

SILENT *Viola* SVV-200

SERVICE MANUAL



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

IMPORTANT NOTICE

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

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

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

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

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

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

WARNING: CHEMICAL CONTENT NOTICE!

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

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

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

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

■ WARNING

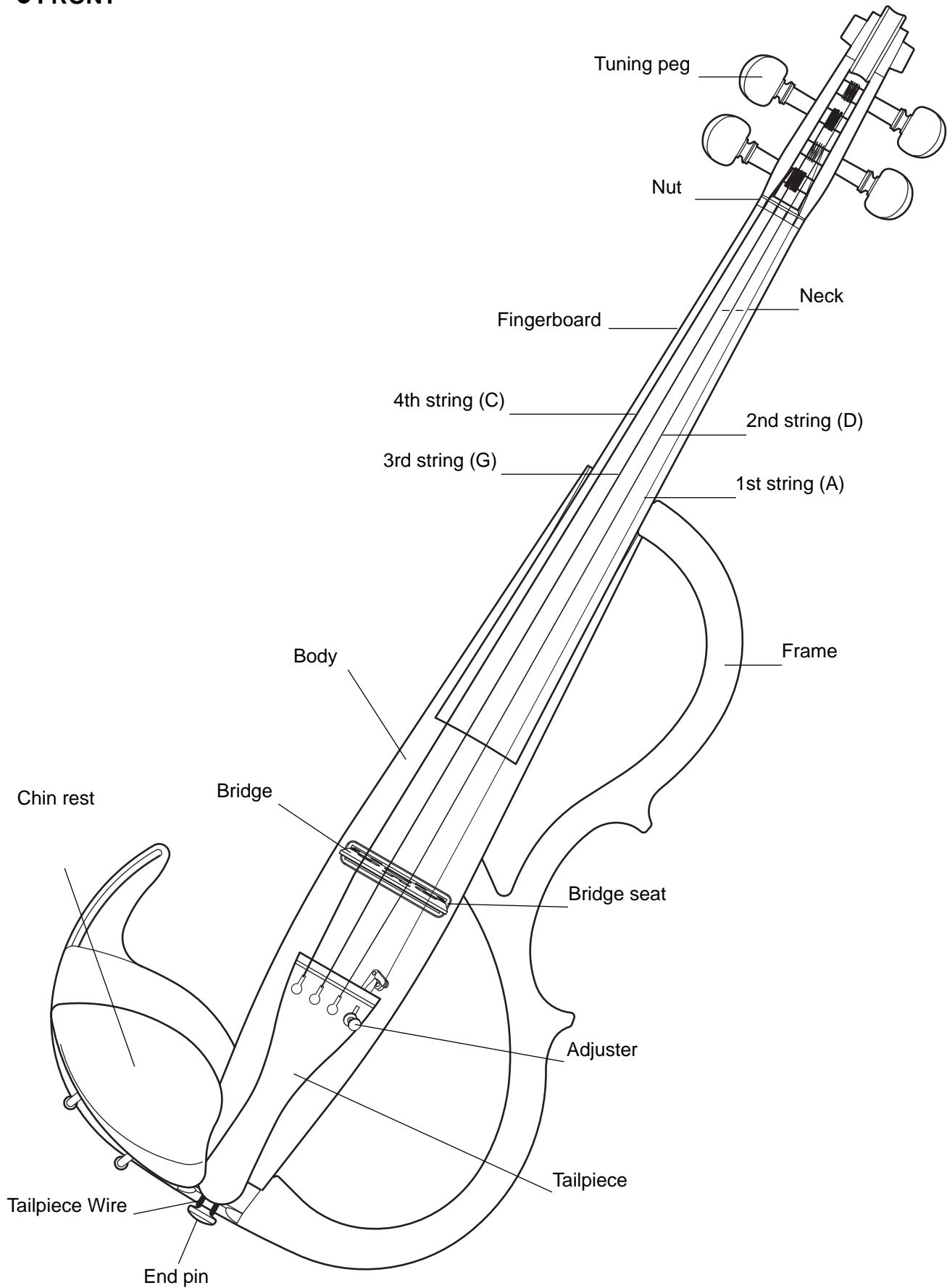
Components having special characteristics are marked \triangle and must be replaced with parts having specification equal to those originally installed.

■ SPECIFICATIONS

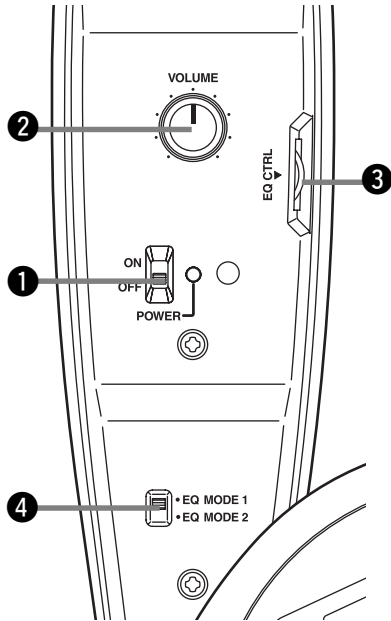
Neck	Hard Maple
Body	Spruce
Fingerboard/Tuning Pegs	Ebony
Bridge	Hard Maple (Aubert)
Frame	Plywood
Chin Rest/Tailpiece	Ebony
Adjuster	1st string (Wittner)
Strings	Ball-end type (Dominant)
Sensor	Stereo Piezo pick-up (underneath the bridge)
Connectors/Controls	<ul style="list-style-type: none"> • Headphone Output • EQ CTRL (Equalizer Control) • LINE OUT • VOLUME • EQ MODE Switch (EQ MODE 1/EQ MODE 2) • POWER Switch (ON/OFF)
Power	6F22 (S-006P) 9V battery x1
Battery Life (Continuous Use) ..	Using Manganese battery : approximately 5 hours Using Alkaline battery : approximately 12 hours
String Length	375 mm (14-3/4")
Body Length	406 mm (16")
Output Impedance.....	1k Ω (LINE OUT)
Dimensions	677 (L) x 246 (W) x 129 (H) mm 27-5/8" (L) x 9-11/16" (W) x 5-1/16" (H)
Weight (with battery)	approximately 740g (1 lbs. 10 oz.)

■ PANEL LAYOUT

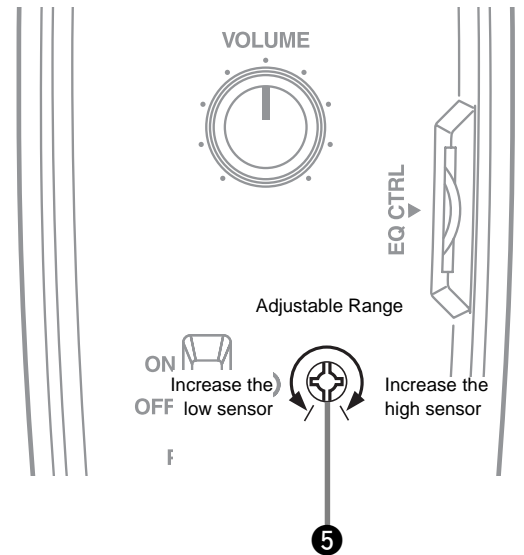
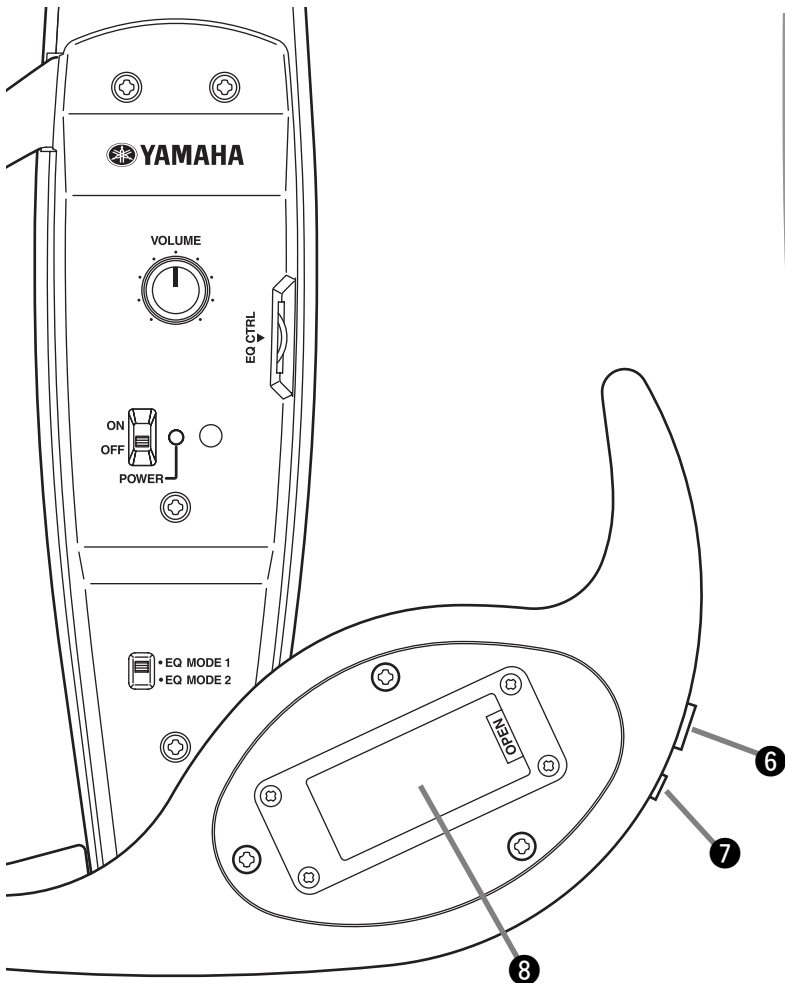
● FRONT



