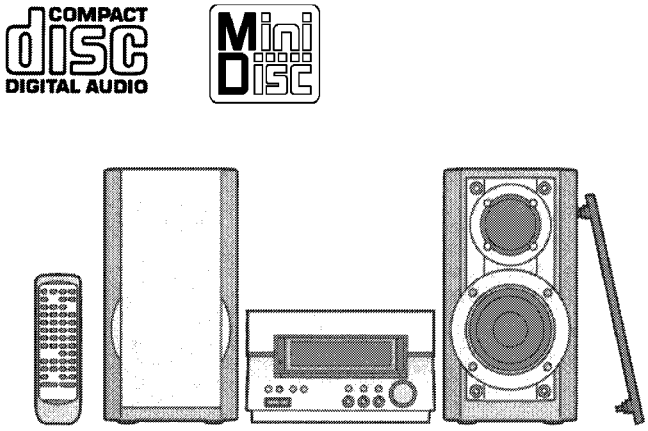
ORDER NO. MD0010161C2

Service Manual

MD Stereo System



SA-PM65MD

Colour

(S)... Silver Type

Area

(EB)... Great Britain

(EG)... Germany and Italy

CD SECTION

RAE0155Z TRAVERSE DECK SERIES

MD SECTION

MR3 MECHANISM SERIES

Specification

■ Amplifier Section	
RMS power output	
THD 10%, both channels driven	
LOW	2 X 16 W (6Ω)
HIGH	2 X 4 W (6Ω)
Total BI-AMP power	2 X 20 W
Input sensitivity	
AUX	390 mV
EXT IN	390 mV
P-MD	100 mV
Output sensitivity	
EXT OUT	390 mV
Input/Output impedance	
AUX	33 kΩ
EXT IN	33 kΩ
P-MD	10 kΩ
Headphone	16-32 Ω
■ FM tuner section	
Frequency range	87.50-108.00 MHz (0.05 MHz steps)
Sensitivity	1.8μV (IHF)
S/N 26 dB	1.5μV
Antenna terminals	75 Ω unbalanced
■ AM tuner section	
Frequency range	522-1629 kHz (9kHz steps)
Sensitivity	
S/N 20 dB	500 μV/m
■ MD section	
System	MiniDisc Digital Audio System
Recording	Magnetic field modulation direct overwrite
Reading	Non-contact optical system with semiconductor laser (Wavelength = 780nm)
Sampling frequency	44.1 kHz
Coding system	ATRAC
Number of channels	2 channels stereo
Wow and flutter	Below measurable limit
■ CD section	
Sampling frequency	44.1kHz
Decoding	16 bit linear
Beam source	Semiconductor laser
Wave length	780 nm
Number of channels	2 channels stereo
Wow and flutter	Below measurable limit
Digit filter	8 fs
D/A converter	MASH (1 bit DAC)
■ General	
Power supply	
For EB	AC 230-240 V, 50Hz
For EG	AC 220-230 V, 50Hz

Panasonic®

Power consumption	60 W
Standby	
ECO	0.8 W
NORMAL	8.5 W
Dimensions (WxHxD)	
Panels closed	210x140x365 mm
Panels open	210x159x399 mm
Mass	4.7 kg

Notes :

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

2. Total harmonic distortion is measured by the digital spectrum analyzer.

* US and foreign patents licensed from Dolby Laboratories.

■ System: SC-PM65MD (EB) Music Center: SA-PM65MD (EB)
Speaker: SB-PM65 (EG)

■ System: SC-PM65MD (EG) Music Center: SA-PM65MD (EG)
Speaker: SB-PM65 (EG)

⚠ WARNING

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

CONTENTS

1 Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C905, C910 through a 10Ω, 5W resistor to ground.

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

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

[EG]

- Current consumption at AC 230V, 50 Hz in NO SIGNAL mode should be ~160mA.

[EB]

- Current consumption at AC 240V, 50 Hz in NO SIGNAL mode should be ~160mA.

2 Protection Circuitry

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

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

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

If this occurs, follow the procedure outlines below:

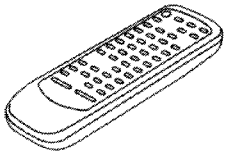
1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

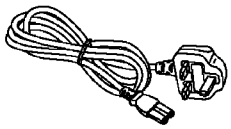
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

3 Accessories

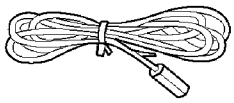
Note : Refer to Packing Materials & Accessories for part number.



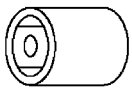
Remote Control
Transmitter



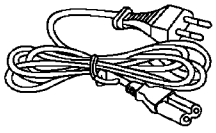
AC mains lead (EB)



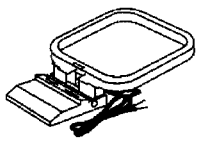
FM indoor antenna



FM antenna Plug
Adaptor (EB)



AC mains lead (EG)



AM Loop antenna

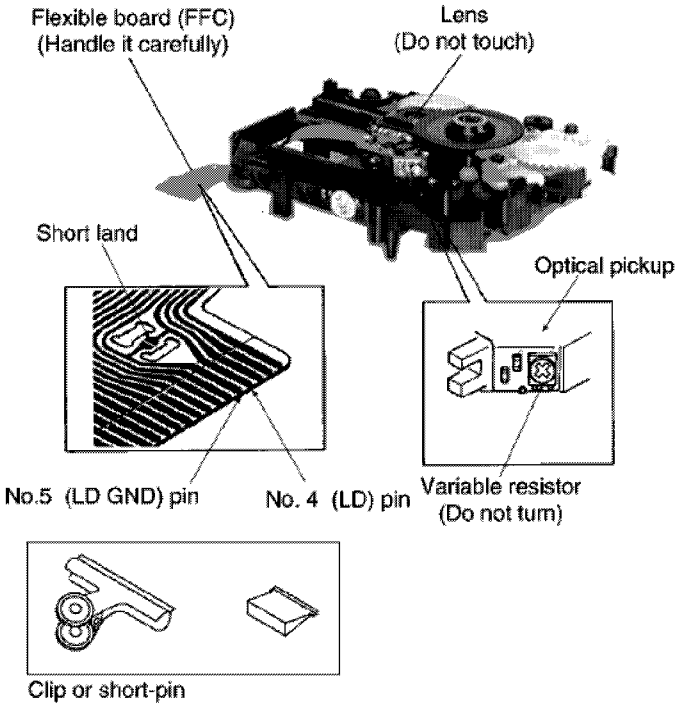
4 Handling Precautions For Traverse Deck (CD/MD)

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).

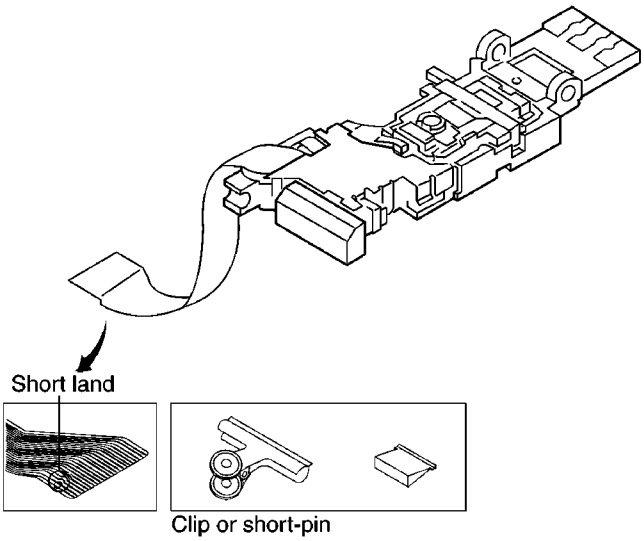
● **Handling of CD traverse deck (optical pickup)**

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



● **Handling of MD Unit (optical pickup)**

1. Do not subject the MD unit (optical pickup) to static electricity as it is extramely sensitive to electrical shock.
2. The short land between the No.25 (LD-GND) and No. 24 (LD) pins on the flexible board is shorted with a solder builder up to prevent damage to the laser diode.
3. Take care not to apply excessive stress to the flexible board (FFC).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted..



● **Grounding for electrostatic breakdown prevention**

1. Human body grounding

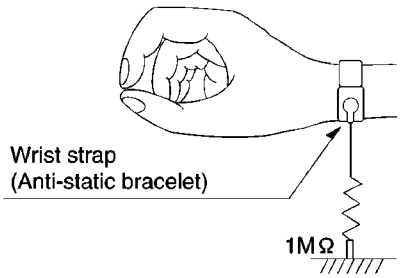
   Use the anti-static wrist strap to discharge the static electricity from your body.

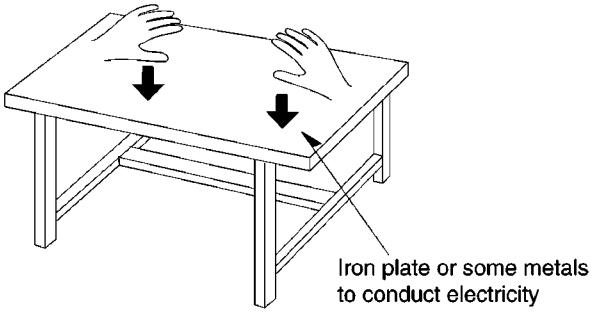
2. Work table grounding

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

Caution :

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





Caution when Replacing the Optical Pickup :

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

5 Precaution of Laser Diode

Caution :

This product utilizes a laser diode with the unit turned "ON", invisible laser radiation is emitted from the pick up lens.
Wavelength : 780 nm
Maximum output radiation power from pick up : 100 mW/VDE
Laser radiation from pick upunit is safety level, but be sure the followings:

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

ACHTUNG :

Dieses Produkt enthält eine Laserdiode. Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit abgestrahlt.
Wellenlänge : 780nm
Maximale Strahlungsleistung der Lasereinheit :100W/VDE
DieStrahlung an der Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

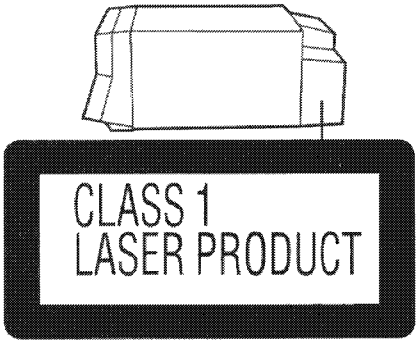
1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werkseitig justierten Einstellregler der Lasereinhit nicht verstellen.
3. Nicht mit optischen Instrumenten in die Fokussierlinse blicken.
4. Nicht über längere Zeit in die Fokussierlinse blicken.

ADVARSEL :

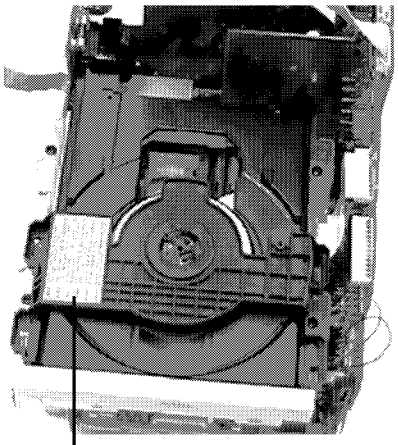
I dette a apparat anvendes laser.

CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Use of Caution Labels



LUOKAN 1 LASERLAITE
KLASS 1 LASER APPARAT



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

6 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 OF 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 stated 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

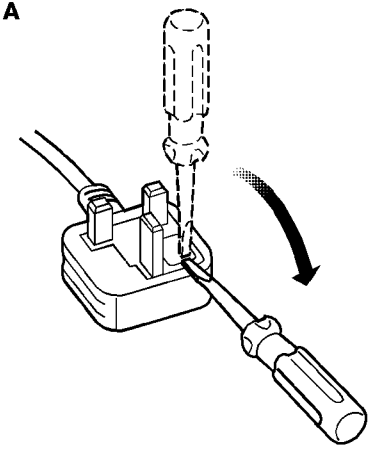
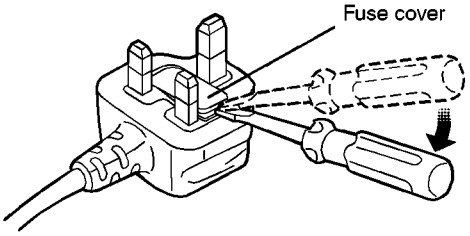


Figure B



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

Figure A

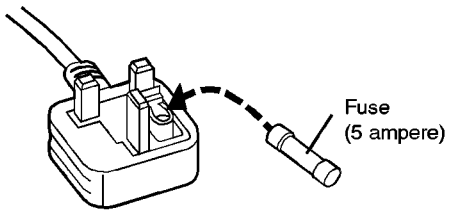
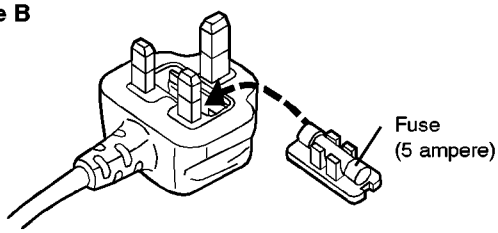
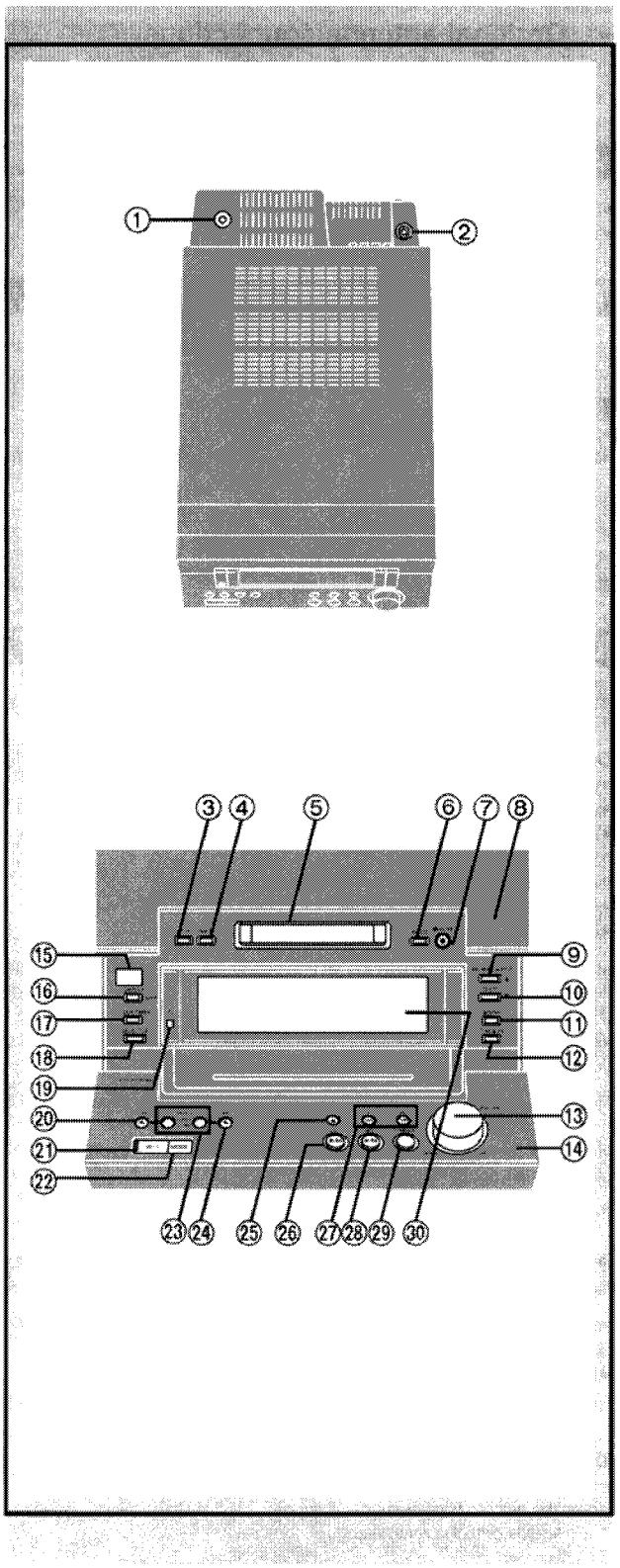


Figure B



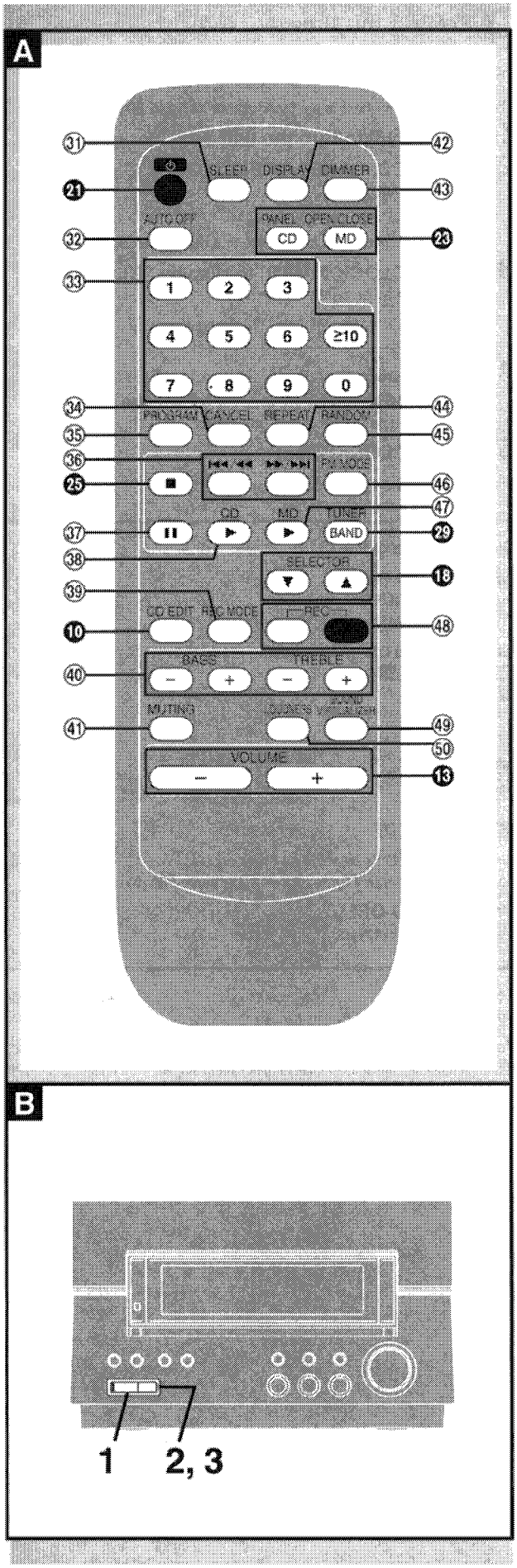
7 Operation Procedures



Front panel controls

Main unit

① Headphone jack (PHONES)
② P-MD terminal (P-MD)
③ Enter button (ENTER)
④ MD edit cancel button (CANCEL)
⑤ MD slot
⑥ MD edit button (MD EDIT)
⑦ MD record/pause button (● REC/❚❚)
⑧ MD panel
⑨ MD recording mode select button (REC MODE/–SP/LP, ▲)
⑩ CD edit button (CD EDIT, ▼)
⑪ Memory button (MEMORY)
⑫ Tuning mode select button (TUNE MODE)
⑬ Volume control (VOLUME)
⑭ CD panel
⑮ Remote control signal sensor
⑯ Display/character select button (DISPLAY, CHARA)
⑰ Clock/timer button (CLOCK/TIMER)
⑱ Function select button (SELECTOR)
⑲ Play/record timer button (◴, ◴PLAY/◴REC)
⑳ CD tray open/close button (⏏, CD)
㉑ Standby/on switch (⏻/I)
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.
Standby/on indicator
When the unit is connected to the AC mains supply, this indicator lights red in standby mode and lights green when the unit is turned on.
㉒ Power saving mode button (MODE)
㉓ CD/MD panel open/close buttons (PANEL OPEN/CLOSE)
㉔ MD eject button (⏏, MD)
㉕ Stop button (■)
㉖ CD play/pause button (▶/❚❚, CD)
㉗ Disc skip/search, tune, time adjust buttons (⏮, ∨, ⏭, ∧)
㉘ MD play/pause button (▶/❚❚, MD)
㉙ Tuner band button (TUNER/BAND)
㉚ Display



Front panel controls

A Remote control

Buttons such as ㉑ function in the same way as the controls on the main unit.

㉛ **Sleep timer button (SLEEP)**
㉜ **Auto power-off button (AUTO OFF)**
㉝ **Numbered buttons (0–9, ≥10)**
㉞ **Program cancel mode button (CANCEL)**
㉟ **Program button (PROGRAM)**
㊱ **Disc skip/search buttons (⏮/◀◀, ▶▶/⏭)**
㊲ **Disc pause button (⏸)**
㊳ **CD play button (▶, CD)**
㊴ **MD recording mode select button (REC MODE)**
㊵ **Bass/treble control buttons (BASS −, +, TREBLE −, +)**
㊶ **Muting button (MUTING)**
㊷ **Display select button (DISPLAY)**
㊸ **Dimmer button (DIMMER)**
㊹ **Repeat button (REPEAT)**
㊺ **Random button (RANDOM)**
㊻ **FM mode button (FM MODE)**
㊼ **MD play button (▶, MD)**
㊽ **MD record buttons (REC)**
㊾ **Sound virtualizer button (SOUND VIRTUALIZER)**
㊿ **Loudness button (LOUDNESS)**

B Saving power in standby mode

Set the unit to reduce energy consumption in standby mode.

1 **Press [⏻/I] to turn the unit on.**

2 **Press [MODE].**
The current mode is displayed.

3 **Within 2 seconds**
Press [MODE] to select "ECO".
Each time you press the button:
NORMAL (off) ⇄ ECO (on)

ECO: The clock is not displayed in standby mode.
Power consumption—Approx. 0.8 W
NORMAL: The clock is displayed in standby mode.
Power consumption—Approx. 8.5 W

The standby/on indicator lights in both modes.

The mode can be switched to ECO when the unit is off but it can not be switched back to NORMAL.

8 Operation Check 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

Warning :-

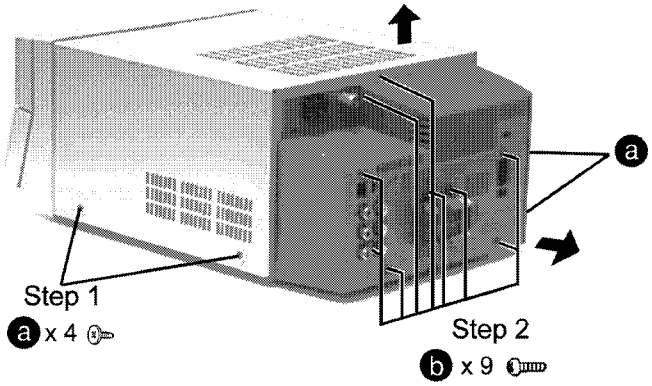
This product uses a laser diode. Refer to caution statement Precaution of Laser Diode.

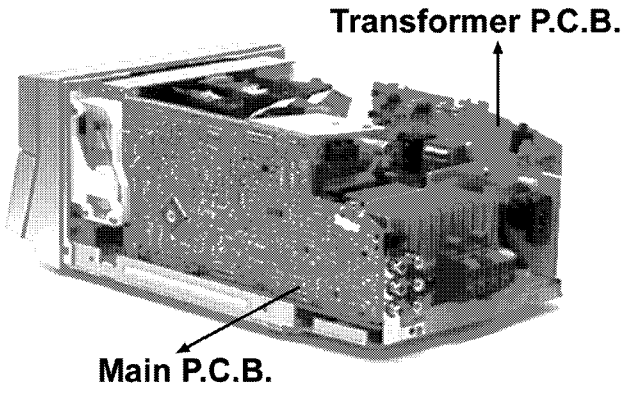
ACHTUNG :-

- Die Lasereinheit nicht zerlegen.
- Die Lasereinheit darf nur gegen eine vom Hertsteller spezifizierte Einheit ausgetauscht werden.

8.1. Checking Procedure for Each Major P.C.B.

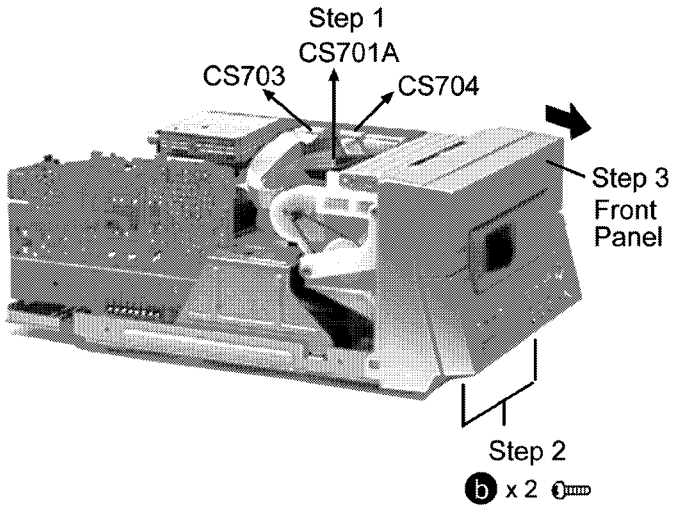
8.1.1. Checking for the Transformer P.C.B. and Main P.C.B.





- Check the Transformer P.C.B. and Main P.C.B. as shown.

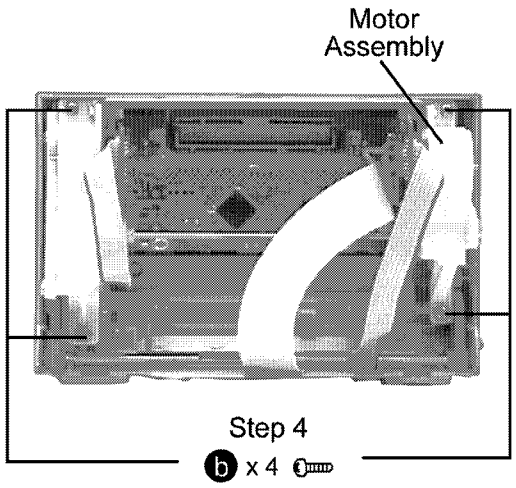
8.1.2. Checking for the Panel P.C.B., CD Loding P.C.B., MD Loding P.C.B. and Tact Switch P.C.B.



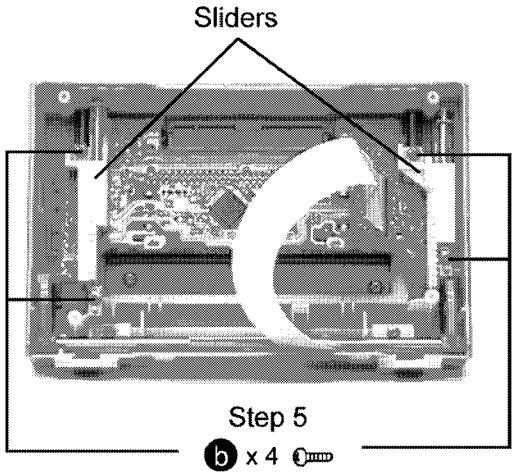
Step 1 Disconnect CS701A, CS703 and CS704.

Step 2 Unscrew all the screws.

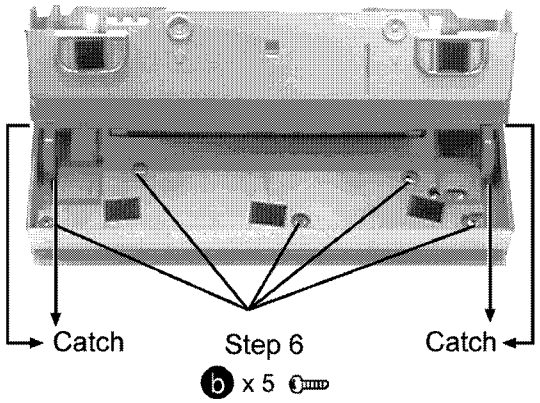
Step 3 Remove the front panel in the direction of arrow shown.



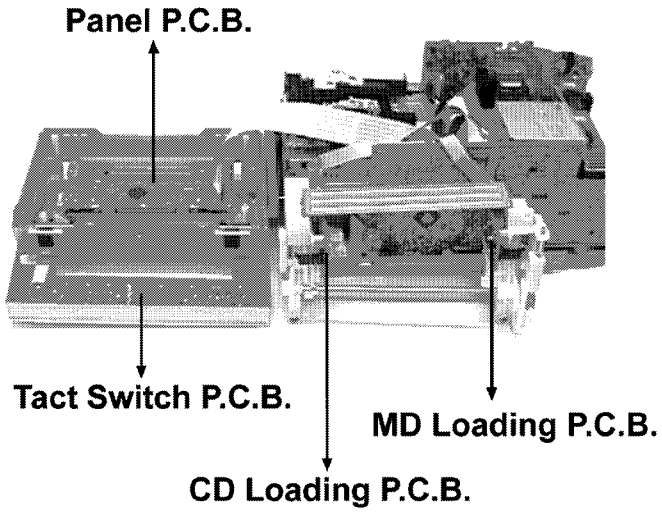
Step 4 Unscrew all the screws and remove the Motor Assembly.



Step 5 Unscrew all the screws and remove the Sliders.

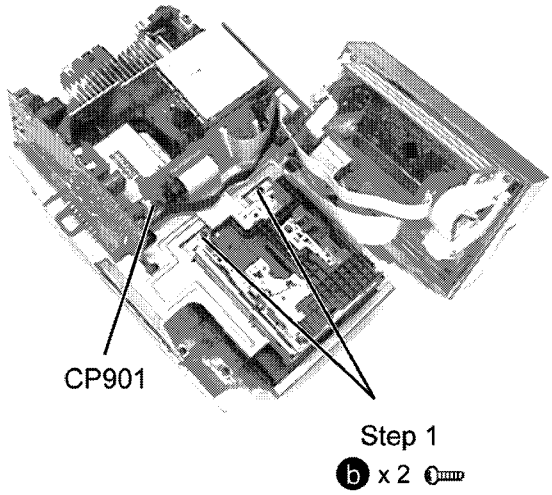


Step 5 Unscrew all the screws and release the catches.

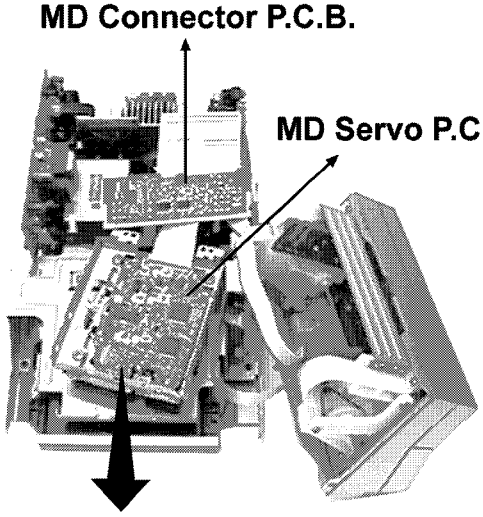


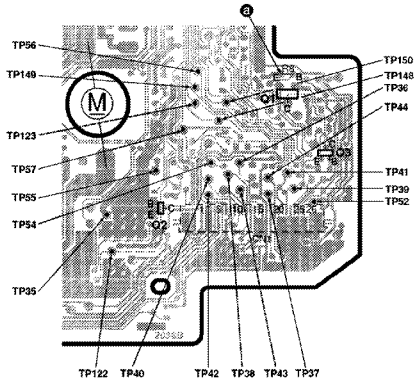
- Reconnect all the connectors.
- Check the Panel P.C.B., CD Loding P.C.B., MD Loding P.C.B. and Tact Switch P.C.B. as shown.

8.1.3. Checking for the MD Servo P.C.B. and MD Connector P.C.B.



Step 1 Unscrew all the screws and disconnect the connector (CP901).



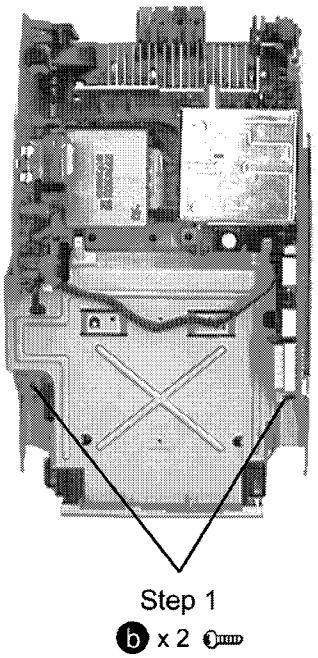


Pin No. of IC1	Test point	Pin No. of IC1	Test point
2PIN	Left side of R8 (ⓐ)	32PIN	TP52
5PIN	TP54	36PIN	Equivalent for pin 16 of IC3
11PIN	TP55	37PIN	TP35
16PIN	TP57	38PIN	TP44
21PIN	TP56	39PIN	TP37
26PIN	TP36	40PIN	TP38
27PIN	TP150	41PIN	TP43
28PIN	TP149	44PIN	TP42
29PIN	TP148	45PIN	TP40
30PIN	TP123	46PIN	TP39
31PIN	TP122	47PIN	TP41

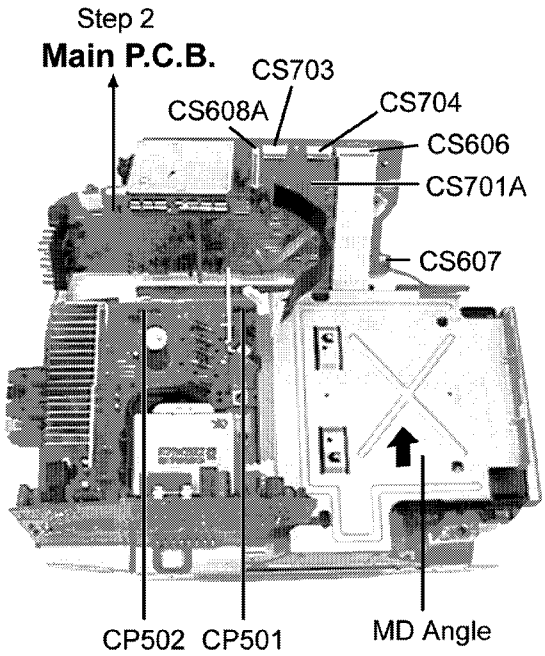
(The waveforms are noted on the schematic diagram.)

- Reconnect the connector.
- Check the MD Servo P.C.B. and MD Connector P.C.B. as shown.
- When checking the IC1 on the MD Servo P.C.B., it can be measured with test point on the MD Servo P.C.B.

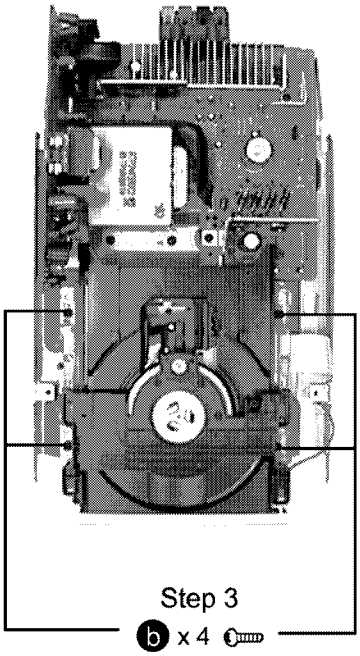
8.1.4. Checking for the CD Servo P.C.B.



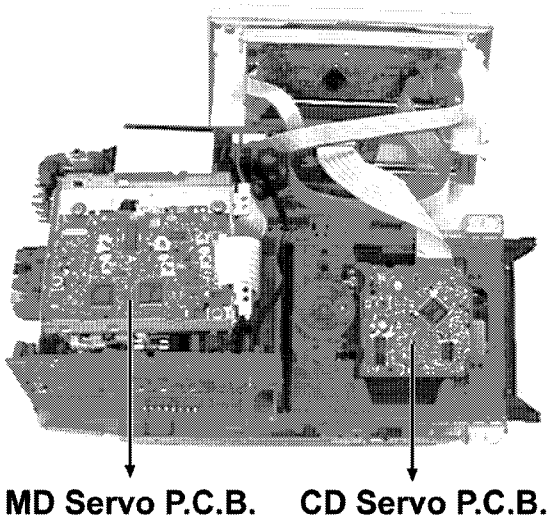
Step 1 Unscrew all the screws.



Step 2 Lift up the Main P.C.B., disconnect all connectors as shown and lift up the MD Angle in the direction of arrow shown.

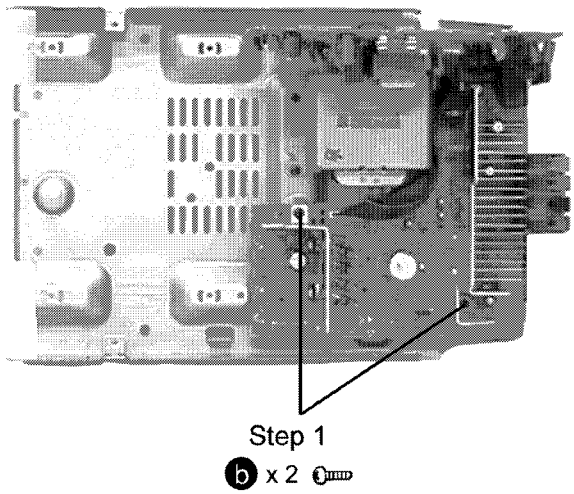


Step 3 Unscrew all the screws.

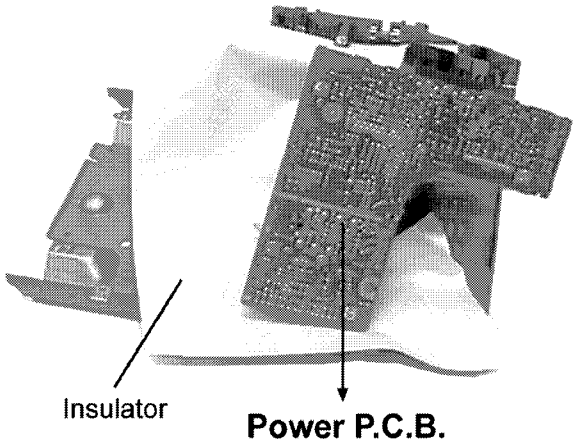


- Reconnect all the connectors.
- Check the CD Servo P.C.B. as shown.

8.1.5. Checking for the Power P.C.B.



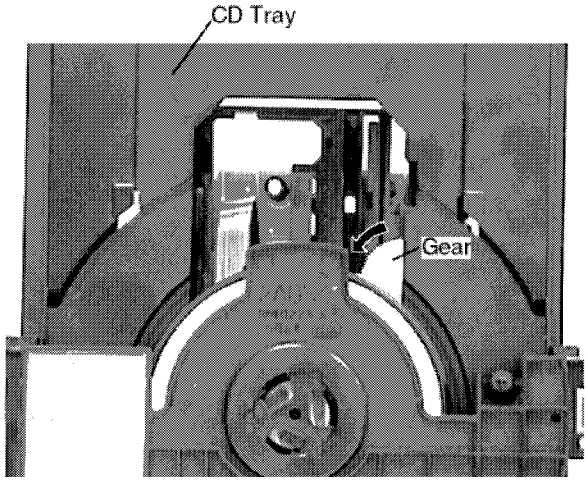
Step 2 Unscrew all the screws.



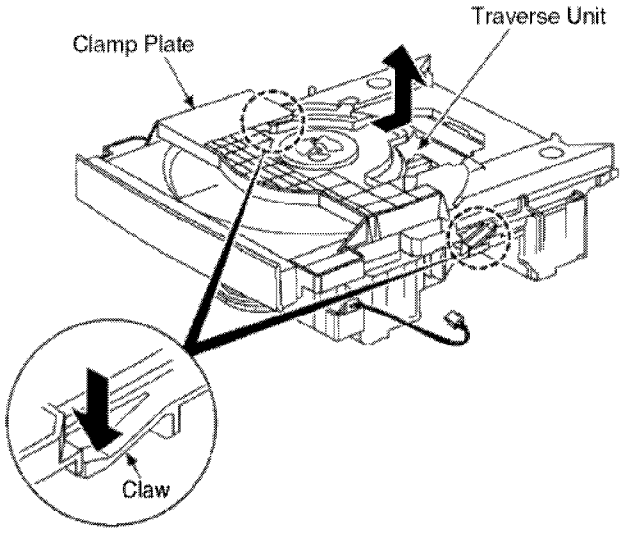
- Check the Power P.C.B. as shown.

8.2. Disassembly and Assembly of the Disc Tray and CD Traverse Unit

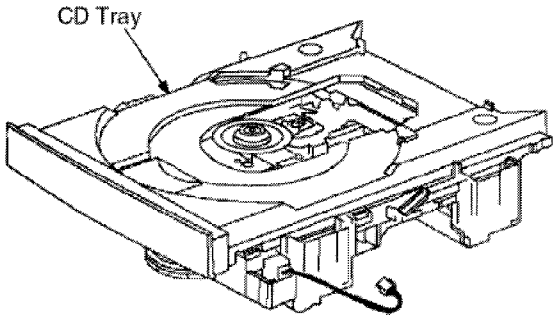
8.2.1. Disassembly of the Disc Tray.



Step 1 Turn the gear counter clock wise until the CD Tray starts to move out.

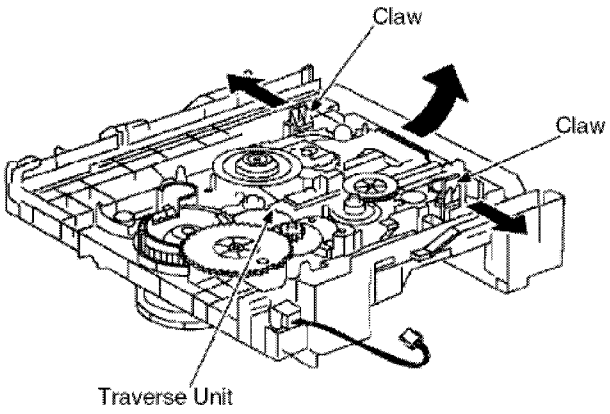


Step 2 Release the 2 claws and remove the clamp plate in the direction of the arrow.

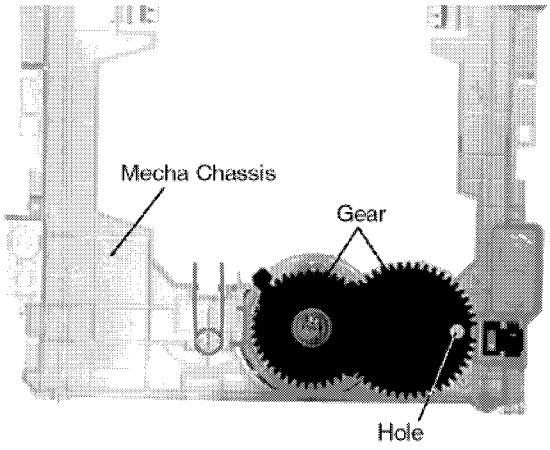


Step 3 Lift up the CD Tray to remove it.

8.2.2. Disassembly of the CD Traverse Unit.

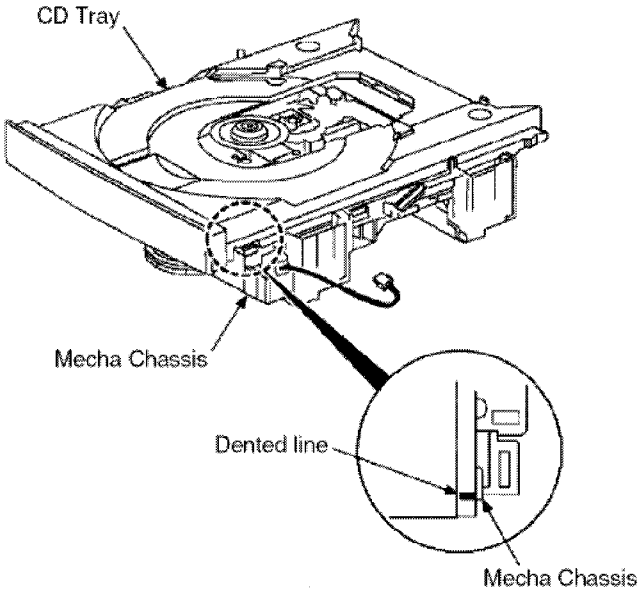


Step 1 Release the 2 claws and remove the CD Traverse Unit in the direction of the arrow.



NOTE :

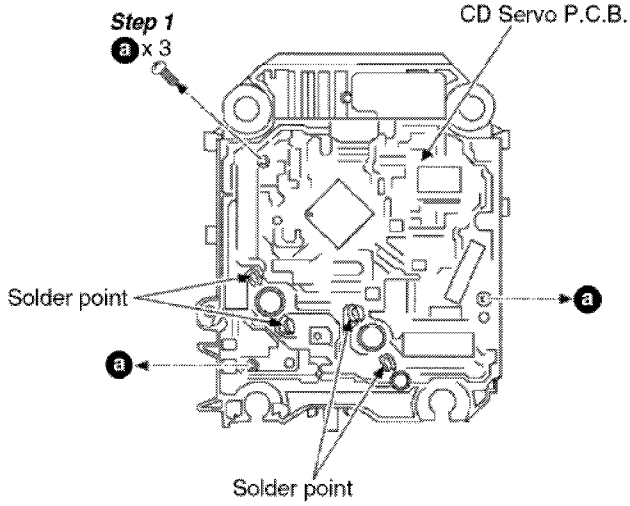
1. Follow the reverse procedure to replace the CD Traverse Unit and CD Tray.
2. Make sure that the 2 gear is in position shown above and the hole on the right gear is align with the hole below it when replacing the CD Traverse Unit and CD Tray.



NOTE : When replacing the CD Tray, make sure the Dented line is at the position as shown.

8.3. Main Component Replacement Procedure

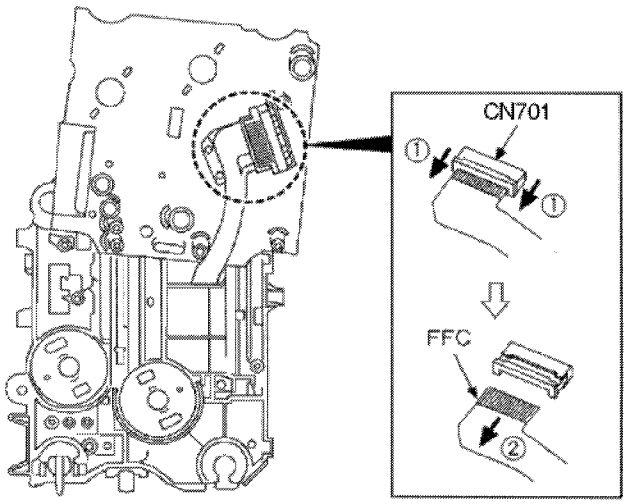
8.3.1. Replacement of the CD Servo P.C.B. and Optical Pick-up Unit.

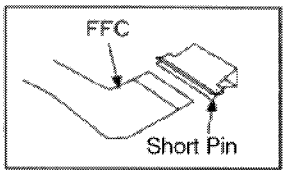


Step 2 Desolder the 4 legs of 2 motors and flip over the CD Servo P.C.B.

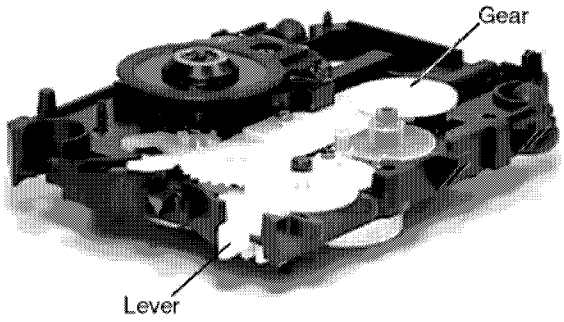
Step 3 Remove the flexible cable at CN701.

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

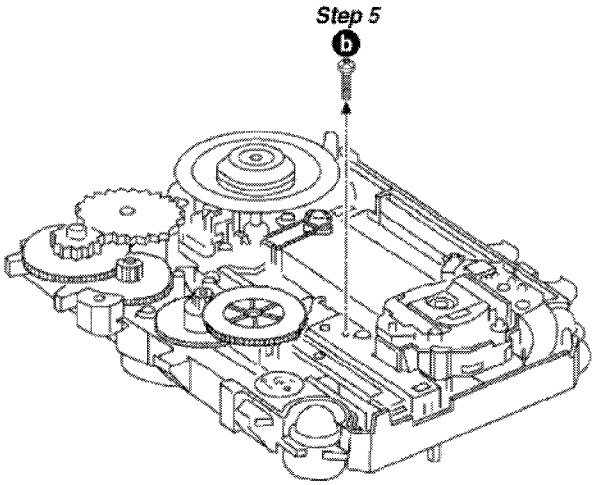


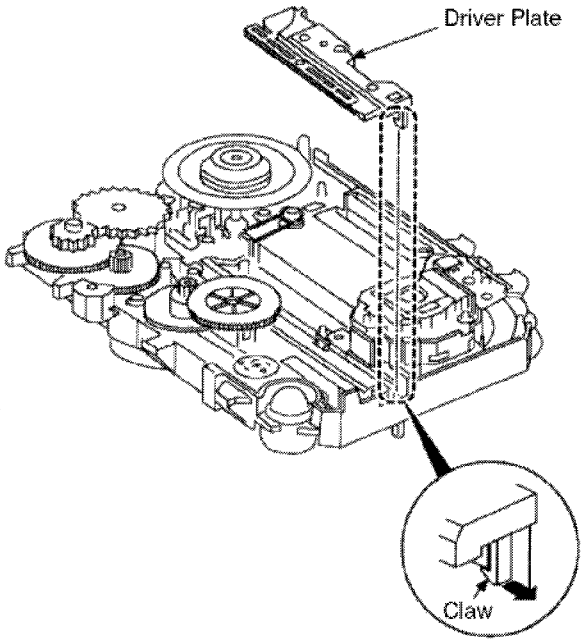


NOTE : Insert a short pin into the flexible cable.

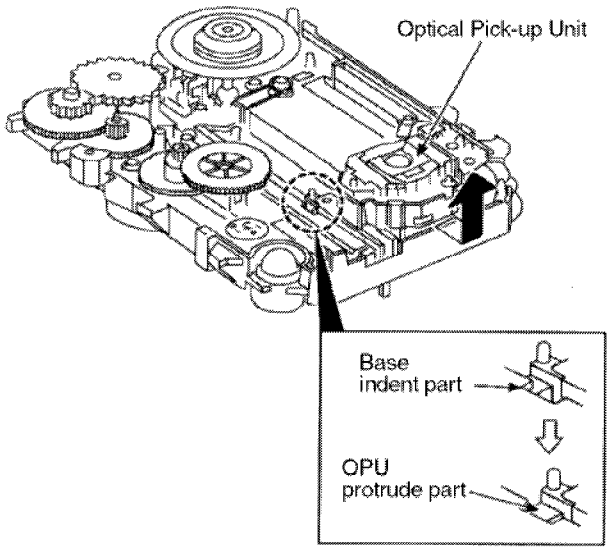


Step 4 Push the lever in and turn the gear clock wise fully.

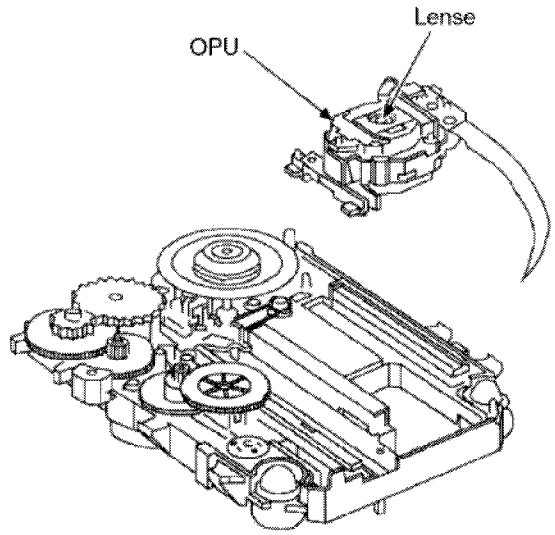




Step 6 Release the claw and remove the Driver Plate.



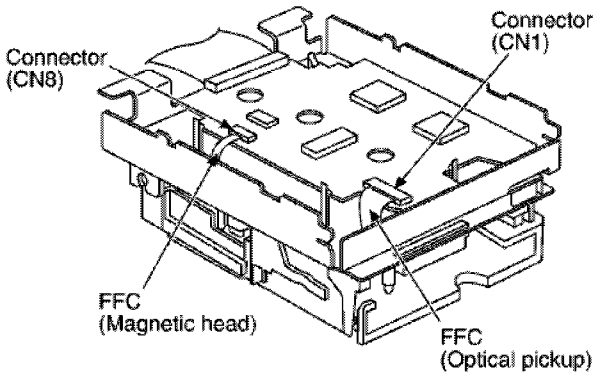
Step 7 Slide out the Optical Pick-up Unit from the indent opening.



