

# Service Manual

COMPACT  
disc  
DIGITAL AUDIO

MASH\*  
multi-stage noise shaping

CD Stereo System  
**SA-AK17**

Colour

(K) ... Black Type



Remote  
Control  
Transmitter

SB-AK17

SA-AK17

SB-AK17

Area

Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	

System	Music Center	Speaker
SC-AK17 (E)	SA-AK17 (E)	SB-AK17 (E)
SC-AK17 (EB)	SA-AK17 (EB)	SB-AK17 (E)
SC-AK17 (EG)	SA-AK17 (EG)	SB-AK17 (E)

\* MASH is a trademark of NTT.

**TAPE SECTION : AR2 MECHANISM SERIES**  
**CD SECTION : RAE0152Z-M TRAVERSE DECK SERIES**

## Specifications

### Amplifier Section

RMS power output	
THD 10%, both channels driven	
For	30W per channel (6Ω)
1 kHz continuous power output	
THD 1% both channels driven (DIN)	20W per channel (6Ω)
Input sensitivity and impedance	
AUX	250mV, 13.2KΩ

### Cassette Deck Section

Track system	4 track, 2 channel
Heads	
Record/playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase 100 kHz
Tape speed	4.8 cm/s
Frequency response (+3, -6 dB at DECK OUT)	
NORMAL (TYPE I)	35 Hz - 14 kHz
HIGH (TYPE II)	35 Hz - 14 kHz
S/N	50dB(A weighted)
Wow and flutter	0.18 % (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

### FM Tuner Section

Frequency range	87.50 - 108.00 MHz (50 kHz steps)
Sensitivity	
S/N 26dB	1.5 μV
Antenna terminal(s)	75 Ω (unbalanced)

### AM Tuner Section

Frequency range	522 - 1629 kHz (9kHz steps)
Sensitivity	
S/N 20 dB	560 μV/m

### CD Section

Sampling frequency	44.1 kHz
Decoding	16 bit linear
Beam source/wave length	Semiconductor laser / 780 nm
Number of channels	Stereo
Frequency response	20Hz - 20kHz (+1dB, -2dB)
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/A converter	MASH (1 bit DAC)

### General

Power consumption	120W
Power supply	
For E,EG area	AC 230V, 50Hz
For EB area	AC 230 - 240V, 50Hz
Dimensions (W x H x D)	270 x 331 x 316 mm
Weight	
For GN area	6.7 kg

### Notes :

- Specifications are subject to change without notice. Weight and dimensions are approximate.
- Total harmonic distortion is measured by the digital spectrum analyzer.

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**⚠ WARNING**

This service information is designed for experience 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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**■ Before Repair and Adjustment**

Disconnect AC power, discharge Power Supply Capacitors C506 ~ C508 through a 10Ω , 5W resistor to ground. DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices. After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

**For E, EG**

Current consumption at AC 230V, 50 Hz in NO SIGNAL mode should be ~350mA.

**For EB**

Current consumption at AC 240V, 50 Hz in NO SIGNAL mode should be ~350mA.

**■ Protection Circuitry**

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

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

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker 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.

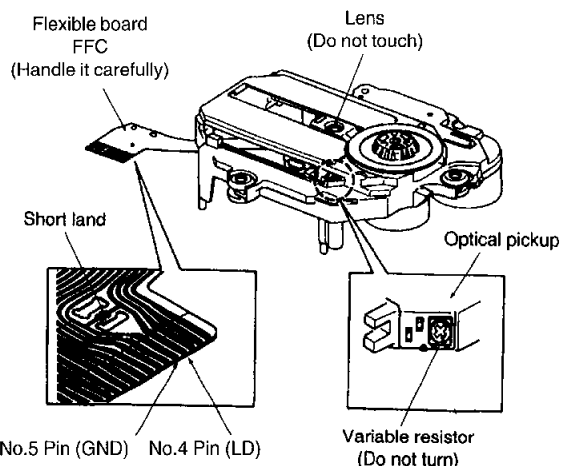
**■ Handling Precautions For Traverse Deck**

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).

**• Handling of 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. To connect to the PC board, be sure to open by removing the solder build-up, and finish the work quickly.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.



## • Grounding for electrostatic breakdown prevention

### 1. Human body grounding

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

### 2. Work table grounding

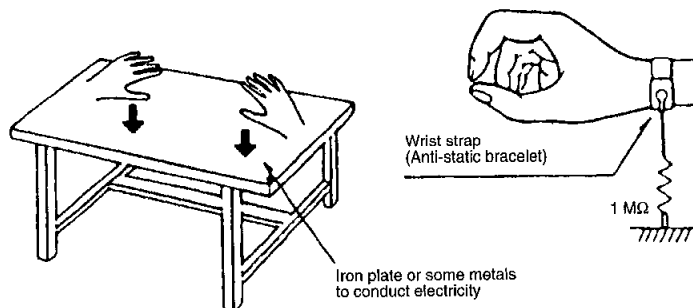
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

#### 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).

#### Caution when Replacing the Traverse Deck:

The traverse deck 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.



## ■ 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  $\mu$ 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 $\mu$ 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!

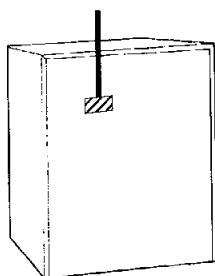
THIS PRODUCT UTILIZES A LASER.

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

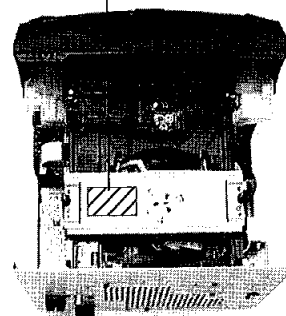
## ■ Use of Caution Labels



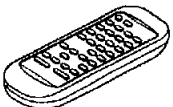
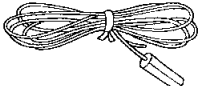
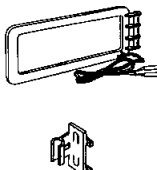
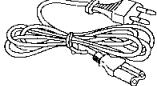
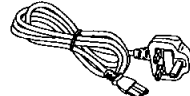
**LUOKAN 1 LASERLAITE  
KLASS 1 LASER APPARAT**



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVARSEL	USYNLIG LASERSTRÅLING VED ÅBNING. NÅR SIKKERHEDSÅBRYDERE ER UDE AF FUNKTION. UNDSÅ UDSÆTTELSE FOR STRÅLING.
VARO!	AVÄTTAESSA JA SUOJALUKUTUS OHITETTAESSA OLET ALTIINA NÄKYVÄTÖNTÄ LASERSÄTELYLLE. ÄLÄ KATSO SÄTEESSEEN.
VARNING	OSYNLIG LASERSTRÅLING NÅR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.
ADVARSEL	USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRITES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRÄHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.



## ■ Accessories

RAK-CH943WK 	RSA0007 	RSA0022 	RJA0043-1C 	RJA0044-1C 	<b>Blank</b>
--	--	--	--	---	--------------

## ■ Caution for AC Main Leads



(For "EB" area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

### CAUTION !

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

### IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral  
Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

**WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  $\perp$  OR COLOURED GREEN OR GREEN/YELLOW.**

**THIS PLUG IS NOT WATERPROOF—KEEP DRY.**

### Before use

Remove the connector cover.

### How to replace the fuse

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

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

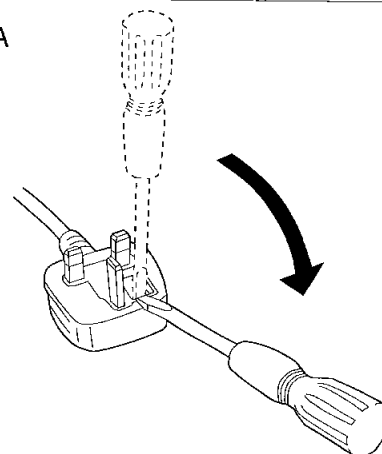
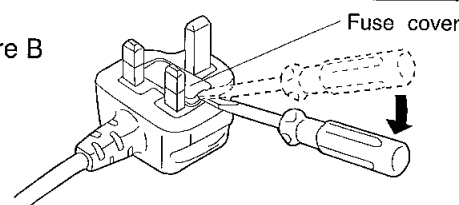


Figure B



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

Figure A

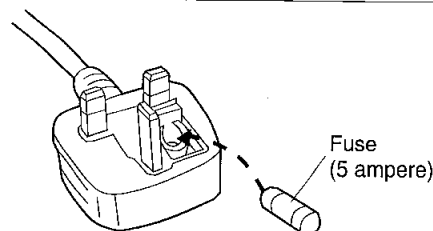
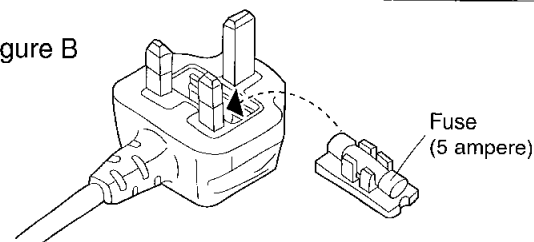
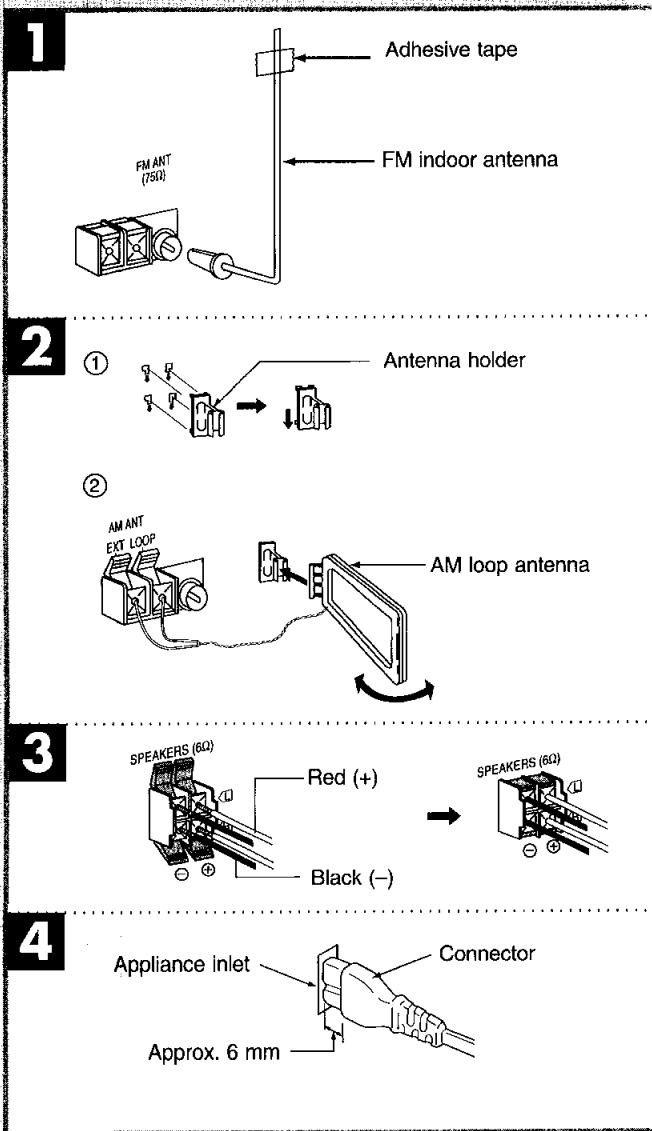
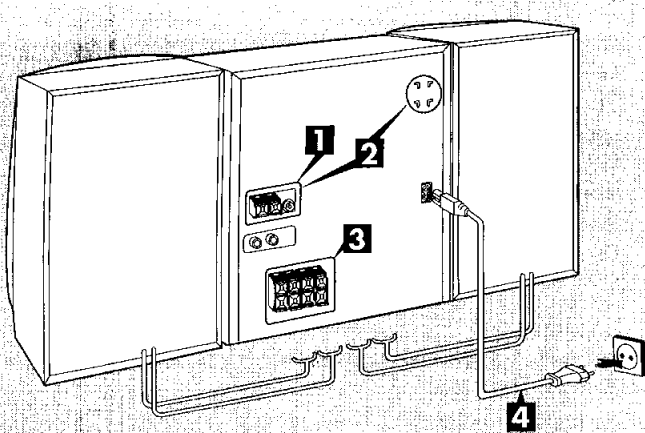


Figure B



## Connections



### Basic connections (for supplied accessories)

- Plug the AC power cord into a household AC outlet only after all other connections have been made.
- To prepare the AM loop antenna wire and speaker cords, twist the vinyl cover tip and pull off.

#### 1 Connect the FM indoor antenna.

Tape the antenna to a wall or column, in a position where radio signals are received with the least amount of interference.

#### Note

**For best reception sound quality:**  
An FM outdoor antenna is recommended.

#### 2 Connect the AM loop antenna.

After attaching the antenna, turn on the system and tune in a broadcast station. Then, turn the antenna to the angle of best reception and least interference.

#### 3 Connect the front speaker cables.

Connect each end of the speaker cables to the terminal lever of the same colour.

#### Caution

- **Use only the supplied front speakers.**  
The combination of the main unit and front speakers provide the best sound. Using other front speakers can damage the unit and sound quality will be negatively affected.
- To prevent damage to circuitry, never short-circuit positive (+) and negative (-) speaker wires.

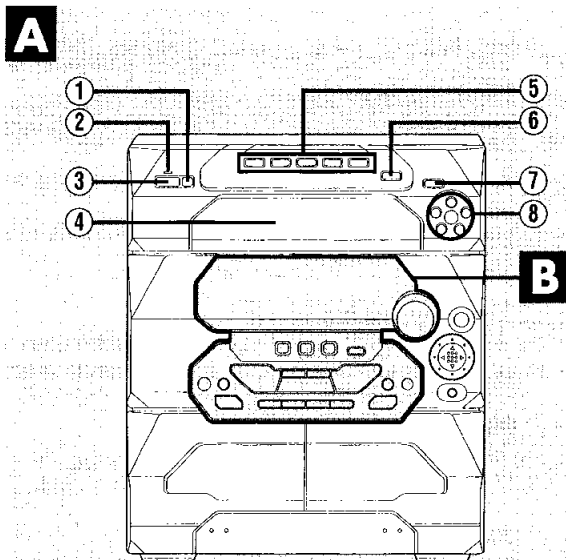
#### 4 Connect the AC power cord.

##### Insertion of connector

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.

However there is no problem using the unit.

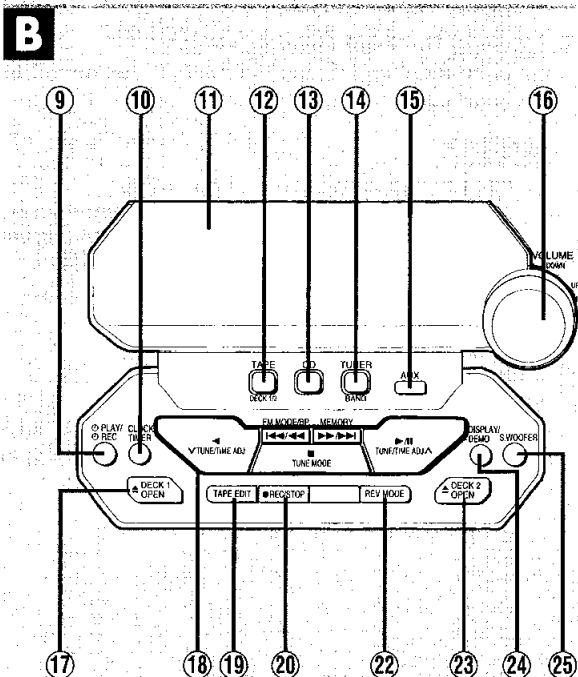
## ■ Location of Controls



### Main unit **A**

No.	Name
-----	------

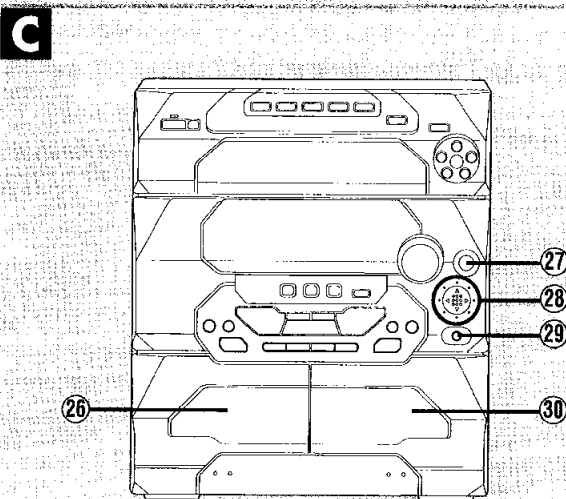
- |   |  |
|---|--|
| ① | ECO button (ECO)   |
| ② | AC supply indicator (AC IN)<br>This indicator lights when the unit is connected to the AC mains supply.  |
| ③ | Standby/on switch (⏻/⏻)<br>Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power. |
| ④ | Disc tray  |
| ⑤ | Disc select buttons and indicators (DISC 1 – DISC 5)   |
| ⑥ | CD manager button (CD MANAGER)   |
| ⑦ | Random play button (RANDOM)  |
| ⑧ | Direct disc tray open/close buttons (▲ OPEN/CLOSE 1 – ▲ OPEN/CLOSE 5)  |



### Center console **B**

No.	Name
-----	------

- |   |  |
|---|--|
| ⑨ | Play timer/record timer button and indicator (⏻/⏻)                   |
| ⑩ | Clock/timer button (CLOCK/TIMER)                                     |
| ⑪ | Display  |
| ⑫ | Tape/deck select button (TAPE, DECK 1/2)                             |
| ⑬ | CD button (CD)   |
| ⑭ | Tuner/band select button (TUNER, BAND)                               |
| ⑮ | AUX button (AUX)   |
| ⑯ | Volume control (VOLUME)  |
| ⑰ | Deck 1 open button (▲ DECK 1 OPEN)                                   |
| ⑱ | Basic operating buttons<br>Functions change according to the source. |
| ⑲ | Tape edit button (TAPE EDIT)   |
| ⑳ | Recording start/stop button (● REC/STOP)                             |
| ㉒ | Reverse mode select button (REV MODE)                                |
| ㉓ | Deck 2 open button (▲ DECK 2 OPEN)                                   |
| ㉔ | Display select/demonstration button (-DISPLAY/-DEMO)                 |
| ㉕ | V.BASS button (V.BASS)   |

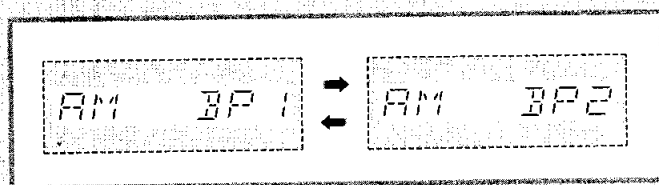
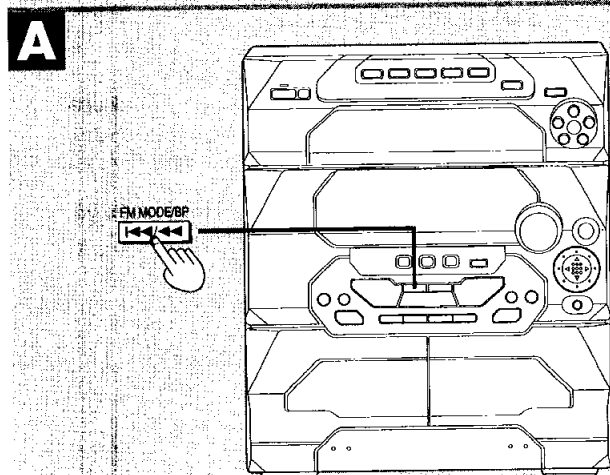
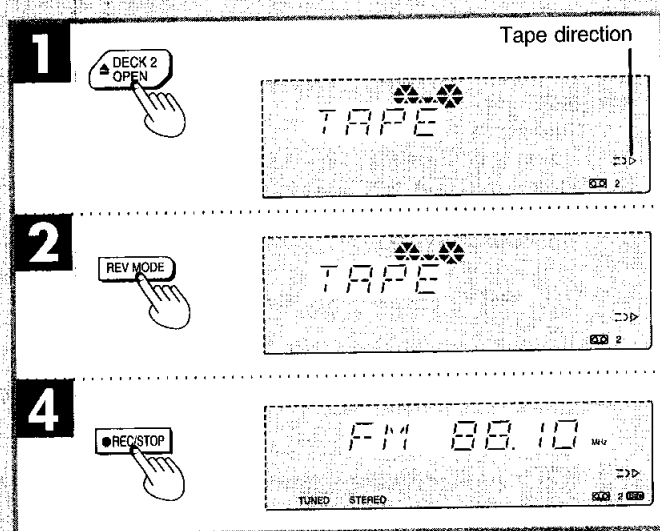
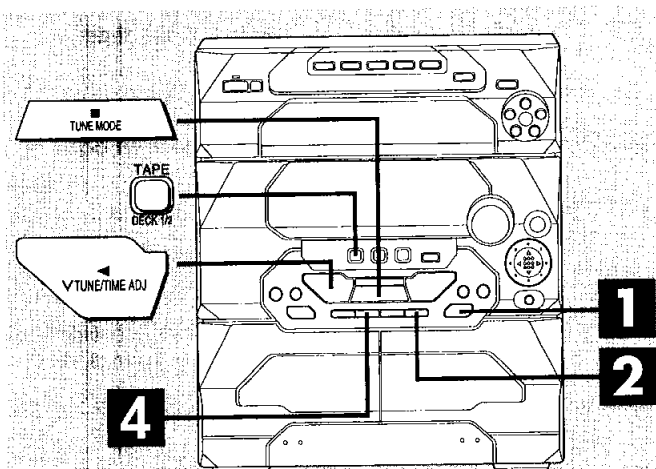


### Main unit **C**

No.	Name
-----	------

- |   |   |
|---|---|
| ⑳ | Deck 1 cassette holder                        |
| ㉗ | 3D AI EQ button (3D AI EQ)                    |
| ㉘ | Sound equalizer control/indicators (SOUND EQ) |
| ㉙ | Headphone jack (PHONES)                       |
| ㉚ | Deck 2 cassette holder                        |

## Recording From Radio Broadcasts

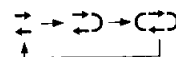


### 1 Press [▲ DECK 2 OPEN] and insert the tape.

Close the holder by hand.  
Tape direction is automatically set to "▷".

### 2 Press [REV MODE] to select the reverse mode.

Every time you press the button:



▷ : One side is recorded, then recording stops automatically.

▷, ◁ : Both sides (front side → reverse side) are recorded, then recording stops automatically.

### 3 Select a radio station.

### 4 Press [● REC/STOP] to start recording.

If you selected "◁" in step 2, the direction will automatically change to "▷" when recording starts.

#### To stop recording

Press [● REC/STOP] again.  
Recording can also be stopped by pressing [■].

#### To start recording on the reverse side

Load a tape and change the tape direction as follows:

1. Press [TAPE DECK 1/2] and select tape deck 2.
2. Press [◀] and immediately thereafter [■]. The tape direction will be shown as "◁".

#### To record from a specific point on a tape

Before recording, advance the tape to the point from where you want to start recording.

#### To cut an unnecessary part while recording

1. Press [● REC/STOP] during the unnecessary part. The cassette deck will go into the stop mode.
2. Press [● REC/STOP] to resume recording again. Recording will continue in the same direction as before.

#### Note

When recording an AM broadcast, sound is momentarily interrupted when you start and stop the recording.

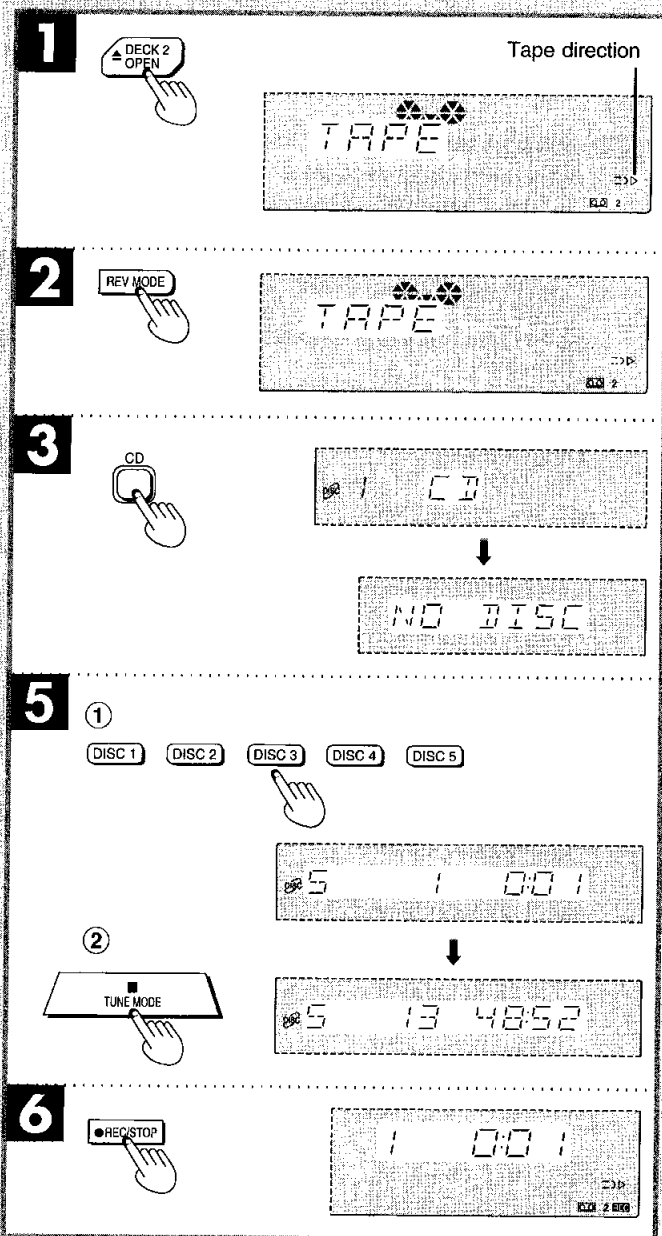
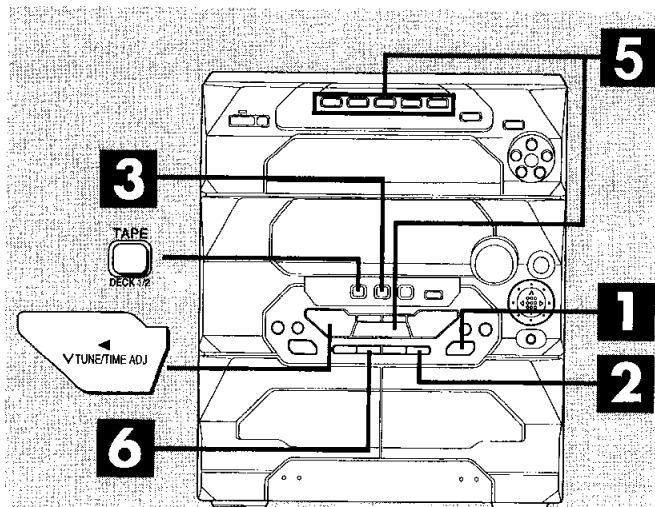
#### To reduce noise while AM recording (Beat proof function) A

Press [FM MODE/BP] while recording.

Each time you press the button, "BP1" and "BP2" will be displayed alternately.

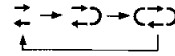
Select the position where there is less noise.

## ■ Recording From Compact Discs



**1** Press [**DECK 2 OPEN**], and insert the tape.  
Close the holder by hand.  
Tape direction is automatically set to "▷".

**2** Press [**REV MODE**] to select the reverse mode.  
Every time you press the button:



▷ : One side is recorded, then recording stops automatically.

▷, ◁ : Both sides (front side → reverse side) are recorded, then recording stops automatically.

**3** Press [**CD**].

**4** Insert CD in the tray.

**5** Press [**DISC 1**] – [**DISC 5**] to select the disc you want.  
Pressing [**■**] will stop playback.

**6** Press [**● REC/STOP**] to start recording.

- If you selected "◁▷" in step **2**, the direction will automatically change to "▷" when recording starts.
- The recording will proceed from the first track on the selected CD and will continue on through the last track of the final disc (page 26).
- The tape deck stops automatically when the CD is finished.

### To stop recording

- To add a 4 second silent interval before stopping Press [**■**]. The CD will stop automatically too.
- To stop recording without a silent interval Press [**● REC/STOP**]. The CD will stop automatically too.

### To start recording on the reverse side

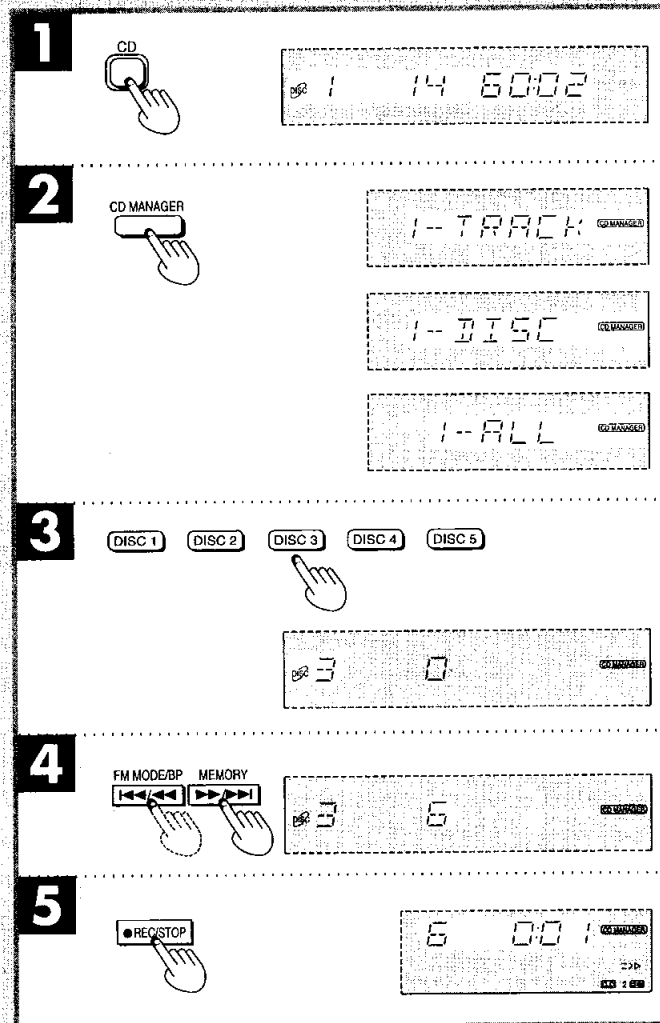
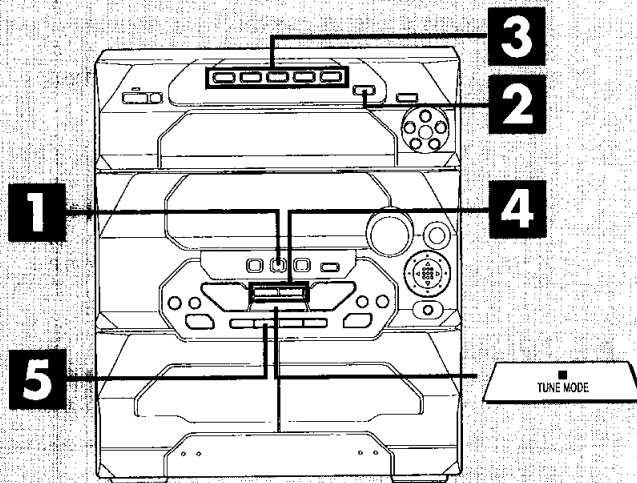
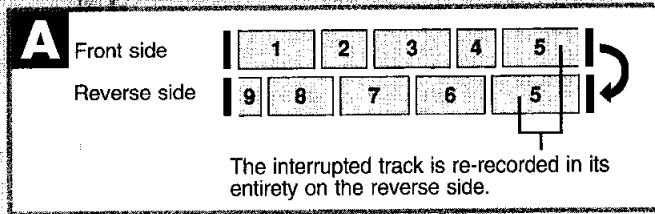
Load a tape and change the tape direction as follows:

1. Press [**TAPE DECK 1/2**] and select tape deck 2.
2. Press [**◁**] and immediately thereafter [**■**]. The tape direction will be shown as "◁".

### To record from a specific point on a tape

Before recording, advance the tape to the point from where you want to start recording.





## To record special CDs and tracks (CD Manager function)

This function makes it easier for you to select special CDs and tracks from amongst those loaded in the player.

- While recording, if a track is cut off in the middle at the end of the front side, it is re-recorded from the beginning, on the reverse side. **A**
- At the end of the reverse side recording stops and the current track will be interrupted.

### Before recording

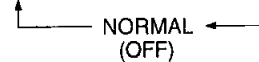
Prepare the tape you want to use.

#### 1 Press [CD].

#### 2 Press [CD MANAGER] to select the desired mode.

Every time you press the button:

1-TRACK → 1-DISC → 1-ALL



1-TRACK : Only one particular track is recorded.

1-DISC : The tracks on only one particular disc are recorded.

1-ALL : The same track numbers on each of the CDs are recorded in succession.

(NORMAL : The original display is restored in about 3 seconds.)

#### 3 Press [DISC 1] – [DISC 5] to select the disc you want.

##### Note

This step is not required if 1-ALL was selected in step 2.

#### 4 Press [◀◀/▶▶] or [▶▶/▶▶] to select the desired track.

##### Note

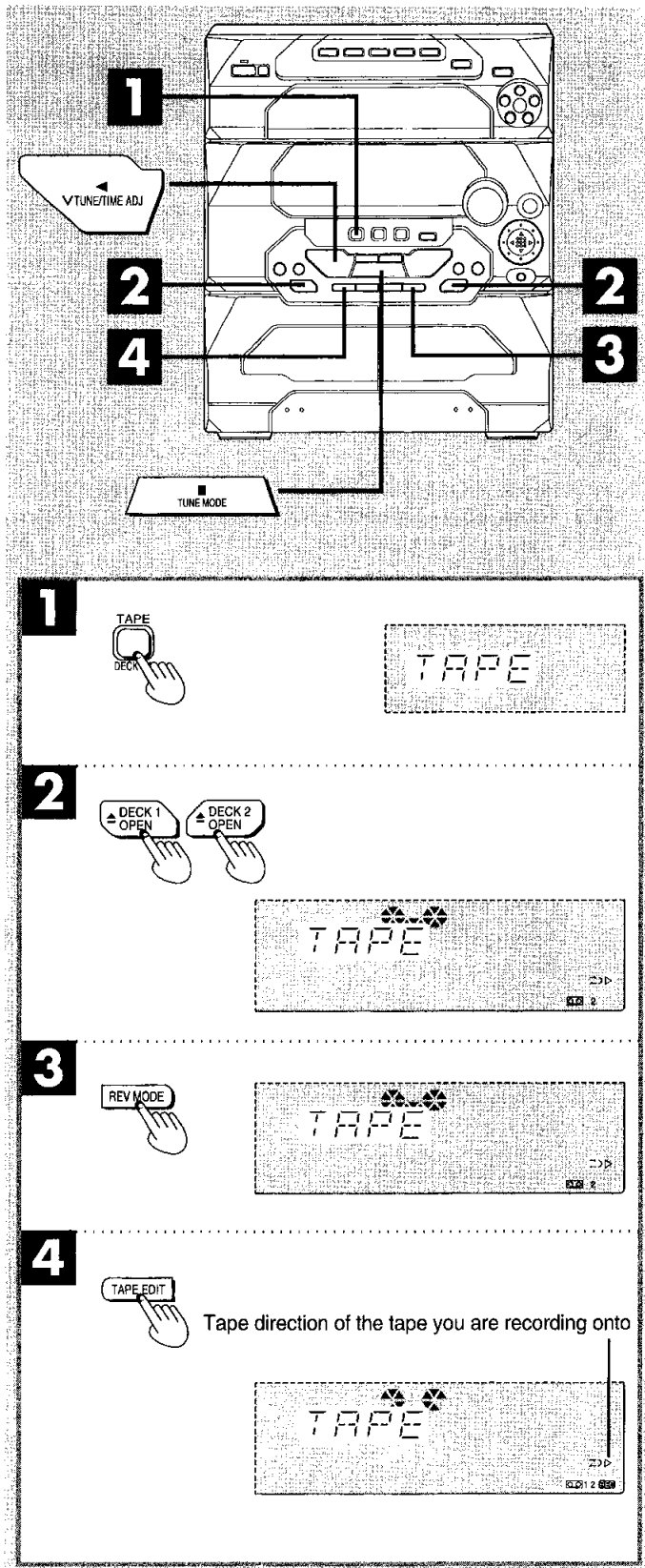
This step is not required if 1-DISC was selected in step 2.

#### 5 Press [● REC/STOP] to start recording.

### To stop recording

- To add a 4 second silent interval before stopping Press [■]. The CD will automatically stop too.
- To stop recording without a silent interval Press [● REC/STOP]. The CD will stop automatically too.

## ■ Tape-to-Tape Recording



The recording level and the Dolby effect will be recorded as they are on the tape being played back.

**1** Press [TAPE].

**2** Press [ $\triangle$  OPEN] on both decks and insert the tapes.

For playback : Into deck 1

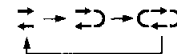
For recording : Into deck 2

Close the holders by hand.

Tape direction is automatically set to "▷".

**3** Press [REV MODE] to select the reverse mode.

Every time you press the button:



▷ : One side is recorded, then recording stops automatically.

↔, ↔▷ : Both sides (front side → reverse side) are recorded, then recording stops automatically.

**4** Press [TAPE EDIT] to start recording.

- If you selected "↔▷" in step 3, the direction will automatically change to "↔" when recording starts.

### To stop recording:

Press [■].

Both decks will stop.

### To start recording on the reverse side

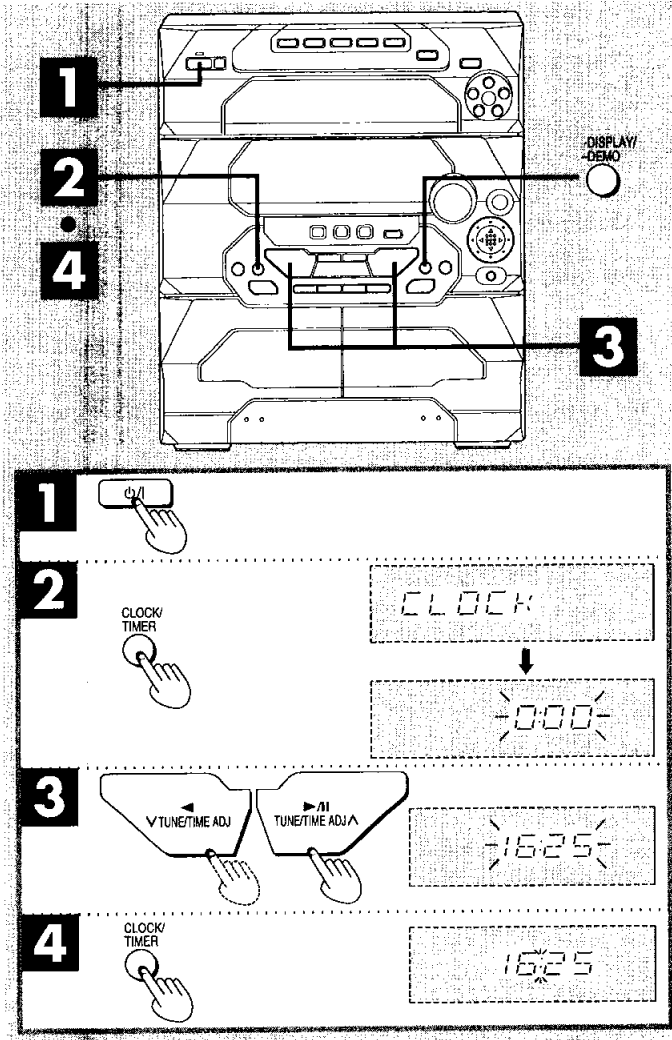
Load a tape and change the tape direction as follows:

1. Press [TAPE DECK 1/2] and select tape deck 2.
2. Press [◀] and immediately thereafter [■]. The tape direction will be shown as "◁".

### To record from a specific point on a tape

Before recording, advance the tape to the point from where you want to start recording.

## Setting The Time



This is a 24-hour display clock.

This example in the figure shows how to set the time for 16:25 (4:25 p.m.).

**1** Press [⏻/⏻] to switch on the system.

**2** Press [CLOCK/TIMER] to select "CLOCK".  
Every time you press the button:

CLOCK → ⏻PLAY → ⏻REC  
↑ Previous display ↓

**3** (within 7 seconds or so)  
Press [V] or [^] to show the present time.

**4** Press [CLOCK/TIMER] to finish setting the time.  
The display will return to whatever was displayed before you set the time.

To display the time when system is ON  
Press [CLOCK/TIMER] to select "CLOCK".

At ECO mode on, to display the time when system is OFF  
Press [-DISPLAY/-DEMO].

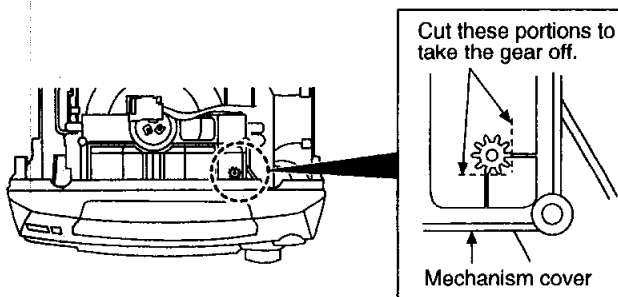
The time will be displayed for about 5 seconds and then the display will return to whatever was previously displayed.

