

Service Manual

Portable Stereo Component System

RX-CS45GC
RX-CS45GU
RX-CS45GS
RX-CS45GS1

Colour

(K)...Black Type



Specifications

n RADIO

Frequency range

FM	87.5-108 MHz
MW	520-1610 kHz
SW1	2.3-7.0 MHz
SW2	7.0-22.0 MHz

n TAPE RECORDER

Track system	Stereo
Monitor system	Variable sound monitor
Recording system	AC bias(84 kHz)
Erasing system	Multi pole Magnet
Frequency range	
Normal	40 Hz-12 kHz

n GENERAL

Power requirement

AC	110-127 V/220-240 V, 50/60 Hz
Power consumption	22 W
Power consumption in standby mode	2.75 W
Battery	12 V (Eight R20/LR20, D, UM-1 batteries)

DC IN	12-13.2 V
Power output	
PMPO	200 W
RMS(max.)	(DC 12 V/AC 117 V) 9 W x 2/8.3 W x 2
Speakers	10 cm 8 Ω
Full range	2 Ceramic Tweeter

Jacks

Input sensitivity / Input impedance	
CD/LINE IN	
Normal	316 mV, 33 k Ω
High	100 mV, 12 k Ω
Output impedance	
Headphones	32 Ω
Dimensions (W x H x D)	518 x 260 x 225 mm
Main unit	210 x 255 x 230 mm
Speaker box	163 x 260 x 210 mm
Mass	6.2 kg with batteries 5.38 kg without batteries

Notes:

1. Specifications are subject to change without notice.
2. Mass and dimensions are approximate.

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WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Safety Precautions

1.1. General Guidelines

1. When servicing observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, ensure that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, check for leakage current to prevent from being exposed to shock hazards.

1.1.1. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Using an ohmmeter measure the resistance value, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis the reading should be between $1M\Omega$ and $5.2M\Omega$.

When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

1.1.2. Leakage Current Hot Check (See Fig. 1)

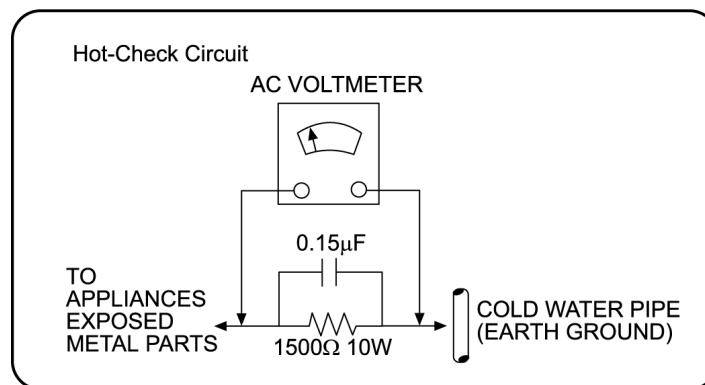


Fig. 1

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a $1.5k\Omega$, 10 watts resistor, in parallel with a $0.15\mu F$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Fig. 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. Should the measurement outside of the limits specified, there is a possibility of a shock hazard, and equipment should be examine and reached before it is returned to the customer.

1.2. Caution for AC Cord (For GS only)

Note on AC power supply cord (For Saudi Arabia and Kuwait only)

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below. Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

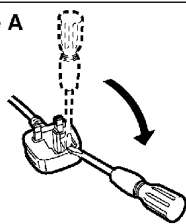
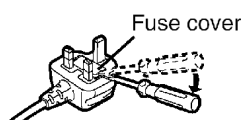


Figure B



2. Replace the fuse and close or attach the fuse cover.

Figure A

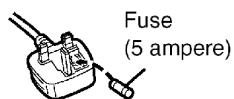
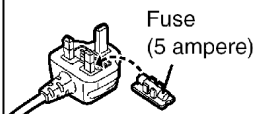


Figure B



1.3. Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector. Use a minus (-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be sure.

(If the power supply in your area is 220 V to 240 V, set to "220 V to 240 V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

1.4. Before Repair and Adjustment

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

Current consumption in AC 110 V, 127 V, 220 V or 240 V at 50 Hz in NO SIGNAL mode at (volume minimum) should be ~ 90 mA, ~ 110 mA, ~ 50 mA or ~ 60 mA respectively.

Battery current consumption (12 V DC) is ~ 250 mA.

1.5. Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example the positive and negative speaker connection wires are "shorted", or if speaker with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

2 Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder remover device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution:

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize body motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

3 Warning

3.1. Service caution based on legal restrictions

3.1.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder. (See right figure)	PbF
---	-----

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
(Definition: The letter of "PbF" is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

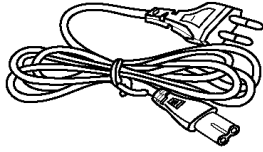
Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
- | | |
|-----------------|-------------------|
| RFKZ03D01K----- | (0.3mm 100g Reel) |
| RFKZ06D01K----- | (0.6mm 100g Reel) |
| RFKZ10D01K----- | (1.0mm 100g Reel) |

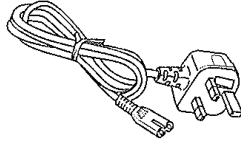
Note

- * Ingredient: Tin (Sn), 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

4 Accessories



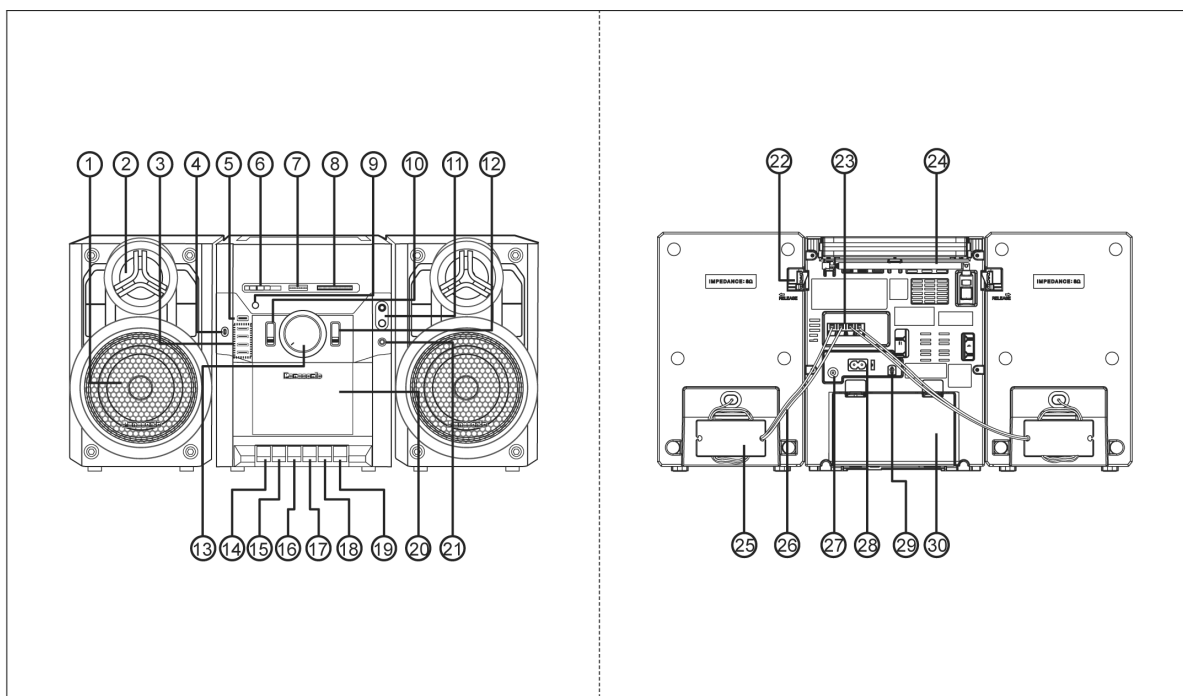
AC Cord... (For GC/GS1/GU)



AC Cord... (For GS only)

5 Operating Instructions Procedures

5.1. Main Operation Buttons



- ① Speakers (Full Range)
- ② Speakers (Tweeter)
- ③ Preset equalizer buttons
- ④ Built-in microphone (MIC)
- ⑤ XBS button
- ⑥ Band selector (BAND)
- ⑦ Fine tuning control (FINE TUNING)
- ⑧ Tuning control (TUNING)
- ⑨ Operation/battery indicator (OPERATION/BATT)
- ⑩ FM mode/beat proof selector (FM MODE/BP)/
Audio input level switch (CD LINE IN)
- ⑪ Audio input terminal (CD/LINE IN)
- ⑫ Function selector (SELECTOR)
- ⑬ Volume control (VOLUME)
- ⑭ Recording button (● REC)
- ⑮ Playback button (▶ PLAY)
- ⑯ Rewind/review button (◀◀ REW/REV)
- ⑰ Fast forward/cue button (▶▶ FF/CUE)
- ⑱ Stop/eject button (■/▲ STOP/EJECT)
- ⑲ Pause button (⏸ PAUSE)
- ⑳ Cassette holder
- ㉑ Headphones jack (PHONES)
- ㉒ Speaker release levers (RELEASE)
- ㉓ Speaker terminals (SPEAKERS)
- ㉔ Whip antenna
- ㉕ Speaker cord compartments
- ㉖ Speaker cords
- ㉗ DC input jack (DC IN)
- ㉘ AC socket (AC IN~)
- ㉙ Voltage selector (VOLT ADJ)
- ㉚ Battery compartment cover

6 Assembling and Disassembling

6.1. Caution

“Attention Servicer”

Some chassis components may have sharp edges.

Be careful when disassembly and servicing.

1. This section describes procedure for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
3. Select items from the following index when checks or replacement are required.
4. Refer to the Part No. on the page of “Parts Location and Replacement Parts List” if necessary.

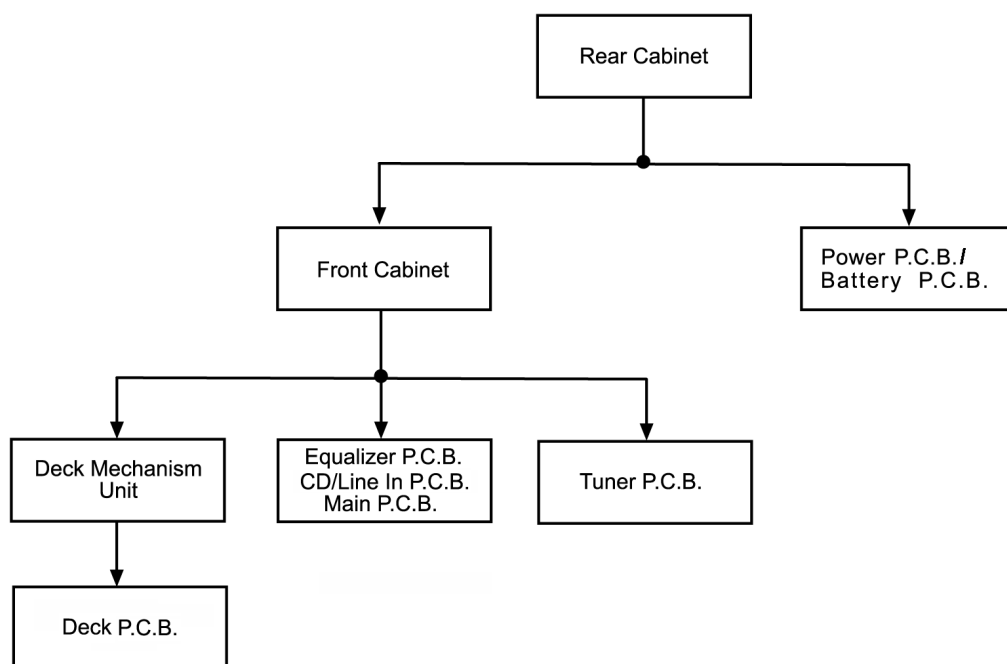
6.2. Disassembly Procedures

- Disassembly of the Front Cabinet
- Disassembly of the Equalizer P.C.B., CD/Line In P.C.B. and Main P.C.B.
- Disassembly of the Deck Mechanism Unit and Deck P.C.B.
- Disassembly of the Tuner P.C.B.
- Disassembly of the Power P.C.B./ Battery P.C.B.
- Disassembly of the Speaker

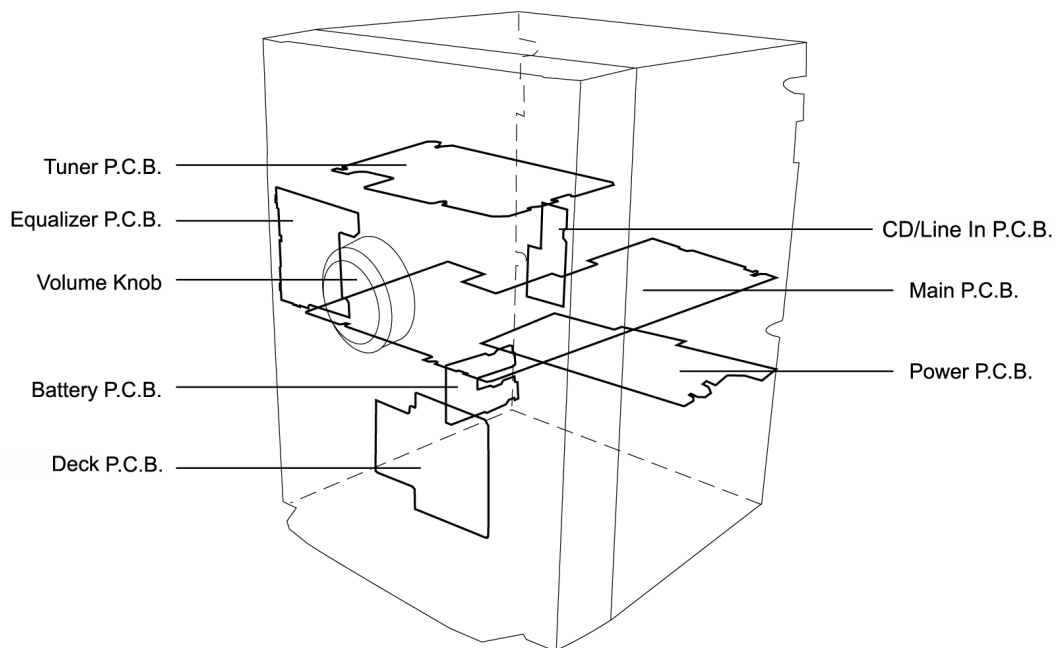
6.3. Disassembly Flow chart

The following chart is the procedure for disassembly the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart as below.

