

# Service Manual

**COMPACT**  
**disc**  
**DIGITAL AUDIO**

**MASH**<sup>\*1</sup>  
multi-stage noise shaping

<sup>\*2</sup> **DOLBY B NR**

CD Stereo System  
**SA-AK20**

Colour

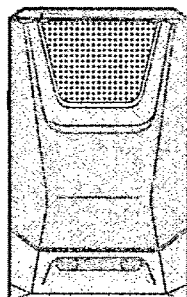
(K) ... Black Type

Area

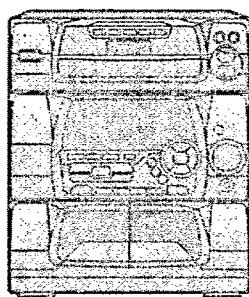
Suffix for Model No.	Area	Colour
(E)	Europe	(K)
(EB)	Great Britain	
(EG)	Germany and Italy	



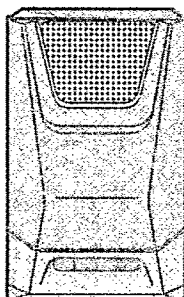
Remote Control  
Transmitter



SB-AK20



SA-AK20



SB-AK20

<sup>\*1</sup> MASH is a trademark of NTT.

<sup>\*2</sup> Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trade marks of Dolby Laboratories Licensing Corporation.

System	Music Center	Speaker
SC-AK20 (E)	SA-AK20 (E)	SB-AK20 (E)
SC-AK20 (EB)	SA-AK20 (EB)	
SC-AK20 (EG)	SA-AK20 (EG)	

## TAPE SECTION : AR2 MECHANISM SERIES CD SECTION : RAE0150Z TRAVERSE DECK SERIES

### Specifications

#### Amplifier Section

1 kHz continuous power output	
Both channels driven	2 x 35W (THD 1%, 6 Ω)
RMS	2 x 50W (THD 10%, 6 Ω)
Total harmonic distortion	
Half power at 1 kHz	0.09% (6Ω)
Frequency response	
AUX	60Hz – 20kHz(-3db)
Input sensitivity and impedance	
AUX	250mV, 22KΩ
Tone controls	
6 EQ SPACE	HEAVY, CLEAR, SOFT, DISCO, LIVE, HALL
V.BASS (volume at -30dB)	63Hz, 7dB
Load impedance	6Ω

#### FM Tuner Section

Frequency range	87.5 – 108.0 MHz
Sensitivity	23.3 dBf
Total harmonic distortion	
MONO	0.3%
STEREO	0.5%
S/N	
MONO	60dB
Antenna terminal(s)	75 Ω (unbalanced)

#### AM Tuner Section

Frequency range	522 – 1611 kHz
Sensitivity (for 50mW, 500mW)	
MW(at 999kHz, 1000kHz)	250 μV/m

#### Cassette Deck Section

Track system	4 track, 2 channel
Heads	
Record/playback	Solid permalloy head(Rotary 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	
NORMAL	35 Hz – 14 kHz(+3dB,-6dB)
HIGH	35 Hz – 14 kHz(+3dB,-6dB)
S/N (HIGH)	
Dolby NR off	50 dB (A weighted)
Dolby NR on	60 dB (CCIR)
Wow and flutter	0.18 % (WRMS)
Fast forward and rewind time	
	Approx. 120 seconds with C-60 cassette tape

**Panasonic**<sup>®</sup>

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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.

**■ 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)
S/N	
CD UNIT OUT	95 dB (JIS. A)
SP OUT	87 dB (JIS. A)
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	AC 230 V, 50 Hz
for EB	AC 230 – 240V, 50 Hz
Dimensions (W x H x D)	270 x 330 x 314 mm
Weight	7.6 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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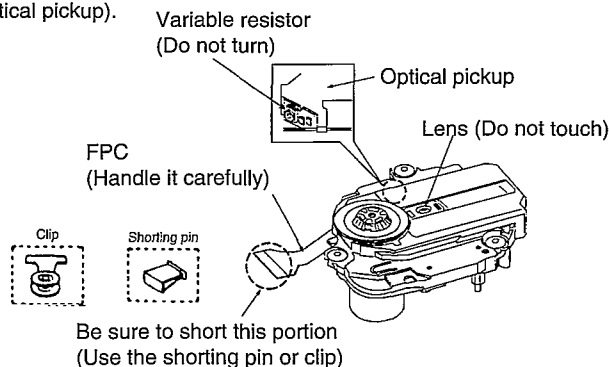
**■ Handling Precautions For Traverse Deck**

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)**

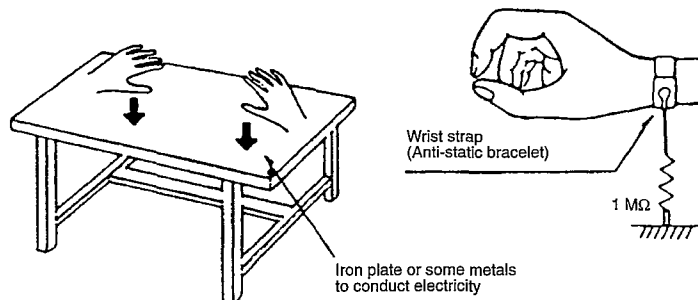
- Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
- To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC board).  
When removing or connecting the short pin, finish the job in as short time as possible.
- Take care not to apply excessive stress to the flexible board (FPC board).
- Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

**• Grounding for electrostatic breakdown prevention**

- Human body grounding**  
Use the anti-static wrist strap to discharge the static electricity from your body.
- 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).



## ■ 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 laserdioden. 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 laserdioden 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.

**ADVASEL:** I dette a apparat anvendes laser.

### CAUTION!

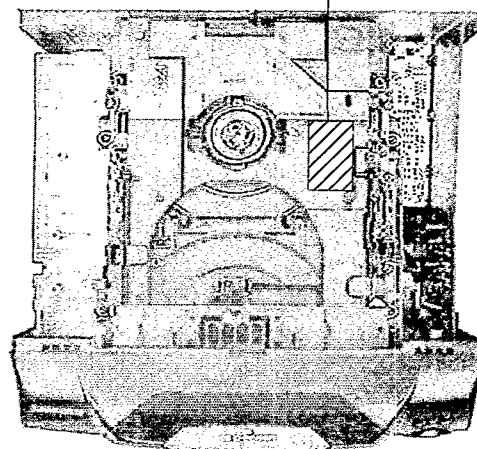
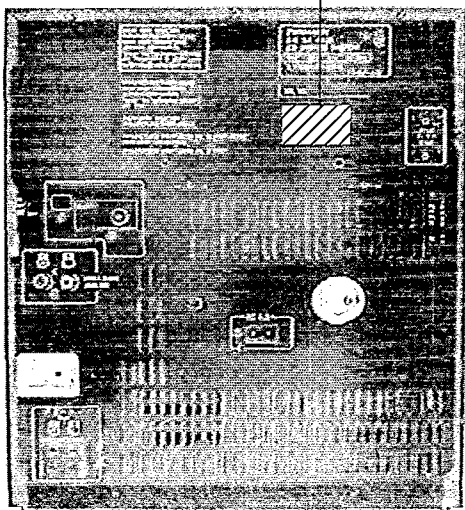
THIS PRODUCT UTILIZES A LASER.

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.
ADVASEL	USYNLIG LASERSTRÅLING VED ÅBNING. UNDSK SEEREDSÅREDE ER UDE AF FUNKTION. UNDGÅ UDSETELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTIINA NÄKYMÄTÖN LASERISÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING	OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN.
ADVASEL	USYNLIG LASERSTRÅLING NÄR DEKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNDGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSICHTBARE LASERSTRÄHLUNG, WEIN ABDECKUNG GEÖFFNET. NICHT DEN STRAHL AUSSETZEN.

## ■ Caution for AC Mains Lead



### (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 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

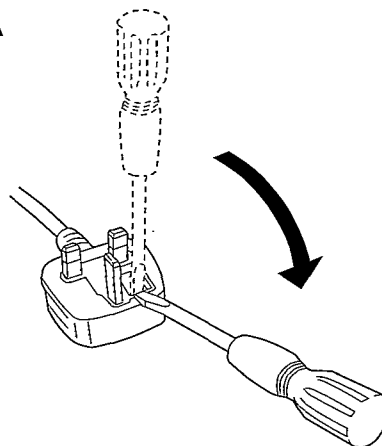
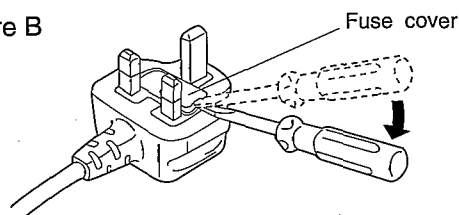


Figure B



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

Figure A

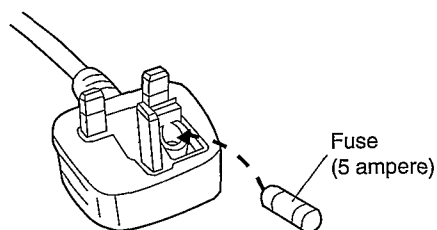
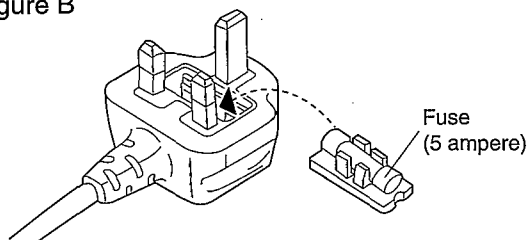


Figure B



## ■ Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C513, C514 and C515 through a 10 $\Omega$ , 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.

Current consumption at AC 230V(for E, EG) or 230-240V(for EB), 50 Hz in NO SIGNAL mode should be ~300mA.

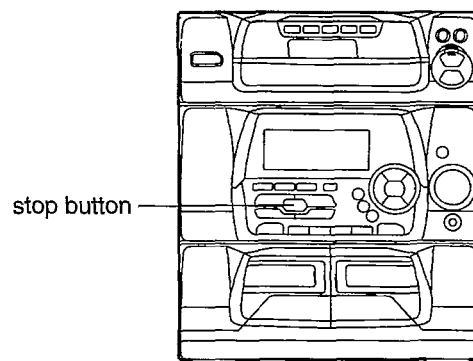
## ■ Before Moving or Shipping This Unit

Before moving or shipping this system:

Prepare the system as described below to prevent damage to the mechanism.

1. Remove all CDs.
2. Press CD.
3. Press stop button (■) for 5 seconds. The display will change from "WAIT" to "LOCKED" to "GOOD BYE" and finally "ZZZ". Then the unit will be turned off automatically. (This will set the so-called "shipping mode".)
4. Unplug the system. The shipping mode will turn off automatically when you turn the power on the next time.

Avoid strong vibrations or impact while moving the equipment. The shipping mode will turn OFF automatically when you turn the power ON the next time.



## ■ Operation Checks and Main Component Replacement Procedures

**"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

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• Checking Procedure for each major P.C.B.	
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• Main Component Replacement Procedures	
1. Replacement of the Traverse Deck .....	9
2. Replacement of the Power Amplifier IC and Regulator Transistors .....	10

**Warning** : This product uses a laser diode. Refer to caution statement on page 2.

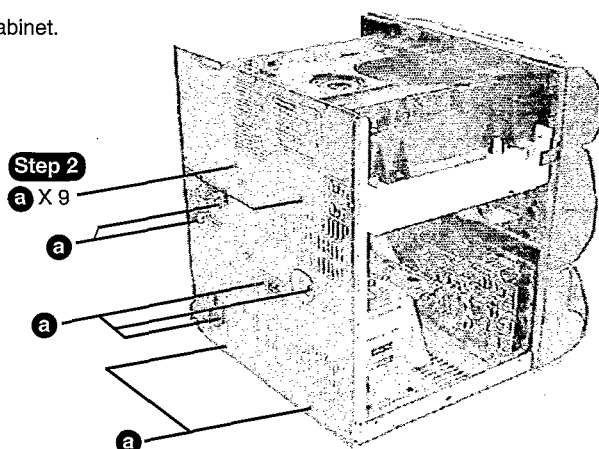
**ACHTUNG** : • Die lasereinheit nicht zerlegen.

• Die lasereinheit darf nur gegen eine vom hersteller spezifizierte einheit ausgetauscht werden.

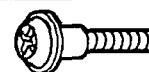
## ■ Checking Procedure for each major P.C.B.

### 1. Checking of the Main, Panel, Deck, Tuner and Servo P.C.B.

**Step 1** Remove the Top Cabinet.



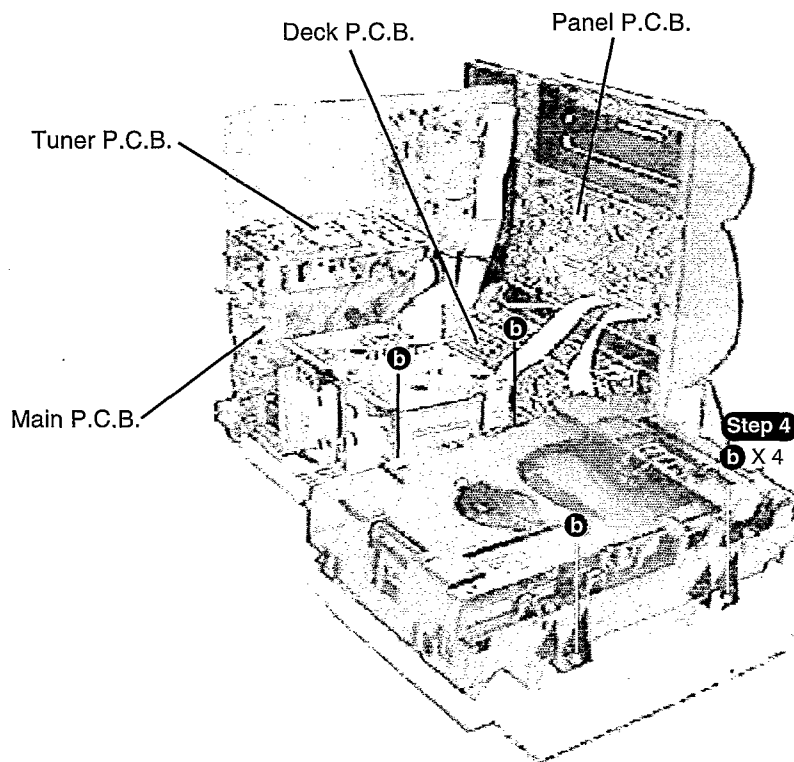
**a**  
[XTBS3+8JFZ1]  
(Black)



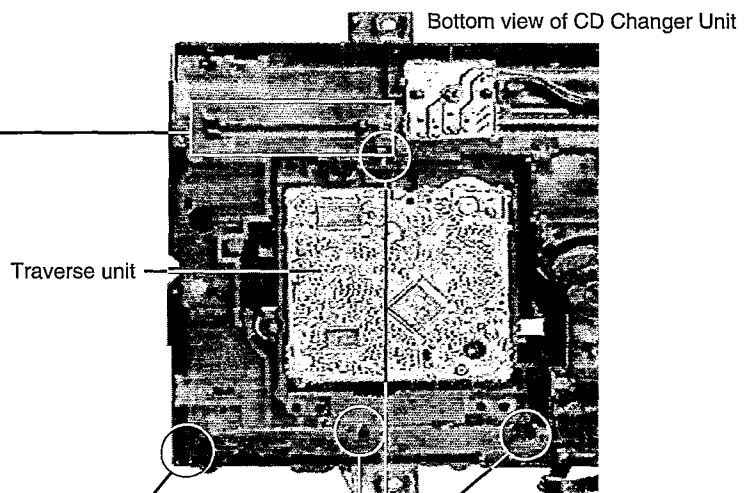
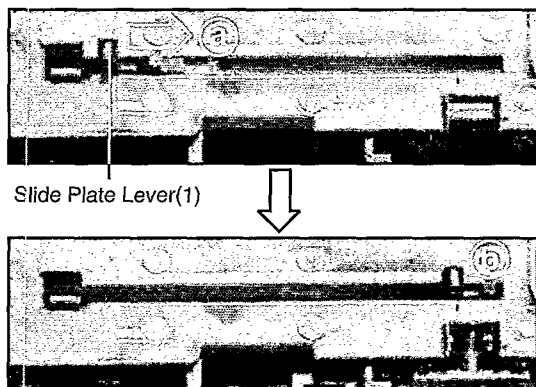
**b**  
[RHD30048]  
(Brass)

**Step 3**

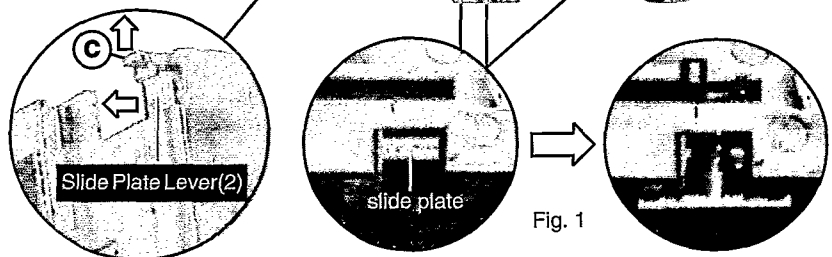
Place the CD changer as shown on the right and check the Main P.C.B., Panel P.C.B. and Deck P.C.B.



### • Disassembly of the Traverse Unit

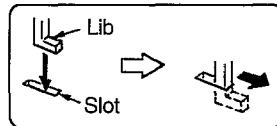
**Step 5**

Move the Slide Plate Lever(1) in the direction of arrow (a) to the position (b) and hold it, then lift up the stopper (c) until the Slide Plate Lever(2) eject out. Now the 3 slide plate will be open as shown in the figure 1 on the right and the traverse unit can be removed.



**Step 6**

Slide in the Traverse Unit into a slot on the top of the CD Changer Unit and then stand it.



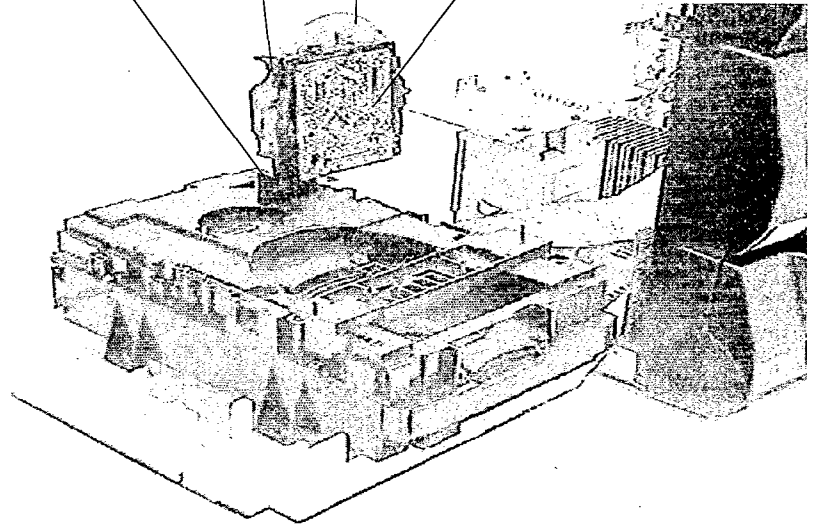
Traverse unit

Disc

Servo P.C.B.

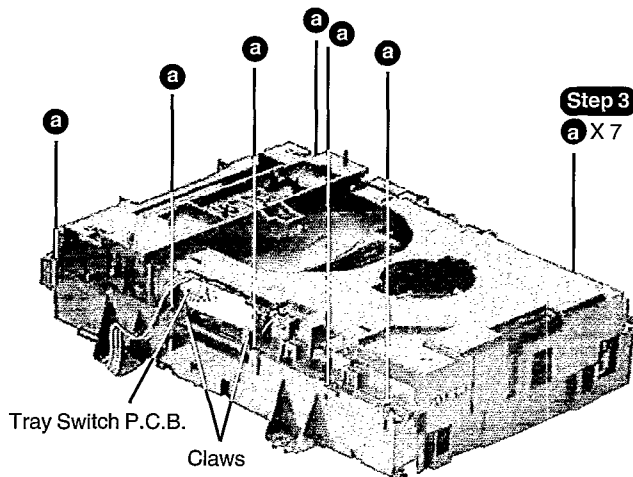
**Step 7**

Attach the disc and clasper with magnet to the Traverse Unit as shown in the diagram on the left, then check the Servo P.C.B.  
(Refer to page 11 of how to check the CD Unit without connecting to the CD Changer Loading Mechanism.)



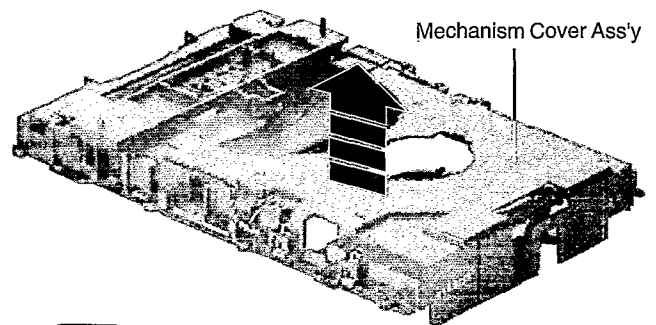
## ■ Disassembly of the CD Changer Unit

**Step 1** Follow the procedures in 'Checking Procedure For Each Major P.C.B.' (Step 1 ~ Step 4 ).

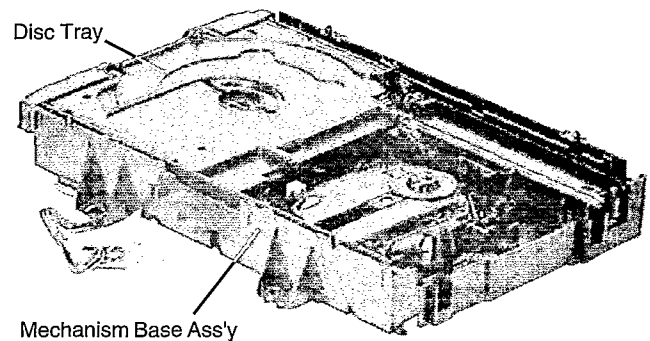


**Step 2** Remove the Tray Switch P.C.B.

**Step 4** Remove the Mechanism Cover Ass'y.

**Step 5**

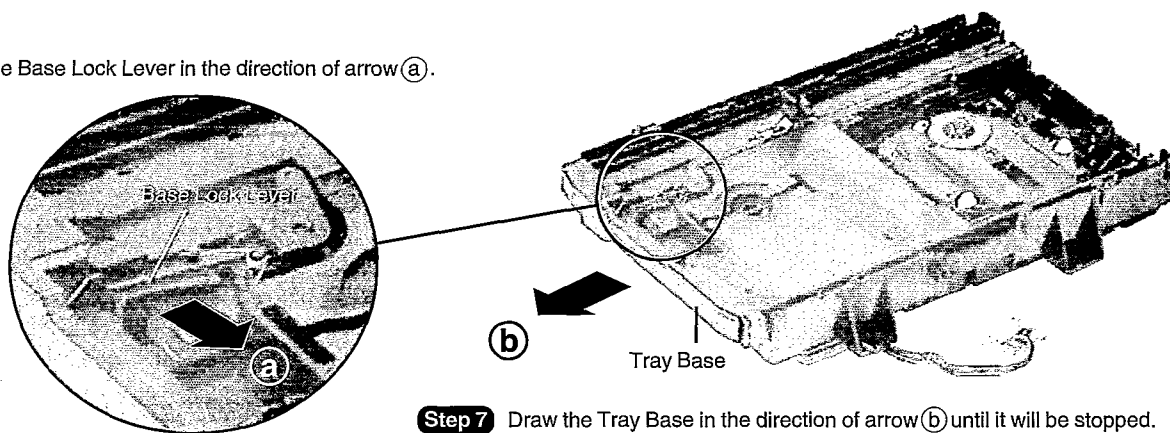
Remove the Disc Tray sided on the Mechanism Base Ass'y.



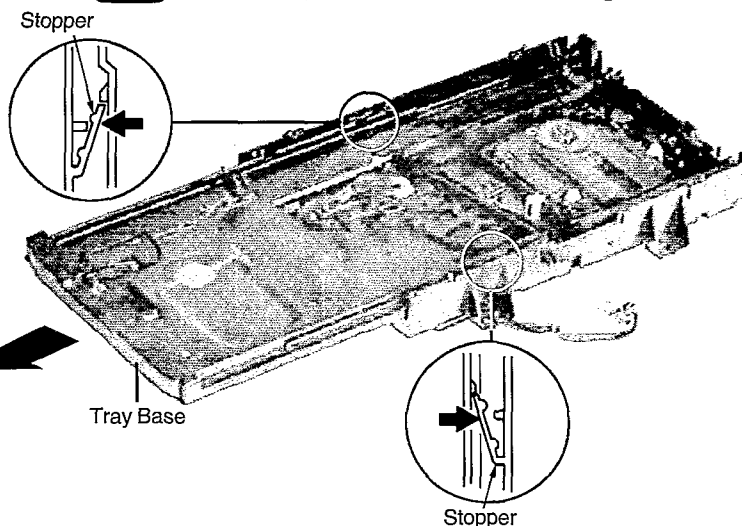
**a**  
[XTB3+10JFZ]  
(Black)

**Step 6**

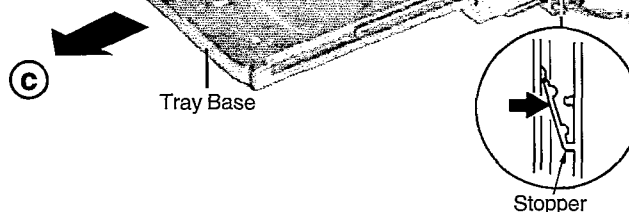
Unlock the Base Lock Lever in the direction of arrow (a).

**Step 7**

Draw the Tray Base in the direction of arrow (b) until it will be stopped.

**Step 8**

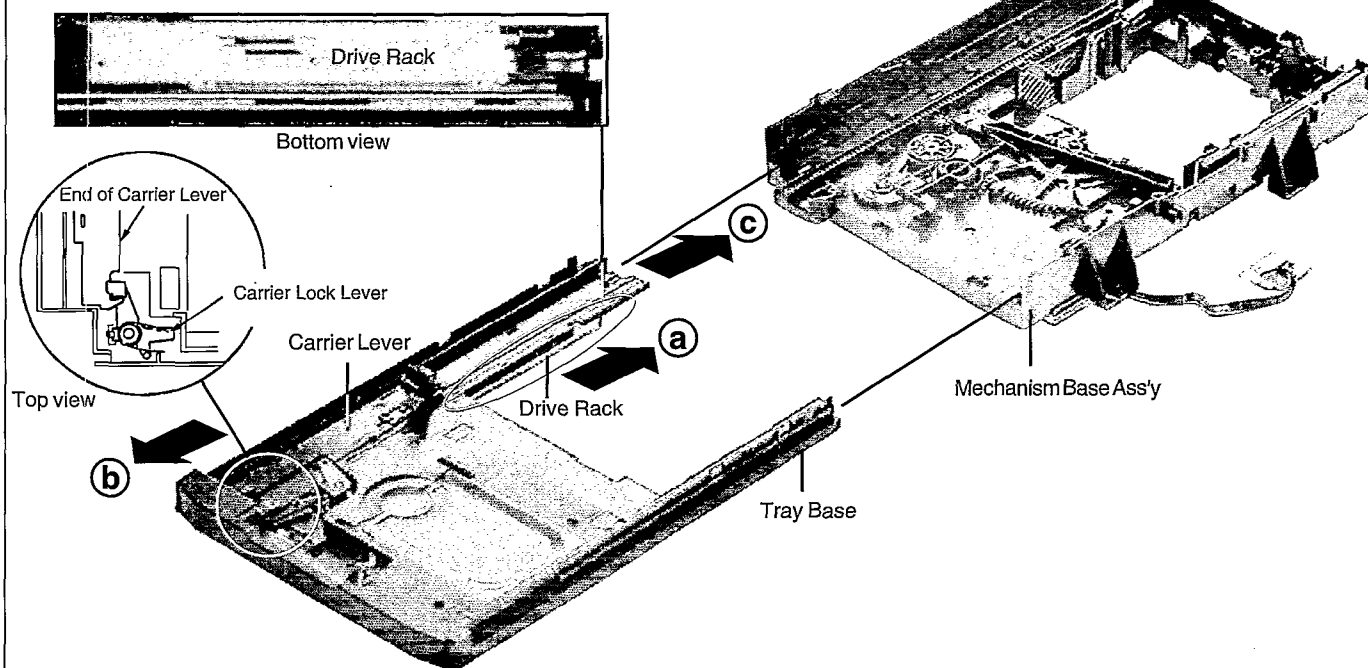
Release 2 stoppers manually and pull out the Tray Base in the direction of arrow (c).



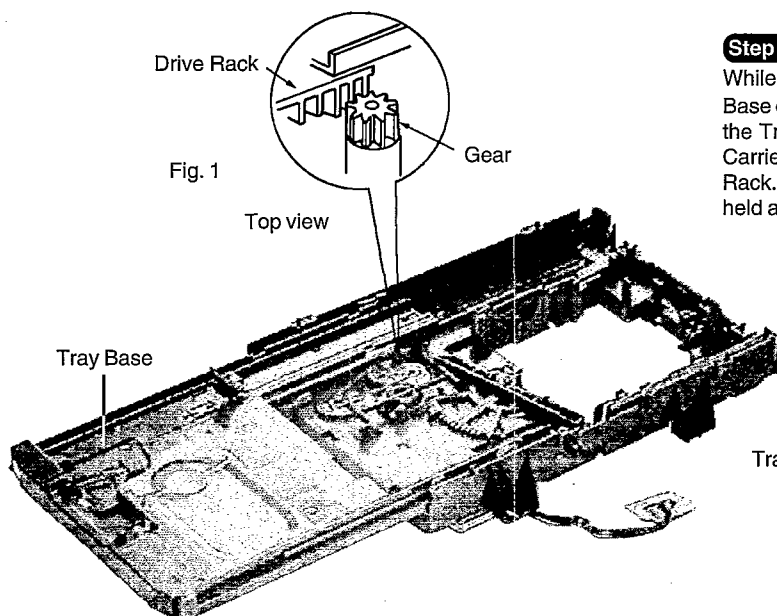
## ■ Assembly of the CD Changer Unit

**Step 1**

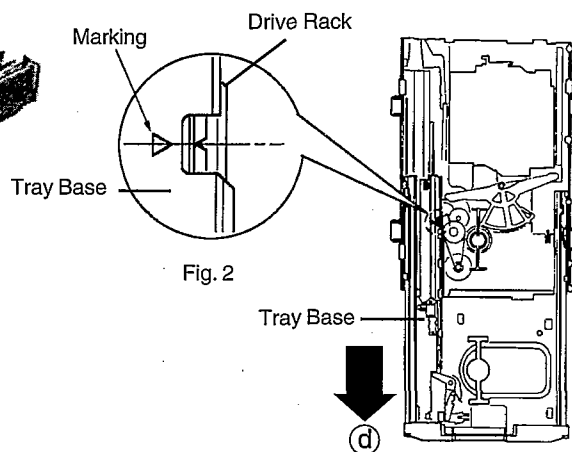
Move the Drive Rack in the direction of arrow (a) to the position as shown in the diagram below and the Carrier Lever in the direction of arrow (b) fully until the Carrier Lever is locked.





**Step 2**

While holding the Drive Rack and Carrier Lever, insert the Tray Base on the Mechanism Base in the direction of arrow ③ until the Tray Base stops as shown in figure 1. Release only the Carrier Lever and push the Tray Base together with the Drive Rack. After engaging the gear, release the Drive Rack which held and feed the Tray Base slowly.

**Step 3**

Draw the Tray Base in the direction of arrow ④ to the end until it stops. Make sure the mark '▽' on the Tray Base is aligned with the mark '△' on the Drive Rack as shown in figure 2 before closing the Tray Base. (In case that the statement above is not operated, draw the Tray Base again from step 2)

## ■ Main Component Replacement Procedures

### 1. Replacement of the Traverse Deck

**Step 1** Follow the procedures in 'Disassembly of the Traverse Unit' ( **Step 1** ~ **Step 2** ).

**Step 2**

a X 2

**Step 4**

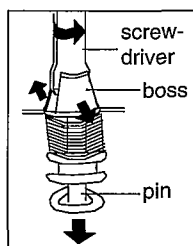
Desolder the 4 legs of the 2 motors and pull out the Servo P.C.B.

**Step 3**

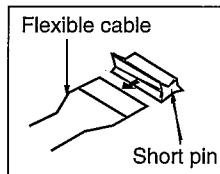
b X 1

**Step 5**

Widen the 2 bosses with a flat screwdriver and pull out the 2 pins. Then remove the Traverse Deck.