● CONTROL PANEL side

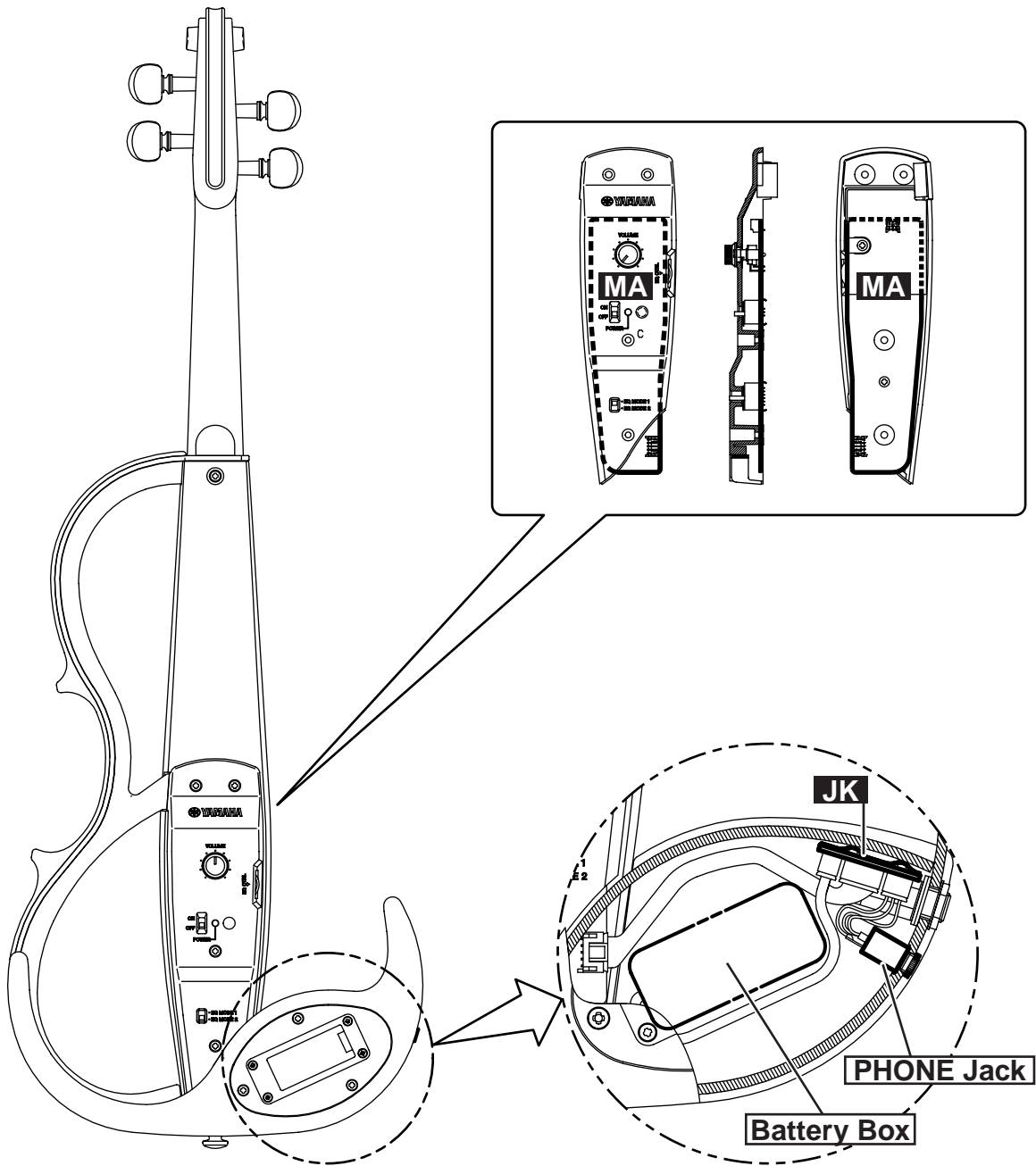


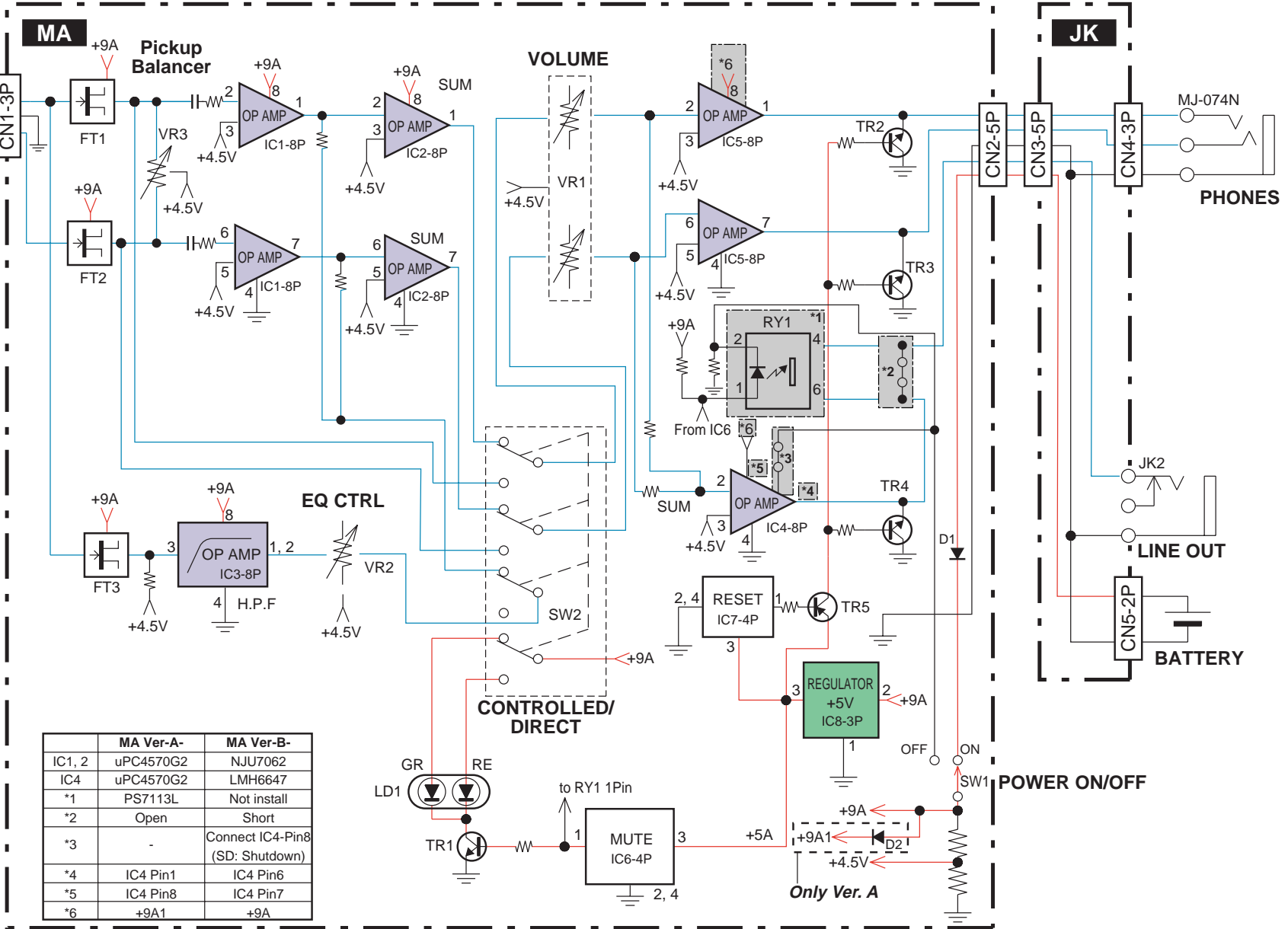
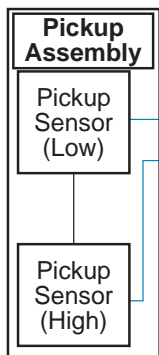
- ① POWER Switch
- ② VOLUME
- ③ EQ CTRL (Equalizer Control)
- ④ EQ MODE Switch
 - EQ MODE 1
 - EQ MODE 2



- ⑤ Pickup Balancer (located inside)
- ⑥ LINE OUT jack: Standard phone type
- ⑦ PHONES jack: Stereo mini type
- ⑧ Battery Case: 6F22(S-006P) 9V

