ORDER NO. MD9604026C8

Service Manual

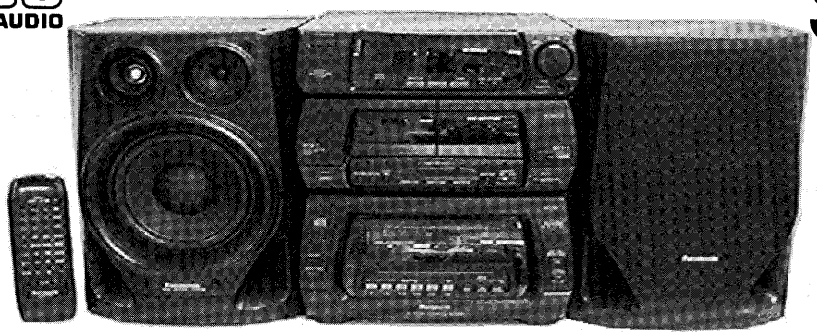
COMPACT disc DIGITAL AUDIO

*1 MASH multi-stage noise shaping

*2 DOLBY B NR

CD Stereo System

SA-CH84M



Remote Control Transmitter SB-CH94 SA-CH84M SB-CH94

Colour

(K) . . . . . Black Type

Area

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

*2 Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

System	Music Center	Speaker
SC-CH84M (E)	SA-CH84M (E)	SB-CH84 (E) (Made in PAES)
SC-CH84M (EB)	SA-CH84M (EB)	
SC-CH84M (EG)	SA-CH84M (EG)	
SC-CH84M (GN)	SA-CH84M (GN)	SB-CH94 (GC)

TAPE SECTION : AR-2 MECHANISM SERIES
CD SECTION : RAE0150Z TRAVERSE DECK SERIES

■ Specifications

■ Amplifier Section

1 kHz continuous power output,both channels driven 1% total hamonic distortion

DIN	2 x 35W (6Ω)
RMS	2 X 50W (6Ω)
Input sensitivity	
AUX	250mV
Input impedance	
AUX	22kΩ

■ Cassette Deck Section

Track system	4 track, 2 channels
Heads	
Record/playback	Solid permalloy head
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias 100 kHz
Erasing system	AC erase
Tape speed	4.8cm/sec. ($1^{7}/_{8}$ ips)
Frequency response (EIAJ) at PHONES OUT	
NORMAL	35Hz — 14kHz
CrO_2	35Hz — 14kHz
S/N ratio	
Dolby NR off	50dB (A weighted)
Dolby NR on	60dB (CCIR)
Wow and flutter	0.18% (WRMS)
Fast forward and rewind time	Approx. 120 seconds with C-60 cassette tape

■ AM Tuner Section

Frequency range	
AM (GN only)	522 — 1611kHz
MW (E,EB,EG only)	522 — 1611kHz
LW (E,EB,EG only)	144 — 288kHz
Sensitivty (S/N 20 dB)	500μV/m

■ FM Tuner Section

Frequency range	87.5 — 108.0MHz
Sensitivity	23.3dBf (4.0μV, IHF '58)
Antenna terminal(s)	75Ω (unbalanced)

■ CD Section

Sampling frequency	44.1kHz
Decoding	16 bit linear
Beam source / wave length	Semiconductor laser / 780 nm
Number of channels	Stereo
S/N ratio	
SP OUT	85 dB (JIS.A)
Wow and flutter	Below measurable limit
Digital filter	8 fs
D/A converter	MASH (1 bit DAC)

■ General

Power consumption	130W
Power supply	AC 230V, 50Hz ... (E,EG) AC 230 — 240V, 50Hz ... (EB,GN)
Dimensions (W x H x D)	270 x 347 x 424mm
Weight	10.7kg

Notes :

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

*1 MASH is a trademark of NTT.

Panasonic®

Contents

⚠ WARNING

This service information is designed for experiense 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

■ 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 μW/VDE

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

ACHTUNG: Dieses produkt enthält eine laserdiode. Im eingeschalteten zustand wird unsichtbare laserstrahlung von der lasereinheit abgestrahlt.

Wellenlänge : 780nm
Maximale strahlungsleistung der lasereinheit :100μW/VDE

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:
1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den werkseitig justierten einstellregler der 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.

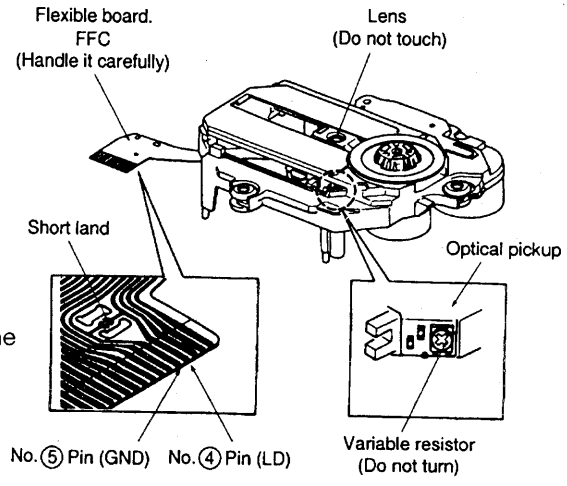
CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Handling Precautions for Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body. So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

- **Handling of traverse deck (optical pickup)**

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

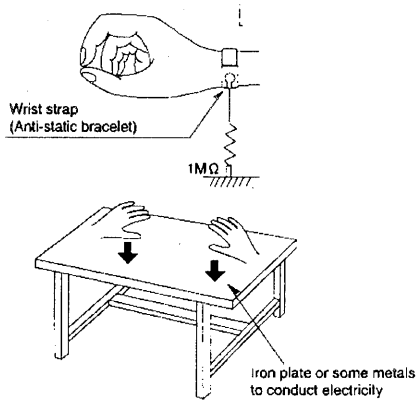


• **Grounding for electrostatic breakdown prevention**

1. Human body grounding
   Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
   Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

Caution :

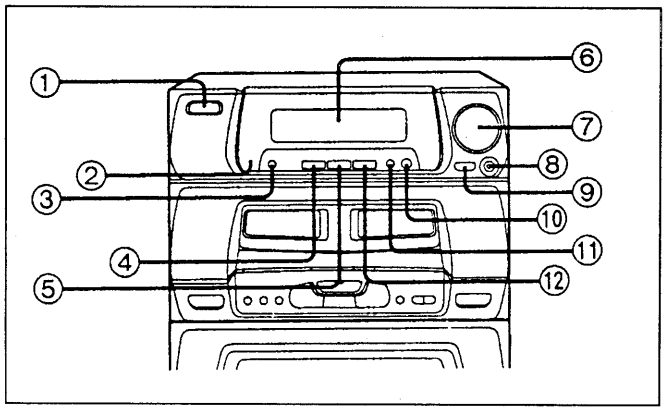
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).

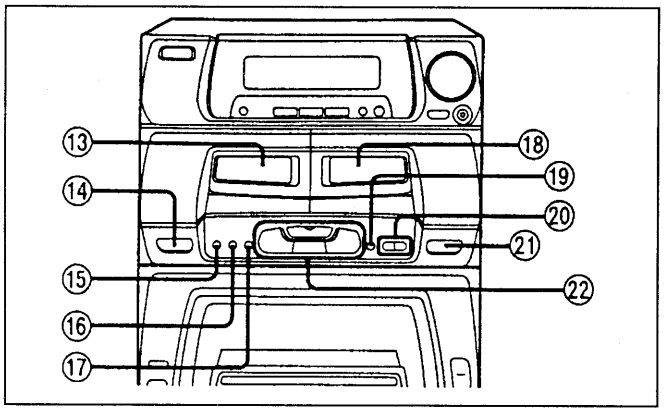


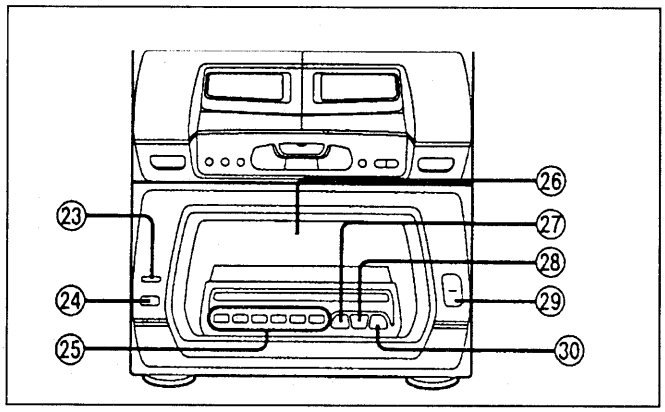
■Before Repair and Adjustment

Disconnect AC power, Discharge Power Supply Capacitors C547, C548, C549 and C580 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.
Current consumption at 230V(for E,EG) or 230 – 240V(for EB,GN), 50 Hz in NO SIGNAL mode should be less than 250mA.

■ Location of Controls







① **Power "STANDBY ⏻/ON" switch (POWER, STANDBY ⏻/ON)**
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.
② **Remote control signal sensor**
③ **Record timer/play timer button (◴ REC/◴ PLAY)**
④ **Tape/deck select button (TAPE, DECK 1/2)**
⑤ **CD button (CD)**
⑥ **Display**
⑦ **Volume control (VOLUME)**
⑧ **Headphones jack (PHONES)**
⑨ **V. BASS/DEMO button (-V. BASS/–DEMO)**
⑩ **EQ space selection button (EQ SPACE)**
⑪ **AUX button (AUX)**
⑫ **Tuner/band select button (TUNER, BAND)**
⑬ **Deck 1 cassette holder**
⑭ **Deck 1 cassette open button (⏏ OPEN, DECK 1)**
⑮ **Reverse mode select button (REV MODE)**
⑯ **Dolby noise reduction button (DOLBY NR)**
⑰ **Clock/timer button (CLOCK/TIMER)**
⑱ **Deck 2 cassette holder**
⑲ **Recording start/stop button (REC START/STOP)**
⑳ **Tape edit buttons (TAPE EDIT NOR, HIGH)**
㉑ **Deck 2 cassette open button (⏏ OPEN, DECK 2)**
㉒ **Basic operating buttons**
Buttons change according to the source.
㉓ **CD edit button (CD EDIT)**
㉔ **Single play button (SINGLE PLAY)**
㉕ **Group file select buttons (GROUP FILE)**
㉖ **Window**
㉗ **Group mode select button (MODE)**
㉘ **Group disc enter button (DISC ENTER)**
㉙ **Disc skip/group name select button (DISC SKIP/GROUP NAME)**
㉚ **Group name enter button (NAME ENTER)**

■ Caution for AC Mains Lead

[For [EB] area.]
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 ⟨ASTA⟩ or the BSI mark on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained. A replacement fuse cover can be purchased from your local dealer.

CAUTION !
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.
THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.

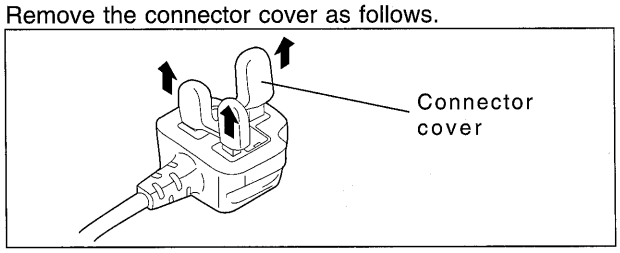
IMPORTANT
The wires in this lead are coloured in accordance with the following code:

Blue: Neutral
Brown: Live

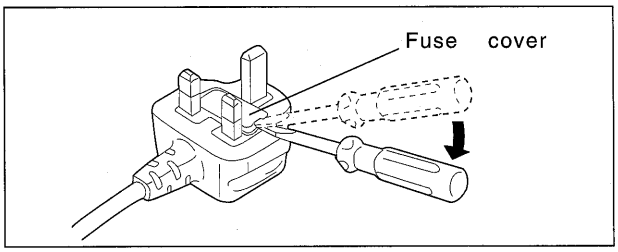
As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either or these wires be connetced to the earth terminal of the three pin plug, marked with the letter E or the Earth symbol ⏚ .

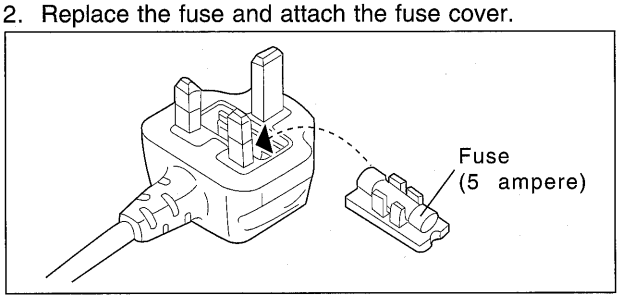
Before use
Remove the connector cover as follows.



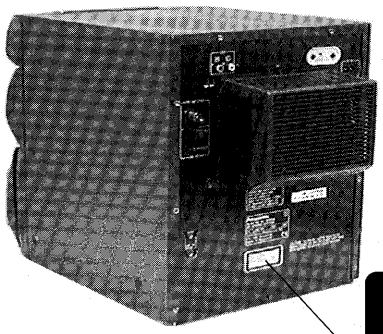
How to replace the fuse
1. Remove the fuse cover with a screwdriver.

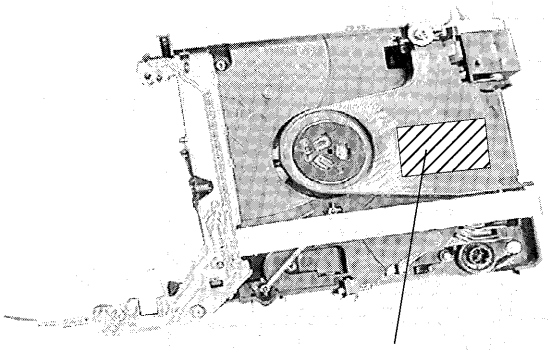


2. Replace the fuse and attach the fuse cover.



■ Use of Caution Labels





CLASS 1
LASER PRODUCT

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.

■ Operation Checks and Main Component Replacement Procedures

"ATTENTION SERVICER" Some chassis components may have sharpe edges. Be careful when disassembling and serving.

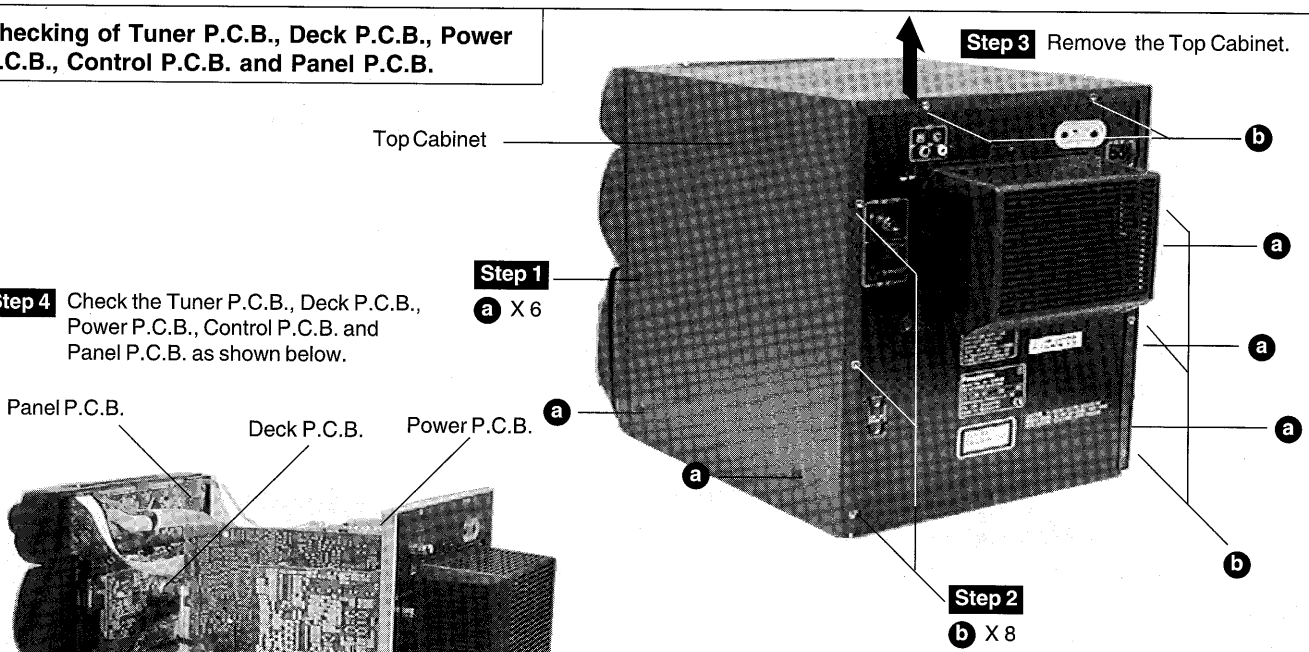
Warning : This product uses a laser diode. Refer to caution statements on page 2.

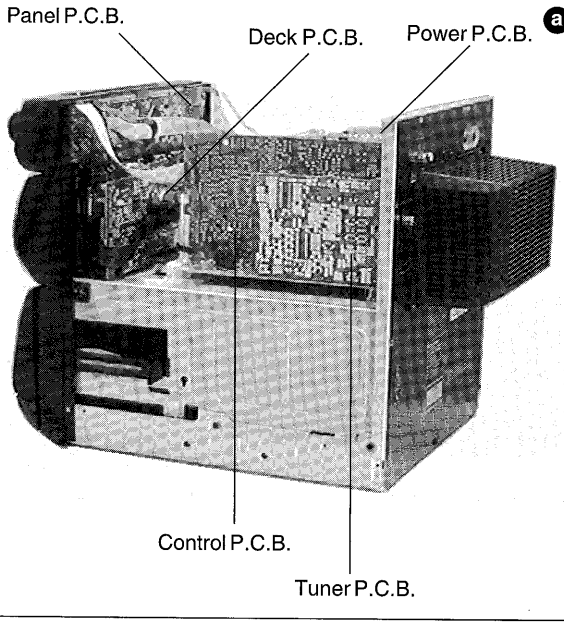
1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures. Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

• Contents

■ Checking Procedure for Major P.C.B.

1. Checking of Tuner P.C.B., Deck P.C.B., Power P.C.B., Control P.C.B. and Panel P.C.B.





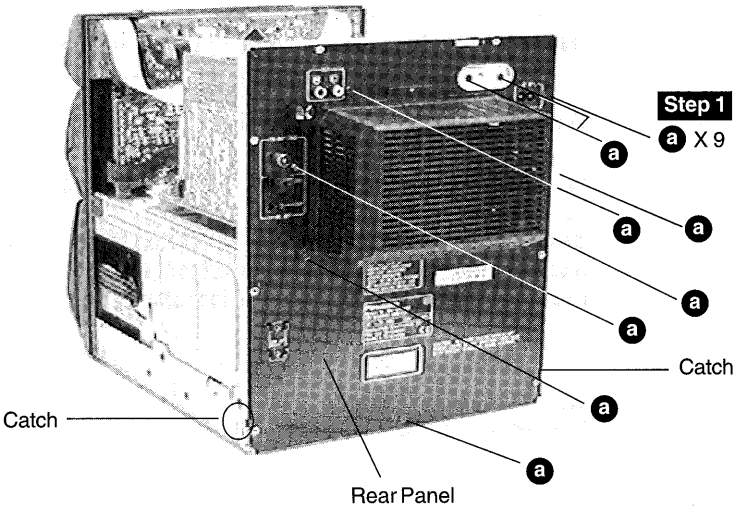
a [RHD30007] (Black)

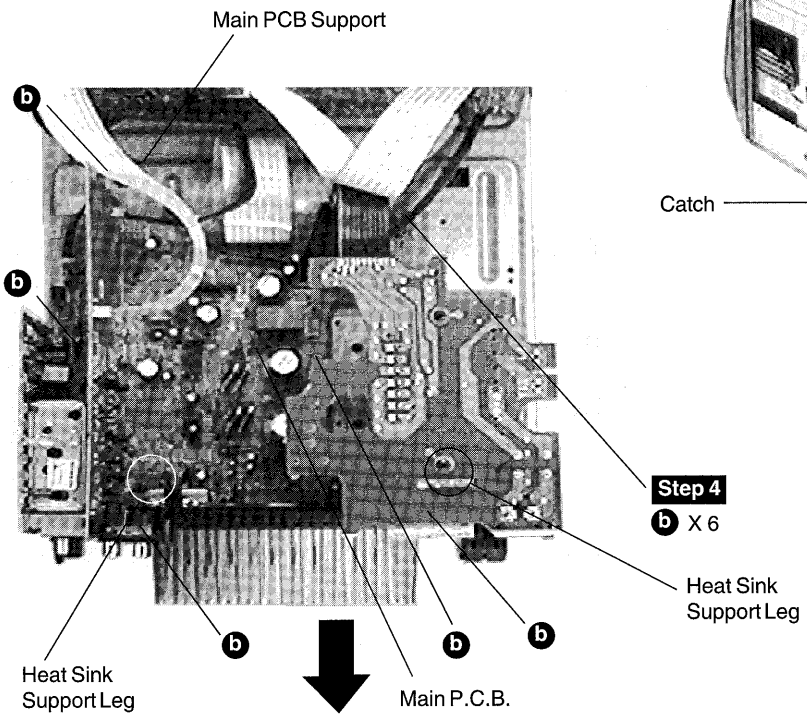
b [XTBS3+8JFZ1] (Black)

2. Checking of Main P.C.B.

Step 2 Follow the Checking of Tuner P.C.B., Deck P.C.B., Power P.C.B., Control P.C.B. and Panel P.C.B. procedures from Step 1 to 3.

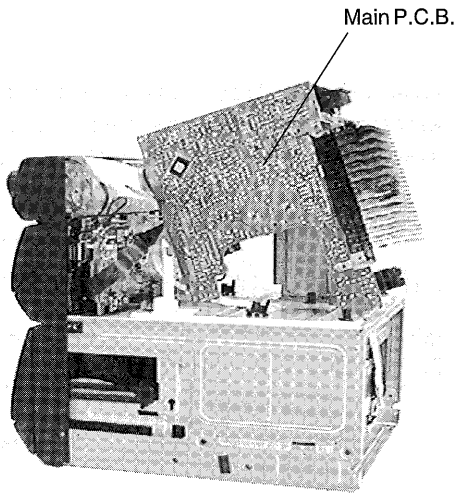
Step 3 Release the two catches and remove the rear panel.



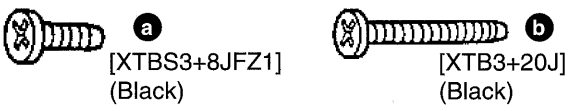


Step 5

Slide the Main P.C.B. backwards and remove it.
(Take note of the Main PCB Support and the two Heat Sink Suppport Legs)

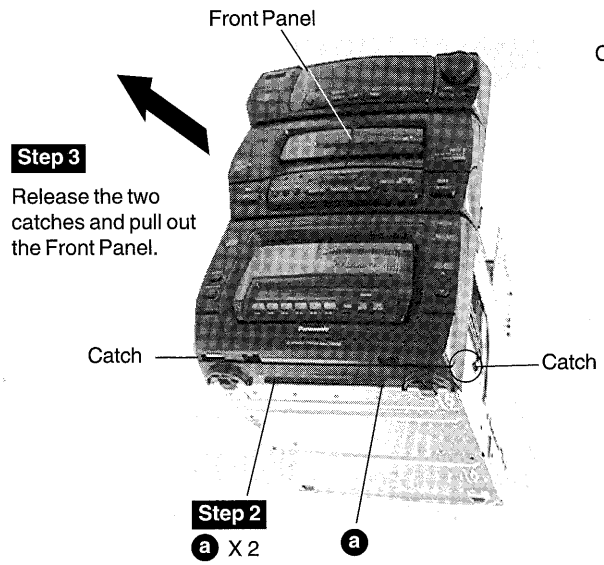


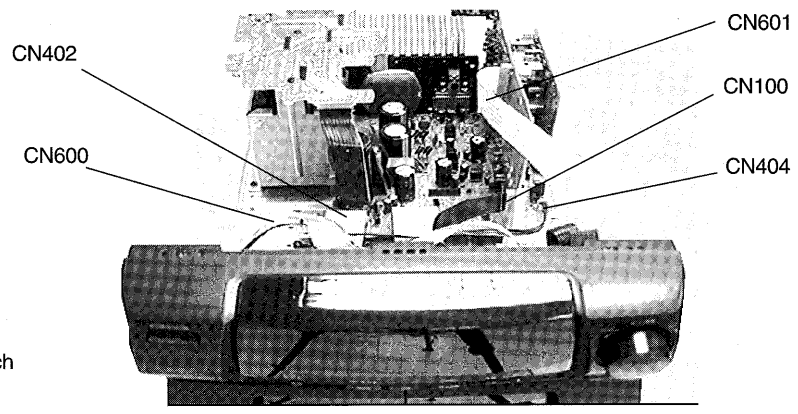
Step 6 Position and check the Main P.C.B. as shown on the right.



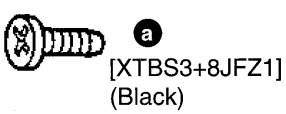
3. Checking of Servo P.C.B.

Step 1 Follow the Checking of Main P.C.B. procedures from Step 1 to 5.

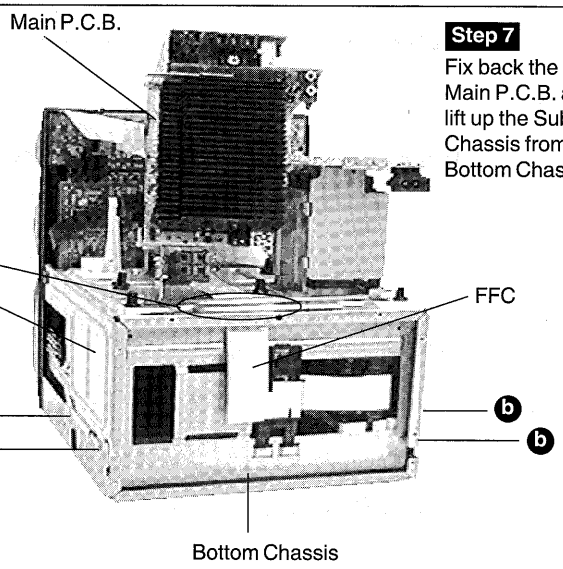




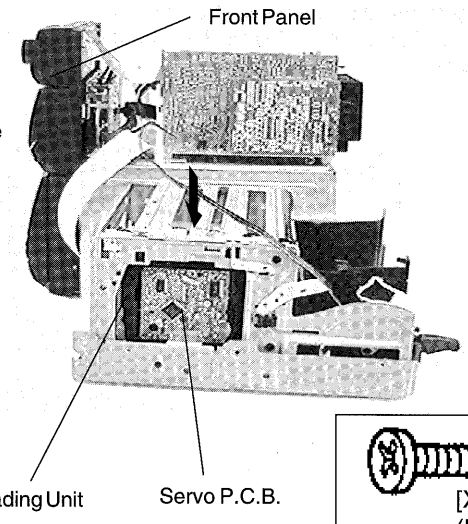
Step 4 Disconnect the connections from CN600, CN402, CN100,CN601 and CN404.



Step 5 Lift up the Main P.C.B. and remove the tape and pull out the FFC.



Step 7 Fix back the Main P.C.B. and lift up the Sub Chassis from the Bottom Chassis.



Step 8 Fix back the Front Panel and connect back the connections for CN600, CN402, CN100, CN601, CN404. Push the Loading Unit to the extreme left (as shown on the right) and check the Servo P.C.B.

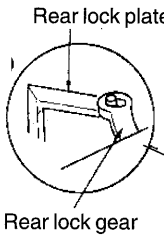
[XTB3+10JFZ]
(Black)

■ Disassembly of the Loading Unit, Operational Parts and Traverse Unit.

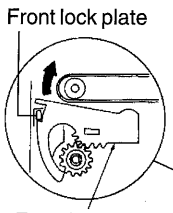
1. Disassembly of the Loading Unit

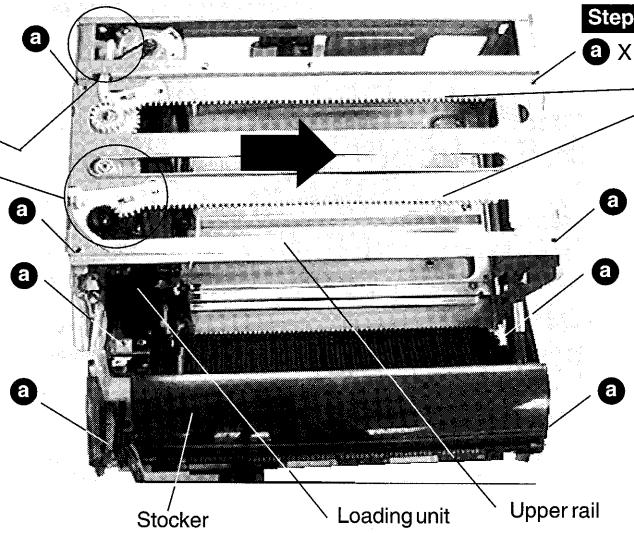
Step 1 Follow the Checking of Servo P.C.B. procedures from Step 1 to 8.

Take note of the rear lock plate and the rear lock gear during disassembly and assembly.



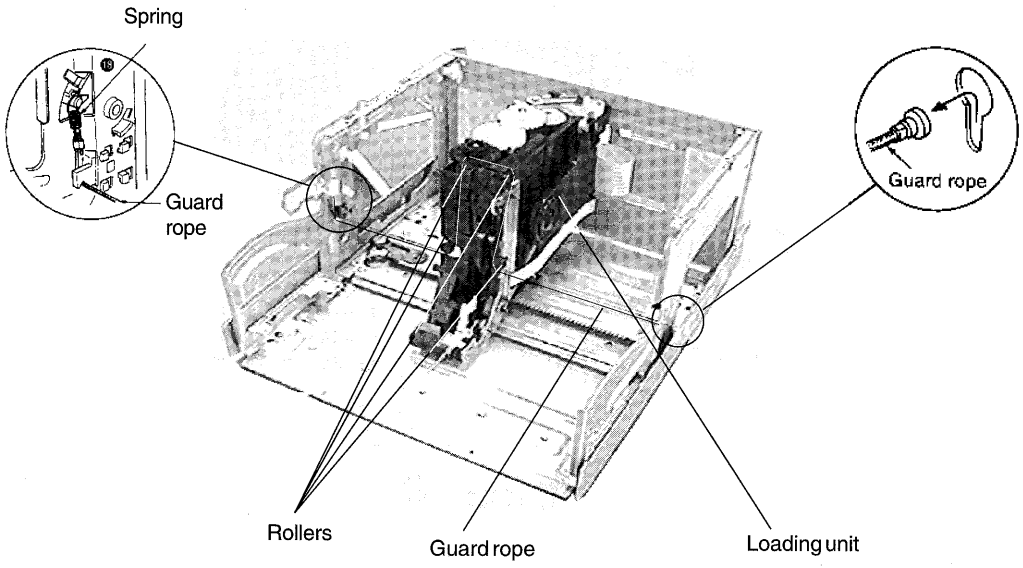
Step 3 Unlock the loading unit by moving the front lock gear manually in the direction of arrow





Step 4 Move the loading unit manually in the right direction. (Move the loading unit beyond the center of the frame.)
The pointers on the frame (shown above) are for checking purposes during assembly.

Step 5 Remove the upper rail and the stocker.



Step 6 Remove the guard rope.

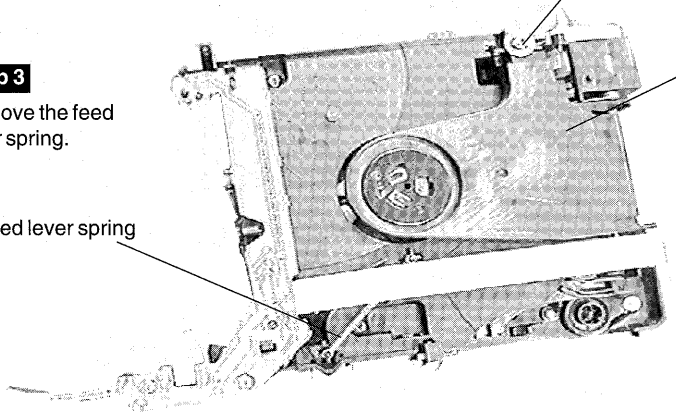
Step 7 Remove the Loading unit.

[XTB3+6F]
(Brass)

2. Disassembly of the Disc Guide (L), Return Lever A, Rear Feed Lever, Guide Lever, Feed Sub Lever and Front Feed Lever.

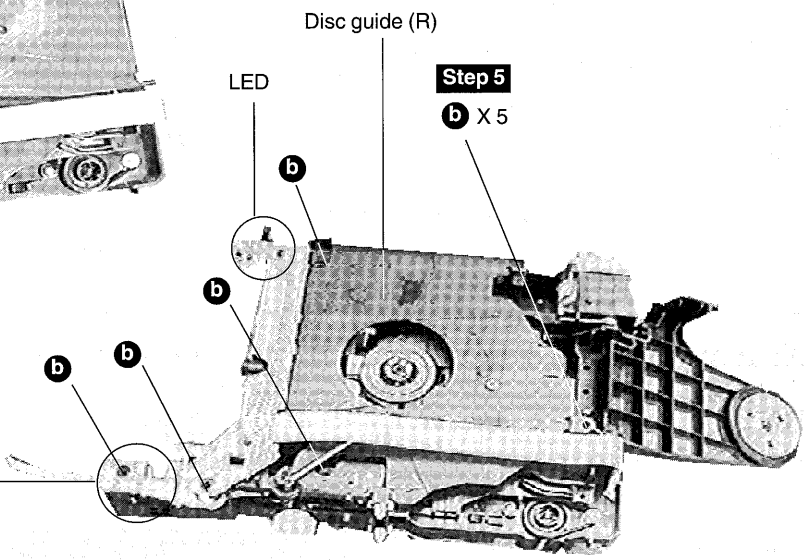
Step 1 Follow the Disassembly of the Loading Unit procedures from Step 1 to 7.

Step 2 ⓐ X 1



Step 3
Remove the feed lever spring.

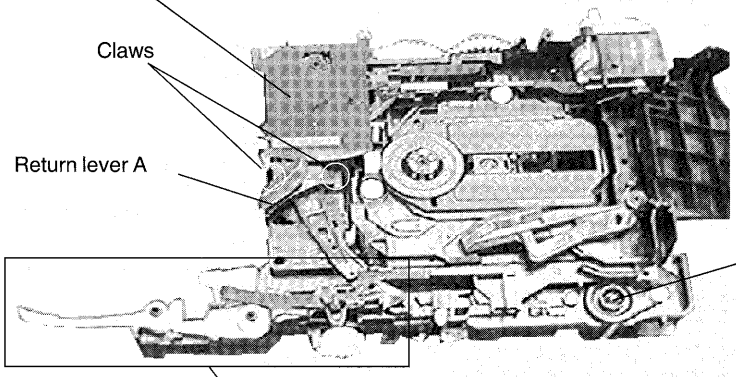
Step 4 Tilt the clamp plate backward.



Step 5
ⓑ X 5

Step 6 Remove the disc guide (R).
(Do not touch the LED or the photo coupler by hand.)

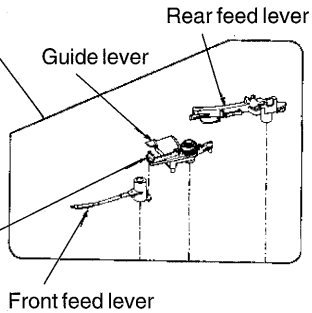
Photo coupler

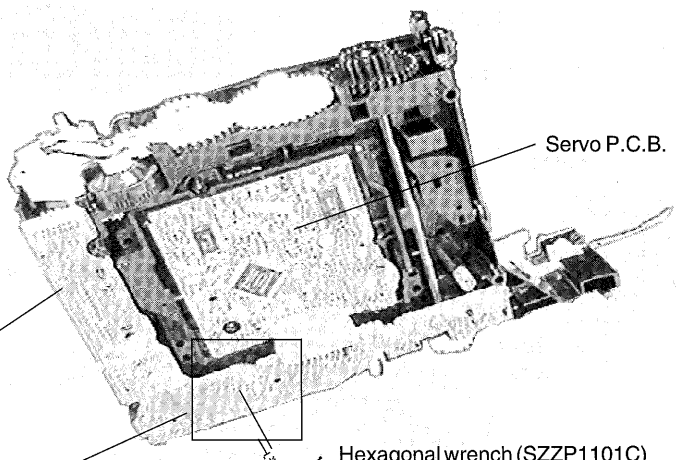


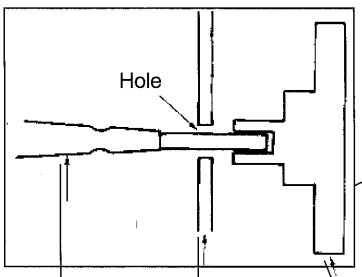
Step 7 Rotate the pulley (or rotate with 2mm hexagonal wrench, SZZP1101C, as shown below) clockwise inorder to shift the return lever A away from the disc guide (L).

Step 8 Release the 2 claws and then remove the disc guide (L).
Note : Some of the operational parts can be removed easily (eg. return lever A, rear feed lever, guide lever, feed sub lever and front feed lever).

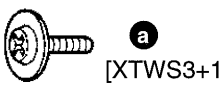
Pulley
- Rotate clockwise : Loading operation
- Rotate counterclockwise : Unloading operation



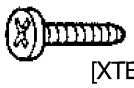




Hexagonal wrench (SZZP1101C)
- Rotate clockwise : Loading operation
- Rotate counterclockwise : Unloading operation



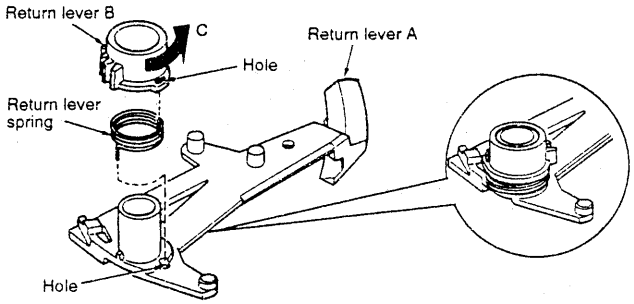
ⓐ [XTWS3+10T] (Black)



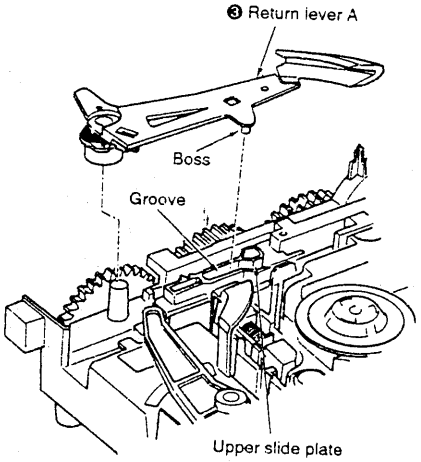
ⓑ [XTBS26+10J] (Black)

Reassembly ❶ Rotate the pulley clockwise fully.

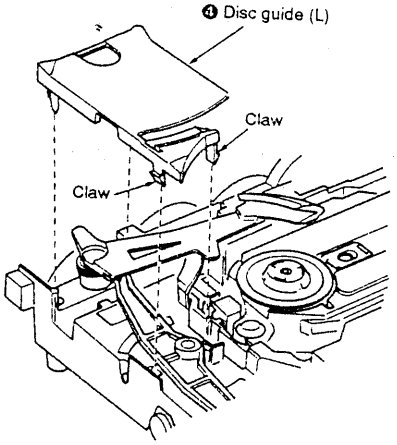
❷ Align the both ends of the spring with the holes of return lever A and B and then, install the return lelver A with rotating the return lever B in the direction of arrow (➡) C.



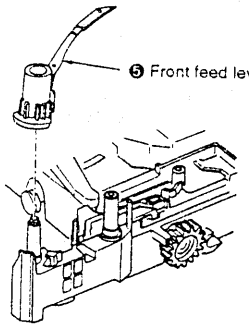
❸ Install the return lever A.
(Align the boss of return lever A with the groove of upper slide plate.)



❹ Install the disc guide(L).
(Press the disc guide (L) untill the claws are hooked completely.)

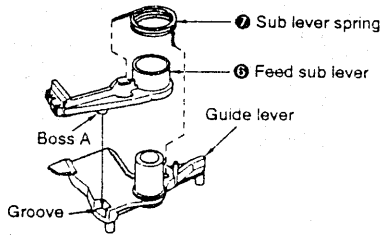


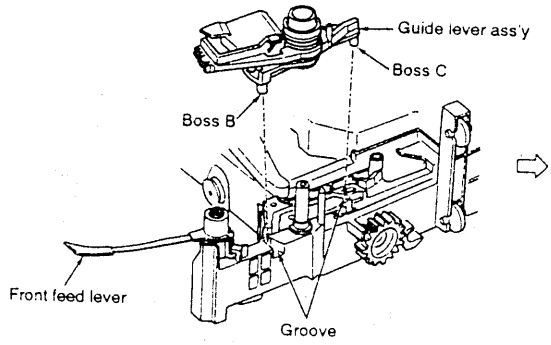
❺ Install the front feed lever.
(The state of pulley rotated clockwise fully.)

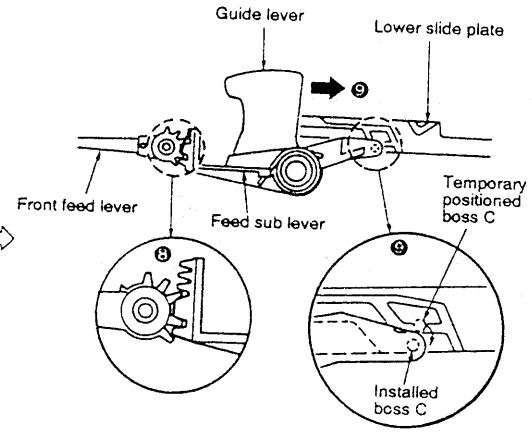


❻ Install the feed sub laver to the guide lever.
• Align the boss A of feed sub lever with the groove of the guide lever.

❼ Install the sub lever spring.

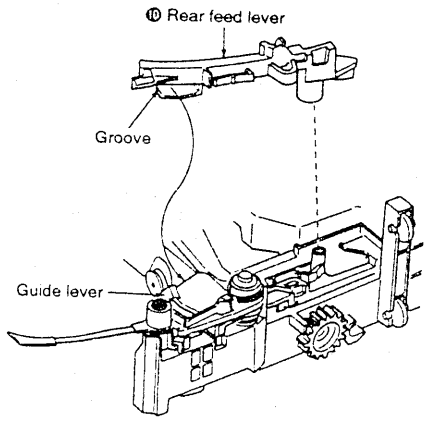






❽ Engage the gear of guide lever ass'y with the gear of front feed lever temporary.
• Boss B must be placed in the groove.
• Boss C must be run over the lower side plate.

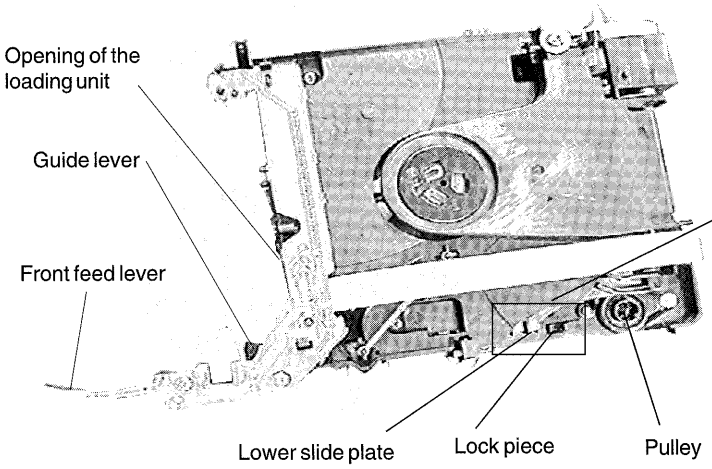
❾ With fixing the gear by finger not to slip off the gear clench, rotate the guide lever in the direction of arrow.
• The boss C will fit in the groove.



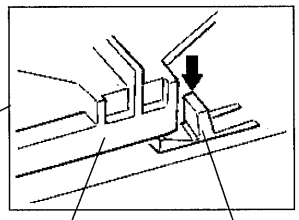
❿ Install the rear feed lever.
(Align the guide lever with the groove of rear feed lever.)

3. Disassembly of the Traverse Unit

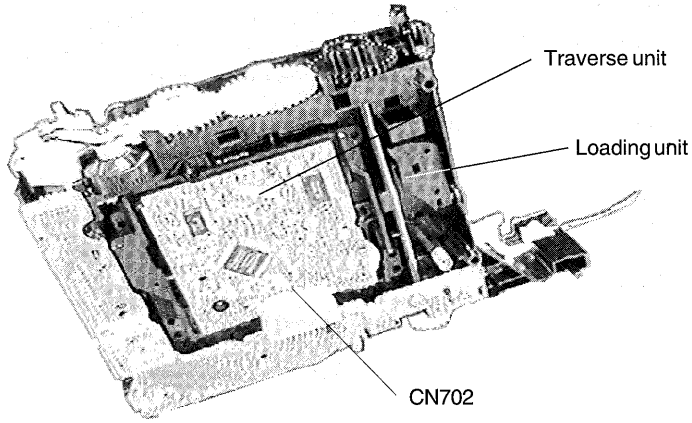
Step 1 Follow the Disassembly of the Loading Unit procedures from Step 1 to 7.



Step 2 Rotate the pulley counterclockwise until the lower slide plate touches the lock piece.



Step 3 Rotate the pulley counterclockwise fully with pressing the rib of lock piece. (The lower side plate runs over the lock piece.)



Step 4 Slide the lower slide plate manually until the lower slide plate touches the rib of lock piece.

Step 5 Remove the traverse unit from the loading unit.

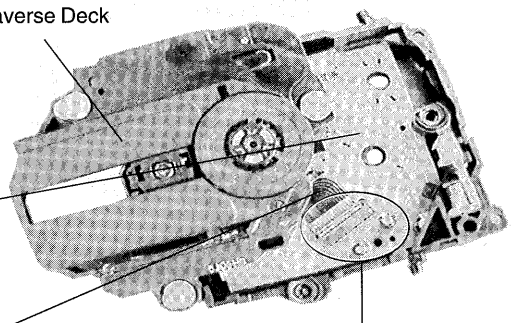
Step 6 Remove the FFC from the connector, CN702.

Reassembly

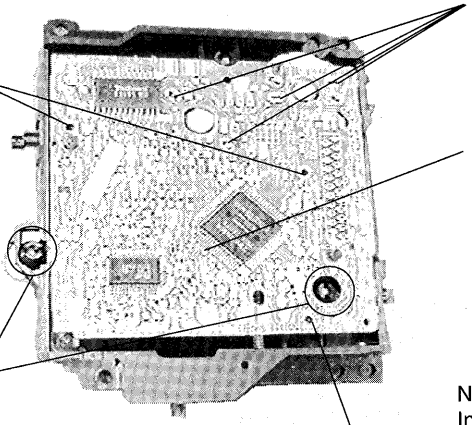
Reverse the steps above. But during Step 3, push the guide lever towards the opening of the loading unit while rotating the pulley clockwise.

■ Replacement of the Traverse Deck

Step 1 Follow the Disassembly of the Traverse Unit procedures from Step 1 to 6.