## Operation Checks and Main Component Replacement Procedures

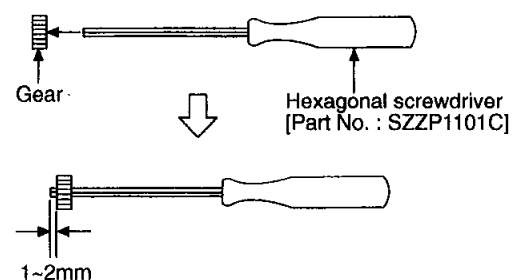
### Gear for servicing (jig) information

- This unit has a gear which is used for checking items (Open/close of disc tray, up/down operation of traverse unit by manually) when servicing.
- For preparation of gear (for servicing), Perform the procedures as follows.
- In case of re-servicing the same set, the "gear for servicing" may have been taken off because it has been used.  
The "gear for servicing" must be stored.

- Remove the gear provided with mechanism cover as shown below.



- Insert the hexagonal screwdriver (2mm) into the gear, and then project the tip of screwdriver for 1~2mm in length.



**"ATTENTION SERVICER"** Some chassis components may have sharp edges. Be careful when disassembling 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.
4. Refer the Parts No. on the page of "Main Component Replacement Procedures", if necessary.

• **Contents**

	page
• <b>Checking Procedure for each major P.C.B.</b>	
1. Checking of the Main, Tuner, Panel, Deck and Power P.C.B. ....	12 & 13
• <b>Main Component Replacement Procedures</b>	
1. Replacement of the Traverse Deck .....	14
2. Replacement of the Power Amplifier IC and Regulator Transistors .....	15
• <b>Disassembly and assembly of the Traverse Unit</b> .....	16 & 17
• <b>Disassembly and assembly of the Disc Tray</b> .....	17 & 18

**Warning** : This product uses a laser diode. Refer to caution statement on page 3.

**ACHTUNG** : • Die Lasereinheit nicht zerlegen.

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

■ **Checking Procedure for each major P.C.B.**

**1. Checking of the Main, Tuner, Panel, Deck and Power P.C.B.**

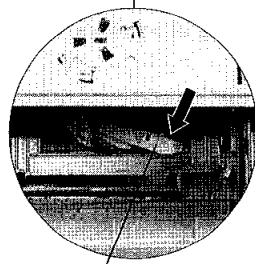
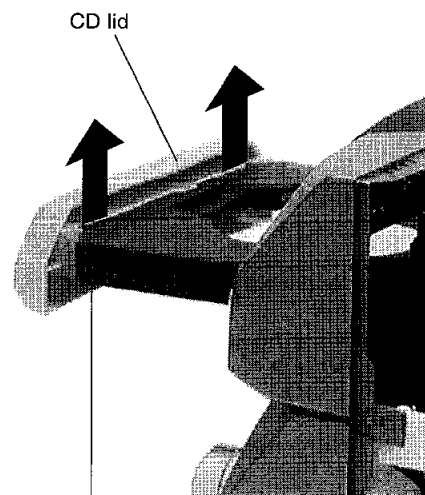
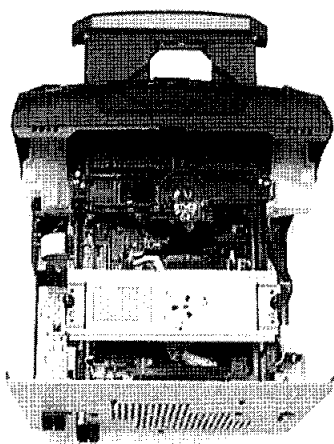
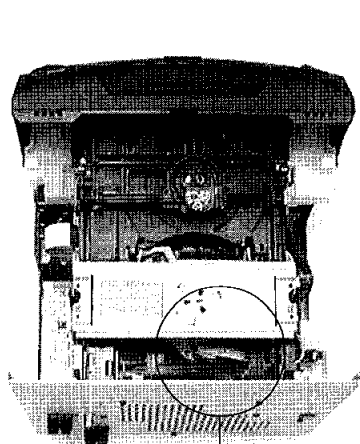
**Step 1** Remove the Top Cabinet.

**Step 2** Push the lever in the direction of arrow.

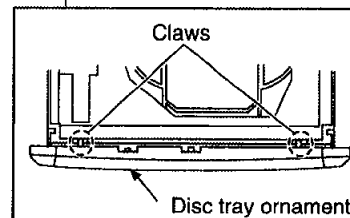
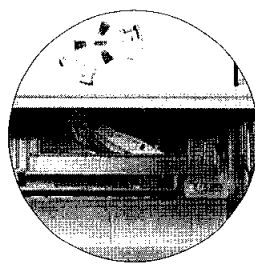
**Step 3** Pull out the CD tray as shown and remove the CD lid. Push back the CD tray after the CD lid has been removed.



**a**  
[XTBS3+8JFZ1]  
(Black)



Lever



(Bottom view)

**Step 4**

**a** X 10

**a**

**a**

**a**

**a**

CP603

**Step 6**

Release 2 catches and remove the CD changer base together with the CD changer.

Catch

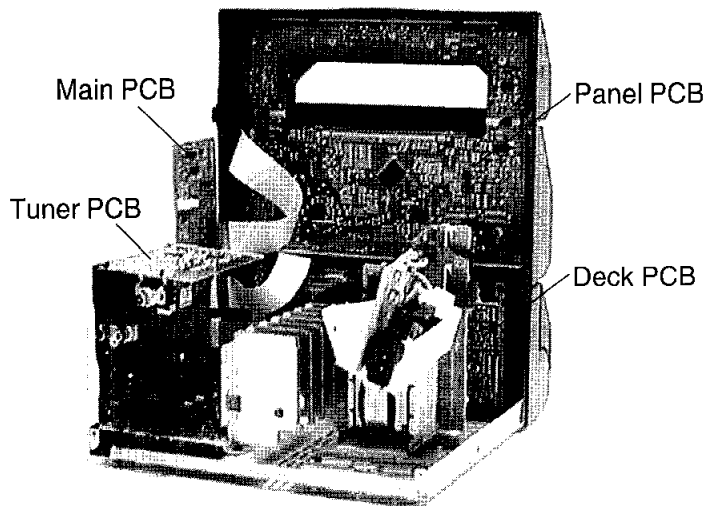
Catch

CN309

**Step 5**

Remove the wire at CP603 and CN309.

●Checking for Panel PCB, Main PCB and Deck PCB



**Step 7**

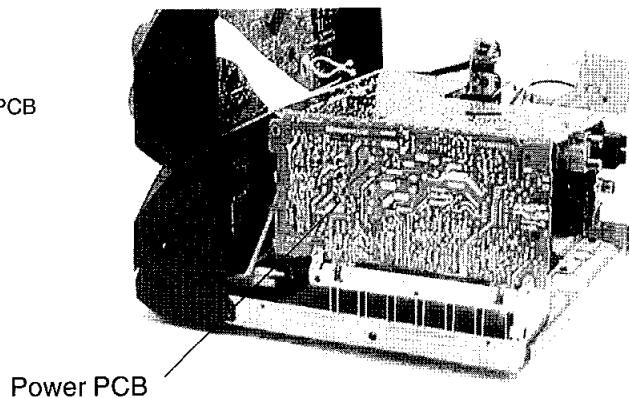
**b** X 2

**Step 8**

**a** X 2

Heat Sink

●Checking for Power PCB



**b**  
[XTB3+20J]  
(Brass)

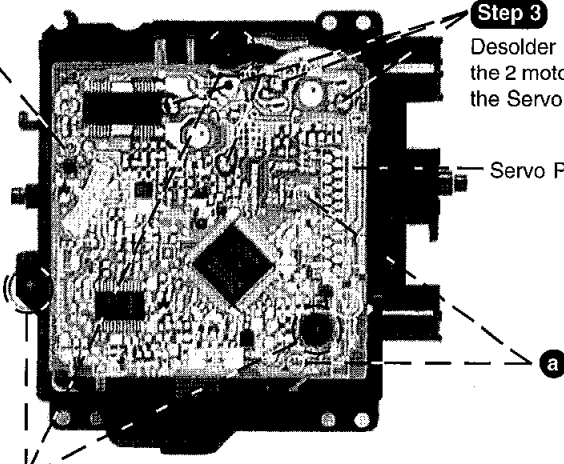
## ■ Main Component Replacement Procedures

### 1. Replacement of the Traverse Deck

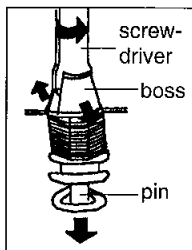
**Step 1** Follow the procedures in 'Disassembly of the Traverse Unit' ( **Step 1** ~ **Step 4** ).

**Step 2**

a X 3



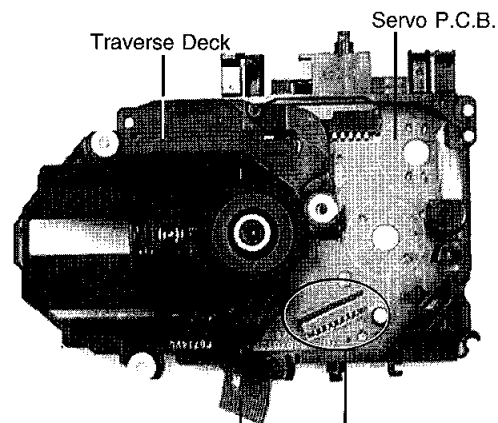
**Step 4** Widen the 3 bosses with a flat screwdriver and pull out the 3 pins. Then remove the Traverse Deck.



**Step 3**

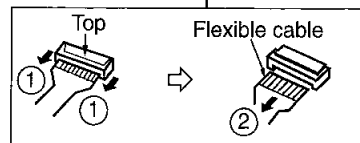
Desolder the 4 legs of the 2 motors and pull out the Servo P.C.B.

Servo P.C.B.

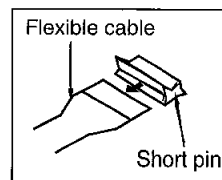


**Step 5** Remove the flexible cable CN701.

- Removal of the flexible cable  
Push the top of the connector in the direction of the arrow ①, and then pull out the flexible cable in the direction of the arrow ②.



Note :  
Insert a short pin into the flexible cable for traverse unit.



- Installation to the CD servo P.C.B. after replacement

**Step 3**

a X 3

**Step 2**

Install the CD servo P.C.B. in the traverse deck assembly

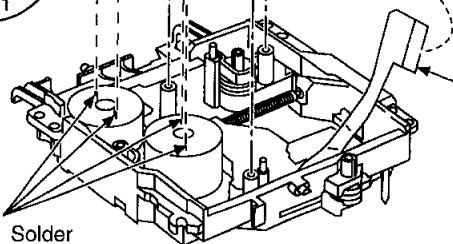
**Step 1**

Connect the FFC board

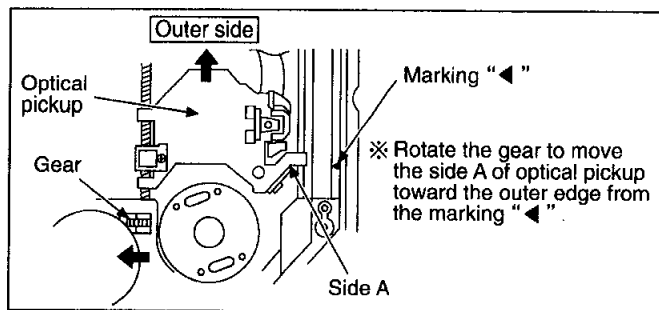
Reset detect switch

S701

**Step 4** Solder



Note : Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀".  
[Otherwise, the reset detect switch (S701) mounted on the CD servo P.B.C. may be damaged.]



a

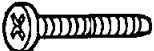


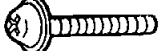
[XTN2+6G] (Brass)


## 2. Replacement of the Power Amplifier IC and Regulator Transistor.

**Step 1** Follow the procedures in 'Checking Procedure for each major P.C.B.' ( **Step 1** ~ **Step 6** ).

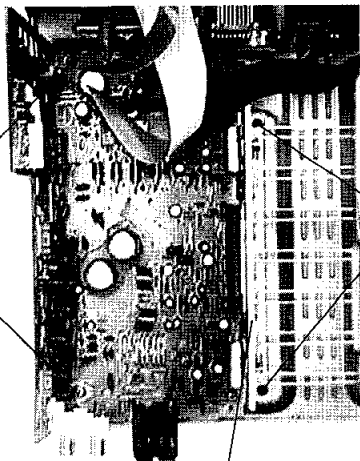
**a**  [XTBS3+8JFZ1] (Black)

**b**  [XTB3+20J] (Brass)

**c**  [XTW3+15T] (Brass)

**d**  [XTB3+10JFZ] (Black)

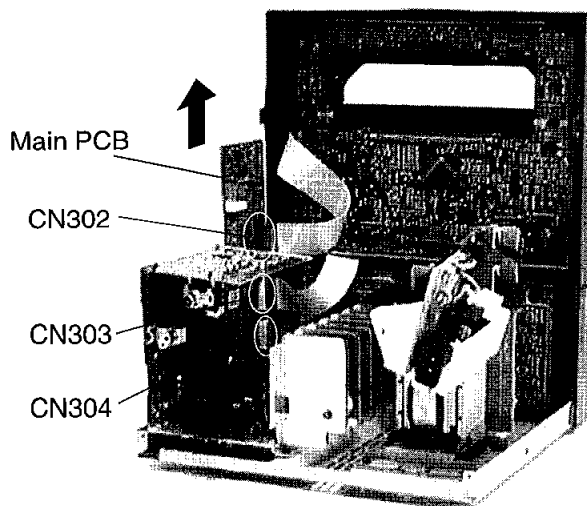
**Step 2**  
**b** X 2



Heat Sink

**Step 3**  
**a** X 2

**Step 4** Remove the wires at CN302, CN303 and CN304 and pull out the Main PCB.

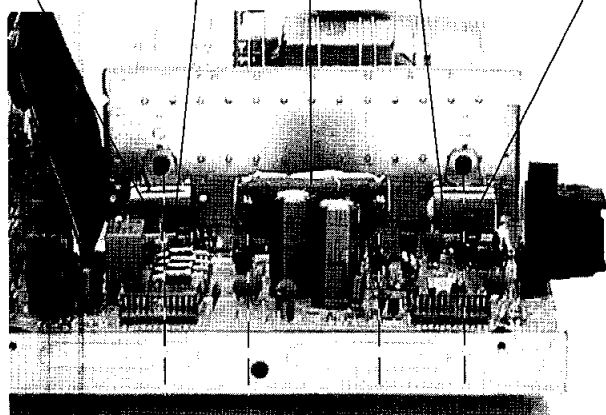


**Step 5** Remove 4 screws fixed to the Power Amplifier IC and Transistor Holders.

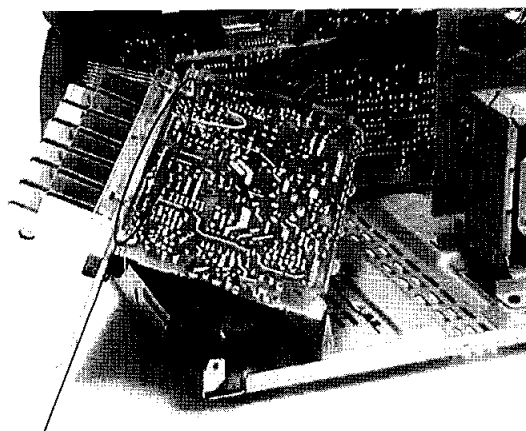
Regulator Transistors  
Q504(2SB1566E),  
Q514(2SD2395E)

Power Amp IC  
IC501  
(RSN35H1)

Regulator Transistors  
Q502(2SB1566E),  
Q501(2SD2395E)

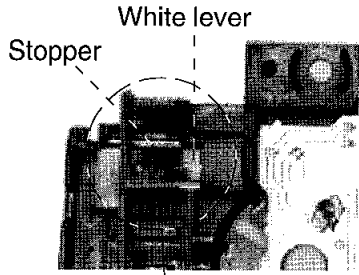


**d** **c** **c** **d**

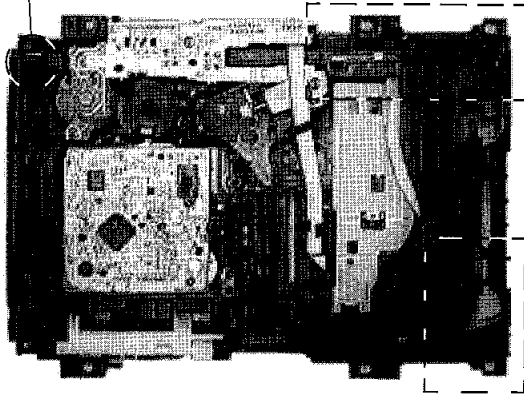


**Step 6** Unsolder the terminals of Power Amp IC or Regulator Transistor and replace the respective component.

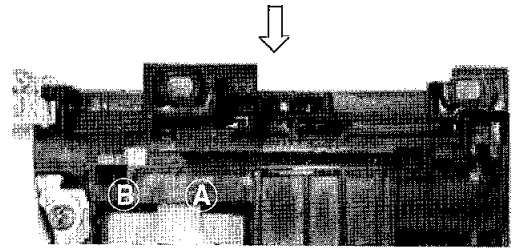
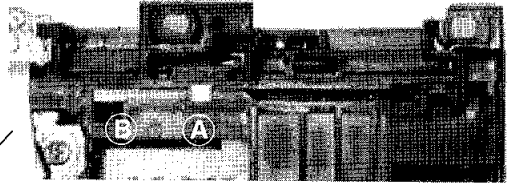
## ■ Disassembly and assembly of the Traverse Unit



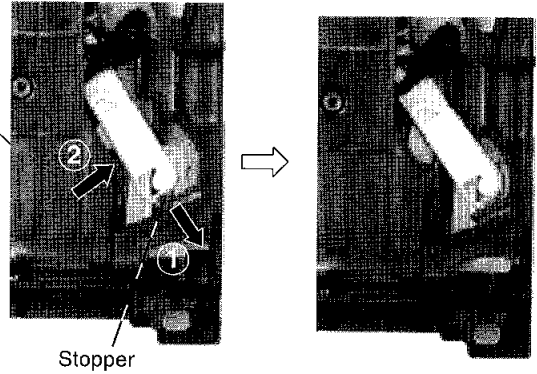
**Step 3** Push the stopper (black) down until the white lever eject out.



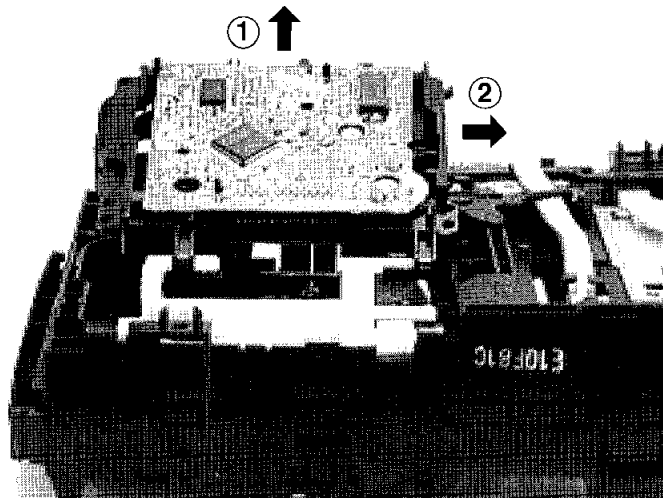
**Step 1** Push the lever from position (A) to (B).



**Step 2** Pull the stopper (black) in the direction of arrow ① and push the lever in the direction of arrow ②.



**Step 4** Lift up the traverse unit and slide out the unit as shown.



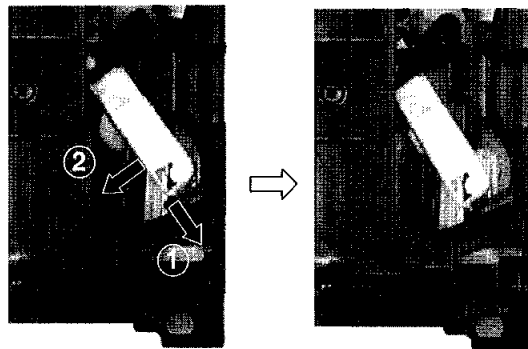
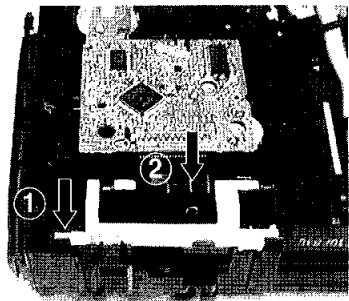


●Replacement of Traverse Unit

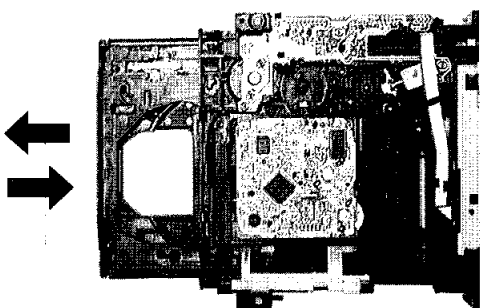
**Step 1** Place the traverse unit as shown.

**Step 2** Press in the lever shaft in the direction of arrow ① as shown and push the traverse unit into position in the direction of arrow ②.

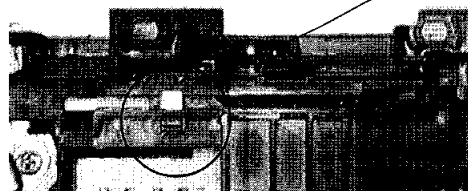
**Step 3** Pull the stopper in the direction of arrow ① and release the lever in the direction of arrow ② as shown.



**Step 4** Pull out the tray half way and push it back fully.



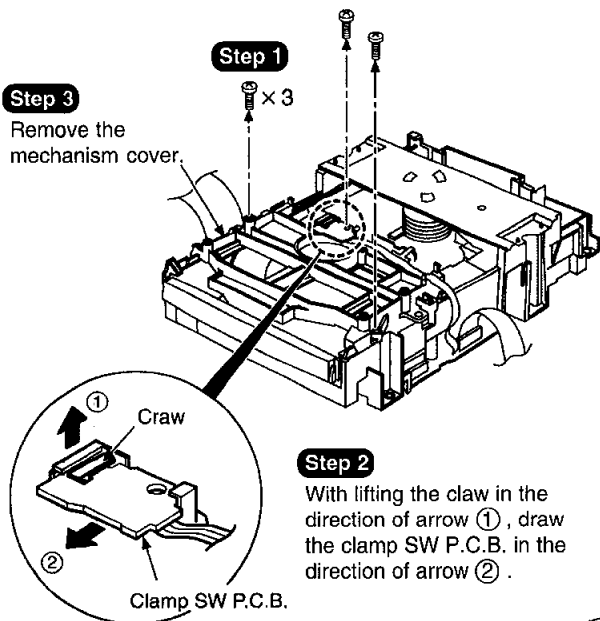
**Step 5** Push the lever to the initial position indicated 'H'.



■ Disassembly and assembly of the Disc Tray

**Step 3**

Remove the mechanism cover.

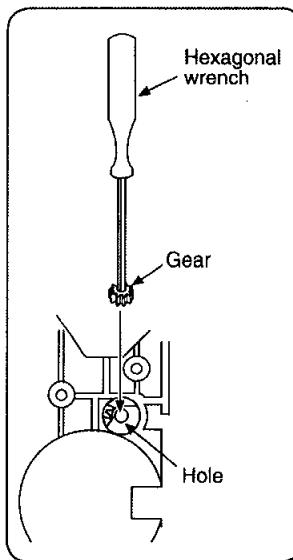
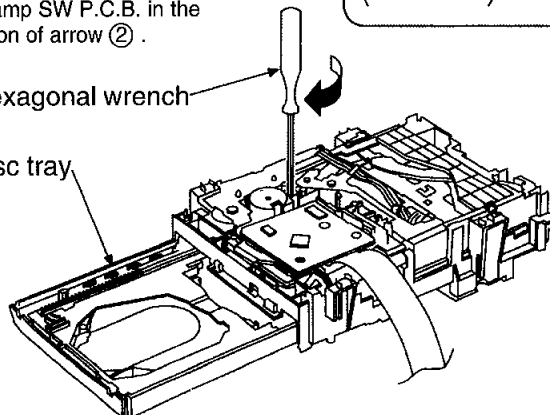


**Step 2**

With lifting the claw in the direction of arrow ①, draw the clamp SW P.C.B. in the direction of arrow ②.

Hexagonal wrench

Disc tray

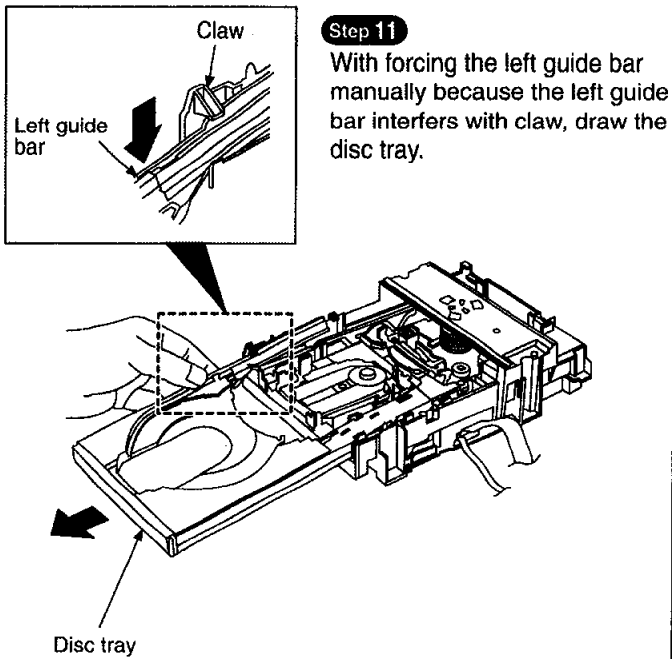
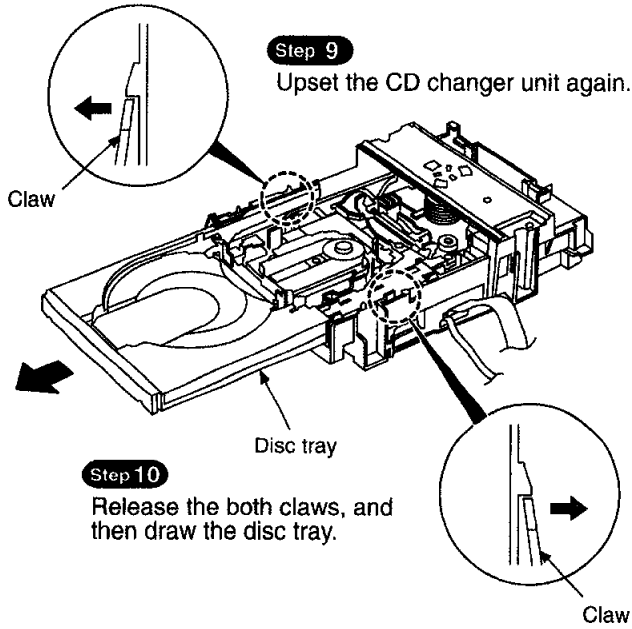


**Step 4**

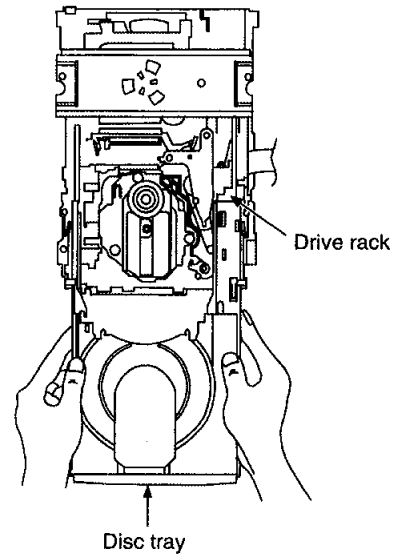
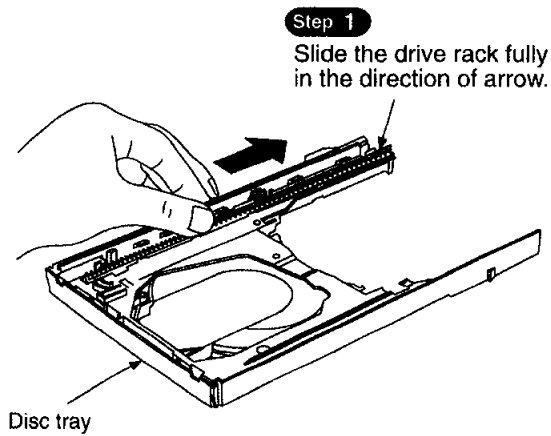
Insert the gear with hexagonal wrench into the hole.

**Step 5**

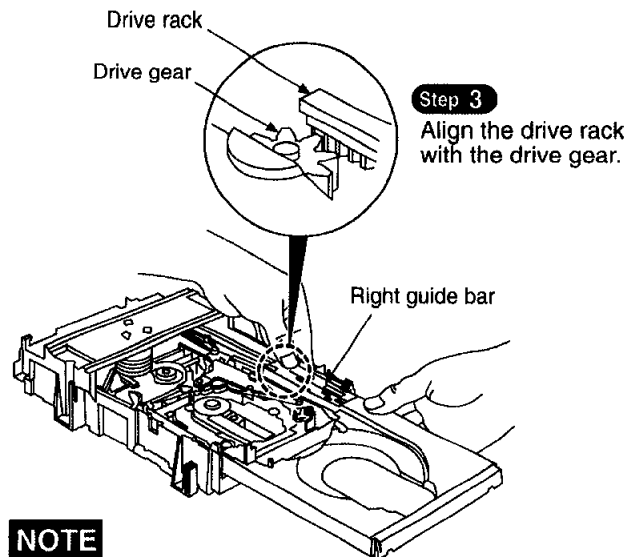
Rotate the hexagonal wrench in the direction of arrow (clockwise), and then open the disc tray fully.



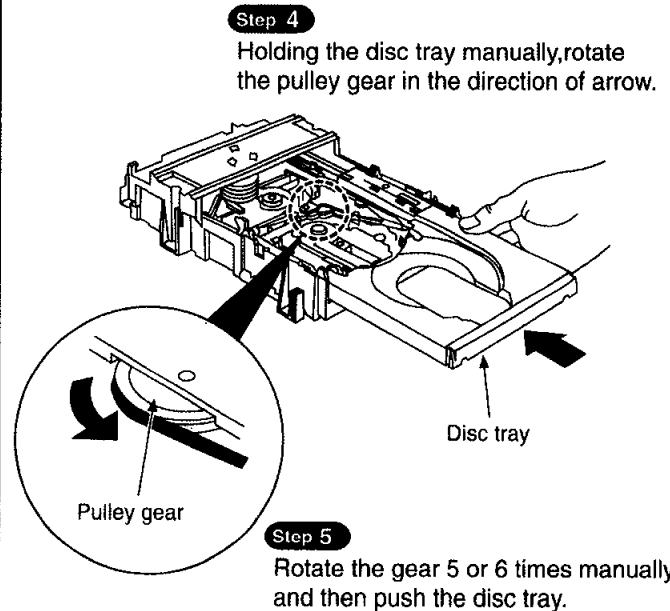
**Installation of the disc tray after replacement**



**Step 2**  
Holding the drive rack not to move, install the disc tray



**NOTE**  
Force the right guide bar of tray base manually not to move upwards.



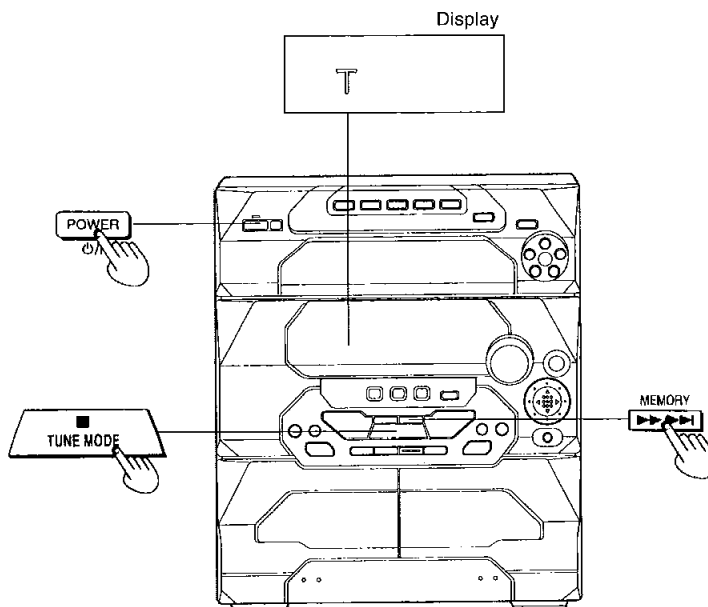
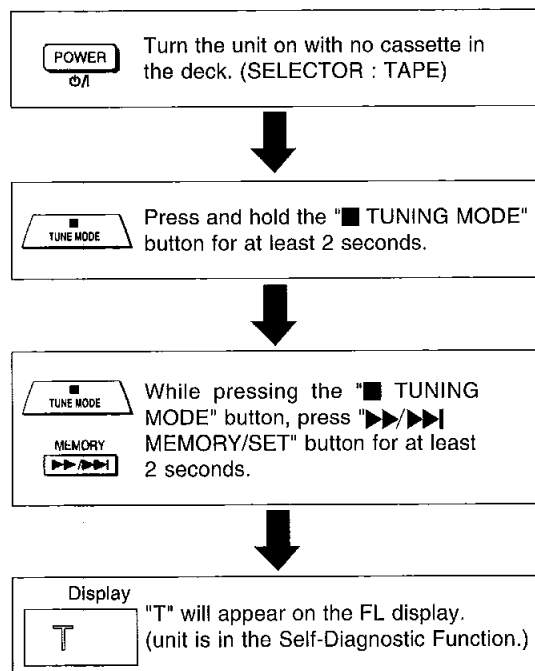
## ■ Self-Diagnostic Display Function

### ■ Self-diagnostic display

This unit is equipped with a self-diagnostic display function which, if a problem occurs, will display an error code corresponding to the problem.

Use this function when performing maintenance on the unit.

### ■ How to enter the Self-Diagnostic Function



### ■ Cassette Mechanism Test (For error code H01, H02, H03, F01, F02)

1. Press "TAPE, DECK 1/2" to select Deck 2.
2. Load a cassette tape with the erasure prevention tab, remove from left side only and close the cassette holder.
3. Press "▶▶▶▶ MEMORY" (Tape will be stop after 2 seconds).
4. Load a cassette tape with the erasure prevention tab, remove from right side only and close the cassette holder.
5. Press "◀◀◀◀ FM MODE/BP" (Tape will be stop after 2 seconds).
6. Load a pre-recorded tape with both side record tabs intact and close the cassette holder.
7. Press "▶ TUNE/TIME ADJ ^" (After TPS function, tape will stop automatically).
8. Press "•REC/STOP" (Tape will not move).
9. Press "■ TUNING MODE" to indicate Error code.
  - If several problem exist, error code will change each time when "■ TUNING MODE" is pressed. (e.g. H01 H03 F01 ..... etc.)
10. Press "TAPE, DECK 1/2" to select Deck 1.
11. Repeat step 2 to 9 to test Deck 1. (Tape Deck 1 will not check H02 because of no recording function)

### ■ CD Mechanism Test (F15, F16, F25 ~ F28, F75)

1. Press "CD".
2. Press "NEXT OPEN".
3. Press "■ TUNING MODE" to indicate Error Code.
  - If several problem exist, error code will change each time when "■ TUNING MODE" is pressed. (e.g. F15 F16 F25 ..... etc.)

### ■ To clear all Error code

1. Press "■ TUNING MODE" button for 5 seconds.
2. FL indicator shows "CLEAR" for 1 second and change to "T".

### ■ How to get out from Self-Diagnostic function

1. Press "POWER" button OFF.

### ■ Power Amplifier Failure (F61)

1. When power amplifier fail, F61 will indicate automatically.

## ■ Description of Error Code

### (1) Error detection for Cassette Mechanism block

No.	Error	Error Display	Problem condition
1	MODE SW detection error	H01	Faulty operation of cassette mechanism. Faulty contact or short-circuit of mechanism mode switch (S951, S971).
2	REC INH SW detection error	H02	Recording not possible. Faulty contact or short-circuit of REC INH switch (S974, S975).
3	HALF SW detection error	H03	Playback can not perform. Faulty contact or short-circuit of HALF switch (S952, S972).
4	Reel Pulse detection error	F01	The tape advances slightly and then stops. Faulty reel pulse, faulty hole detect IC (IC951, IC971).
5	TPS abnormal	F02	Cassette deck will not perform TPS function. Faulty playback EQ/recording amplifier IC (IC101).

### (2) Error detection for CD/Changer block

No.	Error	Error Display	Problem condition
1	REST SW detection error	F15	CD does not function. This error occurs when the Optical Pick Up REST SW (S701) is not detected within the specified time (about 8 seconds)
2	Transmission error between CD servo LSI and micon	F26	CD does not function. This error occurs when the POWER is ON for the CD block and an error is detected after the transmission has started.
3	CD power error	F75	CD does not function. Check if CDRST is H for SELECTOR at CD. If it is not H after 1 second, it shall be memorised as an error. (IC702)

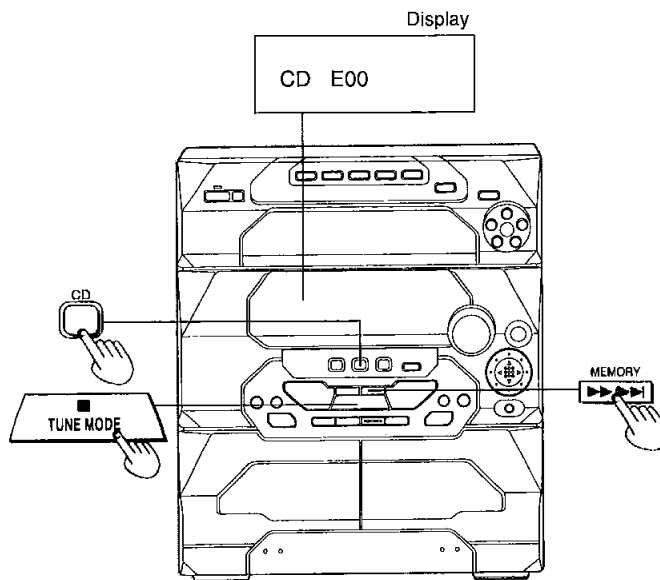
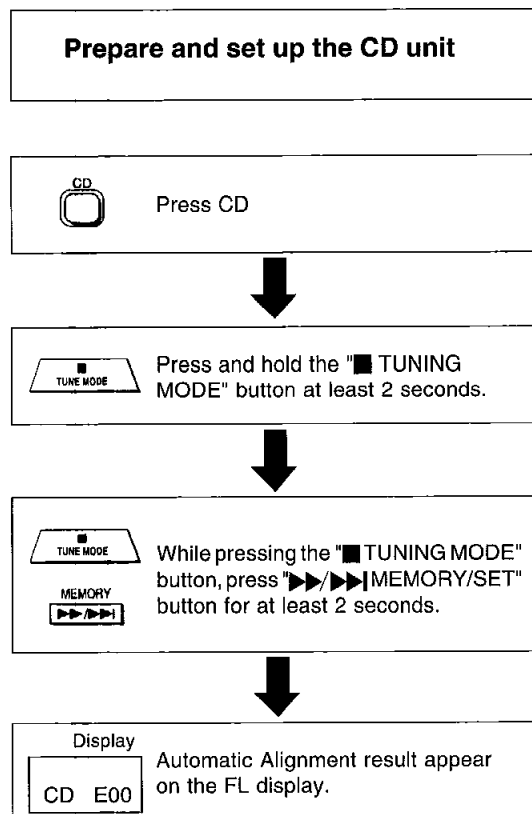
### (3) Power Supply related error detection

No.	Error	Error Display	Problem condition
1	POWER AMP output abnormal	F61	When POWER is switched on, power become off automatically. During normal operation, if DC DET become L, PCNT shall become L and the error display on the left shall be displayed. (IC501)

## ■ CD Test Mode Function

This CD test mode is provided to check CD unit without connecting to changer loading mechanism. This mode shall operate CD PLAY with CD unit being connected only and CD Automatic Alignment result is shown on FL display.

### ■ How to set CD test mode



### ■ CD Automatic Alignment result indication

This function provided indication of error code as the result of Automatic Alignment of CD (Tracking, Focus, Offset, etc.). Based on these error codes, the faulty area can be located .

### ■ Error code Explanation

- The unit is satisfactory if the error code is E00
- Before testing, make sure that the test disc is free of scratches, dirt and that the optical pick up lens is clean.