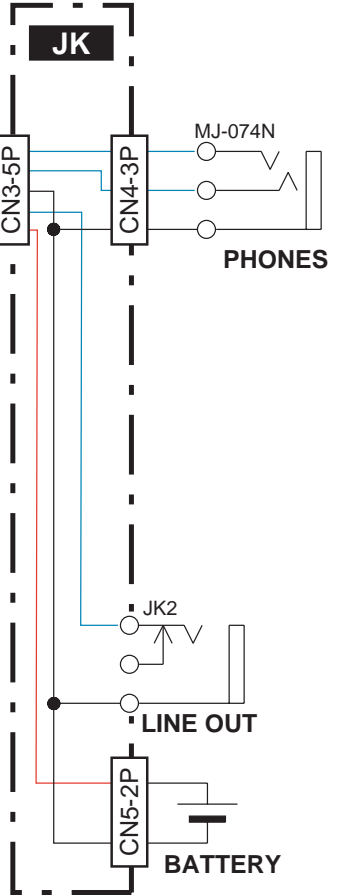
■ CIRCUIT BOARD LAYOUT





	MA Ver-A-	MA Ver-B-
IC1, 2	uPC4570G2	NJU7062
IC4	uPC4570G2	LMH6647
*1	PS7113L	Not install
*2	Open	Short
*3	-	Connect IC4-Pin8 (SD: Shutdown)
*4	IC4 Pin1	IC4 Pin6
*5	IC4 Pin8	IC4 Pin7
*6	+9A1	+9A

BLOCK DIAGRAM



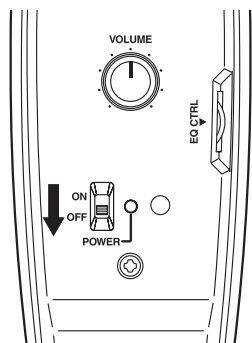
POWER ON/OFF

■ DISASSEMBLY PROCEDURE

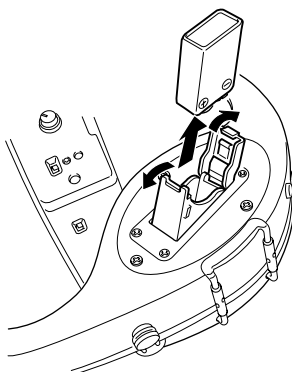
PREPARATION

Before disassemble the unit, proceed as follows.

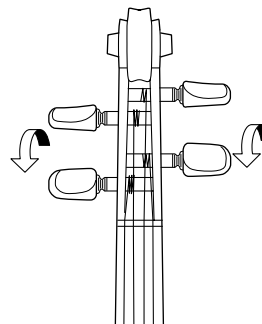
- Turn off the power. (Fig.1)
- Remove the chin rest.
- Remove the battery from the battery box. (Fig.2)
- Remove all the strings and the bridge. (Fig.3)



(Fig. 1)



(Fig. 2)

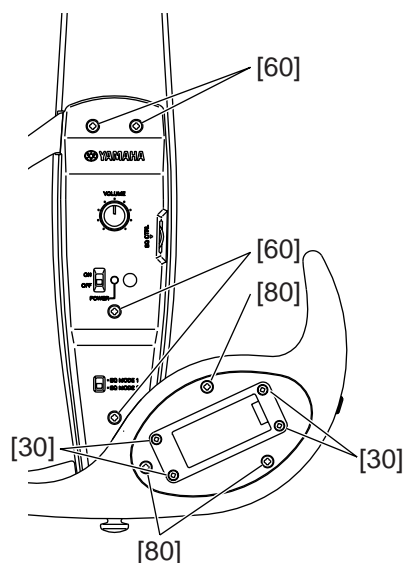


(Fig. 3)

1. MA Circuit Board (Time required: about 2 min)

- 1-1 Remove the four (4) screws marked [60] to remove the cover assembly. (Fig.4)
- 1-2 Remove the two (2) screws marked [50]. (Fig.5)
- 1-3 Remove the VR knob marked [60]. The MA circuit board can then be removed. (Fig.5)

* **The shield cover is attached to the circuit board with adhesive tape, so remove it carefully.**



- [30]: Flat Head Screw M2.6x6 MFZN2BL (EC020020)
- [60]: Bind Head Tapping Screw-1 3.0x12 MFZN2BL (VB998200)
- [80]: Flat Head Tapping Screw-1 3.0x14 MFZN2BL (VC043700)

(Fig. 4)

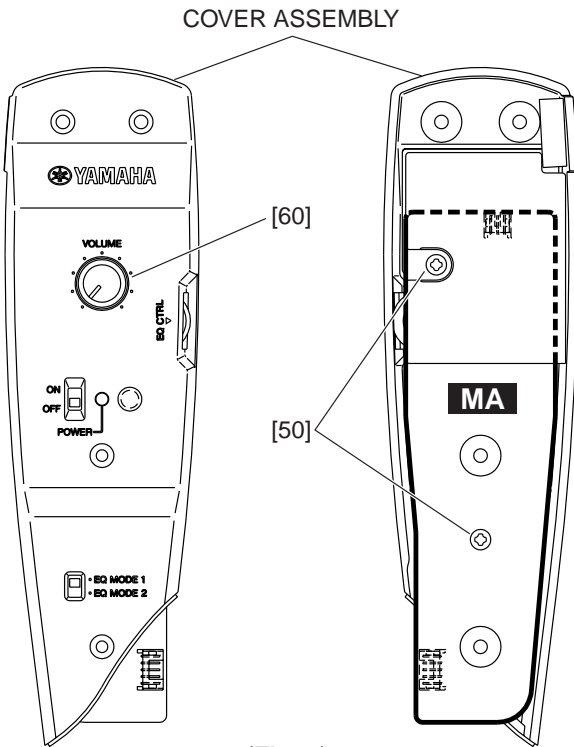
2. JK Circuit Board (Time required: about 2 min)

2-1 Remove the three (3) screws marked [80] to remove the battery plate assembly. (Fig.4)

2-2 Remove the hexagonal nut marked [A]. The JK circuit board can then be removed. (Fig.6)

* **The JK circuit board is attached to the side board with adhesive tape, so remove it carefully.**

* **When removing the JK circuit board, take care not to lose the two SPACER 1.0. (Fig. 6)**



(Fig. 5)

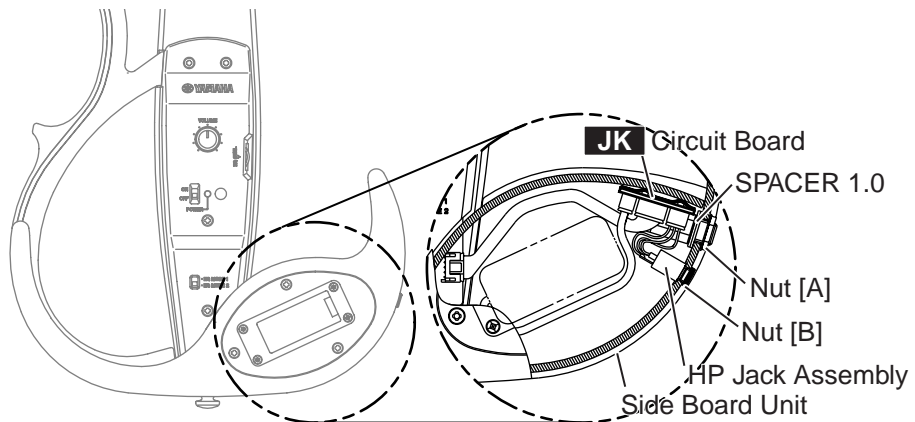
[50]: Bind Head Tapping Screw-P PW 3.0x8 MFZN2BL (V9343100)

[60]: Konb (V2300100)

3. HP Jack Assembly (Time required: about 2 min)

3-1 Remove the battery plate assembly. (See procedure 2-1)

3-2 Remove the nut marked [B]. The HP jack assembly can then be removed. (Fig.6)



(Fig. 6)

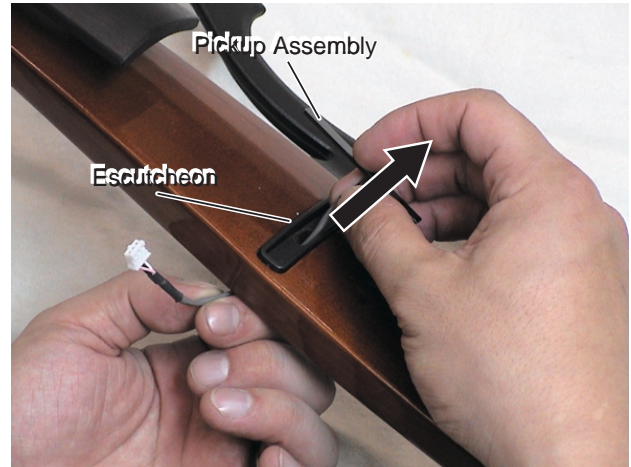
4. Battery Box Assembly

(Time required: about 2 min)