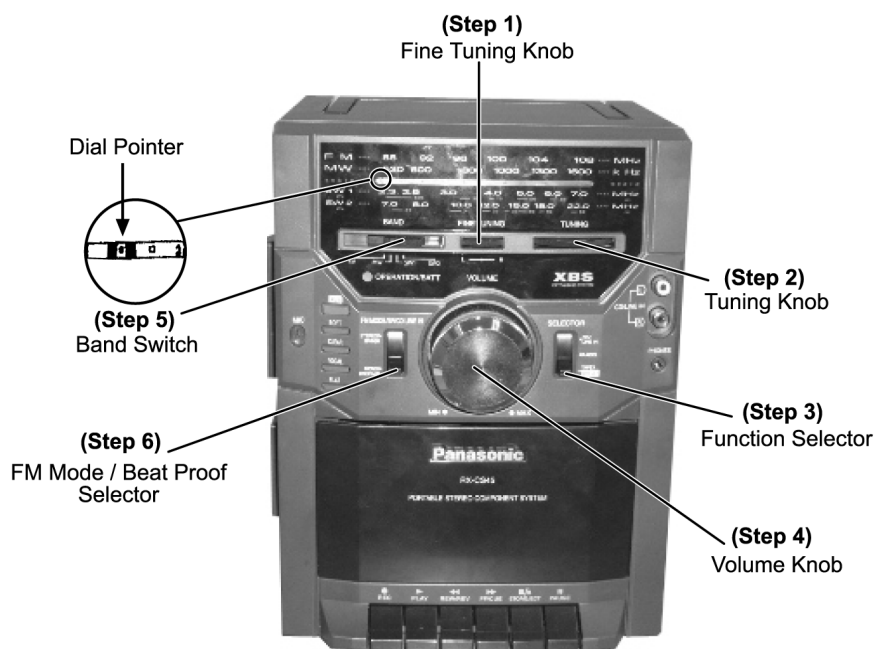


6.4. Main Parts Location Diagram



6.5. Before Disassembly

Important notes: Ensure all the settings as below are set before proceeding to the disassemble steps.



Step 1: Set fine tuning knob to centre.

Step 2: Set tuning knob until dial pointer line up at "0" point graduation as shown in the figure.

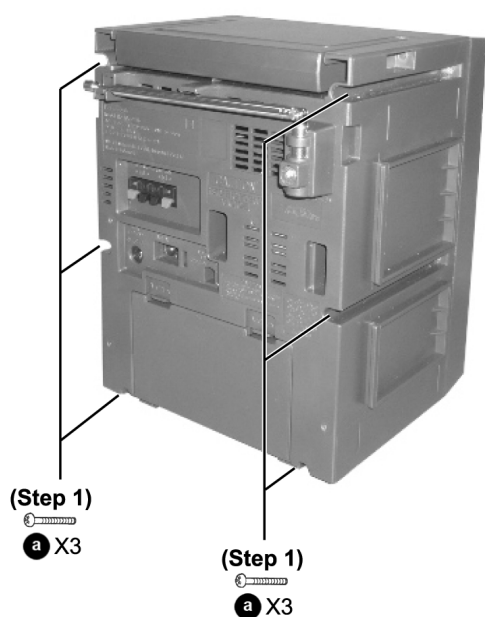
Step 3: Set function selector to OFF.

Step 4: Set volume knob to minimum.

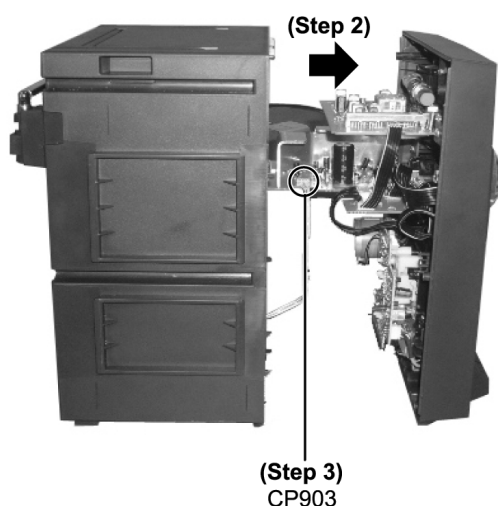
Step 5: Set band switch to SW2.

Step 6: Set FM mode/ beat proof selector to normal.

6.6. Disassembly of Front Cabinet



Step 1: Remove 6 screws.



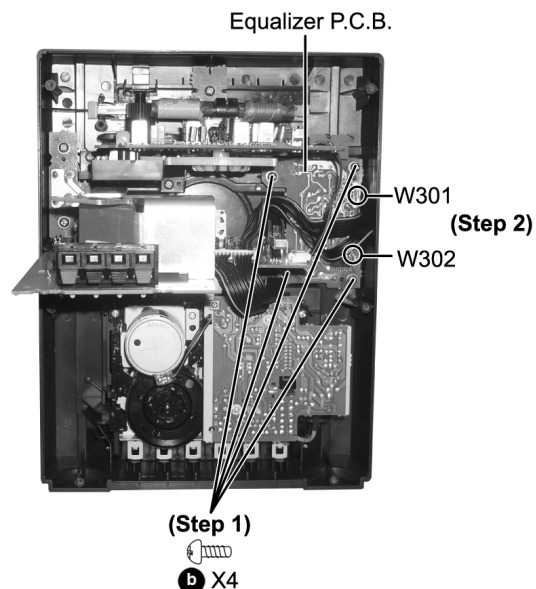
Step 2: Slightly push the front cabinet as arrow shown.

Step 3: Disconnect the connector (CP903).

6.7. Disassembly Equalizer P.C.B., CD/Line In P.C.B. and Main P.C.B.

• Follow (Step 1 - Step 3) of item 6.6.

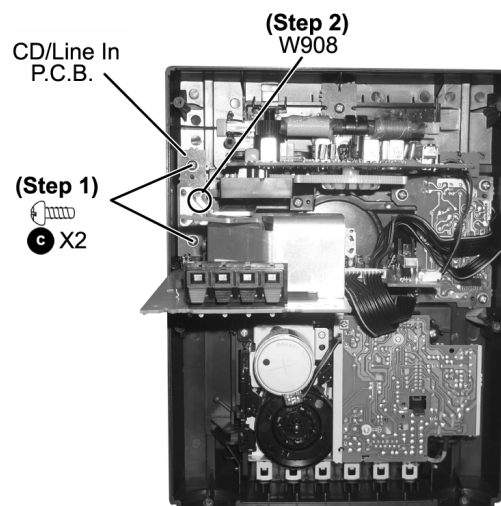
6.7.1. Disassembly Equalizer P.C.B.



Step 1: Remove 4 screws.

Step 2: Unsolder wires (W301 and W302) from Equalizer P.C.B.

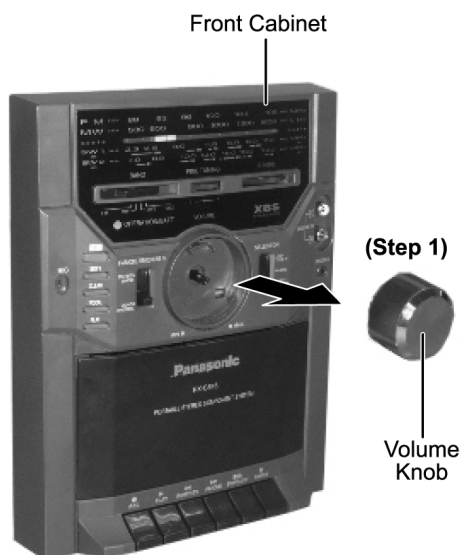
6.7.2. Disassembly CD/Line In P.C.B.



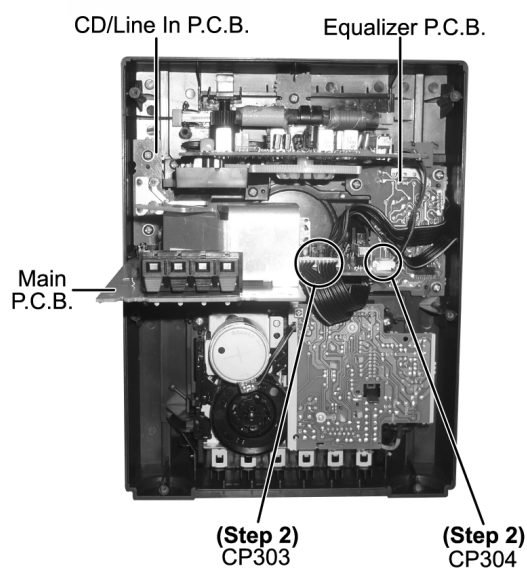
Step 1: Remove 2 screws.

Step 2: Unsolder wire (W908) from CD/Line In P.C.B.

6.7.3. Disassembly Main P.C.B.

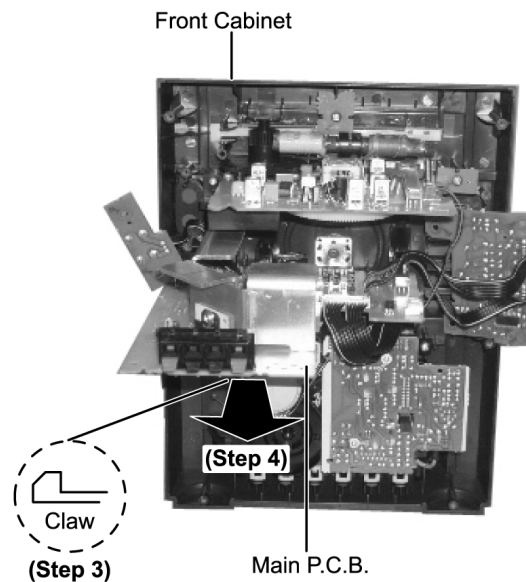


Step 1: Remove volume knob.



Step 2: Disconnect the connectors (CP303 and CP304).

- Follow (Step 1) of item 6.7.1.
- Follow (Step 1) of item 6.7.2

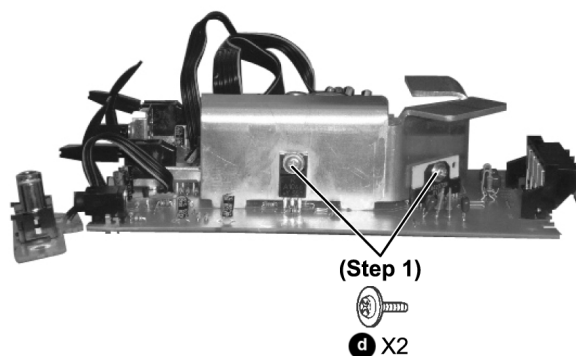


Step 3: Release the claw.

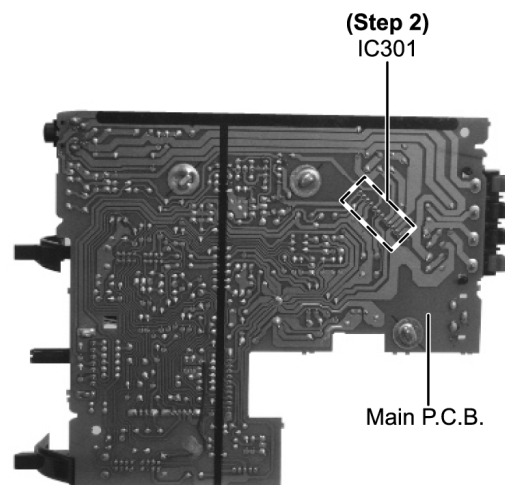
Step 4: Remove the Main P.C.B. as arrow shown.

6.7.3.1. Replacement of Power IC

- Follow the (Step 1 - Step 4) of item 6.7.3.



Step 1: Remove 2 screws.



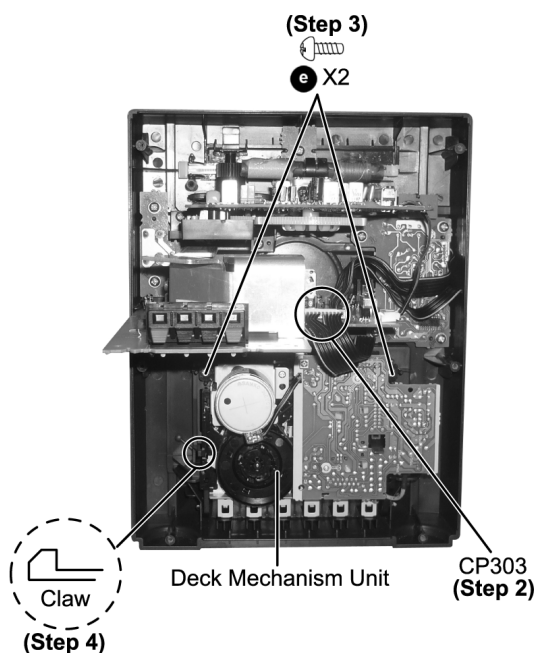
Step 2: Unsolder all the pins for solder side of Main P.C.B.

6.8. Disassembly of Deck Mechanism Unit

· Follow (Step 1 - Step 3) of item 6.6.



Step 1: Press the stop/eject button.