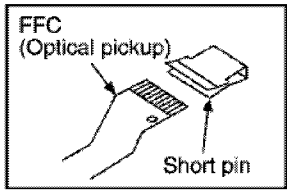
NOTE : Do not touch the Lense on the OPU.

8.3.2. Replacement for the Magnetic Head and Optical Pick-up.

Step 1 Remove the 2 FFCs from the connector.

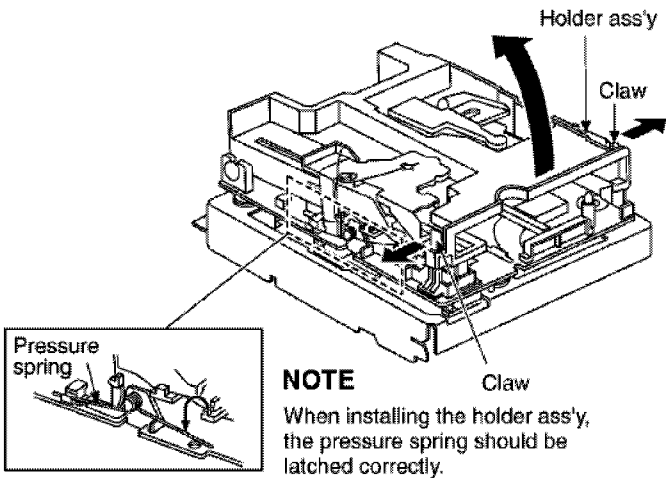


NOTE
Insert a short pin into the traverse unit FFC board.
(Refer to "Handling Precautions for Traverse deck".)



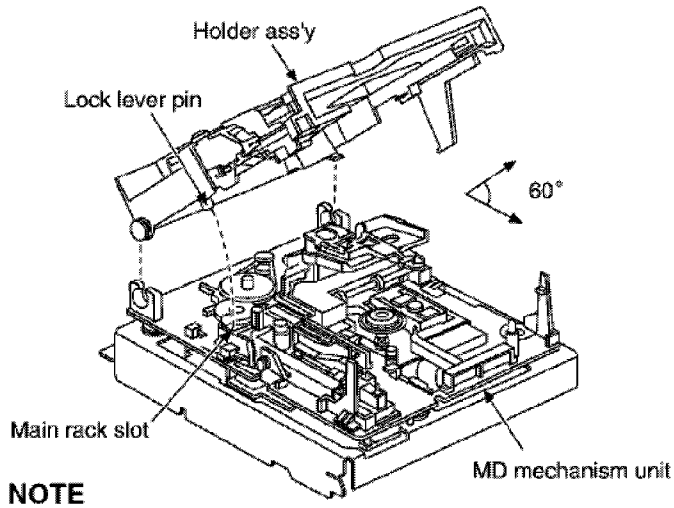
Step 2 Remove the pressure spring from latch.

Step 3 Release the 2 claws and then lift up the holder ass'y.



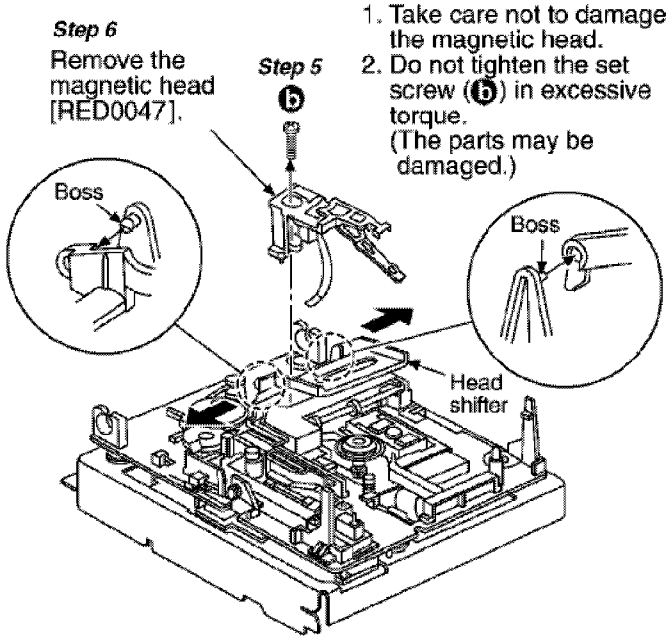
NOTE
When installing the holder ass'y, the pressure spring should be latched correctly.

Step 4 Set the holder ass'y and MD mechanism unit at a 60 degree angle and then pull out the holder ass'y.

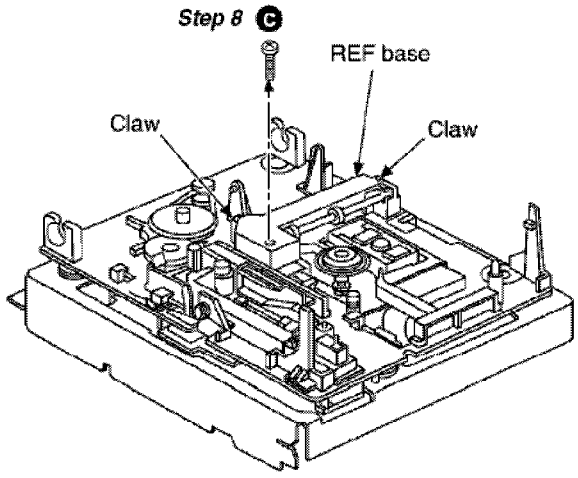


NOTE
When installing the holder ass'y, align the lock lever pin with the main rack slot.

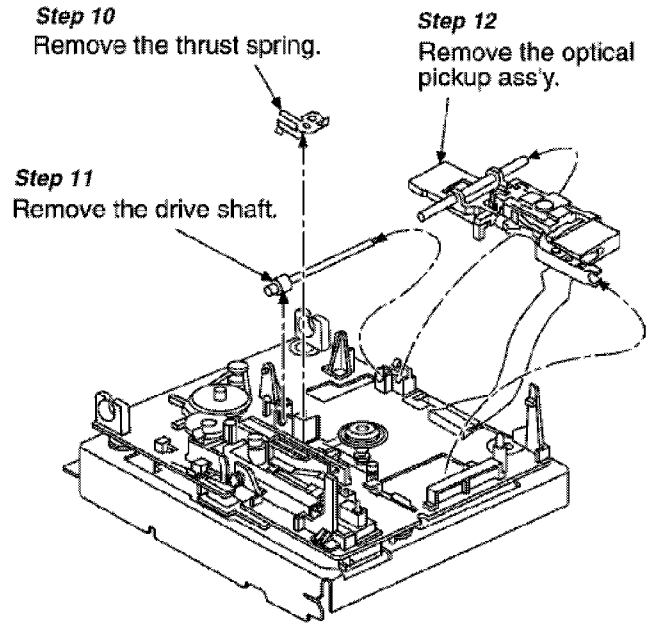
NOTE
1. Take care not to damage the magnetic head.
2. Do not tighten the set screw (Ⓑ) in excessive torque.
(The parts may be damaged.)

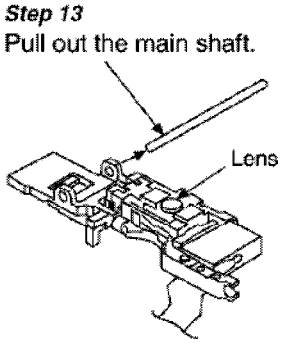


Step 7 Spread the lugs of head shifter and then release the lugs from boss.



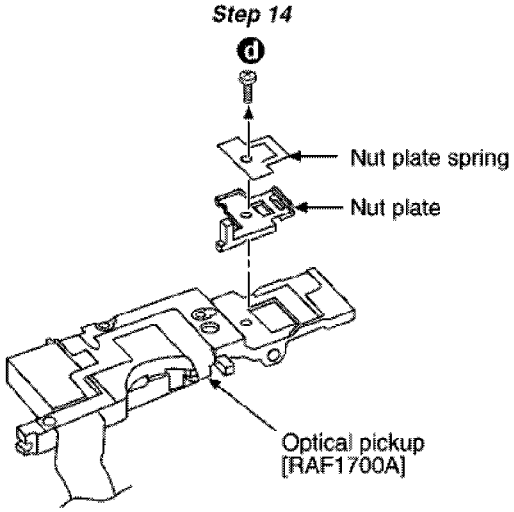
Step 9 Release the 2 claws and then remove the REF base.





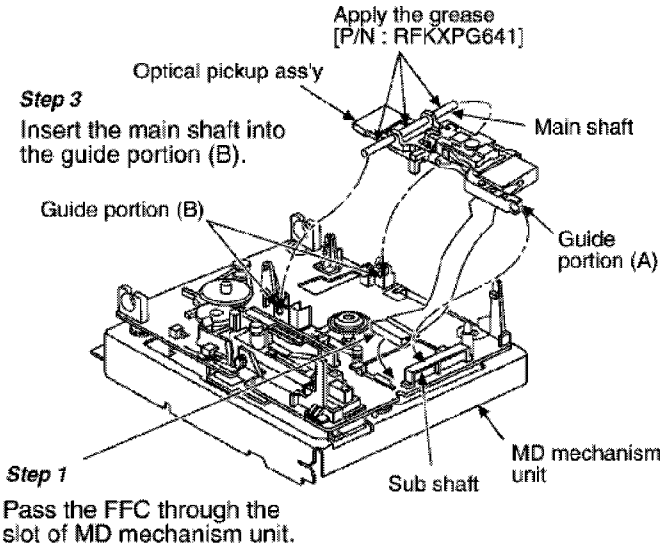
NOTE

1. Use care to prevent damage the optical pickup, due to the precision construction.
2. Do not apply the grease on the lens of optical pickup.
3. Do not touch the lens of the optical pickup.



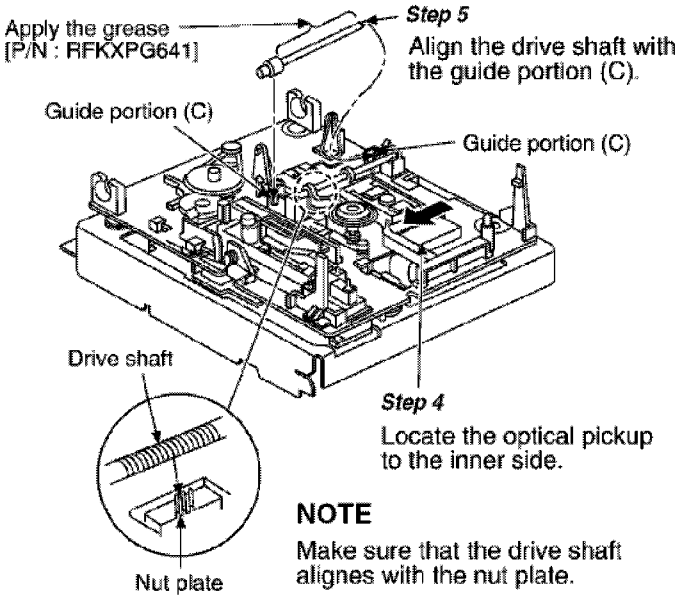
Step 15 Remove the nut plate spring and nut plate.

Notice for installing the optical pickup



Step 2 Align the guide portion (A) of optical pickup with the sub shaft.

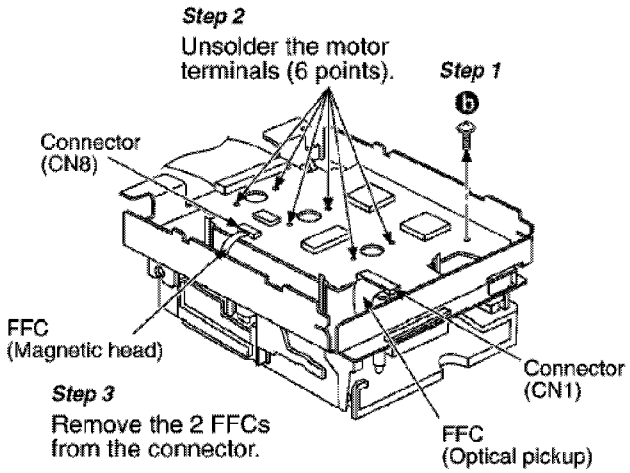
Note : Take care not to bend the FFC.



NOTE

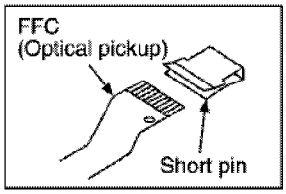
Make sure that the drive shaft alignes with the nut plate.

8.3.3. Replacement for the Belt and Loading Motor Assembly

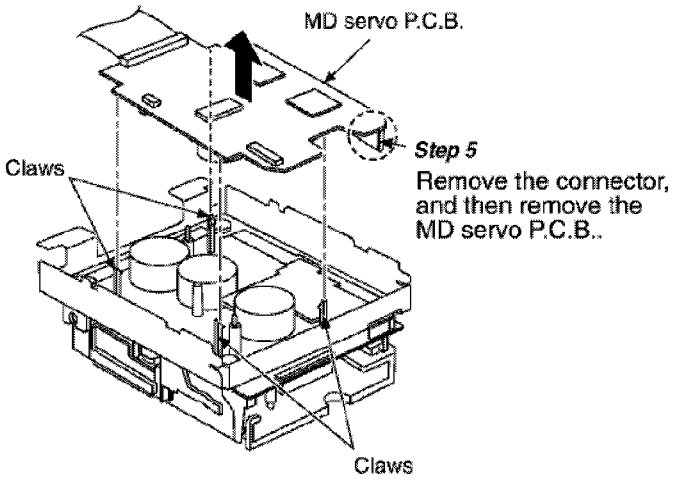


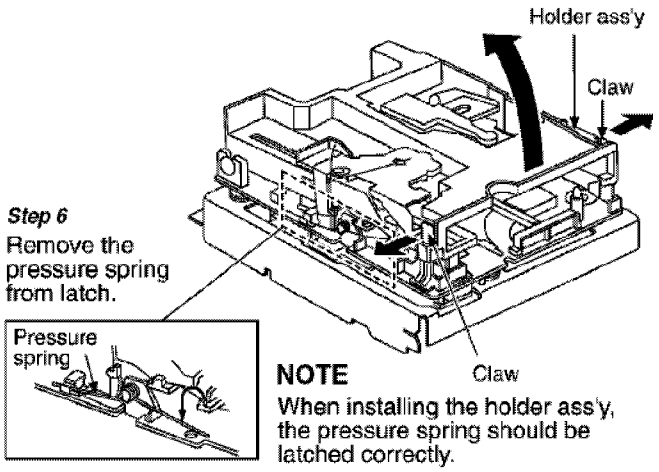
NOTE

Insert a short pin into the traverse unit FFC borad.
(Refer to "Handling Precautions for Traverse deck".)



Step 4 Release the 4 claws.

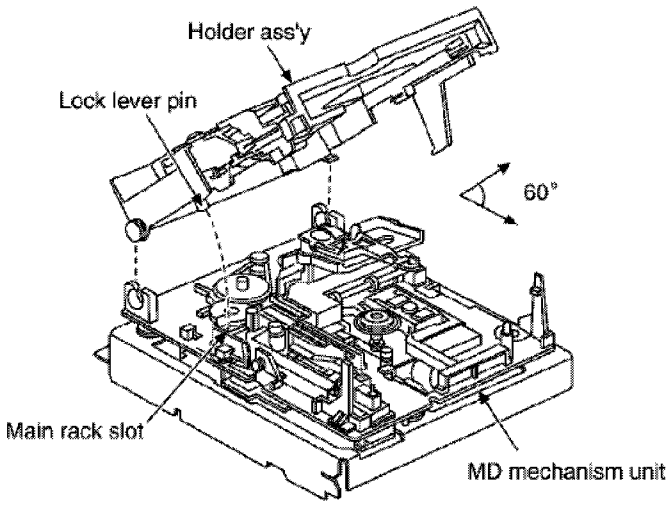




NOTE

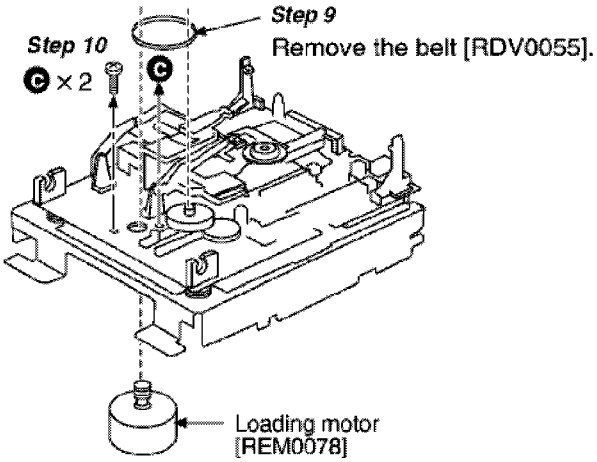
When installing the holder ass'y, the pressure spring should be latched correctly.

Step 7 Release the 2 claws and then lift up the holder ass'y.

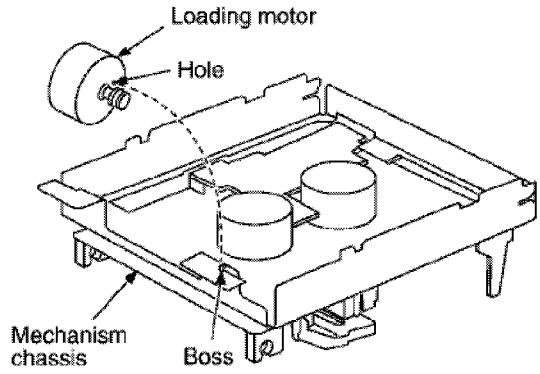


Note : When installing the holder ass'y, align the lock lever pin with the main rack slot.

Step 8 Set the holder ass'y and MD mechanism unit at a 60 degree angle, and then pull out the holder ass'y.



Notice for installing the loading motor



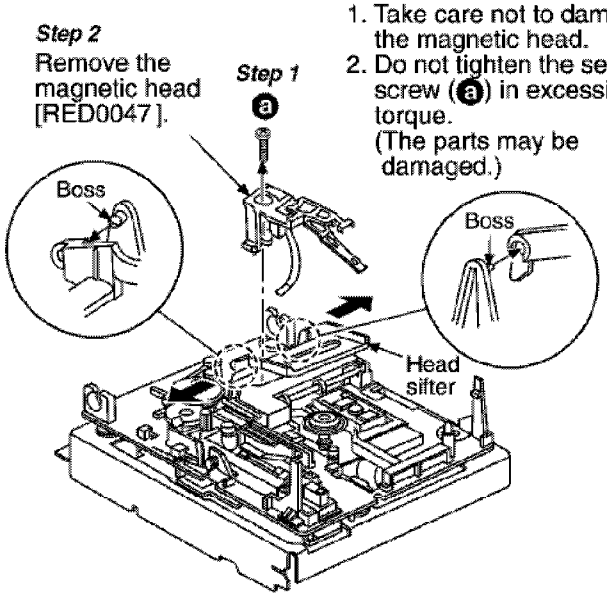
- Align the hole of loading motor with the boss of mechanism chassis and then install the loading motor.

8.3.4. Replacement for the Traverse Motor Assembly

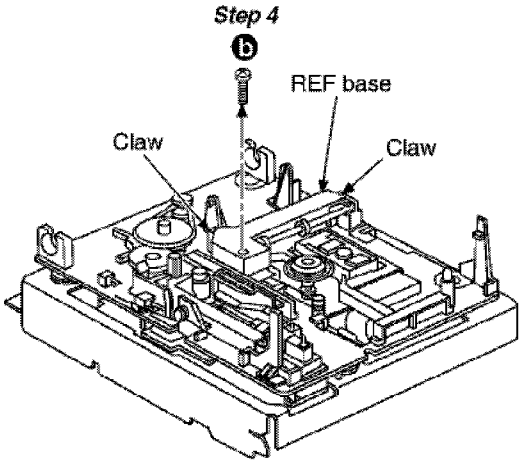
- Follow **Step 1** ~ **Step 8** of item 1.3.4 in Main Component Replacement Procedures.

NOTE

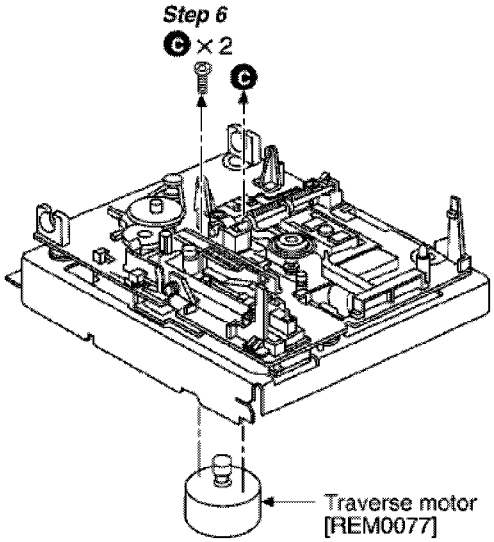
1. Take care not to damage the magnetic head.
2. Do not tighten the set screw (ⓐ) in excessive torque. (The parts may be damaged.)



Step 3 Spread the lugs of head shifter and then release the lugs from boss.

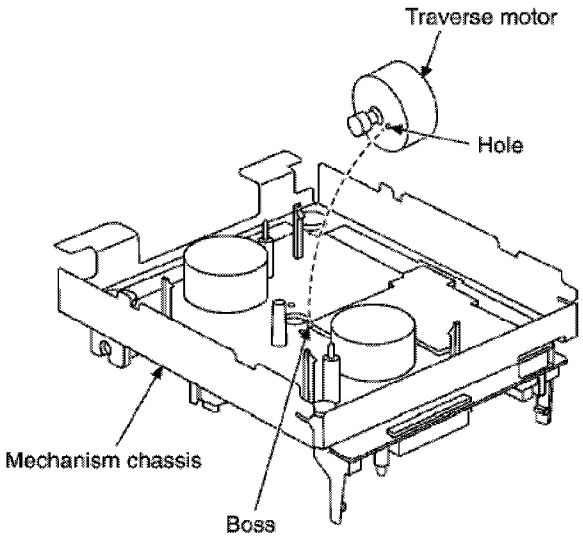


Step 5 Release the 2 claws and then remove the REF base.



Notice for installing the traverse motor

- Align the hole of traverse motor with the boss of mechanism chassis and then install the traverse motor.



9 Self-Diagnostic Display Function

This unit is equipped with a self-diagnostic function which, in the event of a malfunction, automatucally display a code indication the nature of the malfunction. Use this self-diagnostic function when servicing the unit.

9.1. Entering self-diagnostic Mode

1. Turn the power on.
2. Press CD play button with no CD, cassette or MD loaded.
3. Press and hold the STOP button for at least 2 seconds, and while still pressing the STOP button, press the Forward Skip/Search button for at least 2 seconds. The unit enters Self-Diagnostic Mode and display “TEST”.Then an error code (e.g. H01) is displayed, if any. In the case of no error, “TEST” is displayed on FL.
4. If more than 1 error exists, the display will sequentially show the respective error codes each time the STOP button is pressed.
5. Press "Stop" to indicate Error code.ve).

   ǂ If several problem exist, error code will change each time when "Stop" is pressed.

   (e.g. F15 → H15 → F26 ..... etc.)

9.2. Clearing all error code

1. Press and hold STOP button for 5 seconds.
2. FL indicator shows “CLEAR” for 1 second and change to “TEST”.

9.3. Cancelling the Self-Diagnostic mode

1. Press the “Power” button to turn off the system. Press the “Power” button again to turn on the system.

9.4. Description of error code

9.4.1. Power Amplifier Failure (F76)

When power amplifier output failure for power supply failure.

9.4.2. Error detection for CD Block

Error Code	Problem Condition	Possible Cause
F15	CD does not function	REST SW detection error. This error occurs when the Optical Pick Up REST SW (S701) is not detected within the specified time. (about 8 seconds).
H15	The CD tray closes	CD disc tray detect switch NG. (Check and replace)
F26	CD does not function	Transmission error between CD servo LSI and micon. This error occurs between CD servo LSI and micon. This error occurs when the POWER is ON for the CD block and an error is detected after the transmission hasstarted.

9.4.3. Error dection code for MD block

Error Code	Problem Condition	Possible Cause
MD F15	Interval till MD starts playing is too long	Pickup home position sense switch (S8) is defective; check and replace if neccessary.
MD F26	MD is loaded but cannot be played	Communication error between the servo processor IC and the microprocessor IC (system control). Check if the flexible circuit board is disconnected. Displayed when the disc is scratched too.
F22	MD cannot be loaded	MD loading motor or MD loading mechanism error; check and replace.
F28	MD cannot be loaded	Confirm that the disc is not catching on anything. The connection (flexible circuit board or connector cable) between the MD unit and the MD servo circuit board is disconnected or damaged; check and replace ifneccessary. The MD unit may be malfunctioning; replace it.
F29	MD cannot be ejected	Confirm that the disc is not catching anything. The connection (flexible circuit board or connector cable) between the MD unit and the MD servo circuit board is disconnected or damaged; check and replace if neccessary. TheMD unit may be malfunctioning; replace it.

10 Measurement and Adjustment

10.1. Laser Power Adjustment

Adjust each laser power : read power for reading (play) and write power for writing (record).

10.1.1. Necessary Instruments

- Laser power meter (Advantest TQ8210 or compatible meter)
- Test disc (Pre-mastered disc RFKV0006 or RFKV0014)
- Recordable disc available on sales root (with music recorded)
- Insulated driver for adjustment such as a ceramic driver
- Jitter meter

10.1.2. Set the Unit to the Adjustment Mode

1. Perform the item "8.1.3. Checking for the MD Servo P.C.B. and MD Connector P.C.B." in "Operation Check and Main Component Replacement Procedures".
2. Turn the power on.
3. Press CD play button with no CD, cassette or MD loaded.
4. While pressing STOP button on the unit, press 4 and 7 on the remote control. The unit enters doctor mode for adjustment.

Cautions

1. **About handling the MD unit**
   - The magnetic head is a precision unit and is very fragile. Do not deform it.
   - Laser diode in the optical pickup may be destroyed by the staticelectricity generated in your clothes or body. Be especially careful with the static electricity.
   - The optical pickup is structured extremely precisely. Do not subject to the strong impact or shock. Do not touch the lens.
2. **About handling the magnetic head**

   When replacing the magnetic head, do not tighten the mounting screw (RHD17022) too firmly. If the screw is tightened too much to deform the resin, the position of the head is moved, and this affects its recording operation.

   Recommended torque for mounting screw: 700 g cm +/- 100 g cm

   Reference: This is the same force as using a screwdriver with a 15-mm diameter grip, you fasten the screw naturally with your thumb and index finger.
3. **About the driver for adjusting laser power**

   Use only insulated driver such as a ceramic driver. With the metal driver, it is not possible to adjust properly because of the induction noise. Also, if it short-circuits with the chassis, it may destroy or damage the laser diode.

   Recommended driver: VESSEL 9000 1.8 -30 (Ceramic driver)

Cautions on optical pickup:

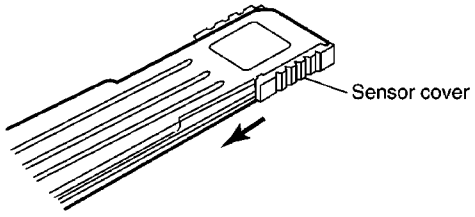
- The optical pickup and the magnetic head are structured precisely; therefore, they are very fragile. Be careful not to touch them with the edge of the laser power meter.
- The sensor of the laser power meter is a very fine part. Be careful not to touch it to the optical pickup lens.
- The focus point of the laser reaches to 356°F. Therefore, avoid adjusting using laser power for a long time because the sensor of the laser power meter may be burned.
- Do not allow the write power to even momentarily reach or exceed 7.5 mW. Doing so will result in damage to the optical pickup.
- Do not set the unit to the laser power adjustment mode with the MD loaded. Doing so may result in damage to the MD.

10.1.3. Adjustment Procedure

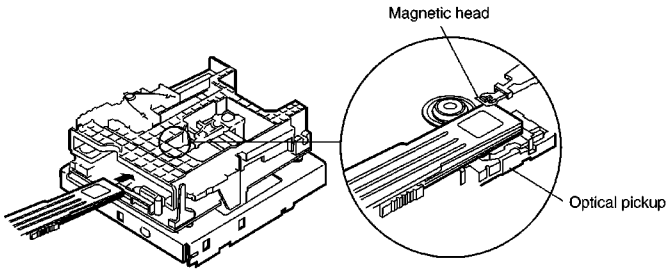
1. Enter "1" using numeric pad on the remote control with no MD loaded.

   → FL display "ROUGH ADJ".

   (Read power adjustment mode)
2. Slide sensor cover on the laser power meter. (Fig. 1)

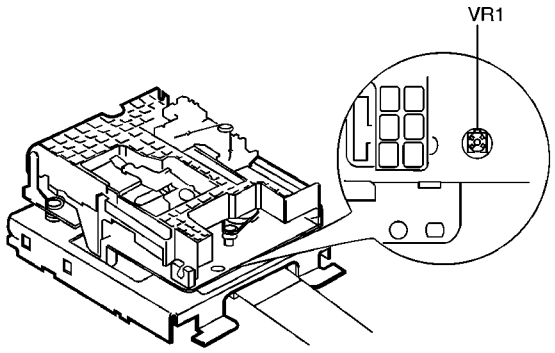


3. Place the sensor on the laser power meter right on top of the optical pickup. (Fig. 2)



4. Confirm that the reading of the laser power meter is within the standard value. If the value is out of the range, adjust VR1. (Fig. 3)

Standard value (read power) : 600µW ~ 650µW



Cautions

Proceeding on to the subsequent adjustment procedure with the read power exceeding 650µW will result in damage to the optical pickup.

5. Press "ENTER" button on the unit.

   → FL display "ROUGH ADJ" flash for 3 times and display the next indication.

   → FL display "FINE ADJ"

   (Write power adjustment mode)

6. Adjust VR1 until reading of the laser power meter is within the standard value. (Fig. 3)

   Standard value (write power) : 6.8mW ± 0.1mW

   Cautions

   Do not allow the write power to reach or exceed 7.5mW, even for a moment. Doing so will result in damage to the optical pickup.

7. Press "ENTER" button on the unit.

   → FL display "FINE ADJ" flash for 3 times and display the next indication.

   → FL display "ROM-D.CHECK"

   (ROM data check mode)

8. Confirm that the reading of the laser power meter is within the standard value.

   Standard value(ROM data laser power) : 320µW~380µ

9. Press "ENTER" button on the unit.

   → FL display "RAM-D.CHECK"

   (RAM data check mode)

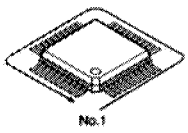
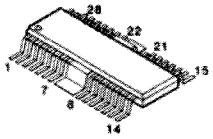
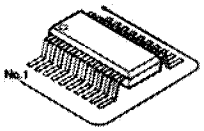
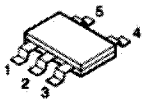
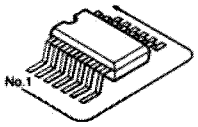
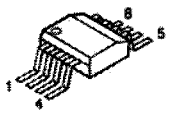
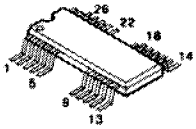
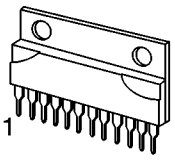
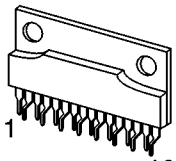
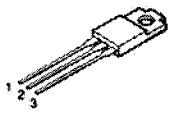
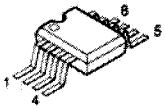
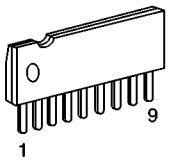
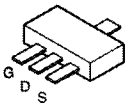
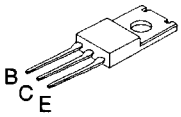
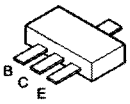
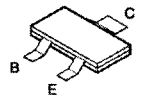
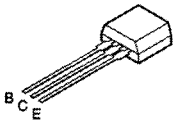
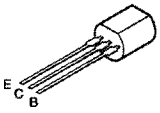
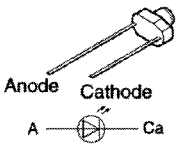
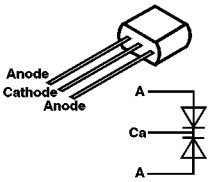
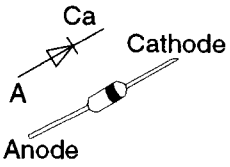
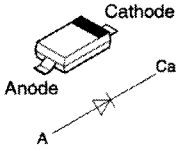
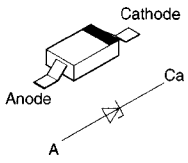
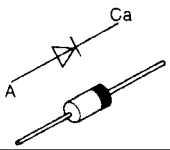
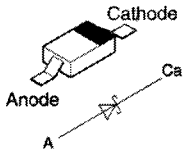
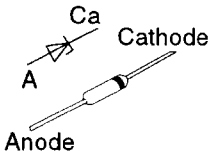
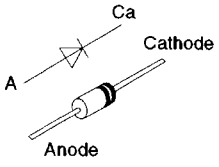
10. Confirm that the reading of the laser power meter is within the standard value.

    Standard value(RAM data laser power) : 620µW~740µ

11. Press "EJECT" to cancel adjustment mode, then press "POWER" button to turn off the power.

Note : If the value in step 8 and step 10 is out of standard value, turn off the power and readjust from the beginning.

11 Illustration of IC's, Transistors and Diodes

 AN8772FHQ (48P) MN66616RA4 (100P) MN662790RSC (80P) MN101D03DAA1 (80P) M9202-12BDR3 (64P) MN101C49KAA2 (100P)		AN8814SB-E1 BA5948FPE2 		 AK4518VF-E2 (24P) LB1830MS-TLM (10P) BU4052BCF-E2 (16P) BH3857AFV-E2 (40P) LC72721NMTLM (20P) AN8839NSBE2 (28P)	RN5RG33AA-TL RN5RZ26BA-TR 
 TC74HCT00AFL (14P) TC74HCT7007A (14P) TC4050BF (16P)		TC7W04FTE12L 	M51V4400D7FS 	AN7135 	AN7194K-LD 
UPC29M33HF 	BA4558FE2 	BA6283N 	2SJ278MYTR 2SK1764KYTR 	2SB1566E 	2SB1121ST-TD 
DTC114EUA106 DTA143XUA106 2SA1576A106R DTC114YUA106 	2SB1295-6-TB DTC114YETL 2SB1462STX 2SA1037AKSTX 2SC4081106R DTA144EUA106 DTC144EUA106 DTC143EUA106 DTC143XKA146 DTA143XKA146		2SC1740SRTA RVTDTA114EST 2SC1740SLNST RVTDTA143TST		2SD592ARTA 2SA952LTA 2SB621AQRSTA
LNJ301MPUJAD 	SML72420C 		RVD1SS133TA 1SS291TA RB441Q40T77		SC80209TE12R 1SS355TE17 UDZSTE175R6B 1SS380TE-17 UDZTE1716B
MA8056MTX 	RL1N4003N02 1D3E 	MA728TX 	MTZJ7R5ATA MTZJ30BTA 	SB360L6508 	

12 Terminal Function of IC´s

12.1. IC1 (AN8772FHQ) : RF AMP

Pin No.	Mark	I/O	Function
1	CENVD	—	D signal det. capacitor connection terminal
2	LDO	O	Laser amp output terminal
3	APCPD	I	Photo diode light quantity det. input terminal
4	LD IN	I	Laser amp reverse input terminal
5	APC REF	I	APC amp criterion voltage input terminal
6	TEMP IN	I	Temperature sensor amp input terminal
7	TEMP	O	Temperature sensor amp output terminal
8	ADIP	O	ADIP signal output terminal
9	TOFS	I	Tracking error offset adjustment terminal
10	TBAL	I	Tracking ballance adjustment terminal
11	TE	O	Tracking error signal output terminal
12	CRS IN	I	Track cross input terminal
13	TGAIN	I	Tracking gain adjustment input terminal
14	LNP	O	Lens position signal output terminal
15	AB GAIN	I	APP compensation signal gain adjustment terminal
16	FE	O	Focus error signal output terminal
17	AS GAIN	I	AS gain adjustment terminal
18	FBAL	I	Focus ballance adjustment terminal
19	AS/MON3T	O	AS/3TMON signal output terminal
20	CEA	I	3T envelope det. capacitor connection terminal
21	BDO/ TRCRS	O	BDO/Track cross signal output terminal
22	CBD O	O	BDO detection capacitor connection terminal

Pin No.	Mark	I/O	Function
23	OFT O	O	Off track detection signal output terminal
24	GND	—	GND terminal
25	OFT IN	I	Off track detection signal input terminal
26	VCC	I	Power supply terminal (+3V)
27	NRFDET/ OFTR	O	NRFDET/off track signal output terminal
28	NRFLD	I	Serial command latch signal input terminal
29	RF DATA	I	Serial command data signal input terminal
30	RFCK	I	Serial command clock input terminal
31	NRFSTBY	I	Standby control signal input terminal
32	OUT RF	O	EFM signal output terminal
33	CRF AGC	—	RFAGC capacitor connection terminal
34	EQ IN	I	EQ input terminal
35	ARFO	O	RF amp. output terminal
36	SVREF	I	Reference voltage input terminal
37	VREF	O	Reference voltage output terminal
38	RF1	I	RF1 signal input terminal
39	RF2	I	RF2 signal input terminal
40	F1	I	F1 signal input terminal
41	F2	I	F2 signal input terminal
42	CLPF1	—	APP compensation LPF capacitor connection terminal
43	CLPF2	—	RF equalizer adjustment resistor connection terminal
44 ~ 47	A ~ D	I	Beam A~D signal input terminal
48	CENVC	—	Beam E signal detection capacitor connection terminal

12.2. IC2 (AN8814SB-E1) : FOCUS/TRACKING COIL, SPINDLE/TRAVERSE MOTOR DRIVE

Pin No.	Mark	I/O	Function
1	REG B	—	3.3V external transistor control terminal (Not used, open)
2	REG M	—	3.3V regular output monitor terminal (Not used, connected to GND)
3	NC	—	Not used, open
4	OPO	O	Op-amp output terminal
5	OP-	O	Op-amp invert output terminal
6	OP+	O	Op-amp non-invert output terminal (Not used, connected to GND)
7	Vcc	I	Power supply terminal
8	1/2 PVcc2	O	1/2 PVcc output terminal 1 (Connected to GND through capacitor)
9	PVcc2	I	Power supply terminal for driver
10	PGND2	—	GND terminal
11	VO4-	O	Tracking coil driver output terminal
12	VO4+	O	Tracking coil driver output terminal
13	VO3-	O	Focus coil driver output terminal
14	VO3+	O	Focus coil driver output terminal
15	VO2-	O	Traverse motor drive output terminal
16	VO2+	O	Traverse motor drive output terminal
17	VO1-	O	Spindle motor drive output terminal
18	VO+	O	Spindle motor drive output terminal
19	PGND	—	GND terminal
20	PVcc1	I	Power supply terminal

Pin No.	Mark	I/O	Function
21	1/2 PVcc1	O	1/2 PVcc output terminal 1 (Connected to GND through capacitor)
22	VREF	I	Reference voltage input
23	IN1	I	Spindle motor drive input terminal
24	PC1	I	Power cut 1 input terminal
25	IN2	I	Traverse motor drive input terminal
26	PC2	I	Power cut 2 input terminal
27	IN3	I	Focus drive input terminal
28	IN4	I	Tracking drive input terminal

12.3. IC3 (MN66616RA4) : ATRAC ENCORDER/DECORDER, SERVO SIGNAL PROCESSOR

Pin No.	Mark	I/O	Function
1	ADIP	I	ADIP FM signal input terminal
2	LNP	I	Lens position signal input terminal
3	FE	I	Focus error signal input terminal
4	TE	I	Tracking error signal input terminal
5	AS	I	AS signal input terminal
6	DRMONI	I	Drive voltage monitor input terminal
7	BAT	I	Battery power supply terminal
8	AMONI	—	Servo analog monitor signal output (Not used, poen)
9	VREFI	I	Reference voltage input terminal
10	TOFS	O	Tracking off-set adjustment output terminal
11	FBAL	O	Focus balance adjustment output terminal
12	TBAL	O	Tracking balance adjustment output terminal
13	TGAIN	O	TE error gain adjustment output terminal
14	ASGAIN	O	Main beam amp gain adjustment output terminal
15	ABGAIN	O	APP adjustment output terminal
16	AV_{DD} 1	I	Power supply terminal
17	AV_{SS} 1	—	GND terminal
18	FOD	O	Focus drive signal output terminal
19	TRD	O	Tracking drive signal output terminal
20	TVD	O	Traverse motor drive signal ouutput terminal
21	SPD	O	Spindle motor drive signal output terminal
22	SPON	O	Drive IC spindle ON signal output terminal
23	TVON	O	Drive IC traverse ON signal output terminal
24	DV_{DD} 0	I	Power supply terminal
25	FG	I	FG input terminal
26	NRECT	O	Rec/Play switching signal output terminal
27	IVDD2	—	Power supply terminal for I/O pad
28	IVDD0	—	Power supply terminal for I/O pad
29	DVss0	—	GND terminal
30 ~ 32	RAD12 ~ RAD10	—	DRAM address output terminal (Not used, open)
33 ~ 42	RAD9 ~ RAD0	O	DRAM address output terminal
43 ~ 46	RDT3 ~ RDT0	I/O	DRAM data input/output terminal
47	NRAS	O	DRAM row address strobe output terminal
48	NCAS	O	DRAM culum address strobe output terminal
49	NWE	O	DRAM write enable output terminal
50	NRST	I	Reset signal input terminal
51	SELAD	I	MSP/MDA,I/F address select input terminal (“H” Address)
52	SSCK	I	MSP/MDA,I/F clock input terminal
53	SSDW	I	MSP/MDA,I/F write data input terminal
54	SSDR	O	MSP/MDA,I/F read data output terminal
55	MDISY	O	Leader synchronous signal output
56	SCTSY	O	ADIP synchronous noise output terminal
57	SGSYNC	O	Frame synchronous signal output terminal
58	DVDD1	I	Power supply terminal
59	IVDD1	—	Power supply terminal for I/O pad

Pin No.	Mark	I/O	Function
60	DVss1	—	GND terminal
61	FS384	O	384 Fs output terminal
62	SCL	O	Bit clock output terminal
63	SWS	O	Word clock output terminal
64	SDAP	O	Audio data output terminal
65	SDAR	I	Audio data input terminal
66	LRCK	I	CD word clock input terminal (Connected to GND)
67	BCK	I	CD bit clock input terminal (Connected to GND)
68	DATA	I	CD data input terminal (Connected to GND)
69	TX	O	Digital audio interface signal output terminal (Not used, open)
70	RX1	I	Digital audio interface signal 1 input terminal
71	RX2	I	Digital audio interface signal 2 input terminal
72	NREFM	—	EFM modulation inverted output (Not used, open)
73	REFM	O	EFM modulation output terminal
74	MONI3	—	Monitor signal output (Not used, open)
75	MONI2	—	Monitor signal output (Not used, open)
76	MONI1	—	Monitor signal output (Not used, open)
77	MONI0	—	Monitor signal output (Not used, open)
78	TS3	—	Not used, connected to GND
79	TS2	—	Not used, connected to GND
80	TS1	—	Not used, connected to GND
81	TS0	—	Not used, connected to GND
82	EXSYSCK	—	External system clock input terminal (Not used, connected to GND)
83	DVDD2	I	Power supply terminal
84	X1	I	Crystal oscillator input terminal (F=16.9344MHz)
85	X0	O	Crystal oscillator output terminal (F=16.9344MHz)
86	VDss2	—	GND terminal
87	RFDAT	O	RF serial data output terminal
88	RFCK	O	RF serial clock output terminal
89	NRFLD	O	RF serial load output terminal
90	TRCRS	I	Track cross input terminal
91	OFTR	I	Off-track signal input terminal
92	APCD	O	Laser power PWM output terminal
93	EXEFMCK	I	External FM clock input terminal (Not used, connected to GND through registor)
94	PEFM1	O	EFM loop filter output terminal
95	EEMIREF	I	EFM PLL reference current input terminal
96	EEMPLLF	O	EFM PLL filter output terminal
97	PEFMS	I	EFM signal input terminal
98	AV_{DD} 0	I	Power supply terminal
99	AVss0	—	GND terminal
100	TEFSEL	—	Not used, open

12.4. IC10 (MN101D03DAA1) : SYSTEM CONTROL

Pin No.	Mark	I/O	Function
1	DACRST	O	DAC reset signal output terminal to IC4 (“L”:Reset)
2	DEO	O	DE emphasis signal output terminal to IC4(“L”:DE emphases)
3	MUTE	—	AD-DA mute output terminal (Not used, open)
4	AD RST	O	Reset signal output terminal
5	NRFSTBY	O	Standby control signal output terminal (“L”:Standby)
6	PC	O	Transistor drive signal output terminal (“H”:Power ON)
7	MSP RST	O	MSP reset signal output terminal (“L”:Reset)
8	LOAD1	O	Loading motor drive 1 output terminal
9	LOAD0	O	Loading motor drive 0 output terminal
10	NEFMON	O	Magnetic head current output terminal
11	TEST01	O	Test signal output terminal (Not used, open)
12	TVSW	I	Traverse innermost detection switch signal input terminal
13	DISC IN	I	Disc detection switch signal input terminal
14	REFLECT	I	Reflection rate switch signal input terminal
15	LOAD SW0 (OPEN)	I	Loading mechanism position det. Switch 0 signal input terminal
16	LOAD SW1 (TRG)	I	Loading mechanism position det. Switch 1 signal input terminal
17	LOAD SW2 (PLAY/REC)	I	Loading mechanism position det. Switch 2 signal input terminal.
18	LOAD SW3 (PLAY)	I	Loading mechanism position det. Switch 3 signal input terminal
19	PROTECT	I	Erase prevention switch signal input terminal
20	MMOD	—	Connected to GND
21	RST	I	Reset signal input terminal (“L”:Reset)
22	UNIT TEST	I	Test signal input terminal (Open)
23	CS2	I	Test signal input terminal (Open)
24	SCTSY	I	Micro computer interrupt signal input terminal (SUBQ/ADIP simultaneous signal)
25	MDISY	I	Micro computer interrupt signal input terminal (MD simultaneous signal)
26	PANEL REQ	I	Panel I/F request signal input terminal
27 ~ 29	LED OUT1 ~ LED OUT3	O	Drive signal output terminal to LED DRIVE (“H”:LED ON)
30	TEST02	O	Test signal output terminal (Not used, open)
31	V_{DD} 2(3V)	I	Power supply terminal (+3V)
32	OSC1	I	Crystal oscillator input terminal (f=10.02MHz)
33	OSC2	O	Crystal oscillator output terminal (f=10.02MHz)
34	V_{SS}	—	GND terminal
35	X1	I	Not used, connected to GND
36	X0	O	Not used, open
37	VSS	—	GND terminal
38	TEST03	O	Test signal output terminal (Not used, open)
39	EEPCS	O	EEPROM chip select signal output terminal (Not used, open)
40	EEPCK	O	EEPROM clock signal output terminal (Not used, open)

Pin No.	Mark	I/O	Function
41	EEPDATA	I/O	EEPROM data in/output terminal (Connected to GND through resistor)
42	TEST04	O	Test signal output terminal (Not used, open)
43	TEST05		
44	CFSYNC	I	ATRACK management frame simultaneous signal input terminal
45	TEST06	O	Test signal output terminal (Not used, open)
46	TEST07	I	Connected to rec/play switch signal
47	TOK OK	O	Not used, open
48	HF ON	—	Drive signal output terminal to Q3 (POWER SUPPLY CONTROL)
49	PANEL CLK	I	Panel I/F clock input terminal
50	PANEL DATA I	I	Panel I/F data input terminal
51	PANEL DATA 0	O	Panel I/F data output terminal
52	PANEL CS	O	Panel I/F chip select output terminal
53	SELAD	O	Micro computer I/F address select output terminal
54	SSCLK	O	Micro computer I/F clock output terminal
55	SSDR	I	Micro computer I/F reading data input terminal
56	SSDW	O	Micro computer I/F writing data output terminal
57	LCDCK	O	LCD clock test signal output terminal (Connected to power supply through resistor)
58	ADRS TEST RXD	O	Test signal output terminal (Connected to power supply through resistor)
59	LCD DATA TXD	O	Test signal output terminal (Not used, open)
60	VREF-	—	Connected to GND
61	TEMP	I	Temprature sensor amp input terminal
62	KEY1	I	Key input 1 terminal
63	KEY2	I	Key input 2 terminal
64	MO LOAD	I	Test signal input terminal (“L”:Without loading mechanism) (Open)
65	SRVTEST	I	Test signal input terminal (“L”:Servo test mode) (Open)
66	LOAD P	I	Test signal input terminal (Open)
67	TEST KEY IN	I	Test signal input terminal (“L”:Unit key mode) (Open)
68	SRV LOAD	I	Test signal input terminal (“L”:Using for servo primary values EEPROM)
69	VCC 3V	I	Power supply terminal (+3V)
70	VCC 5V	I	Power supply terminal (+5V)
71	SELADDA	I	AD/DA converter select signal input terminal (Open)
72	SLOCK	O	Spindle lock test signal output terminal (Not used, open)
73	TLOCK	O	Tracking lock signal output terminal (“H”:lock) (Not used, open)
74	FLOCK	O	Focus lock test signal output terminal (“H”:lock) (Not used, open)
75	ERROR	O	Servo error test signal output terminal (Not used, open)
76	BUSY	O	Servo busy test signal output terminal (Not used, open)
77	SBPRETRY	O	Signal management retry test signal output terminal (Not used, open)
78	SRVRETRY	O	Servo retry test signal output terminal (Not used, open)
79	ARDSKIP	O	Address skip test signal output terminal (Not used, open)

Pin No.	Mark	I/O	Function
80	SPMWE	O	SPM take in test signal output terminal

12.5. IC72 (M51V4400D7FS) : 4M DRAM

Pin No.	Mark	I/O	Function
1	DO1	I/O	DRAM data 1 in/output terminal
2	DO2	I/O	DRAM data 2 in/output terminal
3	WE	I	DRAM light enable input terminal
4	RAS	I	DRAM low address strobe input terminal
5	A9	I	DRAM address 9 input terminal
9	A0	I	DRAM address 0 input terminal
10 ~ 12	A1 ~ A3	I	DRAM address 1~3 input terminal
13	VCC	I	Power supply terminal

Pin No.	Mark	I/O	Function
14 ~ 18	A4 ~ A8	I	DRAM address 4~8 input terminal
22	OE	I	DRAM output enable input terminal (Not used, connected to GND)
23	CAS	I	DRAM calam address strobe input terminal
24	DO3	I/O	DRAM data 3 in/output terminal
25	DO4	I/O	DRAM data 4 in/output terminal
26	VSS	—	GND terminal

12.6. IC701 (AN8839NSBE2) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDE	I	Tracking signal input 1
2	PDF	I	Tracking signal input 2
3	VCC	I	Power supply
4	PDA	I	Focus signal input termianl 1
5	PDB	I	Focus signal input terminal 2
6	LPD	I	APC amp input
7	LD	O	APC amp output
8	RF	O	RFsumming output
9	RFIN	I	Detector's input
10	CSBRT	I	Capacitor for OFTR connection
11	CEA	I	Capacitor for HPF amp connection
12	BDO	O	BDO output ("H" : drop out)
13	LDON	I	APC control
14	GND	—	Ground

Pin No.	Mark	I/O	Function
15	/RFDET	O	NRFDET output ("L" : detection)
16	CROSS	—	Connected to GND
17	OFTR	O	OFTR output
18	NC	—	N.C.
19	ENV	O	3T-ENV output
20	NC	—	N.C.
21	NC	—	N.C.
22	TEN	I	TE amp input
23	TEOUT	O	TE amp output
24	FEOUT	O	FE amp output
25	FEN	I	FE amp input
26	VREF	O	Reference voltage output
27	TBAL	I	Tracking balance control
28	FBAL	I	Focus balance control

12.7. IC702 (MN662790RSC) Servo Processor / Digital Signal Processor / Digital Filter / D/A Converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Bit Clock Output for Serial Data
2	LRCK	O	L/P Clock Signal Output
3	SRDATA	O	Serial Data Output
4	DVDD1	I	Power Supply Input (for Digital Circuit)
5	DVSS1	I	Ground (for Digital Circuit)
6	TX	O	Digital Audio Interface Signal Output (Latches Data at first Transistion)
7	MCLK	I	Microprocessor Command Clock Signal Input
8	MDATA	I	Microprocessor Command Data Signal Input
9	MLD	I	Microprocessor Command Load Signal Input
10	SENSE	I	Sense Signal Output (OFT, FESL, MAGEND, NAJEND, POSAD, SFG) (Not Used, Open)
11	/FLOCK	O	Focus Servo Feeding Signal Output ("L": Feed)
12	/TLOCK	O	Tracking Servo Feeding Signal Output ("L":Feed)