- 4-1 Remove the battery plate assembly.
(See procedure 2-1)
- 4-2 Remove the four (4) screws marked [30]. The battery box assembly can then be removed. (Fig.4)

5. Pickup Assembly (Time required: about 1 min)

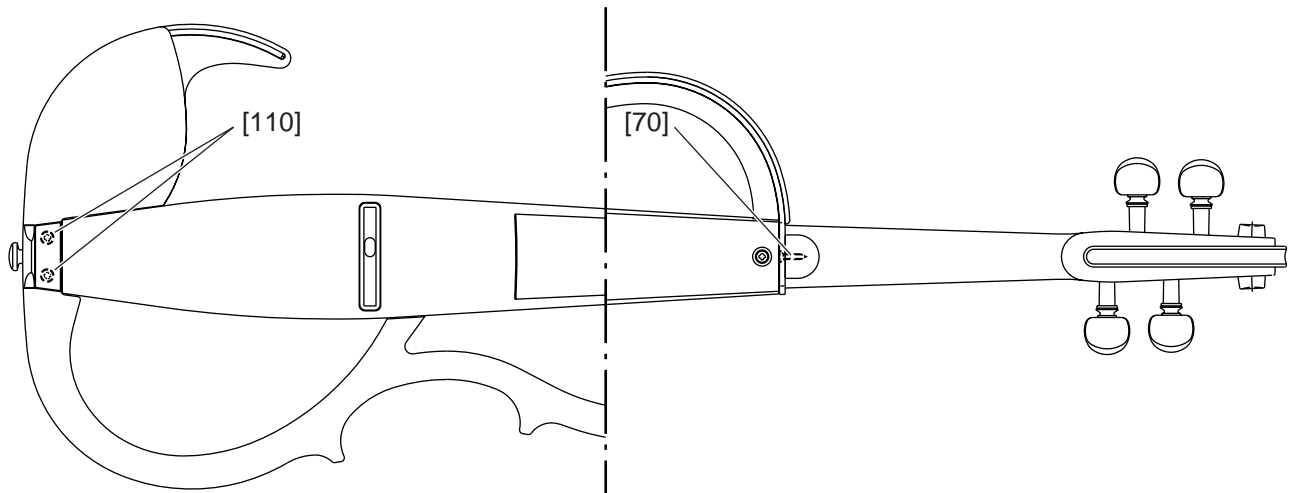
- 5-1 Remove the cover assembly. (See procedure 1-1)
 - 5-2 Push the cable of the pickup assembly into a hole on the body assembly so that the pickup assembly floats.
- The pickup assembly can then be removed. (Fig.7)



(Fig.7)

6. Side Board Unit (Time required: about 1 min)

- 6-1 Remove the screw marked [70] and the two (2) screws marked [110]. The side board unit can then be removed. (Fig.8)



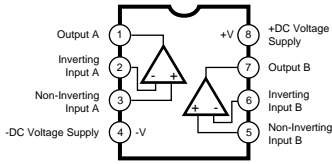
- [70]: Flat Head Tapping Screw-1 3.0X14 MFZN2BL (VC043700)
- [110]: Flat Head Tapping Screw-1 3.0X20 MFZN2BL (VH922600)

(Fig. 8)

IC BLOCK DIAGRAM

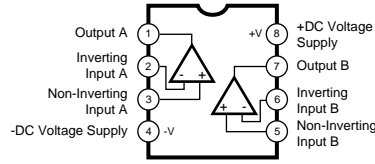
● **PC4570G2** (XF291A00)
Dual Operational Amplifier

MA(Ver. A): IC1, IC2, IC3, IC4
MA(Ver. B): IC3



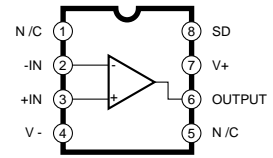
● **NJM3414AM(T1)** (XR294A00)
Dual Operational Amplifier

MA(Ver. A): IC5
MA(Ver. B): IC5



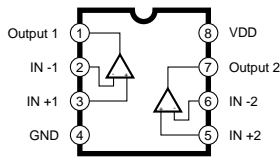
● **LMH6647MAX** (X3124A00)
Operational Amplifier

MA(Ver. B): IC4



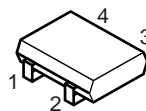
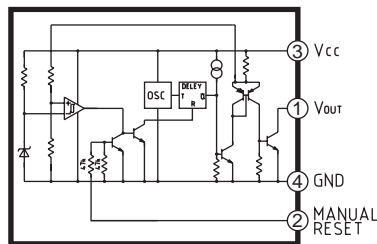
● **NJU7062M** (X3125A00)
Dual Operational Amplifier

MA(Ver. B): IC1, IC2



● **PST594C** (XT627A00)
SYSTEM RESET

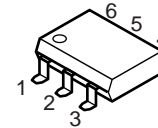
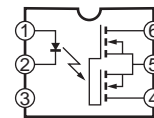
MA(Ver. A): IC6, IC7
MA(Ver. B): IC6, IC7



- 1: V_{out}
- 2: Manual Reset
- 3: V_{cc}
- 4: GND

● **PS7113L-1A** (V4494200)
OCMOS FET

MA(Ver. A): RY1

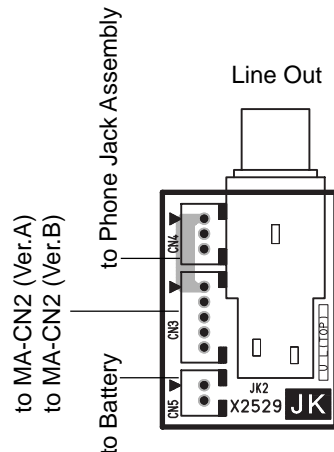


- 1: LED ANODE
- 2: LED CATHODE
- 3: NC
- 4: MOS FET Drain
- 5: MOS FET Source
- 6: MOS FET Drain

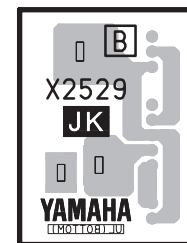
CIRCUIT BOARDS

JK Circuit Board

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



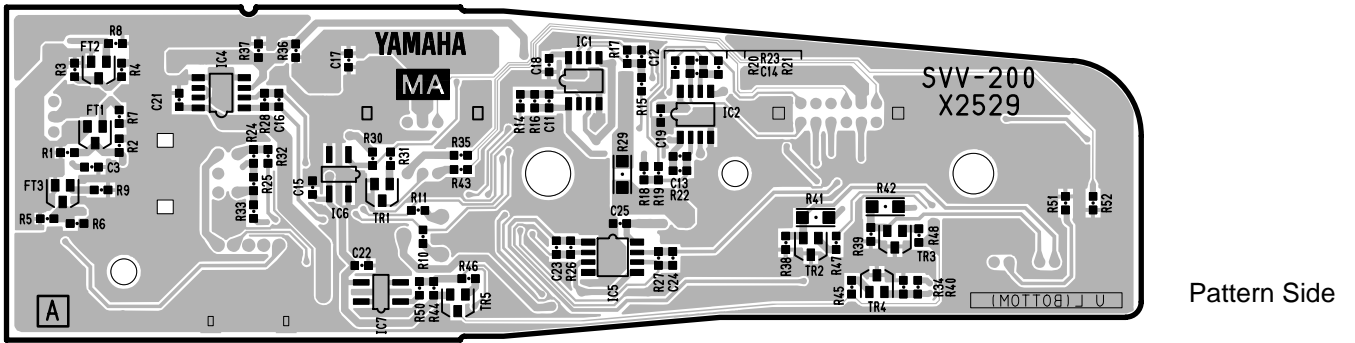
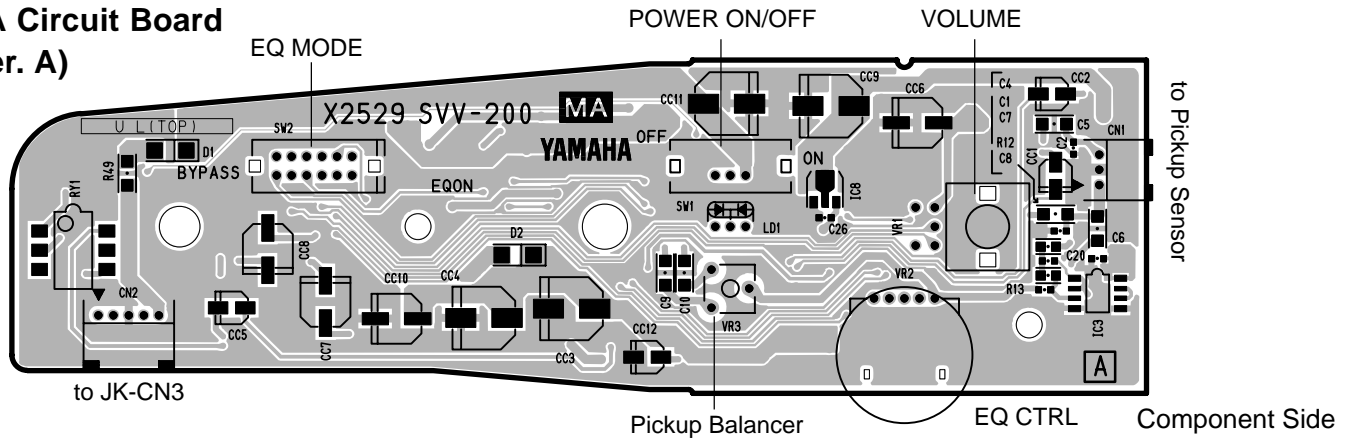
Component Side