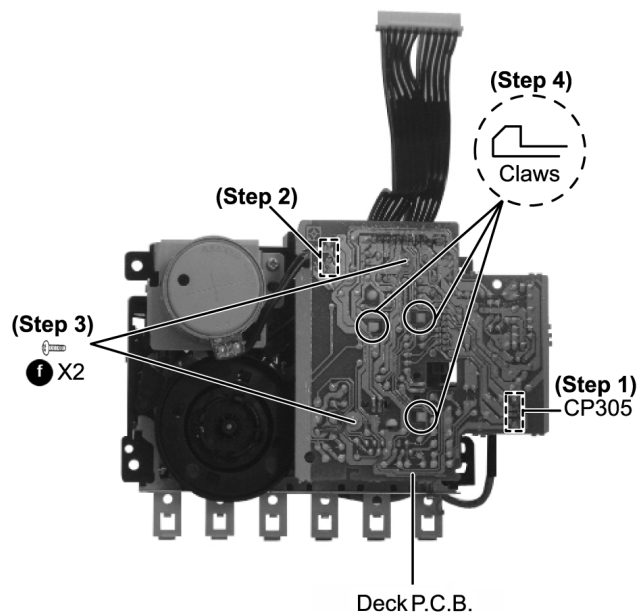
Step 2: Disconnect the connector (CP303).

Step 3: Remove 2 screws.

Step 4: Release the claw.

6.8.1. Disassembly of Deck P.C.B.

· Follow (Step 1 - Step 4) of item 6.8.



Step 1: Disconnect the connector (CP305).

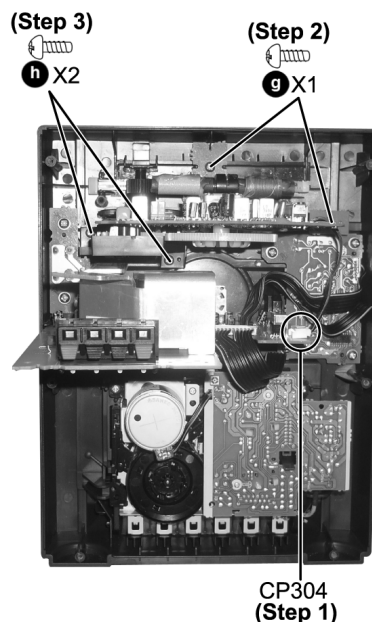
Step 2: Unsolder motor wire.

Step 3: Remove 2 screws.

Step 4: Release 3 claws.

6.9. Disassembly of Tuner P.C.B.

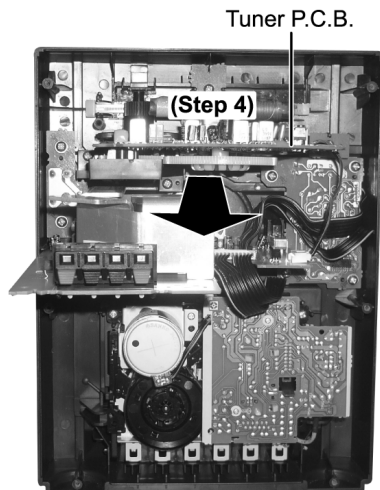
· Follow (Step 1 - Step 3) of item 6.6.



Step 1: Disconnect the connector (CP304) from Main P.C.B.

Step 2: Remove 1 screw from each Support P.C.B.

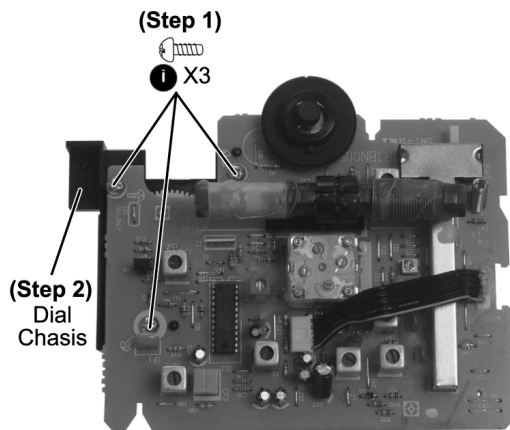
Step 3: Remove 2 screws.



Step 4: Remove the Tuner P.C.B. as arrow shown.

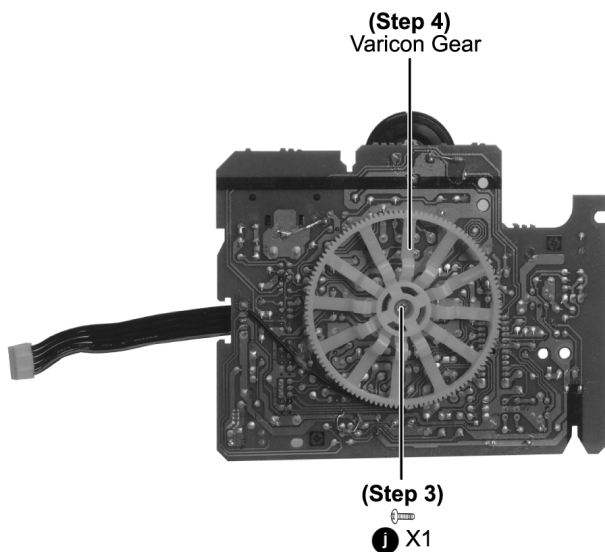
6.9.1. Disassembly of Varicon

· Follow (Step 1 - Step 4) of item 6.9.



Step 1: Remove 3 screws.

Step 2: Remove the dial chasis.

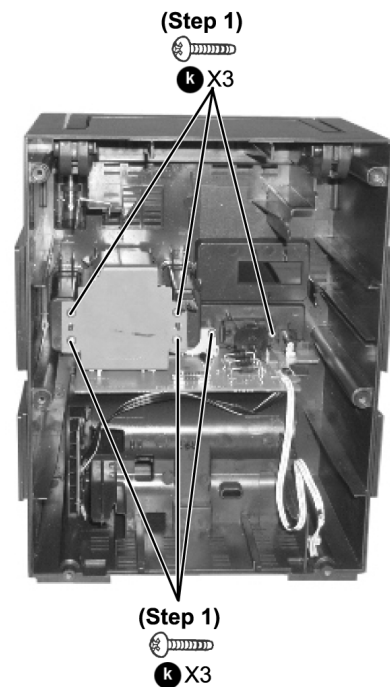


Step 3: Remove 1 screw.

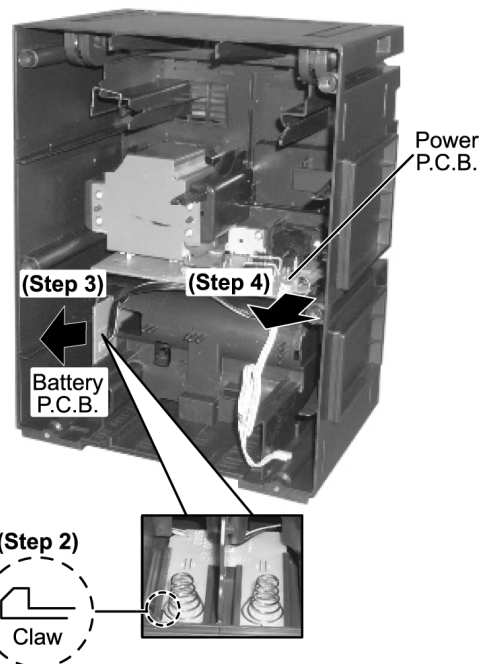
Step 4: Remove the varicon gear.

6.10. Disassembly of Power P.C.B./ Battery P.C.B.

· Follow (Step 1 - Step 3) of item 6.6.



Step 1: Remove 6 screws.

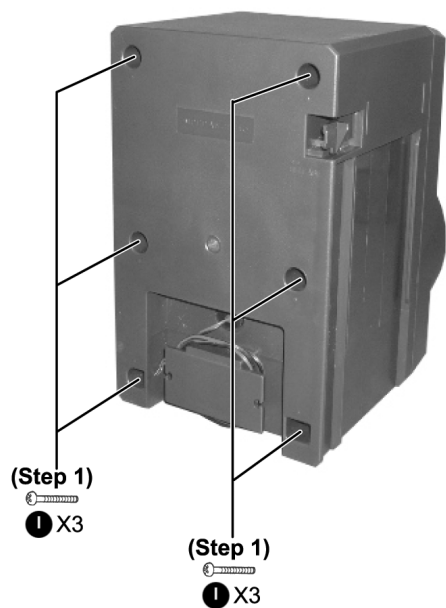


Step 2: Release the claw from the battery compartment.

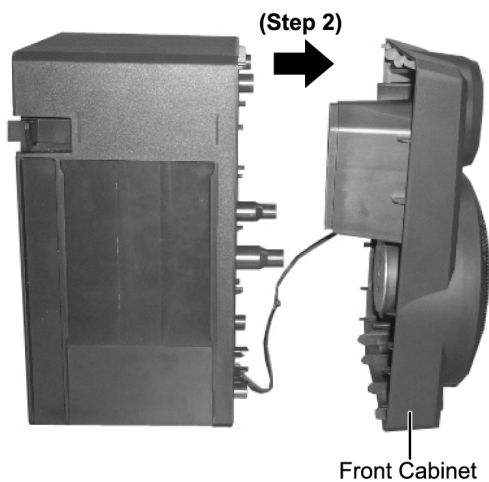
Step 3: Remove the Battery P.C.B. as arrow shown.

Step 4: Remove the Power P.C.B. as arrow shown.

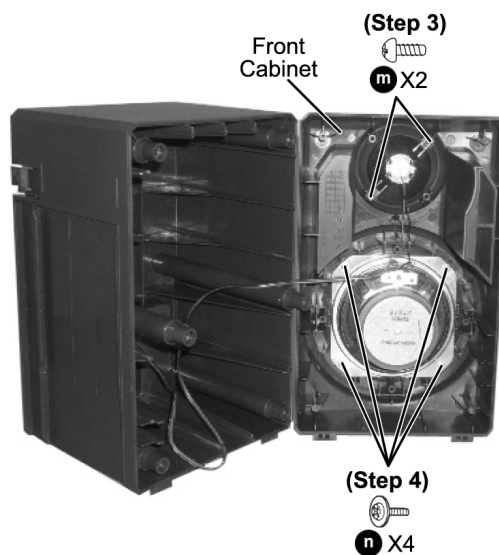
6.11. Disassembly of Speaker



Step 1: Remove 6 screws.

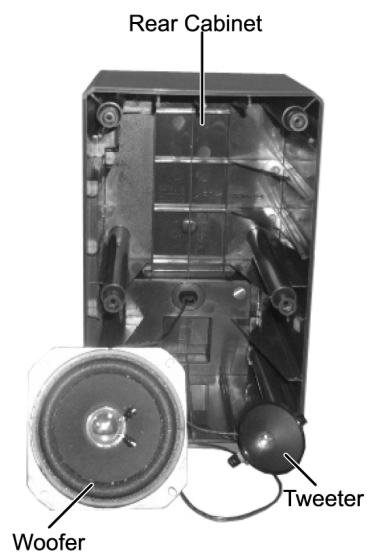


Step 2: Slightly push the front cabinet forward as arrow shown.



Step 3: Remove 2 screws.

Step 4: Remove 4 screws.



Step 5: Release woofer and tweeter from front cabinet.

7 Service Positions

7.1. Checking Procedures

Note: For description of the disassembly procedures, see the section 6.

7.2. Checking and Repairing of the Equalizer P.C.B., CD/Line In P.C.B. and Main P.C.B.

1.Disassembly Front Cabinet

Remove 6 screws from rear cabinet.

Disconnect connector (CP903) from Main P.C.B.

2.Disassembly Equalizer P.C.B., CD/Line In P.C.B. and Main P.C.B.

Pull out the volume knob.

Disconnect connectors (CP303) and (CP304)
from Main P.C.B.

Remove 4 screws from Equalizer P.C.B.

Remove 2 screws from CD/Line In P.C.B.

Release the claw.

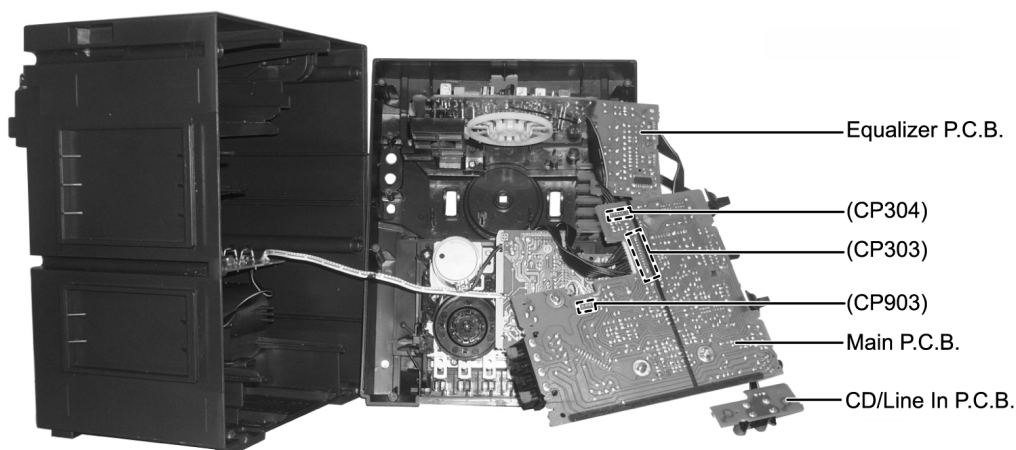
Remove Main P.C.B.

3.Connect Power P.C.B., Tuner P.C.B and Deck P.C.B.

Connect wire W903 (Power P.C.B.) to connector CP903 (Main P.C.B.).

Connect wire W303 (Tuner P.C.B.) to connector CP304 (Main P.C.B.).

Connect wire CN303 (Deck P.C.B.) to connector CP303 (Main P.C.B.).



7.3. Checking and Repairing of the Deck P.C.B.

1.Disassembly Front Cabinet

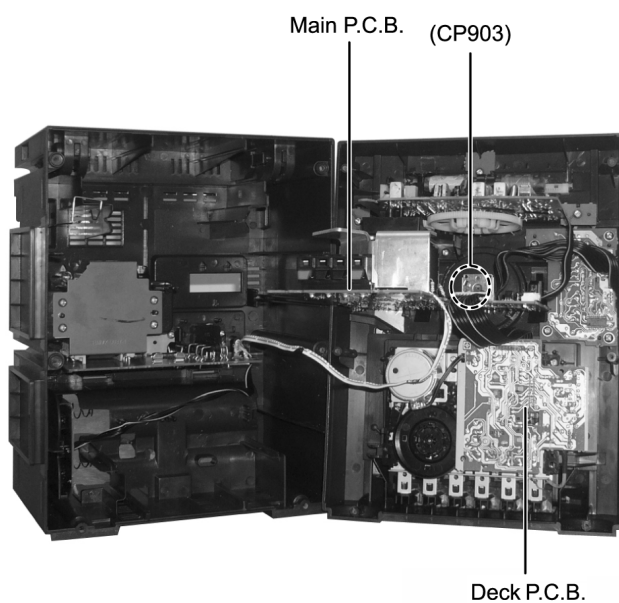
Remove 6 screws from rear cabinet.

