

Service Manual

Portable Stereo CD System



RX-ES29EE

Colour

(S).....Silver Type



Specification

■ RADIO

Frequency range

FM 87.50-108.00 MHz (50 kHz steps)

AM 522-1629 kHz (9 kHz steps)

■ CD PLAYER

Sampling frequency 44.1 kHz

Decoding 16 bit linear

Beam source Semiconductor laser (wavelength 780 nm)

No. of channels 2 channel, stereo

Wow and flutter Below measurable limit

D/A converter MASH (1 bit DAC)

■ TAPE RECORDER

Track system Stereo

Monitor system Variable sound monitor

Recording system AC bias

Erasing system Multi Pole magnet

Frequency range 50-14000 Hz

Normal position

■ GENERAL

Speakers 8 cm 5.4Ω x 2

Jacks

Output Phones: 3.5 mm stereo (16-32Ω)

Power requirement

AC 230-240 V, 50 Hz

Power consumption 30 W

Battery 12 V [Eight R20/LR20 (D, UM-1) batteries]

! Do not use rechargeable type batteries

Memory backup for computer/clock 6 V [Four R6/LR6 (AA, UM-3) batteries]

! Do not use rechargeable type batteries

Dimensions 529 mm (W) x 144 mm (H) x 276 mm (D)

Mass 4.4 kg without batteries

Power consumption in standby mode 2.7 W

Notes:

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

Panasonic

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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 checks 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 5.2Ω .

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

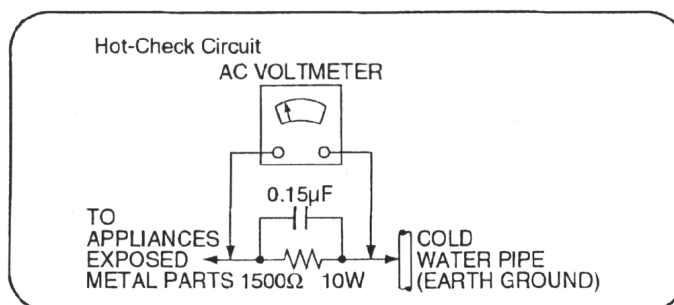


Fig. 1

1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 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 Figure 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 is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and re-checked before it is returned to the customer.

2 Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C301, C131, C231, C310, C307, C309 and C331 through a 10 Ω , 1 W resistor to ground. DO NOT SHORT-CIRCUIT DIRECTLY (with a screw driver 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 at AC 220 V, 50 Hz in NO SIGNAL mode should be ~180 mA respectively.

Current consumption at AC 240 V, 60 Hz in NO SIGNAL mode should be ~129 mA respectively.

3 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.
- 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 systems 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.

4 Handling the Lead Solder

4.1. About lead free solder (PbF)

Distinction of PbF P.C.B. :

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 $\pm$ 20°F (370 $\pm$ 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

5 Precaution of Laser Diode

Caution :

This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens.

Wavelength : 780 nm

Maximum output radiation power from pick up : 100 μ W/VDE

Laser radiation from pick up unit is safety level, but be sure the followings:

1. Do not disassemble the optical pick up unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pick up unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

ACHTUNG :

Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.

Wellenlänge : 780nm

Maximale Strahlungsleistung der Lasereinheit : 100 μ W/VDE

Die Strahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

ADVARSEL :

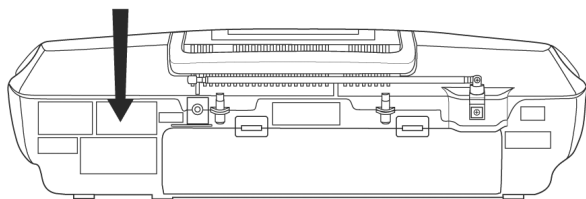
I dette a apparat anvendes laser.

CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

n Use of Caution Labels



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETTELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUJALUKITUS OHITETTAESSA OLET ALTIINA NÄKYMÄTÖNTÄ LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	ÖSYNLIG LASERSTRÅLNING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSIHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

Внутри аппарата

6 Handling Precautions For Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

I Handling of CD traverse deck (optical pickup)

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. The short land between the No.4 (LD) and No.5 (GND) pins on the flexible board (FFC) is shorted with a solder build-up to prevent damage to the laser diode.
3. Take care not to apply excessive stress to the flexible board (FPC board) (Fig 6.1).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

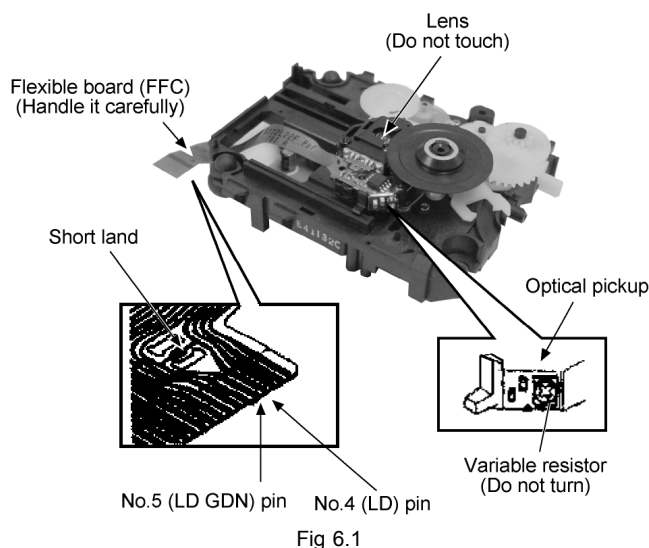


Fig 6.1

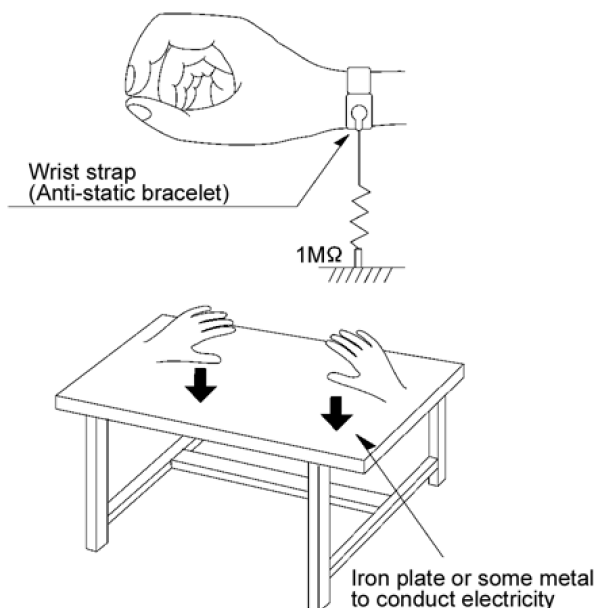


Fig 6.2

Caution when Replacing the Optical Pickup :

The traverse has a short point shorted with solder to protect the laser diode against electrostatics breakdown. Be sure to remove the solder from the short point before making connections.

I Grounding for electrostatic breakdown prevention

1. Human body grounding (Fig 6.2)

Use the anti-static wrist strap to discharge the static electricity from your body.

2. Work table grounding (Fig 6.2)

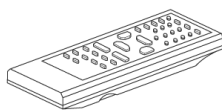
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :

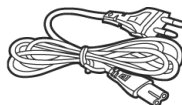
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

7 Accessories

Note : Refer to Packing Materials & Accessories Parts List (Section 23.5) for the part number.



Remote Control.....1pc



AC cord.....1 pc

8 Operation Procedures

8.1. Main Unit

Main Unit

- ① Deck
- ② Deck eject button (▲ DECK)
 - Press [▲ DECK] to open the deck.
 - (The unit comes on.)
 - Then, load a cassette and close the deck by hand.
- ③ Record/record pause button (●/II)
- ④ Cassette play button (▶ TAPE)
 - Press [▶ TAPE] to start play.
- ⑤ Band button (TUNER BAND)
 - Press [TUNER BAND] to select "FM" or "AM".
- ⑥ CD play/pause button (CD ▶/II)
 - Press [CD ▶/II] to start play.
 - Plays to the end of the CD and stops.
 - Press [CD ▶/II] to pause halfway during play.
 - Press again to resume play.
- ⑦ CD recording mode button (CD REC MODE)
- ⑧ Play timer/record timer button (⌚ PLAY/REC)
- ⑨ Clock/timer button (CLOCK/TIMER)
- ⑩ CD program/clear, tuner preset button (• MEMORY-CLEAR)
- ⑪ Speaker

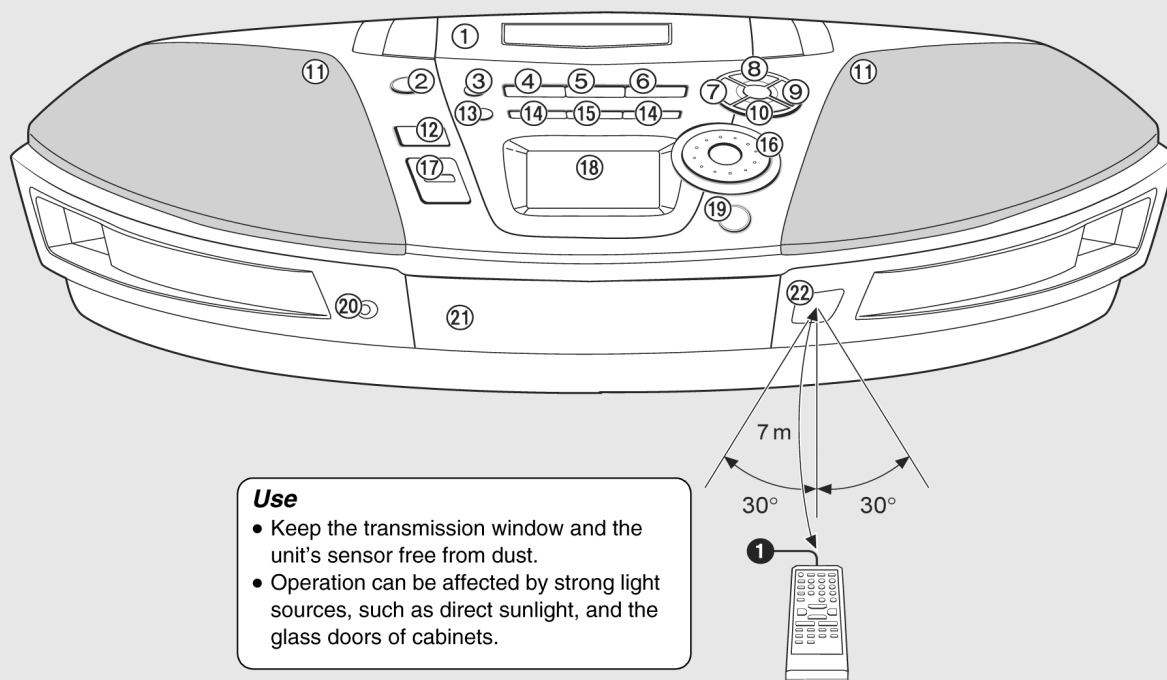
Note:

 - These speakers do not have magnetic shielding.
 - Do not place them near televisions, personal computers or other devices easily influenced by magnetism.
- ⑫ Standby/on switch (⏻/II)

Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
- ⑬ Sound equalizer button (SOUND EQ)
- ⑭ Tuning/CD search, Rewind/fast-forward buttons (REW/-/◀◀, ▶▶/+FF)
- ⑮ CD/Tape mode select/stop button (■ TAPE/CD)
 - Press [■ TAPE/CD] to stop play.
- ⑯ Time adjust, Preset channel select/CD track select dial (TIME/PRESET TUNE ← TRACK SKIP →)
- ⑰ Volume control buttons (+, - VOLUME)
 - Press [+ , - VOLUME] to adjust to the desired volume for CD, Tuner or Cassette.
- ⑱ Display panel
 

e.g. CD
- ⑲ CD tray open/close button (▲ CD)
 - Press [▲ CD] to open the tray.
 - (The unit comes on.)
 - Load a CD and press [▲ CD] to close the tray.
- ⑳ Standby indicator (⏻)

When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
- ㉑ CD tray
- ㉒ Remote control signal sensor (SENSOR)

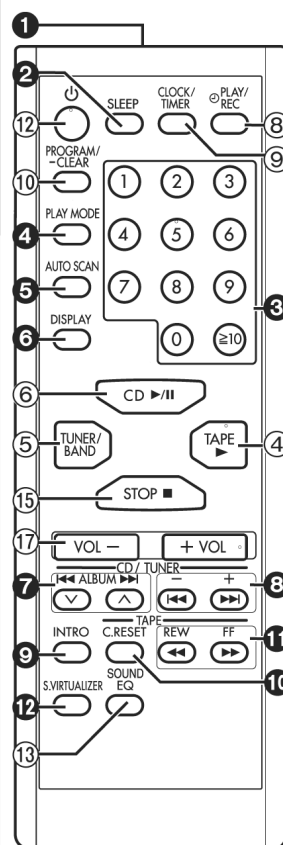


Use

- Keep the transmission window and the unit's sensor free from dust.
- Operation can be affected by strong light sources, such as direct sunlight, and the glass doors of cabinets.

8.2. Remote Control

- 1 Transmission window**
Aim at the sensor, avoiding obstacles, at a maximum range of 7 meters directly in front of the unit.
- 2 Sleep timer button (SLEEP)**
- 3 Numeric buttons**
- 4 CD/MP3 play mode/FM mode button (PLAY MODE)**
- 5 Auto scan button (AUTO SCAN)**
- 6 Display select button (DISPLAY)**
 - Press [DISPLAY] to display the clock on the Display panel ⑮.
- 7 Preset channel select/album skip buttons (V/I◀◀ ALBUM, ALBUM▶▶/I/∧)**
- 8 Tuning/CD skip, search/MP3 track skip/clock, timer adjust buttons (◀/I◀◀, ▶▶/I/∧)**
- 9 MP3 intro play button (INTRO)**
- 10 Tape counter reset button (C.RESET)**
 - Press [C.RESET] to reset the tape counter. The counter resets to "000".
- 11 Rewind/fast-forward buttons (◀◀/REW, ▶▶/FF)**
- 12 Sound virtualizer button (S.VIRTUALIZER)**



9 Information on MP3

This unit can play MP3, a method of compressing audio without affecting audio quality.

■ **When creating MP3 files to play on this unit**

Disc format: ISO9660 level 1 and level 2 (except for extended formats)

Title names and album names are not displayable on this unit.

■ **Limitation on MP3**

- This unit is compatible with multi-session but if there are a lot of sessions it takes more time for play to start. Keep the number of sessions to a minimum to avoid this.
- This unit cannot play files recorded using packet write.
- If a CD-ROM format CD contains MP3 and files other than MP3, only the MP3 files will be playable.
- Depending on how you create MP3 files, they may not play in the order you numbered them or may not play at all.

MPEG Layer-3 audio decoding technology licenced from Fraunhofer IIS and Thomson multimedia.

10 Disassembly and Main Component Replacement Procedures and Operational Check

“ATTENTION SERVICER”

Some chassis components may have sharp edges. Be careful when disassembly and servicing.

1. This section describes procedures 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.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

Warning:

This product uses a laser diode. Refer to “Precaution of Laser Diode”.

ACHTUNG:

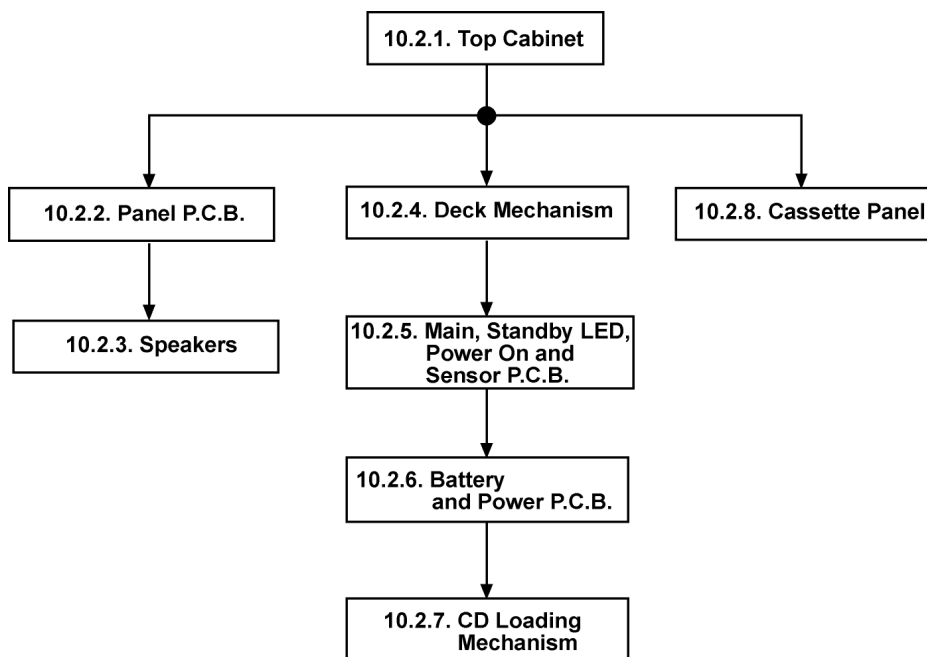
Die Lasereinheit nicht zerlegen.

Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

10.1. Disassembly flow chart

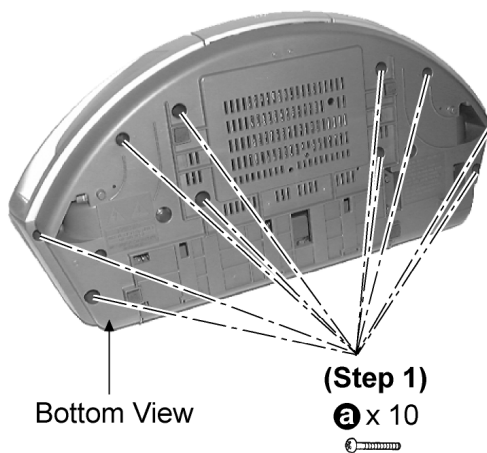
The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

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

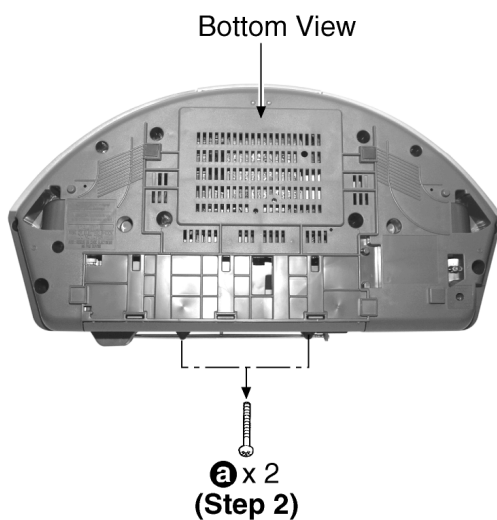


10.2. Checking Procedure for each major P.C.B.

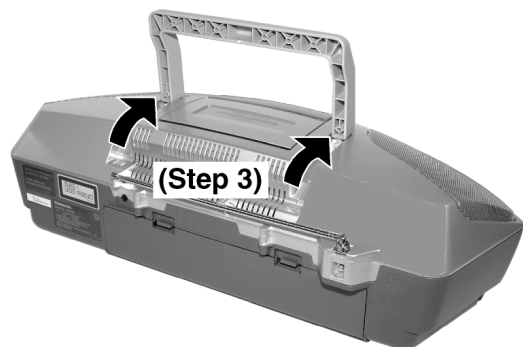
10.2.1. Disassembly of Top Cabinet Unit.



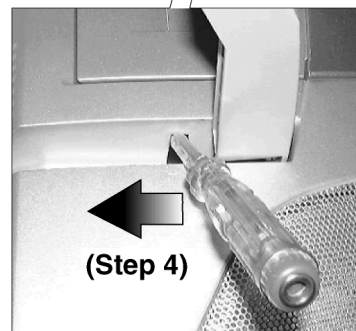
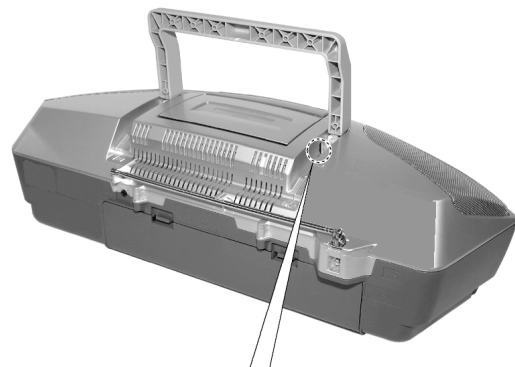
Step 1: Remove 10 screws.



Step 2: Remove 2 screws.

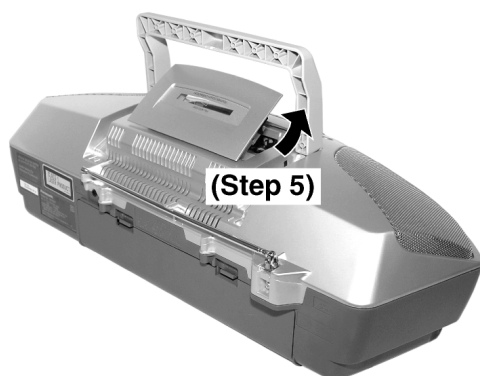


Step 3: Flip up the handle as arrow direction shown.

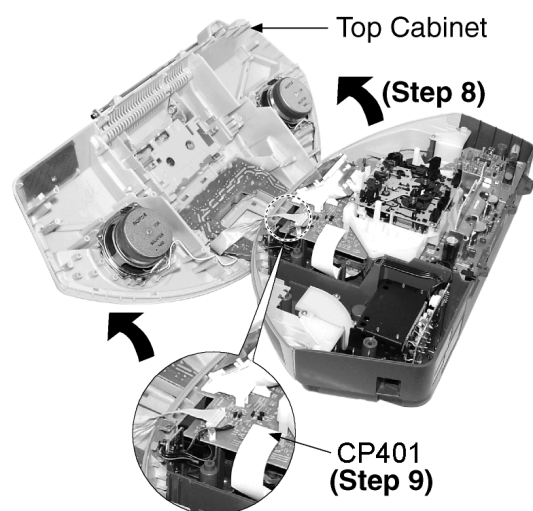


Step 4: Use a screw driver and insert into the hole. Slide the screw driver to the direction shown to open the cassette panel.

Note: Be careful not to exert strong force as it may cause damage to the chassis.



Step 5: Cassette panel will automatically open.

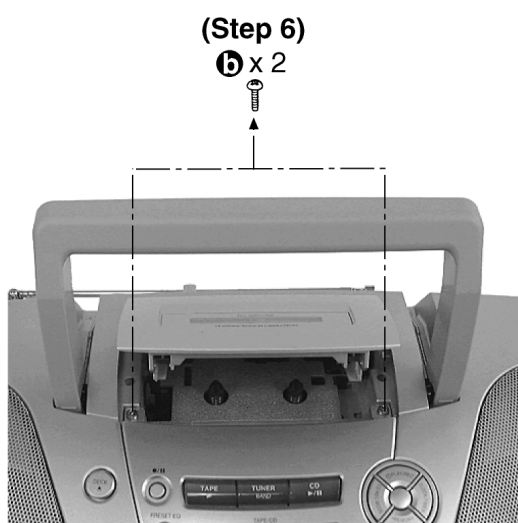


Step 8: Flip the Top Cabinet over as arrow shown.

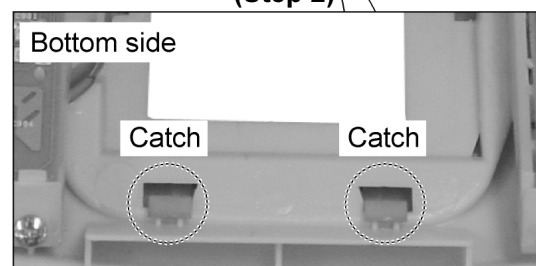
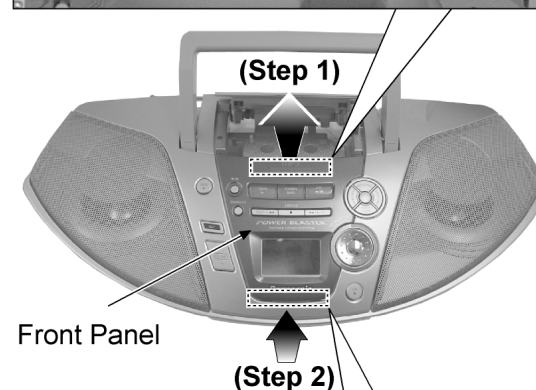
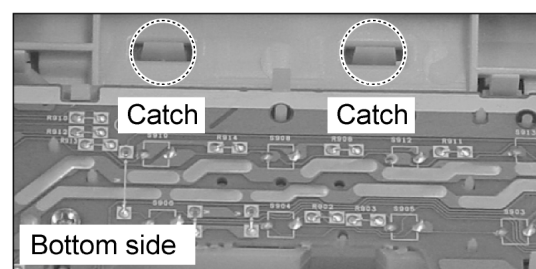
Step 9: Detach the FFC wire (CP401).

10.2.2. Disassembly of Panel P.C.B.

Follow (step 1) to (step 9) of item 10.2.1.

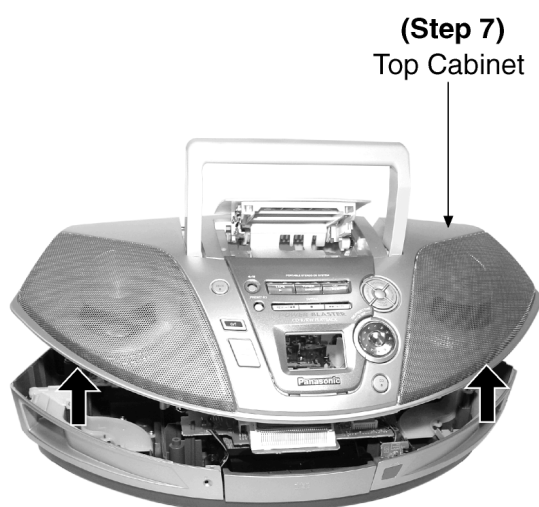


Step 6: Remove 2 screws.

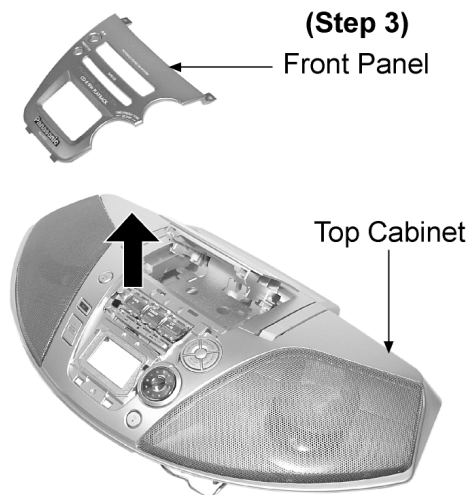


Step 1: Lift the upper section of the front panel slightly towards you as arrow shown.

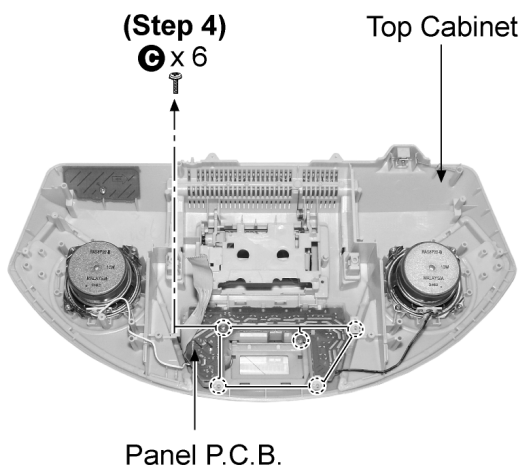
Step 2: While lifting, push the lower section of the front panel in the direction shown by the arrow to release the catches.



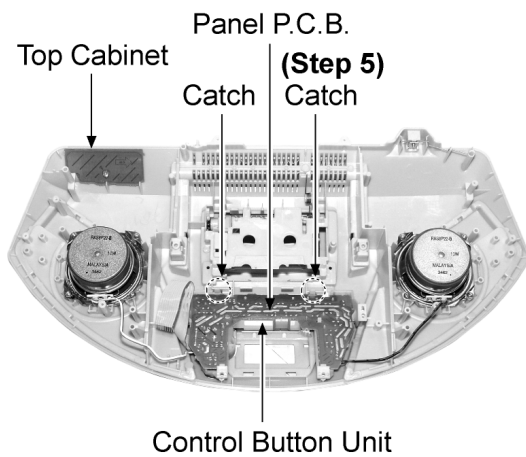
Step 7: Lift up the Top Cabinet as arrow shown.



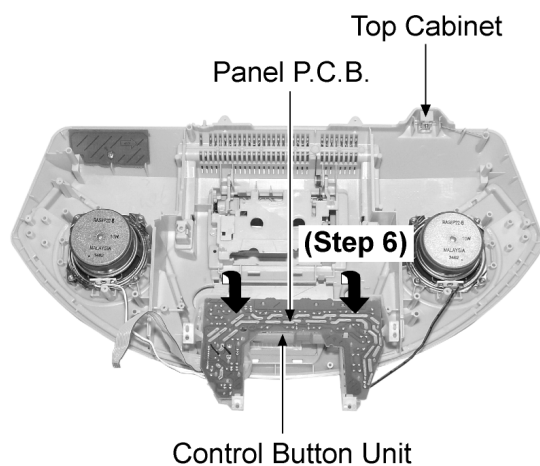
Step 3: Remove the Front Panel from Top Cabinet as arrow shown.



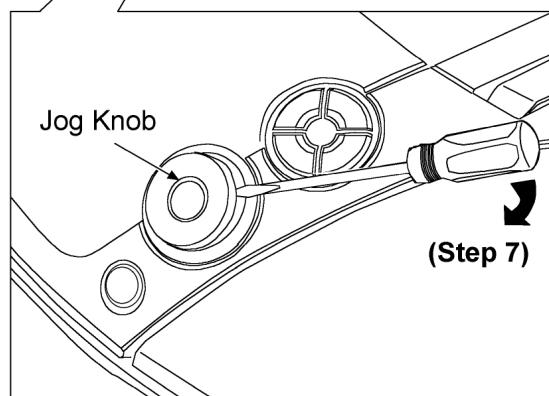
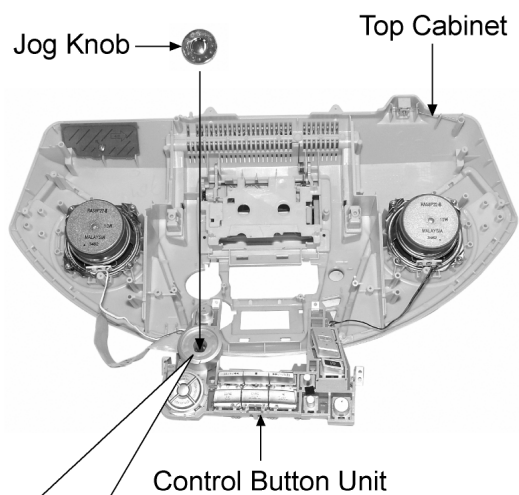
Step 4: Remove 6 screws.



Step 5: Release 2 catches.

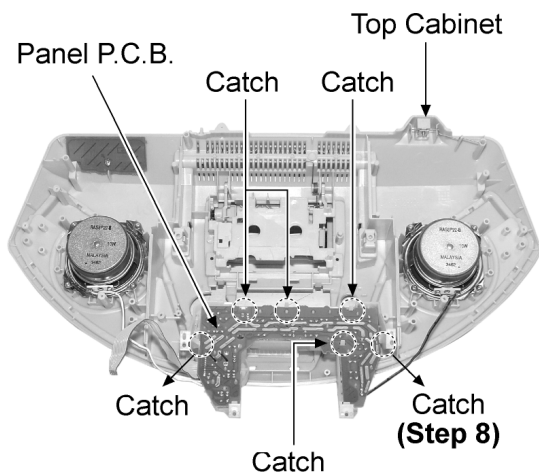


Step 6: Flip over the Control Button Unit with the Panel P.C.B. as arrow shown.

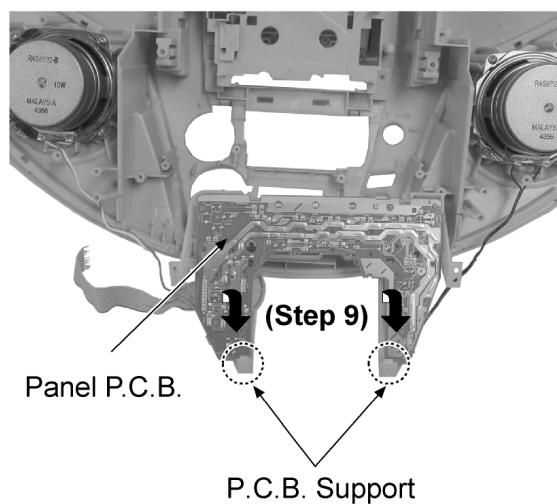


Step 7: Remove the Jog Knob using a screwdriver as arrow shown.

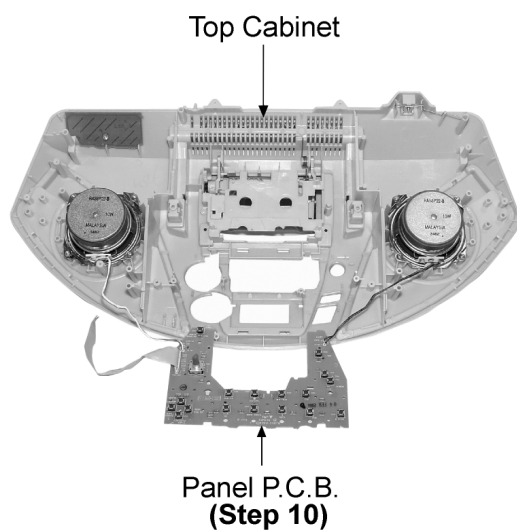
Caution: Do not exert strong force as it may cause damage to the top cabinet.



Step 8: Release 6 catches.



Step 9: Remove the Panel P.C.B. as arrow shown.

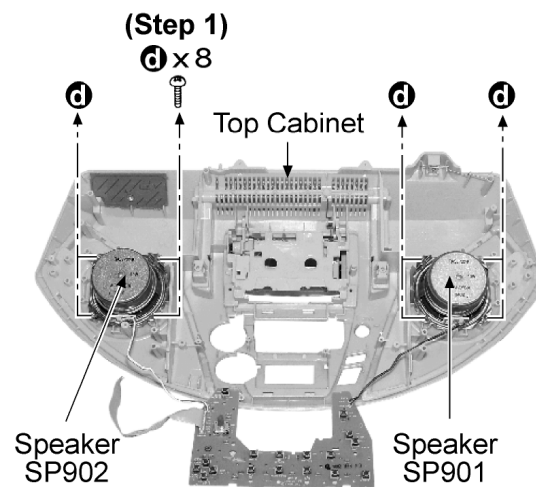


Step 10: Flip the Panel P.C.B. over.

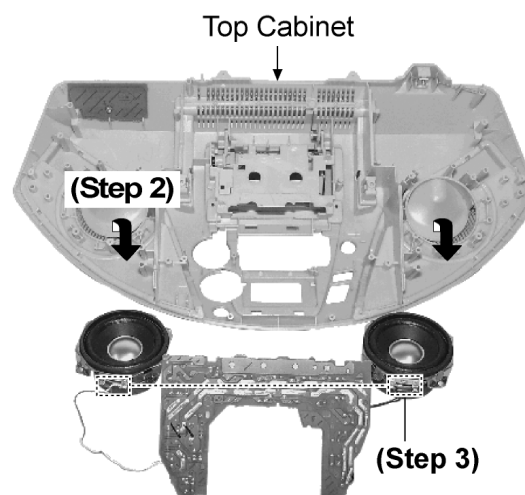
10.2.3. Disassembly of Speakers.

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 10) of item 10.2.2.



Step 1: Remove 8 screws.

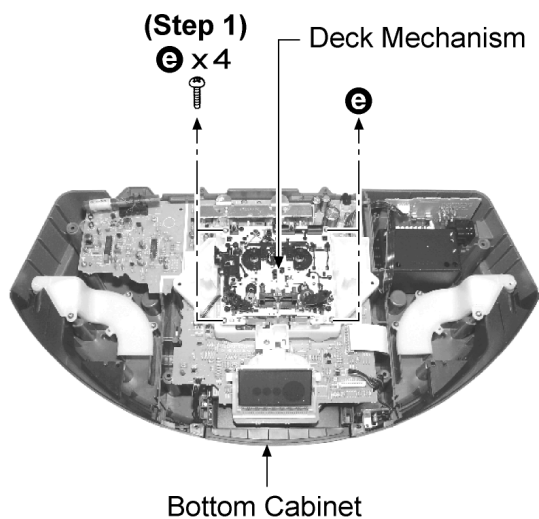


Step 2: Flip the both side speakers as arrow shown.

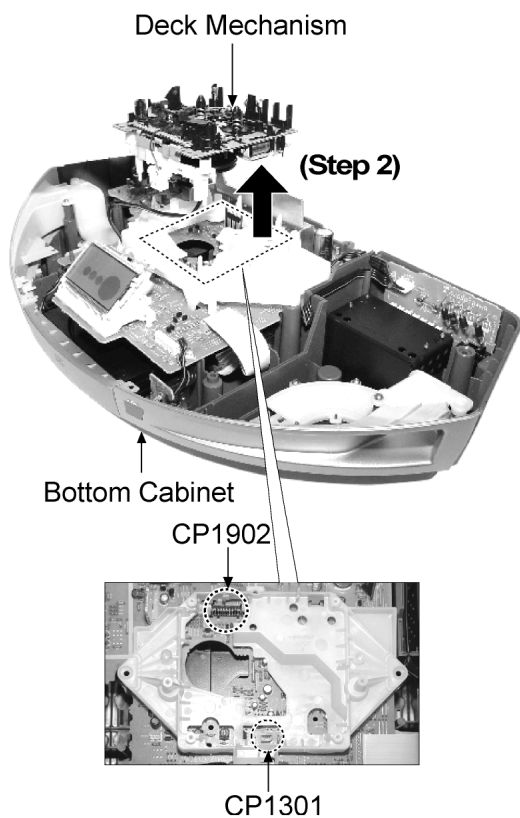
Step 3: Desolder the wire at speaker terminal to remove speaker.