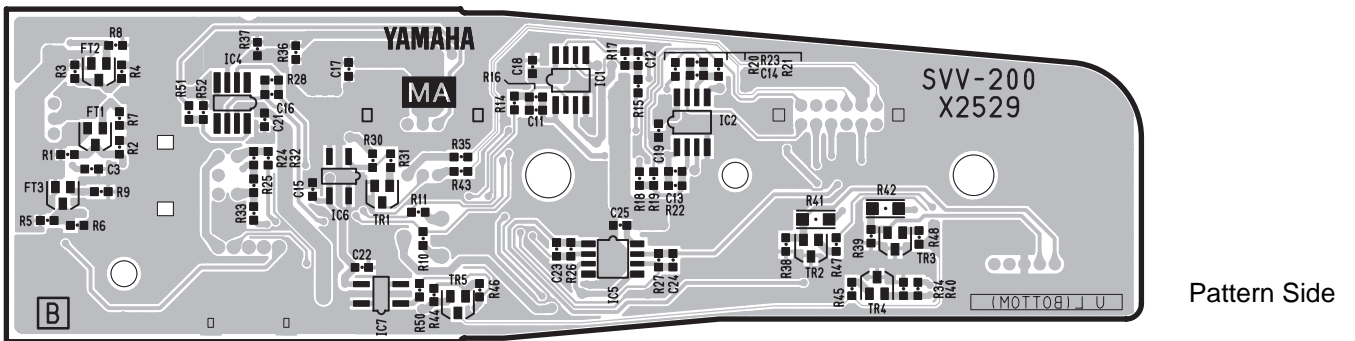
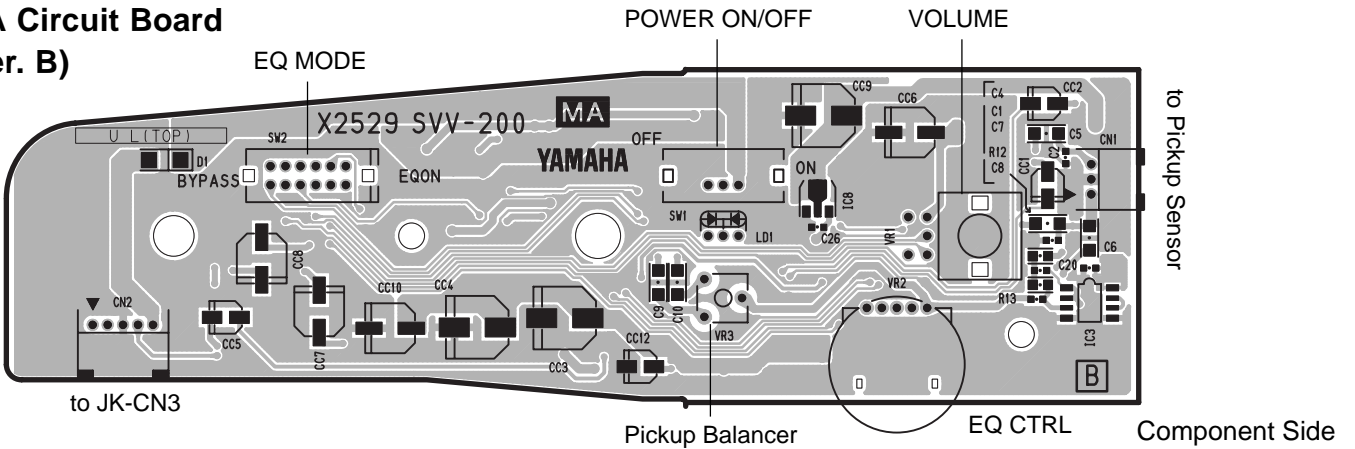
Pattern Side

- MA: ENA-V883800
- JK: ENA-V883800

•MA Circuit Board
(Ver. A)



•MA Circuit Board
(Ver. B)



MA: ENA-V883800

JK: ENA-V883800

Note: See parts list for details of circuit board component parts.
Version A circuit board fast lot only

■ INSPECTION

1. Preparation

To check the unit, following jigs are required.

- Stereo Inner phones (Headphones)
- Powered speaker
- Battery (S-006P x 1)

Load a battery into the product.

Connect headphones and a powered speaker to [PHONE] jack and [LINE OUT] jack respectively.

Perform each inspection aurally or visually.

Set each control as follows.

[VOLUME] knob : Minimum

[EQ CTRL] dial : Minimum

[EQ MODE] switch: EQ MODE 2

2. Inspection Procedure

2-1 Power supply and Volume

Turn on the [POWER ON/OFF] switch with the [EQ MODE] switch set to "EQ MODE2", and confirm that the LED illuminates red.

About 2 seconds after turning on the power, play strings and turn the [VOLUME] knob from minimum to maximum position, and confirm that the sound volume of headphones or a speaker changes continuously.

Besides, confirm that the no mechanical noise is generated and that the knob can be turned smoothly without interference of external fittings.

Next, set the [EQ MODE] switch to "EQ MODE1", and confirm that the LED turns to green.

Finally, confirm that no noise is generated when the [POWER ON/OFF] switch is turned on or turned off.

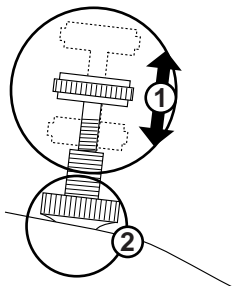
2-2 Tone Control

Play a string with fingers and turn the [EQ CTRL] dial from minimum to maximum position. And confirm that high frequencies are gradually emphasized.

Besides, confirm that the no mechanical noise is generated and that the dial can be turned smoothly without interference of external fittings.

■ POINTS TO CHECK WHEN NOISE HAS OCCURED

When a mechanical noise is produced, check and adjust the following points.

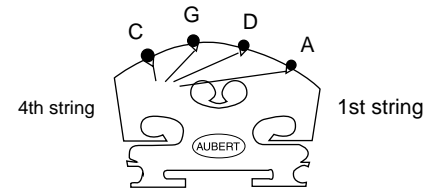


1. When the adjusting screw protrudes too much it makes a noise; make sure the adjuster screw is not too loose.
2. Make sure the adjuster fixing screw is tightened.
3. When the bridge is inclined or touches the escutcheon edge, place the bridge in the center of the escutcheon and slightly incline it towards the tailpiece side, so that the bridge is aligned at 90 degrees to the escutcheon after the strings has been tuned.

■ TUNING

The Silent Viola is shipped from the factory with the bridge unfitted. First, set up the bridge and then proceed with tuning.

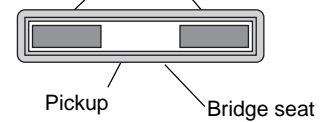
- The lower side of the bridge supports the 1st string (A), the higher side supports the 4th string (C). Make sure the bridge is placed properly, then set the bridge in the bridge seat. (Make sure the logo side of the bridge is facing the tailpiece.)



Looking from the tailpiece

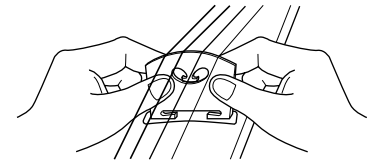
- Make sure the entire underside of the bridge's legs is in contact with the pickup. Also, make sure that the bridge does not slide off of the Bridge Seat or that its legs are touching the sides of the Bridge Seat. Doing so will result in deteriorated sound quality.