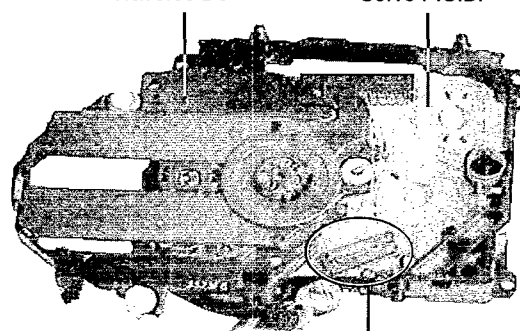


**Note :**  
Insert a short pin into the flexible cable for traverse unit.



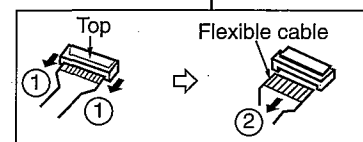
Traverse Deck

Servo P.C.B.

**Step 6**

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.



a

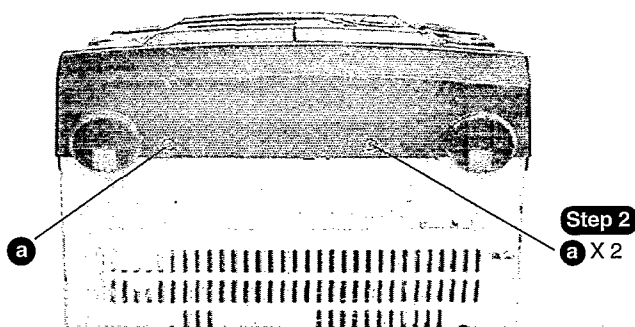
[XTV2+6G] (Brass)

b

[XTN2+6G] (Brass)

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

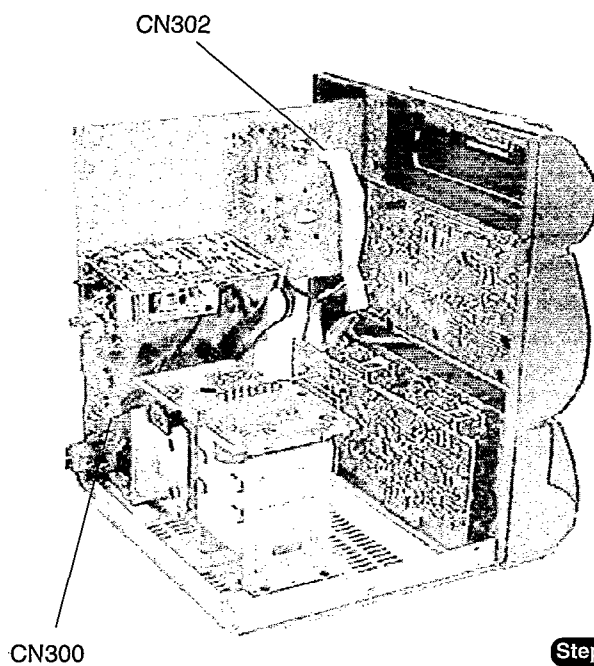
**Step 1** Follow the procedures in 'Checking of the Main, Panel, Deck and Servo P.C.B.' ( Step 1 ~ Step 3 ) and remove the CD changer unit.



**a**  
[XTB3+8JFZ]  
(Black)



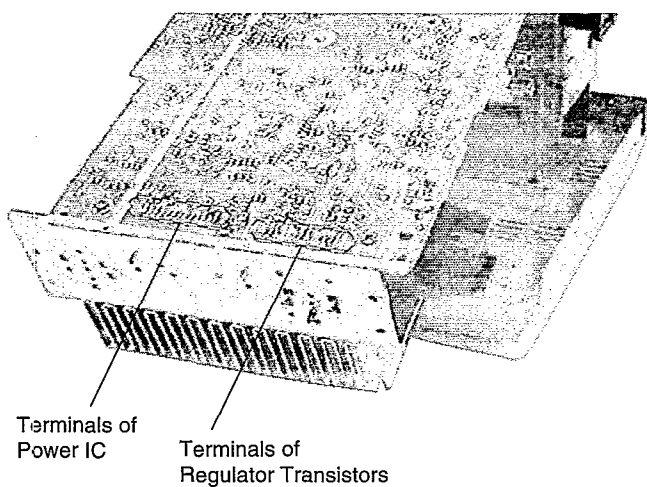
**b**  
[XTW3+15T]



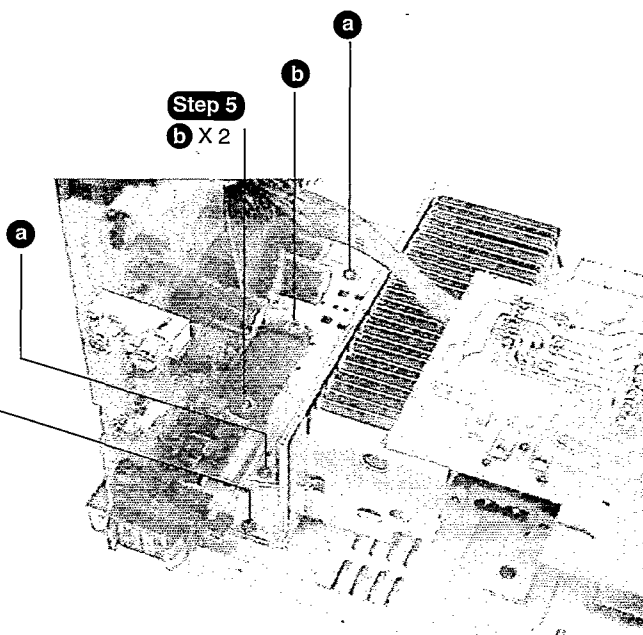
**Step 3** Remove the connector CN300 and CN302 and remove the front cabinet in the direction of arrow (a).



**Step 4**  
**a** X 3



**Step 5**  
**b** X 2



**Step 6**

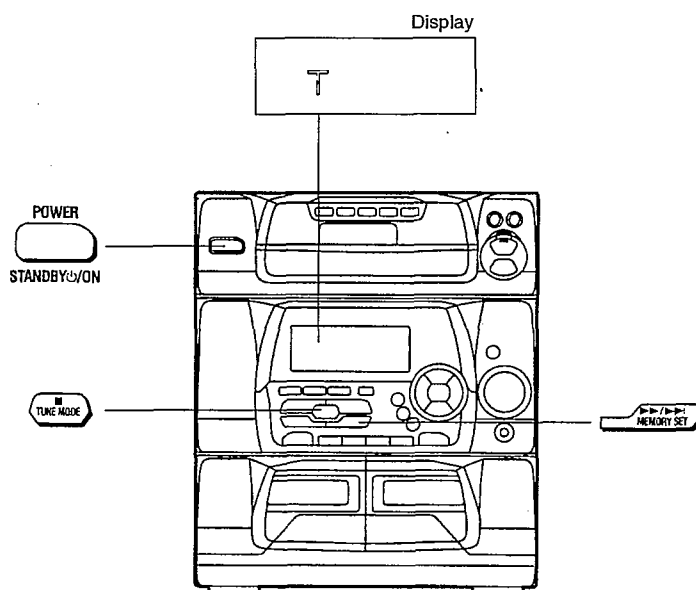
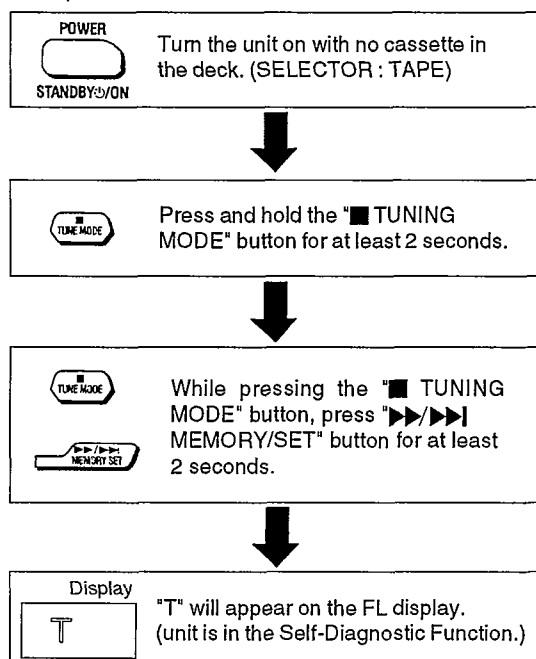
Unsolder the terminals of Power IC or Regulator Transistors on the solder surface and replace them.

## ■ 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/SET" (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 "OPEN -NEXT/-AUTO".
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	S3 (TUP) detection error	F16	CD does not function. This error occurs when S3 (Traverse up detection) is not ON or OFF within the specified time.
3	S4 (DRO) detection error	F25	Tray does not stay open. This error occurs when S4 (Tray open detection) is not ON or OFF during OPEN/CLOSE operation within the specified time.
4	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.
5	S5 (TNO) detection error	F27	Tray number does not detect correctly. This error occurs when S5 (Tray number detection) can not be detected normally or when the TRAY No. is uncertain.
6	S1 (STK), S2 (PLY) detection error	F28	CD loading mechanism does not move correctly. This error occurs when S1 (stocker position detection) is not ON or OFF, or S2 (play position detection) is not ON or OFF within the specified time.
7	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)

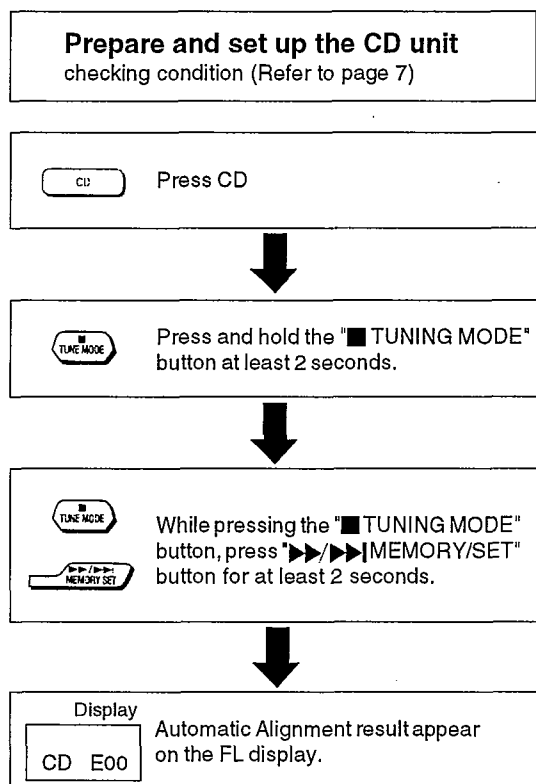
### (3) Power Supply related error detection

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
  - Dolby NR : OFF
  - Make sure head, capstan and pressure roller are clean.
  - Judgeable room temperature  $20 \pm 5^{\circ}\text{C}$  ( $68 \pm 9^{\circ}\text{F}$ )
- 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
  - CrO<sub>2</sub> tape; QZZCRX
- Measuring instrument
  - EVM (Electronic Voltmeter)
  - Digital frequency counter

#### • 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.

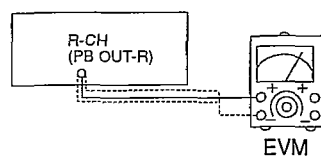


Fig. 1

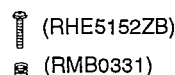


Fig. 2

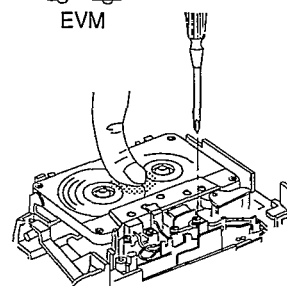


Fig. 3

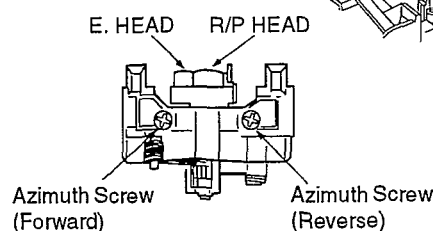


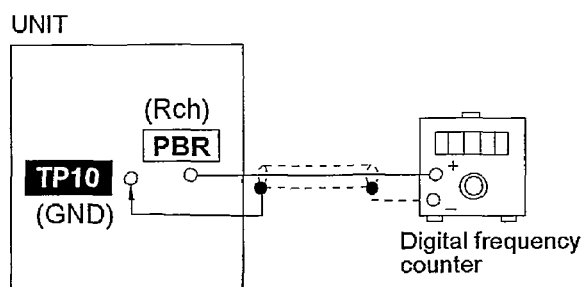
Fig. 4

#### • 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 VR201 (DECK 2) for the output value shown below.

**Adjustment target : 2955 ~ 3045 Hz (NORMAL speed)**

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

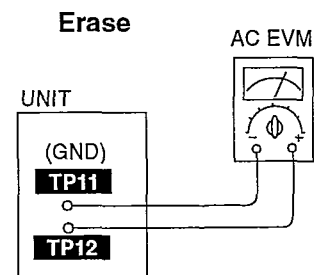
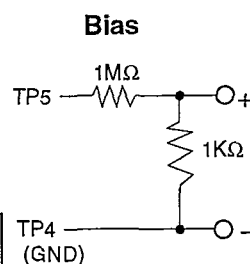


#### • Bias and Erase Voltage Check

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 CrO<sub>2</sub> tape (QZZCRX).
5. Repeat steps 2 and 3.

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

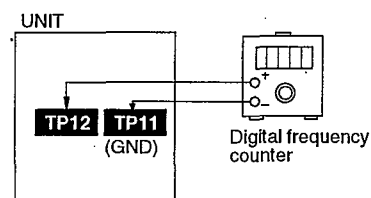
**Erase voltage for Deck 2 (Standard value) : more than 100mV (Normal)  
more than 150mV (CrO<sub>2</sub>)**



### • Bias Frequency Adjustment (Deck 2)

1. Set the unit to "AUX" position.
2. Insert the Normal blank tape (QZZCRA) into DECK2 and set the unit to "REC" mode (use "•REC / STOP" key).
3. Adjust L201 so that the output frequency is within the standard value.

Standard Value :  $98 \pm 8$  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.	450 kHz 30 % Mod. at 400 Hz	Point of non-interference. (on/about 600kHz)	Headphone Jack (32Ω) (Fabricate the plug as shown in Fig.2 and then connect the lead wires of the plug to the measuring instrument.)	Z2 (AM IFT)	Adjust for maximum output.

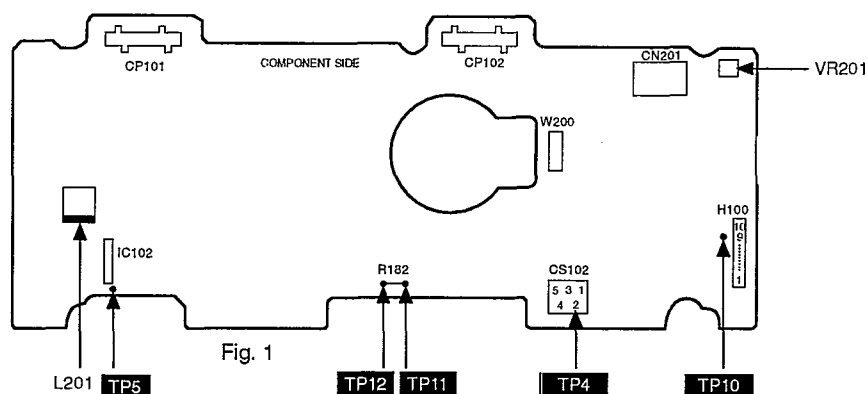
### • AM-RF ALIGNMENT(EG)

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig. 3)	REMARKS
CONNECTIONS	FREQUENCY				
"	522 kHz	Tuning capacitor fully closed.	"	Z1-1 (AM OSC Coil)	Adjust for maximum output.
"	1629 kHz	Tuning capacitor fully opened.	"	Z1-2 (AM OSC Trimmer)	Adjust for maximum output.
"	603 kHz	Tune to signal	"	Z1-2 (AM ANT Coil)	Adjust for maximum output.
"	1404 kHz	"	"	Z1-2 (AM ANT Trimmer)	Adjust for maximum output.

## • Alignment Points

### <Cassette Deck Section>

### <Tuner Section>



To Headphone

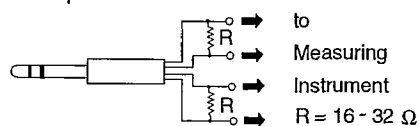


Fig. 2

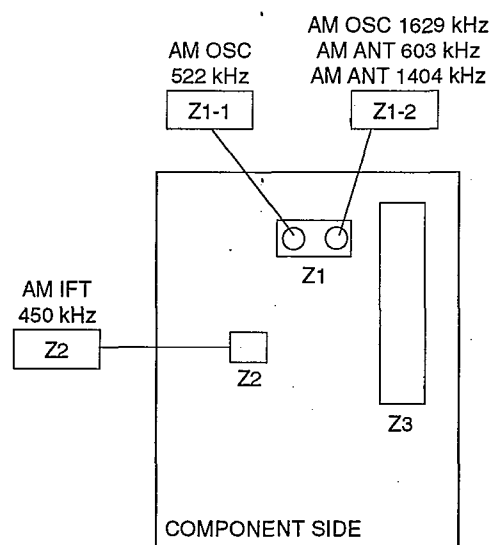


Fig. 3

## ■ Terminal Function of ICs

### • IC701 (AN8835SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDA	I	PD signal input
2	PDB	I	PD signal input
3	VCC	I	Power supply connection
4	LPD	I	Laser PD connection
5	LD	O	Power out for LD driving
6	RF	O	RF signal output
7	RFIN	I	RF signal input
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF-AGC output
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	TEBPF	I	Vibration detection signal input
21	CCRS	I	Capacitor for LPF connection
22	TE	O	Tracking error signal output
23	FE	O	Focus error signal output
24	TBAL	I	Tracking balance signal input
25	FBAL	I	Focus balance signal input
26	VREF	O	Reference voltage output
27	PDE	I	PD signal input
28	PDF	I	PD signal input

### • IC703 (AN8389SE1) Focus coil / Tracking coil / Traverse motor / Spindle motor driver

Pin No.	Mark	I/O	Function
1	VCC	I	Power supply terminal
2	VREF	I	Reference voltage input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	Ground connection
6	NC	—	Ground connection
7	NRESET	I	Reset input
8	GND	—	Ground connection
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (Not used, open)

Pin No.	Mark	I/O	Function
13	PVCC1	I	Power supply (1) for driver
14	PGND1	—	Ground connection (1) for driver
15	D1-	O	Motor driver (1) reverse-action output
16	D1+	O	Motor driver (1) forward-action output
17	D2-	O	Motor driver (2) reverse-action output
18	D2+	O	Motor driver (2) forward-action output
19	D3-	O	Motor driver (3) reverse-action output
20	D3+	O	Motor driver (3) forward-action output
21	D4-	O	Motor driver (4) reverse-action output
22	D4+	O	Motor driver (4) forward-action output
23	PGND2	—	Ground connection (2) for driver
24	PVCC2	I	Power supply (2) for driver



• IC702 (MN662741RPA) 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	DSLIF	I/O	DSL loop filter
48	PLLIF	I/O	PLL loop filter
49	VCOF	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	PDO	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	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2	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	DEMPH	O	De-emphasis ON signal output (("H" : ON) (Not used, open)
69	RESY	O	Frame resynchronizing signal output (Not used, open)
70	/RST2	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, RSEL="L")
77	CSEL	I	Crystal oscillating frequency designation input

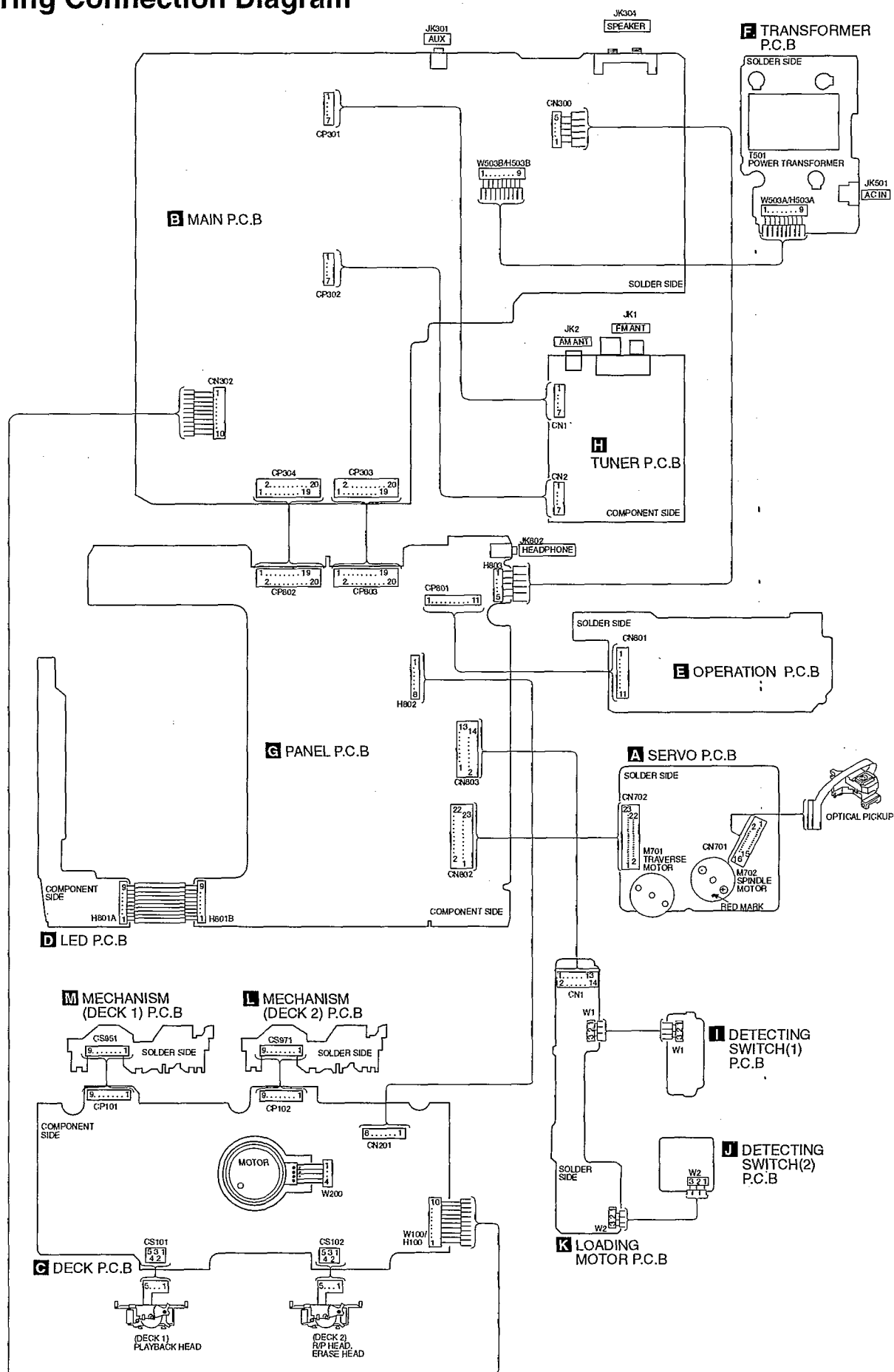
Pin No.	Mark	I/O	Function
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal ("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal "H" : SMCK=8.4672MHz "L" : MCK=4.2336MHz (Not used, open)

### • IC803 (M38197MA194F) System Microprocessor

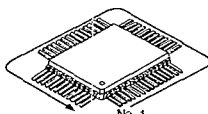
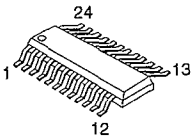
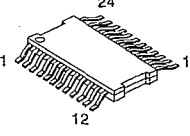
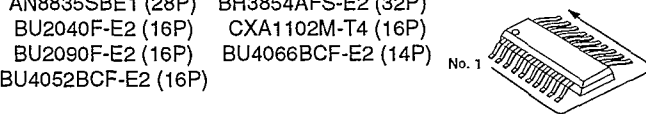
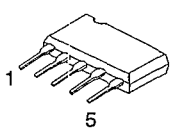
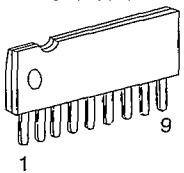
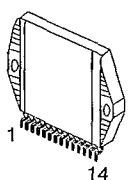
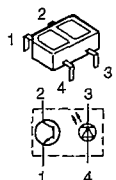
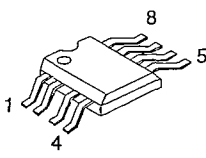
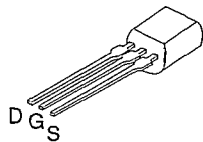
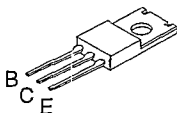
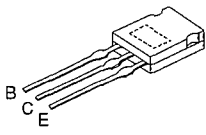
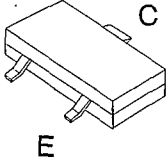
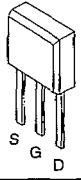
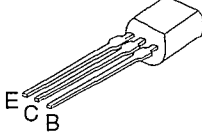
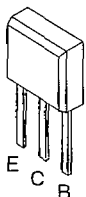
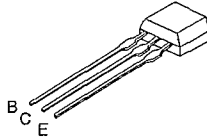
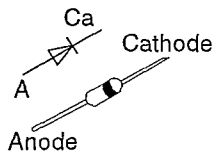
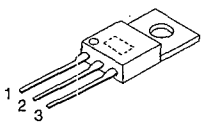
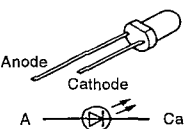
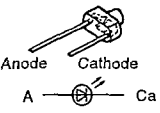
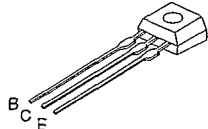
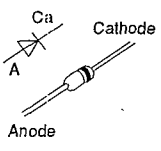
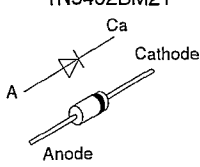
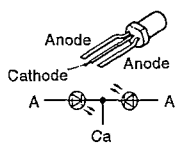
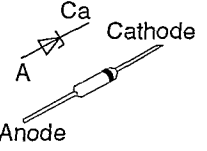
Pin No.	Mark	I/O	Function
1	DECK 2	I	Mecha condition input(PLAY, FF/RW, MOTOR)
2	DECK 1	I	Mecha condition input(PLAY, FF/RW, MOTOR)
3	TPS_IN	I	TPS input
4	CRT	—	CR timer
5	KEY 4	I	Key 4 input
6	KEY 3	I	Key 3 input
7	KEY 2	I	Key 2 input
8	KEY 1	I	Key 1 input
9	SER 1	O	LED drive clock output
10	MDATA/ PLLDATA	O	CD command data output
11	SER 2	O	LED drive data output
12	SER 3	O	LED drive data output
13	SER 4	O	Key control clock output
14	SER 5	O	Key control strobe output
15	SPEANA INPUT	I	Spectrum analyser input
16	CHG SW1	I	CD changer SW input (STK_SW, TUP_SW)
17	CHG SW2	I	CD changer SW input (DR0_SW, PLY_SW, TNO_SW)
18	CDRST	I	CD reset input
19	STATUS	I	CD signal processor status input
20	SQCK	O	CD subcode clock output
21	NC	—	No connection
22	SUBQ	I	CD subcode data input
23	TLOCK	I	CD tracking lock input
24	FLOCK	I	CD focus lock input
25	SENSE	I	CD servo processor sense input
26	MLD/ PLLCE	O	CD command load output
27	NC	—	No connection
28	MCLK/ PLLCLK	O	CD command clock output
29	RESTSW	I	CD REST detect SW input

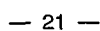
Pin No.	Mark	I/O	Function
30	BLKCK	I	CD block clock input
31	RMT	I	Remote control signal input
32	DCDET	I	DC detect input
33	P.CONT	O	Power control output
34	/HALT	I	AC failure detect input
35	/RESET	I	RESET input
36	XCIN	I	X'tal oscillator (f = 32.768 kHz sub clock)
37	XCOU	O	X'tal oscillator (f = 32.768 kHz sub clock)
38	XIN	I	X'tal oscillator (f = 6.0 MHz Main clock)
39	XOUT	O	X'tal oscillator (f = 6.0 MHz Main clock)
40	VSS	—	Ground (0V)
41	MBP1	O	MPU beat proof output 1
42	MBP2	O	MPU beat proof output 2
43	CDGMUTE	—	No connection
44	/CDGRESET	—	No connection
45	CD DMUTE	O	CD digital mute output
46	SPE CONT A	O	Space control A
47	SPE CONT B	O	Space control B
48	SPE CONT C	O	Space control C
49-64	GRD16-GRD1	O	FL digit (grid) drive signal output
65-88	AND1-AND24	O	FL segment (anode) drive output
89	JOG A	I	Jog dial signal input A
90	JOG B	I	Jog dial signal input B
91	VCC	I	Power supply (+5V)
92	REGION IN	I	Area setting terminal
93	MKCLK	O	Cassette deck control clock signal output
94	MKDATA	O	Cassette deck control data output
95	SD IN	I	Tuner signal DET input
96	STEREO IN	I	Tuner stereo DET input
97	DO IN	I	Tuner PLL if data input
98	VP	I	Power input (-30V)
99	VSS	—	Ground (0V)
100	VREF	I	Reference for A-D