Pin No.	Mark	I/O	Function
13	BLKCK	O	Sub-Code Block Clocl Signal Output (fBLKCK = 75Hz during Normal Playback)
14	SQCK	I	External Clock Signal Input for Sub-Code Q Resistor)
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 Signal Input
19	SMCK	O	1/2 - Divided Clock Signal of Crystal Oscillating at MSEL= "H" (fSMCK=8.4672 MHz) 1/4 - Divided Clock Signal of Crystal Oscillating at MSEL= "L" (fSMCK=4.2336MHz)
20	CSEL	I	Frequency Selection Terminal H= 33.8688 MHz; L= 16.9344 MHz
21	TRV	O	Traverse Forced Feed Output
22	TVD	O	Traverse Drive Output
23	PC	O	Traverse (Spindle) Motor ON Signal Output ("L":ON)
24	ECM	O	Spindle Motor Drive Signal Output (Forced Mode Output)

Pin No.	Mark	I/O	Function
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 Error Signal Input (Analog Input)
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": Detect)
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": Detect)
39	BDO	I	Dropout Signal Input ("H": Dropout)
40	LDON	O	Laser on Signal Output ("H": ON)
41	PLLF2	I/O	PLL Loop Filter Characteristic Switching Terminal
42	TOFS/DSLF2	O	Tracking Offset Alignment Output/ DSL Balance Output (DA Output)
43	DRF	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 Terminal
47	DSLF	I/O	DSL Loop Filter
48	PLLF	I/O	PLL Loop Filter
49	VCOF	I/O	VCO Loop Filter Terminal
50	AVDD2	I	Power Supply Input (For Analog Circuit)
51	AVSS2	I	GND (For Analog Circuit)
52	EFM	O	EFM Signal Output (Not Used, Open)
53	PCK	O	PLL Extraction Clock Output (Not Used, Open) (fPCK= 4.3218 MHz during Normal Playback)
54	VCOF2	I/O	VCO loop Filter for 33.8688 MHz Conversion Terminal for 16.9344 Mhz Crystal mode, Must use other Circuit)

Pin No.	Mark	I/O	Function
55	SUBC	O	Sub-Code Serial Data Output (Not Used, Open)
56	SBCK	I	Clock Input for Sub-Code Serial Data)
57	VSS	I	GND
58	X1 IN	I	Crystal Oscillating Circuit Input (f= 16.9344 MHz)
59	X2 OUT	O	Crystal Oscillating Circuit Input (f= 16.9344 MHz)
60	VDD	I	Power Supply Input (For Oscillating Circuit)
61	BYTCK	O	Byte Clock Output (Not Used, Open)
62	/CLDCK	O	Sub-Code Frame Clock Signal Output (fCLDCK= 7.35 kHz During Normal Playback)
63	FCLK	O	Crystal Frame Clock Signal Output) (fCLDCK= 7.35 kHz)
64	IPFLAG	O	Interpolation Flag Output ("H": Interpolation) (Not Used, Open)
65	FLAG	O	Flag Output (Not Ised, 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 DN Signal Output ("H":ON)
69	RESY	O	Frame Re-synchronizing Signal Output
70	IOSEL	I	Mode Switching Terminal
71	/TEST	I	Test Input
72	AVDD1	I	Power Supply Input (For Analog Circuit)
73	OUTL	O	Left Channel Audio Signal Output
74	AVSS1	I	GND
75	OUTR	O	Right Signal Audio Signal Output
76	RSEL	I	RF Signal Polarity Assignment Input (at "H" level, RSEL= "H", at "L" SEL= "L")
77	IOVDD	I	5V Supply
78	PSEL	I	Test terminal (Connected to GND)
79	MSEL	I	SMCK Oscillating Frequency Designation Input ("L": 4.2336 MHz, "H" 8.4672MHz)
80	SSEL	I	SUBQ Output Mode Select ("H": Q-Code Buffer Mode)

12.8. IC703 (BA5948FPE2) Focus Coil / Tracking Coil / Traverse Motor / Spindle Motor Driver

Pin No.	Mark	I/O	Function
1	IN2	I	Motor Driver 92) Input
2	PC2	I	Turntable Motor Drive Signal ("L":ON)
3	IN1	I	Motor Driver (1) Input
4	PC1	—	Traverse Motor Drive Signal ("L":ON)
5	NC	—	No connection

Pin No.	Mark	I/O	Function
6	NC	—	No connection
7	NC	—	No connection
8	NC	—	No connection
9	PGND1	—	Ground Conenction (1) for Driver
10	PVCC1	I	Power Supply (1) for Driver
11	D1-	O	Motor Driver (1) reverse - action output

Pin No.	Mark	I/O	Function
12	D1+	O	Motor Driver (1) forward - action output
13	D2-	O	Motor Driver (2) reverse - action output
14	D2+	O	Motor Driver (1) forward - action output
15	D3-	O	Motor Driver (3) reverse - action output
16	D3-	O	Motor Driver (3) forward - action output
17	D4-	O	Motor Driver (4) reverse - action output

Pin No.	Mark	I/O	Function
18	D4+	O	Motor Driver (4) forward - action output
19	PVCC2	I	Power Supply (2) for Driver
20	PGND2	—	Ground Connection(2) for Driver
21	NC	NC	No Connection
22	NC	NC	No Connection
23	NC	NC	No Connection
24	NC	NC	No Connection
25	VCC	I	Power Supply Terminal
26	VREF	I	Reference Voltage Input
27	IN4	I	Motor Driver (4) Input
28	IN3	I	Motor Driver (3) Input

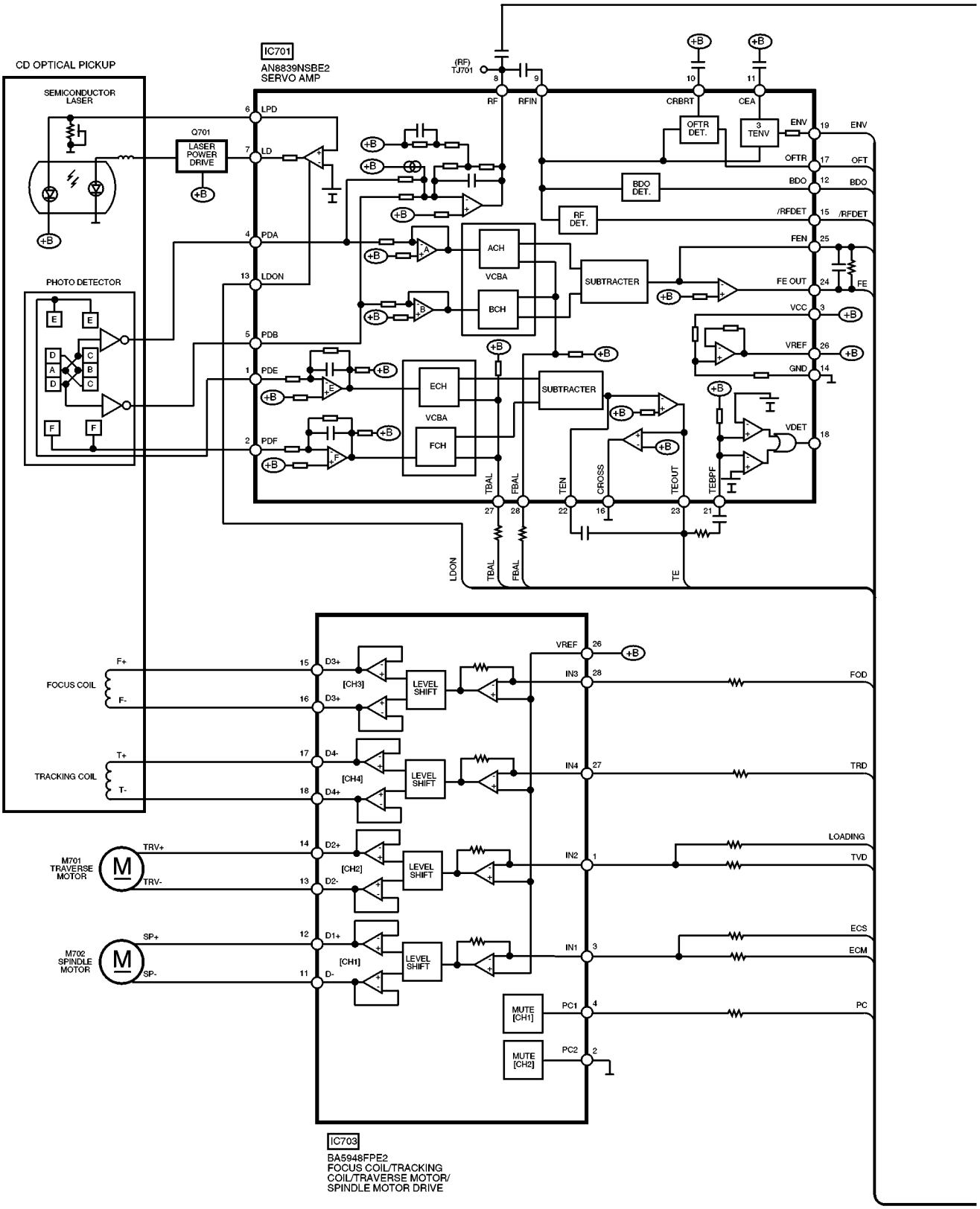
12.9. IC801 (MN101C49KAA2) System Microprocessor

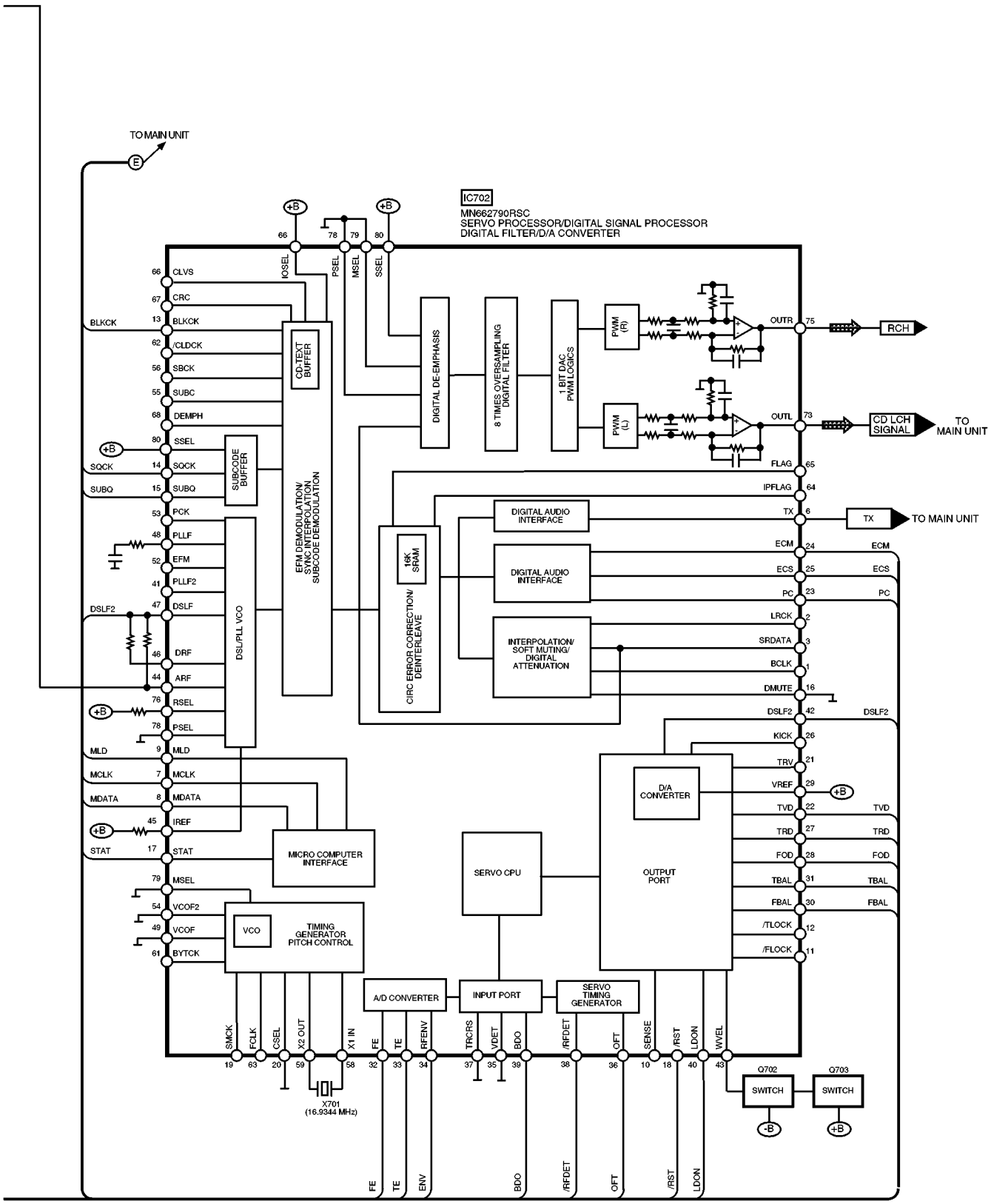
Pin No.	Mark	I/O	Function
1	Vref-	—	A/D Convertor Reference GND
2	ADINO	AD I	KEY 0 Input
3	ADIN1	AD I	KEY 1 Input
4	(N.C)	AD I	N.C
5	(N.C)	AD I	N.C
6	RDS_SEL	I	RDS Select (PHOTO/TPS)
7	ADIN5	AD I	Power Detect
8	(N.C)	AD I	N.C
9	(N.C)	AD I	N.C
10	VRef+	—	A/D Converter Reference Voltage
11	VDD	—	Power Input Pin
12	OSC2	O	Main Oscillator Output
13	OSC1	I	Main Oscillator Input
14	VSS	—	GND
15	XI	I	Suboscillator Input
16	XO	O	Suboscillator Output
17	GND	I	Memory Mode Selection
18	(N.C)	I/O	N.C
19	/RDS_DO	I/O	RDS Data Input
20	/RDS_CLK	I/O	RDS Clock Input
21	FL DATA	I/O	FL Driver Data Output
22	(N.C)	I/O	N.C
23	/FLCLK	I/O	FL Driver Clock Selection
24	/FLCS	I/O	FL Driver Selection
25	/FLRST	I/O	FL Driver Reset Output
26	RM IN	I	Remote Input
27	/BLKCK	I	CD Subcode Block Clock Input
28	SYNC/HALT	I	Power Failure Detection Pulse Input
29	MD_CS	I	MD CS Input
30	(N.C)	I	N.C
31	JOG B	I	Jog Input B (Volume)
32	JOG A	I	Jog Input A (Volume)
33	MICON RST	I	Micom Reset (L:Reset)
34	CD_OPSW	I/O	CD Tray Open Detect SW (H: OPEN; L: CLOSE)
35	CR TIMER	I/O	CR TIMER
36	SEL 1	I/O	Function Change 1
37	SEL 2	I/O	Function Change 2
38	/TUNER_L	I/O	Non-tuner Function L
39	DIGITAL_L	I/O	Opt In Mute Control Out (L: Digital in)
40	CD&TUNER_H	I/O	"H": CD and Tuner Function
41	SPEED	I/O	CD Highspeed Recording Corresponding Input H: Highspeed Correspondence)
42	AUX2_DATA OUT	I/O	P-MD Link .....Data Out

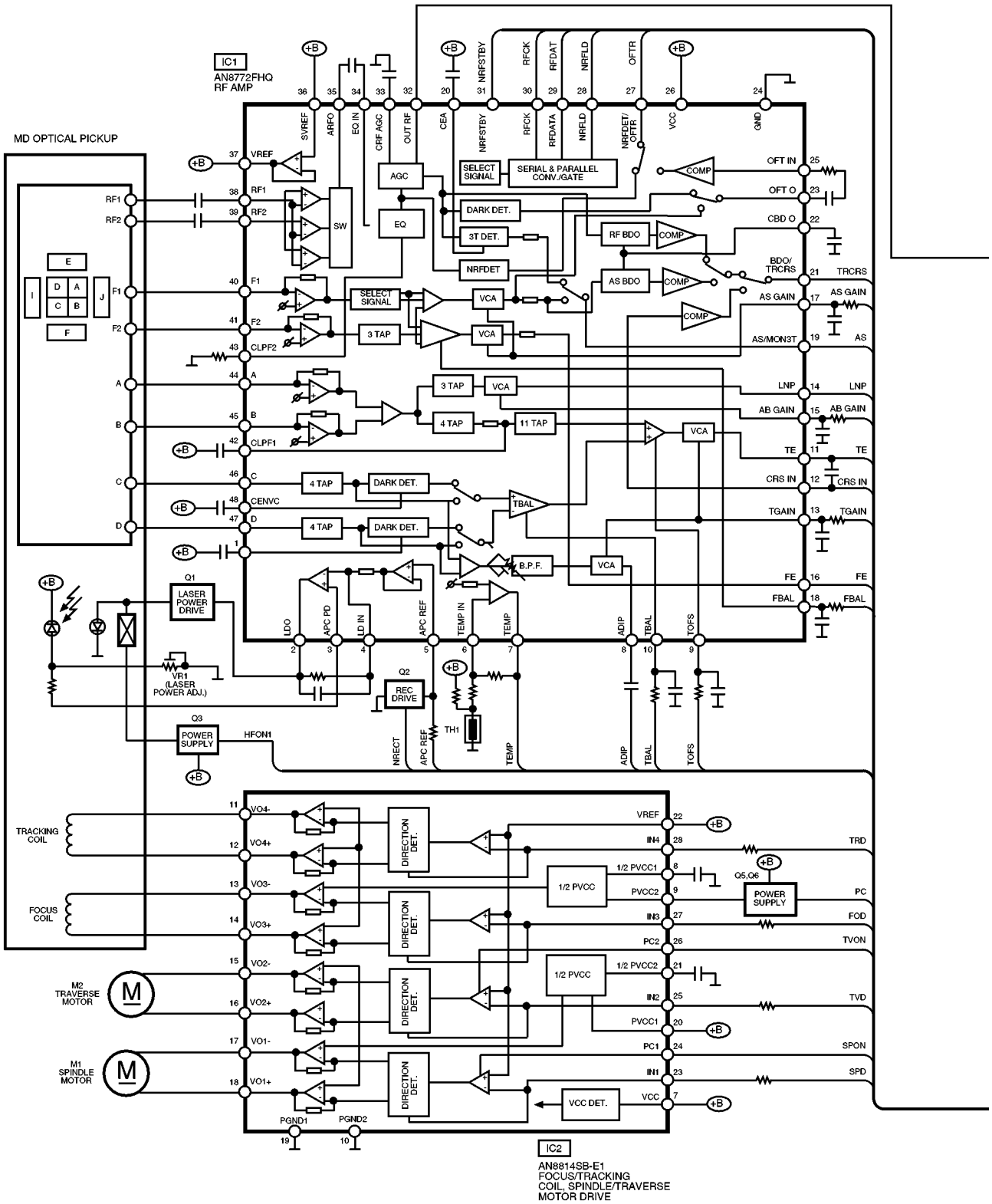
Pin No.	Mark	I/O	Function
43	/SUBQAUX DATA	I/O	CD Subcode Data In P-MD Link use Data In
44	SQCK	I/O	CD Subcode Read Clock Output
45	MD_DATAIN	I/O	MD Data Output (Input of MD unit)
46	MD_DATAOUT	I/O	MD Data Output (Input of MD Unit)
47	MD_CLK	I/O	MD Clock Output
48	MD_REQ	I/O	MD Request Signal Out
49	MD_SYS RST	I/O	MD Reset Output (L:Reset)
50	LOADSW	I/O	MD Loading SW Input (H: SW Off)
51	(N.C)	I/O	N.C
52	SW1	I/O	MD Panel SW
53	SW2	I/O	CD Panel SW
54	SW3	I/O	MD Shutter SW
55	ECLK	I/O	EEPROM Clock Output
56	ECS	I/O	EEPROM CS Output
57	EDATA	I/O	EEPROM Data In/Out
58	MUTE A	I/O	Audio Mute Output (L: Mute On)
59	PWRCONT	I/O	Power Control Output
60	/CD_L	I/O	Non-CD Function L
61	/STATUS	I/O	CD Status Input
62	CD RESET	I/O	CD Reset Output
63	/RESTSW	I/O	CD Traverse Limit SW
64	MCLK	I/O	CD LSI Command Clock
65	MDATA	I/O	CD LSI Command Data
66	MLD	I/O	CD LSI Command Load
67	CD_PNL_CL	I/O	Front Panel Close Control(active H)
68	CD_PNL_OP	I/O	Front Panel Open Control(active H)
69	MD_PNL_CL	I/O	Front Panel Close Control(active H)
70	MD_PNL_OP	I/O	Front Panel Open Control(active H)
71	LOPEN_L	I/O	CD Tray Open Low Speed (active L)
72	LCLOSE_H	I/O	CD Tray Close Low Speed (active H)
73	ACCNT	I/O	Main Transformer Control Output (active H)
74	SD	I/O	Tuner Signal Detect
75	PLL DO	I/O	PLL Control Data Input
76	PLL DI	I/O	PLL Count Data Output
77	PLL CE	I/O	PLL Chip Enable Output
78	PLL CLK	I/O	PLL Clock Output
79	(N.C)	I/O	N.C
80	CLOD_START _HSCM	I/O	74 minutes restriction detect input at CLOD_START (L: restrict)

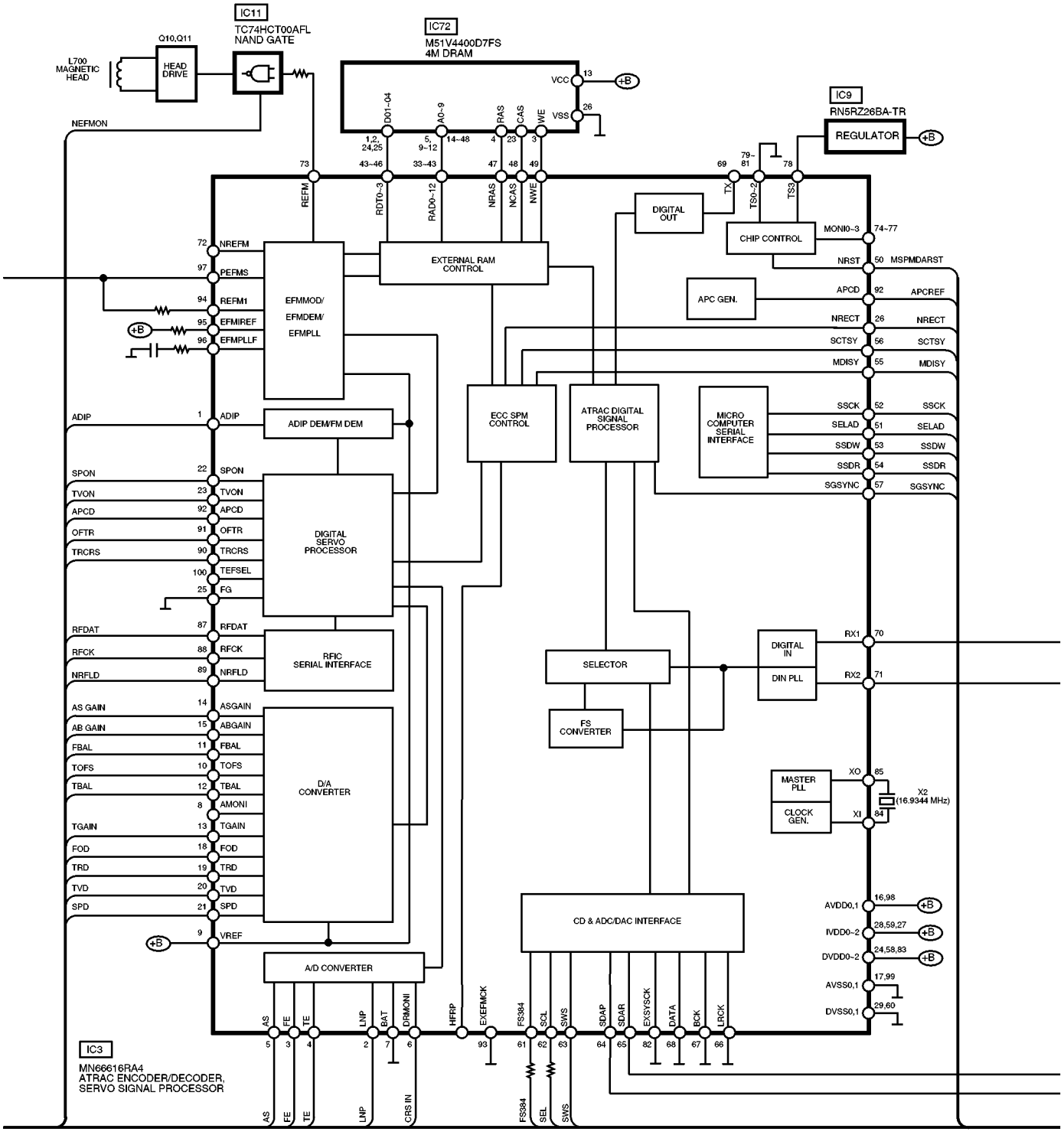
Pin No.	Mark	I/O	Function
81	TMRLED	I/O	Timer LED Control Out (Timer Setting: L)
82	LED_CD	I/O	CD LED Drive(active L)
83	LED_MD	I/O	MD LED Drive(active L)
84	LED_TUNER	I/O	Tuner LED Drive(active L)
85	(N.C)	I/O	(Open)
86	(N.C)	I/O	(Open)
87	AGCLK	I/O	ASP Clock Output
88	AGDATA	I/O	ASP Data Output
89	AGLATCH	I/O	ASP Latch Output
90	LED A	I/O	LED Control (active H)
91	DES1	I/O	Destination Setup 1
92	DES2	I/O	Destination Setup 2
93	OPEN_H	I/O	CD Tray Open Control (active H)
94	CLOSE_L	I/O	CD Tray Close Control (active L)
95	GND	—	D/A Converter Reference GND
96	(N.C)	I/O	(Open)
97	(N.C)	I/O	(Open)
98	MBP2	I/O	MICOM Beatproof Cont2(active H)
99	MBP1	I/O	MICOM Beatproof Cont2(active H)
100	VRef+	—	D/A Converter Reference Voltage

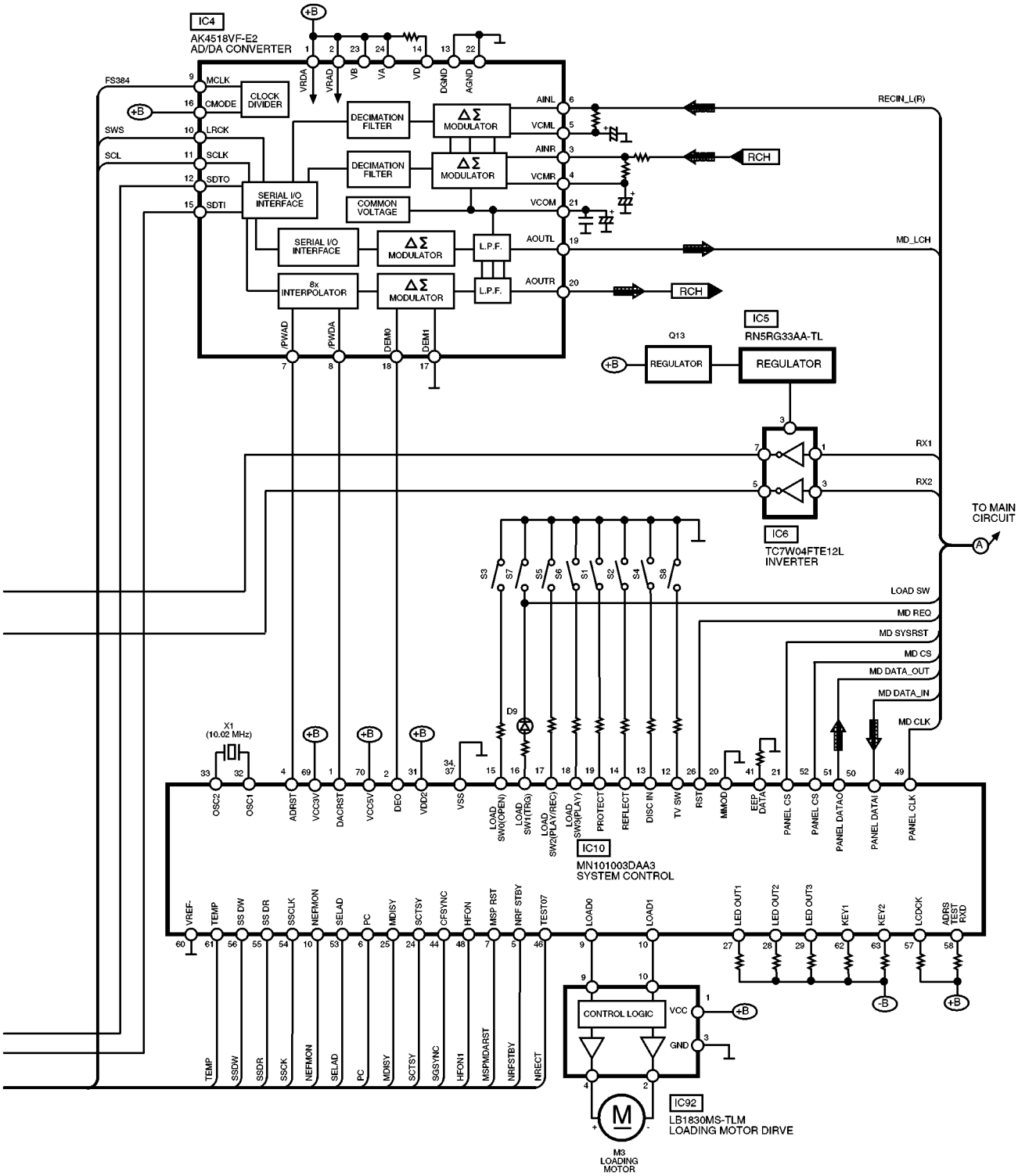
13 Block Diagram

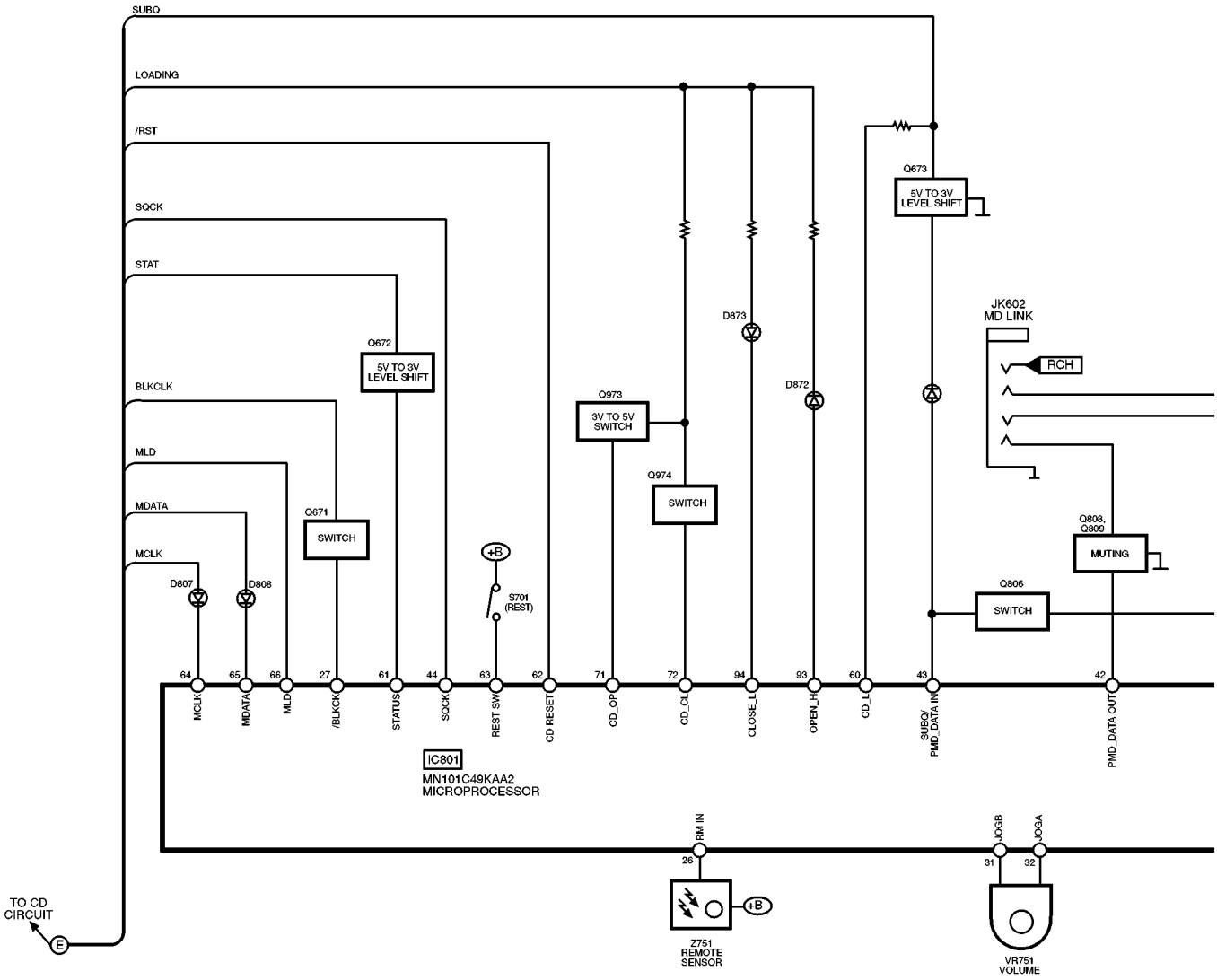


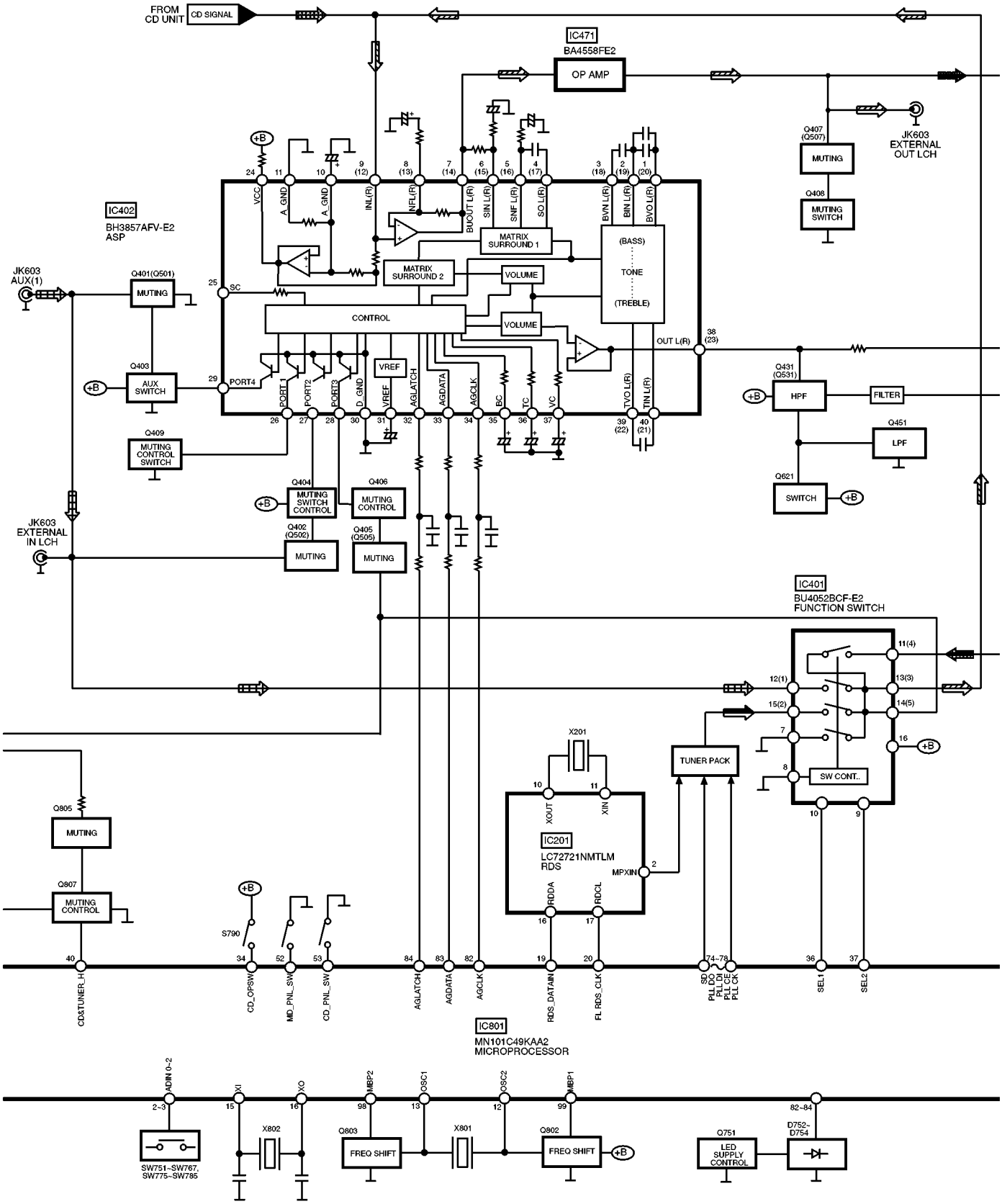

TO MAIN UNIT
E
IC702
MN662790RSC
SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR
DIGITAL FILTER/D/A CONVERTER
+B
66 CLVS
67 CRC
BLKCK 13 BLKCK
62 /CLDCK
56 SBCK
55 SUBC
68 DEMPH
80 SSEL
SQCK 14 SQCK
SUBQ 15 SUBQ
53 PCK
48 PLLF
52 EFM
41 PLLF2
DSLF2 47 DSLF
46 DRF
44 ARF
76 RSEL
78 PSEL
MLD 9 MLD
MCLK 7 MCLK
MIDATA 8 MIDATA
45 IREF
STAT 17 STAT
79 MSEL
54 VCOF2
49 VCOF
61 BYTCK
IOSEL
PSEL
MSEL
SSEL
CD-TEXT BUFFER
SUBCODE BUFFER
EFM DEMODULATION/ SYNC INTERPOLATION SUBCODE DEMODULATION
DSL/PLL VCO
DIGITAL DE-EMPHASIS
8 TIMES OVERSAMPLING DIGITAL FILTER
1-BIT DAC PWM LOGICS
PWM (R)
PWM (L)
OUTR 75
OUTL 73
RCH
CD LCH SIGNAL
TO MAIN UNIT
FLAG 65
IPFLAG 64
TX 6
TX
TO MAIN UNIT
16K SRAM
CIRC ERROR CORRECTION/ DEINTERLEAVE
DIGITAL AUDIO INTERFACE
DIGITAL AUDIO INTERFACE
INTERPOLATION/ SOFT MUTING/ DIGITAL ATTENUATION
ECM 24 ECM
ECS 25 ECS
PC 23 PC
LRCK 2
SRDATA 3
BCLK 1
DMUTE 16
DSLF2 42 DSLF2
KICK 26
TRV 21
VREF 29
TVD 22 TVD
TRD 27 TRD
FOD 28 FOD
TBAL 31 TBAL
FBAL 30 FBAL
/TLOCK 12
/FLOCK 11
D/A CONVERTER
OUTPUT PORT
MICRO COMPUTER INTERFACE
SERVO CPU
VCO
TIMING GENERATOR PITCH CONTROL
A/D CONVERTER
INPUT PORT
SERVO TIMING GENERATOR
SMCK 19
FCLK 63
CSEL 20
X2 OUT 59
X1 IN 58
X701 (16.9344 MHz)
FE 32
TE 33
RFENV 34
TRCRS 37
VDET 35
BDO 39
/RFDET 38
OFT 36
SENSE 10
/RST 18
LDON 40
WVEL 43
Q702 SWITCH
Q703 SWITCH
-B
+B
FE
TE
ENV
BDO
/RFDET
OFT
/RST
LDON

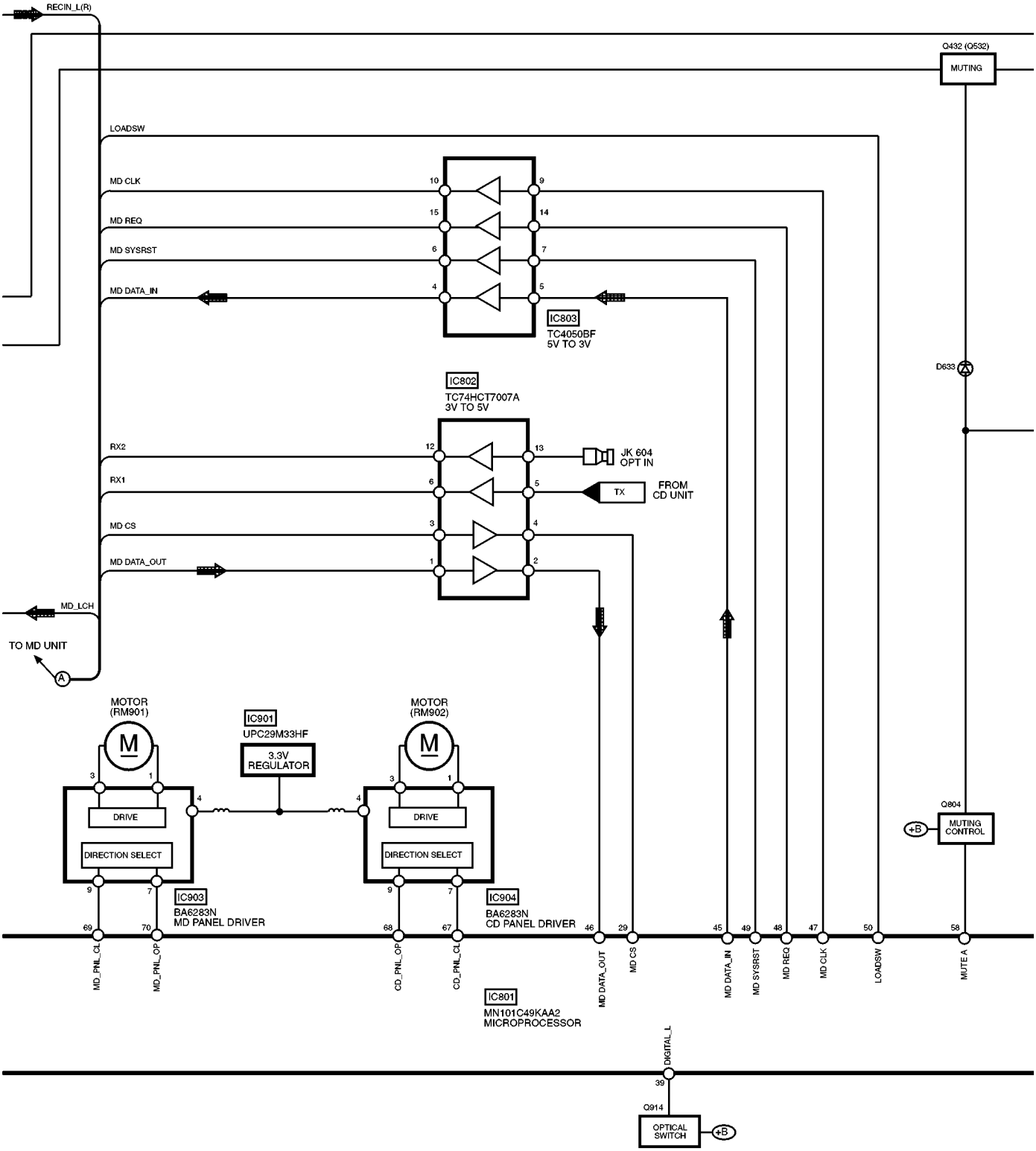

IC1
AN8772FHQ
RF AMP
MD OPTICAL PICKUP
SVREF
ARFO
EQ IN
CRF AGC
OUT RF
CEA
NRFSTBY
RFCK
RFDATA
NRFLD
NRFDET/ OFTR
VCC
GND
VREF
RF1
RF2
F1
F2
CLPF2
A
B
CLPF1
C
CENVC
D
AGC
SELECT SIGNAL
SERIAL & PARALLEL CONV./GATE
COMP
OFT IN
OFT O
CBD O
SW
EQ
DARK DET.
3T DET.
NRFDET
RF BDO
AS BDO
BDO/ TRCRS
TRCRS
AS GAIN
AS/MON3T
AS
VCA
3 TAP
4 TAP
11 TAP
LNP
AB GAIN
TE
CRS IN
TGAIN
FE
FBAL
TBAL
B.P.F.
LDO
APC PD
LD IN
APC REF
TEMP IN
TEMP
ADIP
TOFS
Q1
LASER POWER DRIVE
VR1 (LASER POWER ADJ.)
Q2
REC DRIVE
TH1
NRECT
Q3
POWER SUPPLY
HFON1
TRACKING COIL
FOCUS COIL
M2 TRAVERSE MOTOR
M1 SPINDLE MOTOR
VO4+
VO4+
VO3-
VO3+
VO2-
VO2+
VO1-
VO1+
DIRECTION DET.
1/2 PVCC
PVCC1
PVCC2
PC1
PC2
IN1
IN2
IN3
IN4
VCC DET.
Q5,Q6
TRD
PC
FOD
TVON
TVD
SPON
SPD
PGND1
PGND2
IC2
AN8814SB-E1
FOCUS/TRACKING
COIL, SPINDLE/TRAVERSE
MOTOR DRIVE

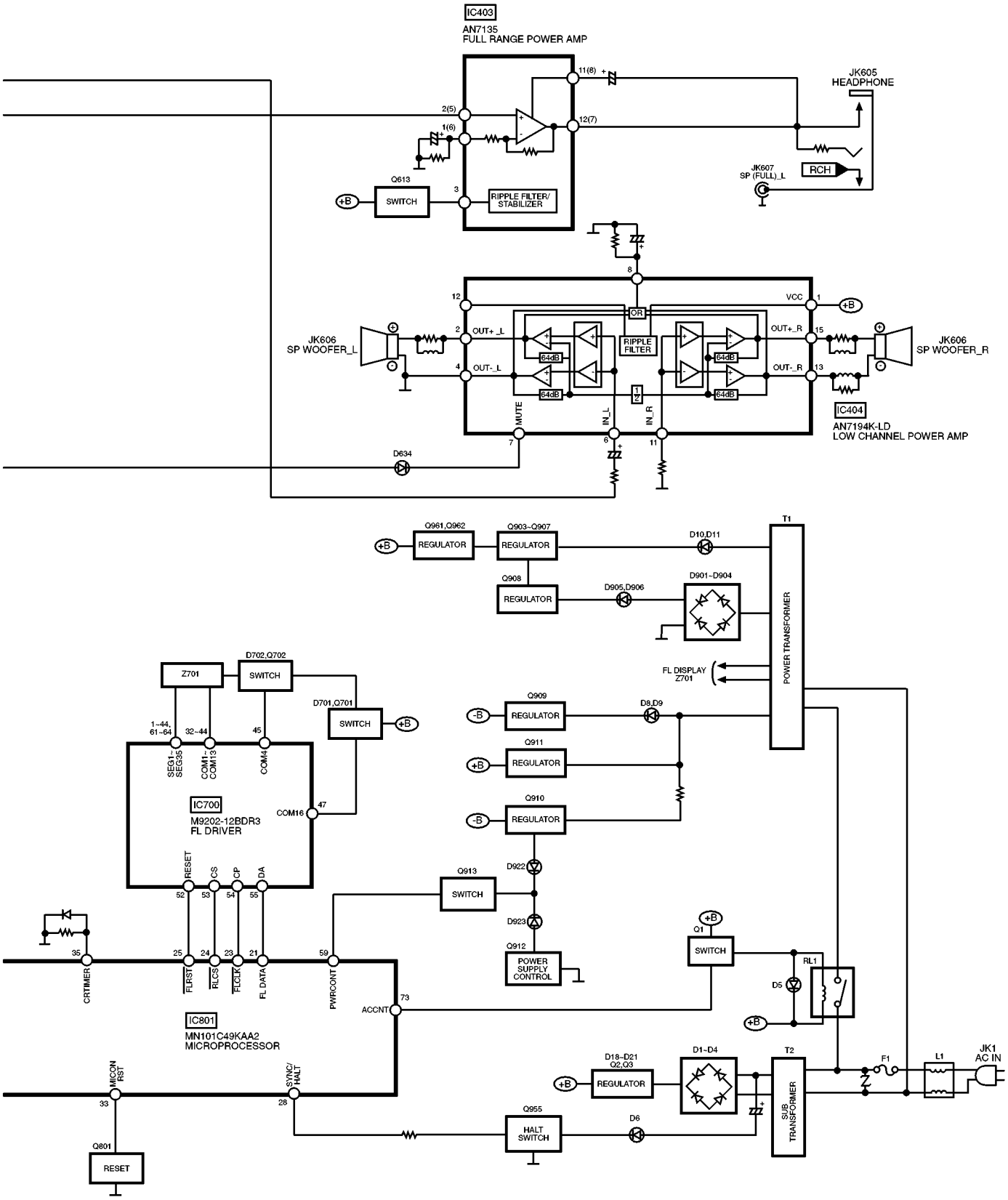

IC11
TC74HCT00AFL
NAND GATE
Q10,Q11
HEAD DRIVE
L700
MAGNETIC HEAD
NEFMON
IC72
M51V4400D7FS
4M DRAM
VCC
VSS
IC9
RN5RZ26BA-TR
REGULATOR
+B
REFM
RDT0~3
RAD0~12
NRAS
NCAS
NWE
TX
TS0~2
TS3
DIGITAL OUT
CHIP CONTROL
MONI0~3
NRST
MSPMDARST
APC GEN.
APCD
APCREF
NREFM
PEFMS
REFM1
EFMIREF
EFMPLLF
EFMMOD/
EFMDEM/
EFMPLL
EXTERNAL RAM CONTROL
NRECT
SCTSY
MDISY
ECC SPM CONTROL
ATRAC DIGITAL SIGNAL PROCESSOR
MICRO COMPUTER SERIAL INTERFACE
SSCK
SELAD
SSDW
SSDR
SGSYNC
ADIP
ADIP DEM/FM DEM
SPON
TVON
APCD
OFTR
TRCRS
TEFSEL
FG
DIGITAL SERVO PROCESSOR
RFDAT
RFCK
NRFLD
RFIC SERIAL INTERFACE
AS GAIN
AB GAIN
FBAL
TOFS
TBAL
AMONI
TGAIN
FOD
TRD
TVD
SPD
VREF
D/A CONVERTER
SELECTOR
FS CONVERTER
DIGITAL IN
DIN PLL
RX1
RX2
MASTER PLL
CLOCK GEN.
XO
XI
X2
(16.9344 MHz)
CD & ADC/DAC INTERFACE
A/D CONVERTER
AVDD0,1
IVDD0~2
DVDD0~2
AVSS0,1
DVSS0,1
AS
FE
TE
LNP
RAT
DRMONI
HFRP
EXEFMCK
FS384
SCL
SWS
SDAP
SDAR
EXSYSCK
DATA
BCK
LRCK
IC3
MN66616RA4
ATRAC ENCODER/DECODER,
SERVO SIGNAL PROCESSOR
CRS IN
SEL


IC4
AK4518VF-E2
AD/DA CONVERTER
+B
VRDA
VRAD
VB
VA
VD
DGND
AGND
FS384
MCLK
CMODE
CLOCK DIVIDER
SWS
LRCK
SCL
SCLK
SDTO
SDTI
SERIAL I/O INTERFACE
DECIMATION FILTER
MODULATOR
COMMON VOLTAGE
8x INTERPOLATOR
L.P.F.
AINL
VCML
AINR
VCMR
VCOM
AOUTL
AOUTR
RECIN_L(R)
RCH
MD_LCH
PWAD
PWDA
DEM0
DEM1
IC5
RN5RG33AA-TL
Q13
REGULATOR
RX1
RX2
IC6
TC7W04FTE12L
INVERTER
TO MAIN CIRCUIT
S3
S7
S5
S6
S1
S2
S4
S8
LOAD SW
MD REQ
MD SYSRST
MD CS
MD DATA_OUT
MD DATA_IN
MD CLK
X1
(10.02 MHz)
D9
OSC2
OSC1
ADRST
VCC3V
DACRST
VCC5V
DEO
VDDE
VSS
LOAD SW0(OPEN)
LOAD SW1(TRG)
LOAD SW2(PLAY/REC)
LOAD SW3(PLAY)
PROTECT
REFLECT
DISC IN
TV SW
RST
MMOD
EEP DATA
PANEL CS
PANEL CS
PANEL DATAO
PANEL DATAI
PANEL CLK
IC10
MN101003DAA3
SYSTEM CONTROL
VREF-
TEMP
SS DW
SS DR
SSCLK
NEFMON
SELAD
PC
MDISY
SCTSY
CFSYNC
HFON
MSP RST
NRF STBY
TEST07
LOAD0
LOAD1
LED OUT1
LED OUT2
LED OUT3
KEY1
KEY2
LCDCK
ADRS TEST RXD
CONTROL LOGIC
VCC
GND
-B
IC92
LB1830MS-TLM
LOADING MOTOR DIRVE
M
M3
LOADING
MOTOR


SUBQ
LOADING
/RST
SQCK
STAT
BLKCLK
MLD
MDATA
MCLK
D807
D808
Q671
SWITCH
Q672
5V TO 3V
LEVEL SHIFT
+B
S701
(REST)
Q973
3V TO 5V
SWITCH
Q974
SWITCH
D873
D872
Q673
5V TO 3V
LEVEL SHIFT
JK602
MD LINK
RCH
Q808,
Q809
MUTING
Q806
SWITCH
64 MCLK
65 MDATA
66 MLD
27 /BLKCK
61 STATUS
44 SQCK
63 REST SW
62 CD RESET
71 CD_OP
72 CD_CL
94 CLOSE_I
93 OPEN_H
60 CD_I
43 SUBQ/
PMD_DATA IN
42 PMD_DATA OUT
IC801
MN101C49KAA2
MICROPROCESSOR
RM IN
26
JOGB
31
JOGA
32
+B
Z751
REMOTE
SENSOR
VR751
VOLUME
TO CD
CIRCUIT
E


FROM CD UNIT
CD SIGNAL
IC471
BA4558FE2
OP AMP
Q407 (Q507)
MUTING
Q408
MUTING SWITCH
JK603 EXTERNAL OUT LCH
IC402
BH3857AFV-E2
ASP
JK603 AUX(1)
Q401(Q501)
MUTING
Q403
AUX SWITCH
Q409
MUTING CONTROL SWITCH
MATRIX SURROUND 1
MATRIX SURROUND 2
VOLUME
CONTROL
(BASS)
TONE
(TREBLE)
OUT L(R)
Q431 (Q531)
HPF
FILTER
Q451
LPF
Q621
SWITCH
Q404
MUTING SWITCH CONTROL
Q406
MUTING CONTROL
Q402 (Q502)
MUTING
Q405 (Q505)
MUTING
JK603 EXTERNAL IN LCH
IC401
BU4052BCF-E2
FUNCTION SWITCH
SW CONT..
TUNER PACK
X201
IC201
LC72721NMTLM
RDS
MPXIN
Q805
MUTING
Q807
MUTING CONTROL
S790
CD&TUNER_H
CD_OPSW
MD_PNL_SW
CD_PNL_SW
AGLATCH
AGDATA
AGCLK
RDS_DATAIN
FL_RDS_CLK
SD
PLL DO
PLL DI
PLL CE
PLL CK
SEL1
SEL2
IC801
MN101C49KAA2
MICROPROCESSOR
ADIN 0~2
SW751~SW767, SW775~SW785
X802
FREQ SHIFT
X801
Q803
Q802
Q751
LED SUPPLY CONTROL
D752~D754


RECIN_L(R)
Q432 (Q532)
MUTING
LOADSW
MD CLK
MD REQ
MD SYSRST
MD DATA_IN
IC803
TC4050BF
5V TO 3V
D633
IC802
TC74HCT7007A
3V TO 5V
RX2
RX1
MD CS
MD DATA_OUT
JK 604
OPT IN
TX
FROM
CD UNIT
MD_LCH
TO MD UNIT
A
MOTOR
(RM901)
MOTOR
(RM902)
IC901
UPC29M33HF
3.3V
REGULATOR
DRIVE
DIRECTION SELECT
IC903
BA6283N
MD PANEL DRIVER
IC904
BA6283N
CD PANEL DRIVER
Q804
+B
MUTING
CONTROL
MD_PNL_CL
MD_PNL_OP
CD_PNL_OP
CD_PNL_CL
MD DATA_OUT
MD CS
MD DATA_IN
MD SYSRST
MD REQ
MD CLK
LOADSW
MUTE A
IC801
MN101C49KAA2
MICROPROCESSOR
DIGITAL_L
Q914
OPTICAL
SWITCH
+B



SIGNAL LINES

: CD SIGNAL LINE : MD SIGNAL LINE : MD REC SIGNAL LINE

: AUX SIGNAL LINE : AM/FM SIGNAL LINE : MAIN SIGNAL LINE

NOTE: ( ) indicates Pin No. Right Channel.