Error code	E00	E01	E02	E03	E04	E05	E06	E07	E08	E09	E0A	E0B	E0C	E0D	E0E	E0F
Focus offset	○	✖	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Tracking offset	○	✖	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Focus Gain (Rough)	○	✖	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Tracking Gain(Rough)	○	-	○	✖	○	✖	○	✖	○	✖	○	✖	○	✖	○	✖
Tracking balance	○	-	✖	✖	○	○	✖	✖	○	○	✖	✖	○	○	✖	✖
Focus balance	○	-	○	○	✖	✖	✖	✖	○	○	○	○	✖	✖	✖	✖
Tracking or Focus Gain (Fine)	○	-	○	○	○	○	○	○	✖	✖	✖	✖	✖	✖	✖	✖


○ Satisfy

✖ Fault

✖ Fault either items)

## ■ Measurements and Adjustments

### < CASSETTE DECK SECTION >

- Measurement Condition
  - Reverse-mode selector switch : 
  - Tape edit : NORMAL
  - Record timer : OFF
  - Make sure head, capstan and pressure roller are clean.
  - Judgeable room temperature  $20 \pm 5 \text{ }^\circ\text{C}$  ( $68 \pm 9 \text{ }^\circ\text{F}$ )
- Measuring instrument
  - EVM (Electronic Voltmeter)
  - Digital frequency counter
- Test tape
  - Head azimuth adjustment (8 kHz, -20 dB); QZZCFM
  - Tape speed adjustment (3 kHz, -10 dB); QZZCWAT
  - Playback gain adjustment (315 Hz, 0 dB); QZZCFM
  - Normal reference blank tape; QZZCRA
  - Cr<sub>2</sub> tape; QZZCRX

#### • Head Azimuth Adjustment (Deck 1/2)

##### Caution :

- Please replace both azimuth adjustment screws (RHE5152ZB) and springs (RMB0331) simultaneously when readjusting the head azimuth. (shown in Fig. 2)
- Even if you wish to readjust the head azimuth without replacing the screws and springs, a fine adjustment cannot be done because of the screw-locking bond adhered to the azimuth screw and spring.
- Please remove the screw-locking bond left on the head base when replacing the azimuth screw.
  - If you wish to readjust the head azimuth, be sure to adjust with adhering the cassette tape closely to the mechanism by pushing the center of cassette tape with your finger. (shown in Fig. 3)

1. Playback the azimuth adjustment portion (8 kHz, -20 dB) of the test tape (QZZCFM) in the forward play mode. Vary the azimuth adjusting screw until the output of the R-CH (PB OUT-R) are maximized.
2. Perform the same adjustment in the reverse play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.

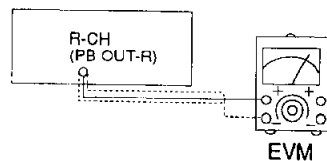


Fig. 1

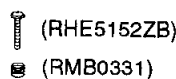


Fig. 2

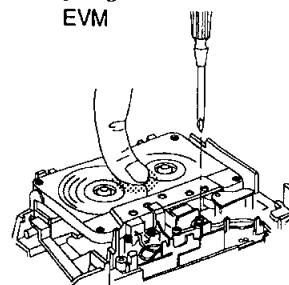


Fig. 3

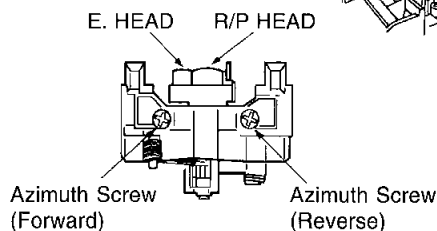


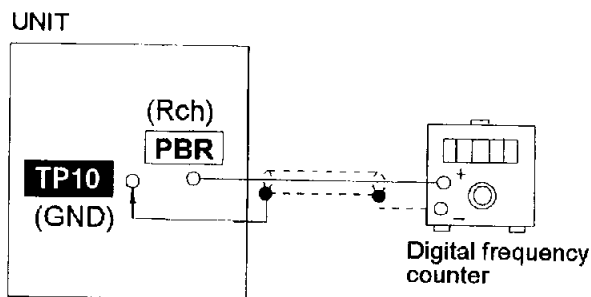
Fig. 4

#### • Tape Speed Adjustment (Deck 1/2)

1. Set the tape edit button to "NORMAL" position.
2. Insert the test tape (QZZCWAT) to DECK 2 and playback (FWD side) the middle portion of it.
3. Adjust Motor VR (DECK 2) for the output value shown below.

**Adjustment target : 2940 ~ 3060 Hz (NORMAL speed)**

4. After alignment, assure that the output frequency of the DECK 2 REV and DECK 1 FWD are within  $\pm 45 \text{ Hz}$  and  $\pm 60 \text{ Hz}$  respectively of the value of the output frequency of DECK 2 FWD.

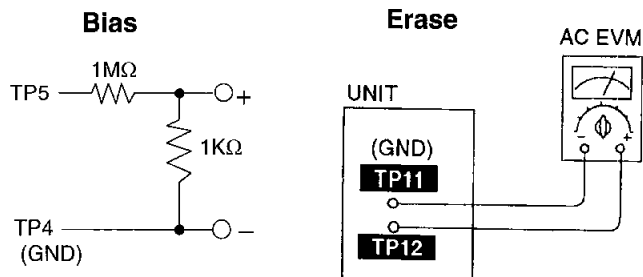


#### • Bias and Erase Voltage Check

1. Set the unit to "AUX" position.
2. Insert the Normal blank tape (QZZCRA) into DECK 2 and set the unit to "REC" mode (use "•REC / STOP" key).
3. Measure and make sure that the output is within the standard value.
4. Insert the Cr<sub>2</sub> tape (QZZCRX).
5. Repeat steps 2 and 3.

**Bias voltage for Deck 2 (Standard value) :**  $19 \pm 4 \text{ mV}$  (Normal)  
 $27 \pm 5 \text{ mV}$  (Cr<sub>2</sub>)

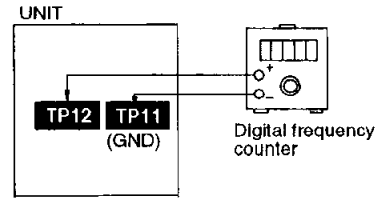
**Erase voltage for Deck 2 (Standard value) :** more than 70mV (Normal)  
 more than 90mV (Cr<sub>2</sub>)



• Bias Frequency Adjustment (Deck 2)

1. Set the unit to "AUX" position.
2. Insert the Normal blank tape (QZZCRA) into DECK 2 and set the unit to "REC" mode (use "•REC / STOP" key).
3. Adjust L601 so that the output frequency is within the standard value.

Standard Value :  $95 \pm 8$  kHz



< TUNER SECTION >

■ AM-IF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 3)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	450kHz 30 % Mod. at 400Hz	Point of non-interference.(on/about 600kHz	Headphones Jack (32Ω) <i>(Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)</i>	Z102 (AM IFT)	Adjust for maximum output.

■ AM-RF ALIGNMENT

"	522 kHz	Tuning capacitor fully closed	"	Z101(GN) (AM OSC Coil)	Adjust for maximum output.
"	603 kHz	Tuning to signal	"	Z101(GN) (AM ANT Coil)	Adjust for maximum output.

• Alignment Points

<Cassette Deck Section>

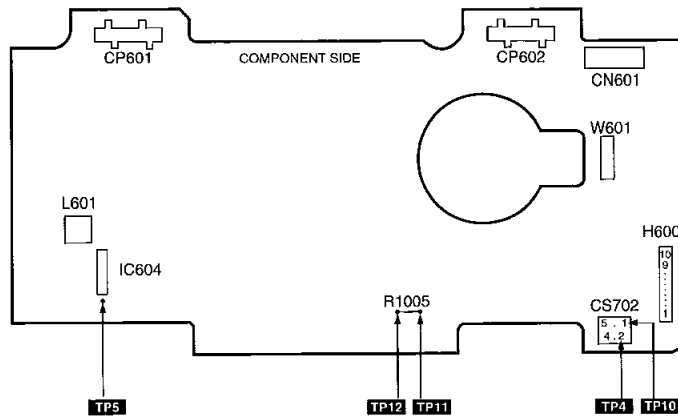


Fig. 1

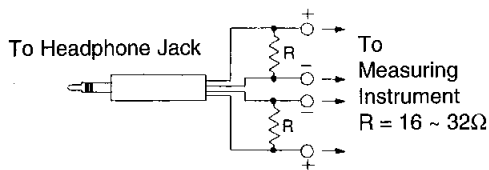


Fig. 2

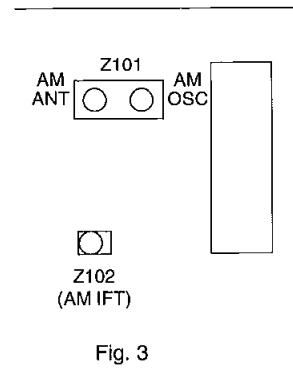
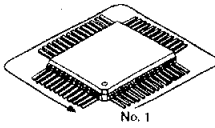
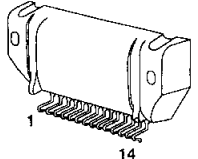
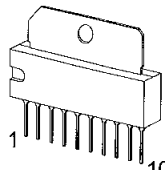
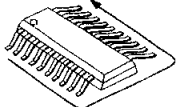
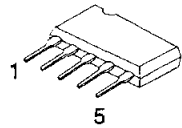
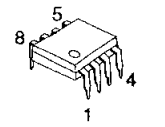
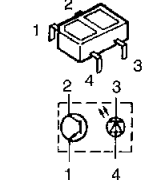
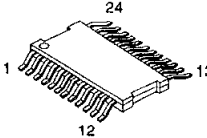
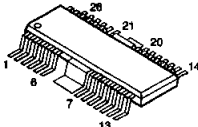
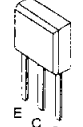
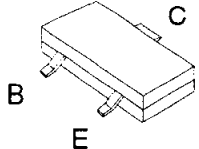
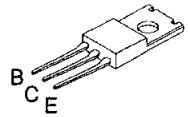
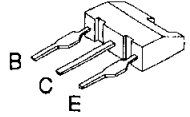
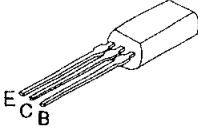
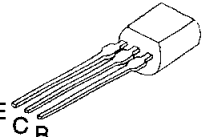
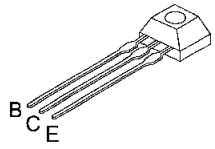
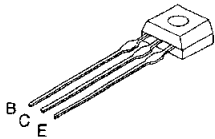
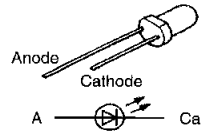
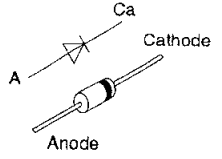
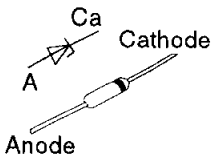
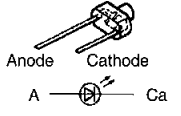
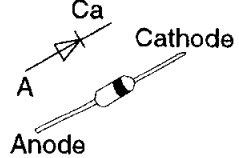
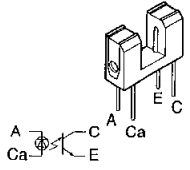


Fig. 3

# ■ Illustration of IC's, Transistors and Diodes

<p>M38198MCA824(100P) MN662746RPK1(80P) M62433AFP(80P)</p>  <p>No. 1</p>	<p>RSN35H1</p>  <p>1 14</p>	<p>TA7291P</p>  <p>1 10</p>	<p>BA3835F-E2(18P) LA1833MN-TLM (24P) BU2090AF-E2 (16P) LC72131MDTRM (20P) No. 1 BA4558FE2 (8P) AN7348STA-E1 (24P)</p> 		
<p>BA7755A</p>  <p>1 5</p>	<p>M5218AP</p>  <p>8 5 1 4</p>	<p>0N2180RLC</p>  <p>1 2 3 4</p>	<p>AN8837SBE1</p>  <p>24 13 12</p>	<p>AN8780NSBE2</p>  <p>28 21 20 14 8 7 13</p>	<p>2SJ498CDTA</p>  <p>E C B</p>
<p>2SA1037AKSTX DTC114YKA146</p>  <p>B C E</p>	<p>2SD2395E 2SB1566E</p>  <p>B C E</p>	<p>2SB1238QRTV2</p>  <p>B C E</p>	<p>2SC3940AQSTA</p>  <p>E C B</p>	<p>KTA12710YTA KTC32030YTA 2SD965RTA KSB564ACYGTA</p>  <p>E C B</p>	
<p>KRC109MTA KRA102MTA KRC111MTA KRA110MTA KRC103MTA KRC102MTA KRC114MTA</p>  <p>B C E</p>		<p>KTC3199GRTA RVTDTTC143EST RVTDTA114EST 2SC2784FTA 2SA933SSTA RVTDTTC114EST</p>	<p>2SC1740SSTA 2SC2785FTA 2SC2787LTA 2SD2144STA 2SD1450STA</p>  <p>B C E</p>	<p>SLR325DCT31 SLR325MCT31W</p>  <p>Anode Cathode A Ca</p>	
<p>1D3E 1N5402BM21 RL1N4003N02</p>  <p>A Ca Cathode Anode</p>	<p>MTZJ10BTA MTZJ4R7BTA MTZJ5R1BTA MTZJ15CTA MTZJ33BTA MTZJ12BTA</p>	<p>MTZJ5R6BTA MTZJ6R2BTA MTZJ8R2CTA MTZJ7R5ATA MA4020LTA MTZJ3R6BTA</p>  <p>A Ca Cathode Anode</p>	<p>LN201LPQJA</p>  <p>Anode Cathode A Ca</p>		
<p>RVD1SS133TA 1SS291TA MA165TA</p>  <p>A Ca Cathode Anode</p>	<p>GP1S94</p>  <p>A C A Ca E C Ca E</p>	<p>Blank</p>			



## ■ Terminal Function of IC's

### • IC701 (AN8837SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDE	I	Tracking signal input terminal 1 (E ch)
2	PDF	I	Tracking signal input terminal 2 (F ch)
3	VCC	I	Power supply connection
4	PDA	I	Focus signal input terminal 1 (A ch)
5	PDB	I	Focus signal input terminal 2 (B ch)
6	LPD	I	Laser PD connection
7	LD	O	Laser power auto control output
8	RF	O	RF signal output
9	RFIN	I	RF signal input
10	CSBRT	I	Capacitor for detection connection
11	CEA	I	Capacitor connection for HPF amplifier
12	BDO	O	BDO output ("H" : drop out)
13	LDON	I	LD APC input ("H" : ON, "L" : OFF)
14	GND	—	Ground connection

Pin No.	Mark	I/O	Function
15	/RFDET	O	NRFDET output ("L" : detection)
16	CROSS	O	CROSS output (Track cross signal output)
17	OFTR	O	Off-track output("L" : ON track, "H" : OFF track)
18	VDET	O	VDET output("H" : Vibration detected)
19	ENV	O	RF envelope detection
20	ENVOFF	I	Not used, connected to power supply
21	TEBPF	I	Oscillation detect signal input
22	TEN	I	Tracking error signal input
23	TEOUT	O	Tracking error signal output
24	FEOUT	O	Focus error signal output
25	FEN	I	Focus error signal input
26	VREF	O	Reference voltage output
27	TBAL	I	Tracking balance signal input
28	FBAL	I	Focus balance signal input

### • IC703 (AN8780NSBE2) Focus coil / Tracking coil / Traverse motor / Spindle motor driver

Pin No.	Mark	I/O	Function
1	/RST	—	Not used, open
2	NC	—	Not used
3	IN2	I	Motor driver (2) input
4	PC2	I	Turntable motor drive signal ("L" : ON)
5	NC	—	Not used
6	IN1	I	Motor driver (1) input
7	PVCC1	I	Power supply (1) for driver
8	PGND1	—	Ground connection (1) for driver
9	NC	—	Not used, connected to GND
10	D1-	O	Motor driver (1) reverse-action output
11	D1+	O	Motor driver (1) forward-action output
12	D2-	O	Motor driver (2) reverse-action output
13	D2+	O	Motor driver (2) forward-action output

Pin No.	Mark	I/O	Function
14	D3-	O	Motor driver (3) reverse-action output
15	D3+	O	Motor driver (3) forward-action output
16	D4-	O	Motor driver (4) reverse-action output
17	D4+	O	Motor driver (4) forward-action output
18	NC	—	Not used, open
19	PGND2P	—	Ground connection (2) for driver
20	PVCC2	I	Power supply (2) for driver
21	VCC	I	Power supply terminal
22	VREF	I	Reference voltage input
23	IN4	I	Motor driver (4) input
24	IN3	I	Motor driver (3) input
25	RSTIN	I	Reset terminal (Not used, connected to GND)
26	NC	—	Not used, connected to GND

• IC702 (MN662746RPK1) Servo processor / Digital signal processor / Digital filter / D/A converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Serial bit clock terminal (Not used, open)
2	LRCK	O	L/R discriminating signal (Not used, open)
3	SRDATA	O	Serial data (Not used, open)
4	DVDD1	I	Power supply (digital circuit) terminal
5	DVSS1	—	GND (digital circuit) terminal
6	TX	O	Digital audio interface signal
7	MCLK	I	Microprocessor command clock signal
8	MDATA	I	Microprocessor command data signal
9	MLD	I	Microprocessor command load signal
10	SENSE	O	Sense signal output (OFT,FESL,MAGEND,NAJEND,POSAD,SFG)
11	/FLOCK	O	Optical servo condition(focus)("L" : lead-in)
12	/TLOCK	O	Optical servo condition(tracking)("L" : lead-in)
13	BLKCK	O	Sub-code block clock (f=75Hz)
14	SQCK	I	External clock signal input for sub-code Q register.
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H" : mute)
17	STAT	O	Status signal output (CRC,CUE,CLVS,TTSTVP,FCLV,SQCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at MSEL = "H" (fSMCK=8.4672MHz) 1/4-divided clock signal of crystal oscillating at MSEL="L" (fSMCK=4.2336MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating (fPMCK=88.2kHz) (Not used, open)
21	TRV	O	Traverse servo control output
22	TVD	O	Traverse drive signal output
23	PC	O	Spindle motor ON signal output ("L" : ON)
24	ECM	O	Spindle motor drive signal output (forced mode output)
25	ECS	O	Spindle motor drive signal output (servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output
29	VREF	I	D/A (drive) output (TVD,ECS,TRD,FOD, FBAL,TBAL) Reference voltage input.
30	FBAL	O	Focus balance adjustment output (Not used,open)
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H" : detection)

Pin No.	Mark	I/O	Function
36	OFT	I	Off-track signal input ("H" : off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L" : detection)
39	BDO	I	Dropout signal input ("H" : Dropout)
40	LDON	O	Laser on signal output ("H" : ON)
41	TES	O	Tracking error shunt signal output ("H" : shunt)
42	PLAY	O	Play signal out ("H" : PLAY)
43	WVEL	O	Double speed status signal output ("H" : DS)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (Not used, open)
47	DSLFL	I/O	DSL loop filter
48	PLLFL	I/O	PLL loop filter
49	DSLFL2	I/O	VCO loop filter (Not used, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (Not used, open)
53	PCK	O	PLL extraction clock output (Not used, open) (fPCK=4.321 MHz during normal playback)
54	TOUT	O	Phase comparison signal of EFM and PCK signals (Not used, open)
55	SUBC	O	Sub-code serial data output (Not used, open)
56	SBCK	I	Sub-code frame clock signal output (fCLDCK=7.35kHz during normal playback)
57	VSS	—	GND
58	X1 IN	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2 OUT	O	Crystal oscillating circuit output (f=16.9344MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (Not used, open)
62	/CLDCK	O	Clock input for sub-code serial data (Not used, open)
63	FCLK	O	Crystal frame clock signal output (fCLK=7.35kHz, double=14.7kHz)
64	PFLAG	O	Interpolation flag output ("H" : interpolation) (Not used, open)
65	FLAG	O	Flag output (Not used, open)
66	CLVS	O	Spindle servo phase synchronizing signal output ("H" : CLV, "L" : rough servo) (Not used, open)
67	CRC	O	Sub-code CRC checked output ("H" : OK, "L" : NG) (Not used, open)
68	RESY	O	Frame resynchronizing signal output (Not used, open)
69	FLAG	O	De-emphasis ON signal output ("H" : ON) (Not used, open)
70	ARST	I	Reset input through MASH circuit ("L" : Reset)
71	/TEST	I	Test input

Pin No.	Mark	I/O	Function
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input (at "H" level, RSEL="H", at "L" level, RESL="L")
77	CSEL	I	Crystal oscillating frequency designation input

Pin No.	Mark	I/O	Function
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal ("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal "H" : SMCK=8.4672MHz "L" : MCK=4.2336MHz (Not used, open)

### • IC600 (M38198MCA824) System Microprocessor

Pin No.	Mark	I/O	Function
1	CRT	I/O	CRT timer
2	TPS	I	TPS signal input
3	DECK1	I	Deck 1 mechanism condition input
4	DECK 2	I	Deck 2 mechanism condition input
5	KEY 4	I	Key 4 input
6	KEY 3	I	Key 3 input
7	KEY 2	I	Key 2 input
8	KEY 1	I	Key 1 input
9	SER 1	O	Serial clock output for IC903 and IC904
10	VBASS	O	VBass level control signal output
11	SER 2	O	Serial data/clock output for IC301 and IC903
12	SER 3	O	Serial data output for IC301 and IC904
13	SER 4	O	Serial clock output (Not used, open)
14	SPE	I	Spectrum analyser input
15	CHG_PLGR	O	Changer plunger output
16	CHG_SW1	I	Changer SW detection input 1
17	CHG_SW2	I	Changer SW detection input 2
18	CDRST	O	Reset signal output for CD circuit
19	STATUS	I	Reset signal input for CD circuit
20	SQCK	O	CD subcode clock output
21	SD	I	Tuner signal detect input
22	SUBQ	I	CD subcode data input
23	CHG_CW	O	Changer motor CW output
24	CHG_CCW	O	Changer motor CCW output
25	CHG_HALF	O	Changer half drive output
26	MLD/ PLLCE	O	CD command load output and tuner chip enable output
27	MDATA/ PLLDA	O	CD command data output / Tuner PLL data output
28	MCLK/ PLLCK	O	CD command clock output and tuner PLL clock output
29	RESTSW	I	CD REST detect SW input

Pin No.	Mark	I/O	Function
30	BLKCK	I	CD block clock input
31	RMT	I	Remote control signal input
32	DCDET	I	DC detect input
33	ECONO	O	Main transformer control output for economy mode
34	SYNC	I	AC power source detect signal input
35	/RESET	I	RESET input
36	XCIN	I	X'tal oscillator (f = 32.768 kHz sub clock)
37	XCOUT	O	X'tal oscillator (f = 32.768 kHz sub clock)
38	XIN	I	X'tal oscillator (f = 8.0 MHz Main clock)
39	XOUT	O	X'tal oscillator (f = 8.0 MHz Main clock)
40	VSS	—	Ground (0V)
41	MBP1	O	MPU beat proof output 1
42	MBP2	O	MPU beat proof output 2
43	J_JOGA	I	AI Equalizer control signal input
44	J_JOGB	I	AI Equalizer control signal input
45	MKCLK	O	Deck control clock output
46	SP_A	O	Space control A
47	SP_B	O	Space control B
48	SP_C	O	Space control C
49-54	GRD8-GRD13	O	LCD grid signal output
55-61	GRD1-GRD7	O	LCD grid signal output
62-90	SEG32-SEG4	O	LCD segment signal output
91	VCC	I	Power supply (+5V)
92-94	REG3-REG1	O	LCD segment signal output
95	REG_IN	I	Region select signal input
96	V_JOGA	I	Main volume jog input A
97	V_JOGB	I	Main volume jog input B
98	VEE	—	Power supply (-30V)
99	AVSS	—	Analog ground (0V)
100	VREF	I	Reference voltage input

## ■ Schematic Diagram

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

Note :

### < for Servo Circuit >

- S701 : Reset switch

### < for Panel circuit and Operation Circuit >

- |        |  |         |  |
|--------|--|---------|--|
| • S602 | : AUX select switch                          | • S621  | : EQ adjust down switch                |
| • S603 | : Reverse play, Tune/time adjust down switch | • S622  | : Display, demonstration select switch |
| • S604 | : DISC 5 eject switch                        | • S623  | : CD manager switch                    |
| • S605 | : Tuner select switch                        | • S624  | : Tape Edit switch                     |
| • S606 | : FWD play/pause, tune/time adjust up switch | • S625  | : EQ adjust left switch                |
| • S607 | : DISC 4 eject switch                        | • S626  | : V. BASS switch                       |
| • S608 | : CD select switch                           | • S627  | : DISC 5 select switch                 |
| • S609 | : Stop, tune mode select switch              | • S628  | : EQ adjust up switch                  |
| • S610 | : DISC 3 eject switch                        | • S629  | : Record select switch                 |
| • S611 | : Tape/deck select switch                    | • S630  | : DISC 4 select switch                 |
| • S612 | : FWD, memory/set switch                     | • S631  | : EQ adjust right switch               |
| • S613 | : DISC 2 eject switch                        | • S632  | : Reverse mode select switch           |
| • S614 | : Clock, timer select switch                 | • S633  | : DISC 3 select switch                 |
| • S615 | : Economy mode switch                        | • S634  | : Deck 2 open switch                   |
| • S616 | : REW, FM mode/BP select switch              | • S635  | : DISC 2 select switch                 |
| • S617 | : DISC 1 eject switch                        | • S636  | : DISC 1 select switch                 |
| • S618 | : Play timer/REC timer select switch         | • S638  | : Power switch                         |
| • S619 | : Random play switch                         | • S639  | : 3D AI EQ switch                      |
| • S620 | : Deck 1 open switch                         | • VR600 | : Volume control                       |













### < for Mechanism (Deck 1) circuit and Mechanism (Deck 2) circuit >

- |        |  |        |  |
|--------|--|--------|--|
| • S951 | : Deck 1 Mode detect switch.             | • S972 | : Deck 2 Tape detect switch.             |
| • S952 | : Deck 1 Tape detect switch.             | • S973 | : Deck 2 CrO <sub>2</sub> detect switch. |
| • S953 | : Deck 1 CrO <sub>2</sub> detect switch. | • S974 | : Deck 2 Record detect switch.           |
| • S971 | : Deck 2 Mode detect switch.             | • S975 | : Deck 2 Record detect switch.           |

### < for Loading Motor circuit, Detecting Switch (1) Circuit and Detecting Switch (2) Circuit >

- SW1, SW2 : Tray position switch
- SW3 : Tray open switch
- SW4 : CD offset detect switch
- SW5 : Spindle bottom position detect switch

### •Signal line

- |   |                     |   |                        |   |                      |
|---|---------------------|---|------------------------|---|----------------------|
|  | : +B line           |  | : Playback signal line |  | : AM signal line     |
|  | : -B line           |  | : Record signal line   |  | : AM OSC signal line |
|  | : FM/AM signal line |  | : CD signal line       |  | : FM OSC signal line |
|  | : Main signal line  |  | : FM signal line       |  | : AUX signal line    |

•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.

No mark : Playback    << >>.....Rec    [ ] : AUX    (( )) : CD    < > ..... FM    ( ).... AM

### •Importance safety notice:

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

### Caution !

- IC, LSI and VLSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

**TUNER CIRCUIT**

( P.C.Board on page 45 )

— : +B Line

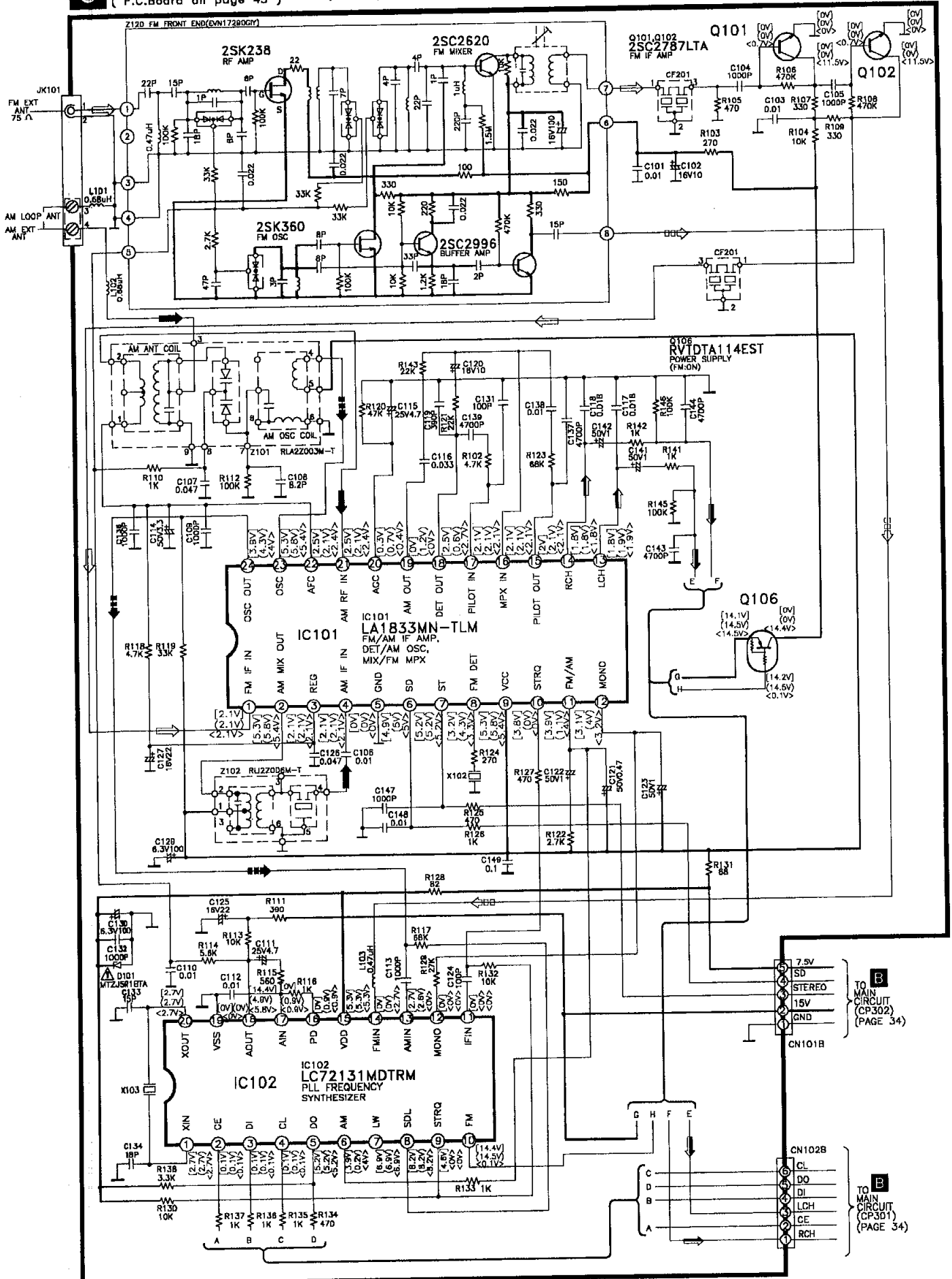
⇨ : FM Signal Line

➔ : AM Signal Line

⇨⇨ : FM/AM Signal Line

⇨⇨⇨ : FM OSC Signal Line

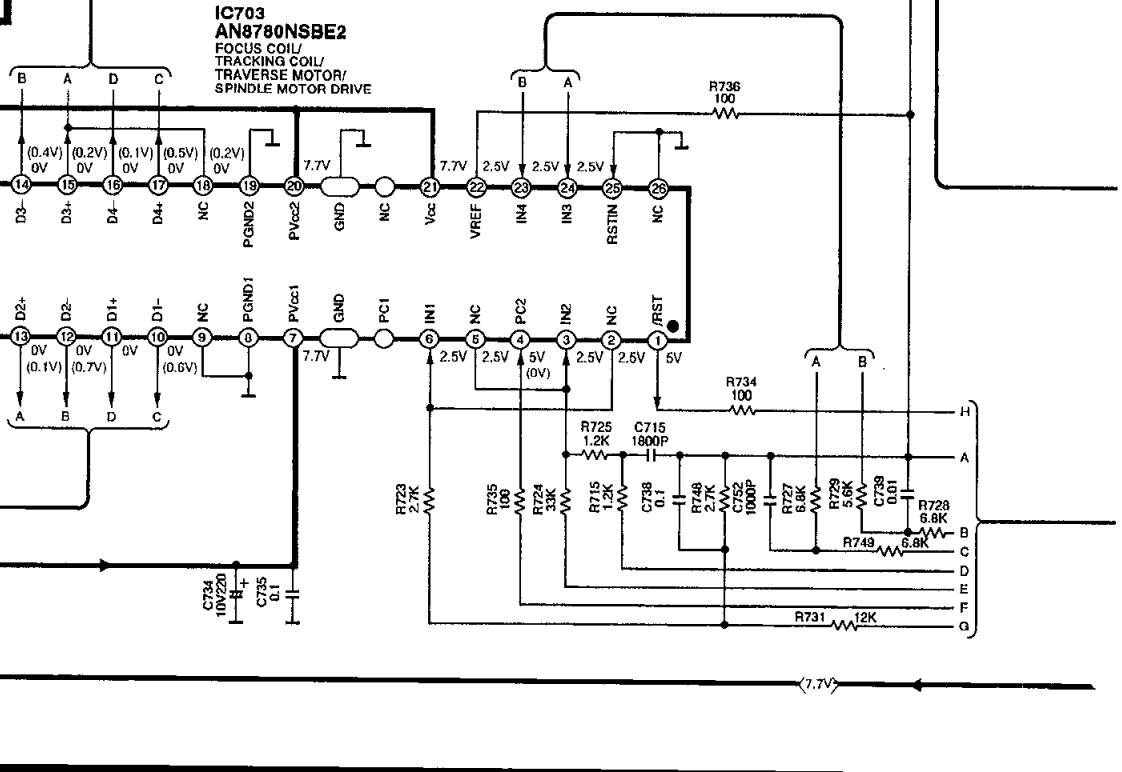
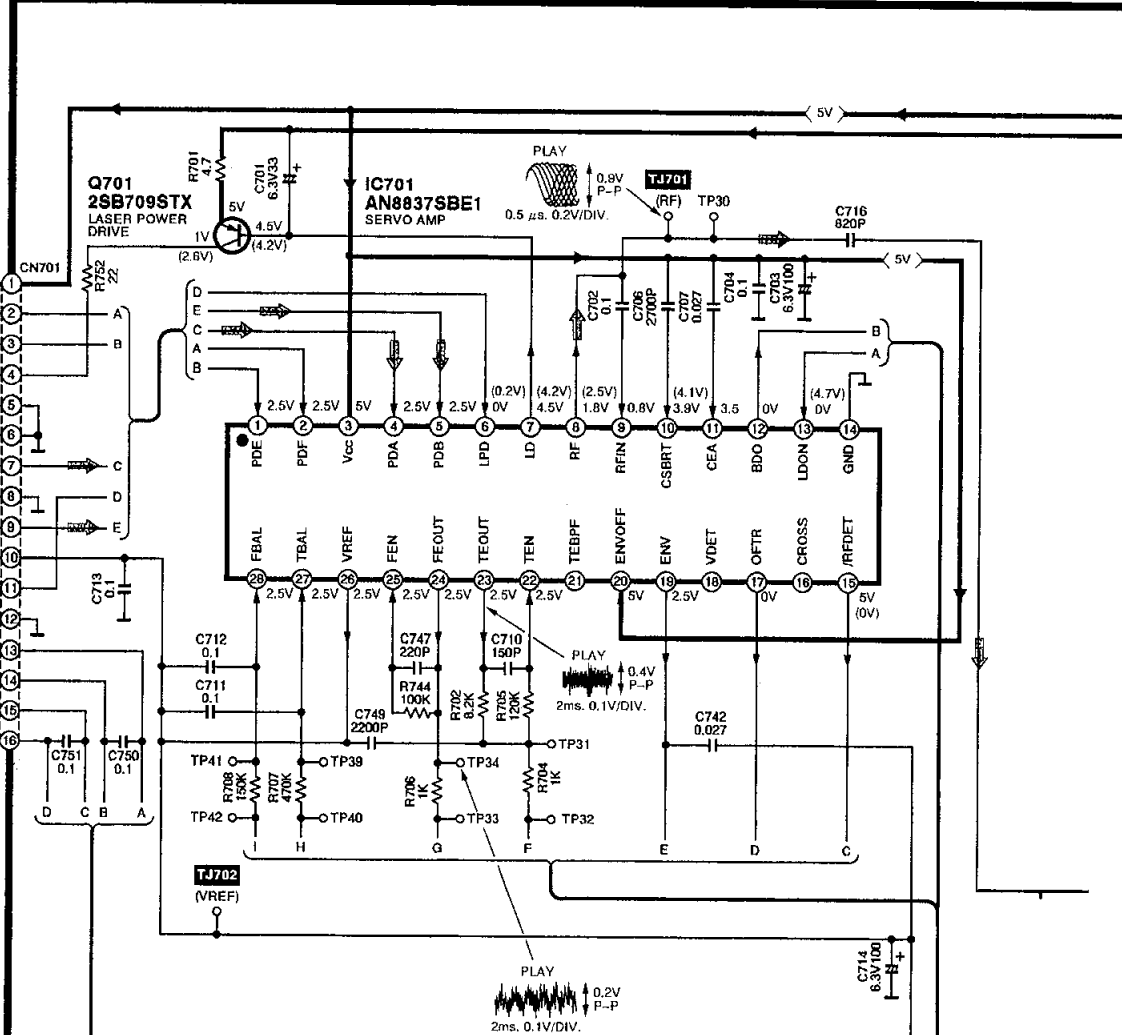
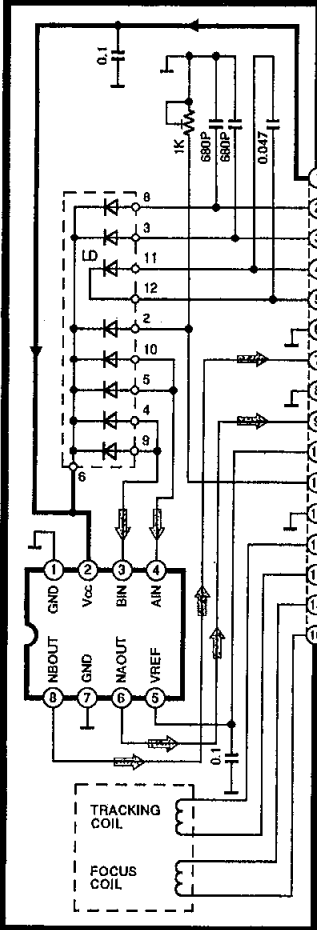
➔➔ : AM OSC Signal Line



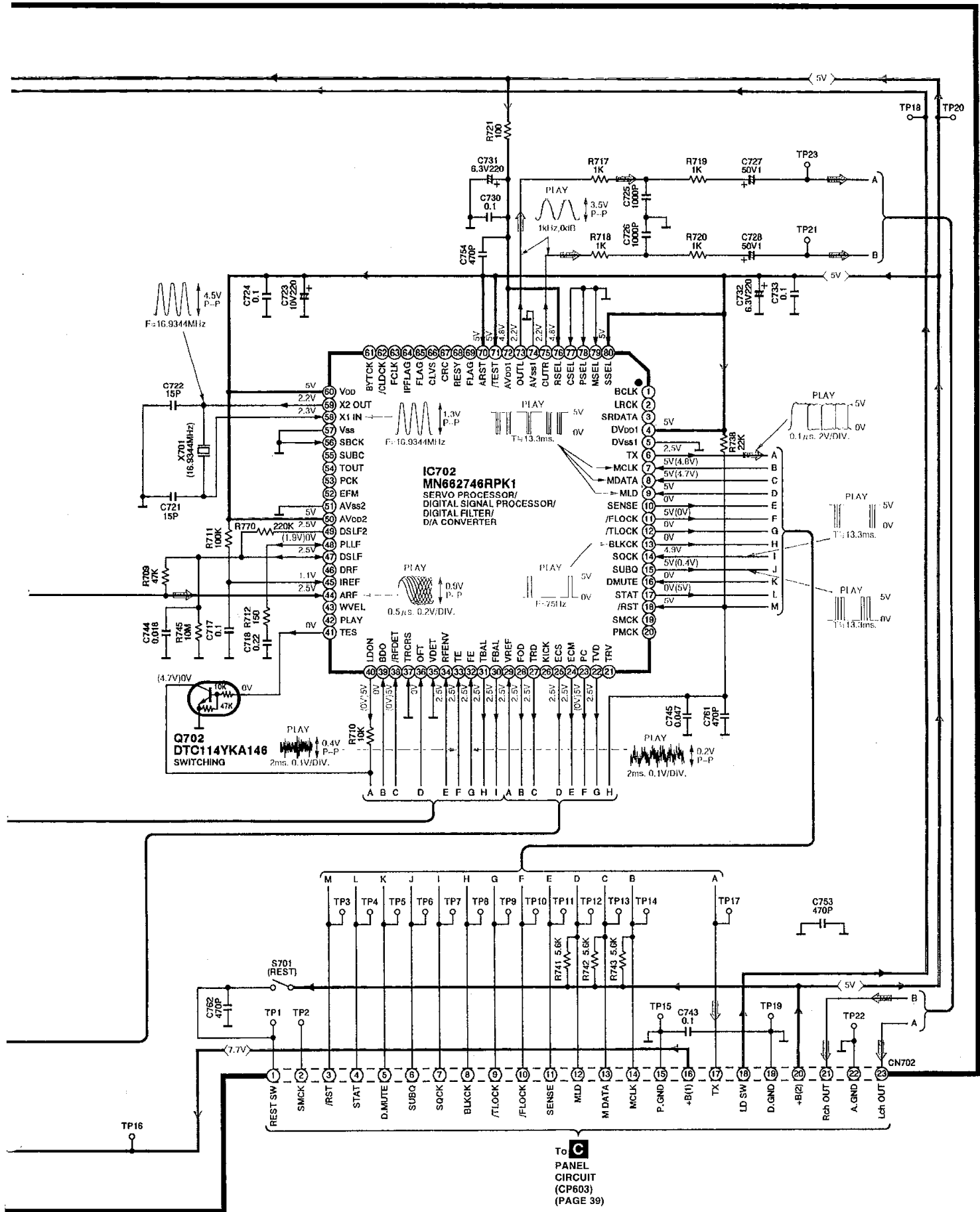
: +B line  : CD signal line


**A** CD SERVO CIRCUIT (P.C.Board on page 43)

**△** OPTICAL PICKUP CIRCUIT





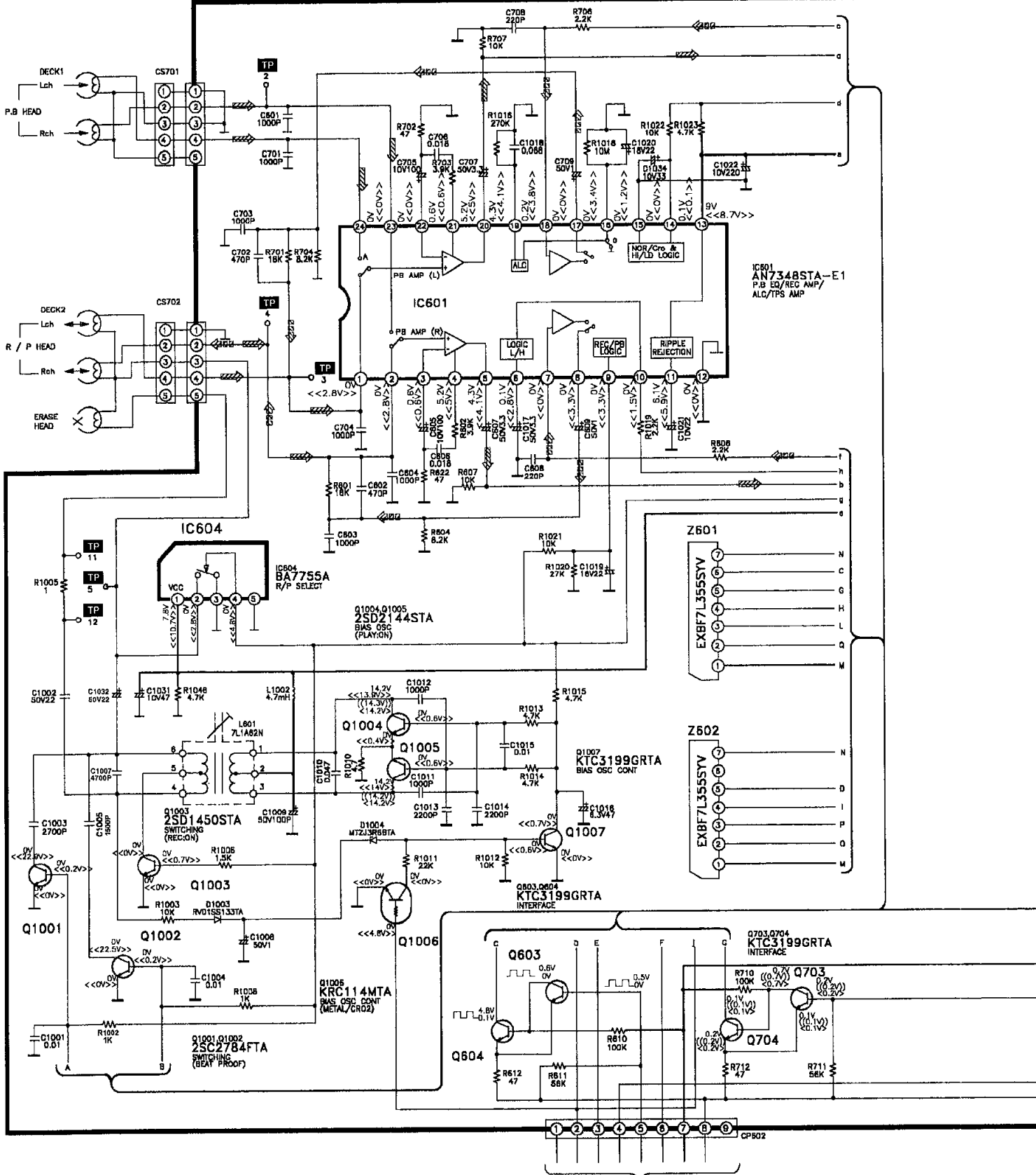
--- : +B line       : CD signal line



To  PANEL CIRCUIT (CP603) (PAGE 39)