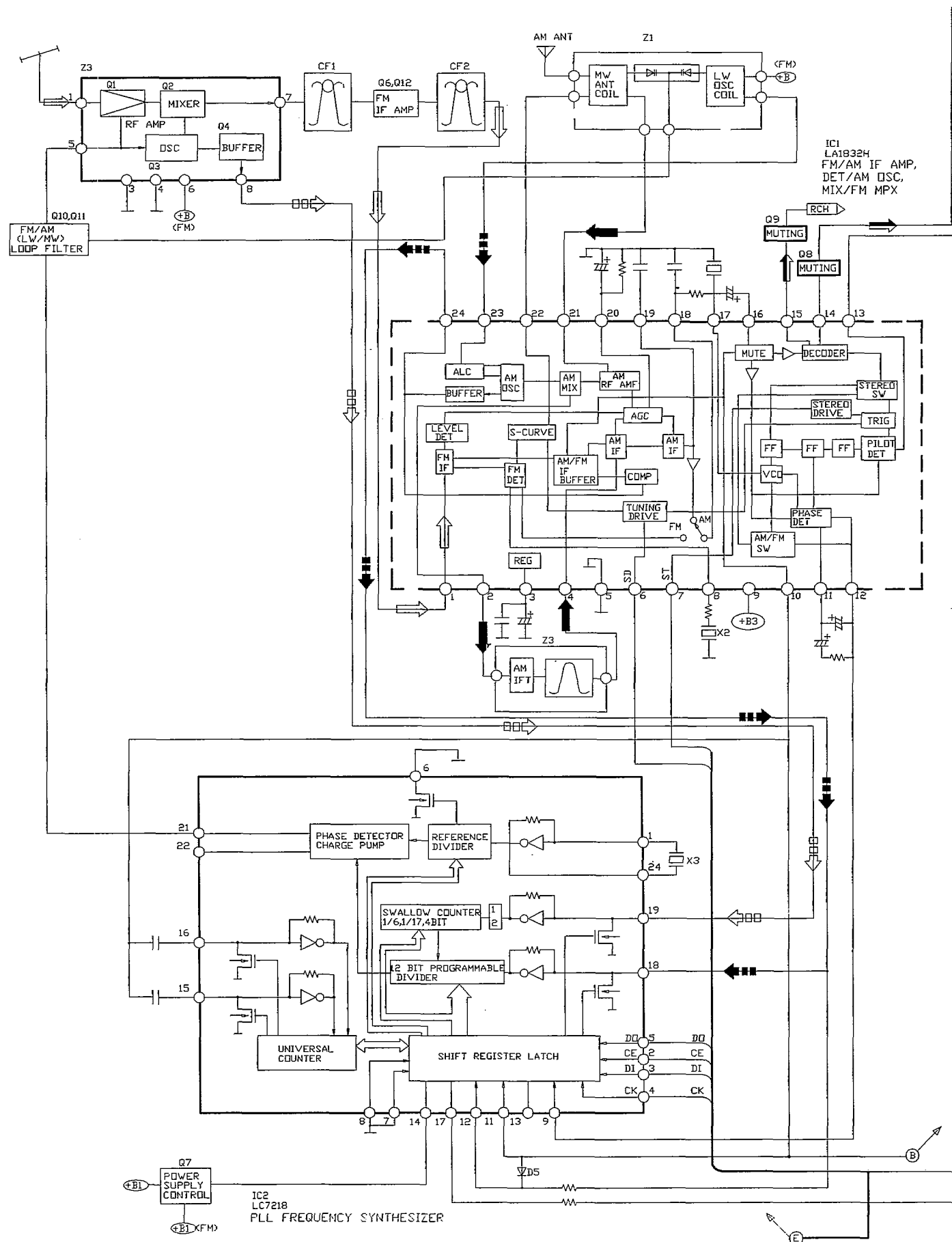
# Wiring Connection Diagram

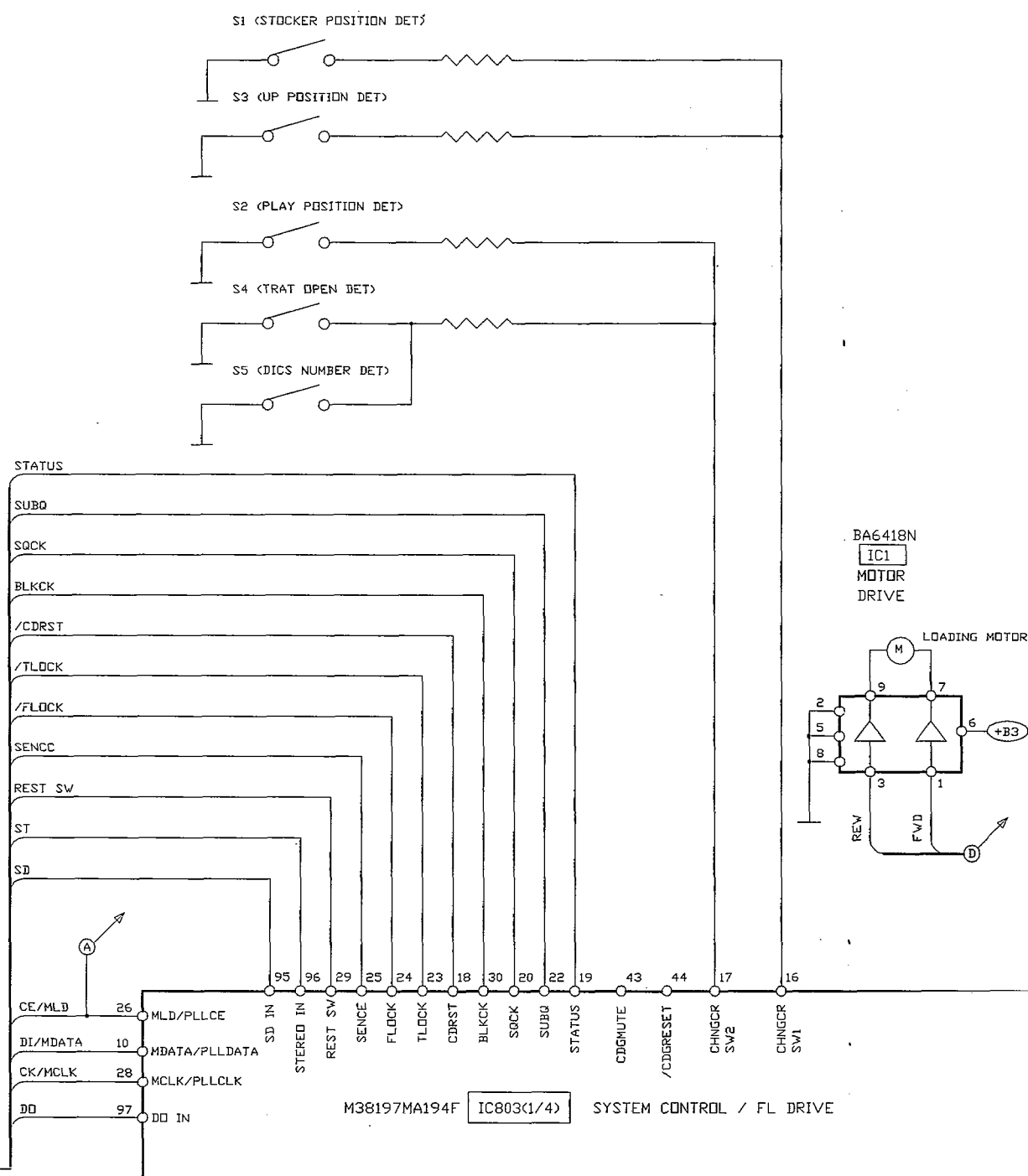


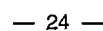
# Terminal Guide of ICs, Transistors and Diodes

M38197MA194F(100P) MN662741RPA(80P) 	LC7218 LA1832H 	AN8389SE1 	BA3835F-E2(18P) AN8835SBE1(28P) BU2040F-E2(16P) BU2090F-E2(16P) BU4052BCF-E2(16P) M51167BFP-TB(36P) BH3854AFS-E2(32P) CXA1102M-T4(16P) BU4066BCF-E2(14P) 		
BA7755A 	BA6418N 	RSN3502 	0N2180RLC 	BA4558FE2 	2SK301QTA 
2SD2395E 2SB1566E 	2SD2037ETA 	2SB709S 	2SJ164QRTA 	2SB621ARTA 2SB621RTA 2SD1302STA 2SD965RTA 2SD467CTZ 	
2SC2784FTA 2SD1450STA BA1L4MTA BA1L4ZTA BN1A4MTA BA1A3QTA 	2SA933SSTA RVTDTA143XST 2SC1740SSTA 	1SS254TA 1SS291TA MA165TA 			
AN78M05 	SLR325DCT31 	SLR-325MC 	2SC2786MTA 2SC2785FETA 2SC2785FTA 2SC2787LTA 2SC2787FL1TA	2SD1020HTA BA1A4ZTA BA1F4MTA BA1L3ZTA BN1L3NTA 	
MA4330LTA 	1D3E 1N5402BM21 	SPR505MDTT 	MTZJ12BTA MTZJ15CTA MTZJ24DTA MTZJ3R6BTA MTZJ4R7BTA	MTZJ5R1BTA MTZJ5R1CTA MTZJ5R6BTA MTZJ6R8ATA MTZJ8R2BTA MTZJ9R1BTA 	

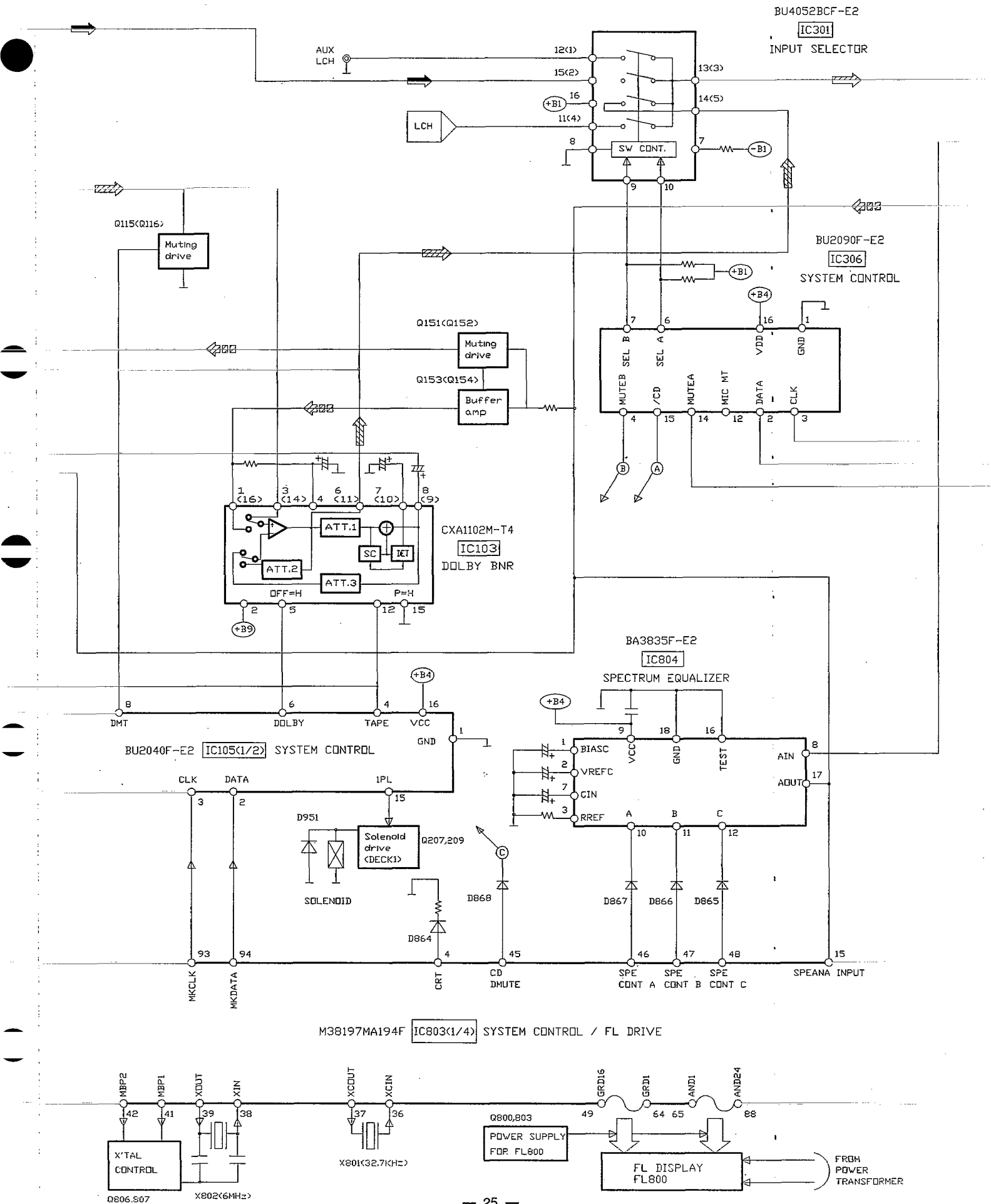


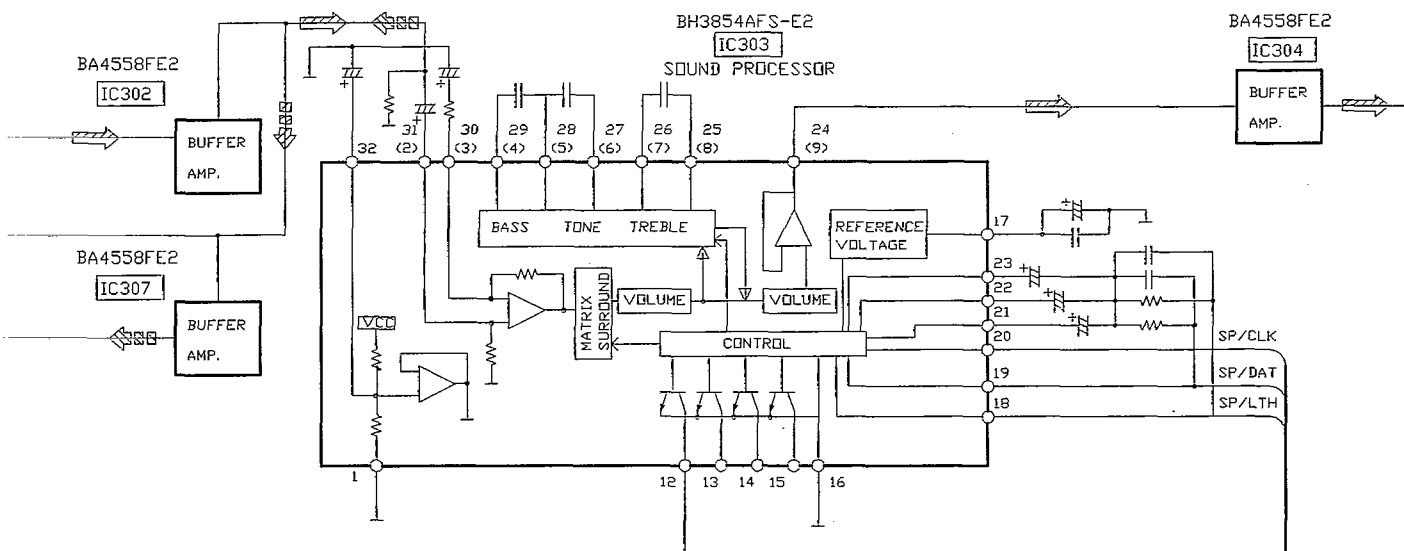




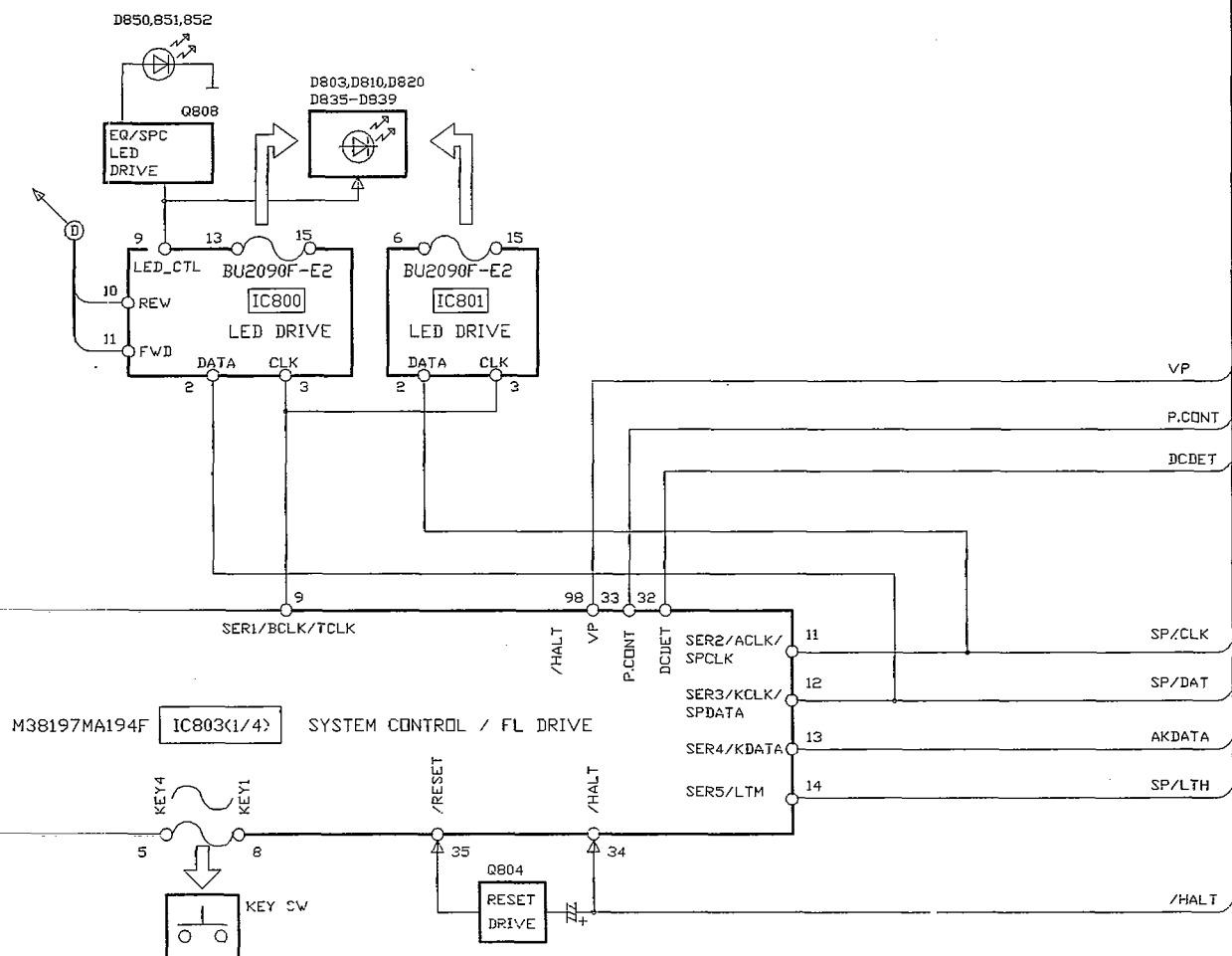


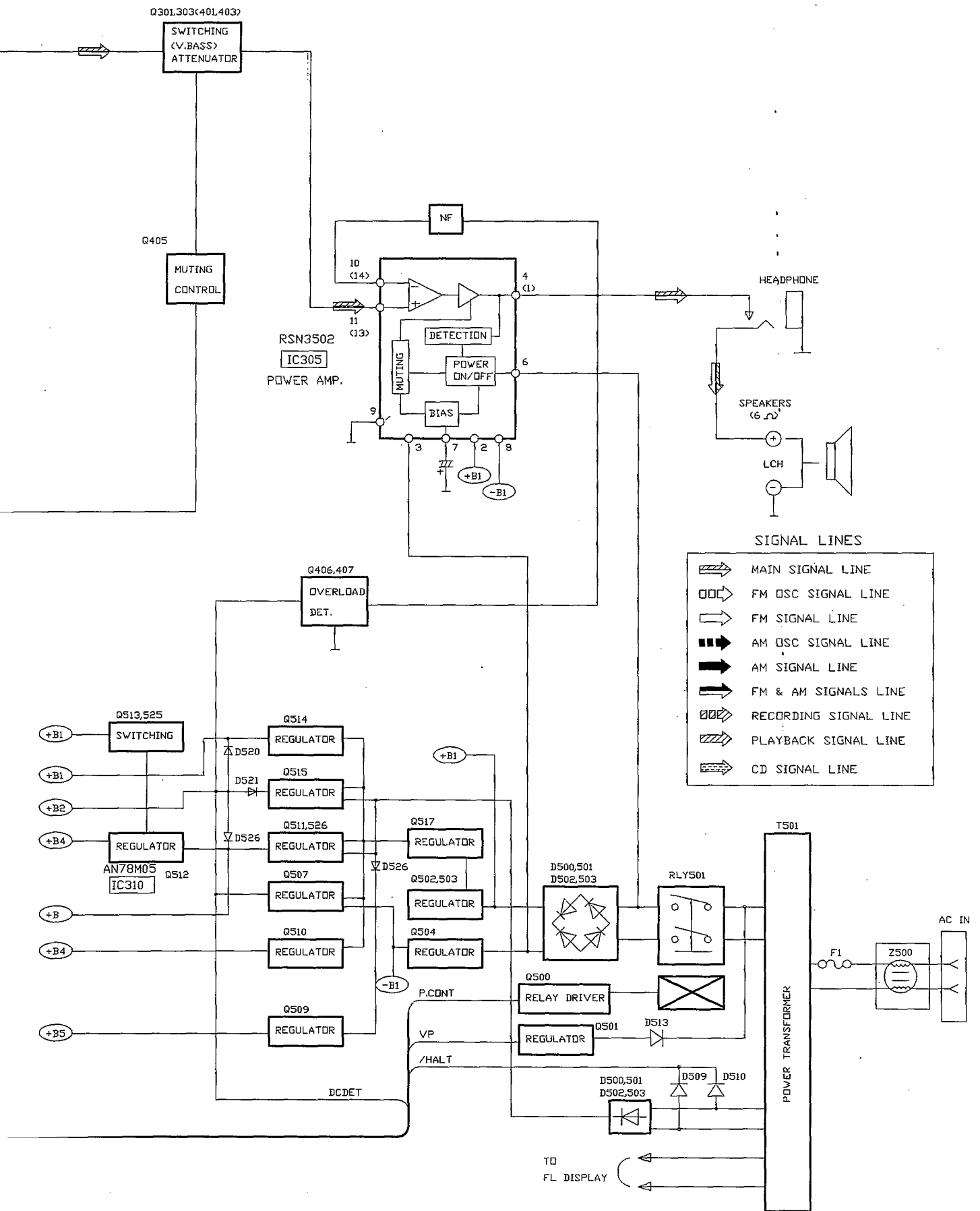






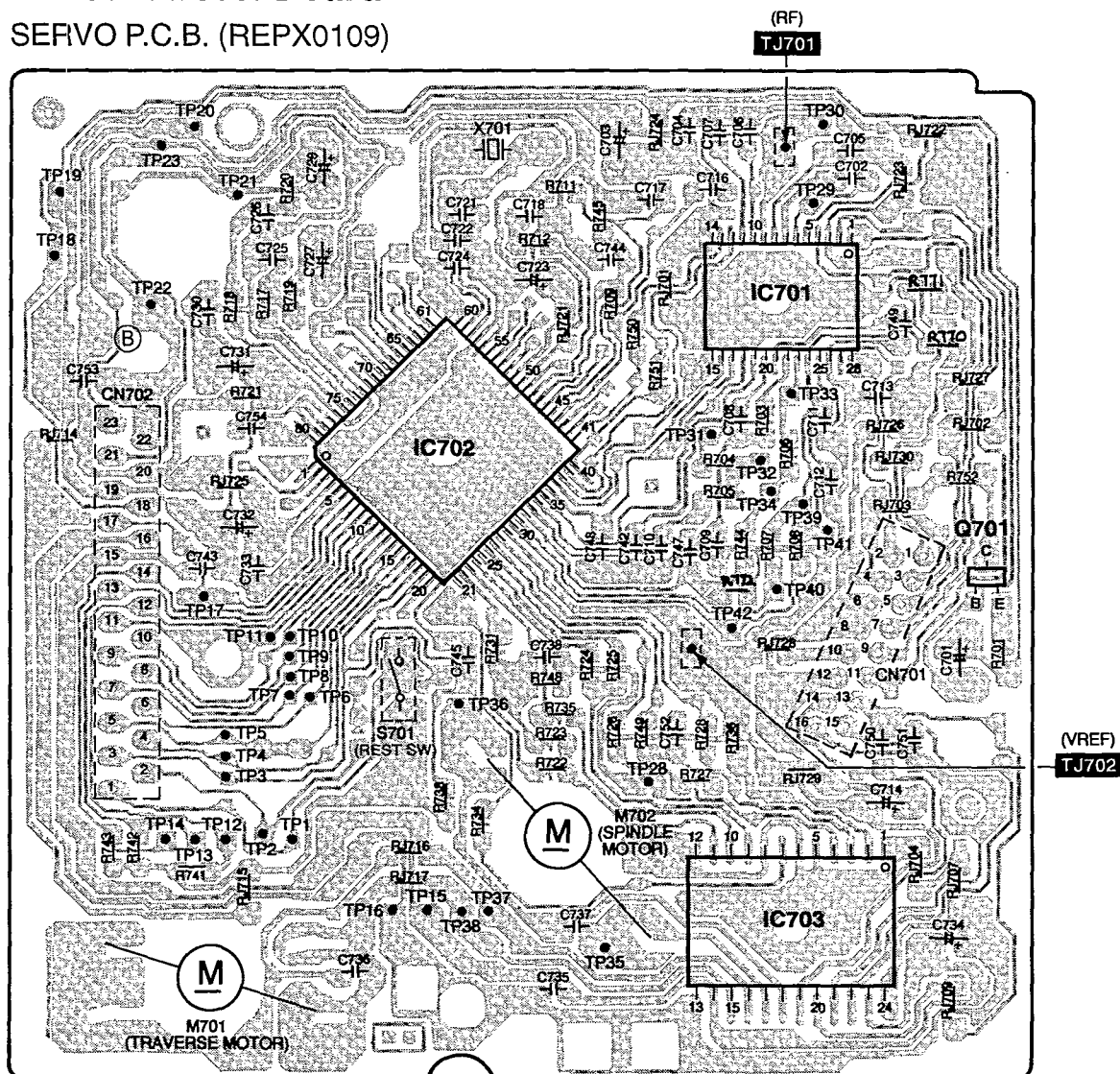
AKDATA



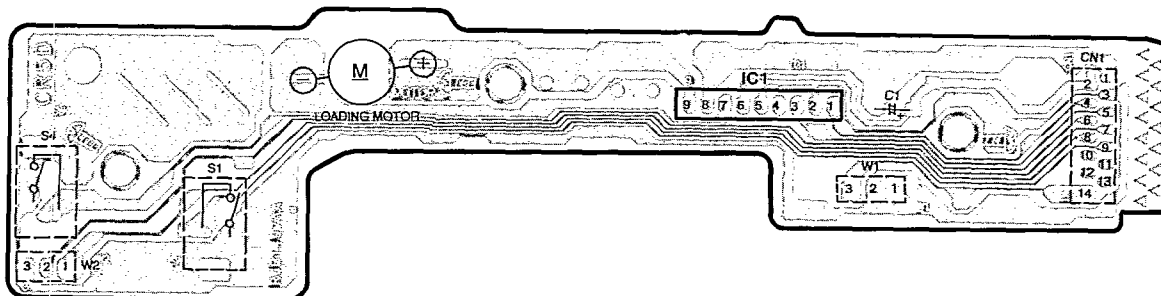


# Printed Circuit Board

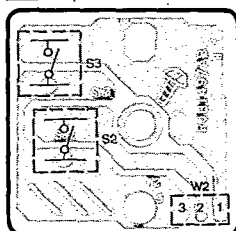
## A SERVO P.C.B. (REPX0109)



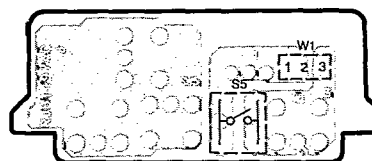
## K LOADING MOTOR P.C.B. (REP2182A-N)



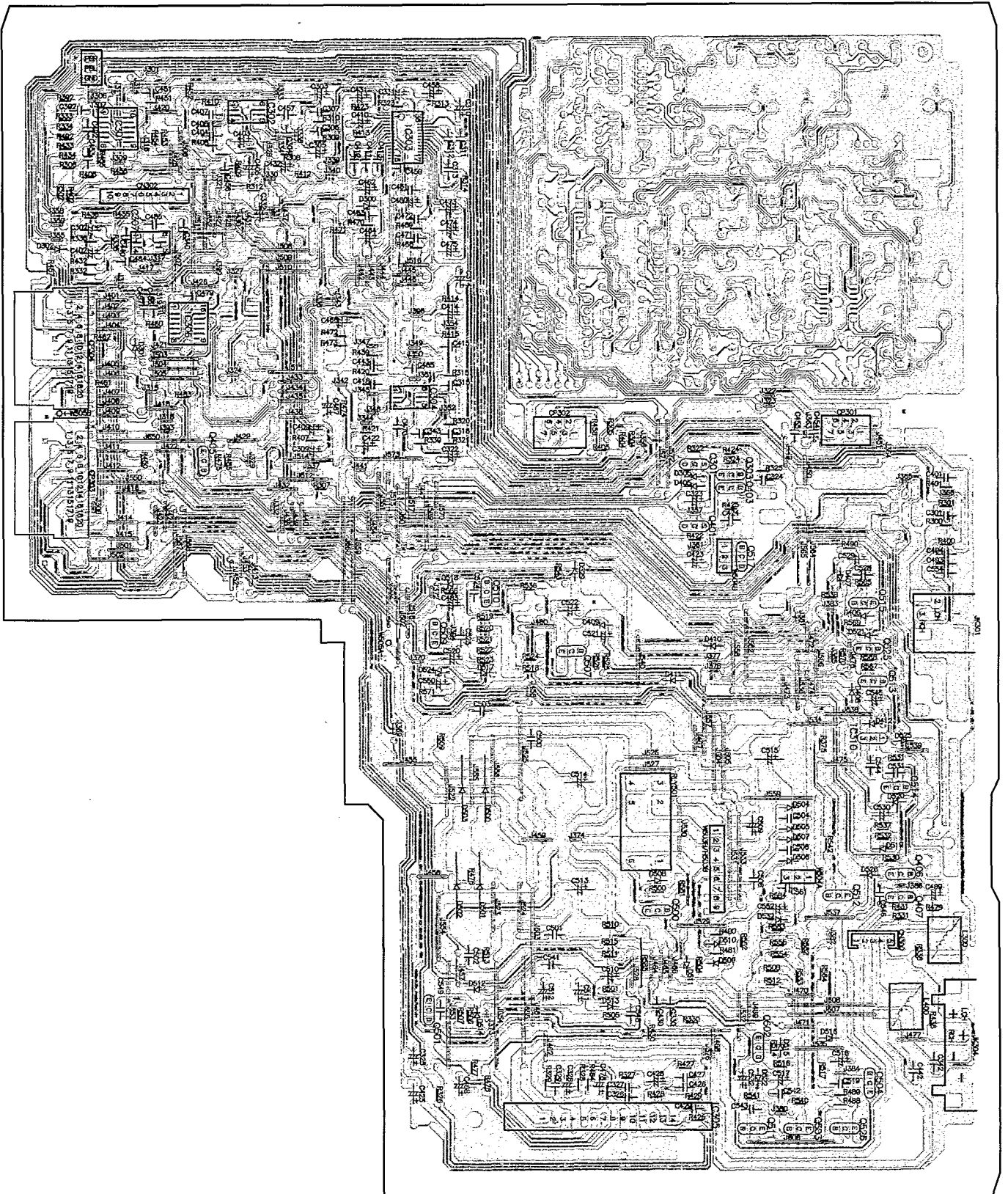
## J DETECTING SWITCH (2) P.C.B. (REP2182A-N)