10.2.4. Disassembly of Deck Mechanism.

Follow (step 1) to (step 9) of item 10.2.1.

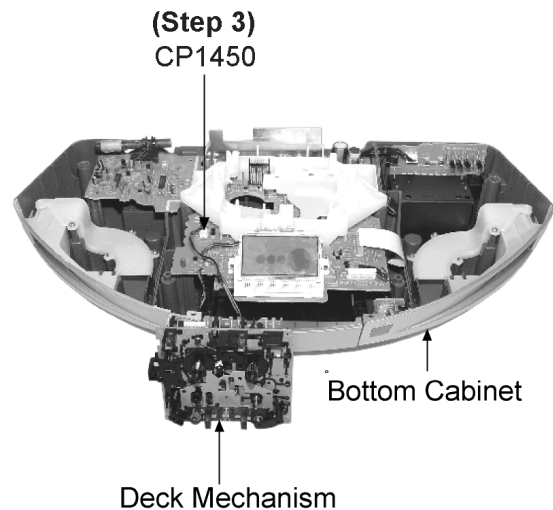


Step 1: Remove 4 screws.



Note: Be careful of connectors (CP1301 & CP1902) while removing the deck mechanism.

Step 2: Remove the deck mechanism as arrow shown.

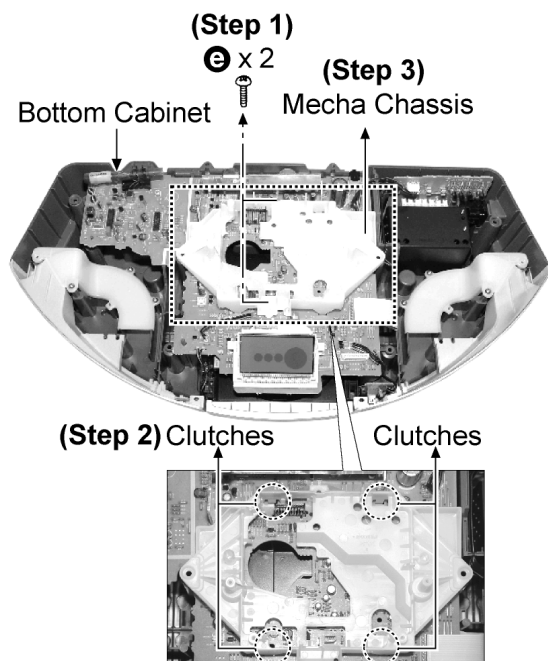


Step 3: Release the connector (CP1450) to remove the deck mechanism.

10.2.5. Disassembly of Main, Standby LED, Power On and Sensor P.C.B.

Follow (step 1) to (step 9) of item 10.2.1.

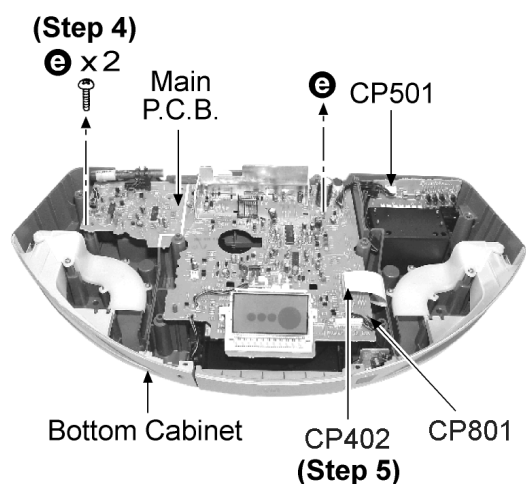
Follow (step 1) to (step 3) of item 10.2.4.



Step 1: Remove 2 screws.

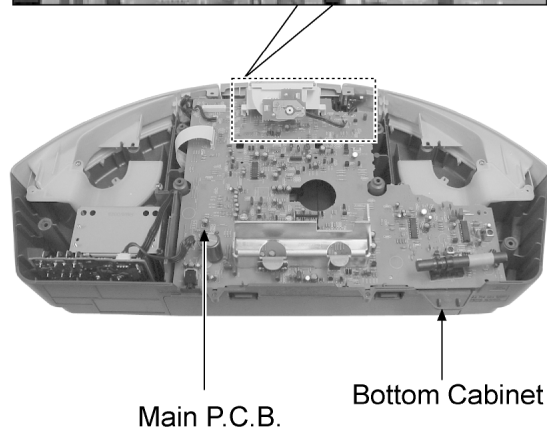
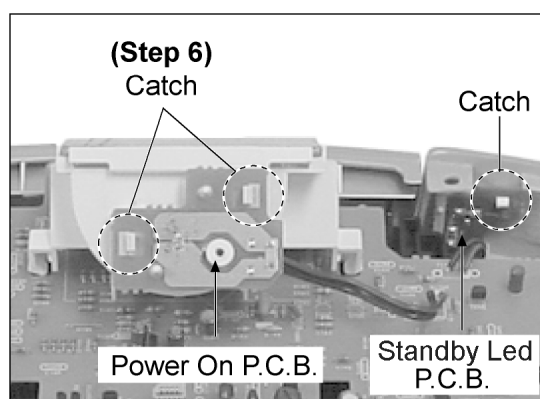
Step 2: Release 4 clutches.

Step 3: Remove the Mecha Chassis.

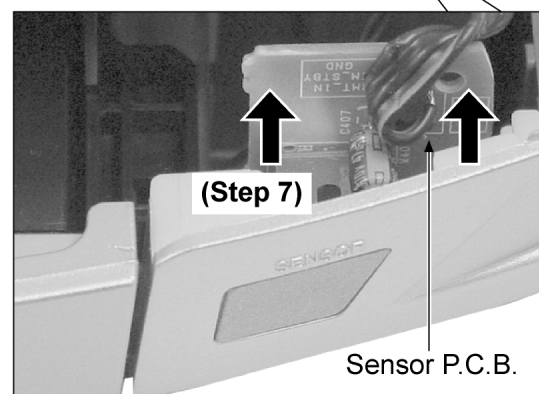
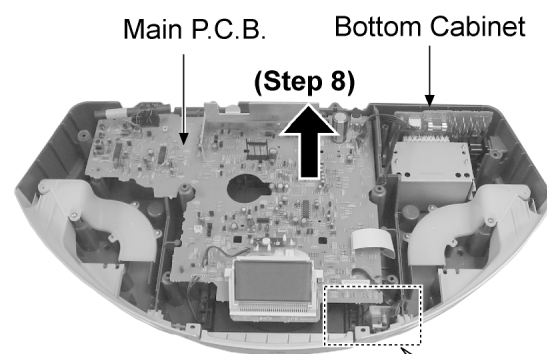


Step 4: Remove 2 screws.

Step 5: Release all the connectors (CP501, CP402 & CP801).



Step 6: Release 3 Catches and remove Power On P.C.B. and Standby Led P.C.B..



Step 7: Release the Sensor P.C.B. as arrow shown.

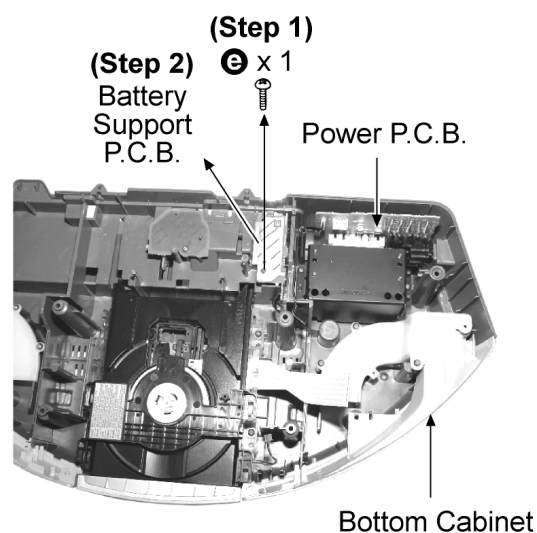
Step 8: Remove the Main P.C.B. as arrow shown.

10.2.6. Disassembly of Battery and Power P.C.B.

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

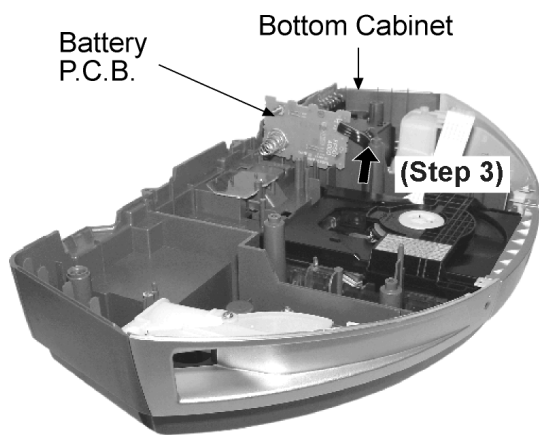
Follow (step 1) to (step 8) of item 10.2.5.



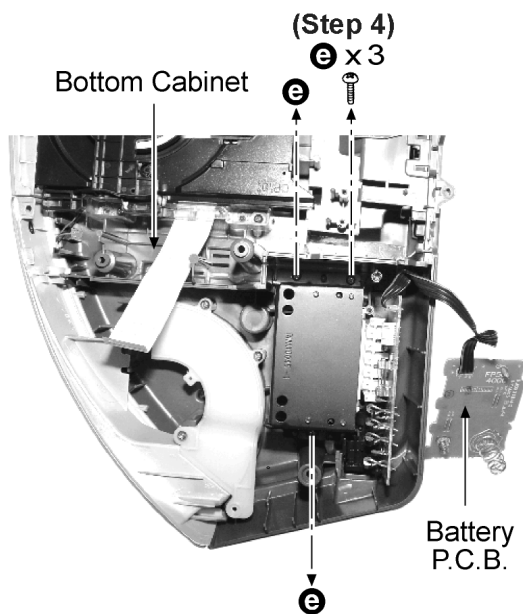
Step 1: Remove 1 screw.

Step 2: Remove the Battery Support P.C.B..

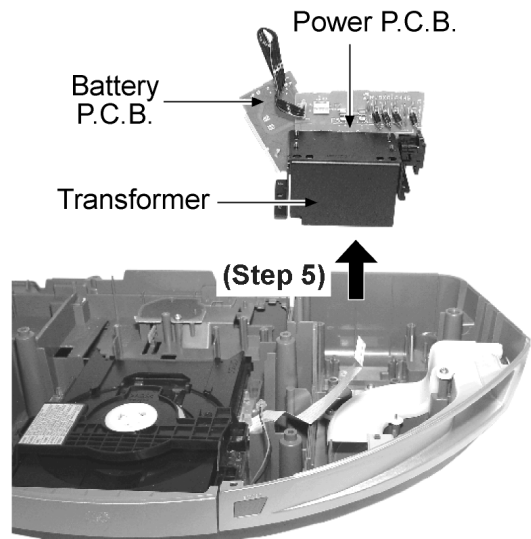
Note: Remember to place the Battery Support P.C.B. to original location.



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



Step 4: Remove 3 screws.



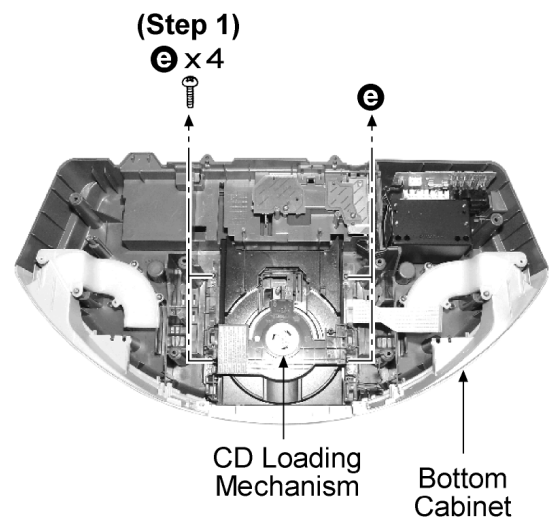
Step 5: Remove the Transformer together with battery P.C.B. and Power P.C.B. as arrow shown.

10.2.7. Disassembly of CD Loading Mechanism.

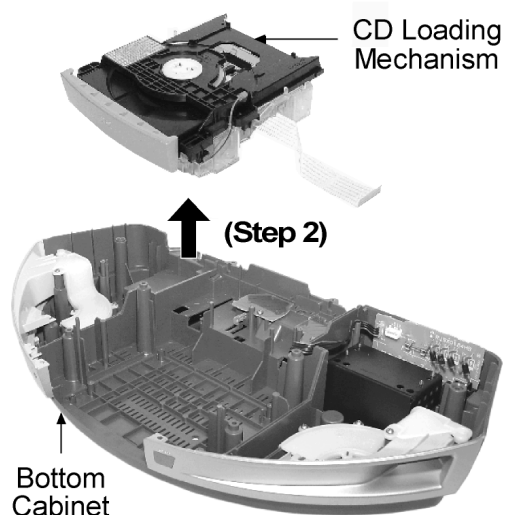
Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

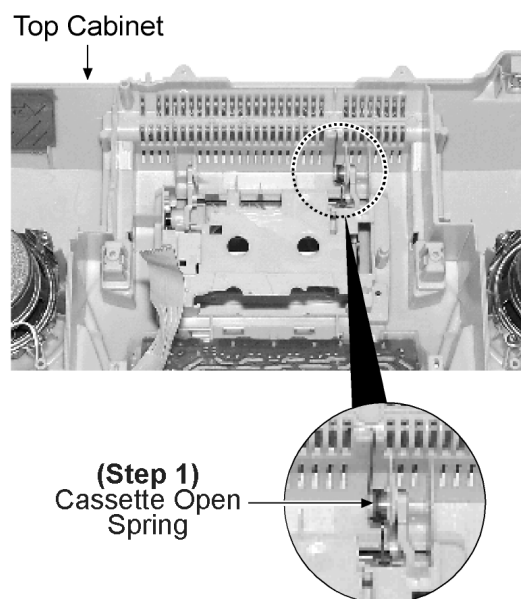
Follow (step 1) to (step 8) of item 10.2.5.



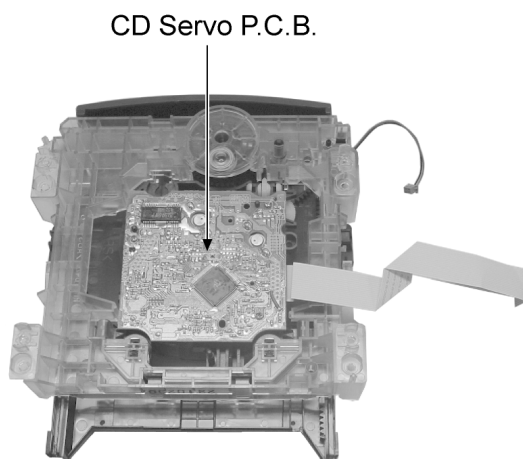
Step 1: Remove 4 screws.



Step 2: Remove the CD Loading Mechanism as arrow shown.

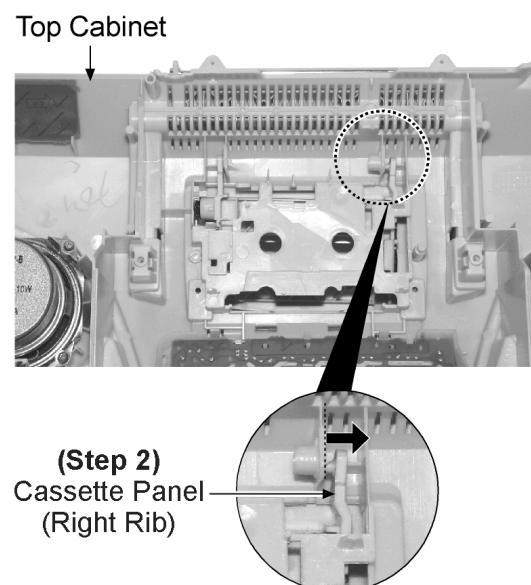


Step 1: Remove the cassette open spring.

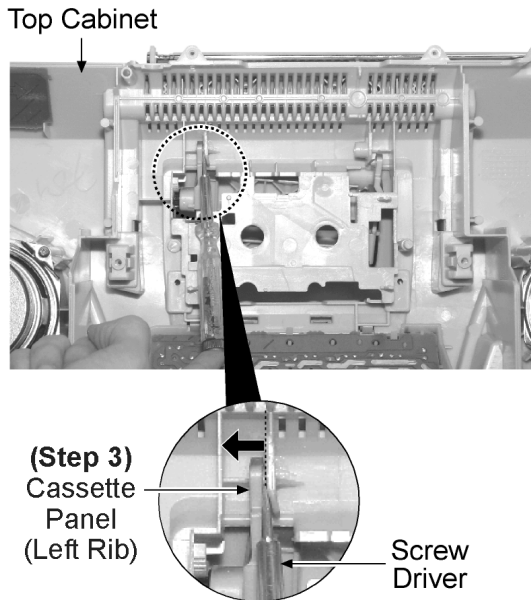


10.2.8. Replacement of Cassette Panel.

Follow (step 1) to (step 9) of item 10.2.1.

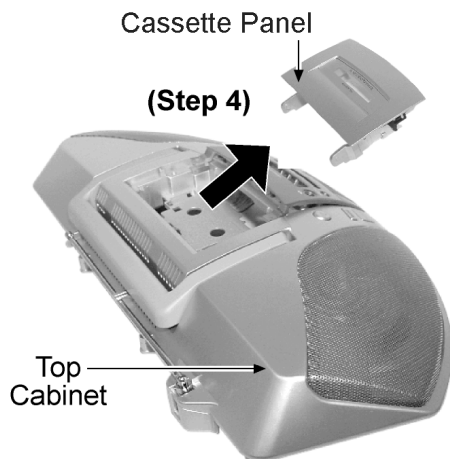


Step 2: Push the cassette panel slowly to the right.



Step 3: Push the cassette panel slowly to the left using a screw driver.

Caution: Be careful of using/exerting strong forces.

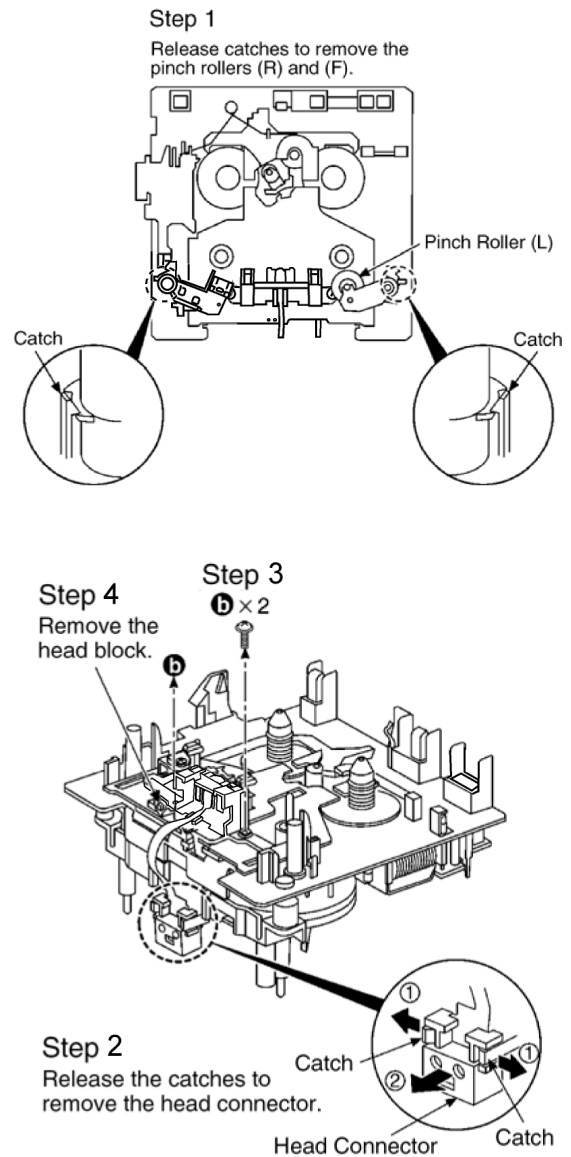


Step 4: Remove the cassette panel from top cabinet as arrow shown.

10.3. Procedures for Replacing Pinch Roller and Head Block (Deck Mechanism Unit)

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

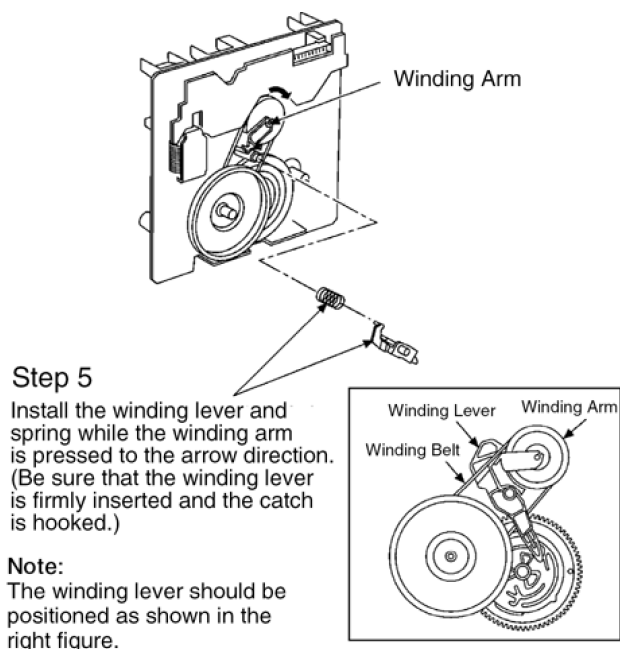
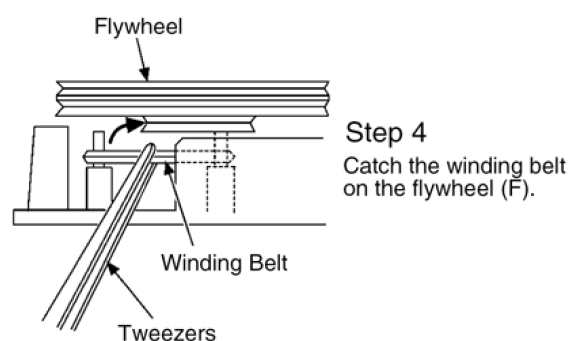
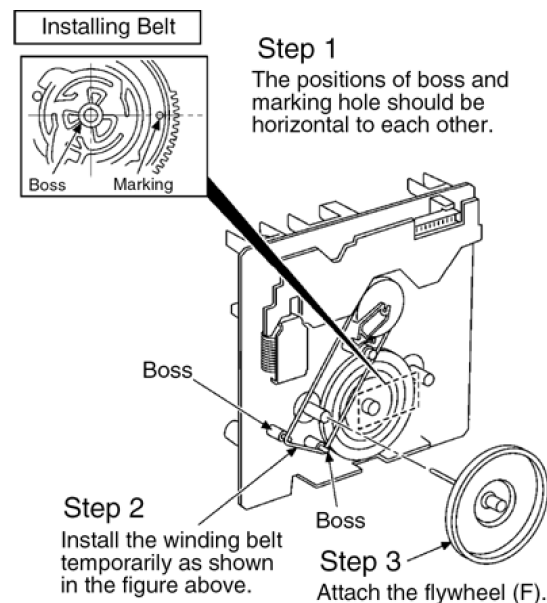
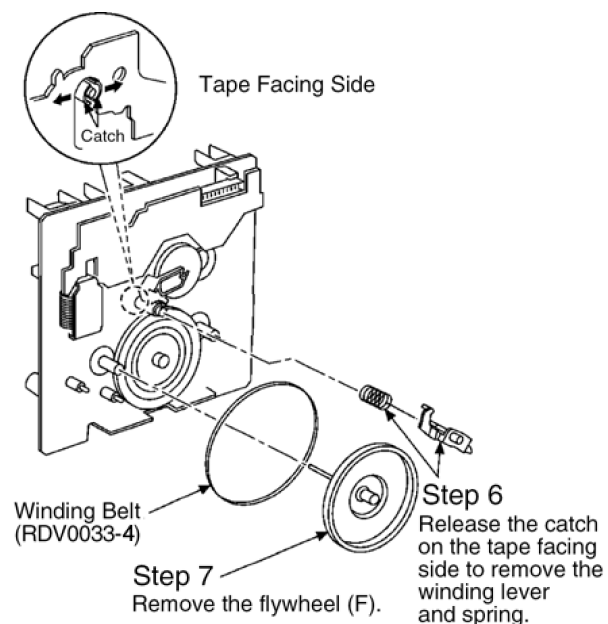
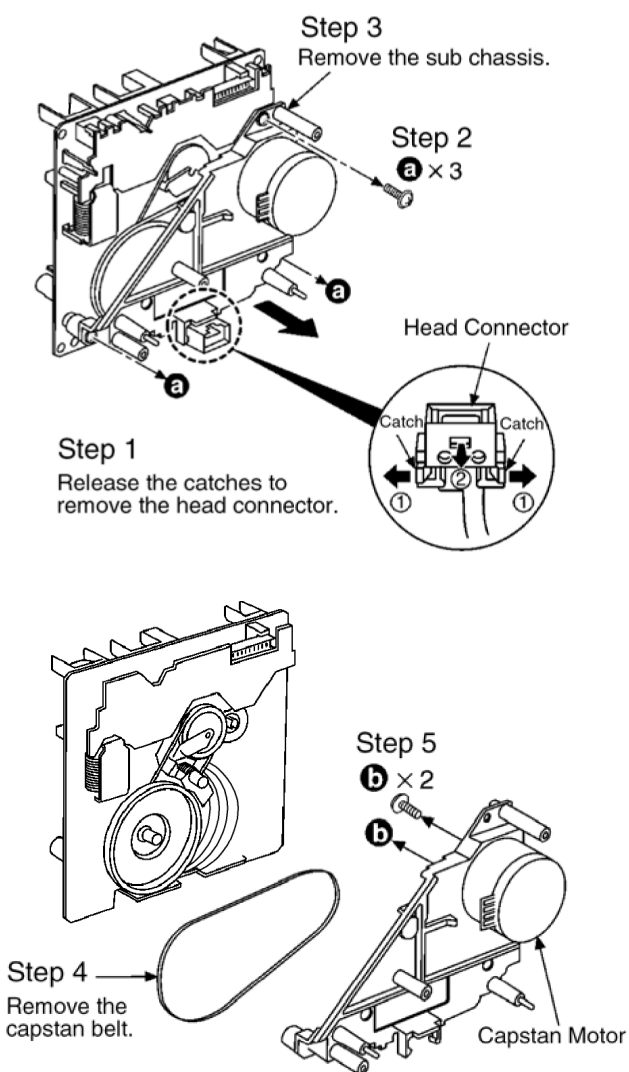


10.4. Procedures for Replacing Motor, Capstan Belt A, Capstan Belt B, and Winding Belt (Deck Mechanism Unit)

Follow (step 1) to (step 9) of item 10.2.1.

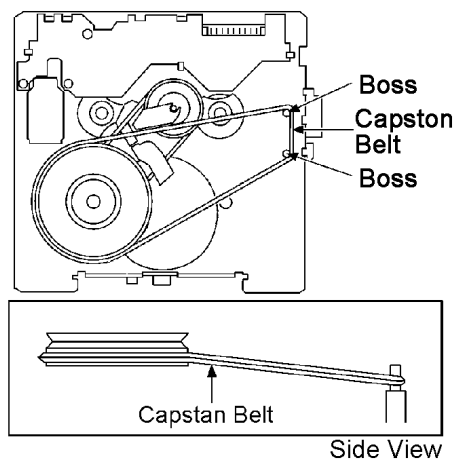
Follow (step 1) to (step 3) of item 10.2.4.

Follow (step 1) of item 10.3.



Step 6

Install the capstan belt temporarily as shown in the figure below.



Note:

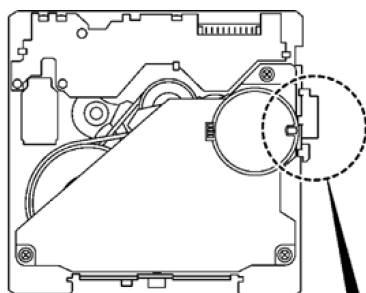
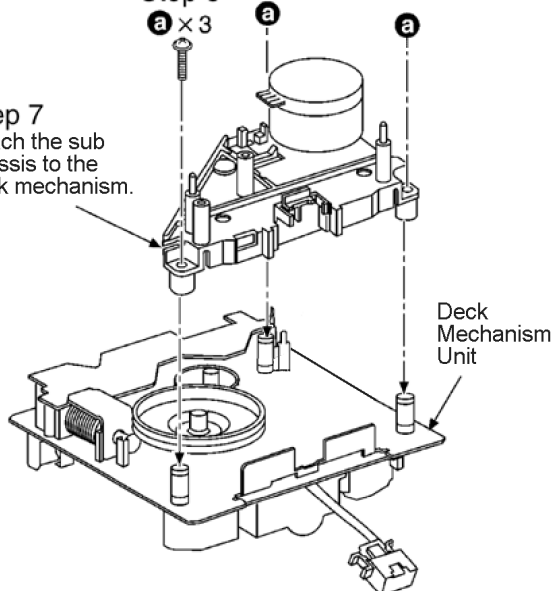
Keep the belt away from grease.

Step 8

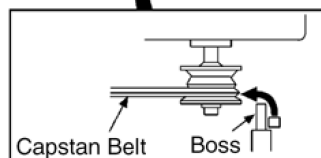
a × 3

Step 7

Attach the sub chassis to the deck mechanism.

**Step 9**

Catch the capstan belt to the pulley of the capstan motor.



10.5. Procedures for Replacing Parts on Deck Mechanism PCB

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

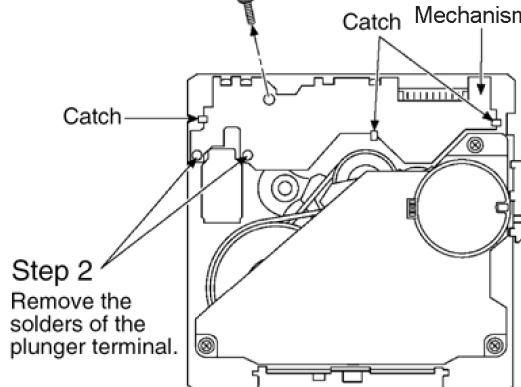
Follow (step 1) of item 10.3.

Step 1

a

Step 3

Remove 3 catches to remove the Deck Mechanism PCB.



10.6. Procedures of Replacing Traverse Base (Unit), Driving Gear, and Cam Gear (CD Mechanism Unit)

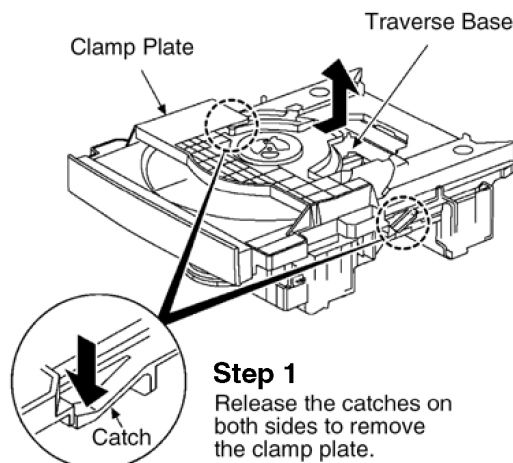
10.6.1. Disassembly of the Disc Tray.

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

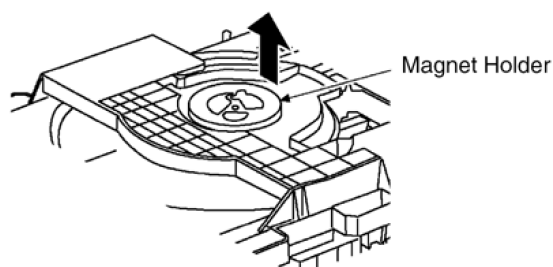
Follow (step 1) to (step 8) of item 10.2.5.

Follow (step 1) to (step 2) of item 10.2.7.



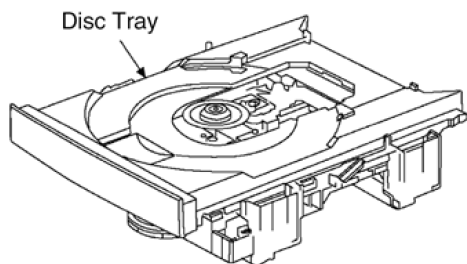
Note:

When the magnet attracts the traverse base (JUN) that is set to UP, lift the magnet holder backward to remove the clamp plate.

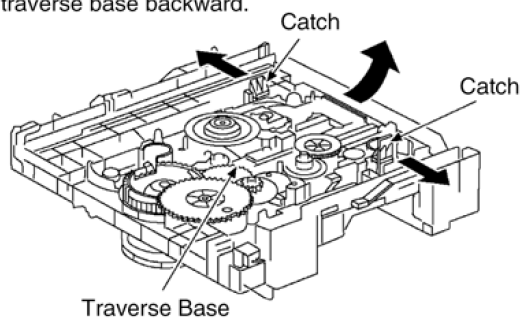


Step 2

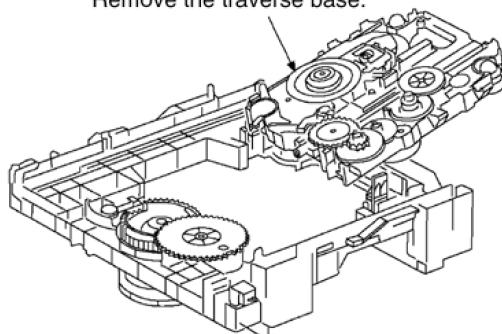
Remove the disc tray upward.

**Step 3**

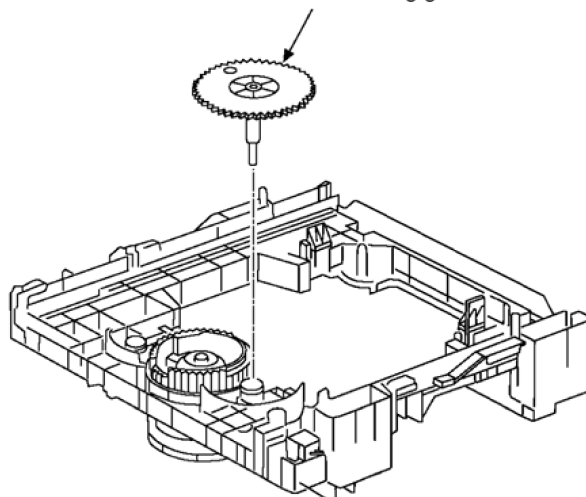
Release 2 catches to pull up the traverse base backward.

**Step 4**

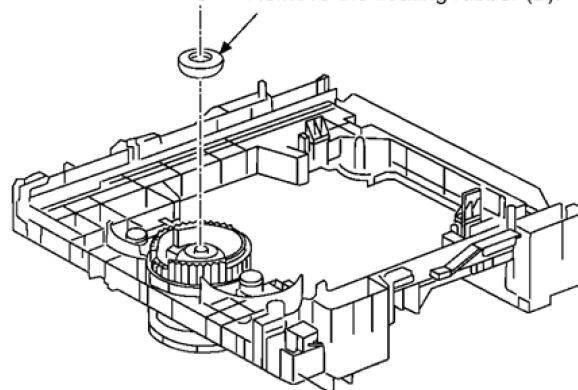
Remove the traverse base.

**Step 6**

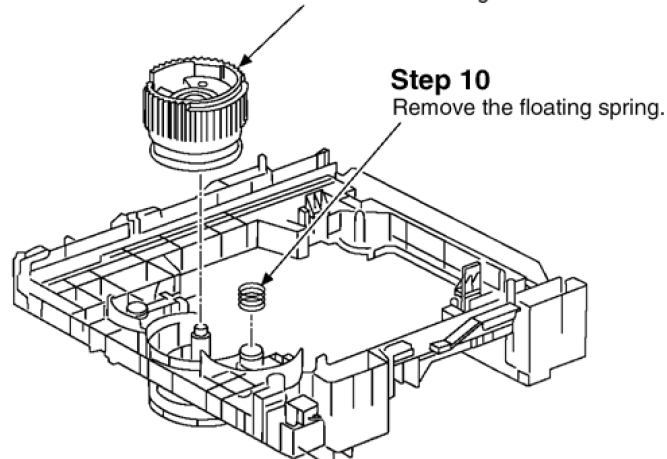
Pull out the driving gear.

**Step 7****b****Step 8**

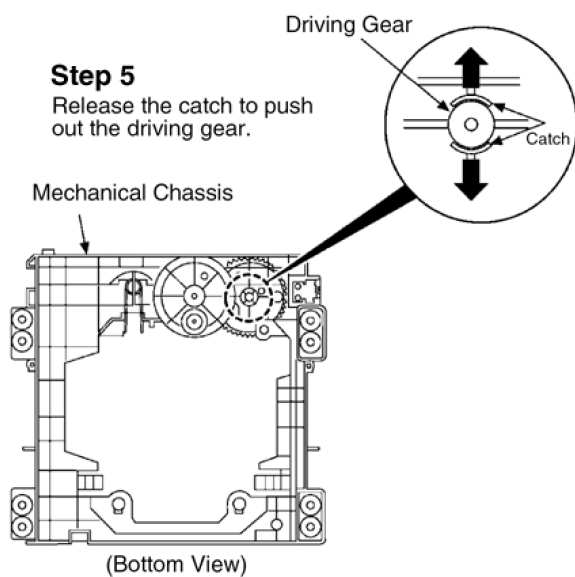
Remove the floating rubber (B).