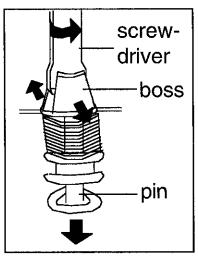
Step 2
ⓐ X 2



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

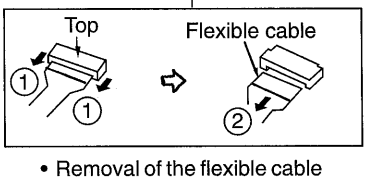
Servo P.C.B.

Step 5
Widen the 2 bosses with a flat screwdriver and pull out the 2 pins. Then remove the Traverse Deck.



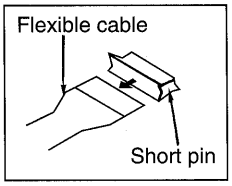
Step 3
ⓑ X 1

Step 6
Remove the flexible cable CN701.



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

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



ⓐ [XTV2+6G] (Brass)

ⓑ [XTN2+6G] (Brass)

■ Measurements and Adjustments

- Measurement Condition
  - Reverse-mode selector switch : ⇄
  - Tape edit : NORMAL
  - Rec timer : OFF
  - Dolby NR : OFF
  - Make sure head, capstan and pressure roller are clean.
  - Judgeable room temperature 20 ± 5 °C (68 ± 9 °F)
- Measuring instrument
  - EVM (Electronic Voltmeter)
  - Digital frequency counter
- Test tape
  - Head azimuth adjustment (8 kHz, –20 dB); QZZCFM
  - Tape speed adjustment (3 kHz, –10 dB); QZZCWAT
  - Playback gain adjustment (315 Hz, 0 dB); QZZCFM
  - Normal reference blank tape; QZZCRA
  - CrO_2 tape; QZZCRX

■ CASSETTE DECK SECTION

• Head Azimuth Adjustment (Deck 1/2)

Caution :

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

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

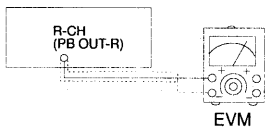


Fig. 1

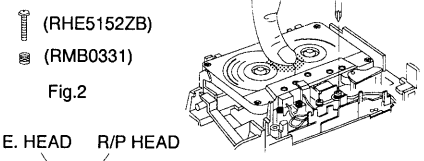


Fig.2

Fig. 3

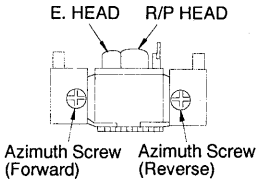


Fig. 4

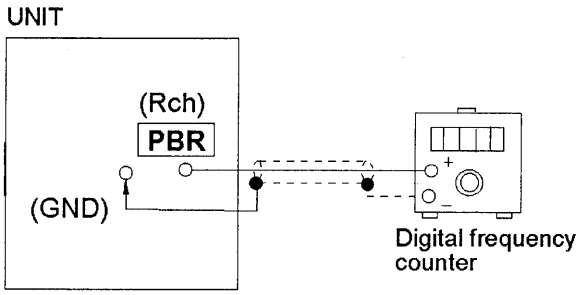
• Tape Speed Adjustment (Deck 1/2)

1. Set the One touch tape edit button to "NORMAL" position.
2. Insert the test tape (QZZCWAT) to DECK 2 and playback (FWD side) the middle portion of it.
3. Adjust VR201 (DECK 2) for the output value shown below.

Adjustment target : 2940 ~ 3060 Hz (NORMAL speed)

4. Assure that the output freqency of the DECK 2 REV and DECK 1 FWD/REV are within ± **40 Hz** of the value of the output frequency of DECK 2 FWD.
5. Press the "HIGH" of tape edit button.
6. Short-circuit between **TP200** and **TP10** (Fig. 5).
7. Assure that the output from DECK 1/2 are within the standard value.

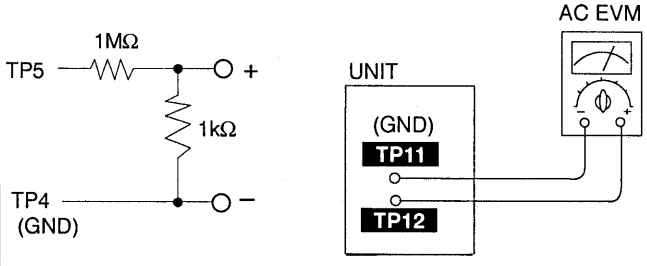
Standard value : 5100 ± 210 Hz (HIGH speed)



• Bias and Erase Voltage Check

1. Insert the normal tape (QZZCRA).
2. Place cassette deck into REC mode.
3. Measure and make sure that the output is within the standard value.
4. Insert the CrO_2 tape (QZZCRX).
5. Repeat steps 2 and 3.

Bias voltage for Deck 2 (Standard value) :	**19 ± 4mV (Normal)**
	27 ± 5mV (CrO_2)
Erase voltage for Deck 2 (Standard value) :	**more than 100mV (Normal)**
	more than 150mV (CrO_2)



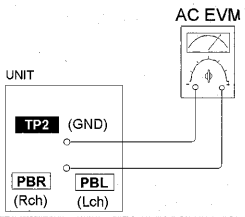
• Bias Frequency Adjustment (Deck 2)

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

Standard Value : 98 ± 8 kHz

PLAYBACK GAIN ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown on thr right.
2. Playback test tape (QZZCFM: 315Hz, –10dB).
3. Adjust **VR101 and VR102 for DECK 1** and **VR103 and VR104 for DECK 2** to read **388 ± 40 mV** on the AC Electronic Voltmeter. (AC EVM)

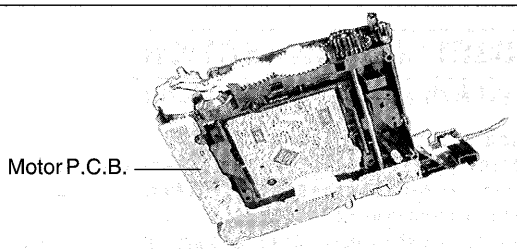


■ CD LOADING MECHANISM SECTION

WARNING: This product uses a laser diode. Refer to caution statments on page 2.

• DISC SENSOR ADJUSTMENT

1. Set the unit to **"CD TEST MODE"** as shown below.
2. Connect the DC electronic voltmeter across **TP501** (+) and **TP502** (–) on the motor P.C.B. (Fig. 6).
3. Adjust **VR501** so that the DC electronic voltmeter reads **2.8 ± 0.1V**.
4. Check the play operaion after adjustment.



• Alignment Points

<Cassette Deck Section>

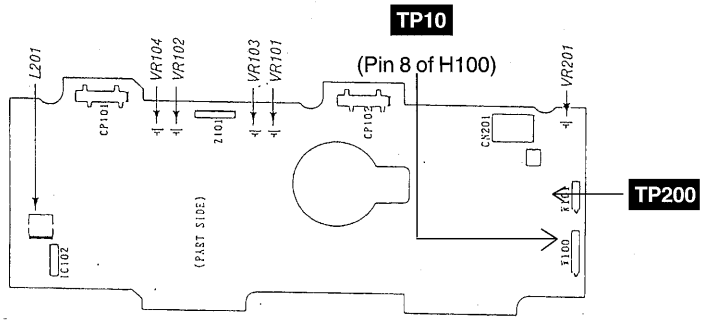


Fig. 5

<CD Loading Mechanism Section>

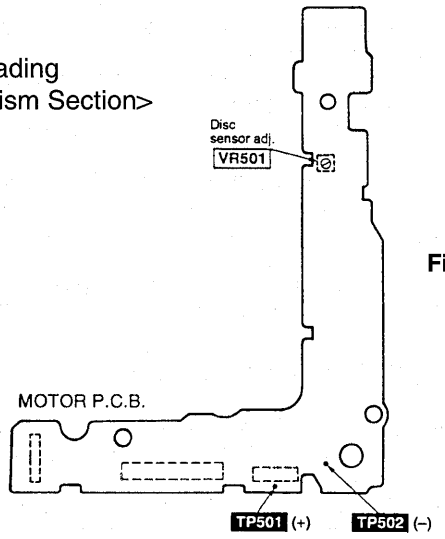


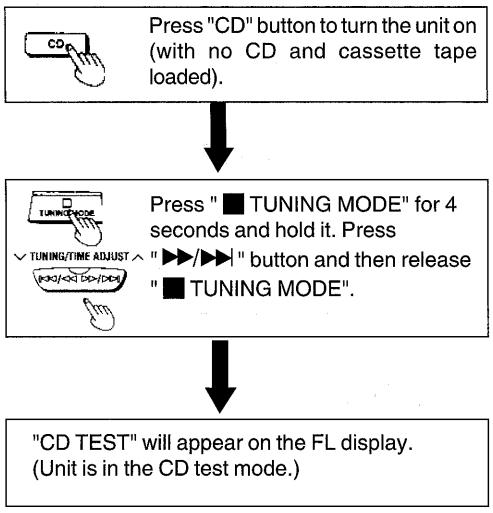
Fig. 6

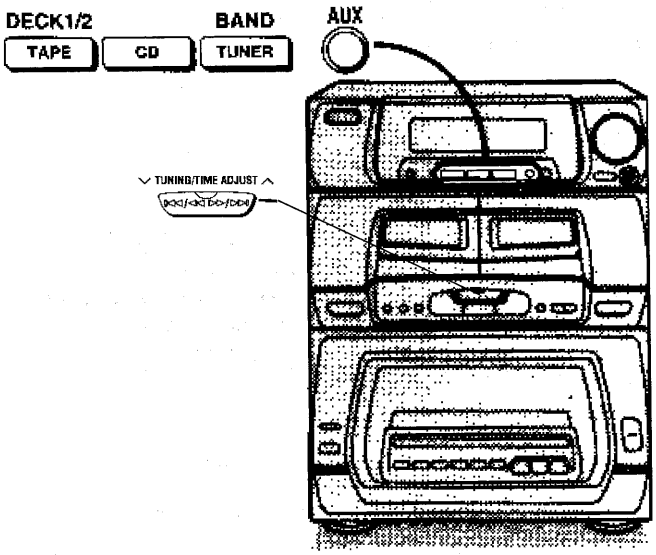
■ CD Test Mode

This unit contains some functions which check operations by internal micro-processor program. Use these functions when performing repair or maintenance on the unit. These functions include:

1. CD automatically-adjusted result display
2. Servo module test mode (CD can be played without changer mechanism)
3. Changer mechanism test mode (Changer can be operated without servo module)
4. Changer continuous play test

■ How to enter the CD test mode





■ CD AUTOMATICALLY-ADJUSTED RESULT DISPLAY MODE

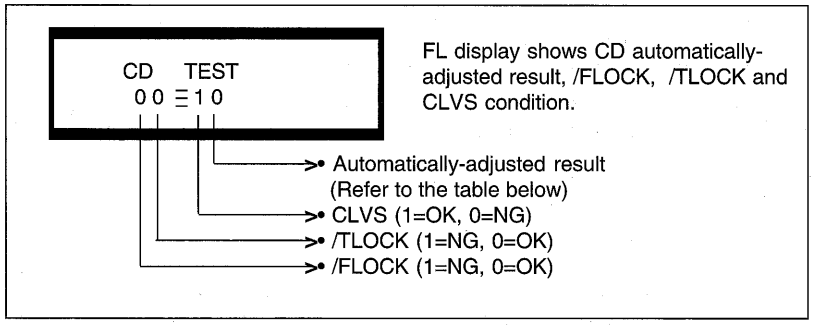
* This function provides indication of error codes as the result of automatically-adjustment of CD (tracking, focus, offset, etc). Based on these error codes, the faulty areas can be located.

• How to set the CD automatically-adjusted result display mode

CD test mode

↓

[A] Press Group File "A" key. →



• Error code explanation

Error Code	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Focus Offset	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tracking Offset	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Focus Gain (Rough)	0	X	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tracking Gain (Rough)	0	–	0	X	0	X	0	X	0	X	0	X	0	X	0	X
Tracking Balance	0	–	X	X	0	0	X	X	0	0	X	X	0	0	X	X
Focus Gain (Fine)	0	–	0	0	X	X	X	X	0	0	0	0	X	X	X	X
Tracking Gain (Fine)	0	–	0	0	0	0	0	0	X	X	X	X	X	X	X	X

0 = OK (Satisfactory)
X = NG (Faulty)

* Before testing, make sure that the test disc is free from scratches, dirt and the optical pick up len is clean.

• How to go out from CD automatically-adjusted result display mode

Press the "POWER" button.

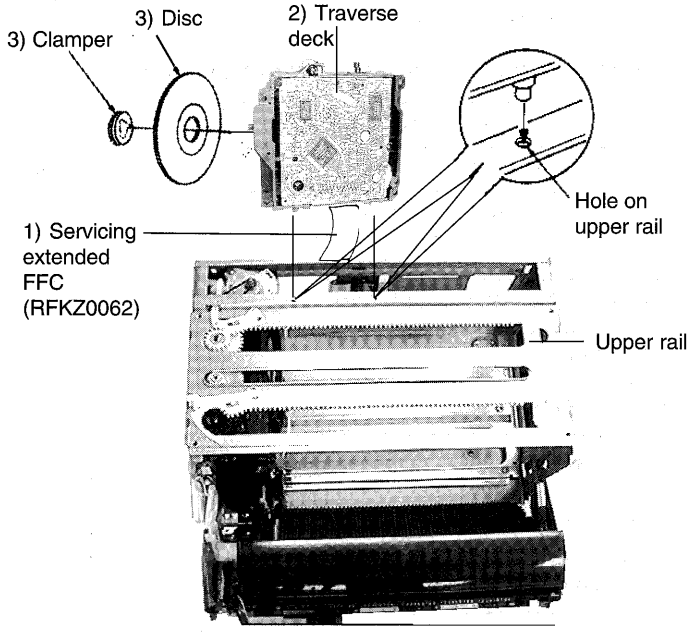
■ SERVO MODULE TEST MODE

* This function provides operation test for CD traverse unit (by itself). You can use this test for traverse unit operation checking and troubleshooting.

• Preapare for set up.

* Remove the traverse deck and set up as shown on the left.

1) Connect the servicing extension FFC between the traverse deck and the loading unit.
2) Position the traverse deck on top of the holes of the upper rail.
3) Attach the disc to the clamper with magnet.



• How to enter the servo module test mode

CD test mode

↓

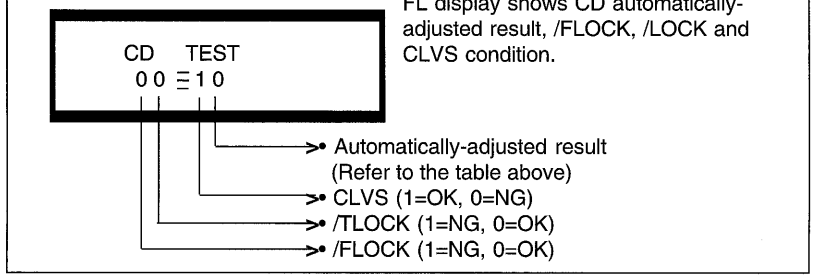
[B] Press Group File "B" key.

↓

FM MODE/BP Press " ▶ FM/BP" button.
(The unit accepts " ▶ FM/BP", " ⏸ ◀ MEMORY/SET", " ▶▶/▶▶| " and " |◀◀\◀◀ " buttons only.)

→

(Each time the CD is played by " ▶ FM/BP" button, the unit reads TOC and indicates automatically-adjusted result.)



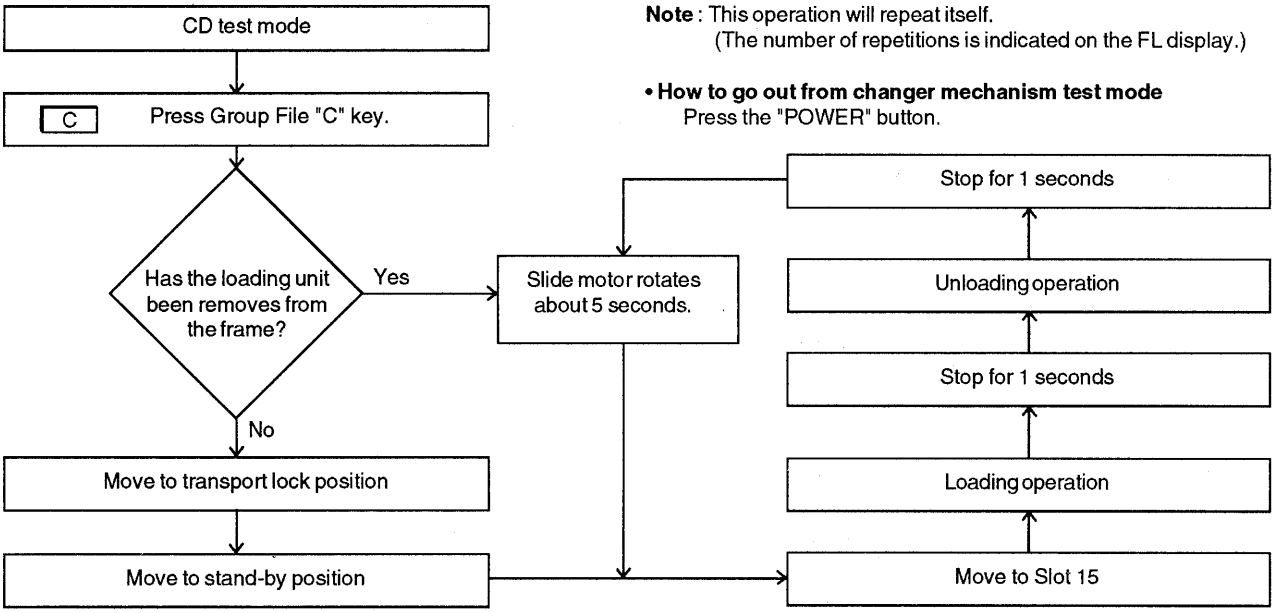
• How to go out from servo module test mode

Press the "POWER" button.

■ CHANGER MECHANISM TEST MODE

* This function provides operation test for changer mechanism individually. You can use this test mode for changer mechanism troubleshooting without CD traverse unit. (It can also be checked with traverse unit.)

• How to enter the changer mechanism test mode (Load disc at Disc No. 15)



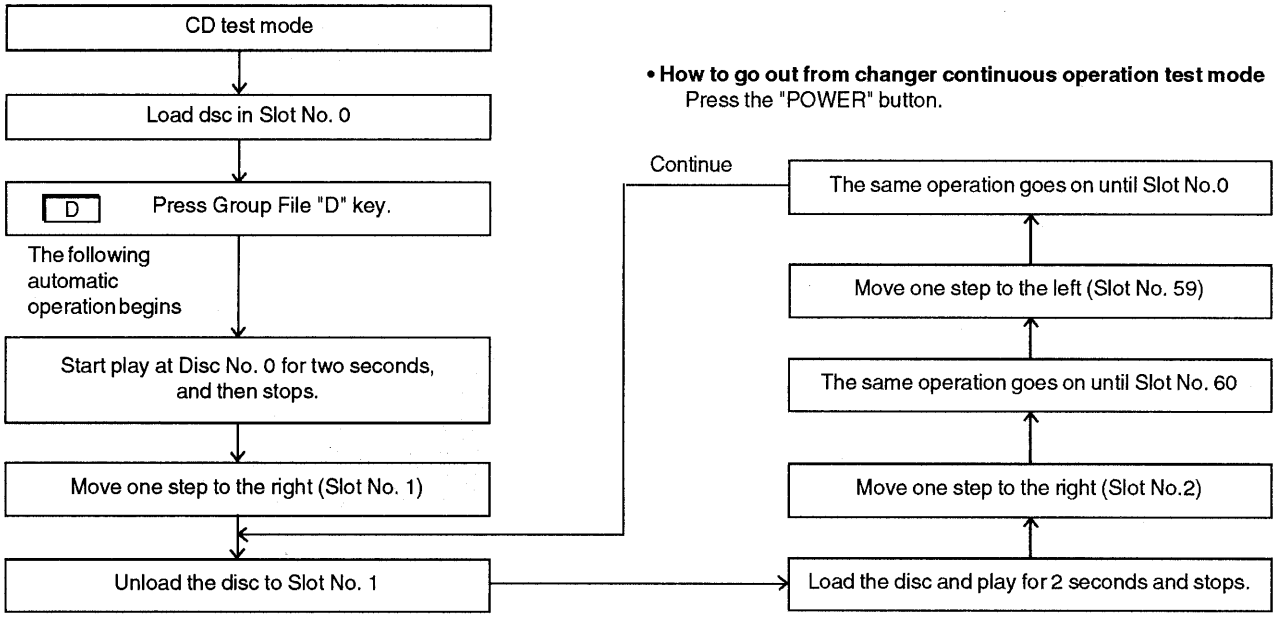
Note : This operation will repeat itself.
(The number of repetitions is indicated on the FL display.)

• How to go out from changer mechanism test mode
Press the "POWER" button.

■ CHANGER CONTINUOUS OPERATION TEST MODE

* This function provides the continuous play operatin for checking changer mechansim. You can use this function to find out the intermittent problem or operation check after repair.

• How to enter the changer continuous operation mode



• How to go out from changer continuous operation test mode
Press the "POWER" button.

■ Self-Diagnostic Display Function

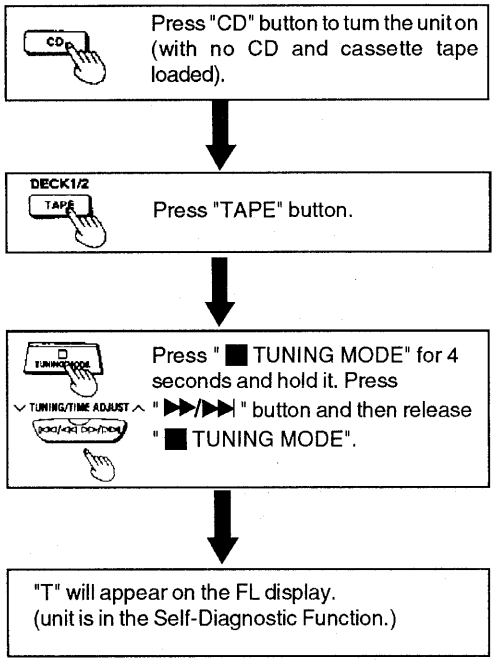
■ Self-diagnostic display

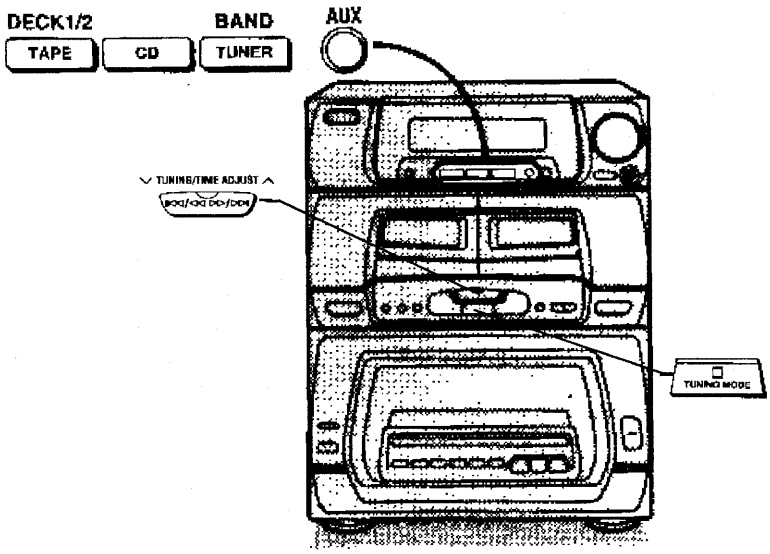
This unit is equipped with a self-diagnosis display function which, if a problem occurs at cassette mechanism and CD mega changer, will display an error code corresponding to the problem. Use this function when performing maintenance on the unit.

■ Preparation

* Normal blank tape with recording prevention tab on one side.
* Normal pre-recorded tape with data on both sides and recording prevention tabs intact.
* Normal pre-recorded tape with recording prevention tabs on both sides.

■ How to enter the Self-Diagnostic Function mode.





■ Cassette Mechanism Test

1. Press "TAPE" button to select the tested cassette deck. (Deck 1 and 2 are tested separately.)
2. Load the normal blank tape. (Recording prevention tab at the right hand side)
3. Press the " ▶▶/▶▶| " button. (Tape will fast forward for about 2 seconds and stop automatically)
4. Load the normal blank tape. (Recording prevention tab at the left hand side)
5. Press the " |◀◀/◀◀ " button. (Tape will fast forward for about 2 seconds and stop automatically)
6. Load the normal pre-recorded tape. (Recording prevention tab on both sides.)
7. Press " ▶ FM/BP" button. (TPS function starts and will stop automatically.)
8. Load the normal blank tape. (Recording prevention tab on both sides)
9. Press "REC START/STOP" button.
10. Repeat step 1 ~ 9 for the other cassette deck.

■ CD / CD Mega Changer Test

1. Press " ∧ DISC SKIP / GROUP NAME" button.
   * CD Mega Changer will operate the following functions automatically for test ans error detection:
     a) Mechanism moves to the transportation position.
     b) Mechanism moves to the initial position. (Stop for 1 second)
     c) Mechanism moves to Disc Number 15.
     d) Disc loading operation. (Stop for 1 second)
     e) Disc unloading operation.
     f) Mechanism moves back to the initial position.

■ To Display Self-Diagnostic Result

1. Press " ■ TUNING MODE" button.
   * If several problems exist, error code will change each time you press " ■ TUNING MODE" button is pressed. (eg. H02 —> H03 —> F02 .... etc.)
   * Press "TAPE" button to display error code for the desired cassette deck.
   * If there is no problem, FL will still display "T".

■ **To Clear The Error Codes**

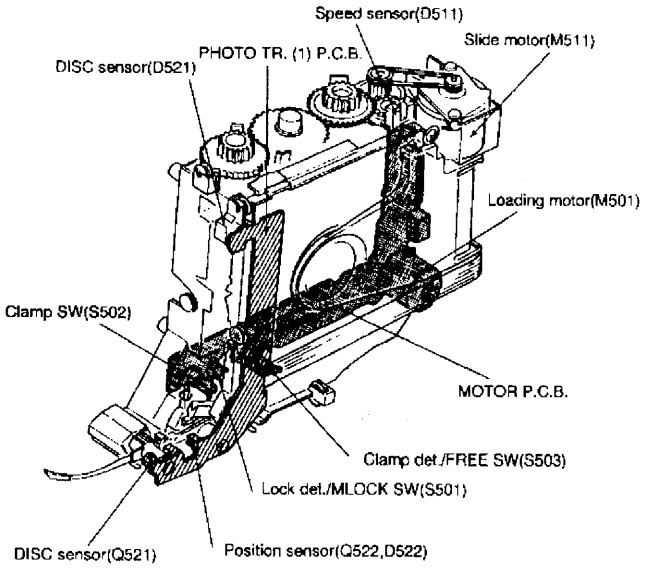
1. Press the "■ TUNING MODE" button for at least 5 seconds.
2. FL indicator shows "CLEAR" for 1 second and change to "T".

■ **How To Get Out From Self-Diagnostic Function**

* Press "POWER" button to switch off the unit.

■ **Interpretation of error codes**

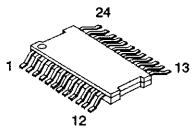
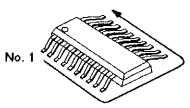
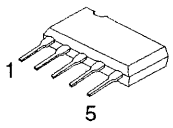
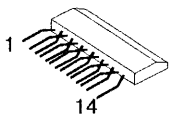
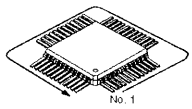
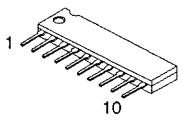
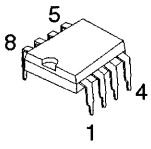
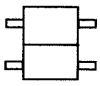
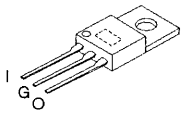
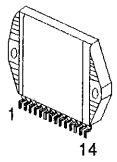
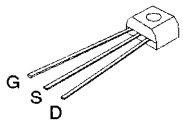
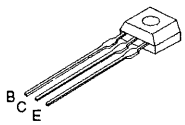
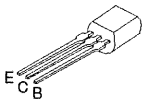
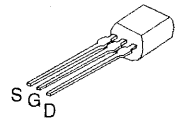
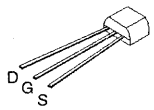
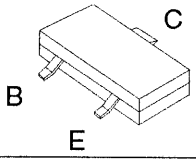
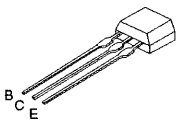
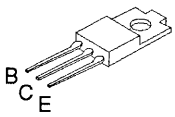
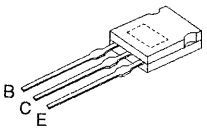
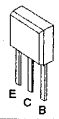
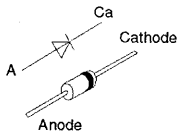
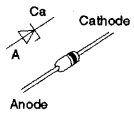
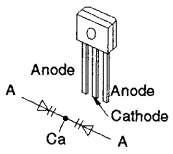
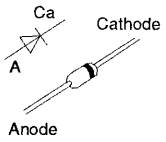
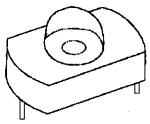
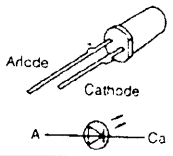
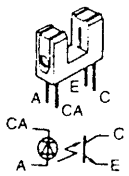
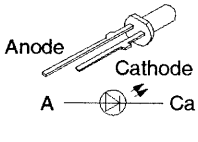
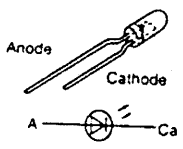
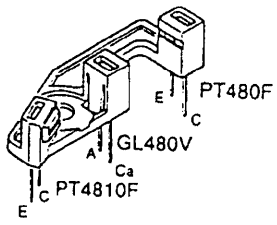
Error code	Problem condition	Correction procedure
H01	Faulty operation of cassette mechanism. Example: Reverse-play operation performs when "▶▶/▶▶|" button is pressed.	Faulty cassette mechanism mode switch [S951, S971] and plunger. (Check and replace)
H02	Recording not possible, or recording mode entered even though erasure prevention tabs have been removed.	Faulty contact or short-circuit of erasure prevention switches [S974, S975]. (Check and replace)
H03	Playback not performed when "▶ FM/BP" button is pressed. Motor turns when "▶ FM/BP" button is pressed even though there is no tape cassette loaded in cassette holder.	Faulty contact or short-circuit of cassette half detect switch. [S952, S972] (Check and replace)
F01	When the "▶ FM/BP" button is pressed, the tape advances slightly and then stops.	Faulty reel pulse, faulty hole detect IC. [IC951, IC971] (Check and replace)
F02	Cassette deck will not perform TPS function.	Faulty playback EQ/recording amplifier IC. [IC101] (Check and replace)
F15	The sympton is slow start-up of the CD when power is turned ON. The cause is defective contact of the OPU reset switch.	Abnormal rest detection switch (S701).
F26 (Automatic display)	Sympton is that the unit does not operate when the "▶ FM/BP" button is pressed, or the CD is skipping etc. The probable cause is defective system control IC. Lock det./MLOCK SW (S501) does not go ON/OFF in initial operation.	• Check system control (IC401) and servo IC (IC702). • Check each IC and servo circuit. • Check Lock det./MLOCK SW (S501).
F27	Sensor abnormal. Load on slide drive system is too great. Loading unit does not move to the right or left. Slide motor malfunction.	• Check slide motor (M511). • Check position sensor (Q522, D522) and speed sensor (D511). • Check gears of slide drive system. (Jammed by foreign matter or great teeth missing.)
F28	Clamp det./FREE SW does not go OFF, and Clamp det. SW (S502) does not go ON within 5 seconds during loading.	• Check Clamp det./FREE SW (S503) and Clamp SW (S502). • Check loading motor (M501). • Check loading drive system. (Riding-up, shifting or foreign matter jamming of levers, missing gear teeth etc.)
F29	Clamp det./FREE SW (S503) and clamp SW does not go ON within 5 seconds during unloading.	
F61	When power is switched on it automatically switches immediately back off, and cannot be switched on. (DCDET become L during normal opearion.)	• Faulty power detector (Q512). (Check and replace) • Power supply circuit



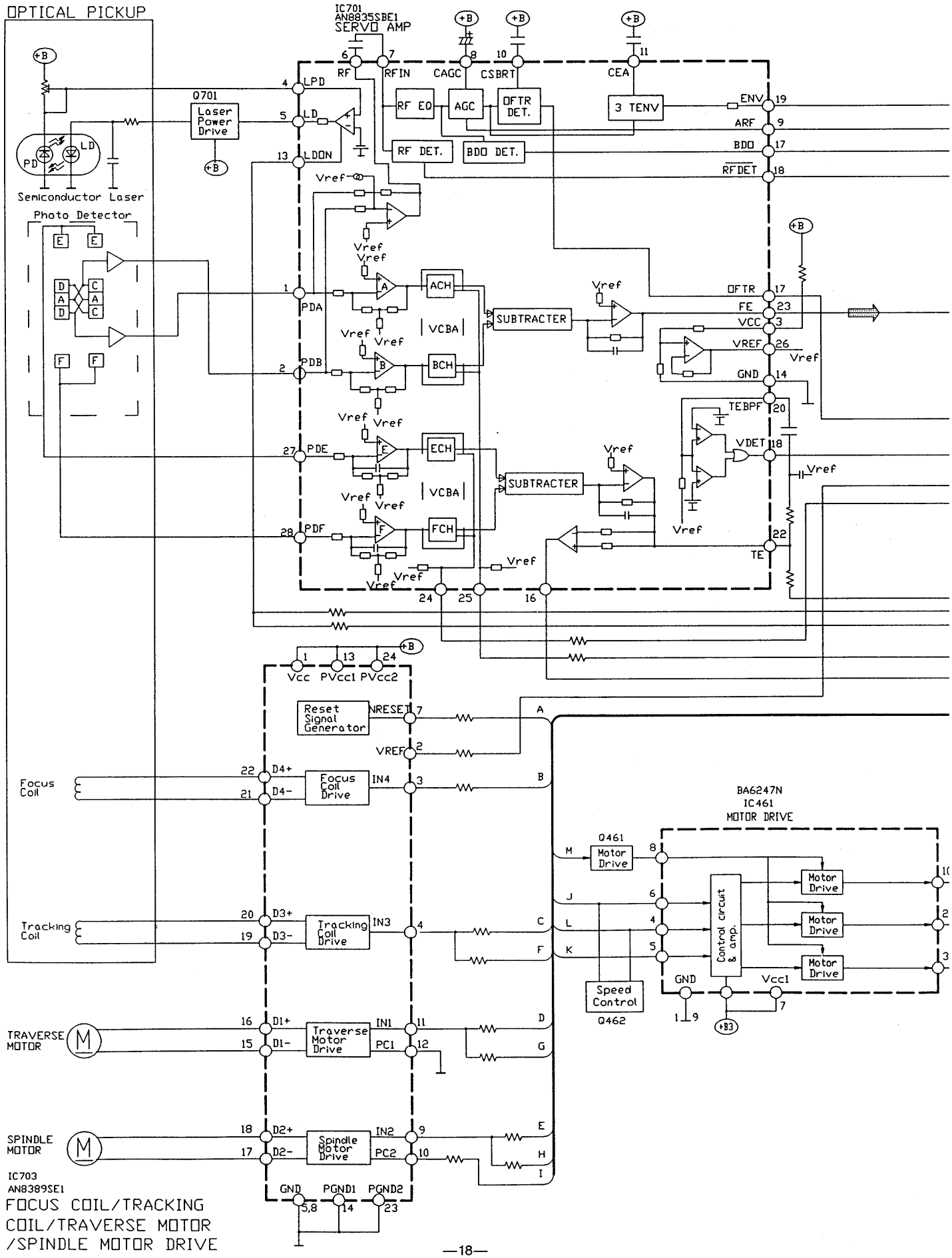
Ref. No.	Part name (Part No.)
IC401	System control IC (UPD78043A039)
IC702	Servo processor IC (MN662741RPA)
S501	Lock det./MLOCK SW (RSH1A017-A)
S502	Clamp det. SW (RSH1A005)
S503	Clamp det./FREE SW (RSH1A005)
S701	Rest detection SW (RSM0006-P)
Q521	Disc sensor (PT4810F)

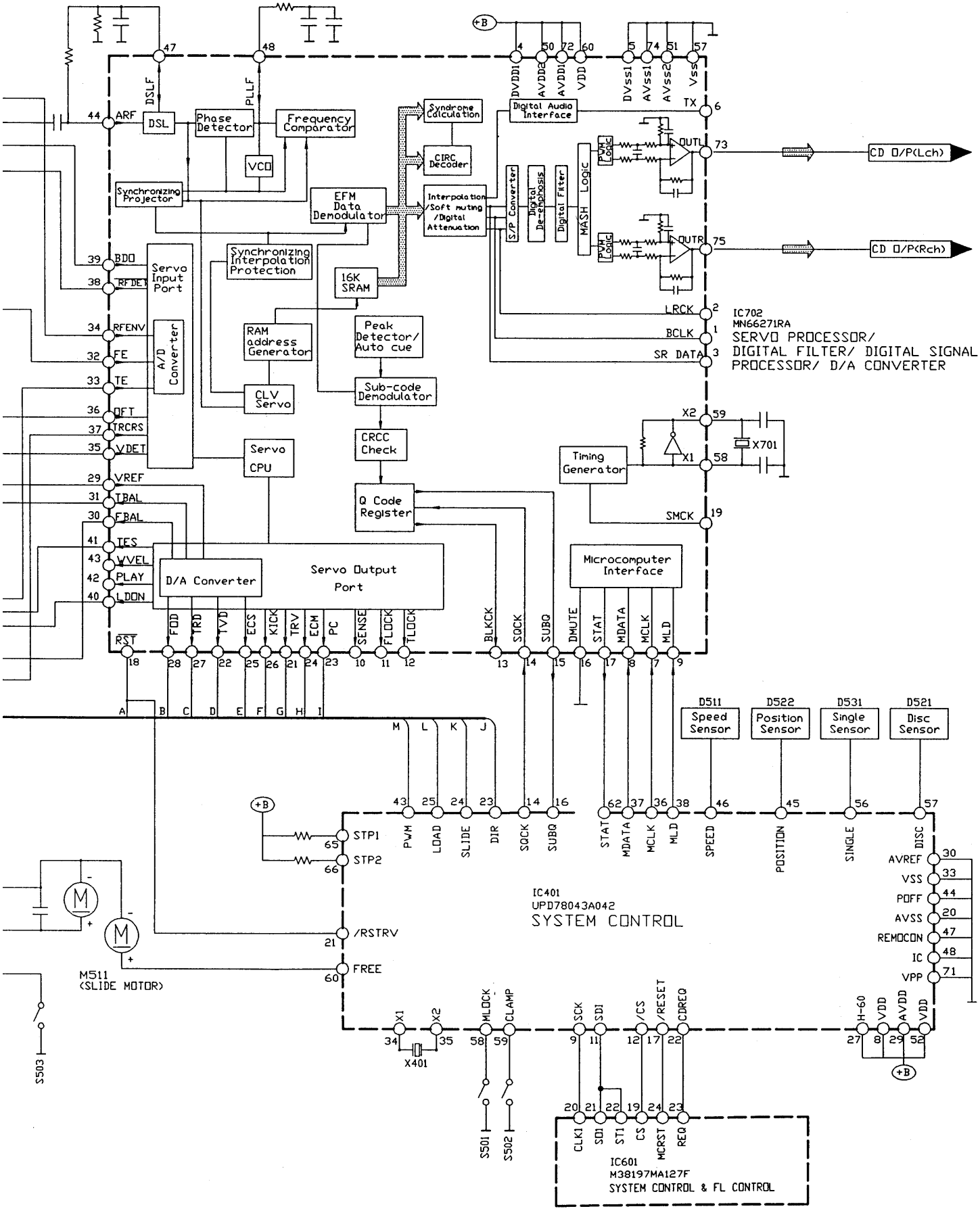
Ref. No.	Part name (Part No.)
Q522	Position sensor (PT480F)
D511	Speed sensor (RSQGP1S53V)
D521	Disc sensor (LN66S)
D522	Position sensor (GL480V)
M501	Loading motor (RFKPLMC50PAK)
M511	Slide motor (RFKPLMC50PBK)

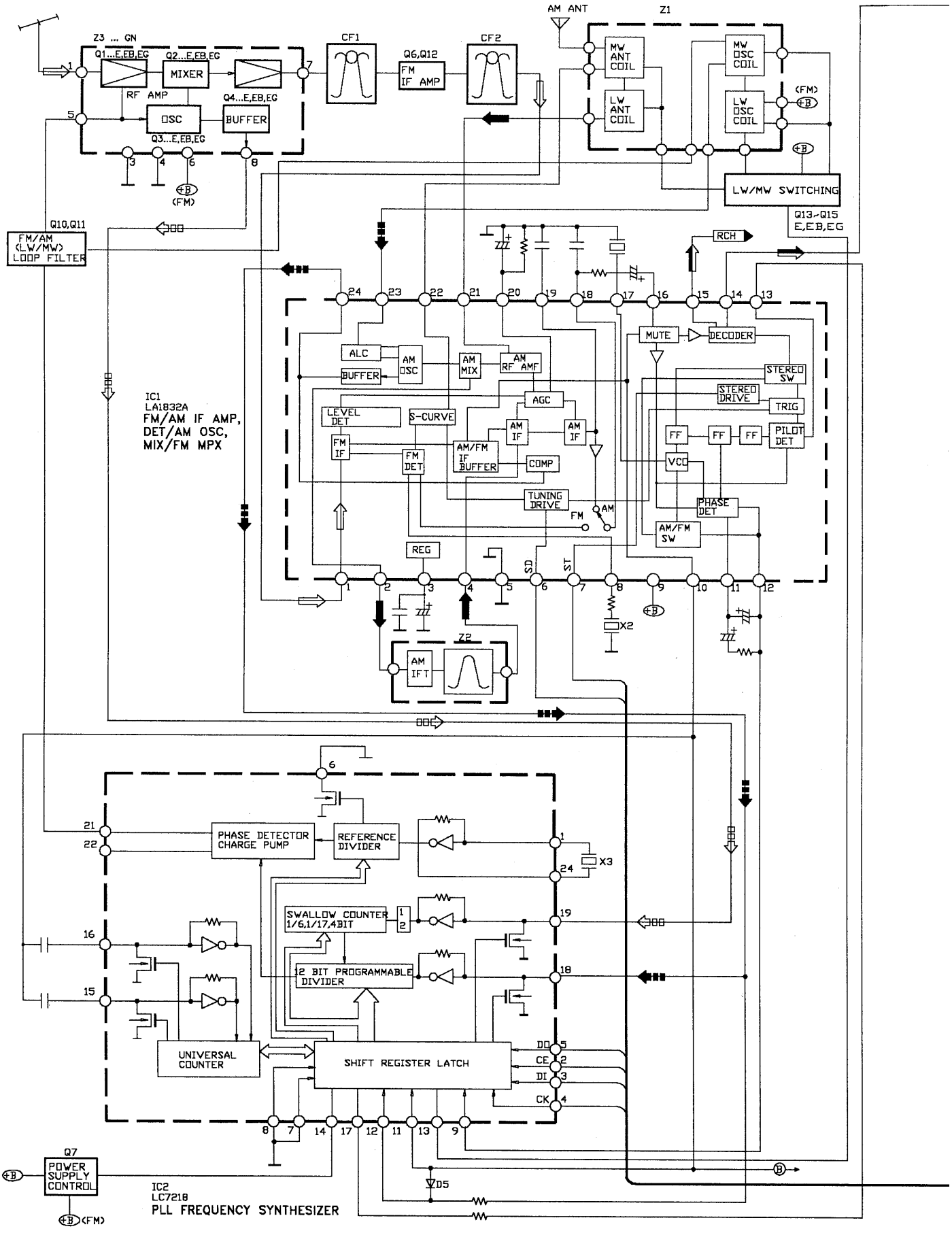
■ Terminal Guide of ICs, Transistors and Diodes

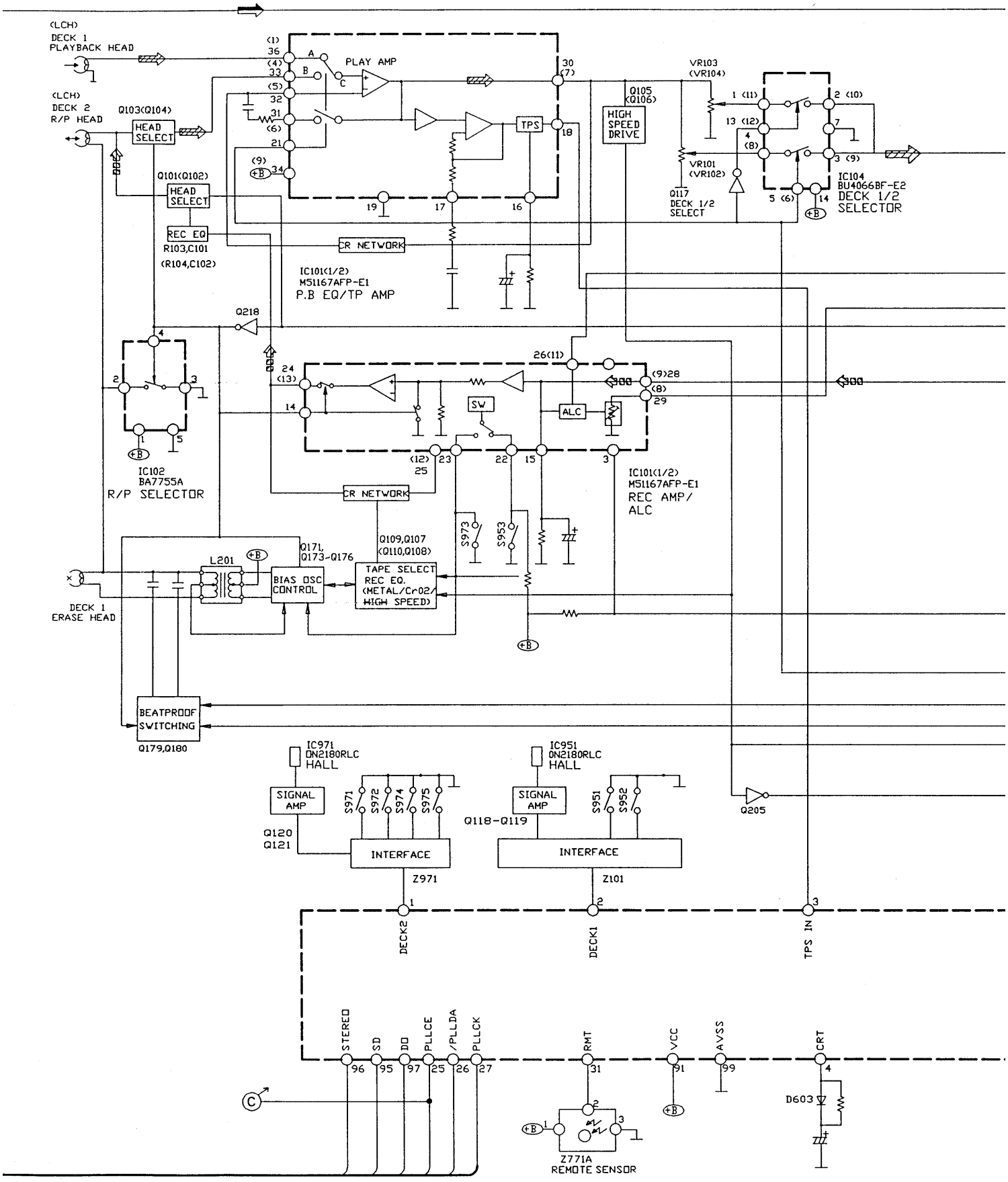
AN8389SE1 	M51167BFP-E1 (36P) AN8835SBE1 (28P) 	BU2040F-E2 (16P) BU4052BCF-E2 (16P) LA1832A (24P) LC7218 (24P) M62422FP-E1 (42P) CXA1102M-T4 (16P) BU4066BCF-E2 (14P)	BA7755A 	M51131L-702 	M38197MA137F(100P) MN662741RPA (80P) UPD78043A042 (80P) 
BA6247N 	M5218AP 	0N2180RLC 	AN78M05 	SVI3101D 	2SK544F-AC 2SJ164RTA 
2SC2785FETA 2SC2786MTA 2SD1020HTA 	2SC2785FTA 2SC2787FL1TA 2SC2787LTA BA1A4ZTA BA1L3ZTA BN1L3NTA 2SC1740SSTA 2SC3311AIQST	2SB621RTA 2SC2001KTA 2SD965RTA 2SA1534AQRTA 	2SK301QTA 	2SD1302STA 2SJ40CDTA 	2SB709S 
RVTDTA143XST RVTDTC143TST 	2SA933SSTA RVTDTA114EST RVDTDTC114TST RVTDTC124EST RVTDTA124EST RVTDTC114EST	2SB1185E 2SD1762E 	2SD2037ETA 	2SC2784FTA 2SD1450STA BA1L4ZTA BN1A4MTA 	1N5402BM21 1D3E 
MTZJ12BTA MTZJ13ATA 	MTZJ15CTA MTZJ5R6CTA MTZJ6R8ATA MTZJ6R8CTA MTZJ5R1BTA MTZJ5R6BTA	MTZJ10BTA MTZJ3R6BTA MTZJ4R7BTA MTZJ5R1CTA MTZJ7R5CTA	SVC211SPA-AL 	RVD1SS133TA 1SS291TA 	MA165 MA700TA 1SS254TA MA167TA
LNJ301MPUJHAD LNJ801TPSJAD 	SLR-325MC SLR-325VC	LN66S SPR505MDTT 	RSQGP1S53V 	GL480V 	BR3433S 
					