Disconnect connector (CP903) from Main P.C.B.



2.Connect Power P.C.B.

Connect wire W903 (Power P.C.B.) to connector CP903 (Main P.C.B.).



7.4. Checking and Repairing of the Tuner P.C.B.

1.Disassembly Front Cabinet

Remove 6 screws from rear cabinet.

Disconnect connector (CP903) from Main P.C.B.

2.Disassembly Tuner P.C.B.

Disconnect the connector (CP304).

Remove 1 screw from each Support P.C.B.

Remove 2 screws.

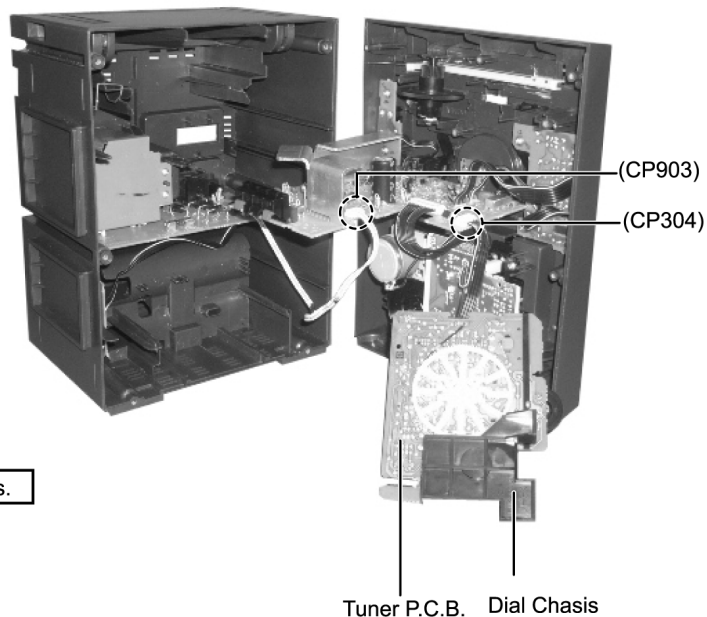
Pull out Tuner P.C.B.

Remove 3 screws from Tuner P.C.B and remove the dial chasis.

3.Connect Power P.C.B.,Tuner P.C.B.

Connect wire W903 (Power P.C.B.) to connector CP903 (Main P.C.B.).

Connect wire W303 (Tuner P.C.B.) to connector CP304 (Main P.C.B.).



7.5. Checking and Repairing of the Power P.C.B.

1.Disassembly Front Cabinet

Remove 6 screws from rear cabinet.

Disconnect connector (CP903) from Main P.C.B.

2.Disassembly Power P.C.B.

Remove 6 screws from Transformer.

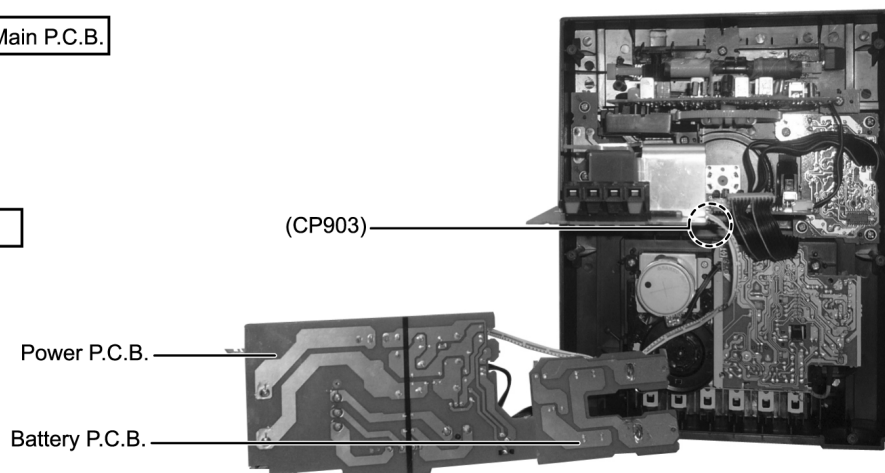
Release the claw.

Pull out the Battery P.C.B.

Remove Power P.C.B.

3.Connect Power P.C.B.

Connect wire W903 (Power P.C.B.) to connector CP903 (Main P.C.B.).



8 Adjustment Procedures

8.1. Tuner Section

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set volume control to maximum.
2. Set band switch to MW, SW1, SW2 and FM.
3. Set function selector to radio.
4. Set fine tuning to centre.
5. Set power source voltage to 6V DC.
6. Output of signal generator should be no higher than necessary to obtain an output reading.

I AM-IF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (IF Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	455 kHz	Point of non-interference. (on/about 600 kHz)	TP3 (SIGNAL), TP4 (GND).	T2 (AM IFT)	Adjust the RF output of the sweemar scope as low as possible to prevent the receiver from saturation. Should be obtained 'V' curve. (Refer to Fig.2)

I MW-RF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (AM Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	511 kHz (GC,GU,GS)	Tuning capacitor fully closed.	TP3, TP4 (GND)	L8 (MW OSC Coil)	Adjust for minimum output.
	520 kHz (GS1)				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	1,650 kHz (GC,GU,GS)	Tuning capacitor fully opened.	TP3, TP4 (GND)	CT6 (MW ANT VC1)	Adjust for maximum output.
	1635 kHz (GS1)				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	550 kHz	Tune to signal.	TP3, TP4 (GND)	[*1] L3 (MW ANT Coil)	Adjust for minimum output.
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	1,500 kHz	Tune to signal.	TP3, TP4 (GND)	CT5 (MW ANT VC1)	Adjust for maximum output.

I SW1-RF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (SW Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	2.25 MHz	Tuning capacitor fully closed.	TP3, TP4 (GND)	L9 (SW1 OSC Coil)	Adjust for minimum output.
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	7.23 MHz	Tuning capacitor fully opened.	TP3, TP4 (GND)	CT1-3 (SW1 ANT Coil)	Adjust for maximum output.
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	2.3 MHz	Tune to signal.	TP3, TP4 (GND)	[*1] L3 (SW1 ANT Coil)	Adjust for minimum output.
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	7.0 MHz	Tune to signal.	TP3, TP4 (GND)	CT1-4 (SW1 ANT VC1)	Adjust for maximum output.

[*1] Fix antenna coil with wax after completing alignment.

I SW2-RF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (SW Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				

Connect to test point TP9 through ceramic capacitor (10pF). Negative side to SW2 GND.	6.89 MHz	Tuning capacitor fully closed.	TP3, TP4 (GND)	L10 (SW1 OSC Coil)	Adjust for minimum output.
Connect to test point TP9 through ceramic capacitor (10pF). Negative side to SW2 GND.	22.79 MHz	Tuning capacitor fully open.	TP3, TP4 (GND)	CT7 (SW1 OSC Trimmer)	Adjust for maximum output.
Connect to test point TP9 through ceramic capacitor (10pF). Negative side to SW2 GND.	7.0 MHz	Tune to signal.	TP3, TP4 (GND)	L7 (SW1 ANT Coil)	Adjust for minimum output.

I FM-IF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (IF Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				
Connect to test point TP13 through ceramic capacitor (10pF). Negative side to test point TP2.	10.7 MHz (SWP)	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to test point TP3. Negative side to test point TP4.	T1 (FM 1st IFT)	Adjust the RF output of the sweemar scope as low as possible to prevent the receiver from saturation. Should be obtained 'V' curve. (Refer to Fig.3)
Connect to test point TP13 through ceramic capacitor (10pF). Negative side to test point TP2.	10.7 MHz (SWP)	Point of non-interference. (on/about 90 MHz)	Connect vert. amp. of scope to test point TP3. Negative side to test point TP4.	T3 (FM 2nd IFT)	Adjust the RF output of the sweemar scope as low as possible to prevent the receiver from saturation. Should be obtained 'S' curve. (Refer to Fig.4)

I FM-RF Alignment

Signal Generator or Sweep Generator		Radio Dial Setting	Indicator (FM Sweemar Scope)	Adjustment (Shown in Fig.1)	Remarks
Connections	Frequency				
Connect to test point TP1 through FM dummy antenna. Negative side to test point TP2.	86.2 MHz (GC, GU, GS) 87.45 (GS1)	Variable capacitor fully closed.	TP3 (SIGNAL), TP4 (GND)	L2 (FM OSC Coil)	[*2] Adjust for maximum output.
Connect to test point TP1 through FM dummy antenna. Negative side to test point TP2.	109.2 MHz	Variable capacitor fully open.	TP3 (SIGNAL), TP4 (GND)	CT1-1 (FM OSC VC1)	[*2] Adjust for maximum output.
Connect to test point TP1 through FM dummy antenna. Negative side to test point TP2.	106 MHz	Tune to signal.	TP3 (SIGNAL), TP4 (GND)	CT1-2 (FM ANT VC1)	Adjust for maximum output.

[*2] three output responses will be present; proper tuning is the center frequency.

8.2. Deck Section

I Deck Adjustment

Item	Input	Measurement Point	Specification	Adjustment	Remarks
Azimuth b/w left & right channel	QZZCAB (~ 3 dB)	Headphone Jack (32 w)	Output Level (Tone and Volume Maximum) 40 mV or greater adjust to max. peak	Azimuth Screw (Refer to Fig. 5)	Playback mode at volume max. under equalizer flat. After alignment, lock screw with screw lock (nigi lock)
Tape Speed	QZZCWAT 3 kHz	Headphone Jack or Speaker	3000 ±90 Hz	N.A	Playback mode (Only checking is needed in this model.)

8.3. Alignment Point

* Please refer to Circuit Board and Wiring Diagram for test point locations.

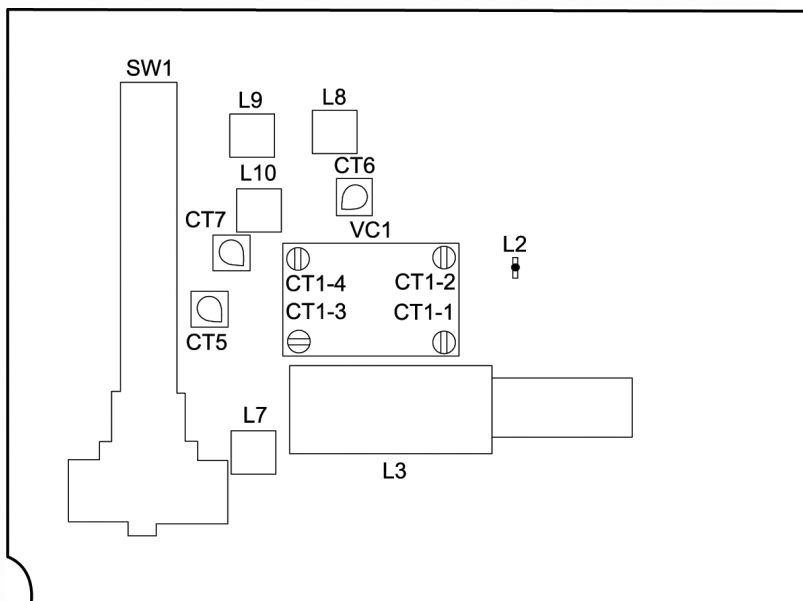


Fig. 1

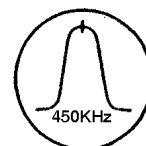


Fig. 2



Fig. 3



Fig. 4

NOTE: MINIMUM SCREW-LOCK APPLY ON SCREW MUST BE 180° AROUND THE SCREW.

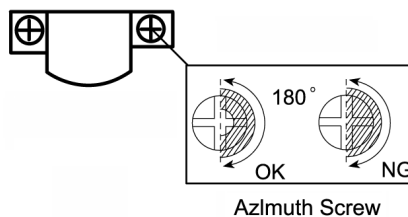
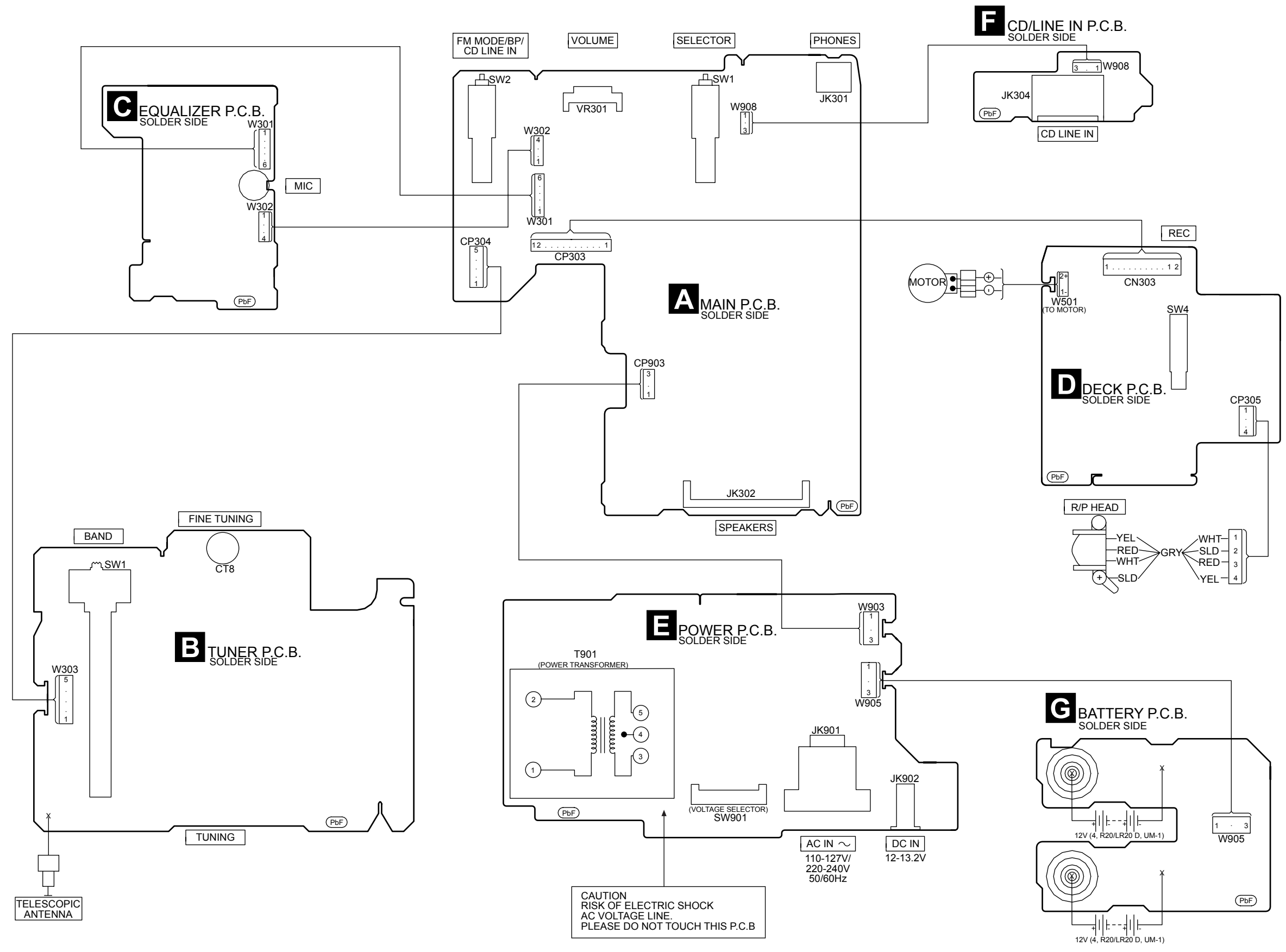