Bridge Legs (Underside)

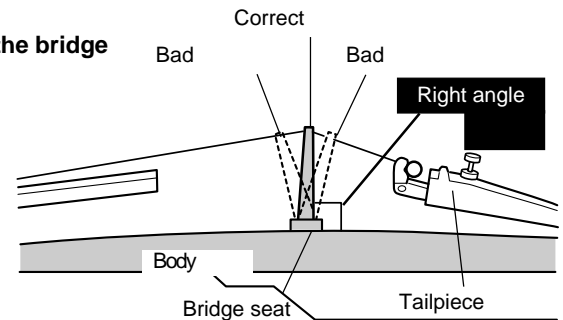


Placing the Bridge's Legs

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

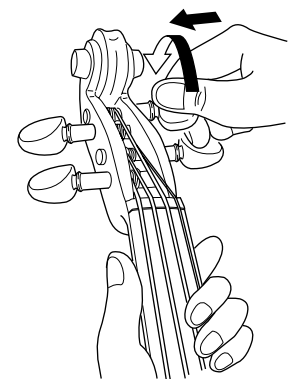


Bridge is placed vertically

Tuning

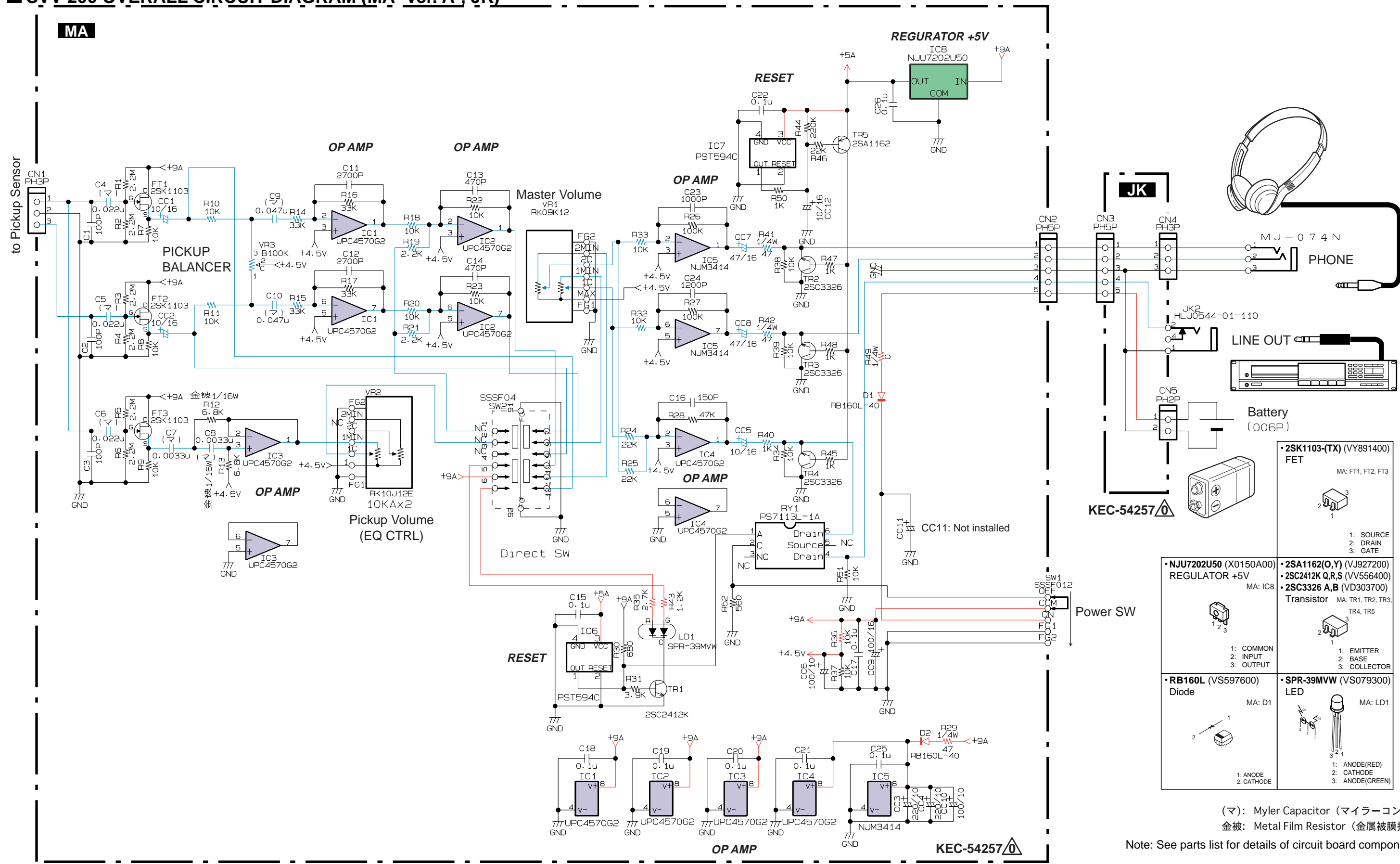
- The strings are tuned to the following pitches. The 1st string is tuned to A, the 2nd string to D, the 3rd string to G, and the 4th string to C. Use a piano, tuning fork, tuner, etc., and adjust the pitch of each string using the tuning pegs. When rotating the peg, apply firm pressure towards the head stock.

- 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.



- An adjuster is provided on the 1st string for fine tuning the string's pitch.

SVV-200 OVERALL CIRCUIT DIAGRAM (MA -Ver. A-, JK)

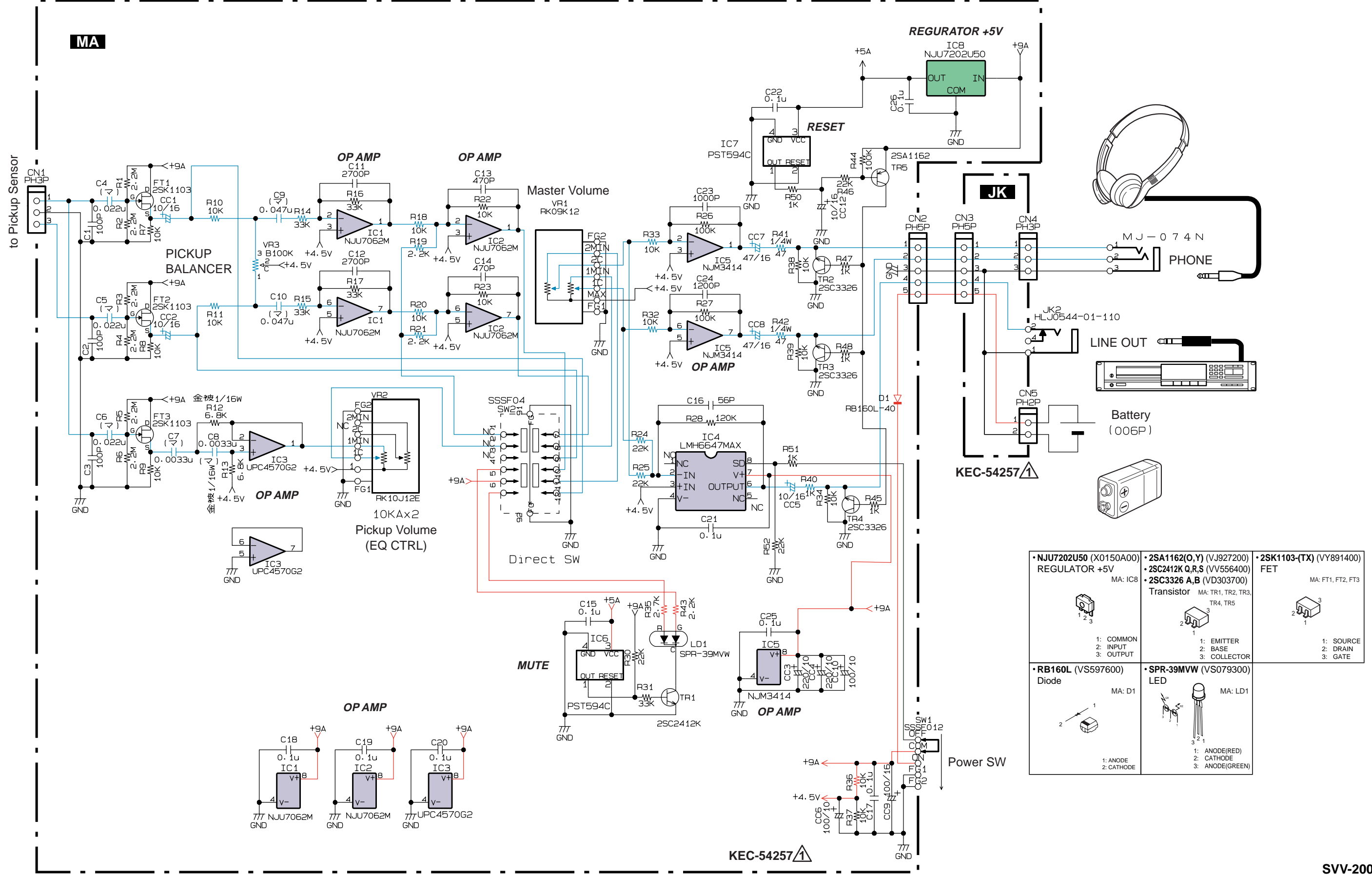


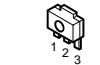

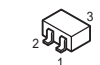


<ul style="list-style-type: none"> • 2SK1103-(TX) (VY891400) FET MA: FT1, FT2, FT3 	<ul style="list-style-type: none"> • NJU7202U50 (X0150A00) REGULATOR +5V MA: IC8 • 2SA1162(O,Y) (VJ927200) • 2SC2412K Q,R,S (VV556400) • 2SC3326 A,B (VD303700) Transistor MA: TR1, TR2, TR3, TR4, TR5
<ul style="list-style-type: none"> • RB160L (VS597600) Diode MA: D1 	<ul style="list-style-type: none"> • SPR-39MVV (VS079300) LED MA: LD1

(マ): Myler Capacitor (マイラーコンデンサー)
 金被: Metal Film Resistor (金属被膜抵抗)