**Step 9**

Remove the cam gear.

**Step 10**

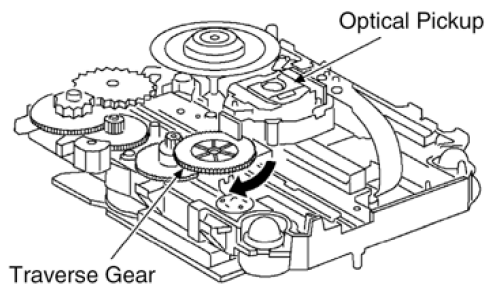
Remove the floating spring.



Assembly of Traverse Base, Cam Gear, Driving Gear, Disc Tray, and Clam Plate

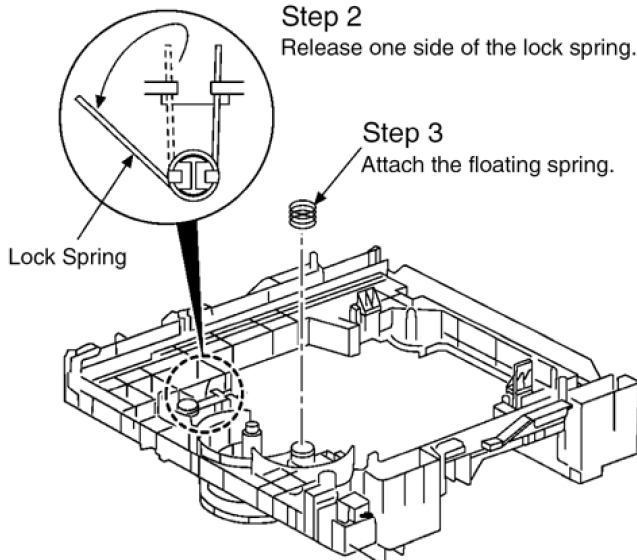
Step 1

Turn the traverse gear (B) to the arrow direction, and move the optical pickup to the center.



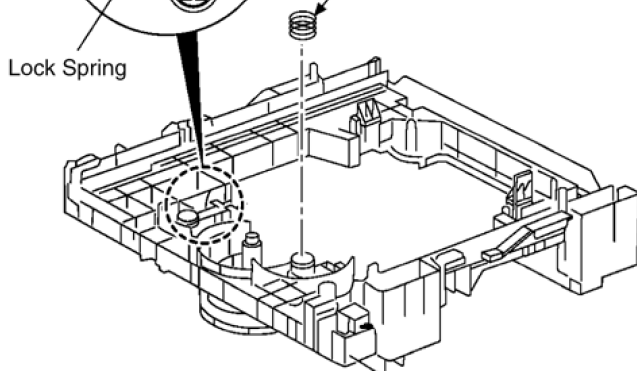
Step 2

Release one side of the lock spring.



Step 3

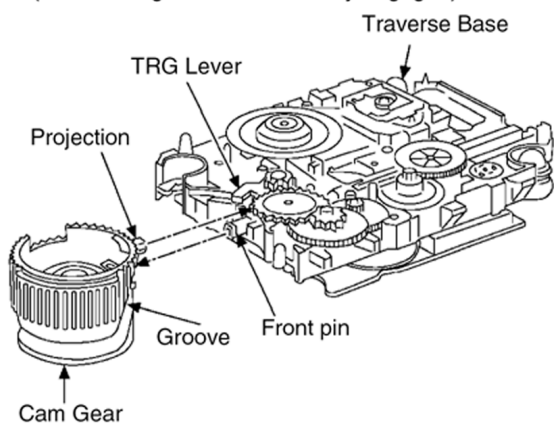
Attach the floating spring.



Step 4

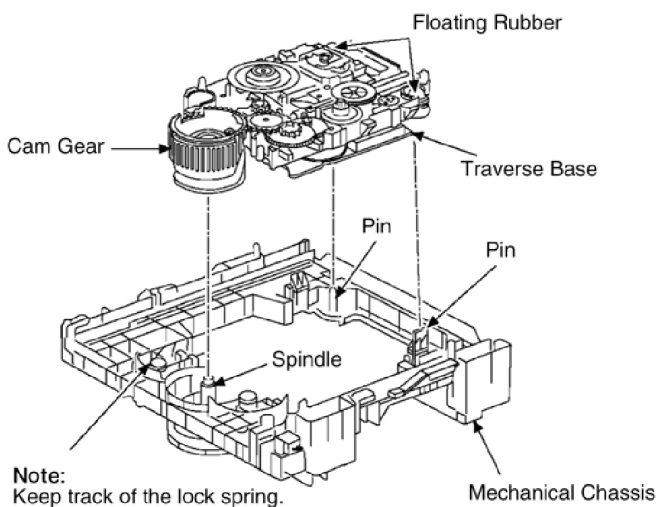
Engage the front pin of the traverse gear to the groove of the cam gear and the projection of the cam gear between the TRG lever.

(so that the gear is automatically engaged)



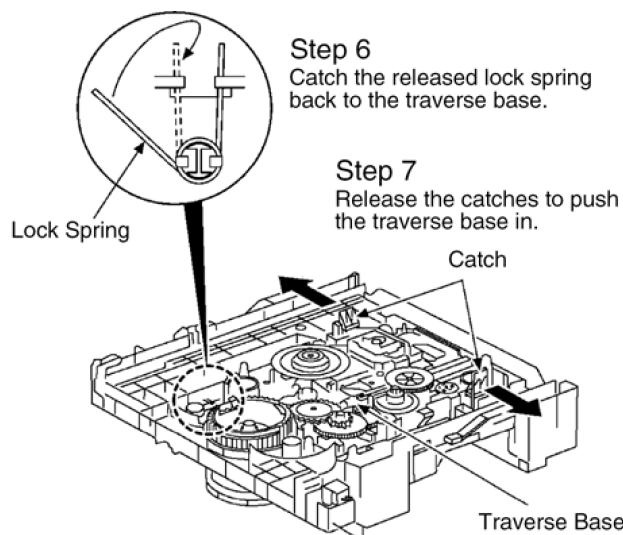
Step 5

Hold the assembled part carefully. Engage the cam gear to the spindle of the mechanical chassis and the floating rubber of the traverse base to the pin of the mechanical chassis.



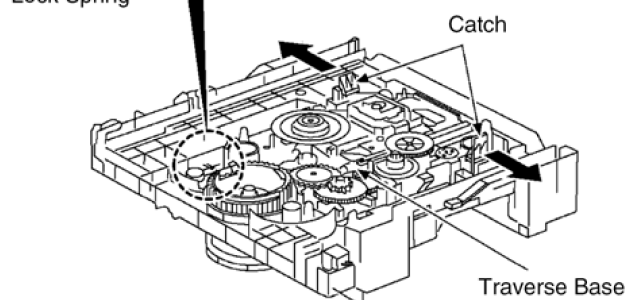
Step 6

Catch the released lock spring back to the traverse base.



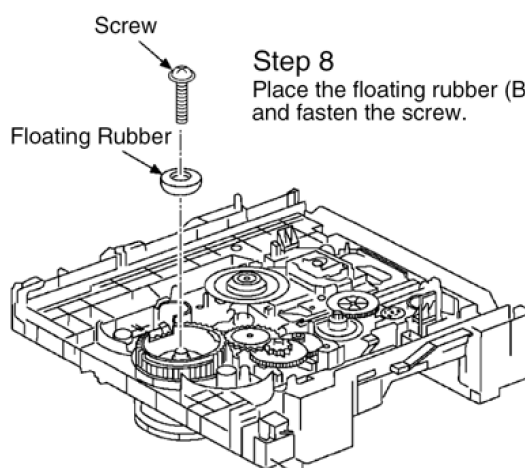
Step 7

Release the catches to push the traverse base in.



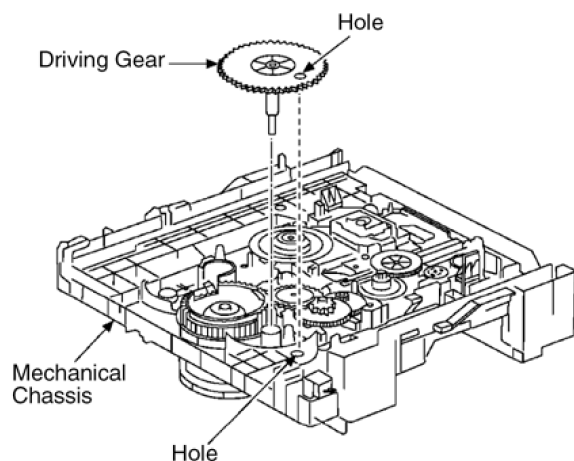
Step 8

Place the floating rubber (B) and fasten the screw.

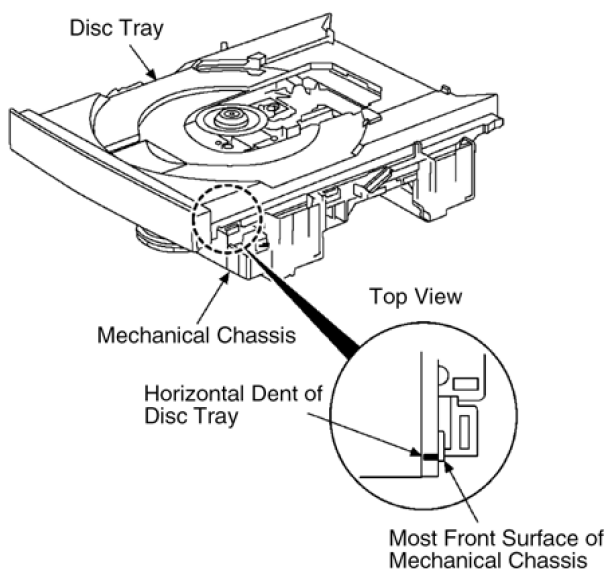


Step 9

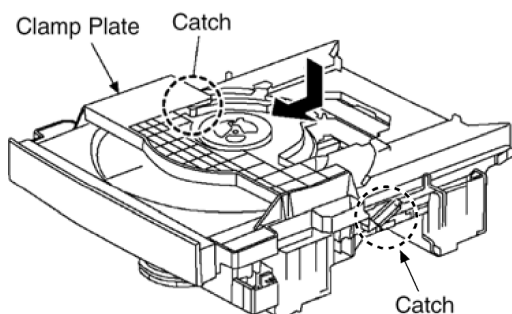
Put together the holes located on the driving gear and the mechanical chassis, and push down the driving gear till a click sound is heard.

**Step 10**

Position the disc tray where the horizontal dent located in the most right exterior of the disc tray is attached to the front surface located in the right most exterior of the mechanical chassis.

**Step 11**

Insert the clamp plate from the top to attach over the catch.



10.7. Procedures for Replacing Optical Pickup (CD Mechanism Unit)

Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

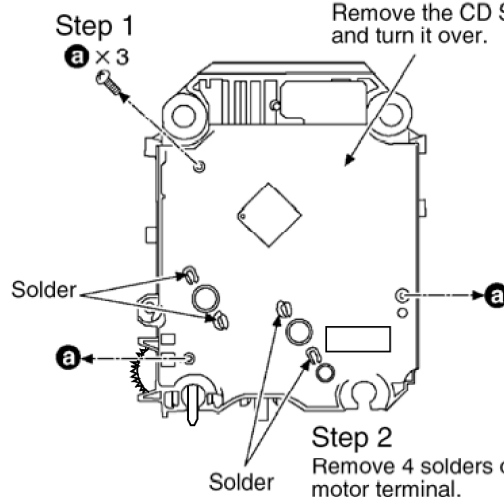
Follow (step 1) to (step 8) of item 10.2.5.

Follow (step 1) to (step 2) of item 10.2.7.

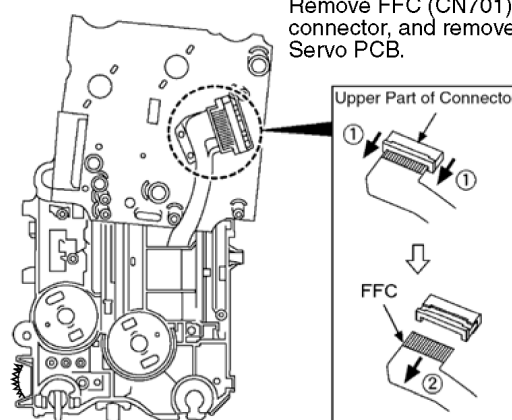
Follow (step 1) to (step 4) of item 10.6.1.

Step 3

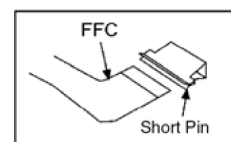
Remove the CD Servo PCB and turn it over.

**Step 4**

Remove FFC (CN701) From the connector, and remove the CD Servo PCB.

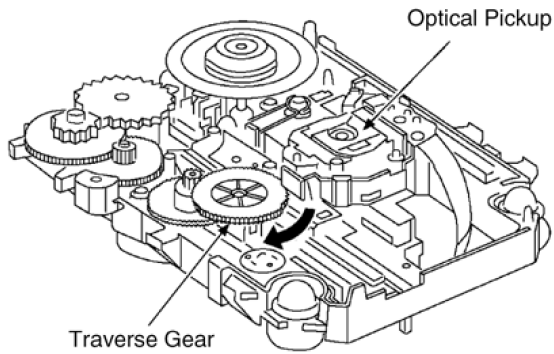
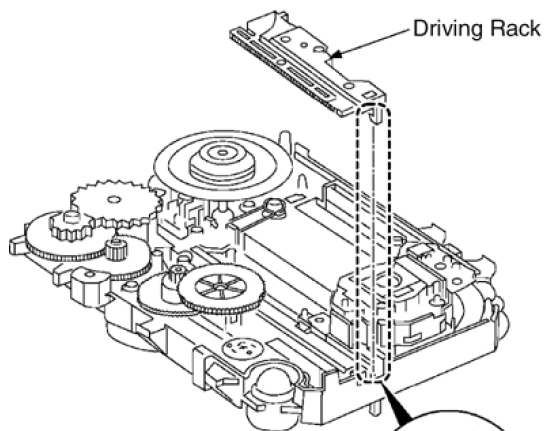
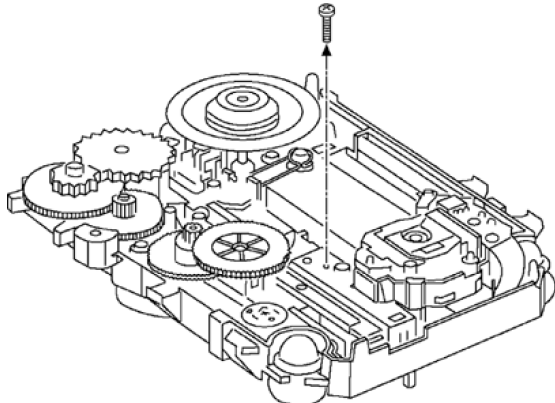


Note:
Insert the short pin to FFC of the optical pickup.
(Refer to "Note on Handling Optical Pickup".)

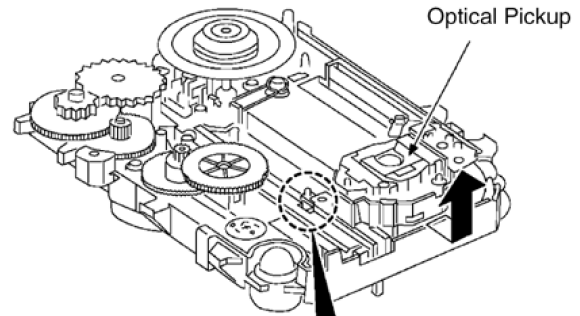
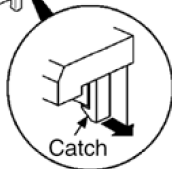


Step 5

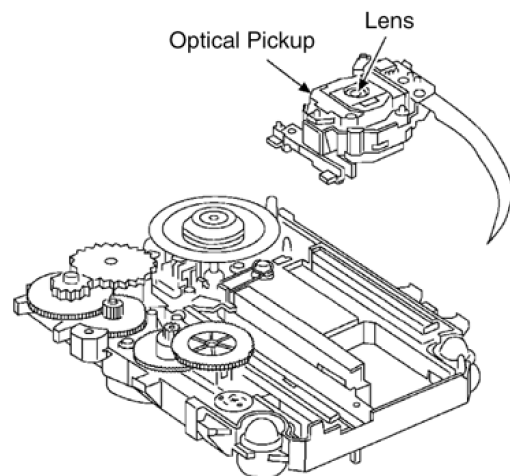
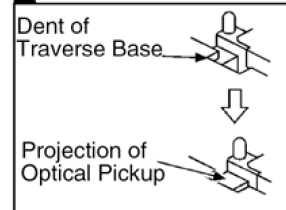
Turn the traverse gear (B) to the arrow direction, and move the optical pickup to the most outer side.

**Step 6****b****Step 7**

Release the catch of the driving rack to remove the rack.

**Step 8**

Engage the projection of the optical pickup to the dent of the traverse base in order to remove the optical pickup.



Note:

Do not touch the optical pickup lens.

10.8. Procedures for Replacement Traverse Gear A and Traverse Gear B (CD Mechanism Unit)

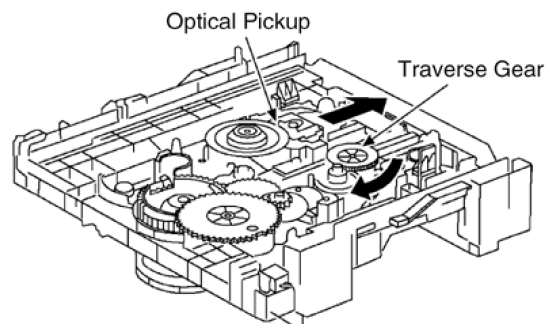
Follow (step 1) to (step 9) of item 10.2.1.

Follow (step 1) to (step 3) of item 10.2.4.

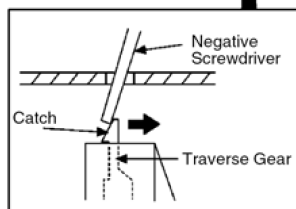
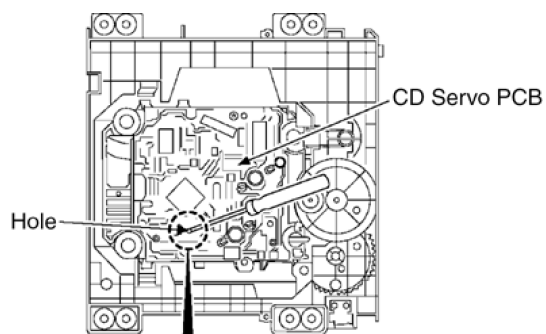
Follow (step 1) to (step 8) of item 10.2.5.

Follow (step 1) to (step 2) of item 10.2.7.

Follow (step 1) to (step 2) of item 10.6.1.

**Step 1**

Turn the traverse gear to the arrow direction, and move the optical pickup to the most outer side.



Step 2

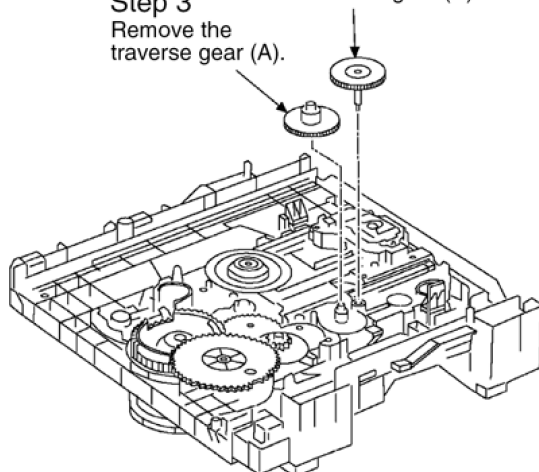
Insert the thin negative screwdriver into the hole of the CD Servo P.C.B., and push the catch to release the traverse gear (B).

Step 4

Remove the traverse gear (B).

Step 3

Remove the traverse gear (A).



Note:

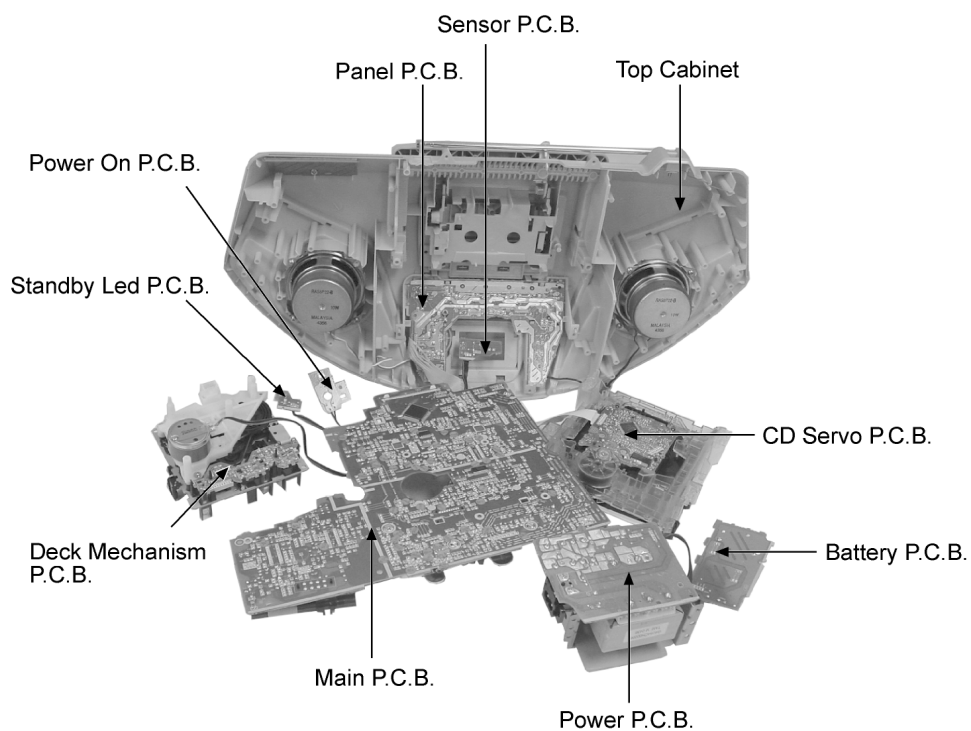
Do not use the once removed traverse gear (B), and be sure to replace with a new gear.

11 Procedure for checking of the major P.C.B.

11.1. Checking the Main P.C.B., Panel P.C.B., Deck Mechanism P.C.B., CD Servo P.C.B., Battery P.C.B., Sensor P.C.B., Power-On P.C.B., Power and Standby LED P.C.B.

Preparation

Follow items 10.2.1. to 10.2.7. of Disassembly Procedure.



12 Self Diagnostic Function

12.1. Self-diagnosis Function

12.1.1. Entering into self-diagnosis mode

1. Ensure there is no cassette tape in the deck unit.
2. Switch to CD function.
3. Press and hold the [CD/TAPE STOP_N] key of the main set for more than 2 seconds. While pressing this key, press the FF key on the main set for another 2 seconds to enter into the Self-Diagnosis mode.

Note:

Even if [CD/TAPE STOP_N] key of the main set is pressed while the self diagnosis mode is on, function will not be switched. Instead, confirmation of error numbers will begin.

12.1.2. Display Location

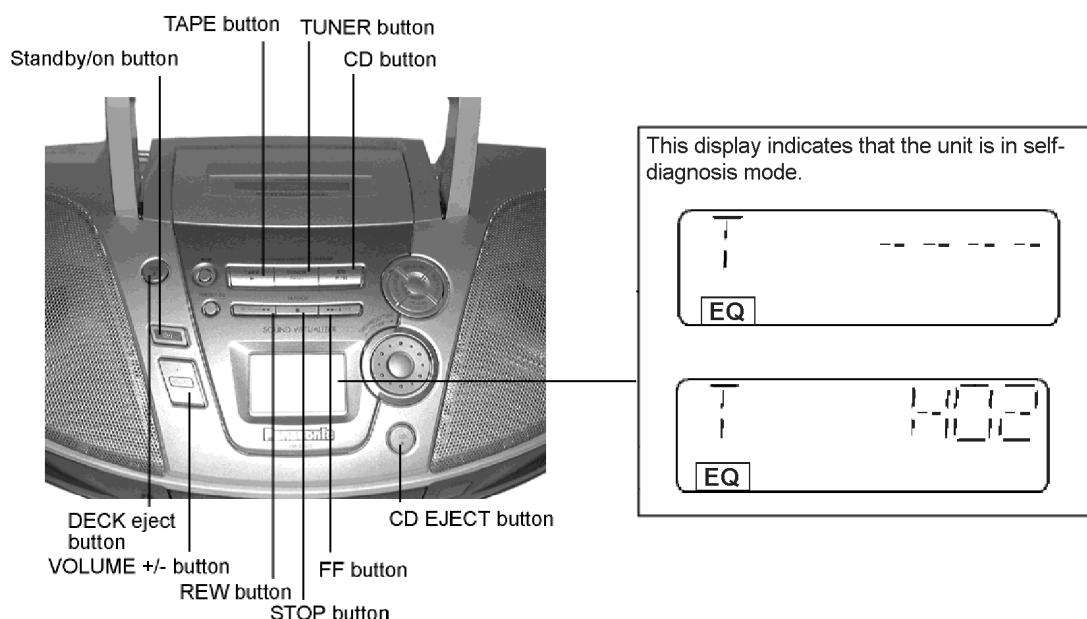


Figure 12-1

12.1.3. Error Code Display

- At the self-diagnosis mode, error codes will be displayed when [TAPE/CD STOP_N] key at the main unit is pressed.

Note:

Error numbers display is due to error symptom encountered during normal operation of unit. These error codes will be “remembered” and stored.

- Example: [T.....H01] (the display shall be retained)
- To exit from the self-diagnosis mode, execute power OFF operation.
- Even at power OFF operation, this error numbers shall not be cleared (the number can be cleared only at the start up of micro-p after reset).
- If repeating self-diagnosis, add the newly detected errors only without deleting errors which have been detected before.

12.1.4. Error Code Table

Error code	Possible symptom	Description of problem
U01	Batteryflat	• During operation, when PDET switches to OFF (PDET < 1.534V) due to fall of power supply voltage fall, the power supply will be automatically switched OFF. • If REM_STBY = L, VCCDET = L the system shall be judged to have low battery and [.....U01] shall be displayed for 10 seconds. • To check REM_STBY and VCCDET, chattering check will be read-in twice 1 sec after PCONT is set to L. • In case of power ON operation, after PCONT is set to 'H', power supply shall be checked using PDET input. If the battery is flat (PDET < 1.534V), power supply OFF process will be executed and error number [.....U01] will be displayed for 5 seconds. This error number will not be memorized.

Error code	Possible symptom	Description of problem
U02	Power supply cut	- During operation, when PDET switches to OFF (PDET < 1.534V) due to fall of power supply voltage, the power supply will be automatically switched OFF. - If REM_STBY = L, VCCDET = H the system shall be judged to have low battery and [.....U02] shall be displayed for 10 seconds. - To check REM_STBY and VCCDET, chattering check will be read-in twice 1 sec after PCONT is set to L. - Power supply state shall be checked using REM_STBY and VCCDET inputs. If power ON is executed from power OFF (REM_STBY = L and VCCDET = H), error number [.....U02] will be displayed for 5 seconds. This error number will not be memorized.
F15	CD REST_SW abnormal	At initial setting of CD traverse position, if REST_SW ON is not detected even though the fail safe timer time is over (10 sec), this is memorized as an error and the error number can be cleared only at the start up of micro-p after reset.
H15	CD OPEN_SW abnormal	During normal operation, if CD OPEN_SW ON is not detected within 4 sec, then H15 will be memorized in memory. The error code can be cleared only at the start up of micro-p after reset.
H01	DECK operation abnormal (reel motor, solenoid, and MODE_SW) (provisional)	- During normal operation, if mechanism error process is executed once by mode switch against the same deck operation, it is judged as mechanism abnormality and this is memorized as an error. - Conditions for judging mechanism error: - Mode switch ON is not detected 800 ms after plunger activation for PLAY / REC process. - Mode switch ON is not detected 800 ms after plunger activation for FF / REW process / Mode switch OFF is not detected 800 ms after plunger activation after detecting Mode SW ON / Mode Switch ON is not detected 800 ms after detecting Mode switch OFF. - If Mode switch comes ON at STOP / PAUSE state (normal condition), this is judged as an Error: - Main purpose for this Self Diagnosis is to diagnose a partial short of the deck. - Mechanical error process caused by EJECT operation will not be counted. - This error number can be cleared only at the start up of micro-p after reset.
F26	Communication between CD servo LSI and microp abnormal	At the time of switching to CD function, SENSE = H will be detected using DTMS system setting command. If the error is memorized when SENSE = L is not detected within fail safe timer time (20 sec), [F26] will be displayed simultaneously. This display will be retained if the power is ON and at CD function. If this error occurs, CD operation afterward cannot be executed as in the case of [NO.DISC.]. This error number can be cleared only at the start up of micro-p after reset.

12.1.5. Self-diagnosis mode Deck Mechanism

- Activate the Self Diagnosis mode for the Deck and the following Self Diagnosis will be conducted.

Error Code	Description
H01:	If MODE_SW abnormal is detected during normal operation, it will be memorized. The detection and memory shall be done for Deck.
H02:	RECINH_SW abnormal.
H03:	HALF_SW abnormal.
F01:	Reel pulse abnormal.

- Operating Procedures

1. Activate the Self Diagnosis mode with the Deck unloaded.
2. The test mode will be displayed ([T] at the 1st digit shows TEST) and detection shall be executed to check RECINH_SW, HALF_SW are in the OFF state (the tape counter display is retained).
3. Load a cassette tape (with recording preventive tab present) into the deck and close the cassette holder.
4. At this instant with the cassette loaded in, RECINH_SW, HALF_SW will be checked and confirmed at this stage by the software. Press FF key to proceed the self-diagnosis. The FF operation will stop automatically after 3 sec. If abnormal operation is detected, the tape will stop automatically after 1 sec. During the FF operation, the Reel Pulse will be checked by the software.
5. After the tape stops, the Error codes will be displayed by toggling the STOP_n key. (For a more detailed explanation, refer to Figure 12-2).

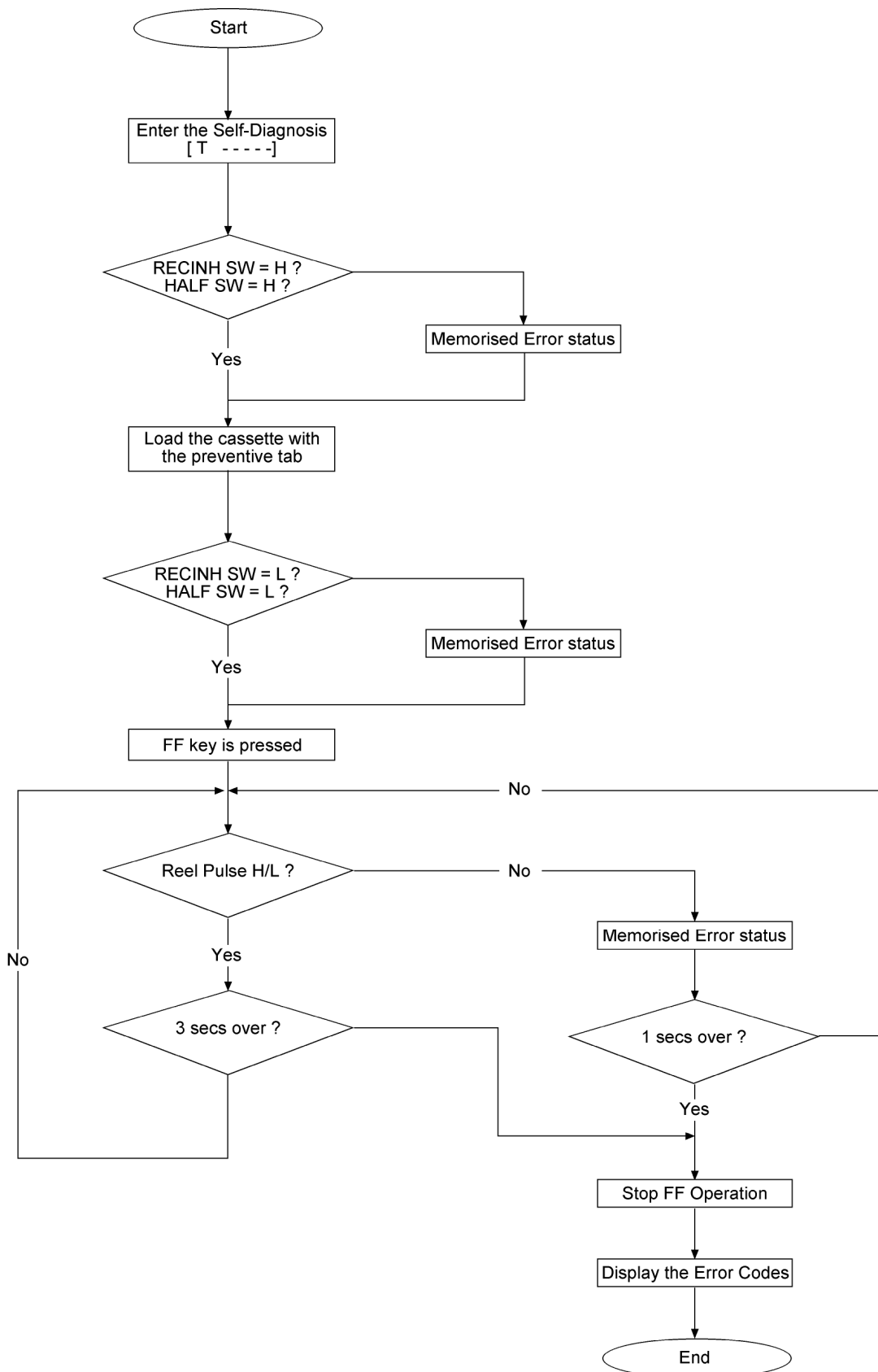
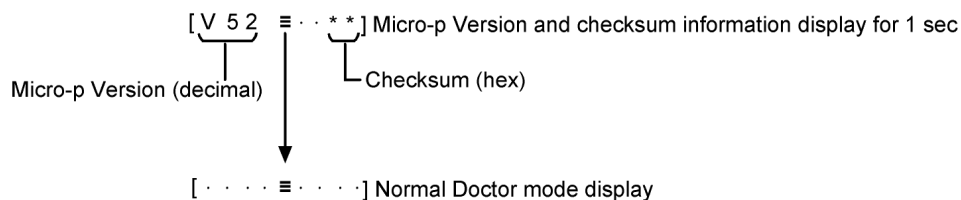


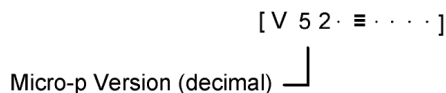
Figure 12-2

12.2. Setting of doctor mode

1. Switch to CD mode. (Ensure no disc is inserted)
2. To enter Doctor mode, press and hold [TAPE/CD STOP_n] key at the main unit, followed by [4] & [7] on remote control.
3. When the Doctor Mode is activated the LCD display will show the $\equiv$ symbol at the 5th digit. At the same time, the micro-p version number (base 10) and EEPROM's checksum (base 16) will be displayed for 1 sec. After displaying the EEPROM information for 1 sec, the display will return to the normal Doctor mode display



4. However, if the EEPROM was not detected, it will not display the EEPROM's checksum information. The LCD will display micro-p version number (as shown below) for 1 sec and return to normal Doctor Mode display.



Note:

Within the Doctor Mode display, at any of the test modes, if [STOP_n] key at main set is pressed, followed by [4] and [7] key from the remote control, the micro-p's version number and EEPROM information will be displayed for 1 sec, and then returned to the normal doctor mode display.

12.2.1. Inspection item list

Test number	Test Item	Operation key (numeric buttons)
1	Tact SW inspection	CD, [1]
2	TONE inspection	[2],[3]
3	LCD ALL Segment inspection	[4]
4	CD Unit Loading Test	CD,[≥ 10],[1],[0]
5	CD Unit Traverse Test	CD,[≥ 10],[1],[1]
6	CD Unit Combination Test	CD,[≥ 10],[1],[2]
7	CD Unit Adjustment Test	[≥ 10],[2],[0]
8	SG2 Aging Test	TAPE, FF
9	EEPROM Checksum Check	DOCTOR mode key
10	BBD Check	TAPE,[8]

Note:

- If entering Doctor Mode by numeric buttons, PRESET EQ will be set to OFF.
- In case of error, all the segments of LCD will blink (1 sec on and off) and Doctor Mode shall be retained.

12.2.2. CD Unit Loading Test (Reliability test 1)

- Purpose : To test CD Unit Loading (OPEN / CLOSE aging test) function.

– The following operation will be carried out.