Fig. 5

Adjustment	Adjustment Points
AM-IF Alignment	T2 (AM IFT)
MW-RF Alignment	L8 (MW OSC Coil)
	CT6 (MW ANT VC1)
	L3 (MW ANT Coil)
	CT5 (MW ANT VC1)
SW1-RF Alignment	L8 (SW1 OSC Coil)
	CT1-3 (SW1 ANT Coil)
	L3 (SW1 ANT Coil)
	CT1-4 (SW1 ANT VC1)
SW2-RF Alignment	L10 (SW1 OSC Coil)
	CT7 (SW1 OSC Trimmer)
	L7 (SW1 ANT Coil)
FM-IF Alignment	T1 (FM 1st IFT)
	T3 (FM 2nd IFT)
FM-RF Alignment	L2 (FM OSC Coil)
	CT1-1 (FM OSC VC1)
	CT1-2 (FM ANT VC1)

9 Wiring Diagrams



10 Notes of Schematic Diagrams


(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

S352	VOCAL SWITCH
S353	FLAT SWITCH
S354	CLEAR SWITCH
S355	SOFT SWITCH
S356	XBS SWITCH
S501	LEAF SWITCH
S502	CUE/REW SWITCH
SW1	FUNCTION SWITCH
SW1	BAND SWITCH
SW2	FM MODE/BP/CD LINE IN SWITCH
SW4	RECORDING SWITCH
SW901	VOLTAGE SELECTOR SWITCH
VR301	VR VOLUME CONTROL

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.

• **Importance safety notice:**

Components identified by  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

11 Schematic Diagrams

SCHEMATIC DIAGRAM - 1

A MAIN CIRCUIT

→ : AM/FM SIGNAL LINE
→ : MAIN SIGNAL LINE
→ : AUX SIGNAL LINE
→ : MIC SIGNAL LINE
→ : TAPE RECORD SIGNAL LINE
→ : TAPE PLAYBACK SIGNAL LINE

— : +B SIGNAL LINE

F CD/LINE IN CIRCUIT

B TO TUNER CIRCUIT (W303) ON SCHEMATIC DIAGRAM - 2

D DECK CIRCUIT

C EQUALIZER CIRCUIT

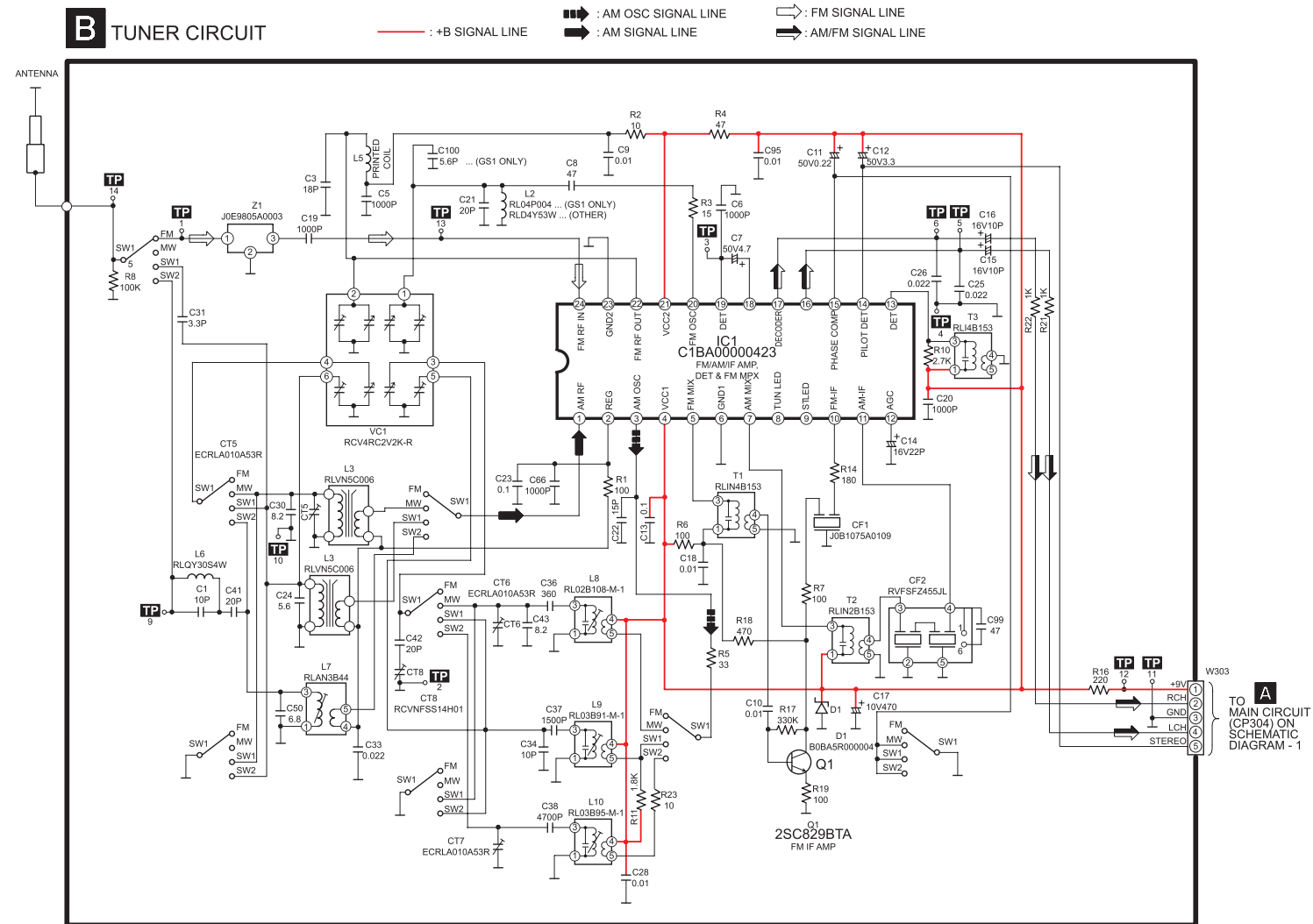
E POWER CIRCUIT

G BATTERY CIRCUIT

RX-CS45GC/GU/GS/GS1 MAIN/EQUALIZER/DECK/POWER/BATTERY/CD/LINE IN CIRCUIT

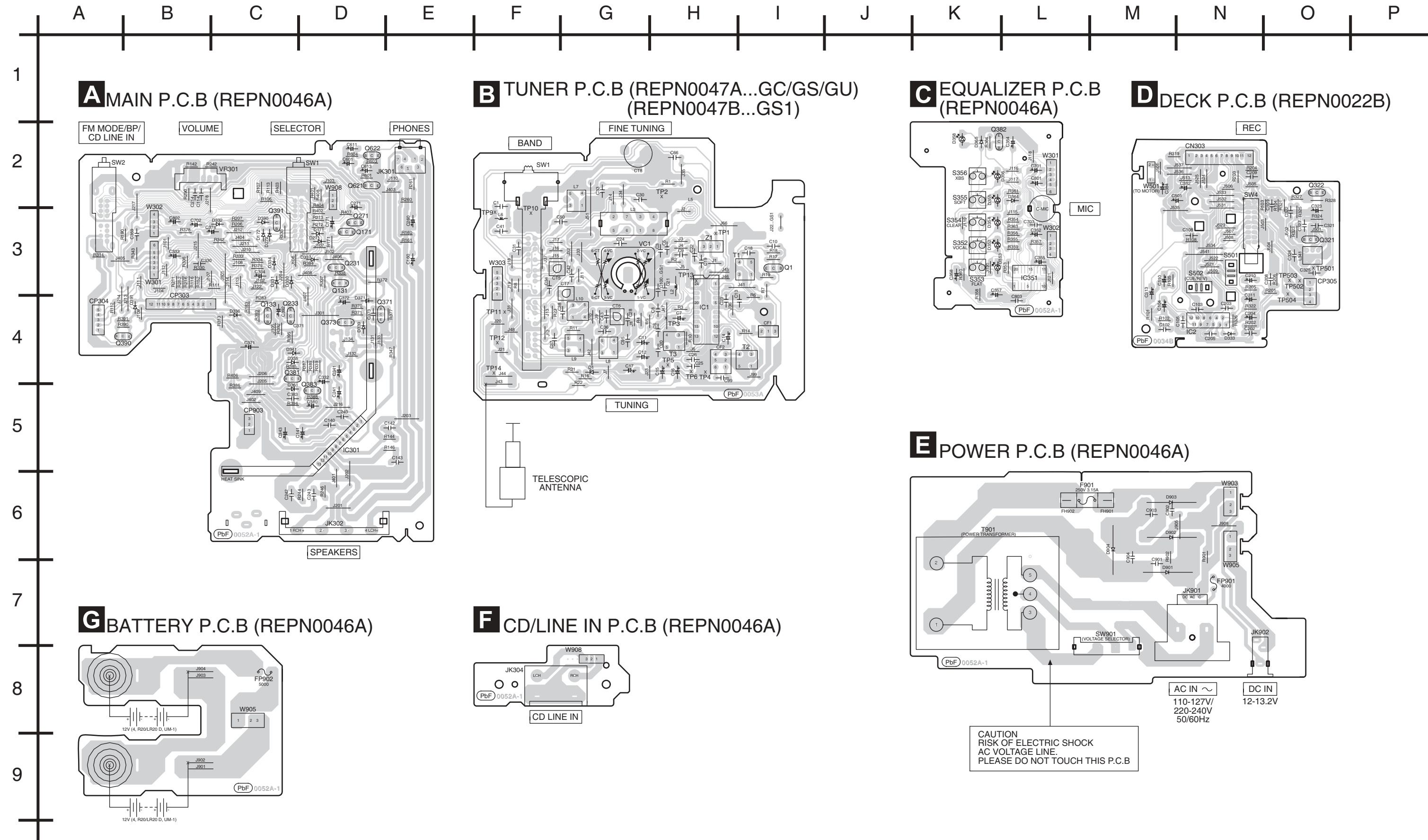
SCHEMATIC DIAGRAM - 2

B TUNER CIRCUIT

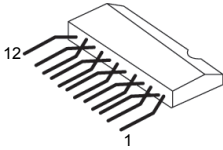
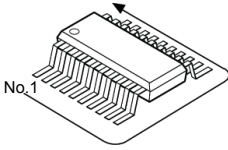
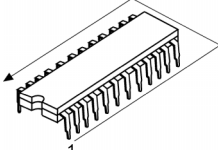
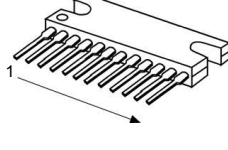
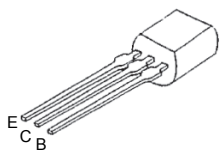
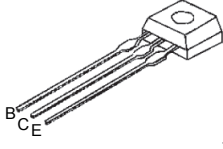
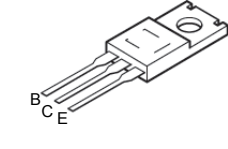
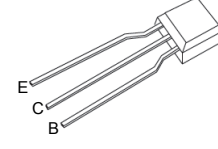
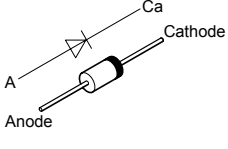
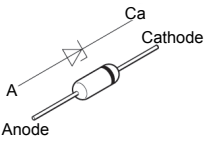
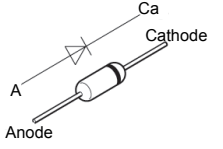
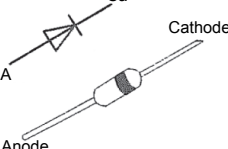
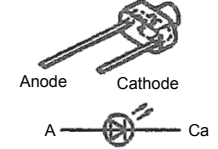