14 Schematic Diagram

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

Note :

S1	PROTECT detect switch
S2	REFLECT detect switch
S3	LOAD OPEN detect switch
S4	DISC IN detect switch
S5	LOAD PLAY/REC detect switch
S6	LOAD PLAY detect switch
S7	LOAD TRG detect switch
S8	Traverse detect switch
S701	Reset switch
S901	MD Loading switch
S902	CD Loading switch
SW751	TIMER REC/PLAY switch
SW752	SELECTOR switch
SW753	CLOCK TIMER switch
SW754	DISPLAY CHARACTER switch
SW755	ENTER switch
SW756	CANCEL switch
SW757	MD EDIT switch
SW758	MD REC switch
SW759	MD REC MODE/SP/LP switch
SW760	CD EDIT switch
SW761	MEMORY switch
SW762	TUNE MODE/AREA switch
SW775	POWER switch
SW776	ECO MODE select switch
SW777	CD select, open/close switch
SW778	CD select, eject switch
SW779	MD select, open/close switch
SW780	MD select, eject switch
SW781	CD select, play/pause switch
SW782	Forward/Skip switch
SW783	TUNER/BAND select switch
SW784	STOP switch
SW785	Reverse/Skip switch
SW786	MD select, play/pause switch
VR1	Laser power adjust VR
VR751	Volume control VR

- 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 waveformsdepending upon the internal impedance of the tester or the measuring unit.

No mark	: Playback
<< >>	: Rec
(( ))	: CD
< >	: FM
( )	: AM
(for MD Servo Circuit)	
( )	: MD play [1kHz, L+R, 0dB]
< >	: MD rec. [1kHz, L+R, 0dB]
No mark	: MD

- **Importance safety notice :**

  Components identified by ⚠ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. Whenreplacing 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.

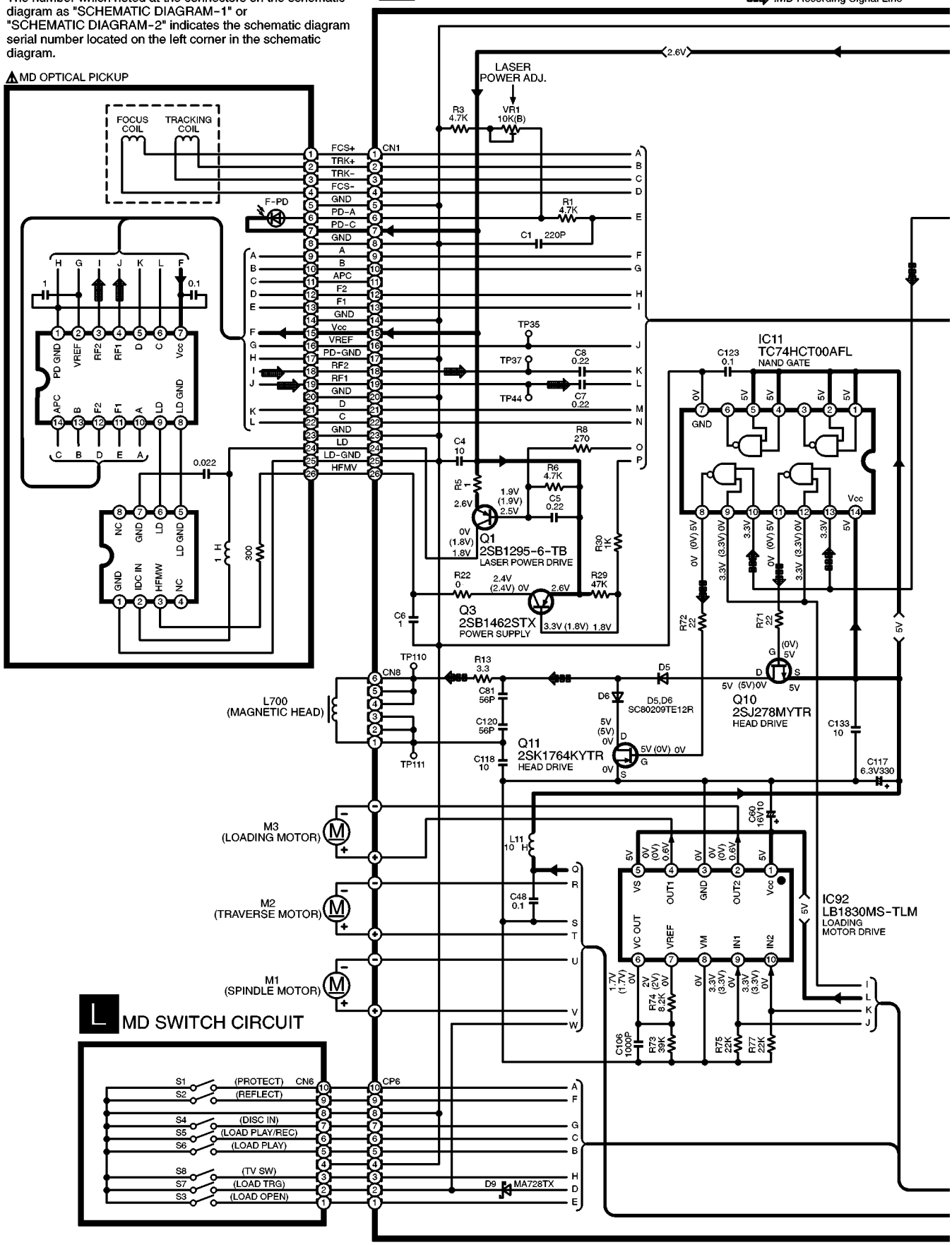
- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

SCHEMATIC DIAGRAM-1

Note:
The number which noted at the connectors on the schematic diagram as "SCHEMATIC DIAGRAM-1" or "SCHEMATIC DIAGRAM-2" indicates the schematic diagram serial number located on the left corner in the schematic diagram.

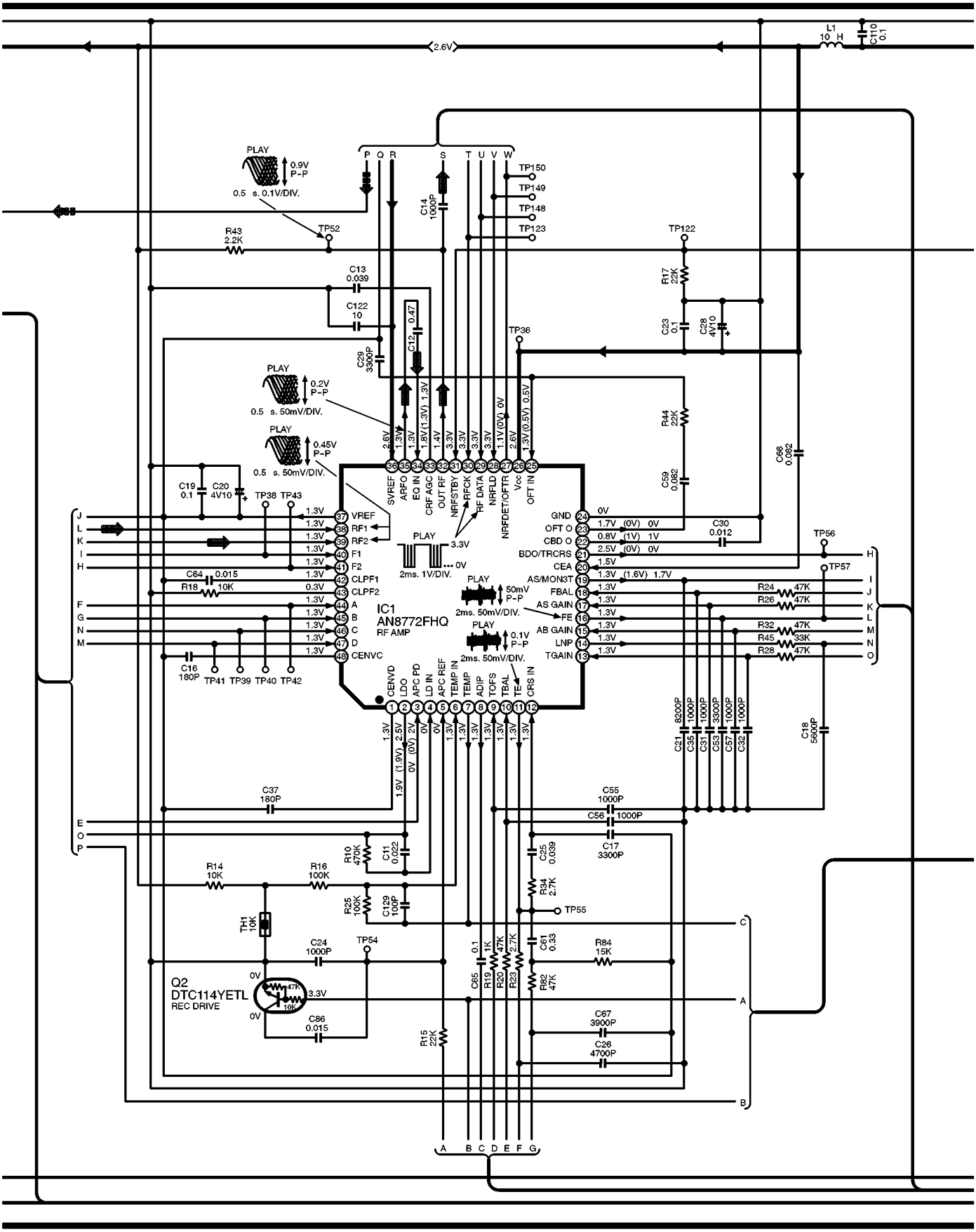
MD SERVO P.C.B. SIDE-A MD SERVO P.C.B. SIDE-B

:+B Signal Line
:MD Signal Line
:MD Recording Signal Line



SCHEMATIC DIAGRAM-2

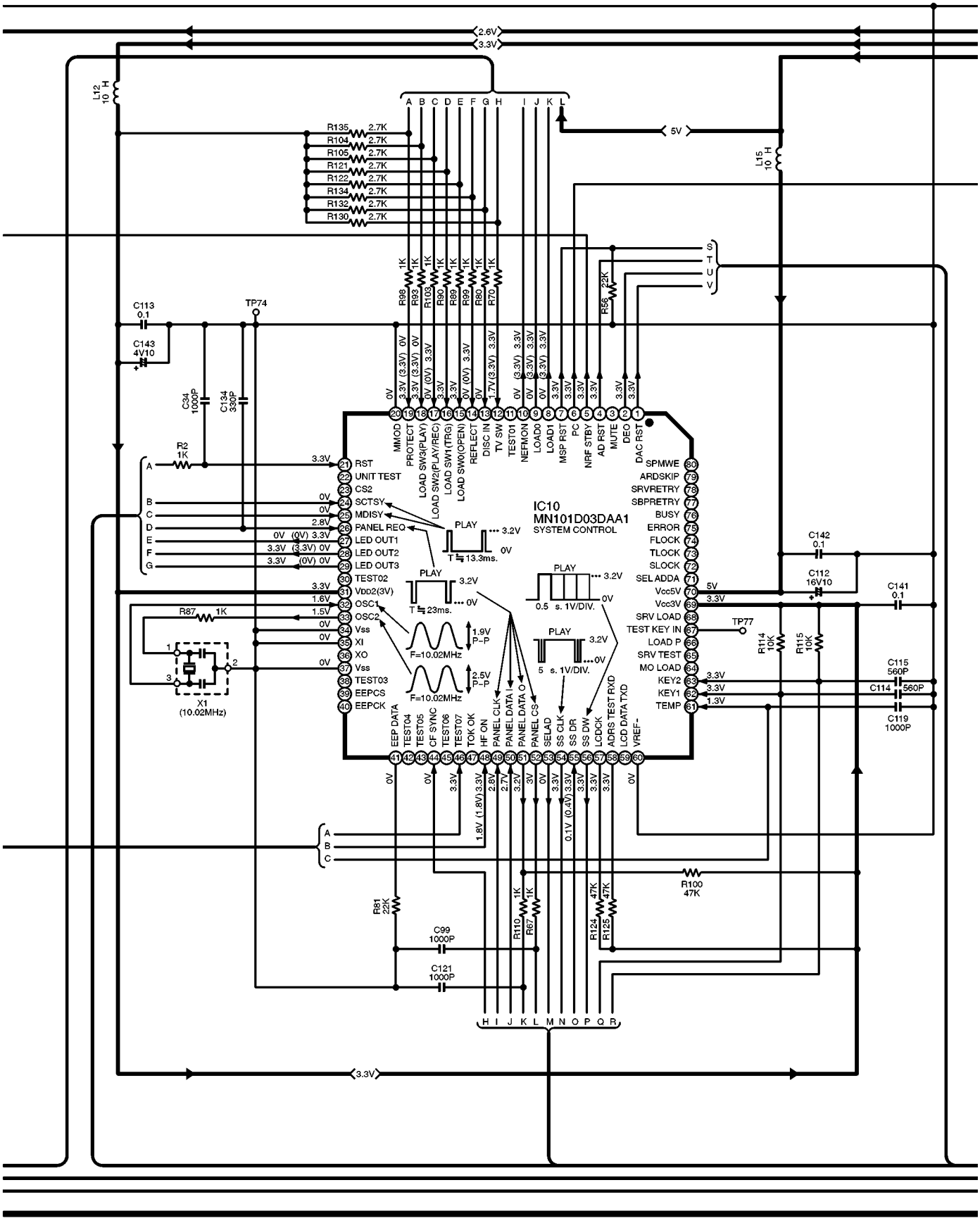
:+B Signal Line :MD Signal Line :MD Recording Signal Line



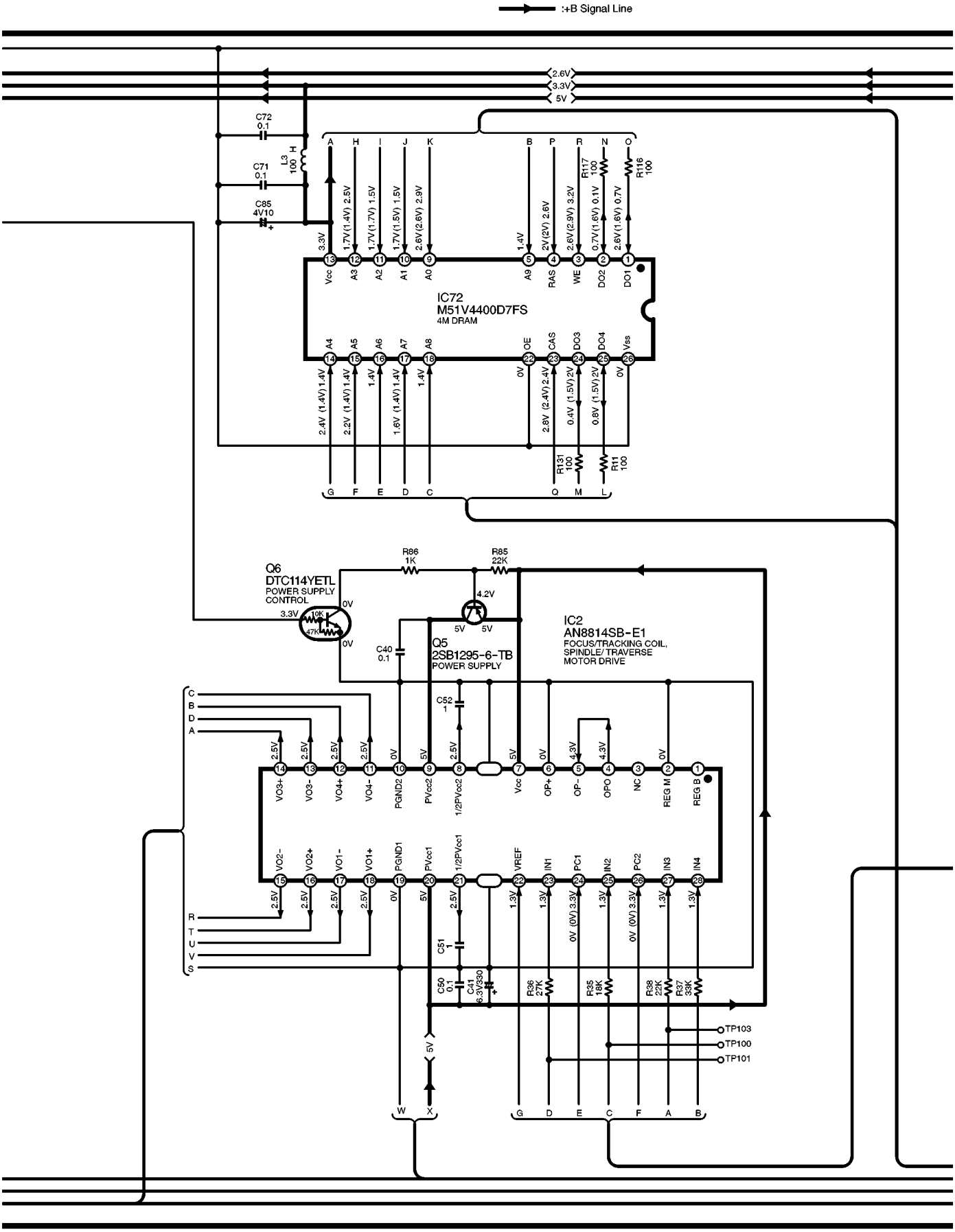
SCHEMATIC DIAGRAM-3

A MD SERVO CIRCUIT

:+B Signal Line



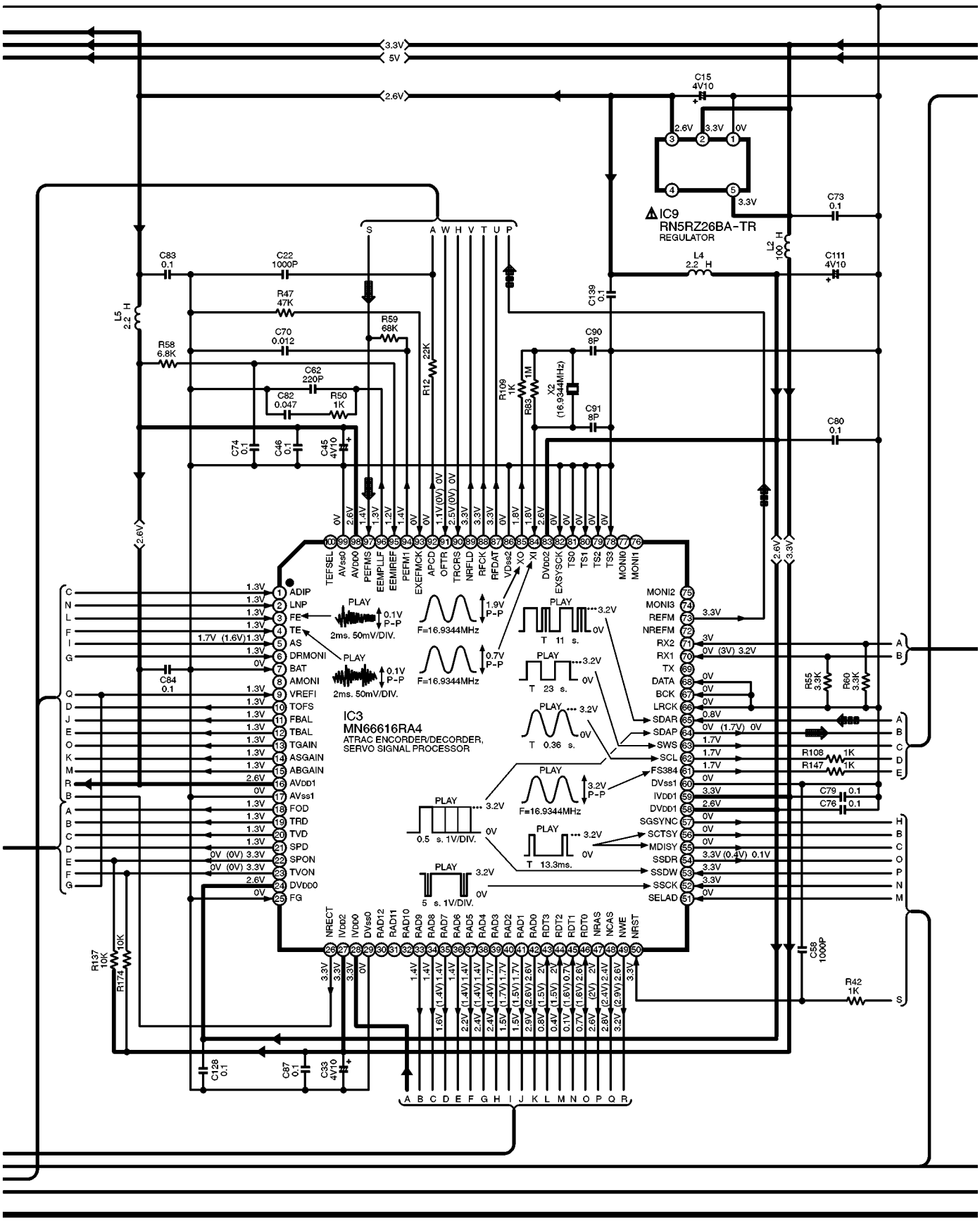
SCHEMATIC DIAGRAM-4



SCHEMATIC DIAGRAM-5

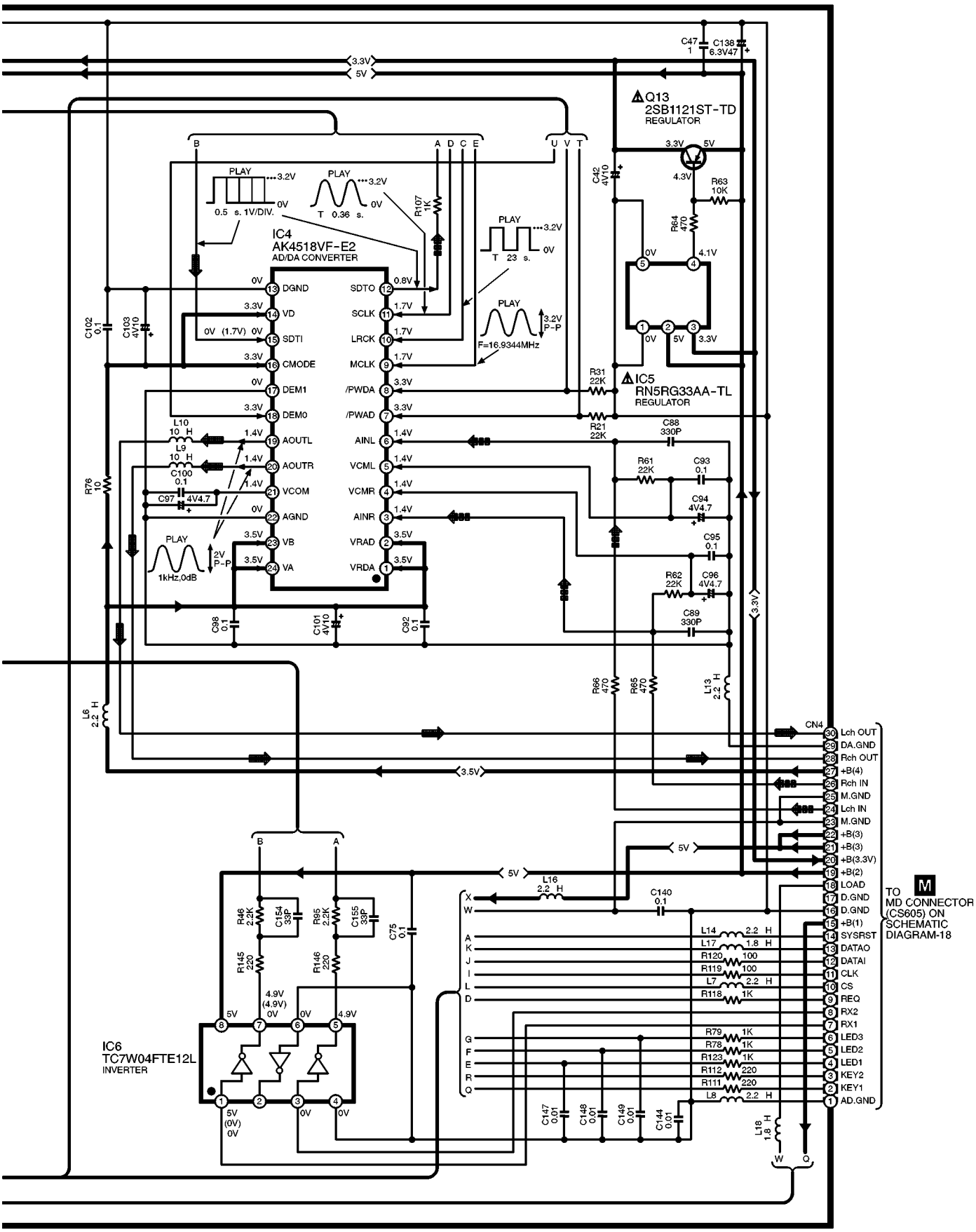
A MD SERVO CIRCUIT

:+B Signal Line :MD Signal Line :MD Recording Signal Line



SCHEMATIC DIAGRAM-6

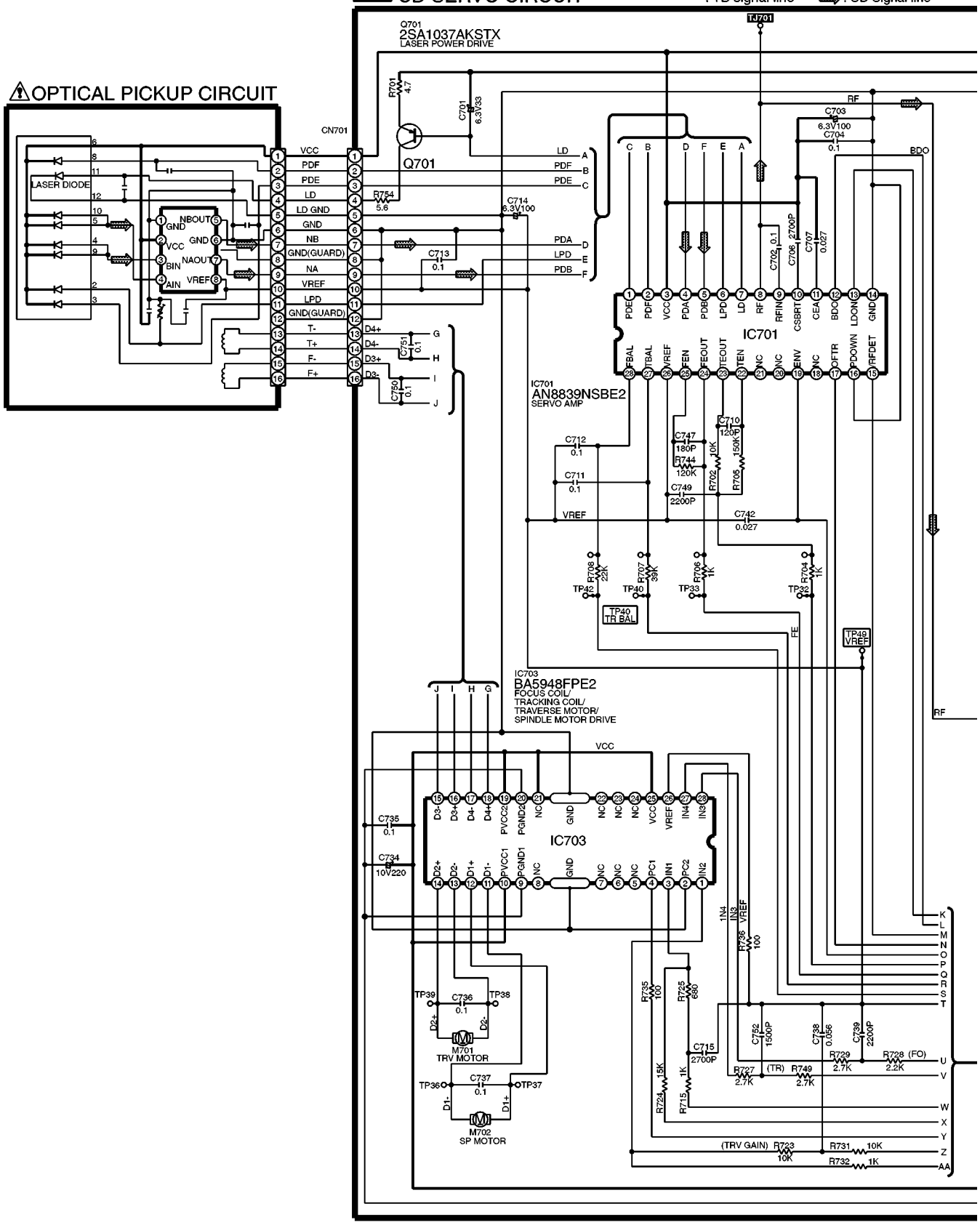
:+B Signal Line :MD Signal Line : MD Recording Signal Line



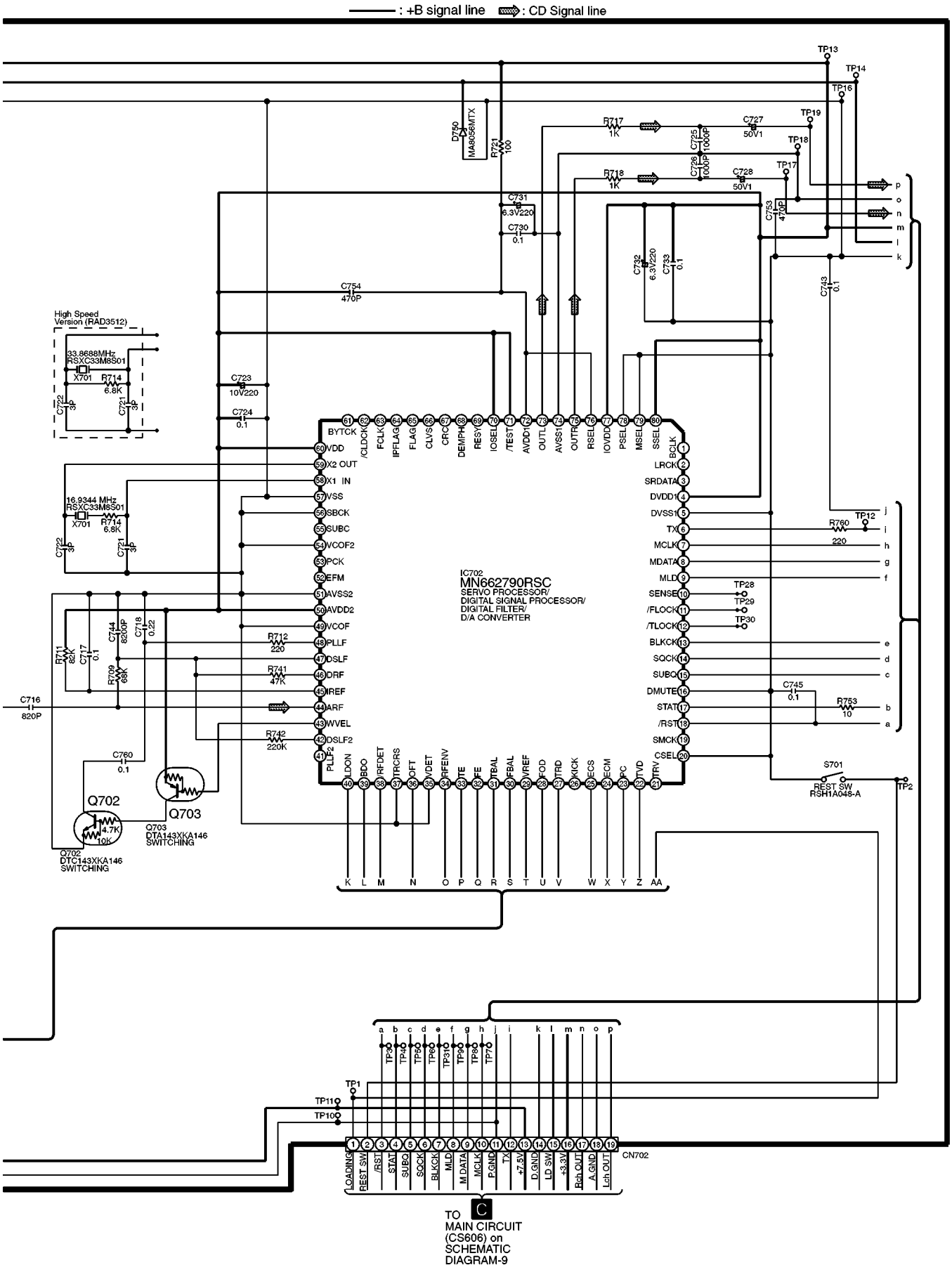
SCHEMATIC DIAGRAM-7

B CD SERVO CIRCUIT

——— : +B signal line ⇨ : CD Signal line



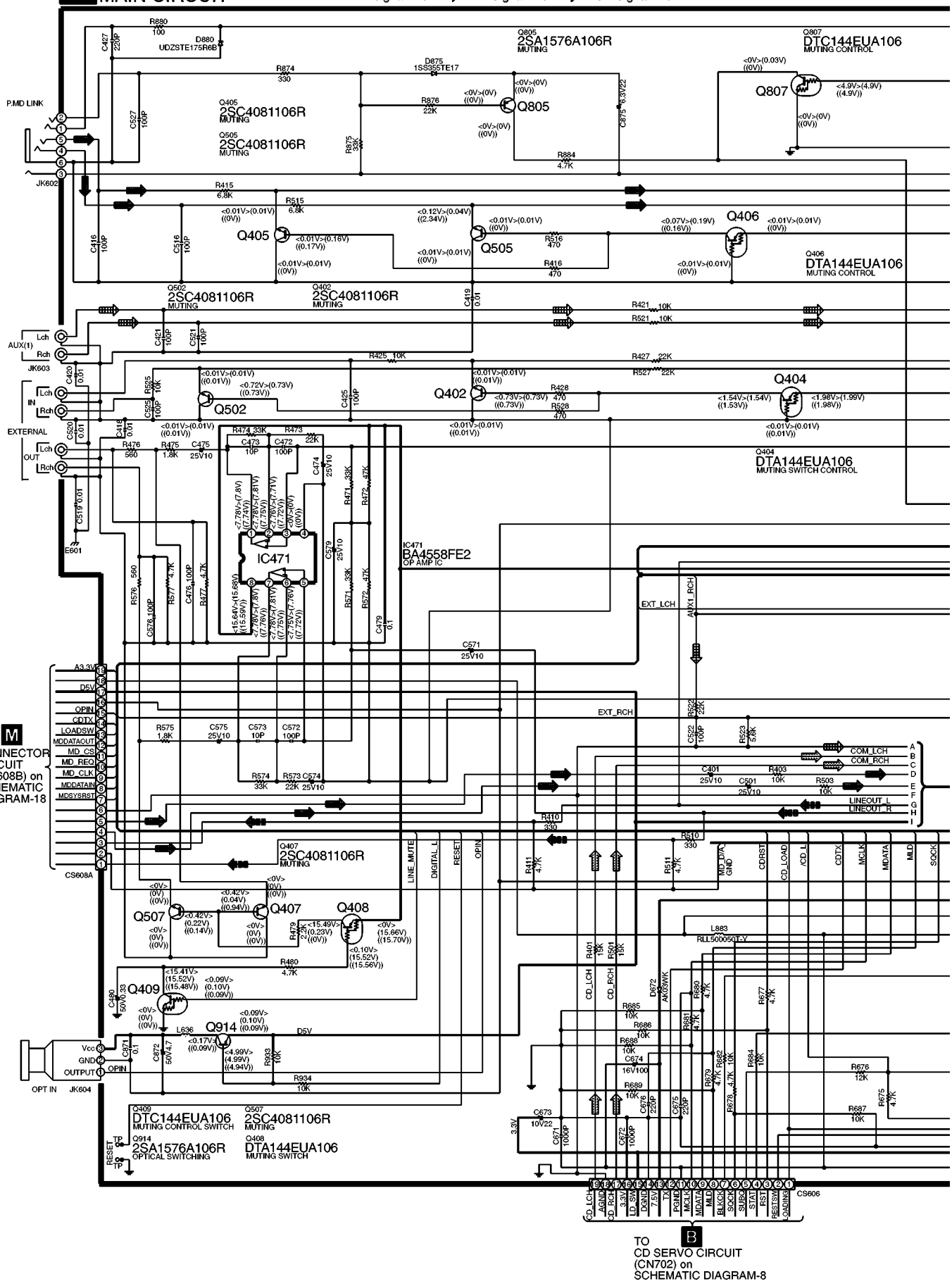
SCHEMATIC DIAGRAM-8



SCHEMATIC DIAGRAM-9

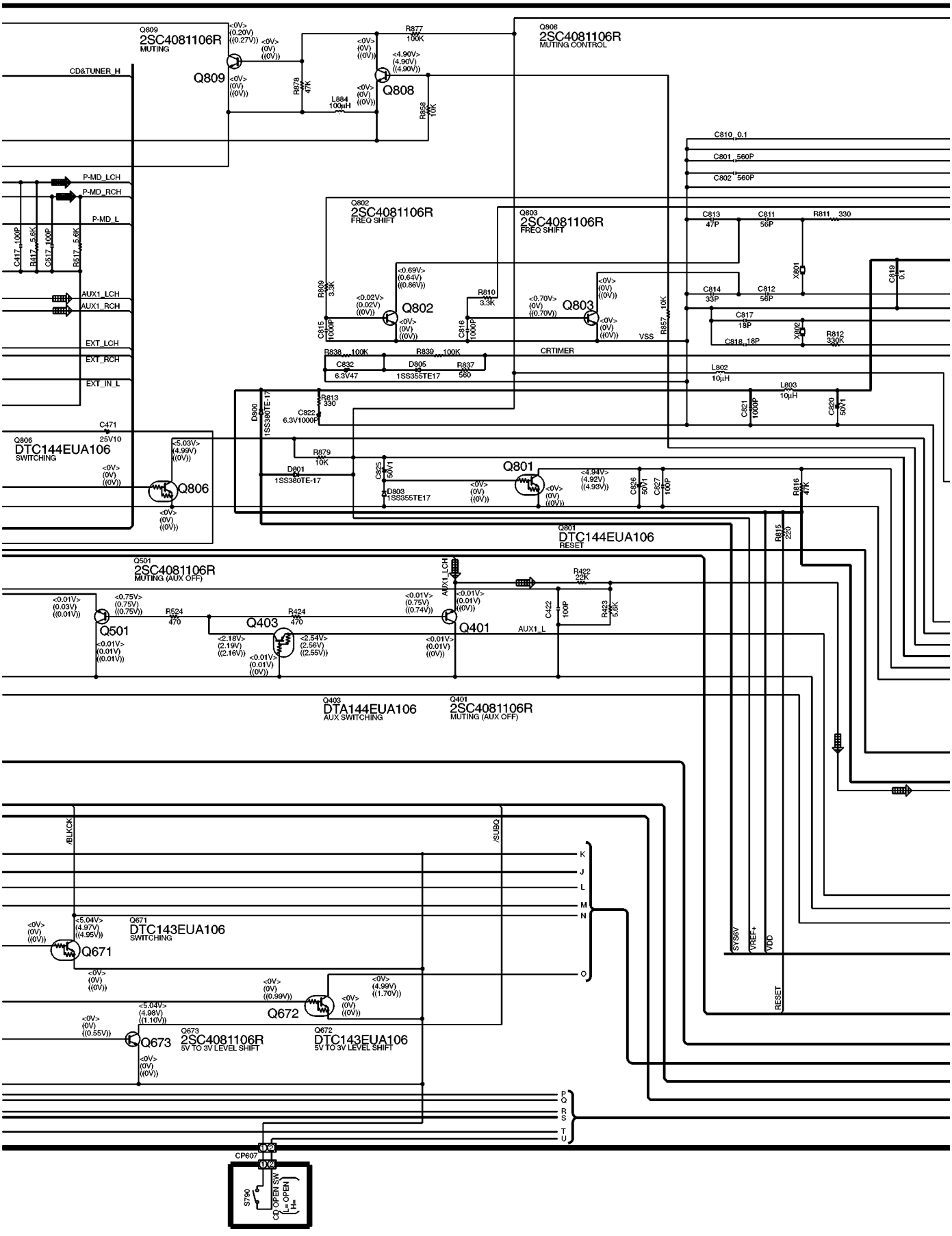
C MAIN CIRCUIT

: +B signal line
: CD Signal line
: MD Signal line
: MD Rec Signal line
: AUX Signal line

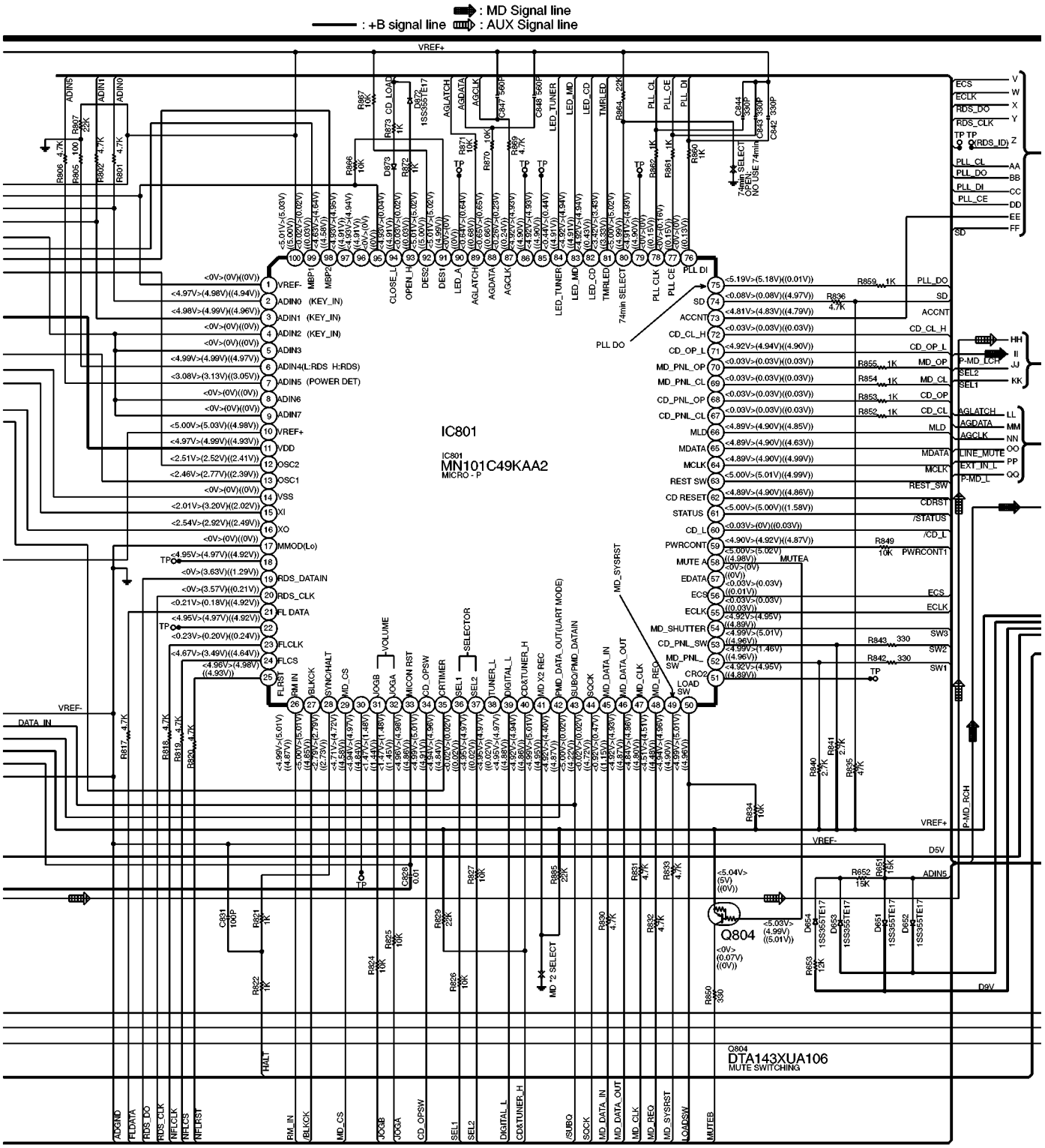


SCHEMATIC DIAGRAM-10

: MD Signal line
: +B signal line : AUX Signal line

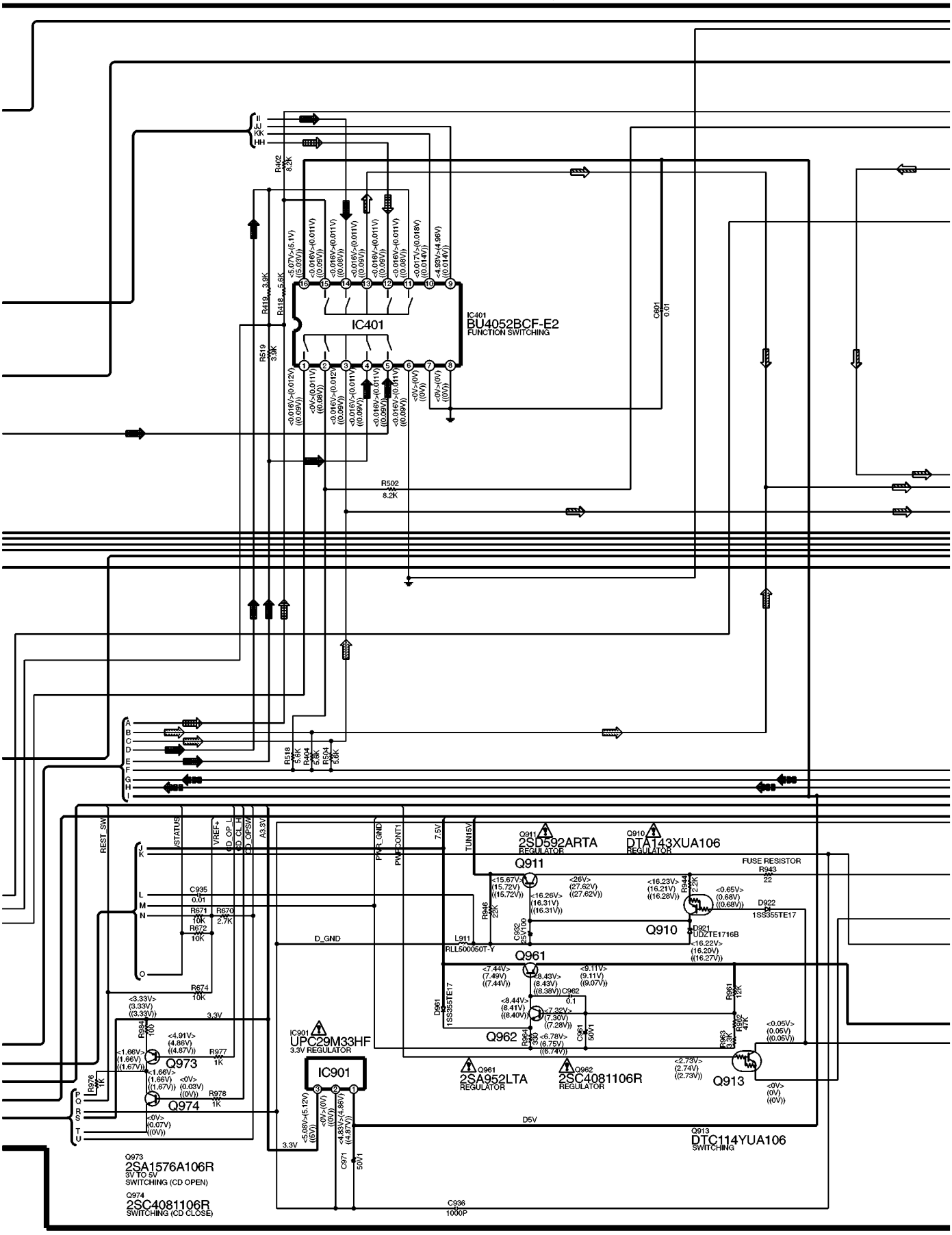


SCHEMATIC DIAGRAM-11



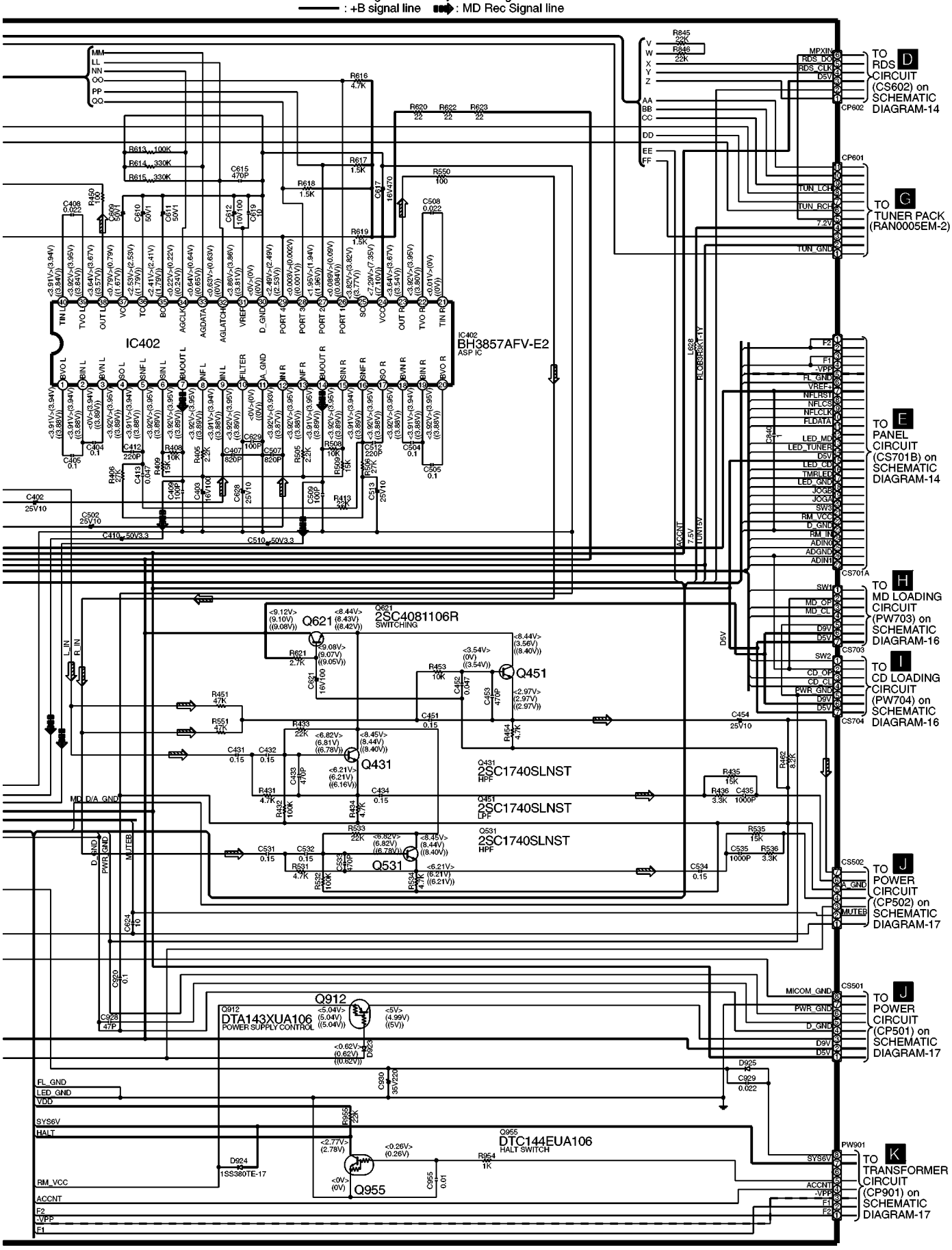
SCHEMATIC DIAGRAM-12

: AUX Signal line : Main Signal line : CD Signal line
: +B signal line : MD Signal line : MD Rec Signal line