- Procedures :

1. Enter into doctor mode (Refer to section 12.2)
2. Press [≥ 10] followed by [1] & [0] on the remote control.

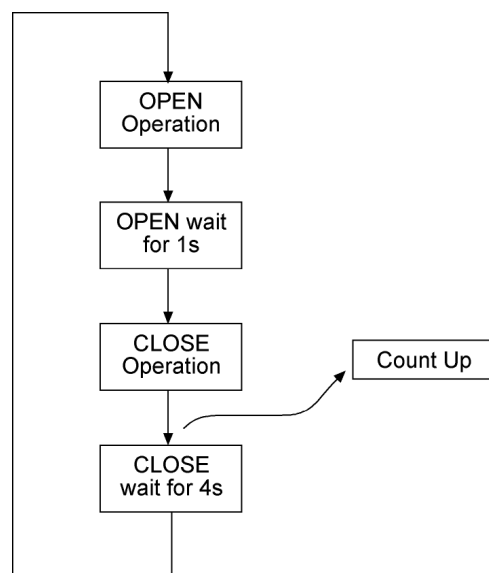


Figure 12-3

3. After a few times, the LCD shall display as below:

Special Note:

Due to certain reasons, when the following conditions occur, the aging will stop but the count value shall be maintained:

- During OPEN operation, after a certain timing, the CD does not open in the Open position. (After REST SW is OFF, the CD OPEN SW did not turn ON after 4s.)
 - Do the CLOSE operation, stop the aging test at CLOSE condition.
- During CLOSE operation, after a certain timing, the CD does not close in the CLOSE position. (After CLOSE operation, REST SW was not turned off in 4s.)
 - Do the OPEN operation, stop the aging test at OPEN condition

12.2.3. CD Unit Traverse Test (Reliability test 2)

- Purpose : (Access Inner Outer Disc aging test) To test CD Unit traverse reliability.
 - The following operation will be carried out.
 - Procedures :
1. Enter into doctor mode (Refer to section 12.2)
 2. Press ≥ 10 followed by [1] & [1] on the remote control.

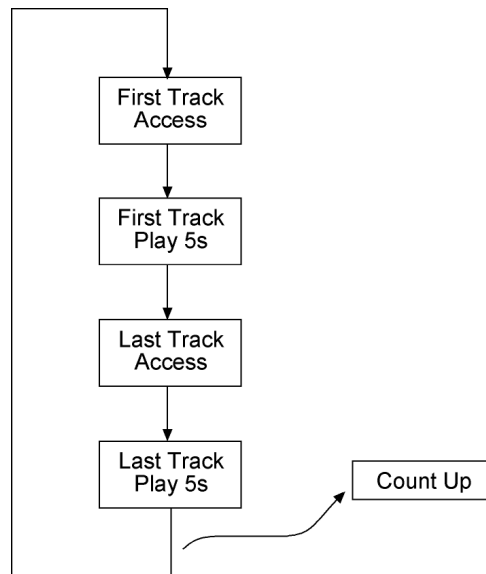


Figure 12-4

3. After a few times, the LCD will display as shown below:



Special Note :

Due to certain reasons, when the following conditions occur, the aging will stop but the count value shall be maintained:

- After 10s, the Disc Access has not yet complete.
- Out of Focus for more than 2s.

12.2.4. CD Unit Combination Test (Reliability test 3)

- Purpose : This test is the combination of the CD OPEN/CLOSE operation and the Inner and Outer Disc Access operation aging test. (Mainly used for CD unit reliability test)

– Operation : During Doctor Mode, when the keys [≥ 10] followed by [1] & [2] are being pressed using the remote control key, the following operation will be carried out.

- Procedures

1. Enter into doctor mode (Refer to section 12.2)

2. Press [≥ 10] followed by [1] & [2] on the remote control key, the following operation will be carried out:

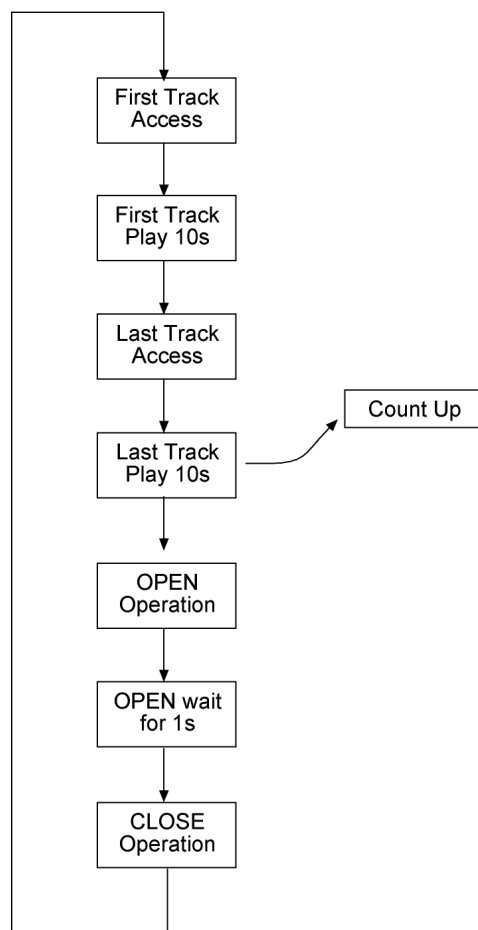


Figure 12-5

3. After a few times, the LCD will display as shown below:

Special Note :

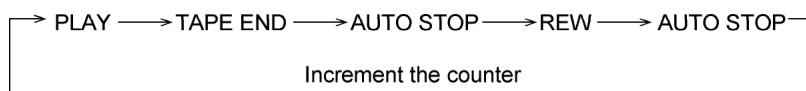
Due to certain reason, when the following conditions occur, the aging will stop but the count value shall be maintained:

- During OPEN operation, after a certain timing, the CD does not open in the OPEN position. (After REST SW is OFF, the CD OPEN SW did not turn ON after 4s.)
- During CLOSE operation, after a certain timing, the CD does not close in the CLOSE position. (After CLOSE operation, REST SW was not turned off in 4s.)
- After 10s, the Disc Access has not yet complete.
- Out of Focus for more than 2s.

12.2.5. Cassette Aging Test (SG2)

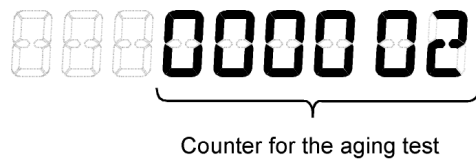
- Purpose : To check the reliability of the SG2 mechanism.
 - Operation: After entering the doctor mode, press [▶▶/+/FF] key on the main set for 2sec, it will enter the Aging Test where the process is as below:
 - Stop Operation: Use Stop key (main set). If stop key is pressed, aging test will stop and remain in doctor mode.
- Procedures :

1. Enter into doctor mode (Refer to section 12.2).
2. Press **[▶▶]/+ /FF** on the main unit. it will enter into the cassette aging mode.



SG2 Aging Test

Example of LCD Display:



13 Measurements and Adjustments

13.1. Tuner Section

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

1. Set selector switch to AM or TAPE.
2. Set volume level to 40.
3. Output of signal generator should be no higher than necessary to obtain an output reading.

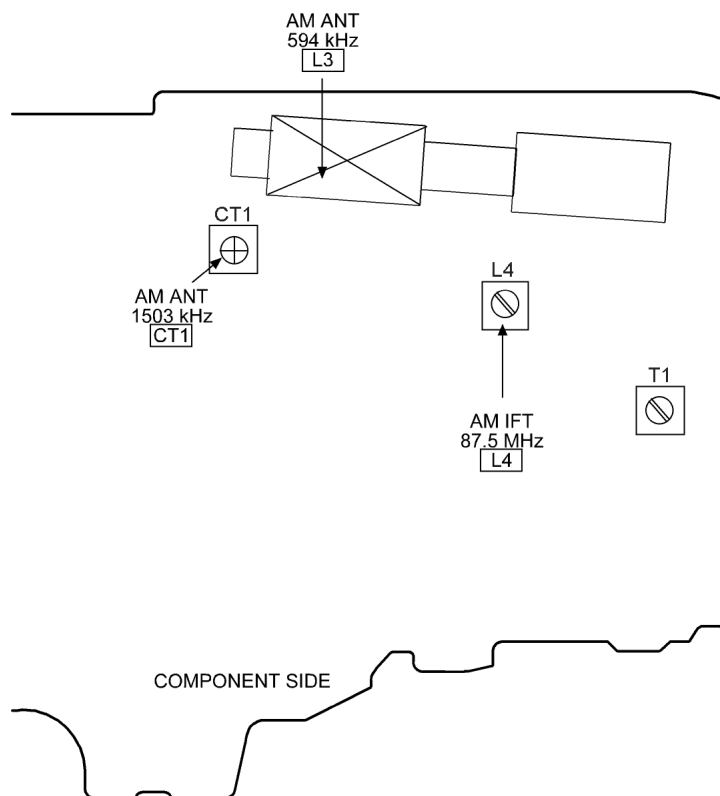
· AM-RF ALIGNMENT

Signal Generator or Sweep Generator Connections	Frequency	Radio Dial Setting	Indicator (Electronic Voltmeter or oscilloscope)	Adjustment (Shown in Fig.1)	Remarks
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	594 kHz	Point of non-interference (on/about 600 kHz)	Headphone Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	[*1] L3 (AM ANT coil)	Adjust for maximum output.
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	1503 kHz	Point of non-interference (on/about 600 kHz)	Headphone Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	CT1 (AM ANT Trimmer)	Adjust for maximum output.

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

· FM-RF ALIGNMENT

Signal Generator or Sweep Generator Connections	Frequency	Radio Dial Setting	Indicator (Electronic Voltmeter or oscilloscope)	Adjustment (Shown in Fig.1)	Remarks
Fashion a loop of several turns of wire and radiate signal into loop of receiver.	87.5 MHz	Point of non-interference (on/about 600 kHz)	Headphone Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	[*1] L4 (AM IFT)	Adjust for maximum output.



13.2. Deck Section

· HEAD AZIMUTH ALIGNMENT

Test Tape	Indicator (Electronic Voltmeter or oscilloscope)	Adjustment	Remarks
QZZCFM (8 kHz, -20 dB)	Headphone Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	Azimuth Screw (Shown in Fig. 3)	1. Insert a test tape (QZZCFM) and start playback in the forward direction. 2. Adjust the azimuth screw for maximum waveform on the oscilloscope and the similar output on L and R channels. 3. When adjusting the azimuth in the reverse direction, repeat the adjustment several times because of a little slip on the forward direction side.

CAUTION:

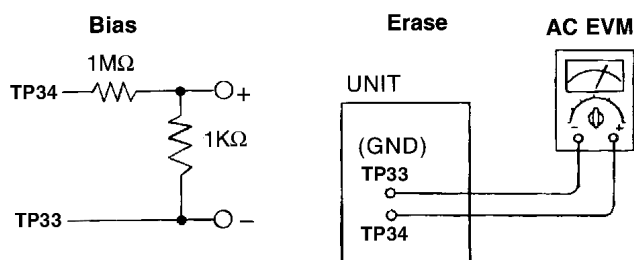
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
- After the adjustment, apply screw lock to the azimuth adjusting screw. (Screw-locking bond: RZZ0L01)

· TAPE SPEED ALIGNMENT

Test Tape	Equipment Connection Electronic Counter	Adjustment	Specifi- cation	Remarks
QZZCWAT (3 kHz, -10 dB)	Headphone Jack (32Ω) Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.	—	3000 ± 90 Hz	Playmode

· BIAS AND ERASE VOLTAGE CHECK

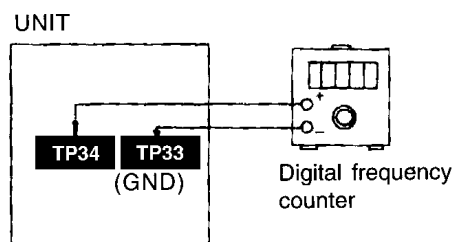
1. Set the unit to "TUNER MODE" position.
2. Insert the Normal blank tape (QZZCRA) into DECK and set the unit to "REC" mode (use "IREC / STOP_n" key).
3. Measure and make sure that the output is within the standard value.
4. Insert the CrO₂ tape (QZZCRX).
5. Repeat steps 2 and 3.



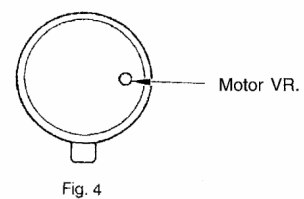
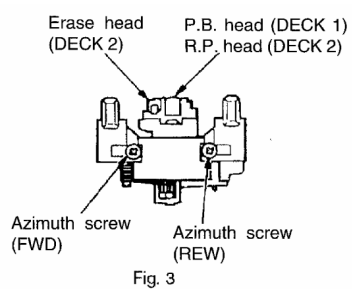
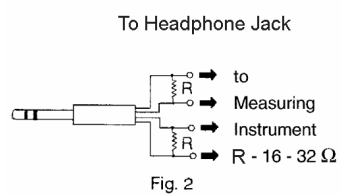
Bias voltage for Deck (Standard value): 17.3 ± 1mV (Normal)

· BIAS FREQUENCY ADJUSTMENT

1. Set the unit to "TUNER MODE" position.
2. Insert the Normal blank tape (QZZCRA) into DECK and set the unit to "REC" mode (use "IREC / STOP_n" key).
3. Adjust CP1301 so that the output frequency is within the standard value.



Standard value: 100 ± 7kHz



14 Voltage Measurement

Note:

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.

Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

14.1. Main P.C.B.

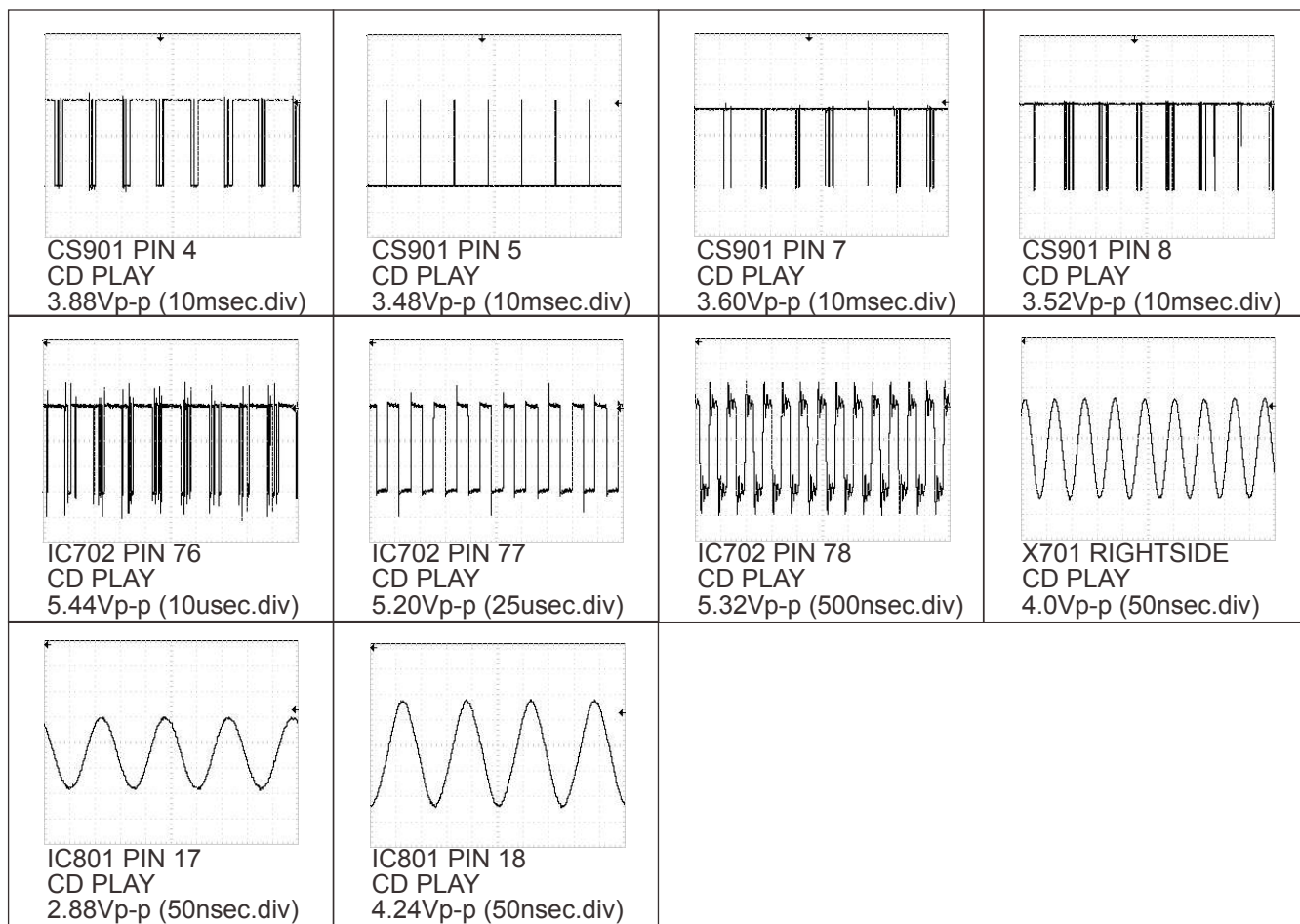
MAIN P.C.B. (REP V0043A)																				
Ref No.	IC1																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	0.8	0	0.6	0.9	5	5	5	0	3.5	5	1.6	1.5	4.3	3.6	3.6	1.4	1.4	3.6	3.9	5
STANDBY	0	0	0	0.3	0	0	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC1																			
MODE	21	22	23	24																
CD PLAY	4.9	5	5	5																
STANDBY	0	0	0	0																
Ref No.	IC2																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	2.5	0	0	0	0	3.8	3.5	3.5	0	0	5	0	3.6	0	2.5	0	5.0	0	0	9.1
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0.1	0
Ref No.	IC2																			
MODE	21	22																		
CD PLAY	0	2.5																		
STANDBY	0	0																		
Ref No.	IC201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	4.4	4.6	4.4	4.6	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.5	0	0	0	8.8	3.4
STANDBY	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0	0	0	0	0	0.4
Ref No.	IC201																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
CD PLAY	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5								
STANDBY	0	0	0	0	0	0	0	0	0	0	0.3	0.3								
Ref No.	IC301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	12.4	0	0	0	2.2	0	15.0	5.7	0	5.8	6.0	0	5.7							
STANDBY	0	0	0	0	0	0	16.5	16.5	0	0	0	0	0	0						
Ref No.	IC302																			
MODE	1	2	3																	
CD PLAY	5.0	0	11.1																	
STANDBY	5.0	0	11.1																	
Ref No.	IC303																			
MODE	1	2	3																	
CD PLAY	3.3	0	5.0																	
STANDBY	3.3	0	5.0																	
Ref No.	IC401																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14						
CD PLAY	1.3	0	0	0	0	0	0	0	0	0	0	0	0	5.0						
STANDBY	0.1	0	0.1	0	0.1	0	0	0	0	0	0	0	0	0						
Ref No.	IC801																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.7	2.4	1.7	1.7	1.2	2.4	3.2	3.2	0	0	0	0	3.3	2.6	0	0	1.6	1.6	3.3	1.0
STANDBY	1.7	1.7	1.7	1.7	1.3	2.4	3.2	3.2	0	0	0	0	0	2.7	2.7	0	1.6	1.6	3.3	1.2
Ref No.	IC801																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	1.6	0	3.3	3.3	3.3	3.3	3.3	0.3	2.4	3.3	3.3	3.3	0	0	0	0	3.2	3.2	2.7	3.3
STANDBY	1.6	0	3.3	3.3	3.3	3.3	3.3	0.3	0	3.3	3.3	3.3	0	0	0	0	0	0	0	0
Ref No.	IC801																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	0	0	0	0	0	0	0	0	0	0	0	3.3	0	0	3.3	0	3.3	0	0	0
STANDBY	0	0	0	0	0	0	0	0.9	2.6	0	0	3.3	0	0	3.3	0	3.3	0	0	0
Ref No.	IC801																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	3.3	2.6	0	0	0	0	0	0	0	0	0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.6	1.8
STANDBY	0	2.7	0	0	0	0	0	0	0	0	0	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Ref No.	IC801																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
CD PLAY	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.7	1.8
STANDBY	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Ref No.	IC971																			
MODE	1	2	3	4																
CD PLAY	0	0	7.3	0																
STANDBY	0	0	0.2	0																
Ref No.	IC1301																			
MODE	1	2	3	4	5															
CD PLAY	6.7	0	0	0	0															
STANDBY	0.2	0	0	0	0															
Ref No.	IC1302																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
CD PLAY	0	0.6	3.6	0	3.3	3.3	0	0	6.1	3.7	3.6	3.2	0	3.6	0.6	0				
STANDBY	0	0	0	0	0.3	0.3	0	0	0	0	0	0.3	0	0	0	0				

Ref No.	Q1			Q102			Q103			Q202			Q203		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	3.6	0	3.0	4.6	2.4	7.1	7.5	6.5	3.0	4.5	2.4	7.1	7.4	6.5
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	Q301			Q302			Q303			Q304			Q305		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	11.7	15.0	11.1	4.3	0	0	2.6	3.3	3.3	0.6	0	0	14.3	15.0	15.0
STANDBY	11.7	16.4	11.1	5.1	0	0	2.6	3.3	3.3	0.6	0	0	16.4	0	16.5
Ref No.	Q306			Q307			Q308			Q309			Q310		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	2.7	0.5	0	14.9	14.2	15.0	14.9	9.1	14.1	8.9	14.2	8.3	6.9	5.0	7.5
STANDBY	0	16.4	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	Q311			Q312			Q313			Q314			Q315		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	4.8	6.9	4.3	4.3	3.4	5.0	3.3	4.3	2.7	4.3	5.0	5.0	2.9	0	0
STANDBY	0	0	0	0.2	0.4	0	0	0.2	0	5.0	0	5.0	0	5.0	0
Ref No.	Q316			Q317			Q401			Q803			Q1000		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	1.4	2.9	0.7	0.7	0	0	14.9	0	0	0	3.3	0	0	9.1	0
STANDBY	0	0	0	0	0	0	0	1.7	0	0	3.3	0	0	0	0
Ref No.	Q1101			Q1102			Q1103			Q1104			Q1201		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	9.1	0	0.6	0	0	0	0	0	0	3.6	0	0	9.1	0
STANDBY	0	0	0	0	0	0.2	0	0	0	0	0	0	0	0	0
Ref No.	Q1202			Q1203			Q1204			Q1301			Q1303		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0.6	0	0	0	0	0	0	3.6	0	0.7	0	0	0	0	0
STANDBY	0	0	0.3	0	0	0	0	0	0	0.7	0	0	0	0	0
Ref No.	Q1400			Q1401			Q1402			Q1403			Q1404		
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B
CD PLAY	0	0.7	0	9.0	0	9.1	0	9.0	0	0	9.1	0	0	9.1	0
STANDBY	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	Q1451			Q1452			Q1453								
MODE	E	C	B	E	C	B	E	C	B						
CD PLAY	9.1	-0.2	9.1	-0.2	8.5	0	9.1	0	9.1						
STANDBY	0	-0.1	0	-0.1	0	0	0	0	0						

14.2. CD Servo P.C.B.

CD SERVO P.C.B (REPV0039A)																				
Ref No.	IC702																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.4	1.4	1.4	3.4	1.6	0	1.7	0	1.4	0	1.6	0	1.8	0	3.4	0	0	1.7	0	0
STANDBY	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC702																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
CD PLAY	1.7	1.7	1.7	1.7	1.7	1.9	1.7	0.2	2.5	2.0	2.0	1.8	1.8	1.8	1.8	1.6	3.4	0	0.8	2.2
STANDBY	0.1	0.1	0.2	0.2	0.2	0.2	0	0.3	0.2	0	0	0.1	0.1	0.1	0.1	0	0.4	0	0	0
Ref No.	IC702																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
CD PLAY	1.6	1.4	0	1.7	1.7	0.8	1.4	1.4	3.4	1.5	0	1.3	3.1	1.5	0	3.4	1.5	3.4	0	3.4
STANDBY	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0.4	0	0	0	0	0	0	0.4
Ref No.	IC702																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
CD PLAY	3.4	0	3.1	2.9	3.0	2.7	0	3.3	0	1.7	1.6	3.4	0.3	0	0	1.7	1.7	1.7	0	0
STANDBY	0.4	0.2	0	0	0	0.2	0.9	0	0	0.2	0.2	0.4	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3
Ref No.	IC703																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CD PLAY	1.7	0	0	0	0	0	0	0	0	7.5	4.3	3.5	3.5	3.5	3.2	3.8	3.5	3.4	7.5	0
STANDBY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC703																			
MODE	21	22	23	24	25	26	27	28												
CD PLAY	7.5	0	0	0	7.5	1.7	1.7	1.7												
STANDBY	0	0	0	0	0	0	0	0												
Ref No.	Q701																			
MODE	E	C	B																	
CD PLAY	3.2	2.0	2.5																	
STANDBY	0.4	0.4	0																	

15 Waveform Chart



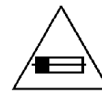
16 Notes of Schematic Diagram

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

Notes:

S701 :	REST SWITCH
S780 :	OPEN SWITCH
S901 :	VOL+ SWITCH
S902 :	VOL- SWITCH
S903 :	SEQ SWITCH
S904 :	STOP SWITCH
S905 :	REW SWITCH
S906 :	FF SWITCH
S907 :	POWER SWITCH
S908 :	TUNER BAND SWITCH
S909 :	CD REC MODE SWITCH
S910 :	CD PLAY / PAUSE SWITCH
S911 :	DECK EJECT SWITCH
S912 :	TAPE PLAY SWITCH
S913 :	REC/PAUSE SWITCH
S914 :	CLOCK/TIMER SWITCH
S915 :	MEMORY/CLEAR SWITCH
S916 :	PLAY/REC TIME SWITCH
S917 :	CD_OPEN/CLOSE SWITCH
S971 :	MODE SWITCH
S972 :	HALF SWITCH
S975 :	RECINF SWITCH

CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE F501 4A, 250V FUSE.



RISK OF FIRE-REPLACE FUSE AS MARKED.

FUSE CAUTION



These symbols located near the fuse indicates that the fuse used is a fast operating type. For continued protection against fire hazard, replace with the same type fuse. For fuse rating, refer to the marking adjacent to the symbol.



Ce symbole indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là où le présent symbole est apposé.

- 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.

< >	; FM	No Mark	: Tape
()	: AM	[]	: Standby
(())	: CD		

Importance safety notice:

Components identified by $\triangle$ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistor), high-quality sound (capacitors), low-noise (resistor), 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.

17 Schematic Diagram

17.1. CD SERVO CIRCUIT

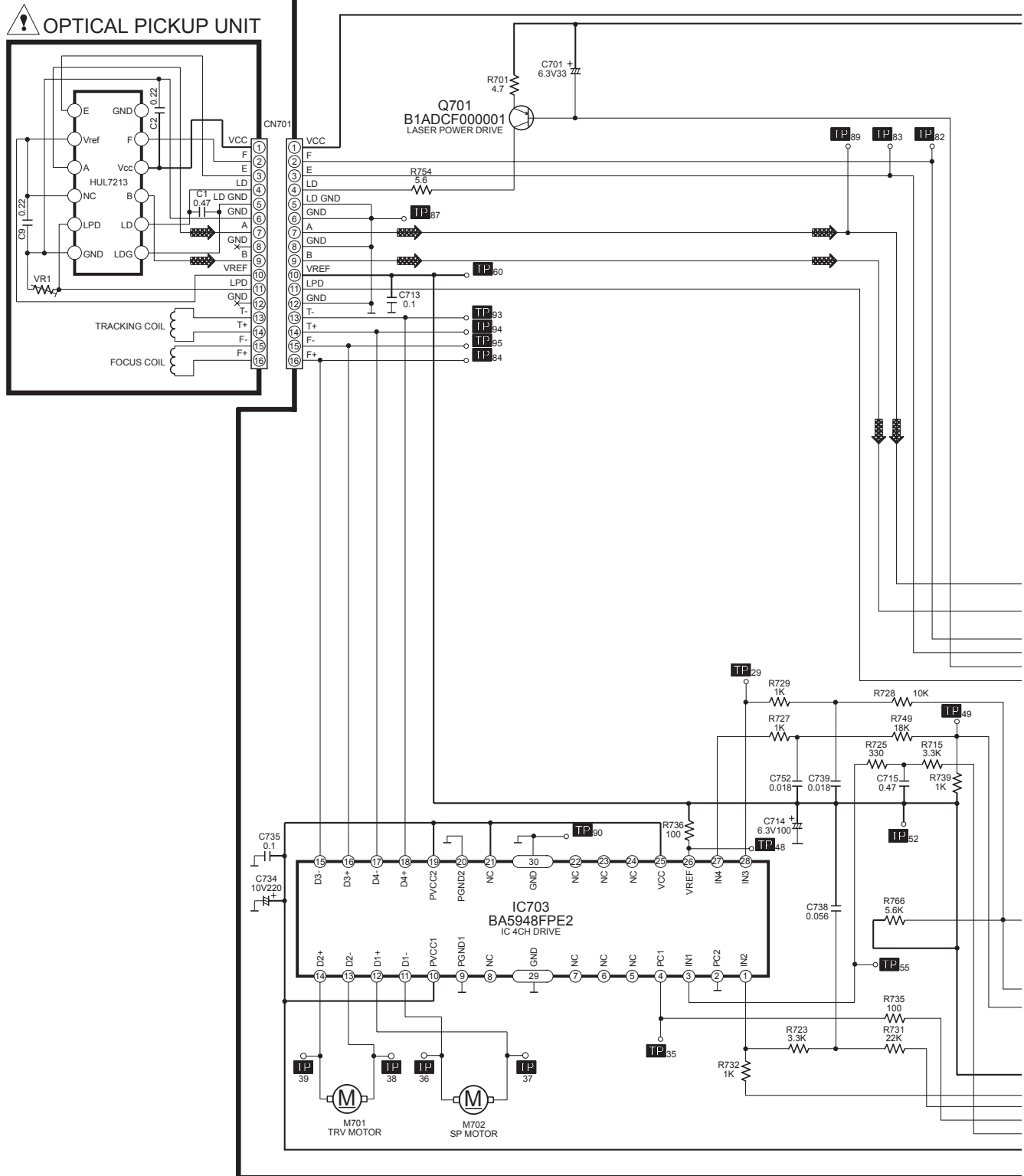
SCHEMATIC DIAGRAM - 1

A

CD SERVO CIRCUIT

— : +B SIGNAL LINE

▨ : CD-DA SIGNAL LINE



SCHEMATIC DIAGRAM - 2

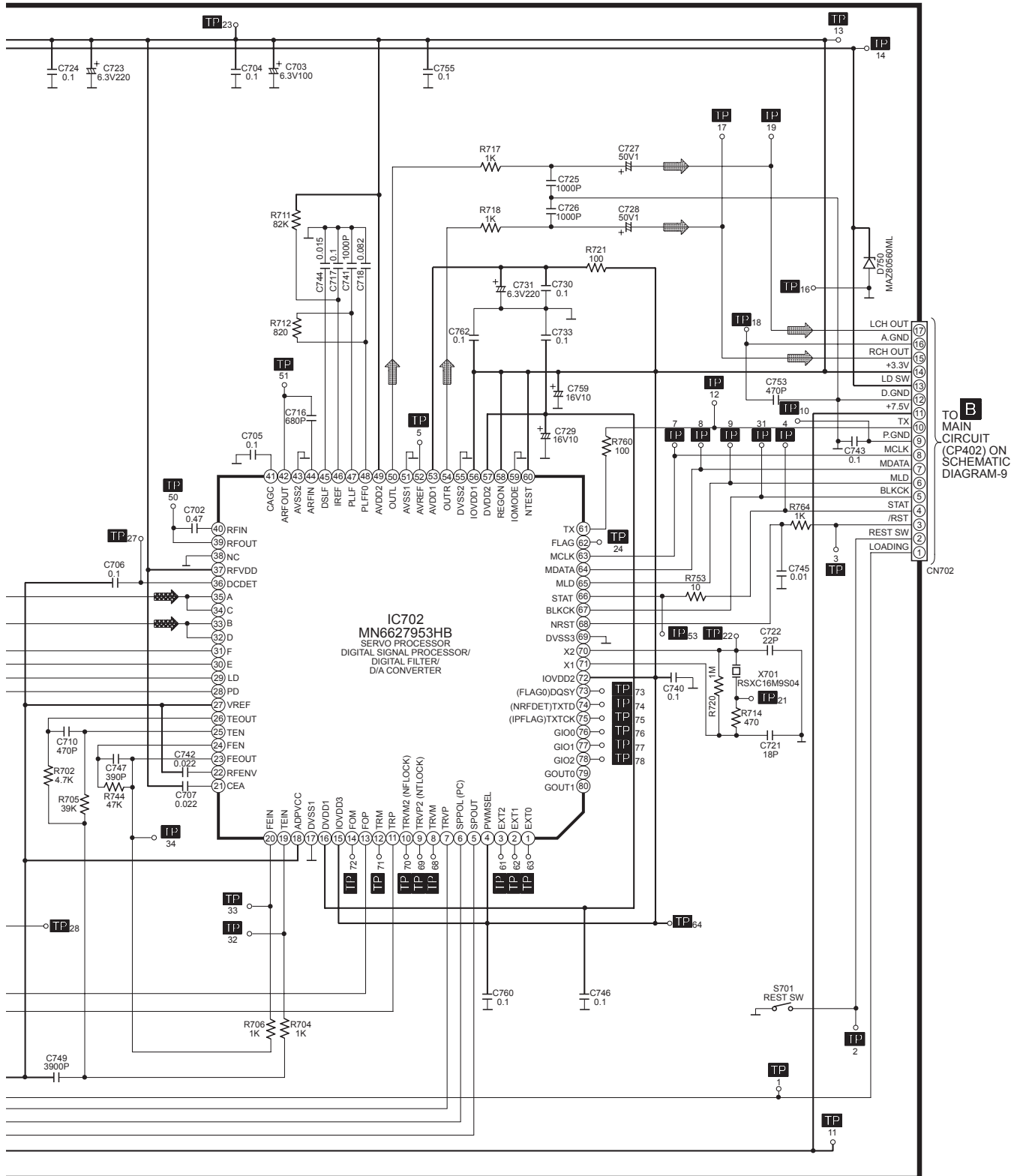
A

CD SERVO CIRCUIT

— : +B SIGNAL LINE

▨ : CD-DA SIGNAL LINE

▤ : CD SIGNAL LINE

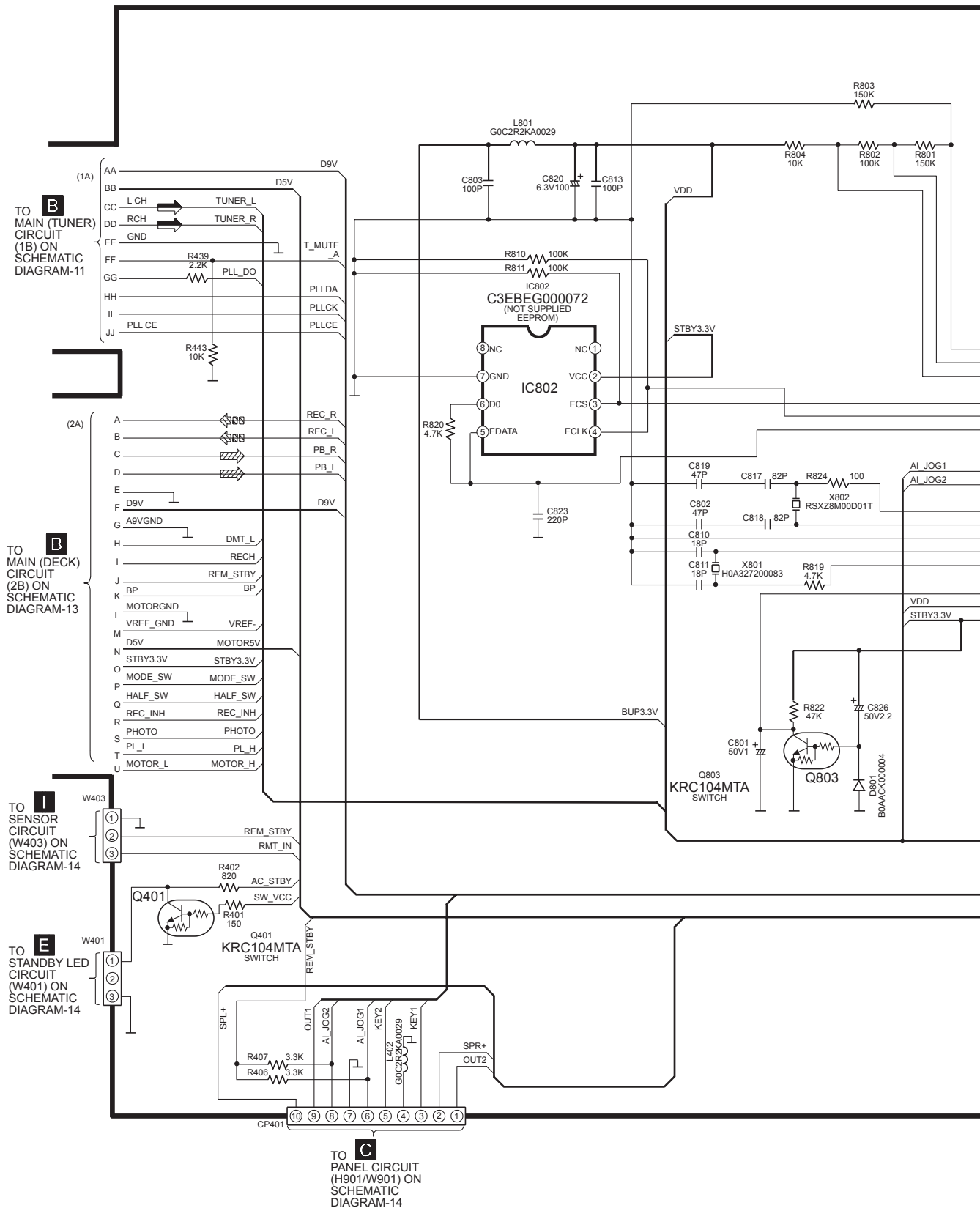


17.2. MAIN CIRCUIT and POWER ON CIRCUIT

SCHEMATIC DIAGRAM-3

B MAIN CIRCUIT

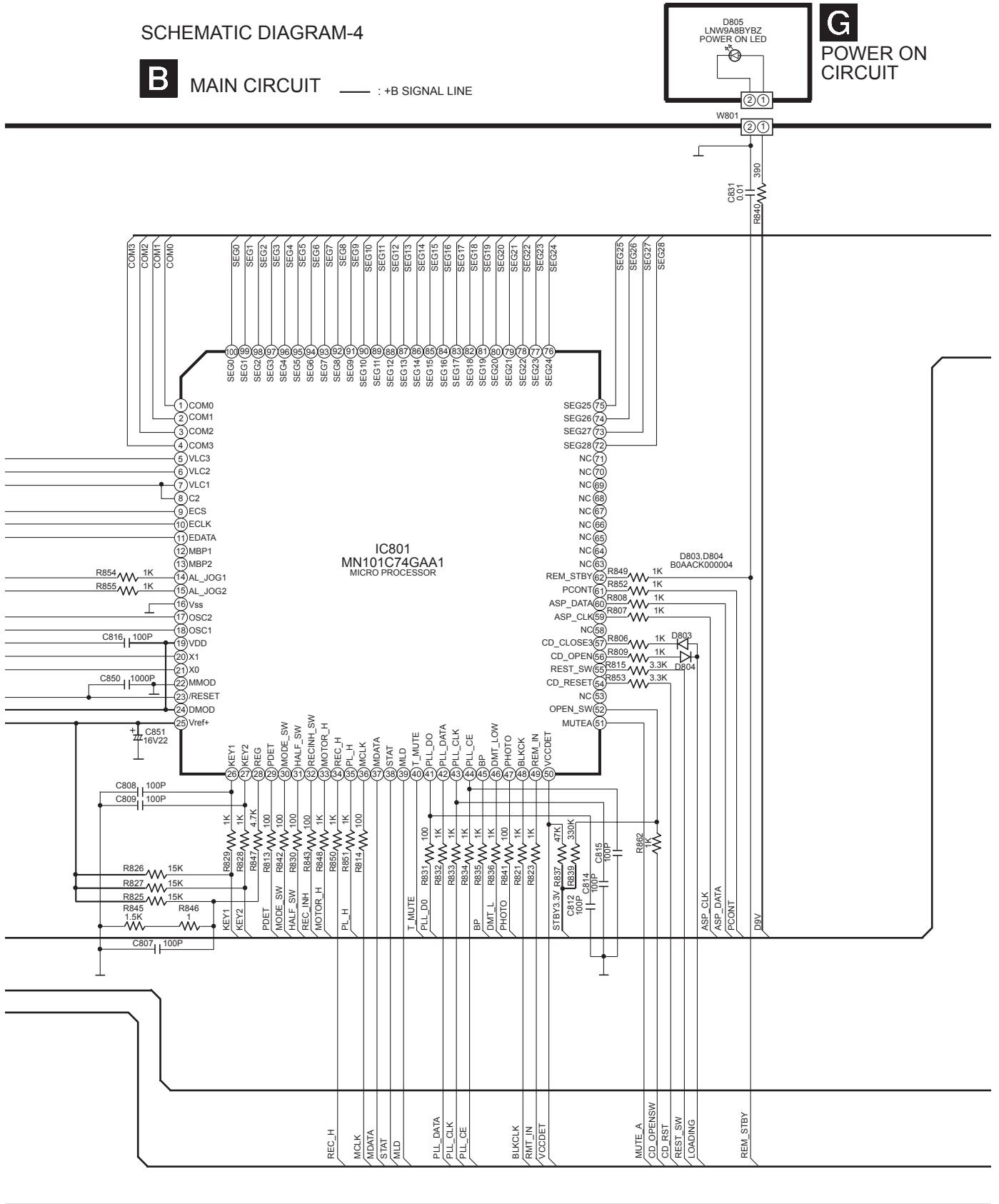
— : +B SIGNAL LINE ➡ : FM/AM SIGNAL LINE ▨ : PLAYBACK SIGNAL LINE ▩ : RECORD SIGNAL LINE