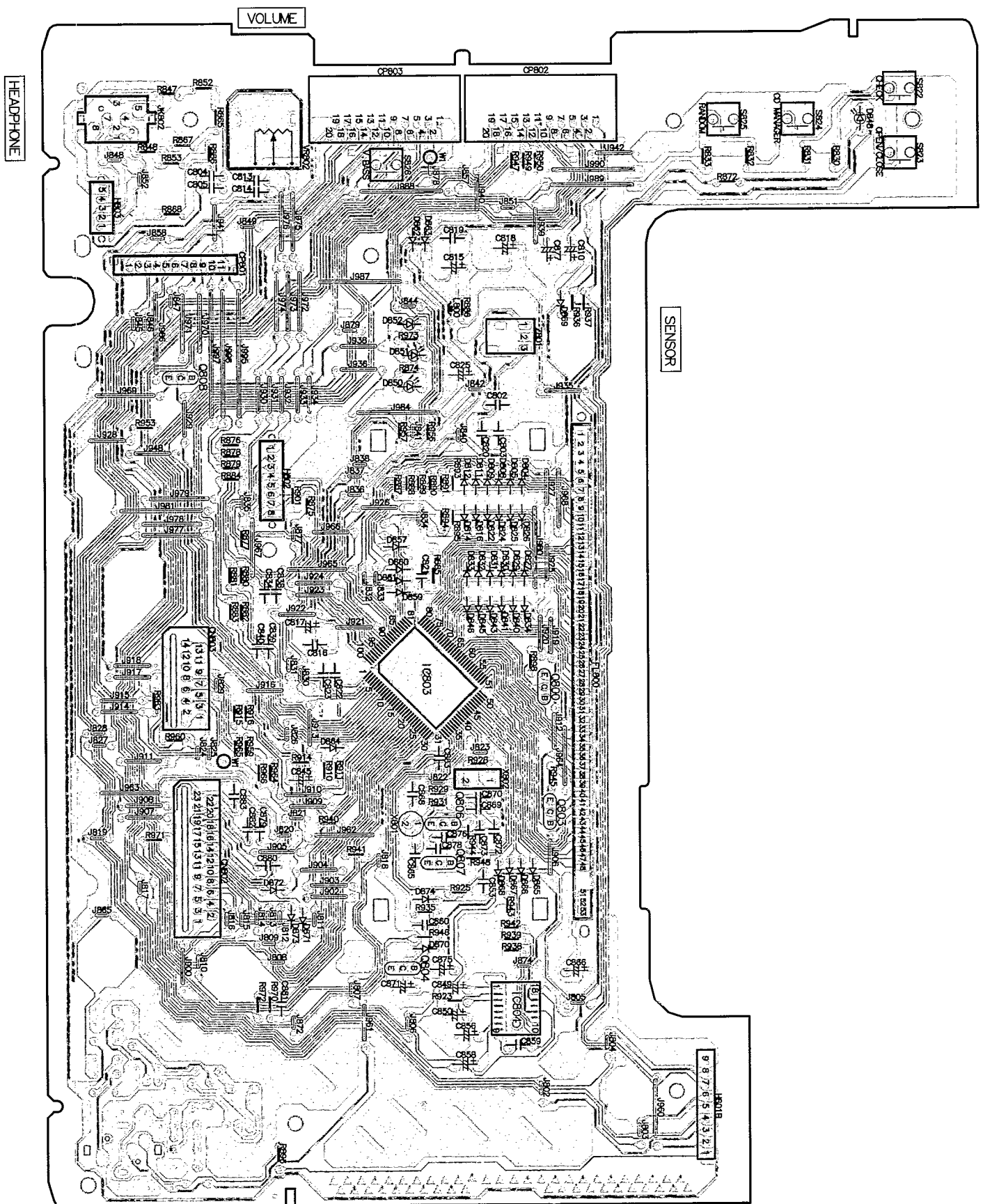


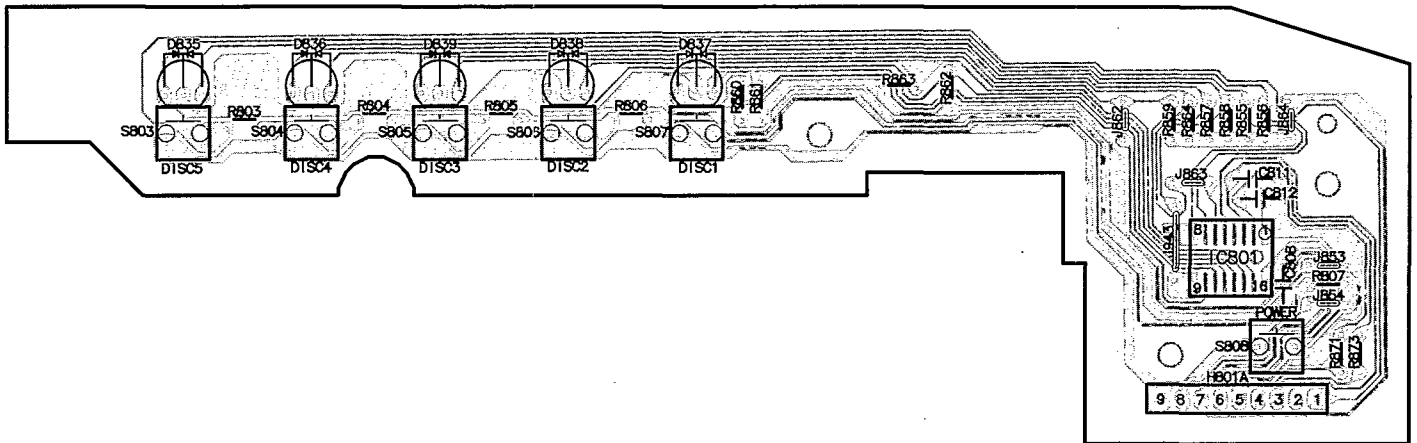
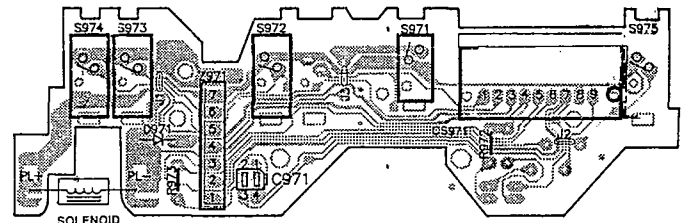
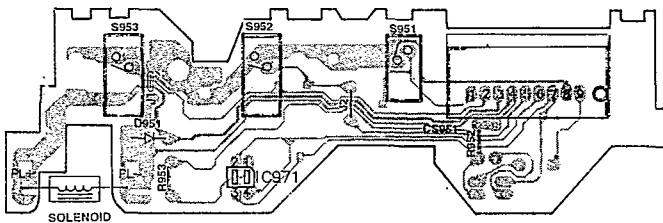
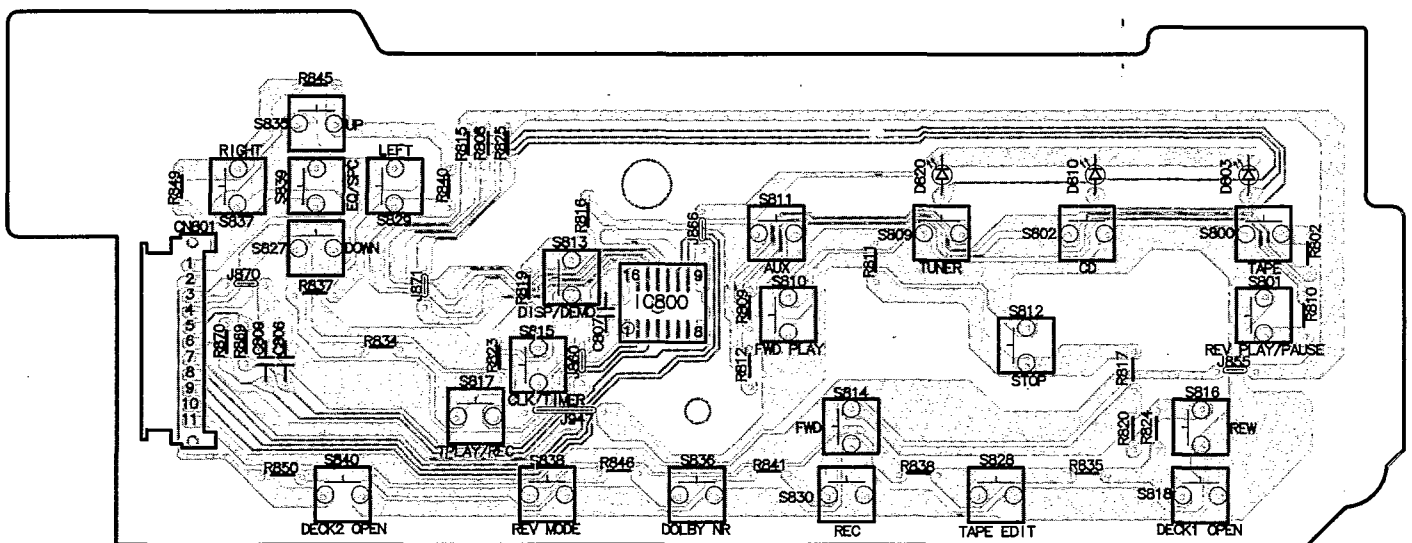
## I DETECTING SWITCH (1) P.C.B. (REP2182A-N)



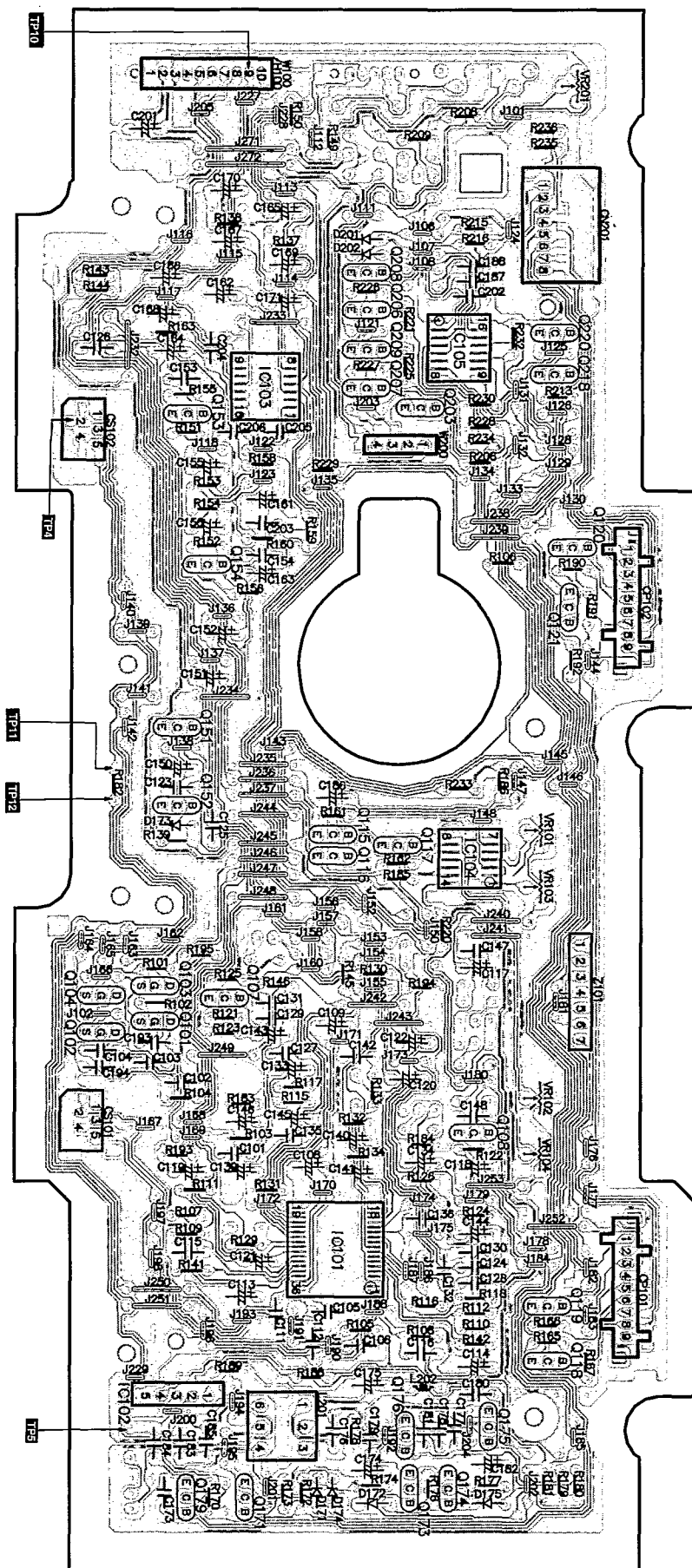
**B** MAIN P.C.B. (REPX0114B)...(E,EG)  
(REPX0114C)...(EB)



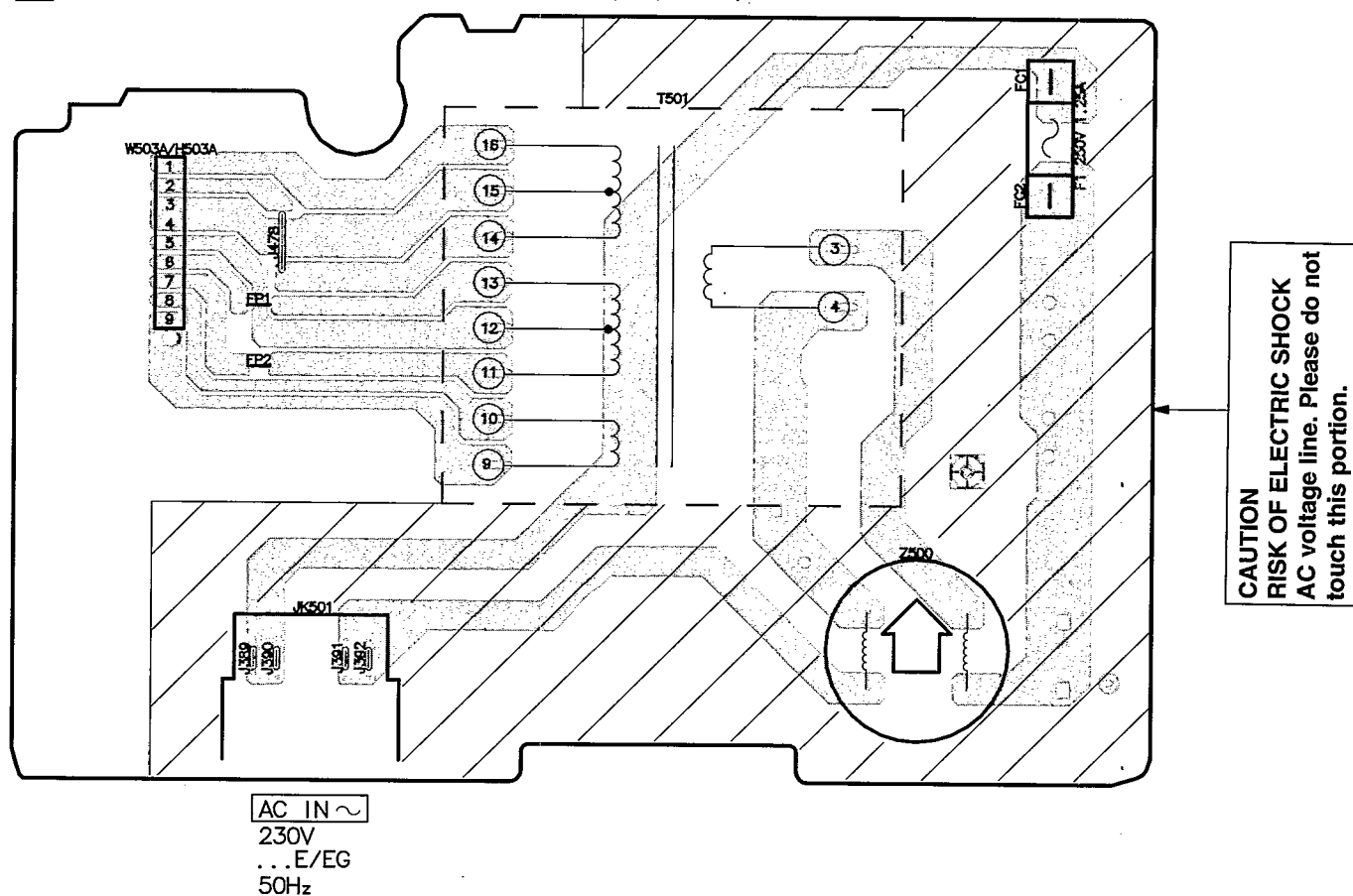
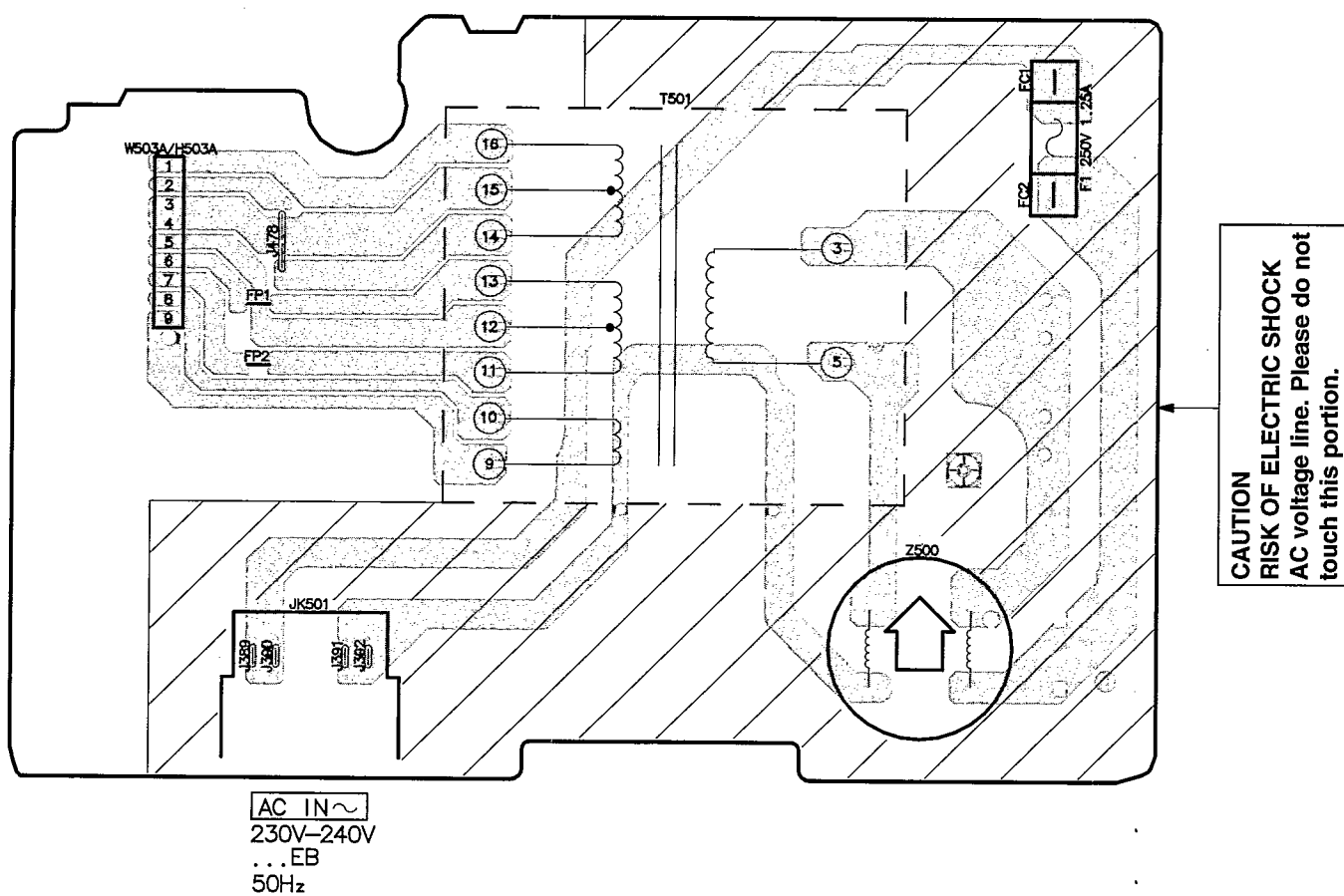
**G** PANEL P.C.B. (REPX0113B)


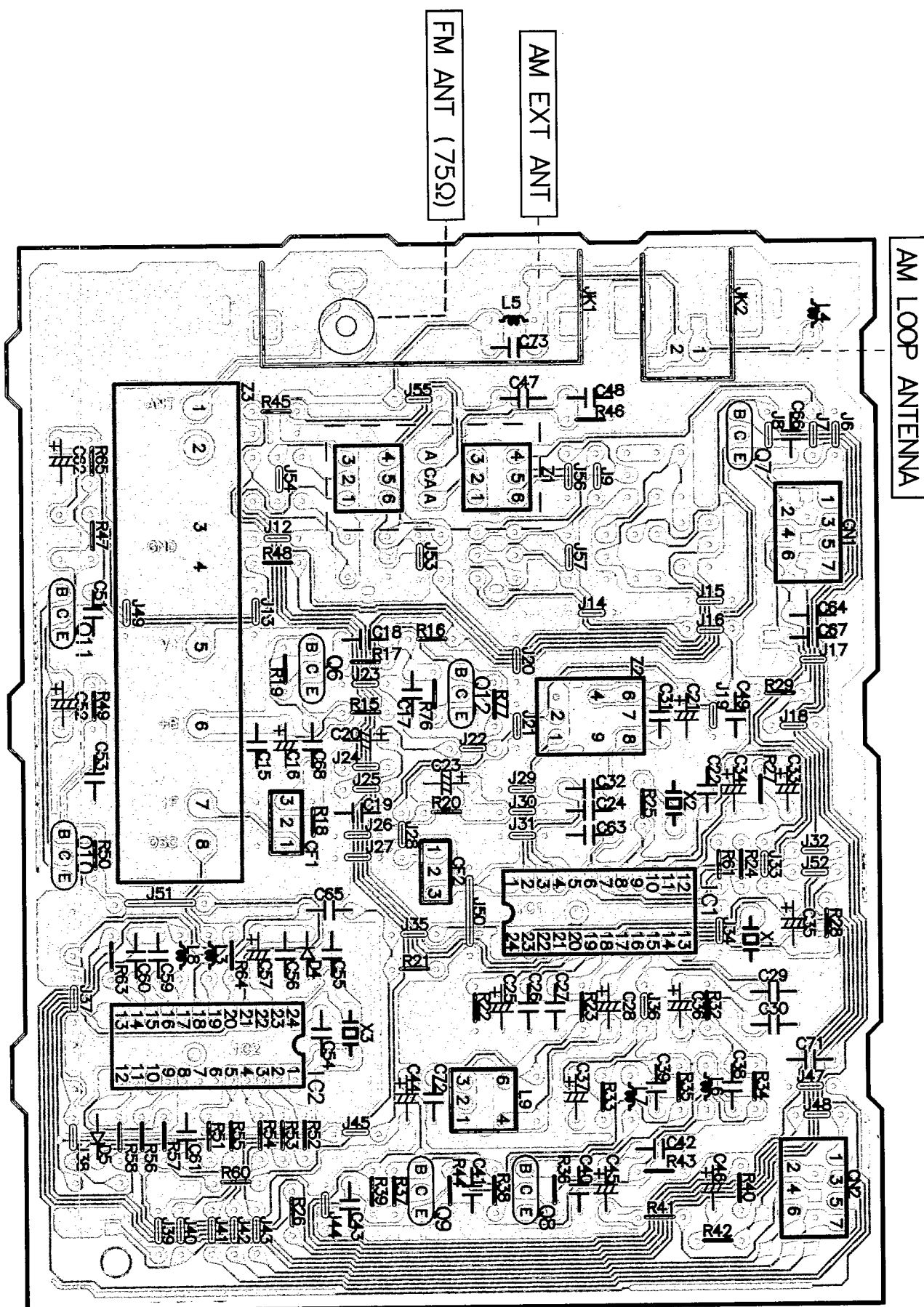
**D** LED P.C.B. (REPX0113B)**M** MECHANISM (DECK 1) P.C.B. (REPX0108A)**L** MECHANISM (DECK 2) P.C.B. (REPX0108)**E** OPERATION P.C.B. (REPX0113B)

**C** DECK P.C.B. (REP2200J)





**F** TRANSFORMER P.C.B. (REPX0114B)...(E,EG)**F** TRANSFORMER P.C.B. (REPX0114C)...(EB)

**H** TUNER P.C.B. (REP2000L)

## ■ 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, Led Circuit and Operation Circuit >

- S800 : Tape/deck select switch
- S801 : Reverse play/pause, Tune/time adjust down switch
- S802 : CD select switch
- S803 : DISC 5 select switch
- S804 : DISC 4 select switch
- S805 : DISC 3 select switch
- S806 : DISC 2 select switch
- S807 : DISC 1 select switch
- S808 : Power switch
- S809 : Tuner select switch
- S810 : FWD play, tune/time adjust up switch
- S811 : AUX select switch
- S812 : Stop, tune mode select switch
- S813 : Display, demonstration select switch
- S814 : FWD, memory/set switch
- S815 : Clock, timer select switch
- S816 : REW, FM mode/BP select switch
- S817 : Play timer/REC timer select switch
- S818 : Deck 1 open switch
- S822 : Disc check open switch
- S823 : Disc tray open/close switch
- S824 : CD manager switch
- S825 : Random play switch
- S826 : V. Bass switch
- S827 : Down select switch
- S828 : Tape Edit switch
- S829 : Left select switch
- S830 : Record select switch
- S835 : Up select switch
- S837 : Right select switch
- S838 : Reverse mode select switch
- S839 : EQ/SPACE select switch
- S840 : Deck 2 open switch
- VR802 : Volume control


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

- S951 : Deck 1 Mode detect switch.
- S952 : Deck 1 Tape detect switch.
- S953 : Deck 1 CrO<sub>2</sub> detect switch.
- S971 : Deck 2 Mode detect switch.
- S972 : Deck 2 Tape detect switch.
- S973 : Deck 2 CrO<sub>2</sub> detect switch.
- S974 : Deck 2 Record detect switch.
- S975 : Deck 2 Record detect switch.
- VR201 : Deck 2 Normal speed adjustment.

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

- S1, S4 : Leaf switch.
- S2, S3, S5 : Mecha switch.

### •Signal line

 : +B line


 : -B line

 : FM/AM signal line


 : Main signal line


 : Playback signal line


 : Record signal line


 : CD signal line

 : FM signal line

 : AM signal line

 : AM OSC signal line

 : FM OSC 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    { } : Tuner    (( )) : CD    ( ) ..... AM    < > ..... FM

#### •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.

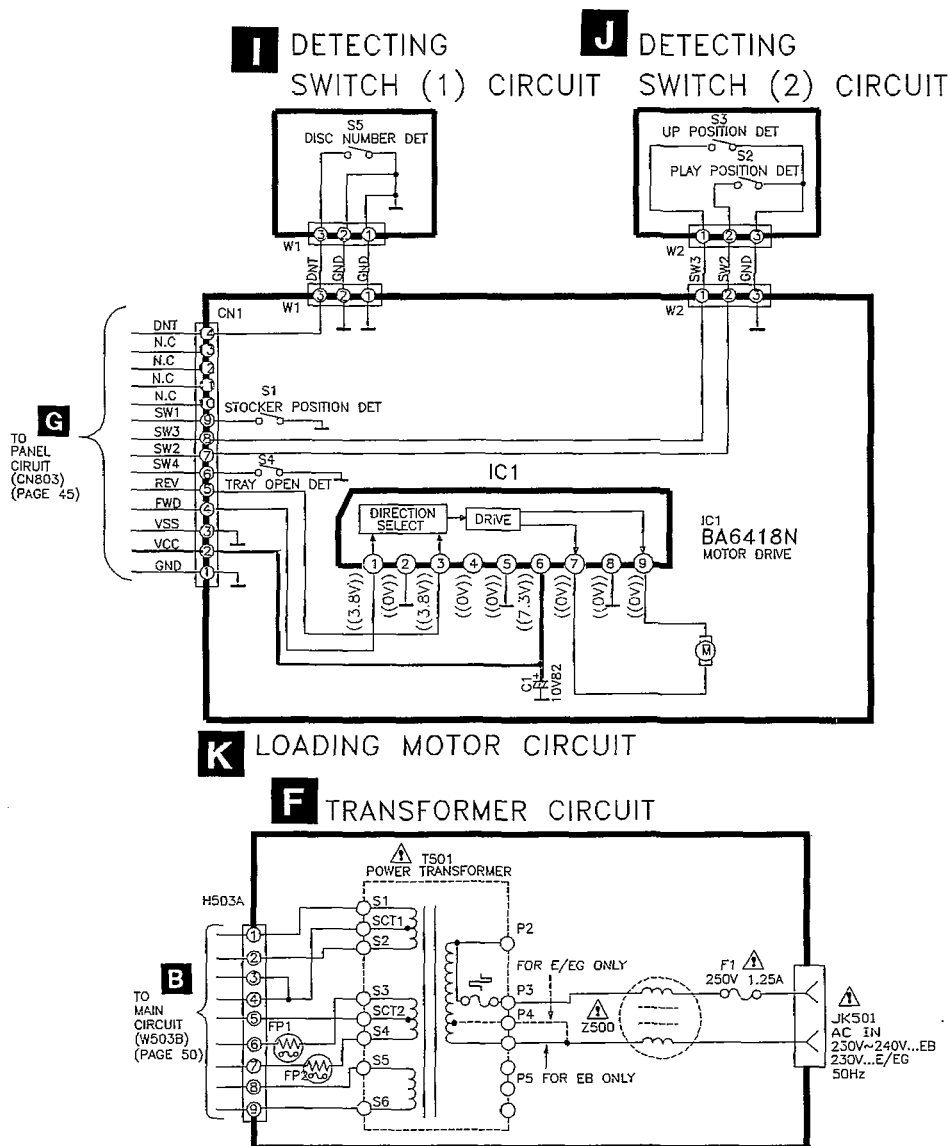
Secondary trouble can be prevented by taking care during repair.

•Cover the parts boxes made of plastics with aluminium foil.

•Put a conductive mat on the work table.

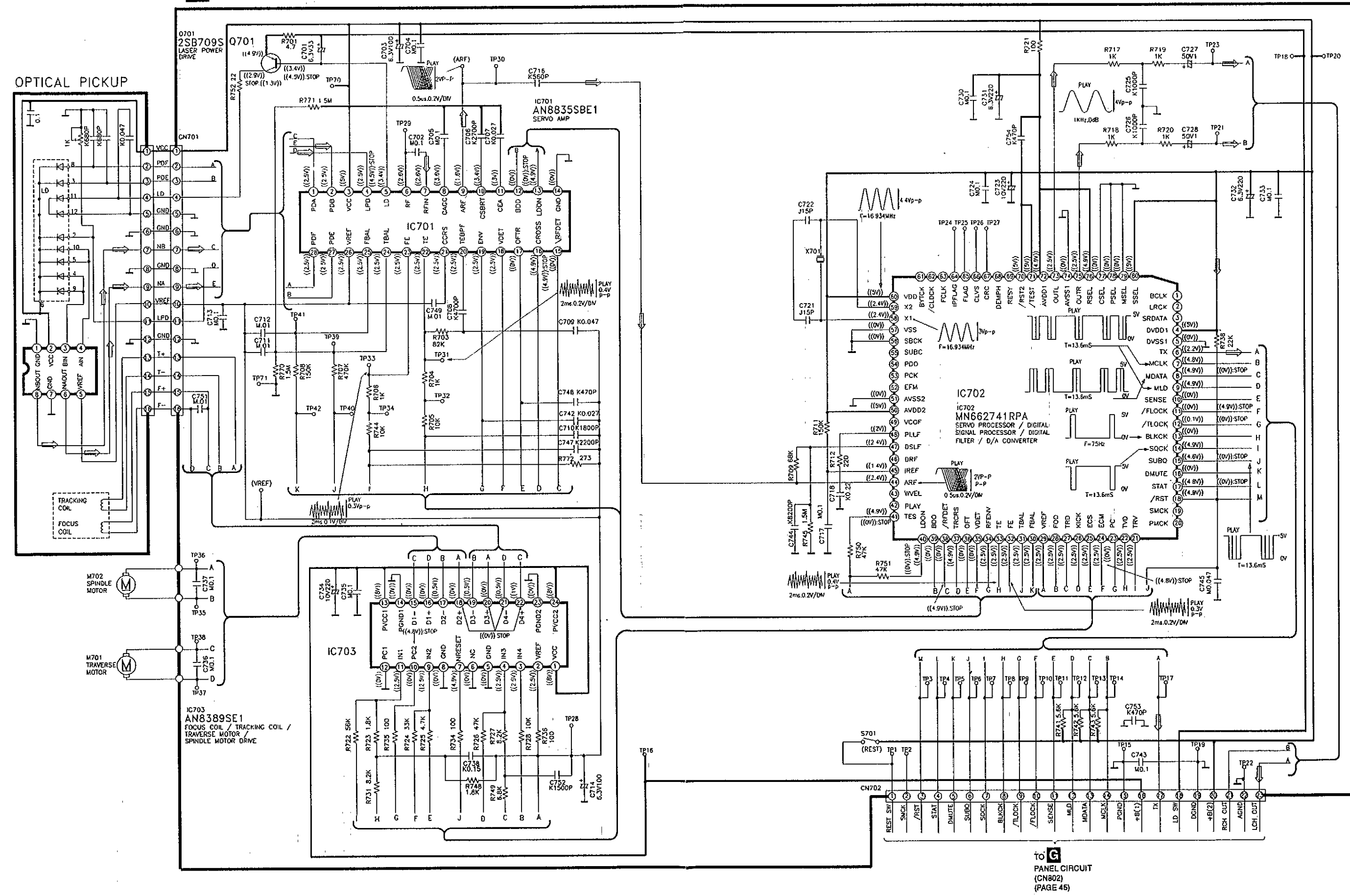
•Ground the soldering iron.

•Do not touch the pins of IC, LSI or VLSI with fingers directly.