**K** DECK CIRCUIT ( P.C.Board on page 50 )

— : +B Line       : Playback Signal Line       : Record Signal Line



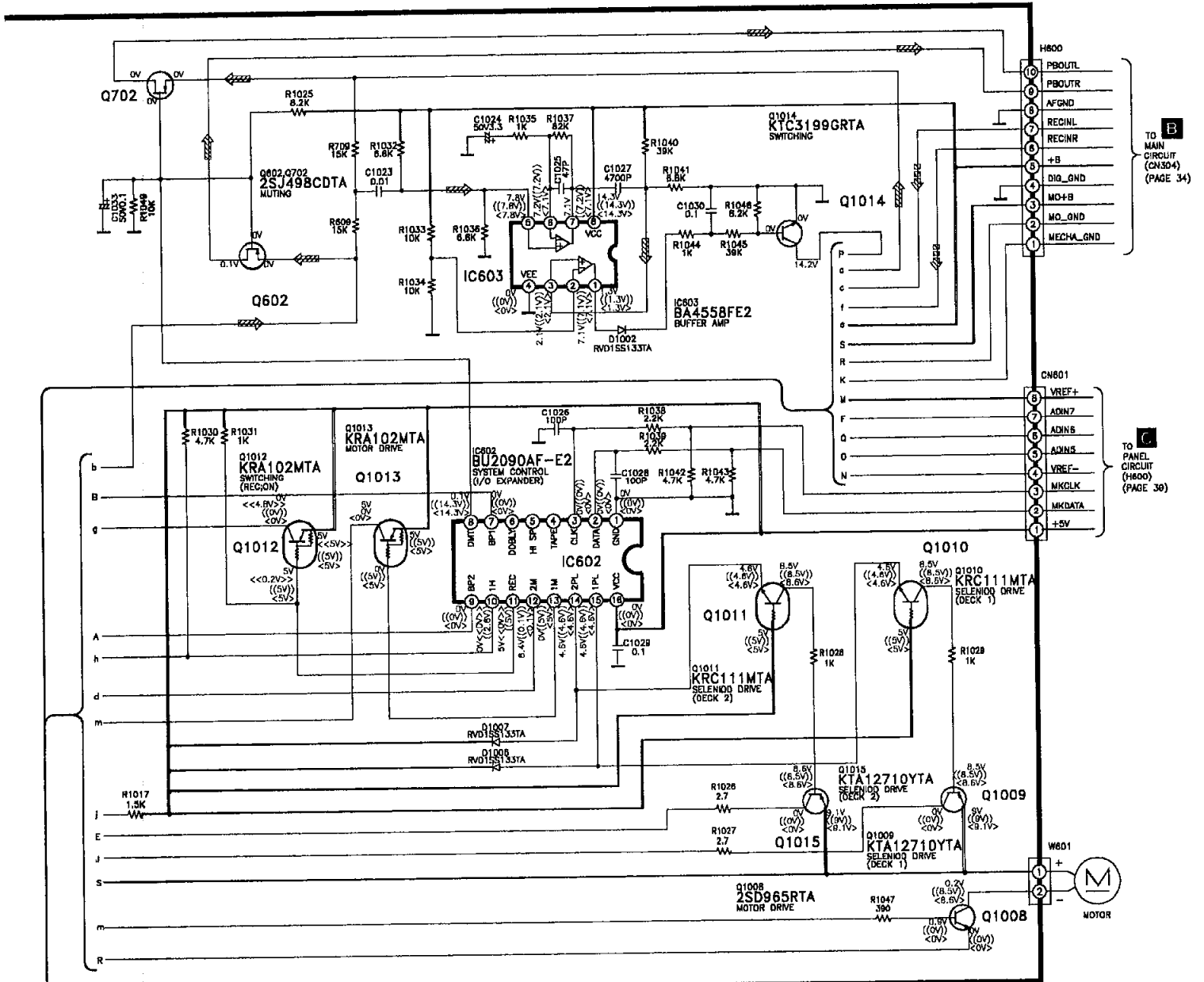
**F**  
TO MECHANISM (DECK2)  
CIRCUIT (CS871)  
(PAGE 33)



: +B Line

⚡ : Playback Signal Line

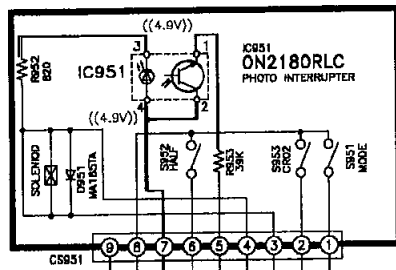
⚡ : Record Signal Line



**B**  
TO MAIN  
CIRCUIT (CN304)  
(PAGE 34)

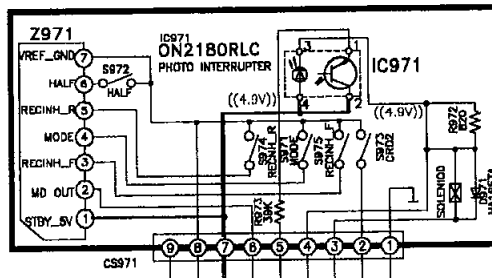
**C**  
TO PANEL  
CIRCUIT (H800)  
(PAGE 36)

**E** MECHANISM (DECK 1)  
CIRCUIT ( P.C.Board on page 49 )

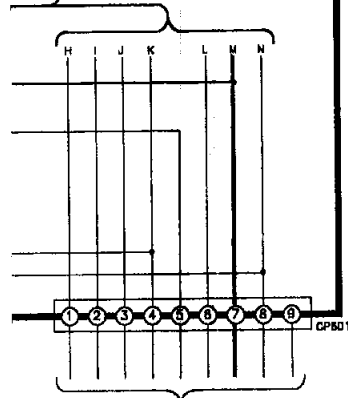


**K**  
TO DECK  
CIRCUIT (CP801)  
(PAGE 33)

**F** MECHANISM (DECK 2)  
CIRCUIT ( P.C.Board on page 49 )



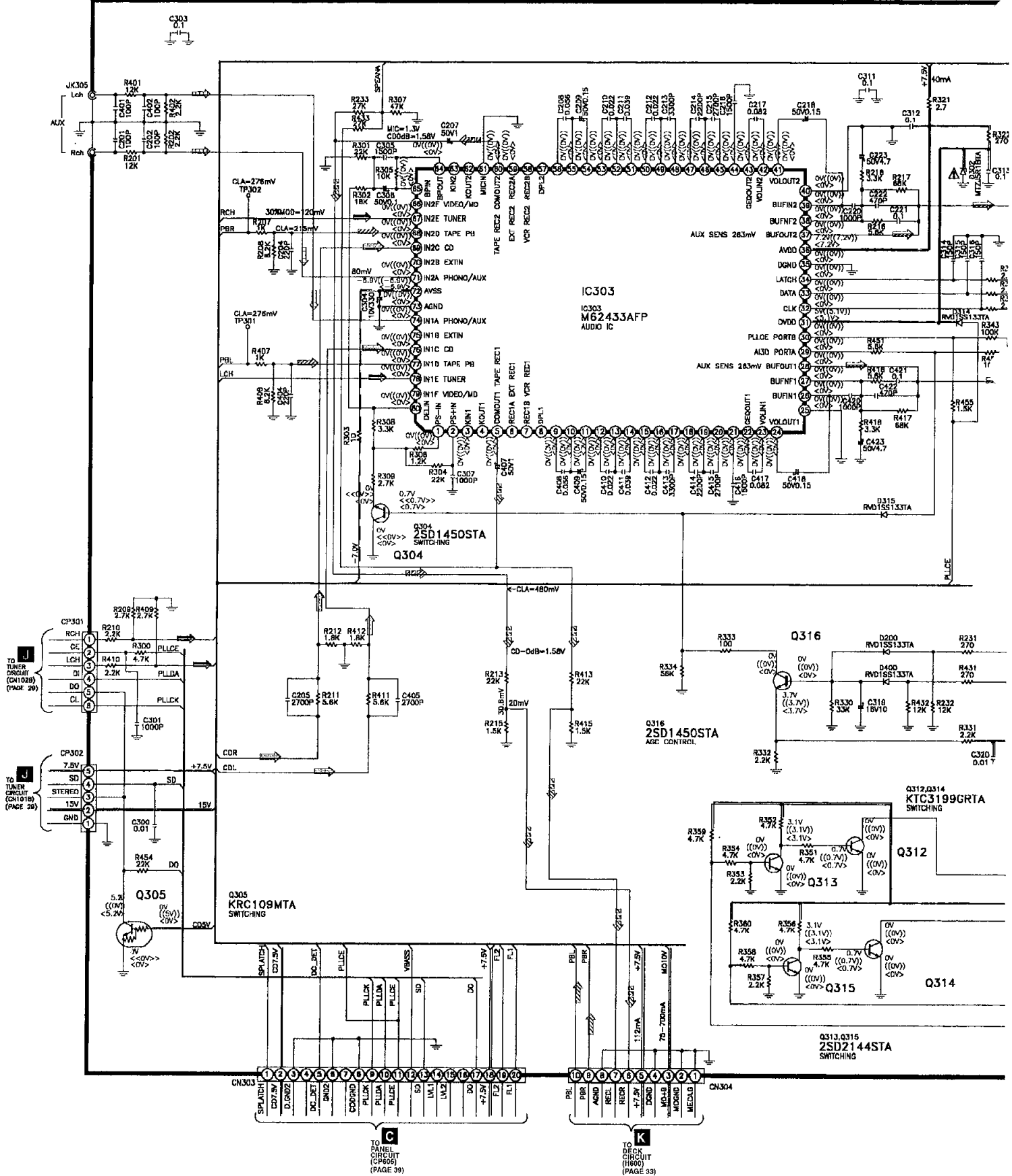
**L**  
TO DECK  
CIRCUIT (CP802)  
(PAGE 32)



**E**  
TO MECHANISM (DECK1)  
CIRCUIT (CS951)  
(PAGE 33)

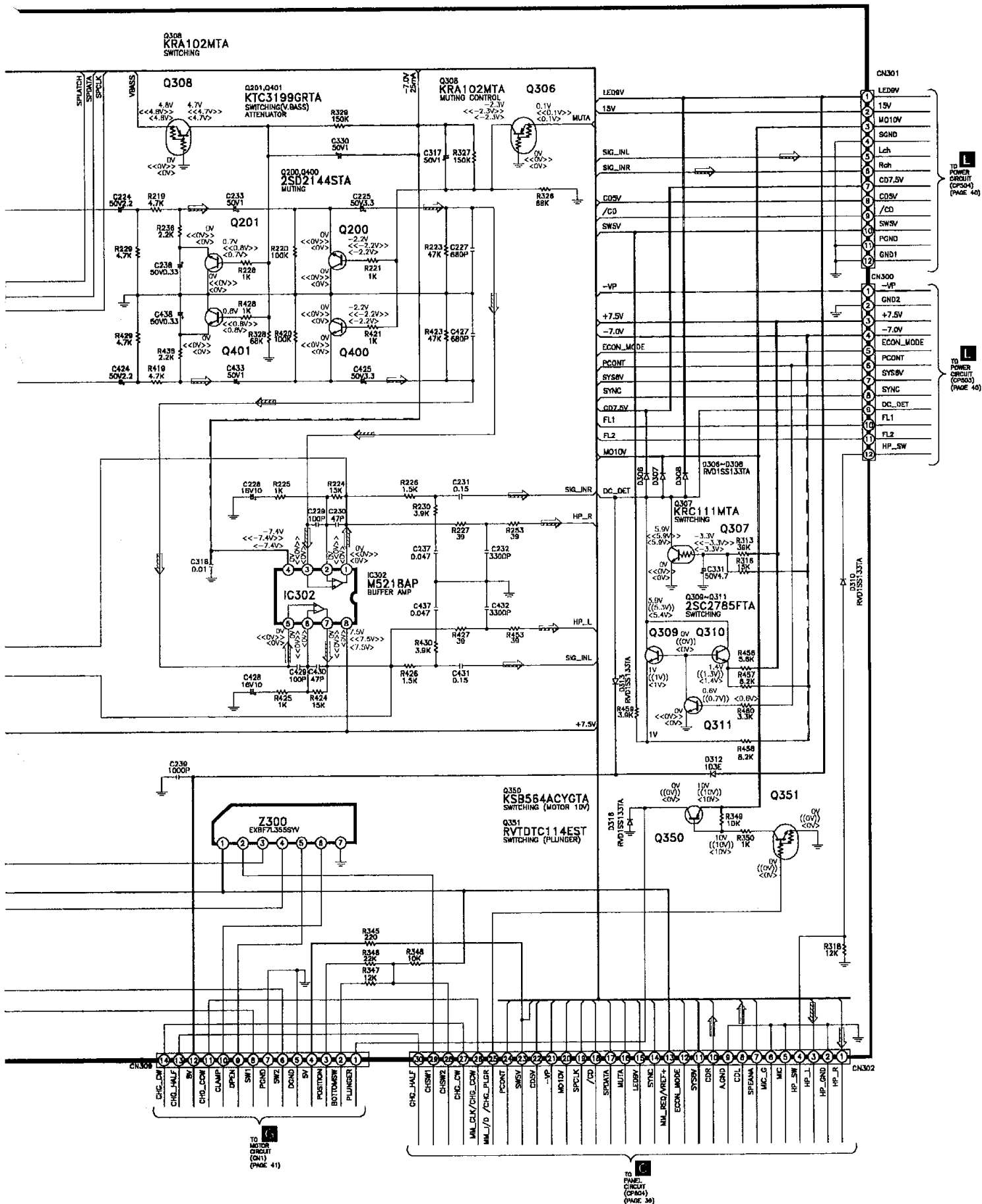
: +B Line  
 : -B Line  
  $\Rightarrow$  : Main Signal Line  
  $\Leftarrow$  : AUX Signal Line  
  $\Leftarrow$  : Playback Signal Line  
  $\Leftarrow$  : CD Signal Line  
  $\Rightarrow$  : FM/AM Signal Line  
  $\Rightarrow$  : Record Signal Line

**B** MAIN CIRCUIT ( P.C.Board on page 44 )



— : +B Line  
 - - - : -B Line

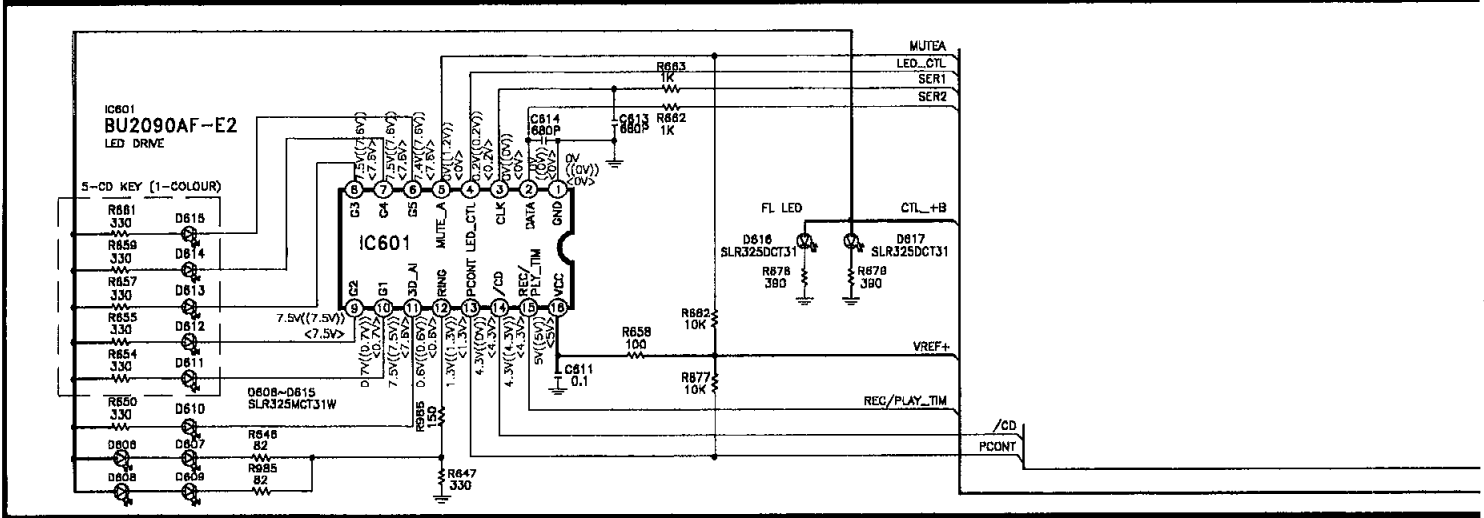
→ : Main Signal Line  
 ⇨ : CD Signal Line



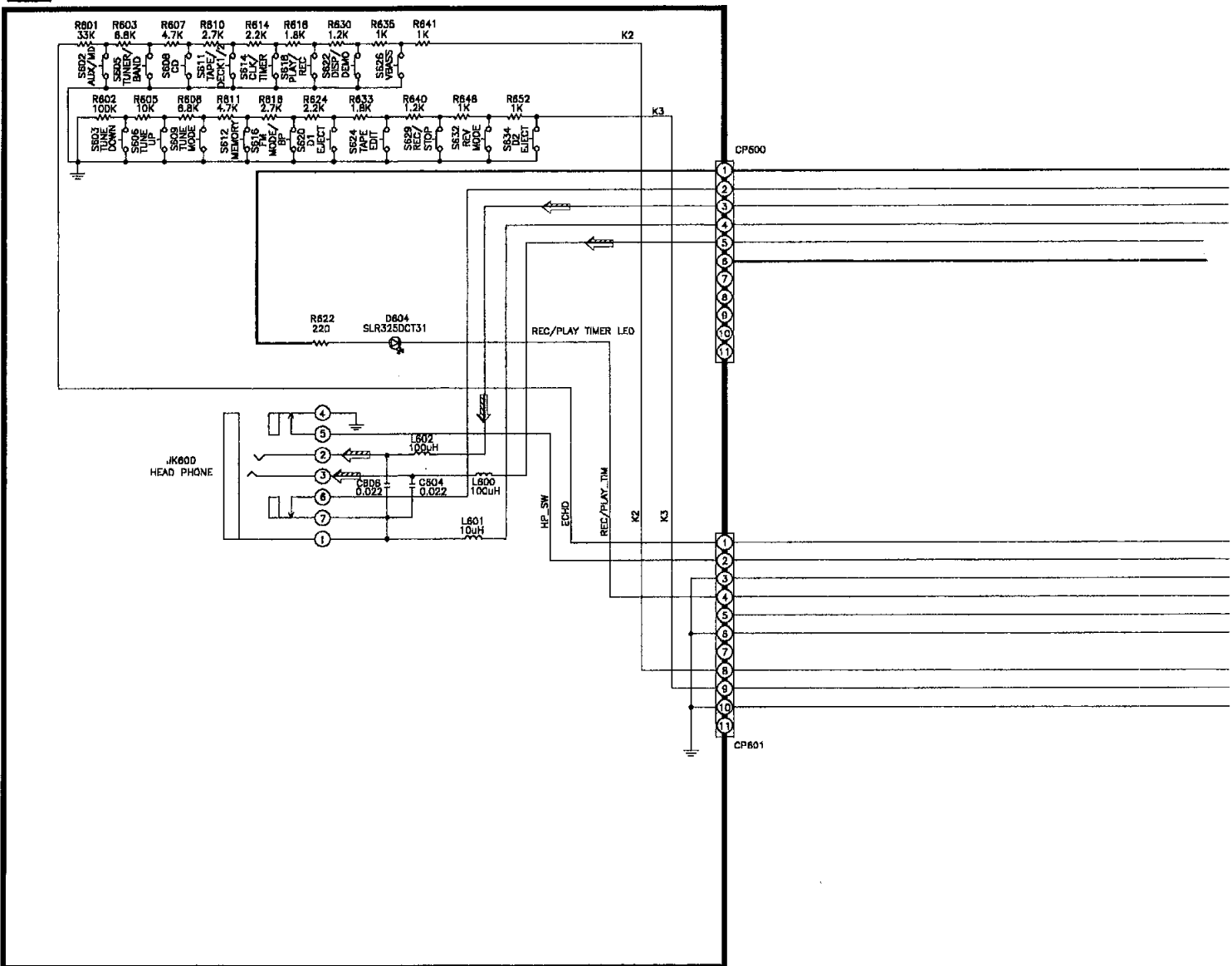
: +B Line

↔ : Main Signal Line

**C** PANEL CIRCUIT ( P.C.Board on page 46 )



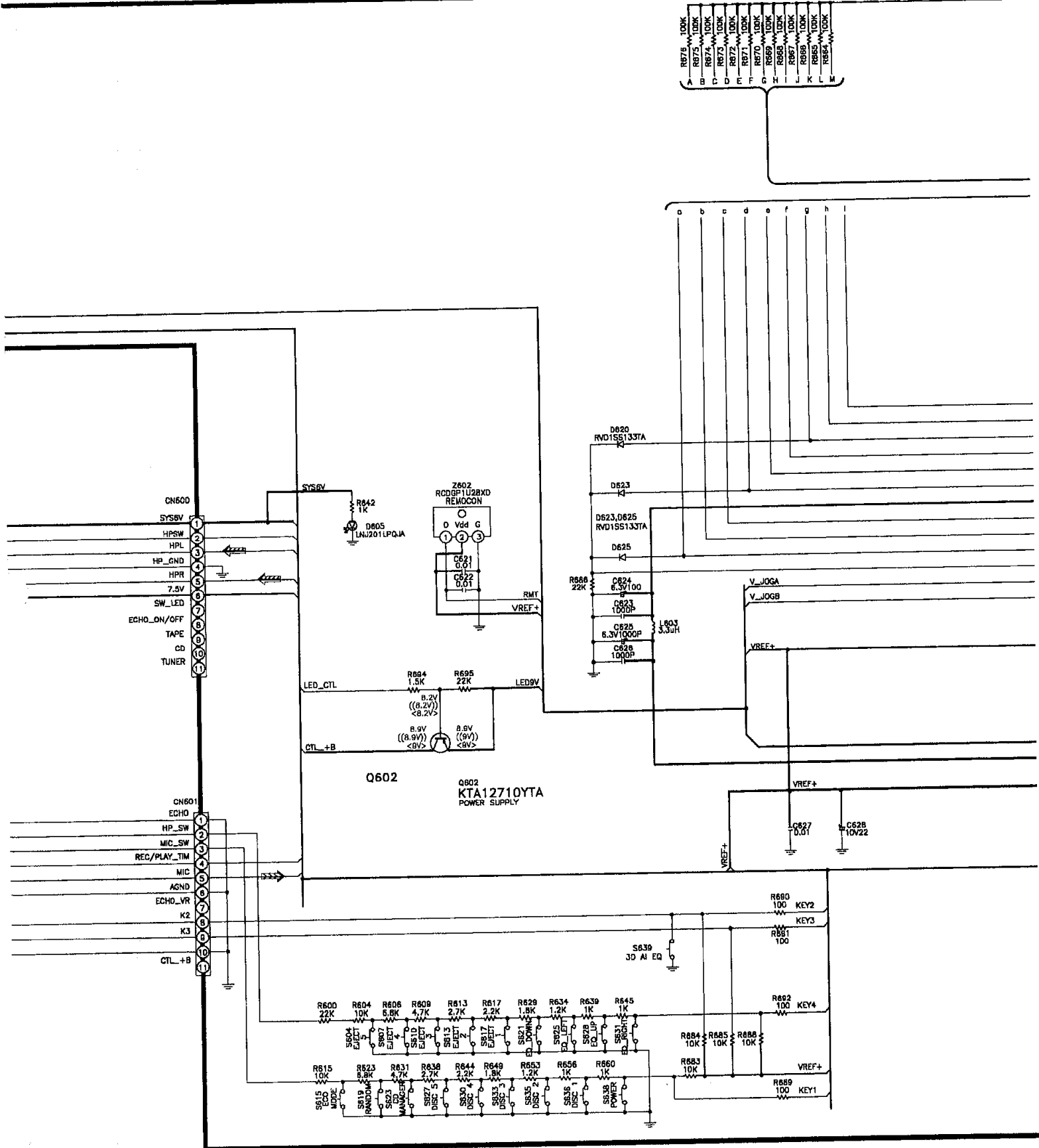
**D** TACT SWITCH CIRCUIT ( P.C.Board on page 48 )



— : +B Line

- - - : -B Line

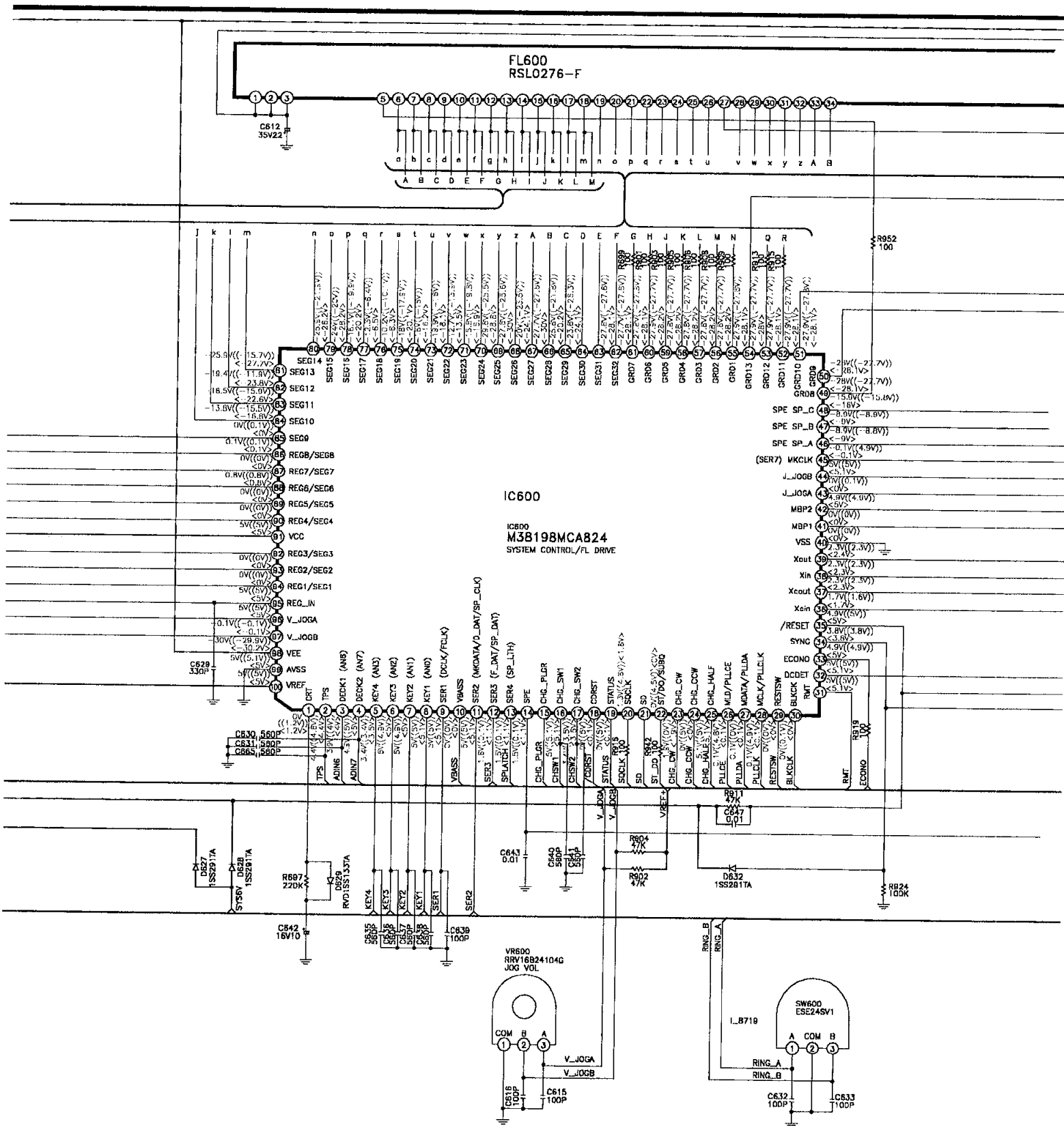
⇒ : Main Signal Line



A	R676	100K
B	R675	100K
C	R674	100K
D	R673	100K
E	R672	100K
F	R671	100K
G	R670	100K
H	R669	100K
I	R668	100K
J	R667	100K
K	R666	100K
L	R665	100K
M	R664	100K

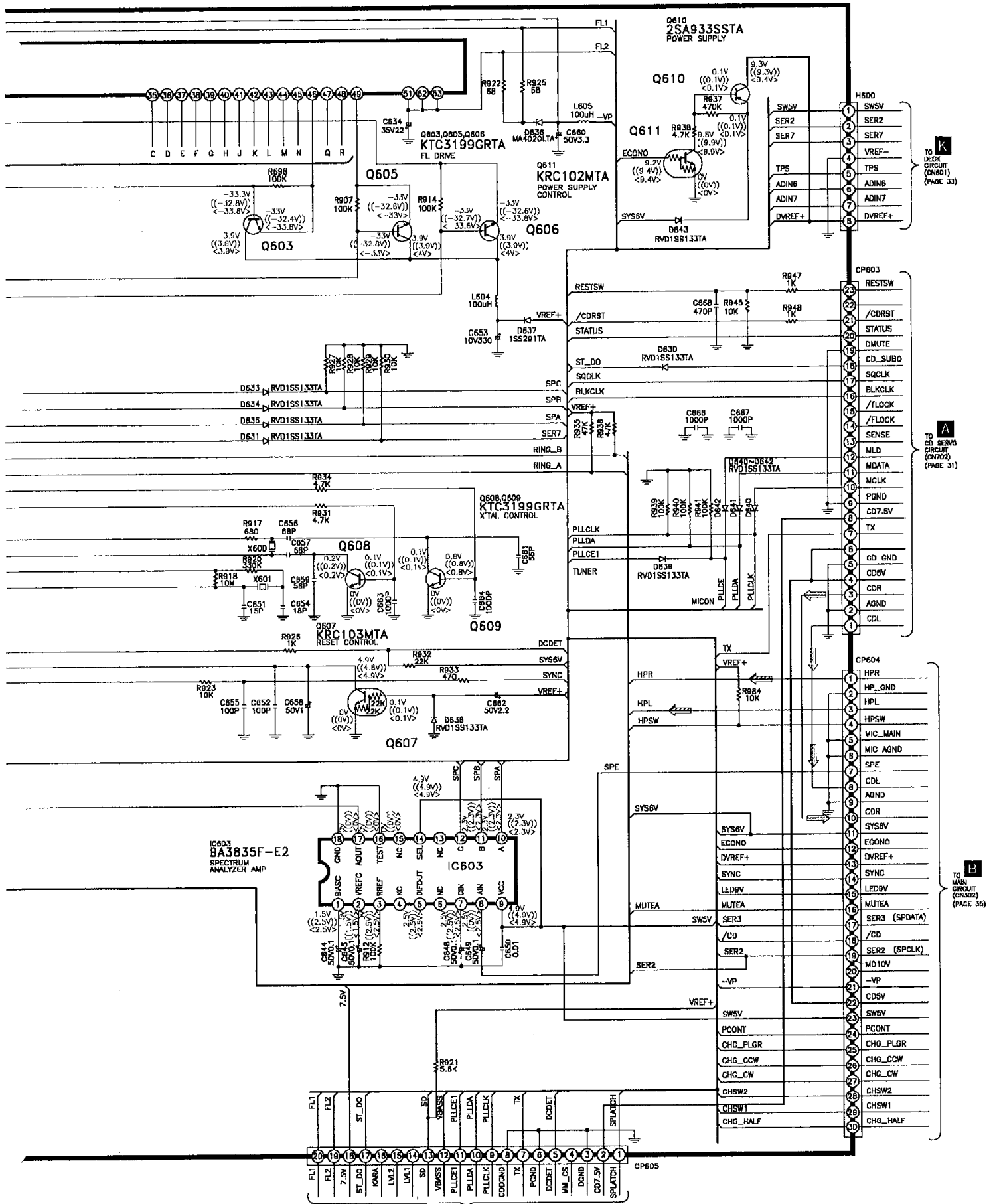
: +B Line

: -B Line



----- : +B Line  
 - - - - - : -B Line

====> : Main Signal Line  
 ==> : CD Signal Line



TO DECK CIRCUIT (CN601) (PAGE 33)

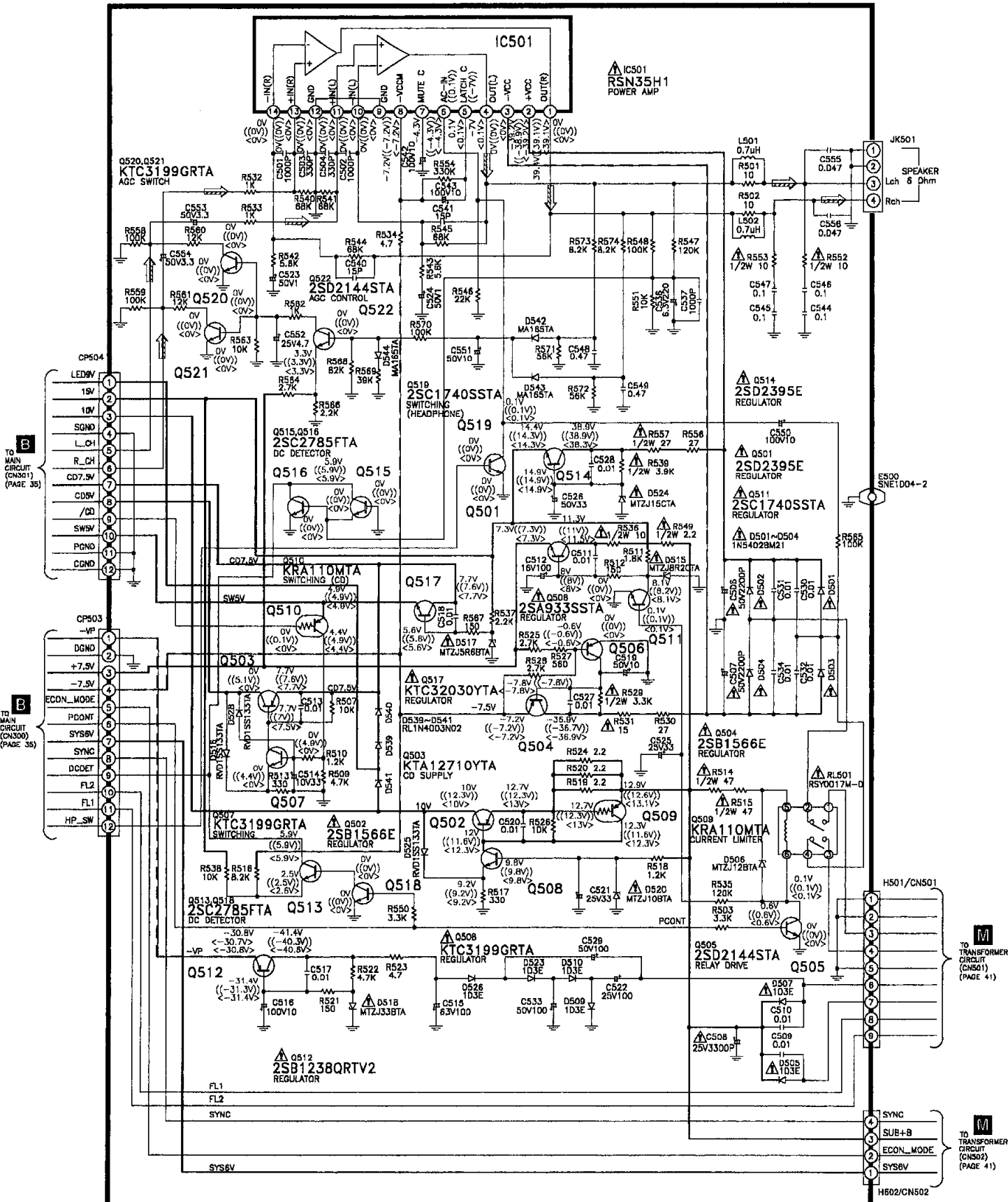
TO CD SERVO CIRCUIT (CN702) (PAGE 31)

TO MAIN CIRCUIT (CN302) (PAGE 36)

TO MAIN CIRCUIT (CN303) (PAGE 34)