SCHEMATIC DIAGRAM-4

B MAIN CIRCUIT — : +B SIGNAL LINE

G
POWER ON
CIRCUIT



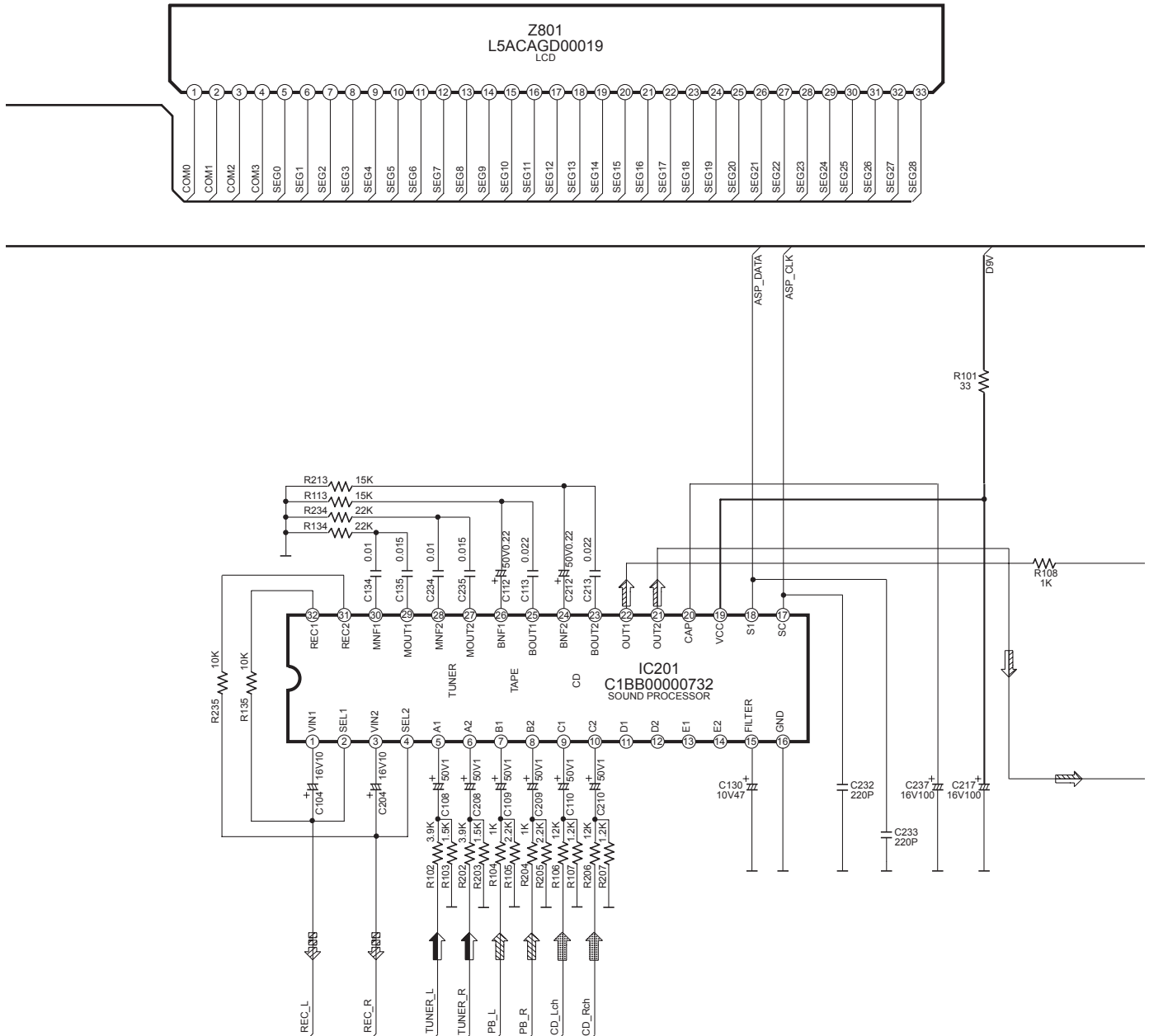
SCHEMATIC DIAGRAM-5

B MAIN CIRCUIT

 : +B SIGNAL LINE
 : MAIN SIGNAL LINE

 : CD SIGNAL LINE
 : FM/AM SIGNAL LINE

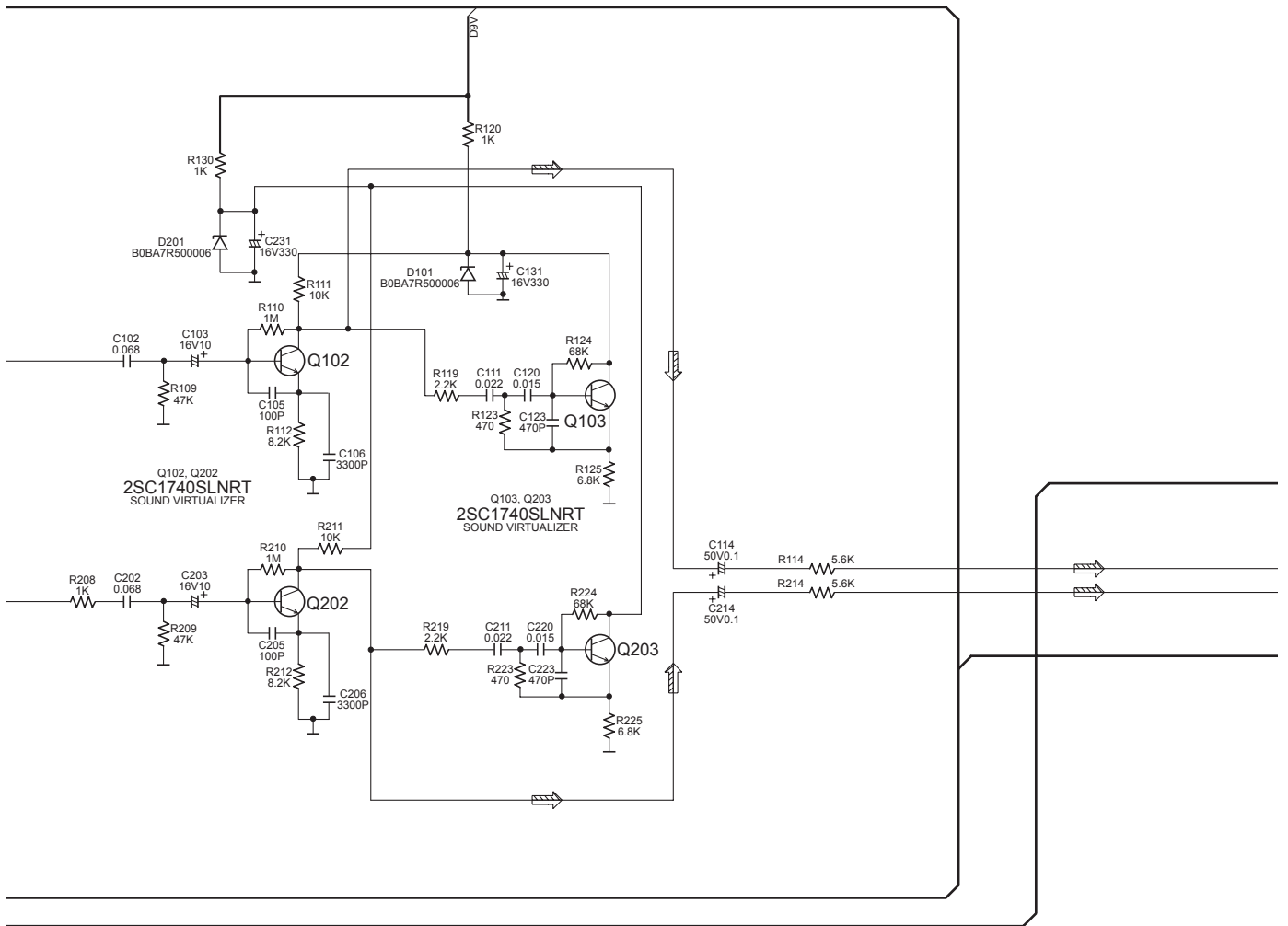
 : PLAYBACK SIGNAL LINE
 : RECORD SIGNAL LINE