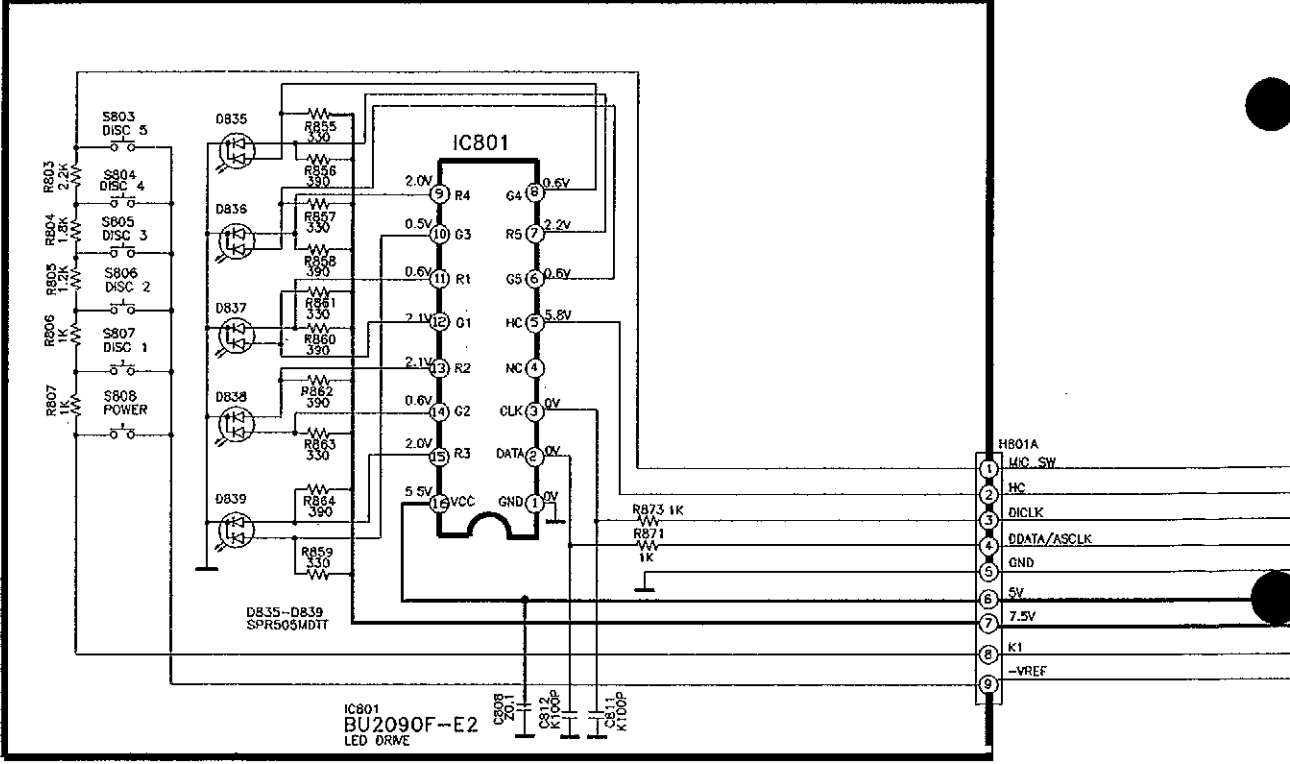




A SERVO CIRCUIT

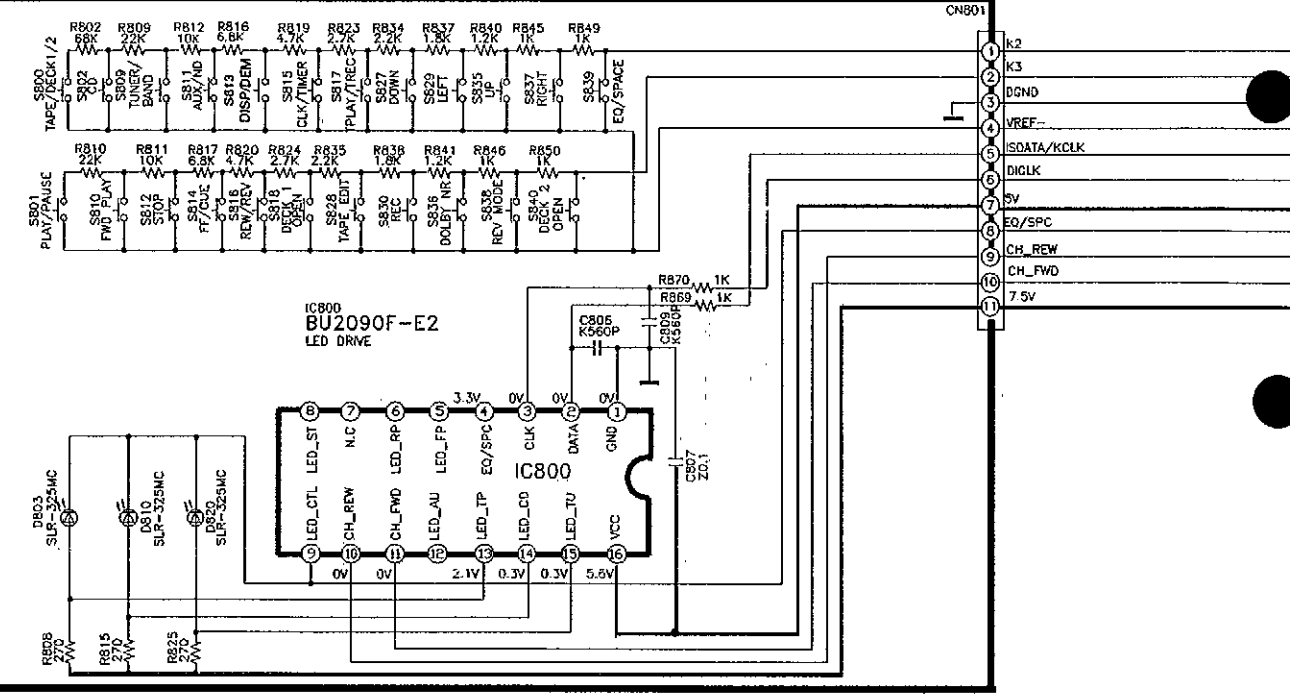


D LED CIRCUIT

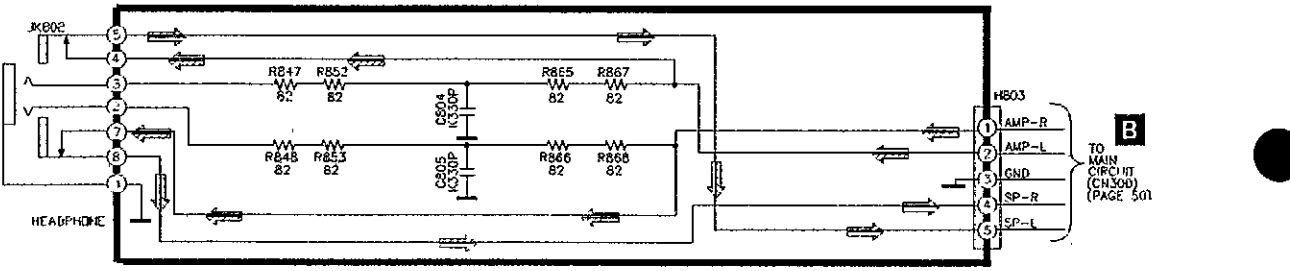


E

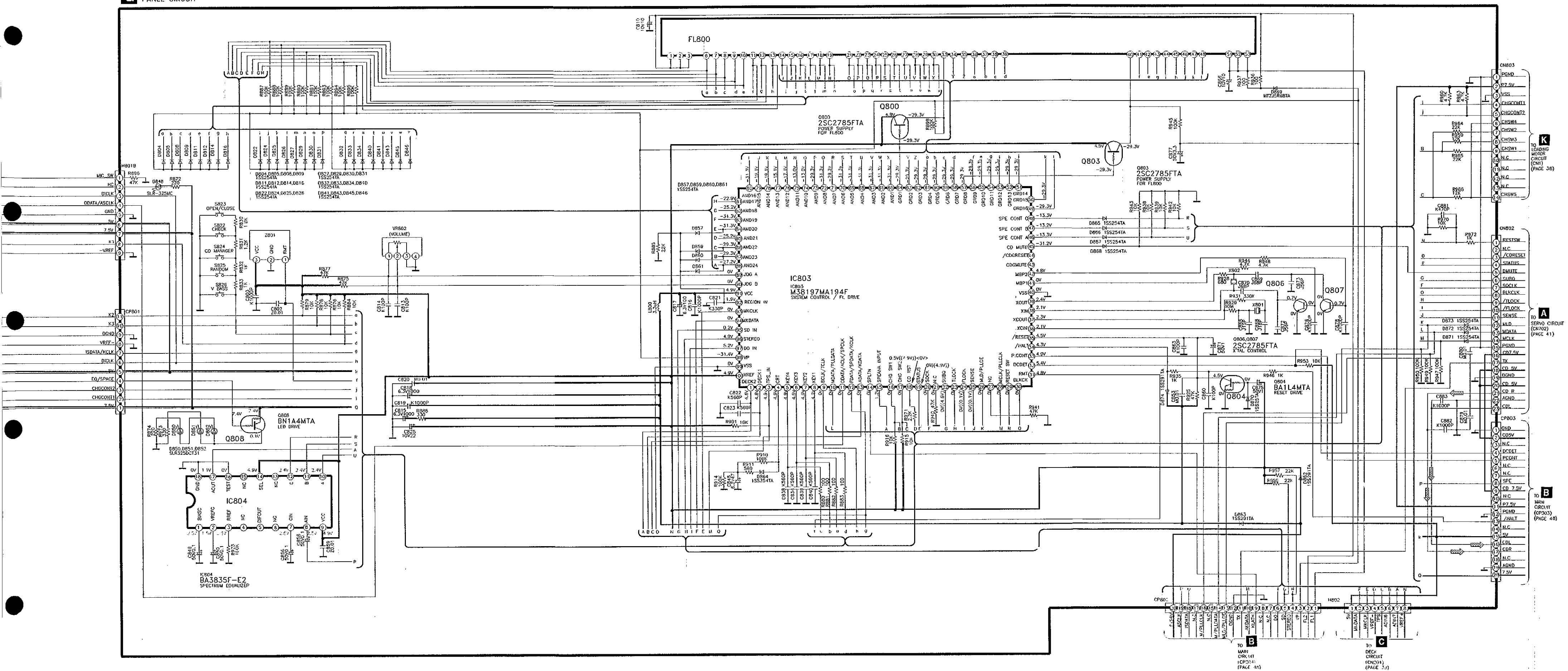
OPERATION CIRCUIT



B

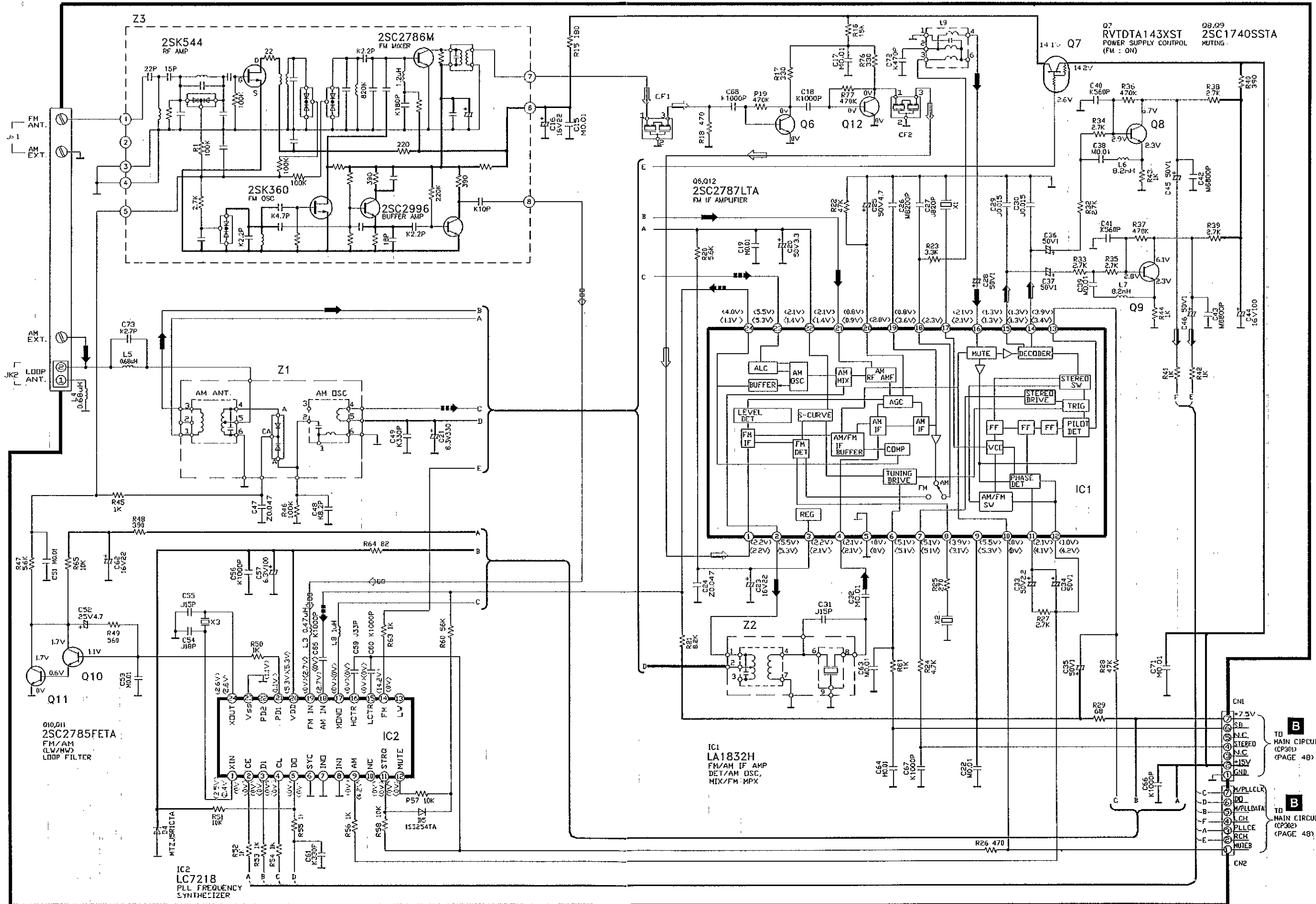


## G PANEL CIRCUIT

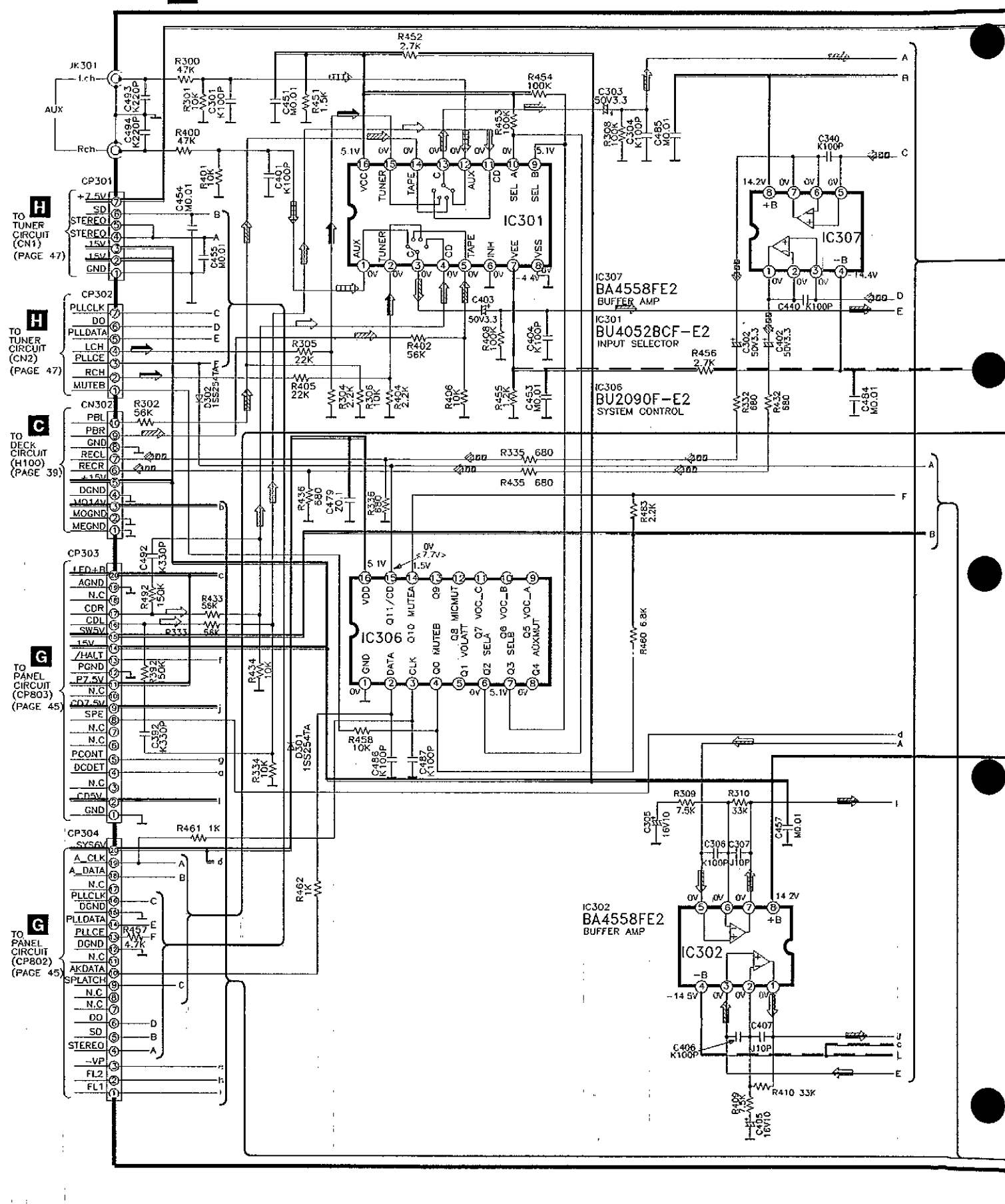




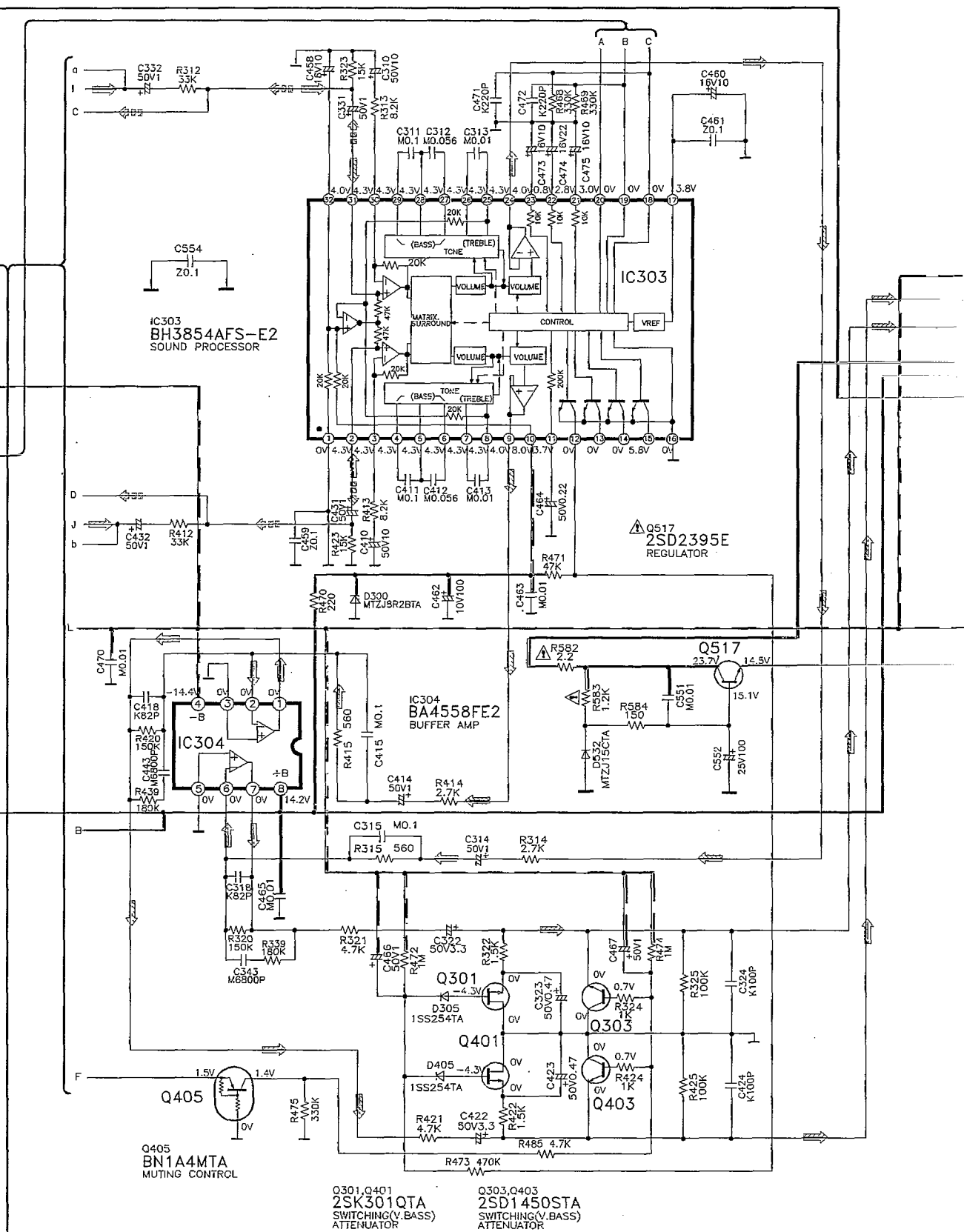
**H** TUNER CIRCUIT

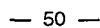


**B** MAIN CIRCUIT

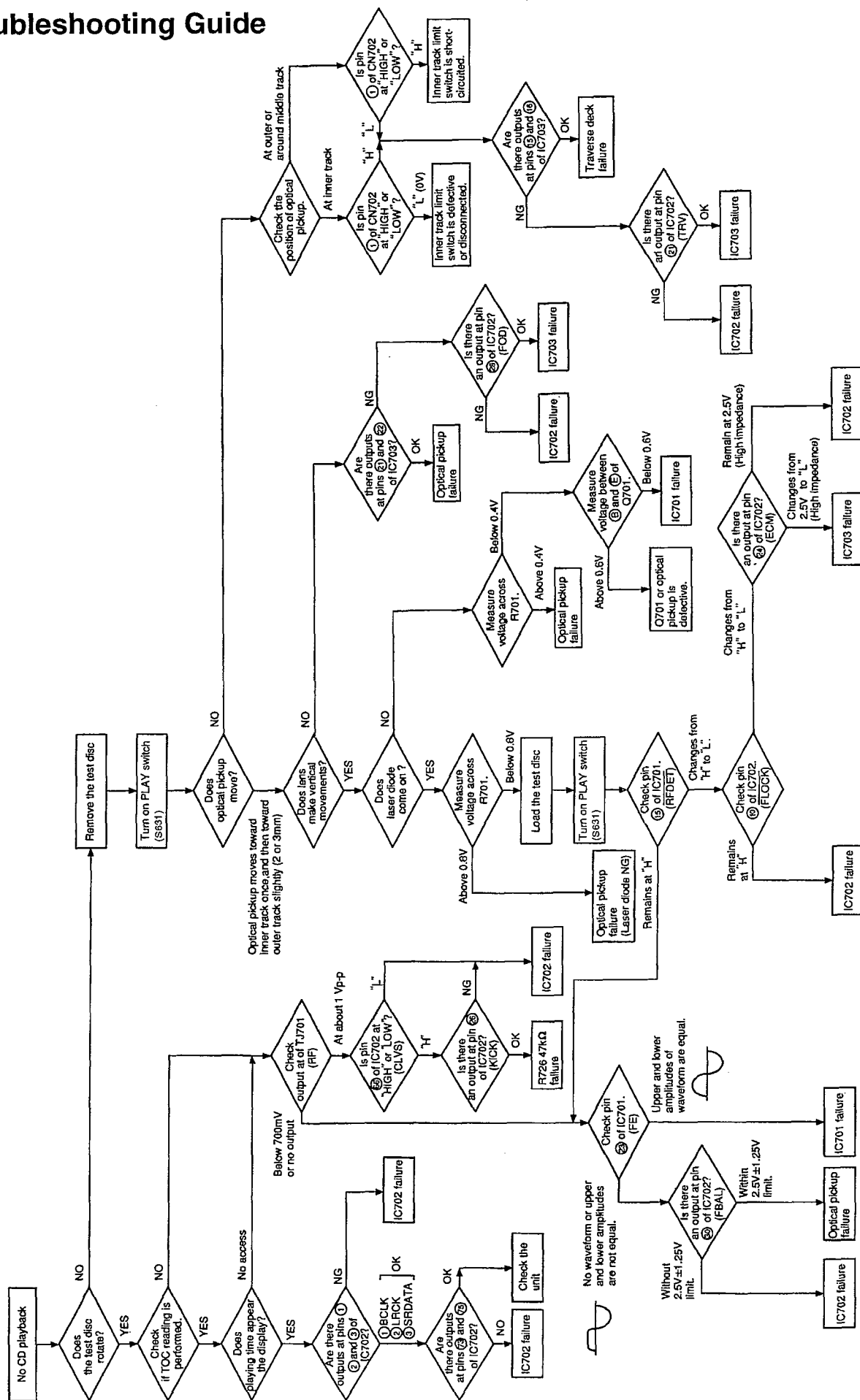






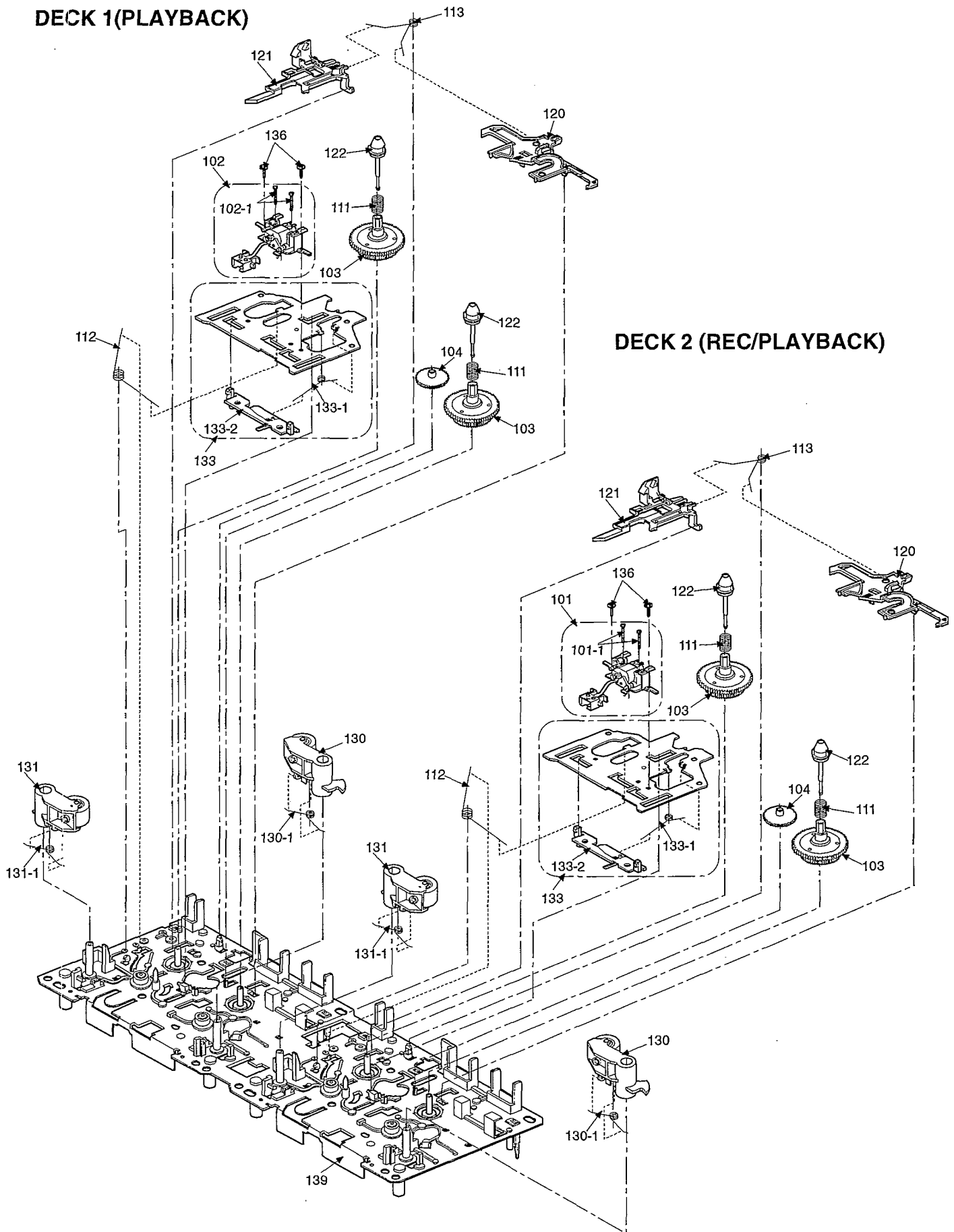


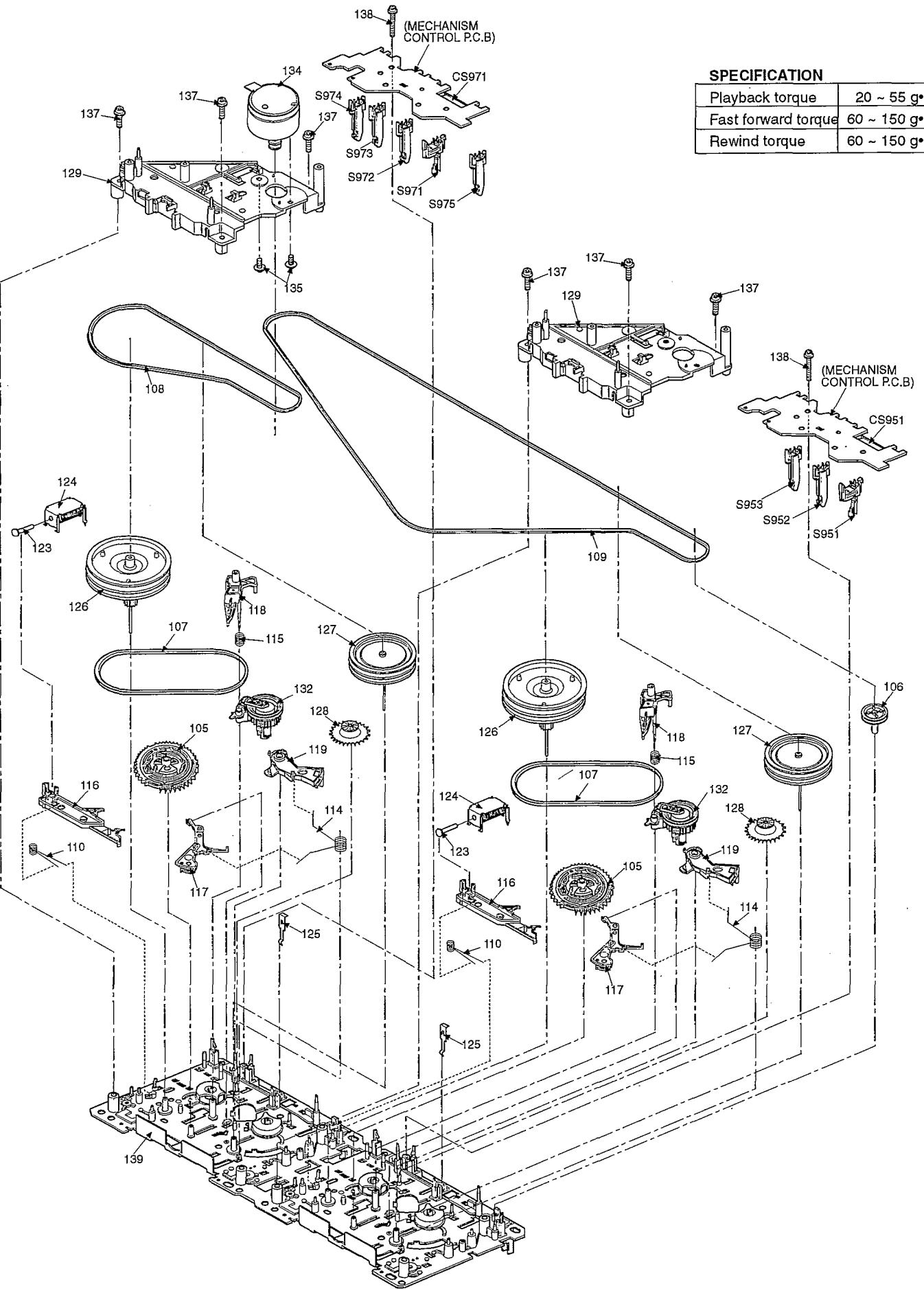
# Troubleshooting Guide



## ■ Mechanism Parts Location (RAA3405)

## DECK 1 (PLAYBACK)





**SPECIFICATION**

Playback torque	20 ~ 55 g·cm
Fast forward torque	60 ~ 150 g·cm
Rewind torque	60 ~ 150 g·cm