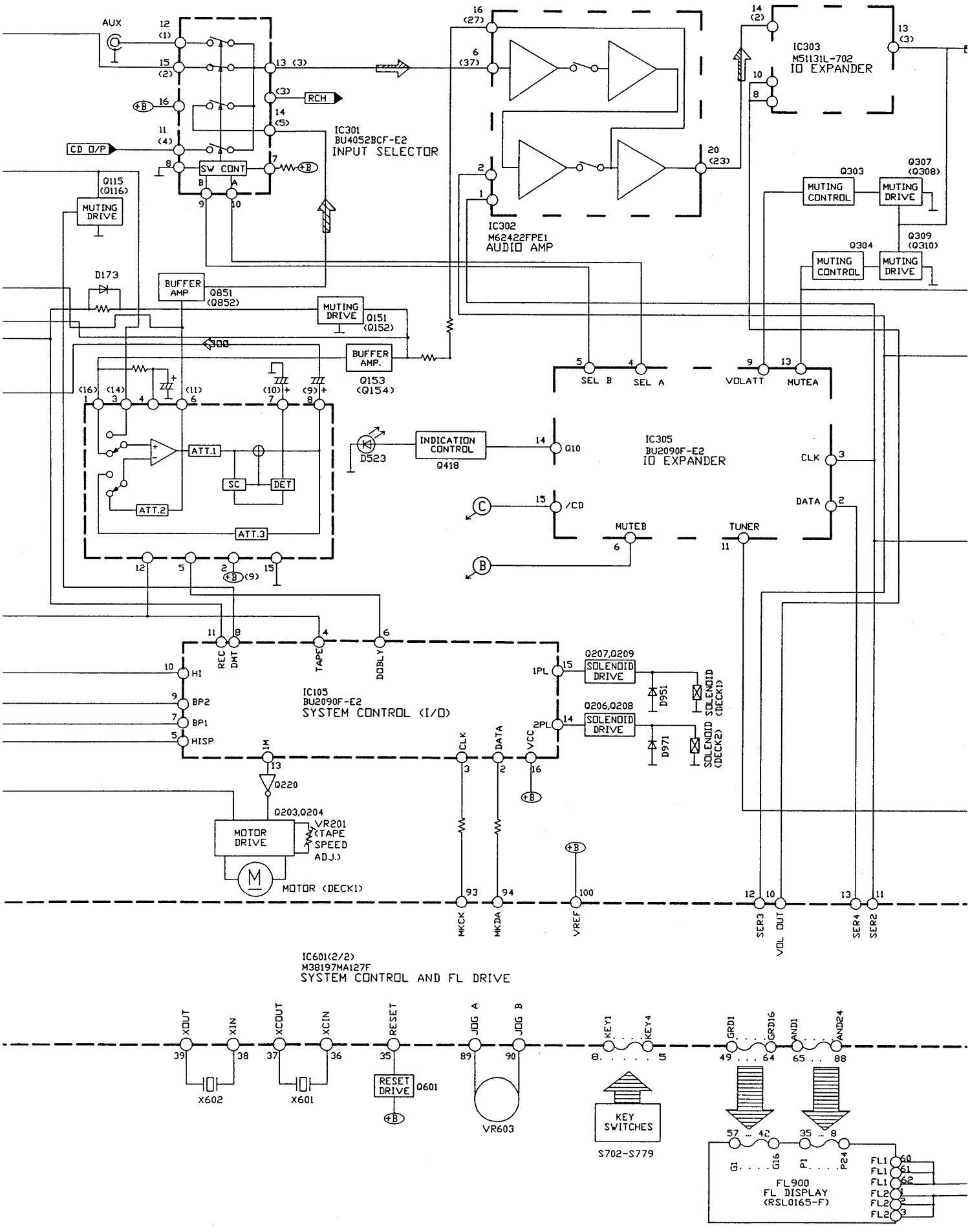
■ Block Diagram

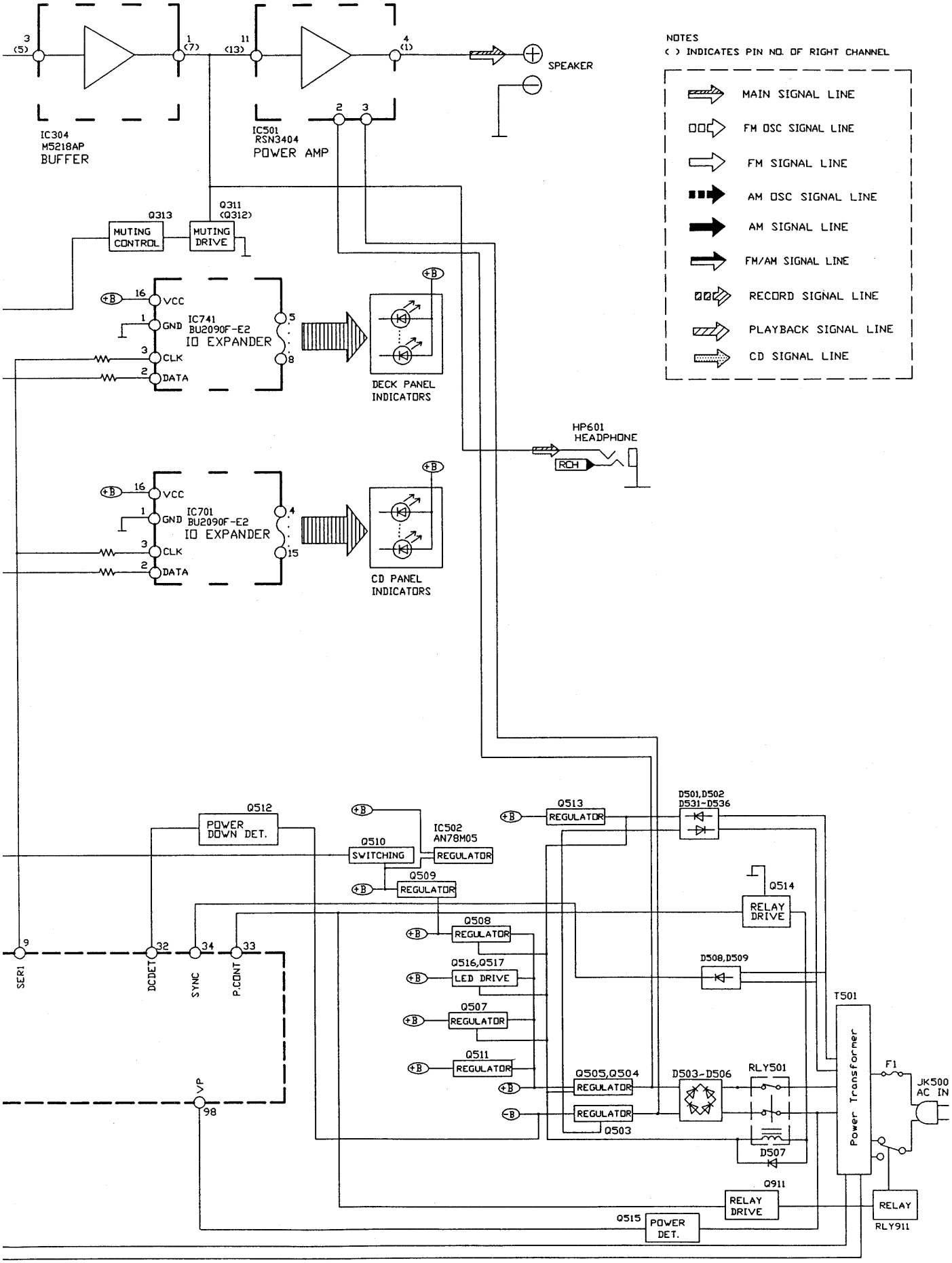



IC702
MN66271RA
SERVO PROCESSOR/
DIGITAL FILTER/ DIGITAL SIGNAL
PROCESSOR/ D/A CONVERTER
IC401
UPD78043A042
SYSTEM CONTROL
IC601
M38197MA127F
SYSTEM CONTROL & FL CONTROL
CD O/P(Lch)
CD O/P(Rch)
Servo Input Port
A/D Converter
Servo Output Port
D/A Converter
Phase Detector
Frequency Comparator
VCO
DSL
Synchronizing Projector
EFM Data Demodulator
Syndrome Calculation
CIRC Decoder
Interpolation /Soft muting /Digital Attenuation
Digital Audio Interface
S/P Converter
Digital De-emphasis
Digital Filter
MASH LOGIC
PWM Logic
Synchronizing Interpolation Protection
16K SRAM
RAM address Generator
Peak Detector/ Auto cue
Sub-code Demodulator
CRCC Check
Q Code Register
CLV Servo
Servo CPU
Timing Generator
Microcomputer Interface
Speed Sensor
Position Sensor
Single Sensor
Disc Sensor
M511
(SLIDE MOTOR)
S503
S501
S502
X401
X701
STP1
STP2
/RSTRV
FREE


AM ANT
Z1
Z3 ... GN
Q1...E,EB,EG
Q2...E,EB,EG
MIXER
RF AMP
OSC
Q4...E,EB,EG
BUFFER
Q3...E,EB,EG
CF1
Q6,Q12
FM IF AMP
CF2
MW ANT COIL
LW ANT COIL
MW OSC COIL
LW OSC COIL
(FM)
+B
LW/MW SWITCHING
Q13~Q15 E,EB,EG
Q10,Q11
FM/AM (LW/MW) LOOP FILTER
RCH
IC1
LA1832A
FM/AM IF AMP, DET/AM OSC, MIX/FM MPX
ALC
AM OSC
BUFFER
AM MIX
AM RF AMP
AGC
LEVEL DET
S-CURVE
AM IF
FM IF
FM DET
AM/FM IF BUFFER
COMP
TUNING DRIVE
FM
AM
REG
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
FF
PILOT DET
VCO
PHASE DET
AM/FM SW
SD
ST
X2
Z2
AM IFT
PHASE DETECTOR CHARGE PUMP
REFERENCE DIVIDER
X3
SWALLOW COUNTER 1/6,1/17,4BIT
12 BIT PROGRAMMABLE DIVIDER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
DO
CE
DI
CK
Q7
POWER SUPPLY CONTROL
D5
IC2
LC7218
PLL FREQUENCY SYNTHESIZER


(LCH)
DECK 1
PLAYBACK HEAD
(LCH)
DECK 2
R/P HEAD
Q103(Q104)
HEAD SELECT
Q101(Q102)
HEAD SELECT
REC EQ
R103,C101
(R104,C102)
PLAY AMP
TPS
HIGH SPEED DRIVE
Q105 (Q106)
VR103 (VR104)
VR101 (VR102)
Q117
DECK 1/2 SELECT
IC104
BU4066BF-E2
DECK 1/2
SELECTOR
CR NETWORK
IC101(1/2)
M51167AFP-E1
P.B EQ/TP AMP
Q218
IC102
BA7755A
R/P SELECTOR
SW
ALC
CR NETWORK
IC101(1/2)
M51167AFP-E1
REC AMP/
ALC
S973
S953
Q109,Q107
(Q110,Q108)
Q171,
Q173-Q176
L201
BIAS OSC CONTROL
TAPE SELECT
REC EQ.
(METAL/CrO2/
HIGH SPEED)
DECK 1
ERASE HEAD
BEATPROOF
SWITCHING
Q179,Q180
IC971
ON2180RLC
HALL
SIGNAL AMP
Q120
Q121
S971
S972
S974
S975
INTERFACE
Z971
IC951
ON2180RLC
HALL
SIGNAL AMP
Q118-Q119
S951
S952
INTERFACE
Z101
Q205
DECK2
DECK1
TPS IN
STEREO
SD
DO
PLLCE
/PLLDA
PLLCK
RMT
VCC
AVSS
CRT
D603
Z771A
REMOTE SENSOR


AUX
CD O/P
IC301
BU4052BCF-E2
INPUT SELECTOR
SW CONT
RCH
IC302
M62422FPE1
AUDIO AMP
IC303
M51131L-702
IO EXPANDER
MUTING DRIVE
Q115 (Q116)
D173
BUFFER AMP
Q851 (Q852)
Q151 (Q152)
Q153 (Q154)
ATT.1
ATT.2
ATT.3
SC
DET
INDICATION CONTROL
Q418
D523
Q10
IC305
BU2090F-E2
IO EXPANDER
SEL B
SEL A
VOLATT
MUTEA
MUTEB
TUNER
CLK
DATA
/CD
Q303
Q307 (Q308)
Q304
Q309 (Q310)
MUTING CONTROL
IC105
BU2090F-E2
SYSTEM CONTROL (I/O)
HI
BP2
BP1
HISP
REC
DMT
TAPE
DOBLY
Q207,Q209
Q206,Q208
SOLENOID DRIVE
D951
D971
SOLENOID (DECK1)
SOLENOID (DECK2)
Q220
Q203,Q204
MOTOR DRIVE
VR201 (TAPE SPEED ADJ.)
MOTOR (DECK1)
MKCK
MKDA
VREF
SER3
VOL OUT
SER4
SER2
IC601(2/2)
M38197MA127F
SYSTEM CONTROL AND FL DRIVE
XOUT
XIN
XCOUT
XCIN
RESET
JOG A
JOG B
KEY1
KEY4
GRD1
GRD16
AND1
AND24
X602
X601
RESET DRIVE Q601
VR603
KEY SWITCHES
S702-S779
FL900
FL DISPLAY
(RSL0165-F)


NOTES
( ) INDICATES PIN NO. OF RIGHT CHANNEL
MAIN SIGNAL LINE
FM OSC SIGNAL LINE
FM SIGNAL LINE
AM OSC SIGNAL LINE
AM SIGNAL LINE
FM/AM SIGNAL LINE
RECORD SIGNAL LINE
PLAYBACK SIGNAL LINE
CD SIGNAL LINE
IC304
M5218AP
BUFFER
IC501
RSN3404
POWER AMP
SPEAKER
Q313
MUTING CONTROL
Q311 (Q312)
MUTING DRIVE
IC741
BU2090F-E2
IO EXPANDER
VCC
GND
CLK
DATA
DECK PANEL INDICATORS
HP601
HEADPHONE
RCH
IC701
BU2090F-E2
IO EXPANDER
CD PANEL INDICATORS
Q512
POWER DOWN DET.
Q510
SWITCHING
IC502
AN78M05
REGULATOR
Q509
Q513
D501,D502
D531~D536
Q514
RELAY DRIVE
Q508
Q516,Q517
LED DRIVE
Q507
Q511
D508,D509
T501
Power Transformer
F1
JK500
AC IN
Q505,Q504
D503~D506
RLY501
Q503
D507
Q911
RELAY DRIVE
RELAY
RLY911
Q515
POWER DET.
SER1
DCDET
SYNC
P.CONT
VP

■ Terminal Functions Of ICs

• IC701 (AN8835SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDA	I	Focus signal input terminal 1 (Ach).
2	PDB	I	Focus signal input terminal 2 (Bch).
3	VCC	I	Power supply terminal.
4	LPD	I	Laser PD signal.
5	LD	O	Laser power auto control output.
6	RF	O	RF amplifier terminal.
7	RF IN	I	AGC input terminal.
8	CAGC	I	AGC detection capacitor input.
9	ARF	O	RF output
10	CSBRT	I	OFTR capacitor connection terminal.
11	CEA	I	HPF-AMP capacitor connection terminal.
12	BDO	O	Dropout detection control.
13	LDON	I	LD APC ON/OFF("H" : ON, "L" : OFF)
14	GND	—	GND terminal.

Pin No.	Mark	I/O	Function
15	/RFDET	O	RF detection signal ("L" : detection).
16	CROSS	O	Tracking error zero cross output.
17	OFTR	O	Off track detection ("H" : detection).
18	VDET	O	Oscillation detection signal ("H" : detection).
19	ENV	O	Envelope output terminal
20	TEBPF	I	Oscillation det. input terminal (Not used,open)
21	CCRS	I	CROSS capacitor connection terminal.
22	TE	O	Tracking error signal.
23	FE	O	Focus error signal.
24	TBAL	I	Tracking balance adjusting input
25	FBAL	I	Focus balance adjusting input
26	VREF	O	Reference voltage output
27	PDE	I	Tracking signal input terminal 1 (Ech).
28	PDF	I	Tracking signal input terminal 2 (Fch).

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

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

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

• IC702 (MN662741RPA) Servo processor / Digital signal processor / Digital filter / D/A converter

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

Pin No.	Mark	I/O	Function
36	OFT	I	Off-track signal input ("H" : off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L" : detection)
39	BDO	I	Dropout signal input ("H" : Dropout)
40	LDON	O	Laser on signal output ("H" : ON)
41	TES	O	Tracking error shunt signal output ("H" : shunt)
42	PLAY	O	Play signal out ("H" : PLAY)
43	WVEL	O	Double speed status signal output ("H" : DS)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	DSL bias (Not used, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	VCOF	I/O	VCO loop filter (Not used, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	O	EFM signal output (Not used, open)
53	PCK	O	PLL extraction clock ouput (Not used, open)
			(fPCK=4.321 MHz during normal playback)
54	PDO	O	Phase comparison signal of EFM and PCK signals
			(Not used, open)
55	SUBC	O	Sub-code serial data output (Not used, open)
56	SBCK	I	Sub-code frame clock signal output
			(fCLDCK=7.35kHz during normal playback)
57	VSS	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344MHz)
59	X2	O	Crystal oscillating circuit output (f=16.9344MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	O	Byte clock output (Not used, open)
62	/CLDCK	O	Clock input for sub-code serial data
			(Not used, open)
63	FCLK	O	Crystal frame clock signal output
			(fCLK=7.35kHz, double=14.7kHz)
64	IPFLAG	O	Interpolation flag output ("H" : interpolation)
			(Not used, open)
65	FLAG	O	Flag output (Not used, open)
66	CLVS	O	Spindle servo phase synchronizing signal output
			("H" : CLV, "L" : rough servo) (Not used, open)
67	CRC	O	Sub-code CRC checked output
			("H" : OK, "L" : NG) (Not used, open)
68	DEMPH	O	De-emphasis ON signal output
			("H" : ON) (Not used, open)
69	RESY	O	Frame resynchronizing signal output
			(Not used, open)
70	/RST2	I	Reset input through MASH circuit ("L" : Reset)
71	/TEST	I	Test input

Pin No.	Mark	I/O	Function
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input
			(at "H" level, RSEL="H", at "L" level, RESL="L")
77	CSEL	I	Crystal oscillating frequency designation input
			"L" : 16.9344MHz "H" : 33.8688MHz
78	PSEL	I	Test input (normally "L") (Not used, open)
79	MSEL	I	Output mode switching of SUBQ terminal
			("H" : Q code buffer mode)
80	SSEL	I	Output frequency switching for SMCK terminal
			"H" : SMCK=8.4672MHz
			"L" : MCK=4.2336MHz (Not used, open)

• IC401 (UPD78043A042) System Control

Pin No.	Mark	I/O	Function
1~6	NC	—	Not connected.
7	LIGHT	—	Not connected.
8	VDD	I	Power input.
9	SCK	O	Serial clock output.
10	SDO	O	Not connected.
11	SDI	I	Serial data input.
12	/CS	O	Chip select
13	DMUTE	O	Muting control.
14	SQCK	O	Sub code Q resistor clock output.
15	NC	—	Not connected.
16	SUBQ	I	Sub code Q data input.
17	/RESET	I	Reset signal input.
18	KBCLK	—	Not connected.
19	KBDATA	—	Not connected.
20	AVSS	—	GND
21	/RSTSV	O	Reset signal output.
22	CDREQ	O	CD request signal output.
23	DIR	O	Motor control signal.
24	SLIDE	O	Motor control signal output.
25	LOAD	O	Motor control signal.
26	NC	—	Not connected.
27	H-60	—	No use (connect to power).
28	NC	—	Not connected.
29	AVDD	I	Power input.
30	AVREF	I	GND
31	XT1	—	GND
32	XT2	—	Not connected.
33	VSS	—	GND
34	X1	I	Ceramic oscillator (f=4.2336MHz)
35	X2	O	Ceramic oscillator (f=4.2336MHz)
36	MCLK	O	Command clock signal output.
37	MDATA	O	Command data signal output.
38	MLD	O	Command load signal output ("L" : Load)
39~42	NC	—	Not connected.
43	PWM	O	Motor control signal output.
44	POFF	O	GND
45	POSITION	I	Tray position detection input.
46	SPEED	I	Loading motor speed sensor.
47	REMOCON	I	GND
48	IC	—	Not connected.
49	/EPHOLD	—	Not connected.
50	EPSO	—	Not connected.
52	VDD	I	Power input.
53	POWER	O	Not connected.
54	EPSI	I	Not connected.
55	/EPCS	—	Not connected.
56	SINGLE	I	Disc slot detection (Single play).
57	DISC	I	Disc control signal input.
58	MLOCK	I	Mechanism detection (S501).
59	CLAMP	I	Mechanism detection (S502).
60	FREE	I	Mechanism detection (S503).
61	NC	—	Not connected.
62	STAT	I	Status signal input.
63	REST	I	Rest position detection.
64	MSC	—	Not connected.
65	STP1	—	GND
66~70	NC	—	Not connected (Open).
71	VPP	—	GND
72~80	NC	—	Not connected.

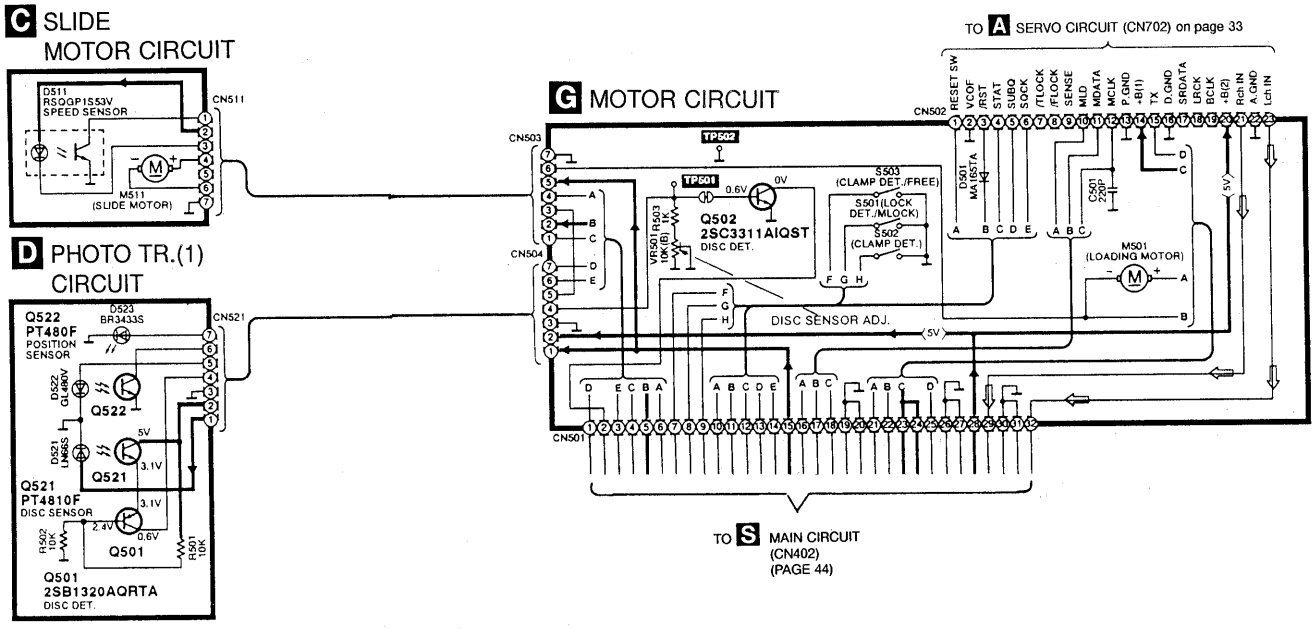
• IC601 (M38197MA137F) System Microprocessor

Pin No.	Mark	I/O	Function
1	DECK2	I	Mecha condition input.
2	DECK1	I	(HALF / REC1 F / MODE / REC1 R)
3	TPS IN	I	TPS input.
4	CRT	—	CRT input.
5~8	KEY4 ~ KEY1	I	Key switch input.
9	SER1	O	Serial clock (EX1 CLK, EX2 CLK)
10	VOL	O	Volume control data output.
11	SER2	O	Serial data/clock(EX1 DAT, EX3 CLK, GEC CLK)
12	SER3	O	Serial data (EX2 DAT, GEC DAT).
13	SER4	O	Serial data (EX3 DAT).
14	KEY LAT	O	Key latch (for key control).
15	ECHO VR	I	Echo VR data in.
16~18	ECHO3 ~ 1	O	Echo data output.
19	CS	I	CD CS.
20	CLK1	I	CD clock input.
21	SO1	O	CD data output.
22	SI1	I	CD data input.
23	REQ	I/O	CD request.
24	MCRST	O	MCRST.
25	/PLLCE	O	/Tuner PLL chip enable.
26	/PLLDA	O	/Tuner Pll data output.
27	/PLLCK	O	/Tuner clock output.
28	MIC SW	O	MIC jack SW on/off
29	NC	—	NC
30	CD MPCN	O	MECHA control power.
31	RMT	I	Remote control input.
32	DCDET	I	DC detect input.
31	RMT	I	Remote contrl signal input.

Pin No.	Mark	I/O	Function
32	DCDET	I	DC detection.
33	P.CONT	O	Power control signal input.
34	SYNC	I	AC failure detect input.
35	RESET	I	Reset input.
36	XCIN	I	32.768 sub clock
37	XCOUT	O	
38	XIN	I	6MHz main clock
39	XOUT	O	6MHz main clock.
40	VSS	—	GND
41	MBP1	O	MPU beat proof output 1.
42	MBP2	O	MPU beat proof output 2.
43~48	NC	—	NC
50~64	GRD1 ~ 16	O	Digit drive output (GRID).
65~80	AND1 ~16	O	Segment drive output (ANODE).
81~88	AND17 ~ 24	O	Segment drive output (ANODE) and
	REG8 ~ 1	O	key scan ouput.
89	JOGA	I	JOG input A.
90	JOGB	I	JOG input B.
91	VCC	—	Power (+5V).
92	REG IN	I	Area setting input.
93	MKCLK	O	Deck control clock output.
94	MKDAT	O	Deck control data output.
95	SD	I	Tuner signal detection input.
96	STERO	I	Tuner stereo detection input.
97	DO	I	Tuner PLL IF data input.
98	VP	—	Power (-30V).
99	AVSS	—	Power (0V)
100	VREF	—	Reference A-D.

■ Schematic Diagram

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



Note :

< for Slide motor circuit, Photo TR (1) circuit and Motor Circuit > (Page 27)

- **S501** : Lock detect switch.
- **S502** : Clamp detect switch.
- **S503** : Clamp detect switch.

< for Deck circuit, Mechanism (Deck 2) circuit and Mechanism (Deck 1) circuit > (Page 29 ~ 31)

- **S951** : Deck 1 mode detect switch.
- **S952** : Deck 1 tape detect switch.
- **S953** : Deck 1 CrO_2 detect switch.
- **S971** : Deck 2 mode detect switch.
- **S972** : Deck 2 tape detect switch.
- **S973** : Deck 2 CrO_2 detect switch.
- **S974** : Deck 2 record detect switch.
- **S975** : Deck 2 record detect switch.
- **VR101** : Deck 1 playback gain control (L).
- **VR102** : Deck 1 playback gain control (R).
- **VR103** : Deck 2 playback gain control (L).
- **VR104** : Deck 2 playback gain control (R).
- **VR201** : Deck 2 normal speed control.

< for Servo circuit > (Page 32 ~ 33)

- **S701** : Reset switch

< for Tuner circuit and Tuner Pack circuit> (Page 34 ~ 37)

< for Connection circuit, Operation (2) circuit, Photo TR (2) circuit and Power circuit > (Page 38)

- **S751** : Open deck 2 switch.
- **S752** : Open deck 1 switch.
- **S753** : Stop/Tuning switch.
- **S754** : Pause/Memory/Play switch.
- **S755** : Play/FM/BP switch.
- **S756** : Rewind/Tuning/Time (–) switch.
- **S757** : Fast forward/Tuning/Time (+) switch.
- **S758** : Record start/stop switch.
- **S759** : Normal switch.
- **S760** : High switch.
- **S761** : Clock switch.
- **S765** : Timer switch.
- **S766** : Reverse mode switch.

< for Panel Circuit, Operation (1) circuit and CD switch circuit > (Page 39)

- **S701** : CD switch.
- **S702** : Single play switch.
- **S704** : CD edit switch.
- **S705** : Group A switch.
- **S706** : Group B switch.
- **S707** : Group C switch.
- **S708** : Group D switch.
- **S709** : Group E switch.
- **S710** : Group F switch.
- **S711** : Group mode switch.
- **S712** : Group enter switch.
- **S713** : Skip/Group name (+) switch.
- **S714** : Skip/Group name (–) switch.
- **S718** : Group name enter switch.
- **S771** : Power switch.
- **S772** : Timer record/Play switch.
- **S774** : Deck 1/2 switch.
- **S775** : CD switch.
- **S776** : Tuner switch.
- **S777** : AUX switch.
- **S778** : EQ space switch.
- **S779** : VBASS switch.

< for Headphone circuit and Control circuit > (Page 40 ~ 41)

- **VR603** : Jog volume control.

< for Supporting circuit > (Page 42 ~ 43)

< for Main circuit > (Page 44 ~ 45)

- **Signal line**

: +B line
: –B line
: FM/AM signal line
: Main signal line
: Playback signal line
: Record signal line
: CD signal line
: FM signal line
: AM signal line
: AM OSC signal line
: FM OSC signal line
: Aux signal line

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

No mark : Playback << >>.....Tape Recording (( )) : CD ( ) ..... AM < > ..... FM

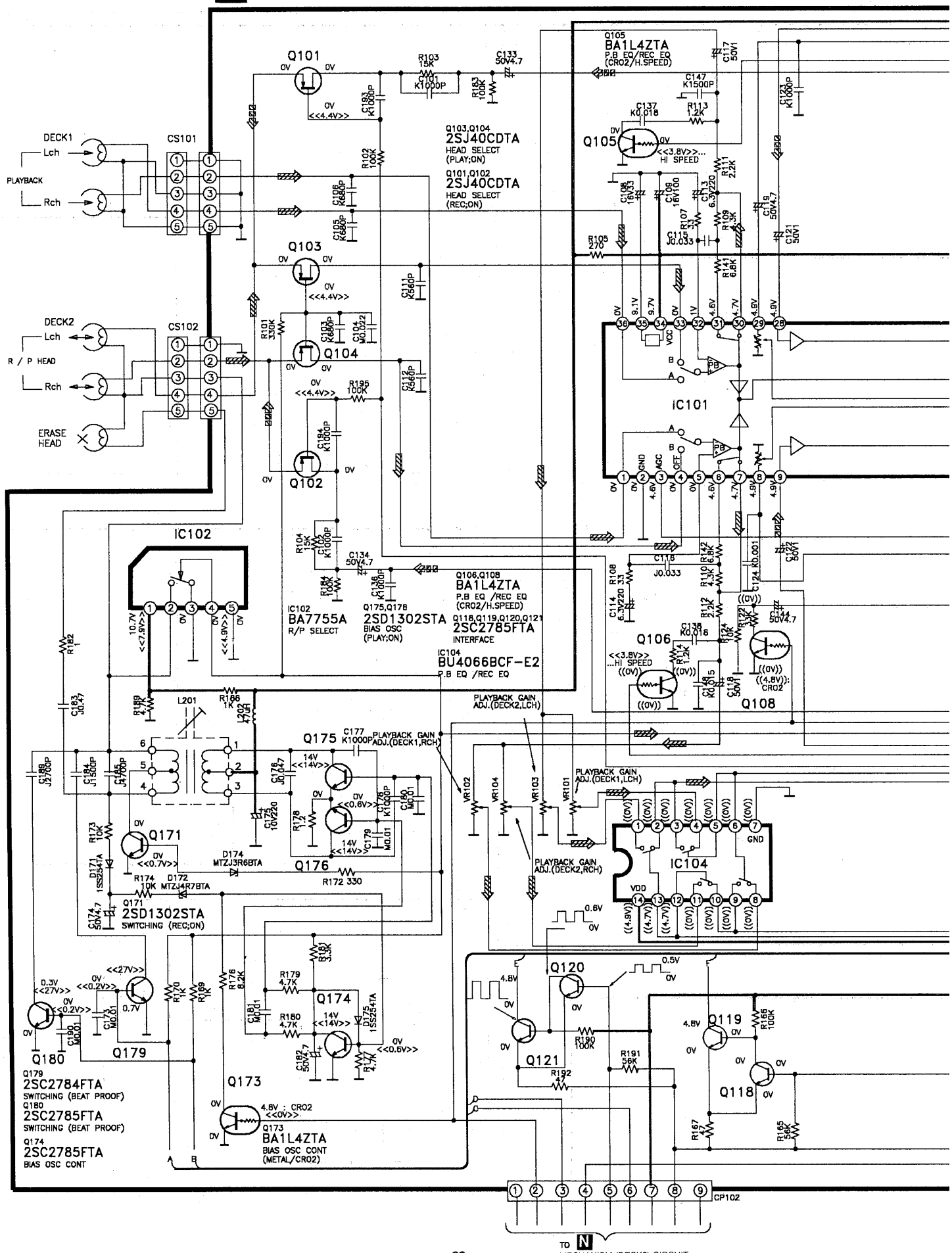
•Importance safety notice:

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

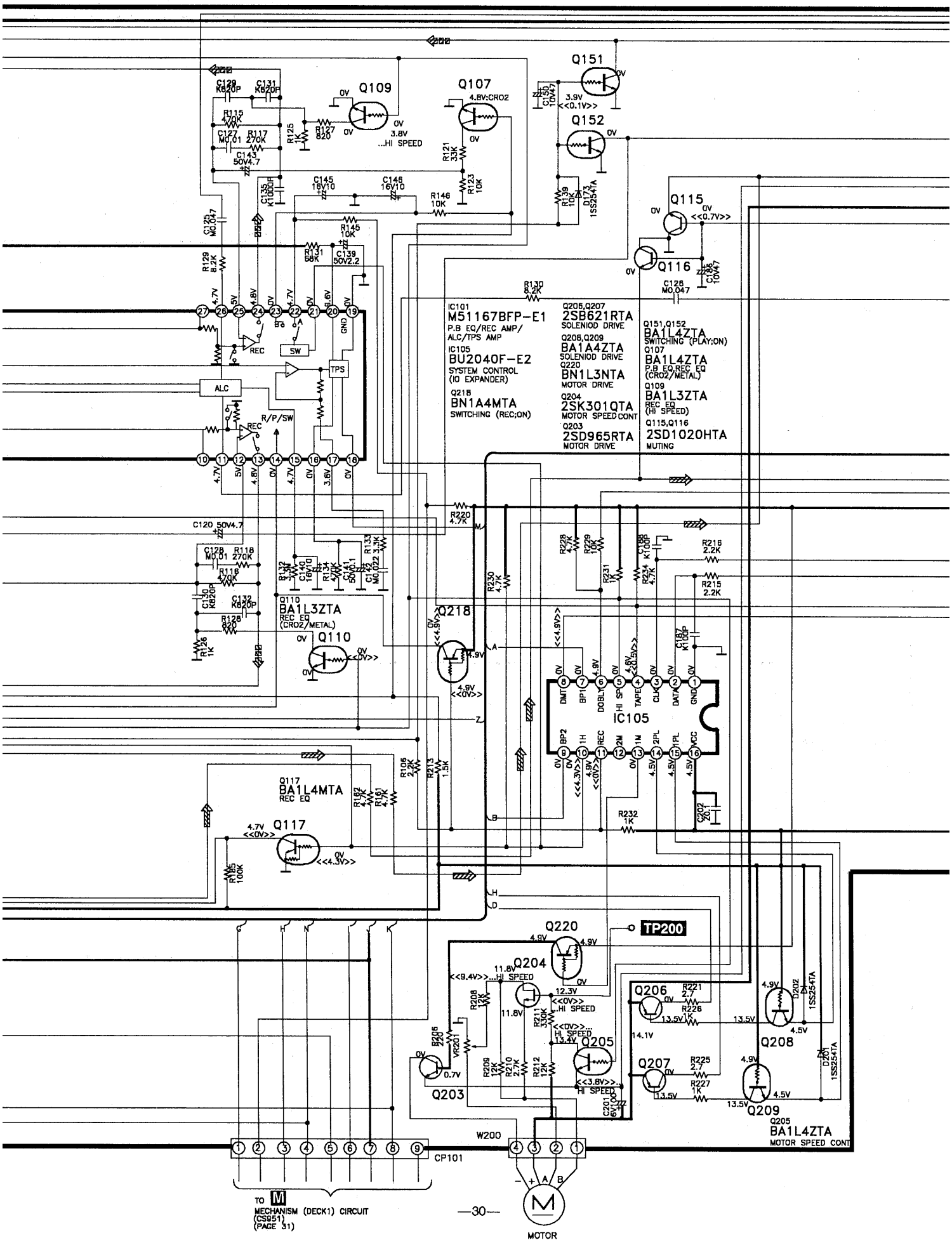
Caution !

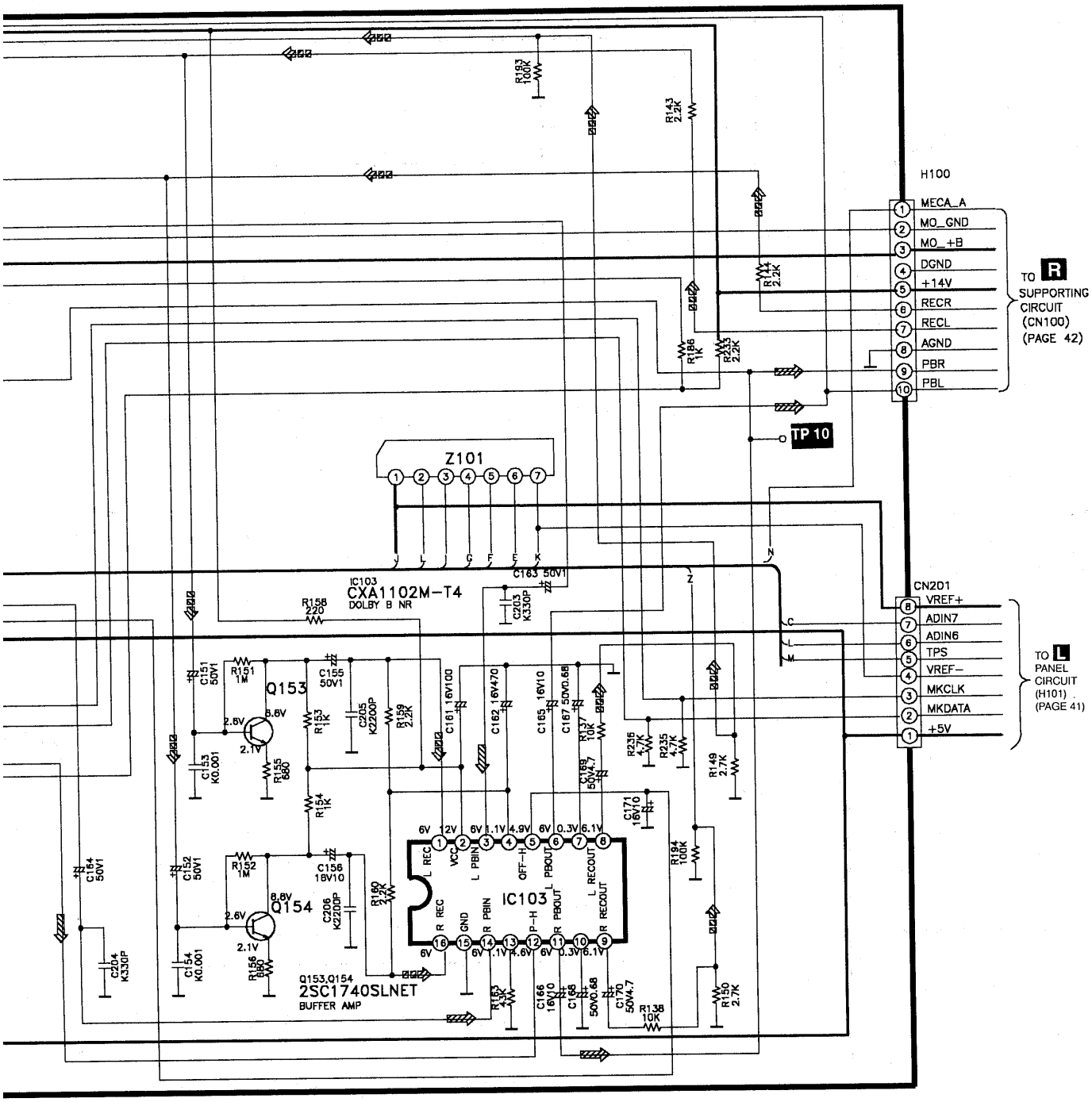
IC, LSI and VLSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.
•Cover the parts boxes made of plastics with aluminium foil.
•Ground the soldering iron.
•Do not touch the pins of IC, LSI or VLSI with fingers directly.
•Put a conductive mat on the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

O DECK CIRCUIT

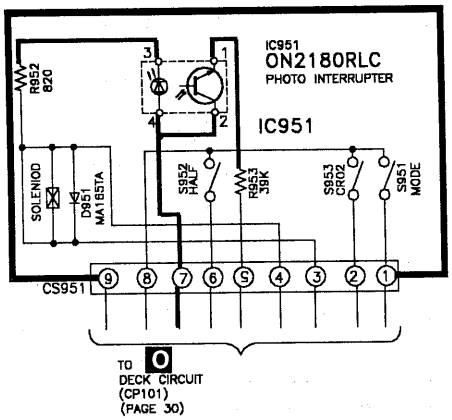


TO N
MECHANISM (DECK2) CIRCUIT
(CS971)
(PAGE 31)

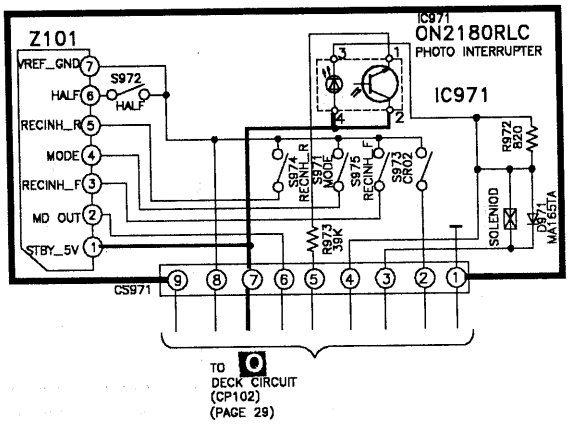

IC101
M51167BFP-E1
P.B EQ/REC AMP/
ALC/TPS AMP
IC105
BU2040F-E2
SYSTEM CONTROL
(IO EXPANDER)
Q218
BN1A4MTA
SWITCHING (REC;ON)
Q205,Q207
2SB621RTA
SOLENIOD DRIVE
Q208,Q209
BA1A4ZTA
SOLENIOD DRIVE
Q220
BN1L3NTA
MOTOR DRIVE
Q204
2SK301QTA
MOTOR SPEED CONT
Q203
2SD965RTA
MOTOR DRIVE
Q151,Q152
BA1L4ZTA
SWITCHING (PLAY;ON)
Q107
BA1L4ZTA
P.B EQ,REC EQ
(CRO2/METAL)
Q109
BA1L3ZTA
REC EQ
(HI SPEED)
Q115,Q116
2SD1020HTA
MUTING
Q110
BA1L3ZTA
REC EQ
(CRO2/METAL)
Q117
BA1L4MTA
REC EQ
Q205
BA1L4ZTA
MOTOR SPEED CONT
TP200
W200
CP101
TO M
MECHANISM (DECK1) CIRCUIT
(CS951)
(PAGE 31)
MOTOR