SCHEMATIC DIAGRAM-13

: -B signal line
: +B signal line
: Main Signal line
: MD Rec Signal line

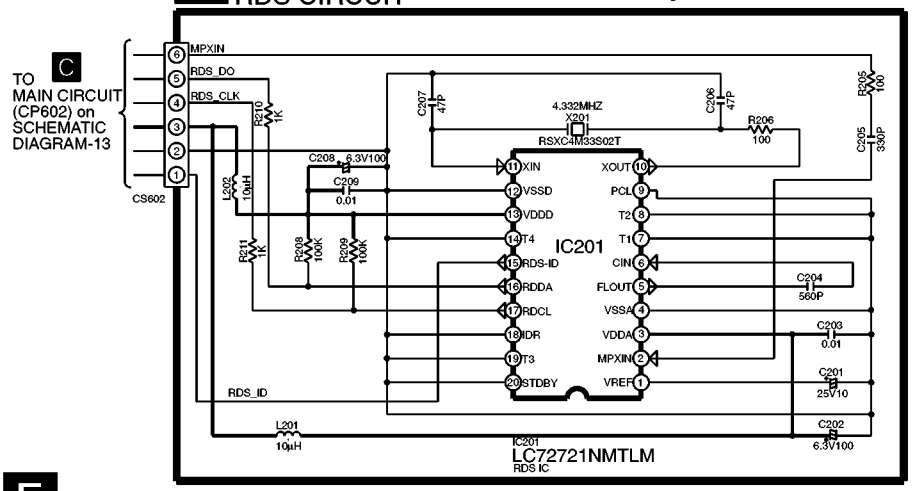


SCHEMATIC DIAGRAM-14

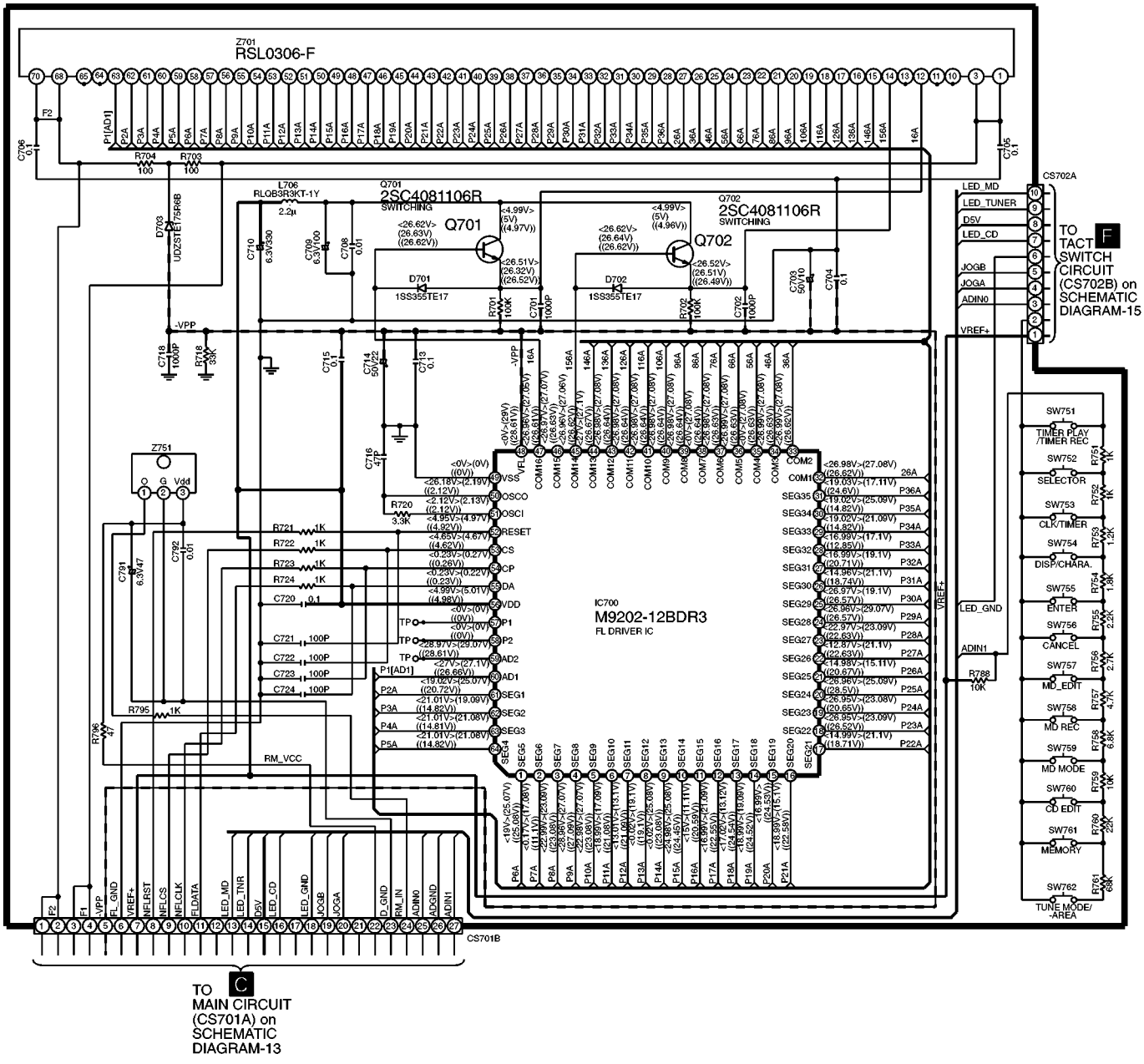
: -B signal line

: +B signal line

D RDS CIRCUIT



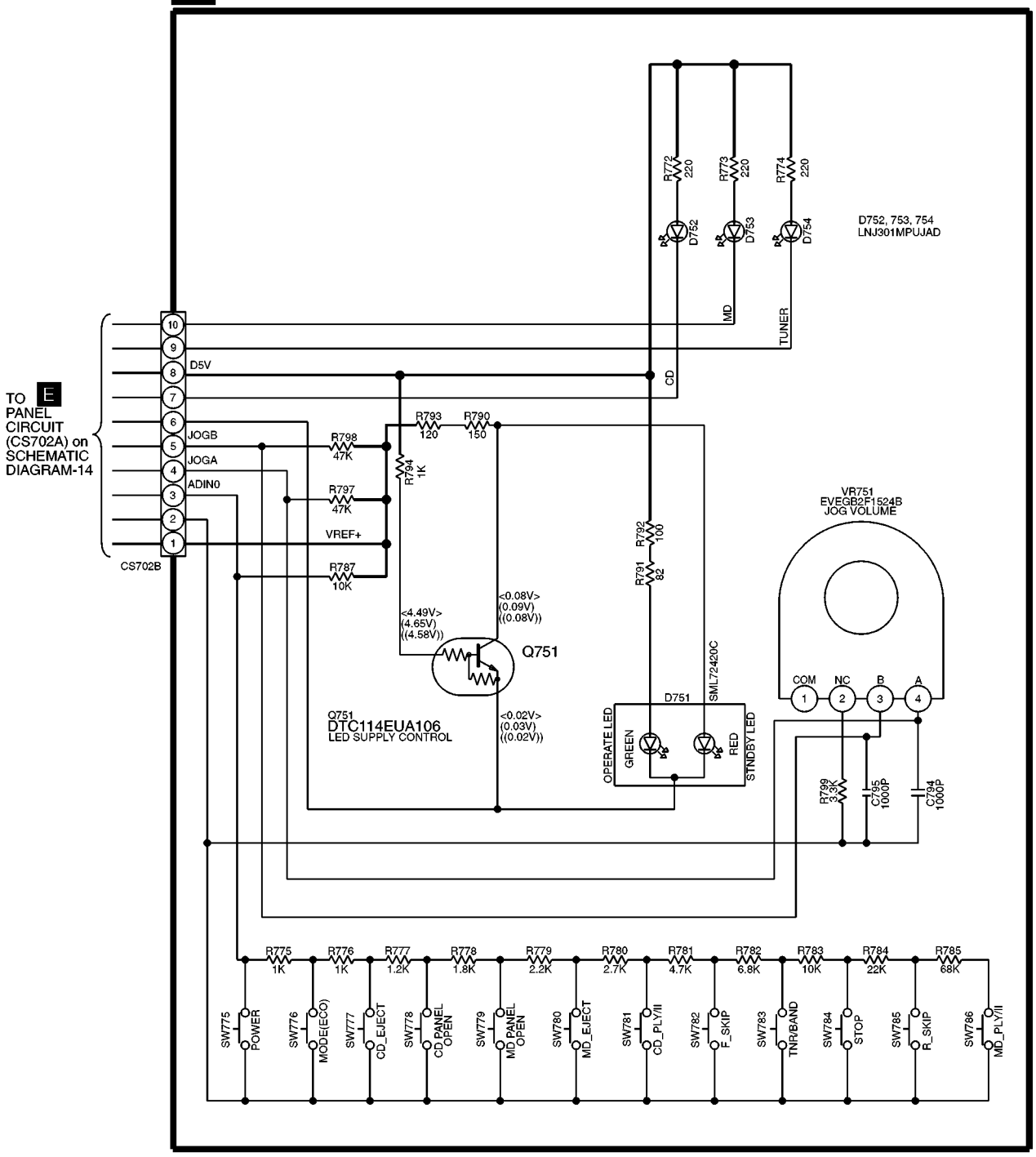
E PANEL CIRCUIT



SCHEMATIC DIAGRAM-15

F TACT SWITCH CIRCUIT

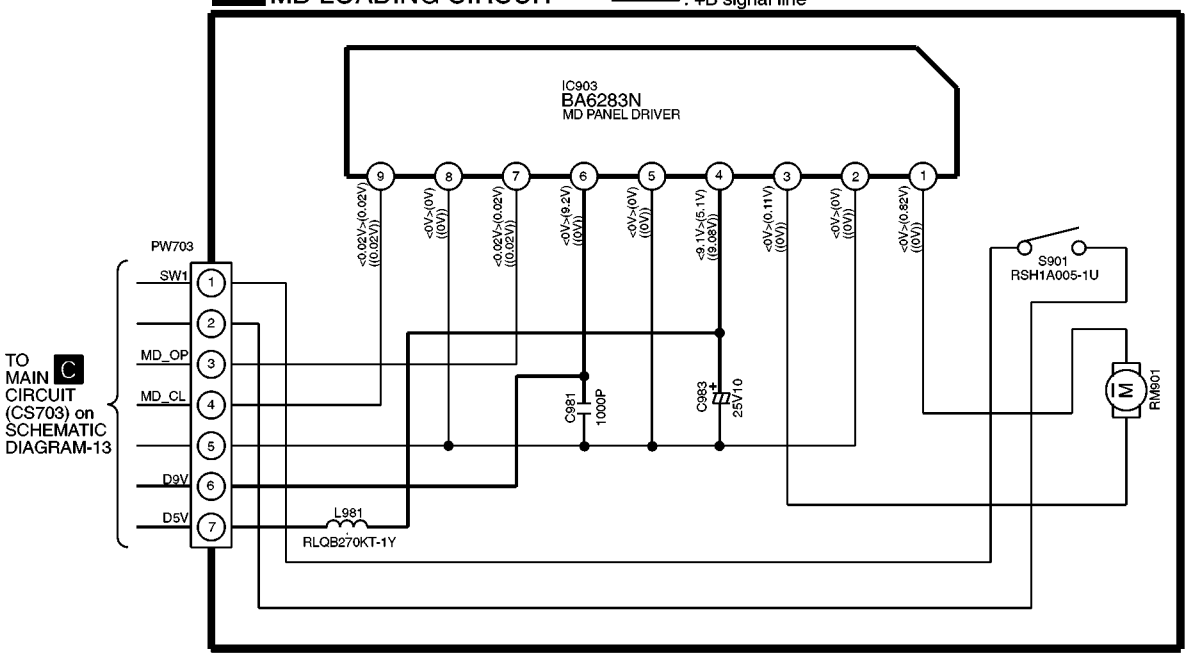
——— : +B signal line



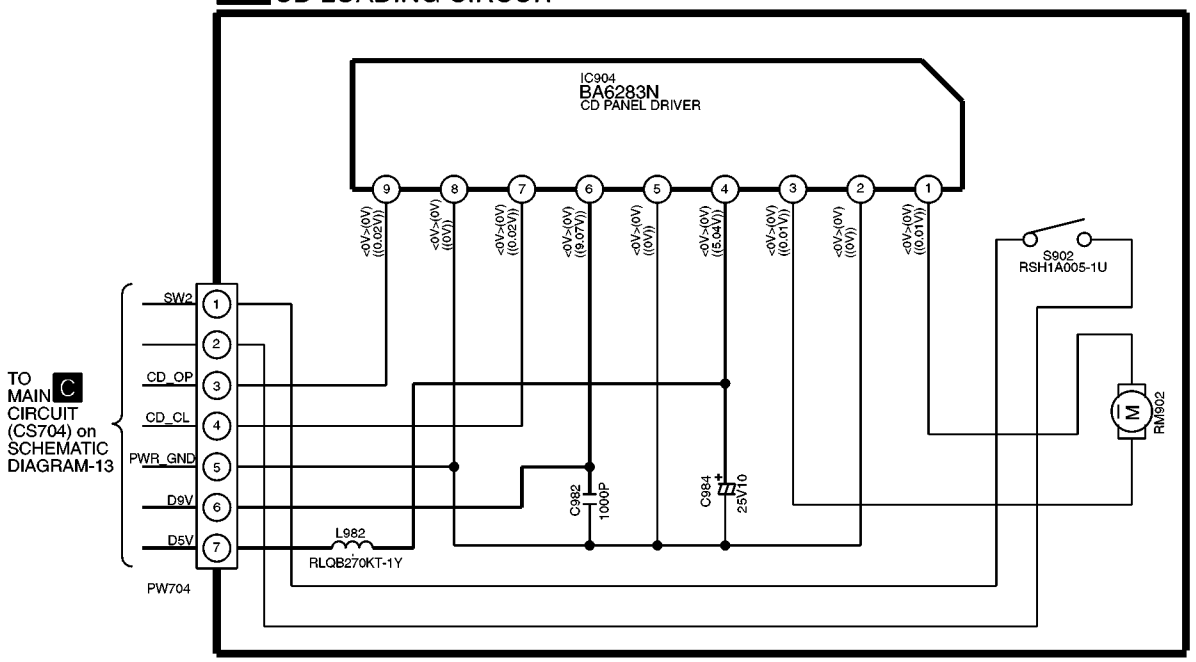
SCHEMATIC DIAGRAM-16

H MD LOADING CIRCUIT

——— : +B signal line



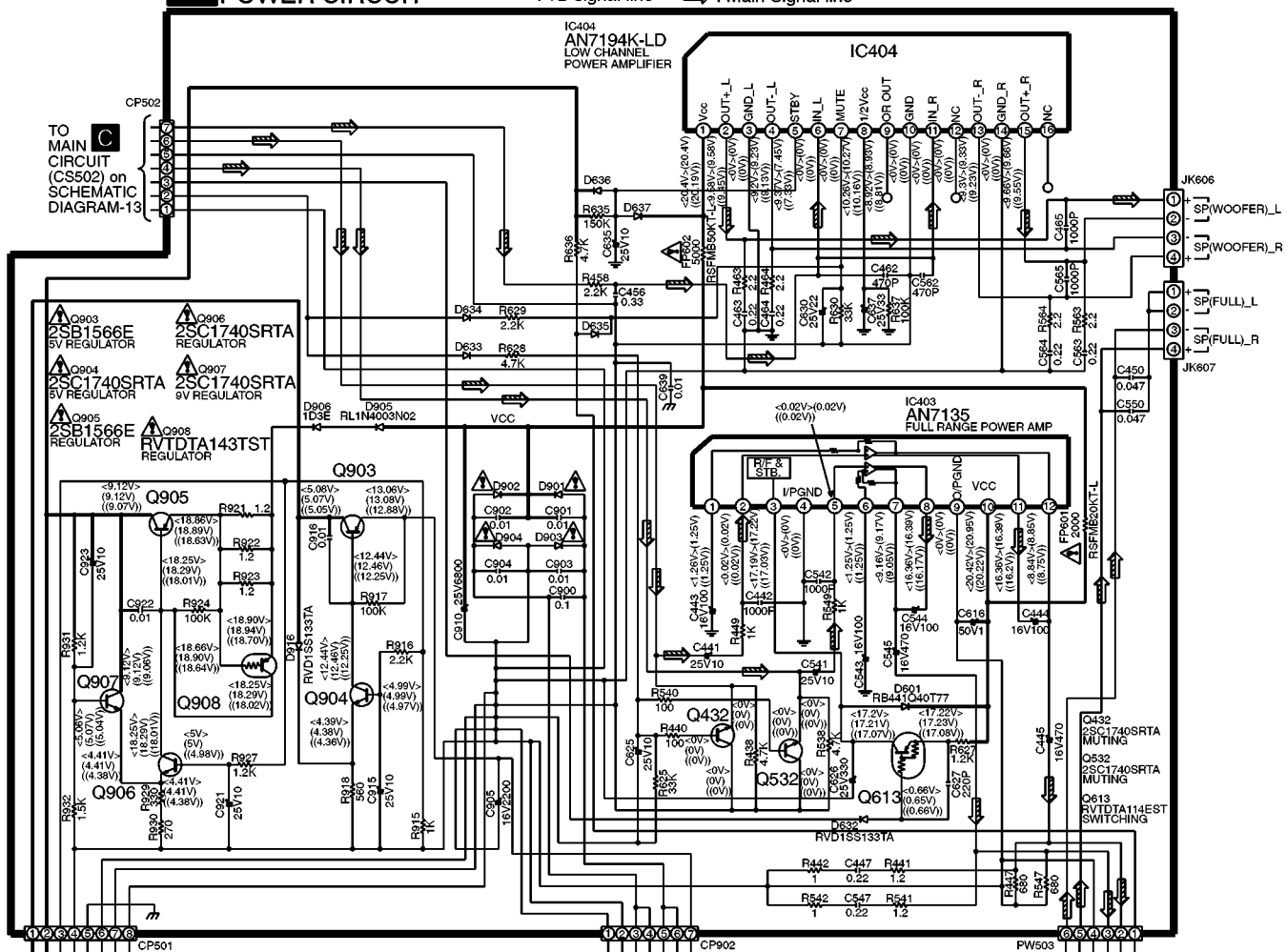
I CD LOADING CIRCUIT



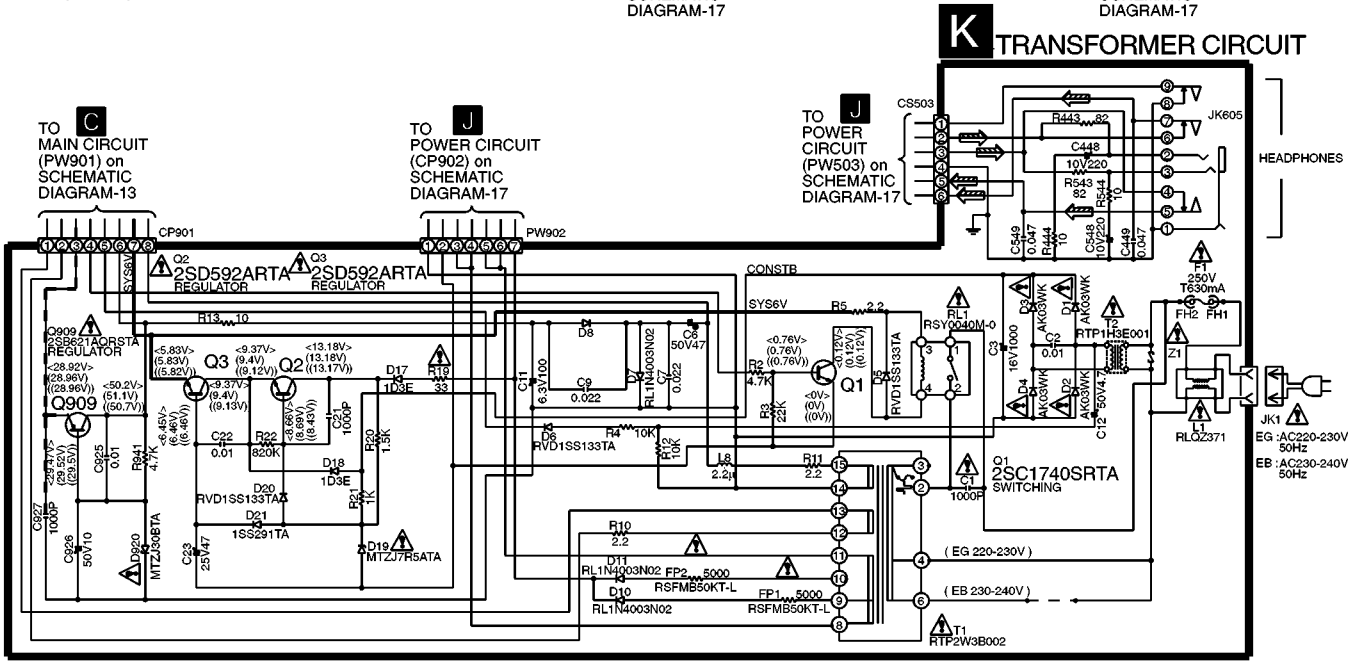
SCHEMATIC DIAGRAM-17

J POWER CIRCUIT

- - - : -B signal line
——— : +B signal line
⇒ : Main Signal line



K TRANSFORMER CIRCUIT



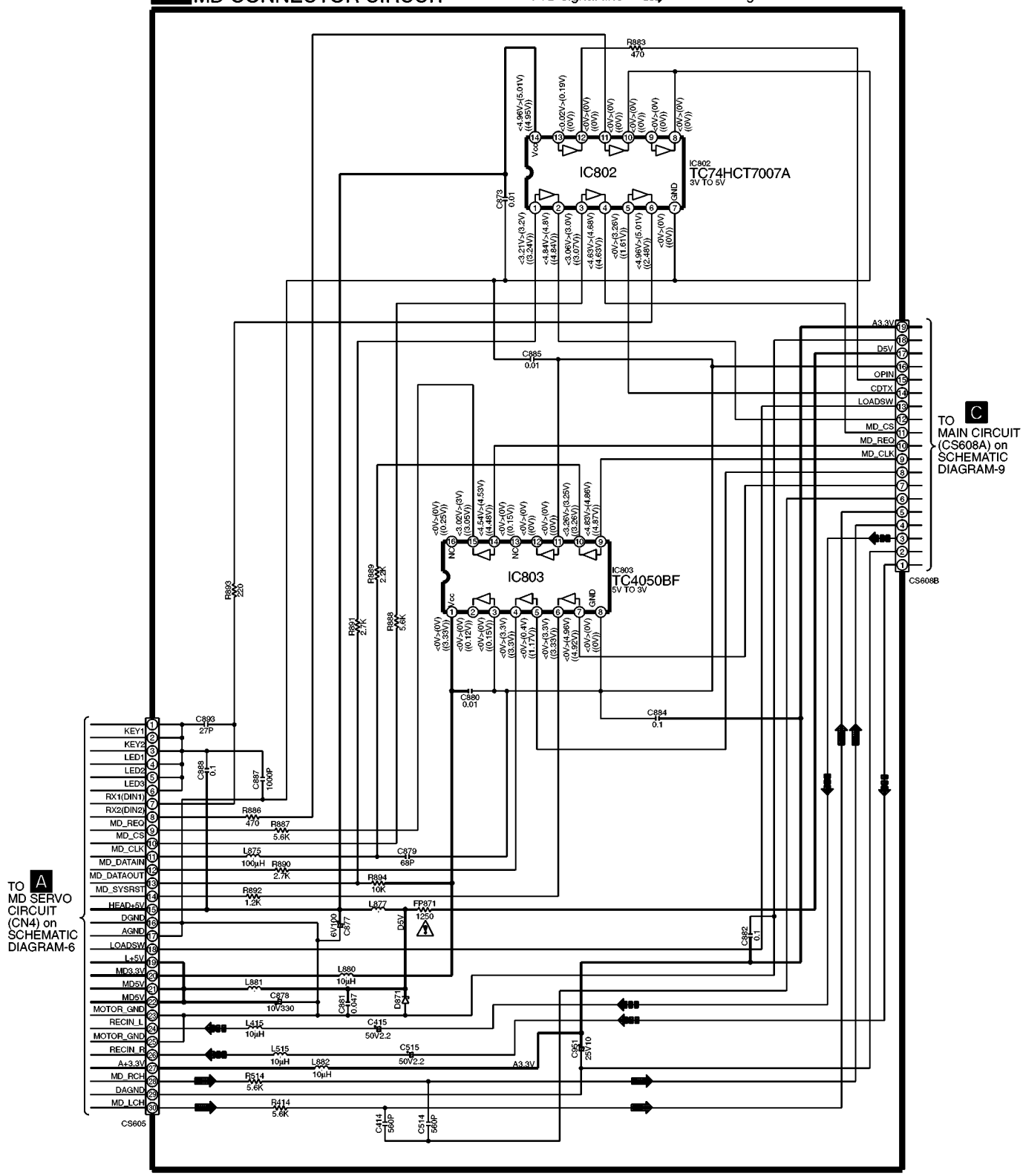
SCHEMATIC DIAGRAM-18

M MD CONNECTOR CIRCUIT

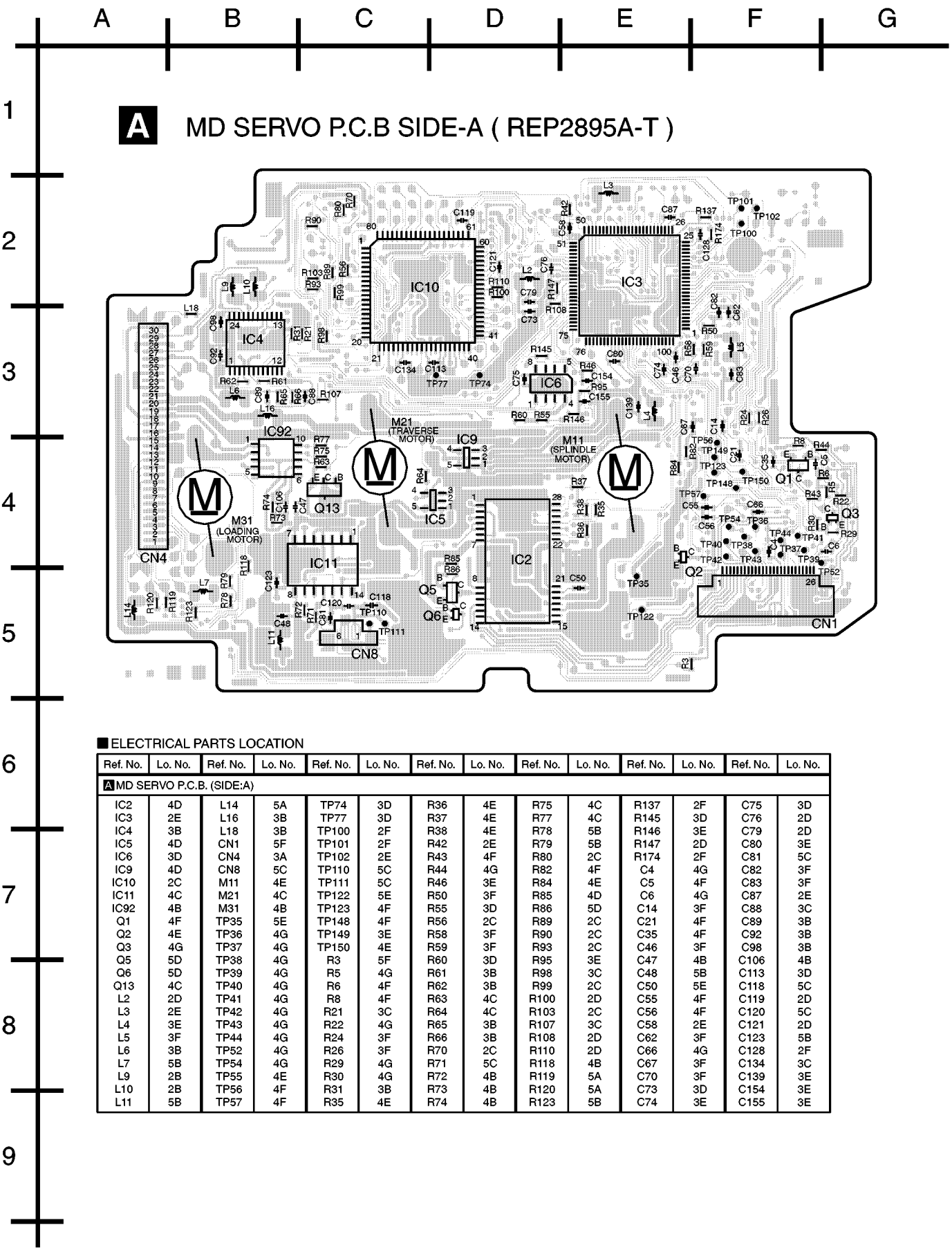
: +B signal line

: MD Signal line

: MD Rec Signal line



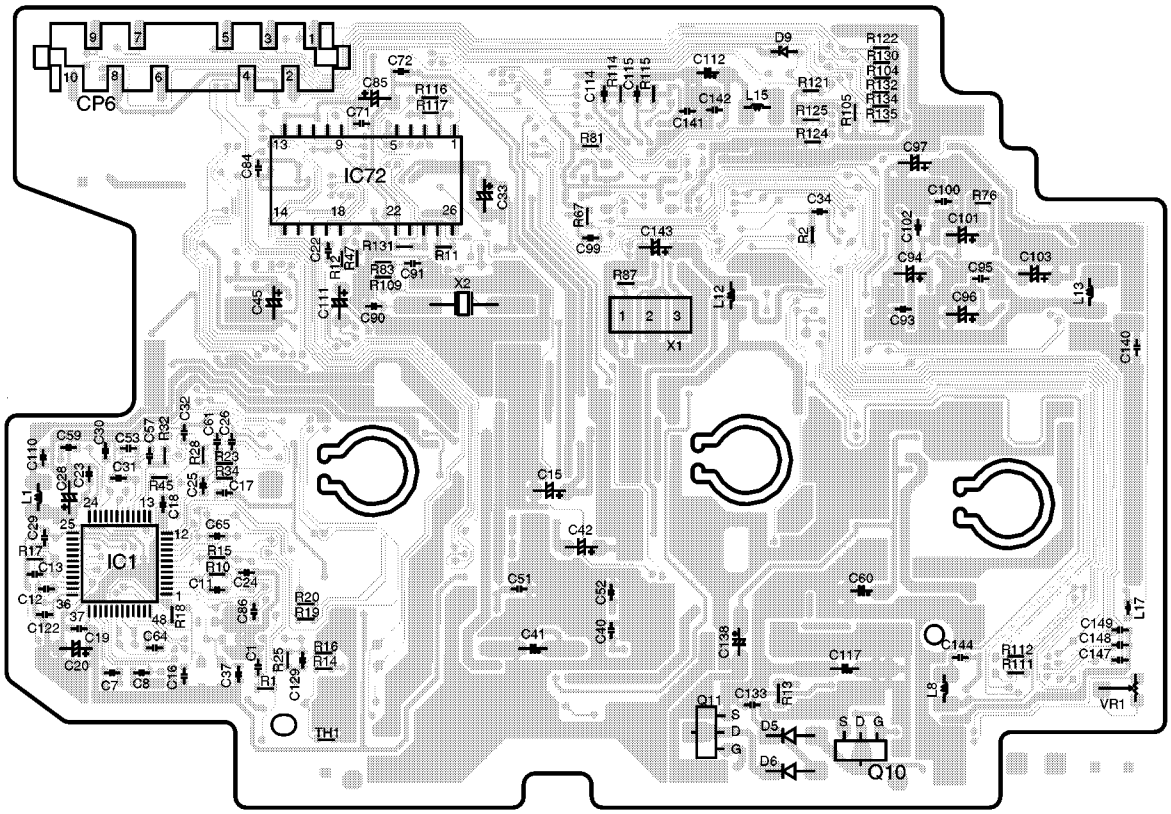
15 Printed Circuit Board



■ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
AMD SERVO P.C.B. (SIDE:A)													
IC2	4D	L14	5A	TP74	3D	R36	4E	R75	4C	R137	2F	C75	3D
IC3	2E	L16	3B	TP77	3D	R37	4E	R77	4C	R145	3D	C76	2D
IC4	3B	L18	3B	TP100	2F	R38	4E	R78	5B	R146	3E	C79	2D
IC5	4D	CN1	5F	TP101	2F	R42	2E	R79	5B	R147	2D	C80	3E
IC6	3D	CN4	3A	TP102	2E	R43	4F	R80	2C	R174	2F	C81	5C
IC9	4D	CN8	5C	TP110	5C	R44	4G	R82	4F	C4	4G	C82	3F
IC10	2C	M11	4E	TP111	5C	R46	3E	R84	4E	C5	4F	C83	3F
IC11	4C	M21	4C	TP122	5E	R50	3F	R85	4D	C6	4G	C87	2E
IC92	4B	M31	4B	TP123	4F	R55	3D	R86	5D	C14	3F	C88	3C
Q1	4F	TP35	5E	TP148	4F	R56	2C	R89	2C	C21	4F	C89	3B
Q2	4E	TP36	4G	TP149	3E	R58	3F	R90	2C	C35	4F	C92	3B
Q3	4G	TP37	4G	TP150	4E	R59	3F	R93	2C	C46	3F	C98	3B
Q5	5D	TP38	4G	R3	5F	R60	3D	R95	3E	C47	4B	C106	4B
Q6	5D	TP39	4G	R5	4G	R61	3B	R98	3C	C48	5B	C113	3D
Q13	4C	TP40	4G	R6	4F	R62	3B	R99	2C	C50	5E	C118	5C
L2	2D	TP41	4G	R8	4F	R63	4C	R100	2D	C55	4F	C119	2D
L3	2E	TP42	4G	R21	3C	R64	4C	R103	2C	C56	4F	C120	5C
L4	3E	TP43	4G	R22	4G	R65	3B	R107	3C	C58	2E	C121	2D
L5	3F	TP44	4G	R24	3F	R66	3B	R108	2D	C62	3F	C123	5B
L6	3B	TP52	4G	R26	3F	R70	2C	R110	2D	C66	4G	C128	2F
L7	5B	TP54	4G	R29	4G	R71	5C	R118	4B	C67	3F	C134	3C
L9	2B	TP55	4E	R30	4G	R72	4B	R119	5A	C70	3F	C139	3E
L10	2B	TP56	4F	R31	3B	R73	4B	R120	5A	C73	3D	C154	3E
L11	5B	TP57	4F	R35	4E	R74	4B	R123	5B	C74	3E	C155	3E

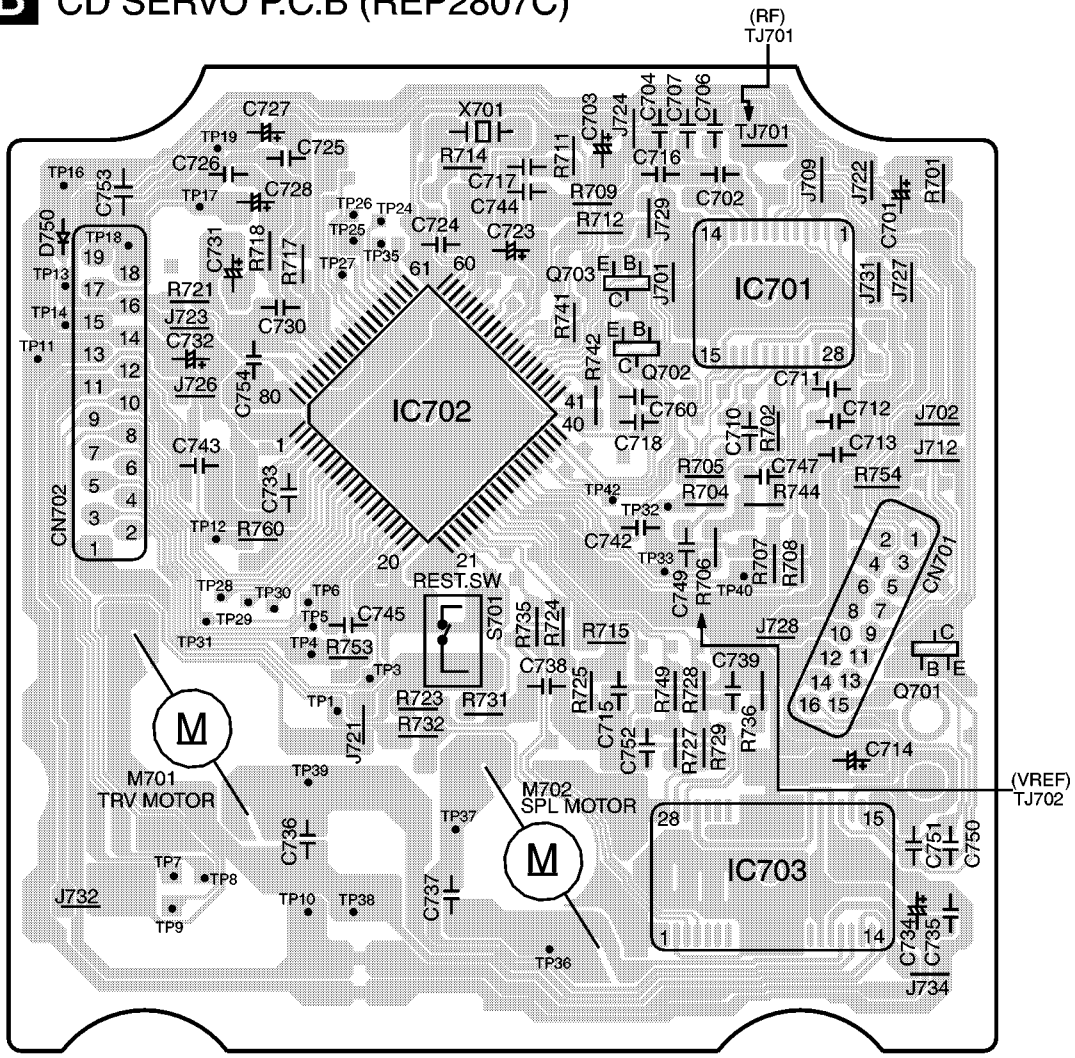
A MD SERVO P.C.B SIDE-B (REP2895A-T)



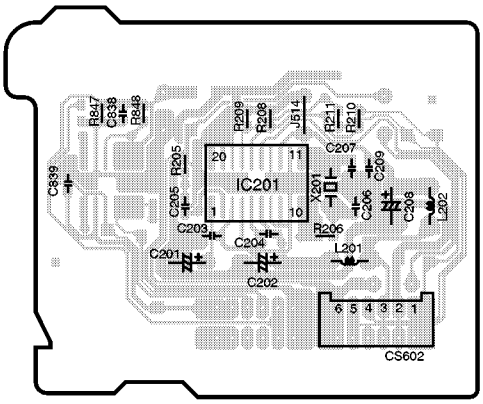
■ELECTRICAL PARTS LOCATION

Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.	Ref. No.	Lo. No.
A MD SERVO P.C.B. (SIDE:B)											
IC1	4A	R13	5E	R111	5F	C17	4B	C53	4B	C103	3F
IC72	2C	R14	2E	R112	5F	C18	4B	C57	4B	C110	4A
Q10	5E	R15	4B	R114	2D	C19	5A	C59	4A	C111	3C
Q11	5E	R16	5C	R115	2D	C20	5A	C60	5E	C112	2E
D5	5E	R17	4A	R116	2C	C22	3C	C61	4B	C114	2D
D6	5E	R18	5B	R117	2C	C23	4A	C64	5B	C115	2D
D9	2E	R19	5B	R121	2E	C24	4B	C65	4B	C117	5E
VR1	5G	R20	5B	R122	2F	C25	4B	C71	2C	C122	5A
TH1	5C	R23	4B	R124	2E	C26	4B	C72	2C	C129	5B
L1	4A	R25	5B	R125	2E	C28	4A	C84	2B	C133	5E
L8	5F	R28	4B	R130	2F	C29	4A	C85	2C	C138	5E
L12	3E	R32	4B	R131	3C	C30	4A	C86	5B	C140	3G
L13	3G	R34	4B	R132	2F	C31	4A	C90	3C	C141	2D
L15	2E	R45	4B	R134	2F	C32	4B	C91	3C	C142	2E
L17	5G	R47	3C	R135	2F	C33	2D	C93	3F	C143	3D
X1	3D	R67	3D	C1	5B	C34	2E	C94	3F	C144	5F
X2	3C	R76	2F	C7	5B	C37	5B	C95	3F	C147	5G
CP6	2A	R81	2D	C8	5B	C40	5D	C96	3F	C148	5G
R1	5B	R83	3C	C11	4B	C41	5D	C97	2F	C149	5G
R2	3E	R87	3D	C12	4A	C42	4D	C99	3D		
R10	4B	R104	2F	C13	4A	C45	3B	C100	3F		
R11	3C	R105	2E	C15	4D	C51	5D	C101	3F		
R12	3C	R109	3C	C16	5B	C52	5D	C102	3F		

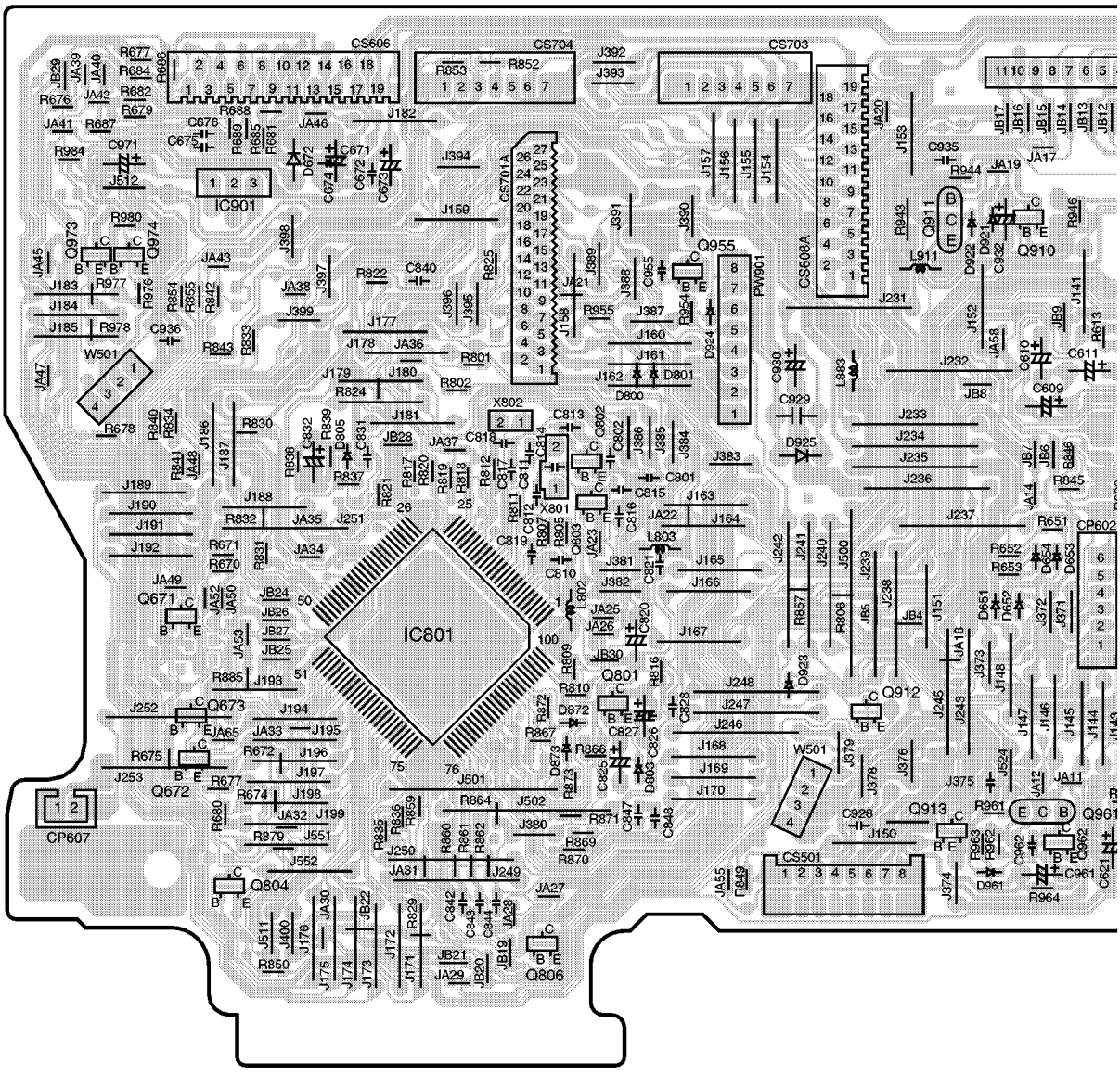
B CD SERVO P.C.B (REP2807C)



D RDS P.C.B (REP2996B)



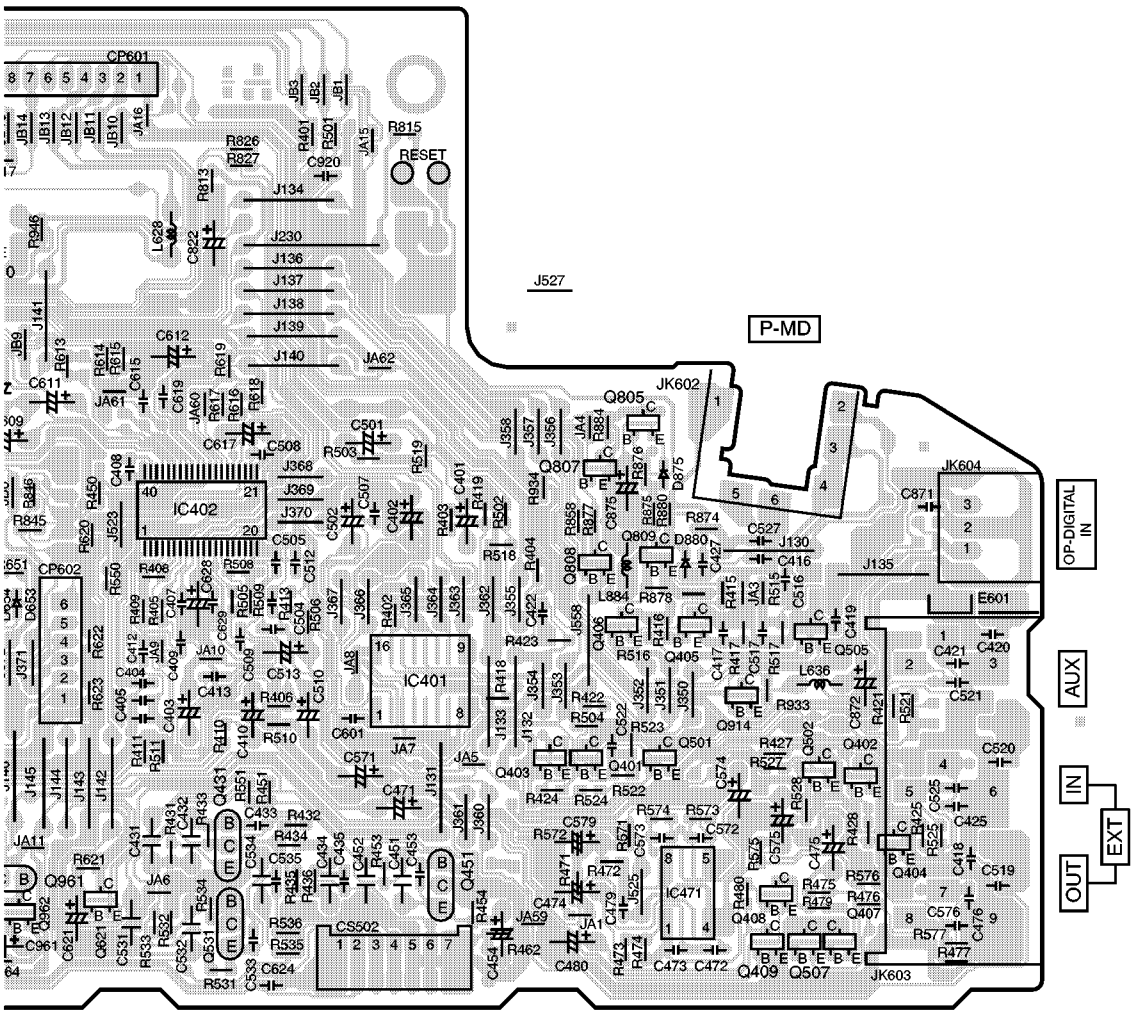
C MAIN P.C.B (REP2996B)