— : +B Line    - - - : -B Line    ⇨ : Main Signal Line

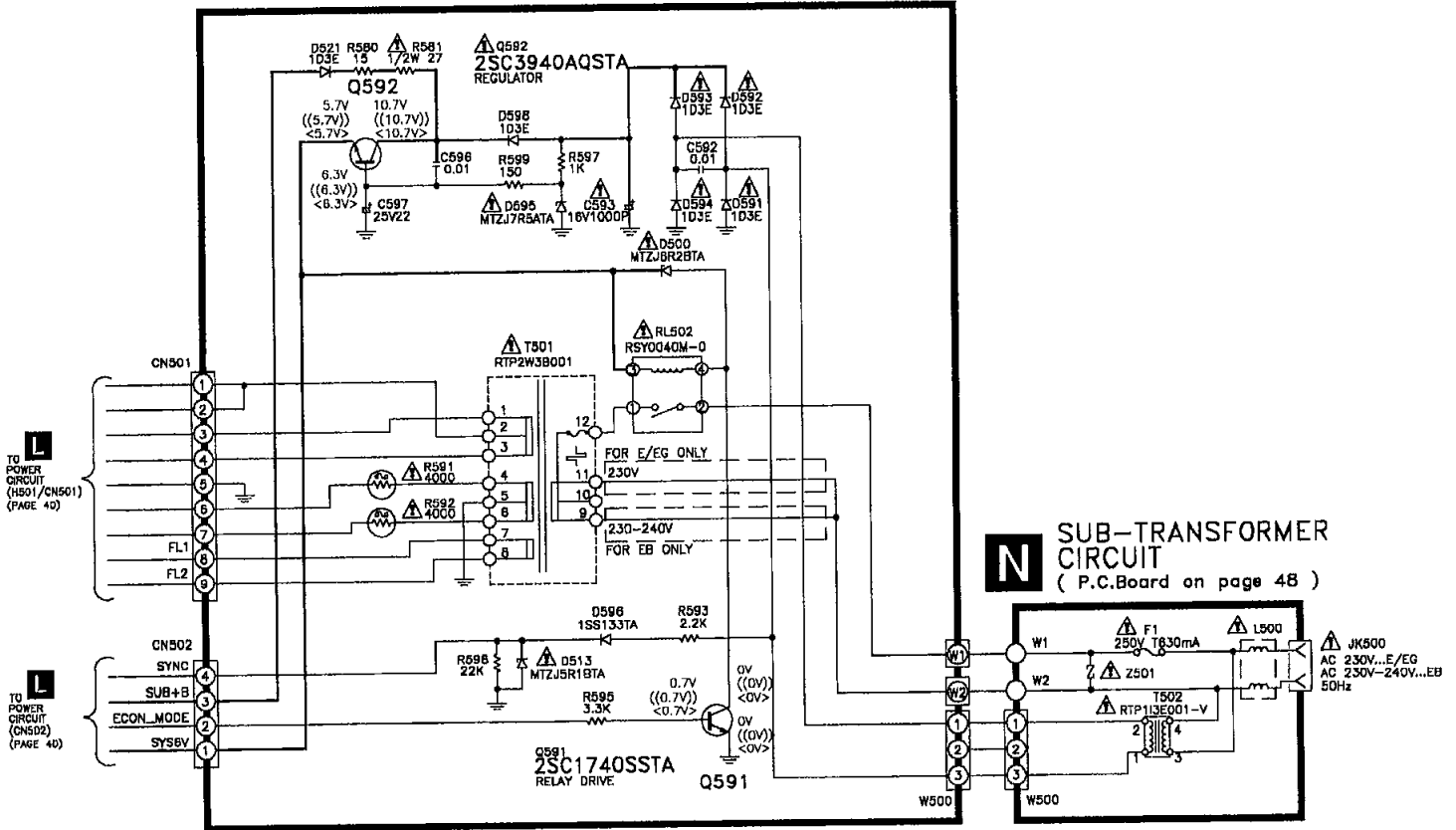
**L** POWER CIRCUIT ( P.C.Board on page 51 )



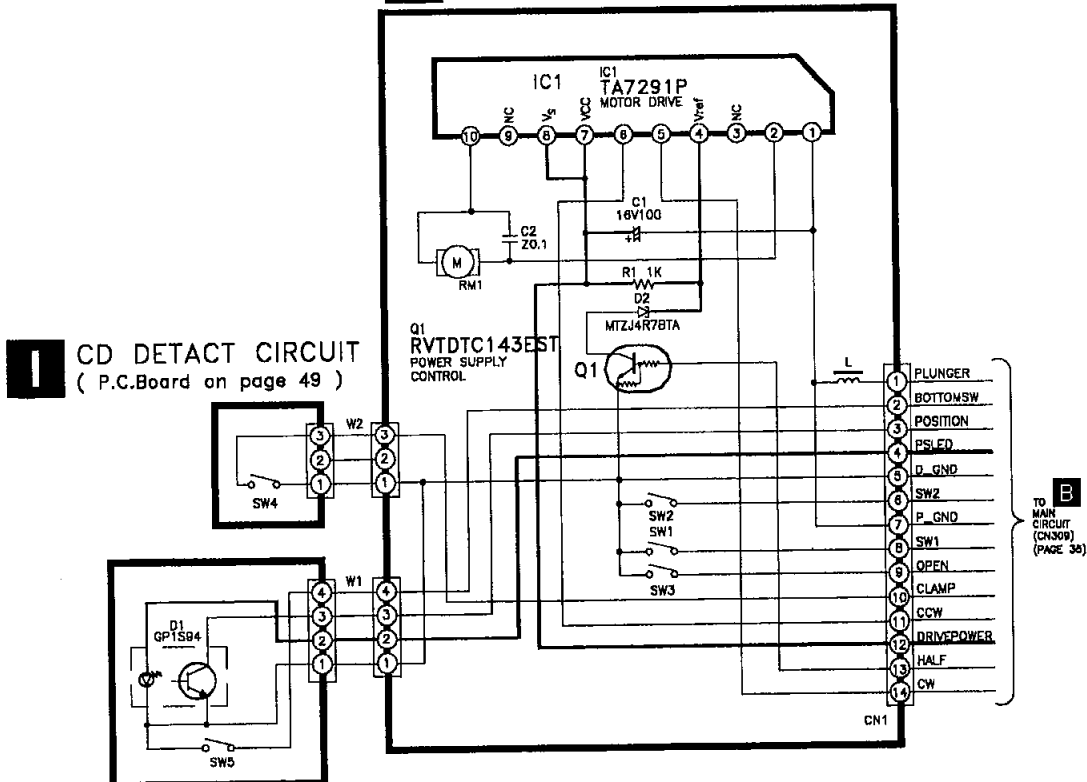


————— : +B Line

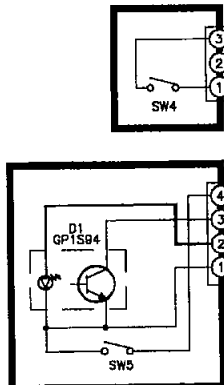
**M** TRANSFORMER CIRCUIT ( P.C.Board on page 42 )



**G** MOTOR CIRCUIT ( P.C.Board on page 49 )



**I** CD DETACT CIRCUIT ( P.C.Board on page 49 )

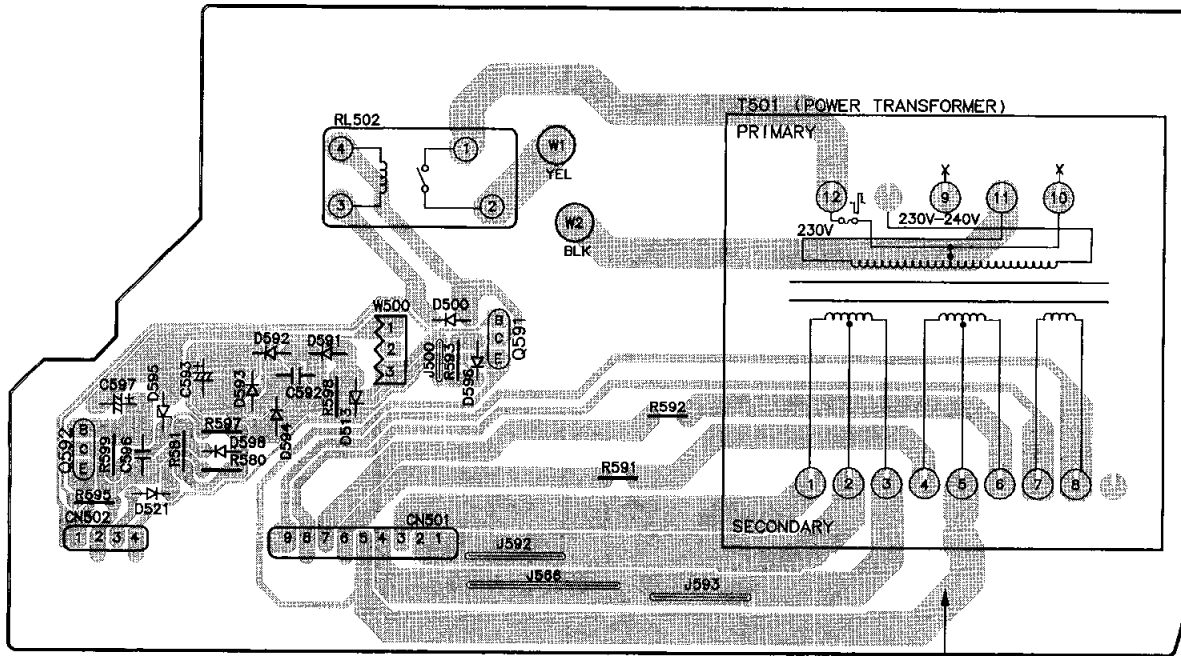


**H** SPINDLE POSITION CIRCUIT ( P.C.Board on page 49 )

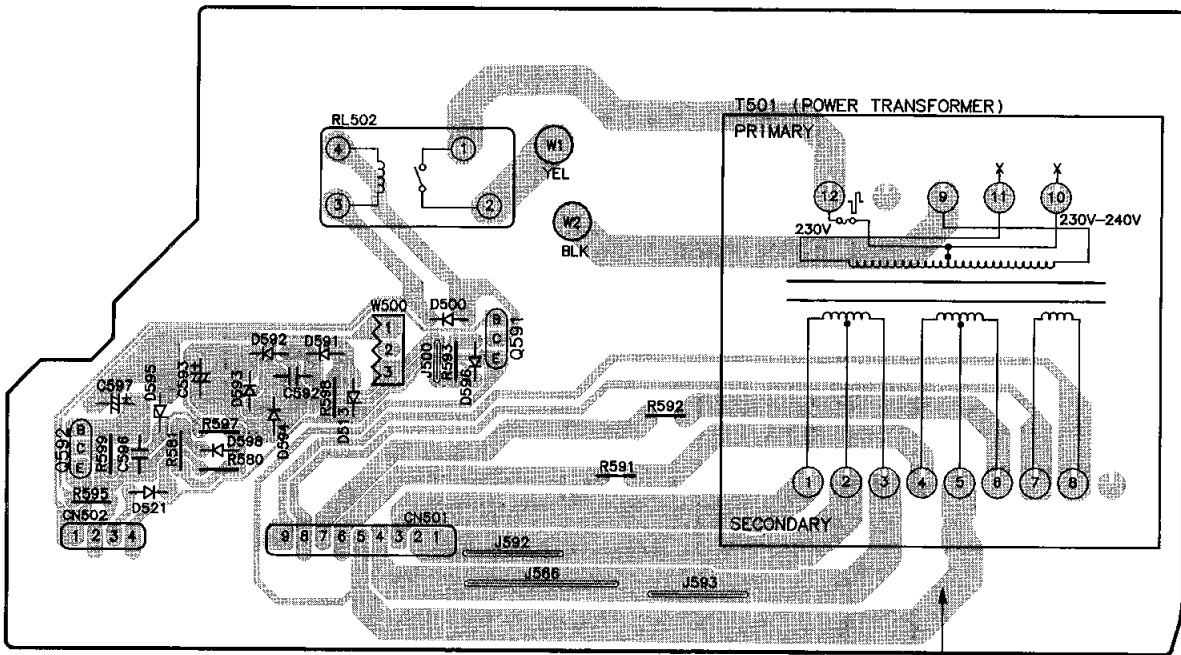
## Printed Circuit Board

Note : Circuit board diagrams may be modified at any time with the development of new technology.

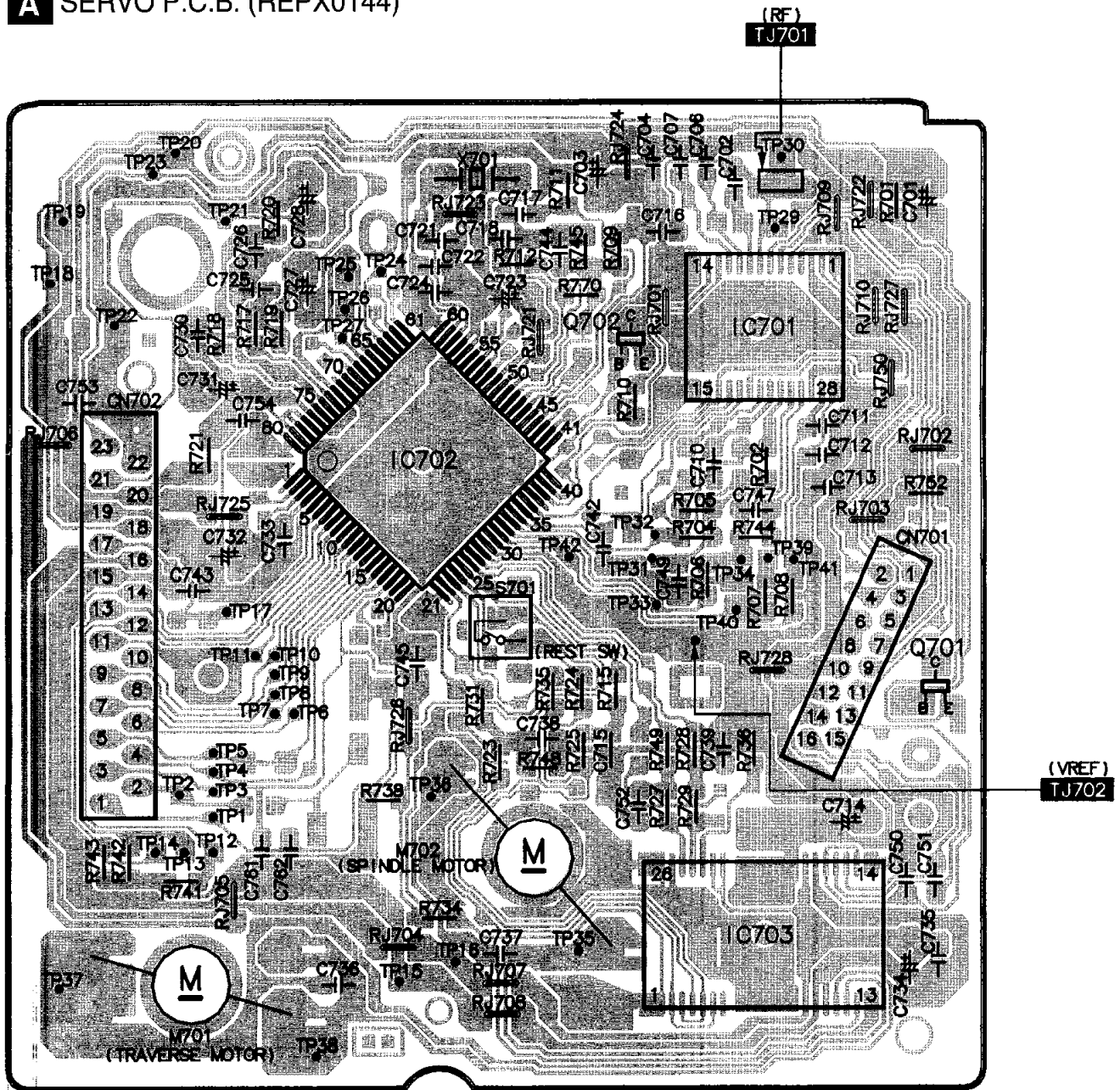
### M TRANSFORMER P.C.B. (REPX0173S)...E,EG...Supplied by MAVD



### M TRANSFORMER P.C.B. (REPX0173T)...EB...Supplied by MAVD



**A** SERVO P.C.B. (REPX0144)

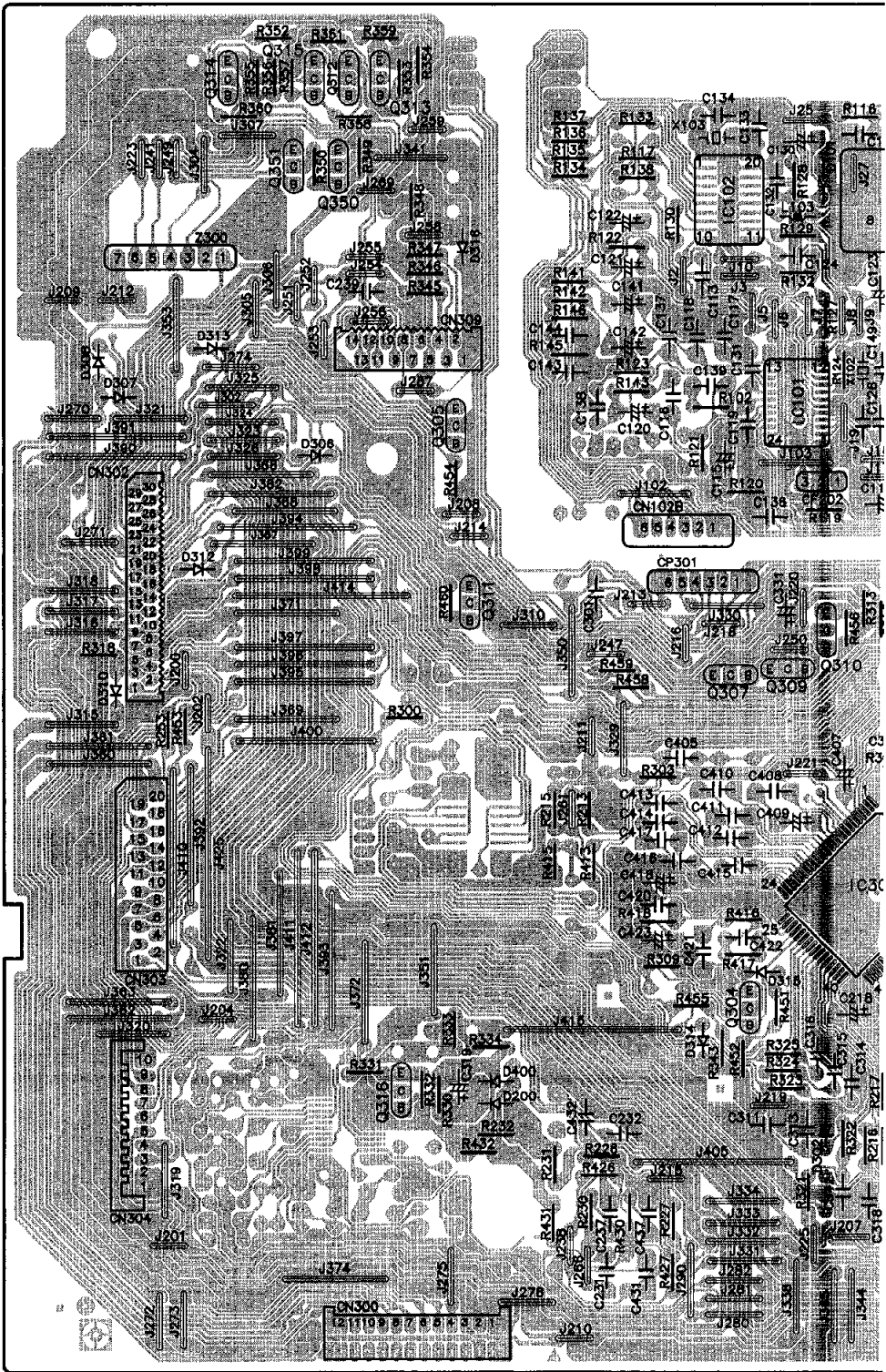


Ref. No.	Loc. No.
IC701	F3
IC702	D4
IC703	F7
Q701	G5
Q702	E3

A
B
C
D
E
F
G

**B** MAIN P.C.B. (REPX0187B)...Supplied by MAVD

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9



G

H

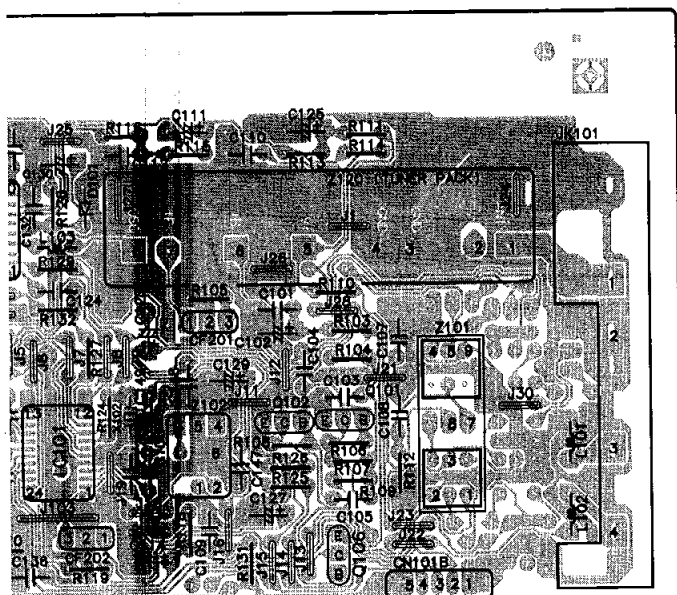
I

J

K

L

M

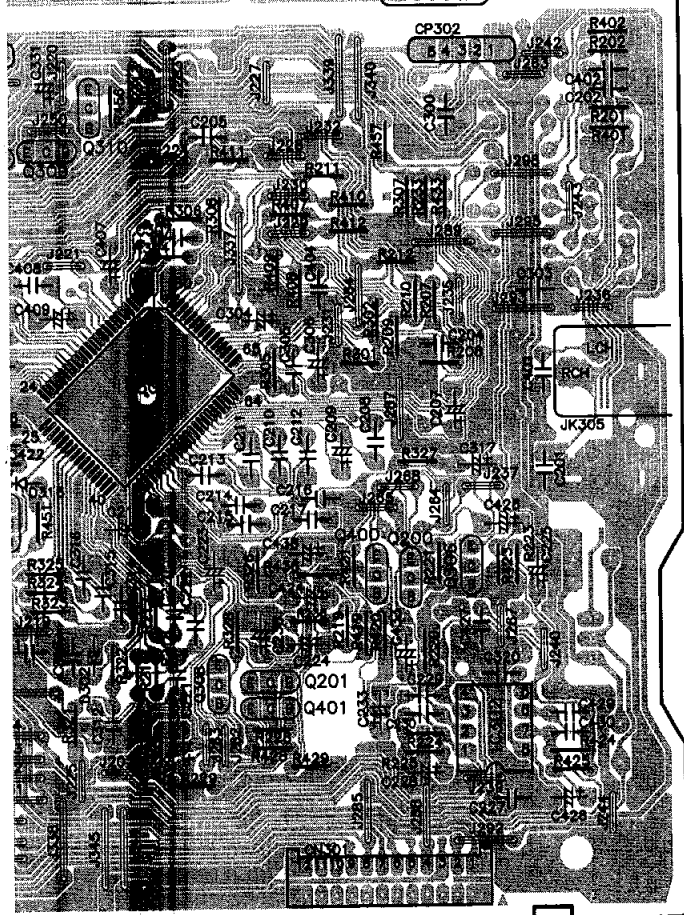
**J** TUNER P.C.B. (REPX0188B)...Supplied by MAVD

FM ANT



GND

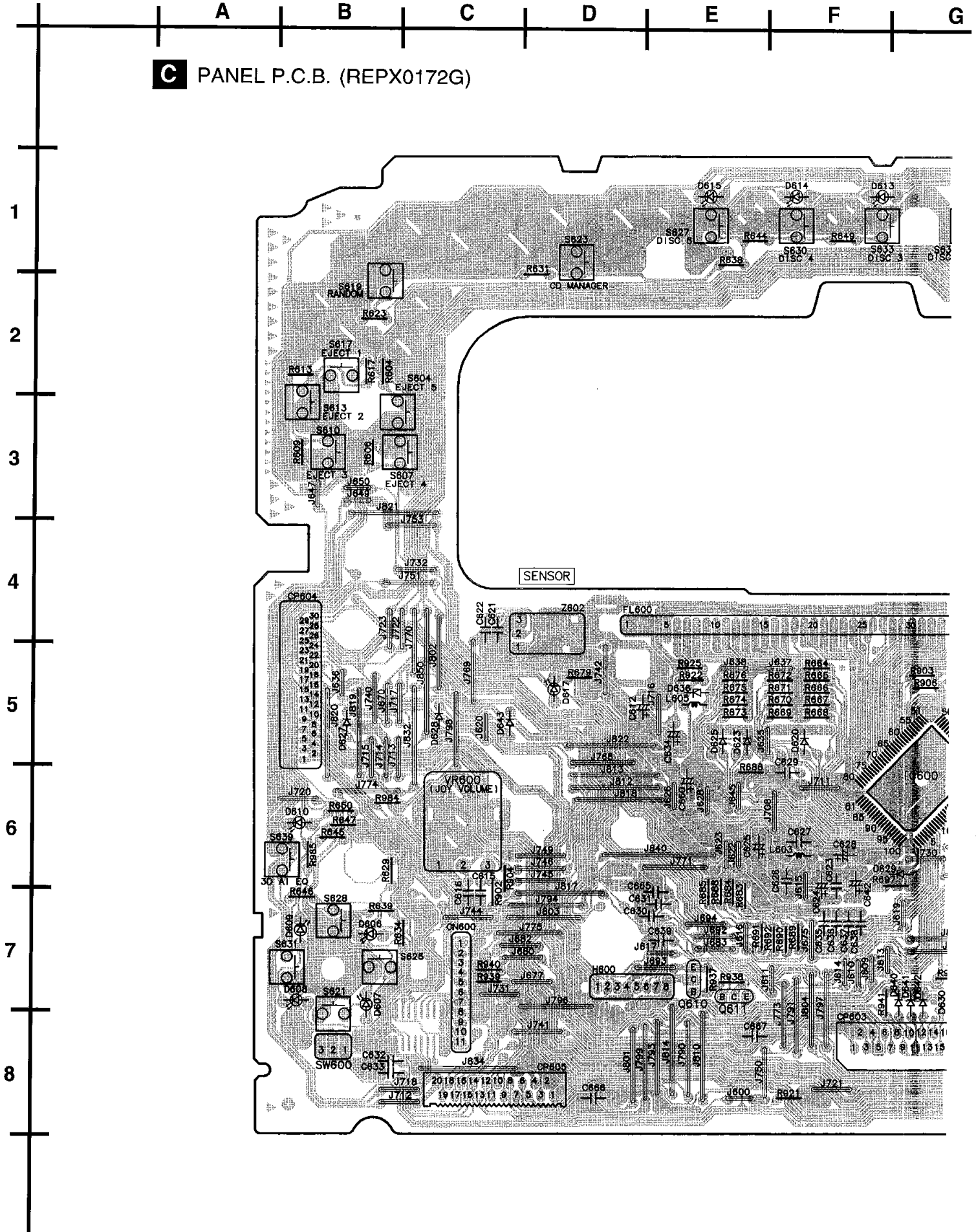
AM LOOP

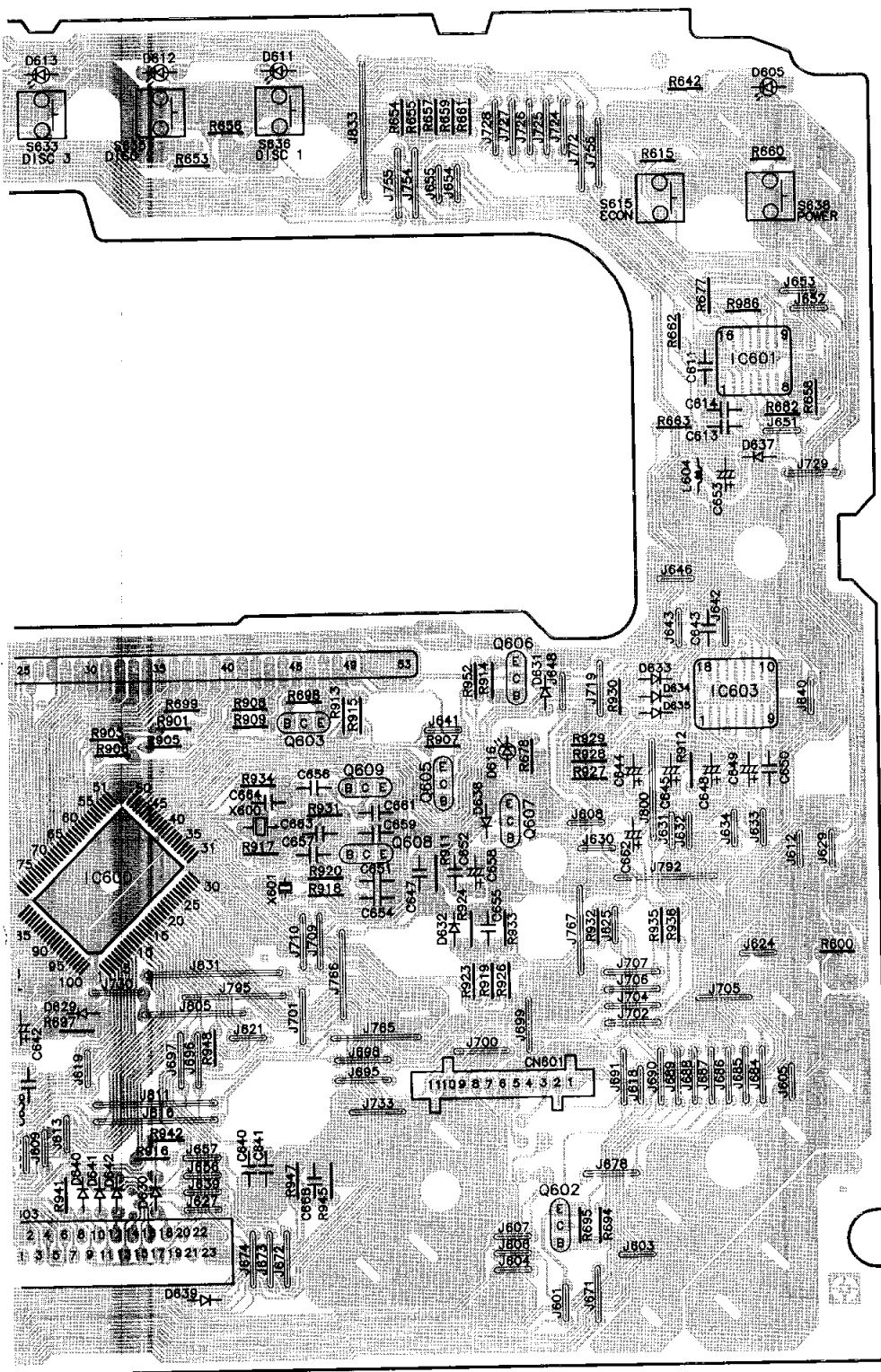
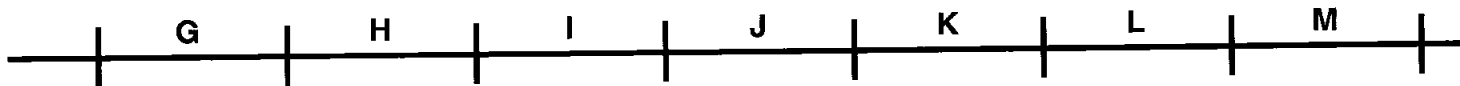
AM ANT  
EXT

AUX

Ref. No.	Loc. No.
D101	F2
D200	D7
D302	F7
D306	C3
D307	B3
D308	B3
D310	B4
D312	C4
D313	C3
D314	F6
D315	F6
D316	D2
D400	D7
IC101	E3
IC102	E2
IC302	H7
IC303	D6
Q101	H3
Q106	H3
Q200	H7
Q201	G7
Q304	F6
Q305	D3
Q306	H7
Q307	F4
Q308	G7
Q309	F4
Q310	F4
Q311	D4
Q312	D1
Q313	D1
Q314	C1
Q315	C1
Q316	D7
Q350	C1
Q351	C1
Q400	H7
Q401	G7

**C** PANEL P.C.B. (REPX0172G)

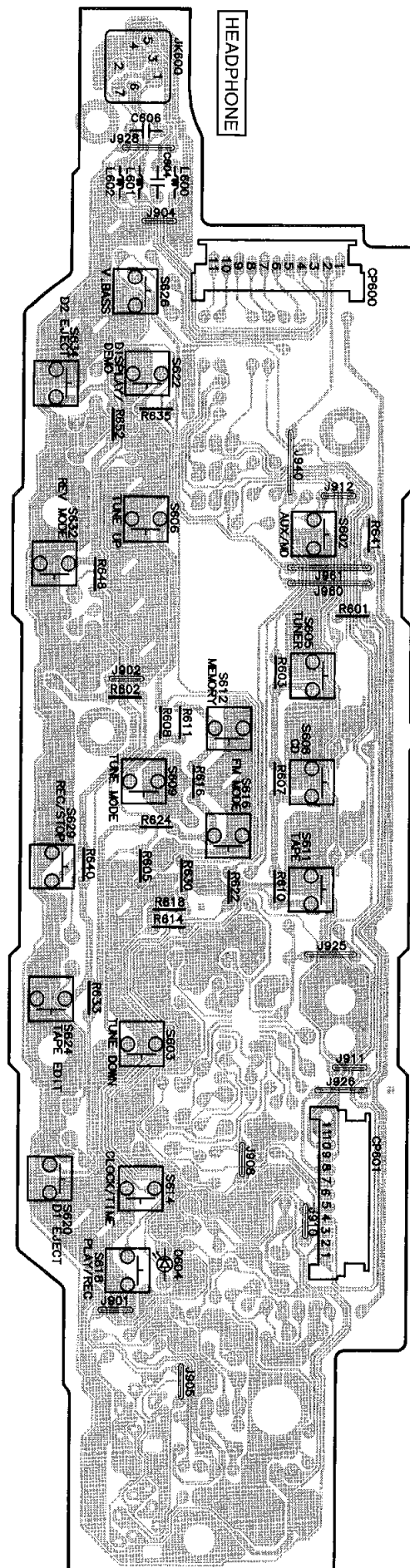




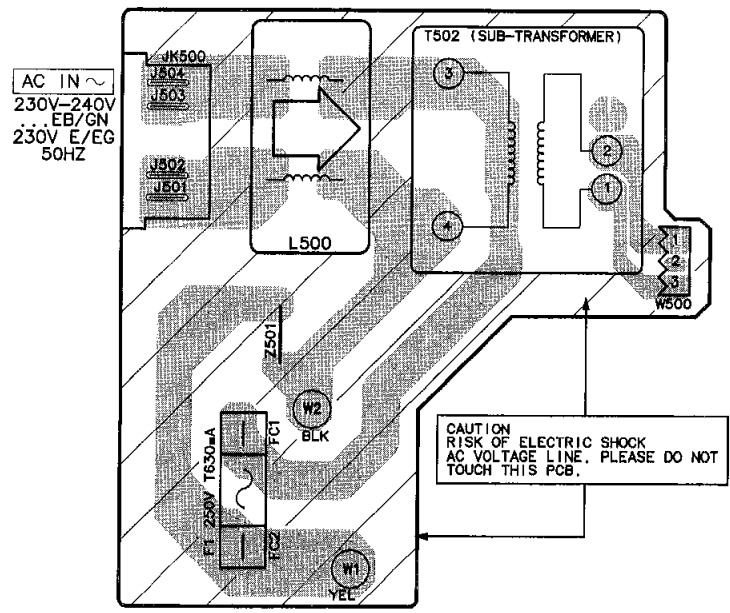
Ref. No.	Loc. No.
D605	K1
D606	B7
D607	B7
D608	B7
D609	B7
D610	B6
D611	H1
D612	G1
D613	G1
D614	F1
D615	E1
D616	I5
D617	D5
D620	F5
D622	F5
D623	E5
D624	E5
D625	E5
D627	B5
D628	C5
D629	G6
D630	G7
D631	J4
D632	I6

Ref. No.	Loc. No.
D633	J4
D634	J5
D635	J5
D636	E5
D637	K3
D638	I5
D639	G8
D640	G7
D641	G7
D642	G7
D643	D5
IC600	G6
IC601	C7
IC603	K5
Q602	J8
Q603	H5
Q605	I5
Q606	I4
Q607	I5
Q608	H5
Q609	H5
Q610	E7
Q611	E7

**D** TACT SWITCH P.C.B. (REPX0179E)

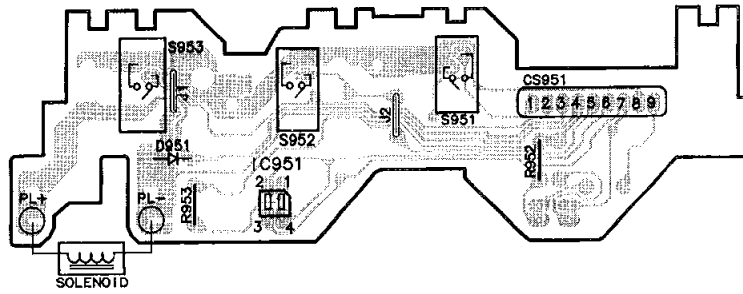


**N** SUB-TRANSFORMER P.C.B. (REPX0173S)...E,EG...Supplied by MAVD (REPX0173T)...EB...Supplied by MAVD

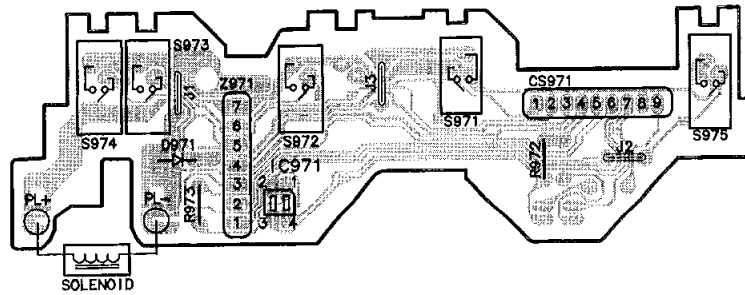




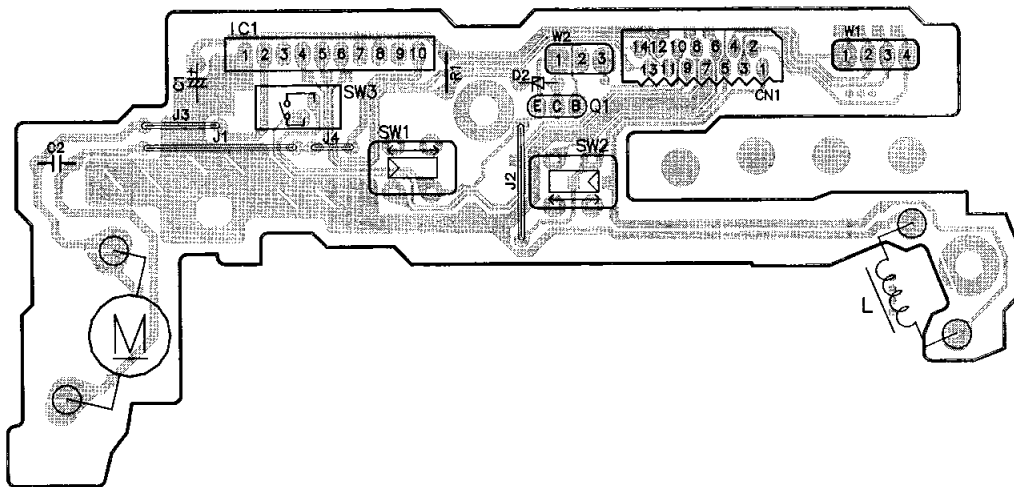
**E** MECHANISM (DECK 1) P.C.B. (REPX0108A)



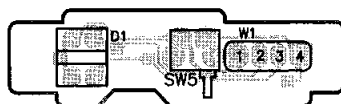
**F** MECHANISM (DECK 2) P.C.B. (REPX0108)



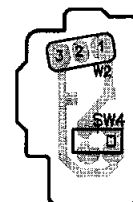
**G** MOTOR P.C.B. (REP2578A-N)



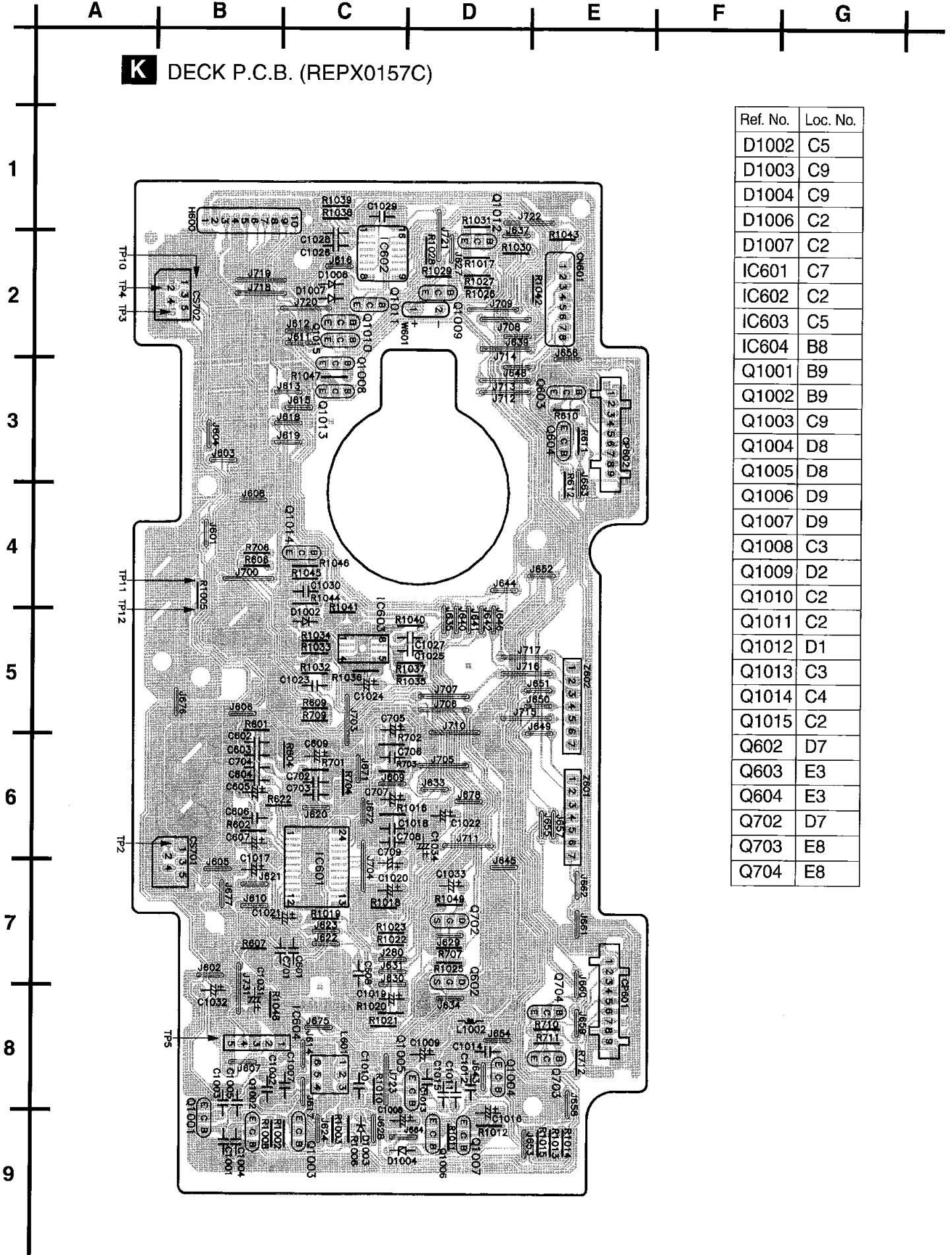
**H** SPINDLE POSITION P.C.B. (REP2578A-N)



