	AAX34650	Tailpiece Sub Assembly		EV205		
* D10a	--	Tailpiece		EV205 (V876010)		
* D10a	--	Tailpiece		EV204 (V877770)		
* D10b	--	GND Sheet		EV205 (V876770)		
* D10b	--	GND Sheet		EV204 (V877780)		
* D10c	--	Tailpiece wire	V-30 V-60	EV204 (V547270)		
* D10d	V9411500	Damper	15X15X0.5			
D30	VP224600	Knob	ABS	MASTER VOLUME		04
D50	EP620150	Bind Head Tapping Screw-P	2.6X5 MFZN2BL			01
* D60	V8769700	Volume Assembly				
D60a	--	Rotary Variable Resistor		MASTER VOLUME (V877630)		
D60b	--	Volume Holder		(V876960)		

* : New parts

RANK : Japan only

ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V8770000	ELECTRICAL PARTS Circuit Board	AMP	(X2525B0)		
*	V8770000	Circuit Board	AMP	(X2525B0)		
*	V8776400	Rotary Variable Resistor				
*	V8776600	Rotary Variable Resistor				
C1	UF037100	Electrolytic Cap. (chip)	10 16V			01
C2	UF066100	Electrolytic Cap. (chip)	1 50V			01
-5	UF066100	Electrolytic Cap. (chip)	1 50V			01
C6	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
-9	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C10	UF037100	Electrolytic Cap. (chip)	10 16V			01
C11	US035100	Ceramic Capacitor-B (chip)	0.1000 16V K			01
C12	UF066100	Electrolytic Cap. (chip)	1 50V			01
C13	UF037100	Electrolytic Cap. (chip)	10 16V			01
C14	UF037100	Electrolytic Cap. (chip)	10 16V			01
C15	US044220	Ceramic Capacitor-B (chip)	0.0220 25V K			01
C16	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C17	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C18	UF066100	Electrolytic Cap. (chip)	1 50V			01
C19	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C20	UF037100	Electrolytic Cap. (chip)	10 16V			01
C21	UF066100	Electrolytic Cap. (chip)	1 50V			01
C22	UF066100	Electrolytic Cap. (chip)	1 50V			01
C23	UF037470	Electrolytic Cap. (chip)	47 16V			01
C24	UF037100	Electrolytic Cap. (chip)	10 16V			01
C25	US063220	Ceramic Capacitor-B (chip)	2200P 50V K			01
C27	UF066100	Electrolytic Cap. (chip)	1 50V			01
D1	VS597600	Diode	RB160L-40 TE25			01
J1	VB858500	Connector Base Post	PH- 6P SE			01
J2	VB858100	Connector Base Post	PH- 2P SE			01
J3	VB858200	Connector Base Post	PH- 3P SE			01
JK1	VB891100	Phone Jack	YKB21-5008	LINE OUT		03
JK2	V8836400	Phone Jack	LGS6507	PHONES		
*	R1	V8776500	Rotary Variable Resistor	500KA	1	
*	R2	V8776500	Rotary Variable Resistor	500KA	2	
*	R3	V8776500	Rotary Variable Resistor	500KA	3	
*	R4	V8776500	Rotary Variable Resistor	500KA	4	
R5	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
-8	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
R9	RD357100	Carbon Resistor (chip)	10K 63M J			01
R10	RD357100	Carbon Resistor (chip)	10K 63M J			01
*	R11	V8776500	Rotary Variable Resistor	500KA	5	
R13	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R14	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R15	RD355100	Carbon Resistor (chip)	100 63M J			01
R16	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
-18	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R19	RD356220	Carbon Resistor (chip)	2.2K 63M J			01
R20	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R21	RD359100	Carbon Resistor (chip)	1.0M 63M J			01
R22	RD356120	Carbon Resistor (chip)	1.2K 63M J			01
R23	RD357100	Carbon Resistor (chip)	10K 63M J			01
R24	RD358100	Carbon Resistor (chip)	100K 63M J			01
R27	RD358100	Carbon Resistor (chip)	100K 63M J			01
R28	RD356430	Carbon Resistor (chip)	4.3K 63M J			01
R29	RD357100	Carbon Resistor (chip)	10K 63M J			01
R30	RD356100	Carbon Resistor (chip)	1.0K 63M J			01
R31	RD357220	Carbon Resistor (chip)	22K 63M J			01
R32	VP940100	Metal Oxide Film Resistor	33.0 1W J			01
R33	RD358100	Carbon Resistor (chip)	100K 63M J			01
SW1	VQ545700	Slide Switch	SSSF04	CONTROLLED-DIRECT		03
SW2	VQ545700	Slide Switch	SSSF04	CONTROLLED-DIRECT		03
*	U1	X2474A00	IC	NJM4580V	OP AMP	
*	-4	X2474A00	IC	NJM4580V	OP AMP	
*	U5	X2473A00	IC	NJM4556AV	OP AMP	
*	V8769700	Volume Assembly				

* : New parts

RANK : Japan only