RX-CS45GC/GU/GS/GS1 TUNER CIRCUIT

12 Printed Circuit Board Diagrams

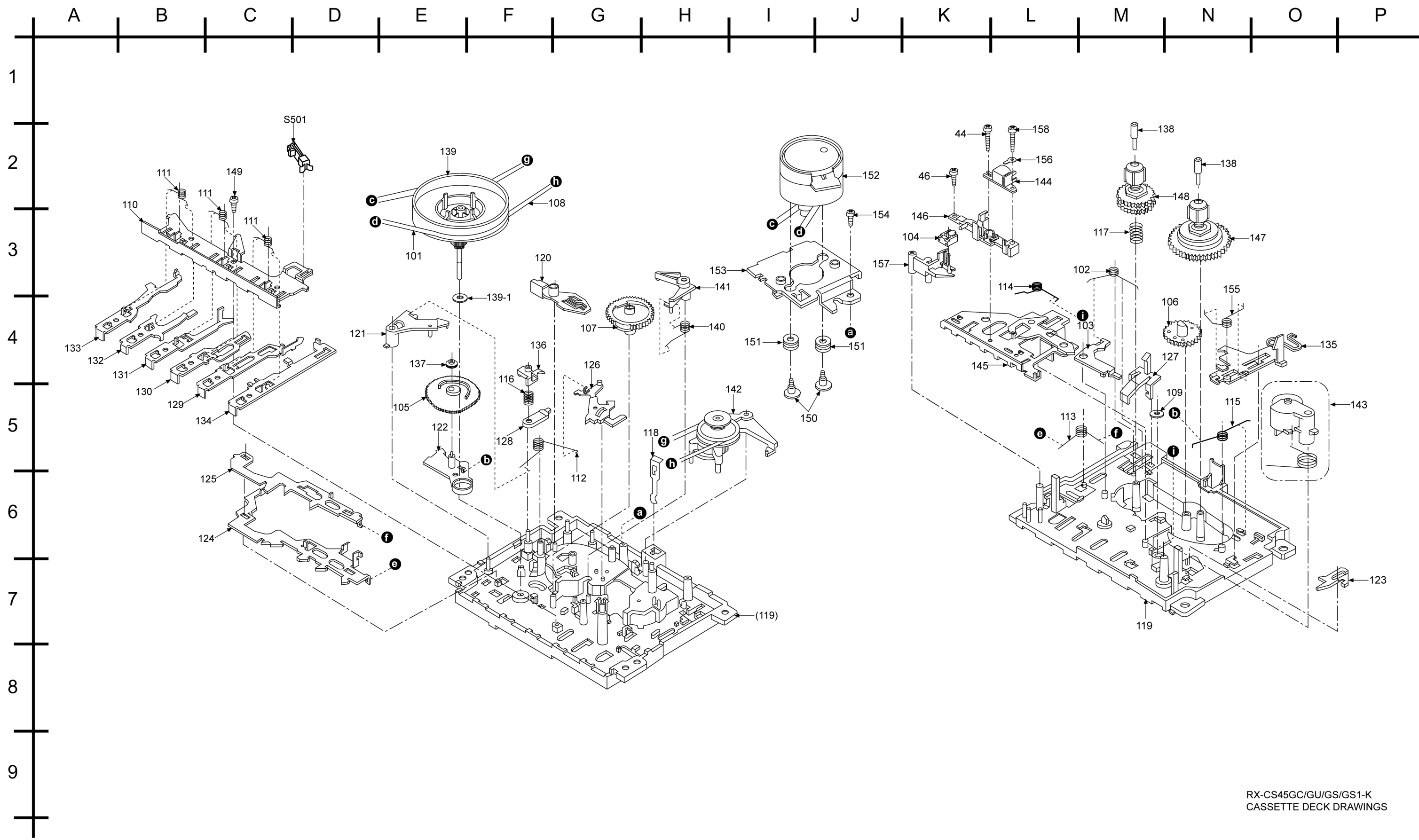


13 Illustration of ICs, Transistors and Diodes

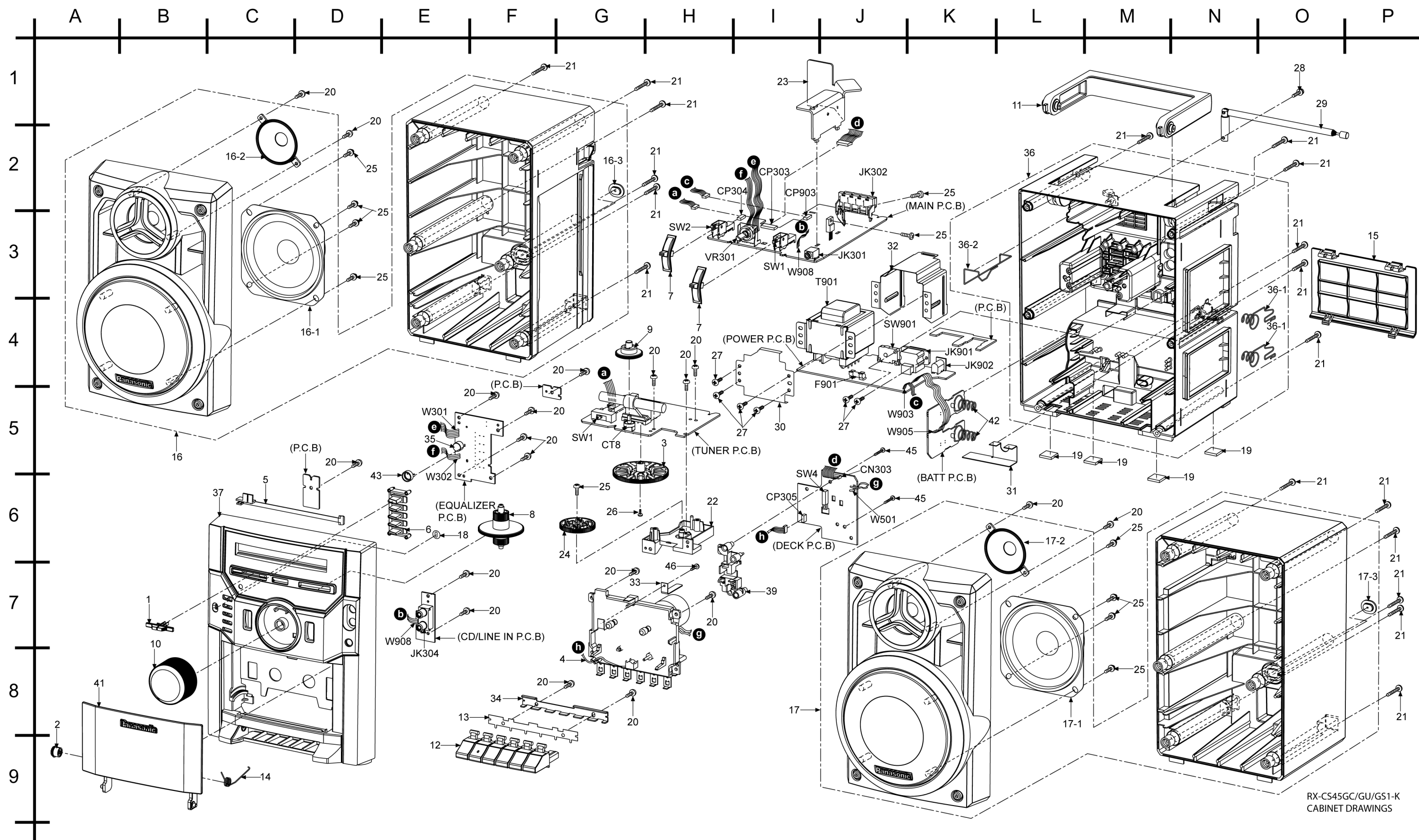
<p>BA3313L (12P)</p> 	<p>CXA2513M (20P)</p> 	<p>C1BA00000423 (24P)</p> 	<p>C0ZAZ0000164 (12P)</p> 	<p>2SC829BTA KTC3203YAT KTA1266GRAT</p> 
<p>KTC3199GRAT</p> 	<p>KTA1046</p> 	<p>B1GACFNN0005 B1GACFJJ0006</p> 	<p>B0EAMM000039</p> 	<p>B0BA8R700009 B0BA5R000004</p> 
<p>B0AACK000004</p> 	<p>RB441Q40T77</p> 	<p>B3ACA0000220 B3AAA0000608</p> 		

14 Exploded Views

14.1. Deck Mechanism Parts Location (RAA0945-2N)

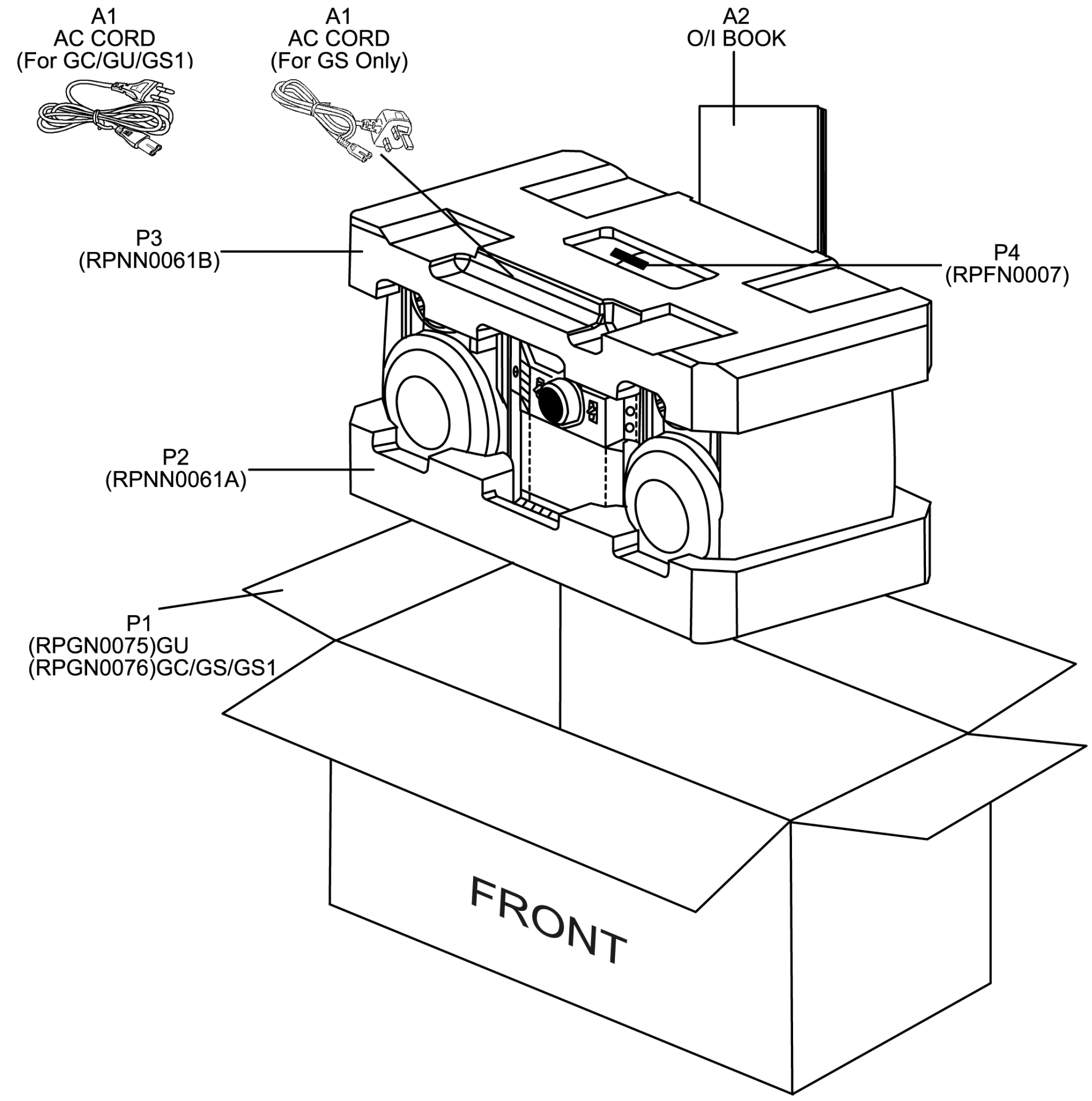


14.2. Cabinet Parts Location



RX-CS45GC/GU/GS1-K
CABINET DRAWINGS

14.3. Packaging Materials and Accessories



15 Replacement Parts List

Notes:

- Important safety notice:

Components identified by \triangle mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.

When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.

- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
- Parts without these indications can be used for all areas.

- Capacitor values are in microfarads (μ F) unless specified otherwise, P= Pico-farads (pF), F= Farads.

- Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).

- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

- [M] markings in the Remarks columns indicates parts supplied by **PAVCSG**.