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

SVV-200 <P.2>
SVV-200 OVERALL CIRCUIT DIAGRAM (MA -Ver. B-, JK)



<p>• NUJ202U50 (X0150A00) REGULATOR +5V MA: IC8</p> 	<p>• 2SA1162(O,Y) (VJ927200) • 2SC2412K Q,R,S (VV556400) • 2SC3326 A,B (VD303700) Transistor MA: TR1, TR2, TR3, TR4, TR5</p> 	<p>• 2SK1103(TX) (VY891400) FET MA: FT1, FT2, FT3</p> 
<p>• RB160L (VS597600) Diode MA: D1</p> 	<p>• SPR-39MVW (VS079300) LED MA: LD1</p> 	

SILENT *Viola*

SVV-200

PARTS LIST

■ CONTENTS

OVERALL ASSEMBLY 2
 ELECTRICAL PARTS 5

Note) DESTINATION ABBREVIATIONS

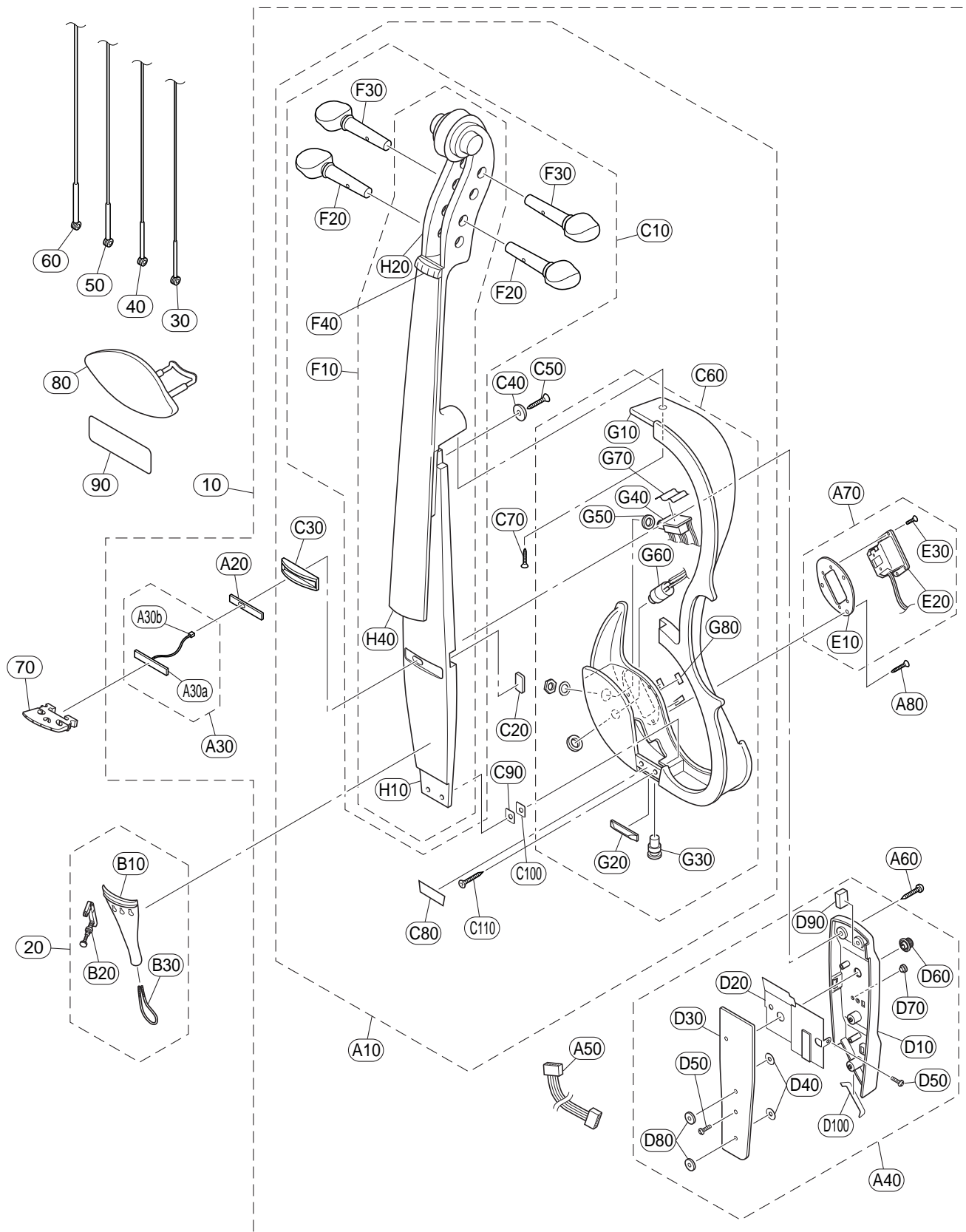
A: Australian model	M: South African model
B: British model	O: Chinese model
C: Canadian model	Q: South-east Asia model
D: German model	T: Taiwan model
E: European model	U: U.S.A. model
F: French model	V: General export model (110V)
H: North European model	W: General export model (220V)
I: Indonesian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

OVERALL ASSEMBLY



REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
		OVERALL ASSEMBLY		SVV-200		
	--	Overall Assembly		(V877070)		
10	--	Sub Assembly(2)		(V877150)		
* 20	V8771600	Tailpiece Assembly				
30	--	String1,A	Viola mittel #136	(V877170)		
40	--	String2,D	Viola mittel #137	(V877180)		
50	--	String3,G	Viola mittel #138	(V877190)		
60	--	String4,C	Viola mittel #139	(V877200)		
70	--	Bridge		(V877210)		
* 70	V8772600	Bridge				
* 80	V8772200	Chin Rest				
90	--	Name Plate		(V877230)		
A10	--	Sub Assembly(2)		(V877150)		
	--	Sub Assembly(1)		(V877280)		
* A20	V8773200	Pickup Spacer				
* A30	V8773300	Pickup Assembly				
A30a	--	Pickup		(V877360)		
A30b	VB304400	Connector Housing	PH- 3P			01
* A40	V8773400	Cover Assembly				
A50	V8505600	Connector Assembly	MA-JK			03
A60	VB998200	Bind Head Tapping Screw-1	3.0X12 MFZN2BL		4	01
A70	--	Battery Plate Assembly		(V877350)		
A80	VC043700	Flat Head Tapping Screw-1	3.0X14 MFZN2BL		3	
* B10	V8771600	Tailpiece Assembly				
	--	Tailpiece		(V877240)		
B20	--	Adjuster		(V877250)		
B30	--	Tailpiece wire	V-30 V-60	(V547270)		
C10	--	Sub Assembly(1)		(V877280)		
	--	Wooden Unit Assembly		(V877420)		
C20	--	Side Board Spacer		(V877480)		
* C30	V8774400	Escutcheon				
C40	--	Washer		(V906560)		
C50	--	Round Head Tapping Screw	3.0X16 MFZN2BL	(V934310)		
* C60	V9065700	Side Board Unit				
* C70	VC043700	Flat Head Tapping Screw-1	3.0X14 MFZN2BL			
* C80	V8774300	End Sheet				
* C90	V9394000	Body Spacer A			2	
* C100	V9394100	Body Spacer B			2	
C110	VH922600	Flat Head Tapping Screw-1	3.0X20 MFZN2BL		2	01
	--	Cover Assembly		(V877340)		
* D10	V8773700	Cover				
* D20	V8773800	Shield Cover				
* D30	V8773900	Circuit Board	MA	(V883800)		
D40	V6059100	Switch Sheet			2	01
D50	V4514500	Bind Head Tapping Screw-P	PW 3.0X8 MFZN2BL		2	01
D60	V2300100	Knob		VOLUME		04
D70	V6228200	Rubber Lid				06
D80	V8774500	Circuit Board Spacer			2	
D90	V8774600	Side Board Cushion				
* D100	V9551400	Cover Spacer				
	--	Battery Plate Assembly		(V877350)		
* E10	V8774100	Battery Plate				
E20	V8125300	Battery Box Assembly				08
E30	EC020020	Flat Head Screw	2.6X6 MFZN2BL		4	01
F10	--	Wooden Unit Assembly		(V877420)		
	--	Body Assembly		(V877470)		
F20	--	Tuning Peg	A,C	(V877510)	2	
* F20	V8775400	Tuning Peg				
F30	--	Tuning Peg	D,G	(V877520)	2	
* F30	V8775400	Tuning Peg				
F40	--	Nut		(V877500)		
* G10	V9065700	Side Board Unit				
	--	Side Board Assembly		(V877490)		

* : New parts

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SVV-200

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
G20	--	Saddle	V-30 V-60	(V591290)		
G30	--	End Pin		(V877530)		
G40	V8772900	Circuit Board	JK	(V883800)		
G50	V8479300	Spacer			2	
G60	V9365000	HP Jack Assembly				
G70	VZ514300	Butyl-rubber Tape				
G80	V9223100	Sheet D			4	
H10	--	Body Assembly		(V877470)		
	--	Body		(V877600)		
H20	--	Neck		(V877610)		
H30	--	Flat Head Tapping Screw-1	3.0X14 MFZN2BL	(VC04370)		3
H40	--	Finger Board		(V877620)		
	VT857700	ACCESSORIES				
	--	Stereo Inner Phones				07
	--	Battery	6F22Y(NR)	(PC10008)		