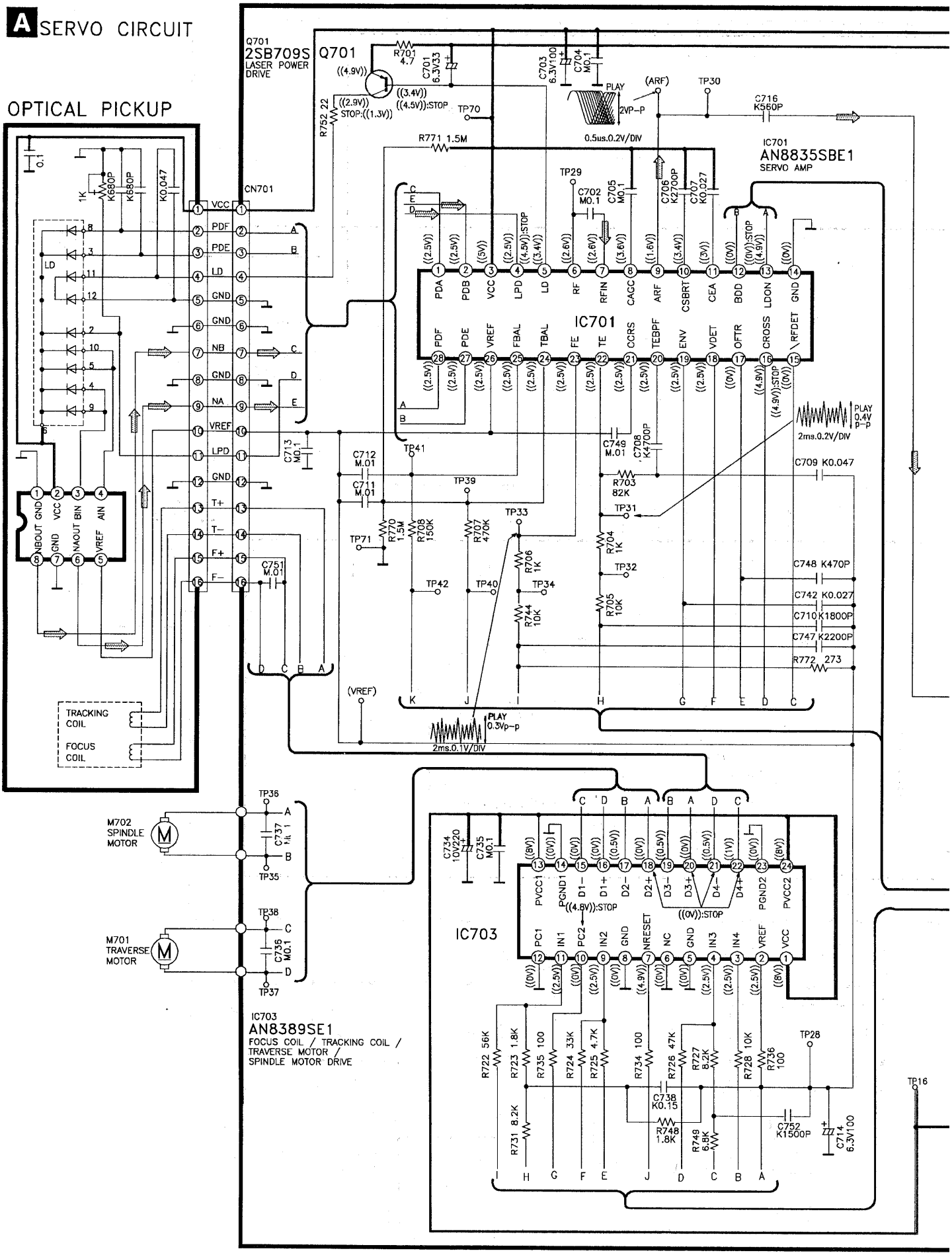


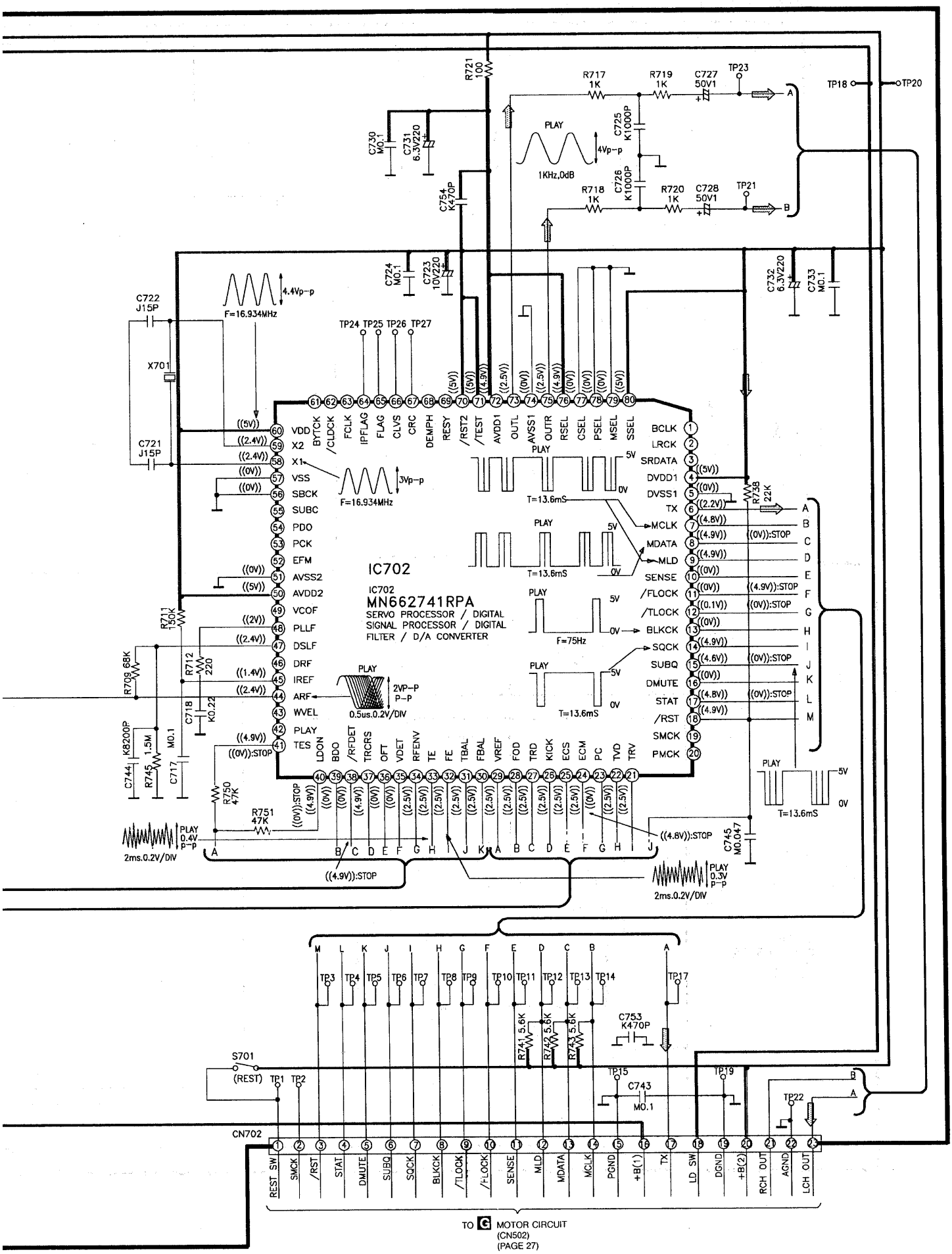
M MECHANISM (DECK 1) CIRCUIT



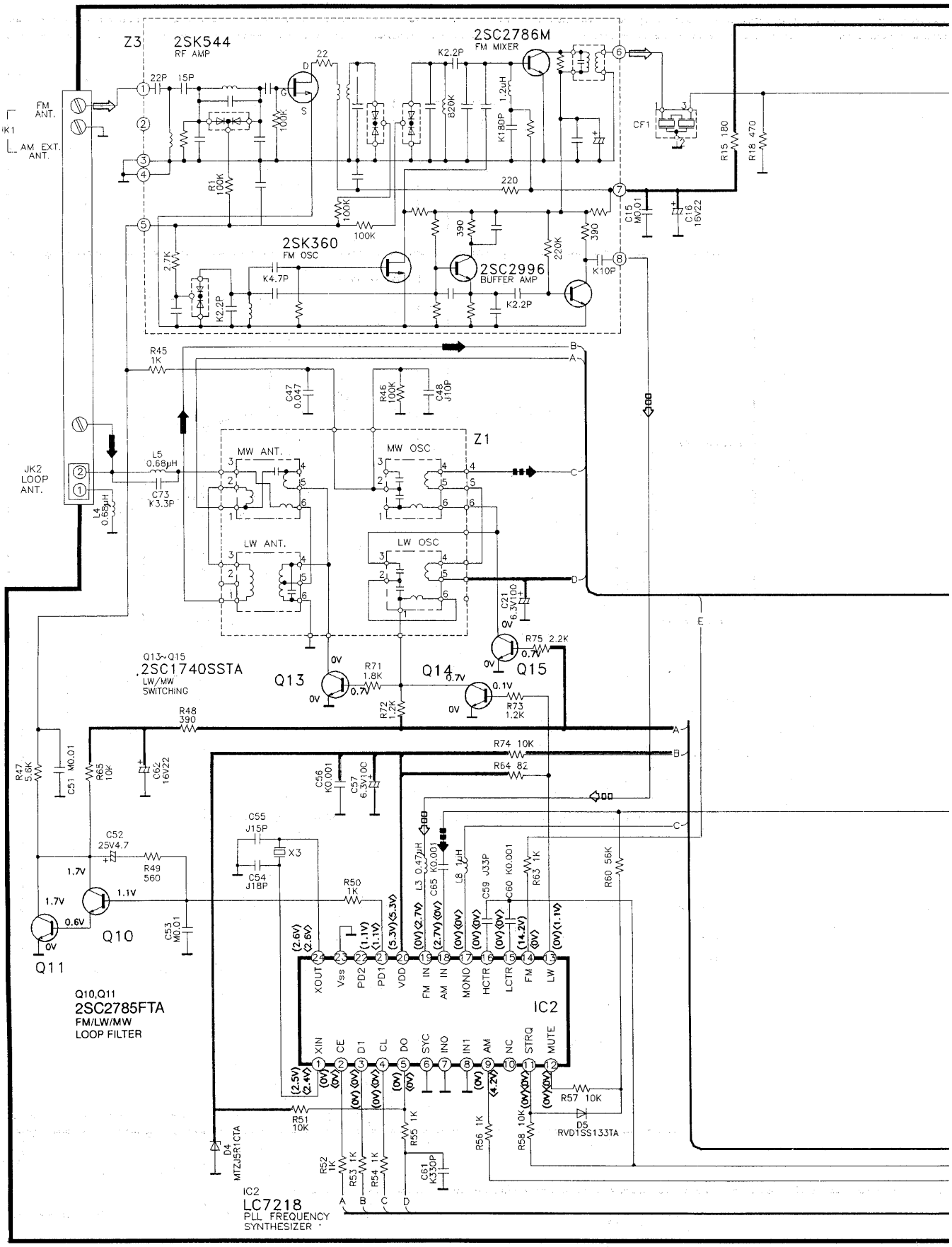
N MECHANISM (DECK 2) CIRCUIT

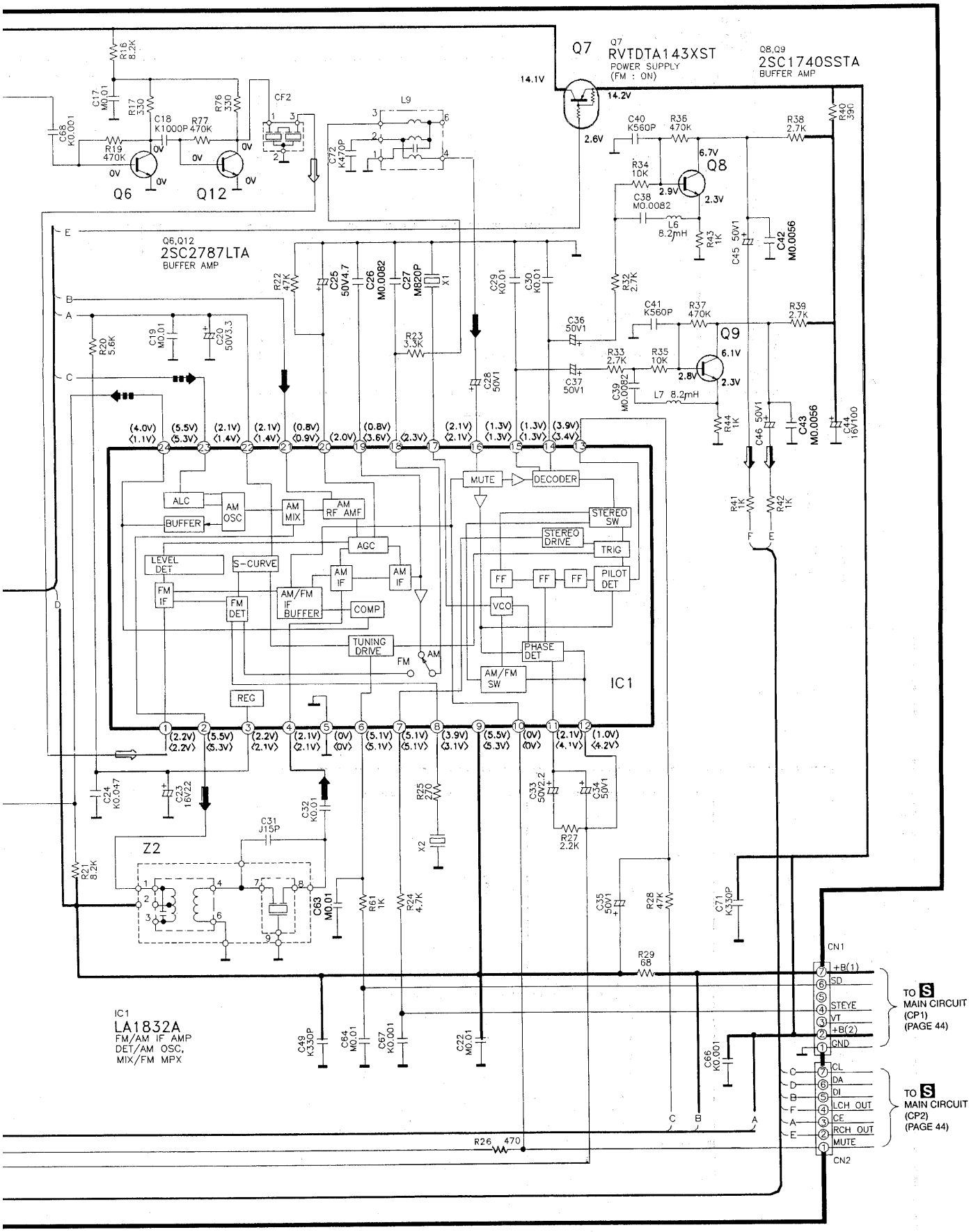


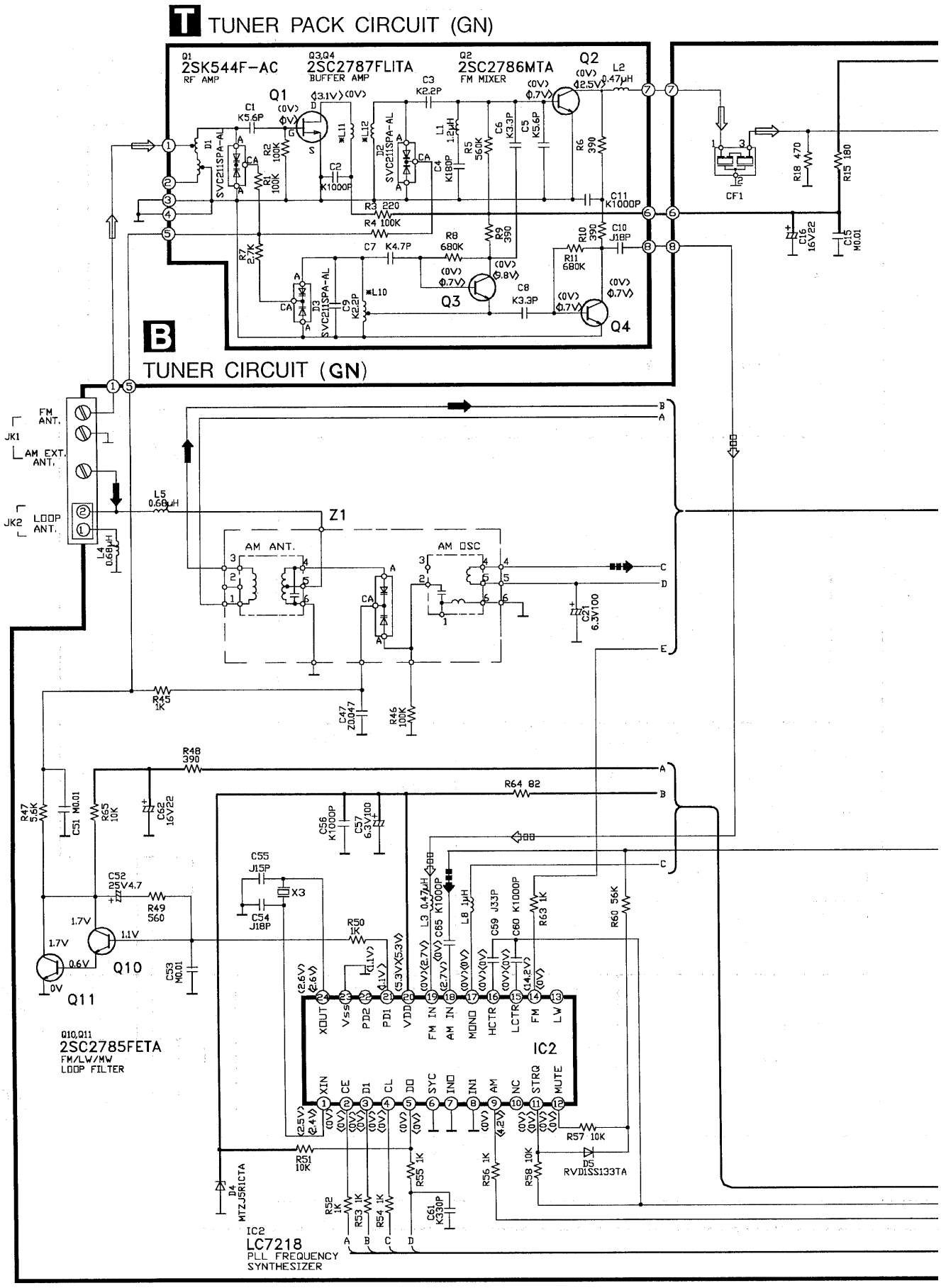

A SERVO CIRCUIT
OPTICAL PICKUP
Q701
2SB709S
LASER POWER DRIVE
IC701
AN8835SBE1
SERVO AMP
IC703
AN8389SE1
FOCUS COIL / TRACKING COIL / TRAVERSE MOTOR / SPINDLE MOTOR DRIVE
CN701
TRACKING COIL
FOCUS COIL
M702 SPINDLE MOTOR
M701 TRAVERSE MOTOR
PLAY 0.4V P-p
PLAY 0.3Vp-p
PLAY 2VP-P
0.5us.0.2V/DIV
2ms.0.2V/DIV
2ms.0.1V/DIV

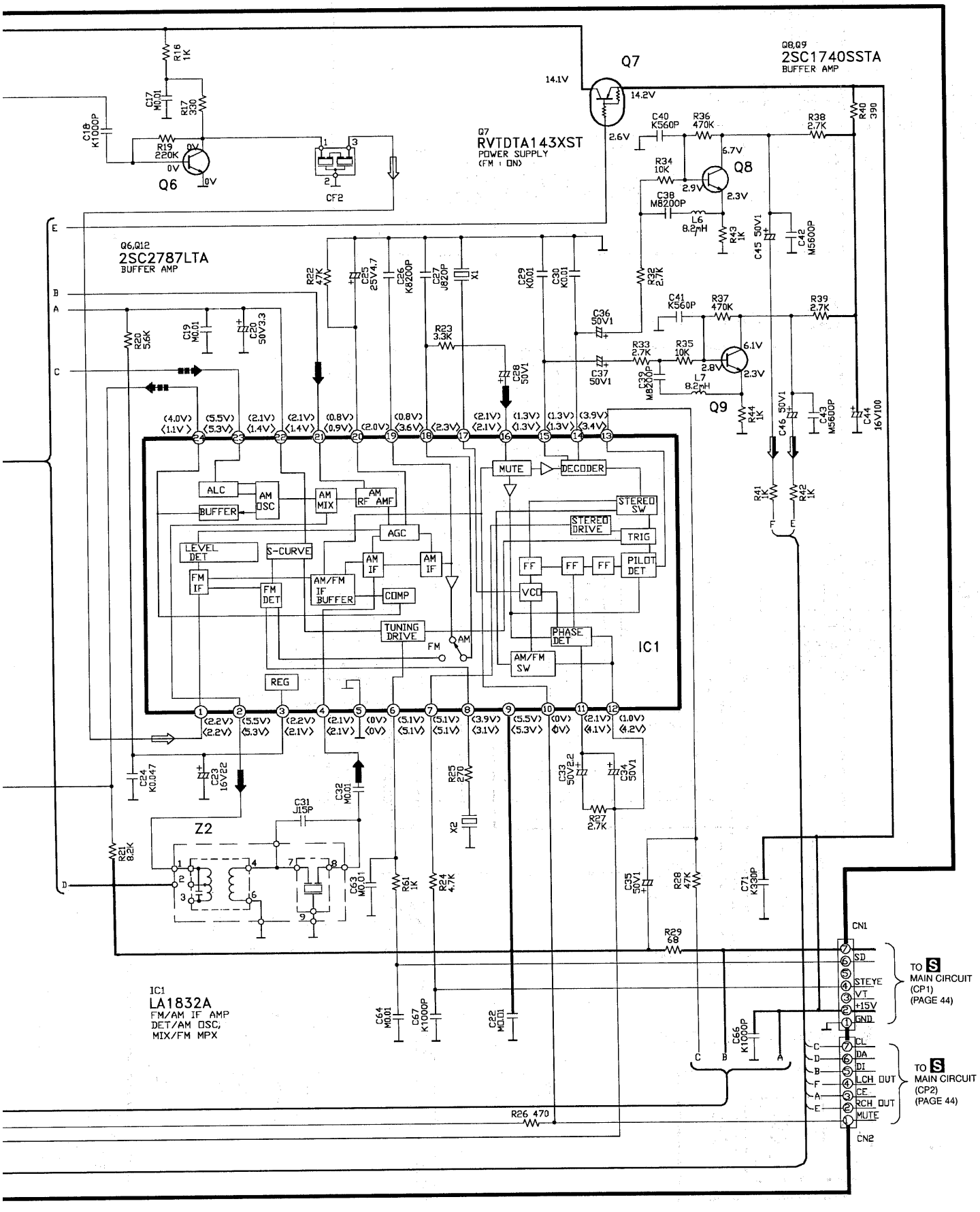

IC702
IC702
MN662741RPA
SERVO PROCESSOR / DIGITAL
SIGNAL PROCESSOR / DIGITAL
FILTER / D/A CONVERTER
X701
F=16.934MHz
4.4Vp-p
3Vp-p
2VP-P
0.5us.0.2V/DIV
2ms.0.2V/DIV
T=13.6mS
F=75Hz
1KHz,0dB
4Vp-p
PLAY
TP1 TP2 TP3 TP4 TP5 TP6 TP7 TP8 TP9 TP10 TP11 TP12 TP13 TP14 TP15 TP17 TP18 TP19 TP20 TP21 TP22 TP23 TP24 TP25 TP26 TP27
S701
(REST)
CN702
REST SW
SMCK
/RST
STAT
DMUTE
SUBQ
SQCK
BLKCK
/TLOCK
/FLOCK
SENSE
MLD
MDATA
MCLK
PGND
+B(1)
TX
LD SW
DGND
+B(2)
RCH OUT
AGND
LCH OUT
TO G MOTOR CIRCUIT
(CN502)
(PAGE 27)

B TUNER CIRCUIT (E,EB,EG)

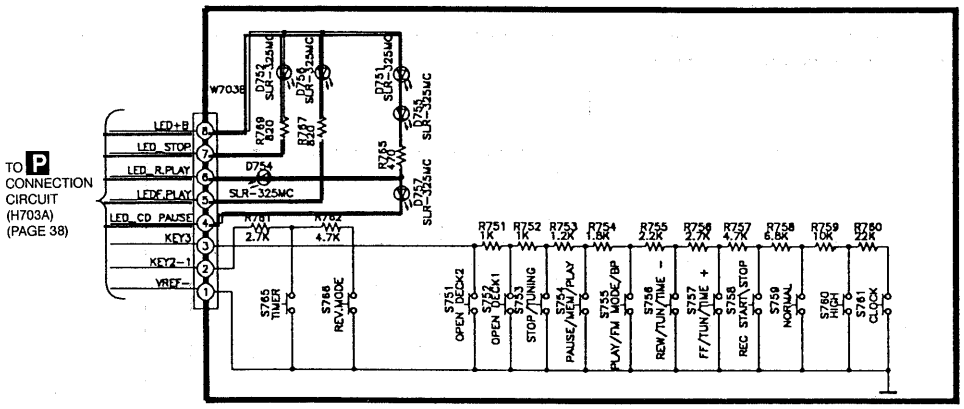



Q7
RVTDTA143XST
POWER SUPPLY
(FM : ON)
Q8,Q9
2SC1740SSTA
BUFFER AMP
Q6,Q12
2SC2787LTA
BUFFER AMP
Q6
Q12
Q8
Q9
IC1
LA1832A
FM/AM IF AMP
DET/AM OSC,
MIX/FM MPX
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
AGC
ALC
BUFFER
AM OSC
AM MIX
AM RF AMP
LEVEL DET
S-CURVE
AM IF
FM IF
FM DET
AM/FM IF BUFFER
COMP
TUNING DRIVE
FM
AM
FF
PILOT DET
VCO
PHASE DET
AM/FM SW
REG
CF2
L9
Z2
X1
X2
CN1
+B(1)
SD
STEYE
VT
+B(2)
GND
CL
DA
DI
LCH OUT
CE
RCH OUT
MUTE
CN2
TO S MAIN CIRCUIT (CP1) (PAGE 44)
TO S MAIN CIRCUIT (CP2) (PAGE 44)

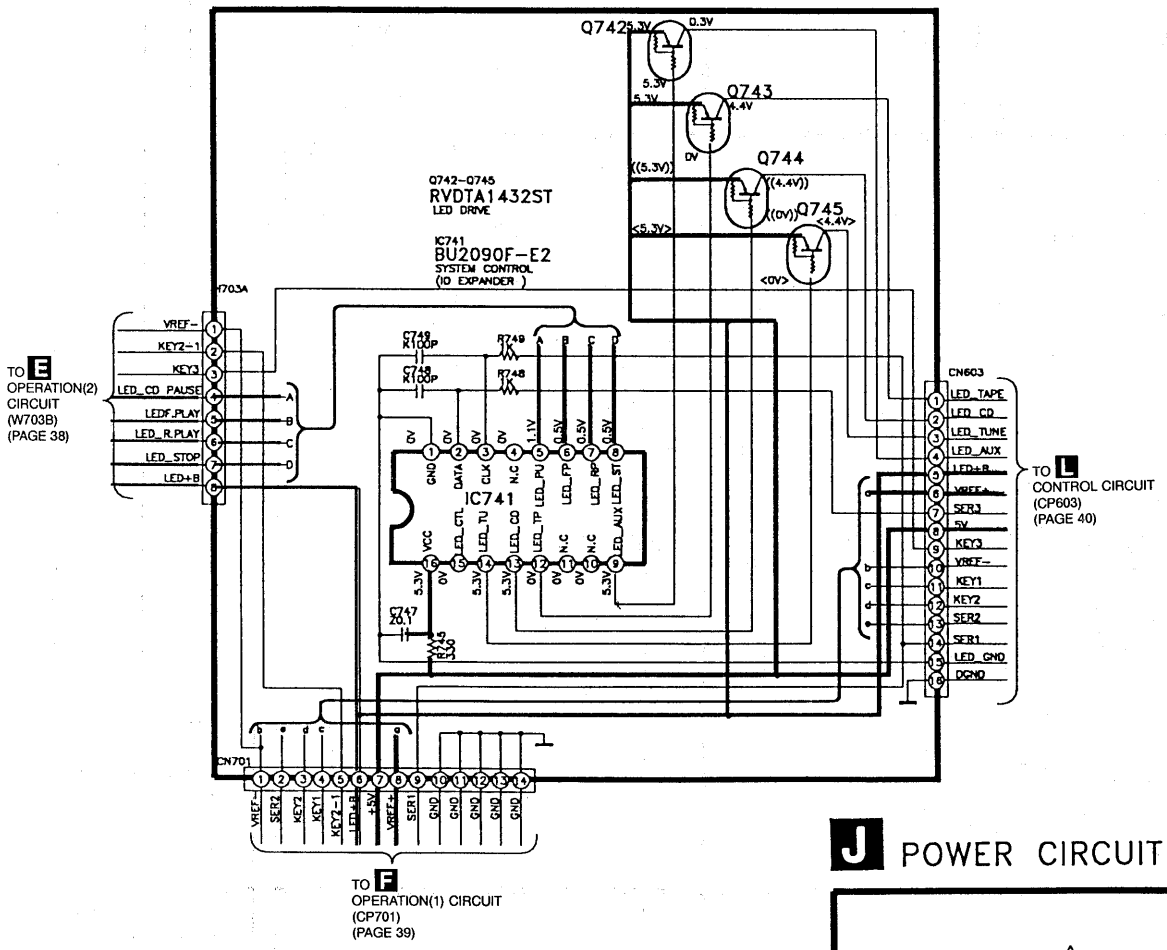

T TUNER PACK CIRCUIT (GN)
Q1
2SK544F-AC
RF AMP
Q3,Q4
2SC2787FLITA
BUFFER AMP
Q2
2SC2786MTA
FM MIXER
Q2
Q1
Q3
Q4
B
TUNER CIRCUIT (GN)
FM ANT.
JK1
AM EXT. ANT.
JK2 LOOP ANT.
Z1
AM ANT.
AM OSC
Q10,Q11
2SC2785FETA
FM/LW/MW
LOOP FILTER
Q10
Q11
IC2
LC7218
PLL FREQUENCY SYNTHESIZER
XOUT
Vss
PD2
PD1
VDD
FM IN
AM IN
MOND
HCTR
LCTR
FM
LW
XIN
CE
DI
CL
DO
SYC
IND
IN1
AM
NC
STRQ
MUTE
CF1
D5
RVD1SS133TA
D4
MTZJ5R1CTA


Q7
RVTDTA143XST
POWER SUPPLY
(FM : ON)
Q8,Q9
2SC1740SSTA
BUFFER AMP
Q6,Q12
2SC2787LTA
BUFFER AMP
Q6
Q8
Q9
CF2
X1
X2
Z2
IC1
LA1832A
FM/AM IF AMP
DET/AM OSC,
MIX/FM MPX
MUTE
DECODER
STEREO SW
STEREO DRIVE
TRIG
PILOT DET
VCO
PHASE DET
AM/FM SW
TUNING DRIVE
AGC
LEVEL DET
S-CURVE
AM IF
FM IF
FM DET
AM/FM IF BUFFER
COMP
ALC
BUFFER
AM OSC
AM MIX
AM RF AMP
REG
CN1
CN2
SD
STEYE
VT
+15V
GND
CL
DA
DI
LCH OUT
CE
RCH OUT
MUTE
TO S MAIN CIRCUIT (CP1) (PAGE 44)
TO S MAIN CIRCUIT (CP2) (PAGE 44)