SCHEMATIC DIAGRAM-6

B MAIN CIRCUIT

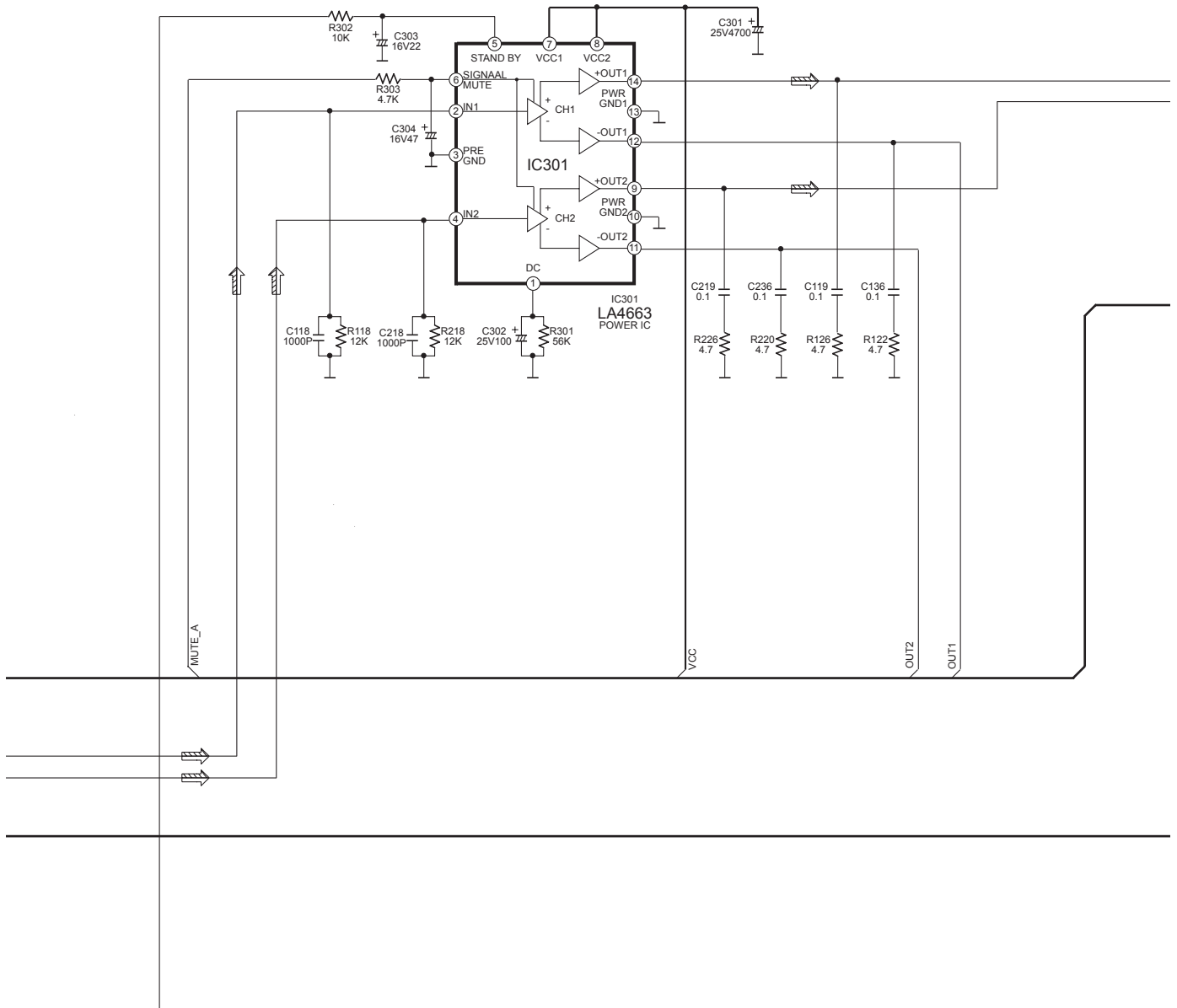
— : +B SIGNAL LINE
 : MAIN SIGNAL LINE



SCHEMATIC DIAGRAM-7

B MAIN CIRCUIT

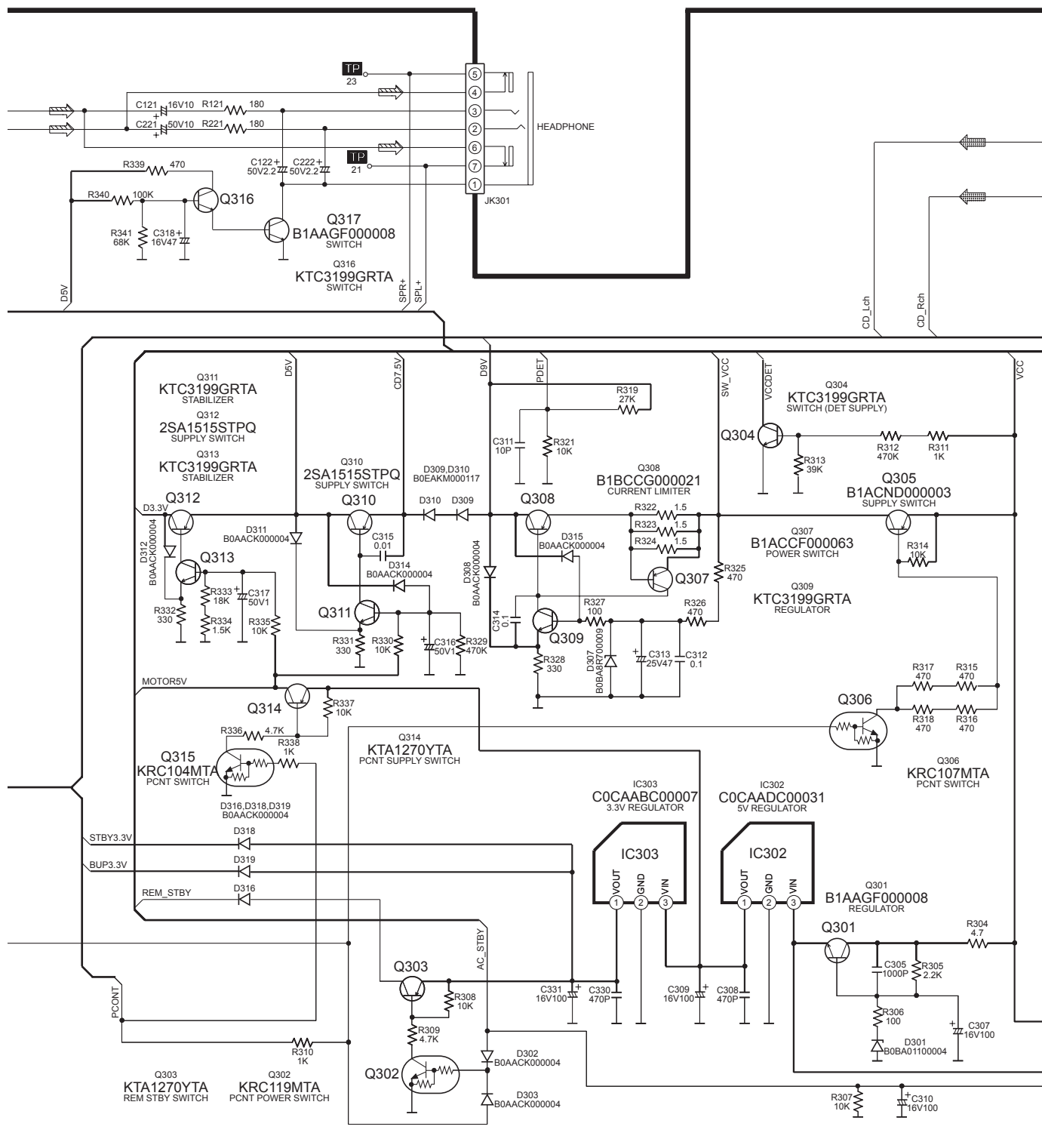
— : +B SIGNAL LINE
 : MAIN SIGNAL LINE



SCHEMATIC DIAGRAM-8

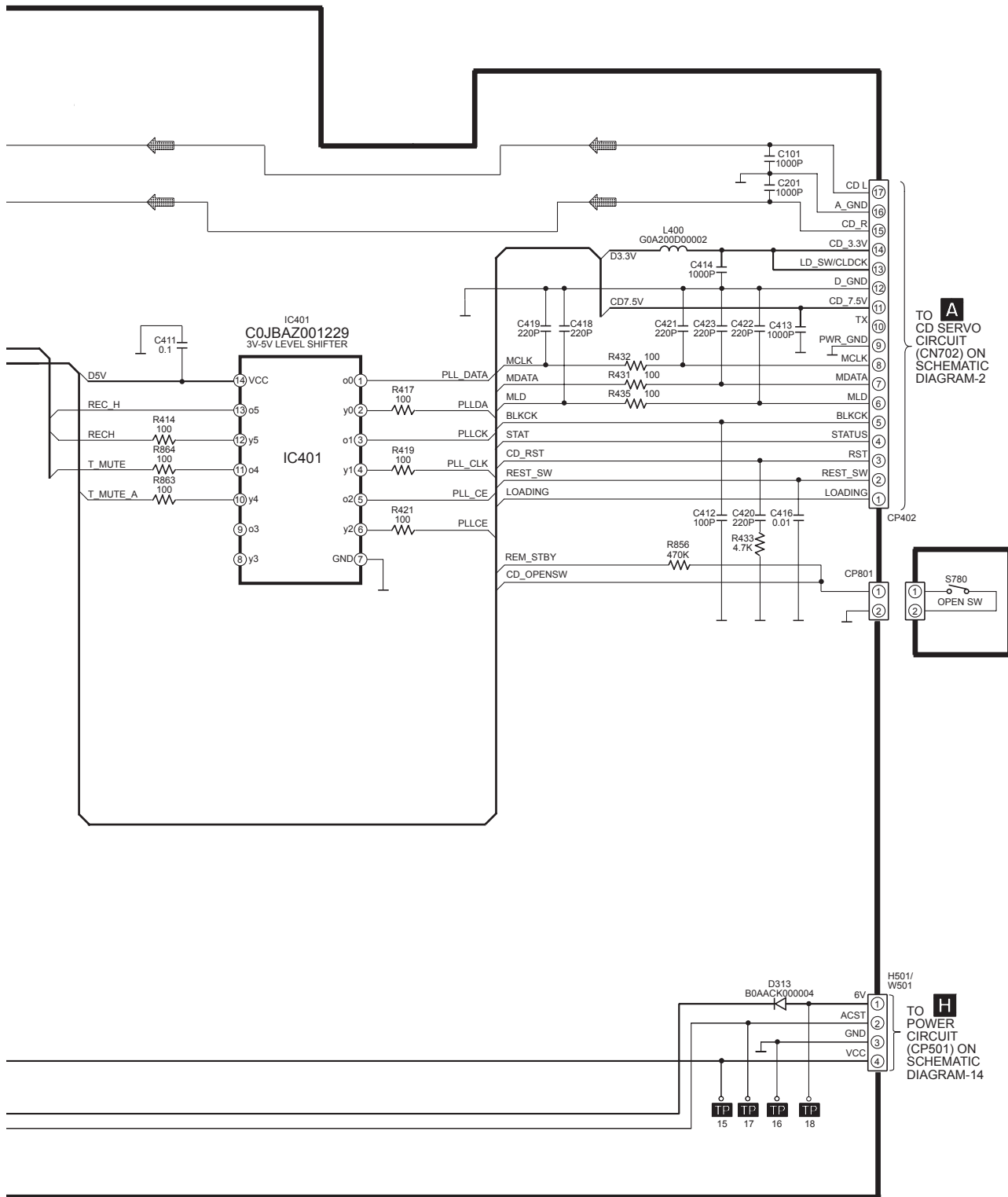
B MAIN CIRCUIT

 : +B SIGNAL LINE
 : MAIN SIGNAL LINE
 : CD SIGNAL LINE



SCHEMATIC DIAGRAM-9

B MAIN CIRCUIT — : +B SIGNAL LINE ➡ : CD SIGNAL LINE



17.3. MAIN (TUNER) CIRCUIT

SCHEMATIC DIAGRAM - 10

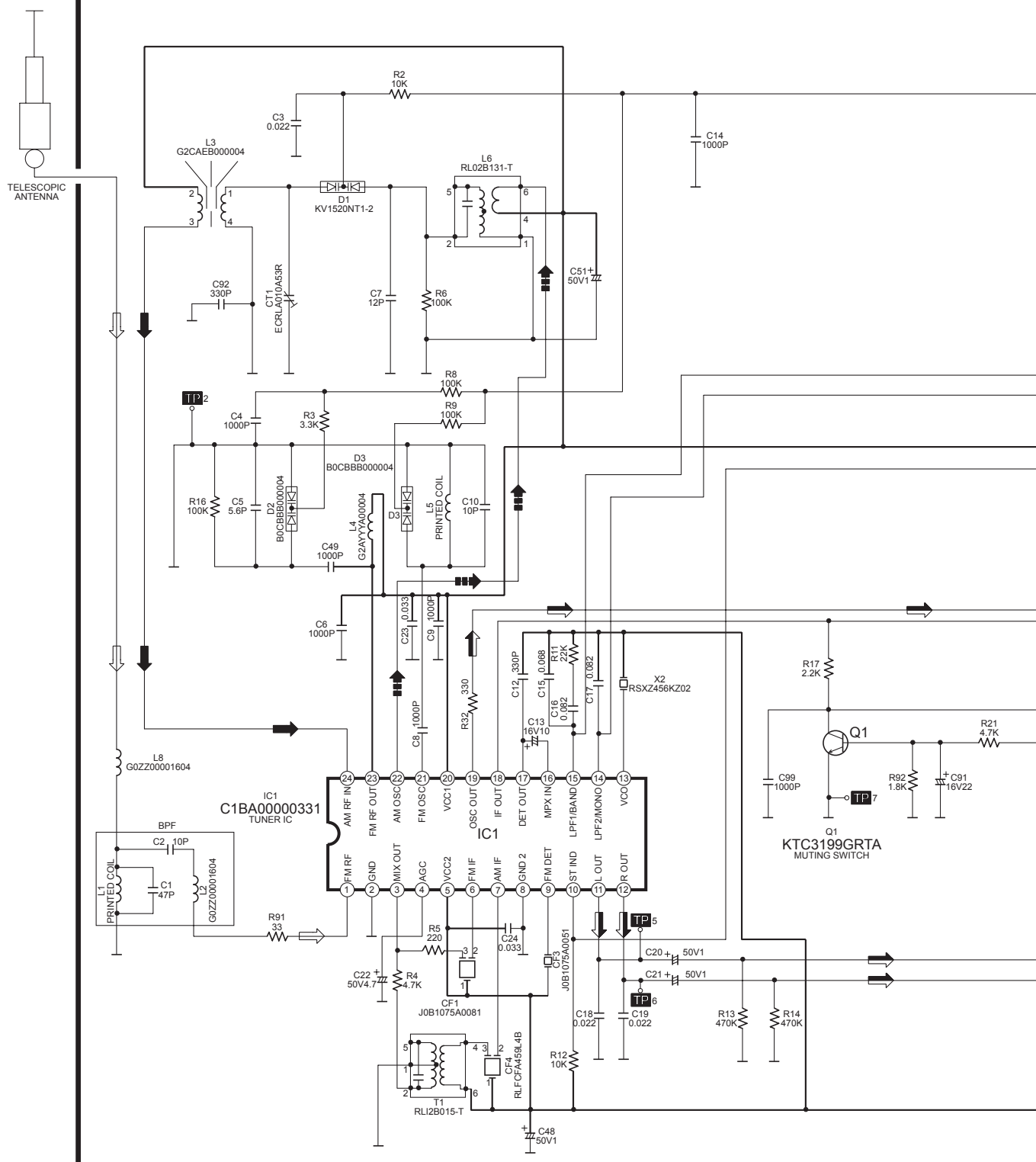
B MAIN (TUNER) CIRCUIT

 : FM/AM SIGNAL LINE

 : AM SIGNAL LINE

 : +B SIGNAL LINE

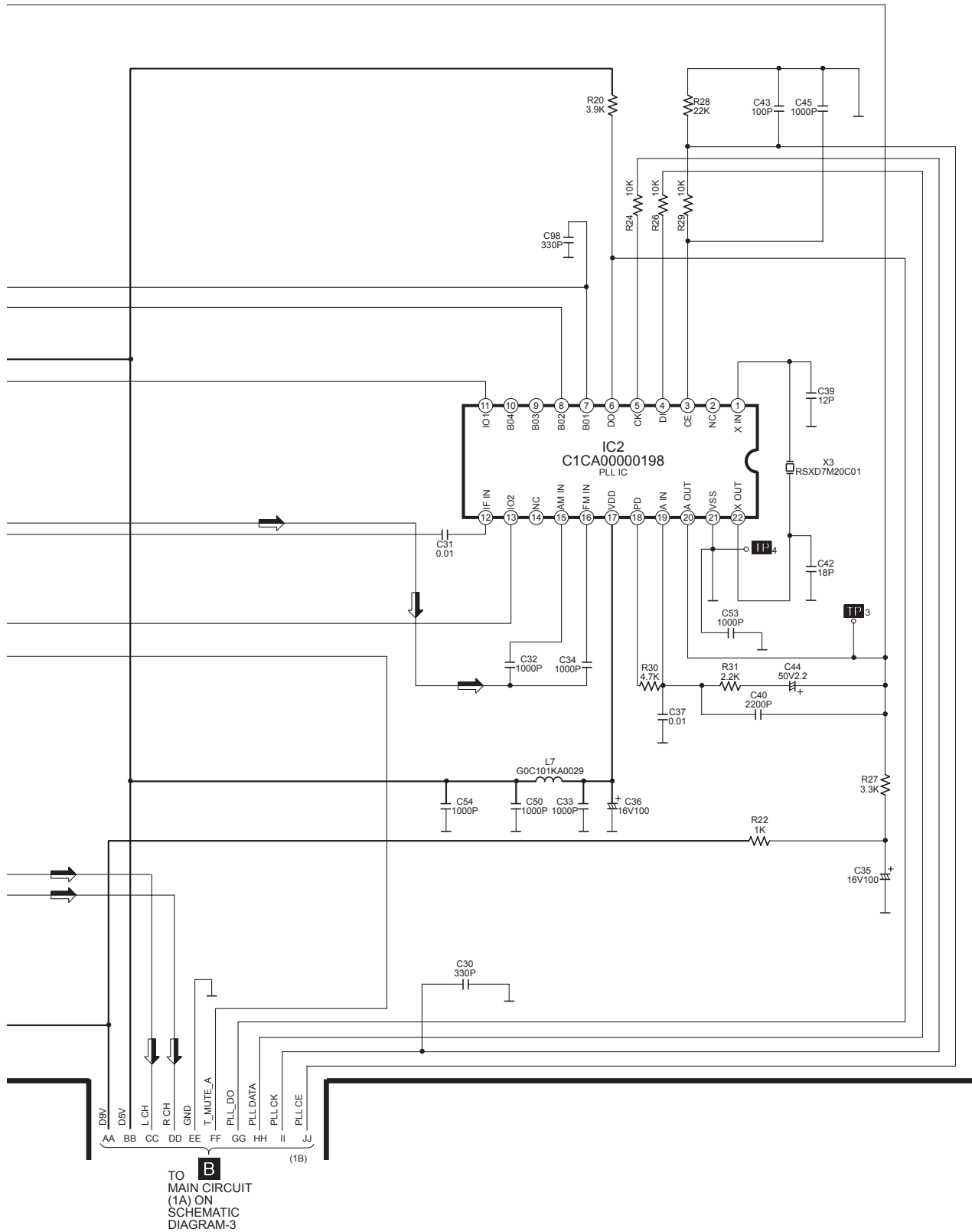
 : AM OSC SIGNAL LINE

 : FM OSC SIGNAL LINE


SCHEMATIC DIAGRAM - 11

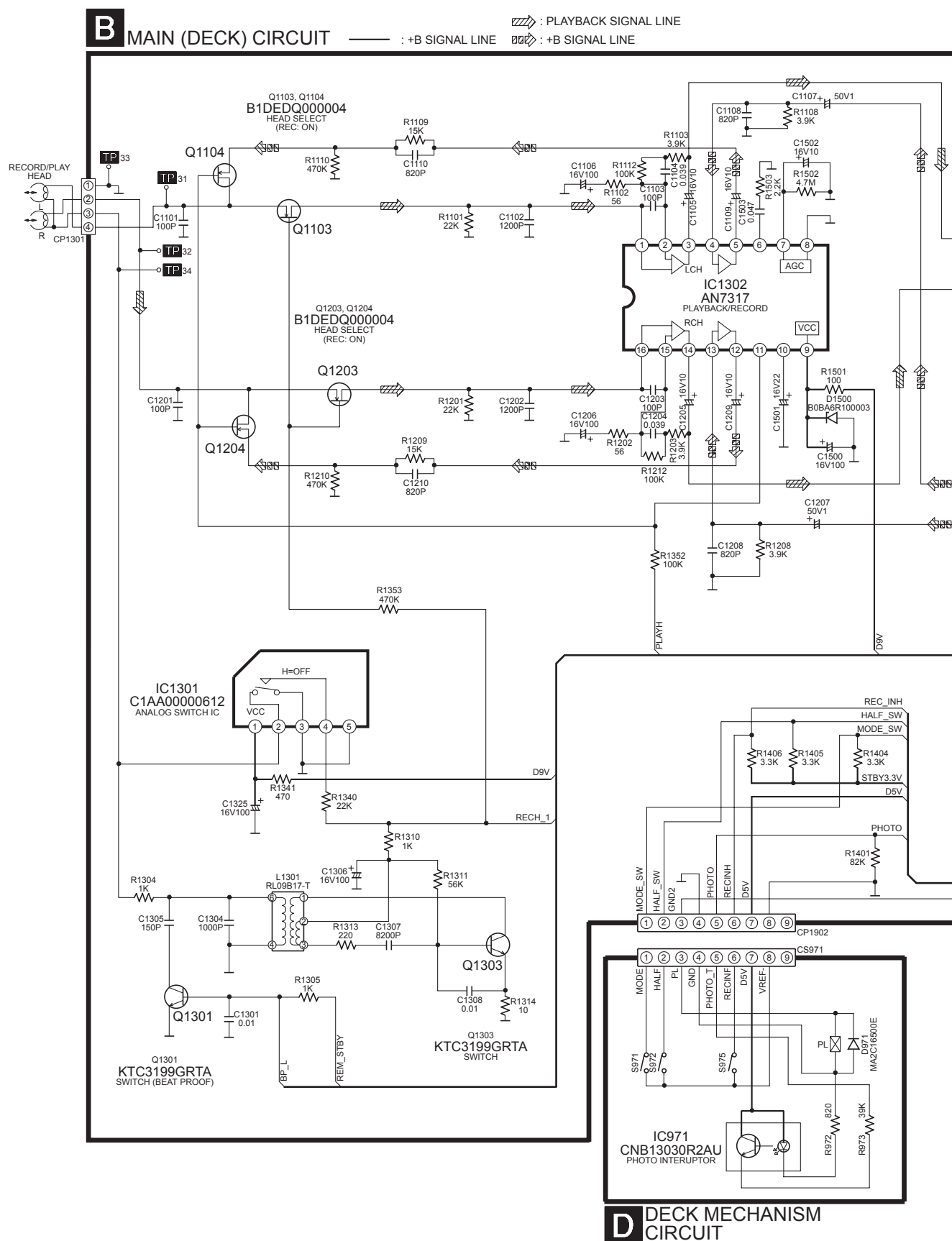
B MAIN (TUNER) CIRCUIT

⇒ : FM/AM SIGNAL LINE
 — : +B SIGNAL LINE



17.4. MAIN (DECK) CIRCUIT

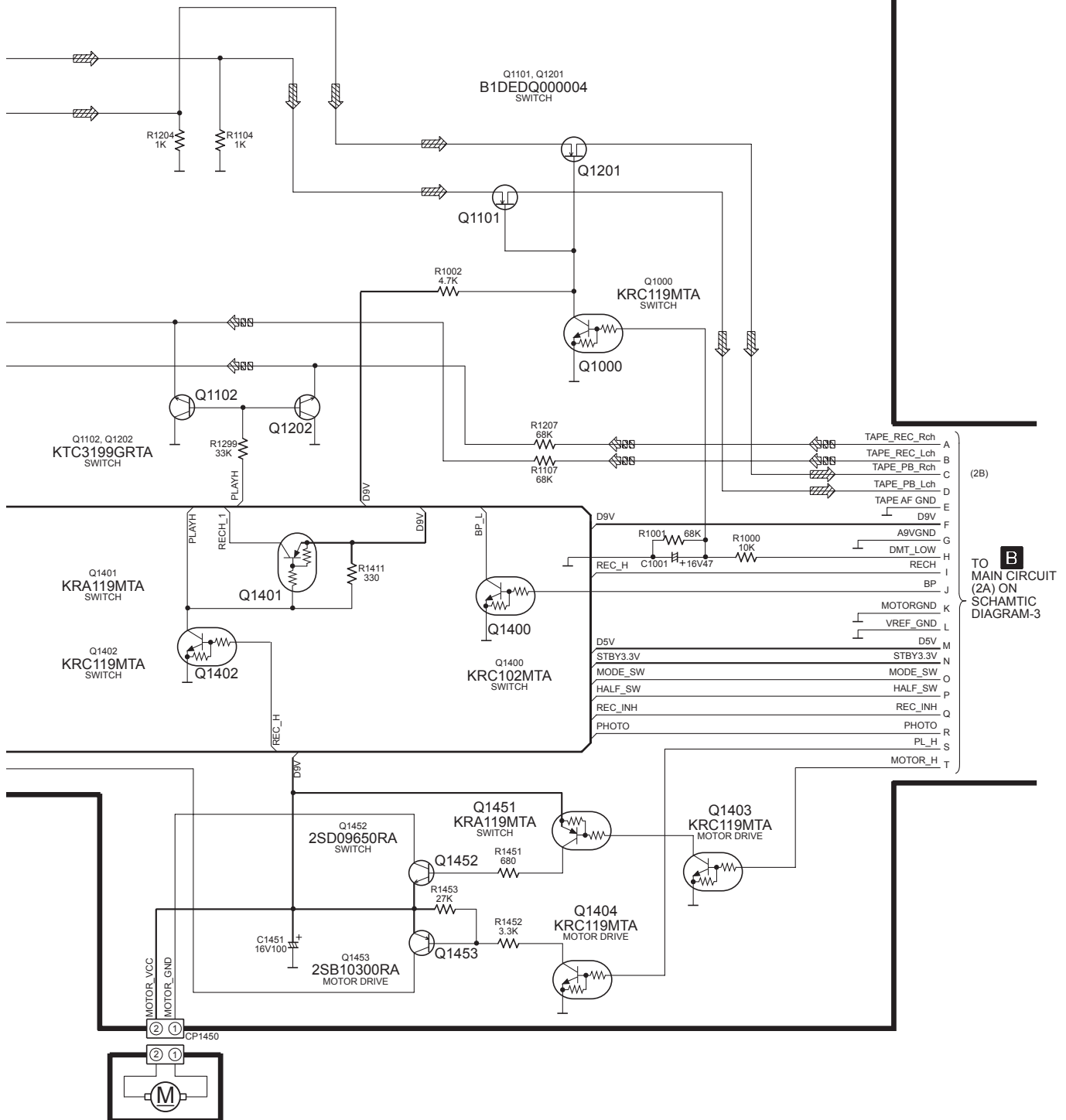
SCHEMATIC DIAGRAM-12



SCHEMATIC DIAGRAM-13

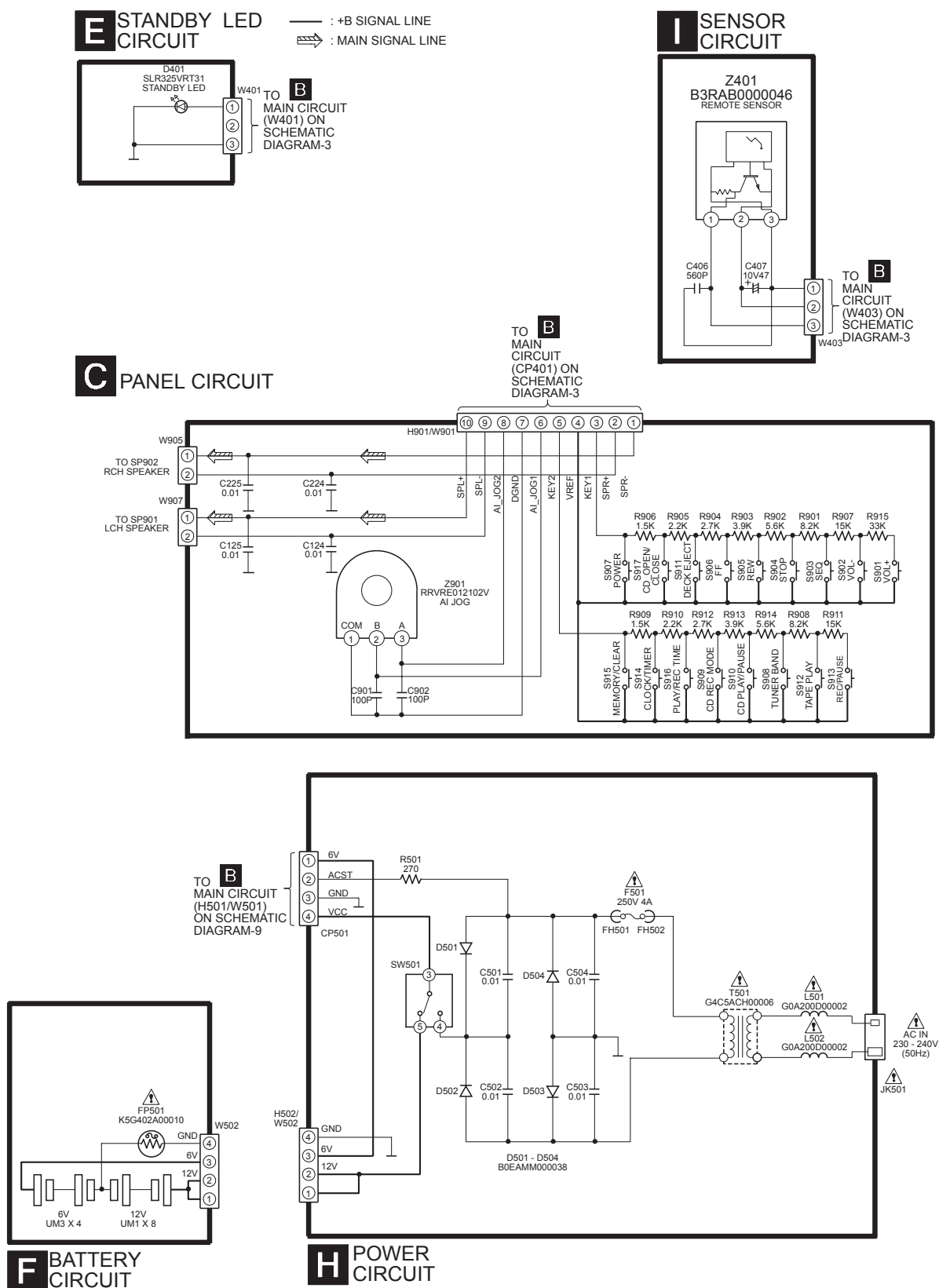
B MAIN (DECK) CIRCUIT

— : +B SIGNAL LINE
 : PLAYBACK SIGNAL LINE
 : +B SIGNAL LINE



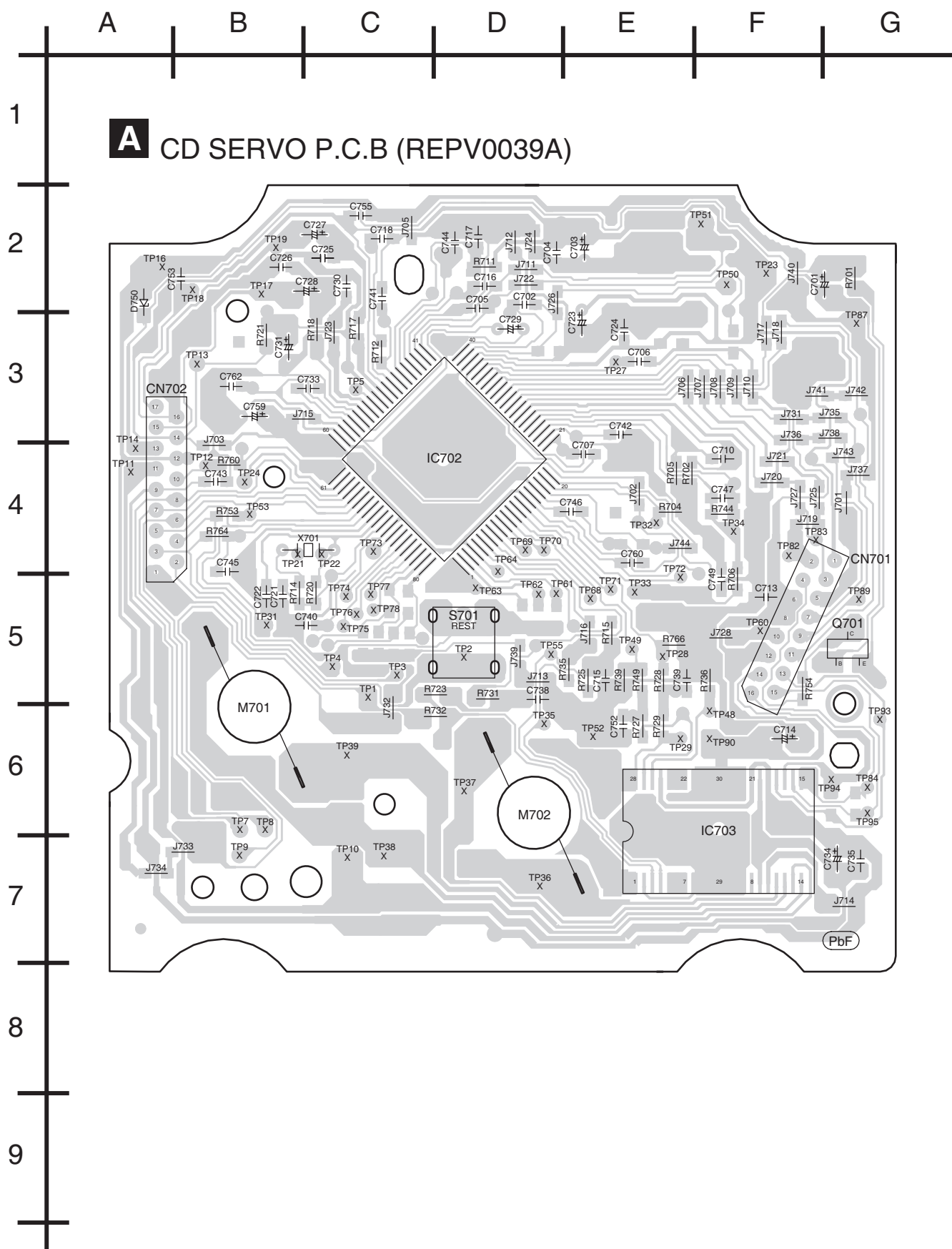
17.5. PANEL CIRCUIT, STANDBY LED CIRCUIT, BATTERY CIRCUIT, POWER CIRCUIT and SENSOR CIRCUIT

SCHEMATIC DIAGRAM-14

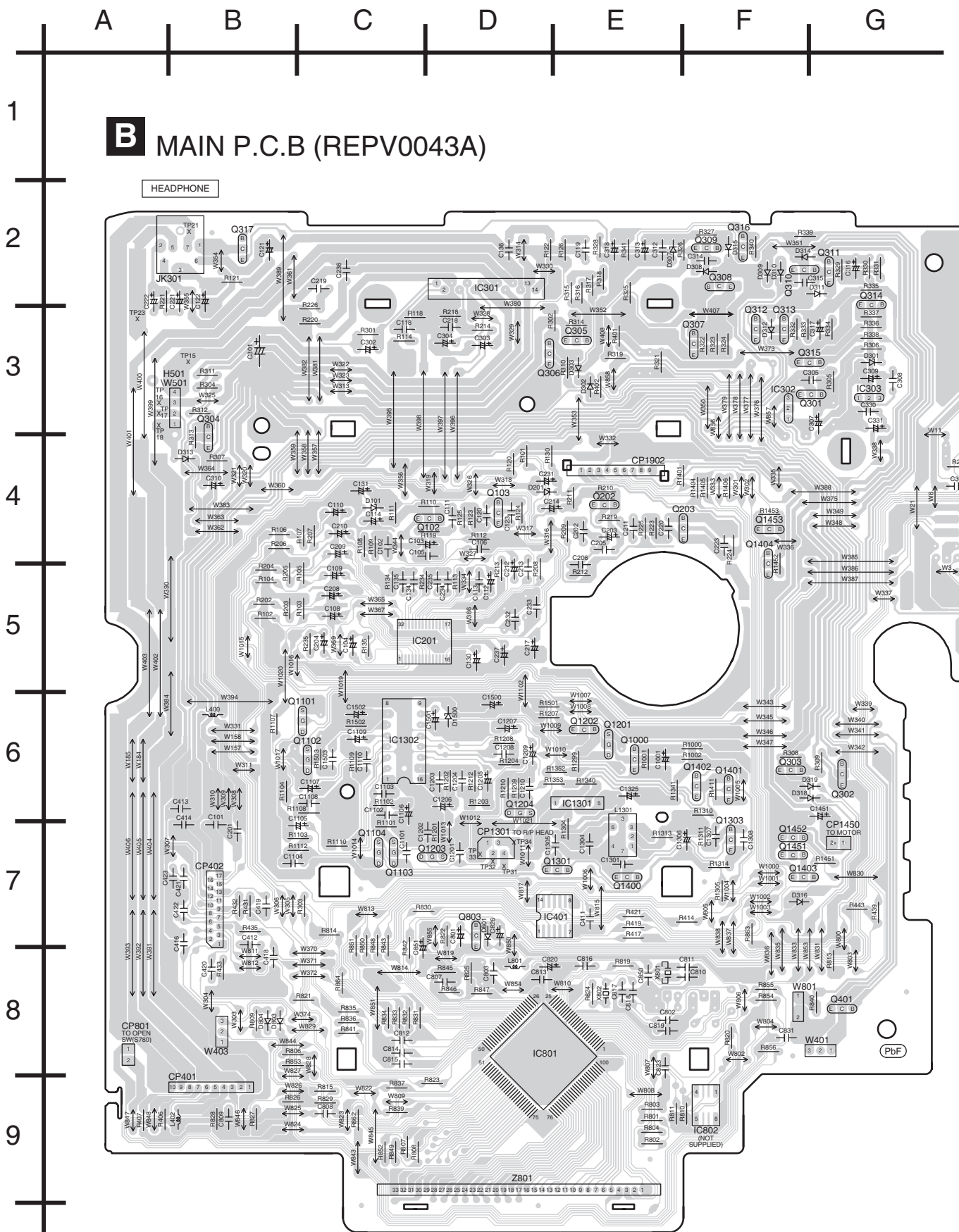


18 Printed Circuit Board

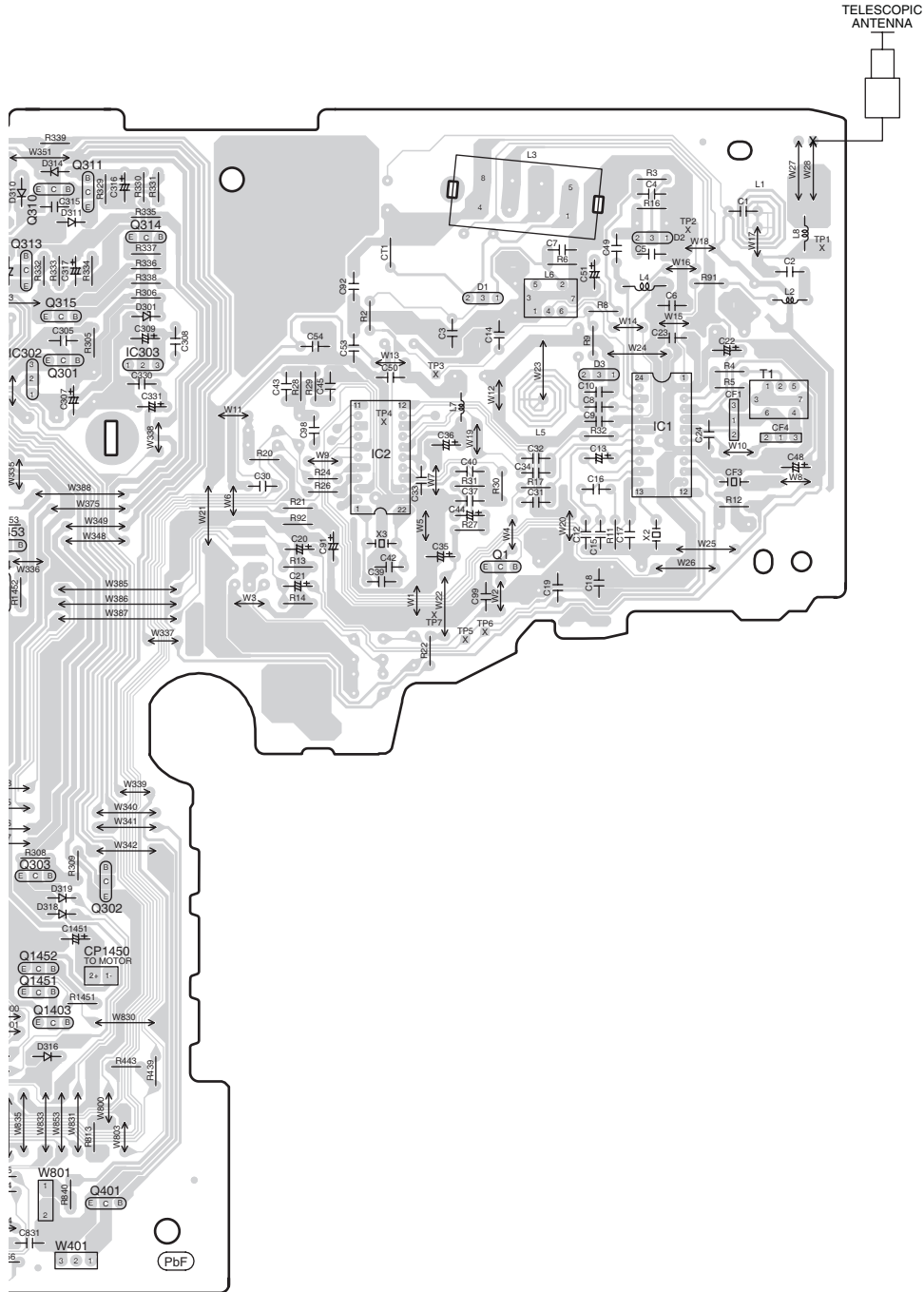
18.1. CD SERVO P.C.B



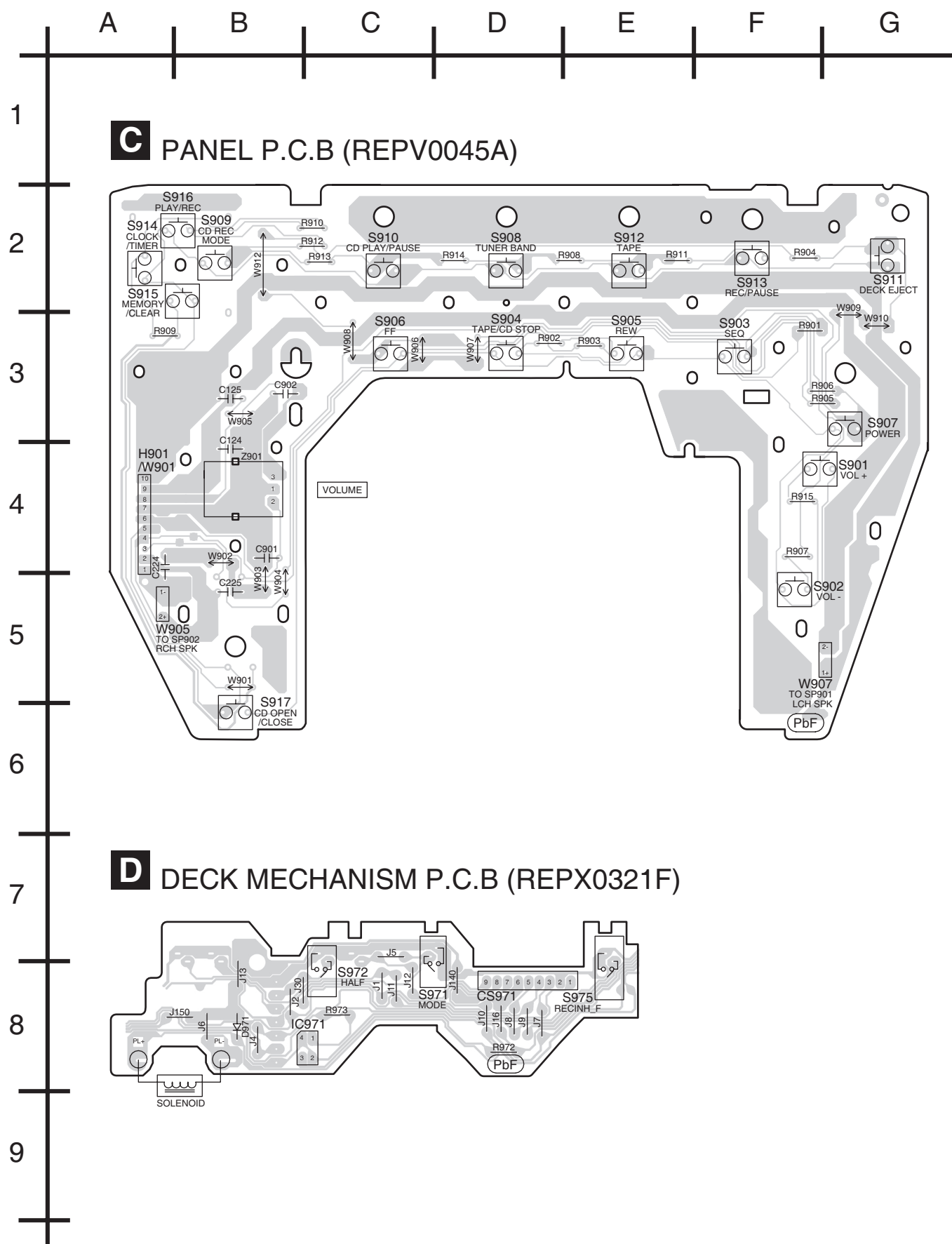
18.2. MAIN P.C.B.



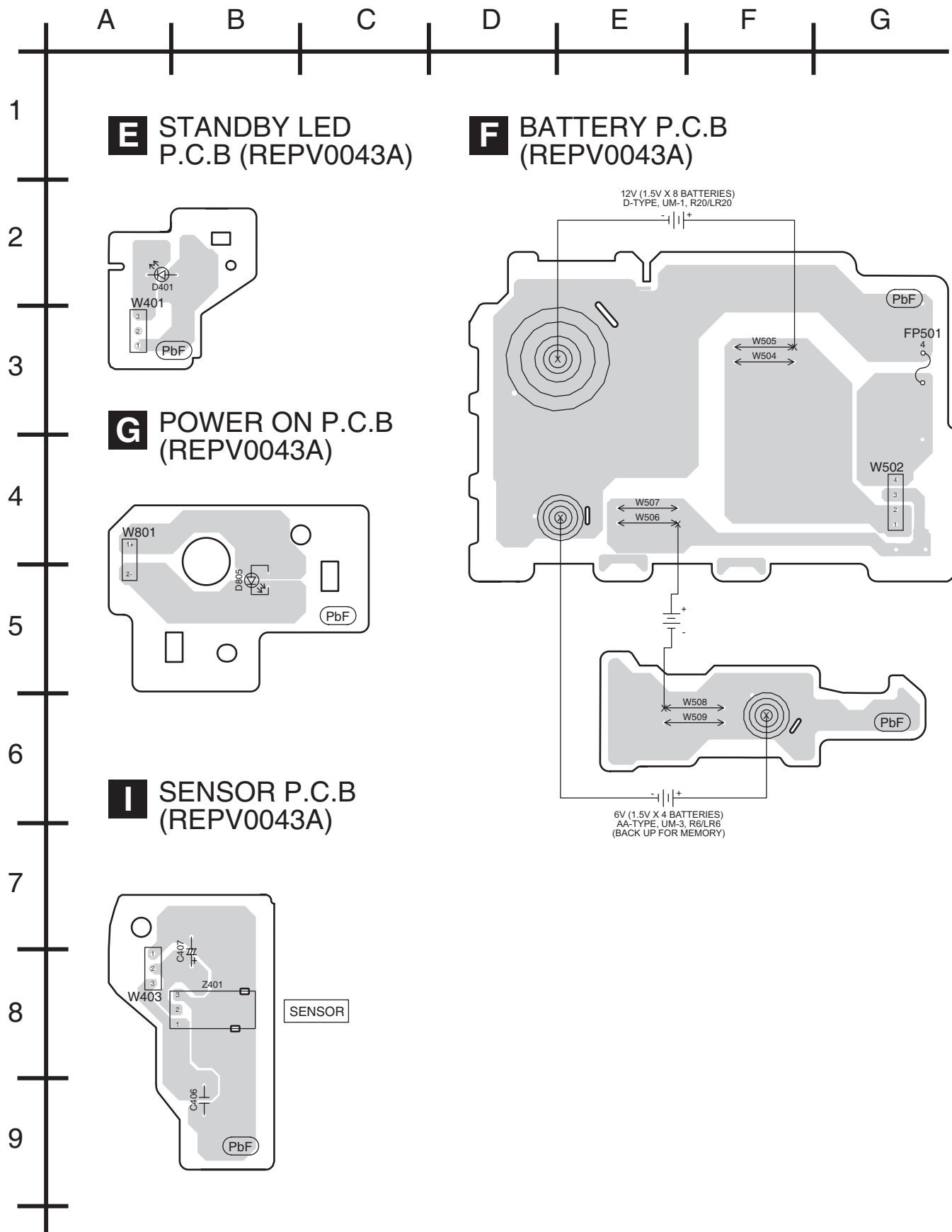
G H I J K L M



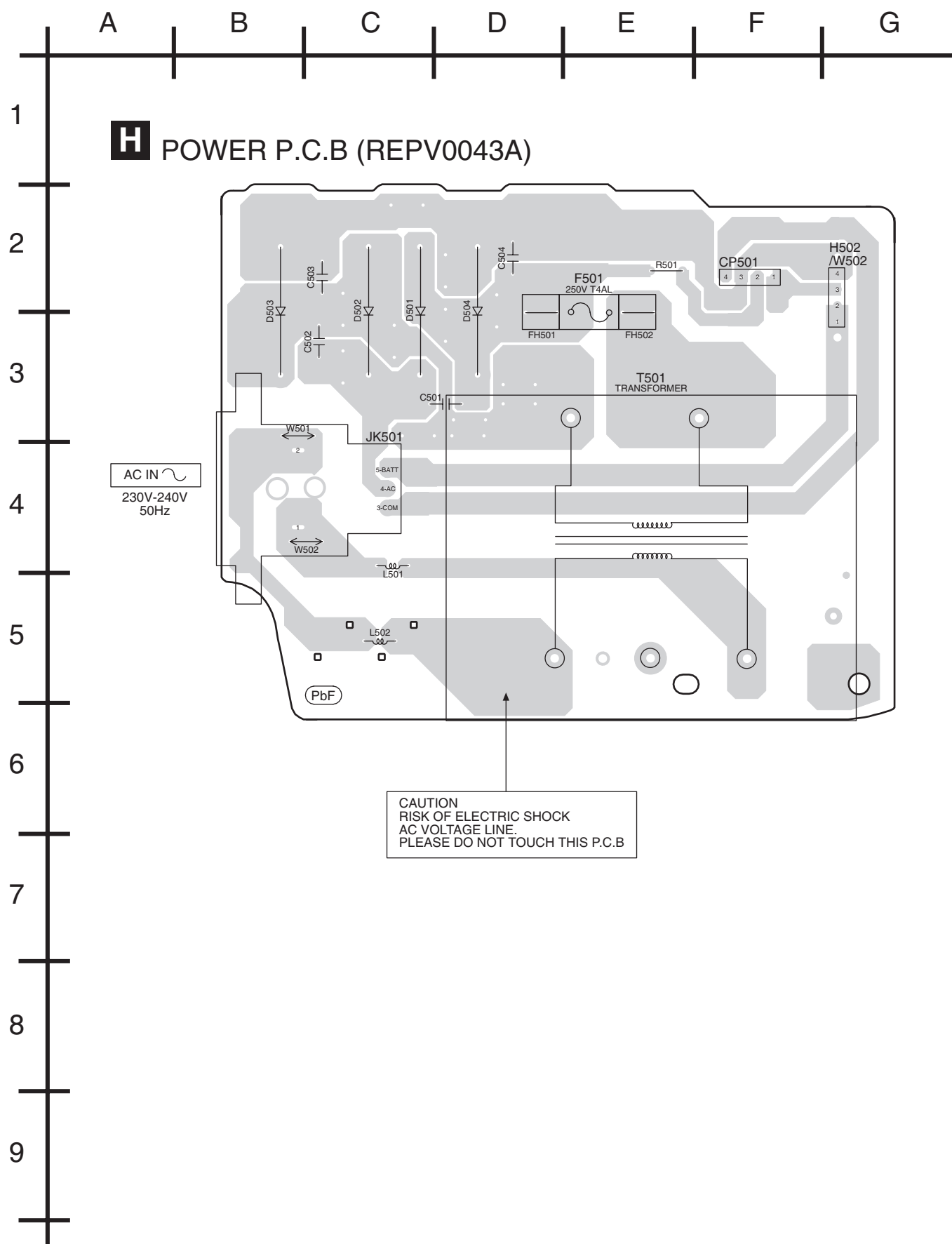
18.3. PANEL P.C.B. and DECK MECHANISM P.C.B.



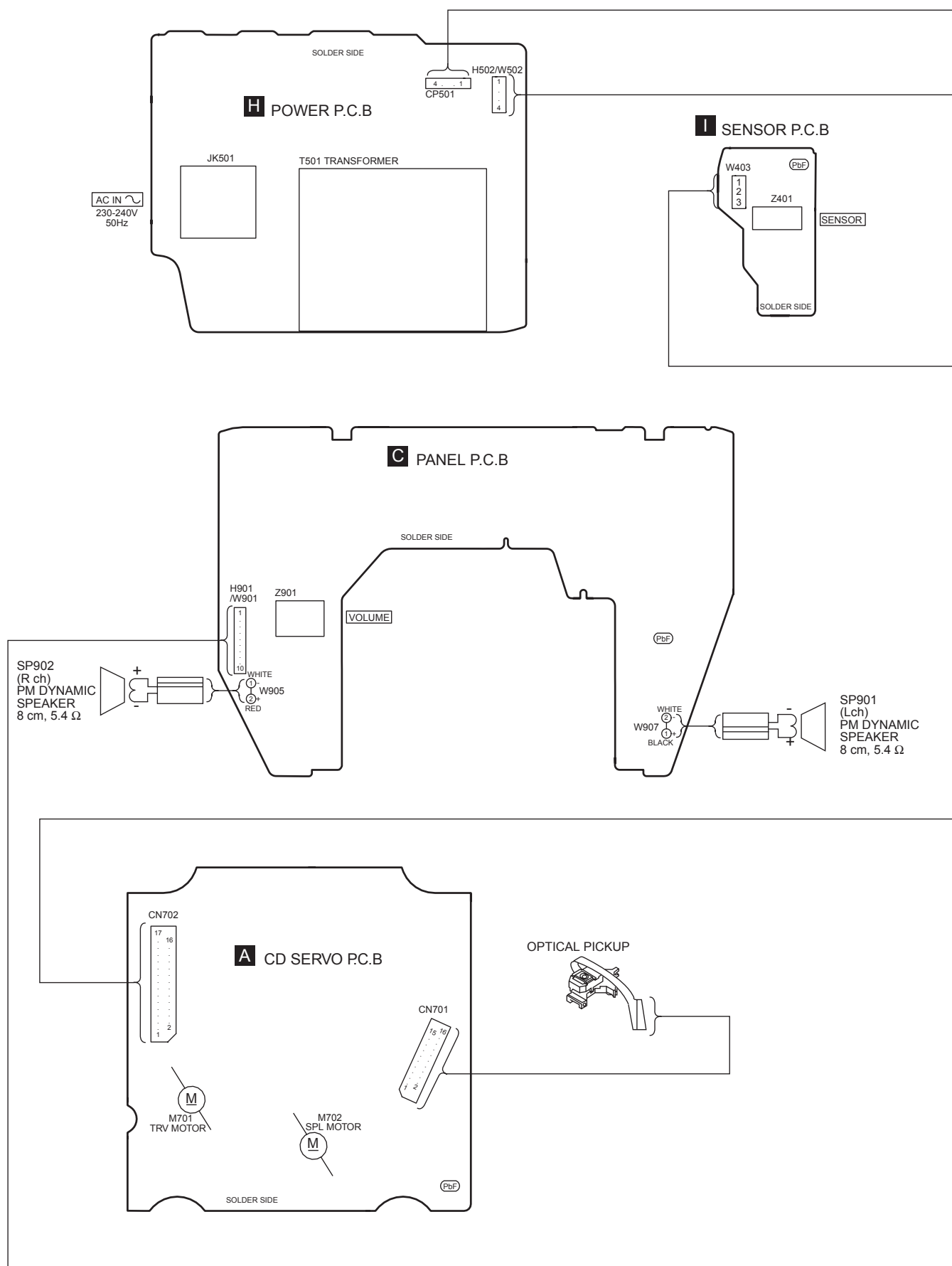
18.4. STANDBY LED P.C.B., BATTERY P.C.B., POWER ON P.C.B. and SENSOR P.C.B.