* : New parts

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ELECTRICAL PARTS

REF NO.	PART NO.	DESCRIPTION		REMARKS	QTY	RANK
*	V8772900	ELECTRICAL PARTS Circuit Board	JK	(V883800) (X2529A0,X2529B0)		
*	V8773900	Circuit Board	MA	(V883800) (X2529A0,X2529B0)		
*	V8772900	Circuit Board	JK	(V883800) (X2529A0,X2529B0)		
*	V8773900	Circuit Board	MA	(V883800) (X2529A0,X2529B0)		
	V8934700	LED Spacer	BL			
10	VZ514300	Butyl-rubber Tape				
CC001	UE037100	Electrolytic Cap. (chip)	10 16V RV2			01
CC002	UE037100	Electrolytic Cap. (chip)	10 16V RV2			01
CC003	UE028220	Electrolytic Cap. (chip)	220 10V RV			01
CC004	UE028220	Electrolytic Cap. (chip)	220 10V RV			01
CC005	UE037100	Electrolytic Cap. (chip)	10 16V RV2			01
CC006	UE028100	Electrolytic Cap. (chip)	100 10V RV			01
CC007	UE037470	Electrolytic Cap. (chip)	47 16V RV2			01
CC008	UE037470	Electrolytic Cap. (chip)	47 16V RV2			01
CC009	UE038100	Electrolytic Cap. (chip)	100 16V RV			01
CC010	UE028100	Electrolytic Cap. (chip)	100 10V RV			01
CC012	UE037100	Electrolytic Cap. (chip)	10 16V RV2			01
CN001	VB858200	Connector Base Post	PH- 3P SE			01
CN002	VB858400	Connector Base Post	PH- 5P SE			01
CN003	VB390100	Connector Base Post	PH- 5P TE			01
CN004	VB389900	Connector Base Post	PH- 3P TE			01
CN005	VB389800	Connector Base Post	PH- 2P TE			01
C0001	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
-0003	US062100	Ceramic Capacitor-SL(chip)	100P 50V J			01
C0004	VR326600	Mylar Capacitor(Chip)	0.0220 16V J			01
-0006	VR326600	Mylar Capacitor(Chip)	0.0220 16V J			01
C0007	VR325700	Mylar Capacitor(Chip)	0.0033 16V J			01
C0008	VR325700	Mylar Capacitor(Chip)	0.0033 16V J			01
C0009	VR327000	Mylar Capacitor(Chip)	0.0470 16V J			01
C0010	VR327000	Mylar Capacitor(Chip)	0.0470 16V J			01
C0011	US063270	Ceramic Capacitor-B (chip)	2700P 50V K			01
C0012	US063270	Ceramic Capacitor-B (chip)	2700P 50V K			01
C0013	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0014	US062470	Ceramic Capacitor-SL(chip)	470P 50V J			01
C0015	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0016	US062150	Ceramic Capacitor-SL(chip)	150P 50V J	Version A		01
C0016	US061560	Ceramic Capacitor-SL(chip)	56P 50V J	Version B		01
C0017	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
-0022	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0023	US063100	Ceramic Capacitor-B (chip)	1000P 50V K			01
C0024	US063120	Ceramic Capacitor-B (chip)	1200P 50V K			01
C0025	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
C0026	US145100	Ceramic Capacitor-F (chip)	0.1000 25V Z			01
D0001	VS597600	Diode	RB160L-40 TE25			01
D0002	VS597600	Diode	RB160L-40 TE25	Version A		01
FT001	VY891400	FET	2SK1103-(TX)			01
-003	VY891400	FET	2SK1103-(TX)			01
IC001	XF291A00	IC	UPC4570G2	OP AMP,Version A		03
IC001	X3125A00	IC	NJU7062M	OP AMP,Version B		03
IC002	XF291A00	IC	UPC4570G2	OP AMP,Version A		03
IC002	X3125A00	IC	NJU7062M	OP AMP,Version B		03
IC003	XF291A00	IC	UPC4570G2	OP AMP		03
IC004	XF291A00	IC	UPC4570G2	OP AMP,Version A		03
IC004	X3124A00	IC	LMH6647MAX	OP AMP,Version B		03
IC005	XR294A00	IC	NJM3414AM(T1)	OP AMP		02
IC006	XT627A00	IC	PST594C-MMP4P	RESET		03
IC007	XT627A00	IC	PST594C-MMP4P	RESET		03
IC008	X0150A00	IC	NJU7202U50	REGULATOR 5V		03
JK002	VK986200	Phone Jack	HLJ0544	LINE OUT		03
LD001	VS079300	LED	SPR-39MVW	POWER		01
RY001	V4494200	Relay	PS7113L-1A	Version A		05
R0001	RD359220	Carbon Resistor (chip)	2.2M 63M J			01
-0006	RD359220	Carbon Resistor (chip)	2.2M 63M J			01
R0007	RD357100	Carbon Resistor (chip)	10K 63M J			01

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REF NO.	PART NO.	DESCRIPTION	REMARKS	QTY	RANK
-0011	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0012	RF356680	Carbon Resistor (chip)	6.8K : D 1608		01
R0013	RF356680	Carbon Resistor (chip)	6.8K : D 1608		01
R0014	RD357330	Carbon Resistor (chip)	33K 63M J		01
-0017	RD357330	Carbon Resistor (chip)	33K 63M J		01
R0018	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0019	RD356220	Carbon Resistor (chip)	2.2K 63M J		01
R0020	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0021	RD356220	Carbon Resistor (chip)	2.2K 63M J		01
R0022	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0023	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0024	RD357220	Carbon Resistor (chip)	22K 63M J		01
R0025	RD357220	Carbon Resistor (chip)	22K 63M J		01
R0026	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0027	RD358100	Carbon Resistor (chip)	100K 63M J		01
R0028	RD357470	Carbon Resistor (chip)	47K 63M J	Version A	01
R0028	RD358120	Carbon Resistor (chip)	120.0K 63M J	Version B	01
R0029	RD154470	Carbon Resistor (chip)	47.0 1/4 J	Version A	01
R0030	RD355680	Carbon Resistor (chip)	680 63M J	Version A	01
R0030	RD357220	Carbon Resistor (chip)	22.0K 63M J	Version B	01
R0031	RD356390	Carbon Resistor (chip)	3.9K 63M J	Version A	01
R0031	RD357330	Carbon Resistor (chip)	33.0K 63M J	Version B	01
R0032	RD357100	Carbon Resistor (chip)	10K 63M J		01
-0034	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0035	RD356270	Carbon Resistor (chip)	2.7K 63M J		01
R0036	RD357100	Carbon Resistor (chip)	10K 63M J		01
-0039	RD357100	Carbon Resistor (chip)	10K 63M J		01
R0040	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0041	RD154470	Carbon Resistor (chip)	47.0 1/4 J		01
R0042	RD154470	Carbon Resistor (chip)	47.0 1/4 J		01
R0043	RD356120	Carbon Resistor (chip)	1.2K 63M J	Version A	01
R0043	RD356220	Carbon Resistor (chip)	2.2K 63M J	Version B	01
R0044	RD358220	Carbon Resistor (chip)	220K 63M J	Version A	01
R0044	RD358100	Carbon Resistor (chip)	100.0K 63M J	Version B	01
R0045	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0046	RD357220	Carbon Resistor (chip)	22K 63M J		01
R0047	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0048	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0049	RD150000	Carbon Resistor (chip)	0.0 1/4 J	Version A	01
R0050	RD356100	Carbon Resistor (chip)	1.0K 63M J		01
R0051	RD357100	Carbon Resistor (chip)	10K 63M J	Version A	01
R0051	RD356100	Carbon Resistor (chip)	1.0K 63M J	Version B	01
R0052	RD355560	Carbon Resistor (chip)	560 63M J	Version A	01
R0052	RD357220	Carbon Resistor (chip)	22.0K 63M J	Version B	01
SW001	VQ545300	Slide Switch	SSSF012	POWER ON/OFF	02
* SW002	V6264900	Slide Switch	SSSF041200	EQ MODE	
TR001	VV556400	Transistor	2SC2412K Q,R,S		01
TR002	VD303700	Transistor	2SC3326 A,B TE85R		01
-004	VD303700	Transistor	2SC3326 A,B TE85R		01
TR005	VJ927200	Transistor	2SA1162 O,Y		01
VR001	VF636100	Rotary Variable Resistor	A 10.0K RK09K12C	VOLUME	03
* VR002	V9287700	Micro Volume	10KA RK10J12E	EQ CTRL	
VR003	VB593200	Trimmer Potentiometer	B 100.0K 3P EVN	Pickup Balancer	01
*	V8773300	Pickup Assembly			

* : New parts

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