**I** CD DETACT P.C.B. (REP2578A-N)

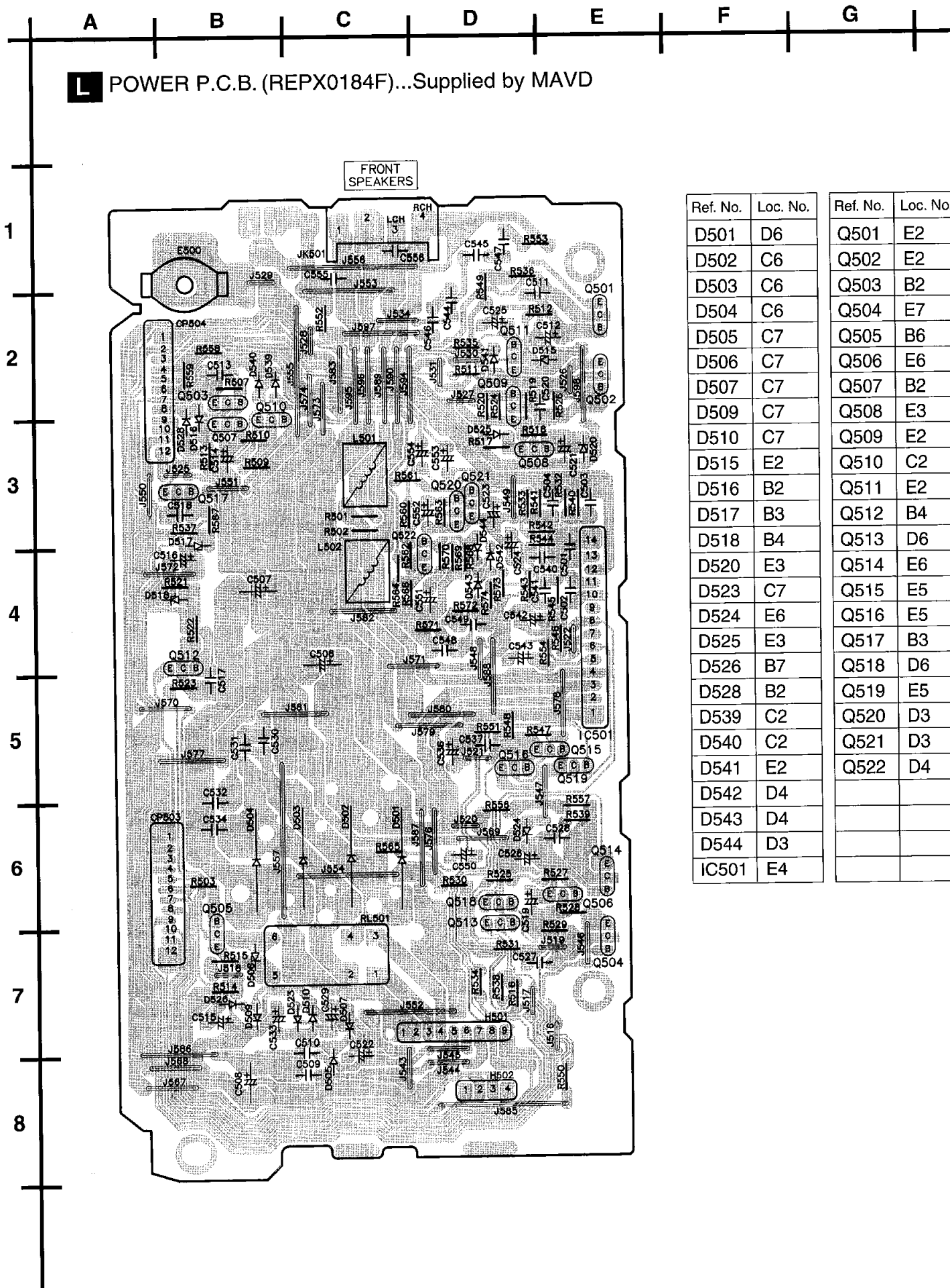


**K** DECK P.C.B. (REPX0157C)



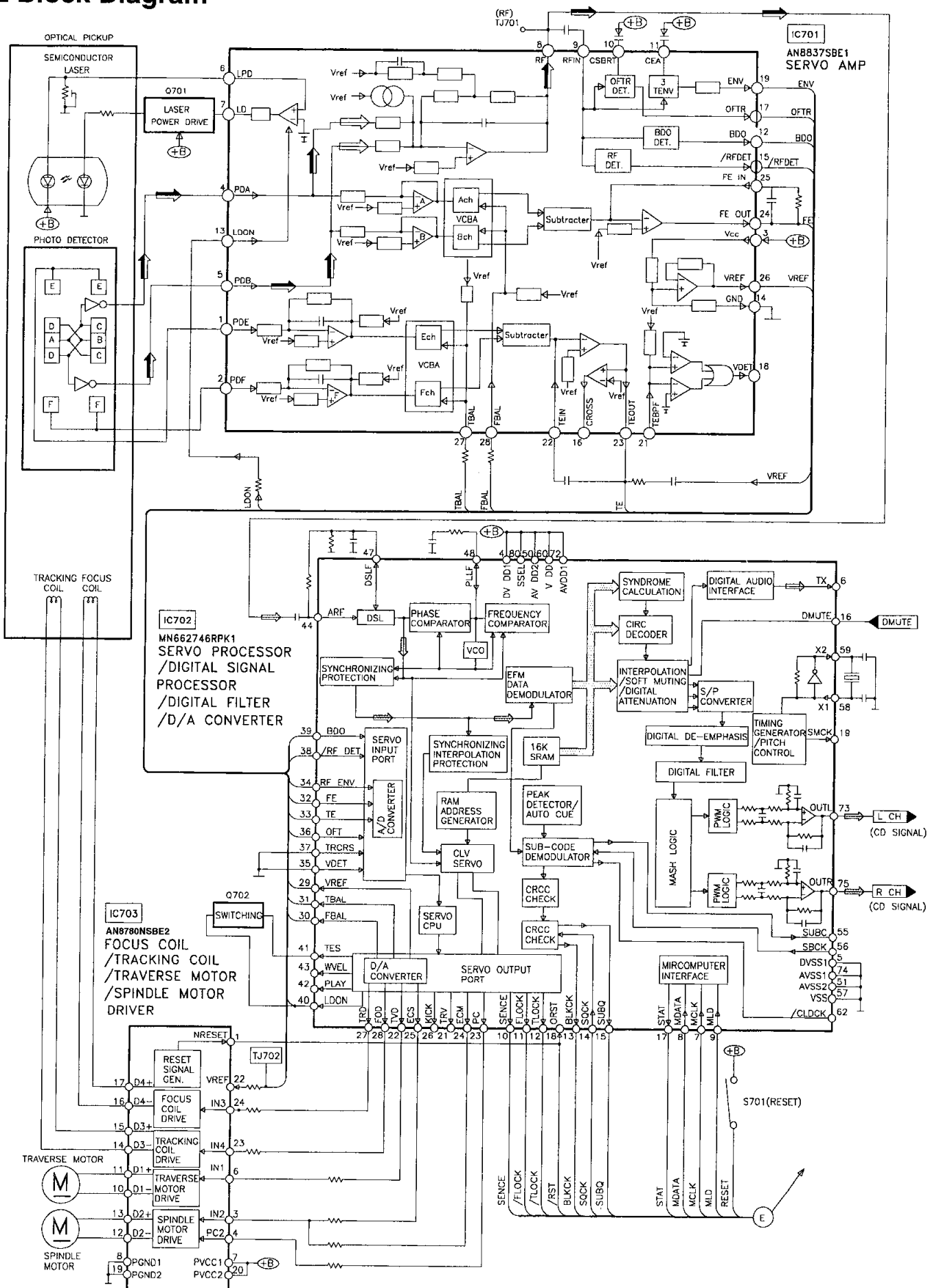
Ref. No.	Loc. No.
D1002	C5
D1003	C9
D1004	C9
D1006	C2
D1007	C2
IC601	C7
IC602	C2
IC603	C5
IC604	B8
Q1001	B9
Q1002	B9
Q1003	C9
Q1004	D8
Q1005	D8
Q1006	D9
Q1007	D9
Q1008	C3
Q1009	D2
Q1010	C2
Q1011	C2
Q1012	D1
Q1013	C3
Q1014	C4
Q1015	C2
Q602	D7
Q603	E3
Q604	E3
Q702	D7
Q703	E8
Q704	E8

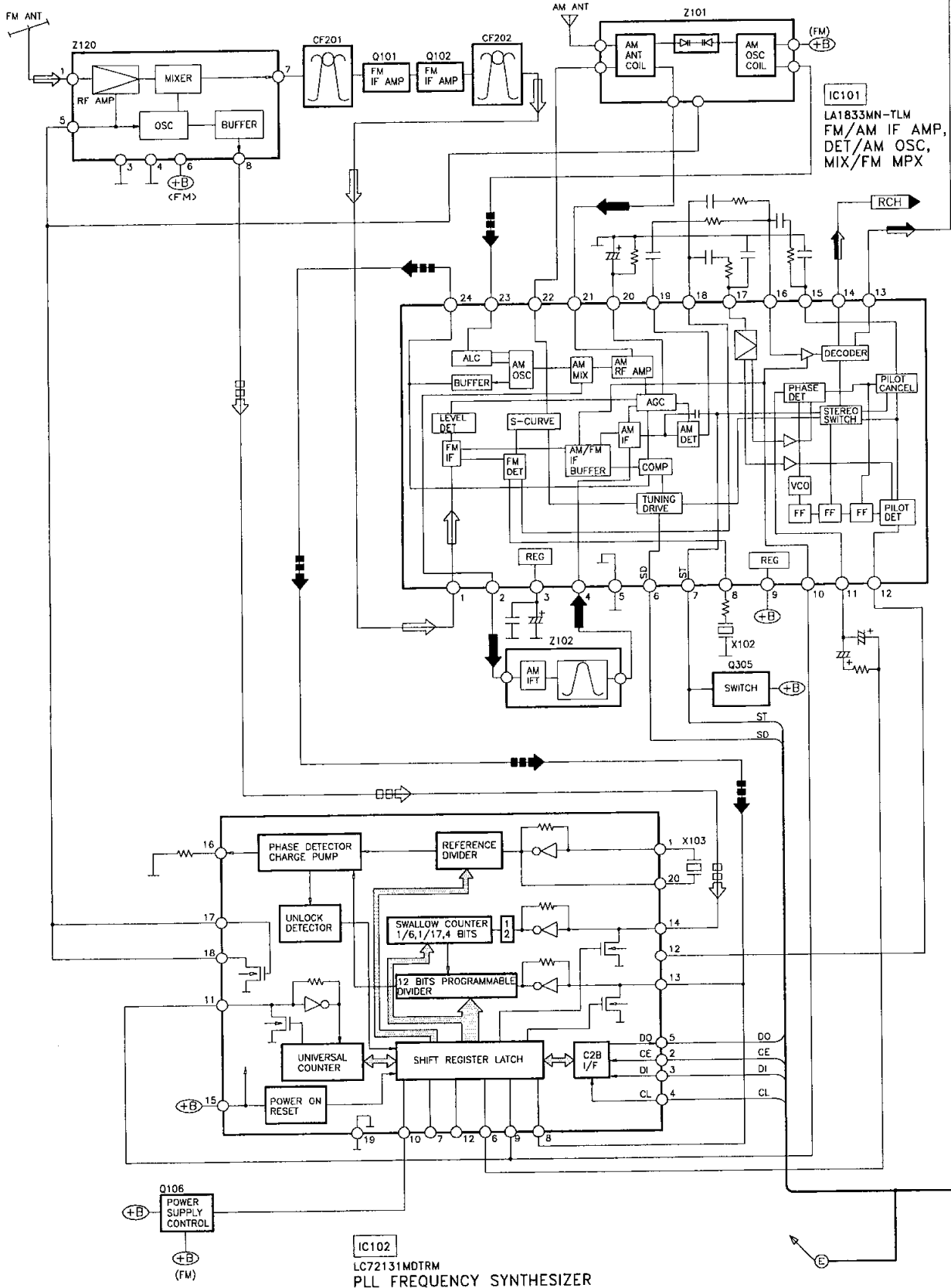
**L** POWER P.C.B. (REPX0184F)...Supplied by MAVD

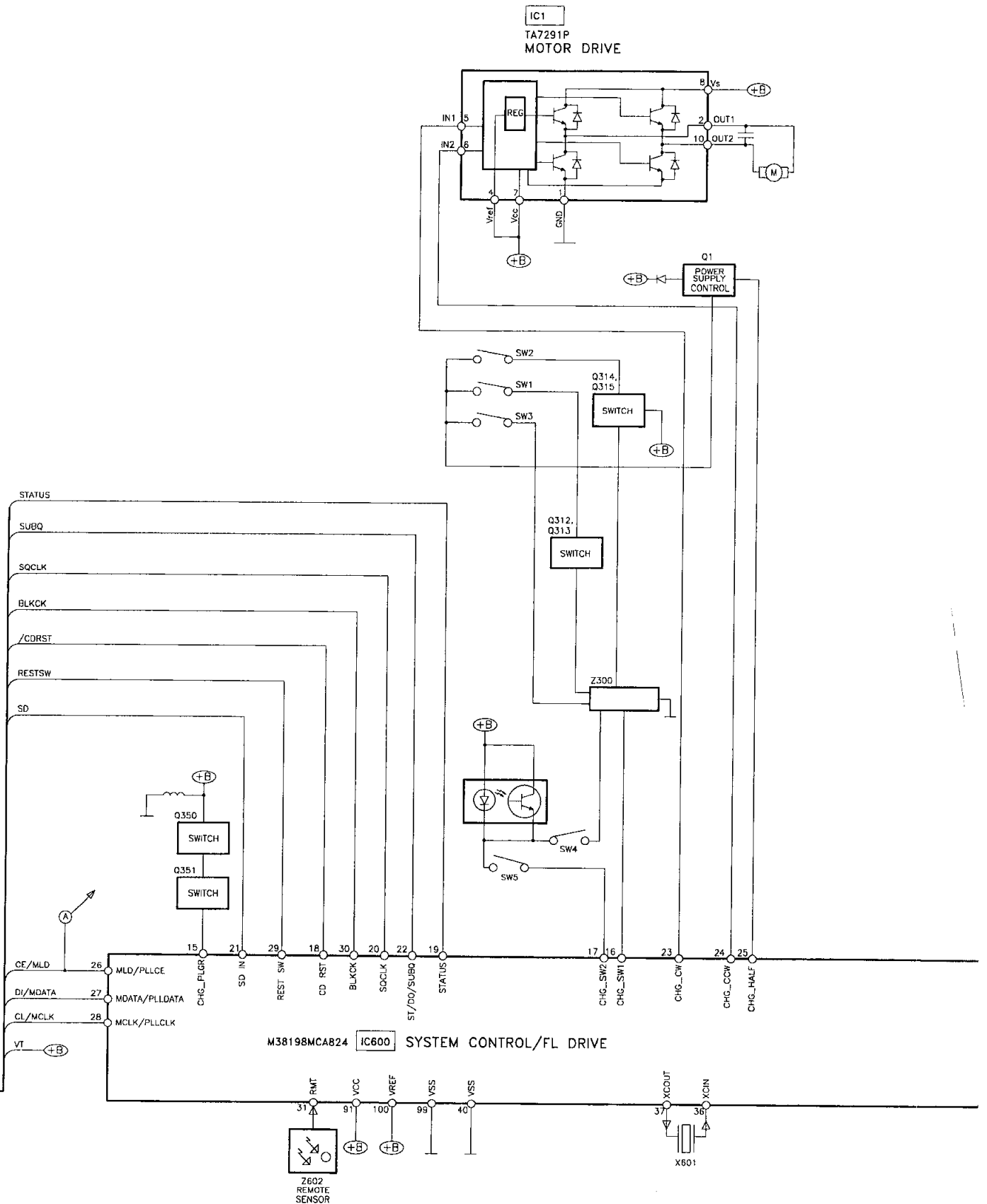


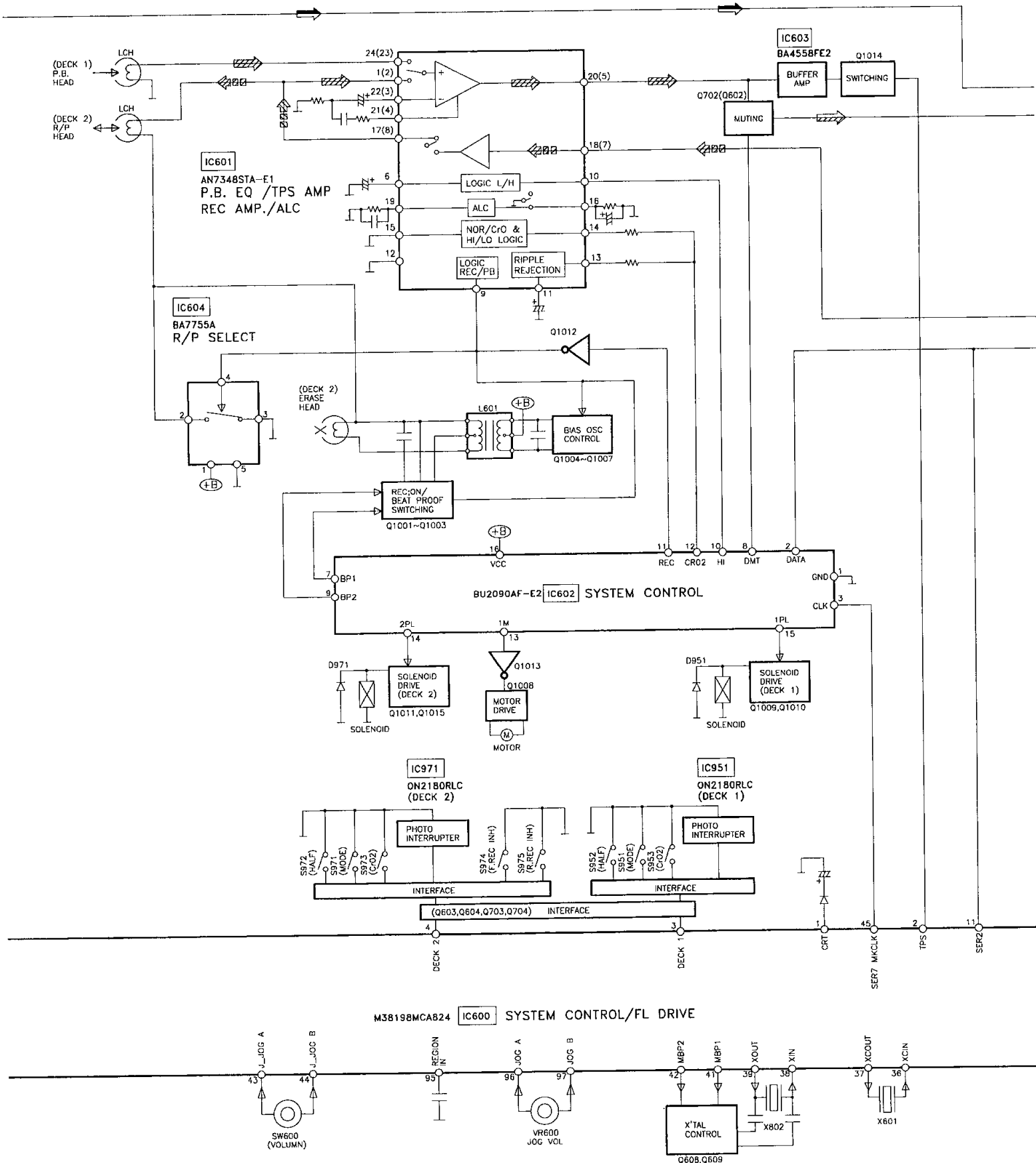
Ref. No.	Loc. No.	Ref. No.	Loc. No.
D501	D6	Q501	E2
D502	C6	Q502	E2
D503	C6	Q503	B2
D504	C6	Q504	E7
D505	C7	Q505	B6
D506	C7	Q506	E6
D507	C7	Q507	B2
D509	C7	Q508	E3
D510	C7	Q509	E2
D515	E2	Q510	C2
D516	B2	Q511	E2
D517	B3	Q512	B4
D518	B4	Q513	D6
D520	E3	Q514	E6
D523	C7	Q515	E5
D524	E6	Q516	E5
D525	E3	Q517	B3
D526	B7	Q518	D6
D528	B2	Q519	E5
D539	C2	Q520	D3
D540	C2	Q521	D3
D541	E2	Q522	D4
D542	D4		
D543	D4		
D544	D3		
IC501	E4		

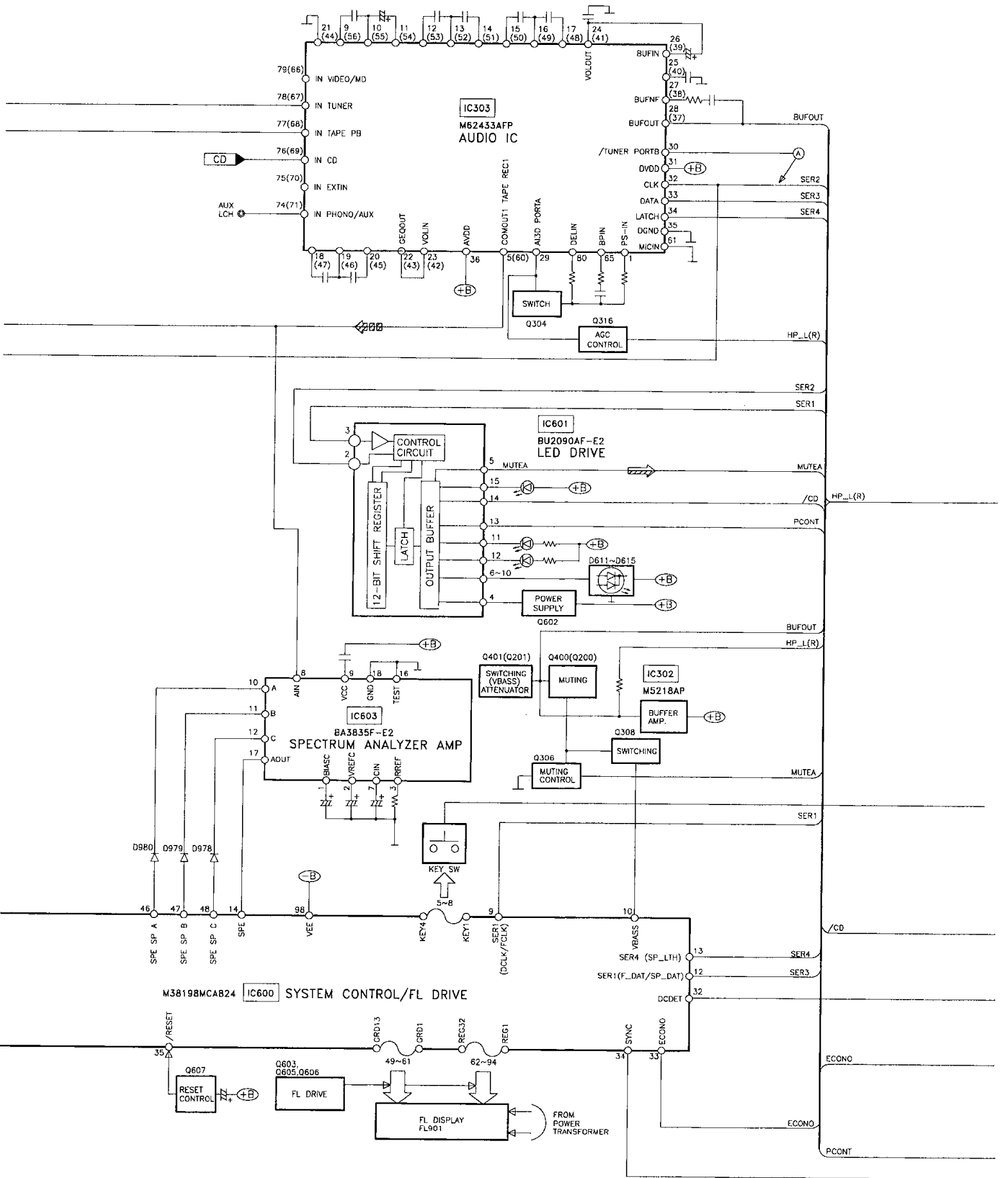
# Block Diagram





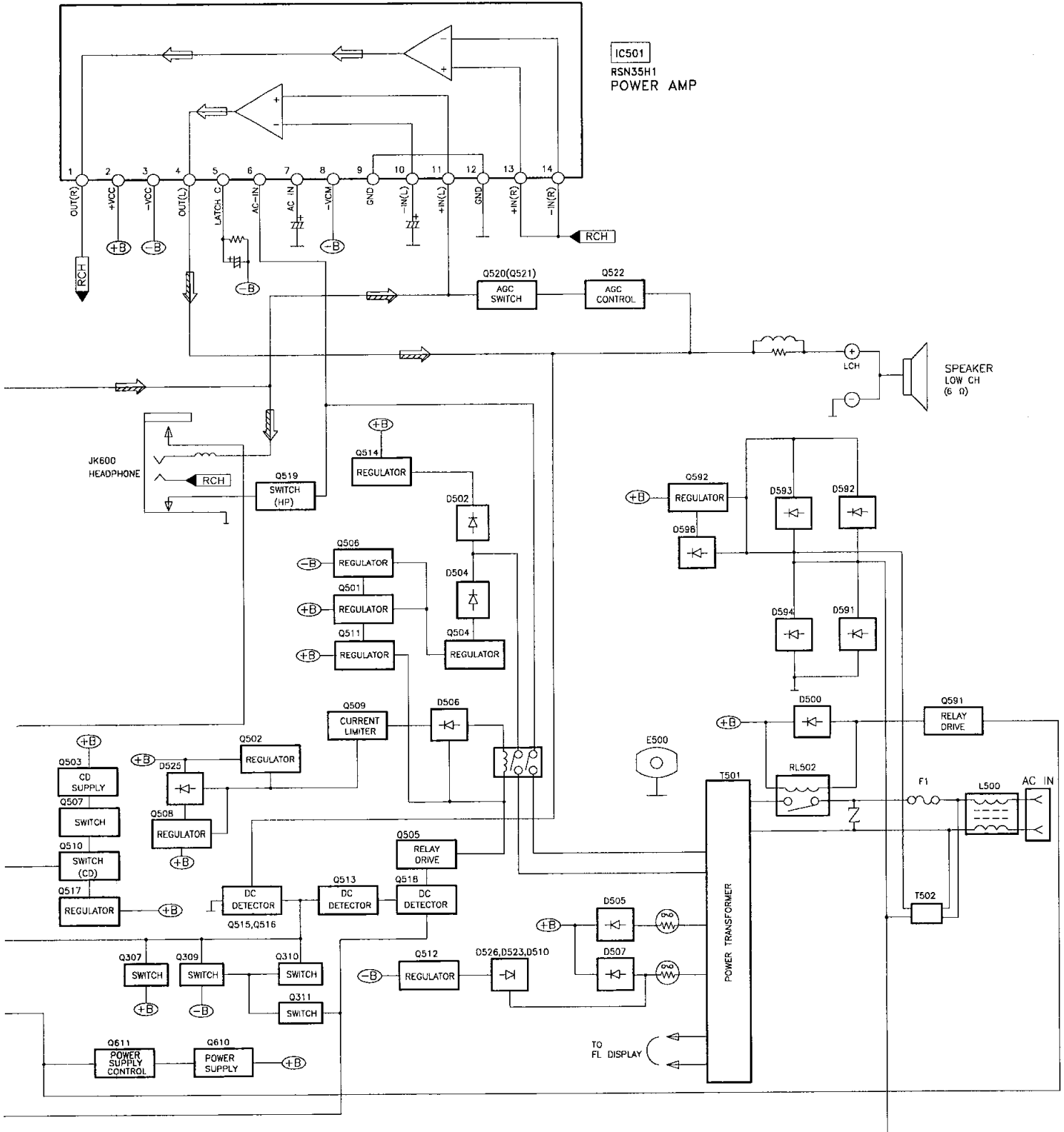
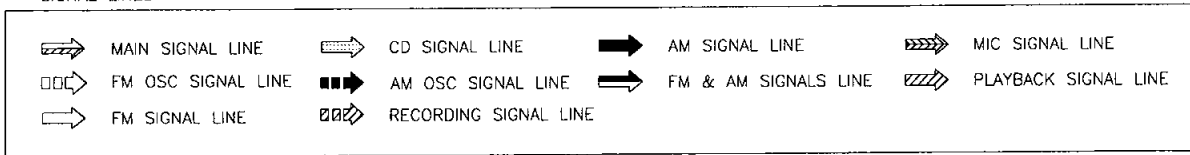




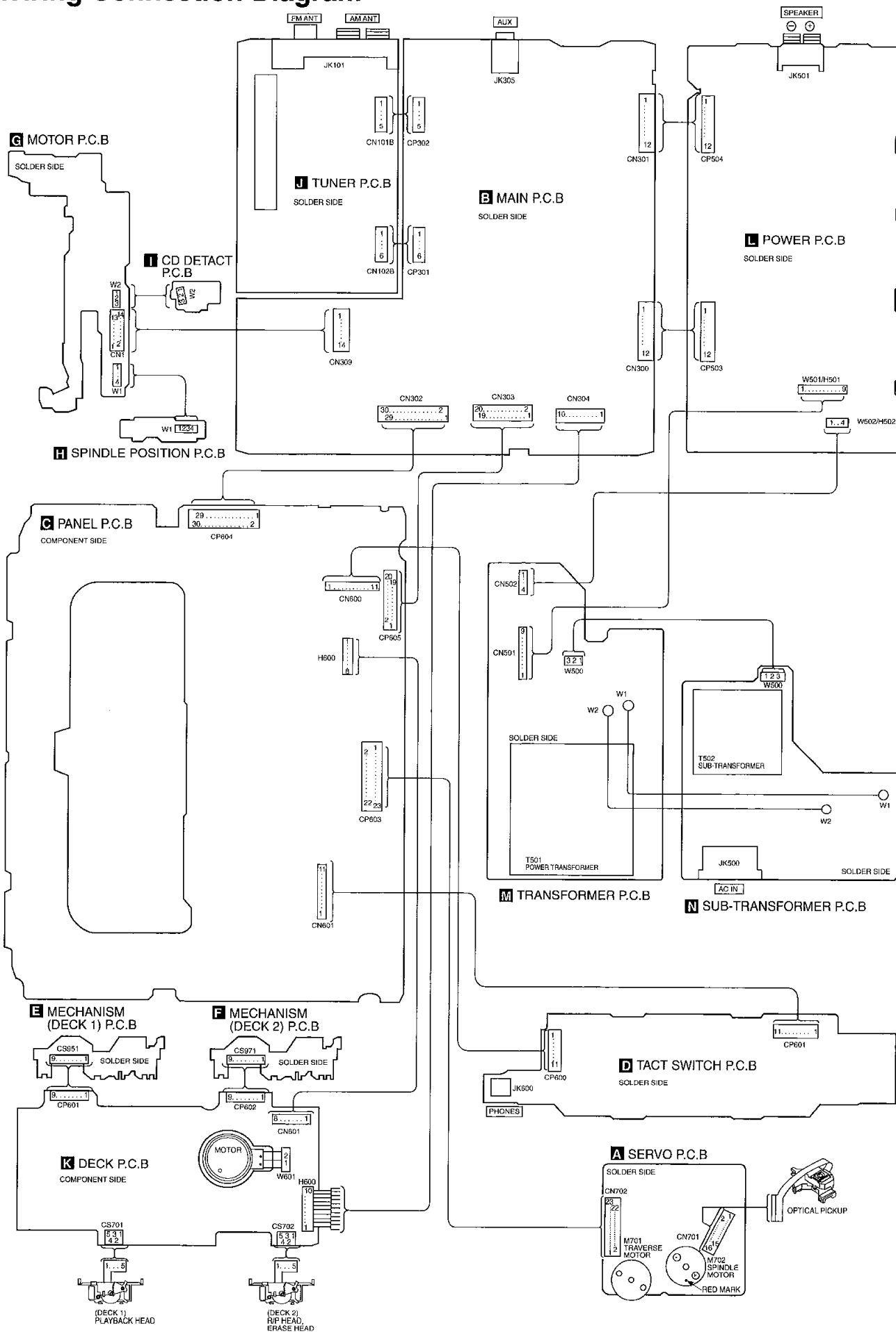




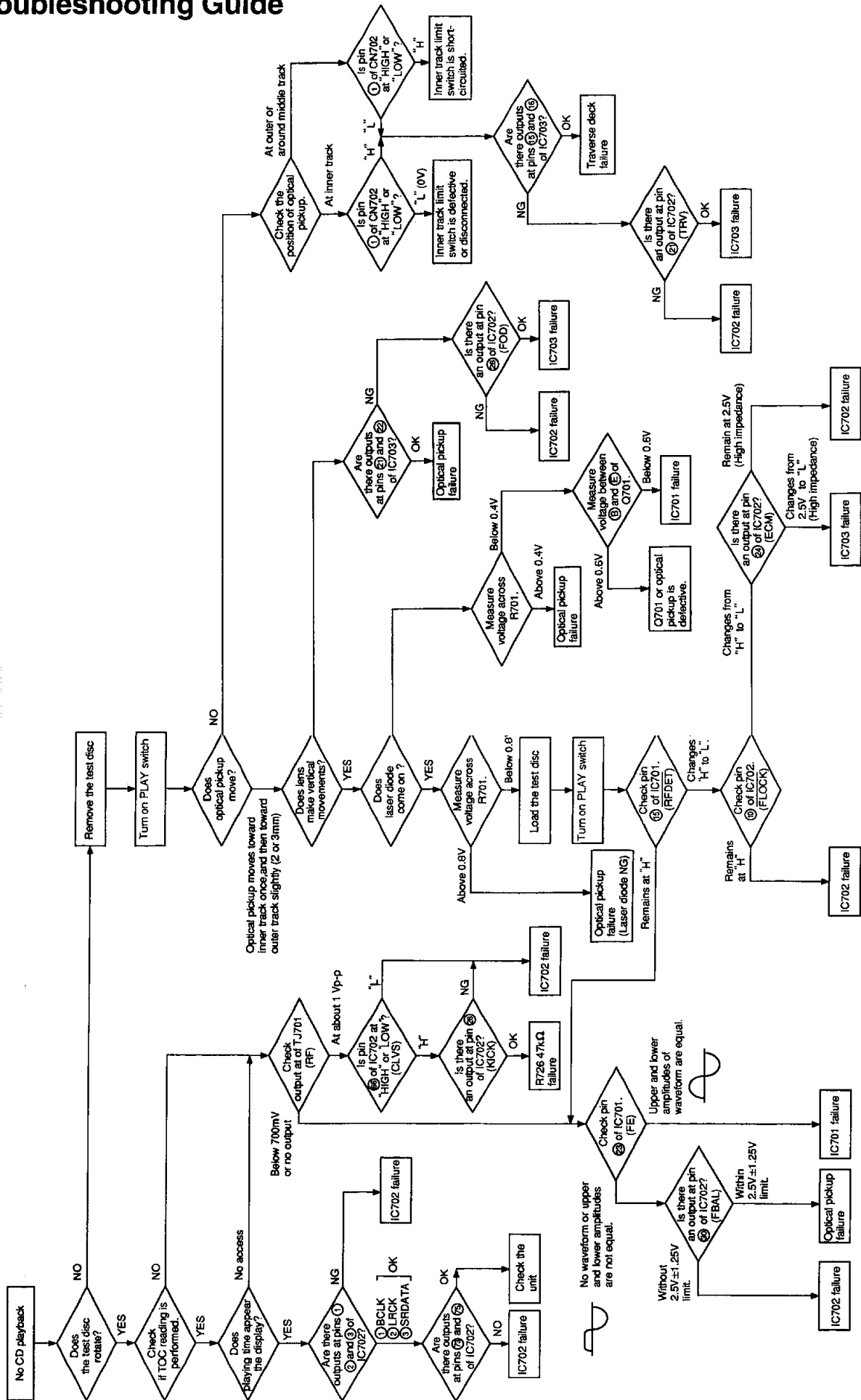
SIGNAL LINES



# Wiring Connection Diagram



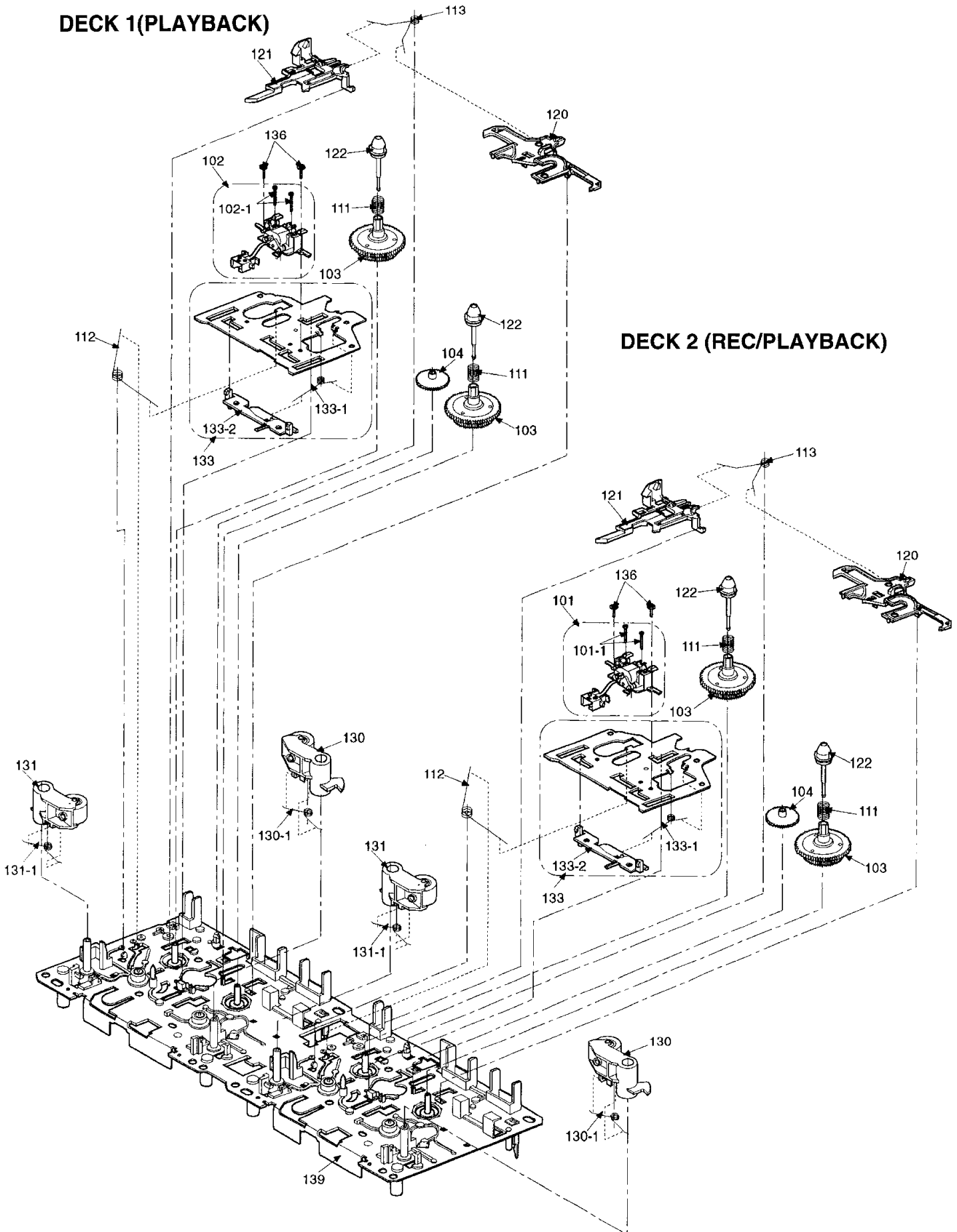
# Troubleshooting Guide



# Mechanism Parts Location (RAA3408)

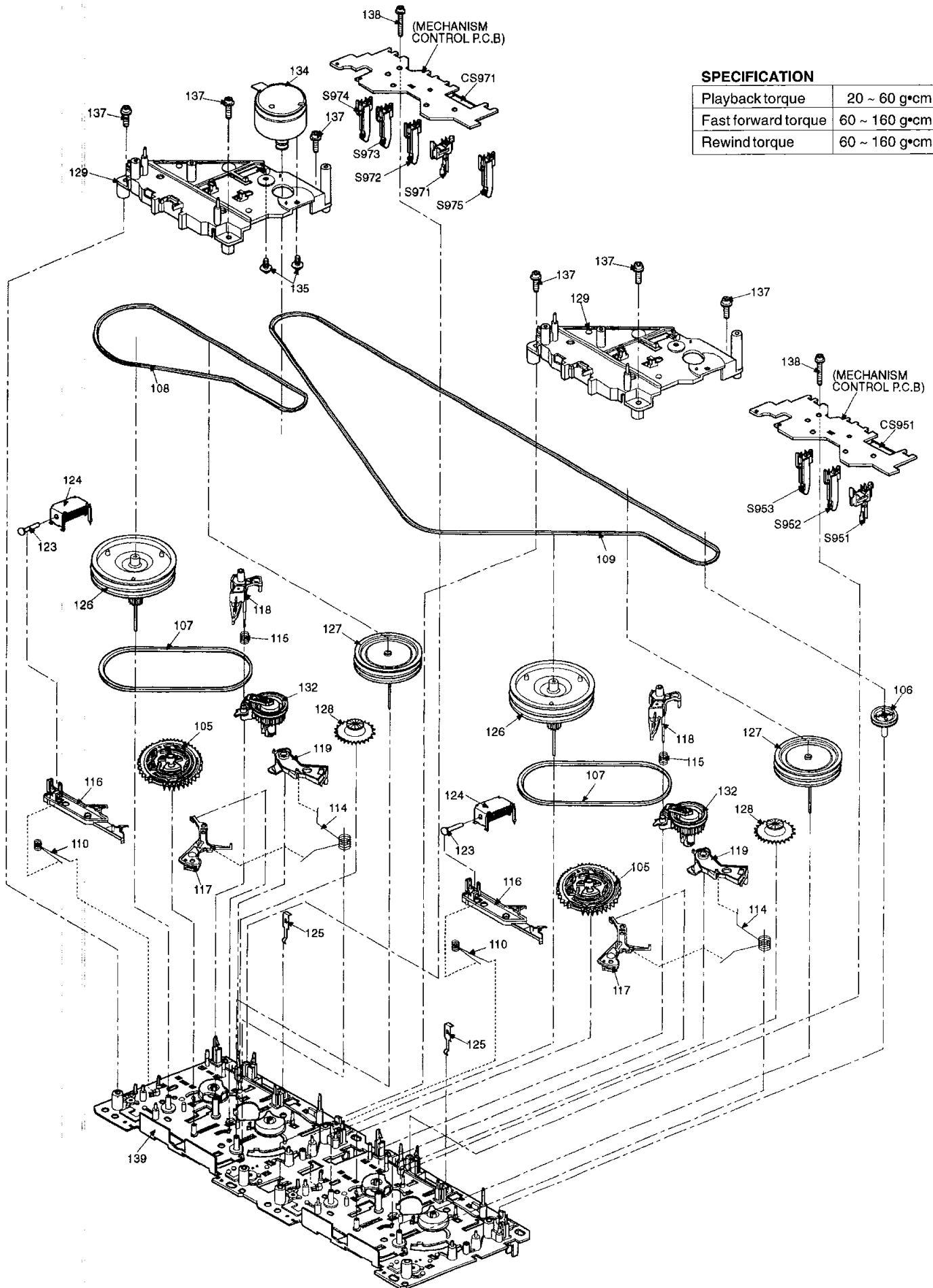
## DECK 1 (PLAYBACK)