G H I J K L M

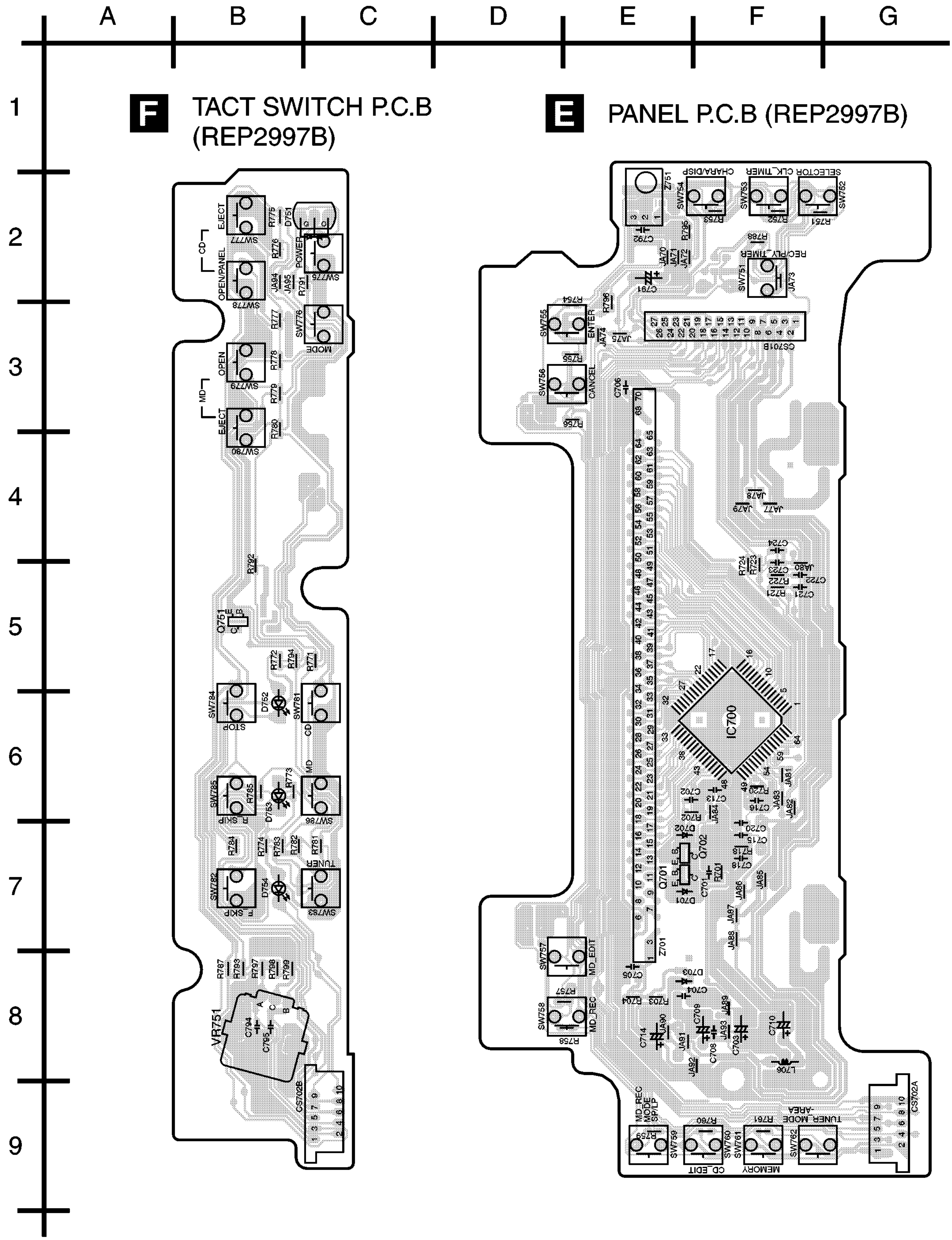
G TUNER PACK (RAN0005EM-2)

(FROM CP601 TO TUNER PACK)

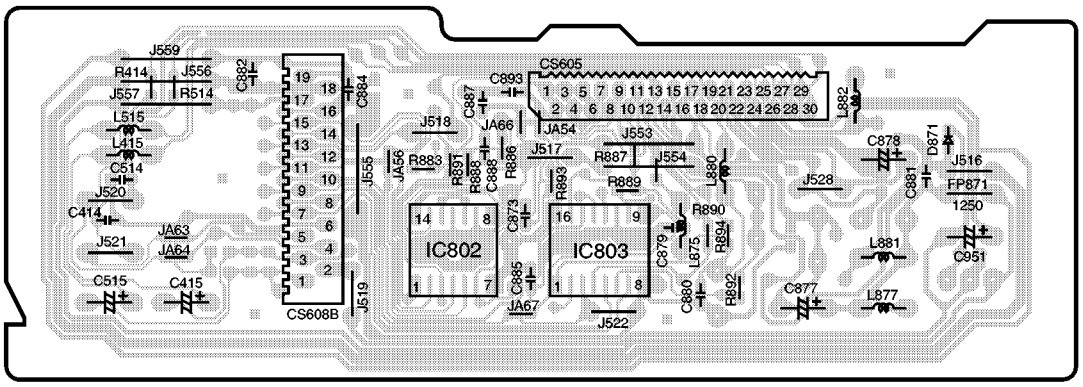


F TACT SWITCH P.C.B (REP2997B)

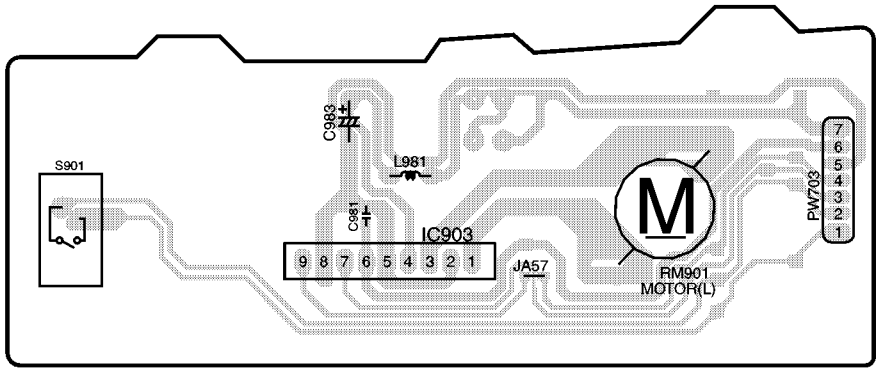
E PANEL P.C.B (REP2997B)



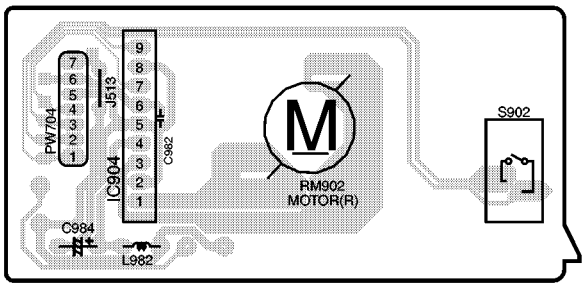
M MD CONNECTOR P.C.B (REP2996B)



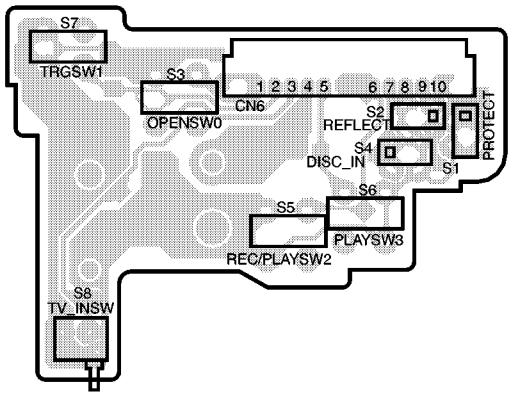
H MD LOADING P.C.B (REP2996B)

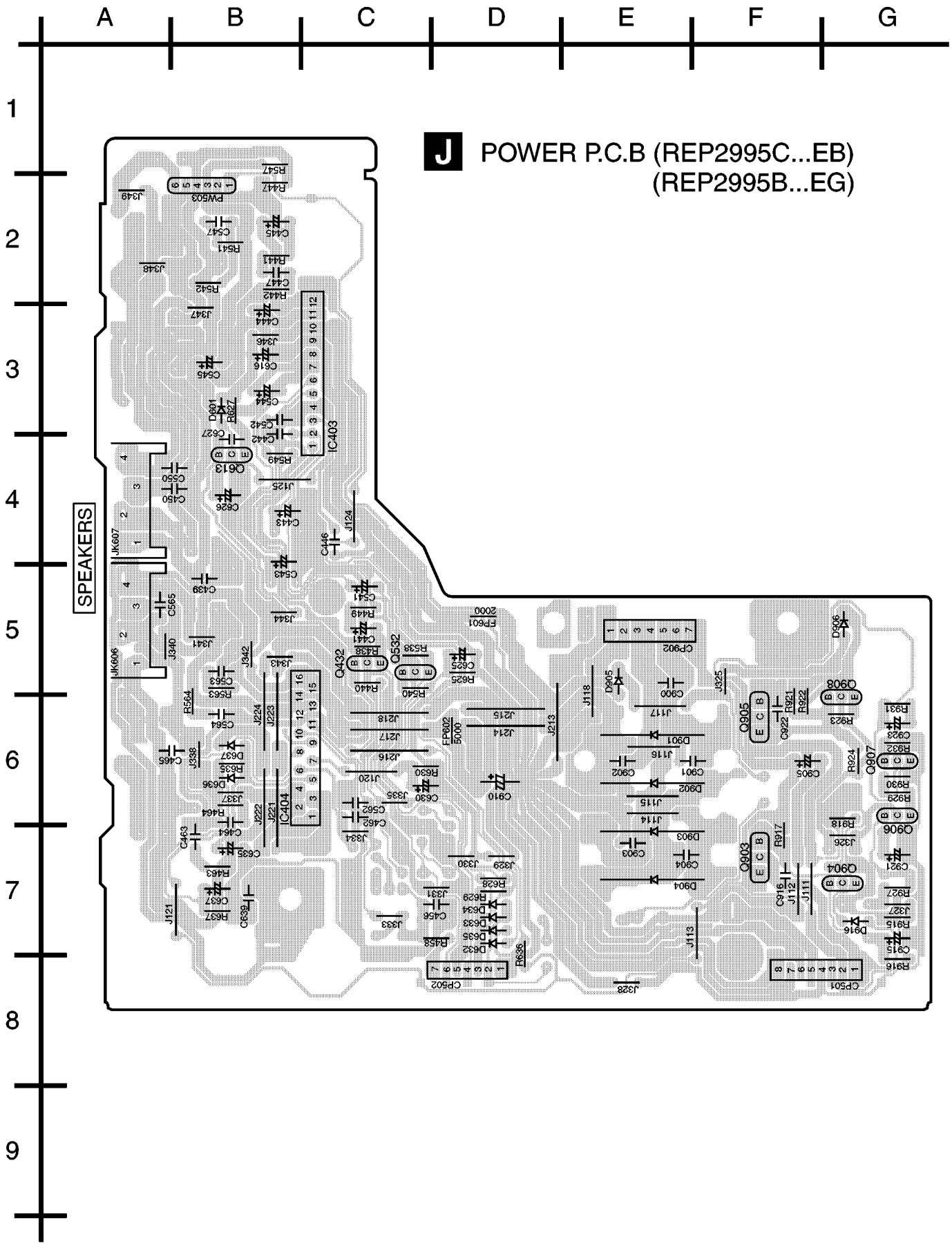


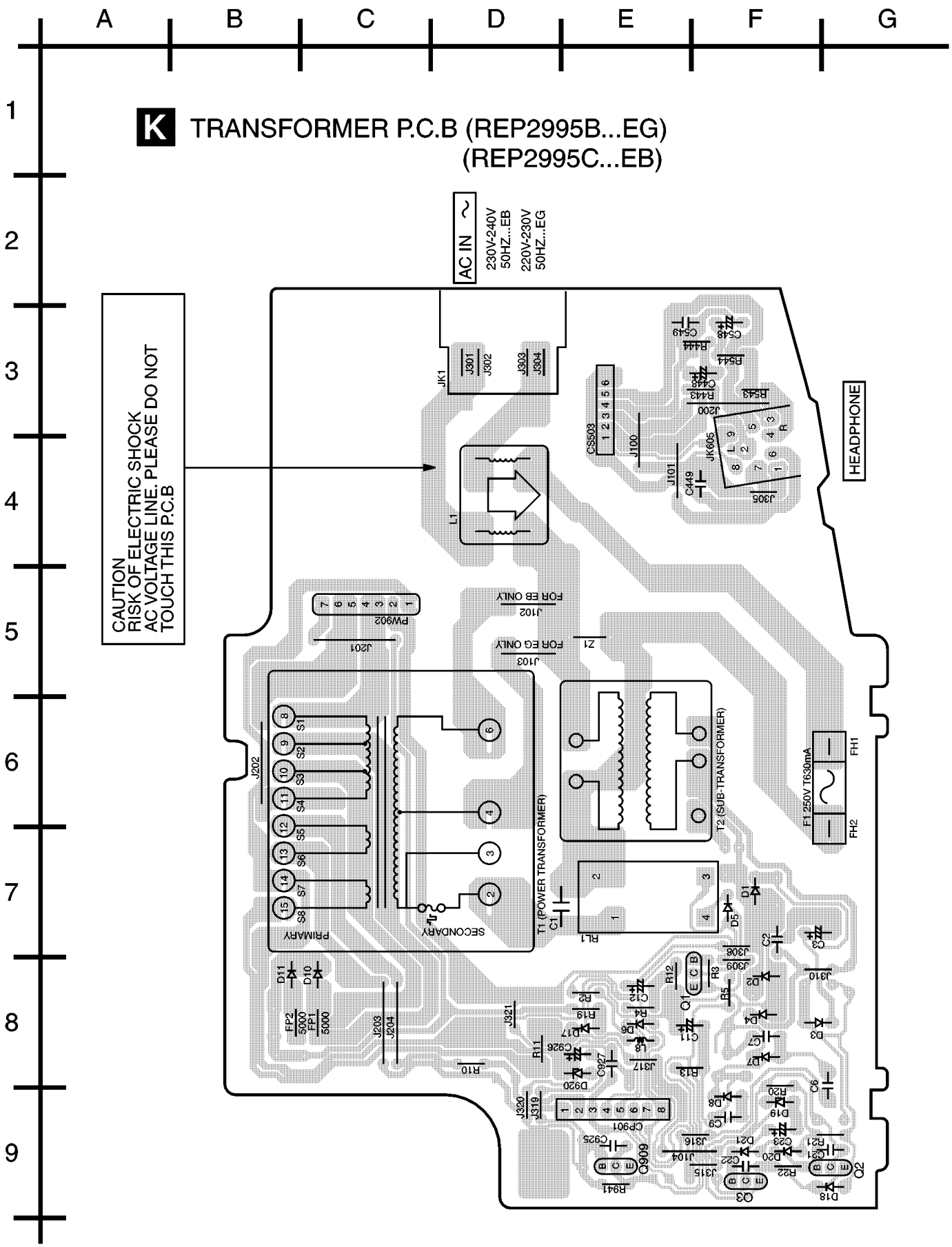
I CD LOADING P.C.B (REP2996B)



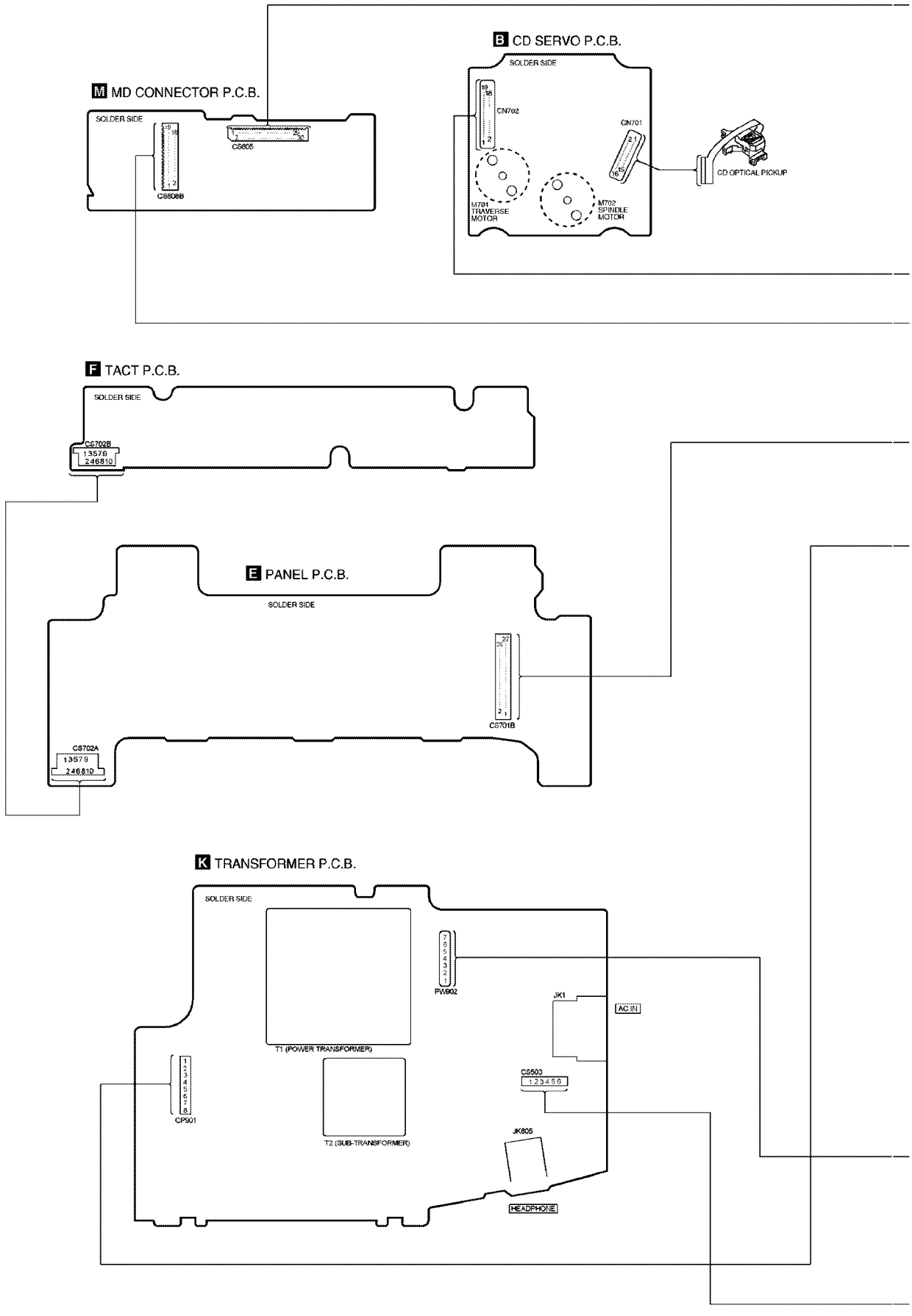
L MD SWITCH P.C.B (REP2575A)

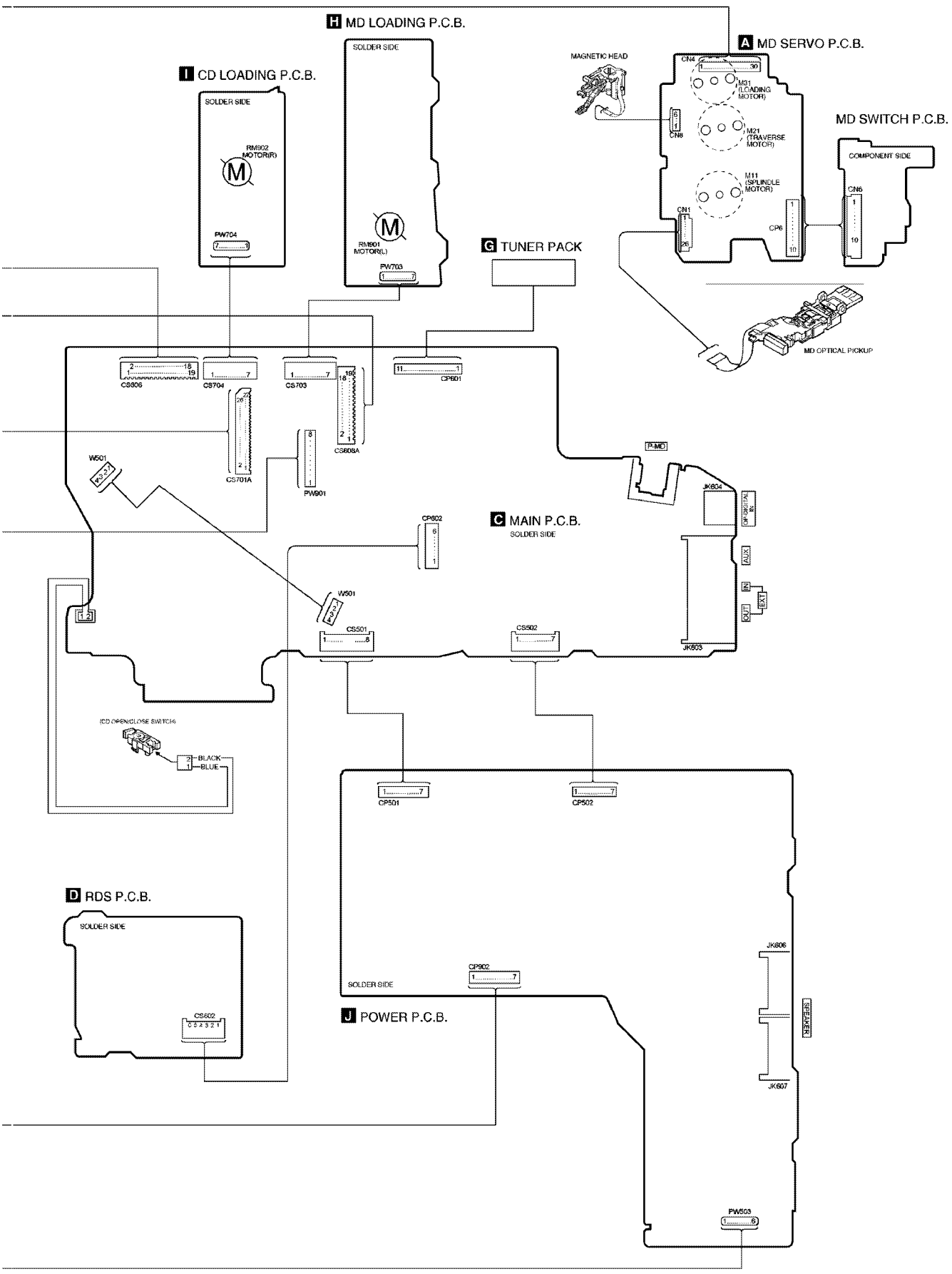



A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
SPEAKERS
J POWER P.C.B (REP2995C...EB)
(REP2995B...EG)

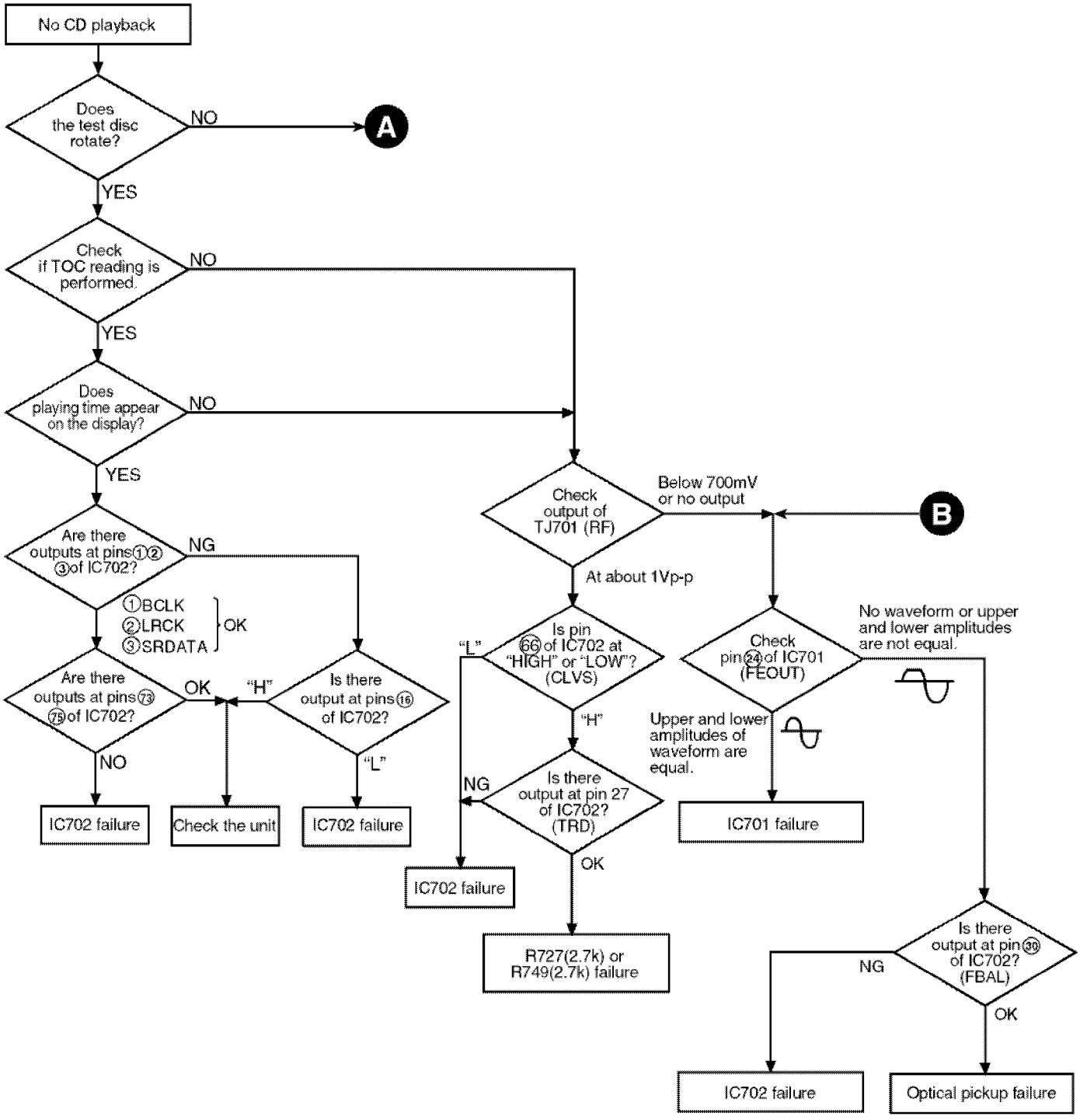

A
B
C
D
E
F
G
1
2
3
4
5
6
7
8
9
K TRANSFORMER P.C.B (REP2995B...EG)
(REP2995C...EB)
AC IN ~
230V-240V
50HZ...EB
220V-230V
50HZ...EG
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE. PLEASE DO NOT
TOUCH THIS P.C.B
HEADPHONE
T1 (POWER TRANSFORMER)
T2 (SUB-TRANSFORMER)
PRIMARY
SECONDARY
FOR EB ONLY
FOR EG ONLY
F1 250V T630mA
FH1
FH2
JK1
JK605
CS503
PW902

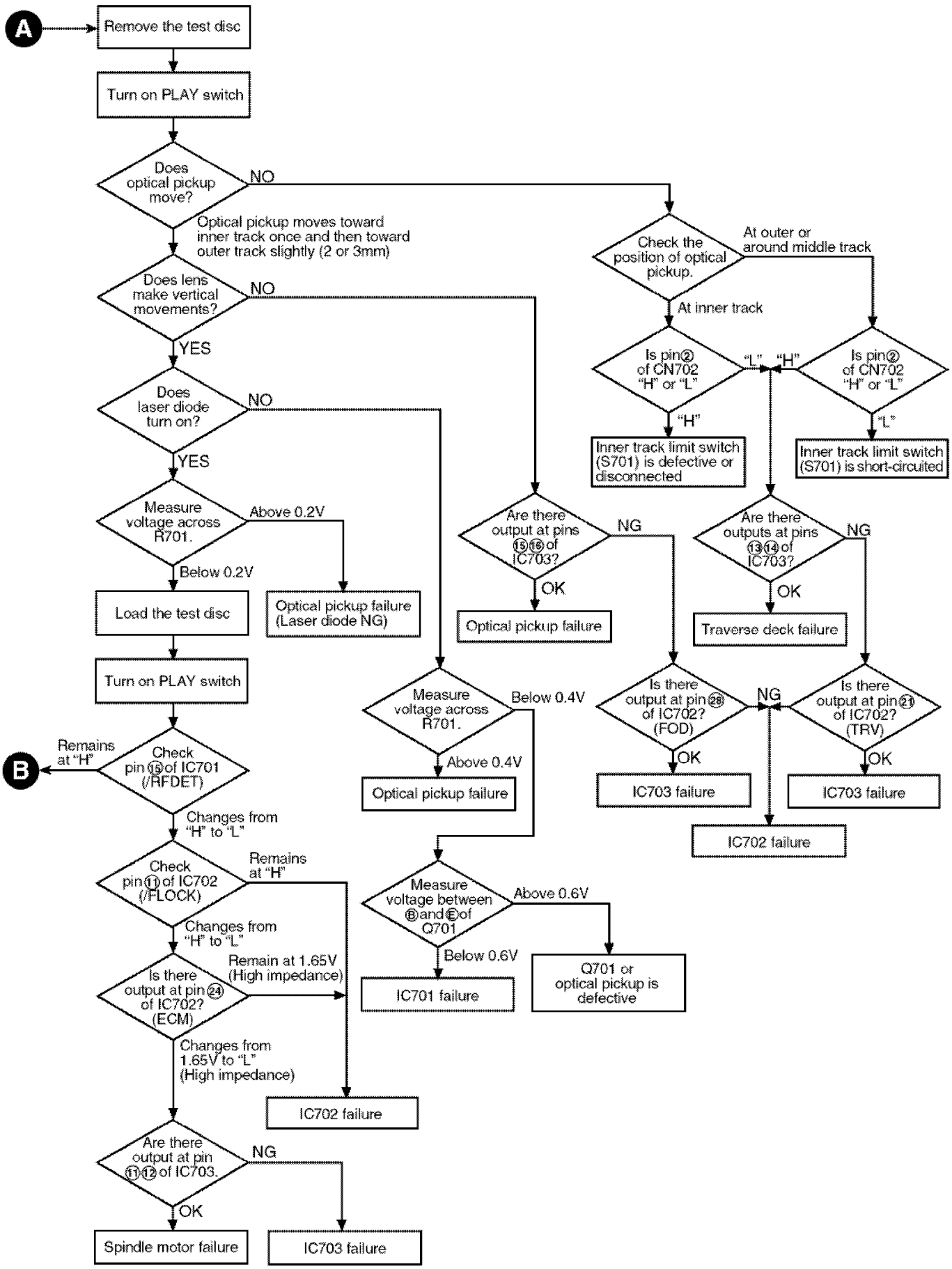
16 Wiring Connection Diagram

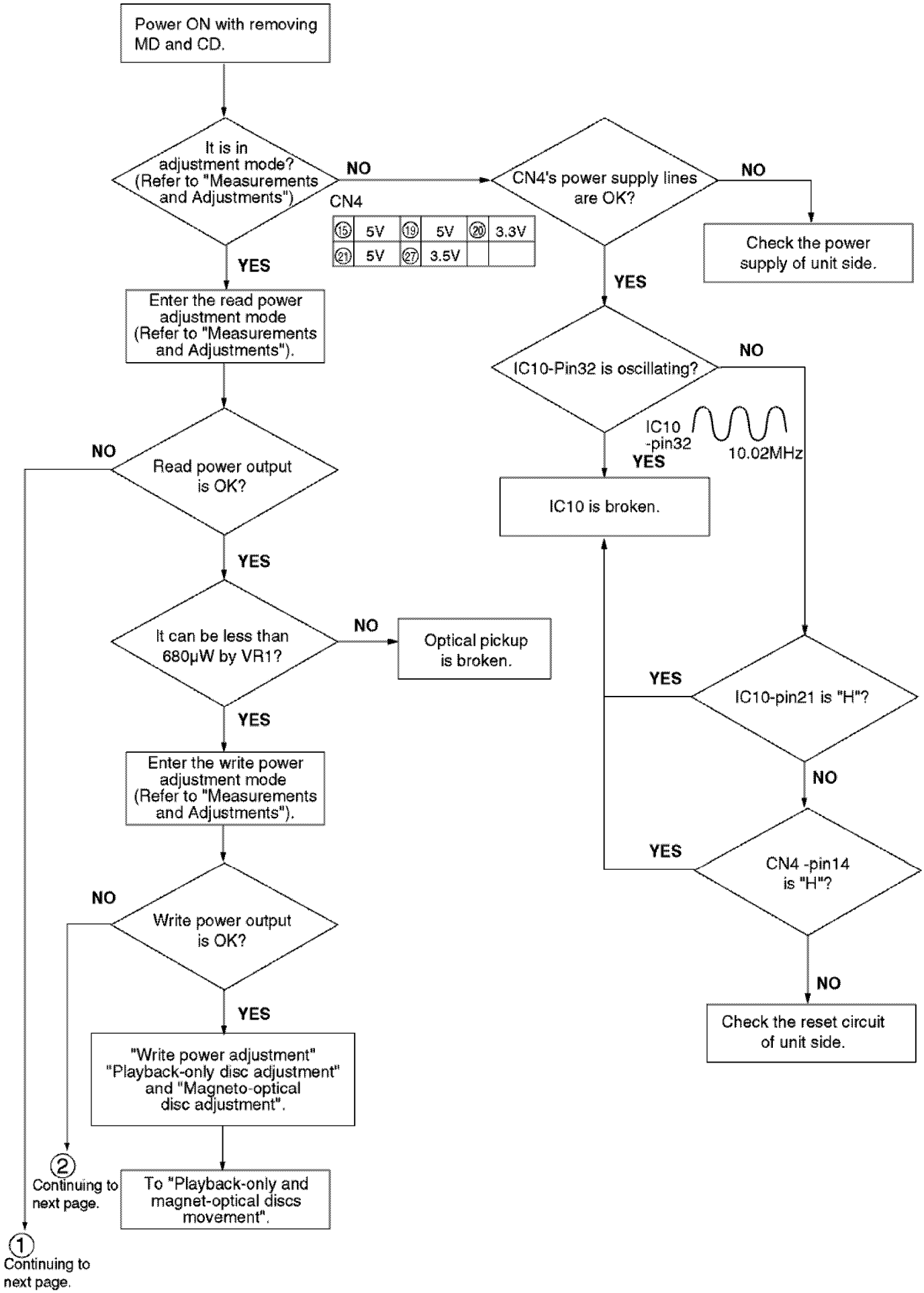


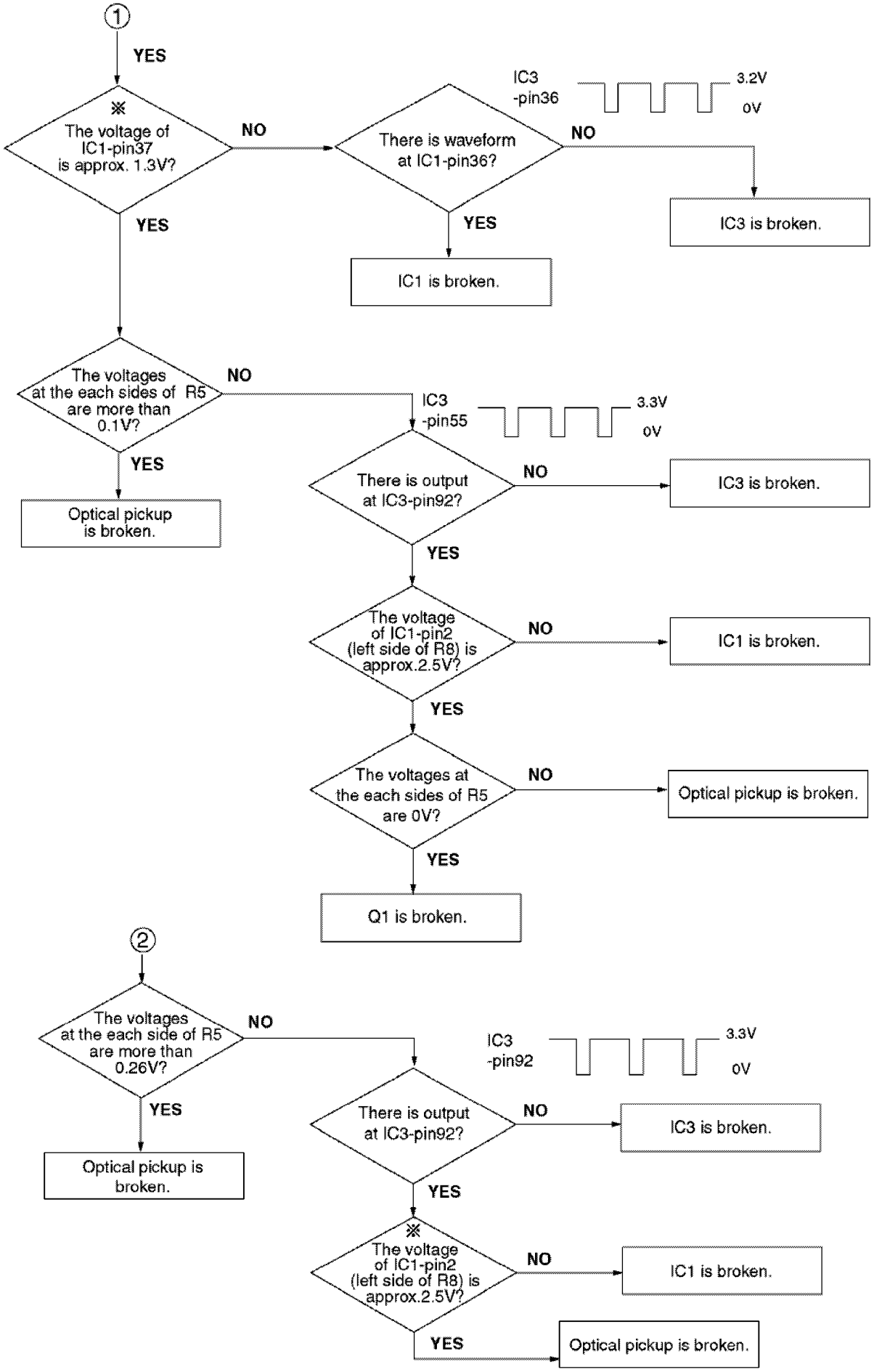

H MD LOADING P.C.B.
SOLDER SIDE
RM901 MOTOR(L)
PW703
I CD LOADING P.C.B.
SOLDER SIDE
RM902 MOTOR(R)
PW704
A MD SERVO P.C.B.
MAGNETIC HEAD
CN4
M31 (LOADING MOTOR)
CN8
M21 (TRAVERSE MOTOR)
M11 (SPLINDLE MOTOR)
CN1
CP6
MD SWITCH P.C.B.
COMPONENT SIDE
CN6
MD OPTICAL PICKUP
G TUNER PACK
CS606
CS704
CS703
CP601
CS608A
CS701A
PW901
W501
P-MD
JK604
CP602
C MAIN P.C.B.
SOLDER SIDE
CS501
CS502
JK603
AUX
IN
OUT
EXT
CD OPEN/CLOSE SWITCH
BLACK
BLUE
CP501
CP502
D RDS P.C.B.
SOLDER SIDE
CS602
CP902
SOLDER SIDE
J POWER P.C.B.
JK606
SPEAKER
JK607
PW503

17 Troubleshooting Guide




A
Remove the test disc
Turn on PLAY switch
Does optical pickup move?
NO
Optical pickup moves toward inner track once and then toward outer track slightly (2 or 3mm)
Does lens make vertical movements?
NO
YES
Does laser diode turn on?
NO
YES
Measure voltage across R701.
Above 0.2V
Below 0.2V
Load the test disc
Optical pickup failure (Laser diode NG)
Turn on PLAY switch
B
Remains at "H"
Check pin ⑮ of IC701 (/RFDET)
Changes from "H" to "L"
Check pin ⑪ of IC702 (/FLOCK)
Remains at "H"
Changes from "H" to "L"
Is there output at pin ㉔ of IC702? (ECM)
Remain at 1.65V (High impedance)
Changes from 1.65V to "L" (High impedance)
IC702 failure
Are there output at pin ⑪⑫ of IC703.
NG
OK
Spindle motor failure
IC703 failure
Measure voltage across R701.
Below 0.4V
Above 0.4V
Optical pickup failure
Measure voltage between Ⓑ and Ⓔ of Q701
Above 0.6V
Below 0.6V
IC701 failure
Q701 or optical pickup is defective
Are there output at pins ⑮⑯ of IC703?
NG
OK
Optical pickup failure
Check the position of optical pickup.
At outer or around middle track
At inner track
Is pin ② of CN702 "H" or "L"
"L"
"H"
"H"
Inner track limit switch (S701) is defective or disconnected
Is pin ② of CN702 "H" or "L"
"L"
Inner track limit switch (S701) is short-circuited
Are there outputs at pins ⑬⑭ of IC703?
NG
OK
Traverse deck failure
Is there output at pin ㉘ of IC702? (FOD)
NG
OK
IC703 failure
Is there output at pin ㉑ of IC702? (TRV)
OK
IC703 failure
IC702 failure


Power ON with removing MD and CD.
It is in adjustment mode? (Refer to "Measurements and Adjustments")
NO
YES
CN4
⑮ 5V ⑲ 5V ⑳ 3.3V
㉑ 5V ㉗ 3.5V
CN4's power supply lines are OK?
NO
Check the power supply of unit side.
YES
Enter the read power adjustment mode (Refer to "Measurements and Adjustments").
IC10-Pin32 is oscillating?
NO
IC10 -pin32
10.02MHz
YES
IC10 is broken.
NO
Read power output is OK?
YES
It can be less than 680µW by VR1?
NO
Optical pickup is broken.
YES
IC10-pin21 is "H"?
YES
NO
Enter the write power adjustment mode (Refer to "Measurements and Adjustments").
CN4 -pin14 is "H"?
YES
NO
Check the reset circuit of unit side.
NO
Write power output is OK?
YES
"Write power adjustment" "Playback-only disc adjustment" and "Magneto-optical disc adjustment".
② Continuing to next page.
To "Playback-only and magnet-optical discs movement".
① Continuing to next page.



※When you measure for IC1, refer to "Operation Checks and Component Replacement Procedures".

Playback-only and magneto-optical discs movement.

It can insert the playback-only disc correctly?

NO

YES

The disc is rotating?

NO

YES

Output of IC3-pin21 is oscillating up and down for VREF(1.3V)?

NO

IC3 is broken.

YES

There are voltages between IC2-pin17 and pin18?

NO

IC2 is broken.

YES

Spindle motor is broken.

IC3-pin21

The voltage fluctuates up and down for VREF (1.3V)

CN4-pin18's voltage becomes from "H" to "L" when the disc is inserted?

NO

LOADING TRG S7 is broken.

YES

H: 3.3V/L: 0V

IC10	Disc tray OPEN	STOP/PLAY	REC
S3: LOAD OPEN SW0(15)	L	H	H
S4:DISC IN(13)	H	L	L
S5: LOAD PLAY/REC SW2(17)	H	L	H
S6: LOAD PLAY SW3(18)	H	H	L

Outputs of IC10-pins 13,15,17 and 18 are OK?

NO

S3,5,4,6 are broken.

YES

The voltages of IC10-pins 8,9 are OK?

NO

IC10 is broken.

YES

There are voltages at IC92-pins 2,4?

NO

IC92 is broken.

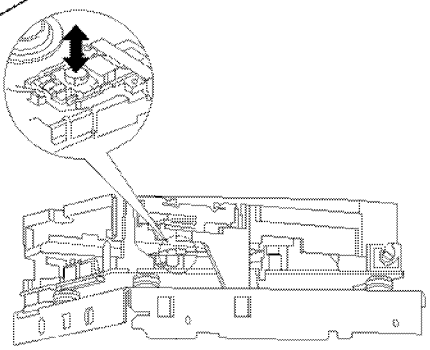
YES

Loading motor is broken.

Optical pickup is moving up and down?

NO

YES



IC3-pin18

The voltage fluctuates up and down for VREF(1.3V)?

Output of IC3-pin18 is oscillating up and down for VREF (1.3V)?

NO

IC3 is broken.

YES

There are voltages between IC2-pin13 and pin14?

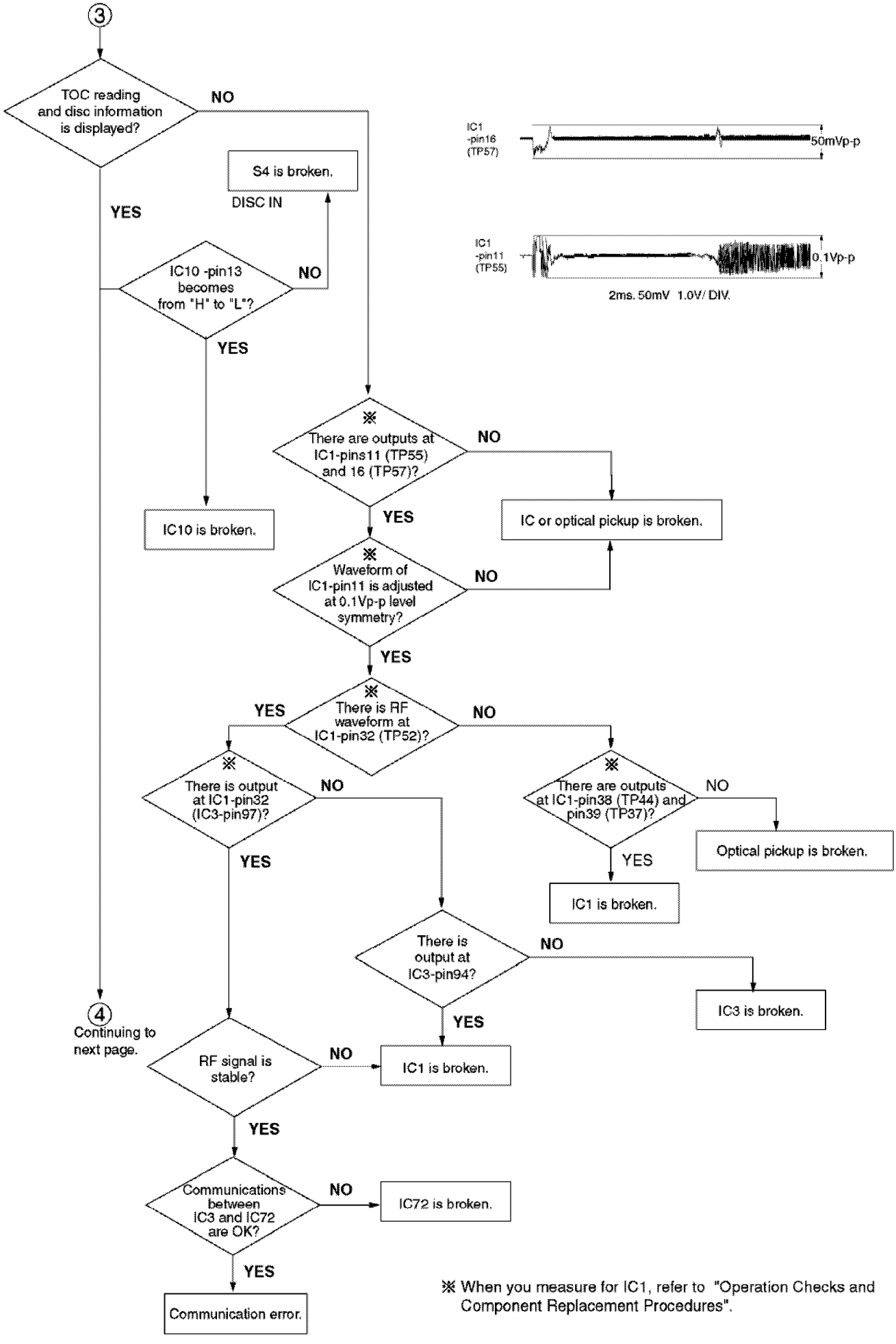
NO

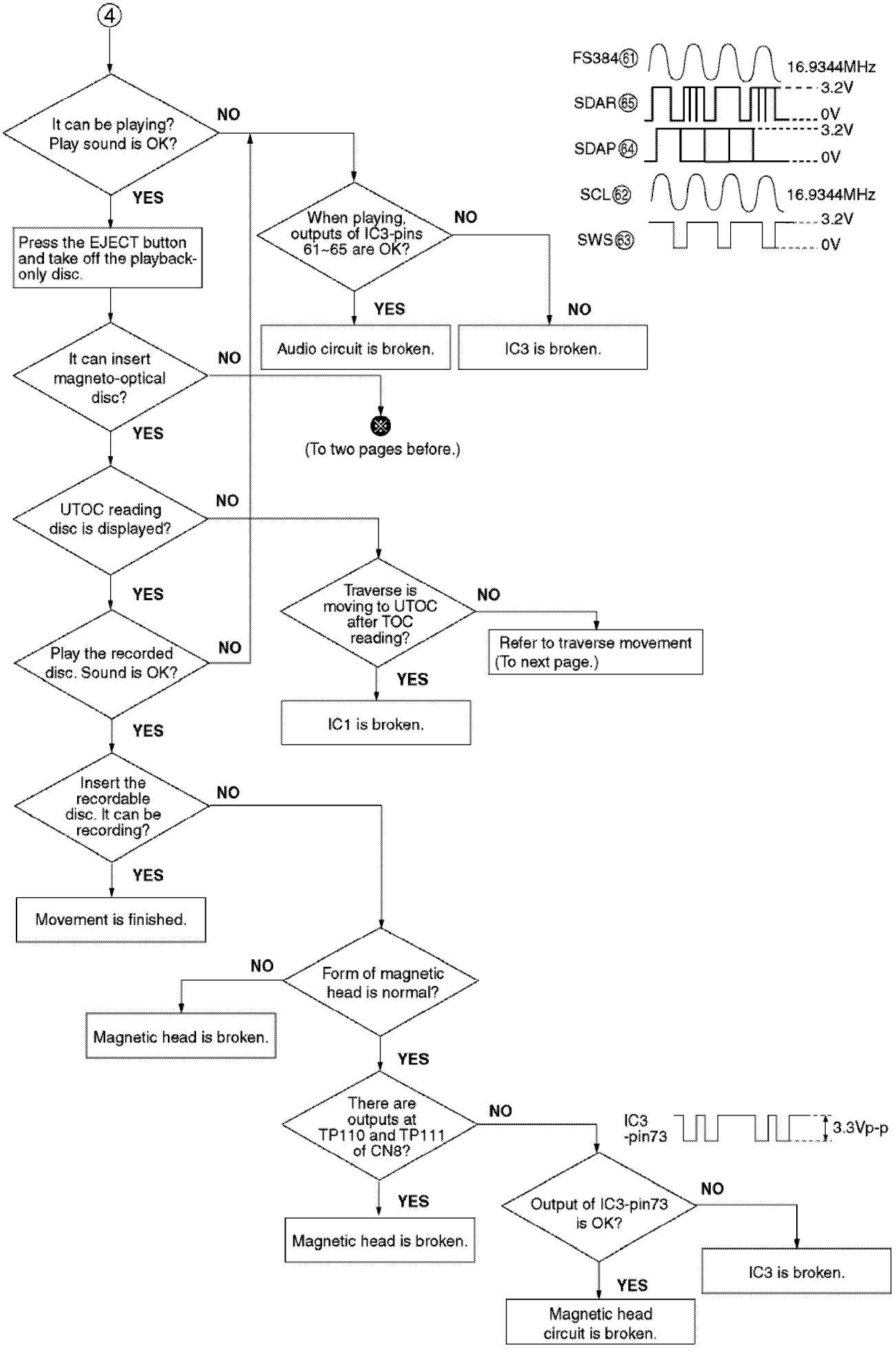
IC2 is broken.

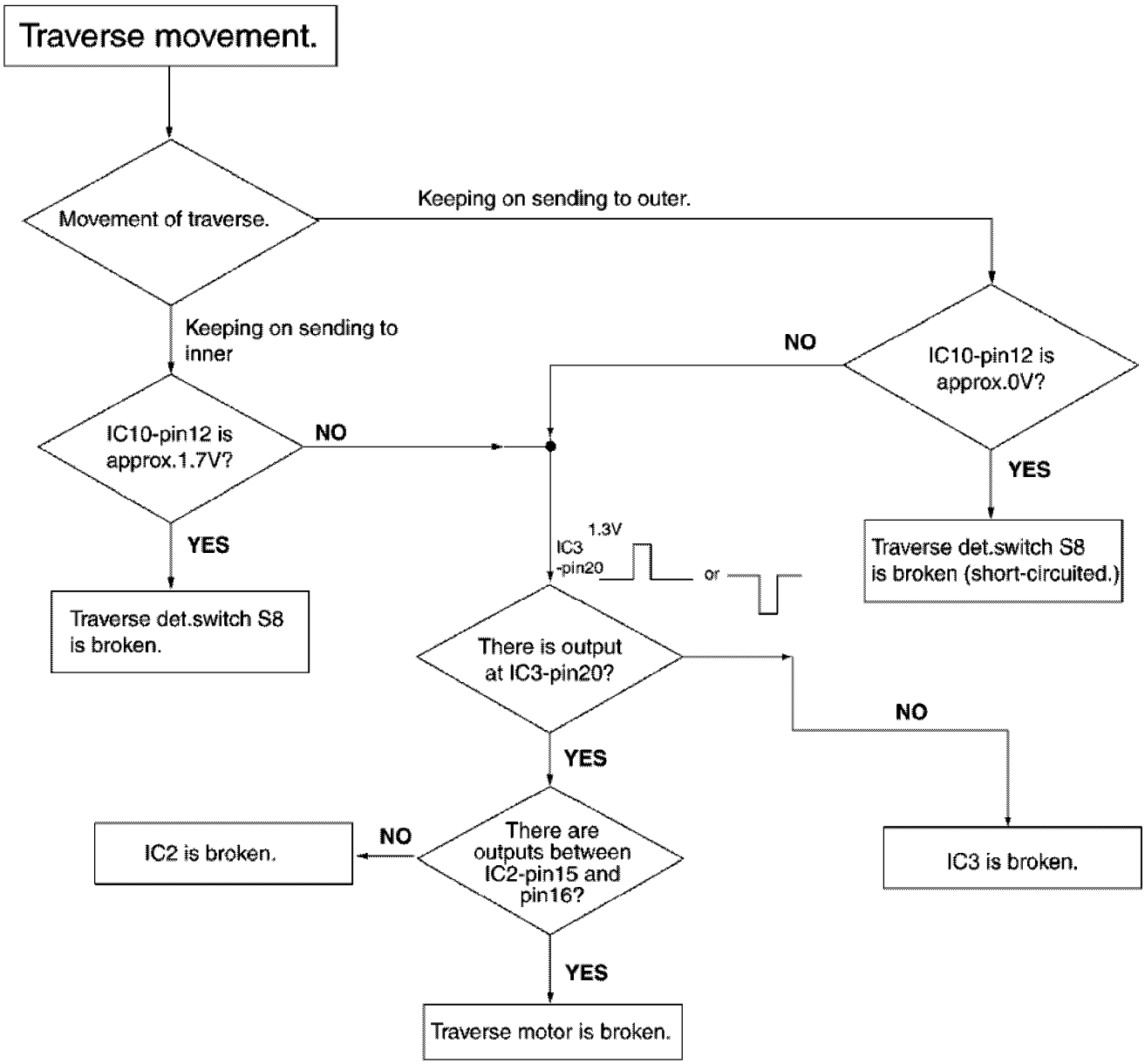
YES

Optical pickup is broken.