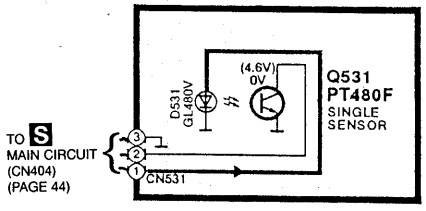
E OPERATION (2) CIRCUIT



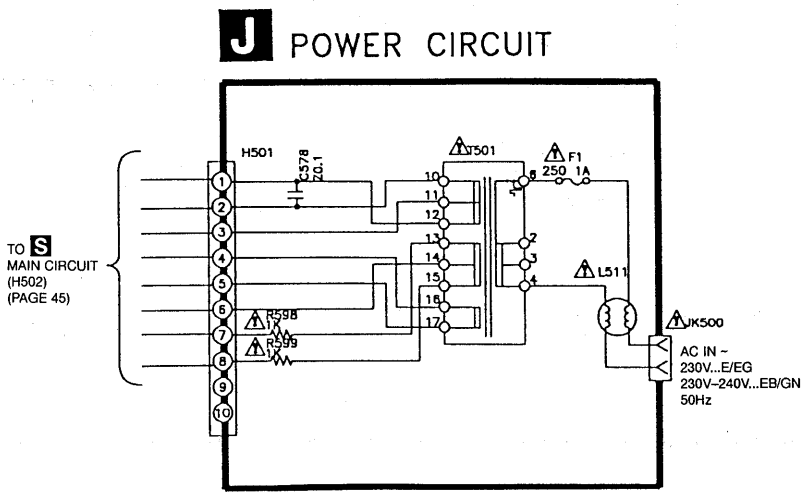
P CONNECTION CIRCUIT



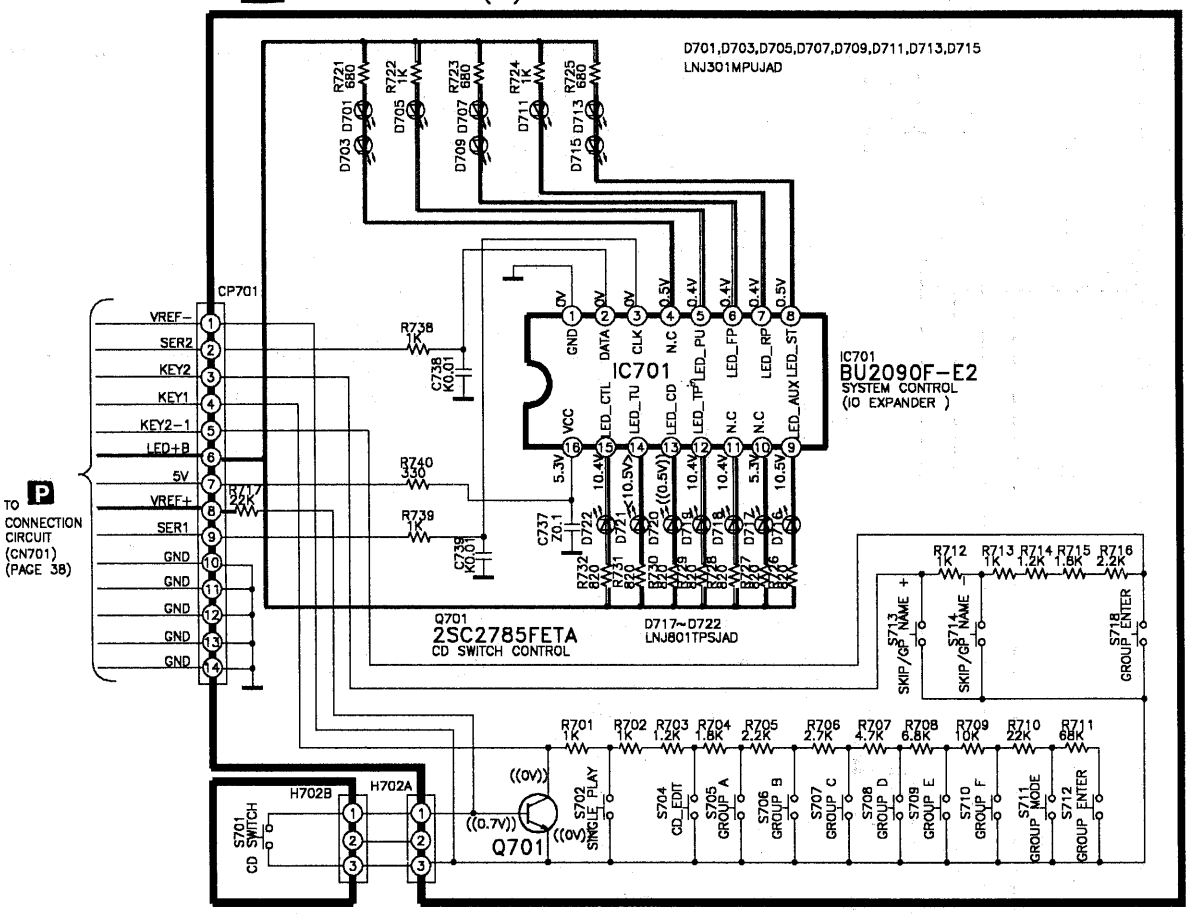
I PHOTO TR.(2) CIRCUIT



J POWER CIRCUIT

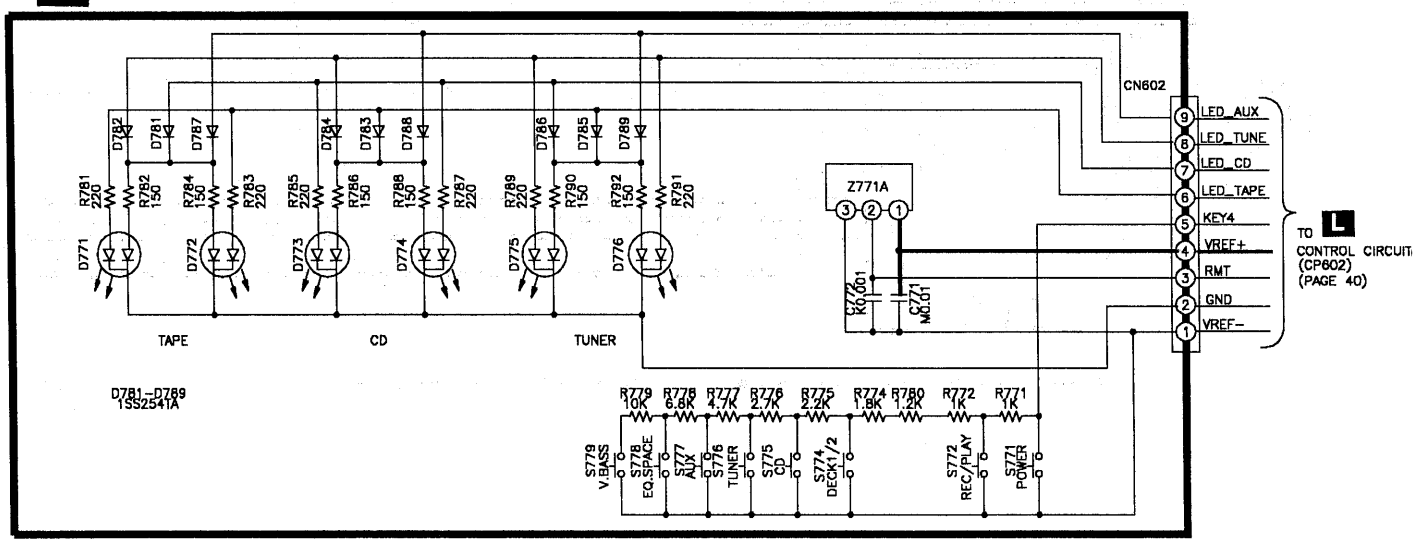


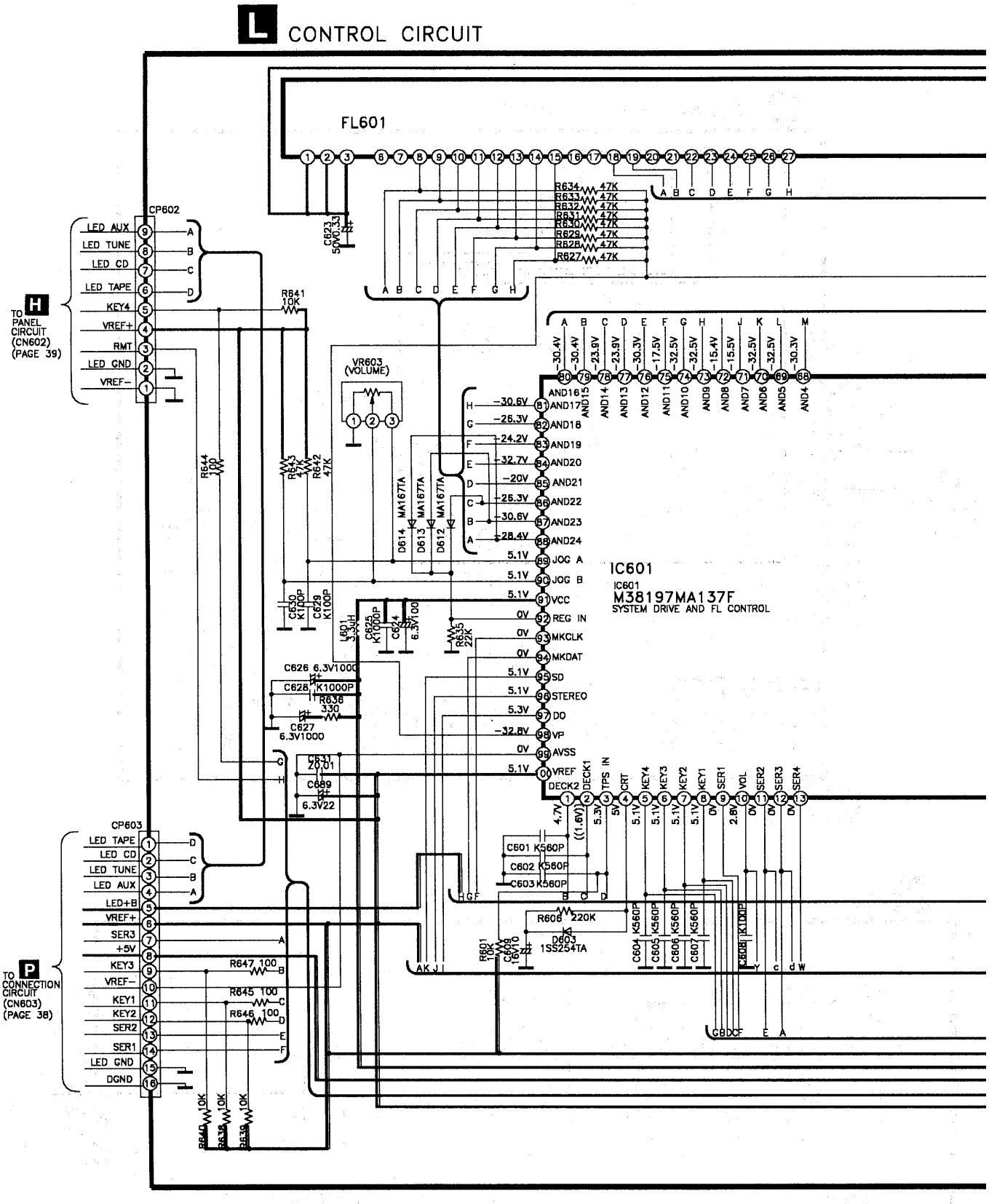
F OPERATION (1) CIRCUIT

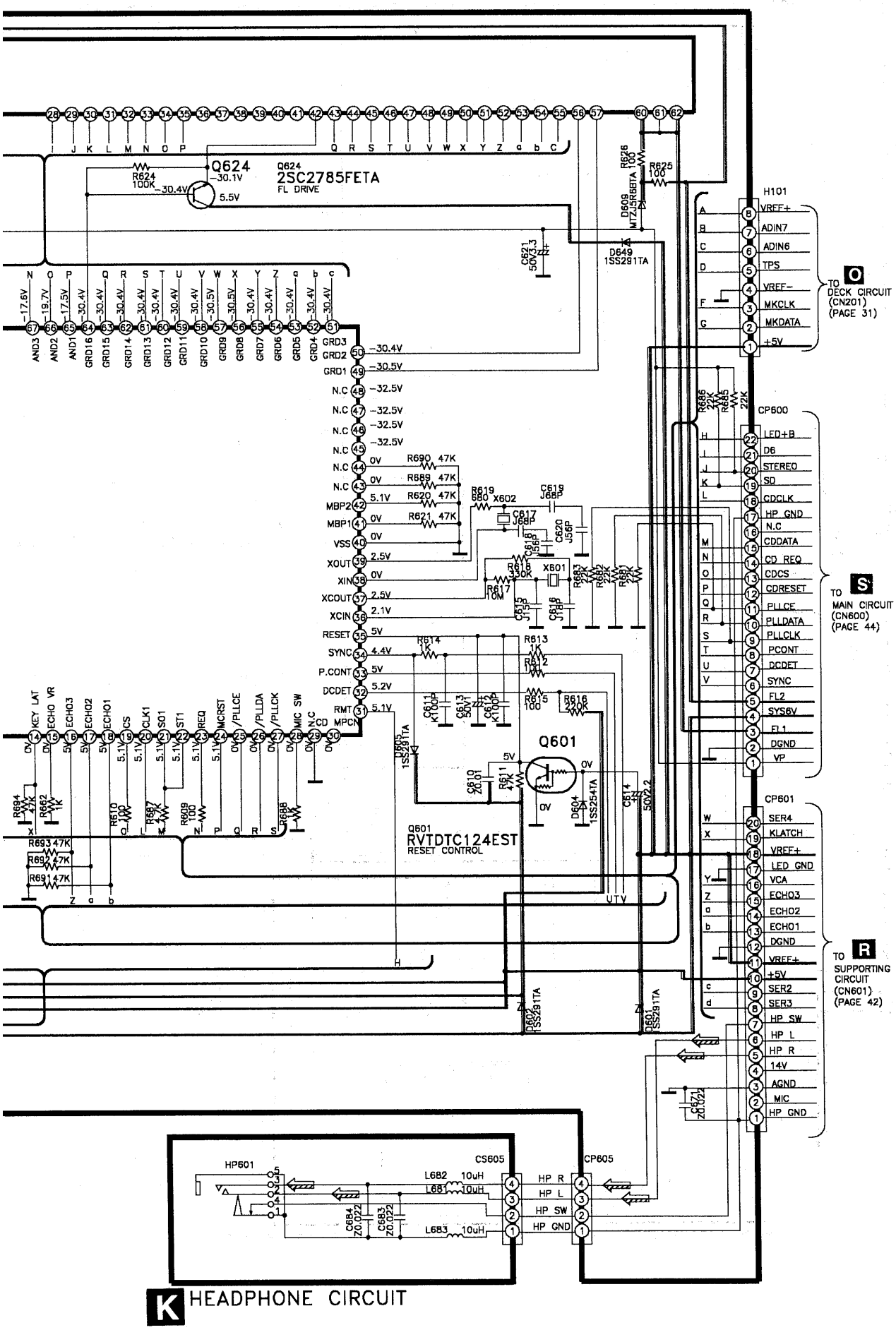


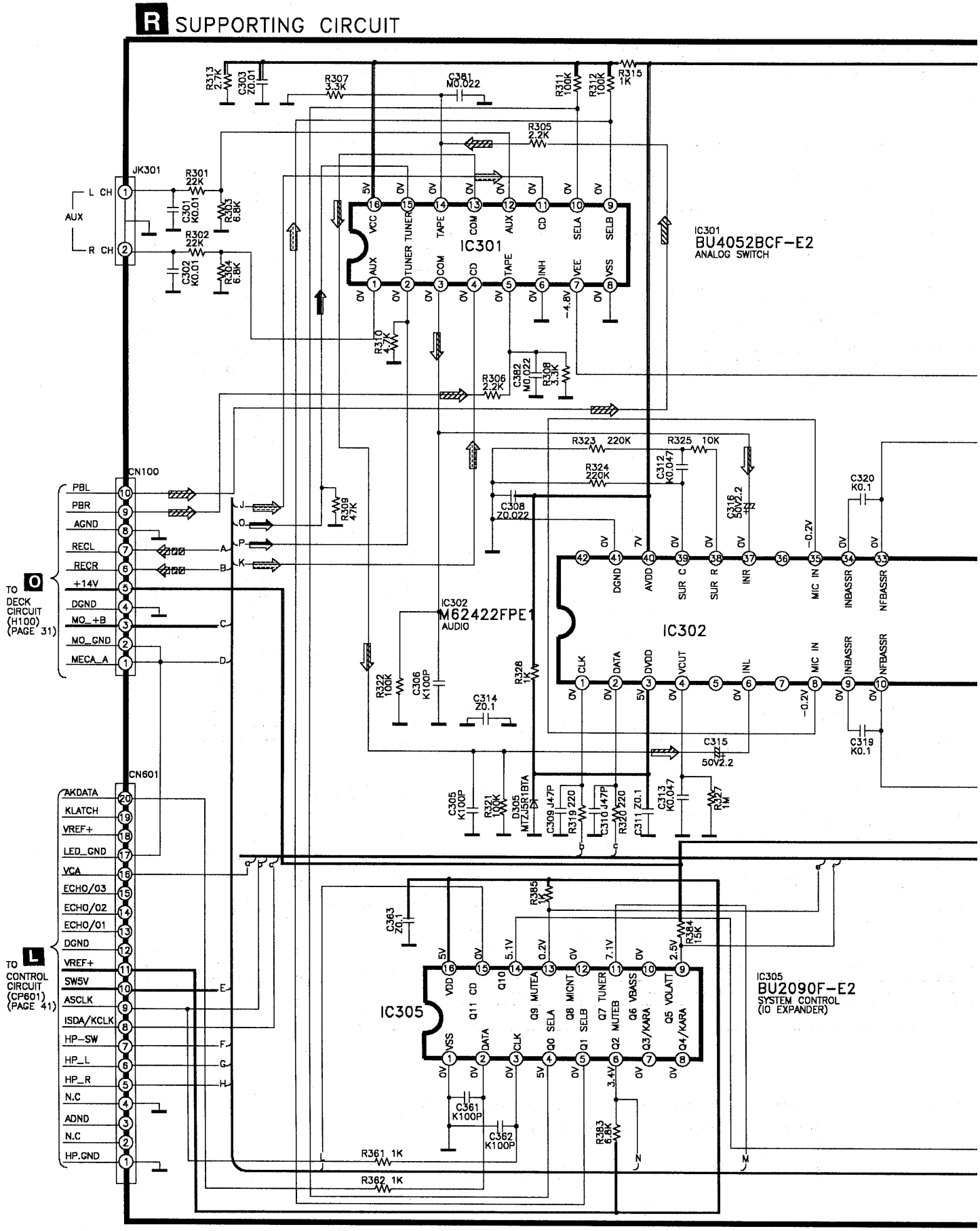
Q CD SWITCH CIRCUIT

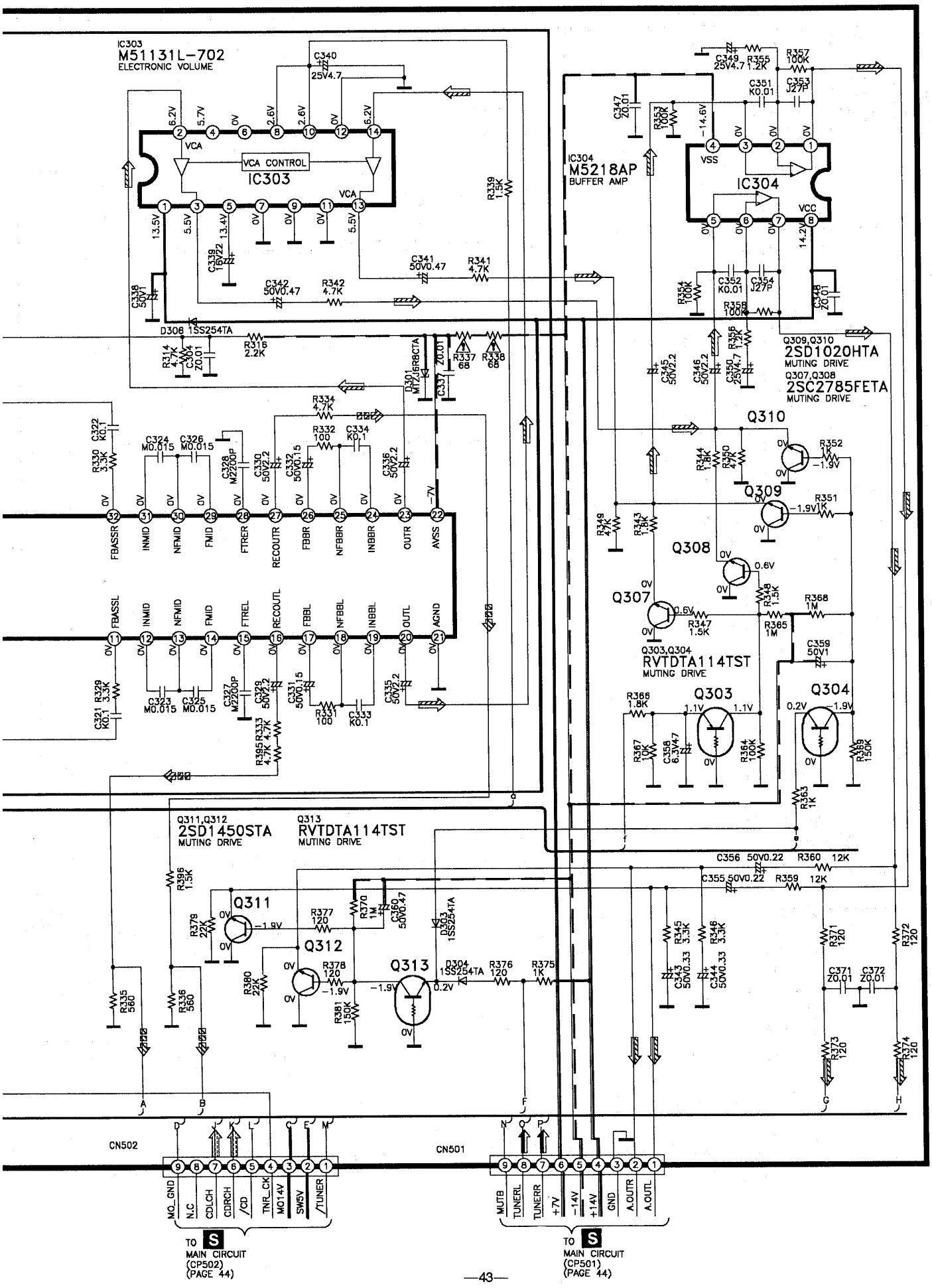
H PANEL CIRCUIT



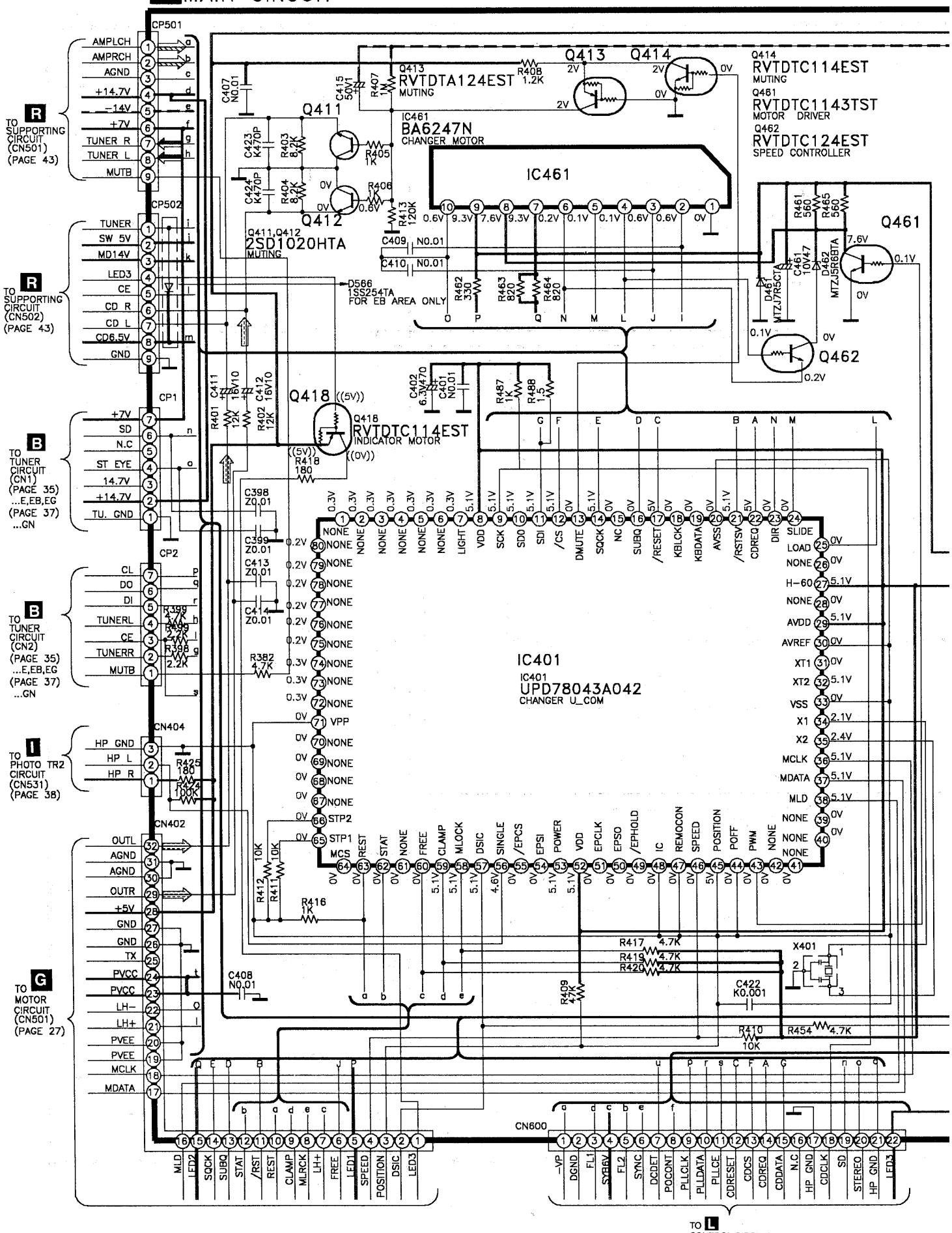

L CONTROL CIRCUIT
FL601
CP602
LED AUX
LED TUNE
LED CD
LED TAPE
KEY4
VREF+
RMT
LED GND
VREF−
TO H PANEL CIRCUIT (CN602) (PAGE 39)
CP603
LED TAPE
LED CD
LED TUNE
LED AUX
LED+B
VREF+
SER3
+5V
KEY3
VREF−
KEY1
KEY2
SER2
SER1
LED GND
DGND
TO P CONNECTION CIRCUIT (CN603) (PAGE 38)
VR603 (VOLUME)
IC601
IC601
M38197MA137F
SYSTEM DRIVE AND FL CONTROL
AND16
AND17
AND18
AND19
AND20
AND21
AND22
AND23
AND24
JOG A
JOG B
VCC
REG IN
MKCLK
MKDAT
SD
STEREO
DO
VP
AVSS
VREF
DECK1
DECK2
TPS IN
CRT
KEY4
KEY3
KEY2
KEY1
SER1
VOL
SER2
SER3
SER4
MA1677A
D601 1SS254TA
R606 220K
C601 K560P
C602 K560P
C603 K560P
C626 6.3V1000
C627 6.3V1000
C628 K1000P
C629 K100P
C630 K100P
C631 Z0.01
C689 6.3V22
R636 330
R637 22K
R638 22K
R639 10K
R640 10K
R641 10K
R642 47K
R643 47K
R644 100
R645 100
R646 100
R647 100
L601 3.3uH

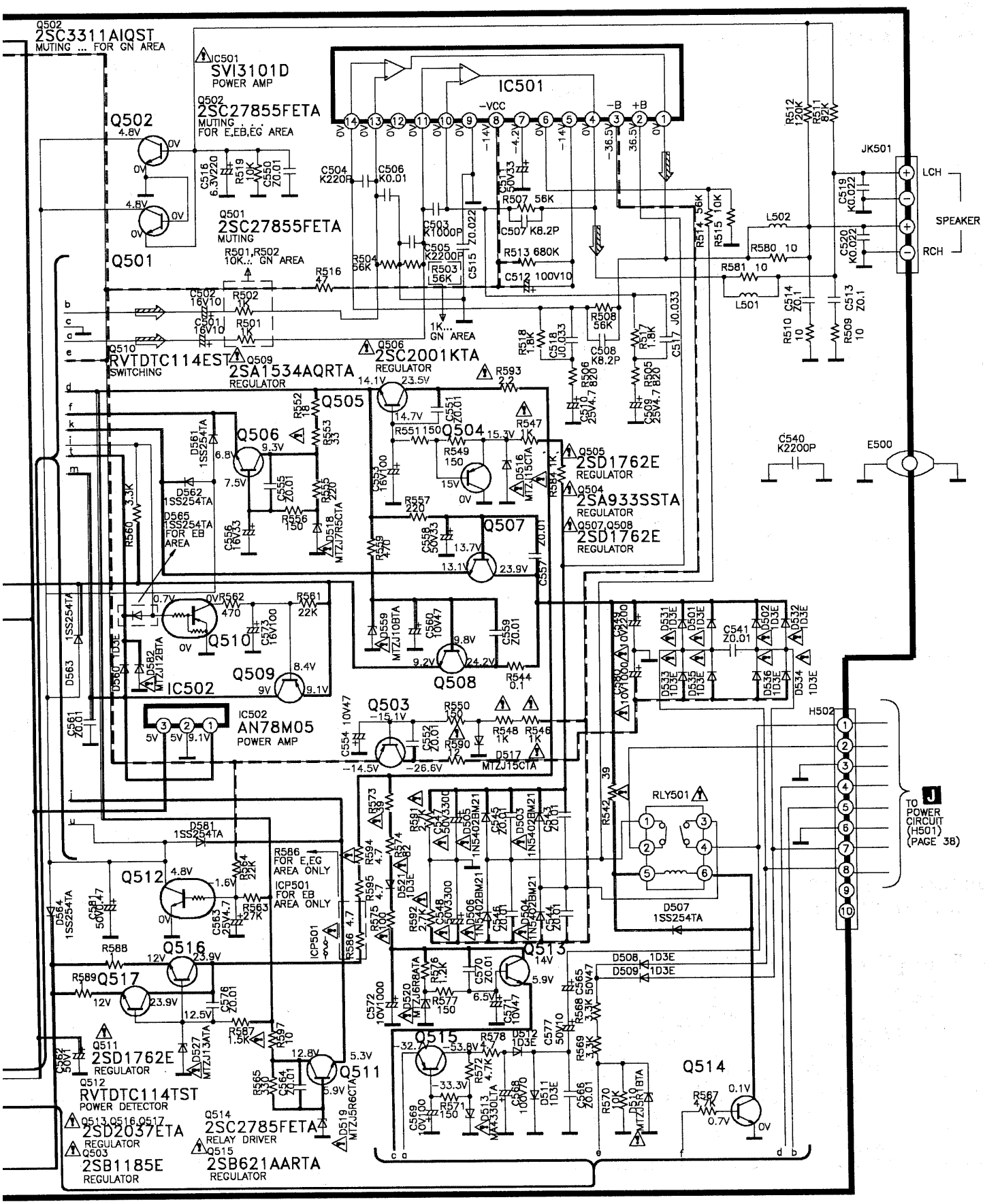

Q624
2SC2785FETA
FL DRIVE
H101
VREF+
ADIN7
ADIN6
TPS
VREF-
MKCLK
MKDATA
+5V
TO DECK CIRCUIT (CN201) (PAGE 31)
CP600
LED+B
D6
STEREO
SD
CDCLK
HP GND
N.C
CDDATA
CD REQ
CDCS
CDRESET
PLLCE
PLLDATA
PLLCLK
PCONT
DCDET
SYNC
FL2
SYS6V
FL1
DGND
VP
TO MAIN CIRCUIT (CN600) (PAGE 44)
CP601
SER4
KLATCH
VREF+
LED GND
VCA
ECHO3
ECHO2
ECHO1
DGND
VREF+
+5V
SER2
SER3
HP SW
HP L
HP R
14V
AGND
MIC
HP GND
TO SUPPORTING CIRCUIT (CN601) (PAGE 42)
Q601
RVTDTC124EST
RESET CONTROL
HP601
CS605
CP605
L682 10uH
L681 10uH
L683 10uH
HP R
HP L
HP SW
HP GND
K HEADPHONE CIRCUIT


R SUPPORTING CIRCUIT
IC301
BU4052BCF-E2
ANALOG SWITCH
IC302
M62422FPE1
AUDIO
IC305
BU2090F-E2
SYSTEM CONTROL
(IO EXPANDER)
JK301
AUX
L CH
R CH
CN100
CN601
TO DECK CIRCUIT (H100) (PAGE 31)
TO CONTROL CIRCUIT (CP601) (PAGE 41)
PBL
PBR
AGND
RECL
RECR
+14V
DGND
MO_+B
MO_GND
MECA_A
AKDATA
KLATCH
VREF+
LED_GND
VCA
ECHO/03
ECHO/02
ECHO/01
DGND
VREF+
SW5V
ASCLK
ISDA/KCLK
HP-SW
HP_L
HP_R
N.C
ADND
N.C
HP.GND


IC303
M51131L-702
ELECTRONIC VOLUME
VCA CONTROL
IC303
IC304
M5218AP
BUFFER AMP
VSS
VCC
D306 1SS254TA
Q309,Q310
2SD1020HTA
MUTING DRIVE
Q307,Q308
2SC2785FETA
MUTING DRIVE
Q310
Q309
Q308
Q307
Q303,Q304
RVTDTA114TST
MUTING DRIVE
Q303
Q304
Q311,Q312
2SD1450STA
MUTING DRIVE
Q313
RVTDTA114TST
MUTING DRIVE
Q311
Q312
Q313
D303 1SS254TA
D304 1SS254TA
FBASSR
INMID
NFMID
FMID
FTRER
RECOUTR
FBBR
NFBBR
INBBR
OUTR
AVSS
FBASSL
INMID
NFMID
FMID
FTREL
RECOUTL
FBBL
NFBBL
INBBL
OUTL
AGND
CN502
CN501
MO_GND
N.C
CDLCH
CDRCH
/CD
TNR_CK
MO14V
SW5V
/TUNER
MUTB
TUNERL
TUNERR
+7V
-14V
+14V
GND
A.OUTR
A.OUTL
TO S MAIN CIRCUIT (CP502) (PAGE 44)
TO S MAIN CIRCUIT (CP501) (PAGE 44)

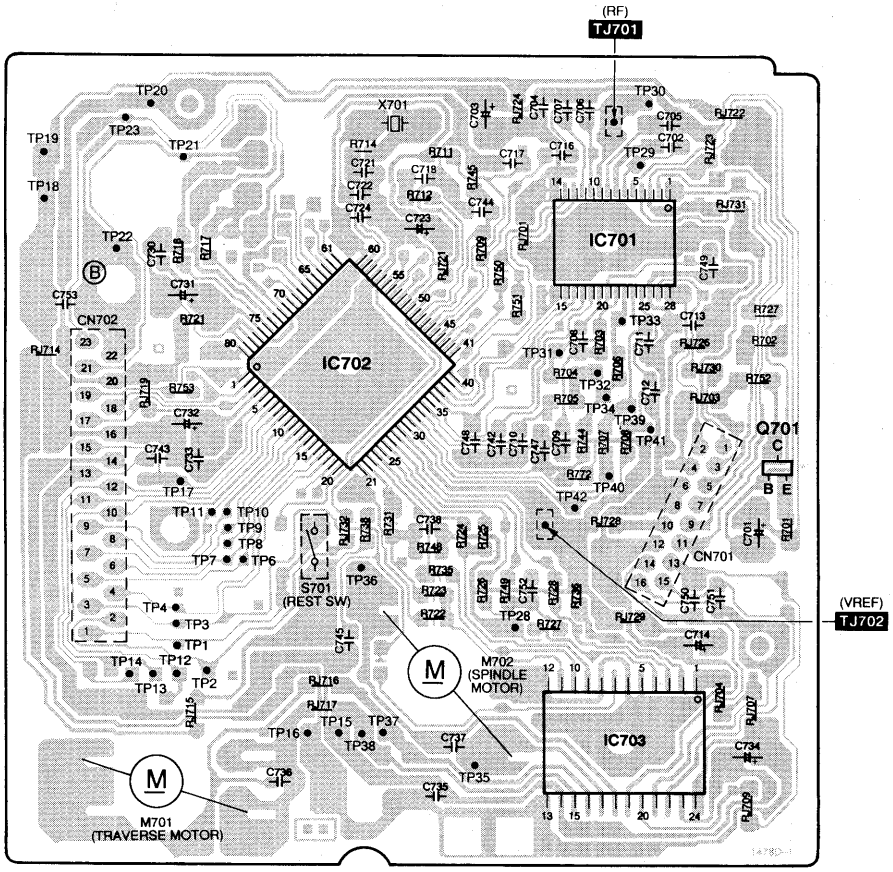
S MAIN CIRCUIT



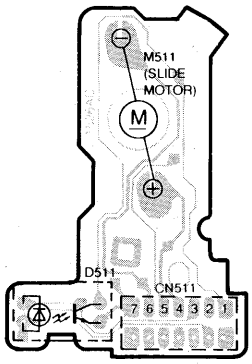

Q502
2SC3311AIQST
MUTING ... FOR GN AREA
IC501
SVI3101D
POWER AMP
IC501
Q502
2SC27855FETA
MUTING
FOR E,EB,EG AREA
Q502
4.8V
Q501
2SC27855FETA
MUTING
Q501
R501,R502
10K... GN AREA
Q510
RVTDTC114EST
SWITCHING
Q509
2SA1534AQRTA
REGULATOR
Q506
2SC2001KTA
REGULATOR
Q505
2SD1762E
REGULATOR
Q504
2SA933SSTA
REGULATOR
Q507,Q508
2SD1762E
REGULATOR
Q506
Q505
Q504
Q507
Q508
Q510
Q509
IC502
IC502
AN78M05
POWER AMP
Q503
Q512
RVTDTC114TST
POWER DETECTOR
Q513,Q516,Q517
2SD2037ETA
REGULATOR
Q503
2SB1185E
REGULATOR
Q514
2SC2785FETA
RELAY DRIVER
Q515
2SB621AARTA
REGULATOR
Q511
2SD1762E
REGULATOR
Q516
Q517
Q513
Q515
Q514
JK501
LCH
RCH
SPEAKER
L502
L501
E500
RLY501
H502
TO J POWER CIRCUIT (H501) (PAGE 38)
D507
1SS254TA
ICP501
FOR EB AREA ONLY
R586
FOR E,EG AREA ONLY
-VCC
-B
+B

■ Printed Circuit Boards

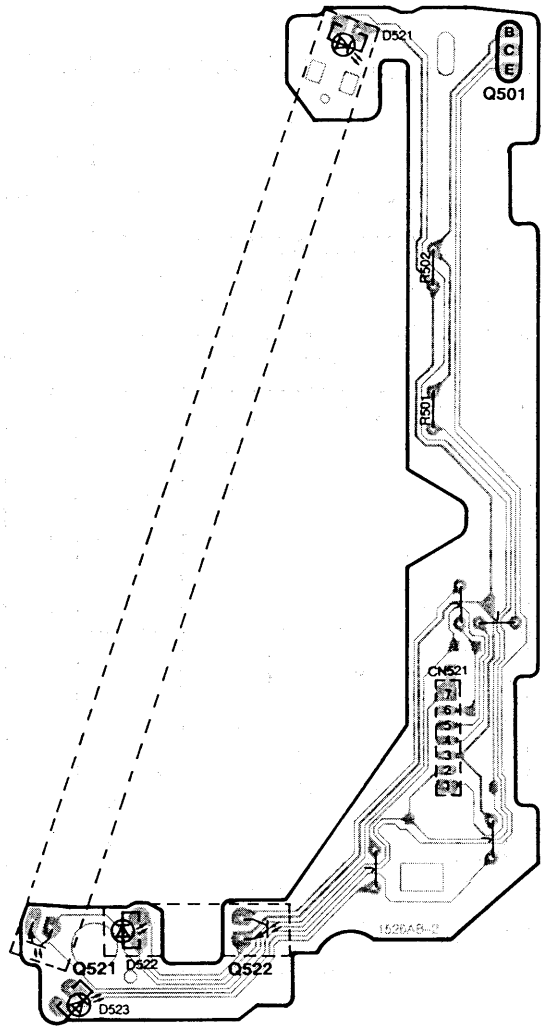
A Servo P.C.B. (REP2144D-N)



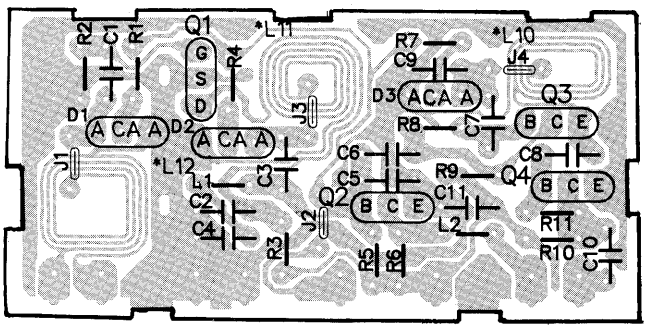
C Slide Motor P.C.B. (REP2219A-3N)



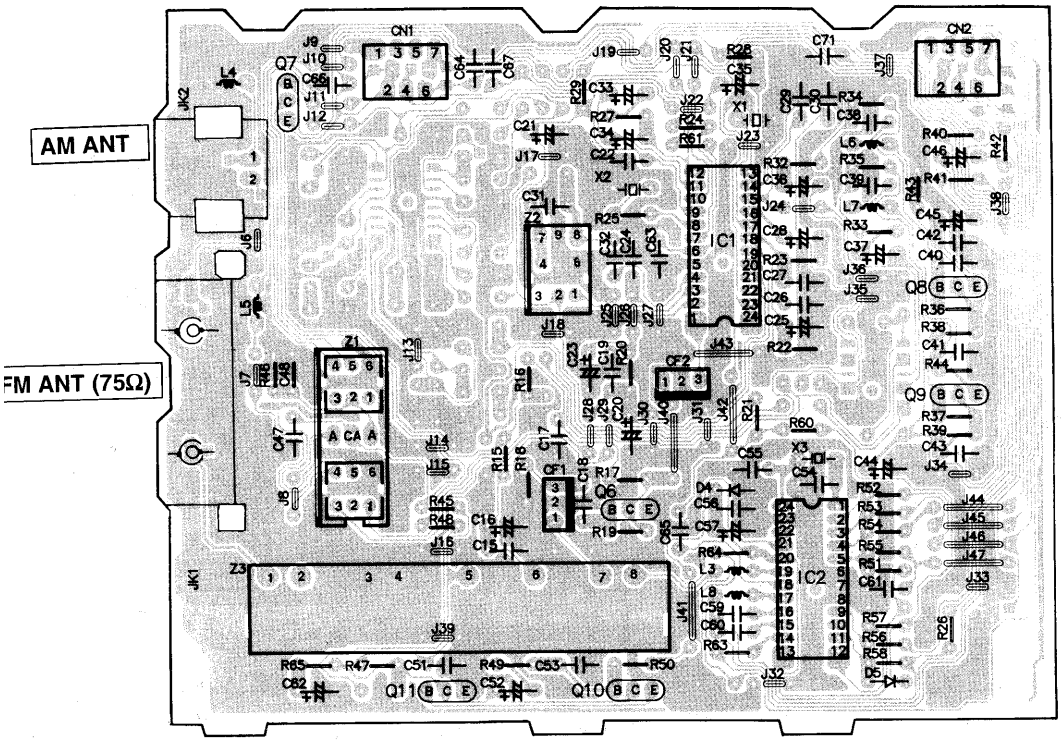
D Photo TR (1) P.C.B. (REP2348A-N)



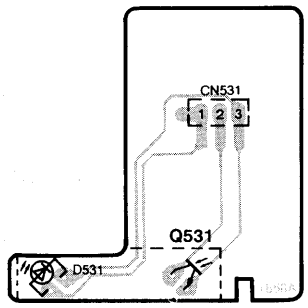
T Tuner Pack P.C.B. (REP1999B) ... for GN only

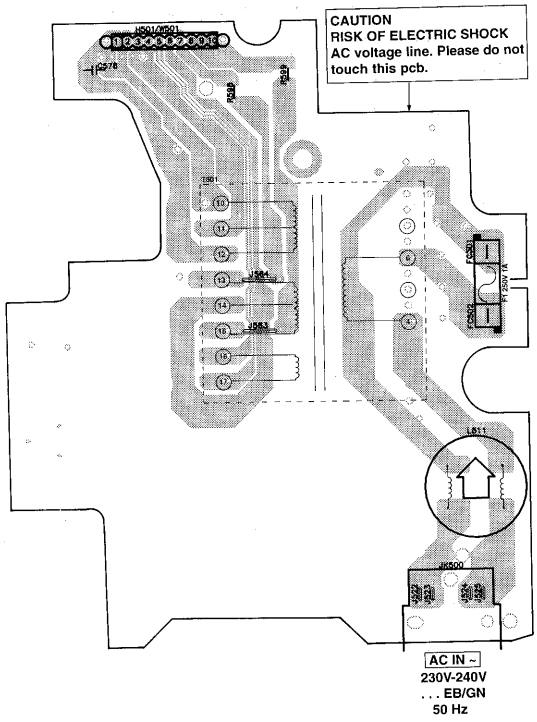


B Tuner P.C.B. (REP2000J) ... for GN only



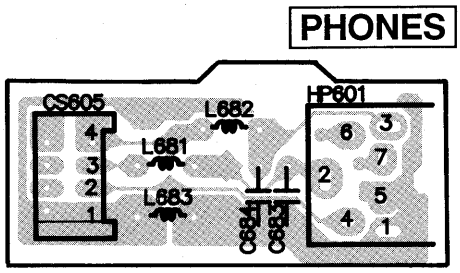
T Photo TR (2) P.C.B. (REP2348A-N)

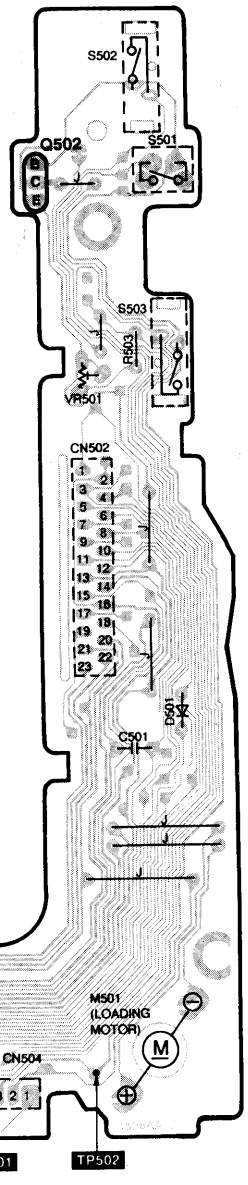




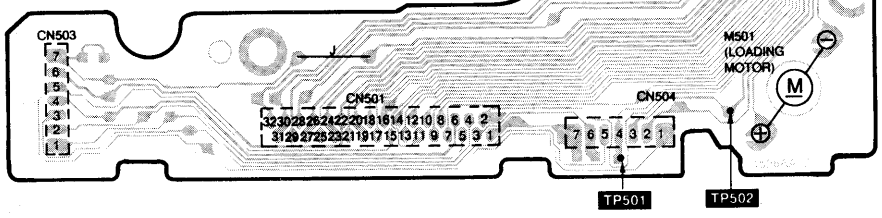
J Power P.C.B.
(REP2225F ... for GN only)
(REP2225E ... for EB only)

K Headphone P.C.B. GN)
(REP2227E ... GN)
(REP2227D ... E,EB & EG)

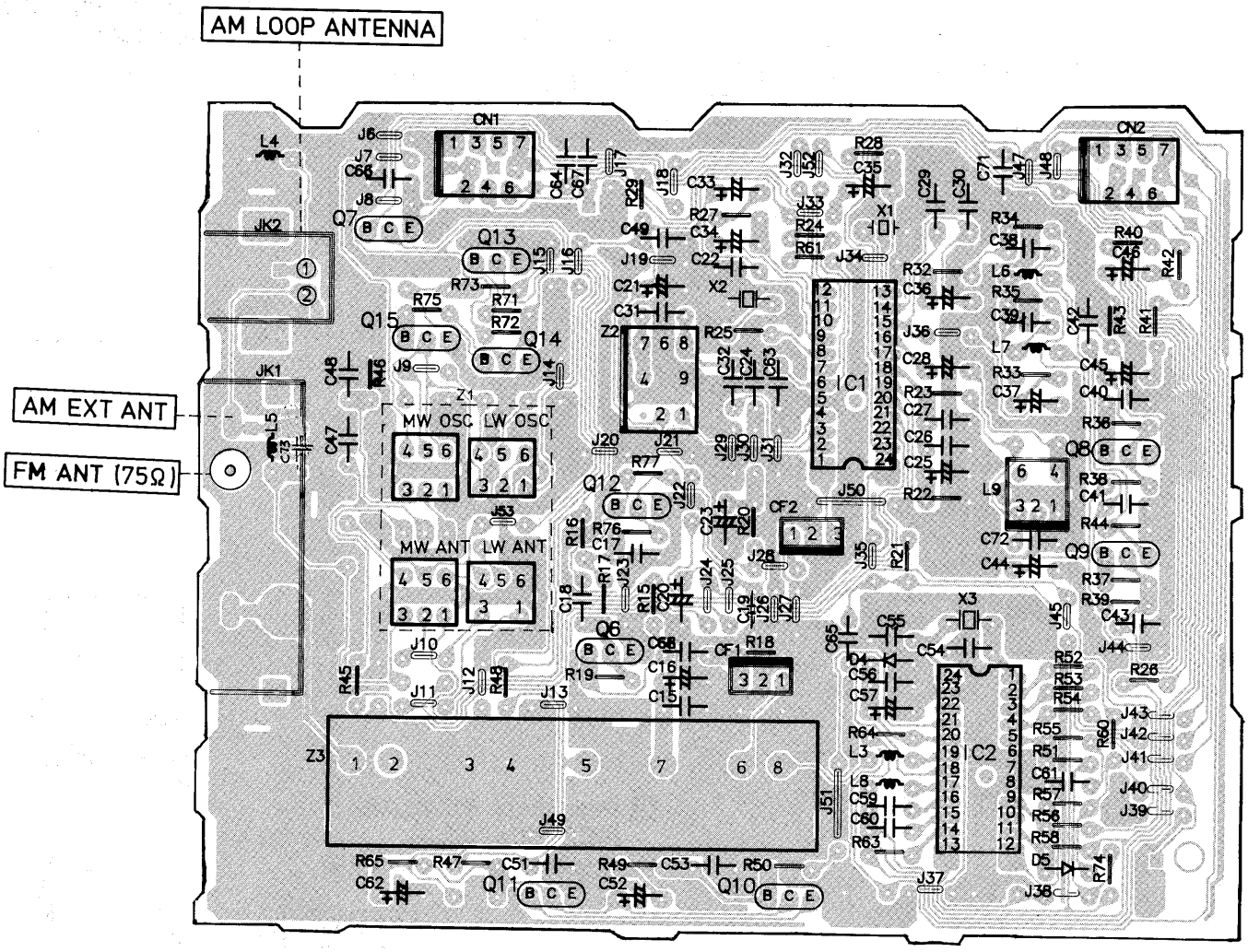




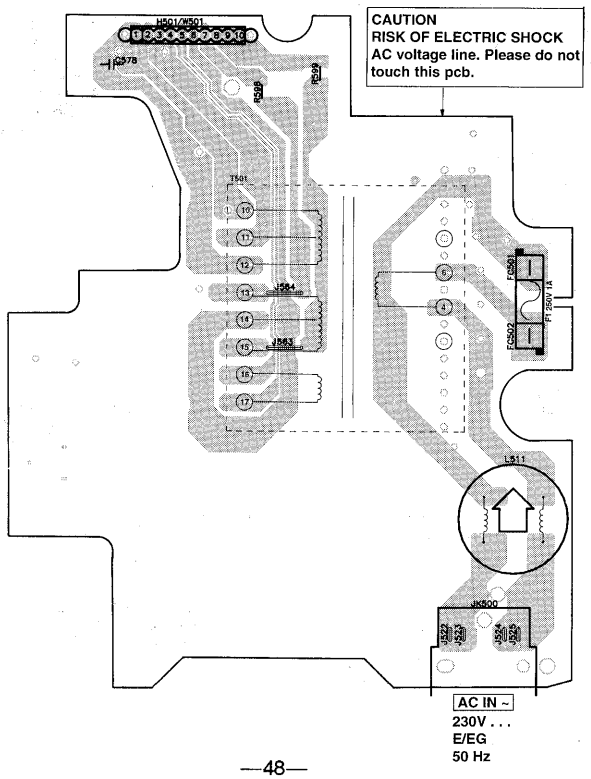
G Motor P.C.B.
(REP2219A-1N)



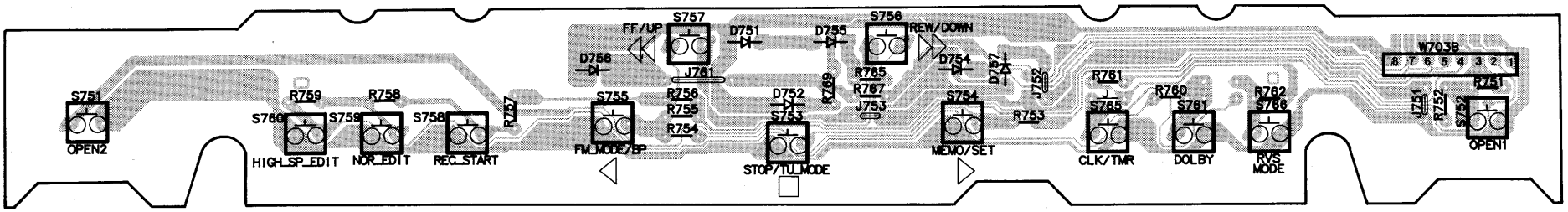
B Tuner P.C.B. (REP2000G) ... for E,EB and EG only



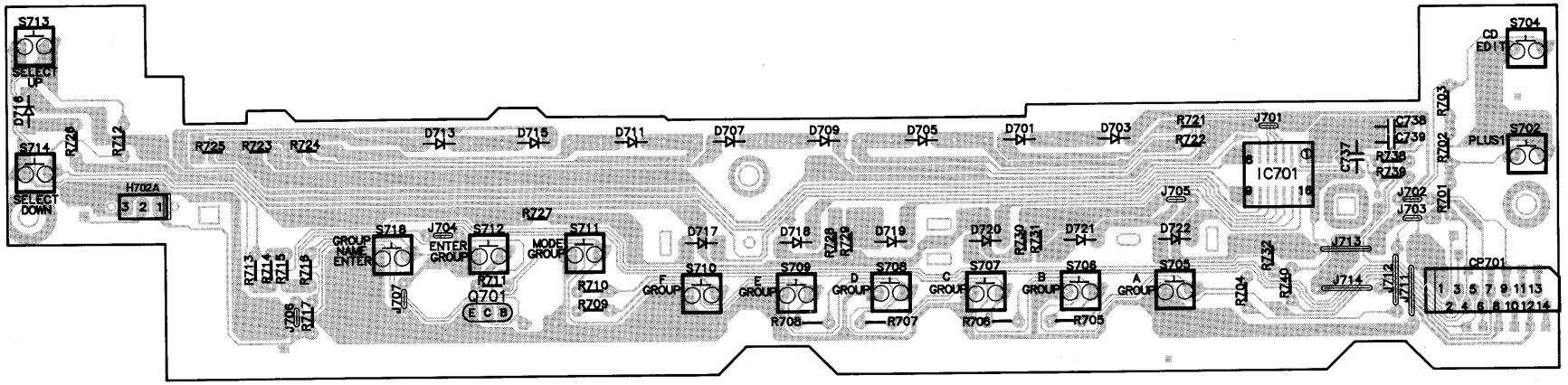
J Power P.C.B. (REP2225D) ... for E and EG only



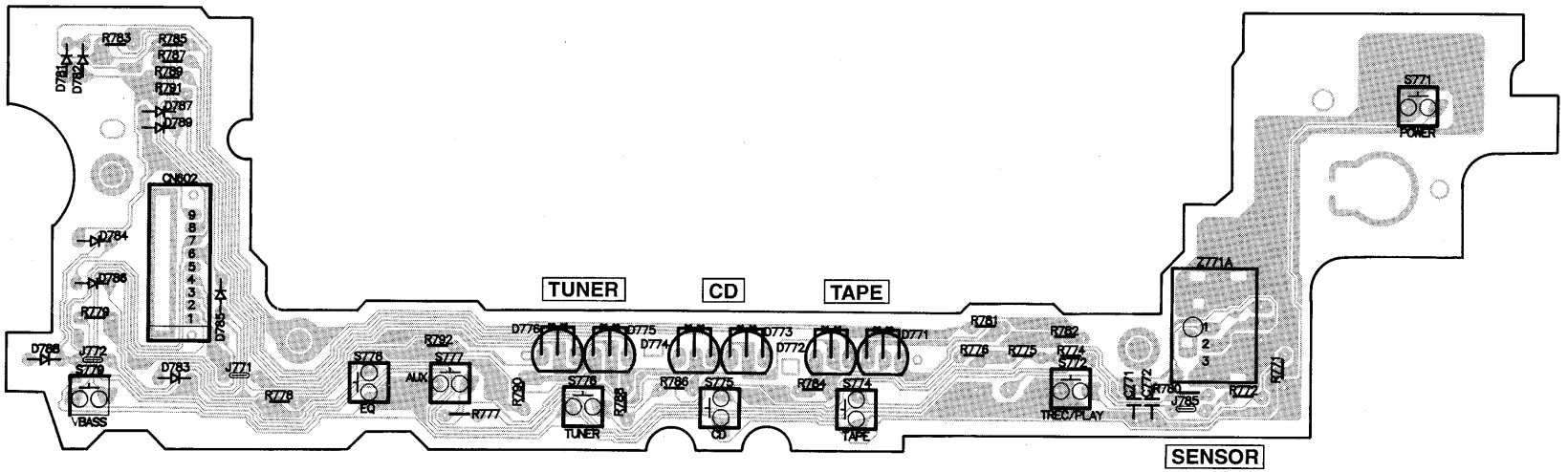
E Operation (2) P.C.B. (REP2227E ... for GN only) (REP2227D ... for E,EB and EG only)



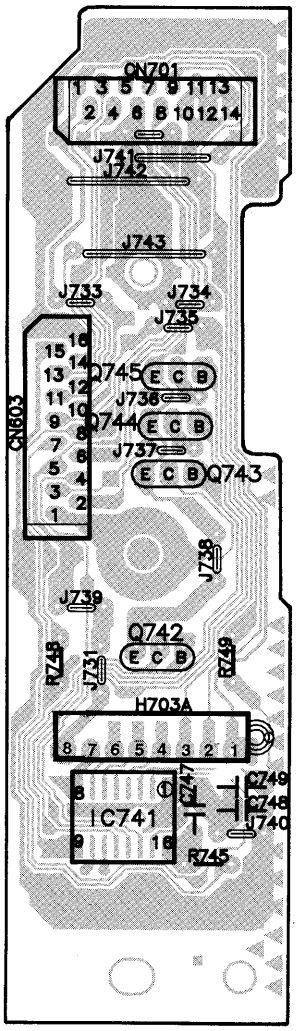
F Operation (1) P.C.B. (REP2227E ... for GN only) (REP2227D ... for E,EB and EG only)



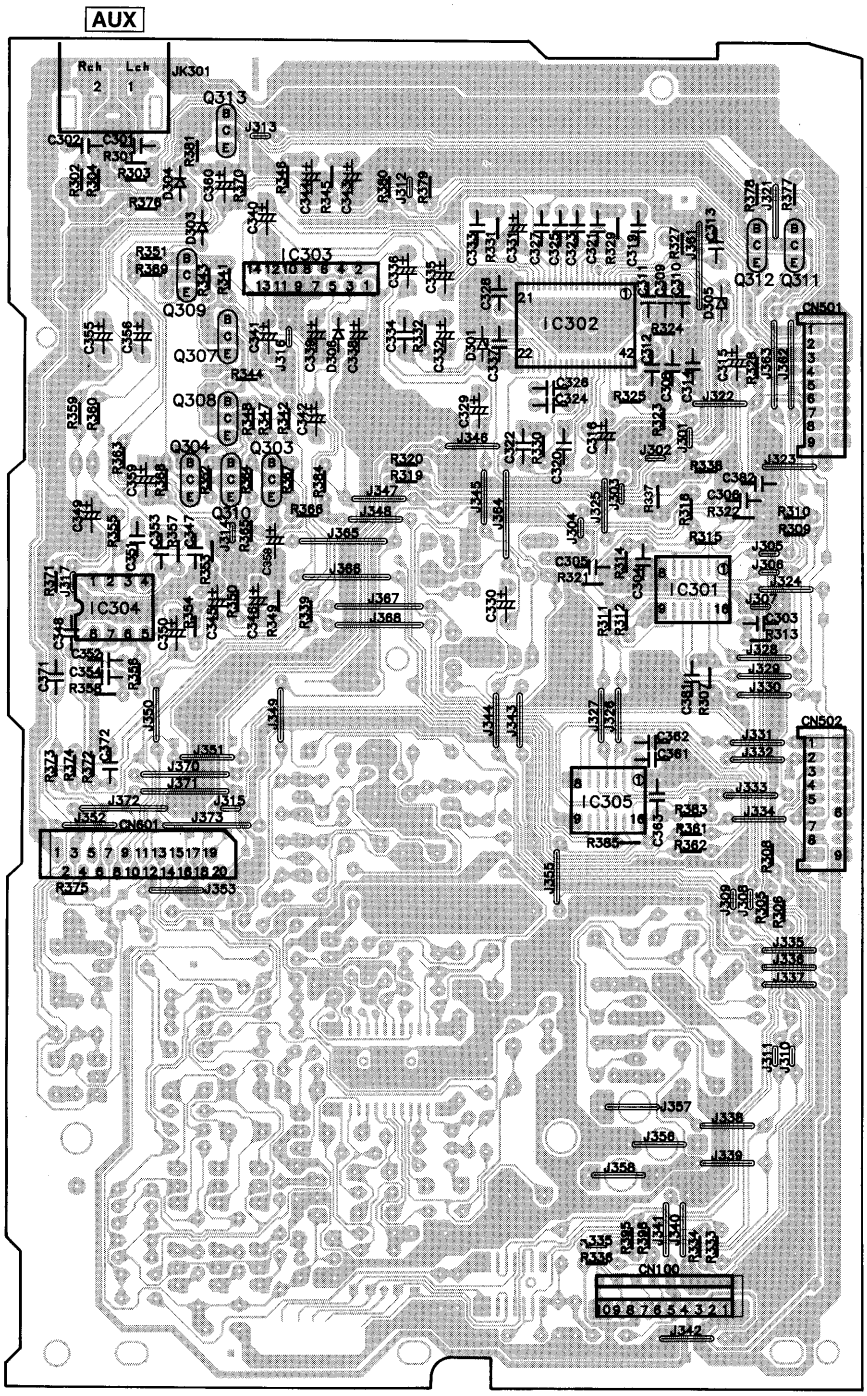
H Panel P.C.B. (REP2227E ... for GN only) (REP2227D ... for E,EB and EG only)



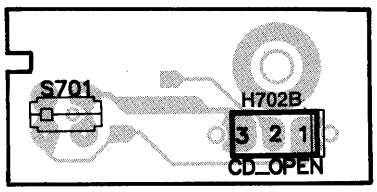
P Connection P.C.B.
(REP2227E ... for GN only)
(REP2227D ... for E,EB and EG only)