## Mechanism Parts List

Notes : [M] in Remarks column indicates parts supplied by MESA

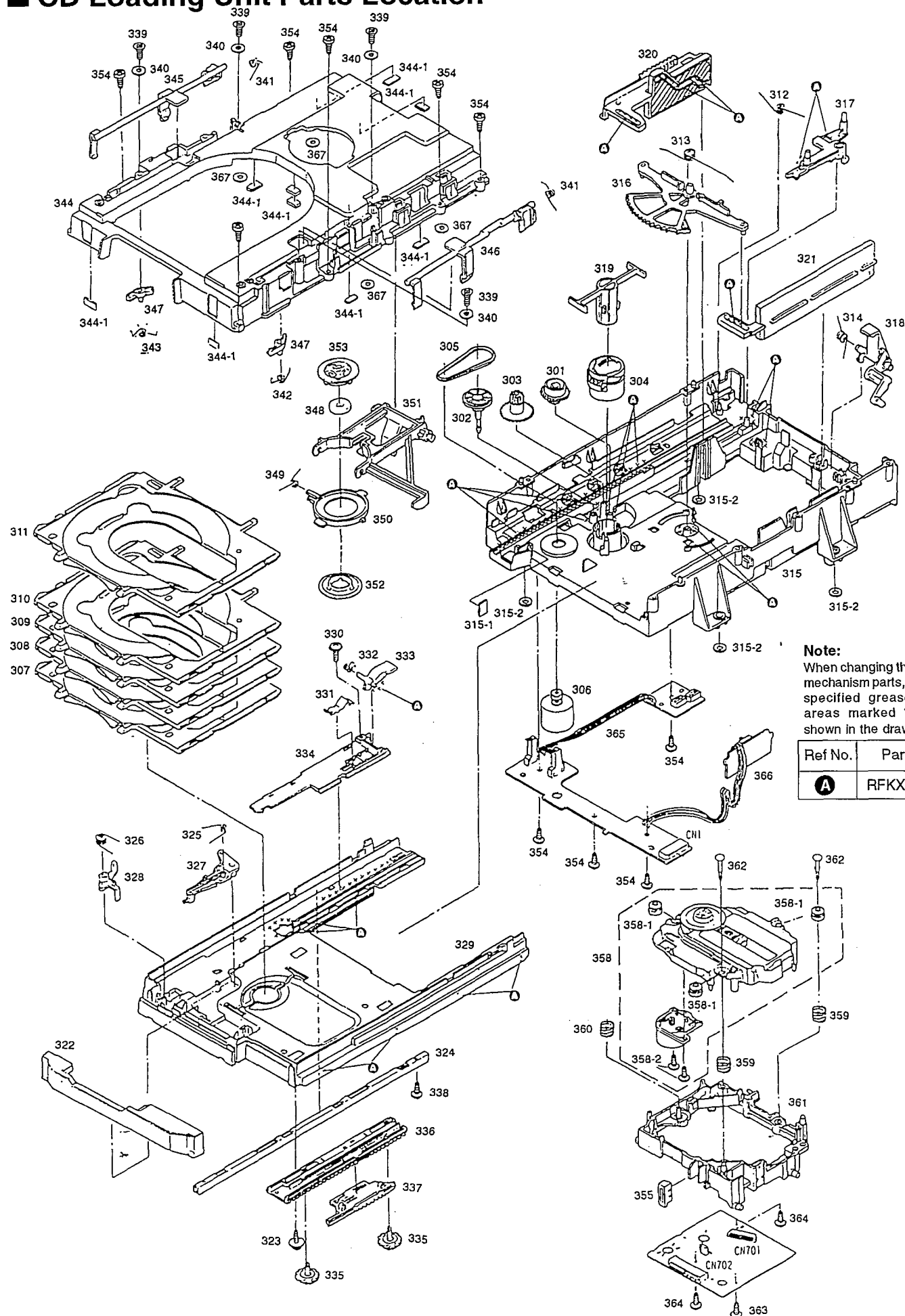
Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK		113	RMB0404	BRAKE ROD SPRING	[M]	129	RMK0283	SUB-CHASSIS	[M]
				114	RMB0406	FR LEVER SPRING	[M]	130	RXL0124	PINCH ROLLER 'F' ASS	[M]
101	RED0043	R/P HEAD BLOCK UNIT	[M]	115	RMB0408	THRUST SPRING	[M]	130-1	RMB0401	PINCH ARM SPRING 'F'	[M]
101-1	RHE5152ZB	SCREW	[M]	116	RML0370	TRIGGER LEVER	[M]	131	RXL0125	PINCH ROLLER 'R' ASS	[M]
102	RED0038	P/B HEAD BLOCK UNIT	[M]	117	RML0371	FR LEVER	[M]	131-1	RMB0402	PINCH ARM SPRING 'R'	[M]
102-2	RHE5152ZB	SCREW	[M]	118	RML0372	WINDING LEVER	[M]	132	RXL0126	WINDING ARM ASS'Y	[M]
103	RDG0300	REEL BASE GEAR	[M]	119	RML0374	EJECT LEVER	[M]	133	RXQ0412	HEAD PANEL ASS'Y	[M]
104	RDG0301	WINDING RELAY GEAR	[M]	120	RMM0131	BRAKE ROD	[M]	133-1	RMB0405	F.R ROD SPRING	[M]
105	RDG0026	MAIN GEAR	[M]	121	RMM0133	EJECT ROD	[M]	133-2	RMM0132	FR ROD	[M]
106	RDR0029	RELAY PULLEY	[M]	122	RMQ0519	REEL HUB	[M]	134	REM0055-1	CAP MOTOR ASS'Y	[M]
107	RDV0033-1	WINDING BELT	[M]	123	RMS0398-1	MOVING CORE	[M]	135	RHD26022	MOTOR SCREW	[M]
108	RDV0034	CAPSTAN BELT 'A'	[M]	124	RSJ0003	PLUNGER	[M]	136	XTW2+5L	HEAD BLOCK UNIT SCRE	[M]
109	RDV0035	CAPSTAN BELT 'B'	[M]	125	RUS609ZC	PACK SPRING	[M]	137	XTW26+10S	SUB-CHASSIS SCREW	[M]
110	RUW147ZA	SPRING	[M]	126	RXF0049	FLYWHEEL 'F' ASS'Y	[M]	138	XYC2+JF17	PCB EARTH SCREW	[M]
111	RMB0400	REEL SPRING	[M]	127	RXF0050	FLYWHEEL 'R' ASS'Y	[M]	139	RFKJXED70-K	CHASSIS ASS'Y	[M]
112	RMB0403	HEAB PANEL SPRING	[M]	128	RXG0040	FF RELAY GEAR ASS'Y	[M]				

## Loading Mechanism Parts List

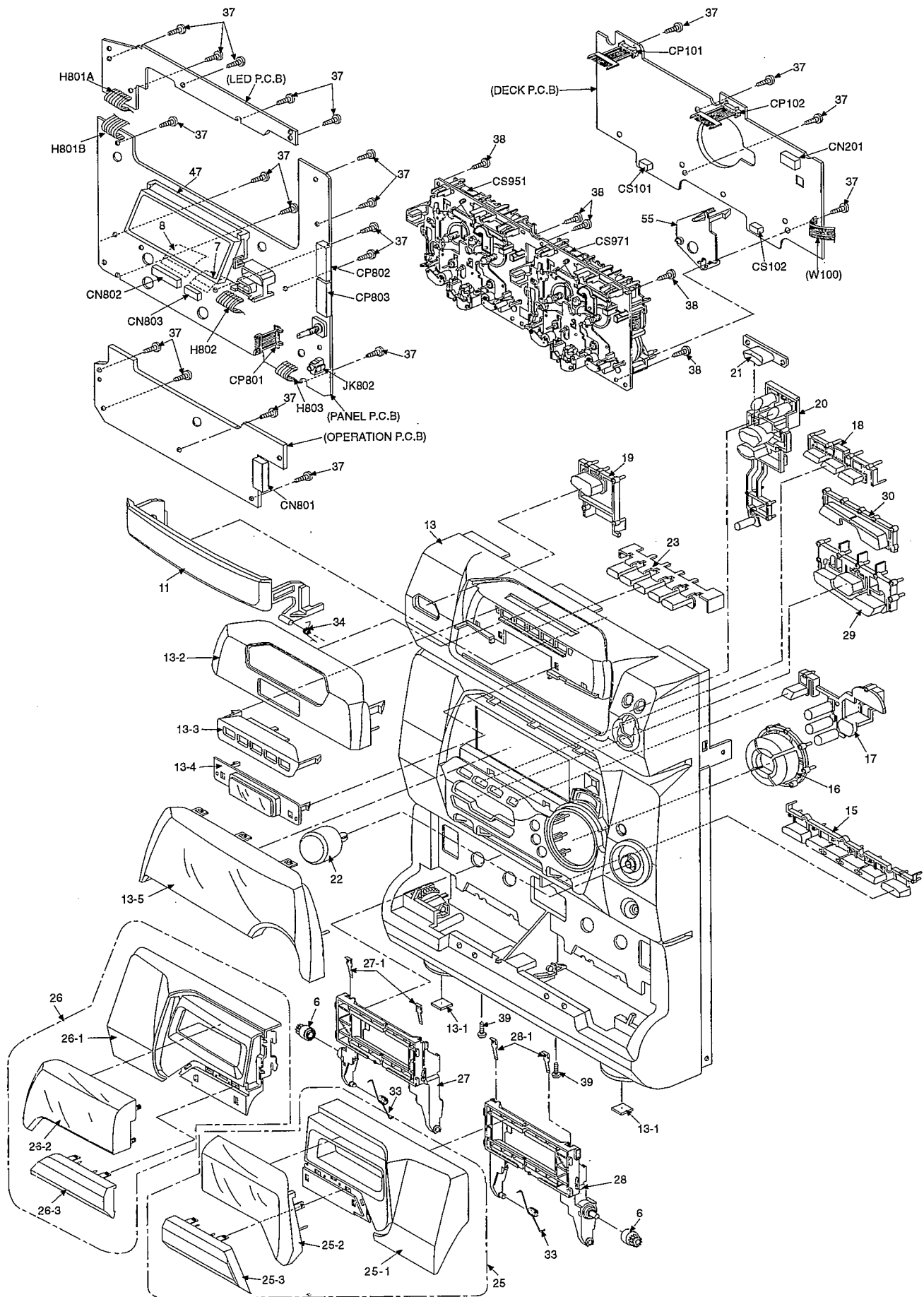
Notes : [M] in Remarks column indicates parts supplied by MESA

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK		322	RGQ0175-K	TRAY ORNAMENT	[M]	346	RML0382	HOLDING CATCH (2)	[M]
				323	RHD20010	SCREW DRIVE RACK	[M]	347	RML0384	UP PREVENTION LEVER	[M]
301	RDG0309	RELAY GEAR	[M]	324	RMA0868	SUPPORT ANGLE	[M]	348	RHM245ZA	MAGNET	[M]
302	RDG0310	PULLEY GEAR	[M]	325	RME0171	BASE LOCK LEVER SP	[M]	349	RME0174	CLAMP BASE SPRING	[M]
303	RDG0311	DRIVE GEAR	[M]	326	RME0172	CARRIER LOCK LEVER S	[M]	350	RFKNACH430GE	CLAMP BASE ASS'Y	[M]
304	RDG0313	UP/DOWN GEAR LEVER	[M]	327	RML0377	BASE LOCK LEVER	[M]	351	RML0388-1	CLAMP LEVER	[M]
305	RDV0036	BELT	[M]	328	RML0378	CARRIER LOCK LEVER	[M]	352	RMR0761-W	MAGNET HOLDER LEVER	[M]
306	RFKPDS790PK1	MOTOR ASS'Y	[M]	329	RMR0884-K	TRAY BASE	[M]	353	RMR0899-K	FIXED PLATE	[M]
307	RGQ0170-K	TRAY 1	[M]	330	RHD20009-1	SCREW CARRIER	[M]	354	XTB3+10JFZ	SCREW PB, LID	[M]
308	RGQ0171-K	TRAY 2	[M]	331	RMC0274	TRAY FOOK SPRING	[M]	355	RMR0975-W	TRAVERSE CAP	[M]
309	RGQ0172-K	TRAY 3	[M]	332	RME0173	CARRIER ARM SPRING	[M]	358	RAE0150Z	TRAVERSE UNIT	[M]
310	RGQ0173-K	TRAY 4	[M]	333	RML0376-1	CARRIER ARM	[M]	358-1	SHGD113-1	FLOATING RUBBER	[M]
311	RGQ0174-K	TRAY 5	[M]	334	RMM0137	CARRIER LEVER	[M]	358-2	SNSD38	SCREW	[M]
312	RME0170	LOCK LEVER SPRING	[M]	335	RDG0312	SPEED UP GEAR	[M]	359	RME0109	FLOATING SPRING (1)	[M]
313	RME0179	ASSIST SPRING	[M]	336	RMM0134	DRIVE GEAR	[M]	360	RME0142	FLOATING SPRING (2)	[M]
314	RME0180	TRAY HOLDER SPRING	[M]	337	RMM0135	CUSHION RACK	[M]	361	RMK0293	TRAVERSE CHASSIS	[M]
315	RFKNACH430GC	MECHA BASE ASS'Y	[M]	338	XTN2+6F	SCREW SUPPORT ANGLE	[M]	362	RMS0123-1	FIXED PIN	[M]
315-1	RMF0221	FELT	[M]	339	XTS3+8J	SCREW	[M]	363	XTN2+6G	SCREW	[M]
315-2	RMG0402-K	RUBBER WASHER	[M]	340	XWE4E10	CUSHION	[M]	364	XTV2+6G	SCREW	[M]
316	RML0379	CHANGE LEVER	[M]	341	RME0178	HOLDING SPRING	[M]	365	REZ0792	3P WIRE KIT	[M]
317	RML0380	LOCK LEVER	[M]	342	RME0181	UP PREVENTION SP (R)	[M]	366	REZ0793	3P WIRE KIT	[M]
318	RML0383	TRAY HOLDING LEVER	[M]	343	RME0182	UP PREVENTION SP (L)	[M]	367	RMG0430-Q	RUBBER TUBE	[M]
319	RML0385	UP/DOWN LEVER	[M]	344	RFKNACH430GD	MECHA COVER ASS'Y	[M]				
320	RMM0139	SLIDE PLATE LEVER (1)	[M]	344-1	RMF0221	FELT	[M]				
321	RMM0141	SLIDE PLATE LEVER (2)	[M]	345	RML0381	HOLDING CATCH (1)	[M]				

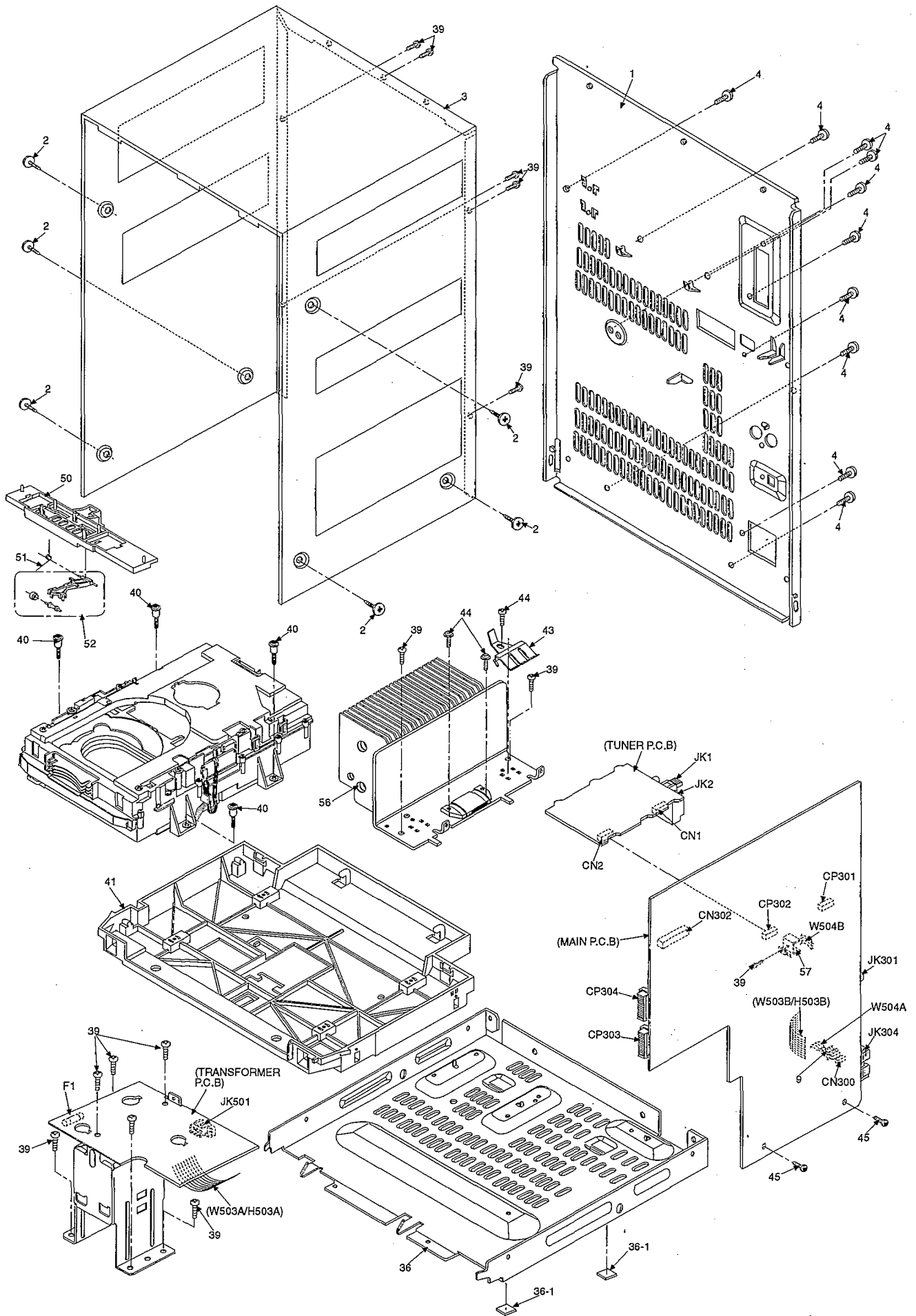
# CD Loading Unit Parts Location



## ■ Cabinet Parts Location








## Repalcement Parts List

Notes: \* Important safety notice:

Components identified by  mark have special characteristics important for safety.

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

When replacing any of 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.

\* [MBV] Indicates in the Remarks columns indicates parts supplied by MBVIDEO.

\* Warning : This product uses a laser diode. Refer to caution statements on page 2.

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
		CABINET AND CHASSIS		30	RGUX0183-S	CONTROL BUTTON 1	[M]	IC701	AN8835SBE1	IC, SERVO AMP.	[M]
				33	RMB0446	CASS OPEN SPRING	[M]	IC702	MN662741RPA	IC, DIGITAL LSI	[M]
1	RGFX0007C-B	REAR PANEL	[MBV](EB)	34	RMBX0010	CD LID SPRING	[M]	IC703	AN8389SE1	IC, COIL/MOTOR DRIVE	[M]
1	RGFX0007C-A	REAR PANEL	[MBV](EG)(E)	36	RFKJAAK20-K	BOTTOM CHASSIS	[M]	IC800	BU2090F-E2	IC, IO EXPANDER	[M]
2	RHD03001-K	SCREW (TRANS)	[M]	36-1	RKA0059-K	LEG RUBBER	[M]	IC801	BU2090F-E2	IC, IO EXPANDER	[M]
3	RKMX0032-K	TOP CABINET	[M]	37	XTBS26+10J	SCREW	[M]	IC803	M38197MA194F	IC, MICRO-COM	[M]
4	XTBS3+8JFZ1	SCREW	[M]	38	XTB3+10JFZ	REA PANEL SCREW	[M]	IC804	BA3835F-E2	IC, SPE ANA	[M]
6	RDG0129-1	DAMPER GEAR	[M]	39	XTB3+8JFZ	SCREW	[M]	IC951	0N2180RLC	IC,HALL	[M]
7	REEX0025	14P FFC	[M]	40	RHD30048	CD MECHANISM SCREW	[M]	IC971	0N2180RLC	IC,HALL	[M]
8	REEX0026	23P FFC	[M]	41	RMKX0019	CD CHASSIS	[M]			TRANSISTORS	
9	REXX0152	5 PIN PANEL TO MAIN	[M]	43	RMC0238	TR HOLDER	[M]				
11	RGKX0018-S	CD LID	[M]	44	XTW3+15T	POWER IC SCREW	[M]				
13	RFKGAK20EK	FRONT PANEL ASS'Y	[MBV]	45	XYE3+F10FN	PCB GROUND SCREW	[M]	Q6	2SC2787LTA	TRANSISTOR	[M]
13-1	RKA0059-K	LEG RUBBER	[M]	47	RMNX0016	FL HOLDER	[M]	Q7	RVTDTA143XST	TRANSISTOR	[M]
13-2	RKWX0091-K	CD WINDOW	[M]	48	RSC0403	TUNER SHIELD PLATE	[M]	Q8	2SC1740SSSTA	TRANSISTOR	[M]
13-3	RGKX0019-S	CD WINDOW ORNAMENT	[M]	50	RMN0350	8 LED HOLDER	[M]	Q9	2SC1740SSSTA	TRANSISTOR	[M]
13-4	RKWX0101-Q	DISC WINDOW	[M]	51	RME0221	HOLDER ARM SPRING	[M]	Q10	2SC2785FETA	TRANSISTOR	[M]
13-5	RKWX0090-Q	FL WINDOW	[M]	52	RFKNACH34PK	HOLDER ARM ASSEMBLY	[M]	Q11	2SC2785FETA	TRANSISTOR	[M]
15	RGUX0179-K	DECK BOTTOM	[M]	55	RMR0909-X	DECK PCB SUPPORT	[M]	Q12	2SC2787LTA	TRANSISTOR	[M]
16	RGUX0180-S	EQ BUTTON	[M]	56	RXXX0007	HEAT SINK UNIT	[M]	Q101	2SJ164QRTA	TRANSISTOR	[M]
17	RGUX0181-S	EQ BUTTON 2	[M]	57	RMYX0030	SUB HEAT SINK	[M]	Q102	2SJ164QRTA	TRANSISTOR	[M]
18	RGUX0184-Q	FUNCTION BUTTON	[M]			INTEGRATED CIRCUITS		Q103	2SJ164QRTA	TRANSISTOR	[M]
19	RGUX0185-K	POWER BUTTON	[M]					Q104	2SJ164QRTA	TRANSISTOR	[M]
20	RGUX0187-K	HIT CHART BUTTON	[M]					Q107	BA1L4ZTA	TRANSISTOR	[M]
21	RGUX0006-Q	HITBUTTON DIFFUSER C	[M]	IC1	LA1832H	IC, IF/MPX	[M]	Q108	BA1L4ZTA	TRANSISTOR	[M]
22	RGWX0027-K	VOLUME KNOB	[M]	IC1	BA6418N	IC, DRIVER	[M]	Q115	2SD1020HTA	TRANSISTOR	[M]
23	RGUX0188-Q	DISC BUTTON	[M]	IC2	LC7218	IC, PLL	[M]	Q116	2SD1020HTA	TRANSISTOR	[M]
25	RFKLAAK40EBK	CASS. LID ASS'Y (R)	[M]	IC101	M51167BFP-TB	IC, R/P	[M]	Q117	BA1L4MTA	TRANSISTOR	[M]
25-1	RKFX0052-K	CASSETTE LID (R)	[M]	IC102	BA7755A	IC, SW	[M]	Q118	2SC2785FTA	TRANSISTOR	[M]
25-2	RKWX0088-Q	CASSETTE LID WINDOW	[M]	IC103	CXA1102M-T4	IC, DOLBY	[M]	Q119	2SC2785FTA	TRANSISTOR	[M]
25-3	RGKX0016-S	CASS. ORNAMENT R	[M]	IC104	BU4066BCF-E2	IC, ANALOG SW	[M]	Q120	2SC2785FTA	TRANSISTOR	[M]
26	RFKLAK20PBK	CASS. LID ASS'Y (L)	[M]	IC105	BU2040F-E2	IC, I/O	[M]	Q121	2SC2785FTA	TRANSISTOR	[M]
26-1	RKFX0053-K	CASSETTE LID (L)	[M]	IC301	BU4052BCF-E2	IC, ANALOG SW	[M]	Q151	BA1L4ZTA	TRANSISTOR	[M]
26-2	RKWX0089-Q	CASSETTE LID WINDOW	[M]	IC302	BA4558FE2	IC, OP AMP	[M]	Q152	BA1L4ZTA	TRANSISTOR	[M]
26-3	RGKX0017-S	CASS. ORNAMENT L	[M]	IC303	BH3854AFS-E2	IC, SOUND PROCESSOR	[M]	Q153	2SC1740SLNET	TRANSISTOR	[M]
27	RFKLACH330AK	CASS. HOLDER ASS'Y L	[M]	IC304	BA4558FE2	IC, OP AMP	[M]	Q154	2SC1740SLNET	TRANSISTOR	[M]
27-1	RUS757ZAA	CASSETTE HALF SPRING	[M]	IC305	RSN3502	IC, HIC	[M] 	Q171	2SD1302STA	TRANSISTOR	[M]
28	RFKLACH330BK	CASS. HOLDER ASS'Y R	[M]	IC306	BU2090F-E2	IC, IO EXPANDER	[M]	Q173	BA1L4ZTA	TRANSISTOR	[M]
28-1	RUS757ZAA	CASSETTE HALF SPRING	[M]	IC307	BA4558FE2	IC, OP AMP	[M]	Q174	2SC2785FTA	TRANSISTOR	[M]
29	RGUX0182-S	CONTROL BUTTON 2	[M]	IC310	AN78M05	IC, 5V REG	[M] 	Q175	2SD1302STA	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
Q176	2SD1302STA	TRANSISTOR	[M]	D201	1SS254TA	DIODE	[M]	D812	1SS254TA	DIODE	[M]
Q179	2SC2784FTA	TRANSISTOR	[M]	D202	1SS254TA	DIODE	[M]	D814	1SS254TA	DIODE	[M]
Q203	2SD965RTA	TRANSISTOR	[M]	D300	MTZJ8R2BTA	DIODE	[M]	D816	1SS254TA	DIODE	[M]
Q206	2SB621RTA	TRANSISTOR	[M]	D301	1SS254TA	DIODE	[M]	D820	SLR-325MC	DIODE	[M]
Q207	2SB621RTA	TRANSISTOR	[M]	D302	1SS254TA	DIODE	[M]	D822	1SS254TA	DIODE	[M]
Q208	BA1A4ZTA	TRANSISTOR	[M]	D305	1SS254TA	DIODE	[M]	D824	1SS254TA	DIODE	[M]
Q209	BA1A4ZTA	TRANSISTOR	[M]	D405	1SS254TA	DIODE	[M]	D825	1SS254TA	DIODE	[M]
Q218	BN1A4MTA	TRANSISTOR	[M]	D406	1SS254TA	DIODE	[M]	D826	1SS254TA	DIODE	[M]
Q220	BN1L3NTA	TRANSISTOR	[M]	D407	MTZJ12BTA	DIODE	[M]▲	D827	1SS254TA	DIODE	[M]
Q301	2SK301QTA	TRANSISTOR	[M]	D408	1D3E	DIODE	[M]	D829	1SS254TA	DIODE	[M]
Q303	2SD1450STA	TRANSISTOR	[M]	D409	1SS254TA	DIODE	[M]	D830	1SS254TA	DIODE	[M]
Q401	2SK301QTA	TRANSISTOR	[M]	D410	1D3E	DIODE	[M]	D831	1SS254TA	DIODE	[M]
Q403	2SD1450STA	TRANSISTOR	[M]	D411	1SS254TA	DIODE	[M]	D832	1SS254TA	DIODE	[M]
Q405	BN1A4MTA	TRANSISTOR	[M]	D412	1SS254TA	DIODE	[M]	D833	1SS254TA	DIODE	[M]
Q406	2SC2785FTA	TRANSISTOR	[M]	D500	1N5402BM21	DIODE	[M]▲	D834	1SS254TA	DIODE	[M]
Q407	2SC2785FTA	TRANSISTOR	[M]	D501	1N5402BM21	DIODE	[M]▲	D835	SPR505MDTT	DIODE	[M]
Q500	2SC2785FTA	TRANSISTOR	[M]	D502	1N5402BM21	DIODE	[M]▲	D836	SPR505MDTT	DIODE	[M]
Q501	2SB621ARTA	TRANSISTOR	[M]▲	D503	1N5402BM21	DIODE	[M]▲	D837	SPR505MDTT	DIODE	[M]
Q502	2SA933SSTA	TRANSISTOR	[M]▲	D504	1D3E	DIODE	[M]	D838	SPR505MDTT	DIODE	[M]
Q503	2SD2395E	TRANSISTOR	[M]▲	D505	1D3E	DIODE	[M]	D839	SPR505MDTT	DIODE	[M]
Q504	2SB1566E	TRANSISTOR	[M]▲	D506	1D3E	DIODE	[M]	D840	1SS254TA	DIODE	[M]
Q507	BA1L3ZTA	TRANSISTOR	[M]▲	D507	1D3E	DIODE	[M]	D841	1SS254TA	DIODE	[M]
Q509	2SD2037ETA	TRANSISTOR	[M]▲	D508	MTZJ12BTA	DIODE	[M]	D843	1SS254TA	DIODE	[M]
Q510	2SD2037ETA	TRANSISTOR	[M]▲	D509	1D3E	DIODE	[M]	D845	1SS254TA	DIODE	[M]
Q511	2SD2395E	TRANSISTOR	[M]▲	D510	1D3E	DIODE	[M]	D846	1SS254TA	DIODE	[M]
Q512	2SB1566E	TRANSISTOR	[M]▲	D511	MTZJ5R1BTA	DIODE	[M]	D848	SLR-325MC	DIODE	[M]
Q513	BA1A3QTA	TRANSISTOR	[M]	D512	1D3E	DIODE	[M]	D850	SLR325DCT31	DIODE	[M]
Q514	2SD467CTZ	TRANSISTOR	[M]▲	D513	1D3E	DIODE	[M]	D851	SLR325DCT31	DIODE	[M]
Q515	2SD2037ETA	TRANSISTOR	[M]▲	D514	MA4330LTA	DIODE	[M]▲	D852	SLR325DCT31	DIODE	[M]
Q517	2SD2395E	TRANSISTOR	[M]▲	D515	MTZJ24DTA	DIODE	[M]▲	D857	1SS254TA	DIODE	[M]
Q525	BA1F4MTA	TRANSISTOR	[M]	D516	MTZJ15CTA	DIODE	[M]▲	D859	1SS254TA	DIODE	[M]
Q526	2SD2395E	TRANSISTOR	[M]▲	D517	MTZJ6R8ATA	DIODE	[M]	D860	1SS254TA	DIODE	[M]
Q701	2SB709S	TRANSISTOR	[M]	D518	1SS254TA	DIODE	[M]	D861	1SS254TA	DIODE	[M]
Q800	2SC2785FTA	TRANSISTOR	[M]	D519	MTZJ8R2BTA	DIODE	[M]▲	D862	1SS291TA	DIODE	[M]
Q803	2SC2785FTA	TRANSISTOR	[M]	D520	1SS254TA	DIODE	[M]	D863	1SS291TA	DIODE	[M]
Q804	BA1L4MTA	TRANSISTOR	[M]	D521	1SS254TA	DIODE	[M]	D864	1SS254TA	DIODE	[M]
Q806	2SC2785FTA	TRANSISTOR	[M]	D522	MTZJ9R1BTA	DIODE	[M]	D865	1SS254TA	DIODE	[M]
Q807	2SC2785FTA	TRANSISTOR	[M]	D524	MTZJ6R8BTA	DIODE	[M]▲	D866	1SS254TA	DIODE	[M]
Q808	BN1A4MTA	TRANSISTOR	[M]	D525	1SS254TA	DIODE	[M]	D867	1SS254TA	DIODE	[M]
				D526	1SS254TA	DIODE	[M]	D868	1SS254TA	DIODE	[M]
		DIODES		D529	1SS254TA	DIODE	[M]	D869	MTZJ5R6BTA	DIODE	[M]
				D532	MTZJ15CTA	DIODE	[M]	D870	1SS254TA	DIODE	[M]
D4	MTZJ5R1CTA	DIODE	[M]	D803	SLR-325MC	DIODE	[M]	D871	1SS254TA	DIODE	[M]
D5	1SS254TA	DIODE	[M]	D804	1SS254TA	DIODE	[M]	D872	1SS254TA	DIODE	[M]
D171	1SS254TA	DIODE	[M]	D805	1SS254TA	DIODE	[M]	D873	1SS254TA	DIODE	[M]
D172	MTZJ4R7BTA	DIODE	[M]	D808	1SS254TA	DIODE	[M]	D874	1SS291TA	DIODE	[M]
D173	1SS254TA	DIODE	[M]	D809	1SS254TA	DIODE	[M]	D951	MA165TA	DIODE	[M]
D174	MTZJ3R6BTA	DIODE	[M]	D810	SLR-325MC	DIODE	[M]	D971	MA165TA	DIODE	[M]
D175	1SS254TA	DIODE	[M]	D811	1SS254TA	DIODE	[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
		<b>VARIABLE RESISTORS</b>		S839	EVQ21405R	SW, EQ/SPACE	[M]	L300	SLQY07G-40	SP COIL	[M]
				S840	EVQ21405R	SW, OPEN (DECK 2)	[M]	L400	SLQY07G-40	SP COIL	[M]
VR101	RRN6B05B24TA	VR, SEMIFIXED	[M]	S951	RSH1A018-1U	SW,MODE DETECT	[M]	L800	RLQZP3R3KT-Y	COIL	[M]
VR102	RRN6B05B24TA	VR, SEMIFIXED	[M]	S952	RSH1A019-2U	SW,TAPE DETECT	[M]	T501	RTP1M3B010-X	POWER TRANSFORMER	[M]▲
VR103	RRN6B05B24TA	VR, SEMIFIXED	[M]	S953	RSH1A019-2U	SW,Cr02 DETECT	[M]				
VR104	RRN6B05B24TA	VR, SEMIFIXED	[M]	S971	RSH1A018-1U	SW,MODE DETECT	[M]			<b>COMPONENT COMBINATION</b>	
VR201	RRN6B05B73TA	VR, TAPE SPEED	[M]	S972	RSH1A019-2U	SW,TAPE DETECT	[M]				
VR802	EVQVBXFK124B	VR, VOL	[M]	S973	RSH1A019-2U	SW,Cr02 DETECT	[M]	Z1	RLA2Z002M-T	AM ANT OSC	[M]
				S974	RSH1A019-2U	SW,REC DETECT	[M]	Z2	RLI2Z006M-T	AM IFT	[M]
		<b>SWITCHES</b>		S975	RSH1A019-2U	SW,REC DETECT	[M]	Z3	ENV17290G1R	FM TUNER PACK	[M]
								Z101	EXBF7L355SYV	RADA RESISTOR	[M]
S1	RSH1A005	SW, LEAF	[M]			<b>CONNECTORS</b>		Z500	SLQZ650MH49	AC LINE COIL	[M]▲
S2	RSH1A032-U	SW, MECHA	[M]	CN1	RJU063W07T	7P B-B CONNECTOR	[M]	Z801	RCD12042TE	REMOTE CONT. SENSOR	[M]
S3	RSH1A032-U	SW, MECHA	[M]	CN1	RJS1A6714	CONNECTOR 14P	[M]	Z971	EXBF7L355SYV	RADA RESISTOR	[M]
S4	RSH1A005	SW, LEAF	[M]	CN2	RJU063W07T	7P B-B CONNECTOR	[M]			<b>CERAMIC FILTERS</b>	
S5	RSH1A032-U	SW, MECHA	[M]	CN201	RJS87Z7A	8 PIN MOLEX	[M]				
S701	RSM0006-P	SW, RESET	[M]	CN300	RJP5G18ZA	5P CONNECTOR	[M]	CF1	RLFFETNGA01L	(FM CF)	[M]
S800	EVQ21405R	SW, TAPE	[M]	CN302	RJS1A5210	10 PINS WIRE HOLDER	[M]	CF2	RLFFETNGA02L	(FM CF)	[M]
S801	EVQ21405R	SW, REV PLAY/PAUSE	[M]	CN701	RJU035T016-1	16 PIN FFC CONNECTOR	[M]				
S802	EVQ21405R	SW, CD	[M]	CN702	RJS1A6723-1Q	23 PIN FFC CONNECTOR	[M]			<b>OSCILLATORS</b>	
S803	EVQ21405R	SW, DISC 5	[M]	CN801	RJU071H11M	11P CPNECTOR	[M]				
S804	EVQ21405R	SW, DISC 4	[M]	CN802	RJS1A6223-1	23P CONNECTOR	[M]	X1	RSXZ456KM01	19KHZ OSC	[M]
S805	EVQ21405R	SW, DISC 3	[M]	CN803	RJS1A6214-1	14P FFC CONNECTOR	[M]	X2	RLFDFT12DD	FM RESONATOR	[M]
S806	EVQ21405R	SW, DISC 2	[M]	CP101	RJT071H09A	9P B-B PIN	[M]	X3	SVQ49U722T-S	7.2MHZ X'TAL	[M]
S807	EVQ21405R	SW, DISC 1	[M]	CP102	RJT071H09A	9P B-B PIN	[M]	X701	RSXZ16M9M01T	CERAMIC OSC	[M]
S808	EVQ21405R	SW, POWER	[M]	CP301	RJT063W07T	7P CONNECTOR	[M]	X801	RSXD32K7S02	32.768HKZ X'TAL	[M]
S809	EVQ21405R	SW, TUNER	[M]	CP302	RJT063W07T	7P CONNECTOR	[M]	X802	EF0EN6004T4	CERAMIC OSC	[M]
S810	EVQ21405R	SW, FWD PLAY	[M]	CP303	RJU077K20	20P B-B CONNECTOR	[M]				
S811	EVQ21405R	SW, AUX	[M]	CP304	RJU077K20	20P B-B CONNECTOR	[M]			<b>RELAY</b>	
S812	EVQ21405R	SW, STOP	[M]	CP801	RJT071H11	11P B-B PIN	[M]				
S813	EVQ21405R	SW, DISP/DEMO	[M]	CP802	RJT077K20	20P B-B CONNECTOR	[M]	RLY501	RSY0017M-0	RELAY	[M]
S814	EVQ21405R	SW, FWD	[M]	CP803	RJT077K20	20P B-B CONNECTOR	[M]				
S815	EVQ21405R	SW, CLK/TIMER	[M]	CS101	RJS1A6805	HEAD SOCKET	[M]			<b>DISPLAY TUBE</b>	
S816	EVQ21405R	SW, REW	[M]	CS102	RJS1A6805	HEAD SOCKET	[M]				
S817	EVQ21405R	SW, TPLAY/REC	[M]	CS951	RJU071H09M1	9P CONNECTOR	[M]	FL800	RSL0232-F	FL DISPLAY	[M]
S818	EVQ21405R	SW, OPEN(DECK 1)	[M]	CS971	RJU071H09M1	9P CONNECTOR	[M]				
S822	EVQ21405R	SW, CHECK	[M]							<b>FUSE PROTECTOR</b>	
S823	EVQ21405R	SW, OPEN/CLOSE	[M]			<b>COILS &amp; TRANSFORMERS</b>					
S824	EVQ21405R	SW, CD MANAGER	[M]					FP1	RSFMB40KT-L	FUSE PROTECTOR	[M]
S825	EVQ21405R	SW, RANDOM	[M]	L3	RLQZPR47KT-Y	COIL	[M]	FP2	RSFMB40KT-L	FUSE PROTECTOR	[M]
S826	EVQ21405R	SW, V.BASS	[M]	L4	ELEPKR68MA	COIL	[M]				
S827	EVQ21405R	SW, DOWN	[M]	L5	ELEPKR68MA	COIL	[M]			<b>FUSE</b>	
S828	EVQ21405R	SW, TAPE EDIT	[M]	L6	ELELN822KL	RF CHOCK COIL	[M]				
S829	EVQ21405R	SW, LEFT	[M]	L7	ELELN822KL	RF CHOCK COIL	[M]	F1	XBA2C12TB0	FUSE	[M]▲
S830	EVQ21405R	SW, REC	[M]	L8	RLQZP1R0KT-Y	AXIAL COIL	[M]				
S835	EVQ21405R	SW, UP	[M]	L9	SLM1B10-1M	A.B. FILTER	[M]			<b>FUSE CLIPS</b>	
S836	EVQ21405R	SW, DOLBY NR	[M]	L201	RL08C002M-T	BIAS OSC COIL	[M]				
S837	EVQ21405R	SW, RIGHT	[M]	L202	RLQZB470KT-D	RF CHOKE COIL	[M]	FC1	RJR0169T	FUSE HOLDER	[M]
S838	EVQ21405R	SW, REV 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
FC2	RJR0169T	FUSE HOLDER	[M]	RJ702	ERJ8GEY0R00A	0 1/8W	[M]	RJ726	ERJ8GEY0R00A	0 1/8W	[M]
				RJ703	ERJ8GEY0R00A	0 1/8W	[M]	RJ727	ERJ8GEY0R00A	0 1/8W	[M]
		JACKS		RJ704	ERJ8GEY0R00A	0 1/8W	[M]	RJ728	ERJ8GEY0R00A	0 1/8W	[M]
				RJ707	ERJ8GEY0R00A	0 1/8W	[M]	RJ729	ERJ8GEY0R00A	0 1/8W	[M]
JK1	RJH8201	ANTENNA TERMINAL	[M]	RJ709	ERJ8GEY0R00A	0 1/8W	[M]	RJ730	ERJ8GEY0R00A	0 1/8W	[M]
JK2	SJS208	LOOP ANT. TERMINAL	[M]	RJ714	ERJ8GEY0R00A	0 1/8W	[M]				
JK301	RJH2206	RCA JACK	[M]	RJ715	ERJ8GEY0R00A	0 1/8W	[M]			TEST JUMPERS	
JK304	RJH5407	SPEAKER TERMINAL	[M]	RJ716	ERJ8GEY0R00A	0 1/8W	[M]				
JK501	SJS9236	SOCKET	[M]▲	RJ717	ERJ8GEY0R00A	0 1/8W	[M]	TJ701	EYF8CU	TEST JUMPER	[M]
JK802	RJJ37TK05-X	HP JACK	[M]	RJ721	ERJ8GEY0R00A	0 1/8W	[M]	TJ702	EYF8CU	TEST JUMPER	[M]
				RJ722	ERJ8GEY0R00A	0 1/8W	[M]				
		CHIP JUMPERS		RJ723	ERJ8GEY0R00A	0 1/8W	[M]				
				RJ724	ERJ8GEY0R00A	0 1/8W	[M]				
RJ701	ERJ8GEY0R00A	0 1/8W	[M]	RJ725	ERJ8GEY0R00A	0 1/8W	[M]				