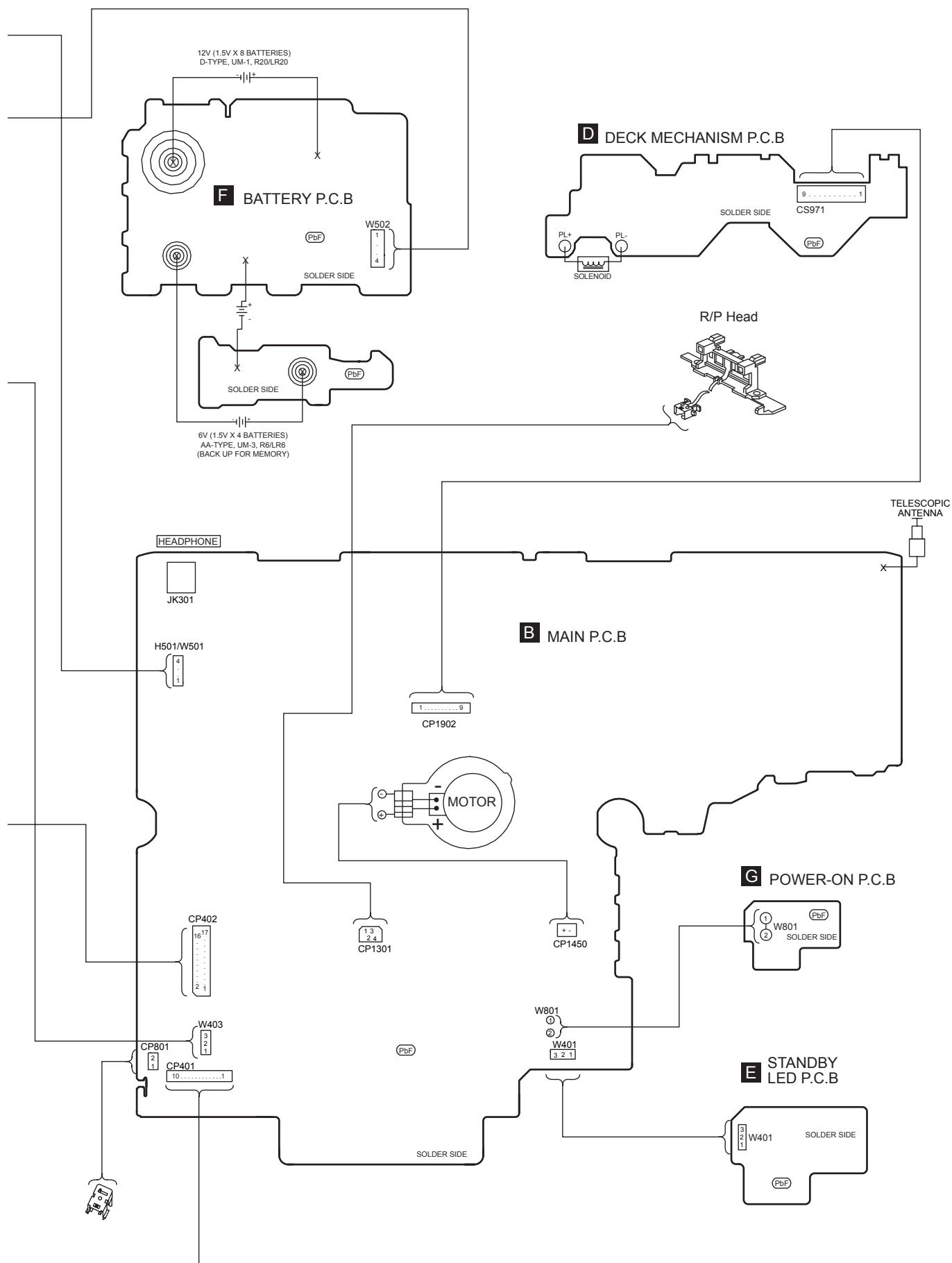


18.5. POWER P.C.B.

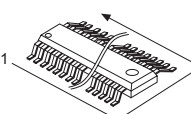
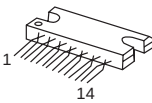
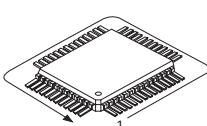
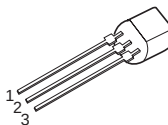
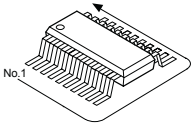
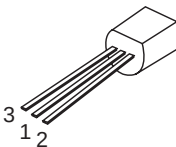
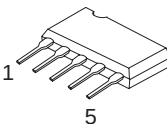
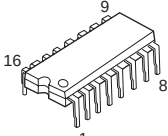
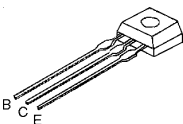
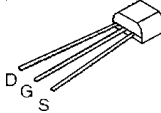
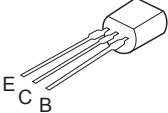
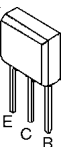
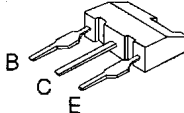
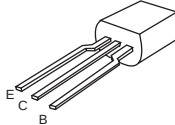
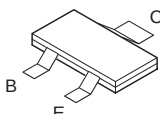
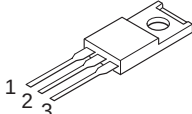
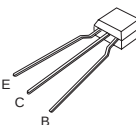
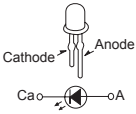
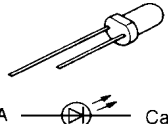
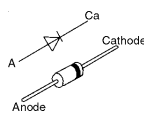
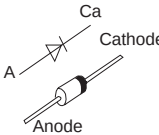
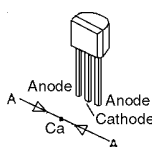
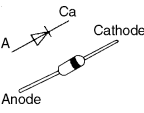
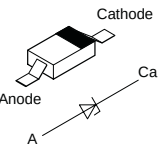
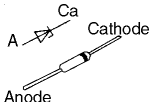


19 Wiring Connection Diagram





20 Type Illustration of IC's, Transistors and Diodes

C1BA00000331 (24P) C1CA00000198 (22P) BA5948FPE2 (28P) 	LA4663 (14P) 	MN6627953HB (80P) MN101C74GAA1 (100P) 	C0CAABC00007 	C1BB00000732 (32P) C0JBAZ001229 (14P) 
C0CAADC00031 (3P) 	CNB13030R2AU 	C1AA00000612 (5P) 	AN7317 (16P) 	KTC3199GRTA 
B1DEDQ000004 	2SD09650RA 	2SA1515STPQ 2SB10300RA 	B1ACND000003 	KTA1270YTA 
B1ADCF000001 	B1BCCG000021 	KRA119MTA KRC102MTA KRC104MTA KRC107MTA KRC119MTA B1AAGF000008 2SC1740SLNRT B1ACCF000063 		LNW9A8BYBZ 
SLR325VRT31 	B0EAMM000038 	B0EAKM000117 	KV1520NT1-2 B0CBBB000004 	B0AACK000004 MA2C16500E 
MAZ80560ML 	B0BA01100004 B0BA6R100003 B0BA7R500006 B0BA8R700009 			

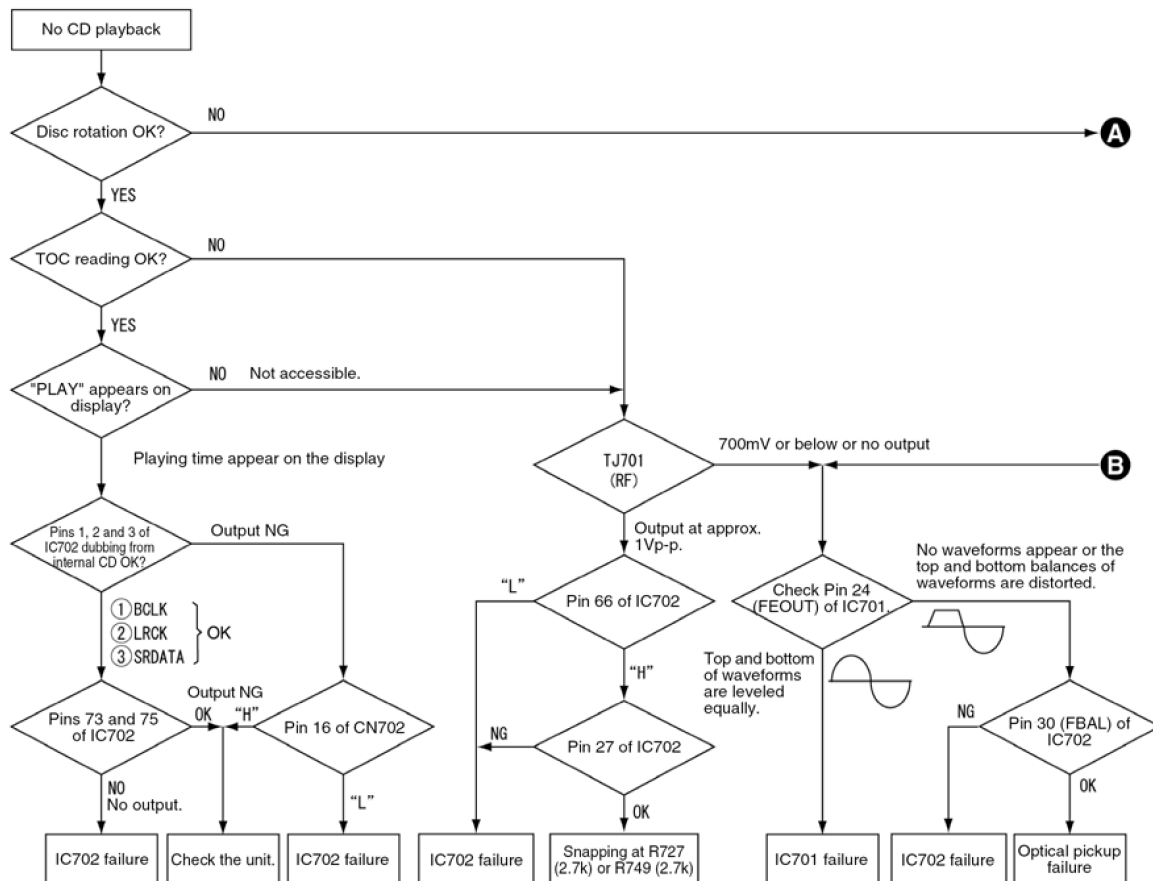
21 Terminal Function Of IC's

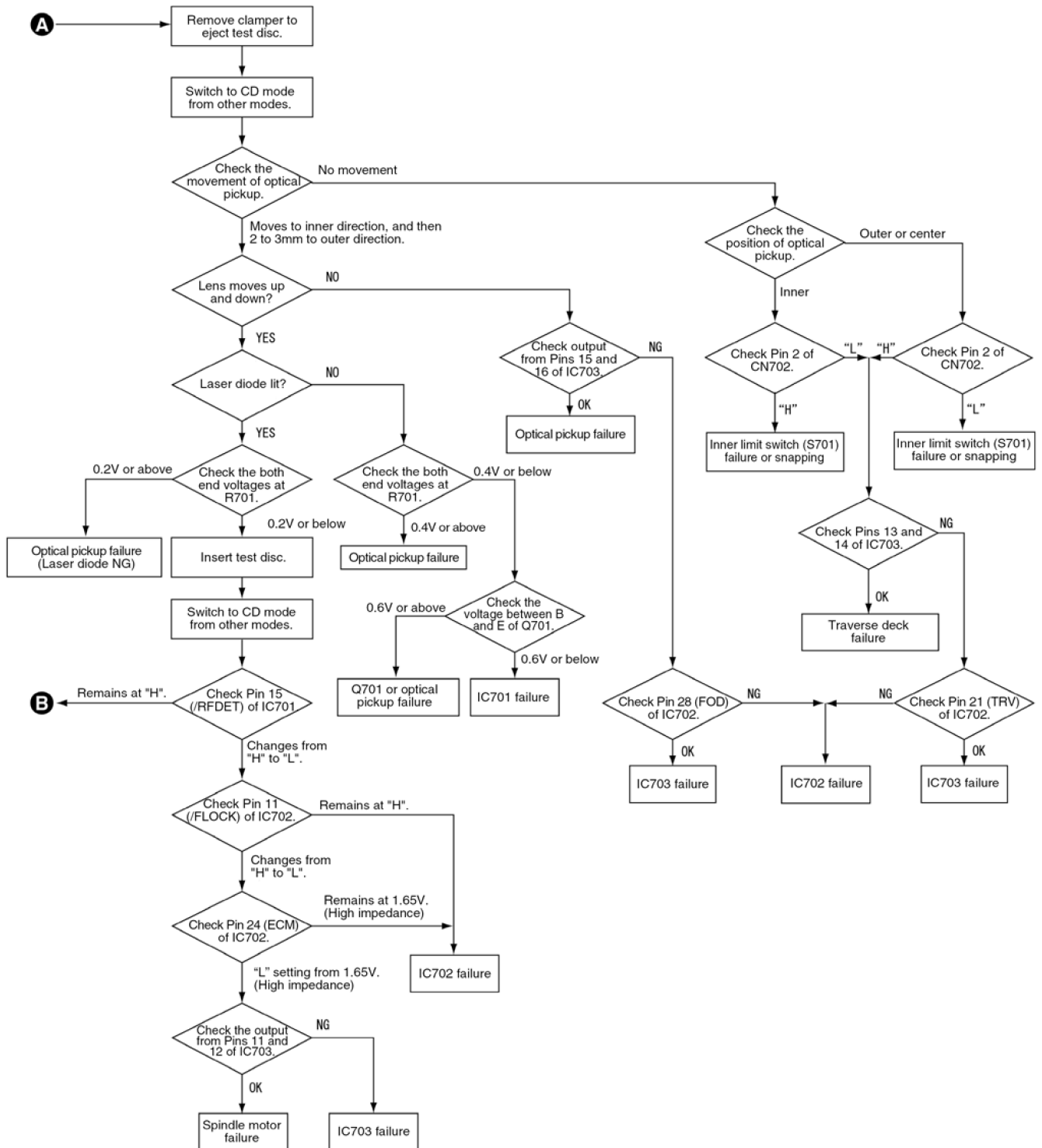
21.1. IC801 (MN101C74GAA1): Microprocessor

Pin NO.	Terminal Name	I/O	Function
1	COM0	O	LCD COMMON OUTPUT
2	COM1	O	LCD COMMON OUTPUT
3	COM2	O	LCD COMMON OUTPUT
4	COM3	O	LCD COMMON OUTPUT
5	VLC3	-	LCD BIAS
6	VLC2	-	LCD BIAS
7	VLC1	-	LCD BIAS
8	C2	-	CONNECTED TO VLC1
9	ECS	O	EERROM CS OUTPUT
10	ECLK	O	EEPROM CLOCK OUTPUT
11	EDATA	I/O	EEPROM DATA IN / OUT
12	MBP1	O	MBP CONTROL OP1
13	MBP2	O	MBP CONTROL OP2
14	AI_JOG1	I	JOG INPUT 1
15	AI_JOG2	I	JOG INPUT 2
16	VSS	-	GND
17	OSC2	O	8 MHz OSC OUTPUT
18	OSC1	I	8 MHz OSC OUTPUT
19	VDD	-	BUP 3.3V
20	X1	I	32.768kHz OSC INPUT
21	X0	O	32.768kHz OSC OUTPUT
22	MMOD	I	CONNECT TO VDD
23	/RESET	I	FOR RESET MICROP
24	DMOD	I	-
25	VREF+	-	3.3V REFERENCE VOLTAGE
26	KEY1	I/O	KEY INPUT 1
27	KEY2	I/O	KEY INPUT 2
28	REG	I/O	REGION SETTING
29	PDET	I	POWER DETECTION
30	MODE_SW	I	DECK INPUT 1
31	HALF_SW	I	DECK INPUT 2
32	RECINH_SW	I	DECK INPUT 3
33	MOTOR_H	O	DECK MOTOR CONTROL OUTPUT
34	REC_H	O	DECK REC CONTROL OUTPUT
35	PL_H	O	DECK PLUNGER CONTROL
36	MCLK	O	CD LSI COMMAND CONTROL
37	MDATA	O	CD LSI COMMAND DATA
38	STAT	I	CD STATUS INPUT
39	MLD	O	CD LSI COMMAND LOAD
40	T_MUTE	O	TUNER MUTE
41	PLL_DO	I	PLL IF COUNT INPUT
42	PLL_DATA	O	PLL DATA OUTPUT
43	PLL_CLK	O	PLL CLOCK OUTPUT
44	PLL_CE	O	PLL CHIP ENABLE INPUT
45	BP	O	BEAT PROFF FOR AM
46	DMT_LOW	O	TAPE MUTE OUTPUT
47	PHOTO	I	DECK PHOTO SW INPUT
48	BLKCK	I	CD SUBCODE BLOCK INPUT
49	REM_IN	I	REMOTE CONTROL INPUT
50	VCCDET	I	MAIN POWER DETECT INPUT
51	MUTEA	O	AUDIO MUTE INPUT
52	OPEN_SW	I	CD OPEN SWITCH
53	NC	-	NO CONNECTION
54	CD_RESET	O	CD RST OUTPUT
55	REST_SW	I	CD LIMIT SW INPUT FOR THE MOST INNER POINT
56	CD_OPEN	O	CD OPEN OUTPUT
57	CD_CLOSE	O	CD CLOSE OUTPUT
58	NC	-	NO CONNECTION
59	ASP_CLK	O	ASP SERIAL CLOCK OUTPUT

Pin NO.	Terminal Name	I/O	Function
60	ASP_DATA	O	ASP SERIAL DATA OUTPUT
61	PCONT	O	POWER CONTROL OUTPUT
62	REM_STBY	I	AC IN DETECTION
63	NC	-	NO CONNECTION
64	NC	-	NO CONNECTION
65	NC	-	NO CONNECTION
66	NC	-	NO CONNECTION
67	NC	-	NO CONNECTION
68	NC	-	NO CONNECTION
69	NC	-	NO CONNECTION
70	NC	-	NO CONNECTION
71	NC	-	NO CONNECTION
72	SEG28	O	LCD SEGMENT DRIVE OUTPUT
73	SEG27	O	LCD SEGMENT DRIVE OUTPUT
74	SEG26	O	LCD SEGMENT DRIVE OUTPUT
75	SEG25	O	LCD SEGMENT DRIVE OUTPUT
76	SEG24	O	LCD SEGMENT DRIVE OUTPUT
77	SEG23	O	LCD SEGMENT DRIVE OUTPUT
78	SEG22	O	LCD SEGMENT DRIVE OUTPUT
79	SEG21	O	LCD SEGMENT DRIVE OUTPUT
80	SEG20	O	LCD SEGMENT DRIVE OUTPUT
81	SEG19	O	LCD SEGMENT DRIVE OUTPUT
82	SEG18	O	LCD SEGMENT DRIVE OUTPUT
83	SEG17	O	LCD SEGMENT DRIVE OUTPUT
84	SEG16	O	LCD SEGMENT DRIVE OUTPUT
85	SEG15	O	LCD SEGMENT DRIVE OUTPUT
86	SEG14	O	LCD SEGMENT DRIVE OUTPUT
87	SEG13	O	LCD SEGMENT DRIVE OUTPUT
88	SEG12	O	LCD SEGMENT DRIVE OUTPUT
89	SEG11	O	LCD SEGMENT DRIVE OUTPUT
90	SEG10	O	LCD SEGMENT DRIVE OUTPUT
91	SEG9	O	LCD SEGMENT DRIVE OUTPUT
92	SEG8	O	LCD SEGMENT DRIVE OUTPUT
93	SEG7	O	LCD SEGMENT DRIVE OUTPUT
94	SEG6	O	LCD SEGMENT DRIVE OUTPUT
95	SEG5	O	LCD SEGMENT DRIVE OUTPUT
96	SEG4	O	LCD SEGMENT DRIVE OUTPUT
97	SEG3	O	LCD SEGMENT DRIVE OUTPUT
98	SEG2	O	LCD SEGMENT DRIVE OUTPUT
99	SEG1	O	LCD SEGMENT DRIVE OUTPUT
100	SEG0	O	LCD SEGMENT DRIVE OUTPUT

22 Troubleshooting Flowchart (CD Section Circuit)





23 Parts Location and Replacement Parts List

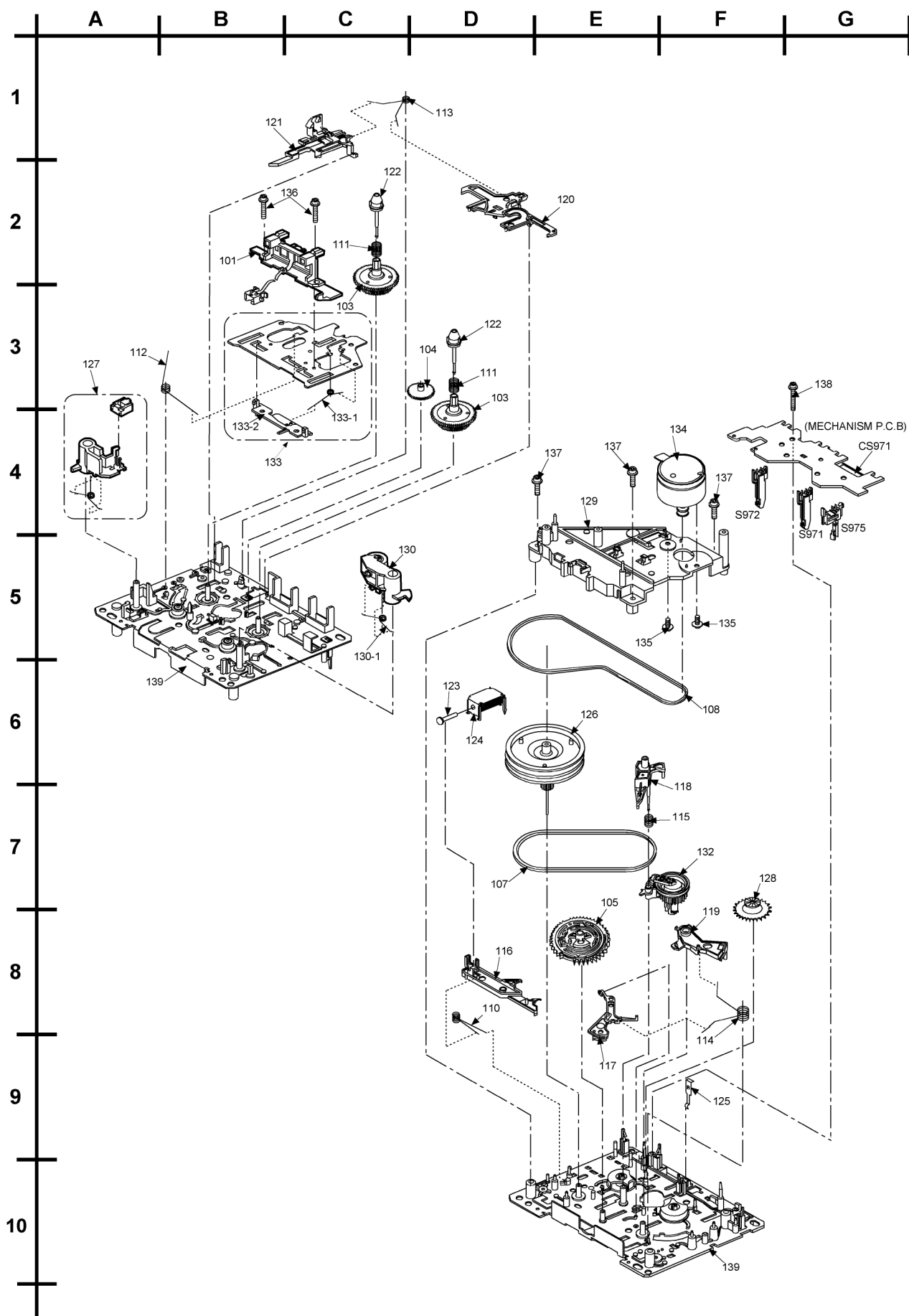
Notes:

- Important safety notice:
Components identified by $\triangle$ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (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.
- Warning: This product uses a laser diode. Refer to Precaution of Laser Diode.
ACTUNG:
Die Lasereinheit nicht zerlegen.
Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.
- 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] Indicates 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	Ur:	Ukraine				

23.1. Deck Mechanism (RAA4401-1V)

23.1.1. Deck Mechanism Parts Location

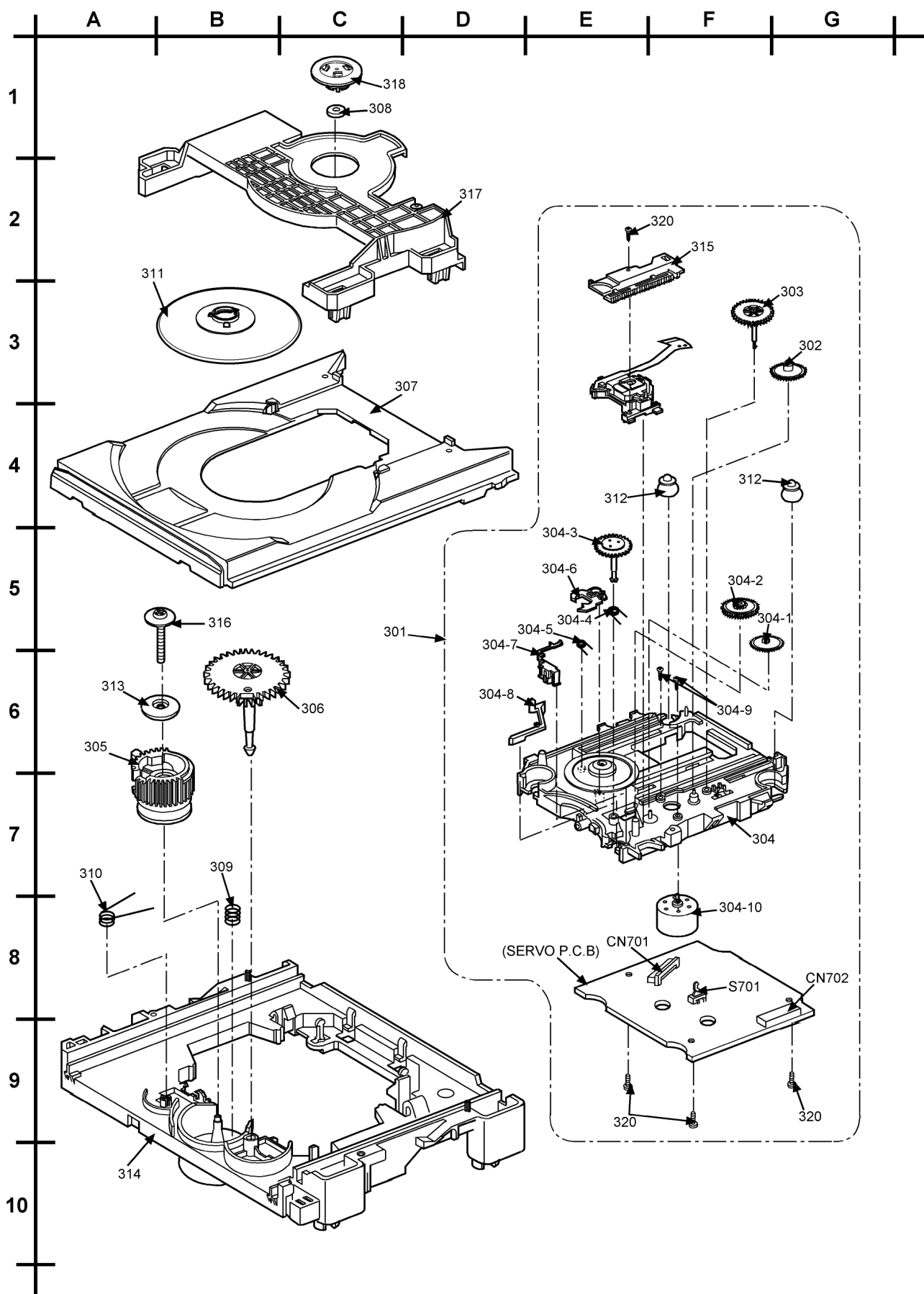


23.1.2. Deck Mechanism Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK	
101	RED0062	HEAD BLOCK UNIT	[M]
103	RDG0300	REEL BASE GEAR	[M]
104	RDG0301	WINDING RELAY GEAR	[M]
105	RDK0026-4	MAIN GEAR	[M]
107	RDV0033-4	WINDING BELT	[M]
108	RDV0064	CAPSTAN BELT	[M]
110	RMB0312	TRIGGER LEVER SPRING	[M]
111	RMB0400	REEL SPRING	[M]
112	RMB0403	HEAD PANEL SPRING	[M]
113	RMB0404	BRAKE ROD SPRING	[M]
114	RMB0406-5	FR LEVER SPRING	[M]
115	RMB0408	THRUST SPRING	[M]
116	RML0370-4	TRIGGER LEVER	[M]
117	RML0371	FR LEVER	[M]
118	RML0372-2	WINDING LEVER	[M]
119	RML0374-2	EJECT LEVER	[M]
120	RMM0131-1	BRAKE ROD	[M]
121	RMM0133-1	EJECT ROD	[M]
122	RMQ0519	REEL HUB	[M]
123	RMS0398-1	MOVING CORE	[M]
124	RSJ0003	PLUNGER ASS'Y	[M]
125	RMC0061	PACK SPRING	[M]
126	RXF0061-1	FLYWHEEL 'F' ASS'Y	[M]
127	RXL0151	E-HEAD ARM ASS'Y	[M]
128	RXG0040	FF RELAY GEAR ASS'Y	[M]
129	RMK0283A-J	SUB-CHASSIS	[M]
130	RXL0124	PINCH ROLLER F ASS'Y	[M]
130-1	RMB0401	PINCH ARM SPRING F	[M]
132	RXL0126	WINDING ARM ASS'Y	[M]
133	RXQ0412-1	HEAD PANEL ASS'Y	[M]
133-1	RMB0405-1	FR ROD SPRING	[M]
133-2	RMM0132-1	FR ROD	[M]
134	REM0120	CAP MOTOR ASS'Y	[M]
135	RHD26022	MOTOR SCREW	[M]
136	XTW2+5L	HEAD BLOCK UNIT SCREW	[M]
137	XTW26+10S	SUB-CHASSIS SCREW	[M]
138	XYC2+JF17	PCB EARTH SCREW	[M]
139	RFKJSTR280PP	CHASSIS ASS'Y	[M]

23.2. CD Loading Mechanism

23.2.1. CD Loading Mechanism Parts Location

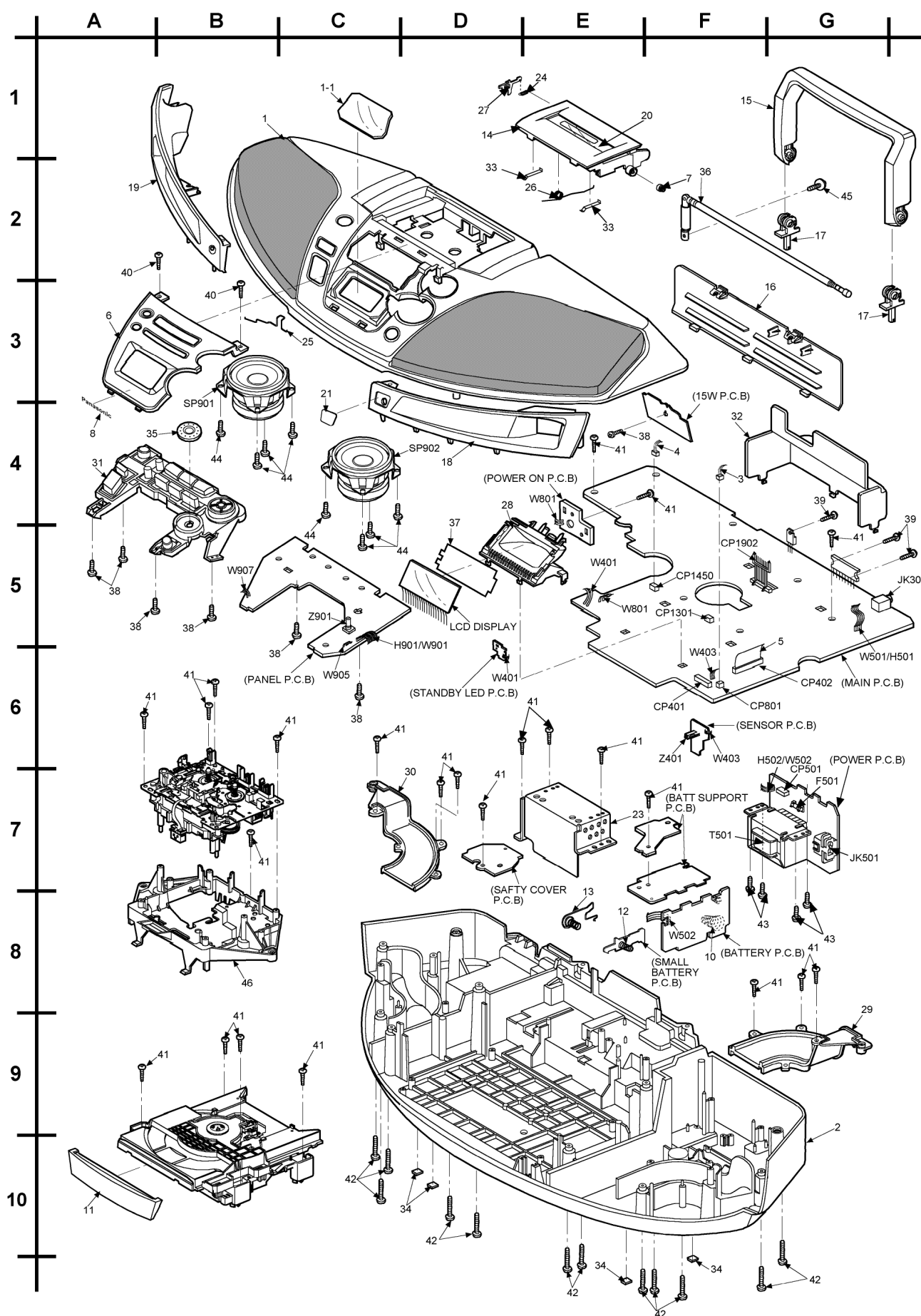


23.2.2. CD Loading Mechanism Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RAE0157Z-V	CT 130MP TRV	[M]
302	RDG0455	TRAVERSE GEAR (A)	[M]
303	RDG0456	TRAVERSE GEAR (B)	[M]
304	RFKNCT100	TRAVERSE BASE ASS'Y	[M]
304-1	RDG0457	LOAD GEAR (A)	[M]
304-10	RXQ0632	TRAVERSE MOTOR UNIT	[M]
304-2	RDG0458	LOAD GEAR (B)	[M]
304-3	RDG0459	LOAD GEAR (C)	[M]
304-4	RME0369	PRESS SPRING	[M]
304-5	RME0291	LOCK SPRING	[M]
304-6	RML0551	TRG LEVER	[M]
304-7	RML0552	LOCK LEVER	[M]
304-8	RMM0219	STOPPER	[M]
304-9	XQN17+C28FJ	SCREW	[M]
305	RDG0460-2	CAM GEAR	[M]
306	RDG0461	DRIVE GEAR	[M]
307	RGQ0254-K2	TRAY	[M]
308	RHM0001	MAGNET	[M]
309	RMB0603	FLOATING SPRING	[M]
310	RME0288	CENTERING SPRING	[M]
311	RFKNXED50-S	CLAMPER HOLDER ASS'Y	[M]
312	RMG0510-K	FLOATING RUBBER (A)	[M]
313	RMG0511-K	FLOATING RUBBER (B)	[M]
314	RMK0422-6	MECHA CHASSIS	[M]
315	RMM0218	TRAVERSE DRIVE RACK	[M]
316	RHD30083	CAM. GEAR SCREW	[M]
317	RMRL223-K1	CLAMP PLATE	[M]
318	RMRL242-X1	FIXTURE	[M]
320	XTN2+6GFJ	SCREW	[M]

23.3. Cabinet Part List

23.3.1. Cabinet Parts Location



23.3.2. Cabinet Part List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKKXES29EGS	UPPER CABINET ASS'Y	[M]
1-1	RKWX0140-Q	LCD PANEL	[M]
2	RKSX0036S-H	BOTTOM CABINET	[M]
3	REX0980	MAIN-CD WIRE	[M]
4	REXX0212	MOTOR WIRE	[M]
5	REEV0069	CD FF WIRE	[M]
6	RGKX0052E-H	FRONT PANEL	[M]
7	RDG0183-J	DAMPER GEAR	[M]
8	RGB0115-S	BADGE	[M]
10	RJC511XA	BATTERY TERMINAL	[M]
11	RGKX0051-1S	CD TRAY LID	[M]
12	RJC751YB	UM-3 BATTERY SPRING	[M]
13	RJC91008-1	+ - BATTERY TERMINAL	[M]
14	RKFX0080-H	CASS LID	[M]
15	RKH0011-H	HANDLE	[M]
16	RKK0073-1H	BATTERY COVER	[M]
17	RKQ0224-W	HANDLE FIXTURE	[M]
18	RKT0007-1S	SPEAKER PORT (R)	[M]
19	RKT0008-1S	SPEAKER PORT (L)	[M]
20	RKWX0141-K	CASS PANEL	[M]
21	RKWX0142-Q	REMCON PANEL	[M]
23	RMV0025	TRANS BRACKET	[M]
24	RMB0448-J	LOCK ROD SPRING	[M]
25	RME0270	R. ANTENNA TERMINAL	[M]
26	RMEX0010	CASS OPEN SPRING	[M]
27	RMM0163-1	CASS LOCK ROD	[M]
28	RMNX0031-W	LCD HOLDER	[M]
29	RMVX0048	PORT COVER RIGHT	[M]
30	RMVX0049	PORT COVER LEFT	[M]
31	RYQX0031B-2S	CONTROL BUTTON ASS'Y	[M]
32	RMVX0041	HEAT SINK	[M]
33	RUS757ZAA	CASS HALF SPRING	[M]
34	RHGV0008	LEG CUSHION	[M]
35	RGWX0050-S	JOG KNOB	[M]
36	XEARR210C-C	ROD ANTENNA	[M]
37	RMXX0006	LCD SPACER SHEET	[M]
38	RHD26046-L	SCREW	[M]
39	XTV3+10GFJ-M	SCREW	[M]
40	XTB3+12CFN	SCREW	[M]
41	XTV3+12GFJ-M	SCREW	[M]
42	XTV3+20GFJ-M	SCREW	[M]
43	XTV3+6FFJ	SCREW	[M]
44	XTV3+10FFJ	SCREW	[M]
45	XYN3+F12FFJ	SCREW	[M]
46	RMKX0037	MECHA CHASSIS	[M]