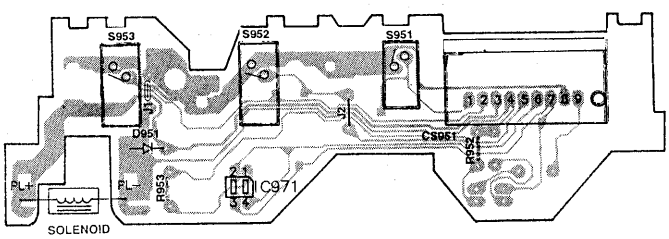
R Supporting P.C.B. (REP2226D)



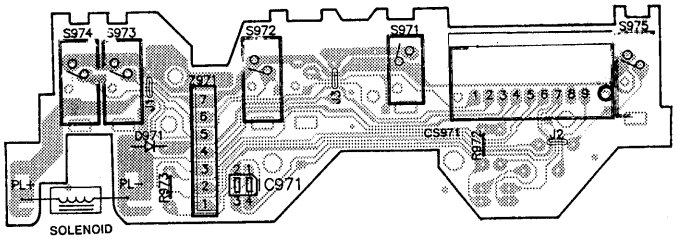
Q CD Switch P.C.B.
(REP2227E ... for GN only)
(REP2227D ... for E,EB and EG only)



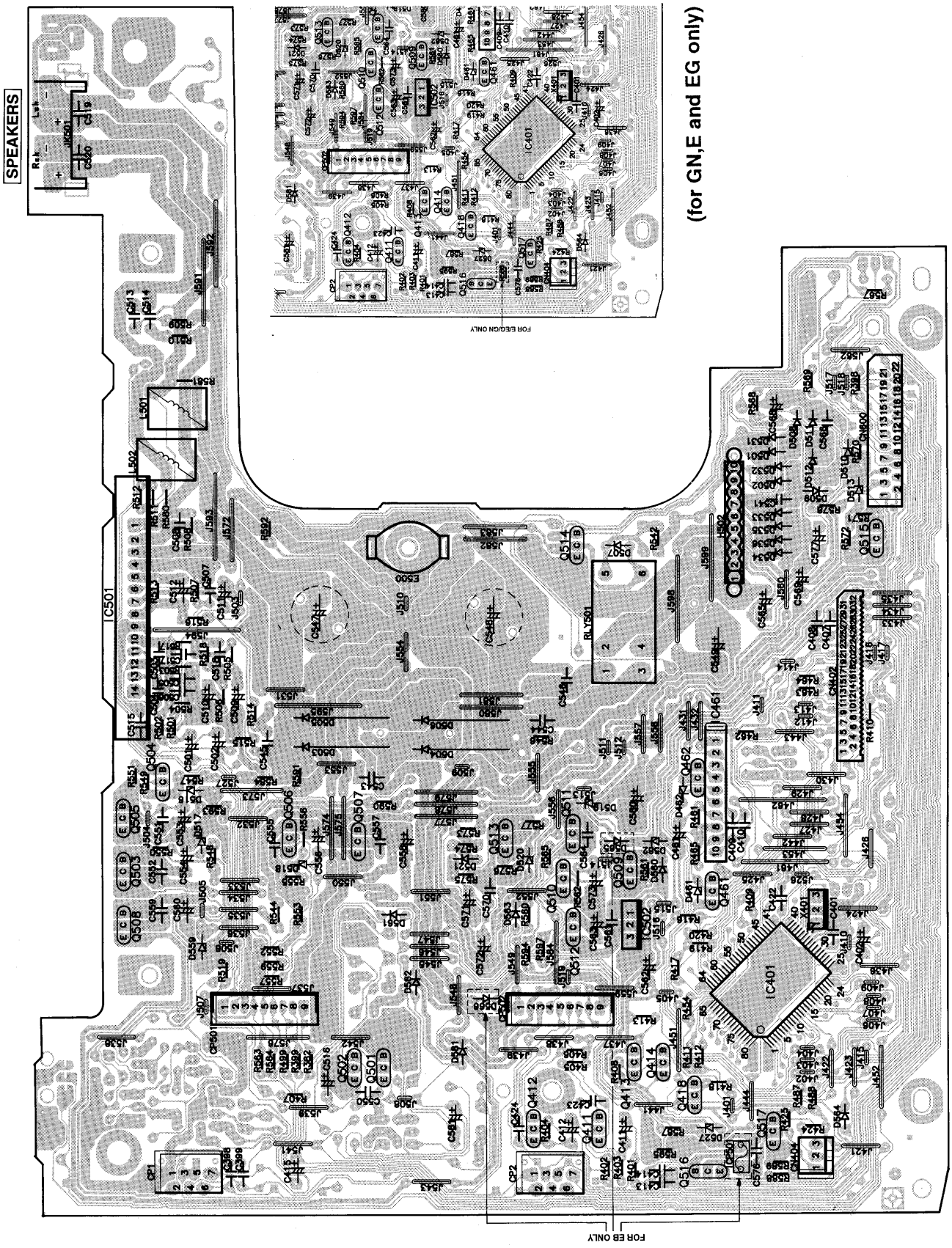
M Mechanism Deck (1) P.C.B.
(REPX0108A)



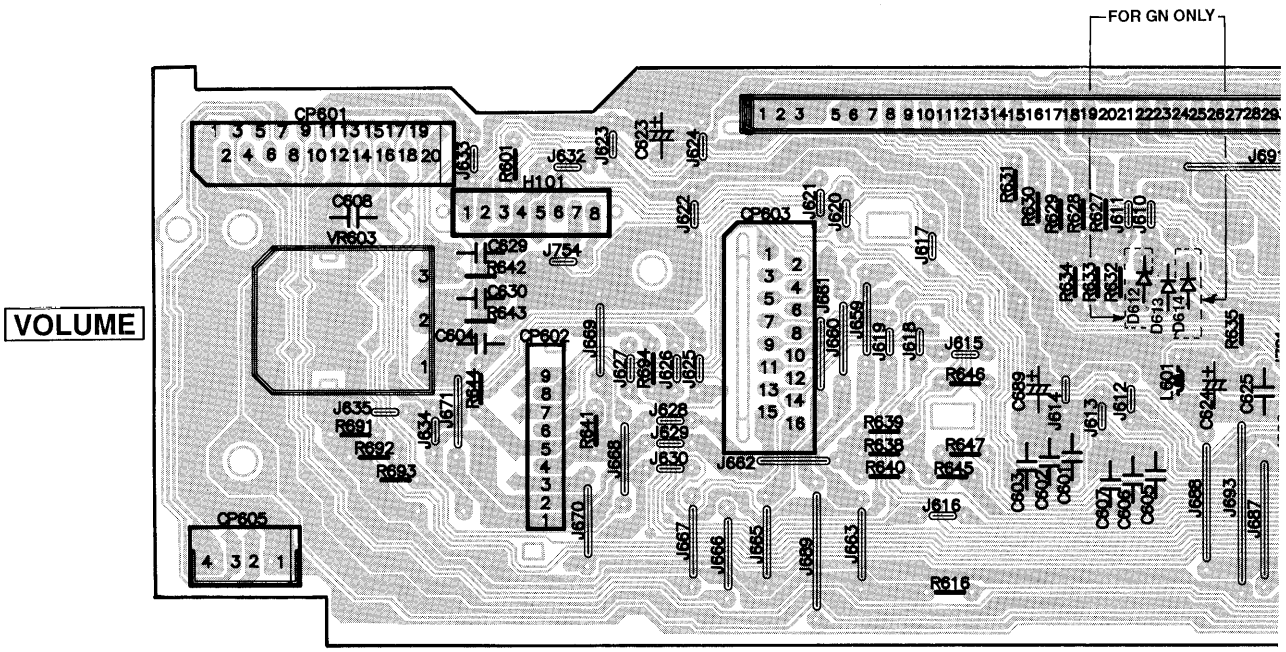
N Mechanism Deck (2) P.C.B.
(REPX0108)



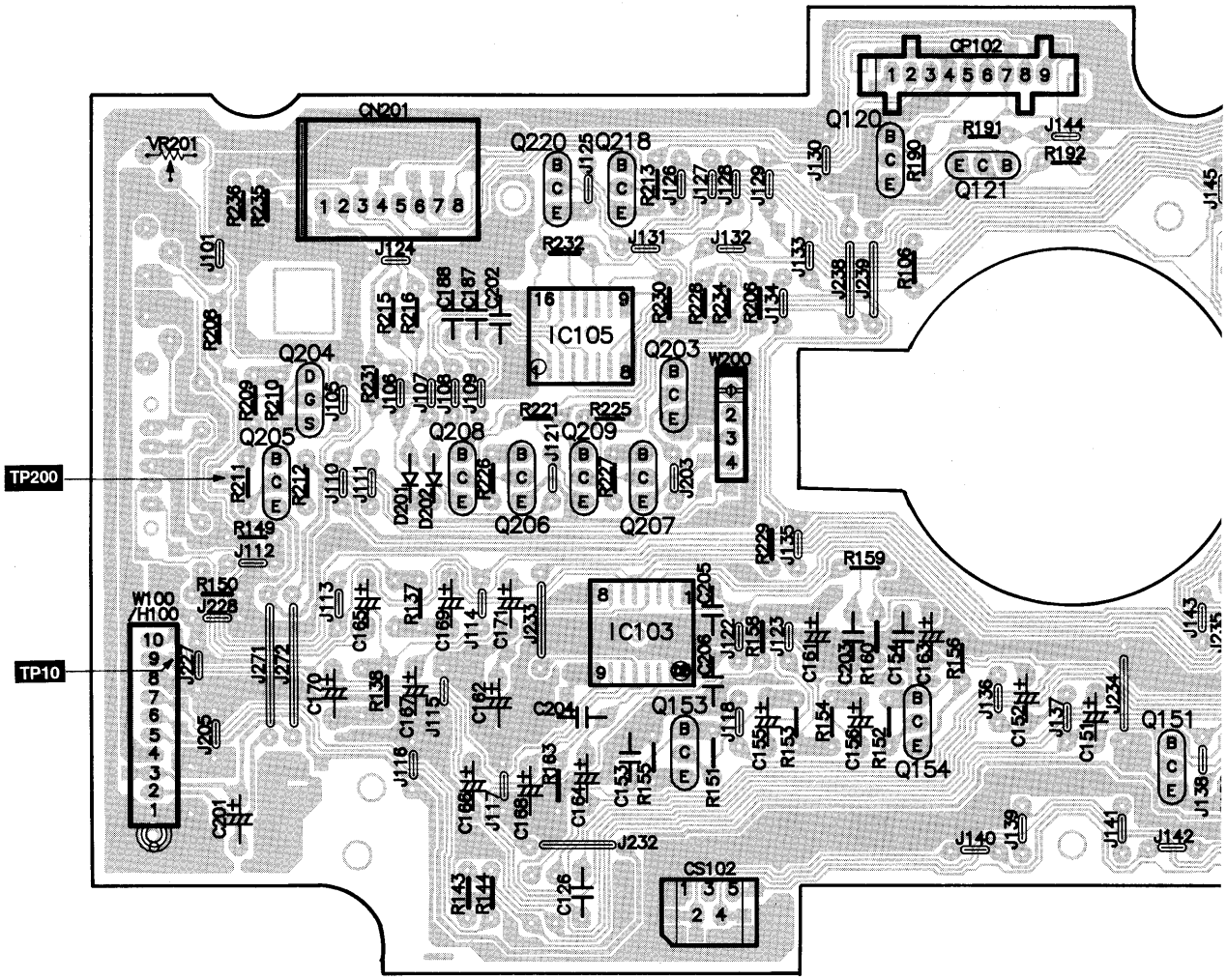
S Main P.C.B. (REP2225F ... for GN only) (REP2225D ... for E and EG only) (REP2225E ... for EB only)

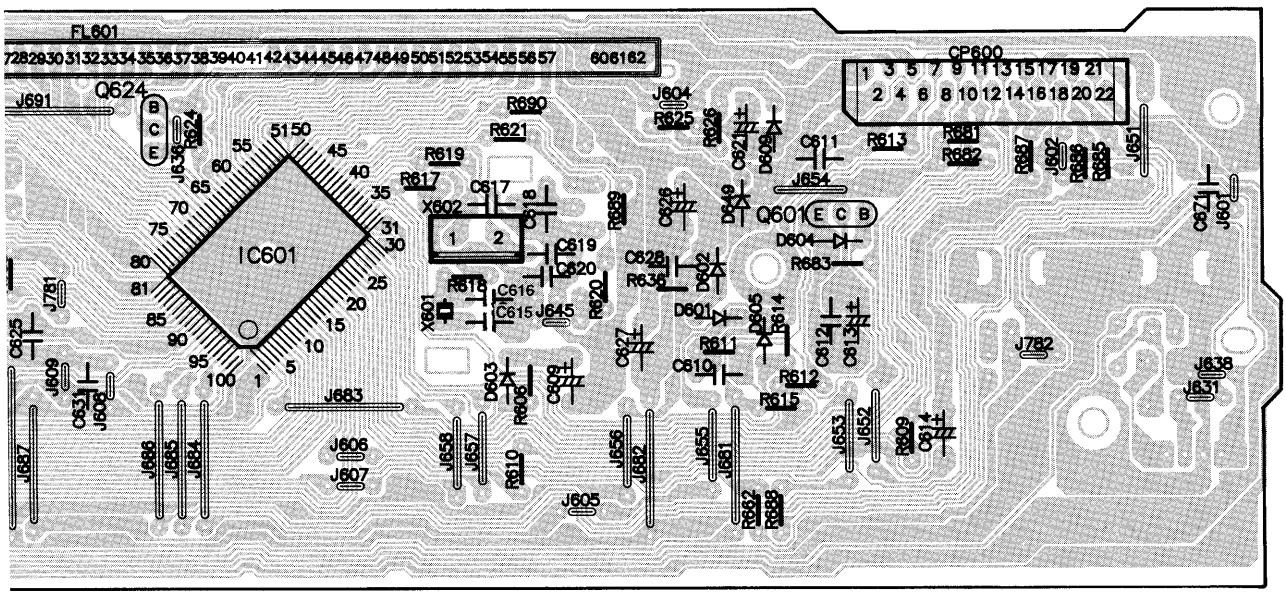


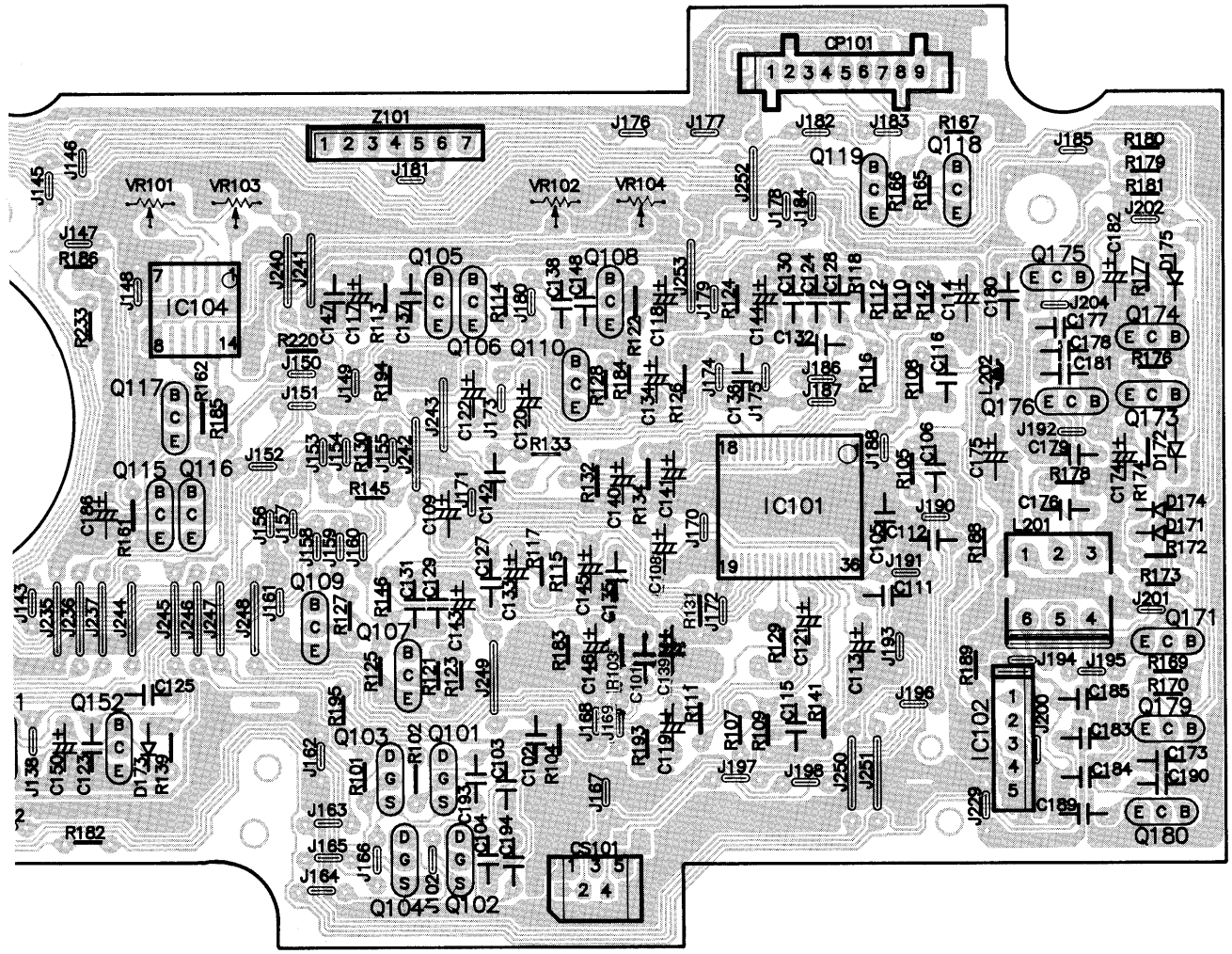
L Control P.C.B. (REP2227E ... for GN only) (REP2227D ... for E,EB and EG only)



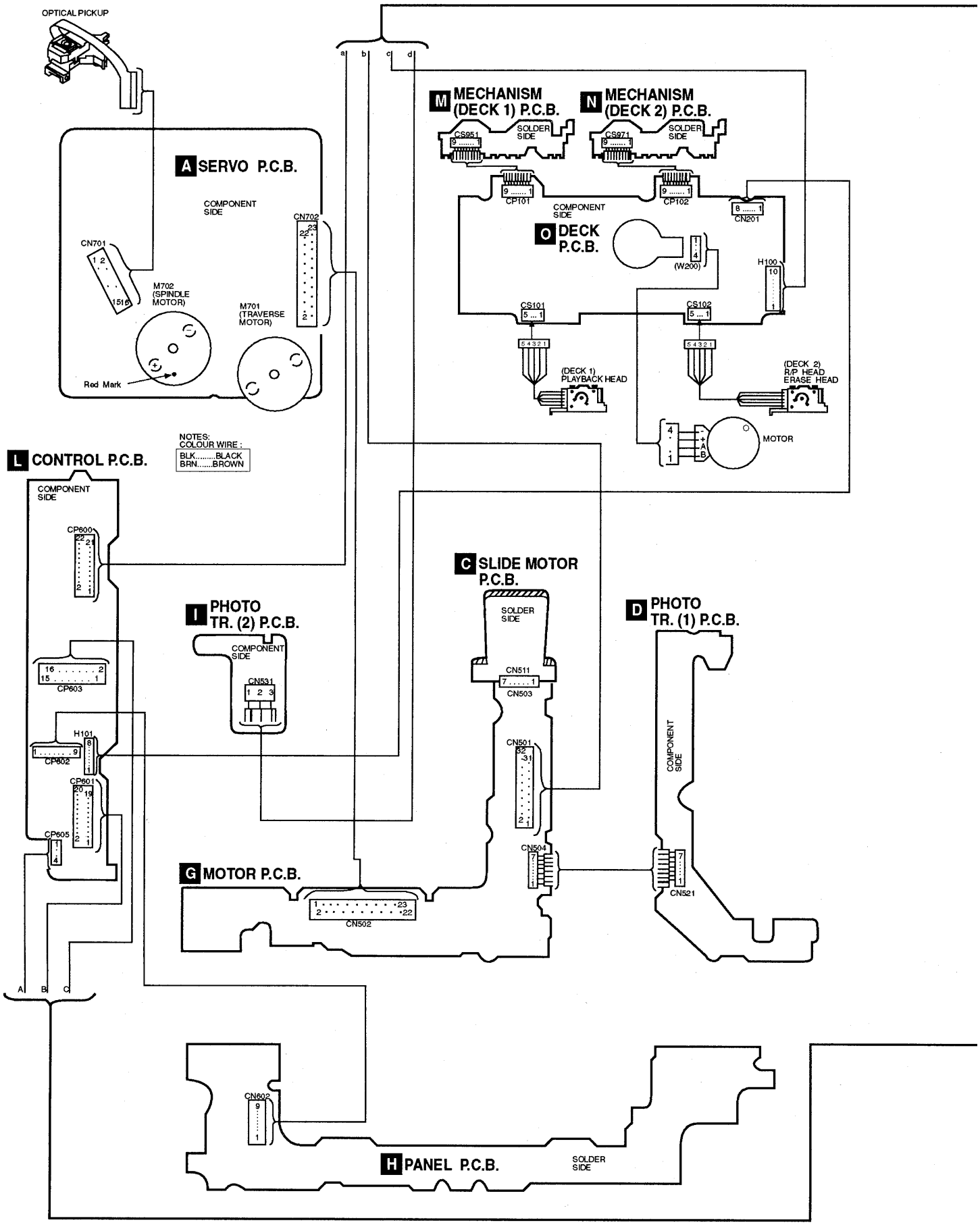
O Deck P.C.B. (REP2200E)

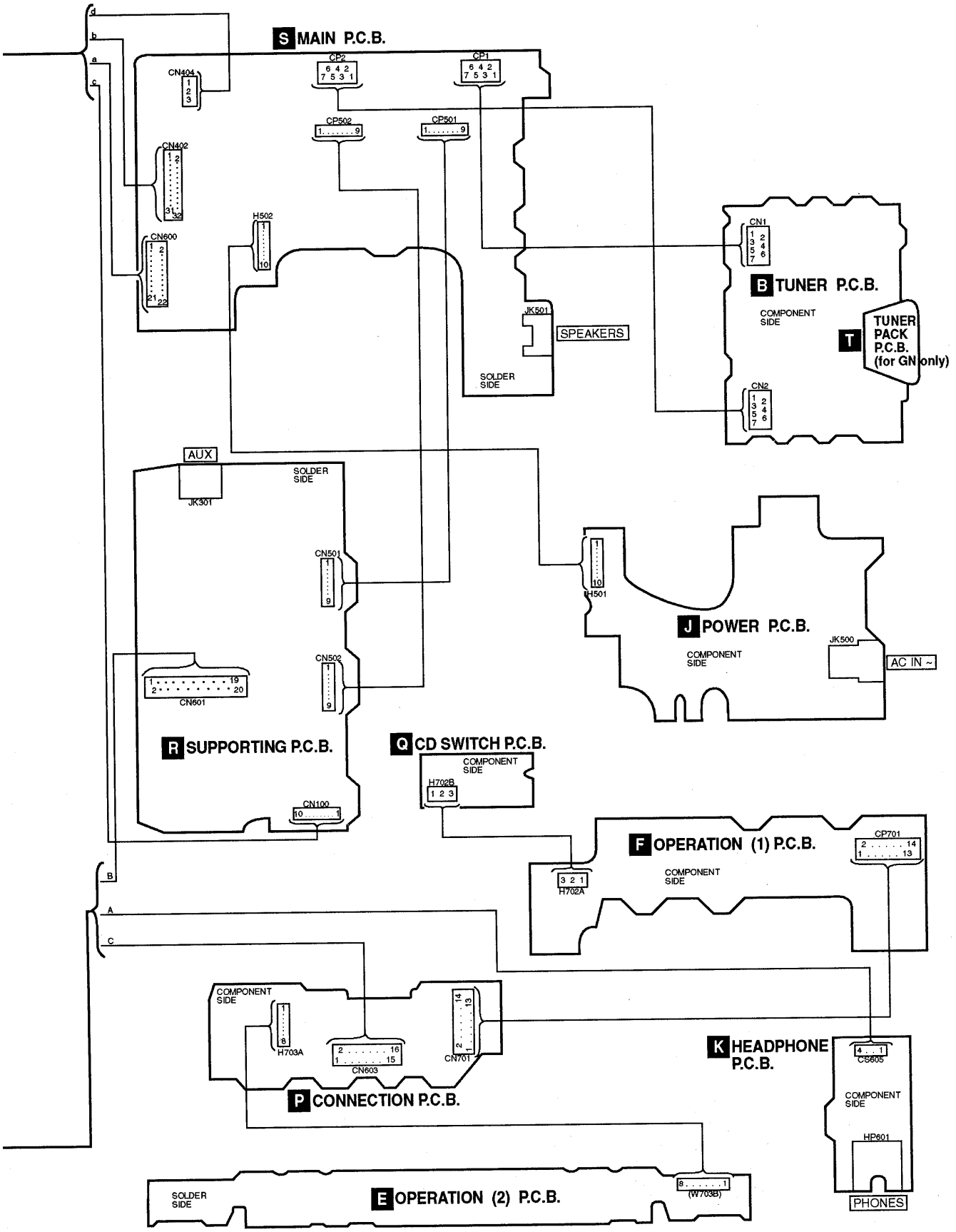



FL601
CP600
Q624
Q601
IC601
X602
J691
J781
J782
J683
J606
J607
J605
J687
J686
J685
J684
J658
J657
J656
J682
J655
J681
J653
J652
J638
J631
J609
J608
J645
J654
J651
J601

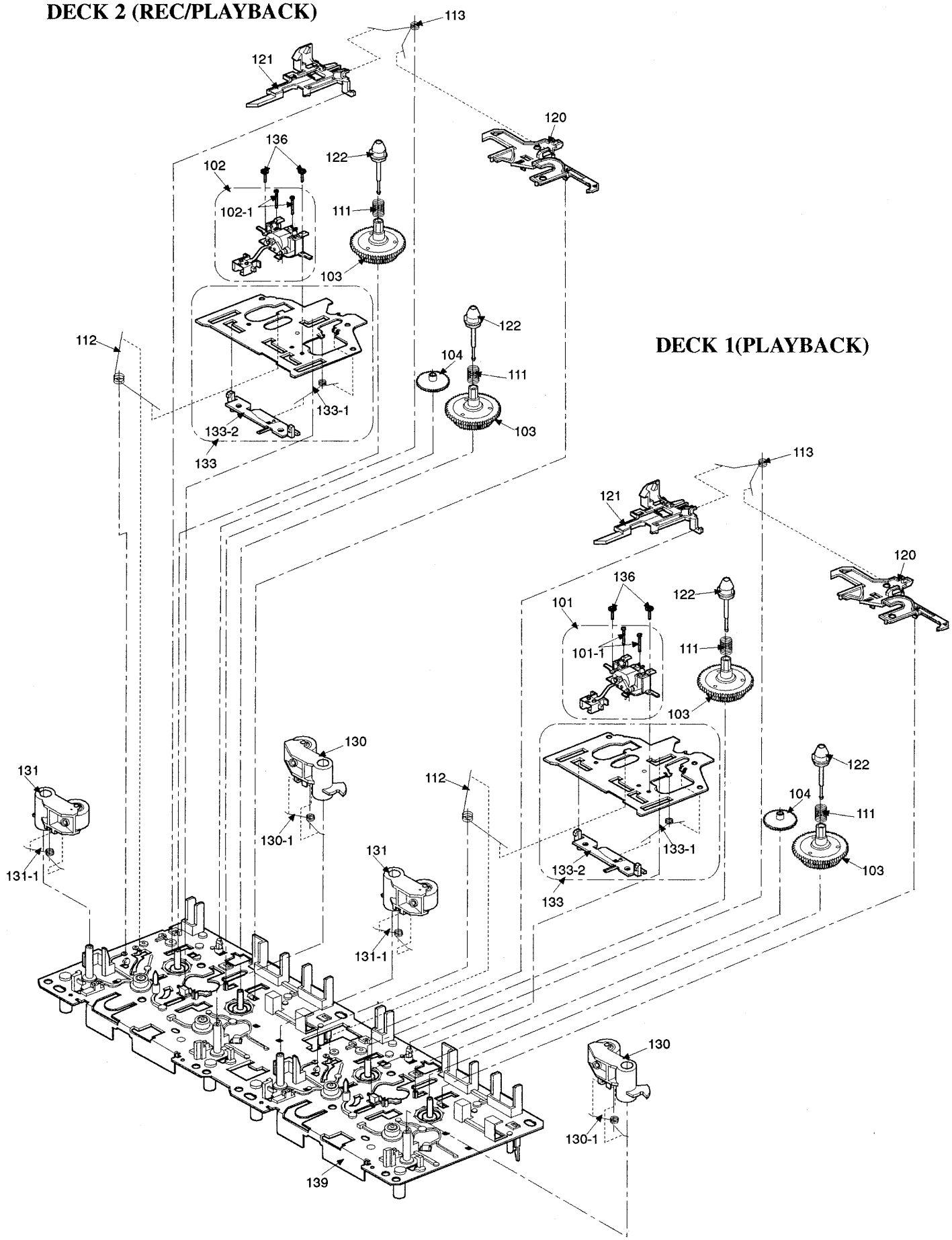

CP101
Z101
IC104
IC101
IC102
Q105
Q106
Q108
Q110
Q107
Q109
Q101
Q103
Q102
Q104
Q115
Q116
Q117
Q118
Q119
Q175
Q174
Q176
Q173
Q171
Q179
Q180
Q152
VR101
VR103
VR102
VR104
SS101
L201
J201
J204
J202

■ Wiring Connection Diagram



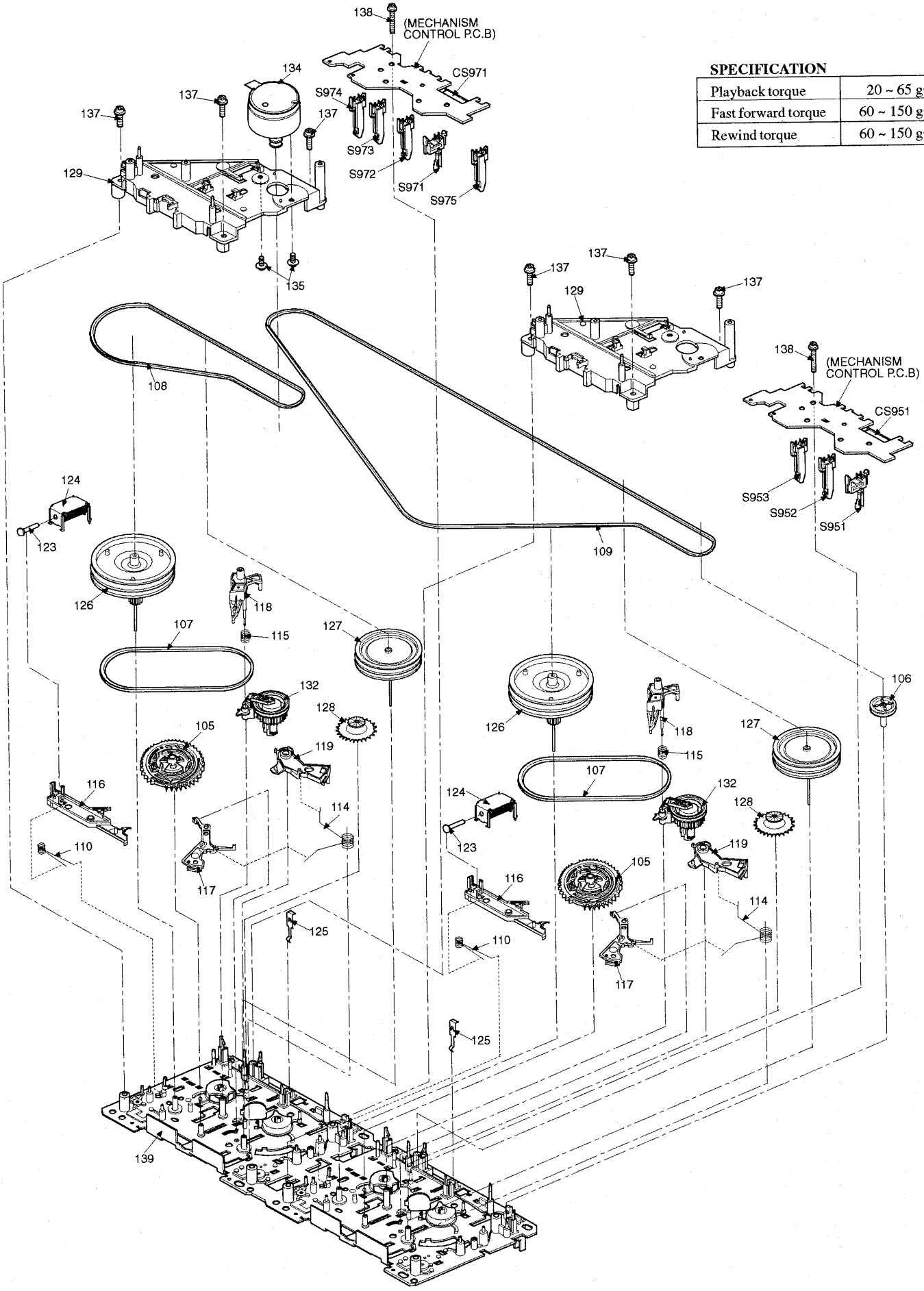

S MAIN P.C.B.
CN404
CP2
CP1
CP502
CP501
CN402
H502
CN600
JK501
SPEAKERS
SOLDER SIDE
CN1
B TUNER P.C.B.
COMPONENT SIDE
T TUNER PACK P.C.B. (for GN only)
CN2
AUX
JK301
SOLDER SIDE
CN501
CN502
H501
J POWER P.C.B.
JK500
AC IN ~
CN601
R SUPPORTING P.C.B.
Q CD SWITCH P.C.B.
COMPONENT SIDE
H702B
CN100
F OPERATION (1) P.C.B.
CP701
H702A
COMPONENT SIDE
COMPONENT SIDE
H703A
CN603
CN701
K HEADPHONE P.C.B.
CS605
COMPONENT SIDE
HP601
PHONES
P CONNECTION P.C.B.
SOLDER SIDE
E OPERATION (2) P.C.B.
(W703B)

■ Mechanism Parts Location (RAA3404)



SPECIFICATION

Playback torque	20 ~ 65 g•cm
Fast forward torque	60 ~ 150 g•cm
Rewind torque	60 ~ 150 g•cm



■ Mechanism Parts List

Note : [M] in Remarks column indicates parts that are supplied by **MESA**.

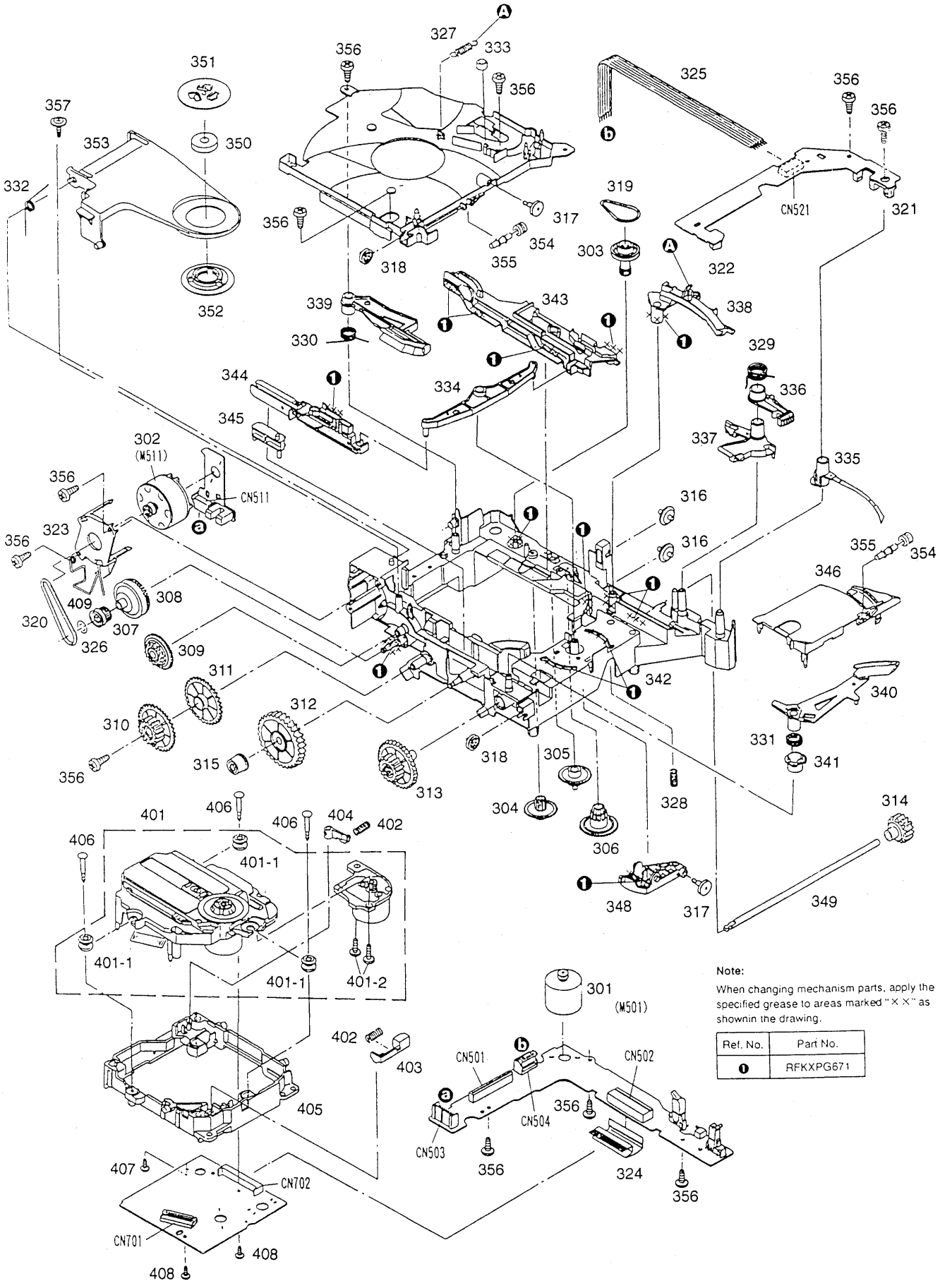
Ref No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK	
101	RED0038	P/B HEAD BLOCK ASS'Y	
101-1	RHE5152ZB	SCREW	
102	RED0037	R/P HEAD BLOCK ASS'Y	
102-1	RHE5152ZB	SCREW	
103	RDG0300	REEL TABLE BASE	
104	RDG0301	GEAR	
105	RDK0026	GEAR	
106	RDR0029	RELAY PULLY	
107	RDV0033-1	BELT	
108	RDV0034	BELT	
109	RDV0035	BELT	
110	RUW147ZA	SPRING	
111	RMB0400	REEL TABLE SPRING	
112	RMB0403	SPRING	
113	RMB0404	SPRING	
114	RMB0406	SPRING	
115	RMB0408	SPRING	
116	RML0370	LEVER	
117	RML0371	LEVER	
118	RML0372	ARM	
119	RML0374	LEVER	
120	RMM0131	LEVER	
121	RMM0133	LEVER	
122	RMQ0519	REEL TABLE HEAD	
123	RMS0398-1	SHAFT	
124	RSJ0003	PLUNGER	
125	RUS609ZC	SPRING	
126	RXF0049	FLYWHEEL ASS'Y	
127	RXF0050	FLYWHEEL ASS'Y	
128	RXG0040	GEAR	
129	RMK0283	PLATE	
130	RXL0124	PINCH ROLLER ASS'Y	
130-1	RMB0401	SPRING	
131	RXL0125	PINCH ROLLER ASS'Y	
131-1	RMB0402	SPRING	
132	RXL0126	GEAR	
133	RXQ0412	ROD	
133-1	RMB0405	SPRING	
133-2	RMM0132	ROD	
134	REM0055	MOTOR ASS'Y	
135	RHD26022	SCREW	
136	XTW2+5L	SCREW	
137	XTW26+10S	SCREW	
138	XYC2+JF17	SCREW	
139	RFKJXED70-K	CHASSIS ASS'Y	

■ Loading Mechanism Parts List

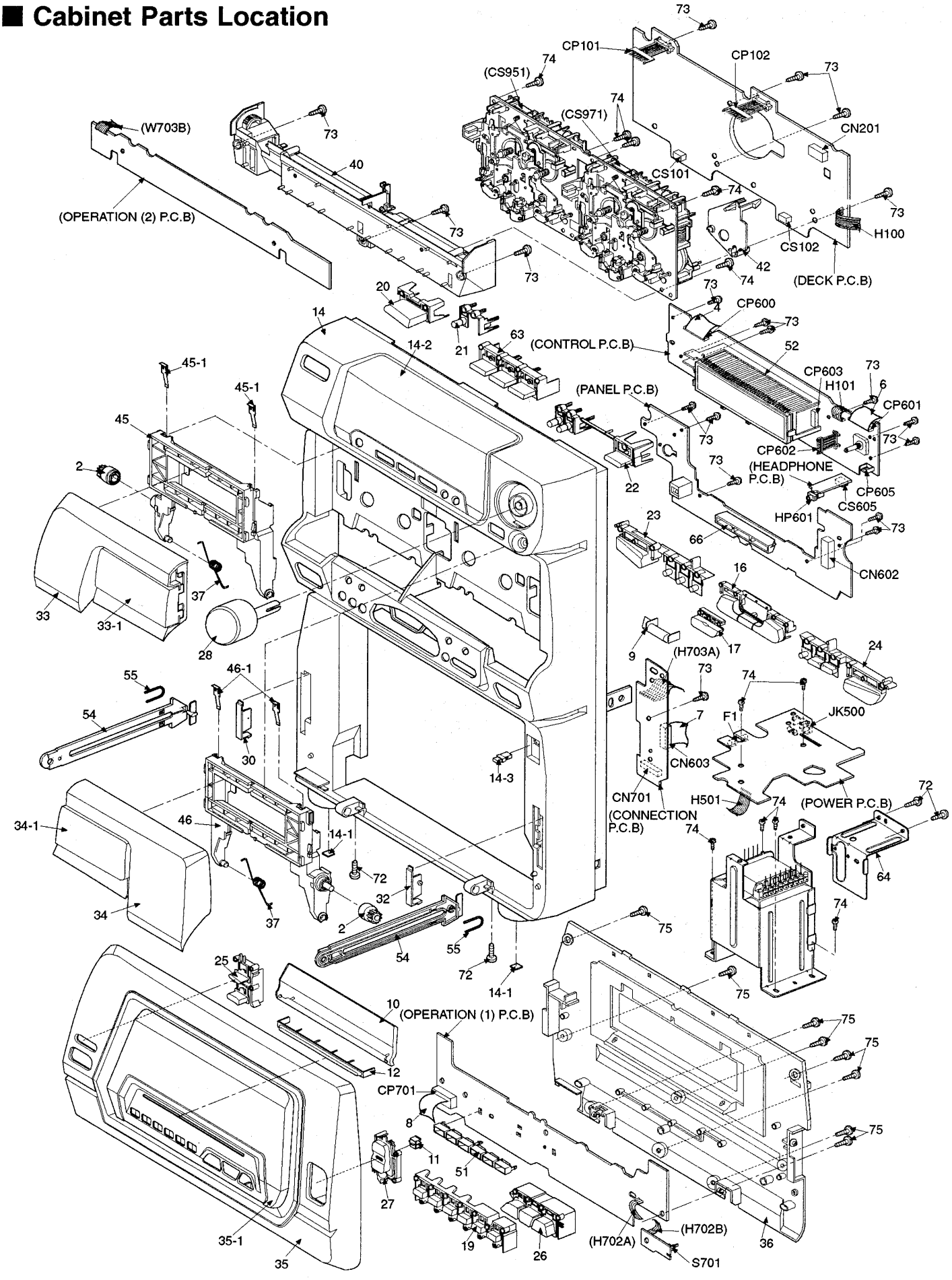
Note : [M] in Remarks column indicates parts that are supplied by **MESA**.