## Resistors & Capacitors

**Notes :**

- \* Capacitor values are in microfarads ( $\mu\text{F}$ ) 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 column indicates parts supplied by MESA




Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks	Ref. No.	Part No.	Values & Remarks
		RESISTORS	R42	ERDS2TJ102T	1K 1/4W [M]	R104	ERDS2TJ153T	15K 1/4W [M]	R139	ERDS2TJ103T	10K 1/4W [M]
			R43	ERDS2TJ102T	1K 1/4W [M]	R105	ERDS2TJ271T	270 1/4W [M]	R141	ERDS2TJ682T	6.8K 1/4W [M]
R15	ERDS2TJ181T	180 1/4W [M]	R44	ERDS2TJ102T	1K 1/4W [M]	R106	ERDS2TJ222T	2.2K 1/4W [M]	R142	ERDS2TJ682T	6.8K 1/4W [M]
R16	ERDS2TJ153T	15K 1/4W [M]	R45	ERDS2TJ102T	1K 1/4W [M]	R107	ERDS2TJ330T	33 1/4W [M]	R143	ERDS2TJ222T	2.2K 1/4W [M]
R17	ERDS2TJ331T	330 1/4W [M]	R46	ERDS2TJ104T	100K 1/4W [M]	R108	ERDS2TJ330T	33 1/4W [M]	R144	ERDS2TJ222T	2.2K 1/4W [M]
R18	ERDS2TJ471T	470 1/4W [M]	R47	ERDS2TJ562T	5.6K 1/4W [M]	R109	ERDS2TJ432T	4.3K 1/4W [M]	R145	ERDS2TJ103T	10K 1/4W [M]
R19	ERDS2TJ474T	470K 1/4W [M]	R48	ERDS2TJ391T	390 1/4W [M]	R110	ERDS2TJ432T	4.3K 1/4W [M]	R146	ERDS2TJ103T	10K 1/4W [M]
R20	ERDS2TJ562T	5.6K 1/4W [M]	R49	ERDS2TJ561T	560 1/4W [M]	R111	ERDS2TJ222T	2.2K 1/4W [M]	R149	ERDS2TJ272T	2.7K 1/4W [M]
R21	ERDS2TJ822T	8.2K 1/4W [M]	R50	ERDS2TJ102T	1K 1/4W [M]	R112	ERDS2TJ222T	2.2K 1/4W [M]	R150	ERDS2TJ272T	2.7K 1/4W [M]
R22	ERDS2TJ473T	47K 1/4W [M]	R51	ERDS2TJ103T	10K 1/4W [M]	R115	ERDS2TJ474T	470K 1/4W [M]	R151	ERDS2TJ105T	1M 1/4W [M]
R23	ERDS2TJ332T	3.3K 1/4W [M]	R52	ERDS2TJ102T	1K 1/4W [M]	R116	ERDS2TJ474T	470K 1/4W [M]	R152	ERDS2TJ105T	1M 1/4W [M]
R24	ERDS2TJ472T	4.7K 1/4W [M]	R53	ERDS2TJ102T	1K 1/4W [M]	R117	ERDS2TJ274T	270K 1/4W [M]	R153	ERDS2TJ102T	1K 1/4W [M]
R25	ERDS2TJ271T	270 1/4W [M]	R54	ERDS2TJ102T	1K 1/4W [M]	R118	ERDS2TJ274T	270K 1/4W [M]	R154	ERDS2TJ102T	1K 1/4W [M]
R26	ERDS2TJ471T	470 1/4W [M]	R55	ERDS2TJ102T	1K 1/4W [M]	R121	ERDS2TJ333T	33K 1/4W [M]	R155	ERDS2TJ681T	680 1/4W [M]
R27	ERDS2TJ272T	2.7K 1/4W [M]	R56	ERDS2TJ102T	1K 1/4W [M]	R122	ERDS2TJ333T	33K 1/4W [M]	R156	ERDS2TJ681T	680 1/4W [M]
R28	ERDS2TJ473T	47K 1/4W [M]	R57	ERDS2TJ103T	10K 1/4W [M]	R123	ERDS2TJ103T	10K 1/4W [M]	R158	ERDS2TJ221T	220 1/4W [M]
R29	ERDS2TJ680T	68 1/4W [M]	R58	ERDS2TJ103T	10K 1/4W [M]	R124	ERDS2TJ103T	10K 1/4W [M]	R159	ERDS2TJ222T	2.2K 1/4W [M]
R32	ERDS2TJ272T	2.7K 1/4W [M]	R60	ERDS2TJ563T	56K 1/4W [M]	R125	ERDS2TJ102T	1K 1/4W [M]	R160	ERDS2TJ222T	2.2K 1/4W [M]
R33	ERDS2TJ272T	2.7K 1/4W [M]	R61	ERDS2TJ102T	1K 1/4W [M]	R126	ERDS2TJ102T	1K 1/4W [M]	R161	ERDS2TJ472T	4.7K 1/4W [M]
R34	ERDS2TJ272T	2.7K 1/4W [M]	R63	ERDS2TJ102T	1K 1/4W [M]	R129	ERDS2TJ822T	8.2K 1/4W [M]	R162	ERDS2TJ472T	4.7K 1/4W [M]
R35	ERDS2TJ272T	2.7K 1/4W [M]	R64	ERDS2TJ820T	82 1/4W [M]	R130	ERDS2TJ822T	8.2K 1/4W [M]	R163	ERDS2TJ433T	43K 1/4W [M]
R36	ERDS2TJ474T	470K 1/4W [M]	R65	ERDS2TJ103T	10K 1/4W [M]	R131	ERDS2TJ683T	68K 1/4W [M]	R165	ERDS2TJ563T	56K 1/4W [M]
R37	ERDS2TJ474T	470K 1/4W [M]	R76	ERDS2TJ331T	330 1/4W [M]	R132	ERDS2TJ335T	3.3M 1/4W [M]	R166	ERDS2TJ104T	100K 1/4W [M]
R38	ERDS2TJ272T	2.7K 1/4W [M]	R77	ERDS2TJ474T	470K 1/4W [M]	R133	ERDS2TJ332T	3.3K 1/4W [M]	R167	ERDS2TJ470T	47 1/4W [M]
R39	ERDS2TJ272T	2.7K 1/4W [M]	R101	ERDS2TJ334T	330K 1/4W [M]	R134	ERDS2TJ474T	470K 1/4W [M]	R170	ERDS2TJ102T	1K 1/4W [M]
R40	ERDS2TJ391T	390 1/4W [M]	R102	ERDS2TJ104T	100K 1/4W [M]	R137	ERDS2TJ103T	10K 1/4W [M]	R172	ERDS2TJ331T	330 1/4W [M]
R41	ERDS2TJ102T	1K 1/4W [M]	R103	ERDS2TJ153T	15K 1/4W [M]	R138	ERDS2TJ103T	10K 1/4W [M]	R173	ERDS2TJ103T	10K 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
R174	ERDS2TJ103T	10K 1/4W [M]	R312	ERDS2TJ333T	33K 1/4W [M]	R430	ERDS1FVJ100T	10 1/2W $\Delta$ [M]	R509	ERG1SJ332E	3.3K 1W $\Delta$ [M]
R176	ERDS2TJ822T	8.2K 1/4W [M]	R313	ERDS2TJ822T	8.2K 1/4W [M]	R431	ERDS2TJ124T	120K 1/4W [M]	R510	ERG1SJ332E	3.3K 1W $\Delta$ [M]
R177	ERDS2TJ472T	4.7K 1/4W [M]	R314	ERDS2TJ272T	2.7K 1/4W [M]	R432	ERDS2TJ681T	680 1/4W [M]	R511	ERDS1FVJ2R2T	2.2 1/2W $\Delta$ [M]
R178	ERDS2TJ1R2T	1.2 1/4W [M]	R315	ERDS2TJ561T	560 1/4W [M]	R433	ERDS2TJ563T	56K 1/4W [M]	R512	ERDS1FVJ102T	1K 1/2W $\Delta$ [M]
R179	ERDS2TJ472T	4.7K 1/4W [M]	R320	ERDS2TJ154T	150K 1/4W [M]	R434	ERDS2TJ103T	10K 1/4W [M]	R513	ERDS1FVJ102T	1K 1/2W $\Delta$ [M]
R180	ERDS2TJ472T	4.7K 1/4W [M]	R321	ERDS2TJ472T	4.7K 1/4W [M]	R435	ERDS2TJ681T	680 1/4W [M]	R514	ERDS2TJ151T	150 1/4W [M]
R181	ERDS2TJ332T	3.3K 1/4W [M]	R322	ERDS2TJ152T	1.5K 1/4W [M]	R436	ERDS2TJ681T	680 1/4W [M]	R515	ERDS1FVJ102T	1K 1/2W $\Delta$ [M]
R182	ERDS2TJ1R0T	1 1/4W [M]	R323	ERDS2TJ153T	15K 1/4W [M]	R438	ERDS2TJ100T	10 1/4W [M]	R516	ERDS2TJ151T	150 1/4W [M]
R183	ERDS2TJ104T	100K 1/4W [M]	R324	ERDS2TJ102T	1K 1/4W [M]	R439	ERDS2TJ184T	180K 1/4W [M]	R517	ERDS2TJ151T	150 1/4W [M]
R184	ERDS2TJ104T	100K 1/4W [M]	R325	ERDS2TJ104T	100K 1/4W [M]	R450	ERDS2TJ272T	2.7K 1/4W [M]	R518	ERDS1FVJ270T	27 1/2W $\Delta$ [M]
R185	ERDS2TJ104T	100K 1/4W [M]	R326	ERDS2TJ102T	1K 1/4W [M]	R451	ERDS2TJ152T	1.5K 1/4W [M]	R519	ERDS1FVJ270T	27 1/2W [M]
R186	ERDS2TJ102T	1K 1/4W [M]	R327	ERDS2TJ683T	68K 1/4W [M]	R452	ERDS2TJ272T	2.7K 1/4W [M]	R520	ERDS1FVJ270T	27 1/2W $\Delta$ [M]
R188	ERDS2TJ102T	1K 1/4W [M]	R328	ERDS2TJ392T	3.9K 1/4W [M]	R453	ERDS2TJ104T	100K 1/4W [M]	R521	ERDS1FVJ270T	27 1/2W $\Delta$ [M]
R189	ERDS2TJ472T	4.7K 1/4W [M]	R329	ERDS2TJ683T	68K 1/4W [M]	R454	ERDS2TJ104T	100K 1/4W [M]	R522	ERDS2TJ122T	1.2K 1/4W [M]
R190	ERDS2TJ104T	100K 1/4W [M]	R330	ERDS1FVJ100T	10 1/2W $\Delta$ [M]	R455	ERDS2TJ122T	1.2K 1/4W [M]	R523	ERDS2TJ151T	150 1/4W [M]
R191	ERDS2TJ563T	56K 1/4W [M]	R331	ERDS2TJ823T	82K 1/4W [M]	R456	ERDS2TJ272T	2.7K 1/4W [M]	R524	ERDS1FVJ4R7T	4.7 1/2W $\Delta$ [M]
R192	ERDS2TJ470T	47 1/4W [M]	R332	ERDS2TJ681T	680 1/4W [M]	R457	ERDS2TJ472T	4.7K 1/4W [M]	R525	ERDS2TJ223T	22K 1/4W [M]
R193	ERDS2TJ104T	100K 1/4W [M]	R333	ERDS2TJ563T	56K 1/4W [M]	R458	ERDS2TJ103T	10K 1/4W [M]	R526	ERDS2TJ273T	27K 1/4W [M]
R194	ERDS2TJ104T	100K 1/4W [M]	R334	ERDS2TJ103T	10K 1/4W [M]	R460	ERDS2TJ682T	6.8K 1/4W [M]	R530	ERDS2TJ180T	18 1/4W [M]
R195	ERDS2TJ104T	100K 1/4W [M]	R335	ERDS2TJ681T	680 1/4W [M]	R461	ERDS2TJ102T	1K 1/4W [M]	R531	ERDS1FVJ330T	33 1/2W $\Delta$ [M]
R206	ERDS2TJ221T	220 1/4W [M]	R336	ERDS2TJ681T	680 1/4W [M]	R462	ERDS2TJ102T	1K 1/4W [M]	R532	ERDS2TJ821T	820 1/4W [M]
R208	ERDS2TJ103T	10K 1/4W [M]	R338	ERDS2TJ100T	10 1/4W [M]	R468	ERDS2TJ334T	330K 1/4W [M]	R536	ERDS2TJ152T	1.5K 1/4W [M]
R209	ERDS2TJ332T	3.3K 1/4W [M]	R339	ERDS2TJ184T	180K 1/4W [M]	R469	ERDS2TJ334T	330K 1/4W [M]	R537	ERDS2TJ151T	150 1/4W [M]
R213	ERDS2TJ152T	1.5K 1/4W [M]	R375	ERDS2TJ223T	22K 1/4W [M]	R470	ERDS2TJ221T	220 1/4W [M]	R538	ERDS2TJ391T	390 1/4W [M]
R215	ERDS2TJ222T	2.2K 1/4W [M]	R392	ERDS2TJ154T	150K 1/4W [M]	R471	ERDS2TJ473T	47K 1/4W [M]	R540	ERDS2TJ272T	2.7K 1/4W [M]
R216	ERDS2TJ222T	2.2K 1/4W [M]	R400	ERDS2TJ473T	47K 1/4W [M]	R472	ERDS2TJ105T	1M 1/4W [M]	R541	ERDS2TJ1R0T	1 1/4W [M]
R220	ERDS2TJ472T	4.7K 1/4W [M]	R401	ERDS2TJ103T	10K 1/4W [M]	R473	ERDS2TJ474T	470K 1/4W [M]	R542	ERDS2TJ331T	330 1/4W [M]
R221	ERDS2TJ2R7T	2.7 1/4W [M]	R402	ERDS2TJ563T	56K 1/4W [M]	R474	ERDS2TJ105T	1M 1/4W [M]	R543	ERDS2TJ1R0T	1 1/4W [M]
R225	ERDS2TJ2R7T	2.7 1/4W [M]	R404	ERDS2TJ222T	2.2K 1/4W [M]	R475	ERDS2TJ334T	330K 1/4W [M]	R552	ERDS1FVJ560T	56 1/2W $\Delta$ [M]
R226	ERDS2TJ102T	1K 1/4W [M]	R405	ERDS2TJ223T	22K 1/4W [M]	R476	ERD2FCVG470T	47 1/4W [M]	R553	ERDS1FVJ2R2T	2.2 1/2W $\Delta$ [M]
R227	ERDS2TJ102T	1K 1/4W [M]	R406	ERDS2TJ103T	10K 1/4W [M]	R477	ERDS2TJ103T	10K 1/4W [M]	R554	ERDS1FVJ2R2T	2.2 1/2W $\Delta$ [M]
R228	ERDS2TJ472T	4.7K 1/4W [M]	R407	ERDS2TJ153T	15K 1/4W [M]	R478	ERDS2TJ563T	56K 1/4W [M]	R555	ERDS1FVJ2R2T	2.2 1/2W $\Delta$ [M]
R229	ERDS2TJ103T	10K 1/4W [M]	R408	ERDS2TJ104T	100K 1/4W [M]	R479	ERDS2TJ563T	56K 1/4W [M]	R564	ERDS1FVJ6R8T	6.8 1/2W $\Delta$ [M]
R230	ERDS2TJ472T	4.7K 1/4W [M]	R409	ERDS2TJ752T	7.5K 1/4W [M]	R480	ERDS2TJ562T	5.6K 1/4W [M]	R565	ERDS1FVJ1R0T	1 1/2W $\Delta$ [M]
R232	ERDS2TJ102T	1K 1/4W [M]	R410	ERDS2TJ333T	33K 1/4W [M]	R481	ERDS2TJ562T	5.6K 1/4W [M]	R566	ERDS2TJ1R2T	1.2 1/4W [M]
R233	ERDS2TJ222T	2.2K 1/4W [M]	R412	ERDS2TJ333T	33K 1/4W [M]	R483	ERDS2TJ222T	2.2K 1/4W [M]	R567	ERDS2TJ103T	10K 1/4W [M]
R234	ERDS2TJ472T	4.7K 1/4W [M]	R413	ERDS2TJ822T	8.2K 1/4W [M]	R484	ERDS2TJ334T	330K 1/4W [M]	R568	ERDS2TJ103T	10K 1/4W [M]
R235	ERDS2TJ472T	4.7K 1/4W [M]	R414	ERDS2TJ272T	2.7K 1/4W [M]	R485	ERDS2TJ472T	4.7K 1/4W [M]	R569	ERDS2TJ1R0T	1 1/4W [M]
R236	ERDS2TJ472T	4.7K 1/4W [M]	R415	ERDS2TJ561T	560 1/4W [M]	R488	ERDS2TJ1R0T	1 1/4W [M]	R570	ERDS2TJ222T	2.2K 1/4W [M]
R300	ERDS2TJ473T	47K 1/4W [M]	R420	ERDS2TJ154T	150K 1/4W [M]	R489	ERDS2TJ1R0T	1 1/4W [M]	R571	ERDS2TJ151T	150 1/4W [M]
R301	ERDS2TJ103T	10K 1/4W [M]	R421	ERDS2TJ472T	4.7K 1/4W [M]	R490	ERDS2TJ151T	150 1/4W [M]	R581	ERDS1FVJ560T	56 1/2W $\Delta$ [M]
R302	ERDS2TJ563T	56K 1/4W [M]	R422	ERDS2TJ152T	1.5K 1/4W [M]	R492	ERDS2TJ154T	150K 1/4W [M]	R582	ERDS1FVJ2R2T	2.2 1/2W $\Delta$ [M]
R304	ERDS2TJ222T	2.2K 1/4W [M]	R423	ERDS2TJ153T	15K 1/4W [M]	R500	ERDS1FVJ560T	56 1/2W $\Delta$ [M]	R583	ERDS1FVJ222T	1.2K 1/2W $\Delta$ [M]
R305	ERDS2TJ223T	22K 1/4W [M]	R424	ERDS2TJ102T	1K 1/4W [M]	R501	ERDS2TJ472T	4.7K 1/4W [M]	R584	ERDS2TJ151T	150 1/4W [M]
R306	ERDS2TJ103T	10K 1/4W [M]	R425	ERDS2TJ104T	100K 1/4W [M]	R504	ERDS2TJ103T	10K 1/4W [M]	R585	ERX1ANJP5R6	5.6 1W $\Delta$ [M]
R307	ERDS2TJ153T	15K 1/4W [M]	R426	ERDS2TJ102T	1K 1/4W [M]	R505	ERD25FVJ4R7T	4.7 1/4W [M]	R701	ERJ6GEYJ4R7V	4.7 1/10W [M]
R308	ERDS2TJ104T	100K 1/4W [M]	R427	ERDS2TJ683T	68K 1/4W [M]	R506	ERDS2TJ472T	4.7K 1/4W [M]	R703	ERJ6GEYJ823	82K 1/10W [M]
R309	ERDS2TJ752T	7.5K 1/4W [M]	R428	ERDS2TJ392T	3.9K 1/4W [M]	R507	ERDS2TJ151T	150 1/4W [M]	R704	ERJ6GEYJ102V	1K 1/10W [M]
R310	ERDS2TJ333T	33K 1/4W [M]	R429	ERDS2TJ683T	68K 1/4W [M]	R508	ERDS1FVJ102T	1K 1/2W $\Delta$ [M]	R705	ERJ6GEYJ103V	10K 1/10W [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
R706	ERJ6GEYJ102V	1K 1/10W [M]	R817	ERDS2TJ682T	6.8K 1/4W [M]	R880	ERDS2TJ101T	100 1/4W [M]	R959	ERDS2TJ123T	12K 1/4W [M]
R707	ERJ6GEYJ474V	470K 1/10W [M]	R819	ERDS2TJ472T	4.7K 1/4W [M]	R881	ERDS2TJ101T	100 1/4W [M]	R960	ERDS2TJ472T	4.7K 1/4W [M]
R708	ERJ6GEYJ154V	150K 1/10W [M]	R820	ERDS2TJ472T	4.7K 1/4W [M]	R882	ERDS2TJ101T	100 1/4W [M]	R963	ERDS2TJ472T	4.7K 1/4W [M]
R709	ERJ6GEYJ683V	68K 1/10W [M]	R823	ERDS2TJ272T	2.7K 1/4W [M]	R883	ERDS2TJ101T	100 1/4W [M]	R964	ERDS2TJ223T	22K 1/4W [M]
R711	ERJ6GEYJ154V	150K 1/10W [M]	R824	ERDS2TJ272T	2.7K 1/4W [M]	R884	ERDS2TJ103T	10K 1/4W [M]	R965	ERDS2TJ223T	22K 1/4W [M]
R712	ERJ6GEYJ221V	220 1/10W [M]	R825	ERDS2TJ271T	270 1/4W [M]	R885	ERDS2TJ223T	22K 1/4W [M]	R966	ERDS2TJ123T	12K 1/4W [M]
R717	ERJ6GEYJ102V	1K 1/10W [M]	R830	ERDS2TJ182T	1.8K 1/4W [M]	R886	ERDS2TJ331T	330 1/4W [M]	R970	ERDS2TJ103T	10K 1/4W [M]
R718	ERJ6GEYJ102V	1K 1/10W [M]	R831	ERDS2TJ122T	1.2K 1/4W [M]	R887	ERDS2TJ104T	100K 1/4W [M]	R971	ERDS2TJ222T	2.2K 1/4W [M]
R719	ERJ6GEYJ102V	1K 1/10W [M]	R832	ERDS2TJ102T	1K 1/4W [M]	R888	ERDS2TJ104T	100K 1/4W [M]	R972	ERDS2TJ102T	1K 1/4W [M]
R720	ERJ6GEYJ102V	1K 1/10W [M]	R833	ERDS2TJ102T	1K 1/4W [M]	R889	ERDS2TJ104T	100K 1/4W [M]	R972	ERDS2TJ821T	820 1/4W [M]
R721	ERJ6GEYJ101V	100 1/10W [M]	R834	ERDS2TJ222T	2.2K 1/4W [M]	R890	ERDS2TJ104T	100K 1/4W [M]	R973	ERDS2TJ331T	330 1/4W [M]
R722	ERJ6GEYJ563V	56K 1/10W [M]	R835	ERDS2TJ222T	2.2K 1/4W [M]	R891	ERDS2TJ104T	100K 1/4W [M]	R973	ERDS2TJ393T	39K 1/4W [M]
R723	ERJ6GEYJ182V	1.8K 1/10W [M]	R837	ERDS2TJ182T	1.8K 1/4W [M]	R893	ERDS2TJ104T	100K 1/4W [M]			
R724	ERJ6GEYJ333V	33K 1/10W [M]	R838	ERDS2TJ182T	1.8K 1/4W [M]	R894	ERDS2TJ104T	100K 1/4W [M]			CAPACITORS
R725	ERJ6GEYJ472V	4.7K 1/10W [M]	R840	ERDS2TJ122T	1.2K 1/4W [M]	R895	ERDS2TJ104T	100K 1/4W [M]			
R726	ERJ6GEYJ473V	47K 1/10W [M]	R841	ERDS2TJ122T	1.2K 1/4W [M]	R896	ERDS2TJ473T	47K 1/4W [M]	C1	ECEA1AKF820E	82 10V [M]
R727	ERJ6GEYJ822V	8.2K 1/10W [M]	R845	ERDS2TJ102T	1K 1/4W [M]	R898	ERDS2TJ104T	100K 1/4W [M]	C15	ECBT1C103MS5	0.01 16V [M]
R728	ERJ6GEYJ103V	10K 1/10W [M]	R846	ERDS2TJ102T	1K 1/4W [M]	R901	ERDS2TJ103T	10K 1/4W [M]	C16	ECEA1CU220B	22 16V [M]
R731	ERJ6GEYJ822V	8.2K 1/10W [M]	R847	ERDS2TJ820T	82 1/4W [M]	R910	ERDS2TJ104T	100K 1/4W [M]	C17	ECBT1C103MS5	0.01 16V [M]
R734	ERJ6GEYJ101V	100 1/10W [M]	R848	ERDS2TJ820T	82 1/4W [M]	R911	ERDS2TJ561T	560 1/4W [M]	C18	ECBT1H102KB5	1000P 50V [M]
R735	ERJ6GEYJ101V	100 1/10W [M]	R849	ERDS2TJ102T	1K 1/4W [M]	R914	ERDS2TJ104T	100K 1/4W [M]	C19	ECBT1C103MS5	0.01 16V [M]
R736	ERJ6GEYJ101V	100 1/10W [M]	R850	ERDS2TJ102T	1K 1/4W [M]	R915	ERDS2TJ103T	10K 1/4W [M]	C20	ECEA1HKA3R3B	3.3 50V [M]
R738	ERJ6GEYJ223V	22K 1/10W [M]	R852	ERDS2TJ820T	82 1/4W [M]	R916	ERDS2TJ103T	10K 1/4W [M]	C21	ECEA0JU101B	100 6.3V [M]
R741	ERJ6GEYJ562V	5.6K 1/10W [M]	R853	ERDS2TJ820T	82 1/4W [M]	R923	ERDS2TJ104T	100K 1/4W [M]	C22	ECBT1C103MS5	0.01 16V [M]
R742	ERJ6GEYJ562V	5.6K 1/10W [M]	R855	ERDS2TJ331T	330 1/4W [M]	R925	ERDS2TJ473T	47K 1/4W [M]	C23	ECEA1CU220B	22 16V [M]
R743	ERJ6GEYJ562V	5.6K 1/10W [M]	R856	ERDS2TJ391T	390 1/4W [M]	R928	ERDS2TJ681T	680 1/4W [M]	C24	ECBT1H473ZF5	0.047 50V [M]
R744	ERJ6GEYJ103V	10K 1/10W [M]	R857	ERDS2TJ331T	330 1/4W [M]	R929	ERDS2TJ106T	10M 1/4W [M]	C25	ECEA1HKA4R7B	4.7 50V [M]
R745	ERJ6GEYJ155V	1.5M 1/10W [M]	R858	ERDS2TJ391T	390 1/4W [M]	R931	ERDS2TJ334T	330K 1/4W [M]	C26	ECBT1C822MS5	8200P 16V [M]
R748	ERJ6GEYJ182V	1.8K 1/10W [M]	R859	ERDS2TJ331T	330 1/4W [M]	R935	ERDS2TJ102T	1K 1/4W [M]	C27	ECQP1821JZT	820P 100V [M]
R749	ERJ6GEYJ682V	6.8K 1/10W [M]	R860	ERDS2TJ391T	390 1/4W [M]	R936	ERDS2TJ101T	100 1/4W [M]	C28	ECEA1HKA010B	1 50V [M]
R750	ERJ6GEYJ473V	47K 1/10W [M]	R861	ERDS2TJ331T	330 1/4W [M]	R937	ERDS2TJ101T	100 1/4W [M]	C29	ECFR1C103KR	0.01 100V [M]
R751	ERJ6GEYJ473V	47K 1/10W [M]	R862	ERDS2TJ391T	390 1/4W [M]	R938	ERDS2TJ103T	10K 1/4W [M]	C30	ECFR1C103KR	0.01 100V [M]
R752	ERJ6GEYJ220V	22 1/8W [M]	R863	ERDS2TJ331T	330 1/4W [M]	R939	ERDS2TJ103T	10K 1/4W [M]	C31	ECBT1H150JC5	15P 50V [M]
R770	ERJ6GEYJ155V	1.5M 1/10W [M]	R864	ERDS2TJ391T	390 1/4W [M]	R940	ERDS2TJ473T	47K 1/4W [M]	C32	ECBT1C103MS5	0.01 16V [M]
R771	ERJ6GEYJ155V	1.5M 1/10W [M]	R865	ERDS2TJ820T	82 1/4W [M]	R941	ERDS2TJ473T	47K 1/4W [M]	C33	ECEA1HKA2R2B	2.2 50V [M]