- Reference for O/I book languages are as follows:

Ar :	Arabic	Du :	Dutch	It :	Italian	Sp :	Spanish
Cf :	Canadian French	En :	English	Ko :	Korean	Sw :	Swedish
Cz :	Czech	Fr :	French	Po :	Polish	Co :	Traditional Chinese
Da :	Danish	Ge :	German	Ru :	Russian	Cn :	Simplified Chinese
Pe :	Persian						

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RGVN0008-K	BAND SELECTOR KNOB	[M]
2	RDG0183-L	DAMPER GEAR	[M]
3	RDGN0008	VC GEAR	[M]
4	REXN0021	DECH HEAD 1 WIRE	[M]
5	RGJN0005	DIAL POINTER	[M]
6	RGUN0040	PRESET EQ BUTTON	[M]
7	RGVN0005-K	SELECTOR KNOB	[M]
8	RGWN0018-K	TUNING KNOB	[M]
9	RGWN0017-K	FINE TUNING KNOB	[M]
10	RGWN0019-S	VOLUME KNOB	[M]
11	RKXN0005-K	HANDLE	[M]
12	RGZN0005-K	MECHA BUTTON	[M]
13	RHRX0008	MECHA BUTTON SEAT	[M]
14	RMEN0004	CASS OPEN SPRING	[M]
15	RKKN0006-K	BATT COVER	[M]
16	RAPN0023-K	SPEAKER BOX UNIT L	[M]
16-1	RASN10PL09-G	SPEAKER	[M]
16-2	RATN0045	TWEETER ASS'Y	[M]
16-3	RGKX0058-S	DOME CAP	[M]
17	RAPN0024-K	SPEAKER BOX UNIT R	[M]
17-1	RASN10PL09-G	SPEAKER	[M]
17-2	RATN0045	TWEETER ASS'Y	[M]
17-3	RGKX0058-S	DOME CAP	[M]
18	RMGN0016	MIC RUBBER	[M]
19	RMGX0022	RUBBER LEG	[M]
20	XTV3+10GFJ	SCREW	[M]
21	XTV3+20GFJ	SCREW	[M]
22	RMKN0007-K	DIAL CHASSIS	[M]
23	RMYN0013-1	HEAT SINK	[M]
24	RDGN0007	MIDDLE GEAR	[M]
25	XTW3+10FFJ	SCREW	[M]
26	XYN26+C6FJ	SCREW	[M]
27	XTV3+12GFJ	SCREW	[M]
28	XYN3+F12FJ	SCREW	[M]
29	XEARR812GA-1	ROD ANTENNA	[M]
30	RMVX0037-1	TRANSF TOP SHIELD PLATE	[M]
31	RMVN0049	S' INSULATOR	[M]
32	RMVX0036-2	TRANS SHIELD PLATE	[M]
33	RMCN0005	R/P SPRING	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
34	RMAX0006-1	ANGLE BAR	[M]
35	RJMN0002-R	CONDENSER MIC	[M]
36	RFKHXCS45GCK	BACK CABINET ASS'Y	[M]GC
36	RFKHXCS45GSK	BACK CABINET ASS'Y	[M]GS/GS1
36	RFKHXCS45GUK	BACK CABINET ASS'Y	[M]GU
36-1	RJCN0008	BATTERY TERMINAL	[M]
36-2	RJRN0012-1	ANT. TERMINAL	[M]
37	RFKXCS45GCK	FRONT CABINET ASS'Y	[M]GC/GS/GU
37	RFKXCS45GS1	FRONT CABINET ASS'Y	[M]GS1
39	RMR0368-1	MECHA CHASSIS	[M]
41	RFKLXCS45GCK	CASS LID ASS'Y	[M]
42	RMBX0002-3	BATTERY SPRING	[M]
43	RMN0001	MIC HOLDER	[M]
44	XTN2+8FFJ	SCREW	[M]
45	XTN2+14GFJ	SCREW	[M]
46	XTN2+4FFJ	SCREW	[M]
		CASSETTE DECK	
101	RDV0021-1	CAP BELT	[M]
102	RMB0109-1	BRAKE SPRING	[M]
103	RML0116-1	BRAKE	[M]
104	RD-JHP001-N	ERASE HEAD	[M]
105	RDG0057-2	IDLER GEAR	[M]
106	RDG0059	FF RELAY GEAR	[M]
107	RDK0005-5	CAM GEAR	[M]
108	RDV0006-1	RF BELT	[M]
109	RHW16009	CAPSTAN WASHER	[M]
110	RMA0109-5	BACK PLATE	[M]
111	RMB0043-2	ROD OPR SPRING	[M]
112	RMB0045-2	A.S SPRING	[M]
113	RMB0046-2	LOCK PLATE SPRING	[M]
114	RMB0047	HEAD PANEL SPRING	[M]
115	RMB0048-1	IDLER LEVER SPRING	[M]
116	RMB0053-1	PAUSE LEVER SPRING	[M]
117	RMB0125	BACK TENSION SPRING	[M]
118	RMC0061	PACK SPRING	[M]
119	RFKRCT090P-K	CHASSIS ASS'Y	[M]
120	RML0071-2	SWING LEVER	[M]
121	RML0072-3	RELEASE LEVER	[M]
122	RML0074-3	IDLER LEVER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
123	RML0076-2	EJECT SELECT LEVER	[M]
124	RML0077-6	LOCK PLATE	[M]
125	RML0078-3	FUNCION PLATE	[M]
126	RML0073-2	PROTECT LEVER	[M]
127	RML0081-4	RECORD SAFETY LEVER	[M]
128	RML0082-1	PAUSE LEVER	[M]
129	RMM0023-3	PLAY ROD	[M]
130	RMM0024-2	REW ROD	[M]
131	RMM0025-3	FF ROD	[M]
132	RMM0026-2	STOP ROD	[M]
133	RMM0027-1	PAUSE ROD	[M]
134	RMM0028-3	REC. ROD	[M]
135	RMM0029-3	EJECT SLIDE LEVER	[M]
136	RMR0211-1	PAUSE BUSH	[M]
137	RMR0227	IDLER GEAR BUSH	[M]
138	RMS0055-1	REEL SHAFT	[M]
139	RXF0020	FLYWHEEL ASS'Y	[M]
139-1	RHW21008	FLYWHEEL WASHER	[M]
140	RMB0044	TRIGGER SPRING	[M]
141	RML0075	TRIGGER LEVER	[M]
142	RXP0014	RF CLUTCH ASS'Y	[M]
143	RXP0015	PINCH ROLLER ASS'Y	[M]
144	RBR4CM006-T	R/P HEAD	[M]
145	RMA1080-1	HEAD PANEL	[M]
146	RMR0149-1	HEAD BASE	[M]
147	RXR0004	TAKE UP REEL ASS'Y	[M]
148	RXR0005	SUPPLY REEL ASS'Y	[M]
149	XTN2+6JFJ	SCREW	[M]
150	RHD26002-1	MOTOR SCREW	[M]
151	RMG0102-1	MOTOR CUSHION	[M]
152	RFKPXC545GCK	MOTOR ASS'Y	[M]
153	RMA0108-1	MOTOR BRACKET A	[M]
154	XTN26+8JFJ	SCREW	[M]
155	RME0098-3	EJECT SPRING	[M]
156	RJR0033	EARTH LUG	[M]
157	RML0080-2	ERASE HEAD ARM	[M]
158	RHD20049-1	AZIMUTH SCREW SELF	[M]
		PRINTED CIRCUIT BOARDS	
	REPN0046A	MAIN P.C.B	[M] (RTL)
	REPN0047A	TUNER P.C.B	[M] GC/GS/GU (RTL)
	REPN0047B	TUNER P.C.B	[M] GS1 (RTL)
	REPN0046A	EQUALIZER P.C.B	[M] (RTL)
	REPN0022B	DECK P.C.B	[M] (RTL)
	REPN0046A	POWER P.C.B	[M] (RTL)
	REPN0046A	CD/LINE IN P.C.B	[M] (RTL)
	REPN0046A	BATTERY P.C.B	[M] (RTL)
		INTEGRATED CIRCUITS	
IC1	C1BA00000423	IC FM/AM	[M]
IC2	BA3313L	IC DUAL PRE AMPLIFIER	[M]
IC301	C0ZAZ0000164	IC AMPLIFIER	[M]
IC351	CXA2513M	IC3 BAND PRESET GRAPHIC EQUALIZER	[M]
		TRANSISTORS	
Q1	2SC829BTA	TRANSISTOR	[M]
Q131	KTC3199GRAT	TRANSISTOR	[M]
Q133	KTC3199GRAT	TRANSISTOR	[M]
Q171	KTC3199GRAT	TRANSISTOR	[M]
Q231	KTC3199GRAT	TRANSISTOR	[M]
Q233	KTC3199GRAT	TRANSISTOR	[M]
Q271	KTC3199GRAT	TRANSISTOR	[M]
Q321	KTC3199GRAT	TRANSISTOR	[M]
Q322	KTC3199GRAT	TRANSISTOR	[M]
Q371	KTA1046	TRANSISTOR	[M]
Q373	KTC3199GRAT	TRANSISTOR	[M]
Q381	KTC3203YAT	TRANSISTOR	[M]
Q382	KTC3199GRAT	TRANSISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
Q383	KTA1266GRAT	TRANSISTOR	[M]
Q390	KTA1266GRAT	TRANSISTOR	[M]
Q391	B1GACFNN0005	TRANSISTOR	[M]
Q621	B1GACFJJ0006	TRANSISTOR	[M]
Q622	KTC3199GRAT	TRANSISTOR	[M]
		DIODES	
D1	B0BA5R000004	DIODE	[M]
D171	B0AACK000004	DIODE	[M]
D172	B0AACK000004	DIODE	[M]
D271	B0AACK000004	DIODE	[M]
D272	B0AACK000004	DIODE	[M]
D330	B0AACK000004	DIODE	[M]
D331	B0AACK000004	DIODE	[M]
D332	B0AACK000004	DIODE	[M]
D333	B0AACK000004	DIODE	[M]
D334	B0AACK000004	DIODE	[M]
D335	B0AACK000004	DIODE	[M]
D336	B0AACK000004	DIODE	[M]
D337	B0AACK000004	DIODE	[M]
D339	B0AACK000004	DIODE	[M]
D341	B0AACK000004	DIODE	[M]
D352	B3ACA0000220	LED	[M]
D353	B3ACA0000220	LED	[M]
D354	B3ACA0000220	LED	[M]
D355	B3ACA0000220	LED	[M]
D356	B3ACA0000220	LED	[M]
D358	B3AAA0000608	LED	[M]
D361	B0BA8R700009	DIODE	[M]
D364	RB441Q40T77	DIODE	[M]
D365	B0AACK000004	DIODE	[M]
D371	B0BA8R700009	DIODE	[M]
D390	B0AACK000004	DIODE	[M]
D391	B0AACK000004	DIODE	[M]
D901	B0EAMM000039	DIODE	[M]
D902	B0EAMM000039	DIODE	[M]
D903	B0EAMM000039	DIODE	[M]
D904	B0EAMM000039	DIODE	[M]
		VARIABLE RESISTOR	
VR301	RRVN12A01C54	VR VOLUME CONTROL	[M]
		SWITCHES	
S352	EVQ21405R	VOCAL SWITCH	[M]
S353	EVQ21405R	FLAT SWITCH	[M]
S354	EVQ21405R	CLEAR SWITCH	[M]
S355	EVQ21405R	SOFT SWITCH	[M]
S356	EVQ21405R	XBS SWITCH	[M]
S501	RSHN1A001-1M	LEAF SWITCH	[M]
S502	RSHN1A002-1M	CUE/REW SWITCH	[M]
		SWITCHES	
SW1	K0C143B00004	FUNCTION SWITCH	[M]
SW1	RSSN4H005-C	BAND SWITCH	[M]
SW2	K0C142B00001	FM MODE/BP/CD LINE IN SWITCH	[M]
SW4	K0F162A00001	RECORDING SWITCH	[M]
SW901	RSR2A006S-B	VOLTAGE SELECTOR SWITCH	[M]
		CONNECTORS	
CP303	K1KA12BA0062	CONNECTOR	[M]
CP304	K1KA05BA0061	CONNECTOR	[M]
CP305	K1KA04AA0193	CONNECTOR	[M]
CP903	K1KA03BA0055	CONNECTOR	[M]
		TRIMMER	
CT5	ECRLA010A53R	TRIMMER CAPACITOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
CT6	ECRLA010A53R	TRIMMER CAPACITOR	[M]
CT7	ECRLA010A53R	TRIMMER CAPACITOR	[M]
CT8	RCVNFSS14H01	FINE TUNING	[M]
		COILS & TRANSFORMERS	
L2	RL04P004	FM OSC COIL	[M]GS1
L2	RLD4Y53W	FM OSC COIL	[M]GC/GS/GU
L3	RLVN5C006	FERRITE ANTENNA	[M]
L6	RLQY30S4W	COIL	[M]
L7	RLAN3B44	SW2 ANT COIL	[M]
L8	RL02B108-M-1	AM OSC COIL	[M]
L9	RL03B91-M-1	SW2 OSC COIL	[M]
L10	RL03B95-M-1	SW2 OSC COIL	[M]
L341	RL0N9B17	BIAS OSC COIL	[M]
		TRANSFORMERS	
T1	RLIN4B153	FM IFT	[M] △
T2	RLIN2B153	AM IFT	[M] △
T3	RLIN4B153	FM IFT	[M] △
T901	G4CYAYY00093	TRANSFORMER	[M] △
		COMPONENT COMBINATIO	
Z1	J0E9805A0003	BAND PASS FILTER	[M]
		VARIABLE CAPACITOR	
VC1	RCV4RC2V2K-R	VARIABLE CAPACITOR	[M]
		CERAMIC FILTERS	
CF1	J0B1075A0109	CERAMIC FILTER	[M]
CF2	RVFSFZ455JL	CERAMIC FILTER	[M]
		FUSES	
F901	K5D312BLA015	FUSE 3.15A	[M] △
		FUSE HOLDERS	
FH901	K3GE1ZA00011	FUSE HOLDER	[M]
FH902	K3GE1ZA00011	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP901	K5G402A00025	FUSE PROTECTOR	[M]
FP902	K5G502A00039	FUSE PROTECTOR	[M]
		JACKS	
JK301	K2HC103B0186	JK HEADPHONE	[M]
JK302	RJHN5417-1	JK SPEAKER	[M]
JK304	K2HA204A0049	JK RCA PIN	[M]
JK901	K2AA2B000014	JK AC INLET	[M] △
JK902	RJJ43K12	JK DC INLET	[M]
		WIRES	
W301	RWJ0206140KK	WIRE	[M]
CN303	REXN0025-1	MECHA-MAIN WIRE	[M]
W302	RWJ0204170KK	EQ-MAIN WIRE	[M]
W304	RWJ0203200KK	WIRE	[M]
W501	RWJN0602065K	MOTOR WIRE	[M]
W903	REXN0050	POWER-MAIN WIRE	[M]
W905	REXN0051	BATT-POWER WIRE	[M]
W908	RWJ0203090KK	CD LINE IN-MAIN WIRE	[M]
		PACKING MATERIALS	
P1	RPGN0075	PACKING CASE	[M]GU
P1	RPGN0076	PACKING CASE	[M]GC/GS/GS1