23.4. Electrical Part List

Ref. No.	Part No.	Part Name & Description	Remarks
		Printed Circuit Board	
	REPV0039A	CD SERVO P.C.B.	[M] RTL
	REPV0043A	MAIN P.C.B. / STANDBY LED P.C.B. / BATTERY P.C.B. / POWER ON P.C.B. / SENSOR P.C.B. / POWER P.C.B.	[M] RTL
	REPV0045A	PANEL P.C.B.	[M] RTL
	REPX0321F	DECK MECHANISM P.C.B.	[M] RTL
		INTEGRATED CIRCUITS	
IC1	C1BA00000331	IC TUNER	[M]
IC2	C1CA00000198	IC PLL	[M]
IC201	C1BB00000732	IC SOUND PROCESSOR	[M]
IC301	LA4663	IC POWER	[M]
IC302	C0CAADC00031	IC 5V REGULATOR	[M]
IC303	C0CAABC00007	IC 3.3V REGULATOR	[M]
IC401	C0JBAZ001229	IC 3V-5V LEVEL SHIFTER	[M]
IC702	MN6627953HB	IC SERVO PROCESSOR DIGITAL SIGNAL PROCESSOR/DIGITAL FILTER/ D/A CONVERTER	[M]
IC703	BA5948FPE2	IC 4 CH DRIVE	[M]
IC801	MN101C74GAA1	IC MICRO PROCESSOR	[M]
IC971	CNB13030R2AU	IC PHOTO INTERRUPTOR	[M]
IC1301	C1AA00000612	IC ANALOG SW	[M]
IC1302	AN7317	IC PLAYBACK / RECORD	[M]
		TRANSISTORS	
Q1	KTC3199GRTA	TRANSISTOR	[M]
Q102	2SC1740SLNRT	TRANSISTOR	[M]
Q103	2SC1740SLNRT	TRANSISTOR	[M]
Q202	2SC1740SLNRT	TRANSISTOR	[M]
Q203	2SC1740SLNRT	TRANSISTOR	[M]
Q301	B1AAGF000008	TRANSISTOR	[M]
Q302	KRC119MTA	TRANSISTOR	[M]
Q303	KTA1270YTA	TRANSISTOR	[M]
Q304	KTC3199GRTA	TRANSISTOR	[M]
Q305	B1ACND000003	TRANSISTOR	[M]
Q306	KRC107MTA	TRANSISTOR	[M]
Q307	B1ACCF000063	TRANSISTOR	[M]
Q308	B1BCCG000021	TRANSISTOR	[M]
Q309	KTC3199GRTA	TRANSISTOR	[M]
Q310	2SA1515STPQ	TRANSISTOR	[M]
Q311	KTC3199GRTA	TRANSISTOR	[M]
Q312	2SA1515STPQ	TRANSISTOR	[M]
Q313	KTC3199GRTA	TRANSISTOR	[M]
Q314	KTA1270YTA	TRANSISTOR	[M]
Q315	KRC104MTA	TRANSISTOR	[M]
Q316	KTC3199GRTA	TRANSISTOR	[M]
Q317	B1AAGF000008	TRANSISTOR	[M]
Q401	KRC104MTA	TRANSISTOR	[M]
Q701	B1ADCF000001	TRANSISTOR	[M]
Q803	KRC104MTA	TRANSISTOR	[M]
Q1000	KRC119MTA	TRANSISTOR	[M]
Q1101	B1DEDQ000004	TRANSISTOR	[M]
Q1102	KTC3199GRTA	TRANSISTOR	[M]
Q1103	B1DEDQ000004	TRANSISTOR	[M]
Q1104	B1DEDQ000004	TRANSISTOR	[M]
Q1201	B1DEDQ000004	TRANSISTOR	[M]
Q1202	KTC3199GRTA	TRANSISTOR	[M]
Q1203	B1DEDQ000004	TRANSISTOR	[M]
Q1204	B1DEDQ000004	TRANSISTOR	[M]
Q1301	KTC3199GRTA	TRANSISTOR	[M]
Q1303	KTC3199GRTA	TRANSISTOR	[M]
Q1400	KRC102MTA	TRANSISTOR	[M]
Q1401	KRA119MTA	TRANSISTOR	[M]
Q1402	KRC119MTA	TRANSISTOR	[M]
Q1403	KRC119MTA	TRANSISTOR	[M]
Q1404	KRC119MTA	TRANSISTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
Q1451	KRA119MTA	TRANSISTOR	[M]
Q1452	2SD09650RA	TRANSISTOR	[M]
Q1453	2SB10300RA	TRANSISTOR	[M]
		DIODES	
D1	KV1520NT1-2	DIODE	[M]
D2	B0CBBB000004	DIODE	[M]
D3	B0CBBB000004	DIODE	[M]
D101	B0BA7R500006	DIODE	[M]
D201	B0BA7R500006	DIODE	[M]
D301	B0BA01100004	DIODE	[M]
D302	B0AACK000004	DIODE	[M]
D303	B0AACK000004	DIODE	[M]
D307	B0BA8R700009	DIODE	[M]
D308	B0AACK000004	DIODE	[M]
D309	B0EAKM000117	DIODE	[M]
D310	B0EAKM000117	DIODE	[M]
D311	B0AACK000004	DIODE	[M]
D312	B0AACK000004	DIODE	[M]
D313	B0AACK000004	DIODE	[M]
D314	B0AACK000004	DIODE	[M]
D315	B0AACK000004	DIODE	[M]
D316	B0AACK000004	DIODE	[M]
D318	B0AACK000004	DIODE	[M]
D319	B0AACK000004	DIODE	[M]
D401	SLR325VRT31	DIODE	[M]
D501	B0EAMM000038	DIODE	[M]
D502	B0EAMM000038	DIODE	[M]
D503	B0EAMM000038	DIODE	[M]
D504	B0EAMM000038	DIODE	[M]
D750	MAZ80560ML	DIODE	[M]
D801	B0AACK000004	DIODE	[M]
D803	B0AACK000004	DIODE	[M]
D804	B0AACK000004	DIODE	[M]
D805	LNW9A8BYBZ	DIODE	[M]
D971	MA2C16500E	DIODE	[M]
D1500	B0BA6R100003	DIODE	[M]
		SWITCHES	
S701	RSH1A048-A	SW REST	[M]
S780	KOF111E00093	SW OPEN	[M]
S901	EVQ21405RJ	SW VOL+	[M]
S902	EVQ21405RJ	SW VOL-	[M]
S903	EVQ21405RJ	SW SEQ	[M]
S904	EVQ21405RJ	SW STOP	[M]
S905	EVQ21405RJ	SW REW	[M]
S906	EVQ21405RJ	SW FF	[M]
S907	EVQ21405RJ	SW POWER	[M]
S908	EVQ21405RJ	SW TUNER BAND	[M]
S909	EVQ21405RJ	SW CD REC MODE	[M]
S910	EVQ21405RJ	SW CD PLAY / PAUSE	[M]
S911	EVQ21405RJ	SW DECK EJECT	[M]
S912	EVQ21405RJ	SW TAPE PLAY	[M]
S913	EVQ21405RJ	SW REC / PAUSE	[M]
S914	EVQ21405RJ	SW CLOCK / TIMER	[M]
S915	EVQ21405RJ	SW MEMORY / CLEAR	[M]
S916	EVQ21405RJ	SW PLAY / REC TIMER	[M]
S917	EVQ21405RJ	SW CD OPEN / CLOSE	[M]
S971	K0J1BB000017	SW MODE	[M]
S972	RSH1A019-2U	SW HALF	[M]
S975	RSH1A019-2U	SW RECINF	[M]
		CONNECTORS	
CN701	RJS2A8616	16P FPC CONNECTOR	[M]
CN702	RJS2A7717	17P FPC CONNECTOR	[M]
CP401	K1MP10A00003	10P WIRE HOLDER	[M]
CP402	K1MN17A00040	17P FPC CONNECTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
CP501	K1KA04A00105	4P CONNECTOR	[M]
CP801	K1KA02A00010	2P CONNECTOR	[M]
CP1301	RJS1A6804-J	4P CONNECTOR	[M]
CP1450	K1KA02A00228	MOTOR CONNECTOR	[M]
CP1902	K1KA09B00058	9P CONNECTOR	[M]
CS971	RJU071H09M1	9P CONNECTOR	[M]
		TRIMMER	
CT1	ECRLA010A53R	TRIMMER CAPACITOR	[M]
		COILS & TRANSFORMERS	
L2	G0ZZ00001604	FM COIL	[M]
L3	G2CAEB000004	FERRITE ANTENNA	[M]
L4	G2AYYYA00004	OSC COIL	[M]
L6	RL02B131-T	AM OSC COIL	[M]
L7	G0C101KA0029	AXIAL COIL	[M]
L8	G0ZZ00001604	FM COIL	[M]
L400	G0A200D00002	RF CHOKE COIL	[M]
L402	G0C2R2KA0029	COIL	[M]
L501	G0A200D00002	RF CHOKE COIL	[M] △
L502	G0A200D00002	RF CHOKE COIL	[M] △
L801	G0C2R2KA0029	COIL	[M]
L1301	RL09B17-T	REC BIAS OSC COIL	[M]
T1	RLI2B015-T	AM IFT	[M] △
T501	G4C5ACH00006	TRANSFORMER	[M] △
		COMPONENT COMBINATIONS	
Z401	B3RAB0000046	REMOCON SENSOR	[M]
Z801	L5ACAGD00019	LIQUID CRYSTAL DISPLAY	[M]
Z901	RRVRE012102V	AI JOG	[M]
		SPEAKERS	
SP901	L0AA07A00014	SPEAKER	[M]
SP902	L0AA07A00014	SPEAKER	[M]
		CERAMIC FILTERS	
CF1	J0B1075A0081	FM CF	[M]
CF3	J0B1075A0051	FM DISCRIMINATOR	[M]
CF4	RLFCFA459L4B	AM FILTER	[M]
		OSCILLATORS	
X2	RSXZ456KZ02	CERAMIC OSCILLATOR	[M]
X3	RSXD7M20C01	CRYSTAL OSCILLATOR	[M]
X701	RSXC16M9S04	CRYSTAL OSCILLATOR	[M]
X801	H0A327200083	CRYSTAL OSCILLATOR	[M]
X802	RSXZ8M00D01T	CERAMIC RESONATOR	[M]
		FUSE	
F501	K5D402BL0001	FUSE	[M] △
		FUSE HOLDERS	
FH501	EYF52BC	FUSE CLIP	[M] △
FH502	EYF52BC	FUSE CLIP	[M] △
		FUSE PROTECTOR	
FP501	K5G402A00010	FUSE PROTECTOR	[M] △
		HOLDERS	
H501	K1YF04000001	CABLE HOLDER	[M]
H502	K1YF04000001	CABLE HOLDER	[M]
H901	RMR0319	10P CABLE HOLDER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		JACKS	
JK301	K2HC103B0049	JK HEADPHONE	[M]
JK501	K2AA2K000008	JK AC (SW501)	[M] △
		WIRES	
W401	RWJ8302080KK	STANDBY-BLUE LED WIRE	[M]
W403	RWJ8303110SS	R/CONTROL SENSOR	[M]
W501	REXX0214	MAIN-POWER WIRE	[M]
W502	RWJ0104170SQ	POWER-BATTERY WIRE	[M]
W801	RWJ8302080KK	POWER ON-BLUE LED WIRE	[M]
W901	RWJ1110150XX	MAIN-PANEL WIRE	[M]
W905	RWJ4202205KX	MAIN-SPEAKER (RIGHT) WIRE	[M]
W907	RWJ6902170KX	MAIN-SPEAKER (LEFT) WIRE	[M]
		RESISTORS	
R2	D0AE103JA048	10K 1/4W	[M]
R3	ERDS2TJ332T	3.3K 1/4W	[M]
R4	D0AE472JA048	4.7K 1/4W	[M]
R5	D0AE221JA048	220 1/4W	[M]
R6	D0AE104JA048	100K 1/4W	[M]
R8	D0AE104JA048	100K 1/4W	[M]
R9	D0AE104JA048	100K 1/4W	[M]
R11	D0AE223JA048	22K 1/4W	[M]
R12	D0AE103JA048	10K 1/4W	[M]
R13	D0AE474JA048	470K 1/4W	[M]
R14	D0AE474JA048	470K 1/4W	[M]
R16	D0AE104JA048	100K 1/4W	[M]
R17	ERDS2TJ222T	2.2K 1/4W	[M]
R20	ERDS2TJ392T	3.9K 1/4W	[M]
R21	D0AE472JA048	4.7K 1/4W	[M]
R22	D0AE102JA048	1K 1/4W	[M]
R24	D0AE103JA048	10K 1/4W	[M]
R26	D0AE103JA048	10K 1/4W	[M]
R27	ERDS2TJ332T	3.3K 1/4W	[M]
R28	D0AE223JA048	22K 1/4W	[M]
R29	D0AE103JA048	10K 1/4W	[M]
R30	D0AE472JA048	4.7K 1/4W	[M]
R31	ERDS2TJ222T	2.2K 1/4W	[M]
R32	D0AE331JA048	330 1/4W	[M]
R91	ERDS2TJ330T	33 1/4W	[M]
R92	ERDS2TJ182T	1.8K 1/4W	[M]
R101	ERD2FCVG330T	33 1/4W	[M]
R102	ERDS2TJ392T	3.9K 1/4W	[M]
R103	ERDS2TJ152T	1.5K 1/4W	[M]
R104	D0AE102JA048	1K 1/4W	[M]
R105	ERDS2TJ222T	2.2K 1/4W	[M]
R106	D0AE123JA048	12K 1/4W	[M]
R107	D0AE122JA048	1.2K 1/4W	[M]
R108	D0AE102JA048	1K 1/4W	[M]
R109	D0AE473JA048	47K 1/4W	[M]
R110	ERDS2TJ105T	1M 1/4W	[M]
R111	D0AE103JA048	10K 1/4W	[M]
R112	ERDS2TJ822T	8.2K 1/4W	[M]
R113	D0AE153JA048	15K 1/4W	[M]
R114	D0AE562JA048	5.6K 1/4W	[M]
R118	D0AE123JA048	12K 1/4W	[M]
R119	ERDS2TJ222T	2.2K 1/4W	[M]
R120	D0AE102JA048	1K 1/4W	[M]
R121	ERDS2TJ181T	180 1/4W	[M]
R122	ERD2FCVJ4R7T	4.7 1/4W	[M]
R123	ERDS2TJ471T	470 1/4W	[M]
R124	ERDS2TJ683T	68K 1/4W	[M]
R125	ERDS2TJ682T	6.8K 1/4W	[M]
R126	ERD2FCVJ4R7T	4.7 1/4W	[M]
R130	D0AE102JA048	1K 1/4W	[M]
R134	D0AE223JA048	22K 1/4W	[M]
R135	D0AE103JA048	10K 1/4W	[M]
R202	ERDS2TJ392T	3.9K 1/4W	[M]
R203	ERDS2TJ152T	1.5K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R204	DOAE102JA048	1K 1/4W	[M]
R205	ERDS2TJ222T	2.2K 1/4W	[M]
R206	DOAE123JA048	12K 1/4W	[M]
R207	DOAE122JA048	1.2K 1/4W	[M]
R208	DOAE102JA048	1K 1/4W	[M]
R209	DOAE473JA048	47K 1/4W	[M]
R210	ERDS2TJ105T	1M 1/4W	[M]
R211	DOAE103JA048	10K 1/4W	[M]
R212	ERDS2TJ822T	8.2K 1/4W	[M]
R213	DOAE153JA048	15K 1/4W	[M]
R214	DOAE562JA048	5.6K 1/4W	[M]
R218	DOAE123JA048	12K 1/4W	[M]
R219	ERDS2TJ222T	2.2K 1/4W	[M]
R220	ERD2FCVJ4R7T	4.7 1/4W	[M]
R221	ERDS2TJ181T	180 1/4W	[M]
R223	ERDS2TJ471T	470 1/4W	[M]
R224	ERDS2TJ683T	68K 1/4W	[M]
R225	ERDS2TJ682T	6.8K 1/4W	[M]
R226	ERD2FCVJ4R7T	4.7 1/4W	[M]
R234	DOAE223JA048	22K 1/4W	[M]
R235	DOAE103JA048	10K 1/4W	[M]
R301	DOAE563JA048	56K 1/4W	[M]
R302	DOAE103JA048	10K 1/4W	[M]
R303	DOAE472JA048	4.7K 1/4W	[M]
R304	ERD2FCVJ4R7T	4.7 1/4W	[M]
R305	ERDS2TJ222T	2.2K 1/4W	[M]
R306	DOAE101JA048	100 1/4W	[M]
R307	DOAE103JA048	10K 1/4W	[M]
R308	DOAE103JA048	10K 1/4W	[M]
R309	DOAE472JA048	4.7K 1/4W	[M]
R310	DOAE102JA048	1K 1/4W	[M]
R311	DOAE102JA048	1K 1/4W	[M]
R312	DOAE474JA048	470K 1/4W	[M]
R313	ERDS2TJ393T	39K 1/4W	[M]
R314	DOAE103JA048	10K 1/4W	[M]
R315	ERDS2TJ471T	470 1/4W	[M]
R316	ERDS2TJ471T	470 1/4W	[M]
R317	ERDS2TJ471T	470 1/4W	[M]
R318	ERDS2TJ471T	470 1/4W	[M]
R319	ERDS2TJ273T	27K 1/4W	[M]
R321	DOAE103JA048	10K 1/4W	[M]
R322	ERDS2TJ1R5T	1.5 1/4W	[M]
R323	ERDS2TJ1R5T	1.5 1/4W	[M]
R324	ERDS2TJ1R5T	1.5 1/4W	[M]
R325	ERDS2TJ471T	470 1/4W	[M]
R326	ERDS2TJ471T	470 1/4W	[M]
R327	DOAE101JA048	100 1/4W	[M]
R328	DOAE331JA048	330 1/4W	[M]
R329	DOAE474JA048	470K 1/4W	[M]
R330	DOAE103JA048	10K 1/4W	[M]
R331	DOAE331JA048	330 1/4W	[M]
R332	DOAE331JA048	330 1/4W	[M]
R333	ERDS2TJ183T	18K 1/4W	[M]
R334	ERDS2TJ152T	1.5K 1/4W	[M]
R335	DOAE103JA048	10K 1/4W	[M]
R336	DOAE472JA048	4.7K 1/4W	[M]
R337	DOAE103JA048	10K 1/4W	[M]
R338	DOAE102JA048	1K 1/4W	[M]
R339	ERDS2TJ471T	470 1/4W	[M]
R340	DOAE104JA048	100K 1/4W	[M]
R341	ERDS2TJ683T	68K 1/4W	[M]
R350	DOAE473JA048	47K 1/4W	[M]
R401	ERDS2TJ151T	150 1/4W	[M]
R402	ERDS2TJ821T	820 1/4W	[M]
R406	ERDS2TJ332T	3.3K 1/4W	[M]
R407	ERDS2TJ332T	3.3K 1/4W	[M]
R414	DOAE101JA048	100 1/4W	[M]
R417	DOAE101JA048	100 1/4W	[M]
R419	DOAE101JA048	100 1/4W	[M]
R421	DOAE101JA048	100 1/4W	[M]
R431	DOAE101JA048	100 1/4W	[M]
R432	DOAE101JA048	100 1/4W	[M]
R433	DOAE472JA048	4.7K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R435	DOAE101JA048	100 1/4W	[M]
R439	ERDS2TJ222T	2.2K 1/4W	[M]
R443	DOAE103JA048	10K 1/4W	[M]
R501	ERDS2TJ271T	270 1/4W	[M]
R701	D0GB4R7JA007	4.7 1/16W	[M]
R702	D0GB472JA041	4.7K 1/16W	[M]
R704	ERJ3GEYJ102V	1K 1/16W	[M]
R705	D0GB393JA041	39K 1/16W	[M]
R706	ERJ3GEYJ102V	1K 1/16W	[M]
R711	D0GB823JA007	82K 1/16W	[M]
R712	D0GB821JA007	820 1/16W	[M]
R714	D0GB471JA041	470 1/16W	[M]
R715	D0GB332JA007	3.3K 1/16W	[M]
R717	ERJ3GEYJ102V	1K 1/16W	[M]
R718	ERJ3GEYJ102V	1K 1/16W	[M]
R720	D0GB105JA007	1M 1/16W	[M]
R721	D0GB101JA007	100 1/16W	[M]
R723	D0GB332JA007	3.3K 1/16W	[M]
R725	D0GB331JA007	330 1/16W	[M]
R727	ERJ3GEYJ102V	1K 1/16W	[M]
R728	ERJ3GEYJ103V	10K 1/16W	[M]
R729	ERJ3GEYJ102V	1K 1/16W	[M]
R731	D0GB223JA041	22K 1/16W	[M]
R732	ERJ3GEYJ102V	1K 1/16W	[M]
R735	D0GB101JA007	100 1/16W	[M]
R736	D0GB101JA007	100 1/16W	[M]
R739	ERJ3GEYJ102V	1K 1/16W	[M]
R744	D0GB473JA041	47K 1/16W	[M]
R749	D0GB183JA007	18K 1/16W	[M]
R753	D0GB100JA007	10 1/16W	[M]
R754	D0GB5R6JA007	5.6 1/16W	[M]
R760	D0GB101JA007	100 1/16W	[M]
R764	ERJ3GEYJ102V	1K 1/16W	[M]
R766	D0GB562JA007	5.6K 1/16W	[M]
R801	ERDS2TJ154T	150K 1/4W	[M]
R802	DOAE104JA048	100K 1/4W	[M]
R803	ERDS2TJ154T	150K 1/4W	[M]
R804	DOAE103JA048	10K 1/4W	[M]
R806	DOAE102JA048	1K 1/4W	[M]
R807	DOAE102JA048	1K 1/4W	[M]
R808	DOAE102JA048	1K 1/4W	[M]
R809	DOAE102JA048	1K 1/4W	[M]
R810	DOAE104JA048	100K 1/4W	[M]
R811	DOAE104JA048	100K 1/4W	[M]
R813	DOAE101JA048	100 1/4W	[M]
R814	DOAE101JA048	100 1/4W	[M]
R815	ERDS2TJ332T	3.3K 1/4W	[M]
R819	DOAE472JA048	4.7K 1/4W	[M]
R820	DOAE472JA048	4.7K 1/4W	[M]
R821	DOAE102JA048	1K 1/4W	[M]
R822	DOAE473JA048	47K 1/4W	[M]
R823	DOAE102JA048	1K 1/4W	[M]
R824	DOAE101JA048	100 1/4W	[M]
R825	DOAE153JA048	15K 1/4W	[M]
R826	DOAE153JA048	15K 1/4W	[M]
R827	DOAE153JA048	15K 1/4W	[M]
R828	DOAE102JA048	1K 1/4W	[M]
R829	DOAE102JA048	1K 1/4W	[M]
R830	DOAE101JA048	100 1/4W	[M]
R831	DOAE101JA048	100 1/4W	[M]
R832	DOAE102JA048	1K 1/4W	[M]
R833	DOAE102JA048	1K 1/4W	[M]
R834	DOAE102JA048	1K 1/4W	[M]
R835	DOAE102JA048	1K 1/4W	[M]
R836	DOAE102JA048	1K 1/4W	[M]
R837	DOAE473JA048	47K 1/4W	[M]
R839	ERDS2TJ334T	330K 1/4W	[M]
R840	ERDS2TJ391T	390 1/4W	[M]
R841	DOAE101JA048	100 1/4W	[M]
R842	DOAE101JA048	100 1/4W	[M]
R843	DOAE101JA048	100 1/4W	[M]
R845	ERDS2TJ152T	1.5K 1/4W	[M]
R846	DOAE1R0JA048	1 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R847	D0AE472JA048	4.7K 1/4W	[M]
R848	D0AE102JA048	1K 1/4W	[M]
R849	D0AE102JA048	1K 1/4W	[M]
R850	D0AE102JA048	1K 1/4W	[M]
R851	D0AE102JA048	1K 1/4W	[M]
R852	D0AE102JA048	1K 1/4W	[M]
R853	ERDS2TJ332T	3.3K 1/4W	[M]
R854	D0AE102JA048	1K 1/4W	[M]
R855	D0AE102JA048	1K 1/4W	[M]
R856	D0AE474JA048	470K 1/4W	[M]
R862	D0AE102JA048	1K 1/4W	[M]
R863	D0AE101JA048	100 1/4W	[M]
R864	D0AE101JA048	100 1/4W	[M]
R901	ERDS2TJ822T	8.2K 1/4W	[M]
R902	D0AE562JA048	5.6K 1/4W	[M]
R903	ERDS2TJ392T	3.9K 1/4W	[M]
R904	D0AE272JA048	2.7K 1/4W	[M]
R905	ERDS2TJ222T	2.2K 1/4W	[M]
R906	ERDS2TJ152T	1.5K 1/4W	[M]
R907	D0AE153JA048	15K 1/4W	[M]
R908	ERDS2TJ822T	8.2K 1/4W	[M]
R909	ERDS2TJ152T	1.5K 1/4W	[M]
R910	ERDS2TJ222T	2.2K 1/4W	[M]
R911	D0AE153JA048	15K 1/4W	[M]
R912	D0AE272JA048	2.7K 1/4W	[M]
R913	ERDS2TJ392T	3.9K 1/4W	[M]
R914	D0AE562JA048	5.6K 1/4W	[M]
R915	ERDS2TJ333T	33K 1/4W	[M]
R972	ERDS2TJ821T	820 1/4W	[M]
R973	ERDS2TJ393T	39K 1/4W	[M]
R1000	D0AE103JA048	10K 1/4W	[M]
R1001	ERDS2TJ683T	68K 1/4W	[M]
R1002	D0AE472JA048	4.7K 1/4W	[M]
R1101	D0AE223JA048	22K 1/4W	[M]
R1102	ERDS2TJ560T	56 1/4W	[M]
R1103	ERDS2TJ392T	3.9K 1/4W	[M]
R1104	D0AE102JA048	1K 1/4W	[M]
R1107	ERDS2TJ683T	68K 1/4W	[M]
R1108	ERDS2TJ392T	3.9K 1/4W	[M]
R1109	D0AE153JA048	15K 1/4W	[M]
R1110	D0AE474JA048	470K 1/4W	[M]
R1112	D0AE104JA048	100K 1/4W	[M]
R1201	D0AE223JA048	22K 1/4W	[M]
R1202	ERDS2TJ560T	56 1/4W	[M]
R1203	ERDS2TJ392T	3.9K 1/4W	[M]
R1204	D0AE102JA048	1K 1/4W	[M]
R1207	ERDS2TJ683T	68K 1/4W	[M]
R1208	ERDS2TJ392T	3.9K 1/4W	[M]
R1209	D0AE153JA048	15K 1/4W	[M]
R1210	D0AE474JA048	470K 1/4W	[M]
R1212	D0AE104JA048	100K 1/4W	[M]
R1299	ERDS2TJ333T	33K 1/4W	[M]
R1304	D0AE102JA048	1K 1/4W	[M]
R1305	D0AE102JA048	1K 1/4W	[M]
R1310	D0AE102JA048	1K 1/4W	[M]
R1311	D0AE563JA048	56K 1/4W	[M]
R1313	D0AE221JA048	220 1/4W	[M]
R1314	D0AE100JA048	10 1/4W	[M]
R1340	D0AE223JA048	22K 1/4W	[M]
R1341	ERDS2TJ471T	470 1/4W	[M]
R1352	D0AE104JA048	100K 1/4W	[M]
R1353	D0AE474JA048	470K 1/4W	[M]
R1401	ERDS2TJ823T	82K 1/4W	[M]
R1404	ERDS2TJ332T	3.3K 1/4W	[M]
R1405	ERDS2TJ332T	3.3K 1/4W	[M]
R1406	ERDS2TJ332T	3.3K 1/4W	[M]
R1411	D0AE331JA048	330 1/4W	[M]
R1451	ERDS2TJ681T	680 1/4W	[M]
R1452	ERDS2TJ332T	3.3K 1/4W	[M]
R1453	ERDS2TJ273T	27K 1/4W	[M]
R1501	D0AE101JA048	100 1/4W	[M]
R1502	ERDS2TJ475T	4.7M 1/4W	[M]
R1503	ERDS2TJ222T	2.2K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		CAPACITORS	
C1	F1D1H470A006	47P 50V	[M]
C2	F1D1H100A015	10P 50V	[M]
C3	F1C1C223A001	0.022 16V	[M]
C4	F1D1H102A012	1000P 50V	[M]
C5	F1D1H5R6A017	5.6P 50V	[M]
C6	F1D1H102A012	1000P 50V	[M]
C7	F1D1H120A015	12P 50V	[M]
C8	F1D1H102A012	1000P 50V	[M]
C9	F1D1H102A012	1000P 50V	[M]
C10	F1D1H100A015	10P 50V	[M]
C12	F1D1H331A012	330P 50V	[M]
C13	ECA1CAK100XB	10 16V	[M]
C14	F1D1H102A012	1000P 50V	[M]
C15	F1C1C683A014	0.068 16V	[M]
C16	F1C1C823A015	0.082 16V	[M]
C17	F1C1C823A015	0.082 16V	[M]
C18	F1C1C223A001	0.022 16V	[M]
C19	F1C1C223A001	0.022 16V	[M]
C20	ECA1HAK010XB	1 50V	[M]
C21	ECA1HAK010XB	1 50V	[M]
C22	ECA1HAK4R7XB	4.7 50V	[M]
C23	F1C1C3330001	0.033 16V	[M]
C24	F1C1C3330001	0.033 16V	[M]
C30	F1D1H331A012	330P 50V	[M]
C31	F1D1C103A004	0.01 16V	[M]
C32	F1D1H102A012	1000P 50V	[M]
C33	F1D1H102A012	1000P 50V	[M]
C34	F1D1H102A012	1000P 50V	[M]
C35	ECA1CAK101XB	100 16V	[M]
C36	ECA1CAK101XB	100 16V	[M]
C37	F1D1C103A004	0.01 16V	[M]
C39	F1D1H120A015	12P 50V	[M]
C40	F1D1C222A010	2200P 16V	[M]
C42	F1D1H180A015	18P 50V	[M]
C43	F1D1H101A012	100P 50V	[M]
C44	ECA1HAK2R2XB	2.2 50V	[M]
C45	F1D1H102A012	1000P 50V	[M]
C48	ECA1HAK010XB	1 50V	[M]
C49	F1D1H102A012	1000P 50V	[M]
C50	F1D1H102A012	1000P 50V	[M]
C51	ECA1HAK010XB	1 50V	[M]
C53	F1D1H102A012	1000P 50V	[M]
C54	F1D1H102A012	1000P 50V	[M]
C91	ECA1CAK220XB	22 16V	[M]
C92	F1D1H331A012	330P 50V	[M]
C98	F1D1H331A012	330P 50V	[M]
C99	F1D1H102A012	1000P 50V	[M]
C101	F1D1H102A012	1000P 50V	[M]
C102	F1C1C683A014	0.068 16V	[M]
C103	ECA1CAK100XB	10 16V	[M]
C104	ECA1CAK100XB	10 16V	[M]
C105	F1D1H101A012	100P 50V	[M]
C106	F1D1C332A010	3300P 16V	[M]
C108	ECA1HAK010XB	1 50V	[M]
C109	ECA1HAK010XB	1 50V	[M]
C110	ECA1HAK010XB	1 50V	[M]
C111	F1C1C223A001	0.022 16V	[M]
C112	ECA1HAKR22XB	0.22 50V	[M]
C113	F1D1H223A012	0.022 50V	[M]
C114	ECQV1H104JL3	0.1 50V	[M]
C118	F1D1H102A012	1000P 50V	[M]
C119	ECQB1H104JF3	0.1 50V	[M]
C120	F1C1C153A001	0.015 16V	[M]
C121	ECA1CAK100XB	10 16V	[M]
C122	ECA1HAK2R2XB	2.2 50V	[M]
C123	F1D1H471A012	470P 50V	[M]
C124	F1E1H1030001	0.01 50V	[M]
C125	F1E1H1030001	0.01 50V	[M]
C130	ECA1AAK470XB	47 10V	[M]
C131	ECA1CAM331XB	330 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C134	F1E1H1030001	0.01 50V	[M]
C135	ECQB1H153JF3	0.015 50V	[M]
C136	ECQB1H104JF3	0.1 50V	[M]
C201	F1D1H102A012	1000P 50V	[M]
C202	F1C1C683A014	0.068 16V	[M]
C203	ECA1CAK100XB	10 16V	[M]
C204	ECA1CAK100XB	10 16V	[M]
C205	F1D1H101A012	100P 50V	[M]
C206	F1D1C332A010	3300P 16V	[M]
C208	ECA1HAK010XB	1 50V	[M]
C209	ECA1HAK010XB	1 50V	[M]
C210	ECA1HAK010XB	1 50V	[M]
C211	F1C1C223A001	0.022 16V	[M]
C212	ECA1HAKR22XB	0.22 50V	[M]
C213	F1D1H223A012	0.022 50V	[M]
C214	ECQV1H104JL3	0.1 50V	[M]
C217	ECA1CAK101XB	100 16V	[M]
C218	F1D1H102A012	1000P 50V	[M]
C219	ECQB1H104JF3	0.1 50V	[M]
C220	F1C1C153A001	0.015 16V	[M]
C221	ECA1HAK100XB	10 50V	[M]
C222	ECA1HAK2R2XB	2.2 50V	[M]
C223	F1D1H471A012	470P 50V	[M]
C224	F1E1H1030001	0.01 50V	[M]
C225	F1E1H1030001	0.01 50V	[M]
C231	ECA1CAM331XB	330 16V	[M]
C232	F1D1H221A012	220P 50V	[M]
C233	F1D1H221A012	220P 50V	[M]
C234	F1E1H1030001	0.01 50V	[M]
C235	ECQB1H153JF3	0.015 50V	[M]
C236	ECQB1H104JF3	0.1 50V	[M]
C237	ECA1CAK101XB	100 16V	[M]
C301	ECA1EAM472XE	4700 25V	[M]
C302	ECA1EAM101XB	100 25V	[M]
C303	ECA1CAK220XB	22 16V	[M]
C304	ECA1CAK470XB	47 16V	[M]
C305	F1D1H102A012	1000P 50V	[M]
C307	ECA1CAK101XB	100 16V	[M]
C308	F1D1H471A012	470P 50V	[M]
C309	ECA1CAK101XB	100 16V	[M]
C310	ECA1CAK101XB	100 16V	[M]
C312	F1D1H1040002	0.1 50V	[M]
C313	ECA1EAK470XB	47 25V	[M]
C314	F1D1H1040002	0.1 50V	[M]
C315	F1D1E103A001	0.01 25V	[M]
C316	ECA1HAK010XB	1 50V	[M]
C317	ECA1HAK010XB	1 50V	[M]
C318	ECA1CAK470XB	47 16V	[M]
C330	F1D1H471A012	470P 50V	[M]
C331	ECA1CAK101XB	100 16V	[M]
C406	F1D1H561A012	560P 50V	[M]
C407	ECA1AAK470XB	47 10V	[M]
C411	F1D1H1040002	0.1 50V	[M]
C412	F1D1H101A012	100P 50V	[M]
C413	F1D1H102A012	1000P 50V	[M]
C414	F1D1H102A012	1000P 50V	[M]
C416	F1E1H1030001	0.01 50V	[M]
C418	F1D1H221A012	220P 50V	[M]
C419	F1D1H221A012	220P 50V	[M]
C420	F1D1H221A012	220P 50V	[M]
C421	F1D1H221A012	220P 50V	[M]
C422	F1D1H221A012	220P 50V	[M]
C423	F1D1H221A012	220P 50V	[M]
C501	F1B1H103A007	0.01 50V	[M]
C502	F1B1H103A007	0.01 50V	[M]
C503	F1B1H103A007	0.01 50V	[M]
C504	F1B1H103A007	0.01 50V	[M]
C701	ECEA0JKA330I	33 6.3V	[M]
C702	F1H1A4740009	0.47 10V	[M]
C703	ECEA0JKA101I	100 6.3V	[M]
C704	F1H1C104A041	0.1 16V	[M]
C705	F1H1C104A041	0.1 16V	[M]
C706	F1H1C104A041	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C707	F1H1E223A002	0.022 25V	[M]
C710	ECJ1VC1H471J	470P 50V	[M]
C713	F1H1C104A041	0.1 16V	[M]
C714	ECEA0JKA101I	100 6.3V	[M]
C715	F1H1A4740009	0.47 10V	[M]
C716	ECJ1VB1H681K	680P 50V	[M]
C717	F1H1C104A041	0.1 16V	[M]
C718	ECJ1VB1C823K	0.082 16V	[M]
C721	ECJ1VC1H180J	18P 50V	[M]
C722	F1H1H220A230	22P 50V	[M]
C723	ECEA0JKA221I	220 6.3V	[M]
C724	F1H1C104A041	0.1 16V	[M]
C725	F1H1H102A219	1000P 50V	[M]
C726	F1H1H102A219	1000P 50V	[M]
C727	ECA1HAK010XI	1 50V	[M]
C728	ECA1HAK010XI	1 50V	[M]
C729	ECEA1CKA100I	10 16V	[M]
C730	F1H1C104A041	0.1 16V	[M]
C731	ECA0JAK221XI	220 6.3V	[M]
C733	F1H1C104A041	0.1 16V	[M]
C734	ECEA1AKA221I	220 10V	[M]
C735	F1H1E104A030	0.1 25V	[M]
C738	ECJ1VB1C563K	0.056 16V	[M]
C739	ECJ1VB1E183K	0.018 25V	[M]
C740	F1H1C104A041	0.1 16V	[M]
C741	F1H1H102A219	1000P 50V	[M]
C742	F1H1E223A002	0.022 25V	[M]
C743	F1H1E104A030	0.1 25V	[M]
C744	F1H1E1530002	0.015 25V	[M]
C745	F1H1E103A029	0.01 25V	[M]
C746	F1H1C104A041	0.1 16V	[M]
C747	ECJ1VB1H391K	390P 50V	[M]
C749	F1H1H392A013	3900P 50V	[M]
C752	ECJ1VB1E183K	0.018 25V	[M]
C753	F1H1H471A219	470P 50V	[M]
C755	F1H1C104A041	0.1 16V	[M]
C759	ECEA1CKA100I	10 16V	[M]
C760	F1H1C104A041	0.1 16V	[M]
C762	F1H1C104A041	0.1 16V	[M]
C801	ECA1HAK010XB	1 50V	[M]
C802	F1D1H470A006	47P 50V	[M]
C803	F1D1H101A012	100P 50V	[M]
C807	F1D1H101A012	100P 50V	[M]
C808	F1D1H101A012	100P 50V	[M]
C809	F1D1H101A012	100P 50V	[M]
C810	F1D1H180A015	18P 50V	[M]
C811	F1D1H180A015	18P 50V	[M]
C812	F1D1H101A012	100P 50V	[M]
C813	F1D1H101A012	100P 50V	[M]
C814	F1D1H101A012	100P 50V	[M]
C815	F1D1H101A012	100P 50V	[M]
C816	F1D1H101A012	100P 50V	[M]
C817	F1D1H820A012	82P 50V	[M]
C818	F1D1H820A012	82P 50V	[M]
C819	F1D1H470A006	47P 50V	[M]
C820	ECA0JAK101XB	100 6.3V	[M]
C823	F1D1H221A012	220P 50V	[M]
C826	ECA1HAK2R2XB	2.2 50V	[M]
C831	F1E1H1030001	0.01 50V	[M]
C850	F1D1H102A012	1000P 50V	[M]
C851	ECA1CAK220XB	22 16V	[M]
C901	F1D1H101A012	100P 50V	[M]
C902	F1D1H101A012	100P 50V	[M]
C1001	ECA1CAK470XB	47 16V	[M]
C1101	F1D1H101A012	100P 50V	[M]
C1102	F1D1C122A010	1200P 16V	[M]
C1103	F1D1H101A012	100P 50V	[M]
C1104	F1C1C393A013	0.039 16V	[M]
C1105	ECA1CAK100XB	10 16V	[M]
C1106	ECA1CAK101XB	100 16V	[M]
C1107	ECA1HAK010XB	1 50V	[M]
C1108	F1D1H821A012	820P 50V	[M]
C1109	ECA1CAK100XB	10 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C1110	F1D1H821A012	820P 50V	[M]
C1201	F1D1H101A012	100P 50V	[M]
C1202	F1D1C122A010	1200P 16V	[M]
C1203	F1D1H101A012	100P 50V	[M]
C1204	F1C1C393A013	0.039 16V	[M]
C1205	ECA1CAK100XB	10 16V	[M]
C1206	ECA1CAK101XB	100 16V	[M]
C1207	ECA1HAK010XB	1 50V	[M]
C1208	F1D1H821A012	820P 50V	[M]
C1209	ECA1CAK100XB	10 16V	[M]
C1210	F1D1H821A012	820P 50V	[M]
C1301	F1D1C103A004	0.01 16V	[M]
C1304	F0A2A102A010	1000P 100V	[M]
C1305	F0A2A151A010	150P 100V	[M]
C1306	ECA1CAK101XB	100 16V	[M]
C1307	F1D1C822A004	8200P 16V	[M]
C1308	F1D1C103A004	0.01 16V	[M]
C1325	ECA1CAK101XB	100 16V	[M]
C1451	ECA1CAK101XB	100 16V	[M]
C1500	ECA1CAK101XB	100 16V	[M]
C1501	ECA1CAK220XB	22 16V	[M]
C1502	ECA1CAK100XB	10 16V	[M]
C1503	F1C1C473A013	0.047 16V	[M]

23.5. Packaging Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPGV0165	PACKING CASE	[M]
P2	RPNX0111-3	POLYFOAM	[M]
P3	RPHX0018-1	MIRAMAT SHEET	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		ACCESSORIES	
A1	N2QAHB000048	REMOTE CONTROL	[M]
A1-1	RKK-HTR0283H	R/C BATTERY COVER	[M]
A2	K2CQ2CA00002	AC CORD	[M] 
A3	RQT7913-R	O/I BOOK (Ru/Ur)	[M]

23.6. Packaging

Accessory case

A3: O/I Book