③ Continuing to next page.


③
TOC reading and disc information is displayed?
NO
YES
S4 is broken.
DISC IN
IC10 -pin13 becomes from "H" to "L"?
NO
YES
IC10 is broken.
※ There are outputs at IC1-pins11 (TP55) and 16 (TP57)?
NO
YES
IC or optical pickup is broken.
※ Waveform of IC1-pin11 is adjusted at 0.1Vp-p level symmetry?
NO
YES
※ There is RF waveform at IC1-pin32 (TP52)?
YES
NO
※ There is output at IC1-pin32 (IC3-pin97)?
NO
YES
※ There are outputs at IC1-pin38 (TP44) and pin39 (TP37)?
NO
YES
Optical pickup is broken.
IC1 is broken.
There is output at IC3-pin94?
NO
YES
IC3 is broken.
④
Continuing to next page.
RF signal is stable?
NO
YES
IC1 is broken.
Communications between IC3 and IC72 are OK?
NO
YES
IC72 is broken.
Communication error.
IC1 -pin16 (TP57)
50mVp-p
IC1 -pin11 (TP55)
0.1Vp-p
2ms. 50mV 1.0V/ DIV.
※ When you measure for IC1, refer to "Operation Checks and Component Replacement Procedures".


④
It can be playing? Play sound is OK?
NO
YES
Press the EJECT button and take off the playback-only disc.
When playing, outputs of IC3-pins 61~65 are OK?
NO
YES
NO
Audio circuit is broken.
IC3 is broken.
It can insert magneto-optical disc?
NO
YES
(To two pages before.)
UTOC reading disc is displayed?
NO
YES
Traverse is moving to UTOC after TOC reading?
NO
Refer to traverse movement (To next page.)
YES
IC1 is broken.
Play the recorded disc. Sound is OK?
NO
YES
Insert the recordable disc. It can be recording?
NO
YES
Movement is finished.
Form of magnetic head is normal?
NO
Magnetic head is broken.
YES
There are outputs at TP110 and TP111 of CN8?
NO
YES
Magnetic head is broken.
Output of IC3-pin73 is OK?
NO
YES
IC3 is broken.
Magnetic head circuit is broken.
FS384 61
16.9344MHz
SDAR 65
3.2V
0V
SDAP 64
3.2V
0V
SCL 62
16.9344MHz
SWS 63
3.2V
0V
IC3 -pin73
3.3Vp-p


Traverse movement.
Movement of traverse.
Keeping on sending to outer.
Keeping on sending to inner
IC10-pin12 is approx.1.7V?
NO
YES
Traverse det.switch S8 is broken.
IC10-pin12 is approx.0V?
NO
YES
Traverse det.switch S8 is broken (short-circuited.)
IC3 -pin20
1.3V
or
There is output at IC3-pin20?
NO
YES
IC3 is broken.
There are outputs between IC2-pin15 and pin16?
NO
IC2 is broken.
YES
Traverse motor is broken.

18 Parts Location and Replacement Parts List

Notes:

- Important safety notice:

  Components identified by ⚠ mark have special characteristics important for safety.

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

  When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to teh cover page for area or colour)

  Parts without these indications can be used for all areas.
- Warning: This product uses a laser diode. Refer to caution statements on "Precaution of Laser Diode".

  ACTUNG:

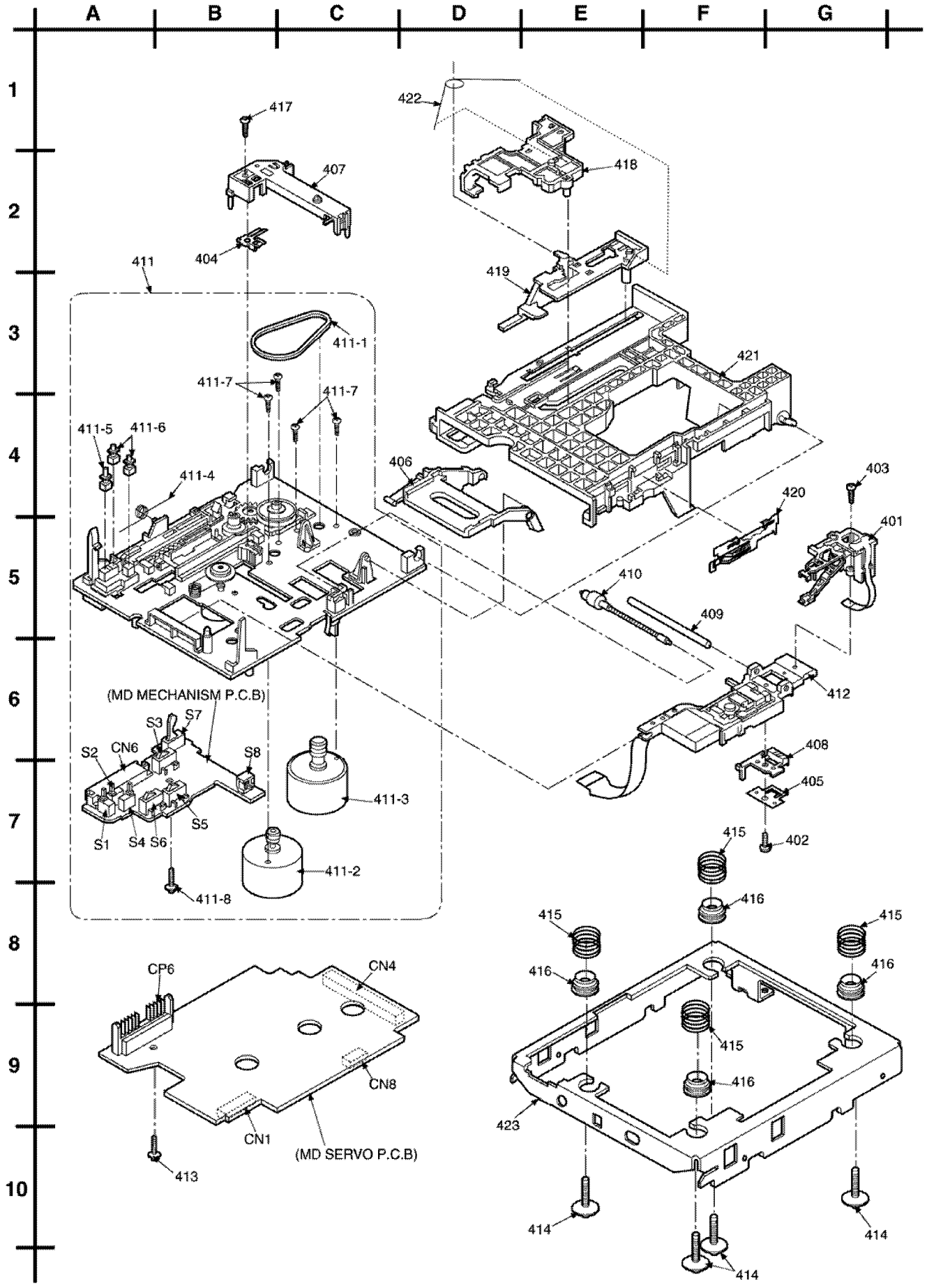
  – Die Lasereinheit nicht zerlegen.

  – Die Lasereinheit darf nur gegen eine vom Hertsteller spezifizierte Einheit ausgetauscht werden.
- Capacitor values are in microfarads (μF) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availabilityis dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Indicates i nthe Remarks columns indicates parts supplied by **MESA.**
- The "(SF)" mark denotes the standard part.
- Remote Control Unit: Supply period for three years from terminal of production.
- Reference for O/I book languages are as follows:

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

18.1. MD Mechanism

18.1.1. MD Mechanism Parts location

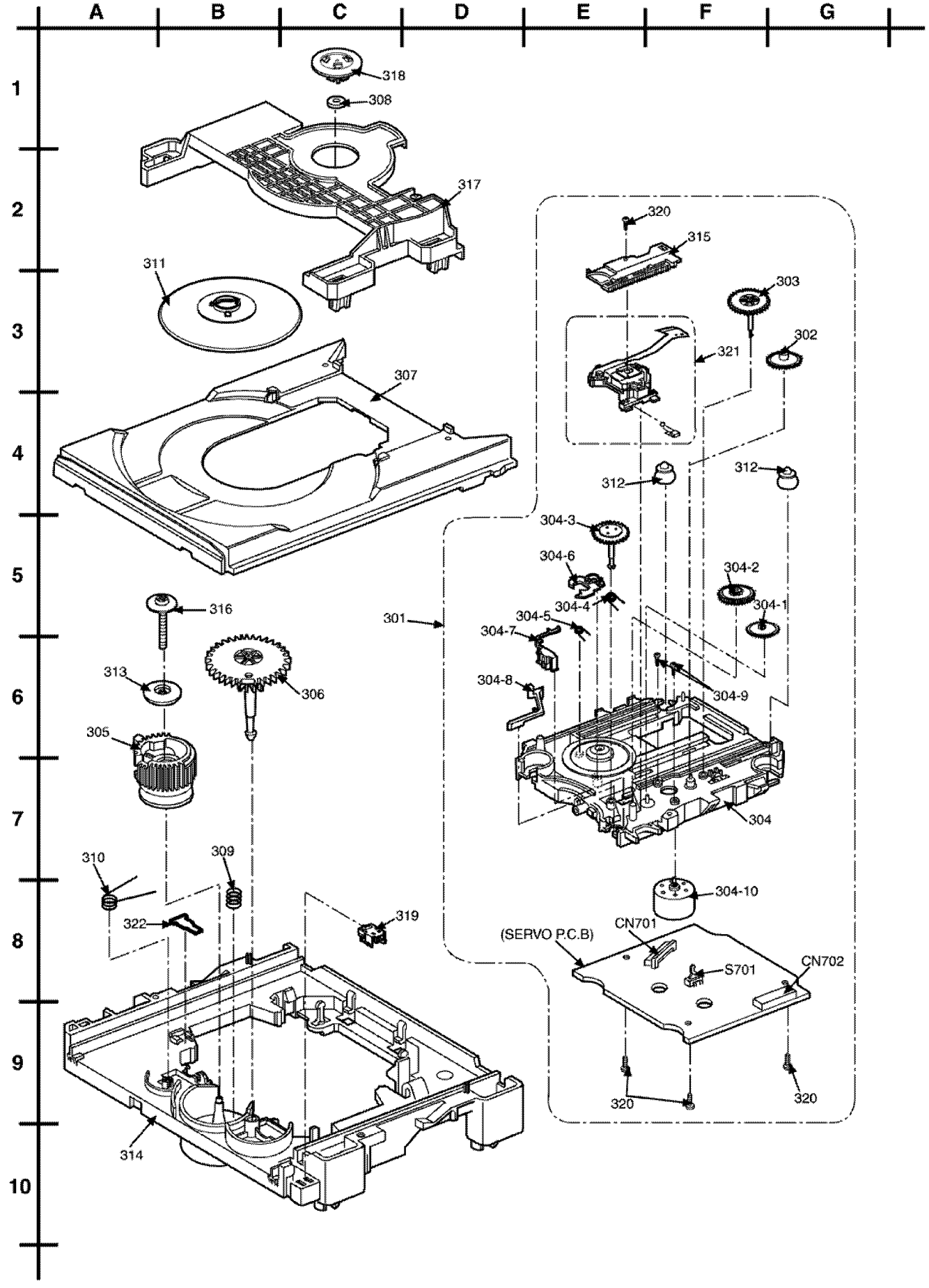


18.1.2. MD Mechanism Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
401	RED0047-2	RECORDING HEAD	[M]
402	RHD17021	NUT PLATE SCREW	[M]
403	RHD17022	RECORDING HEAD SCREW	[M]
404	RMC0348	THRUST SPRING	[M]
405	RMC0349	NUT PLATE SPRING	[M]
406	RML0515	HEAD SHIFTER	[M]
407	RMQ0750	REF BASE	[M]
408	RMQ0751	NUT PLATE	[M]
409	RMS0611	MAIN SHAFT	[M]
410	RXJ0021	DRIVE SHAFT ASS'Y	[M]
411	RXK0249	MECHA CHASSIS UNIT	[M]
411-1	RDV0055-J	BELT	[M]
411-2	REM0077	TRV MOTOR ASS'Y	[M]
411-3	REM0078	LOADING MOTOR ASS'Y	[M]
411-4	RMB0548	HOLDER SPRING	[M]
411-5	RMQ0752	PIN A (BLACK)	[M]
411-6	RMQ0753	PIN B (NATURAL)	[M]
411-7	XQN17+C25FZ	MOTOR SCREW	[M]
411-8	XYC2+FF105	PCB SCREW	[M]
412	RAF1701A-S	MD OPU	[M]
413	XTW2+6S	SCREW	[M]
414	RHD20053	SCREW	[M]
415	RMB0504	DAMPER SPRING	[M]
416	RMG0447-K2	DAMPER	[M]
417	XTN17+6GFZ	REF. BASE SCREW	[M]
418	RML0514	LOCK LEVER	[M]
419	RMM0199	SLIDER	[M]
420	RMM0200	SHUTTER OPENER	[M]
421	RMR1118-K2	HOLDER	[M]
422	RMB0547-1	LOCK LEVER SPRING	[M]
423	RMA1117-1J	MECAH BASE FRAME	[M]

18.2. CD Loading Mechanism

18.2.1. CD Loading Mechanism Parts Location

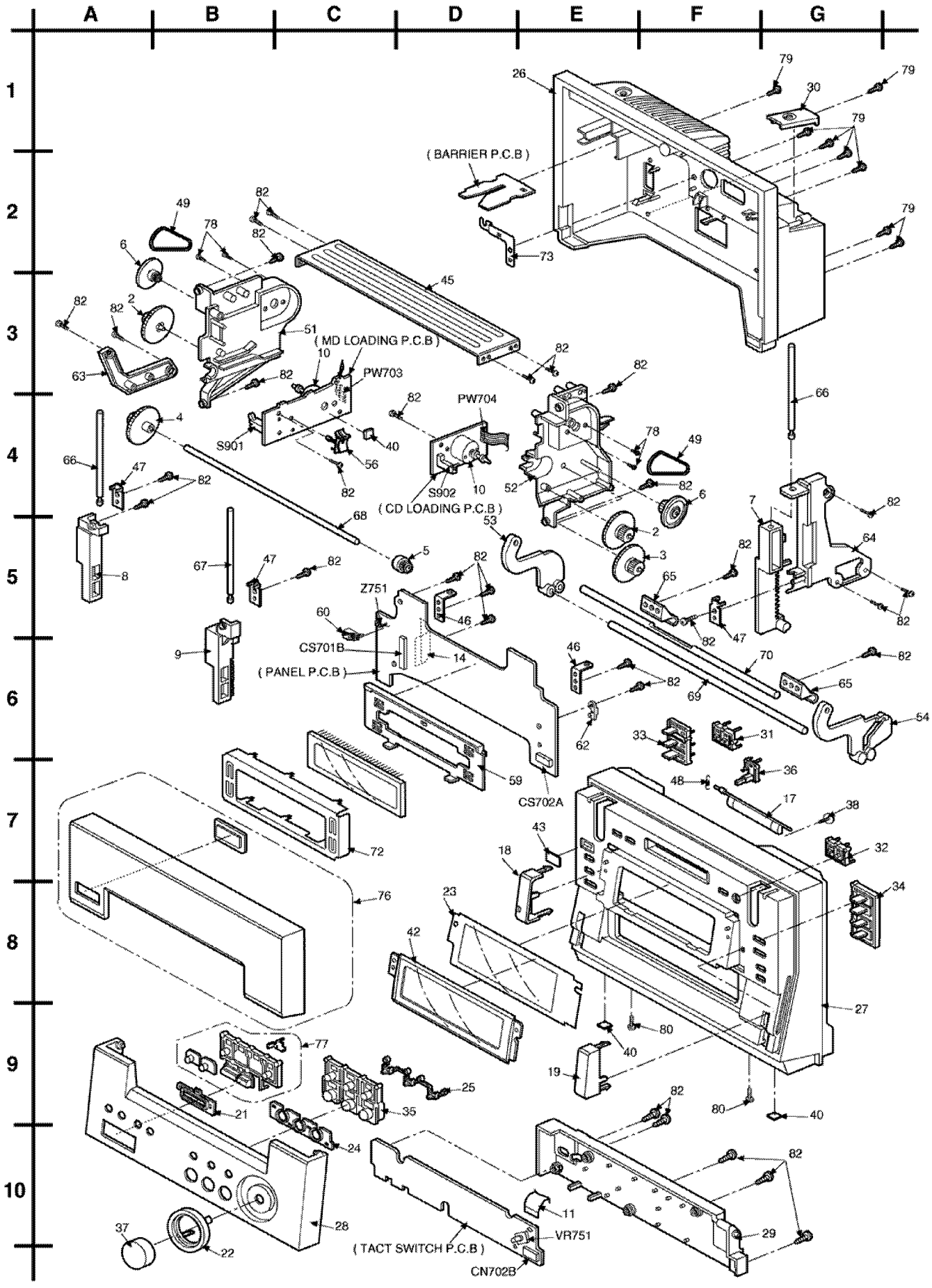


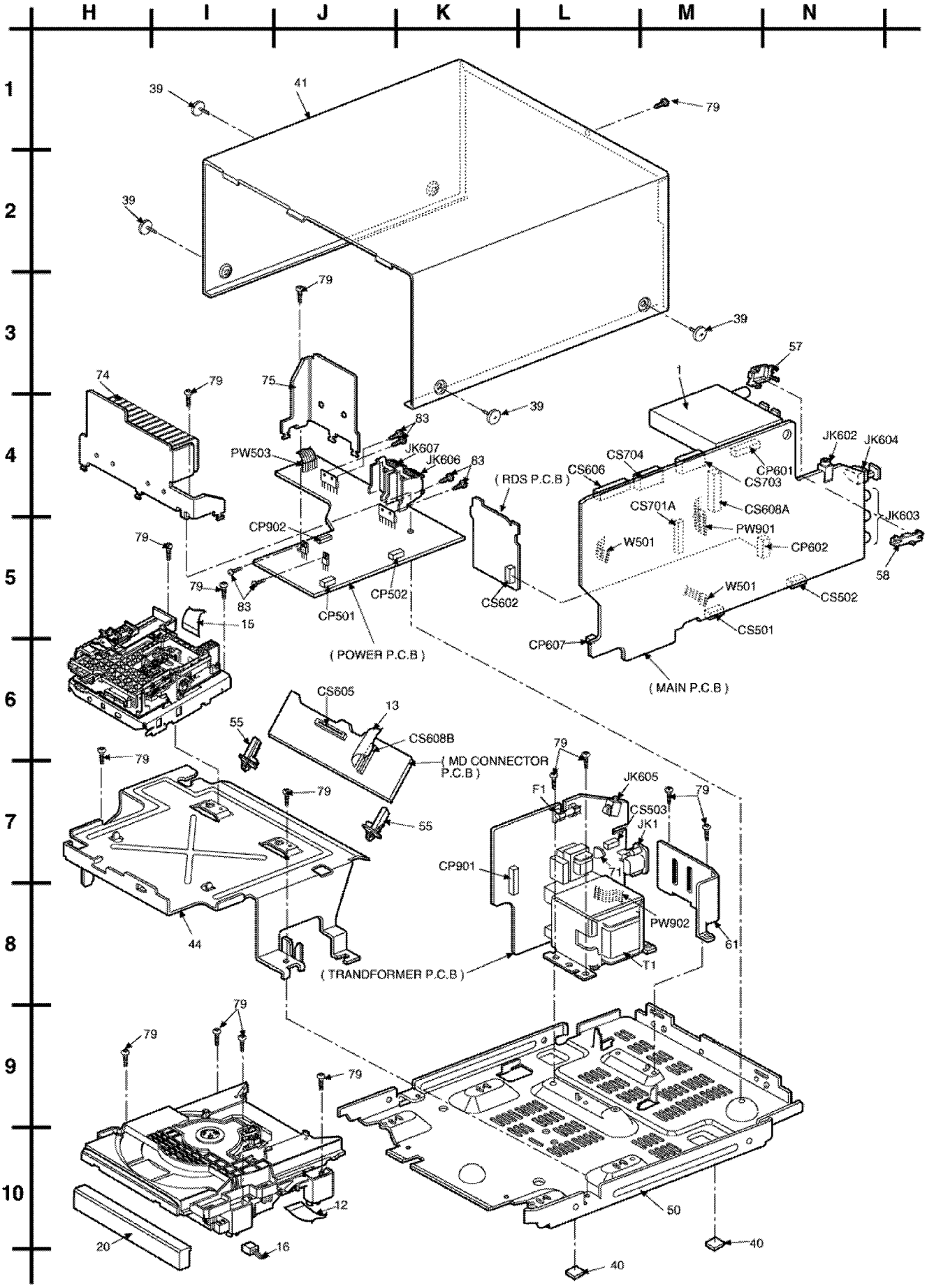
18.2.2. CD Mechanism Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	RAE0155Z	CT100W TRAVERSE	[M]
302	RDG0455	TRAVERSE GEAR (A)	[M]
303	RDG0456	TRAVERSE GEAR (B)	[M]
304	RFKNCT100	TRAVERSE BASE ASS'Y	[M]
304-1	RDG0457	LOAD GEAR (A)	[M]
304-10	RXQ0632	TRV MOTOR UNIT	[M]
304-2	RDG0458	LOAD GEAR (B)	[M]
304-3	RDG0459	LOAD GEAR (C)	[M]
304-4	RME0290	PRESS SPRING	[M]
304-5	RME0291	LOCK SPRING	[M]
304-6	RML0551	TRG LEVER	[M]
304-7	RML0552	LOCK LEVER	[M]
304-8	RMM0219	STOPPER	[M]
304-9	XQN17+C28F	SCREW	[M]
305	RDG0460	CAM GEAR	[M]
306	RDG0461	DRIVE GEAR	[M]
307	RGQ0292-H	TRAY	[M]
308	RHM0001	MAGNET	[M]
309	RMB0603	FLOATING SPRING	[M]
310	RME0288	CENTERING SPRING	[M]
311	RFKNXED50-S	CLAMPER HOLDER ASS'Y	[M]
312	RMG0510-K	FLOATING RUBBER (A)	[M]
313	RMG0511-K	FLOATING RUBBER (B)	[M]
314	RMK0422	MECHA CHASSIS	[M]
315	RMM0218	TRAVERSE DRIVE RACK	[M]
316	RHD30083	CAM. GEAR SCREW	[M]
317	RMR1223-K	CLAMP PLATE	[M]
318	RMR1242-X1	FIXTURE	[M]
319	RSH1A049-U	OPEN SWITCH	[M]
320	XTN2+6G	SCREW	[M]
321	RXQ0704	OPU UNIT	[M]
322	RMG0544-H	BRAKE SHOE	[M]

18.3. Cabinet

18.3.1. Cabinet Parts Location

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PW503
JK607
JK606
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CP902
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83
15
CP501
CP502
(POWER P.C.B)
(RDS P.C.B)
CS602
1
57
JK602
JK604
CS704
CS606
CP601
CS703
CS701A
CS608A
JK603
PW901
W501
CP602
58
W501
CS502
CS501
CP607
(MAIN P.C.B)
CS605
13
55
CS608B
(MD CONNECTOR P.C.B)
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55
79
F1
JK605
79
CS503
JK1
71
CP901
PW902
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T1
(TRANDFORMER P.C.B)
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18.3.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RAN0005EM-2	TUNER PACK	[M]
2	RDG0485	TRANSFER GEAR	[M]
3	RDG0486	BOTTOM PANEL GEAR	[M]
4	RDG0487	UPPER PANEL GEAR (A)	[M]
5	RDG0488	UPPER PANEL GEAR (B)	[M]
6	RDG0489	BELT PULLEY	[M]
7	RDG0490	BOTTTOM PANEL RACK	[M]
8	RDG0491	UPPER PANEL RACK (L)	[M]
9	RDG0492	UPPER PANEL RACK (R)	[M]
10	RFKPAPM15EGS	MOTOR ASS'Y	[M]
11	REE1035	10P FFC	[M]
12	REE1036	19P FFC	[M]
13	REE1037	19P FFC	[M]
14	REE1038	27P FFC	[M]
15	REE1039	30P FFC	[M]
16	REX1041	2P WIRE	[M]
17	RGK0977-2HJ	MD LID	[M]
18	RGK1288-Q	FL ORNAMENT L	[M]
19	RGK1289-Q	FL ORNAMENT R	[M]
20	RGK1290-H	CD LID	[M]
21	RGK1291-S	BUTTON ORNAMENT A	[M]
22	RGK1293-S	VOLUME RING	[M]
23	RGK1294-S	HALF MIRROR	[M]
24	RGK1298-A	BOTTOM ORNAMENT B	[M]
25	RGL0519-Q	FUNCTION LIGHT	[M]
26	RFKHAPM65EBS	REAR PANEL ASS'Y	[M]EB
26	RFKHAPM65EGS	REAR PANEL ASS'Y	[M]EG
27	RGP0809A-S	FRONT PANEL	[M]
28	RGP0812A-S	BOTTOM PANEL FRONT	[M]
29	RGP0813-H	BOTTOM PANEL REAR	[M]
30	RGQ0276-H	JACK COVER	[M]
31	RGU1901-H	ENTER BUTTON	[M]
32	RGU1902-H	MD REC BUTTON	[M]
33	RGU1903-H	CLOCK BUTTON	[M]
34	RGU1904-H	MEMORY BUTTON	[M]
35	RGU1905-S	FUNCTION BUTTON	[M]
36	RGU1907-A	TIMER REC BUTTON	[M]
37	RGW0354-S	VOLUME KNOB	[M]
38	RHD20010	SCREW	[M]
39	RHD30007-S	SCREW	[M]
40	RHGV0008	LEG CUSHION	[M]
41	RKM0426A-S	CABINET	[M]
42	RKW0619-Q	FL WINDOW	[M]
43	RKW0621-Q	SENSOR WINDOW (B)	[M]
44	RMA1367	MD ANGLE	[M]
45	RMA1368	GEAR CHASSIS ANGLE	[M]
46	RMA1369	GUIDE SHAFT PLATE (A	[M]
47	RMA1370	GUIDE SHAFT PLATE (B	[M]
48	RMB0621	MD LID SPRING	[M]
49	RMG0158	BELT	[M]
50	RMK0465	BOTTOM CHASSIS	[M]
51	RMK0466	GEAR CHASSIS (L)	[M]
52	RMK0467	GEAR CHASSIS (R)	[M]
53	RML0588	ARM (L)	[M]
54	RML0589	ARM (R)	[M]
55	RMN0203	PCB SUPPORT	[M]
56	RMN0539	CONNECTOR HOLDER	[M]
57	RMN0566	JACK HOLDER (A)	[M]
58	RMN0567	JACK HOLDER (B)	[M]
59	RMN0608	FL HOLDER	[M]
60	RMN0609	SENSOR HOLDER	[M]
61	RMN0610	WIRE SUPPORT	[M]
62	RMN0622	RACK SUPPORT	[M]
63	RMR1313-W	GEAR FIXTURE (L)	[M]
64	RMR1314-W	GEAR FIXTURE (R)	[M]
65	RMR1315-W	ARM SHAFT SUPPORT	[M]
66	RMS0697	GUIDE SHAFT (A)	[M]
67	RMS0698	GUIDE SHAFT (B)	[M]
68	RMS0699	MAIN SHAFT	[M]
69	RMS0700	ARM SHAFT	[M]
70	RMS0736	ARM SHAFT 2	[M]
71	RMZ0339	ZENER COVER	[M]
72	RSC0562-1	FL SHIELD	[M]
73	RSC0563	EARTH PLATE	[M]
74	RXX0226	HEAT SINK UNIT	[M]
75	RXX0232	HEAT SINK (B) (U)	[M]
76	RYP0961A-S	UPPER PANEL UNIT	[M]
77	RYQ0324A-S	POWER BTN. UNIT	[M]
78	XQN2+C3	SCREW	[M]
79	XTB3+10JFZ	SCREW	[M]
80	XTB3+8JFZ	SCREW	[M]
82	XTBS26+10J	SCREW	[M]
83	XTV3+8F	SCREW	[M]

18.4. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		P.C.B.	
	REP2895A-T	MD SERVO P.C.B. SIDE-A/MD SERVO P.C.B. SIDE-B	[M] (RTL)
	REP2807C	CD SERVO P.C.B.	[M] (RTL)
	REP2996B	RDS P.C.B./MAIN P.C.B./MD CONNECTOR P.C.B./MD LOADING P.C.B./CD LOADING P.C.B.	[M] (RTL)
	RAN0005EM-2	TUNER PACK	[M] (RTL)
	REP2997B	TACT SWITCH P.C.B./PANEL P.C.B.	[M] (RTL)
	REP2575A	MD SWITCH P.C.B.	[M] (RTL)
	REP2995B	POWER P.C.B./TRANSFORMER P.C.B.	[M]EG (RTL)
	REP2995C	POWER P.C.B./TRANSFORMER P.C.B.	[M]EB (RTL)
		INTEGRATED CIRCUITS	
IC1	AN8772FHQ	IC RF	[M]
IC2	AN8814SB-E1	IC	[M]
IC3	MN66616RA4	IC MSP LSI	[M]
IC4	AK4518VF-E2	IC AD/DA	[M]
IC5	RN5RG33AA-TL	IC REGULATOR	[M] ⚠
IC6	TC7W04FTE12L	IC	[M]
IC9	RN5RZ26BA-TR	IC REGULATOR	[M] ⚠
IC10	MN101D03DAA1	IC	[M]
IC11	TC74HCT00AFL	IC	[M]
IC72	M51V4400D7FS	IC 4M DRAM	[M]
IC92	LB1830MS-TLM	IC MOTOR DR	[M]
IC201	LC72721NMTLM	IC RDS	[M]
IC401	BU4052BCF-E2	IC FUNCTION SW	[M]
IC402	BH3857AFV-E2	IC SOUND PROCESSOR	[M]
IC403	AN7135	IC POWER AMP	[M]
IC404	AN7194K-LD	IC BTC POWER	[M]
IC471	BA4558FE2	IC OP AMP	[M]
IC700	M9202-12BDR3	IC FL DRIVER	[M]
IC701	AN8839NSBE2	IC HEAD AMP	[M]
IC702	MN662790RSC	IC LSI	[M]
IC703	BA5948FPE2	IC 4 CH DRIVE	[M]
IC801	MN101C49KAA2	IC MICON	[M]
IC802	TC74HCT7007A	IC 3V TO 5V	[M]
IC803	TC4050BF	IC 5V T0 3V	[M]
IC901	UPC29M33HF	IC	[M] ⚠
IC903	BA6283N	IC MOTOR DRIVER	[M]
IC904	BA6283N	IC MOTOR DRIVER	[M]
		TRANSISTORS	
Q1	2SB1295-6-TB	TRANSISTOR	[M]
Q1	2SC1740SRTA	TRANSISTOR	[M]
Q2	2SD592ARTA	TRANSISTOR	[M] ⚠
Q2	DTC114YETL	TRANSISTOR	[M]
Q3	2SB1462STX	TRANSISTOR	[M]
Q3	2SD592ARTA	TRANSISTOR	[M] ⚠