Ref. No.	Part No.	Part Name & Description	Remarks
P2	RPNN0061A	BOTTOM POLYFOAM	[M]
P3	RPNN0061B	TOP POLYFOAM	[M]
P4	RPFN0007	MIRAMAT SHEET	[M]
		ACCESSORIES	
A1	RJA0019-2X	AC CORD	[M]GC/GS1 /GU △
A1	RJA0053-3X	AC CORD	[M]GS △
A2	RQT8658-G	O/I BOOK (En/Ar)	[M]
		RESISTORS	
R1	RRDS2TJ101T	100 1/4W	[M]
R2	RRDS2TJ100T	10 1/4W	[M]
R3	RRDS2TJ150T	15 1/4W	[M]
R4	RRDS2TJ470T	47 1/4W	[M]
R5	RRDS2TJ330T	33 1/4W	[M]
R6	RRDS2TJ101T	100 1/4W	[M]
R7	RRDS2TJ101T	100 1/4W	[M]
R8	RRDS2TJ104T	100K 1/4W	[M]
R10	RRDS2TJ272T	2.7K 1/4W	[M]
R11	RRDS2TJ182T	1.8K 1/4W	[M]
R14	RRDS2TJ181T	180 1/4W	[M]
R16	RRDS2TJ221T	220 1/4W	[M]
R17	RRDS2TJ334T	330K 1/4W	[M]
R18	RRDS2TJ471T	470 1/4W	[M]
R19	RRDS2TJ101T	100 1/4W	[M]
R21	RRDS2TJ102T	1K 1/4W	[M]
R22	RRDS2TJ102T	1K 1/4W	[M]
R23	RRDS2TJ100T	10 1/4W	[M]
R101	RRDS2TJ392T	3.9K 1/4W	[M]
R102	RRDS2TJ222T	2.2K 1/4W	[M]
R103	RRDS2TJ102T	1K 1/4W	[M]
R104	RRDS2TJ104T	100K 1/4W	[M]
R105	RRDS2TJ560T	56 1/4W	[M]
R106	RRDS2TJ271T	270 1/4W	[M]
R107	RRDS2TJ103T	10K 1/4W	[M]
R108	RRDS2TJ123T	12K 1/4W	[M]
R111	RRDS2TJ224T	220K 1/4W	[M]
R112	RRDS2TJ472T	4.7K 1/4W	[M]
R113	RRDS2TJ103T	10K 1/4W	[M]
R116	RRDS2TJ103T	10K 1/4W	[M]
R142	RRDS2TJ822T	8.2K 1/4W	[M]
R144	ERD2FCVJ4R7T	4.7 1/4W	[M]
R146	ERD2FCVJ4R7T	4.7 1/4W	[M]
R152	RRDS2TJ222T	2.2K 1/4W	[M]
R160	RRDS2TJ103T	10K 1/4W	[M]
R161	RRDS2TJ181T	180 1/4W	[M]
R171	RRDS2TJ102T	1K 1/4W	[M]
R183	RRDS2TJ101T	100 1/4W	[M]
R190	RRDS2TJ332T	3.3K 1/4W	[M]
R201	RRDS2TJ392T	3.9K 1/4W	[M]
R202	RRDS2TJ222T	2.2K 1/4W	[M]
R203	RRDS2TJ102T	1K 1/4W	[M]
R204	RRDS2TJ104T	100K 1/4W	[M]
R205	RRDS2TJ560T	56 1/4W	[M]
R206	RRDS2TJ271T	270 1/4W	[M]
R207	RRDS2TJ103T	10K 1/4W	[M]
R208	RRDS2TJ123T	12K 1/4W	[M]
R211	RRDS2TJ224T	220K 1/4W	[M]
R212	RRDS2TJ472T	4.7K 1/4W	[M]
R213	RRDS2TJ103T	10K 1/4W	[M]
R216	RRDS2TJ103T	10K 1/4W	[M]
R242	RRDS2TJ822T	8.2K 1/4W	[M]
R244	ERD2FCVJ4R7T	4.7 1/4W	[M]
R246	ERD2FCVJ4R7T	4.7 1/4W	[M]
R252	RRDS2TJ222T	2.2K 1/4W	[M]
R260	RRDS2TJ103T	10K 1/4W	[M]
R261	RRDS2TJ181T	180 1/4W	[M]
R283	RRDS2TJ101T	100 1/4W	[M]
R290	RRDS2TJ332T	3.3K 1/4W	[M]
R313	ERDS1FVJ2R7T	2.7 1/2W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R314	RRDS2TJ103T	10K 1/4W	[M]
R319	RRDS2TJ101T	100 1/4W	[M]
R321	RRDS2TJ471T	470 1/4W	[M]
R322	RRDS2TJ105T	1M 1/4W	[M]
R323	RRDS2TJ333T	33K 1/4W	[M]
R324	RRDS2TJ100T	10 1/4W	[M]
R325	RRDS2TJ221T	220 1/4W	[M]
R326	RRDS2TJ104T	100K 1/4W	[M]
R327	RRDS2TJ103T	10K 1/4W	[M]
R328	RRDS2TJ103T	10K 1/4W	[M]
R330	RRDS2TJ222T	2.2K 1/4W	[M]
R333	RRDS2TJ222T	2.2K 1/4W	[M]
R334	RRDS2TJ101T	100 1/4W	[M]
R335	RRDS2TJ222T	2.2K 1/4W	[M]
R336	RRDS2TJ471T	470 1/4W	[M]
R337	RRDS2TJ332T	3.3K 1/4W	[M]
R338	RRDS2TJ123T	12K 1/4W	[M]
R339	RRDS2TJ222T	2.2K 1/4W	[M]
R342	RRDS2TJ472T	4.7K 1/4W	[M]
R343	RRDS2TJ471T	470 1/4W	[M]
R347	RRDS2TJ103T	10K 1/4W	[M]
R353	RRDS2TJ680T	68 1/4W	[M]
R354	RRDS2TJ181T	180 1/4W	[M]
R355	RRDS2TJ473T	47K 1/4W	[M]
R356	RRDS2TJ181T	180 1/4W	[M]
R357	RRDS2TJ683T	68K 1/4W	[M]
R358	RRDS2TJ104T	100K 1/4W	[M]
R359	RRDS2TJ183T	18K 1/4W	[M]
R360	RRDS2TJ683T	68K 1/4W	[M]
R361	RRDS2TJ683T	68K 1/4W	[M]
R363	RRDS2TJ221T	220 1/4W	[M]
R364	RRDS2TJ391T	390 1/4W	[M]
R370	RRDS2TJ681T	680 1/4W	[M]
R371	RRDS2TJ681T	680 1/4W	[M]
R372	RRDS2TJ102T	1K 1/4W	[M]
R377	RRDS2TJ103T	10K 1/4W	[M]
R378	RRDS2TJ472T	4.7K 1/4W	[M]
R379	RRDS2TJ272T	2.7K 1/4W	[M]
R384	RRDS2TJ221T	220 1/4W	[M]
R385	RRDS2TJ683T	68K 1/4W	[M]
R386	RRDS2TJ101T	100 1/4W	[M]
R387	RRDS2TJ332T	3.3K 1/4W	[M]
R388	RRDS2TJ334T	330K 1/4W	[M]
R389	RRDS2TJ223T	22K 1/4W	[M]
R390	RRDS2TJ182T	1.8K 1/4W	[M]
R391	RRDS2TJ102T	1K 1/4W	[M]
R392	RRDS2TJ103T	10K 1/4W	[M]
R393	RRDS2TJ103T	10K 1/4W	[M]
R394	RRDS2TJ104T	100K 1/4W	[M]
R395	RRDS2TJ473T	47K 1/4W	[M]
R401	RRDS2TJ393T	39K 1/4W	[M]
R402	RRDS2TJ393T	39K 1/4W	[M]
R403	RRDS2TJ123T	12K 1/4W	[M]
R404	RRDS2TJ123T	12K 1/4W	[M]
R406	ERDS1FVJ2R7T	2.7 1/2W	[M]
R407	RRDS2TJ123T	12K 1/4W	[M]
R408	RRDS2TJ123T	12K 1/4W	[M]
R601	RRDS2TJ683T	68K 1/4W	[M]
R603	RRDS2TJ152T	1.5K 1/4W	[M]
R604	RRDS2TJ152T	1.5K 1/4W	[M]
R901	RRDS2TJ683T	68K 1/4W	[M]
R902	RRDS2TJ222T	2.2K 1/4W	[M]
		CAPACITORS	
C1	F1D1H100A015	10P 50V	[M]
C3	F1D1H180A015	18P 50V	[M]
C5	F1D1H102A012	1000P 50V	[M]
C6	F1D1H102A012	1000P 50V	[M]
C7	RCA1HKA4R7BT	4.7 50V	[M]
C8	F1D1H470A006	47 50V	[M]
C9	F1D1C103A004	0.01 16V	[M]
C10	F1D1C103A004	0.01 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C11	RCA1HKAR22BT	0.22 50V	[M] △
C12	RCA1HKA3R3BT	3.3 50V	[M] △
C13	F1D1H104A046	0.1 50V	[M]
C14	RCA1CKA220BT	22P 16V	[M]
C15	RCA1CKA100BT	10P 16V	[M]
C16	RCA1CKA100BT	10P 16V	[M]
C17	F2A1A471A161	470 10V	[M] △ GS1
C17	RCA1AM471BR	470 10V	[M] GC/GS
C18	F1D1C103A004	0.01 16V	[M]
C19	F1D1H102A012	1000P 50V	[M]
C20	F1D1H102A012	1000P 50V	[M]
C21	F1D1H200A015	20P 50V	[M]
C22	F1D1H150A015	15P 50V	[M]
C23	F1D1H104A046	0.1 50V	[M]
C24	F1D1H5R6A017	5.6 50V	[M]
C25	F1DZZ2230001	0.022	[M]
C26	F1DZZ2230001	0.022	[M]
C28	F1D1C103A004	0.01 16V	[M]
C30	F1D1H8R2A017	8.2 50V	[M]
C31	F1D1H3R3A017	3.3 50V	[M]
C33	F1D1H223A046	0.022 50V	[M]
C34	F1D1H100A015	10P 50V	[M]
C36	ECQP2A361JZT	360 100V	[M]
C37	ECQP2A152JZT	1500P 100V	[M]
C38	ECQP2A472JZT	4700P 100V	[M]
C41	F1D1H200A015	20P 50V	[M]
C42	F1D1H200A015	20P 50V	[M]
C43	F1D1H8R2A017	8.2 50V	[M]
C50	F1D1H6R8A017	6.8 50V	[M]
C66	F1D1H102A012	1000P 50V	[M]
C95	F1D1C103A004	0.01 16V	[M]
C99	F1D1H470A006	47 50V	[M]
C100	F1D1H5R6A017	5.6 50V	[M] GS1
C102	F1D1H333A046	0.033 50V	[M]
C103	F1D1C222A010	2200P 16V	[M]
C104	RCA1CKA100BT	10P 16V	[M]
C105	F1D1H331A012	330P 50V	[M]
C108	F1D1C222A010	2200P 16V	[M]
C109	F1D1H102A012	1000P 50V	[M]
C110	RCA1AM101BR	100P 10V	[M]
C114	F1D1H561A012	560 50V	[M]
C140	F1D1H821A012	820 50V	[M]
C141	RCA1HKA0R1BT	0.1 50V	[M]
C142	ECQV1H104JL3	0.1 50V	[M]
C143	ECQV1H104JL3	0.1 50V	[M]
C160	RCA1CKA100BT	10P 16V	[M]
C171	RCA1HKA4R7BT	4.7 50V	[M]
C202	F1D1H333A046	0.033 50V	[M]
C203	F1D1C222A010	2200P 16V	[M]
C204	RCA1CKA100BT	10P 16V	[M]
C205	F1D1H331A012	330P 50V	[M]
C208	F1D1C222A010	2200P 16V	[M]
C209	F1D1H102A012	1000P 50V	[M]
C210	RCA1AM101BR	100P 10V	[M]
C214	F1D1H561A012	560 50V	[M]
C240	F1D1H821A012	820 50V	[M]
C241	RCA1HKA0R1BT	0.1 50V	[M]
C242	ECQV1H104JL3	0.1 50V	[M]
C243	ECQV1H104JL3	0.1 50V	[M]
C260	RCA1CKA100BT	10P 16V	[M]
C271	RCA1HKA4R7BT	4.7 50V	[M]
C310	RCA1HKA4R7BT	4.7 50V	[M]
C311	RCA1CM330BR	33P 16V	[M]
C312	RCA1AM471BR	470 10V	[M] △
C313	RCA1HKA3R3BT	3.3 50V	[M]
C321	F1D1H102A012	1000P 50V	[M]
C322	F1D1H223A046	0.022 50V	[M]
C323	RCA1AM101BR	100P 10V	[M]
C324	ECQP2A152JZT	1500P 100V	[M]
C325	F0A2A121A010	120 100V	[M]
C327	F1D1C103A004	0.01 16V	[M]
C330	F1D1H333A046	0.033 50V	[M]
C332	RCA1CKA100BT	10P 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C333	RCA1HKAR47BT	0.47 50V	[M]
C334	RCA1CM101BR	100P 16V	[M]
C341	RCA1CM470BR	47 16V	[M]
C343	RCA1HKA4R7BT	4.7 50V	[M]
C352	RCA1CM101BR	100P 16V	[M]
C354	RCA1CKA100BT	10P 16V	[M]
C355	RCA1CM101BR	100P 16V	[M] △
C357	RCA1HKAR22BT	0.22 50V	[M]
C358	RCA1CKA100BT	10P 16V	[M]
C359	F1D1C332A002	3300P 16V	[M]
C371	RCA1EM472ET	4700P 25V	[M] △
C372	RCA1CM470BR	47 16V	[M] △
C373	F1D1H102A012	1000P 50V	[M]
C378	RCA1CKA220BT	22P 16V	[M]
C383	F1D1C103A004	0.01 16V	[M]
C384	RCA1EM101BR	100P 25V	[M]
C392	RCA1CKA100BT	10P 16V	[M]
C501	RCA1CKA100BT	10P 16V	[M]
C601	RCA1CM470BR	47 16V	[M] △
C611	RCA1CKA100BT	10P 16V	[M] △
C613	RCA1CM470BR	47 16V	[M]
C701	RCA1HKA0R1BT	0.1 50V	[M]
C702	RCA1HKA0R1BT	0.1 50V	[M]
C703	F1D1H561A012	560 50V	[M]
C801	RCA1HKA0R1BT	0.1 50V	[M]
C803	F1D1H561A012	560 50V	[M]
C901	F1D1H103A046	0.01 50V	[M]
C902	F1D1H103A046	0.01 50V	[M]
C903	F1D1H103A046	0.01 50V	[M]
C904	F1D1H103A046	0.01 50V	[M]