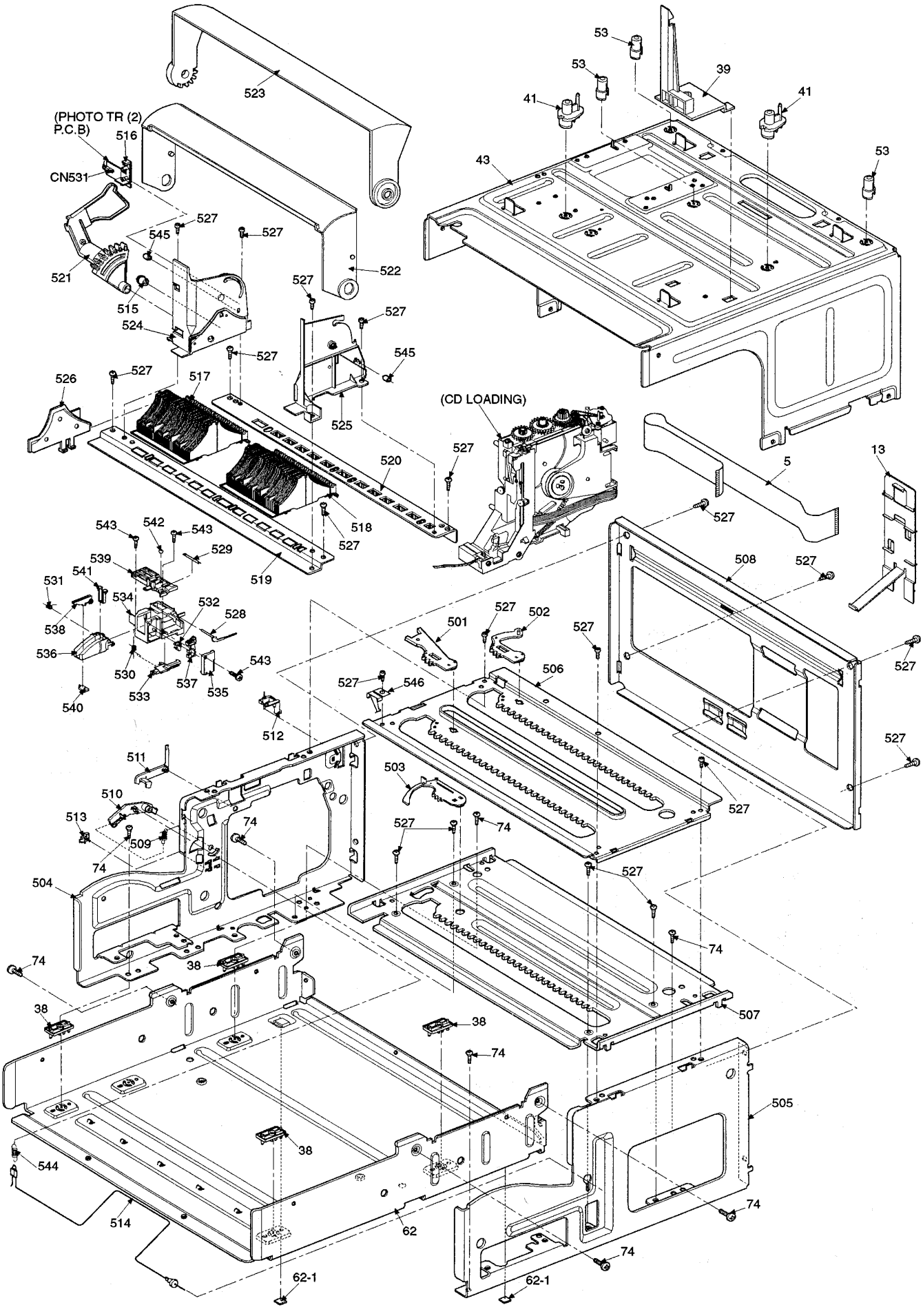
Ref No.	Part No.	Part Name & Description	Remarks
		LOADING MECHANISM	
301	RFKPLMC50PAK	LOADING MOTOR ASS'Y	
302	RFKPLMC50PBK	SLIDE MOTOR ASS'Y	
303	RDG0336	PULLEY GEAR	
304	RDG0337	REDUCTION GEAR (A)	
305	RDG0338	REDUCTION GEAR (B)	
306	RDG0339	DRIVE GEAR	
307	RDG0340	SLIDE PULLEY GEAR	
308	RDG0341	COUNT RING	
309	RDG0342	SLIDE REDUCTN GEAR	
310	RDG0343	REAR SLIDE GEAR	
311	RDG0344	SLIDE GEAR (A)	
312	RDG0345	SLIDE GEAR (B)	
313	RDG0346	FRONT SLIDE GEAR	
314	RDG0347	LOWER SLIDE GEAR	
315	RDP0080	UPPER ROLLER	
316	RDP0081	LOWER ROLLER	
317	RDP0082	ROPE ROLLER (A)	
318	RDP0083	ROPE ROLLER (B)	
319	RDV0041	LOADING BELT	
320	RDV0046	SLIDE BELT	
321	RMN0357	SENOR HOLDER	
322	RMN0358	LED HOLDER	
323	RMN0356	MOTOR HOLDER	
324	REZ0916	FFC (23P)	
325	REZ0832	FLAT CABLE (7P)	
326	RHW21009	WASHER	
327	RMB0453	FEED LEVER SPRING	
328	RMB0483	LOCK C SPRING	
329	RME0194	SUB LEVER SPRING	
330	RME0195	SIZE LEVER SPRING	
331	RME0196	RETURN LEVER SPRING	
332	RME0197	CLAMP SPRING	
333	RMG0200	CUSHION RUBBER	
334	RML0411	CONNECTION LEVER	
335	RML0412	FRONT FEED LEVER	
336	RML0413	FEED SUB LEVER	
337	RML0414	GUIDE LEVER	
338	RML0415	REAR FEED LEVER	
339	RML0416	SIZE DETECTION LEVER	
340	RML0417	RETURN LEVER (A)	
341	RML0418	RETURN LEVER (B)	
342	RFKNLMC50PBK	MECHA BASE ASS'Y	
343	RMR0921-K	LOWER SLIDE PLATE	
344	RMR0922-K	UPPER SLIDE PLATE	
345	RMR0923-W	SLIDE SUPPORT PLATE	
346	RMR0924-K	DISC GUIDE (L)	
347	RMR0925-K	DISC GUIDE (R)	
348	RMR0927-K	ROLLER BASE	
349	RMS0519	CONNECTION SHAFT	
350	RHM245ZA	MAGNET	[M]
351	RMR0334	FIXED PLATE	[M]
352	RMR0761-W	CLAMPER	
353	RMR0926-K	CLAMPER PLATE	
354	RDP0091	DISC ROLLER	
355	RDP0092	GUIDE ROLLER	
356	XTBS26+10J	SCREW	
357	XTWS3+10T	SCREW	
401	RAE0150Z	TRAVERSE DECK ASS'Y	
401-1	SHGD113-1	FLOATING RUBBER	
401-2	SNSD38	SCREW	
402	RMB0455	FRONT SUPPORT SPRING	
403	RML0423	FRONT SUPPORT ARM	
404	RML0424	REAR SUPPORT ARM	
405	RMR0937-K	TRAVERSE CHASSIS	
406	RMS0123-1	TRAVERSE FIXED PIN	
407	XTN2+6G	SCREW	
408	XTV2+6G	SCREW	
409	RME0225	LOCK PLATE SPRING	

■ Loading Mechanism Parts Location



■ Cabinet Parts Location




(PHOTO TR (2) P.C.B)
CN531
516
523
521
522
515
524
545
527
517
526
525
(CD LOADING)
520
518
519
53
39
41
43
5
13
508
501
502
506
546
512
511
510
513
509
503
504
507
505
544
514
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536
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533
537
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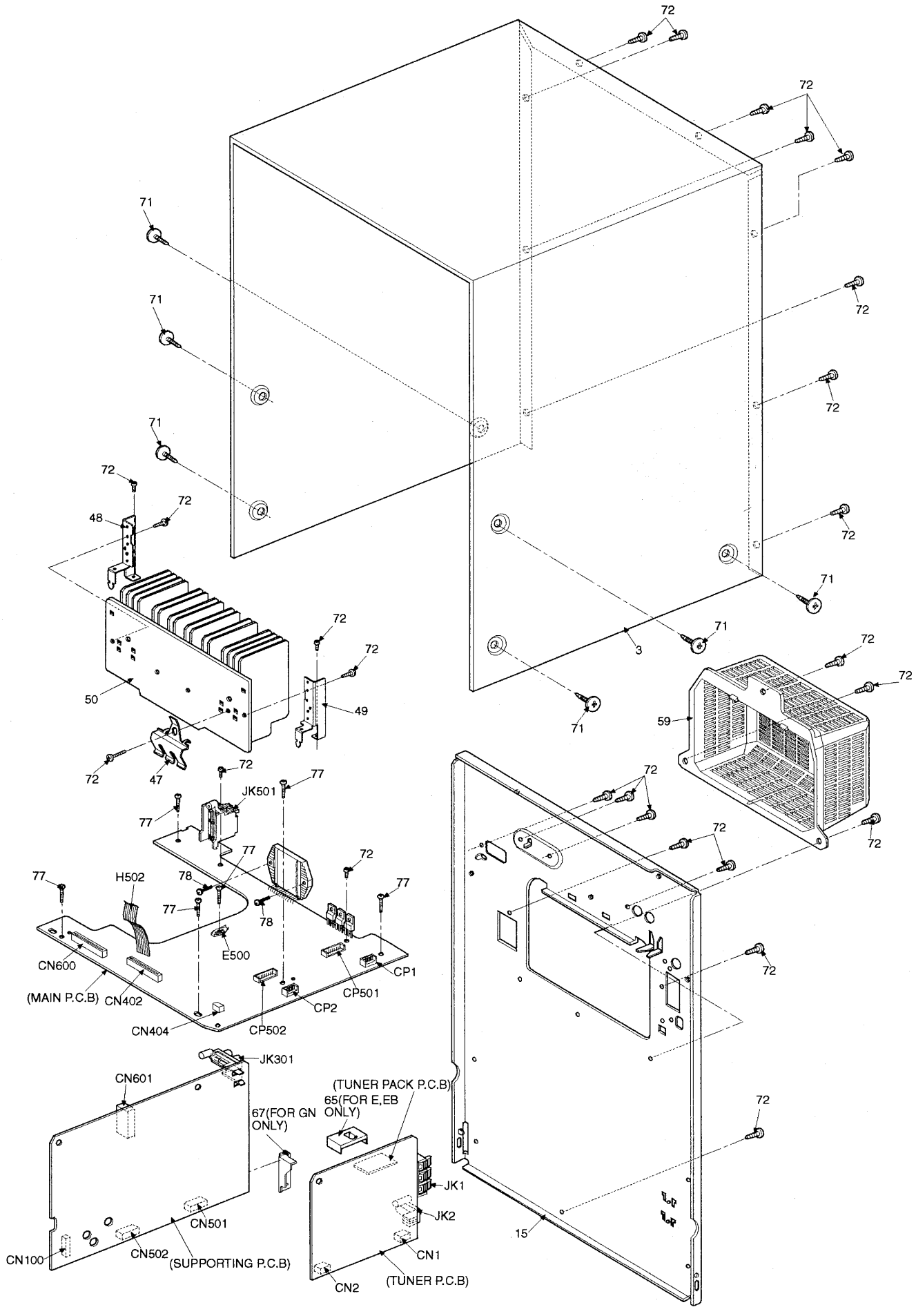
540
529
542
74
38


72
71
48
50
49
47
JK501
77
78
H502
E500
CN600
(MAIN P.C.B)
CN402
CN404
CP502
CP2
CP501
CP1
JK301
CN601
67(FOR GN ONLY)
65(FOR E,EB ONLY)
(TUNER PACK P.C.B)
CN501
CN502
CN100
(SUPPORTING P.C.B)
JK1
JK2
CN1
CN2
(TUNER P.C.B)
3
15
59

■ 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-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area)
* Parts without these indication can be used for all areas.
* [M] and [MAV] in Remarks column indicate parts that are supplied by **MESA and MAV** respectively.
* Remote Control Unit : Supply period for three years from terminal of production.
* The "(SF)" mark denotes the standard part.
* **Warning** : This product uses a laser diode. Refer to caution statements on page 2.
* **ACHTUNG**: Die lasereinheit nicht zerlegen.
Die lasereinheit darf nur gegen einc vom hersteller spezifizierte einheit ausgetauscht werden.

Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
2	RDG0129	DAMPER GEAR	[M]
3	RKM0318A-K	CABIBET	[M]
4	REE0698	22P FFC	[M]
5	REE0697	32P FFC	[M]
6	REE0699	20P FFC	[M]
7	REE0700	16P FFC	[M]
8	REE0701	14P FFC	[M]
9	RMR0978-X	FFC HOLDER	
10	RGL0312-Q	CD LIGHTING PLATE	
11	RGL0313-Q	CD LIGHTING CHIP	
12	RGL0326-Q	CD LIGHTING PIECE	
13	RMR0950-K	FFC HOLDER	
14	RFKGCH84MEK1	FRONT PANEL ASS'Y	[M]
14-1	RKA0059-K	LEG RUBBER	[M]
14-2	RKW0429-V	FL WINDOW	
14-3	RMQ0215A	NS RATCH	
15	RGR0232B-C	REAR PANEL	[M](E,EG)
15	RGR0232B-D	REAR PANEL	[M](EB)
15	RGR0232B-E	REAR PANEL	[M](GN)
16	RGU1341-K	MAIN CON BUTTON (A)	
17	RGU1382-K	MAIN CON BUTTON (B)	
19	RGU1343-Q	CD LIGHTING BUTTON	
20	RGU1402-K	TUNER BUTTON (A)	[M]
21	RGU1403A-K	TUNER BUTTON (B)	[M]
22	RGU1404-K	TUNER BUTTON (C)	[M]
23	RGU1409-K	DECK BUTTON (A)	[M]
24	RGU1410-K	DECK BUTTON (B)	[M]
25	RGU1411-K	CD BUTTON (A)	[M]
26	RGU1412-K	CD BUTTON (B)	[M]
27	RGU1413-K	CD BUTTON (C)	[M]
28	RGW0238-K	MAIN VOLUME KNOB	[M]
30	RKQ0193-K	GRIL COVER (L)	
32	RKQ0194-K	GRIL COVER (R)	
33	RFKLCH94MPK1	CASS LID ASS'Y (L)	[M]
33-1	RKW0412-Q	CASSETTE WINDOW (L)	[M]
34	RFKLCH84MEK2	CASS LID ASS'Y (R)	[M]
34-1	RKW0413-Q	CASSETTE WINDOW (R)	[M]
35	RFKGCH84MEK2	CD PANEL ASS'Y	[M]
35-1	RKW0430-Q	CD WINDOW	
36	RFKHCH94MPK1	CD REAR PANEL ASS'Y	[M]
37	RMB0474	CASS. OPEN SPRING	
38	RMN0366	CD MECHA SUPPORT	
39	RMN0367	MAIN PCB SUPPORT	
40	RMQ0577	DECK MECHA FLAME	
41	RMR0741-X	PCB SUPPORT (PIN)	[M]
42	RMR0909-X	DECK PCB SUPPORT	[M]
43	RMK0311	SUB CHASSISS	
45	RFKLACH330AK	CASS HOLDER ASS'Y	[M]
45-1	RUS757ZAA	CASS. HALF SPRING	[M]
46	RFKLACH330BK	CASS HOLDER ASS'Y	[M]
46-1	RUS757ZAA	CASS. HALF SPRING	[M]
47	RMC0238	TRANSISTOR COVER	
48	RMQ0575	HEAT SINK SUPPORT(L)	
49	RMQ0576	HEAT SINK SUPPORT(R)	
50	RXX0102	HEAT SINK UNIT	[M]
51	RMN0369	CD LED CASE	
52	RMN0376	FL HOLDER	[M]
53	SHE187-5	PCB SUPPORT	
54	RKJ0016	SIDE STAY	
55	RME0218	STAY SPRING	[M]
59	RMV0085A	HEATSINK COVER	[M]
62	RFKJCH94MPK	BOTTOM CHASSIS AS'Y	[M]
62-1	RKA0059-K	LEG RUBBER	[M]
63	RGU1339-Q	TUN. LIGHTING BUTTON	
64	RMA0932	TRANS ANGLE	
65	RSC0403	TUNER SHIELD PLATE	[M](E,EB)
66	RMN0368	TUNER LED CASE	
67	RMN0390-1	BACK-UP PIECE	[M](GN)
71	RHD30007	SCREW (TRANS)	
72	XTBS3+8JFZ1	SCREW	
73	XTBS26+10J	SCREW (PCB)	
74	XTB3+10JFZ	SCREW (H.S. SUPPORT)	
75	XTB3+8JFZ	SCREW (CD REAR PNEL)	
77	XTB3+20J	SCREW (MAIN PCB)	
78	XTW3+15T	SCREW (POWER IC)	
		INTEGRATED CIRCUITS	
IC1	LA1832A	IC, IF/MPX	
IC2	LC7218	IC, PLL	
IC101	M51167BFP-E1	IC, R/P	
IC102	BA7755A	IC, SW	
IC103	CXA1102M-T4	IC, DOLBY IC	
IC104	BU4066BCF-E2	IC, ANALOG SW IC	[M]
IC105	BU2040F-E2	IC, IO EXPANDER	[M]
IC301	BU4052BCF-E2	IC, ANALOG SW	
IC302	M62422FPE1	IC, AUDIO	
IC303	M51131L-702	IC, VCA	
IC304	M5218AP	IC, BUFFER AMP	
IC305	BU2090F-E2	IC, IO EXPANDER	[M]
IC401	UPD78043A042	IC, CHANGER U-COM	
IC461	BA6247N	IC, MOTOR DRIVE	
IC501	SVI3101D	IC, POWER AMP	⚠
IC502	AN78M05	IC, AMP	
IC601	M38197MA137F	IC, U-CON	[M]
IC701	BU2090F-E2	IC, IO EXPANDER	[M]
IC741	BU2090F-E2	IC, IO EXPANDER	[M]
IC951	0N2180RLC	IC,HALL	
IC971	0N2180RLC	IC,HALL	
		IC PROTECTORS	
ICP510	SRUN10T	IC PROTECTOR	⚠
		TRANSISTORS	
Q1	2SK544F-AC	TRANSISTOR	(GN)
Q2	2SC2786MTA	TRANSISTOR	(GN)
Q3	2SC2787FL1TA	TRANSISTOR	(GN)
Q4	2SC2787FL1TA	TRANSISTOR	(GN)
Q6	2SC2787LTA	TRANSISTOR	
Q7	RVTDTA143XST	TRANSISTOR	
Q8	2SC1740SSTA	TRANSISTOR	
Q9	2SC1740SSTA	TRANSISTOR	

Ref No.	Part No.	Part Name & Description	Remarks
Q10	2SC2785FETA	TRANSISTOR	
Q11	2SC2785FETA	TRANSISTOR	
Q12	2SC2787LTA	TRANSISTOR	(E,EB,EG)
Q13	2SC1740SSTA	TRANSISTOR	(E,EB,EG)
Q14	2SC1740SSTA	TRANSISTOR	(E,EB,EG)
Q15	2SC1740SSTA	TRANSISTOR	(E,EB,EG)
Q105	BA1L4ZTA	TRANSISTOR	[M]
Q106	BA1L4ZTA	TRANSISTOR	[M] ⚠
Q107	BA1L4ZTA	TRANSISTOR	[M]
Q108	BA1L4ZTA	TRANSISTOR	[M]
Q109	BA1L3ZTA	TRANSISTOR	[M]
Q110	BA1L3ZTA	TRANSISTOR	[M]
Q115	2SD1020HTA	TRANSISTOR	[M]
Q116	2SD1020HTA	TRANSISTOR	[M]
Q117	BA1L4MTA	TRANSISTOR	[M]
Q118	2SC2785FTA	TRANSISTOR	
Q119	2SC2785FTA	TRANSISTOR	
Q120	2SC2785FTA	TRANSISTOR	
Q121	2SC2785FTA	TRANSISTOR	
Q151	BA1L4ZTA	TRANSISTOR	[M]
Q152	BA1L4ZTA	TRANSISTOR	[M]
Q153	2SC1740SLNET	TRANSISTOR	
Q154	2SC1740SLNET	TRANSISTOR	
Q171	2SD1302STA	TRANSISTOR	
Q173	BA1L4ZTA	TRANSISTOR	[M]
Q174	2SC2785FTA	TRANSISTOR	
Q175	2SD1302STA	TRANSISTOR	
Q176	2SD1302STA	TRANSISTOR	
Q179	2SC2784FTA	TRANSISTOR	[M]
Q180	2SC2785FTA	TRANSISTOR	
Q203	2SD965RTA	TRANSISTOR	
Q204	2SK301QTA	TRANSISTOR	[M]
Q205	BA1L4ZTA	TRANSISTOR	[M]
Q206	2SB621RTA	TRANSISTOR	
Q207	2SB621RTA	TRANSISTOR	
Q208	BA1A4ZTA	TRANSISTOR	[M]
Q209	BA1A4ZTA	TRANSISTOR	[M]
Q218	BN1A4MTA	TRANSISTOR	[M]
Q220	BN1L3NTA	TRANSISTOR	[M]
Q303	RVTDTA114TST	TRANSISTOR	
Q304	RVTDTA114TST	TRANSISTOR	
Q307	2SC2785FETA	TRANSISTOR	
Q308	2SC2785FETA	TRANSISTOR	
Q309	2SD1020HTA	TRANSISTOR	[M]
Q310	2SD1020HTA	TRANSISTOR	[M]
Q311	2SD1450STA	TRANSISTOR	
Q312	2SD1450STA	TRANSISTOR	
Q313	RVTDTA114TST	TRANSISTOR	

Ref No.	Part No.	Part Name & Description	Remarks
Q411	2SD1020HTA	TRANSISTOR	[M]
Q412	2SD1020HTA	TRANSISTOR	[M]
Q413	RVTDTA124EST	TRANSISTOR	
Q414	RVTDTC114EST	TRANSISTOR	
Q418	RVTDTA114EST	TRANSISTOR	
Q461	RVTDTC143TST	TRANSISTOR	
Q462	RVTDTC124EST	TRANSISTOR	[M]
Q501	2SC2785FETA	TRANSISTOR	
Q502	2SC2785FETA	TRANSISTOR	
Q503	2SB1185E	TRANSISTOR	⚠
Q504	2SA933SSTA	TRANSISTOR	⚠
Q505	2SD1762E	TRANSISTOR	[M]⚠
Q506	2SC2001KTA	TRANSISTOR	⚠
Q507	2SD1762E	TRANSISTOR	[M]⚠
Q508	2SD1762E	TRANSISTOR	[M]⚠
Q509	2SA1534AQRTA	TRANSISTOR	[M]⚠
Q510	RVTDTC114EST	TRANSISTOR	
Q511	2SD1762E	TRANSISTOR	[M]⚠
Q512	RVTDTC114TST	TRANSISTOR	
Q513	2SD2037ETA	TRANSISTOR	[M]⚠
Q514	2SC2785FETA	TRANSISTOR	
Q515	2SB621ARTA	TRANSISTOR	⚠
Q516	2SD2037ETA	TRANSISTOR	[M]⚠
Q517	2SD2037ETA	TRANSISTOR	[M]⚠
Q601	RVTDTC124EST	TRANSISTOR	[M]
Q624	2SC2785FETA	TRANSISTOR	
Q701	2SC2785FETA	TRANSISTOR	
Q742	RVTDTA143XST	TRANSISTOR	
Q743	RVTDTA143XST	TRANSISTOR	
Q744	RVTDTA143XST	TRANSISTOR	
Q745	RVTDTA143XST	TRANSISTOR	
		DIODES	
D1	SVC211SPA-AL	DIODE	(GN)
D2	SVC211SPA-AL	DIODE	(GN)
D3	SVC211SPA-AL	DIODE	(GN)
D4	MTZJ5R1CTA	DIODE	[M]
D5	RVD1SS133TA	DIODE	
D95	MA165TA	DIODE	
D171	RVD1SS133TA	DIODE	
D172	MTZJ4R7BTA	DIODE	
D173	RVD1SS133TA	DIODE	
D174	MTZJ3R6BTA	DIODE	[M]
D175	RVD1SS133TA	DIODE	
D201	RVD1SS133TA	DIODE	
D202	RVD1SS133TA	DIODE	
D301	MTZJ6R8CTA	DIODE	

Ref No.	Part No.	Part Name & Description	Remarks
D303	1SS254TA	DIODE	
D304	1SS254TA	DIODE	
D305	MTZJ5R1BTA	DIODE	
D306	1SS254TA	DIODE	
D461	MTZJ7R5CTA	DIODE	
D462	MTZJ5R6BTA	DIODE	
D501	1D3E	DIODE	[M]⚠
D502	1D3E	DIODE	[M]⚠
D503	1N5402BM21	DIODE	⚠
D504	1N5402BM21	DIODE	⚠
D505	1N5402BM21	DIODE	⚠
D506	1N5402BM21	DIODE	⚠
D507	1SS254TA	DIODE	
D508	1D3E	DIODE	[M]
D509	1D3E	DIODE	[M]
D510	MTZJ5R1BTA	DIODE	⚠
D511	1D3E	DIODE	[M]
D512	1D3E	DIODE	[M]
D513	MA4330LTA	DIODE	⚠
D516	MTZJ15CTA	DIODE	⚠
D517	MTZJ15CTA	DIODE	⚠
D518	MTZJ7R5CTA	DIODE	⚠
D519	MTZJ5R6CTA	DIODE	⚠
D520	MTZJ6R8ATA	DIODE	⚠
D521	1D3E	DIODE	[M]
D527	MTZJ13ATA	DIODE	⚠
D531	1D3E	DIODE	[M]⚠
D532	1D3E	DIODE	[M]⚠
D533	1D3E	DIODE	[M]⚠
D534	1D3E	DIODE	[M]⚠
D535	1D3E	DIODE	[M]⚠
D536	1D3E	DIODE	[M]⚠
D559	MTZJ10BTA	DIODE	⚠
D560	1D3E	DIODE	[M]
D561	1SS254TA	DIODE	
D562	1SS254TA	DIODE	
D563	1SS254TA	DIODE	
D564	1SS254TA	DIODE	
D565	1SS254TA	DIODE	(EB)
D566	1SS254TA	DIODE	(EB)
D581	1SS254TA	DIODE	
D582	MTZJ12BTA	DIODE	⚠
D601	1SS291TA	DIODE	
D602	1SS291TA	DIODE	
D603	1SS254TA	DIODE	
D604	1SS254TA	DIODE	
D605	1SS291TA	DIODE	
D609	MTZJ5R6BTA	DIODE	

Ref No.	Part No.	Part Name & Description	Remarks
D612	MA167TA	DIODE	(GN)
D613	MA167TA	DIODE	
D614	MA167TA	DIODE	(GN)
D649	1SS291TA	DIODE	
D701	LNJ301MPUJAD	DIODE	
D703	LNJ301MPUJAD	DIODE	
D705	LNJ301MPUJAD	DIODE	
D707	LNJ301MPUJAD	DIODE	
D709	LNJ301MPUJAD	DIODE	
D711	LNJ301MPUJAD	DIODE	
D713	LNJ301MPUJAD	DIODE	
D715	LNJ301MPUJAD	DIODE	
D716	SLR-325VC	DIODE	[M]
D717	LNJ801TPSJAD	DIODE	
D718	LNJ801TPSJAD	DIODE	
D719	LNJ801TPSJAD	DIODE	
D720	LNJ801TPSJAD	DIODE	
D721	LNJ801TPSJAD	DIODE	
D722	LNJ801TPSJAD	DIODE	
D751	SLR-325MC	DIODE	
D752	SLR-325MC	DIODE	
D754	SLR-325MC	DIODE	
D755	SLR-325MC	DIODE	
D756	SLR-325MC	DIODE	
D757	SLR-325MC	DIODE	
D771	SPR505MDTT	DIODE	
D772	SPR505MDTT	DIODE	
D773	SPR505MDTT	DIODE	
D774	SPR505MDTT	DIODE	
D775	SPR505MDTT	DIODE	
D776	SPR505MDTT	DIODE	
D781	1SS254TA	DIODE	
D782	1SS254TA	DIODE	
D783	1SS254TA	DIODE	
D784	1SS254TA	DIODE	
D785	1SS254TA	DIODE	
D786	1SS254TA	DIODE	
D787	1SS254TA	DIODE	
D788	1SS254TA	DIODE	
D789	1SS254TA	DIODE	
D971	MA165TA	DIODE	
		VAR. RESISTORS	
VR101	RRN6B05B24TA	VR, DECK 1 (L)	
VR102	RRN6B05B24TA	VR, DECK 1 (R)	
VR103	RRN6B05B24TA	VR, DECK 2 (L)	
VR104	RRN6B05B24TA	VR, DECK 2 (R)	

Ref No.	Part No.	Part Name & Description	Remarks
VR201	RRN6B05B73TA	VR, DECK 2 SPEED	
VR603	RRV16B24104B	VR, JOG	
		SWITCHES	
S701	RSH1A91ZA-A	SW, CD SWITCH	
S702	EVQ21405R	SW, SINGLE PLAY	
S704	EVQ21405R	SW, CD EDIT	
S705	EVQ21405R	SW, GROUP A	
S706	EVQ21405R	SW, GROUP B	
S707	EVQ21405R	SW, GROUP C	
S708	EVQ21405R	SW, GROUP D	
S709	EVQ21405R	SW, GROUP E	
S710	EVQ21405R	SW, GROUP F	
S711	EVQ21405R	SW, GROUP MODE	
S712	EVQ21405R	SW, GROUP ENTER	
S713	EVQ21405R	SW, SKIP/GP NAME (+)	
S714	EVQ21405R	SW, SKIP/GP NAME (-)	
S718	EVQ21405R	SW, GP NAME ENTER	
S751	EVQ21405R	SW, OPEN DECK 2	
S752	EVQ21405R	SW, OPEN DECK 1	
S753	EVQ21405R	SW, STOP/TUNING	
S754	EVQ21405R	SW, PAUSE/MEM/PLAY	
S755	EVQ21405R	SW, PLAY/FM MODE/BP	
S756	EVQ21405R	SW, REW/TUN/TIME (-)	
S757	EVQ21405R	SW, FF/TUN/TIME (+)	
S758	EVQ21405R	SW, REC START/STOP	
S759	EVQ21405R	SW, NORNAL	
S760	EVQ21405R	SW, HIGH	
S761	EVQ21405R	SW, CLOCK	
S765	EVQ21405R	SW, TIMER	
S766	EVQ21405R	SW, REV MODE	
S771	EVQ21405R	SW, POWER	
S772	EVQ21405R	SW, TIMER REC/PLAY	
S774	EVQ21405R	SW, DECK 1/2	
S775	EVQ21405R	SW, CD	
S776	EVQ21405R	SW, TUNER	
S777	EVQ21405R	SW, AUX	
S778	EVQ21405R	SW, EQ SPACE	
S779	EVQ21405R	SW, VBASS	
S951	RSH1A018-1U	SW,MODE DETECT	
S952	RSH1A019-2U	SW,TAPE DETECT	
S953	RSH1A019-2U	SW,Cr02 DETECT	
S971	RSH1A018-1U	SW,MODE DETECT	
S972	RSH1A019-2U	SW,TAPE DETECT	
S973	RSH1A019-2U	SW,Cr02 DETECT	
S974	RSH1A019-2U	SW,REC DETECT	
S975	RSH1A019-2U	SW,REC DETECT	

Ref No.	Part No.	Part Name & Description	Remarks
		CONNECTORS	
CN1	RJU063W07T	CONNECTOR (7P)	
CN2	RJU063W07T	CONNECTOR (7P)	
CN100	RJS1A5210	CONNECTOR (10P)	[M]
CN201	RJS8T7ZA	CONNECTOR (8P)	
CN402	RJS2A3332	CONNECTOR (32P)	
CN404	RJS1A6603	CONNECTOR (3P)	
CN501	RJU057W009	CONNECTOR (9 P)	
CN502	RJU057W009	CONNECTOR (9 P)	
CN600	RJS1A6822	CONNECTOR (22P)	
CN601	RJS1A6820	CONNECTOR (20P)	
CN602	RJU071H09M	CONNECTOR (9 P)	
CN603	RJS1A6816	CONNECTOR (16P)	
CN701	RJS1A6814	CONNECTOR (14P)	
CP1	RJT063W07T	CONNECTOR (7 P)	
CP2	RJT063W07T	CONNECTOR (7 P)	
CP101	RJT071H09A	CONNECTOR (9 P)	
CP102	RJT071H09A	CONNECTOR (9 P)	
CP501	RJT057W009-1	CONNECTOR (9 P)	
CP502	RJT057W009-1	CONNECTOR (9 P)	
CP600	RJS1A6822	CONNECTOR (22P)	
CP601	RJS1A6820	CONNECTOR (20P)	
CP602	RJT071H09A	CONNECTOR (9 P)	
CP603	RJS1A6216-1	CONNECTOR (16P)	
CP605	RJT057W004	CONNECTOR (4 P)	
CP701	RJS1A6814	CONNECTOR (14P)	
CS101	RJS1A6805-J	SOCKET (5P)	[M]
CS102	RJS1A6805-J	SOCKET (5P)	[M]
CS605	RJU057W004	SOCKET (4P)	
CS951	RJU071H09M1	9P CONNECTOR	[M]
CS971	RJU071H09M1	9P CONNECTOR	[M]
		COILS,TRANSFORMERS	
L1	RLQZP1R2KT-Y	INDUCTOR	(GN)
L2	RLQZPR47KT-Y	INDUCTOR	(GN)
L3	RLQZPR47KT-Y	INDUCTOR	
L4	ELEPKR68MA	INDUCTOR	
L5	ELEPKR68MA	INDUCTOR	
L6	ELELN822KL	RF CHOCK COIL	
L7	ELELN822KL	RF CHOCK COIL	
L8	RLQZP1R0KT-Y	AXIAL COIL	
L9	SLM1B10-1M	A.B. FILTER	(E,EB,EG)
L201	RL08C002M-T	BIAS OSC COIL	
L202	RLQZB470KT-D	RF CHOKE COIL	
L501	SLQY07G-40	S. OUT COIL	

Ref No.	Part No.	Part Name & Description	Remarks
L502	SLQY07G-40	S. OUT COIL	
L511	SLQZ650MH49	AC LINE COIL	⚠
L601	RLQZP3R3KT-Y	INDUCTOR	
L681	RLQZP100KT-Y	AXIAL COIL	
L682	RLQZP100KT-Y	AXIAL COIL	
L683	RLQZP100KT-Y	AXIAL COIL	
T501	RTP2M3B004	POWER TRANSFORMER	[M]⚠
		COMP. COMBINATION	
Z1	RLA6Z005M-T	AM ANT/OSC	(E,EB,EG)
Z1	RLA2Z002M-T	AM ANT. COIL	(GN)
Z2	RLI2Z006M-T	AM IFT	
Z3	ENV17290G1R	FM TUNER PACK	(E,EB,EG)
Z101	EXBF7L355SYV	RADA RESISTOR	
Z771A	RCDGP1U58XD	REMOCON SENSOR	
		CERAMIC FILTERS	
CF1	RLFFETNGA01L	FM CF	(E,EB,EG)
CF1	RLFFETWNA01L	FM CF	(GN)
CF2	RLFFETNGA02L	FM CF	(E,EB,EG)
CF2	RLFFETWNA01L	FM CF	(GN)
		OSCILLATORS	
X1	RSXZ456KM01	19KHZ OSC	
X2	RLFDFT12DD	FM RESONATOR	
X3	SVQ49U722T-S	7.2MHZ X'TAL	
X401	RSXY4M23M01T	CRYSTAL RESONATOP	
X601	RSXD32K7S02	32.768HKZ X'TAL	[M]
X602	EF0EN6004T4	CERAMIC OSC	[M]
X701	RSXZ16M9M01T	CERAMIC OSC	
		RELAYS	
RLY501	RSY0015M-0	RELAY	⚠
		DISPLAY TUBE	
FL601	RSL0220-F	FL	[M]
		FUSES	
F1	XBA2C10TB0	FUSE	⚠

Ref No.	Part No.	Part Name & Description	Remarks
		FUSE CLIP	
FC501	RJR0169T	FUSE HOLDER	[M]
FC502	RJR0169T	FUSE HOLDER	[M]
		HOLDERS	
H100	RMR0319	10P CABLE HOLDER	[M]
H101	RMR0317	8P CABLE HOLDER	[M]
H501	RJS1A5510	WIRE HOLDER	
H502	RJS1A5510	WIRE HOLDER	
H703A	RMR0317	8P CABLE HOLDER	[M]
		JACKS	
JK1	RJH8201	JK, ANT. TERMINAL	[M](E,EB)
JK1	RJH5302	JK, ANT. TERMINAL	[M](GN)
JK2	SJS208	JK, AM LOOP ANT	
JK301	SJF3068-7N	JK, AUX JACK	
JK500	SJS9236	JK, AC INLET ⚠	(E,EB,EG)
JK500	SJSD16-1	JK, AC INLET ⚠	(GN)
JK501	RJR0054M	JK, SPEAKER TERMINAL	
HP601	RJJ37TK01-1C	HEADPHONE	
		EARTH TERMINALS	
E500	SNE1004-2	EARTH TERMINAL	
		PACKING MATERIALS	
P1	RPG2787	PACKING CASE	[M](E,EB,EG)
P1	RPG2786	PACKING CASE	[M](GN)
P2	RPFX0008	POLYBAG	[M]
P4	RPN0954	POLYFOAM	
P5	SPSD155	ACCESSORY CASE	(E,EB,EG)
P5	SPSD152	ACCESSORY CASE	(GN)
P6	SPB1061	VINYL BAG	
		ACCESSORIES	
A1	EUR642173	REMOTE CONTROL	[M]
A1-1	UR64EC1371S4	BATTERY COVER (R C)	[MAV]
A2	RSA0007	FM ANTENNA	(E,EB,EG)
A2	RSA0006	FM ANTENNA	(GN)
A3	RSA0010	AM LOOP ANT	
A4	RJA0019-2K	AC CORD ⚠	(E,EG)(SF)
A4	VJA0733	AC CORD ⚠	(EB) (SF)
A4	RJA0036-K	AC CORD ⚠	(GN) (SF)

Ref No.	Part No.	Part Name & Description	Remarks
A5	RFKSCH84MEK	INSTRU MNL ASS'Y	[M](E)
A5	RQT3359-D	INSTRUCTION MANUAL	[M](EG)
A5	RQT3357-B	INSTRUCTION MANUAL	[M](EB)
A5	RFKSCH84MGNK	INSTR MNL ASS'Y	[M](GN)
A6	RFA0622-K1	FILE BOOK	
A7	RQLA0321	NUMBER SHEET	
A8	SJP9009	ANT ADAPTER	(EB)⚠
		<CD MECHANISM UNIT>	
		CABINET AND CHASSIS	
501	RDG0333	FRONT LOCK GEAR	
502	RDG0334	REAR LOCK GEAR	
503	RDG0374	LOWER LOCK GEAR	
504	RMA0904	SLIDE PLATE (L)	
505	RMA0905	SLIDE PLATE (R)	
506	RMA0906	UPPER RAIL	
507	RMA0907	LOWER RAIL	
508	RMA0908	REAR SUPPORT PLATE	
509	RMB0469	LOCK ARM SPRING	
510	RML0421	STAY LOCK ARM	
511	RML0436	FRONT LOCK PLATE	
512	RML0437	REAR LOCK PLATE	
513	RMR0959-K	ROPE GUIDE	
514	RMW0007	GUARD ROPE	
515	RDG0183	DAMPER GEAR	
516	RMN0388	SINGLE SENOR HOLDER	
517	RFKNLMC50PCK	DISC STOCKER (A)	
518	RFKNLMC50PDK	DISC STOCKER (B)	
519	RMA0910	FRONT STOCKER STAND	
520	RMA0911	REAR STOCKER STAND	
521	RML0419	SHUTTER LEVER (L)	
522	RMR0930-K	SHUTTER INSIDE	
523	RMR0931-K	SHUTTER OUTSIDE	
524	RMR0932-K	SHUTTER SUPPORT (L)	
525	RMR0933-K	SHUTTER SUPPORT (R)	
526	RMR0948-H	S PARTITION PLATE	
527	XTB3+6F	SCREW	
528	RFKNLMC50PEK	EJECT PUSH LEVER	
529	RMC0291	EJECT CLICK SPRING	
530	RME0203	EJECT SLIDE SPRING	
531	RME0204	EJECT LEVER SPRING	
532	RML0438	EJECT MIDDLE LEVER	
533	RML0439	EJECT SLIDE PLATE	
534	RMR0938-K	EJECT BASE	
535	RMR0939-K	EJECT COVER	

Ref No.	Part No.	Part Name & Description	Remarks
536	RMR0940-K	EJECT LEVER	
537	RMR0941-H	EJECT BUTTON	
538	RMR0943-H	EJECT HOLD LEVER	
539	RMR0958-K	EJECT GUIDE	
540	RMR0964-K	EJECT PAD (A)	
541	RMR0965-K	EJECT PAD (B)	
542	SFYB5-32	STEEL BALL	
543	XTN2+6JFZ	SCREW	
544	RMB0454	GUARD ROPE SPRING	
545	RMG0200	CUSHION RUBBER	
546	RMC0316	SPRING PLATE	
		INTEGRATED CIRCUITS	
IC701	AN8835SBE1	IC, SERVO AMP.	
IC702	MN662741RPA	IC, SERVO PROCESSOR	
IC703	AN8389SE1	IC, COIL/MOTOR DRIVE	
		TRANSISTORS	
Q501	2SB1320AQRTA	TRANSISTOR	
Q502	2SC331AIQST	TRANSISTOR	

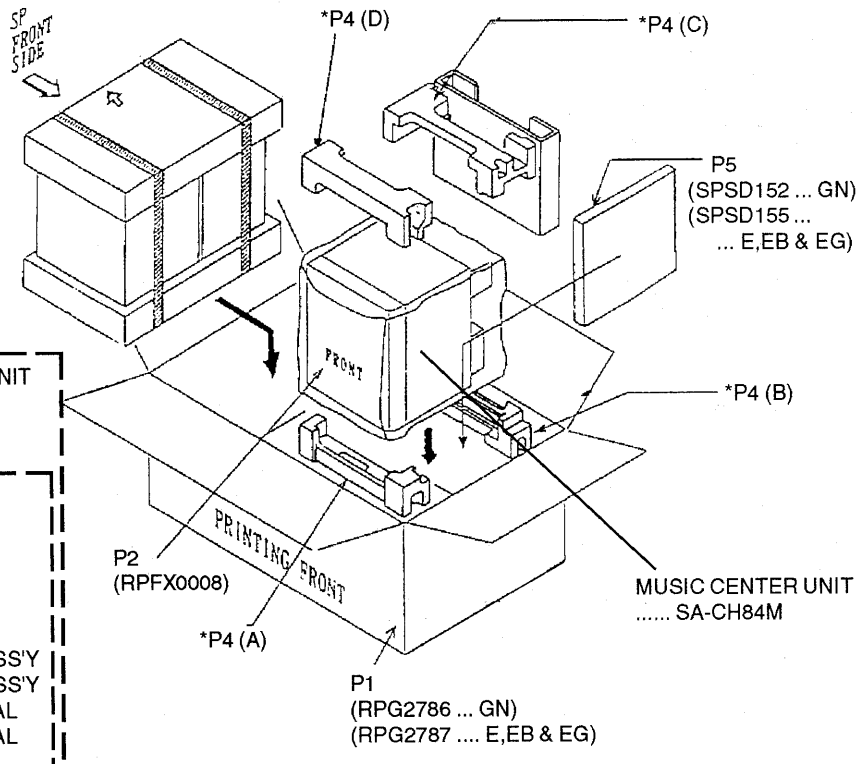
Ref No.	Part No.	Part Name & Description	Remarks
Q521	PT4810F	TRANSISTOR	
Q522	PT480F	TRANSISTOR	
Q523	PT480F	TRANSISTOR	
Q531	PT480F	TRANSISTOR	
Q701	2SB709S	TRANSISTOR	
		DIODES	
D501	MA165	DIODE	
D511	RSQGP1S53V	LED (SPEED SENSOR)	
D521	LN66S	LED (DISC SENSOR)	
D522	GL480V	LED (POSIT. SENSOR)	
D523	BR3433S	LED	
D531	GL480V	LED (SINGLE SENSOR)	
		SWITCHES	
S501	RSP1A017-A	LOCK DET./MLOCK	
S502	RSH1A005	CLAMP DET.	
S503	RSH1A005	CLAMP DET./FREE	
S701	RSM0006-P	SW, RESET	

Ref No.	Part No.	Part Name & Description	Remarks
		CONNECTORS	
CN501	RJS2A3332	CONNECTOR (32P)	
CN502	RJS1A6223-1	CONNECTOR (23P)	
CN503	RJT057W007-1	CONNECTOR (7P)	
CN504	RJS7T4ZA	CONNECTOR (7P)	
CN511	RJU057W007	SOCKET (7P)	
CN521	RJS7T7ZA	CONNECTOR (7P)	
CN531	SJT30344-H	CONNECTOR (3P)	
CN701	RJU035T016-1	16 PIN FFC CONNECTOR	
CN702	RJS1A6723-1Q	23 PIN FFC CONNECTOR	
		VARIABLE RESISTOR	
VR501	EVMLGGA00B14	VR, CD SENSOR	
		OSCILLATORS	
X701	RSXZ16M9M01T	CERAMIC OSC	

■ Packaging (Refer to page 66 for the Parts List.)

SP UNIT .... SB-CH94 ... (GN only)

P4 (RPN0954)
- *P4 (A)
- *P4 (B)
- *P4 (C)
- *P4 (D)



P5 (SPSD152 ... GN) : ACCESSORY CASE
P5 (SPSD155 ... E,EB & EG) : ACCESSORY CASE

A1 (EUR642173) : REMOTE CONTROL UNIT
A6 (RFA0622-K1) : FILE BOOK

P6 (SPB1061) : VINYL BAG

A3 (RSA0010) : AM LOOP ANT
A4 (RJA0036-K ... GN) : AC CORD
A4 (VJA0733 ... EB) : AC CORD
A4 (RJA0019-2K ... E & EG) : AC CORD
A2 (RSA0006 ... GN) : FM ANT
A2 (RSA0007 ... E,EB & EG) : FM ANT
A5 (RFKSCH84MGNK ... GN): INSTRUCTION MNL ASS'Y
A5 (RFKSCH84MEK ... E) : INSTRUCTION MNL ASS'Y
A5 (RQT3357-B ... EB) : INSTRUCTION MANUAL
A5 (RQT3359-D ... EG) : INSTRUCTION MANUAL
A7 (RQLA0321) : NUMBER SHEET

■ Resistors & Capacitors

Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors),etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
Parts without these indication can be used for all areas.
* [M] in Remarks column indicates parts that are supplied by **MESA**.
* Capacitor values are in microfarad (μF) unless specified otherwise, P=Pico-farads (pF) F=Farads (F)
* Resistors values are in ohms, unless specified otherwise, 1k=1,000(OHM), 1M=1,000k(OHM)
* The "**(CD)**" mark indicates the parts are under the CD Mechanism Unit.