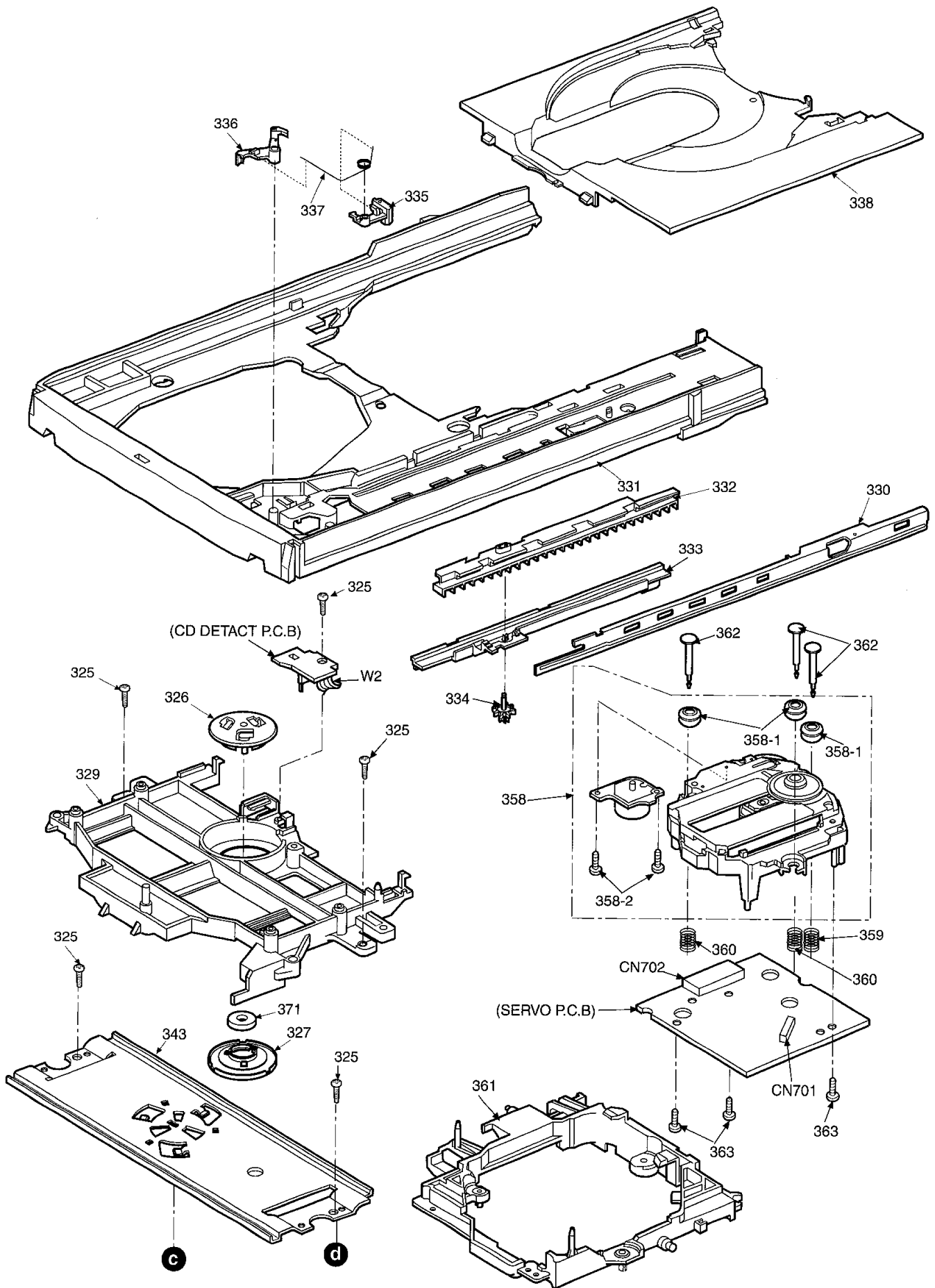
## DECK 2 (REC/PLAYBACK)



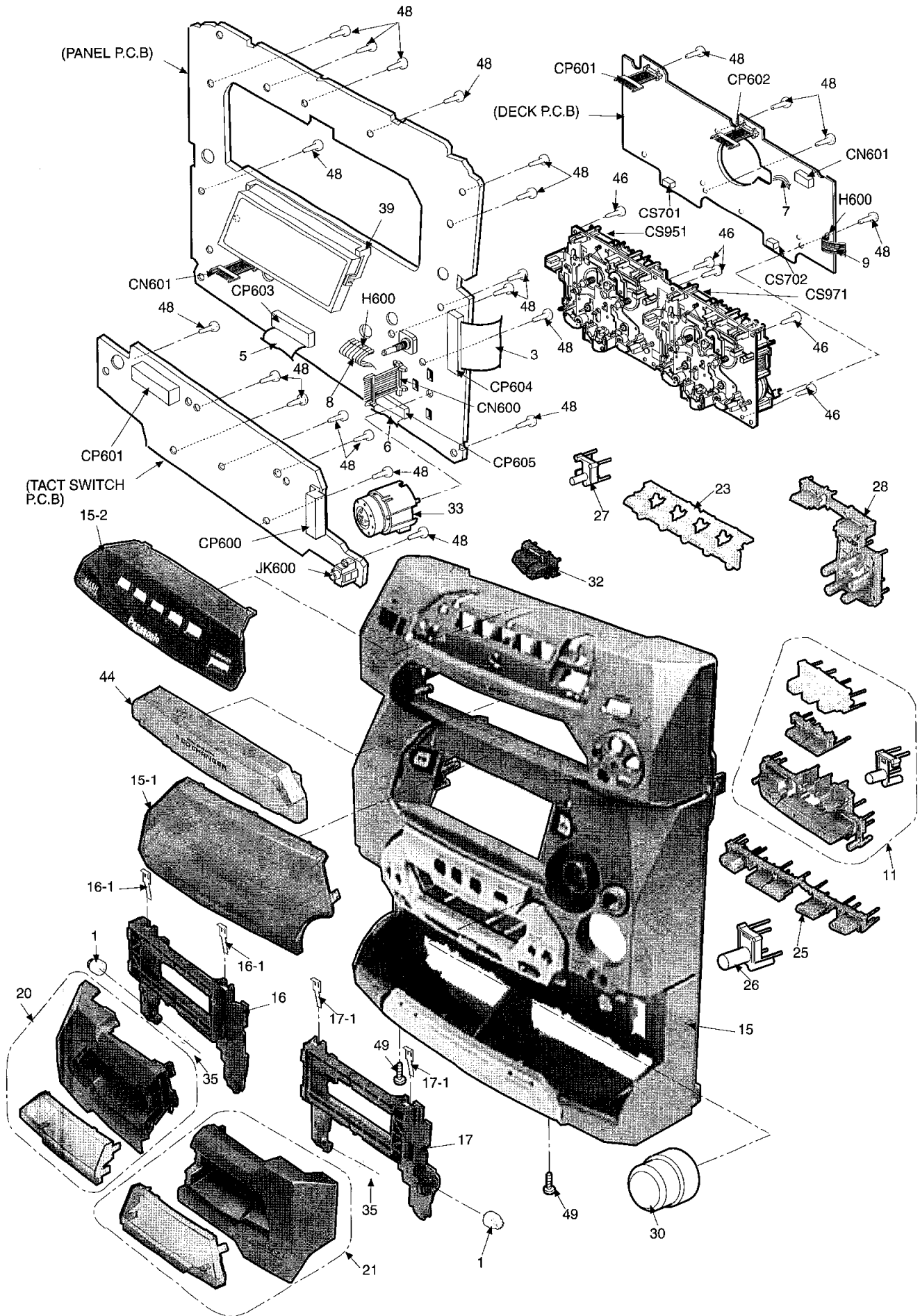
**SPECIFICATION**

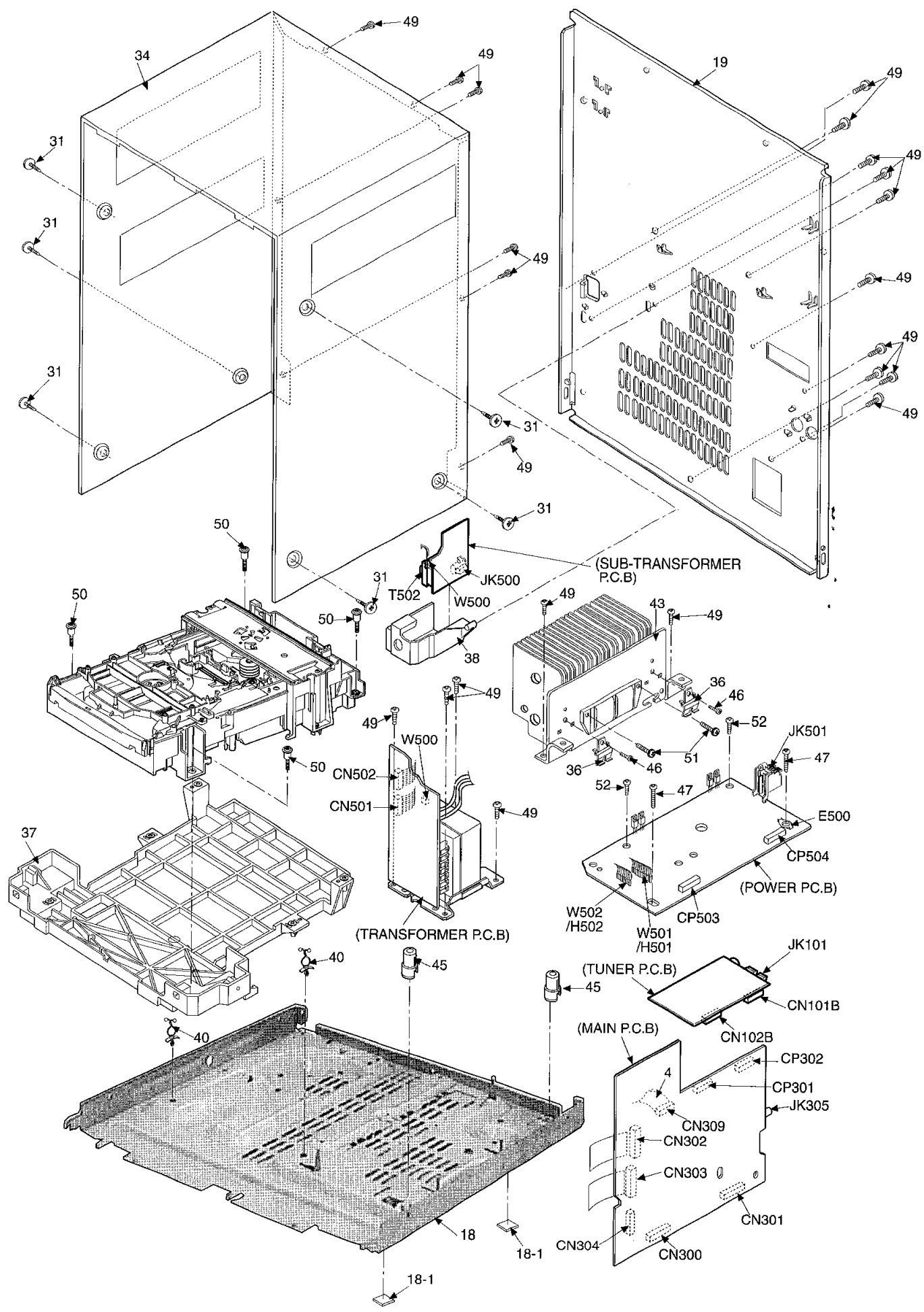
Playback torque	20 ~ 60 g·cm
Fast forward torque	60 ~ 160 g·cm
Rewind torque	60 ~ 160 g·cm





# ■ Cabinet Parts Location







## ■ 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.
- \* [M] indicates in the Remarks columns indicates parts supplied by **MESA**.
- \* [D] indicates in the Remarks columns indicates parts supplied by **MAVD**.
- \* Warning : This product uses a laser diode. Refer to caution statements on page 3.  
 ACHTUNG : • Die Lasereinheit nicht zerlegen.  
 • Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
<b>CABINET AND CHASSIS</b>				43	RXX0193	HEAT SINK	[M]	Q304	2SD1450STA	TRANSISTOR	[M]
				44	RGKX0040-1S	CD LID	[M]	Q305	KRC109MTA	TRANSISTOR	[M]
1	RDG0129-1	DAMPER GEAR	[M]	45	SHE187-4	SPACER (TRANS)	[M]	Q306	KRA102MTA	TRANSISTOR	[M]
3	REEX0054	26P FFC WIRE	[M]	46	XTB3+10JFZ	SCREW	[M]	Q307	KRC111MTA	TRANSISTOR	[M]
4	REEX0055	14P FFC WIRE	[M]	47	XTB3+20J	SCREW	[M]	Q308	KRA102MTA	TRANSISTOR	[M]
5	REEX0056	23P WIRE	[M]	48	XTBS26+10J	SCREW	[M]	Q309	2SC2785FTA	TRANSISTOR	[M]
6	REEX0065	20P FFC WIRE (PAN	[M]	49	XTBS3+8JFZ1	SCREW	[M]	Q310	2SC2785FTA	TRANSISTOR	[M]
7	RWJ0102065CK	WIRE	[M]	50	XTW3+12T	SCREW	[M]	Q311	2SC2785FTA	TRANSISTOR	[M]
8	RWJ0208155RX	WIRE 8P	[M]	51	XTW3+15T	SCREW	[M]	Q312	KTC3199GRTA	TRANSISTOR	[M]
9	RWJ8010160RX	10P WIRE	[M]	52	XTB3+10J	SCREW	[M]	Q313	2SD2144STA	TRANSISTOR	[M]
11	RYQX0024-S	CONTROL BUTT. UNIT	[M]	<b>INTEGRATED CIRCUITS</b>				Q314	KTC3199GRTA	TRANSISTOR	[M]
15	RFKGAAK17EBK	FRONT PANEL ASS'Y	[D]	IC1	TA7291P	IC, DRIVE	[M]	Q315	2SD2144STA	TRANSISTOR	[M]
15-1	RKWX0129-Q	FL WINDOW	[M]	IC101	LA1833MN-TLM	IC, IF & MPX	[M]	Q316	2SD1450STA	TRANSISTOR	[M]
15-2	RGKX0035-K	CD ORNAMENT	[M]	IC102	LC72131MDTRM	IC, PLL	[M]	Q350	KSB564ACYGTA	TRANSISTOR	[M]
16	RFKLACH330AK	C. HOLDER ASS'Y(L)	[M]	IC302	M5218AP	IC, BUFFER AMP	[M]	Q351	RVTDTTC114EST	TRANSISTOR	[M]
16-1	RUS757ZAA	CASS HALF SPRING	[M]	IC303	M62433AFP	IC, AUDIO	[M]	Q400	2SD2144STA	TRANSISTOR	[M]
17	RFKLACH330BK	C. HOLDER ASS'Y(R)	[M]	IC501	RSN35H1	IC, HIC	[M] $\triangle$	Q401	KTC3199GRTA	TRANSISTOR	[M]
17-1	RUS757ZAA	CASS HALF SPRING	[M]	IC600	M38198MCA824	IC, MICRO-P	[M]	Q501	2SD2395E	TRANSISTOR	[M] $\triangle$
18	RFKJAAK17PCK	BOTT. CHASSIS ASS'Y	[M]	IC601	AN7348STA-E1	IC, TAPE PB	[M]	Q502	2SB1566E	TRANSISTOR	[M] $\triangle$
18-1	FKA0059-K	LEG RUBBER	[M]	IC601	BU2090AF-E2	IC, I/O EXPANDER	[M]	Q503	KTA12710YTA	TRANSISTOR	[M]
19	RGRX0013J-A	REAR PANEL	[D]JEG E	IC602	BU2090AF-E2	IC, I/O EXPANDER	[M]	Q504	2SB1566E	TRANSISTOR	[M] $\triangle$
19	RGRX0013J-B	REAR PANEL	[D]EB	IC603	BA3835F-E2	IC, SPECTRUM	[M]	Q505	2SD2144STA	TRANSISTOR	[M]
20	RYFX0073-K	CASS LID UNIT (L)	[M]	IC604	BA7755A	IC, SW	[M]	Q506	2SA933SSTA	TRANSISTOR	[M] $\triangle$
21	RYFX0074-K	CASS LID UNIT (R)	[M]	IC701	AN8837SBE1	IC, HEAD AMP	[M]	Q507	KTC3199GRTA	TRANSISTOR	[M]
23	RGUX0303-Q	DISC BUTTONS	[M]	IC702	MN682746RPK1	IC, LSI	[M]	Q508	KTC3199GRTA	TRANSISTOR	[M] $\triangle$
25	RGUX0312-1S	DECK BUTTON	[M]	IC703	AN8780NSBE2	IC	[M]	Q509	KRA110MTA	TRANSISTOR	[M]
26	RGUX0304-Q	AI EQ BUTTON	[M]	IC951	0N2180RLC	IC, PHOTO INTERRUPTOR	[M]	Q510	KRA110MTA	TRANSISTOR	[M]
27	RGUX0305-Q	TIMER BUTTON	[M]	IC971	0N2180RLC	IC, PHOTO INTERRUPTOR	[M]	Q511	2SC1740SSTA	TRANSISTOR	[M] $\triangle$
28	RGUX0313-1S	EJECT BUTTON	[M]	<b>TRANSISTORS</b>				Q512	2SB1238QRTV2	TRANSISTOR	[M] $\triangle$
30	RGWX0044-1S	VOLUME KNOB	[M]	Q1	RVTDTTC143EST	TRANSISTOR	[M]	Q513	2SC2785FTA	TRANSISTOR	[M]
31	RHD03001-K	SCREW (TRANS)	[M]	Q101	2SC2787LTA	TRANSISTOR	[M]	Q514	2SD2395E	TRANSISTOR	[M] $\triangle$
32	RGLX0017-Q	STAND BY LIGHT	[M]	Q102	2SC2787LTA	TRANSISTOR	[M]	Q515	2SC2785FTA	TRANSISTOR	[M]
33	RYQX0018-1S	JOY/JOG UNIT	[M]	Q106	RVTDTA114EST	TRANSISTOR	[M]	Q516	2SC2785FTA	TRANSISTOR	[M]
34	RKMX0046-K	TOP CABINET (BENT)	[M]	Q200	2SD2144STA	TRANSISTOR	[M]	Q517	KTC32030YTA	TRANSISTOR	[M] $\triangle$
35	RMB0446	CASS OPEN SPRING	[M]	Q201	KTC3199GRTA	TRANSISTOR	[M]	Q518	2SC2785FTA	TRANSISTOR	[M]
36	RMC0158-S	TRANSISTOR HOLDER	[M]	<b>TRANSISTORS</b>				Q519	2SC1740SSTA	TRANSISTOR	[M]
37	RMKX0031	CD CHASSIS	[M]	Q101	2SC2787LTA	TRANSISTOR	[M]	Q520	KTC3199GRTA	TRANSISTOR	[M]
38	RMNX0023	SUB TRANS HOLDER	[M]	Q106	RVTDTA114EST	TRANSISTOR	[M]	Q521	KTC3199GRTA	TRANSISTOR	[M]
39	RMNX0024	FL HOLDER	[M]	Q200	2SD2144STA	TRANSISTOR	[M]	Q522	2SD2144STA	TRANSISTOR	[M]
40	RMRX0026-W	WIRE CLAMPER	[M]	Q201	KTC3199GRTA	TRANSISTOR	[M]	Q591	2SC1740SSTA	TRANSISTOR	[M]

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
Q592	2SC3940AQSTA	TRANSISTOR	[M]△	D400	RVD1SS133TA	DIODE	[M]	D617	SLR325DCT31	DIODE	[M]
Q602	2SJ498CDTA	TRANSISTOR	[M]	D500	MTZJ6R2BTA	DIODE	[M]△	D620	RVD1SS133TA	DIODE	[M]
Q602	KTA12710YTA	TRANSISTOR	[M]	D501	1N5402BM21	DIODE	[M]△	D623	RVD1SS133TA	DIODE	[M]
Q603	KTC3199GRTA	TRANSISTOR	[M]	D502	1N5402BM21	DIODE	[M]△	D625	RVD1SS133TA	DIODE	[M]
Q604	KTC3199GRTA	TRANSISTOR	[M]	D503	1N5402BM21	DIODE	[M]△	D627	1SS291TA	DIODE	[M]
Q605	KTC3199GRTA	TRANSISTOR	[M]	D504	1N5402BM21	DIODE	[M]△	D628	1SS291TA	DIODE	[M]
Q606	KTC3199GRTA	TRANSISTOR	[M]	D505	1D3E	DIODE	[M]△	D629	RVD1SS133TA	DIODE	[M]
Q607	KRC103MTA	TRANSISTOR	[M]	D506	MTZJ12BTA	DIODE	[M]	D630	RVD1SS133TA	DIODE	[M]
Q608	KTC3199GRTA	TRANSISTOR	[M]	D507	1D3E	DIODE	[M]△	D631	RVD1SS133TA	DIODE	[M]
Q609	KTC3199GRTA	TRANSISTOR	[M]	D509	1D3E	DIODE	[M]	D632	1SS291TA	DIODE	[M]
Q610	2SA933SSSTA	TRANSISTOR	[M]	D510	1D3E	DIODE	[M]	D633	RVD1SS133TA	DIODE	[M]
Q611	KRC102MTA	TRANSISTOR	[M]	D513	MTZJ5R1BTA	DIODE	[M]△	D634	RVD1SS133TA	DIODE	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]	D515	MTZJ8R2CTA	DIODE	[M]△	D635	RVD1SS133TA	DIODE	[M]
Q702	2SJ498CDTA	TRANSISTOR	[M]	D516	RVD1SS133TA	DIODE	[M]	D636	MA4020LTA	DIODE	[M]
Q702	DTC114YKA146	TRANSISTOR	[M]	D517	MTZJ5R6BTA	DIODE	[M]△	D637	1SS291TA	DIODE	[M]
Q703	KTC3199GRTA	TRANSISTOR	[M]	D518	MTZJ33BTA	DIODE	[M]△	D638	RVD1SS133TA	DIODE	[M]
Q704	KTC3199GRTA	TRANSISTOR	[M]	D520	MTZJ10BTA	DIODE	[M]△	D639	RVD1SS133TA	DIODE	[M]
Q1001	2SC2784FTA	TRANSISTOR	[M]	D521	1D3E	DIODE	[M]	D640	RVD1SS133TA	DIODE	[M]
Q1002	2SC2784FTA	TRANSISTOR	[M]	D523	1D3E	DIODE	[M]	D641	RVD1SS133TA	DIODE	[M]
Q1003	2SD1450STA	TRANSISTOR	[M]	D524	MTZJ15CTA	DIODE	[M]△	D642	RVD1SS133TA	DIODE	[M]
Q1004	2SD2144STA	TRANSISTOR	[M]	D525	RVD1SS133TA	DIODE	[M]	D643	RVD1SS133TA	DIODE	[M]
Q1005	2SD2144STA	TRANSISTOR	[M]	D526	1D3E	DIODE	[M]	D951	MA165TA	DIODE	[M]
Q1006	KRC114MTA	TRANSISTOR	[M]	D528	RVD1SS133TA	DIODE	[M]	D971	MA165TA	DIODE	[M]
Q1007	KTC3199GRTA	TRANSISTOR	[M]	D539	RL1N4003N02	DIODE	[M]	D1002	RVD1SS133TA	DIODE	[M]
Q1008	2SD965RTA	TRANSISTOR	[M]	D540	RL1N4003N02	DIODE	[M]	D1003	RVD1SS133TA	DIODE	[M]
Q1009	KTA12710YTA	TRANSISTOR	[M]	D541	RL1N4003N02	DIODE	[M]	D1004	MTZJ3R6BTA	DIODE	[M]
Q1010	KRC111MTA	TRANSISTOR	[M]	D542	MA165TA	DIODE	[M]	D1006	RVD1SS133TA	DIODE	[M]
Q1011	KRC111MTA	TRANSISTOR	[M]	D543	MA165TA	DIODE	[M]	D1007	RVD1SS133TA	DIODE	[M]
Q1012	KRA102MTA	TRANSISTOR	[M]	D544	MA165TA	DIODE	[M]				
Q1013	KRA102MTA	TRANSISTOR	[M]	D591	1D3E	DIODE	[M]△			<b>VARIABLE RESISTORS</b>	
Q1014	KTC3199GRTA	TRANSISTOR	[M]	D592	1D3E	DIODE	[M]△				
Q1015	KTA12710YTA	TRANSISTOR	[M]	D593	1D3E	DIODE	[M]△	VR600	RRV16B24104G	VR, ROTARY ENCODE	[M]
				D594	1D3E	DIODE	[M]△				
		<b>DIODES</b>		D595	MTZJ7R5ATA	DIODE	[M]△			<b>SWITCHES</b>	
				D596	RVD1SS133TA	DIODE	[M]				
D1	GP1S94	DIODE	[M]	D598	1D3E	DIODE	[M]	S602	EVQ21405R	SW, AUX/MD	[M]
D2	MTZJ4R7BTA	DIODE	[M]	D604	SLR325DCT31	DIODE	[M]	S603	EVQ21405R	SW, TUNE DOWN	[M]
D101	MTZJ5R1BTA	DIODE	[M]△	D605	LNJ201LPQJA	DIODE	[M]	S604	EVQ21405R	SW, EJECT 5	[M]
D200	RVD1SS133TA	DIODE	[M]	D606	SLR325MCT31W	DIODE	[M]	S605	EVQ21405R	SW, TUNER/BAND	[M]
D302	MTZJ5R1BTA	DIODE	[M]△	D607	SLR325MCT31W	DIODE	[M]	S606	EVQ21405R	SW, TUNE UP	[M]
D306	RVD1SS133TA	DIODE	[M]	D608	SLR325MCT31W	DIODE	[M]	S607	EVQ21405R	SW, EJECT 4	[M]
D307	RVD1SS133TA	DIODE	[M]	D609	SLR325MCT31W	DIODE	[M]	S608	EVQ21405R	SW, CD	[M]
D308	RVD1SS133TA	DIODE	[M]	D610	SLR325MCT31W	DIODE	[M]	S609	EVQ21405R	SW, TUNE MODE	[M]
D310	RVD1SS133TA	DIODE	[M]	D611	SLR325MCT31W	DIODE	[M]	S610	EVQ21405R	SW, EJECT 3	[M]
D312	1D3E	DIODE	[M]	D612	SLR325MCT31W	DIODE	[M]	S611	EVQ21405R	SW, TAPE DECK 1/2	[M]
D313	RVD1SS133TA	DIODE	[M]	D613	SLR325MCT31W	DIODE	[M]	S612	EVQ21405R	SW, MEMORY	[M]
D314	RVD1SS133TA	DIODE	[M]	D614	SLR325MCT31W	DIODE	[M]	S613	EVQ21405R	SW, EJECT 2	[M]
D315	RVD1SS133TA	DIODE	[M]	D615	SLR325MCT31W	DIODE	[M]	S614	EVQ21405R	SW, CLK/TIMER	[M]
D316	RVD1SS133TA	DIODE	[M]	D616	SLR325DCT31	DIODE	[M]	S615	EVQ21405R	SW, ECO MODE	[M]

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
S616	EVQ21405R	SW, FM MODE/BP	[M]	CN309	RJS1A9414-1	14P FFC CONNECTOR	[M]	Z501	ERZV10V511CS	ZNR	[M]△
S617	EVQ21405R	SW, EJECT 1	[M]	CN501	RJT029W09V-1	9P CONNECTOR	[M]	Z601	EXBF7L355SYV	LADDER RESISTOR	[M]
S618	EVQ21405R	SW, PLAY/REC	[M]	CN502	RJT029W04V	4P CONNECTOR	[M]	Z602	EXBF7L355SYV	LADDER RESISTOR	[M]
S619	EVQ21405R	SW, RANDOM	[M]	CN600	RJT071H11	11P B-B PIN	[M]	Z602	RCDGP1U28XD	REMOTE SENSOR	[M]
S620	EVQ21405R	SW, DECK 1 EJECT	[M]	CN601	RJS8T7ZA	8P MOLEX	[M]	Z971	EXBF7L355SYV	RADA RESISTOR	[M]
S621	EVQ11G07K	SW, EQ DOWN	[M]	CN601	RJT071H11	11P B-B PIN	[M]				
S622	EVQ21405R	SW, DISPLAY/DEMO	[M]	CN701	RJS2A6016	16P FFC CONNECTOR	[M]			<b>CERAMIC FILTERS</b>	
S623	EVQ21405R	SW, CD MANAGER	[M]	CN702	RJS1A6723-1Q	23P FFC CONNCTOR	[M]	CF201	RLFFETNGD01L	CERAMIC FILTER	[M]
S624	EVQ21405R	SW, TAPE EDIT	[M]	CP301	RJT100W06	6 PIN B/B CONN.	[D]	CF202	RLFFETMGD01L	CERAMIC FILTER	[M]
S625	EVQ11G07K	SW, EQ LEFT	[M]	CP302	RJT100W05	5 PIN B/B CONN.	[D]				
S626	EVQ21405R	SW, V. BASS	[M]	CP503	RJT057G12	P2 MQ CONNECTOR	[M]			<b>RELAY</b>	
S627	EVQ21405R	SW, DISC 5	[M]	CP504	RJT057G12	P2 MQ CONNECTOR	[M]	RL501	RSY0017M-0	RELAY	[M]△
S628	EVQ11G07K	SW, EQ UP	[M]	CP600	RJU071H11M	CONNECTOR	[M]	RL502	RSY0040M-0	PRIMARY RELAY	[M]△
S629	EVQ21405R	SW, REC/STOP	[M]	CP601	RJT071H09A	9P B-B PIN	[M]				
S630	EVQ21405R	SW, DISC 4	[M]	CP601	RJU071H11M	CONNECTOR	[M]			<b>OSCILLATORS</b>	
S631	EVQ11G07K	SW, EQ RIGHT	[M]	CP602	RJT071H09A	9P B-B PIN	[M]	X102	RLFDFT13DD	FM RESONATOR	[M]
S632	EVQ21405R	SW, REV MODE	[M]	CP603	RJS1A6223-1	23P CONNECTOR	[M]	X103	RSXC7M20S05T	CRYSTAL OSCILLATOR	[M]
S633	EVQ21405R	SW, DISC 3	[M]	CP604	RJS2A4230-F	30P CONNECTOR	[M]	X600	RSXZ8M00D01T	CERAMIC RESONATOR	[M]
S634	EVQ21405R	SW, DECK 2 EJECT	[M]	CP605	RJS1A9420	20P FFC CONNECTOR	[M]	X601	RSXD32K7S02	32.768KHZ X'TAL	[M]
S635	EVQ21405R	SW, DISC 2	[M]	CS701	RJS1A6805-J	CONNECTOR SOCKET	[M]	X701	RSXZ16M9M01T	CERAMIC OSC	[M]
S636	EVQ21405R	SW, DISC 1	[M]	CS702	RJS1A6805-J	CONNECTOR SOCKET	[M]				
S638	EVQ21405R	SW, POWER	[M]	CS951	RJU071H09M1	CONNECTOR	[M]			<b>DISPLAY TUBE</b>	
S639	EVQ21405R	SW, 3D AI EQ	[M]	CS971	RJU071H09M1	CONNECTOR	[M]				
S701	RSH1A043-U	SW, REST	[M]								
S951	RSH1A018-3U	SW, LEAF	[M]			<b>COILS &amp; TRANSFORMERS</b>					
S952	RSH1A019-2U	SW, LEAF	[M]								
S953	RSH1A019-2U	SW, LEAF	[M]	L101	ELESNR68MA	CHOKE COIL	[M]	FL600	RSL0276-F	FL	[M]
S971	RSH1A018-3U	SW, LEAF	[M]	L102	ELESNR68MA	CHOKE COIL	[M]				
S972	RSH1A019-2U	SW, LEAF	[M]	L103	ELEXTR47MA9	CHOKE COIL	[M]			<b>FUSES</b>	
S973	RSH1A019-2U	SW, LEAF	[M]	L500	RLQZ271M	LINE COIL	[M]△				
S974	RSH1A019-2U	SW, LEAF	[M]	L501	RLQYR73MW-E	CHOKE COIL	[M]	F1	XBA2C06TB0	FUSE	[M]△
S975	RSH1A019-2U	SW, LEAF	[M]	L502	RLQYR73MW-E	CHOKE COIL	[M]				
SW1	RSH1A032-U	SW, SLIDE	[M]	L600	RLQZP101KT-Y	AXIAL COIL	[M]			<b>FUSE HOLDERS</b>	
SW2	RSH1A032-U	SW, SLIDE	[M]	L601	7L1A62N	BIAS OSC COIL	[M]				
SW3	RSH1A005-1U	SWITCH	[M]	L601	RLQZP100KT-Y	AXIAL COIL	[M]	FC1	EYF52BC	FUSE HOLDER	[M]
SW4	RSH1A91ZA-A	SWITCH	[M]	L602	RLQZP101KT-Y	AXIAL COIL	[M]	FC2	EYF52BC	FUSE HOLDER	[M]
SW5	RSP1A017-A	SW, LOWER	[M]	L603	RLQZP3R3KT-Y	COIL	[M]				
SW600	ESE24SV1	JOG SWITCH	[M]	L604	RLQZP101KT-Y	AXIAL COIL	[M]			<b>HOLDERS</b>	
				L605	RLQZP101KT-Y	AXIAL COIL	[M]				
		<b>CONNECTORS</b>		L1002	RLQZB470KT-D	RF CHOKE COIL	[M]	H501	RJS1A5509	9P CABLE HOLDER	[M]
CN1	RJS1A9414	14P CONNECTOR	[M]	T501	RTP2W3B001	POWER TRANS	[D]△	H502	RJS1A5504	CABLE HOLDER	[M]
CN101B	RJU100H05	5P B/B CONNECTOR	[D]	T502	RTP113E001-V	BACK-UP TRANS	[M]△	H600	RMR0317	8P CABLE HOLDER	[M]
CN102B	RJU100H06	6P B/B CONNECTOR	[D]					H600	RMR0319	10P CABLE HOLDER	[M]
CN300	RJU057G12	P2 MQ CONNECTOR	[M]			<b>COMPONENT COMBINATION</b>					
CN301	RJU057G12	P2 MQ CONNECTOR	[M]	Z101	RLA2Z003M-T	ANT COIL BLOCK	[M]			<b>JACKS</b>	
CN302	RJS2A3330-1	30P FFC CONNECTOR	[M]	Z102	RLI2Z006M-T	AM IFT	[M]	JK101	RJH5210-1	JK, ANTENNA	[M]
CN303	RJS1A9420	20P FFC CONNECTOR	[M]	Z120	ENV17290G1Y	FM TUNER PACK	[M]	JK305	RJH2206	JK, RCA	[M]
CN304	RJS1A5210	10P WIRE HOLDER	[M]	Z300	EXBF7L355SYV	LADDER RESISTOR	[M]	JK500	SJS9236-J	JK, AC INLET	[M]△

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
JK501	RJR0054B-J	JK, SPEAKER	[M]			<b>WIRES</b>		W500	REXX0202	TRANSFORMER WIRE	[M]
JK600	RJJ37TK07-H	JK, HP	[M]					W501	REXX0198	9-PIN WIRE	[M]
		<b>EARTH TERMINAL</b>		W1	REE0501	TRANS. WIRE (YEL)	[M]				
				W1	REZ1023-1	4P WIRE	[M]				
				W2	REE0856	TRANS. WIRE (BLACK)	[M]				
E500	SNE1004-2	EARTH TERMINAL	[M]	W2	REZ1024	3P WIRE	[M]				

## Resistors & Capacitors

**Notes :** \* Capacitor values are in microfarads (mF) unless specified otherwise, P=Pico-farads (pF), F=Farads.  
 \* Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).  
 \* Bracketed indications in Values & Remarks columns specify the area (Refer to the first page for area).  
 Parts without these indications can be used for all areas.  
 \* [M] indicates in the Values & Remarks columns indicates parts supplied by **MESA**  
 \* [D] indicates in the Values & Remarks columns indicates parts supplied by **MAVD**.