R772	ERJ6GEYJ273V	27K 1/10W [M]	R866	ERDS2TJ820T	82 1/4W [M]	R942	ERDS2TJ103T	10K 1/4W [M]	C34	ECEA1HKA010B	1 50V [M]
R802	ERDS2TJ683T	68K 1/4W [M]	R867	ERDS2TJ820T	82 1/4W [M]	R943	ERDS2TJ103T	10K 1/4W [M]	C35	ECEA1HKA010B	1 50V [M]
R803	ERDS2TJ222T	2.2K 1/4W [M]	R868	ERDS2TJ820T	82 1/4W [M]	R944	ERDS2TJ472T	4.7K 1/4W [M]	C36	ECEA1HKA010B	1 50V [M]
R804	ERDS2TJ182T	1.8K 1/4W [M]	R869	ERDS2TJ102T	1K 1/4W [M]	R945	ERDS2TJ104T	100K 1/4W [M]	C37	ECEA1HKA010B	1 50V [M]
R805	ERDS2TJ122T	1.2K 1/4W [M]	R870	ERDS2TJ102T	1K 1/4W [M]	R946	ERDS2TJ102T	1K 1/4W [M]	C38	ECBT1C103MS5	0.01 16V [M]
R806	ERDS2TJ102T	1K 1/4W [M]	R871	ERDS2TJ102T	1K 1/4W [M]	R947	ERDS2TJ104T	100K 1/4W [M]	C39	ECBT1C103MS5	0.01 16V [M]
R807	ERDS2TJ102T	1K 1/4W [M]	R872	ERDS2TJ221T	220 1/4W [M]	R948	ERDS2TJ472T	4.7K 1/4W [M]	C40	ECBT1H561KB5	560P 50V [M]
R808	ERDS2TJ271T	270 1/4W [M]	R873	ERDS2TJ102T	1K 1/4W [M]	R949	ERDS2TJ104T	100K 1/4W [M]	C41	ECBT1H561KB5	560P 50V [M]
R809	ERDS2TJ223T	22K 1/4W [M]	R874	ERDS2TJ221T	220 1/4W [M]	R950	ERDS2TJ104T	100K 1/4W [M]	C42	ECBT1C682MR5	6800P 16V [M]
R810	ERDS2TJ223T	22K 1/4W [M]	R875	ERDS2TJ473T	47K 1/4W [M]	R952	ERDS2TJ821T	820 1/4W [M]	C43	ECBT1C682MR5	6800P 16V [M]
R811	ERDS2TJ103T	10K 1/4W [M]	R876	ERDS2TJ103T	10K 1/4W [M]	R953	ERDS2TJ103T	10K 1/4W [M]	C44	ECEA1CU101B	100 16V [M]
R812	ERDS2TJ103T	10K 1/4W [M]	R877	ERDS2TJ473T	47K 1/4W [M]	R953	ERDS2TJ393T	39K 1/4W [M]	C45	ECEA1HKA010B	1 50V [M]
R815	ERDS2TJ271T	270 1/4W [M]	R878	ERDS2TJ103T	10K 1/4W [M]	R956	ERDS2TJ223T	22K 1/4W [M]	C46	ECEA1HKA010B	1 50V [M]
R816	ERDS2TJ682T	6.8K 1/4W [M]	R879	ERDS2TJ103T	10K 1/4W [M]	R957	ERDS2TJ223T	22K 1/4W [M]	C47	ECBT1H473ZF5	0.047 50V [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
C48	ECBT1H8R2KC5	8.2P 50V [M]	C130	ECBT1H821KB5	820P 50V [M]	C187	ECBT1H101KB5	100P 50V [M]	C411	ECFR1C104MR	0.1 16V [M]
C49	ECBT1H331KB5	330P 50V [M]	C131	ECBT1H821KB5	820P 50V [M]	C188	ECBT1H101KB5	100P 50V [M]	C412	ECFR1C563KR	0.056 16V [M]
C51	ECBT1C103MS5	0.01 16V [M]	C132	ECBT1H821KB5	820P 50V [M]	C193	ECBT1H102KB5	1000P 50V [M]	C413	ECFR1C103MR	0.01 16V [M]
C52	ECEA25M4R7B	4.7 25V [M]	C133	ECEA1HKA4R7B	4.7 50V [M]	C194	ECBT1H102KB5	1000P 50V [M]	C414	ECEA1HM010B	1 50V [M]
C53	ECBT1C103MS5	0.01 16V [M]	C134	ECEA1HKA4R7B	4.7 50V [M]	C201	ECEA1CKA101B	100 16V [M]	C415	ECFR1C333KR	0.033 16V [M]
C54	ECBT1H180JC5	18P 50V [M]	C135	ECBT1H102KB5	1000P 50V [M]	C202	ECBT1H104ZF5	0.1 50V [M]	C418	ECBT1H820KB5	82P 50V [M]
C55	ECBT1H150JC5	15P 50V [M]	C136	ECBT1H102KB5	1000P 50V [M]	C203	ECBT1H331KB5	330P 50V [M]	C422	ECEA1HM3R3B	3.3 50V [M]
C56	ECBT1H102KB5	1000P 50V [M]	C139	ECEA1HKA2R2B	2.2 50V [M]	C204	ECBT1H331KB5	330P 50V [M]	C423	ECEA1HMR47B	0.47 50V [M]
C57	ECEA0JU101B	100 6.3V [M]	C140	ECEA1CKA100B	10 16V [M]	C205	ECBT1C222KR5	2200P 16V [M]	C424	ECBT1H101KB5	100P 50V [M]
C59	ECBT1H330J5	33P 50V [M]	C141	ECEA1HKA0R1B	0.1 50V [M]	C206	ECBT1C222KR5	2200P 16V [M]	C425	ECEA1HM3R3B	3.3 50V [M]
C60	ECBT1H102KB5	1000P 50V [M]	C142	ECFR1C223MR	0.022 16V [M]	C301	ECBT1H101KB5	100P 50V [M]	C426	ECBT1H102KB5	1000P 50V [M]
C61	ECBT1H331KB5	330P 50V [M]	C143	ECEA1HKA4R7B	4.7 50V [M]	C302	ECEA1HM3R3B	3.3 50V [M]	C427	ECBT1H331KB5	330P 50V [M]
C62	ECEA1CU220B	22 16V [M]	C144	ECEA1HKA4R7B	4.7 50V [M]	C303	ECEA1HM3R3B	3.3 50V [M]	C428	ECEA1HM010B	1 50V [M]
C63	ECBT1C103MS5	0.01 16V [M]	C145	ECEA1CKA100B	10 16V [M]	C304	ECBT1H101KB5	100P 50V [M]	C429	ECBT1H6R8KC5	6.8P 50V [M]
C64	ECBT1C103MS5	0.01 16V [M]	C146	ECEA1CKA100B	10 16V [M]	C305	ECEA1CM100B	10 16V [M]	C430	ECKR1H223ZF5	0.022 50V [M]
C65	ECBT1H102KB5	1000P 50V [M]	C147	ECBT1C152KR5	1500P 16V [M]	C306	ECBT1H101KB5	100P 50V [M]	C431	ECEA1HM010B	1 50V [M]
C66	ECBT1H102KB5	1000P 50V [M]	C148	ECBT1C152KR5	1500P 16V [M]	C307	ECBT1H100JC5	10P 50V [M]	C432	ECEA1HM010B	1 50V [M]
C67	ECBT1H102KB5	1000P 50V [M]	C150	ECEA1AKA470B	47 10V [M]	C309	ECEA1HM3R3B	3.3 50V [M]	C440	ECBT1H101KB5	100P 50V [M]
C68	ECBT1H102KB5	1000P 50V [M]	C151	ECEA1HKA010B	1 50V [M]	C310	ECEA1HM100B	10 50V [M]	C442	ECKR1H223ZF5	0.022 50V [M]
C71	ECBT1C103MS5	0.01 16V [M]	C152	ECEA1HKA010B	1 50V [M]	C311	ECFR1C104MR	0.1 16V [M]	C443	ECBT1C682MR5	6800P 16V [M]
C72	ECBT1H471KB5	470P 50V [M]	C153	ECBT1H102KB5	1000P 50V [M]	C312	ECFR1C563KR	0.056 16V [M]	C451	ECBT1C103MS5	0.01 16V [M]
C73	ECBT1H2R7KC5	2.7P 50V [M]	C154	ECBT1H102KB5	1000P 50V [M]	C313	ECFR1C103MR	0.01 16V [M]	C453	ECBT1C103MS5	0.01 16V [M]
C101	ECBT1H102KB5	1000P 50V [M]	C155	ECEA1CKA100B	10 16V [M]	C314	ECEA1HM010B	1 50V [M]	C454	ECBT1C103MS5	0.01 16V [M]
C102	ECBT1H102KB5	1000P 50V [M]	C156	ECEA1CKA100B	10 16V [M]	C315	ECFR1C333KR	0.033 16V [M]	C455	ECBT1C103MS5	0.01 16V [M]
C103	ECBT1H681KB5	680P 50V [M]	C161	ECEA1CKA101B	100 16V [M]	C318	ECBT1H820KB5	82P 50V [M]	C456	ECBT1C103MS5	0.01 16V [M]
C104	ECFR1C223MR	0.022 16V [M]	C162	ECEA1CU471B	470 16V [M]	C322	ECEA1HM3R3B	3.3 50V [M]	C457	ECBT1C103MS5	0.01 16V [M]
C105	ECBT1H681KB5	680P 50V [M]	C163	ECEA1HKA010B	1 50V [M]	C323	ECEA1HMR47B	0.47 50V [M]	C458	ECEA1CM100B	10 16V [M]
C106	ECBT1H681KB5	680P 50V [M]	C164	ECEA1HKA010B	1 50V [M]	C324	ECBT1H101KB5	100P 50V [M]	C459	ECBT1H104ZF5	0.1 50V [M]
C108	ECEA1CKA330B	33 16V [M]	C165	ECEA1CKA100B	10 16V [M]	C325	ECEA1HM3R3B	3.3 50V [M]	C460	ECEA1CM100B	10 16V [M]
C109	ECEA1CKA101B	100 16V [M]	C166	ECEA1CKA100B	10 16V [M]	C326	ECBT1H102KB5	1000P 50V [M]	C461	ECBT1H104ZF5	0.1 50V [M]
C111	ECBT1H561KB5	560P 50V [M]	C167	ECEA1HKA68B	0.68 50V [M]	C327	ECBT1H331KB5	330P 50V [M]	C462	ECEA1AM101B	100 10V [M]
C112	ECBT1H561KB5	560P 50V [M]	C168	ECEA1HKA68B	0.68 50V [M]	C328	ECEA1HM010B	1 50V [M]	C463	ECBT1C103MS5	0.01 16V [M]
C113	ECEA0JKA221B	220 6.3V [M]	C169	ECEA1HKA4R7B	4.7 50V [M]	C329	ECBT1H6R8KC5	6.8P 50V [M]	C464	ECEA1HMR22B	0.22 50V [M]
C114	ECEA0JKA221B	220 6.3V [M]	C170	ECEA1HKA4R7B	4.7 50V [M]	C330	ECKR1H223ZF5	0.022 50V [M]	C465	ECBT1C103MS5	0.01 16V [M]
C115	ECFR1C333JR	0.033 16V [M]	C171	ECEA1CKA100B	10 16V [M]	C331	ECEA1HM010B	1 50V [M]	C466	ECEA1HM010B	1 50V [M]
C116	ECFR1C333JR	0.033 16V [M]	C173	ECBT1C103MS5	0.01 16V [M]	C332	ECEA1HM010B	1 50V [M]	C467	ECEA1HM010B	1 50V [M]
C117	ECEA1HKA010B	1 50V [M]	C174	ECEA1HKA4R7B	4.7 50V [M]	C340	ECBT1H101KB5	100P 50V [M]	C468	ECEA1HM330B	33 50V [M]
C118	ECEA1HKA010B	1 50V [M]	C175	ECEA1VU221B	220 10V [M]	C342	ECKR1H223ZF5	0.022 50V [M]	C469	ECEA0JKA221B	220 6.3V [M]
C119	ECEA1HKA4R7B	4.7 50V [M]	C176	ECQV1H473JZ3	0.047 50V [M]	C343	ECBT1C682MR5	6800P 16V [M]	C470	ECBT1C103MS5	0.01 16V [M]
C120	ECEA1HKA4R7B	4.7 50V [M]	C177	ECBT1H102KB5	1000P 50V [M]	C392	ECBT1H331KB5	330P 50V [M]	C471	ECBT1H221KB5	220P 50V [M]
C121	ECEA1HKA010B	1 50V [M]	C178	ECBT1H102KB5	1000P 50V [M]	C401	ECBT1H101KB5	100P 50V [M]	C472	ECBT1H221KB5	220P 50V [M]
C122	ECEA1HKA010B	1 50V [M]	C179	ECBT1C103MS5	0.01 16V [M]	C402	ECEA1HM3R3B	3.3 50V [M]	C473	ECEA1CM100B	10 16V [M]
C123	ECBT1H102KB5	1000P 50V [M]	C180	ECBT1C103MS5	0.01 16V [M]	C403	ECEA1HM3R3B	3.3 50V [M]	C474	ECEA1CM220B	22 16V [M]
C124	ECBT1H102KB5	1000P 50V [M]	C181	ECBT1C103MS5	0.01 16V [M]	C404	ECBT1H101KB5	100P 50V [M]	C475	ECEA1CM100B	10 16V [M]
C125	ECFR1C473MR	0.047 16V [M]	C182	ECEA1HKA4R7B	4.7 50V [M]	C405	ECEA1CM100B	10 16V [M]	C478	ECEA1HM2R2B	2.2 50V [M]
C126	ECFR1C473MR	0.047 16V [M]	C183	ECQV1H474JZ3	0.47 50V [M]	C406	ECBT1H101KB5	100P 50V [M]	C479	ECBT1H104ZF5	0.1 50V [M]
C127	ECBT1C103MS5	0.01 16V [M]	C184	ECQP1152JZT	1500P 100V [M]	C407	ECBT1H100JC5	10P 50V [M]	C483	ECEA1EM101B	100P 25V [M]
C128	ECBT1C103MS5	0.01 16V [M]	C185	ECQP2A472JZT	4700P 100V [M]	C409	ECEA1HM3R3B	3.3 50V [M]	C484	ECBT1C103MS5	0.01 16V [M]
C129	ECBT1H821KB5	820P 50V [M]	C186	ECEA1AKA470B	47 10V [M]	C410	ECEA1HM100B	10 50V [M]	C485	ECBT1C103MS5	0.01 16V [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
C486	ECBT1H101KB5	100P 50V [M]	C706	ECUV1H272KBN	2700P 50V [M]	C811	ECBT1H101KB5	100P 50V [M]			
C487	ECBT1H101KB5	100P 50V [M]	C707	ECUV1E273KBN	0.027 25V [M]	C812	ECBT1H101KB5	100P 50V [M]			
C492	ECBT1H331KB5	330P 50V [M]	C708	ECUV1H472KBN	4700P 50V [M]	C813	ECBT1H101KB5	100P 50V [M]			
C493	ECBT1H221KB5	220P 50V [M]	C709	ECUV1C473KBN	0.047 16V [M]	C814	ECBT1H101KB5	100P 50V [M]			
C494	ECBT1H221KB5	220P 50V [M]	C710	ECUV1H182KBN	1800P 50V [M]	C815	ECEA0JM102B	1000 6.3V [M]			
C500	ECKR2H103ZF5	0.01 500V [M]	C711	ECUZNE104MBN	0.1 25V [M]	C816	ECBT1H102KB5	1000P 50V [M]			
C501	ECKR2H103ZF5	0.01 500V [M]	C712	ECUZNE104MBN	0.1 25V [M]	C817	ECEA0JM101B	100 6.3V [M]			
C502	ECKR2H103ZF5	0.01 500V [M]	C713	ECUV1C104MBM	0.1 16V [M]	C818	ECEA0JM102B	1000 6.3V [M]			
C503	ECKR2H103ZF5	0.01 500V [M]	C714	ECEA0JKA101I	100 6.3V [M]	C819	ECBT1H102KB5	1000P 50V [M]			
C504	ECKR1H103ZF5	0.01 50V [M]	C716	ECUV1H561KBN	560P 50V [M]	C820	ECBT1C103MS5	0.01 16V [M]			
C506	ECKR1H103ZF5	0.01 50V [M]	C717	ECUZNE104MBN	0.1 25V [M]	C821	ECBT1H331KB5	330P 50V [M]			
C508	ECKR1H103ZF5	0.01 50V [M]	C718	ECUV1C224KBN	0.22 16V [M]	C822	ECBT1H561KB5	560P 50V [M]			
C509	ECEA1HM220B	22 50V [M]	C721	ECUV1H150JCN	15P 50V [M]	C823	ECBT1H561KB5	560P 50V [M]			
C510	ECEA1HM330B	33 50V [M]	C722	ECUV1H150JCN	15P 50V [M]	C825	ECEA1AKA220B	22 10V [M]			
C511	ECEA1JM221B	220 63V [M]	C723	ECEA1AKA221I	220 10V [M]	C834	ECBT1H561KB5	560P 50V [M]			
C512	ECEA1HM100B	10 50V [M]	C724	ECUV1C104MBM	0.1 16V [M]	C838	ECBT1H561KB5	560P 50V [M]			
C513	ECEA1HM222B	2200 50V  [M]	C725	ECUV1H102KBN	1000P 50V [M]	C839	ECBT1H561KB5	560P 50V [M]			
C514	ECEA1HM222B	2200 50V  [M]	C726	ECUV1H102KBN	1000P 50V [M]	C840	ECBT1H561KB5	560P 50V [M]			
C515	ECEA1VM222B	2200 10V  [M]	C727	ECEA1HPK010I	1 50V [M]	C845	ECEA0JKA470B	47 6.3V [M]			
C517	ECEA1HM470B	47 50V [M]	C728	ECEA1HPK010I	1 50V [M]	C849	ECEA1HKA0R1B	0.1 50V [M]			
C518	ECEA1HM470B	47 50V [M]	C730	ECUZNE104MBN	0.1 25V [M]	C850	ECEA1HKA0R1B	0.1 50V [M]			
C519	ECKR1H103ZF5	0.01 50V [M]	C731	ECEA0JKA221I	220 6.3V [M]	C853	ECBT1C103MS5	0.01 16V [M]			
C520	ECEA1AM470B	47 10V [M]	C732	ECEA0JKA221I	220 6.3V [M]	C856	ECEA1HKA0R1B	0.1 50V [M]			
C521	ECEA1EM4R7B	4.7 25V [M]	C733	ECUZNE104MBN	0.1 25V [M]	C858	ECEA1HKA0R1B	0.1 50V [M]			
C522	ECEA1HMR47B	0.47 50V [M]	C734	ECEA1AKA221I	220 10V [M]	C859	ECBT1E103ZF5	0.01 25V [M]			
C524	ECBT1C103MS5	0.01 16V [M]	C735	ECUZNE104MBN	0.1 25V [M]	C860	ECBT1H101KB5	100P 50V [M]			
C525	ECBT1C103MS5	0.01 16V [M]	C736	ECUZNE104MBN	0.1 25V [M]	C863	ECBT1H101KB5	100P 50V [M]			
C528	ECBT1C103MS5	0.01 16V [M]	C737	ECUZNE104MBN	0.1 25V [M]	C865	ECBT1H150JC5	15P 50V [M]			
C529	ECEA1HM330B	33 50V [M]	C738	ECUV1C154KBN	0.15 16V [M]	C866	ECEA1VKA100B	10 10V [M]			
C530	ECEA1AM330B	33 10V [M]	C742	ECUV1E273KBN	0.027 25V [M]	C868	ECBT1H180JC5	18P 50V [M]			
C531	ECBT1C103MS5	0.01 16V [M]	C743	ECUZNE104MBN	0.1 25V [M]	C869	ECBT1H680J5	68P 50V [M]			
C532	ECEA1HU101B	100 50V [M]	C744	ECUV1E822KBN	8200P 25V [M]	C870	ECBT1H680J5	68P 50V [M]			
C541	ECKR1H103ZF5	0.01 50V [M]	C745	ECUV1C473MBN	0.047 16V [M]	C871	ECEA1HKA010B	1 50V [M]			
C542	ECBT1C103MS5	0.01 16V [M]	C747	ECUV1H222KBN	2200P 50V [M]	C872	ECBT1H560J5	56P 50V [M]			
C543	ECBT1C103MS5	0.01 16V [M]	C748	ECUV1H471KBN	470P 50V [M]	C873	ECBT1H560J5	56P 50V [M]			
C544	ECBT1C103MS5	0.01 16V [M]	C749	ECUZNE104MBN	0.1 25V [M]	C875	ECEA1HKA010B	1 50V [M]			
C545	ECEA1HM010B	1 50V [M]	C751	ECUZNE104MBN	0.1 25V [M]	C876	ECBT1H102KB5	1000P 50V [M]			
C546	ECBT1C103MS5	0.01 16V [M]	C752	ECUV1H152KBN	1500P 50V [M]	C877	ECEA1HKA3R3B	3.3 50V [M]			
C548	ECKR1H103ZF5	0.01 50V [M]	C753	ECUV1H471KBN	470P 50V [M]	C878	ECBT1H102KB5	1000P 50V [M]			
C549	ECBT1C103MS5	0.01 16V [M]	C754	ECUV1H471KBN	470P 50V [M]	C879	ECBT1C103MS5	0.01 16V [M]			
C550	ECEA1AM470B	47 10V [M]	C802	ECBT1E103ZF5	0.01 25V [M]	C880	ECBT1C103MS5	0.01 16V [M]			
C551	ECBT1C103MS5	0.01 16V [M]	C803	ECBT1H102KB5	1000P 50V [M]	C881	ECBT1H471KB5	470P 50V [M]			
C552	ECEA1EM101B	100 25V [M]	C804	ECBT1H331KB5	330P 50V [M]	C882	ECBT1H102KB5	1000P 50V [M]			
C554	ECBT1H104ZF5	0.1 50V [M]	C805	ECBT1H331KB5	330P 50V [M]	C883	ECBT1H102KB5	1000P 50V [M]			
C701	ECEA0JKA330I	33 6.3V [M]	C806	ECBT1H561KB5	560P 50V [M]						
C702	ECUZNE104MBN	0.1 25V [M]	C807	ECBT1H104ZF5	0.1 50V [M]						
C703	ECEA0JKA101I	100 6.3V [M]	C808	ECBT1H104ZF5	0.1 50V [M]						
C704	ECUZNE104MBN	0.1 25V [M]	C809	ECBT1H561KB5	560P 50V [M]						
C705	ECUZNE104MBN	0.1 25V [M]	C810	ECEA1VKA100B	10 10V [M]						

## ■ Packing Materials & Accessories

Notes: \* Important safety notice:

Components identified by  mark have special characteristics important for safety.

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

When replacing any of 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 column indicates parts supplied by MESA.

- \* Remote Control Unit : Supply period for three years from terminal of production.

Ref No.	Part No.	Part Name & Description	Remarks
		<b>PACKING MATERIALS</b>	
P1	RPGX0378	CARTON BOX	[MBV]
P2	RPFX0007	BAG (SET)	[M]
P3	RPNX0067	POLYFOAM	[MBV]
P4	SPSD152	ACCESSORY CASE	[M]
		<b>ACCESSORIES</b>	
A1	EUR644344	REMOTE CONTROL	[M]
A1-1	UR64EC1822-3	R. CONTROL COVER	[M]
A2	RSA0007	FM ANTENA	[M]
A3	RSA0010	AM LOOP ANT	[M]
A4	VJA0733	AC CORD (SF)	[M](EB)△
A4	RJA0019-2K	AC CORD (SF)	[M](EG)(E)△
A5	RFKSAK20EK	INSTR. MANUAL ASS'Y	[MBV](E)
A5	RQT3774-B	INSTR. MANUAL	[M](EB)
A5	RFKSAK20EGK	INSTR. MANUAL ASS'Y	[MBV](EG)
A6	SJP9009	ANT ADAPTER	[M](EB)
		<b>PCB</b>	
	REPX0109	SERVO PCB	[M]
	REP2182A-N	LOADING PCB (DET. SW. 1/2)	[M]
	REPX0108	MECHANISM (DECK 2) PCB	[M]
	REPX0108A	MECHANISM (DECK 1) PCB	[M]
	REPX0114B	MAIN PCB	[MBV]E,EG
	REPX0114C	MAIN PCB	[MBV] EB
	REPX0113B	OPERATION PCB	[MBV]
	REP2200J	DECK PCB	[MBV]
	REP2000L	TUNER PCB	[MBV]

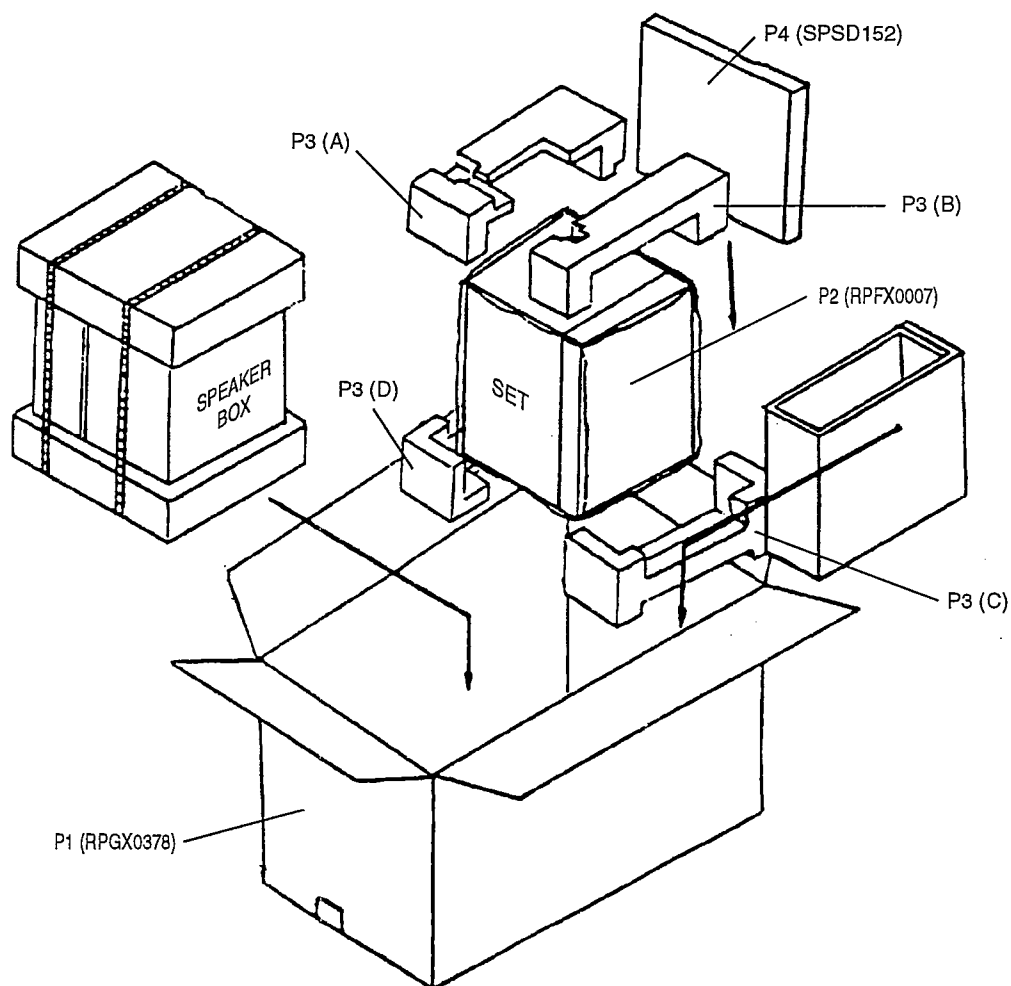
## ■ Packaging

### ACCESSORY

A1 (EUR644344)	: REMOTE CONTROL UNIT
A3 (RSA0010)	: AM LOOP

### FAN BAG

A2 (RSA0007)	: FM ANT
A4 (VJA0733)...EB	: AC CORD
A4 (RJA0019-2K)...EG,E	: AC CORD
A5 (RFKSAK20EK)...E	: INSTR. MANUAL ASS'Y
A5 (RQT3774-B)...EB	: INSTR. MANUAL
A5 (RFKSAK20EGK)...EG	: INSTR. MANUAL ASS'Y
A6 (SJP9009)...EB	



P3 (RPNX0067)

P3 (A)  
P3 (B)  
P3 (C)  
P3 (D)





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