Ref. No.	Part No.	Part Name & Description	Remarks
Q5	2SB1295-6-TB	TRANSISTOR	[M]
Q6	DTC114YETL	TRANSISTOR	[M]
Q10	2SJ278MYTR	TRANSISTOR	[M]
Q11	2SK1764KYTR	TRANSISTOR	[M]
Q13	2SB1121ST-TD	TRANSISTOR	[M] ⚠
Q401	2SC4081106R	TRANSISTOR	[M]
Q402	2SC4081106R	TRANSISTOR	[M]
Q403	DTA144EUA106	TRANSISTOR	[M]
Q404	DTA144EUA106	TRANSISTOR	[M]
Q405	2SC4081106R	TRANSISTOR	[M]
Q406	DTA144EUA106	TRANSISTOR	[M]
Q407	2SC4081106R	TRANSISTOR	[M]
Q408	DTA144EUA106	TRANSISTOR	[M]
Q409	DTC144EUA106	TRANSISTOR	[M]
Q431	2SC1740SLNST	TRANSISTOR	[M]
Q432	2SC1740SRTA	TRANSISTOR	[M]
Q451	2SC1740SLNST	TRANSISTOR	[M]
Q501	2SC4081106R	TRANSISTOR	[M]
Q502	2SC4081106R	TRANSISTOR	[M]
Q505	2SC4081106R	TRANSISTOR	[M]
Q507	2SC4081106R	TRANSISTOR	[M]
Q531	2SC1740SLNST	TRANSISTOR	[M]
Q532	2SC1740SRTA	TRANSISTOR	[M]
Q613	RVTDTA114EST	TRANSISTOR	[M]
Q621	2SC4081106R	TRANSISTOR	[M]
Q671	DTC143EUA106	TRANSISTOR	[M]
Q672	DTC143EUA106	TRANSISTOR	[M]
Q673	2SC4081106R	TRANSISTOR	[M]
Q701	2SA1037AKSTX	TRANSISTOR	[M]
Q701	2SC4081106R	TRANSISTOR	[M]
Q702	2SC4081106R	TRANSISTOR	[M]
Q702	DTC143XKA146	TRANSISTOR	[M]
Q703	DTA143XKA146	TRANSISTOR	[M]
Q751	DTC114EUA106	TRANSISTOR	[M]
Q801	DTC144EUA106	TRANSISTOR	[M]
Q802	2SC4081106R	TRANSISTOR	[M]
Q803	2SC4081106R	TRANSISTOR	[M]
Q804	DTA143XUA106	TRANSISTOR	[M]
Q805	2SA1576A106R	TRANSISTOR	[M]
Q806	DTC144EUA106	TRANSISTOR	[M]
Q807	DTC144EUA106	TRANSISTOR	[M]
Q808	2SC4081106R	TRANSISTOR	[M]
Q809	2SC4081106R	TRANSISTOR	[M]
Q903	2SB1566E	TRANSISTOR	[M] ⚠
Q904	2SC1740SRTA	TRANSISTOR	[M] ⚠
Q905	2SB1566E	TRANSISTOR	[M] ⚠
Q906	2SC1740SRTA	TRANSISTOR	[M] ⚠
Q907	2SC1740SRTA	TRANSISTOR	[M] ⚠
Q908	RVTDTA143TST	TRANSISTOR	[M] ⚠
Q909	2SB621AQRSTA	TRANSISTOR	[M] ⚠
Q910	DTA143XUA106	TRANSISTOR	[M] ⚠
Q911	2SD592ARTA	TRANSISTOR	[M] ⚠
Q912	DTA143XUA106	TRANSISTOR	[M]
Q913	DTC114YUA106	TRANSISTOR	[M]
Q914	2SA1576A106R	TRANSISTOR	[M]
Q955	DTC144EUA106	TRANSISTOR	[M]
Q961	2SA952LTA	TRANSISTOR	[M] ⚠
Q962	2SC4081106R	TRANSISTOR	[M] ⚠
Q973	2SA1576A106R	TRANSISTOR	[M]
Q974	2SC4081106R	TRANSISTOR	[M]
		DIODES	
D1	AK03WK	DIODE	[M] ⚠
D2	AK03WK	DIODE	[M] ⚠
D3	AK03WK	DIODE	[M] ⚠
D4	AK03WK	DIODE	[M] ⚠
D5	RVD1SS133TA	DIODE	[M]
D5	SC80209TE12R	DIODE	[M]
D6	RVD1SS133TA	DIODE	[M]
D6	SC80209TE12R	DIODE	[M]
D7	RL1N4003N02	DIODE	[M]
D8	RL1N4003N02	DIODE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
D9	MA728TX	DIODE	[M]
D10	RL1N4003N02	DIODE	[M]
D11	RL1N4003N02	DIODE	[M]
D17	1D3E	DIODE	[M]
D18	1D3E	DIODE	[M]
D19	MTZJ7R5ATA	DIODE	[M] ⚠
D20	RVD1SS133TA	DIODE	[M]
D21	1SS291TA	DIODE	[M]
D601	RB441Q40T77	DIODE	[M]
D632	RVD1SS133TA	DIODE	[M]
D633	RVD1SS133TA	DIODE	[M]
D634	RVD1SS133TA	DIODE	[M]
D635	RVD1SS133TA	DIODE	[M]
D636	RVD1SS133TA	DIODE	[M]
D637	RB441Q40T77	DIODE	[M]
D651	1SS355TE17	DIODE	[M]
D652	1SS355TE17	DIODE	[M]
D653	1SS355TE17	DIODE	[M]
D654	1SS355TE17	DIODE	[M]
D672	AK03WK	DIODE	[M]
D701	1SS355TE17	DIODE	[M]
D702	1SS355TE17	DIODE	[M]
D703	UDZSTE175R6B	DIODE	[M]
D750	MA8056MTX	DIODE	[M]
D751	SML72420C	DIODE	[M]
D752	LNJ301MPUJAD	DIODE	[M]
D753	LNJ301MPUJAD	DIODE	[M]
D754	LNJ301MPUJAD	DIODE	[M]
D800	1SS380TE-17	DIODE	[M]
D801	1SS380TE-17	DIODE	[M]
D803	1SS355TE17	DIODE	[M]
D805	1SS355TE17	DIODE	[M]
D871	UDZSTE175R6B	DIODE	[M]
D872	1SS355TE17	DIODE	[M]
D873	1SS355TE17	DIODE	[M]
D875	1SS355TE17	DIODE	[M]
D880	UDZSTE175R6B	DIODE	[M]
D901	SB360L6508	DIODE	[M] ⚠
D902	SB360L6508	DIODE	[M] ⚠
D903	SB360L6508	DIODE	[M] ⚠
D904	SB360L6508	DIODE	[M] ⚠
D905	RL1N4003N02	DIODE	[M]
D906	1D3E	DIODE	[M]
D916	RVD1SS133TA	DIODE	[M]
D920	MTZJ30BTA	DIODE	[M] ⚠
D921	UDZTE1716B	DIODE	[M]
D922	1SS355TE17	DIODE	[M]
D923	1SS355TE17	DIODE	[M]
D924	1SS380TE-17	DIODE	[M]
D925	RL1N4003N02	DIODE	[M]
D961	1SS355TE17	DIODE	[M]
		VARIABLE RESISTORS	
VR1	EVM3YSX50B14	VR	[M]
VR751	EVEGB2F1524B	VOL. ENCORDER	[M]
		SWITCHES	
S1	RSH1A91ZA-A	SW CD	[M]
S2	RSH1A91ZA-A	SW CD	[M]
S3	RSH1A044-1A	SW OPEN	[M]
S4	RSH1A91ZA-A	SW CD	[M]
S5	RSH1A044-1A	SW OPEN	[M]
S6	RSH1A044-1A	SW OPEN	[M]
S7	RSH1A045-1A	SW TRIGGER	[M]
S8	RSP1A023-A	SW TRV-IN	[M]
S701	RSH1A048-A	SW RESET	[M]
S901	RSH1A005-1U	SW LEAF	[M]
S902	RSH1A005-1U	SW LEAF	[M]
SW751	EVQ21405R	SW TIMER REC/PLAY	[M]
SW752	EVQ21405R	SW SELECTOR	[M]
SW753	EVQ21405R	SW CLOCK TIMER	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
SW754	EVQ21405R	SW DISPLAY CHARACTER	[M]
SW755	EVQ21405R	SW ENTER	[M]
SW756	EVQ21405R	SW CANCEL	[M]
SW757	EVQ21405R	SW MD EDIT	[M]
SW758	EVQ21405R	SW MD REC	[M]
SW759	EVQ21405R	SW MD MODE	[M]
SW760	EVQ21405R	SW CD EDIT	[M]
SW761	EVQ21405R	SW MEMORY	[M]
SW762	EVQ21405R	SW TUNER MODE/AREA	[M]
SW775	EVQ21405R	SW POWER	[M]
SW776	EVQ21405R	SW MODE	[M]
SW777	EVQ21405R	SW CD EJECT	[M]
SW778	EVQ21405R	SW CD PANEL OPEN	[M]
SW779	EVQ21405R	SW MD OPEN	[M]
SW780	EVQ21405R	SW MD EJECT	[M]
SW781	EVQ21405R	SW CD	[M]
SW782	EVQ21405R	SW FF. SKIP	[M]
SW783	EVQ21405R	SW TUNER	[M]
SW784	EVQ21405R	SW STOP	[M]
SW785	EVQ21405R	SW REW SKIP	[M]
SW786	EVQ21405R	SW MD	[M]
		CONNECTORS	
CN1	RJS2A4526T	CONNECTOR	[M]
CN4	RJS2A4830T	CONNECTOR	[M]
CN6	RJU113W10M	10P CONNECTOR	[M]
CN8	RJS2A4506T	21P CONNECTOR	[M]
CN701	RJS2A8616	16P FPC CONNECTOR	[M]
CN702	RJS1A9319	19P FFC CONNECTOR	[M]
CP6	RJT113W10M	10P CONNECTOR	[M]
CP501	RJT057G08	8P CONNECTOR	[M]
CP502	RJT057G07	7P CONNECTOR	[M]
CP601	RJT100W11	11P CONNECTOR	[M]
CP602	RJT057W006-1	CONNECTOR	[M]
CP607	RJP2G18ZA	2P CONNECTOR	[M]
CP901	RJT029W08V-1	8P CONNECTOR	[M]
CP902	RJT029W07V-1	7P CONNECTOR	[M]
CS501	RJU057G08	8P CONNECTOR	[M]
CS502	RJU057G07	7P CONNECTOR	[M]
CS503	RJS6T4ZA	CONNECTOR	[M]
CS602	RJU057W006	6P CONNECTOR	[M]
CS605	RJS2A3330-2	CONNECTOR	[M]
CS606	RJS1A9419	FFC CONNECTOR	[M]
CS608A	RJS1A9419	FFC CONNECTOR	[M]
CS608B	RJS1A9419	FFC CONNECTOR	[M]
CS701A	RJS2A5627	27P FFC CONNECTOR	[M]
CS701B	RJS2A8427	27P FFC BOTTOM CONNE	[M]
CS702A	RJS1A1410	10P FFC CONNECTOR	[M]
CS702B	RJS1A1410	10P FFC CONNECTOR	[M]
CS703	RJS7T4ZA	CONNECTOR	[M]
CS704	RJS7T4ZA	CONNECTOR	[M]
		COILS & TRANSFORMERS	
L1	RLQU100KT-W	CHIP COIL	[M] ⚠
L1	RLQZ371	CHOKE COIL	[M]
L2	RLQU101KT-W	CHIP COIL	[M]
L3	RLQU101KT-W	CHIP COIL	[M]
L4	RLQU2R2MT-W	CHIP COIL	[M]
L5	RLQU2R2MT-W	CHIP COIL	[M]
L6	RLQU2R2MT-W	CHIP COIL	[M]
L7	RLQU2R2MT-W	CHIP COIL	[M]
L8	RLQA2R2JT-D	RF CHOKE COIL	[M]
L8	RLQU2R2MT-W	CHIP COIL	[M]
L9	RLQU100KT-W	CHIP COIL	[M]
L10	RLQU100KT-W	CHIP COIL	[M]
L11	RLQU100KT-W	CHIP COIL	[M]
L12	RLQU100KT-W	CHIP COIL	[M]
L13	RLQU2R2MT-W	CHIP COIL	[M]
L14	RLQU2R2MT-W	CHIP COIL	[M]
L15	RLQU100KT-W	CHIP COIL	[M]
L16	RLQU2R2MT-W	CHIP COIL	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
L17	RLQP1R8KT2-Y	CHIP COIL	[M]
L18	RLQP1R8KT2-Y	CHIP COIL	[M]
L201	RLQB100KT-1Y	COIL	[M]
L202	RLQB100KT-1Y	COIL	[M]
L415	RLQB100KT-1Y	COIL	[M]
L515	RLQB100KT-1Y	COIL	[M]
L628	RLQB3R3KT-1Y	COIL	[M]
L636	RLQB270KT-1Y	COIL	[M]
L706	RLQB3R3KT-1Y	COIL	[M]
L802	RLQB100KT-1Y	COIL	[M]
L803	RLQB100KT-1Y	COIL	[M]
L875	RLQB101KT-1Y	COIL	[M]
L877	RLL500050T-Y	RF CHOKE COIL	[M]
L880	RLQB101KT-1Y	COIL	[M]
L881	RLL500050T-Y	RF CHOKE COIL	[M]
L882	RLQB101KT-1Y	COIL	[M]
L883	RLL500050T-Y	RF CHOKE COIL	[M]
L884	RLQB101KT-1Y	COIL	[M]
L911	RLL500050T-Y	RF CHOKE COIL	[M]
L981	RLQB270KT-1Y	COIL	[M]
L982	RLQB270KT-1Y	COIL	[M]
T1	RTP2W3B002	POWER TRANSFORMER	[M] ⚠
T2	RTP1H3E001	BACK UP TRANSFORMER	[M] ⚠
		COMPONENT COMBINATION	
Z1	ERZV10V511CS	ZENER	[M] ⚠
Z701	RSL0306-F	FL DISPLAY	[M]
Z751	RCDRPM6937V4	REMOTE SENSOR	[M]
		RELAY	
RL1	RSY0040M-0	RELAY	[M] ⚠
		OSCILLATORS	
X1	RSXY10M0M02T	CRYSTAL OSCILLATOR	[M]
X2	RSXC16M9S03T	CRYSTAL OSCILLATOR	[M]
X201	RSXC4M33S02T	CRYSTAL OSCILLATOR	[M]
X701	RSXC33M8S01	CRYSTAL OSCILLATOR	[M]
X801	RSXZ8M00M02T	FILTER	[M]
X802	RSXD32K0C01	CRYSTAL OSCILLATOR	[M]
		FUSES	
F1	XBA2C06TB0L	FUSE	[M] ⚠
		FUSE HOLDERS	
FH1	EYF52BC	FUSE HOLDER	[M]
FH2	EYF52BC	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP1	RSFMB50KT-L	PROTECTOR	[M] ⚠
FP2	RSFMB50KT-L	PROTECTOR	[M] ⚠
FP601	RSFMB20KT-L	PROTECTOR	[M] ⚠
FP602	RSFMB50KT-L	PROTECTOR	[M] ⚠
FP871	RSFMB12KT-L	COIL	[M] ⚠
		THERMISTOR	
TH1	RRSP33J103CW	THERMISTOR	[M]
		JACKS	
JK1	SJS9236-1	JK AC INLET	[M] ⚠
JK602	RJJ36TA03-C	JK MD LINK	[M]
JK603	RJH2603N-2	JK TRIPPLE RCA	[M]
JK604	T0RX178B	JK OPTICAL MODULE	[M]
JK605	RJJ39T01	JK MIC	[M]
JK606	RJR0054F-J	LOW SPEAKER TERMINAL	[M]
JK607	RJR0054J-J	JK HIGH SPK TERMINAL	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		EARTH TERMINAL	
E601	RSC0574	SHIELD CLAMP	[M]
		WIRES	
W501	RWJ1104130XX	MAIN TO MAIN WIRE	[M]
W501A	RMR0316	7P WIRE HOLDER	[M]
W501B	RMR0316	7P WIRE HOLDER	[M]
PW503	REX1053	6P WIRE	[M]
PW503	RMR0315	6P WIRE HOLDER	[M]
PW703	RMR0313	CABLE HOLDER	[M]
PW703	RWJ1107195XX	MOTOR (L) TO MIN	[M]
PW704	RMR0313	CABLE HOLDER	[M]
PW704	RWJ1107100XX	MOTOR (R) TO MIN	[M]
PW901	REX1039	MAIN TO TRANS WIRE	[M]
PW901	RJS1A5508	HOLDER	[M]
PW902	REX1040	7P WIRE	[M]
PW902	RJS1A5507	WIRE W101 HOLDER	[M]
		RESISTORS	
R1	ERJ3GEYJ472V	4.7K 1/16W	[M]
R2	ERDS2TJ472T	4.7K 1/4W	[M]
R2	ERJ3GEYJ102V	1K 1/16W	[M]
R3	ERDS2TJ223T	22K 1/4W	[M]
R3	ERJ3GEYJ472V	4.7K 1/16W	[M]
R4	ERDS2TJ103T	10K 1/4W	[M]
R5	ERDS2TJ2R2T	2.2 1/4W	[M]
R5	ERJ3GEYJ1R0V	1 1/16W	[M]
R6	ERJ3GEYJ472V	4.7K 1/16W	[M]
R8	ERJ3GEYJ271V	270 1/16W	[M]
R10	ERDS2TJ2R2T	2.2 1/4W	[M]
R10	ERJ3GEYJ474V	470K 1/16W	[M]
R11	ERJ3GEYJ101V	100 1/16W	[M]
R11	ERQ16NKW2R2E	2.2 1/6W	[M]
R12	ERDS2TJ103T	10K 1/4W	[M]
R12	ERJ3GEYJ223V	22K 1/16W	[M]
R13	ERD2FCVG100T	10 1/4W	[M]
R13	ERJ6GEYJ3R3V	3.3 1/10W	[M]
R14	ERJ3GEYD103V	10K 1/16W	[M]
R15	ERJ3GEYJ223V	22K 1/16W	[M]
R16	ERJ3GEYJ104V	100K 1/16W	[M]
R17	ERJ3GEYJ223V	22K 1/16W	[M]
R18	ERJ3GEYJ103V	10K 1/16W	[M]
R19	ERDS1FVJ330T	33 1/2W	[M] ⚠
R19	ERJ3GEYJ102V	1K 1/16W	[M]
R20	ERDS2TJ152T	1.5K 1/4W	[M]
R20	ERJ3GEYJ473V	47K 1/16W	[M]
R21	ERDS2TJ102T	1K 1/4W	[M]
R21	ERJ3GEYJ223V	22K 1/16W	[M]
R22	ERDS2TJ824T	820K 1/4W	[M]
R22	ERJ3GEY0R00V	0 1/16W	[M]
R23	ERJ3GEYJ272V	2.7K 1/16W	[M]
R24	ERJ3GEYJ473V	47K 1/16W	[M]
R25	ERJ3GEYJ104V	100K 1/16W	[M]
R26	ERJ3GEYJ473V	47K 1/16W	[M]
R28	ERJ3GEYJ473V	47K 1/16W	[M]
R29	ERJ3GEYJ473V	47K 1/16W	[M]
R30	ERJ3GEYJ102V	1K 1/16W	[M]
R31	ERJ3GEYJ223V	22K 1/16W	[M]
R32	ERJ3GEYJ473V	47K 1/16W	[M]
R34	ERJ3GEYJ272V	2.7K 1/16W	[M]
R35	ERJ3GEYJ183V	18K 1/16W	[M]
R36	ERJ3GEYJ273V	27K 1/16W	[M]
R37	ERJ3GEYJ333V	33K 1/16W	[M]
R38	ERJ3GEYJ223V	22K 1/16W	[M]
R42	ERJ3GEYJ102V	1K 1/16W	[M]
R43	ERJ3GEYJ222V	2.2K 1/16W	[M]
R44	ERJ3GEYJ223V	22K 1/16W	[M]
R45	ERJ3GEYJ333V	33K 1/16W	[M]
R46	ERJ3GEYJ222V	2.2K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R47	ERJ3GEYJ473V	47K 1/16W	[M]
R50	ERJ3GEYJ102V	1K 1/16W	[M]
R55	ERJ3GEYJ332V	3.3K 1/16W	[M]
R56	ERJ3GEYJ223V	22K 1/16W	[M]
R58	ERJ3GEYJ682V	6.8K 1/16W	[M]
R59	ERJ3GEYJ683V	68K 1/16W	[M]
R60	ERJ3GEYJ332V	3.3K 1/16W	[M]
R61	ERJ3GEYJ223V	22K 1/16W	[M]
R62	ERJ3GEYJ223V	22K 1/16W	[M]
R63	ERJ3GEYJ103V	10K 1/16W	[M]
R64	ERJ3GEYJ471V	470 1/16W	[M]
R65	ERJ3GEYJ471V	470 1/16W	[M]
R66	ERJ3GEYJ471V	470 1/16W	[M]
R67	ERJ3GEYJ102V	1K 1/16W	[M]
R70	ERJ3GEYJ102V	1K 1/16W	[M]
R71	ERJ3GEYJ220V	22 1/16W	[M]
R72	ERJ3GEYJ220V	22 1/16W	[M]
R73	ERJ3GEYJ393V	39K 1/16W	[M]
R74	ERJ3GEYJ822V	8.2K 1/16W	[M]
R75	ERJ3GEYJ223V	22K 1/16W	[M]
R76	ERJ3GEYJ100V	10 1/16W	[M]
R77	ERJ3GEYJ223V	22K 1/16W	[M]
R78	ERJ3GEYJ102V	1K 1/16W	[M]
R79	ERJ3GEYJ102V	1K 1/16W	[M]
R80	ERJ3GEYJ102V	1K 1/16W	[M]
R81	ERJ3GEYJ223V	22K 1/16W	[M]
R82	ERJ3GEYJ473V	47K 1/16W	[M]
R83	ERJ3GEYJ105V	1M 1/16W	[M]
R84	ERJ3GEYJ153V	15K 1/16W	[M]
R85	ERJ3GEYJ223V	22K 1/16W	[M]
R86	ERJ3GEYJ102V	1K 1/16W	[M]
R87	ERJ3GEYJ102V	1K 1/16W	[M]
R89	ERJ3GEYJ102V	1K 1/16W	[M]
R90	ERJ3GEYJ102V	1K 1/16W	[M]
R93	ERJ3GEYJ102V	1K 1/16W	[M]
R95	ERJ3GEYJ222V	2.2K 1/16W	[M]
R98	ERJ3GEYJ102V	1K 1/16W	[M]
R99	ERJ3GEYJ102V	1K 1/16W	[M]
R100	ERJ3GEYJ473V	47K 1/16W	[M]
R103	ERJ3GEYJ102V	1K 1/16W	[M]
R104	ERJ3GEYJ272V	2.7K 1/16W	[M]
R105	ERJ3GEYJ272V	2.7K 1/16W	[M]
R107	ERJ3GEYJ102V	1K 1/16W	[M]
R108	ERJ3GEYJ102V	1K 1/16W	[M]
R109	ERJ3GEYJ102V	1K 1/16W	[M]
R110	ERJ3GEYJ102V	1K 1/16W	[M]
R111	ERJ3GEYJ221V	220 1/16W	[M]
R112	ERJ3GEYJ221V	220 1/16W	[M]
R114	ERJ3GEYJ103V	10K 1/16W	[M]
R115	ERJ3GEYJ103V	10K 1/16W	[M]
R116	ERJ3GEYJ101V	100 1/16W	[M]
R117	ERJ3GEYJ101V	100 1/16W	[M]
R118	ERJ3GEYJ102V	1K 1/16W	[M]
R119	ERJ3GEYJ101V	100 1/16W	[M]
R120	ERJ3GEYJ101V	100 1/16W	[M]
R121	ERJ3GEYJ272V	2.7K 1/16W	[M]
R122	ERJ3GEYJ272V	2.7K 1/16W	[M]
R123	ERJ3GEYJ102V	1K 1/16W	[M]
R124	ERJ3GEYJ473V	47K 1/16W	[M]
R125	ERJ3GEYJ473V	47K 1/16W	[M]
R130	ERJ3GEYJ272V	2.7K 1/16W	[M]
R131	ERJ3GEYJ101V	100 1/16W	[M]
R132	ERJ3GEYJ272V	2.7K 1/16W	[M]
R134	ERJ3GEYJ272V	2.7K 1/16W	[M]
R135	ERJ3GEYJ272V	2.7K 1/16W	[M]
R137	ERJ3GEYJ103V	10K 1/16W	[M]
R145	ERJ3GEYJ221V	220 1/16W	[M]
R146	ERJ3GEYJ221V	220 1/16W	[M]
R147	ERJ3GEYJ102V	1K 1/16W	[M]
R174	ERJ3GEYJ103V	10K 1/16W	[M]
R205	ERJ3GEYJ101V	100 1/16W	[M]
R206	ERJ3GEYJ101V	100 1/16W	[M]
R208	ERJ3GEYJ104V	100K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R209	ERJ3GEYJ104V	100K 1/16W	[M]
R210	ERJ3GEYJ102V	1K 1/16W	[M]
R211	ERJ3GEYJ102V	1K 1/16W	[M]
R401	ERJ3GEYJ153V	15K 1/16W	[M]
R402	ERJ3GEYJ822V	8.2K 1/16W	[M]
R403	ERJ3GEYJ103V	10K 1/16W	[M]
R404	ERJ3GEYJ562V	5.6K 1/16W	[M]
R405	ERJ3GEYJ222V	2.2K 1/16W	[M]
R406	ERJ3GEYJ273V	27K 1/16W	[M]
R408	ERJ3GEYJ103V	10K 1/16W	[M]
R409	ERJ3GEYJ153V	15K 1/16W	[M]
R410	ERJ3GEYJ331V	330 1/16W	[M]
R411	ERJ3GEYJ472V	4.7K 1/16W	[M]
R413	ERJ3GEYJ223V	22K 1/16W	[M]
R414	ERJ3GEYJ562V	5.6K 1/16W	[M]
R415	ERJ3GEYJ682V	6.8K 1/16W	[M]
R416	ERJ3GEYJ471V	470 1/16W	[M]
R417	ERJ3GEYJ562V	5.6K 1/16W	[M]
R418	ERJ3GEYJ562V	5.6K 1/16W	[M]
R419	ERJ3GEYJ392V	3.9K 1/16W	[M]
R421	ERJ3GEYJ103V	10K 1/16W	[M]
R422	ERJ3GEYJ223V	22K 1/16W	[M]
R423	ERJ3GEYJ562V	5.6K 1/16W	[M]
R424	ERJ3GEYJ471V	470 1/16W	[M]
R425	ERJ3GEYJ103V	10K 1/16W	[M]
R427	ERJ3GEYJ223V	22K 1/16W	[M]
R428	ERJ3GEYJ471V	470 1/16W	[M]
R431	ERJ3GEYJ472V	4.7K 1/16W	[M]
R432	ERJ3GEYJ104V	100K 1/16W	[M]
R433	ERJ3GEYJ223V	22K 1/16W	[M]
R434	ERJ3GEYJ472V	4.7K 1/16W	[M]
R435	ERJ3GEYJ153V	15K 1/16W	[M]
R436	ERJ3GEYJ332V	3.3K 1/16W	[M]
R438	ERDS2TJ472T	4.7K 1/4W	[M]
R440	ERDS2TJ101T	100 1/4W	[M]
R441	ERDS2TJ1R2T	1.2 1/4W	[M]
R442	ERDS2TJ1R0T	1 1/4W	[M]
R443	ERDS2TJ820T	82 1/4W	[M]
R444	ERDS2TJ100T	10 1/4W	[M]
R447	ERDS2TJ681T	680 1/4W	[M]
R449	ERDS2TJ102T	1K 1/4W	[M]
R450	ERJ3GEYJ101V	100 1/16W	[M]
R451	ERJ3GEYJ473V	47K 1/16W	[M]
R453	ERJ3GEYJ103V	10K 1/16W	[M]
R454	ERJ3GEYJ472V	4.7K 1/16W	[M]
R458	ERDS2TJ222T	2.2K 1/4W	[M]
R462	ERJ3GEYJ822V	8.2K 1/16W	[M]
R463	ERDS2TJ2R2T	2.2 1/4W	[M]
R464	ERDS2TJ2R2T	2.2 1/4W	[M]
R471	ERJ3GEYJ333V	33K 1/16W	[M]
R472	ERJ3GEYJ473V	47K 1/16W	[M]
R473	ERJ3GEYJ223V	22K 1/16W	[M]
R474	ERJ3GEYJ333V	33K 1/16W	[M]
R475	ERJ3GEYJ182V	1.8K 1/16W	[M]
R476	ERJ3GEYJ561V	560 1/16W	[M]
R477	ERJ3GEYJ472V	4.7K 1/16W	[M]
R479	ERJ3GEYJ222V	2.2K 1/16W	[M]
R480	ERJ3GEYJ472V	4.7K 1/16W	[M]
R501	ERJ3GEYJ153V	15K 1/16W	[M]
R502	ERJ3GEYJ822V	8.2K 1/16W	[M]
R503	ERJ3GEYJ103V	10K 1/16W	[M]
R504	ERJ3GEYJ562V	5.6K 1/16W	[M]
R505	ERJ3GEYJ222V	2.2K 1/16W	[M]
R506	ERJ3GEYJ273V	27K 1/16W	[M]
R508	ERJ3GEYJ103V	10K 1/16W	[M]
R509	ERJ3GEYJ153V	15K 1/16W	[M]
R510	ERJ3GEYJ331V	330 1/16W	[M]
R511	ERJ3GEYJ472V	4.7K 1/16W	[M]
R514	ERJ3GEYJ562V	5.6K 1/16W	[M]
R515	ERJ3GEYJ682V	6.8K 1/16W	[M]
R516	ERJ3GEYJ471V	470 1/16W	[M]
R517	ERJ3GEYJ562V	5.6K 1/16W	[M]
R518	ERJ3GEYJ562V	5.6K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R519	ERJ3GEYJ392V	3.9K 1/16W	[M]
R521	ERJ3GEYJ103V	10K 1/16W	[M]
R522	ERJ3GEYJ223V	22K 1/16W	[M]
R523	ERJ3GEYJ562V	5.6K 1/16W	[M]
R524	ERJ3GEYJ471V	470 1/16W	[M]
R525	ERJ3GEYJ103V	10K 1/16W	[M]
R527	ERJ3GEYJ223V	22K 1/16W	[M]
R528	ERJ3GEYJ471V	470 1/16W	[M]
R531	ERJ3GEYJ472V	4.7K 1/16W	[M]
R532	ERJ3GEYJ104V	100K 1/16W	[M]
R533	ERJ3GEYJ223V	22K 1/16W	[M]
R534	ERJ3GEYJ472V	4.7K 1/16W	[M]
R535	ERJ3GEYJ153V	15K 1/16W	[M]
R536	ERJ3GEYJ332V	3.3K 1/16W	[M]
R538	ERDS2TJ472T	4.7K 1/4W	[M]
R540	ERDS2TJ101T	100 1/4W	[M]
R541	ERDS2TJ1R2T	1.2 1/4W	[M]
R542	ERDS2TJ1R0T	1 1/4W	[M]
R543	ERDS2TJ820T	82 1/4W	[M]
R544	ERDS2TJ100T	10 1/4W	[M]
R547	ERDS2TJ681T	680 1/4W	[M]
R549	ERDS2TJ102T	1K 1/4W	[M]
R550	ERJ3GEYJ101V	100 1/16W	[M]
R551	ERJ3GEYJ473V	47K 1/16W	[M]
R563	ERDS2TJ2R2T	2.2 1/4W	[M]
R564	ERDS2TJ2R2T	2.2 1/4W	[M]
R571	ERJ3GEYJ333V	33K 1/16W	[M]
R572	ERJ3GEYJ473V	47K 1/16W	[M]
R573	ERJ3GEYJ223V	22K 1/16W	[M]
R574	ERJ3GEYJ333V	33K 1/16W	[M]
R575	ERJ3GEYJ182V	1.8K 1/16W	[M]
R576	ERJ3GEYJ561V	560 1/16W	[M]
R577	ERJ3GEYJ472V	4.7K 1/16W	[M]
R613	ERJ3GEYJ104V	100K 1/16W	[M]
R614	ERJ3GEYJ334V	330K 1/16W	[M]
R615	ERJ3GEYJ334V	330K 1/16W	[M]
R616	ERJ3GEYJ472V	4.7K 1/16W	[M]
R617	ERJ3GEYJ152V	1.5K 1/16W	[M]
R618	ERJ3GEYJ152V	1.5K 1/16W	[M]
R619	ERJ3GEYJ152V	1.5K 1/16W	[M]
R620	ERJ3GEYJ220V	22 1/16W	[M]
R621	ERJ3GEYJ272V	2.7K 1/16W	[M]
R622	ERJ3GEYJ220V	22 1/16W	[M]
R623	ERJ3GEYJ220V	22 1/16W	[M]
R625	ERDS2TJ333T	33K 1/4W	[M]
R627	ERDS2TJ122T	1.2K 1/4W	[M]
R628	ERDS2TJ472T	4.7K 1/4W	[M]
R629	ERDS2TJ222T	2.2K 1/4W	[M]
R630	ERDS2TJ333T	33K 1/4W	[M]
R635	ERDS2TJ154T	150K 1/4W	[M]
R636	ERDS2TJ472T	4.7K 1/4W	[M]
R637	ERDS2TJ104T	100K 1/4W	[M]
R651	ERJ3GEYJ153V	15K 1/16W	[M]
R652	ERJ3GEYJ153V	15K 1/16W	[M]
R653	ERJ3GEYJ123V	12K 1/16W	[M]
R670	ERJ3GEYJ272V	2.7K 1/16W	[M]
R671	ERJ3GEYJ103V	10K 1/16W	[M]
R672	ERJ3GEYJ103V	10K 1/16W	[M]
R674	ERJ3GEYJ103V	10K 1/16W	[M]
R675	ERJ3GEYJ472V	4.7K 1/16W	[M]
R676	ERJ3GEYJ123V	12K 1/16W	[M]
R677	ERJ3GEYJ472V	4.7K 1/16W	[M]
R678	ERJ3GEYJ472V	4.7K 1/16W	[M]
R679	ERJ3GEYJ472V	4.7K 1/16W	[M]
R680	ERJ3GEYJ472V	4.7K 1/16W	[M]
R681	ERJ3GEYJ472V	4.7K 1/16W	[M]
R682	ERJ3GEYJ103V	10K 1/16W	[M]
R684	ERJ3GEYJ103V	10K 1/16W	[M]
R685	ERJ3GEYJ103V	10K 1/16W	[M]
R686	ERJ3GEYJ103V	10K 1/16W	[M]
R687	ERJ3GEYJ103V	10K 1/16W	[M]
R688	ERJ3GEYJ103V	10K 1/16W	[M]
R689	ERJ3GEYJ103V	10K 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R701	ERJ3GEYJ104V	100K 1/16W	[M]
R701	ERJ6GEYJ4R7V	4.7 1/10W	[M]
R702	ERJ3GEYJ104V	100K 1/16W	[M]
R702	ERJ6GEYJ103V	10K 1/10W	[M]
R703	ERJ3GEYJ101V	100 1/16W	[M]
R704	ERJ3GEYJ101V	100 1/16W	[M]
R704	ERJ6GEYJ102V	1K 1/10W	[M]
R705	ERJ6GEYJ154V	150K 1/10W	[M]
R706	ERJ6GEYJ102V	1K 1/10W	[M]
R707	ERJ6GEYJ393V	39K 1/10W	[M]
R708	ERJ6GEYJ223V	22K 1/10W	[M]
R709	ERJ6GEYJ683V	68K 1/10W	[M]
R711	ERJ6GEYJ823V	82K 1/10W	[M]
R712	ERJ8GEYJ221V	220 1/8W	[M]
R714	ERJ6GEYJ682V	6.8K 1/10W	[M]
R715	ERJ6GEYJ102V	1K 1/10W	[M]
R717	ERJ6GEYJ102V	1K 1/10W	[M]
R718	ERJ3GEYJ333V	33K 1/16W	[M]
R718	ERJ6GEYJ102V	1K 1/10W	[M]
R720	ERJ3GEYJ332V	3.3K 1/16W	[M]
R721	ERJ3GEYJ102V	1K 1/16W	[M]
R721	ERJ6GEYJ101V	100 1/10W	[M]
R722	ERJ3GEYJ102V	1K 1/16W	[M]
R723	ERJ3GEYJ102V	1K 1/16W	[M]
R723	ERJ6GEYJ103V	10K 1/10W	[M]
R724	ERJ3GEYJ102V	1K 1/16W	[M]
R724	ERJ6GEYJ153V	15K 1/10W	[M]
R725	ERJ6GEYJ681V	680 1/10W	[M]
R727	ERJ6GEYJ272V	2.7K 1/10W	[M]
R728	ERJ6GEYJ222V	2.2K 1/10W	[M]
R729	ERJ6GEYJ272V	2.7K 1/10W	[M]
R731	ERJ6GEYJ103V	10K 1/10W	[M]
R732	ERJ6GEYJ102V	1K 1/10W	[M]
R735	ERJ6GEYJ101V	100 1/10W	[M]
R736	ERJ6GEYJ101V	100 1/10W	[M]
R741	ERJ6GEYJ473V	47K 1/10W	[M]
R742	ERJ6GEYJ224V	220K 1/10W	[M]
R744	ERJ6GEYJ124V	120K 1/10W	[M]
R749	ERJ6GEYJ272V	2.7K 1/10W	[M]
R751	ERJ3GEYJ102V	1K 1/16W	[M]
R752	ERJ3GEYJ102V	1K 1/16W	[M]
R753	ERJ3GEYJ122V	1.2K 1/16W	[M]
R753	ERJ6GEYJ100V	10 1/10W	[M]
R754	ERJ3GEYJ182V	1.8K 1/16W	[M]
R754	ERJ8GEYJ5R6V	5.6 1/8W	[M]
R755	ERJ3GEYJ222V	2.2K 1/16W	[M]
R756	ERJ3GEYJ272V	2.7K 1/16W	[M]
R757	ERJ3GEYJ472V	4.7K 1/16W	[M]
R758	ERJ3GEYJ682V	6.8K 1/16W	[M]
R759	ERJ3GEYJ103V	10K 1/16W	[M]
R760	ERJ3GEYJ223V	22K 1/16W	[M]
R760	ERJ6GEYJ221V	220 1/10W	[M]
R761	ERJ3GEYJ683V	68K 1/16W	[M]
R772	ERJ3GEYJ221V	220 1/16W	[M]
R773	ERJ3GEYJ221V	220 1/16W	[M]
R774	ERJ3GEYJ221V	220 1/16W	[M]
R775	ERJ3GEYJ102V	1K 1/16W	[M]
R776	ERJ3GEYJ102V	1K 1/16W	[M]
R777	ERJ3GEYJ122V	1.2K 1/16W	[M]
R778	ERJ3GEYJ182V	1.8K 1/16W	[M]
R779	ERJ3GEYJ222V	2.2K 1/16W	[M]
R780	ERJ3GEYJ272V	2.7K 1/16W	[M]
R781	ERJ3GEYJ472V	4.7K 1/16W	[M]
R782	ERJ3GEYJ682V	6.8K 1/16W	[M]
R783	ERJ3GEYJ103V	10K 1/16W	[M]
R784	ERJ3GEYJ223V	22K 1/16W	[M]
R785	ERJ3GEYJ683V	68K 1/16W	[M]
R787	ERJ3GEYJ103V	10K 1/16W	[M]
R788	ERJ3GEYJ103V	10K 1/16W	[M]
R790	ERJ3GEYJ151V	150 1/16W	[M]
R791	ERJ3GEYJ820V	82 1/16W	[M]
R792	ERJ3GEYJ101V	100 1/16W	[M]
R793	ERJ3GEYJ121V	120 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R794	ERJ3GEYJ102V	1K 1/16W	[M]
R795	ERJ3GEYJ102V	1K 1/16W	[M]
R796	ERJ3GEYJ470V	47 1/16W	[M]
R797	ERJ3GEYJ473V	47K 1/16W	[M]
R798	ERJ3GEYJ473V	47K 1/16W	[M]
R799	ERJ3GEYJ332V	3.3K 1/16W	[M]
R801	ERJ3GEYJ472V	4.7K 1/16W	[M]
R802	ERJ3GEYJ472V	4.7K 1/16W	[M]
R805	ERJ3GEYJ101V	100 1/16W	[M]
R806	ERJ3GEYJ472V	4.7K 1/16W	[M]
R807	ERJ3GEYJ223V	22K 1/16W	[M]
R809	ERJ3GEYJ332V	3.3K 1/16W	[M]
R810	ERJ3GEYJ332V	3.3K 1/16W	[M]
R811	ERJ3GEYJ331V	330 1/16W	[M]
R812	ERJ3GEYJ334V	330K 1/16W	[M]
R813	ERJ3GEYJ331V	330 1/16W	[M]
R815	ERJ3GEYJ221V	220 1/16W	[M]
R816	ERJ3GEYJ473V	47K 1/16W	[M]
R817	ERJ3GEYJ472V	4.7K 1/16W	[M]
R818	ERJ3GEYJ472V	4.7K 1/16W	[M]
R819	ERJ3GEYJ472V	4.7K 1/16W	[M]
R820	ERJ3GEYJ472V	4.7K 1/16W	[M]
R821	ERJ3GEYJ102V	1K 1/16W	[M]
R822	ERJ3GEYJ102V	1K 1/16W	[M]
R824	ERJ3GEYJ103V	10K 1/16W	[M]
R825	ERJ3GEYJ103V	10K 1/16W	[M]
R826	ERJ3GEYJ103V	10K 1/16W	[M]
R827	ERJ3GEYJ103V	10K 1/16W	[M]
R829	ERJ3GEYJ223V	22K 1/16W	[M]
R830	ERJ3GEYJ472V	4.7K 1/16W	[M]
R831	ERJ3GEYJ472V	4.7K 1/16W	[M]
R832	ERJ3GEYJ472V	4.7K 1/16W	[M]
R833	ERJ3GEYJ472V	4.7K 1/16W	[M]
R834	ERJ3GEYJ103V	10K 1/16W	[M]
R835	ERJ3GEYJ473V	47K 1/16W	[M]
R836	ERJ3GEYJ472V	4.7K 1/16W	[M]
R837	ERJ3GEYJ561V	560 1/16W	[M]
R838	ERJ3GEYJ104V	100K 1/16W	[M]
R839	ERJ3GEYJ104V	100K 1/16W	[M]
R840	ERJ3GEYJ272V	2.7K 1/16W	[M]
R841	ERJ3GEYJ272V	2.7K 1/16W	[M]
R842	ERJ3GEYJ331V	330 1/16W	[M]
R843	ERJ3GEYJ331V	330 1/16W	[M]
R845	ERJ3GEYJ223V	22K 1/16W	[M]
R846	ERJ3GEYJ223V	22K 1/16W	[M]
R849	ERJ3GEYJ103V	10K 1/16W	[M]
R850	ERJ3GEYJ331V	330 1/16W	[M]
R852	ERJ3GEYJ102V	1K 1/16W	[M]
R853	ERJ3GEYJ102V	1K 1/16W	[M]
R854	ERJ3GEYJ102V	1K 1/16W	[M]
R855	ERJ3GEYJ102V	1K 1/16W	[M]
R857	ERJ3GEYJ103V	10K 1/16W	[M]
R858	ERJ3GEYJ103V	10K 1/16W	[M]
R859	ERJ3GEYJ102V	1K 1/16W	[M]
R860	ERJ3GEYJ102V	1K 1/16W	[M]
R861	ERJ3GEYJ102V	1K 1/16W	[M]
R862	ERJ3GEYJ102V	1K 1/16W	[M]
R864	ERJ3GEYJ223V	22K 1/16W	[M]
R866	ERJ3GEYJ103V	10K 1/16W	[M]
R867	ERJ3GEYJ103V	10K 1/16W	[M]
R869	ERJ3GEYJ472V	4.7K 1/16W	[M]
R870	ERJ3GEYJ103V	10K 1/16W	[M]
R871	ERJ3GEYJ103V	10K 1/16W	[M]
R872	ERJ3GEYJ102V	1K 1/16W	[M]
R873	ERJ3GEYJ102V	1K 1/16W	[M]
R874	ERJ3GEYJ331V	330 1/16W	[M]
R875	ERJ3GEYJ333V	33K 1/16W	[M]
R876	ERJ3GEYJ223V	22K 1/16W	[M]
R877	ERJ3GEYJ104V	100K 1/16W	[M]
R878	ERJ3GEYJ473V	47K 1/16W	[M]
R879	ERJ3GEYJ103V	10K 1/16W	[M]
R880	ERJ3GEYJ101V	100 1/16W	[M]
R883	ERJ3GEYJ471V	470 1/16W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R884	ERJ3GEYJ472V	4.7K 1/16W	[M]
R885	ERJ3GEYJ223V	22K 1/16W	[M]
R886	ERJ3GEYJ471V	470 1/16W	[M]
R887	ERJ3GEYJ562V	5.6K 1/16W	[M]
R888	ERJ3GEYJ562V	5.6K 1/16W	[M]
R889	ERJ3GEYJ222V	2.2K 1/16W	[M]
R890	ERJ3GEYJ272V	2.7K 1/16W	[M]
R891	ERJ3GEYJ272V	2.7K 1/16W	[M]
R892	ERJ3GEYJ122V	1.2K 1/16W	[M]
R893	ERJ3GEYJ221V	220 1/16W	[M]
R894	ERJ3GEYJ103V	10K 1/16W	[M]
R915	ERDS2TJ102T	1K 1/4W	[M]
R916	ERDS2TJ222T	2.2K 1/4W	[M]
R917	ERDS2TJ104T	100K 1/4W	[M]
R918	ERDS2TJ561T	560 1/4W	[M]
R921	ERDS2TJ1R2T	1.2 1/4W	[M]
R922	ERDS2TJ1R2T	1.2 1/4W	[M]
R923	ERDS2TJ1R2T	1.2 1/4W	[M]
R924	ERDS2TJ104T	100K 1/4W	[M]
R927	ERDS2TJ122T	1.2K 1/4W	[M]
R929	ERDS2TJ331T	330 1/4W	[M]
R930	ERDS2TJ271T	270 1/4W	[M]
R931	ERDS2TG122T	1.2K 1/4W	[M]
R932	ERDS2TG152T	1.5K 1/4W	[M]
R933	ERJ3GEYJ103V	10K 1/16W	[M]
R934	ERJ3GEYJ103V	10K 1/16W	[M]
R941	ERDS2TJ472T	4.7K 1/4W	[M]
R943	ERD2FCVG220T	22 1/4W	[M]
R944	ERJ3GEYJ222V	2.2K 1/16W	[M]
R946	ERJ3GEYJ223V	22K 1/16W	[M]
R954	ERJ3GEYJ102V	1K 1/16W	[M]
R955	ERJ3GEYJ223V	22K 1/16W	[M]
R961	ERJ3GEYJ123V	12K 1/16W	[M]
R962	ERJ3GEYJ473V	47K 1/16W	[M]
R963	ERJ3GEYJ332V	3.3K 1/16W	[M]
R964	ERJ3GEYJ331V	330 1/16W	[M]
R976	ERJ3GEYJ102V	1K 1/16W	[M]
R977	ERJ3GEYJ102V	1K 1/16W	[M]
R978	ERJ3GEYJ102V	1K 1/16W	[M]
R984	ERJ3GEYJ101V	100 1/16W	[M]
		CAPACITORS	
C1	ECKWRS102MBC	1000P 400V	[M] ⚠
C1	ECUV1H221KBV	220P 50V	[M]
C2	ECKR1H103ZF5	0.01 50V	[M]
C3	ECA1CM102B	1000 16V	[M]
C4	ECUVNJ105ZFV	10 6.3V	[M]
C5	ECUVNA224KBV	0.22 10V	[M]
C6	ECEA1HN470UB	47 50V	[M]
C6	ECUVNJ105ZFV	1 6.3V	[M]
C7	ECKR1H223ZF5	0.022 50V	[M]
C7	ECUVNA224KBV	0.22 10V	[M]
C8	ECUVNA224KBV	0.22 10V	[M]
C9	ECKR1H223ZF5	0.022 50V	[M]
C11	ECA1JM101B	100 6.3V	[M]
C11	ECUV1C223KBV	0.022 16V	[M]
C12	ECEA1HKA4R7B	4.7 50V	[M]
C12	ECUVNJ474KBV	0.47 6.3V	[M]
C13	ECUVNC393KBV	0.039 16V	[M]
C14	ECUV1H102KBV	1000P 50V	[M]
C15	ECST0GY106RR	10 4V	[M]
C16	ECUV1H181KV	180P 50V	[M]
C17	ECUV1H332KBV	3300P 50V	[M]
C18	ECUV1H562KBV	5600P 50V	[M]
C19	ECUVNC104ZFV	0.1 16V	[M]
C20	ECST0GY106RR	10 4V	[M]
C21	ECBT1H102KB5	1000P 50V	[M]
C21	ECUV1H822KBV	8200P 50V	[M]
C22	ECBT1C103MS5	0.01 16V	[M]
C22	ECUV1H102KBV	1000P 50V	[M]
C23	ECA1EAK470XB	47 25V	[M]
C23	ECUVNC104ZFV	0.1 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C24	ECUV1H102KBV	1000P 50V	[M]
C25	ECUVNC393KBV	0.039 16V	[M]
C26	ECUV1H472KBV	4700P 50V	[M]
C28	ECST0GY226RR	10 4V	[M]
C29	ECUV1H332KBV	3300P 50V	[M]
C30	ECUV1E123KBV	0.012 25V	[M]
C31	ECUV1H102KBV	1000P 50V	[M]
C32	ECUV1H102KBV	1000P 50V	[M]
C33	ECST0GY106RR	10 4V	[M]
C34	ECUV1H102KBV	1000P 50V	[M]
C35	ECUV1H102KBV	1000P 50V	[M]
C37	ECUV1H181KV	180P 50V	[M]
C40	ECUVNC104ZFV	0.1 16V	[M]
C41	ECEV0JA331P	330 6.3V	[M]
C42	ECST0GY106RR	10 4V	[M]
C45	ECST0GY106RR	10 4V	[M]
C46	ECUVNC104ZFV	0.1 16V	[M]
C47	ECUVNJ105ZFV	1 6.3V	[M]
C48	ECUVNC104ZFV	0.1 16V	[M]
C50	ECUVNC104ZFV	0.1 16V	[M]
C51	ECUVNJ105ZFV	1 6.3V	[M]
C52	ECUVNJ105ZFV	1 6.3V	[M]
C53	ECUV1H332KBV	3300P 50V	[M]
C55	ECUV1H102KBV	1000P 50V	[M]
C56	ECUV1H102KBV	1000P 50V	[M]
C57	ECUV1H102KBV	1000P 50V	[M]
C58	ECUV1H102KBV	1000P 50V	[M]
C59	ECUVNC823KBV	0.082 16V	[M]
C60	ECEV1CA100R	10 16V	[M]
C61	ECUVNJ334KBV	0.33 6.3V	[M]
C62	ECUV1H221KBV	220P 50V	[M]
C64	ECUV1E153KBV	0.015 25V	[M]
C65	ECUVNC104KBV	0.1 16V	[M]
C66	ECUVNC823KBV	0.082 16V	[M]
C67	ECUV1H392KBV	3900P 50V	[M]
C70	ECUV1E123KBV	0.012 25V	[M]
C71	ECUVNC104ZFV	0.1 16V	[M]
C72	ECUVNC104ZFV	0.1 16V	[M]
C73	ECUVNC104ZFV	0.1 16V	[M]
C74	ECUVNC104ZFV	0.1 16V	[M]
C75	ECUVNC104ZFV	0.1 16V	[M]
C76	ECUVNC104ZFV	0.1 16V	[M]
C79	ECUVNC104ZFV	0.1 16V	[M]
C80	ECUVNC104ZFV	0.1 16V	[M]
C81	ECUV1H560JCV	56P 50V	[M]
C82	ECUV1C473KBV	0.047 16V	[M]
C83	ECUVNC104ZFV	0.1 16V	[M]
C84	ECUVNC104ZFV	0.1 16V	[M]
C85	ECST0GY106RR	10 4V	[M]
C86	ECUV1E153KBV	0.015 25V	[M]
C87	ECUVNC104ZFV	0.1 16V	[M]
C88	ECUV1H331KBV	330P 50V	[M]
C89	ECUV1H331KBV	330P 50V	[M]
C90	ECUV1H080DCV	8P 50V	[M]
C91	ECUV1H080DCV	8P 50V	[M]
C92	ECUVNC104ZFV	0.1 16V	[M]
C93	ECUVNC104ZFV	0.1 16V	[M]
C94	ECST0GY475RR	4.7 4V	[M]
C95	ECUVNC104ZFV	0.1 16V	[M]
C96	ECST0GY475RR	4.7 4V	[M]
C97	ECST0GY475RR	4.7 4V	[M]
C98	ECUVNC104ZFV	0.1 16V	[M]
C99	ECUV1H102KBV	1000P 50V	[M]
C100	ECUVNC104ZFV	0.1 16V	[M]
C101	ECST0GY106RR	10 4V	[M]
C102	ECUVNC104ZFV	0.1 16V	[M]
C103	ECST0GY106RR	10 4V	[M]
C106	ECUV1H102KBV	1000P 50V	[M]
C110	ECUVNC104ZFV	0.1 16V	[M]
C111	ECST0GY106RR	10 4V	[M]
C112	ECEV1CA100R	10 16V	[M]
C113	ECUVNC104ZFV	0.1 16V	[M]
C114	ECUV1H561KBV	560P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C115	ECUV1H561KBV	560P 50V	[M]
C117	ECEV0JA331P	330 6.3V	[M]
C118	ECUVNA105KBN	10 10V	[M]
C119	ECUV1H102KBV	1000P 50V	[M]
C120	ECUV1H560JCV	56P 50V	[M]
C121	ECUV1H102KBV	1000P 50V	[M]
C122	ECUVNJ105ZFV	10 6.3V	[M]
C123	ECUVNC104ZFV	0.1 16V	[M]
C128	ECUVNC104ZFV	0.1 16V	[M]
C129	ECUV1H101JCV	100P 50V	[M]
C133	ECUVNJ105ZFV	10 6.3V	[M]
C134	ECUV1H331KBV	330P 50V	[M]
C138	ECEV0JA470SR	47 6.3V	[M]
C139	ECUVNC104ZFV	0.1 16V	[M]
C140	ECUVNC104ZFV	0.1 16V	[M]
C141	ECUVNC104ZFV	0.1 16V	[M]
C142	ECUVNC104ZFV	0.1 16V	[M]
C143	ECST0GY106RR	10 4V	[M]
C144	ECUV1E103KBV	0.01 25V	[M]
C147	ECUV1E103KBV	0.01 25V	[M]
C148	ECUV1E103KBV	0.01 25V	[M]
C149	ECUV1E103KBV	0.01 25V	[M]
C154	ECUV1H330JCV	33P 50V	[M]
C155	ECUV1H330JCV	33P 50V	[M]
C201	ECA1EAK100XB	10 25V	[M]
C202	ECA0JM101B	100 6.3V	[M]
C203	ECUVNH103KBV	0.01 50V	[M]
C204	ECUV1H561KBV	560P 50V	[M]
C205	ECUV1H331KBV	330P 50V	[M]
C206	ECUV1H470JCV	47P 50V	[M]
C207	ECUV1H470JCV	47P 50V	[M]
C208	ECA0JM101B	100 6.3V	[M]
C209	ECUVNH103KBV	0.01 50V	[M]
C401	ECA1EAK100XB	10 25V	[M]
C402	ECA1EAK100XB	10 25V	[M]
C403	ECA1CAK101XB	100 16V	[M]
C404	ECUVNC104KBV	0.1 16V	[M]
C405	ECUVNC104KBV	0.1 16V	[M]
C407	ECUV1H821KBV	820P 50V	[M]
C408	ECUVNE223KBV	0.022 25V	[M]
C409	ECUV1H101KCV	100P 50V	[M]
C410	ECA1HAK3R3XB	3.3 50V	[M]
C412	ECUV1H221KBV	220P 50V	[M]
C413	ECUVNC473KBV	0.047 16V	[M]
C414	ECUV1H561KBV	560P 50V	[M]
C415	ECA1HAK2R2XB	2.2 50V	[M]
C416	ECUV1H101KCV	100P 50V	[M]
C417	ECUV1H101KCV	100P 50V	[M]
C418	ECUVNH103KBV	0.01 50V	[M]
C419	ECUVNH103KBV	0.01 50V	[M]
C420	ECUVNH103KBV	0.01 50V	[M]
C421	ECUV1H101KCV	100P 50V	[M]
C422	ECUV1H101KCV	100P 50V	[M]
C425	ECUV1H101KCV	100P 50V	[M]
C427	ECUV1H221KBV	220P 50V	[M]
C431	ECQV1H154JZ3	0.15 50V	[M]
C432	ECQV1H154JZ3	0.15 50V	[M]
C433	ECUV1H471KBV	470P 50V	[M]
C434	ECQV1H154JZ3	0.15 50V	[M]
C435	ECUV1H102KBV	1000P 50V	[M]
C439	ECBT1H471KB5	470 50V	[M]
C441	ECA1EAK100XB	10 25V	[M]
C442	ECBT1H102KB5	1000P 50V	[M]
C443	ECA1CAK101XB	100 16V	[M]
C444	ECA1CAK101XB	100 16V	[M]
C445	ECA1CPXL471E	470 16V	[M]
C446	ECBT1C103MS5	0.01 16V	[M]
C447	ECQV1H224JZ3	0.22 50V	[M]
C448	ECA1AM221B	220 10V	[M]
C449	ECBT1H473ZF5	0.047 50V	[M]
C450	ECBT1H473ZF5	0.047 50V	[M]
C451	ECQV1H154JZ3	0.15 50V	[M]
C452	ECFR1C473KR	0.047 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C453	ECUV1H471KBV	470P 50V	[M]
C454	ECA1EAK100XB	10 25V	[M]
C456	ECQV1H334JZ3	0.33 50V	[M]
C462	ECBT1H471KB5	470P 50V	[M]
C463	ECQV1H224JZ3	0.22 50V	[M]
C464	ECQV1H224JZ3	0.22 50V	[M]
C465	ECBT1H102KB5	1000P 50V	[M]
C471	ECA1EAK100XB	10 25V	[M]
C472	ECUV1H101KCV	100P 50V	[M]
C473	ECUV1H100JCV	10P 50V	[M]
C474	ECA1EAK100XB	10 25V	[M]
C475	ECA1EAK100XB	10 25V	[M]
C476	ECUV1H101KCV	100P 50V	[M]
C479	ECUVNC104ZFV	0.1 16V	[M]
C480	ECA1HAKR33XB	0.33 50V	[M]
C501	ECA1EAK100XB	10 25V	[M]
C502	ECA1EAK100XB	10 25V	[M]
C504	ECUVNC104KBV	0.1 16V	[M]
C505	ECUVNC104KBV	0.1 16V	[M]
C507	ECUV1H821KBV	820P 50V	[M]
C508	ECUVNE223KBV	0.022 25V	[M]
C509	ECUV1H101KCV	100P 50V	[M]
C510	ECA1HAK3R3XB	3.3 50V	[M]
C512	ECUV1H221KBV	220P 50V	[M]
C513	ECA1EAK100XB	10 25V	[M]
C514	ECUV1H561KBV	560P 50V	[M]
C515	ECA1HAK2R2XB	2.2 50V	[M]
C516	ECUV1H101KCV	100P 50V	[M]
C517	ECUV1H101KCV	100P 50V	[M]
C519	ECUVNH103KBV	0.01 50V	[M]
C520	ECUVNH103KBV	0.01 50V	[M]
C521	ECUV1H101KCV	100P 50V	[M]
C522	ECUV1H101KCV	100P 50V	[M]
C525	ECUV1H101KCV	100P 50V	[M]
C527	ECUV1H101KCV	100P 50V	[M]
C531	ECQV1H154JZ3	0.15 50V	[M]
C532	ECQV1H154JZ3	0.15 50V	[M]
C533	ECUV1H471KBV	470P 50V	[M]
C534	ECQV1H154JZ3	0.15 50V	[M]
C535	ECUV1H102KBV	1000P 50V	[M]
C539	ECBT1H471KB5	470 50V	[M]
C541	ECA1EAK100XB	10 25V	[M]
C542	ECBT1H102KB5	1000P 50V	[M]
C543	ECA1CAK101XB	100 16V	[M]
C544	ECA1CAK101XB	100 16V	[M]
C545	ECA1CPXL471E	470 16V	[M]
C547	ECQV1H224JZ3	0.22 50V	[M]
C548	ECA1AM221B	220 10V	[M]
C549	ECBT1H473ZF5	0.047 50V	[M]
C550	ECBT1H473ZF5	0.047 50V	[M]
C562	ECBT1H471KB5	470P 50V	[M]
C563	ECQV1H224JZ3	0.22 50V	[M]
C564	ECQV1H224JZ3	0.22 50V	[M]
C565	ECBT1H102KB5	1000P 50V	[M]
C571	ECA1EAK100XB	10 25V	[M]
C572	ECUV1H101KCV	100P 50V	[M]
C573	ECUV1H100JCV	10P 50V	[M]
C574	ECA1EAK100XB	10 25V	[M]
C575	ECA1EAK100XB	10 25V	[M]
C576	ECUV1H101KCV	100P 50V	[M]
C579	ECA1EAK100XB	10 25V	[M]
C601	ECUVNH103KBV	0.01 50V	[M]
C609	ECEA1HKA010B	1 50V	[M]
C610	ECEA1HKA010B	1 50V	[M]
C611	ECEA1HKA010B	1 50V	[M]
C612	ECEA1AKA101B	100 10V	[M]
C615	ECUV1H471KBV	470P 50V	[M]
C616	ECEA1HKA010B	1 50V	[M]
C617	ECA1CM471B	470 16V	[M]
C619	ECUV1C105ZFN	10 16V	[M]
C621	ECA1CAK101XB	100 16V	[M]
C624	ECUV1C105ZFN	10 16V	[M]
C625	ECA1EAK100XB	10 25V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C626	ECA1EM331B	330 25V	[M]
C627	ECBT1H221KB5	220P 50V	[M]
C628	ECA1EAK100XB	10 25V	[M]
C629	ECUV1H101KCV	100P 50V	[M]
C630	ECEA1EKA220B	22 25V	[M]
C635	ECA1EAK100XB	10 25V	[M]
C637	ECEA1EKA330B	33 25V	[M]
C639	ECBT1C103MS5	0.01 16V	[M]
C671	ECUV1H102KBV	1000P 50V	[M]
C672	ECUV1H102KBV	1000P 50V	[M]
C673	ECEA1AKA220B	22 10V	[M]
C674	ECA1CAK101XB	100 16V	[M]
C675	ECUV1H221KBV	220P 50V	[M]
C676	ECUV1H221KBV	220P 50V	[M]
C701	ECEA0JKA330I	33 6.3V	[M]
C701	ECUV1H102KBV	1000P 50V	[M]
C702	ECUV1E104MBN	0.1 25V	[M]
C702	ECUV1H102KBV	1000P 50V	[M]
C703	ECEA0JKA101I	100 6.3V	[M]
C703	ECEA1HKA100B	10 50V	[M]
C704	ECUV1E104MBN	0.1 25V	[M]
C704	ECUVNC104ZFV	0.1 16V	[M]
C705	ECUVNC104ZFV	0.1 16V	[M]
C706	ECUV1H272KBN	2700P 50V	[M]
C706	ECUVNC104ZFV	0.1 16V	[M]
C707	ECUV1E273KBN	0.027 25V	[M]
C708	ECUVNH103KBV	0.01 50V	[M]
C709	ECEA0JKA101B	100 6.3V	[M]
C710	ECEA0JKA331Q	330 6.3V	[M]
C710	ECUV1H121JCN	120P 50V	[M]
C711	ECUV1E104KBN	0.1 25V	[M]
C712	ECUV1E104KBN	0.1 25V	[M]
C713	ECUV1E104MBN	0.1 25V	[M]
C713	ECUVNC104ZFV	0.1 16V	[M]
C714	ECEA0JKA101I	100 6.3V	[M]
C714	ECEA1HKA220B	22 50V	[M]
C715	ECUV1H272KBN	2700P 50V	[M]
C715	ECUVNC104ZFV	0.1 16V	[M]
C716	ECUV1H470JCV	47P 50V	[M]
C716	ECUV1H821KBN	820P 50V	[M]
C717	ECUV1E104ZFN	0.1 25V	[M]
C718	ECUV1C224KBN	0.22 16V	[M]
C718	ECUV1H102KBV	1000P 50V	[M]
C720	ECUVNC104ZFV	0.1 16V	[M]
C721	ECUV1H101KCV	100P 50V	[M]
C722	ECUV1H101KCV	100P 50V	[M]
C723	ECEA1AKA221I	220 10V	[M]
C723	ECUV1H101KCV	100P 50V	[M]
C724	ECUV1E104MBN	0.1 25V	[M]
C724	ECUV1H101KCV	100P 50V	[M]
C725	ECUV1H102KBN	1000P 50V	[M]
C726	ECUV1H102KBN	1000P 50V	[M]
C727	ECA1HAK010XI	1 50V	[M]
C728	ECA1HAK010XI	1 50V	[M]
C730	ECUV1E104ZFN	0.1 25V	[M]
C731	ECA0JAK221XI	220 6.3V	[M]
C732	ECEA0JKA221I	220 6.3V	[M]
C733	ECUV1E104MBN	0.1 25V	[M]
C734	ECEA1AKA221I	220 10V	[M]
C735	ECUV1E104ZFN	0.1 25V	[M]
C736	ECUV1E104ZFN	0.1 25V	[M]
C737	ECUV1E104ZFN	0.1 25V	[M]
C738	ECUV1H563KBN	0.056 50V	[M]
C739	ECUV1H222KBN	2200P 50V	[M]
C742	ECUV1E273KBN	0.027 25V	[M]
C743	ECUV1E104ZFN	0.1 25V	[M]
C744	ECUV1E822KBN	8200P 25V	[M]
C745	ECUV1E104ZFN	0.1 25V	[M]
C747	ECUV1H181JCN	180P 50V	[M]
C749	ECUV1H222KBN	2200P 50V	[M]
C750	ECUV1E104MBN	0.1 25V	[M]
C751	ECUV1E104MBN	0.1 25V	[M]
C752	ECUV1H152KBN	1500P 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C753	ECUV1H471KBN	470P 50V	[M]
C754	ECUV1H471KBN	470P 50V	[M]
C760	ECUV1E104MBN	0.1 25V	[M]
C791	ECEA0JKA470B	47 6.3V	[M]
C792	ECUVNH103KBV	0.01 50V	[M]
C794	ECUV1H102KBV	1000P 50V	[M]
C795	ECUV1H102KBV	1000P 50V	[M]
C801	ECUV1H561KBV	560P 50V	[M]
C802	ECUV1H561KBV	560P 50V	[M]
C810	ECUVNC104ZFV	0.1 16V	[M]
C811	ECUV1H560JCV	56P 50V	[M]
C812	ECUV1H560JCV	56P 50V	[M]
C813	ECUV1H470JCV	47P 50V	[M]
C814	ECUV1H330JCV	33P 50V	[M]
C815	ECUV1H102KBV	1000P 50V	[M]
C816	ECUV1H102KBV	1000P 50V	[M]
C817	ECUV1H180JCV	18P 50V	[M]
C818	ECUV1H180JCV	18P 50V	[M]
C819	ECUVNC104ZFV	0.1 16V	[M]
C820	ECEA1HKA010B	1 50V	[M]
C821	ECUV1H102KBV	1000P 50V	[M]
C822	ECA0JM102B	1000P 6.3V	[M]
C825	ECEA1HKA010B	1 50V	[M]
C826	ECEA1HKA010B	1 50V	[M]
C827	ECUV1H101KCV	100P 50V	[M]
C828	ECUVNH103KBV	0.01 50V	[M]
C831	ECUV1H101KCV	100P 50V	[M]
C832	ECEA0JKA470B	47 6.3V	[M]
C840	ECUV1C105ZFN	1 16V	[M]
C842	ECUV1H331KBV	330P 50V	[M]
C843	ECUV1H331KBV	330P 50V	[M]
C844	ECUV1H331KBV	330P 50V	[M]
C847	ECUV1H561KBV	560P 50V	[M]
C848	ECUV1H561KBV	560P 50V	[M]
C871	ECUVNC104ZFV	0.1 16V	[M]
C872	ECEA1HKA4R7B	4.7 50V	[M]
C873	ECUVNH103KBV	0.01 50V	[M]
C875	ECEA0JKA220B	22 6.3V	[M]
C877	ECA0JM101B	100 6.3V	[M]
C878	ECA1AM331B	330 10V	[M]
C879	ECUV1H680JCV	68P 50V	[M]
C880	ECUVNH103KBV	0.01 50V	[M]
C881	ECUV1E473ZFV	0.047 25V	[M]
C882	ECUVNC104ZFV	0.1 16V	[M]
C884	ECUVNC104ZFV	0.1 16V	[M]
C885	ECUVNH103KBV	0.01 50V	[M]
C887	ECUV1H102KBV	1000P 50V	[M]
C888	ECUVNC104ZFV	0.1 16V	[M]
C893	ECUV1H270JCV	27P 50V	[M]
C900	ECQE2104KF3	0.1 250V	[M]
C901	ECBT1H103ZF5	0.01 50V	[M]
C902	ECBT1H103ZF5	0.01 50V	[M]
C903	ECBT1H103ZF5	0.01 50V	[M]
C904	ECBT1H103ZF5	0.01 50V	[M]
C905	ECA1CM222E	2200 16V	[M]
C910	ECA1EAM682XE	6800 25V	[M]
C915	ECA1EAK100XB	10 25V	[M]
C916	ECBT1E103ZF5	0.01 25V	[M]
C920	ECUVNC104ZFV	0.1 16V	[M]
C921	ECA1EAK100XB	10 25V	[M]
C922	ECBT1E103ZF5	0.01 25V	[M]
C923	ECA1EAK100XB	10 25V	[M]
C925	ECBT1H103ZF5	0.01 50V	[M]
C926	ECEA1HKA100B	10 50V	[M]
C927	ECQB1H102JF3	1000P 50V	[M]
C928	ECUV1H470JCV	47P 50V	[M]
C929	ECKR1H223ZF5	0.022 50V	[M]
C930	ECA1VM221B	220 35V	[M]
C932	ECA1EAM101XB	100 25V	[M]
C935	ECUVNH103KBV	0.01 50V	[M]
C936	ECUV1H102KBV	1000P 50V	[M]
C951	ECA1EAK100XB	10 25V	[M]
C955	ECUVNH103KBV	0.01 50V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C961	ECEA1HKA010B	1 50V	[M]
C962	ECUVNC104ZFV	0.1 16V	[M]
C971	ECEA1HKA010B	1 50V	[M]
C981	ECUV1H102KBV	1000P 50V	[M]
C982	ECUV1H102KBV	1000P 50V	[M]
C983	ECA1EAK100XB	10 25V	[M]
C984	ECA1EAK100XB	10 25V	[M]
		CHIP JUMPER	
RJ701	ERJ6GEY0R00V	0 1/10W	[M]
RJ702	ERJ8GEY0R00V	0 1/8W	[M]
RJ709	ERJ8GEY0R00V	0 1/8W	[M]
RJ712	ERJ8GEY0R00V	0 1/8W	[M]
RJ721	ERJ6GEY0R00V	0 1/10W	[M]
RJ722	ERJ6GEY0R00V	0 1/10W	[M]
RJ723	ERJ6GEY0R00V	0 1/10W	[M]
RJ724	ERJ6GEY0R00V	0 1/10W	[M]
RJ726	ERJ6GEY0R00V	0 1/10W	[M]
RJ727	ERJ6GEY0R00V	0 1/10W	[M]
RJ728	ERJ6GEY0R00V	0 1/10W	[M]
RJ729	ERJ6GEY0R00V	0 1/10W	[M]
RJ731	ERJ6GEY0R00V	0 1/10W	[M]
RJ732	ERJ6GEY0R00V	0 1/10W	[M]
RJ734	ERJ6GEY0R00V	0 1/10W	[M]
		TEST JUMPER	

Ref. No.	Part No.	Part Name & Description	Remarks
TJ701	EYF8CU	TEST JUMPER	[M]

18.5. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG5047	PACKING CASE	[M]
P2	RPN1337-1	POLYFOAM	[M]
P3	RPHV0001	MIRAMAT SHEET	[M]
		ACCESSORIES	
A1	RAK-SC970WK	REMOTE CONTROL	[M]
A1-1	RKK-SC970WK	R/C BATTERY COVER	[M]
A2	RJA0019-2K	AC CORD (SF)	[M] EG ⚠
A2	VJA0733	AC CORD (SF)	[M] EB ⚠
A3	RQT5546-D	O/I BOOK	[M] EG
A3	RQT5547-H	O/I BOOK	[M] EG
A3	RQT5548-B	O/I BOOK	[M] EB
A4	RSA0007-L	FM ANTENNA	[M]
A5	RSA0033	AM LOOP ANTENNA	[M]
A6	SJP9009	ANT ADAPTER	[M] EB

18.6. Packaging