Ref No.	Part No.	Values & Remarks
	RESISTORS	
R1	ERDS2TJ104T	100K 1/4W (GN)
R2	ERDS2TJ104T	100K 1/4W (GN)
R2	RCBS1H102KBY	1K 1/2W (GN)
R3	ERDS2TJ221T	220 1/4W (GN)
R4	ERDS2TJ104T	100K 1/4W (GN)
R5	ERDS2TJ564T	560K 1/4W (GN)
R6	ERDS2TJ391T	390 1/4W (GN)
R7	ERDS2TJ272T	2.7K 1/4W (GN)
R8	ERDS2TJ684T	680K 1/4W (GN)
R9	ERDS2TJ391T	390 1/4W (GN)
R10	ERDS2TJ391T	390 1/4W (GN)
R11	ERDS2TJ684T	680K 1/4W (GN)
R11	RCBS1H102KBY	1K 1/2W (GN)
R15	ERDS2TJ181T	180 1/4W
R16	ERDS2TJ153T	15K 1/4W(E,EB,EG)
R16	ERDS2TJ102T	1K 1/4W (GN)
R17	ERDS2TJ331T	330 1/4W
R18	ERDS2TJ471T	470 1/4W
R19	ERDS2TJ474T	470K 1/4W(E,EB,EG)
R19	ERDS2TJ224T	220K 1/4W (GN)
R20	ERDS2TJ562T	5.6K 1/4W
R21	ERDS2TJ822T	8.2K 1/4W
R22	ERDS2TJ473T	47K 1/4W
R23	ERDS2TJ332T	3.3K 1/4W
R24	ERDS2TJ472T	4.7K 1/4W
R25	ERDS2TJ271T	270 1/4W
R26	ERDS2TJ471T	470 1/4W
R27	ERDS2TJ272T	2.7K 1/4W
R28	ERDS2TJ473T	47K 1/4W
R29	ERDS2TJ680T	68 1/4W
R32	ERDS2TJ272T	2.7K 1/4W
R33	ERDS2TJ272T	2.7K 1/4W
R34	ERDS2TJ103T	10K 1/4W
R35	ERDS2TJ103T	10K 1/4W
R36	ERDS2TJ474T	470K 1/4W
R37	ERDS2TJ474T	470K 1/4W
R38	ERDS2TJ272T	2.7K 1/4W
R39	ERDS2TJ272T	2.7K 1/4W
R40	ERDS2TJ391T	390 1/4W
R41	ERDS2TJ102T	1K 1/4W
R42	ERDS2TJ102T	1K 1/4W
R43	ERDS2TJ102T	1K 1/4W
R44	ERDS2TJ102T	1K 1/4W
R45	ERDS2TJ102T	1K 1/4W
R46	ERDS2TJ104T	100K 1/4W
R47	ERDS2TJ562T	5.6K 1/4W
R48	ERDS2TJ391T	390 1/4W
R49	ERDS2TJ561T	560 1/4W
R50	ERDS2TJ102T	1K 1/4W
R51	ERDS2TJ103T	10K 1/4W
R52	ERDS2TJ102T	1K 1/4W
R53	ERDS2TJ102T	1K 1/4W
R54	ERDS2TJ102T	1K 1/4W
R55	ERDS2TJ102T	1K 1/4W
R56	ERDS2TJ102T	1K 1/4W
R57	ERDS2TJ103T	10K 1/4W
R58	ERDS2TJ103T	10K 1/4W
R60	ERDS2TJ563T	56K 1/4W
R61	ERDS2TJ102T	1K 1/4W
R63	ERDS2TJ102T	1K 1/4W
R64	ERDS2TJ820T	82 1/4W
R65	ERDS2TJ103T	10K 1/4W
R71	ERDS2TJ182T	1.8K 1/4W(E,EB,EG)
R72	ERDS2TJ122T	1.2K 1/4W(E,EB,EG)
R73	ERDS2TJ122T	1.2K 1/4W(E,EB,EG)
R74	ERDS2TJ103T	10K 1/4W(E,EB,EG)
R75	ERDS2TJ222T	2.2K 1/4W(E,EB,EG)
R76	ERDS2TJ331T	330 1/4W(E,EB,EG)
R77	ERDS2TJ474T	470K 1/4W(E,EB,EG)
R101	ERDS2TJ334T	330K 1/4W
R102	ERDS2TJ104T	100K 1/4W
R103	ERDS2TJ153T	15K 1/4W
R104	ERDS2TJ153T	15K 1/4W
R105	ERDS2TJ271T	270 1/4W
R106	ERDS2TJ222T	2.2K 1/4W
R107	ERDS2TJ330T	33 1/4W
R108	ERDS2TJ330T	33 1/4W
R109	ERDS2TJ432T	4.3K 1/4W
R110	ERDS2TJ432T	4.3K 1/4W
R111	ERDS2TJ222T	2.2K 1/4W
R112	ERDS2TJ222T	2.2K 1/4W
R113	ERDS2TJ122T	1.2K 1/4W
R114	ERDS2TJ122T	1.2K 1/4W
R115	ERDS2TJ474T	470K 1/4W
R116	ERDS2TJ474T	470K 1/4W
R117	ERDS2TJ274T	270K 1/4W
R118	ERDS2TJ274T	270K 1/4W
R121	ERDS2TJ333T	33K 1/4W
R122	ERDS2TJ333T	33K 1/4W
R123	ERDS2TJ103T	10K 1/4W
R124	ERDS2TJ103T	10K 1/4W
R125	ERDS2TJ102T	1K 1/4W
R126	ERDS2TJ102T	1K 1/4W
R127	ERDS2TJ821T	820 1/4W
R128	ERDS2TJ821T	820 1/4W
R129	ERDS2TJ822T	8.2K 1/4W
R130	ERDS2TJ822T	8.2K 1/4W
R131	ERDS2TJ683T	68K 1/4W
R132	ERDS2TJ335T	3.3M 1/4W
R133	ERDS2TJ332T	3.3K 1/4W
R134	ERDS2TJ474T	470K 1/4W
R137	ERDS2TJ103T	10K 1/4W
R138	ERDS2TJ103T	10K 1/4W
R139	ERDS2TJ103T	10K 1/4W
R141	ERDS2TJ682T	6.8K 1/4W
R142	ERDS2TJ682T	6.8K 1/4W
R143	ERDS2TJ222T	2.2K 1/4W
R144	ERDS2TJ222T	2.2K 1/4W
R145	ERDS2TJ103T	10K 1/4W
R146	ERDS2TJ103T	10K 1/4W
R149	ERDS2TJ272T	2.7K 1/4W
R150	ERDS2TJ272T	2.7K 1/4W
R151	ERDS2TJ105T	1M 1/4W
R152	ERDS2TJ105T	1M 1/4W
R153	ERDS2TJ102T	1K 1/4W
R154	ERDS2TJ102T	1K 1/4W
R155	ERDS2TJ681T	680 1/4W
R156	ERDS2TJ681T	680 1/4W
R158	ERDS2TJ221T	220 1/4W
R159	ERDS2TJ222T	2.2K 1/4W
R160	ERDS2TJ222T	2.2K 1/4W
R161	ERDS2TJ472T	4.7K 1/4W
R162	ERDS2TJ472T	4.7K 1/4W
R163	ERDS2TJ433T	43K 1/4W
R165	ERDS2TJ563T	56K 1/4W
R166	ERDS2TJ104T	100K 1/4W
R167	ERDS2TJ470T	47 1/4W
R169	ERDS2TJ102T	1K 1/4W
R170	ERDS2TJ102T	1K 1/4W
R172	ERDS2TJ331T	330 1/4W
R173	ERDS2TJ103T	10K 1/4W
R174	ERDS2TJ103T	10K 1/4W
R176	ERDS2TJ822T	8.2K 1/4W
R177	ERDS2TJ472T	4.7K 1/4W
R178	ERDS2TJ1R2T	1.2 1/4W
R179	ERDS2TJ472T	4.7K 1/4W
R180	ERDS2TJ472T	4.7K 1/4W
R181	ERDS2TJ332T	3.3K 1/4W
R182	ERDS2TJ1R0T	1 1/4W
R183	ERDS2TJ104T	100K 1/4W
R184	ERDS2TJ104T	100K 1/4W
R185	ERDS2TJ104T	100K 1/4W
R186	ERDS2TJ102T	1K 1/4W
R188	ERDS2TJ102T	1K 1/4W
R189	ERDS2TJ472T	4.7K 1/4W
R190	ERDS2TJ104T	100K 1/4W
R191	ERDS2TJ563T	56K 1/4W
R192	ERDS2TJ470T	47 1/4W
R193	ERDS2TJ104T	100K 1/4W
R194	ERDS2TJ104T	100K 1/4W
R195	ERDS2TJ104T	100K 1/4W
R206	ERDS2TJ221T	220 1/4W
R208	ERDS2TJ123T	12K 1/4W
R209	ERDS2TJ123T	12K 1/4W
R210	ERDS2TJ272T	2.7K 1/4W
R211	ERDS2TJ334T	330K 1/4W
R212	ERDS2TJ123T	12K 1/4W

Ref No.	Part No.	Values & Remarks
R213	ERDS2TJ152T	1.5K 1/4W
R215	ERDS2TJ222T	2.2K 1/4W
R216	ERDS2TJ222T	2.2K 1/4W
R220	ERDS2TJ472T	4.7K 1/4W
R221	ERDS2TJ2R7T	2.7 1/4W
R225	ERDS2TJ2R7T	2.7 1/4W
R226	ERDS2TJ102T	1K 1/4W
R227	ERDS2TJ102T	1K 1/4W
R228	ERDS2TJ472T	4.7K 1/4W
R229	ERDS2TJ103T	10K 1/4W
R230	ERDS2TJ472T	4.7K 1/4W
R231	ERDS2TJ102T	1K 1/4W
R232	ERDS2TJ102T	1K 1/4W
R233	ERDS2TJ222T	2.2K 1/4W
R234	ERDS2TJ472T	4.7K 1/4W
R235	ERDS2TJ472T	4.7K 1/4W
R236	ERDS2TJ472T	4.7K 1/4W
R301	ERDS2TJ223T	22K 1/4W
R302	ERDS2TJ223T	22K 1/4W
R303	ERDS2TJ682T	6.8K 1/4W
R304	ERDS2TJ682T	6.8K 1/4W
R305	ERDS2TJ222T	2.2K 1/4W
R306	ERDS2TJ222T	2.2K 1/4W
R307	ERDS2TJ332T	3.3K 1/4W
R308	ERDS2TJ332T	3.3K 1/4W
R309	ERDS2TJ472T	4.7K 1/4W
R310	ERDS2TJ472T	4.7K 1/4W
R311	ERDS2TJ104T	100K 1/4W
R312	ERDS2TJ104T	100K 1/4W
R313	ERDS2TJ272T	2.7K 1/4W
R314	ERDS2TJ472T	4.7K 1/4W
R315	ERDS2TJ102T	1K 1/4W
R316	ERDS2TJ222T	2.2K 1/4W
R319	ERDS2TJ221T	220 1/4W
R320	ERDS2TJ221T	220 1/4W
R321	ERDS2TJ104T	100K 1/4W
R322	ERDS2TJ104T	100K 1/4W
R323	ERDS2TJ224T	220K 1/4W
R324	ERDS2TJ224T	220K 1/4W
R325	ERDS2TJ103T	10K 1/4W
R327	ERDS2TJ105T	1M 1/4W
R328	ERDS2TJ102T	1K 1/4W
R329	ERDS2TJ332T	3.3K 1/4W
R330	ERDS2TJ332T	3.3K 1/4W
R331	ERDS2TJ101T	100 1/4W
R332	ERDS2TJ101T	100 1/4W
R333	ERDS2TJ472T	4.7K 1/4W
R334	ERDS2TJ472T	4.7K 1/4W

Ref No.	Part No.	Values & Remarks
R335	ERDS2TJ561T	560 1/4W
R336	ERDS2TJ561T	560 1/4W
R337	ERDS1FVJ680T	68 1/2W
R338	ERDS1FVJ680T	68 1/2W
R339	ERDS2TJ152T	1.5K 1/4W
R341	ERDS2TJ472T	4.7K 1/4W
R342	ERDS2TJ472T	4.7K 1/4W
R343	ERDS2TJ182T	1.8K 1/4W
R344	ERDS2TJ182T	1.8K 1/4W
R345	ERDS2TJ332T	3.3K 1/4W
R346	ERDS2TJ332T	3.3K 1/4W
R347	ERDS2TJ152T	1.5K 1/4W
R348	ERDS2TJ152T	1.5K 1/4W
R349	ERDS2TJ473T	47K 1/4W
R350	ERDS2TJ473T	47K 1/4W
R351	ERDS2TJ102T	1K 1/4W
R352	ERDS2TJ102T	1K 1/4W
R353	ERDS2TJ104T	100K 1/4W
R354	ERDS2TJ104T	100K 1/4W
R355	ERDS2TJ122T	1.2K 1/4W
R356	ERDS2TJ122T	1.2K 1/4W
R357	ERDS2TJ104T	100K 1/4W
R358	ERDS2TJ104T	100K 1/4W
R359	ERDS2TJ123T	12K 1/4W
R360	ERDS2TJ123T	12K 1/4W
R361	ERDS2TJ102T	1K 1/4W
R362	ERDS2TJ102T	1K 1/4W
R363	ERDS2TJ102T	1K 1/4W
R364	ERDS2TJ104T	100K 1/4W
R365	ERDS2TJ105T	1M 1/4W
R366	ERDS2TJ182T	1.8K 1/4W
R367	ERDS2TJ103T	10K 1/4W
R368	ERDS2TJ105T	1M 1/4W
R369	ERDS2TJ154T	150K 1/4W
R370	ERDS2TJ105T	1M 1/4W
R371	ERDS2TJ121T	120 1/4W
R372	ERDS2TJ121T	120 1/4W
R373	ERDS2TJ121T	120 1/4W
R374	ERDS2TJ121T	120 1/4W
R375	ERDS2TJ102T	1K 1/4W
R376	ERDS2TJ121T	120 1/4W
R377	ERDS2TJ121T	120 1/4W
R378	ERDS2TJ121T	120 1/4W
R379	ERDS2TJ223T	22K 1/4W
R380	ERDS2TJ223T	22K 1/4W
R381	ERDS2TJ154T	150K 1/4W
R382	ERDS2TJ472T	4.7K 1/4W
R383	ERDS2TJ682T	6.8K 1/4W

Ref No.	Part No.	Values & Remarks
R384	ERDS2TJ153T	15K 1/4W
R385	ERDS2TJ102T	1K 1/4W
R395	ERDS2TJ271T	270 1/4W
R396	ERDS2TJ271T	270 1/4W
R398	ERDS2TJ472T	4.7K 1/4W
R399	ERDS2TJ222T	2.2K 1/4W
R401	ERDS2TJ123T	12K 1/4W
R402	ERDS2TJ123T	12K 1/4W
R403	ERDS2TJ822T	8.2K 1/4W
R404	ERDS2TJ822T	8.2K 1/4W
R405	ERDS2TJ102T	1K 1/4W
R406	ERDS2TJ102T	1K 1/4W
R407	ERDS2TJ105T	1M 1/4W
R408	ERDS2TJ122T	1.2K 1/4W
R409	ERDS2TJ473T	47K 1/4W
R410	ERDS2TJ103T	10K 1/4W
R411	ERDS2TJ103T	10K 1/4W
R412	ERDS2TJ103T	10K 1/4W
R413	ERDS2TJ124T	120K 1/4W
R416	ERDS2TJ102T	1K 1/4W
R417	ERDS2TJ472T	4.7K 1/4W
R418	ERDS2TJ181T	180 1/4W
R419	ERDS2TJ472T	4.7K 1/4W
R420	ERDS2TJ472T	4.7K 1/4W
R424	ERDS2TJ104T	100K 1/4W
R425	ERDS2TJ181T	180 1/4W
R454	ERDS2TJ472T	4.7K 1/4W
R461	ERDS2TJ561T	560 1/4W
R462	ERDS2TJ331T	330 1/4W
R463	ERDS2TJ821T	820 1/4W
R464	ERDS2TJ821T	820 1/4W
R465	ERDS2TJ561T	560 1/4W
R487	ERDS2TJ102T	1K 1/4W
R488	ERDS2TJ152T	1.5K 1/4W
R499	ERDS2TJ222T	2.2K 1/4W
R501	ERDS2TJ102T	1K 1/4W
R501	ERDS2TJ103T	10K 1/4W(CD)
R502	ERDS2TJ102T	1K 1/4W
R502	ERDS2TJ103T	10K 1/4W(CD)
R503	ERDS2TJ563T	56K 1/4W
R503	ERDS2TJ102T	1K 1/4W(CD)
R504	ERDS2TJ563T	56K 1/4W
R505	ERDS2TJ821T	820 1/4W
R506	ERDS2TJ821T	820 1/4W
R507	ERDS2TJ563T	56K 1/4W
R508	ERDS2TJ563T	56K 1/4W
R509	ERDS1FVJ100T	10 1/2W
R510	ERDS1FVJ100T	10 1/2W

Ref No.	Part No.	Values & Remarks
R511	ERDS2TJ823T	82K 1/4W
R512	ERDS2TJ124T	120K 1/4W
R513	ERDS2TJ684T	680K 1/4W
R514	ERDS2TJ563T	56K 1/4W
R515	ERDS2TJ103T	10K 1/4W
R516	ERD2FCVG470T	47 1/4W
R517	ERDS2TJ182T	1.8K 1/4W
R518	ERDS2TJ182T	1.8K 1/4W
R519	ERDS2TJ103T	10K 1/4W
R542	ERDS1FVJ390T	39 1/2W ⚠
R544	ERQ16NKWR10E	0.WR 1/6W
R546	ERDS1FVJ102T	1K 1/2W ⚠
R547	ERDS1FVJ102T	1K 1/2W ⚠
R548	ERDS1FVJ102T	1K 1/2W ⚠
R549	ERDS2TJ151T	150 1/4W
R550	ERDS2TJ151T	150 1/4W
R551	ERDS2TJ151T	150 1/4W
R552	ERDS2TJ180T	18 1/4W
R553	ERDS1FVJ330T	33 1/2W ⚠
R555	ERDS2TJ221T	220 1/4W
R556	ERDS2TJ151T	150 1/4W
R557	ERDS2TJ221T	220 1/4W
R559	ERDS2TJ471T	470 1/4W
R560	ERDS2TJ332T	3.3K 1/4W
R561	ERDS2TJ223T	22K 1/4W
R562	ERDS2TJ471T	470 1/4W
R563	ERDS2TJ273T	27K 1/4W
R564	ERDS2TJ223T	22K 1/4W
R565	ERDS2TJ331T	330 1/4W
R567	ERDS2TJ472T	4.7K 1/4W
R568	ERDS2TJ332T	3.3K 1/4W
R569	ERDS2TJ332T	3.3K 1/4W
R570	ERDS2TJ103T	10K 1/4W
R571	ERDS2TJ151T	150 1/4W
R572	ERDS2TJ472T	4.7K 1/4W
R573	ERDS1FVJ390T	39 1/2W ⚠
R574	ERDS1FVJ820T	82 1/2W ⚠
R575	ERDS1FVJ101T	100 1/2W ⚠
R576	ERDS2TJ122T	1.2K 1/4W
R577	ERDS2TJ151T	150 1/4W
R578	ERD25FVJ4R7T	4.7 1/4W
R580	ERDS2TJ100T	10 1/4W
R581	ERDS2TJ100T	10 1/4W
R584	ERDS1FVJ102T	1K 1/2W ⚠
R586	ERDS1FVJ4R7T ⚠	4.7 1/2W(E,EG,GN)
R587	ERDS2TJ152T	1.5K 1/4W
R588	ERDS2TJ1R0T	1 1/4W
R589	ERDS2TJ1R0T	1 1/4W

Ref No.	Part No.	Values & Remarks
R590	ERDS1FVJ120T	12 1/2W ⚠
R591	ERG1SJ272P	2.7K 1W ⚠
R592	ERG1SJ272P	2.7K 1W ⚠
R593	ERDS1FVJ2R2T	2.2 1/2W ⚠
R594	ERDS1FVJ4R7T	4.7 1/2W ⚠
R595	ERD2FCVJ4R7T	4.7 1/4W
R597	ERDS1FVJ100T	10 1/2W ⚠
R598	RSFMB40KT-L ⚠	FUSE RESISTOR
R599	RSFMB40KT-L ⚠	FUSE RESISTOR
R601	ERDS2TJ103T	10K 1/4W
R606	ERDS2TJ224T	220K 1/4W
R609	ERDS2TJ101T	100 1/4W
R610	ERDS2TJ101T	100 1/4W
R611	ERDS2TJ473T	47K 1/4W
R612	ERDS2TJ101T	100 1/4W
R613	ERDS2TJ102T	1K 1/4W
R614	ERDS2TJ102T	1K 1/4W
R615	ERDS2TJ101T	100 1/4W
R616	ERDS2TJ224T	220K 1/4W
R617	ERDS2TJ106T	10M 1/4W
R618	ERDS2TJ334T	330K 1/4W
R619	ERDS2TJ681T	680 1/4W
R620	ERDS2TJ473T	47K 1/4W
R621	ERDS2TJ473T	47K 1/4W
R624	ERDS2TJ104T	100K 1/4W
R625	ERDS2TJ101T	100 1/4W
R626	ERDS2TJ101T	100 1/4W
R627	ERDS2TJ473T	47K 1/4W
R628	ERDS2TJ473T	47K 1/4W
R629	ERDS2TJ473T	47K 1/4W
R630	ERDS2TJ473T	47K 1/4W
R631	ERDS2TJ473T	47K 1/4W
R632	ERDS2TJ473T	47K 1/4W
R633	ERDS2TJ473T	47K 1/4W
R634	ERDS2TJ473T	47K 1/4W
R635	ERDS2TJ223T	22K 1/4W
R636	ERDS2TJ331T	330 1/4W
R638	ERDS2TJ103T	10K 1/4W
R639	ERDS2TJ103T	10K 1/4W
R640	ERDS2TJ103T	10K 1/4W
R641	ERDS2TJ103T	10K 1/4W
R642	ERDS2TJ473T	47K 1/4W
R643	ERDS2TJ473T	47K 1/4W
R644	ERDS2TJ101T	100 1/4W
R645	ERDS2TJ101T	100 1/4W
R646	ERDS2TJ101T	100 1/4W
R647	ERDS2TJ101T	100 1/4W
R662	ERDS2TJ102T	1K 1/4W

Ref No.	Part No.	Values & Remarks
R681	ERDS2TJ223T	22K 1/4W
R682	ERDS2TJ223T	22K 1/4W
R683	ERDS2TJ223T	22K 1/4W
R685	ERDS2TJ223T	22K 1/4W
R686	ERDS2TJ223T	22K 1/4W
R687	ERDS2TJ472T	4.7K 1/4W
R688	ERDS2TJ102T	1K 1/4W
R689	ERDS2TJ473T	47K 1/4W
R690	ERDS2TJ473T	47K 1/4W
R691	ERDS2TJ473T	47K 1/4W
R692	ERDS2TJ473T	47K 1/4W
R693	ERDS2TJ473T	47K 1/4W
R694	ERDS2TJ473T	47K 1/4W
R701	ERDS2TJ102T	1K 1/4W
R701	ERJ6GEYJ4R7V	4.7 1/10W(CD)
R702	ERDS2TJ102T	1K 1/4W
R703	ERDS2TJ122T	1.2K 1/4W
R703	ERJ6GEYJ823	82K 1/10W(CD)
R704	ERDS2TJ182T	1.8K 1/4W
R704	ERJ6GEYJ102A	1K 1/10W(CD)
R705	ERDS2TJ222T	2.2K 1/4W
R705	ERJ6GEYJ103V	10K 1/10W(CD)
R706	ERDS2TJ272T	2.7K 1/4W
R706	ERJ6GEYJ102A	1K 1/10W(CD)
R707	ERDS2TJ472T	4.7K 1/4W
R707	ERJ6GEYJ474V	470K 1/10W(CD)
R708	ERDS2TJ682T	6.8K 1/4W
R708	ERJ6GEYJ154V	150K 1/10W(CD)
R709	ERDS2TJ103T	10K 1/4W
R709	ERJ6GEYJ683V	68K 1/10W(CD)
R710	ERDS2TJ223T	22K 1/4W
R711	ERDS2TJ683T	68K 1/4W
R711	ERJ6GEYJ154V	150K 1/10W(CD)
R712	ERDS2TJ102T	1K 1/4W
R712	ERJ6GEYJ221V	220 1/10W(CD)
R713	ERDS2TJ102T	1K 1/4W
R714	ERDS2TJ122T	1.2K 1/4W
R715	ERDS2TJ182T	1.8K 1/4W
R716	ERDS2TJ222T	2.2K 1/4W
R717	ERDS2TJ223T	22K 1/4W
R717	ERJ6GEYJ101V	100 1/10W(CD)
R718	ERJ6GEYJ101V	100 1/10W(CD)
R721	ERDS2TJ681T	680 1/4W
R721	ERJ6GEYJ101V	100 1/10W(CD)
R722	ERDS2TJ102T	1K 1/4W
R722	ERJ6GEYJ563V	56K 1/10W(CD)
R723	ERDS2TJ681T	680 1/4W
R723	ERJ6GEYJ182V	1.8K 1/10W(CD)

Ref No.	Part No.	Values & Remarks
R724	ERDS2TJ102T	1K 1/4W
R724	ERJ6GEYJ333V	33K 1/10W(CD)
R725	ERDS2TJ681T	680 1/4W
R725	ERJ6GEYJ223V	22K 1/10W(CD)
R726	ERDS2TJ821T	820 1/4W
R726	ERJ6GEYJ473V	47K 1/10W(CD)
R727	ERDS2TJ821T	820 1/4W
R727	ERJ6GEYJ822V	8.2K 1/10W(CD)
R728	ERDS2TJ821T	820 1/4W
R728	ERJ6GEYJ103V	10K 1/10W(CD)
R729	ERDS2TJ821T	820 1/4W
R730	ERDS2TJ821T	820 1/4W
R731	ERDS2TJ821T	820 1/4W
R731	ERJ6GEYJ822V	8.2K 1/10W(CD)
R732	ERDS2TJ821T	820 1/4W
R735	ERJ6GEYJ101V	100 1/10W(CD)
R736	ERJ6GEYJ101V	100 1/10W(CD)
R738	ERDS2TJ102T	1K 1/4W
R738	ERJ6GEYJ223V	22K 1/10W(CD)
R739	ERDS2TJ102T	1K 1/4W
R740	ERDS2TJ331T	330 1/4W
R744	ERJ6GEYJ103V	10K 1/10W(CD)
R745	ERDS2TJ331T	330 1/4W
R745	ERJ6GEYJ155V	1.5M 1/10W(CD)
R748	ERDS2TJ102T	1K 1/4W
R748	ERJ6GEYJ182V	1.8K 1/10W(CD)
R749	ERDS2TJ102T	1K 1/4W
R749	ERJ6GEYJ682V	6.8K 1/10W(CD)
R750	ERJ6GEYJ473V	47K 1/10W(CD)
R751	ERDS2TJ102T	1K 1/4W
R751	ERJ6GEYJ473V	47K 1/10W(CD)
R752	ERDS2TJ102T	1K 1/4W
R752	ERJ8GEYJ220V	22 1/8W (CD)
R753	ERDS2TJ122T	1.2K 1/4W
R753	ERJ6GEYJ102A	1K 1/10W(CD)
R754	ERDS2TJ182T	1.8K 1/4W
R755	ERDS2TJ222T	2.2K 1/4W
R756	ERDS2TJ272T	2.7K 1/4W
R757	ERDS2TJ472T	4.7K 1/4W
R758	ERDS2TJ682T	6.8K 1/4W
R759	ERDS2TJ103T	10K 1/4W
R760	ERDS2TJ223T	22K 1/4W
R761	ERDS2TJ272T	2.7K 1/4W
R762	ERDS2TJ472T	4.7K 1/4W
R765	ERDS2TJ471T	470 1/4W
R767	ERDS2TJ821T	820 1/4W
R769	ERDS2TJ821T	820 1/4W
R771	ERDS2TJ102T	1K 1/4W

Ref No.	Part No.	Values & Remarks
R772	ERDS2TJ102T	1K 1/4W
R772	ERJ6GEYJ273V	27K 1/10W(CD)
R774	ERDS2TJ182T	1.8K 1/4W
R775	ERDS2TJ222T	2.2K 1/4W
R776	ERDS2TJ272T	2.7K 1/4W
R777	ERDS2TJ472T	4.7K 1/4W
R778	ERDS2TJ682T	6.8K 1/4W
R779	ERDS2TJ103T	10K 1/4W
R780	ERDS2TJ122T	1.2K 1/4W
R781	ERDS2TJ221T	220 1/4W
R782	ERDS2TJ151T	150 1/4W
R783	ERDS2TJ221T	220 1/4W
R784	ERDS2TJ151T	150 1/4W
R785	ERDS2TJ221T	220 1/4W
R786	ERDS2TJ151T	150 1/4W
R787	ERDS2TJ221T	220 1/4W
R788	ERDS2TJ151T	150 1/4W
R789	ERDS2TJ221T	220 1/4W
R790	ERDS2TJ151T	150 1/4W
R791	ERDS2TJ221T	220 1/4W
R792	ERDS2TJ151T	150 1/4W
R952	ERDS2TJ821T	820 1/4W
R953	ERDS2TJ393T	39K 1/4W
R972	ERDS2TJ821T	820 1/4W
R973	ERDS2TJ393T	39K 1/4W
	CAPACITORS	
C1	ECBT1H5R6KC5	5.6P 50V (GN)
C3	ECBT1H2R2KC5	2.2P 50V (GN)
C4	ECBT1H181KB5	180P 50V (GN)
C5	ECBT1H5R6KC5	5.6P 50V (GN)
C6	ECBT1H3R3KC5	3.3P 50V (GN)
C7	ECBT1H4R7KC5	4.7P 50V (GN)
C8	ECBT1H3R3KC5	3.3P 50V (GN)
C9	ECBT1H2R2KC5	2.2P 50V (GN)
C10	ECBT1H180JC5	18P 50V (GN)
C15	ECBT1C103MS5	0.01 16V
C16	ECEA1CU220B	22 16V
C17	ECBT1C103MS5	0.01 16V
C18	ECBT1H102KB5	1000P 50V
C19	ECBT1C103MS5	0.01 16V
C20	ECEA1HKA3R3B	3.3 50V
C21	ECEA0JU101B	100 6.3V
C22	ECBT1C103MS5	0.01 16V
C23	ECEA1CU220B	22 16V
C24	ECBT1H473ZF5	0.047 50V
C25	ECEA1HKA4R7B	4.7 50V

Ref No.	Part No.	Values & Remarks
C26	ECBT1C822MS5	8200P 16V
C27	ECQP1821JZT	820P 100V [M]
C28	ECEA1HKA010B	1 50V
C29	ECFR1C103KR	0.01 16V
C30	ECFR1C103KR	0.01 16V
C31	ECBT1H150JC5	15P 50V
C32	ECBT1C103MS5	0.01 16V
C33	ECEA1HKA2R2B	2.2 50V
C34	ECEA1HKA010B	1 50V
C35	ECEA1HKA010B	1 50V
C36	ECEA1HKA010B	1 50V
C37	ECEA1HKA010B	1 50V
C38	ECBT1C822MS5	8200P 16V
C39	ECBT1C822MS5	8200P 16V
C40	ECBT1H561KB5	560P 50V
C41	ECBT1H561KB5	560P 50V
C42	ECBT1C562MR5	5600P 16V
C43	ECBT1C562MR5	5600P 16V
C44	ECEA1CU101B	100 16V
C45	ECEA1HKA010B	1 50V
C46	ECEA1HKA010B	1 50V
C47	ECBT1H473ZF5	0.047 50V
C48	ECBT1H100JC5	10P 50V(E,EB,EG)
C48	ECBT1H8R2KC5	8.2P 50V (GN)
C49	ECBT1H331KB5	330P 50V(E,EB,EG)
C51	ECBT1C103MS5	0.01 16V
C52	ECEA25M4R7RB	4.7 25V
C53	ECBT1C103MS5	0.01 16V
C54	ECBT1H180JC5	18P 50V
C55	ECBT1H150JC5	15P 50V
C56	ECBT1H102KB5	1000P 50V
C57	ECEA0JU101B	100 6.3V
C59	ECBT1H330J5	33P 50V
C60	ECBT1H102KB5	1000P 50V
C61	ECBT1H331KB5	330P 50V
C62	ECEA1CU220B	22 16V
C63	ECBT1C103MS5	0.01 16V
C64	ECBT1C103MS5	0.01 16V
C65	ECBT1H102KB5	1000P 50V
C66	ECBT1H102KB5	1000P 50V
C67	ECBT1H102KB5	1000P 50V
C68	ECBT1H102KB5	1000P 50V(E,EB,EG)
C71	ECBT1C103MS5	0.01 16V(E,EB,EG)
C71	ECBT1H331KB5	330P 50V (GN)
C72	ECBT1H471KB5	470P 50V(E,EB,EG)
C73	ECBT1H2R7KC5	2.7P 50V(E,EB,EG)
C101	ECBT1H102KB5	1000P 50V
C102	ECBT1H102KB5	1000P 50V
C103	ECBT1H681KB5	680P 50V
C104	ECFR1C223MR	0.022 16V
C105	ECBT1H681KB5	680P 50V
C106	ECBT1H681KB5	680P 50V
C108	ECEA1CKA330B	33 16V
C109	ECEA1CU101B	100 16V
C111	ECBT1H561KB5	560P 50V
C112	ECBT1H561KB5	560P 50V
C113	ECEA0JKA221B	220 6.3V
C114	ECEA0JKA221B	220 6.3V
C115	ECFR1C333JR	0.033 16V
C116	ECFR1C333JR	0.033 16V
C117	ECEA1HKA010B	1 50V
C118	ECEA1HKA010B	1 50V
C119	ECEA1HKA4R7B	4.7 50V
C120	ECEA1HKA4R7B	4.7 50V
C121	ECEA1HKA010B	1 50V
C122	ECEA1HKA010B	1 50V
C123	ECBT1H102KB5	1000P 50V
C124	ECBT1H102KB5	1000P 50V
C125	ECFR1C473MR	0.047 16V
C126	ECFR1C473MR	0.047 16V
C127	ECBT1C103MS5	0.01 16V
C128	ECBT1C103MS5	0.01 16V
C129	ECBT1H821KB5	820P 50V
C130	ECBT1H821KB5	820P 50V
C131	ECBT1H821KB5	820P 50V
C132	ECBT1H821KB5	820P 50V
C133	ECEA1HKA4R7B	4.7 50V
C134	ECEA1HKA4R7B	4.7 50V
C135	ECBT1H102KB5	1000P 50V
C136	ECBT1H102KB5	1000P 50V
C137	ECFR1C183KR	0.018 16V
C138	ECFR1C183KR	0.018 16V
C139	ECEA1HKA2R2B	2.2 50V
C140	ECEA1CKA100B	10 16V
C141	ECEA1HKA0R1B	0.1 50V
C142	ECFR1C223MR	0.022 16V
C143	ECEA1HKA4R7B	4.7 50V
C144	ECEA1HKA4R7B	4.7 50V
C145	ECEA1CKA100B	10 16V
C146	ECEA1CKA100B	10 16V
C147	ECBT1C152KR5	1500P 16V
C148	ECBT1C152KR5	1500P 16V
C150	ECEA1AKA470B	47 10V
C151	ECEA1HKA010B	1 50V
C152	ECEA1HKA010B	1 50V
C153	ECBT1H102KB5	1000P 50V
C154	ECBT1H102KB5	1000P 50V
C155	ECEA1CKA100B	10 16V
C156	ECEA1CKA100B	10 16V
C161	ECEA1CU101B	100 16V
C162	ECEA1CU471B	470 16V
C163	ECEA1HKA010B	1 50V
C164	ECEA1HKA010B	1 50V
C165	ECEA1CKA100B	10 16V
C166	ECEA1CKA100B	10 16V
C167	ECEA1HKAR68B	0.68 50V
C168	ECEA1HKAR68B	0.68 50V
C169	ECEA1HKA4R7B	4.7 50V
C170	ECEA1HKA4R7B	4.7 50V
C171	ECEA1CKA100B	10 16V
C173	ECBT1C103MS5	0.01 16V
C174	ECEA1HKA4R7B	4.7 50V
C175	ECEA1VU221B	220 10V
C176	ECQV1H473JZ3	0.047 50V
C177	ECBT1H102KB5	1000P 50V
C178	ECBT1H102KB5	1000P 50V
C179	ECBT1C103MS5	0.01 16V
C180	ECBT1C103MS5	0.01 16V
C181	ECBT1C103MS5	0.01 16V
C182	ECEA1HKA4R7B	4.7 50V
C183	ECQV1H474JZ3	0.47 50V
C184	ECQP1152JZT	1500P 100V [M]
C185	ECQP2A472JZT	4700P 100V
C186	ECEA1AKA470B	47 10V
C187	ECBT1H101KB5	100P 50V
C188	ECBT1H101KB5	100P 50V
C189	ECQP2A272JZT	2700P 100V
C190	ECBT1C103MS5	0.01 16V
C193	ECBT1H102KB5	1000P 50V
C194	ECBT1H102KB5	1000P 50V
C201	ECEA1CU101B	100 16V
C202	ECBT1H104ZF5	0.1 50V
C203	ECBT1H331KB5	330P 50V
C204	ECBT1H331KB5	330P 50V
C205	ECBT1C222KR5	2200P 16V
C206	ECBT1C222KR5	2200P 16V
C301	ECBT1H101KB5	100P 50V
C302	ECBT1H101KB5	100P 50V
C303	ECBT1E103ZF5	0.01 25V
C304	ECBT1E103ZF5	0.01 25V
C305	ECBT1H101KB5	100P 50V
C306	ECBT1H101KB5	100P 50V
C308	ECBT1E223ZF5	0.022 25V
C309	ECBT1H470J5	47P 50V
C310	ECBT1H470J5	47P 50V
C311	ECBT1H104ZF5	0.1 50V
C312	ECFR1C473KR	0.047 16V
C313	ECFR1C473KR	0.047 16V
C314	ECFR1E104ZF5	0.1 25V
C315	ECEA1HKA2R2B	2.2 50V
C316	ECEA1HKA2R2B	2.2 50V
C319	ECFR1C104KR	0.1 16V
C320	ECFR1C104KR	0.1 16V
C321	ECFR1C104KR	0.1 16V
C322	ECFR1C104KR	0.1 16V
C323	ECBT0J153MS5	0.015 6.3V
C324	ECBT0J153MS5	0.015 6.3V
C325	ECBT0J153MS5	0.015 6.3V
C326	ECBT0J153MS5	0.015 6.3V
C327	ECBT1C222MR5	2200P 16V
C328	ECBT1C222MR5	2200P 16V
C329	ECEA1HKA2R2B	2.2 50V
C330	ECEA1HKA2R2B	2.2 50V
C331	ECEA1HKAR15B	0.15 50V
C332	ECEA1HKAR15B	0.15 50V
C333	ECFR1C104KR	0.1 16V
C334	ECFR1C104KR	0.1 16V
C335	ECEA1HKA2R2B	2.2 50V
C336	ECEA1HKA2R2B	2.2 50V
C337	ECBT1E103ZF5	0.01 25V
C338	ECEA1HKA010B	1 50V
C339	ECEA1CKA220B	22 16V
C340	ECEA1EKA4R7B	4.7 25V
C341	ECEA1HKAR47B	0.47 50V
C342	ECEA1HKAR47B	0.47 50V
C343	ECEA1HKAR33B	0.33 50V
C344	ECEA1HKAR33B	0.33 50V
C345	ECEA1HKA2R2B	2.2 50V
C346	ECEA1HKA2R2B	2.2 50V
C347	ECBT1E103ZF5	0.01 25V
C348	ECBT1E103ZF5	0.01 25V
C349	ECEA1EKA4R7B	4.7 25V
C350	ECEA1EKA4R7B	4.7 25V
C351	ECBT1H101KB5	100P 50V
C352	ECBT1H101KB5	100P 50V
C353	ECBT1H270J5	27P 50V
C354	ECBT1H270J5	27P 50V
C355	ECEA1HKAR22B	0.22 50V
C356	ECEA1HKAR22B	0.22 50V
C358	ECEA0JKA470B	47 6.3V
C359	ECEA1HKA010B	1 50V
C360	ECEA1HKAR47B	0.47 50V

Ref No.	Part No.	Values & Remarks
C361	ECBT1H101KB5	100P 50V
C362	ECBT1H101KB5	100P 50V
C363	ECFR1E104ZF5	0.1 25V
C371	ECBT1E103ZF5	0.01 25V
C372	ECBT1E103ZF5	0.01 25V
C381	ECBT1C222MR5	2200P 16V
C382	ECBT1C222MR5	2200P 16V
C398	ECBT1E103ZF5	0.01 25V
C399	ECBT1E103ZF5	0.01 25V
C401	ECBT1C103NS5	0.01 16V
C402	ECA0JM471B	470 6.3V
C407	ECBT1C103NS5	0.01 16V
C408	ECBT1C103NS5	0.01 16V
C409	ECBT1C103NS5	0.01 16V
C410	ECBT1C103NS5	0.01 16V
C411	ECEA1CKA100B	10 16V
C412	ECEA1CKA100B	10 16V
C413	ECBT1E103ZF5	0.01 25V
C414	ECBT1E103ZF5	0.01 25V
C415	ECEA1HKA010B	1 50V
C422	ECBT1H102KB5	1000P 50V
C423	ECBT1H471KB5	470P 50V
C424	ECBT1H471KB5	470P 50V
C461	ECEA1VU470B	47 10V
C501	ECBT1H221KB5	220P 50V(CD)
C501	ECEA1CKA100B	10 16V
C502	ECEA1CKA100B	10 16V
C503	ECBT1H102KB5	1000P 50V
C504	ECBT1H102KB5	1000P 50V
C505	ECBT1C103KS5	0.01 16V
C506	ECBT1C103KS5	0.01 16V
C507	ECBT1H8R2KC5	8.2P 50V
C508	ECBT1H8R2KC5	8.2 50V
C509	ECEA1EKA4R7B	4.7 25V
C510	ECEA1EKA4R7B	4.7 25V
C511	ECEA1HU330B	33 50V
C512	ECEA2AU100B	10 100V
C513	ECFR1E104ZF5	0.1 25V
C514	ECFR1E104ZF5	0.1 25V
C515	ECBT1E223ZF5	0.022 25V
C516	ECEA0JKA221B	220 6.3V
C517	ECQV1H333JZ3	0.033 50V
C518	ECQV1H333JZ3	0.033 50V
C519	ECBT1E223ZF5	0.022 25V
C520	ECBT1E223ZF5	0.022 25V
C541	ECKR2H103ZF5	0.01 500V
C543	ECKR2H103ZF5	0.01 500V
C544	ECKR2H103ZF5	0.01 500V
C545	ECKR2H103ZF5	0.01 500V ⚠
C546	ECKR2H103ZF5	0.01 500V ⚠
C547	ECEA1HU332	3300 50V ⚠
C548	ECEA1HU332	3300 50V ⚠
C549	ECEA1VU222E	2200 10V ⚠
C550	ECBT1E103ZF5	0.01 25V
C551	ECBT1E103ZF5	0.01 25V
C552	ECBT1E103ZF5	0.01 25V
C553	ECEA1CU101B	100 16V
C554	ECEA1VU470B	47 10V
C555	ECBT1E103ZF5	0.01 25V
C556	ECEA1CKA330B	33 16V
C557	ECBT1E103ZF5	0.01 25V
C558	ECEA1HU330B	33 50V
C559	ECBT1E103ZF5	0.01 25V
C560	ECEA1VU470B	47 10V
C561	ECBT1E103ZF5	0.01 25V
C562	ECEA1HKA010B	1 50V
C563	ECEA1EKA4R7B	4.7 25V
C564	ECBT1E103ZF5	0.01 25V
C565	ECEA1HU470B	47 50V
C566	ECKR2H103ZF5	0.01 500V
C568	ECA2AM470B	70 100V
C569	ECEA2AU100B	10 100V
C570	ECBT1E103ZF5	0.01 25V
C571	ECEA1AKA470B	47 10V
C572	ECEA1VU102E	1000 10V
C573	ECEA1CU101B	100 16V
C576	ECBT1E103ZF5	0.01 25V
C577	ECEA1HU470B	47 50V
C578	ECQE2104KF3	4K 250V
C580	ECEA1VU102E	1000 10V ⚠
C581	ECEA1HKAR47B	0.47 50V
C590	ECKR1H473ZF5	0.47 50V
C601	ECBT1H561KB5	560P 50V
C602	ECBT1H561KB5	560P 50V
C603	ECBT1H561KB5	560P 50V
C604	ECBT1H561KB5	560P 50V
C605	ECBT1H561KB5	560P 50V
C606	ECBT1H561KB5	560P 50V
C607	ECBT1H561KB5	560P 50V
C608	ECBT1H101KB5	100P 50V
C609	ECEA1CKA100B	10 16V
C610	ECBT1E103ZF5	0.01 25V
C611	ECBT1H101KB5	100P 50V
C612	ECBT1H101KB5	100P 50V
C613	ECEA1HKA010B	1 50V
C614	ECEA1HKA2R2B	2.2 50V
C615	ECBT1H150JC5	15P 50V
C616	ECBT1H180JC5	18P 50V
C617	ECBT1H680J5	68P 50V
C618	ECBT1H560J5	56P 50V
C619	ECBT1H680J5	68P 50V
C620	ECBT1H560J5	56P 50V
C621	ECEA1HU3R3B	3.3 50V
C623	ECEA1HKAR33B	0.33 50V
C624	ECEA0JKA101B	100 6.3V
C625	ECBT1H102KB5	1000P 50V
C626	ECEA0JU102B	1000 6.3V
C627	ECEA0JU102B	1000 6.3V
C628	ECBT1H102KB5	1000P 50V
C629	ECBT1H101KB5	100P 50V
C630	ECBT1H101KB5	100P 50V
C631	ECBT1E103ZF5	0.01 25V
C671	ECBT1E223ZF5	0.022 25V
C683	ECBT1E223ZF5	0.022 25V
C684	ECBT1E223ZF5	0.022 25V
C689	ECEA0JKA220B	22 6.3V
C701	ECEA0JKA330I	33 6.3V **(CD)**
C702	ECUZNE104MBN	0.1 25V **(CD)**
C703	ECEA0JKA101I	100 6.3V **(CD)**
C704	ECUZNE104MBN	0.1 25V **(CD)**
C705	ECUZNE104MBN	0.1 25V **(CD)**
C706	ECUV1H272KBN	2700P 50V **(CD)**
C707	ECUV1E273KBN	0.027 25V **(CD)**
C708	ECUV1H472KBN	4700P 50V **(CD)**
C709	ECUV1C473KBN	0.047 16V **(CD)**
C710	ECUV1H182KBN	1800P 50V **(CD)**
C711	ECUWNE104ZFN	0.1 25V **(CD)**
C712	ECUWNE104ZFN	0.1 25V **(CD)**
C713	ECUV1C104MBM	0.1 16V **(CD)**
C714	ECEA0JKA101I	100 6.3V **(CD)**
C716	ECUV1H561KBN	560P 50V **(CD)**
C717	ECUWNE104ZFN	0.1 25V **(CD)**
C718	ECUVNC224KBN	0.22 16V **(CD)**
C721	ECUV1H150JCN	15P 50V **(CD)**
C722	ECUV1H150JCN	15P 50V **(CD)**
C723	ECEA1AKA221I	220 10V **(CD)**
C724	ECUV1C104MBM	0.1 16V **(CD)**
C730	ECUWNE104ZFN	0.1 25V **(CD)**
C731	ECEA0JKA221I	220 6.3V **(CD)**
C732	ECEA0JKA221I	220 6.3V **(CD)**
C733	ECUZNE104MBN	0.1 25V **(CD)**
C734	ECEA1AKA221I	220 10V **(CD)**
C735	ECUWNE104ZFN	0.1 25V **(CD)**
C736	ECUWNE104ZFN	0.1 25V **(CD)**
C737	ECBT1H104ZF5	0.1 50V
C737	ECUWNE104ZFN	0.1 25V **(CD)**
C738	ECBT1H101KB5	100P 50V
C738	ECUV1C154KBN	0.15 16V **(CD)**
C739	ECBT1H101KB5	100P 50V
C742	ECUV1E273KBN	0.027 25V **(CD)**
C743	ECUWNE104ZFN	0.1 25V **(CD)**
C744	ECUE1E822KBN	8200P 25V **(CD)**
C745	ECUE1H102KBN	1000P 50V **(CD)**
C747	ECBT1H104ZF5	0.1 50V
C747	ECUE1H222KBN	2200P 50V **(CD)**
C748	ECBT1H101KB5	100P 50V
C748	ECUV1H471KBM	470P 50V **(CD)**
C749	ECBT1H101KB5	100P 50V
C749	ECUZNE104MBN	0.1 25V **(CD)**
C750	ECUV1C104MBM	0.1 16V **(CD)**
C751	ECUZNE104MBN	0.1 25V **(CD)**
C752	ECUE1H152KBN	1500P 50V **(CD)**
C753	ECUV1H471KBM	470P 50V **(CD)**
C771	ECBT1C103MS5	0.01 16V
C772	ECBT1H102KB5	1000P 50V
	CLIPS JUMPERS	
RJ701	ERJ8GEY0R00A	0 1/8W
RJ702	ERJ8GEY0R00A	0 1/8W
RJ703	ERJ8GEY0R00A	0 1/8W
RJ704	ERJ8GEY0R00A	0 1/8W
RJ707	ERJ8GEY0R00A	0 1/8W
RJ709	ERJ8GEY0R00A	0 1/8W
RJ714	ERJ8GEY0R00A	0 1/8W
RJ715	ERJ8GEY0R00A	0 1/8W
RJ716	ERJ8GEY0R00A	0 1/8W
RJ717	ERJ8GEY0R00A	0 1/8W
RJ719	ERJ8GEY0R00A	0 1/8W
RJ721	ERJ6GEY0R00A	0 1/10W
RJ722	ERJ8GEY0R00A	0 1/8W
RJ723	ERJ6GEY0R00A	0 1/10W
RJ724	ERJ6GEY0R00A	0 1/10W
RJ726	ERJ6GEY0R00A	0 1/10W
RJ727	ERJ6GEY0R00A	0 1/10W
RJ728	ERJ6GEY0R00A	0 1/10W
RJ729	ERJ6GEY0R00A	0 1/10W
RJ730	ERJ6GEY0R00A	0 1/10W
RJ731	ERJ6GEY0R00A	0 1/10W
RJ732	ERJ6GEY0R00A	0 1/10W
R714	ERJ6GEY0R00A	0 1/10W

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