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		<b>RESISTORS</b>	R133	ERDS2TJ102T	1K 1/4W [M]	R230	ERDS2TJ392T	3.9K 1/4W [M]	R345	ERDS2TJ221T	220 1/4W [M]
			R134	ERDS2TJ471T	470 1/4W [M]	R231	ERDS2TJ271T	270 1/4W [M]	R346	ERDS2TJ223T	22K 1/4W [M]
R1	ERDS2TJ102T	1K 1/4W [M]	R135	ERDS2TJ102T	1K 1/4W [M]	R232	ERDS2TJ123T	12K 1/4W [M]	R347	ERDS2TJ123T	12K 1/4W [M]
R102	ERDS2TJ472T	4.7K 1/4W [M]	R136	ERDS2TJ102T	1K 1/4W [M]	R233	ERDS2TJ273T	27K 1/4W [M]	R348	ERDS2TJ103T	10K 1/4W [M]
R103	ERDS2TJ101T	100 1/4W [M]	R137	ERDS2TJ102T	1K 1/4W [M]	R236	ERDS2TJ222T	2.2K 1/4W [M]	R349	ERDS2TJ103T	10K 1/4W [M]
R104	ERDS2TJ103T	10K 1/4W [M]	R138	ERDS2TJ332T	3.3K 1/4W [M]	R253	ERDS2TJ390T	39 1/4W [M]	R350	ERDS2TJ102T	1K 1/4W [M]
R105	ERDS2TJ471T	470 1/4W [M]	R141	ERDS2TJ102T	1K 1/4W [M]	R300	ERDS2TJ472T	4.7K 1/4W [M]	R351	ERDS2TJ472T	4.7K 1/4W [M]
R106	ERDS2TJ474T	470K 1/4W [M]	R142	ERDS2TJ102T	1K 1/4W [M]	R301	ERDS2TJ223T	22K 1/4W [M]	R352	ERDS2TJ472T	4.7K 1/4W [M]
R107	ERDS2TJ331T	330 1/4W [M]	R143	ERDS2TJ223T	22K 1/4W [M]	R302	ERDS2TJ183T	18K 1/4W [M]	R353	ERDS2TJ222T	2.2K 1/4W [M]
R108	ERDS2TJ474T	470K 1/4W [M]	R145	ERDS2TJ104T	100K 1/4W [M]	R303	ERDS2TJ100T	10 1/4W [M]	R354	ERDS2TJ472T	4.7K 1/4W [M]
R109	ERDS2TJ331T	330 1/4W [M]	R146	ERDS2TJ104T	100K 1/4W [M]	R304	ERDS2TJ223T	22K 1/4W [M]	R355	ERDS2TJ472T	4.7K 1/4W [M]
R110	ERDS2TJ102T	1K 1/4W [M]	R201	ERDS2TJ123T	12K 1/4W [M]	R305	ERDS2TJ103T	10K 1/4W [M]	R356	ERDS2TJ472T	4.7K 1/4W [M]
R111	ERDS2TJ391T	390 1/4W [M]	R202	ERDS2TJ222T	2.2K 1/4W [M]	R306	ERDS2TJ122T	1.2K 1/4W [M]	R357	ERDS2TJ222T	2.2K 1/4W [M]
R112	ERDS2TJ104T	100K 1/4W [M]	R207	ERDS2TJ102T	1K 1/4W [M]	R307	ERDS2TJ473T	47K 1/4W [M]	R358	ERDS2TJ472T	4.7K 1/4W [M]
R113	ERDS2TJ103T	10K 1/4W [M]	R208	ERDS2TJ822T	8.2K 1/4W [M]	R308	ERDS2TJ332T	3.3K 1/4W [M]	R359	ERDS2TJ472T	4.7K 1/4W [M]
R114	ERDS2TJ562T	5.6K 1/4W [M]	R209	ERDS2TJ272T	2.7K 1/4W [M]	R309	ERDS2TJ272T	2.7K 1/4W [M]	R360	ERDS2TJ472T	4.7K 1/4W [M]
R115	ERDS2TJ561T	560 1/4W [M]	R210	ERDS2TJ222T	2.2K 1/4W [M]	R313	ERDS2TJ393T	39K 1/4W [M]	R401	ERDS2TJ123T	12K 1/4W [M]
R116	ERDS2TJ102T	1K 1/4W [M]	R211	ERDS2TJ562T	5.6K 1/4W [M]	R316	ERDS2TJ153T	15K 1/4W [M]	R402	ERDS2TJ222T	2.2K 1/4W [M]
R117	ERDS2TJ683T	68K 1/4W [M]	R212	ERDS2TJ182T	1.8K 1/4W [M]	R318	ERDS2TJ123T	12K 1/4W [M]	R407	ERDS2TJ102T	1K 1/4W [M]
R118	ERDS2TJ472T	4.7K 1/4W [M]	R213	ERDS2TJ223T	22K 1/4W [M]	R321	ERDS2TJ2R7T	2.7 1/4W [M]	R408	ERDS2TJ822T	8.2K 1/4W [M]
R119	ERDS2TJ333T	33K 1/4W [M]	R215	ERDS2TJ152T	1.5K 1/4W [M]	R322	ERDS2TJ271T	270 1/4W [M]	R409	ERDS2TJ272T	2.7K 1/4W [M]
R120	ERDS2TJ473T	47K 1/4W [M]	R216	ERDS2TJ562T	5.6K 1/4W [M]	R323	ERDS2TJ222T	2.2K 1/4W [M]	R410	ERDS2TJ222T	2.2K 1/4W [M]
R121	ERDS2TJ223T	22K 1/4W [M]	R217	ERDS2TJ683T	68K 1/4W [M]	R324	ERDS2TJ222T	2.2K 1/4W [M]	R411	ERDS2TJ562T	5.6K 1/4W [M]
R122	ERDS2TJ272T	2.7K 1/4W [M]	R218	ERDS2TJ332T	3.3K 1/4W [M]	R325	ERDS2TJ222T	2.2K 1/4W [M]	R412	ERDS2TJ182T	1.8K 1/4W [M]
R123	ERDS2TJ683T	68K 1/4W [M]	R219	ERDS2TJ472T	4.7K 1/4W [M]	R326	ERDS2TJ683T	68K 1/4W [M]	R413	ERDS2TJ223T	22K 1/4W [M]
R124	ERDS2TJ271T	270 1/4W [M]	R220	ERDS2TJ104T	100K 1/4W [M]	R327	ERDS2TJ154T	150K 1/4W [M]	R415	ERDS2TJ152T	1.5K 1/4W [M]
R125	ERDS2TJ471T	470 1/4W [M]	R221	ERDS2TJ102T	1K 1/4W [M]	R328	ERDS2TJ683T	68K 1/4W [M]	R416	ERDS2TJ562T	5.6K 1/4W [M]
R126	ERDS2TJ102T	1K 1/4W [M]	R223	ERDS2TJ473T	47K 1/4W [M]	R329	ERDS2TJ154T	150K 1/4W [M]	R417	ERDS2TJ683T	68K 1/4W [M]
R127	ERDS2TJ471T	470 1/4W [M]	R224	ERDS2TJ153T	15K 1/4W [M]	R330	ERDS2TJ333T	33K 1/4W [M]	R418	ERDS2TJ332T	3.3K 1/4W [M]
R128	ERDS2TJ820T	82 1/4W [M]	R225	ERDS2TJ102T	1K 1/4W [M]	R331	ERDS2TJ222T	2.2K 1/4W [M]	R419	ERDS2TJ472T	4.7K 1/4W [M]
R129	ERDS2TJ273T	27K 1/4W [M]	R226	ERDS2TJ152T	1.5K 1/4W [M]	R332	ERDS2TJ222T	2.2K 1/4W [M]	R420	ERDS2TJ104T	100K 1/4W [M]
R130	ERDS2TJ103T	10K 1/4W [M]	R227	ERDS2TJ390T	39 1/4W [M]	R333	ERDS2TJ101T	100 1/4W [M]	R421	ERDS2TJ102T	1K 1/4W [M]
R131	ERDS2TJ680T	68 1/4W [M]	R228	ERDS2TJ102T	1K 1/4W [M]	R334	ERDS2TJ563T	56K 1/4W [M]	R423	ERDS2TJ473T	47K 1/4W [M]
R132	ERDS2TJ103T	10K 1/4W [M]	R229	ERDS2TJ472T	4.7K 1/4W [M]	R343	ERDS2TJ104T	100K 1/4W [M]	R424	ERDS2TJ153T	15K 1/4W [M]

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
R425	ERDS2TJ102T	1K 1/4W [M]	R534	ERD25FVJ4R7T	4.7 1/4W [M]	R600	ERDS2TJ223T	22K 1/4W [M]	R652	ERDS2TJ102T	1K 1/4W [M]
R426	ERDS2TJ152T	1.5K 1/4W [M]	R535	ERDS2TJ124T	120K 1/4W [M]	R601	ERDS2TJ183T	18K 1/4W [M]	R653	ERDS2TJ122T	1.2K 1/4W [M]
R427	ERDS2TJ390T	39 1/4W [M]	R536	ERDS1FVJ100T	10 1/2W Δ[M]	R601	ERDS2TJ333T	33K 1/4W [M]	R654	ERDS2TJ331T	330 1/4W [M]
R428	ERDS2TJ102T	1K 1/4W [M]	R537	ERDS2TJ222T	2.2K 1/4W [M]	R602	ERDS2TJ104T	100K 1/4W [M]	R655	ERDS2TJ331T	330 1/4W [M]
R429	ERDS2TJ472T	4.7K 1/4W [M]	R538	ERDS2TJ103T	10K 1/4W [M]	R602	ERDS2TJ392T	3.9K 1/4W [M]	R656	ERDS2TJ102T	1K 1/4W [M]
R430	ERDS2TJ392T	3.9K 1/4W [M]	R539	ERDS1FVJ392T	3.9K 1/2W Δ[M]	R603	ERDS2TJ682T	6.8K 1/4W [M]	R657	ERDS2TJ331T	330 1/4W [M]
R431	ERDS2TJ271T	270 1/4W [M]	R540	ERDS2TJ683T	68K 1/4W [M]	R604	ERDS2TJ103T	10K 1/4W [M]	R658	ERDS2TJ101T	100 1/4W [M]
R432	ERDS2TJ123T	12K 1/4W [M]	R541	ERDS2TJ683T	68K 1/4W [M]	R604	ERDS2TJ822T	8.2K 1/4W [M]	R659	ERDS2TJ331T	330 1/4W [M]
R433	ERDS2TJ273T	27K 1/4W [M]	R542	ERDS2TJ562T	5.6K 1/4W [M]	R605	ERDS2TJ103T	10K 1/4W [M]	R660	ERDS2TJ102T	1K 1/4W [M]
R436	ERDS2TJ222T	2.2K 1/4W [M]	R543	ERDS2TJ562T	5.6K 1/4W [M]	R606	ERDS2TJ222T	2.2K 1/4W [M]	R661	ERDS2TJ331T	330 1/4W [M]
R451	ERDS2TJ562T	5.6K 1/4W [M]	R544	ERDS2TJ683T	68K 1/4W [M]	R606	ERDS2TJ682T	6.8K 1/4W [M]	R662	ERDS2TJ102T	1K 1/4W [M]
R452	ERDS2TJ103T	10K 1/4W [M]	R545	ERDS2TJ683T	68K 1/4W [M]	R607	ERDS2TJ103T	10K 1/4W [M]	R663	ERDS2TJ102T	1K 1/4W [M]
R453	ERDS2TJ390T	39 1/4W [M]	R546	ERDS2TJ223T	22K 1/4W [M]	R607	ERDS2TJ472T	4.7K 1/4W [M]	R664	ERDS2TJ104T	100K 1/4W [M]
R454	ERDS2TJ223T	22K 1/4W [M]	R547	ERDS2TJ124T	120K 1/4W [M]	R608	ERDS2TJ682T	6.8K 1/4W [M]	R665	ERDS2TJ104T	100K 1/4W [M]
R455	ERDS2TJ152T	1.5K 1/4W [M]	R548	ERDS2TJ104T	100K 1/4W [M]	R609	ERDS2TJ153T	15K 1/4W [M]	R666	ERDS2TJ104T	100K 1/4W [M]
R456	ERDS2TJ562T	5.6K 1/4W [M]	R549	ERDS1FVJ2R2T	2.2 1/2W Δ[M]	R609	ERDS2TJ472T	4.7K 1/4W [M]	R667	ERDS2TJ104T	100K 1/4W [M]
R457	ERDS2TJ822T	8.2K 1/4W [M]	R550	ERDS2TJ332T	3.3K 1/4W [M]	R610	ERDS2TJ104T	100K 1/4W [M]	R668	ERDS2TJ104T	100K 1/4W [M]
R458	ERDS2TJ822T	8.2K 1/4W [M]	R551	ERDS2TJ103T	10K 1/4W [M]	R610	ERDS2TJ272T	2.7K 1/4W [M]	R669	ERDS2TJ104T	100K 1/4W [M]
R459	ERDS2TJ392T	3.9K 1/4W [M]	R552	ERDS1FVJ100T	10 1/2W Δ[M]	R611	ERDS2TJ472T	4.7K 1/4W [M]	R670	ERDS2TJ104T	100K 1/4W [M]
R460	ERDS2TJ332T	3.3K 1/4W [M]	R553	ERDS1FVJ100T	10 1/2W Δ[M]	R611	ERDS2TJ563T	56K 1/4W [M]	R671	ERDS2TJ104T	100K 1/4W [M]
R501	ERDS2TJ100T	10 1/4W [M]	R554	ERDS2TJ334T	330K 1/4W [M]	R612	ERDS2TJ470T	47 1/4W [M]	R672	ERDS2TJ104T	100K 1/4W [M]
R502	ERDS2TJ100T	10 1/4W [M]	R556	ERD2FCVG270T	27 1/4W [M]	R613	ERDS2TJ272T	2.7K 1/4W [M]	R673	ERDS2TJ104T	100K 1/4W [M]
R503	ERDS2TJ332T	3.3K 1/4W [M]	R557	ERDS1FVJ270T	27 1/2W Δ[M]	R614	ERDS2TJ222T	2.2K 1/4W [M]	R674	ERDS2TJ104T	100K 1/4W [M]
R507	ERDS2TJ103T	10K 1/4W [M]	R558	ERDS2TJ104T	100K 1/4W [M]	R615	ERDS2TJ103T	10K 1/4W [M]	R675	ERDS2TJ104T	100K 1/4W [M]
R509	ERDS2TJ472T	4.7K 1/4W [M]	R559	ERDS2TJ104T	100K 1/4W [M]	R616	ERDS2TJ272T	2.7K 1/4W [M]	R676	ERDS2TJ104T	100K 1/4W [M]
R510	ERDS2TJ122T	1.2K 1/4W [M]	R560	ERDS2TJ123T	12K 1/4W [M]	R617	ERDS2TJ222T	2.2K 1/4W [M]	R677	ERDS2TJ103T	10K 1/4W [M]
R511	ERDS2TJ182T	1.8K 1/4W [M]	R561	ERDS2TJ123T	12K 1/4W [M]	R618	ERDS2TJ182T	1.8K 1/4W [M]	R678	ERDS2TJ391T	390 1/4W [M]
R512	ERDS2TJ151T	150 1/4W [M]	R562	ERDS2TJ102T	1K 1/4W [M]	R622	ERDS2TJ221T	220 1/4W [M]	R679	ERDS2TJ391T	390 1/4W [M]
R513	ERDS2TJ331T	330 1/4W [M]	R563	ERDS2TJ103T	10K 1/4W [M]	R622	ERDS2TJ470T	47 1/4W [M]	R682	ERDS2TJ103T	10K 1/4W [M]
R514	ERDS1FVJ470T	47 1/2W Δ[M]	R564	ERDS2TJ272T	2.7K 1/4W [M]	R623	ERDS2TJ682T	6.8K 1/4W [M]	R683	ERDS2TJ103T	10K 1/4W [M]
R515	ERDS1FVJ470T	47 1/2W Δ[M]	R565	ERDS2TJ104T	100K 1/4W [M]	R624	ERDS2TJ222T	2.2K 1/4W [M]	R684	ERDS2TJ103T	10K 1/4W [M]
R516	ERDS2TJ822T	8.2K 1/4W [M]	R566	ERDS2TJ222T	2.2K 1/4W [M]	R629	ERDS2TJ182T	1.8K 1/4W [M]	R685	ERDS2TJ103T	10K 1/4W [M]
R517	ERDS2TJ331T	330 1/4W [M]	R567	ERDS2TJ151T	150 1/4W [M]	R630	ERDS2TJ122T	1.2K 1/4W [M]	R686	ERDS2TJ223T	22K 1/4W [M]
R518	ERDS2TJ122T	1.2K 1/4W [M]	R568	ERDS2TJ823T	82K 1/4W [M]	R631	ERDS2TJ472T	4.7K 1/4W [M]	R688	ERDS2TJ103T	10K 1/4W [M]
R519	ERDS2TJ2R2T	2.2 1/4W [M]	R569	ERDS2TJ393T	39K 1/4W [M]	R633	ERDS2TJ182T	1.8K 1/4W [M]	R689	ERDS2TJ101T	100 1/4W [M]
R520	ERDS2TJ2R2T	2.2 1/4W [M]	R570	ERDS2TJ104T	100K 1/4W [M]	R634	ERDS2TJ122T	1.2K 1/4W [M]	R690	ERDS2TJ101T	100 1/4W [M]
R521	ERDS2TJ151T	150 1/4W [M]	R571	ERDS2TJ563T	56K 1/4W [M]	R635	ERDS2TJ102T	1K 1/4W [M]	R691	ERDS2TJ101T	100 1/4W [M]
R522	ERDS2TJ472T	4.7K 1/4W [M]	R572	ERDS2TJ563T	56K 1/4W [M]	R638	ERDS2TJ272T	2.7K 1/4W [M]	R692	ERDS2TJ101T	100 1/4W [M]
R523	ERD2FCVJ4R7T	4.7 1/4W [M]	R573	ERDS2TJ822T	8.2K 1/4W [M]	R639	ERDS2TJ102T	1K 1/4W [M]	R694	ERDS2TJ152T	1.5K 1/4W [M]
R524	ERDS2TJ2R2T	2.2 1/4W [M]	R574	ERDS2TJ822T	8.2K 1/4W [M]	R640	ERDS2TJ122T	1.2K 1/4W [M]	R695	ERDS2TJ223T	22K 1/4W [M]
R525	ERDS2TJ272T	2.7K 1/4W [M]	R580	ERDS2TJ150T	15 1/4W [M]	R641	ERDS2TJ102T	1K 1/4W [M]	R697	ERDS2TJ224T	220K 1/4W [M]
R526	ERDS2TJ103T	10K 1/4W [M]	R581	ERDS1FVJ270T	27 1/2W Δ[M]	R642	ERDS2TJ102T	1K 1/4W [M]	R698	ERDS2TJ104T	100K 1/4W [M]
R527	ERDS2TJ561T	560 1/4W [M]	R591	RSFMB40KT-L	FUSEPROTECTOR Δ[M]	R644	ERDS2TJ222T	2.2K 1/4W [M]	R699	ERDS2TJ101T	100 1/4W [M]
R528	ERDS2TJ272T	2.7K 1/4W [M]	R592	RSFMB40KT-L	FUSEPROTECTOR Δ[M]	R645	ERDS2TJ102T	1K 1/4W [M]	R701	ERDS2TJ183T	18K 1/4W [M]
R529	ERDS1FVJ332T	3.3K 1/2W Δ[M]	R593	ERDS2TJ222T	2.2K 1/4W [M]	R646	ERDS2TJ820T	82 1/4W [M]	R701	ERJ6GEYJ4R7A	4.7 1/10W [M]
R530	ERD2FCVG270T	27 1/4W [M]	R595	ERDS2TJ332T	3.3K 1/4W [M]	R647	ERDS2TJ331T	330 1/4W [M]	R702	ERDS2TJ470T	47 1/4W [M]
R531	ERDS1FVJ150T	15 1/2W Δ[M]	R597	ERDS2TJ102T	1K 1/4W [M]	R648	ERDS2TJ102T	1K 1/4W [M]	R702	ERJ6GEYJ822A	8.2K 1/10W [M]
R532	ERDS2TJ102T	1K 1/4W [M]	R598	ERDS2TJ223T	22K 1/4W [M]	R649	ERDS2TJ182T	1.8K 1/4W [M]	R703	ERDS2TJ392T	3.9K 1/4W [M]
R533	ERDS2TJ102T	1K 1/4W [M]	R599	ERDS2TJ151T	150 1/4W [M]	R650	ERDS2TJ331T	330 1/4W [M]	R704	ERDS2TJ822T	8.2K 1/4W [M]



Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C213	ECBT1C332KR5	3300P 16V [M]	C411	ECFR1C393KR	0.039 16V [M]	C528	ECKR2H103ZF5	0.01 500V [M]	C623	ECBT1H102KB5	1000P 50V [M]
C214	ECBT1C222KR5	2200P 16V [M]	C412	ECFR1C223KR	0.022 16V [M]	C529	ECEA1HM101B	100 50V [M]	C624	ECEA0JKA101B	100 6.3V [M]
C215	ECBT1C272KR5	2700P 16V [M]	C413	ECBT1C332KR5	3300P 16V [M]	C530	ECKR2H103ZF5	0.01 500V [M]	C625	RCEA0J102B-S	1000P 6.3V [M]
C216	ECBT1C152KR5	1500P 16V [M]	C414	ECBT1C222KR5	2200P 16V [M]	C531	ECKR2H103ZF5	0.01 500V [M]	C626	ECBT1H102KB5	1000P 50V [M]
C217	ECFR1C823MR	0.082 16V [M]	C415	ECBT1C272KR5	2700P 16V [M]	C532	ECKR2H103ZF5	0.01 500V [M]	C627	ECBT1E103ZF5	0.01 25V [M]
C218	ECEA1HKAR15B	0.15 50V [M]	C416	ECBT1C152KR5	1500P 16V [M]	C533	ECEA1HM101B	100 50V [M]	C628	ECEA1AKA220B	22 10V [M]
C220	ECBT1H102KB5	1000P 50V [M]	C417	ECFR1C823MR	0.082 16V [M]	C534	ECKR2H103ZF5	0.01 500V [M]	C629	ECBT1H331KB5	330P 50V [M]
C221	ECFR1E104ZF5	0.1 25V [M]	C418	ECEA1HKAR15B	0.15 50V [M]	C536	ECEA0JKA221B	220 6.3V [M]	C630	ECBT1H561KB5	560P 50V [M]
C222	ECBT1H471KB5	470P 50V [M]	C420	ECBT1H102KB5	1000P 50V [M]	C537	ECBT1H102KB5	1000P 50V [M]	C631	ECBT1H561KB5	560P 50V [M]
C223	ECEA1HKA4R7B	4.7 50V [M]	C421	ECFR1E104ZF5	0.1 25V [M]	C540	ECBT1H150J5	15P 50V [M]	C632	ECBT1H101KB5	100P 50V [M]
C224	ECEA1HKA2R2B	2.2 50V [M]	C422	ECBT1H471KB5	470P 50V [M]	C541	ECBT1H150J5	15P 50V [M]	C633	ECBT1H101KB5	100P 50V [M]
C225	ECEA1HKA3R3B	3.3 50V [M]	C423	ECEA1HKA4R7B	4.7 50V [M]	C542	ECEA2AU100B	10 100V [M]	C634	ECEA1VKA220B	22 35V [M]
C227	ECBT1H681KB5	680P 50V [M]	C424	ECEA1HKA2R2B	2.2 50V [M]	C543	ECEA2AM100B	10 100V [M]	C635	ECBT1H561KB5	560P 50V [M]
C228	ECEA1CKA100B	10 16V [M]	C425	ECEA1HKA3R3B	3.3 50V [M]	C544	ECQV1H104JZ3	0.1 50V [M]	C636	ECBT1H561KB5	560P 50V [M]
C229	ECBT1H101KB5	100P 50V [M]	C427	ECBT1H681KB5	680P 50V [M]	C545	ECQV1H104JZ3	0.1 50V [M]	C637	ECBT1H561KB5	560P 50V [M]
C230	ECBT1H470J5	47P 50V [M]	C428	ECEA1CKA100B	10 16V [M]	C546	ECQV1H104JZ3	0.1 50V [M]	C638	ECBT1H561KB5	560P 50V [M]
C231	ECQV1H154JZ3	0.15 50V [M]	C429	ECBT1H101KB5	100P 50V [M]	C547	ECQV1H104JZ3	0.1 50V [M]	C639	ECBT1H101KB5	100P 50V [M]
C232	ECBT1C332KR5	3300P 16V [M]	C430	ECBT1H470J5	47P 50V [M]	C548	ECQV1H474JZ3	0.47 50V [M]	C640	ECBT1H561KB5	560P 50V [M]
C233	ECEA1HKA010B	1 50V [M]	C431	ECQV1H154JZ3	0.15 50V [M]	C549	ECQV1H474JZ3	0.47 50V [M]	C641	ECBT1H561KB5	560P 50V [M]
C237	ECBT1H473ZF5	0.047 50V [M]	C432	ECBT1C332KR5	3300P 16V [M]	C550	ECEA2AU100B	10 100V [M]	C642	ECEA1CKA100B	10 16V [M]
C238	ECEA1HKAR33B	0.33 50V [M]	C433	ECEA1HKA010B	1 50V [M]	C551	ECEA1HKA100B	10 50V [M]	C643	ECBT1E103ZF5	0.01 25V [M]
C239	ECBT1H102KB5	1000P 50V [M]	C437	ECBT1H473ZF5	0.047 50V [M]	C552	ECEA1EKA4R7B	4.7 25V [M]	C644	ECEA1HKA0R1B	0.1 50V [M]
C300	ECBT1E103ZF5	0.01 25V [M]	C438	ECEA1HKAR33B	0.33 50V [M]	C553	ECEA1HKA3R3B	3.3 50V [M]	C645	ECEA1HKA0R1B	0.1 50V [M]
C301	ECBT1H102KB5	1000P 50V [M]	C501	ECBT1H102KB5	1000P 50V [M]	C554	ECEA1HKA3R3B	3.3 50V [M]	C647	ECBT1E103ZF5	0.01 25V [M]
C303	ECBT1H104ZF5	0.1 50V [M]	C502	ECBT1H102KB5	1000P 50V [M]	C555	ECBT1H473ZF5	0.047 50V [M]	C648	ECEA1HKA0R1B	0.1 50V [M]
C304	ECEA1AM331B	330 10V [M]	C503	ECBT1H331KB5	330P 50V [M]	C556	ECBT1H473ZF5	0.047 50V [M]	C649	ECEA1HKA0R1B	0.1 50V [M]
C305	ECBT1C152KR5	1500P 16V [M]	C504	ECBT1H331KB5	330P 50V [M]	C592	ECKR2H103ZF5	0.01 500V [M]	C650	ECBT1E103ZF5	0.01 25V [M]
C306	ECEA1HKA0R1B	0.1 50V [M]	C506	RCEA1H222B-S	2200P 50V $\Delta$ [M]	C593	RCEA1C102B-S	1000P 16V $\Delta$ [M]	C651	ECBT1H150JC5	15P 50V [M]
C307	ECBT1H102KB5	1000P 50V [M]	C507	RCEA1H222B-S	2200P 50V $\Delta$ [M]	C596	ECKR2H103ZF5	0.01 500V [M]	C652	ECBT1H101KB5	100P 50V [M]
C311	ECBT1H104ZF5	0.1 50V [M]	C508	RCEA1E332B-S	3300P 25V $\Delta$ [M]	C597	ECEA1EKA220B	22 25V [M]	C653	ECEA1AM331B	330 10V [M]
C312	ECBT1H104ZF5	0.1 50V [M]	C509	ECBT1H103ZF5	0.01 50V [M]	C601	ECBT1H102KB5	1000P 50V [M]	C654	ECBT1H180JC5	18P 50V [M]
C313	ECBT1H104ZF5	0.1 50V [M]	C510	ECBT1H103ZF5	0.01 50V [M]	C602	ECBT1H471KB5	470P 50V [M]	C655	ECBT1H101KB5	100P 50V [M]
C314	ECBT1H151KB5	150P 50V [M]	C511	ECKR2H103ZF5	0.01 500V [M]	C603	ECBT1H102KB5	1000P 50V [M]	C656	ECBT1H680J5	68P 50V [M]
C315	ECBT1H151KB5	150P 50V [M]	C512	ECEA1CKA101B	100 16V [M]	C604	ECBT1E223ZF5	0.022 25V [M]	C657	ECBT1H680J5	68P 50V [M]
C316	ECBT1H151KB5	150P 50V [M]	C513	ECKR2H103ZF5	0.01 500V [M]	C604	ECBT1H102KB5	1000P 50V [M]	C658	ECEA1HKA010B	1 50V [M]
C317	ECEA1HKA010B	1 50V [M]	C514	ECEA1AKA330B	33 10V [M]	C605	ECEA1AKA101B	100 10V [M]	C659	ECBT1H560J5	56P 50V [M]
C318	ECBT1E103ZF5	0.01 25V [M]	C515	ECEA1JM101B	100 63V [M]	C606	ECBT1E223ZF5	0.022 25V [M]	C660	ECEA1HKA3R3B	3.3 50V [M]
C319	ECEA1CKA100B	10 16V [M]	C516	ECEA2AM100B	10 100V [M]	C606	ECFR1C183KR	0.018 16V [M]	C661	ECBT1H560J5	56P 50V [M]
C320	ECBT1E103ZF5	0.01 25V [M]	C517	ECKR2H103ZF5	0.01 500V [M]	C607	ECEA1HKA3R3B	3.3 50V [M]	C662	ECEA1HKA2R2B	2.2 50V [M]
C330	ECEA1HKA010B	1 50V [M]	C518	ECKR2H103ZF5	0.01 500V [M]	C608	ECBT1H221KB5	220P 50V [M]	C663	ECBT1H102KB5	1000P 50V [M]
C331	ECEA1HKA4R7B	4.7 50V [M]	C519	ECEA1HKA100B	10 50V [M]	C609	ECEA1HKA010B	1 50V [M]	C664	ECBT1H102KB5	1000P 50V [M]
C401	ECBT1H101KB5	100P 50V [M]	C520	ECKR2H103ZF5	0.01 500V [M]	C611	ECBT1H104ZF5	0.1 50V [M]	C665	ECBT1H561KB5	560P 50V [M]
C402	ECBT1H101KB5	100P 50V [M]	C521	ECEA1EKA330B	33 25V [M]	C612	ECEA1VKA220B	22 35V [M]	C666	ECBT1H102KB5	1000P 50V [M]
C404	ECBT1H221KB5	220P 50V [M]	C522	ECEA1EM101B	100 25V [M]	C613	ECBT1H681KB5	680P 50V [M]	C667	ECBT1H102KB5	1000P 50V [M]
C405	ECBT1C272KR5	2700P 16V [M]	C523	ECEA1HKA010B	1 50V [M]	C614	ECBT1H681KB5	680P 50V [M]	C668	ECBT1H471KB5	470P 50V [M]
C407	ECEA1HKA010B	1 50V [M]	C524	ECEA1HKA010B	1 50V [M]	C615	ECBT1H101KB5	100P 50V [M]	C701	ECBT1H102KB5	1000P 50V [M]
C408	ECFR1C563KR	0.056 16V [M]	C525	ECEA1EKA330B	33 25V [M]	C616	ECBT1H101KB5	100P 50V [M]	C701	ECEA0JKA330I	33 6.3V [M]
C409	ECEA1HKAR15B	0.15 50V [M]	C526	ECEA1HM330B	33 50V [M]	C621	ECBT1E103ZF5	0.01 25V [M]	C702	ECBT1H471KB5	470P 50V [M]
C410	ECFR1C223KR	0.022 16V [M]	C527	ECKR2H103ZF5	0.01 500V [M]	C622	ECBT1E103ZF5	0.01 25V [M]	C702	ECUZ1E104MBN	0.1 25V [M]

Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
C703	ECBT1H102KB5	1000P 50V [M]	C761	ECUZ1H471KBN	470P 50V [M]	RJ722	ERJ6GEY0R00A	0 1/10W [M]			
C703	ECEA0JKA101I	100 6.3V [M]	C762	ECUZ1H471KBN	470P 50V [M]	RJ723	ERJ6GEY0R00A	0 1/10W [M]			
C704	ECBT1H102KB5	1000P 50V [M]	C1001	ECBT1C103MS5	0.01 16V [M]	RJ724	ERJ6GEY0R00A	0 1/10W [M]			
C704	ECUZ1E104MBN	0.1 25V [M]	C1002	ECEA1HKN2R2B	2.2 50V [M]	RJ725	ERJ6GEY0R00A	0 1/10W [M]			
C705	ECEA1AKA101B	100 10V [M]	C1003	ECQP1272JZT	2700P 100V [M]	RJ726	ERJ6GEY0R00A	0 1/10W [M]			
C706	ECFR1C183KR	0.018 16V [M]	C1004	ECBT1C103MS5	0.01 16V [M]	RJ727	ERJ6GEY0R00A	0 1/10W [M]			
C706	ECUZ1H272KBN	2700P 50V [M]	C1005	ECQP1152JZT	1500P 100V [M]	RJ728	ERJ6GEY0R00A	0 1/10W [M]			
C707	ECEA1HKA3R3B	3.3 50V [M]	C1007	ECQP2A472JZT	4700P 100V [M]	RJ750	ERJ6GEY0R00A	0 1/10W [M]			
C707	ECUZ1E273KBN	0.027 25V [M]	C1008	ECEA1HKA010B	1 50V [M]						
C708	ECBT1H221KB5	220P 50V [M]	C1009	RCE1HU101BT	100P 50V [M]			TEST JUMPER			
C709	ECEA1HKA010B	1 50V [M]	C1010	ECQV1H473JZ3	0.047 50V [M]						
C710	ECUV1H151KCN	150P 50V [M]	C1011	ECBT1H102KB5	1000P 50V [M]	TJ701	EYF8CU	TEST JUMPER [M]			
C711	ECUZ1E104ZFN	0.1 25V [M]	C1012	ECBT1H102KB5	1000P 50V [M]						
C712	ECUZ1E104ZFN	0.1 25V [M]	C1013	ECBT1C222KR5	2200P 16V [M]						
C713	ECUZ1E104MBN	0.1 25V [M]	C1014	ECBT1C222KR5	2200P 16V [M]						
C714	ECEA0JKA101I	100 6.3V [M]	C1015	ECBT1C103MS5	0.01 16V [M]						
C715	ECUZ1H182KBN	1800P 50V [M]	C1016	ECEA0JKA470B	47 6.3V [M]						
C716	ECUZ1H821KBN	820P 50V [M]	C1017	ECEA1HKA3R3B	3.3 50V [M]						
C717	ECUZ1E104ZFN	0.1 25V [M]	C1018	ECFR1C683KR	0.068 16V [M]						
C718	ECUZ1C224KBN	0.22 16V [M]	C1019	ECEA1CKA220B	22 16V [M]						
C721	ECUZ1H150JCN	15P 50V [M]	C1020	ECEA1CKA220B	22 16V [M]						
C722	ECUZ1H150JCN	15P 50V [M]	C1021	ECEA1AKA220B	22 10V [M]						
C723	ECEA1AKA221I	220 10V [M]	C1022	ECEA1AKA221Q	220 10V [M]						
C724	ECUZ1E104MBN	0.1 25V [M]	C1023	ECBT1C103MS5	0.01 16V [M]						
C725	ECUZ1H102KBN	1000P 50V [M]	C1024	ECEA1HKA3R3B	3.3 50V [M]						
C726	ECUZ1H102KBN	1000P 50V [M]	C1025	ECBT1H470J5	47P 50V [M]						
C727	ECA1HAK010XI	1 50V [M]	C1026	ECBT1H101KB5	100P 50V [M]						
C728	ECA1HAK010XI	1 50V [M]	C1027	ECBT1C472KR5	4700P 16V [M]						
C730	ECUZ1E104ZFN	0.1 25V [M]	C1028	ECBT1H101KB5	100P 50V [M]						
C731	ECEA0JKA221I	220 6.3V [M]	C1029	ECFR1E104ZF5	0.1 25V [M]						
C732	ECEA0JKA221I	220 6.3V [M]	C1030	ECFR1C104KR	0.1 16V [M]						
C733	ECUZ1E104MBN	0.1 25V [M]	C1031	ECEA1AKA470B	47 10V [M]						
C734	ECEA1AKA221I	220 10V [M]	C1032	ECEA1HKA220B	22 50V [M]						
C735	ECUZ1E104ZFN	0.1 25V [M]	C1033	ECEA1HKA0R1B	0.1 50V [M]						
C736	ECUZ1E104ZFN	0.1 25V [M]	C1034	ECEA1AKA330B	33 10V [M]						
C737	ECUZ1E104ZFN	0.1 25V [M]									
C738	ECUZ1E104MBN	0.1 25V [M]			CHIP JUMPER						
C739	ECUZ1H103KBN	0.01 50V [M]									
C742	ECUZ1E273KBN	0.027 25V [M]	RJ701	ERJ6GEY0R00A	0 1/10W [M]						
C743	ECUZ1E104ZFN	0.1 25V [M]	RJ702	ERJ8GEY0R00A	0 1/8W [M]						
C744	ECUZ1E183KBN	0.018 25V [M]	RJ703	ERJ8GEY0R00A	0 1/8W [M]						
C745	ECUZ1C473KBN	0.047 16V [M]	RJ704	ERJ8GEY0R00A	0 1/8W [M]						
C747	ECUV1H221KBN	220P 50V [M]	RJ705	ERJ8GEY0R00A	0 1/8W [M]						
C749	ECUZ1H222KBN	2200P 50V [M]	RJ706	ERJ8GEY0R00A	0 1/8W [M]						
C750	ECUZ1E104MBN	0.1 25V [M]	RJ707	ERJ8GEY0R00A	0 1/8W [M]						
C751	ECUZ1E104MBN	0.1 25V [M]	RJ708	ERJ8GEY0R00A	0 1/8W [M]						
C752	ECUZ1H102KBN	1000P 50V [M]	RJ709	ERJ8GEY0R00A	0 1/8W [M]						
C753	ECUZ1H471KBM	470P 50V [M]	RJ710	ERJ8GEY0R00A	0 1/8W [M]						
C754	ECUZ1H471KBN	470P 50V [M]	RJ721	ERJ6GEY0R00A	0 1/10W [M]						

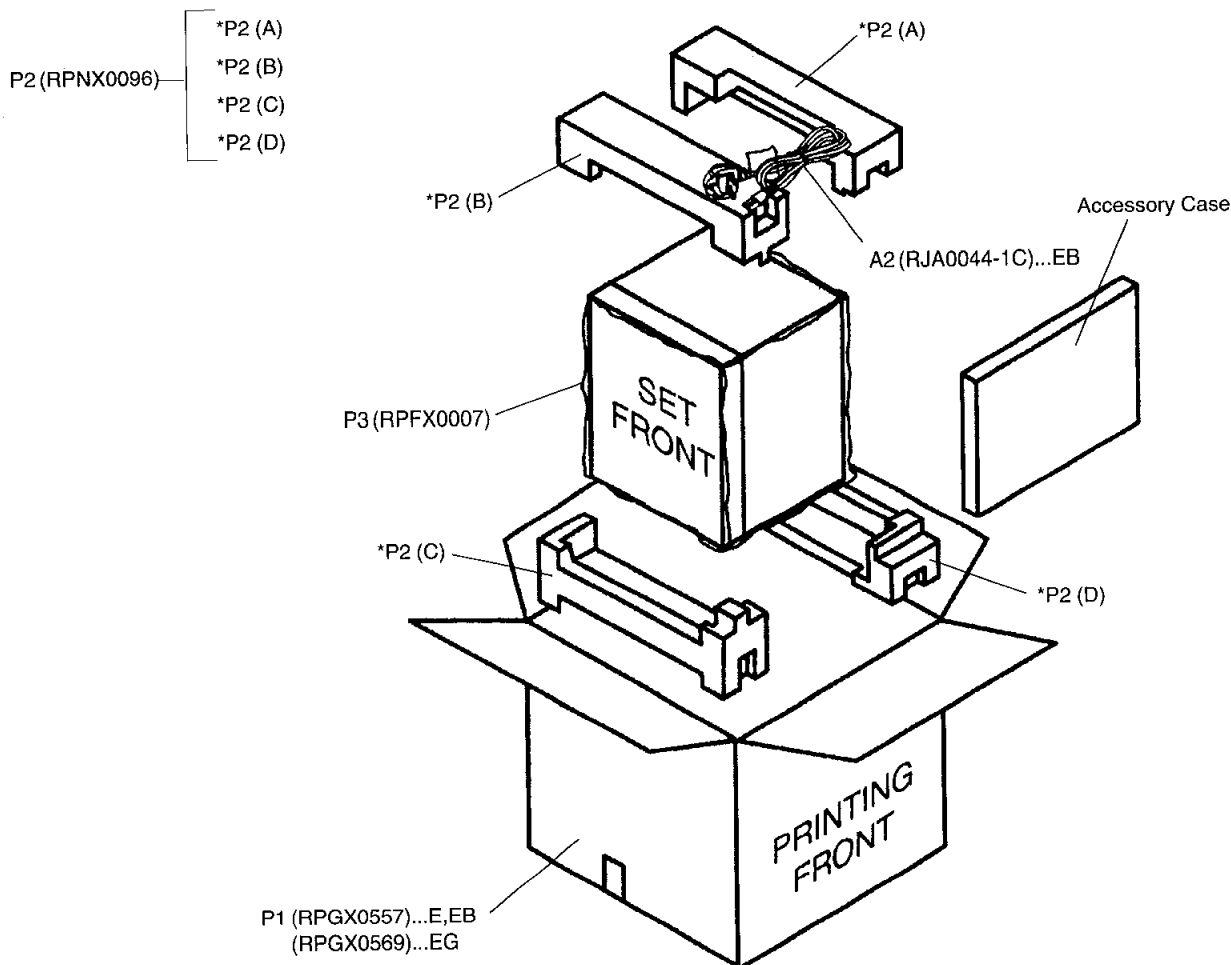




## ■ Packing Materials & Accessories

- Notes: \* Important safety notice:  
 Components identified by  $\Delta$  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. (Refer to the cover page for area)
  - Parts without these indications can be used for all areas.
  - \* The "(SF)" mark denotes the standard part.
  - \* [M] indicates in the Remarks columns indicates parts supplied by **MESA**.
  - \* [D] indicates in the Remarks columns indicates parts supplied by **MAVD**.
  - \* Remote Control Unit : Supply period for three years from terminal of production.
  - \* Reference for O/I book languages are as follows :
- |             |                      |              |              |              |
|-------------|----------------------|--------------|--------------|--------------|
| Ar : Arabic | Cf : Canadian French | Ch : Chinese | Cz : Czech   | Da : Danish  |
| Du : Dutch  | En : English         | Fr : French  | Ge : German  | It : Italian |
| Ko : Korean | Po : Polish          | Ru : Russian | Sp : Spanish | Sw : Swedish |

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		<b>PACKING MATERIALS</b>				<b>ACCESSORIES</b>		A3	RQT4705-R	O/I BOOK (Ru/Cz/Po)	[D]E
								A3	RQT4706-D	O/I BOOK (Ge/It/Fr)	[D]EG
P1	RPGX0557	PACKING CASE	[D]E,EB	A1	RAK-CH943WK	REMOTE CONTROL	[M]	A3	RQT4707-H	O/I BOOK (Du/Da)	[D]EG
P1	RPGX0569	PACKING CASE	[D]EG	A1-1	HTR0216-72PW	R/C BATTER COVER	[M]	A3	RQT4708-B	O/I BOOK (En)	[D]EB
P2	RPNX0096	POLYFOAM	[D]	A2	RJA0043-1C	AC CORD	[D]EG,E $\Delta$	A3	RQT5112-R	O/I BOOK (Ru)	[D]E
P3	RPFX0007	MIRAMAT BAG	[M]	A2	RJA0044-1C	AC CORD	[D]EB $\Delta$	A4	RSA0007	FM ANTENNA	[M]
				A3	RQT4704-E	O/I BOOK (En/Sp/Sw)	[D]E	A5	RSA0022	AM LOOP ANT	[M]

## ■ Packaging



 <b>KRJ2</b>	Door No. 3	 <b>5</b>
	Drop No. 0	
Customer: TECHNICA42		
Load: SPOWE1		
Model: MD9903036C2	Qty: 1	
Assemble at: 60	05/07/00	