ORDER NO. MD9205049C8

Service Manual

COMPACT disc DIGITAL AUDIO

* DOLBY B NR

ORIGINAL S/M 8/9/92

CD Stereo System

SA-CH33

Colour

(K) ... Black Type

SB-CH33 SA-CH33 SB-CH33

Area

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

System Name	Unit	
SC-CH33(GN)	SA-CH33(GN)	Music center
	SB-CH33(G)	Speaker
SC-CH33(E/EB/EG)	SA-CH33(E/EB/EG)	Music center
	SB-CH33(E)	Speaker (PAES)

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

TAPE DECK : MECHANISM SERIES (AR300)
TRAVERSE DECK : MECHANISM SERIES (SODD110Z)

■SPECIFICATIONS

■AMPLIFIER SECTION

1 kHz continuous power output both channels driven	2 X 30 W(THD 1%, 6 Ω)
Total harmonic distortion half power at 1 kHz	0.07% (6Ω)
Frequency response	
AUX	30 Hz — 30 kHz (–3 dB)
Input sensivity	
AUX	250 mV
Input impedance	
AUX	24 kΩ
Graphic equalizer	±10 dB (100 Hz, 330 Hz, 1 kHz, 3.3 kHz, 10 kHz)

■FM TUNER SECTION

Frequency range	87.50 — 108.00 MHz
Sensitivity	23.3 dBf (4.0 μV, IHF '58)
Total harmonic distortion	
MONO	0.3%
STEREO	0.5%
S/N Ratio	
MONO	65dB(70 dB, IHF)
Frequency response	30 Hz ~ 15 kHz (+0.5, –2 dB)
Image rejection at 98 MHz	40 dB
Stereo seperation	
1 kHz	35 dB
Antenna terminal(s)	75 Ω (unbalanced)

■LW/MW TUNER SECTION

Frequency range	
MW	522 — 1611 kHz
LW	144 — 288 kHz
Sensitivity (for 500 mW)	
MW (at 999 kHz)	250 μV/m
LW (at 252 kHz)	350 μV/m

■CASSETTE DECK SECTION

Track system	4 – track, 2 – channel
Heads	
Playback	Solid Permalloy
Record/Playback	Solid Permalloy
Erasure	Double gap ferrite head
Motor	DC servo motor
Recording system	AC bias, 100 kHz
Erase system	AC erase, 100 kHz
Tape speed	4.8 cm/sec
Frequency response	
NORMAL	40 Hz—14 kHz (+3, –6 dB)
CrO_2	40 Hz—14 kHz (+3, –6 dB)
S/N (CrO_2 type tape)	
Dolby NR off	52 dB (A-WTD)
Dolby NR on	61 dB (CCIR)
Wow and Flutter	0.1% (WRMS)
Fast forward and rewind time	Approx. 110 seconds with C-60 cassette tape

MODEL PARTS TABLE

Panasonic

■ CD PLAYER

Sampling frequency	44.1 kHz
Decoding	16–bit linear
Beam Source/wave length	Semiconductor laser/780nm
Number of channels	2 – channel, Stereo
Frequency response	20 Hz–20 kHz (+1, –2 dB)
S/N Ratio	90 dB filter (JIS. A)
Wow and Flutter	Below measurable limit
Digital filter	4 times over sampling
D/A converter	Multi stage noise shaping

■ GENERAL

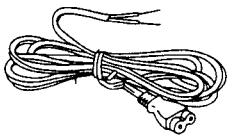
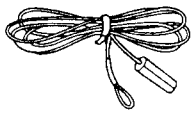
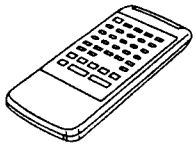
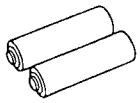
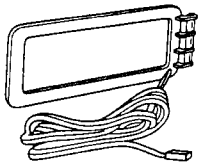
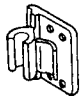
Power consumption	123 W
Power supply	AC 50 Hz, 230 — 240 V
Dimension (W x H x D)	215 x 319 x 338 mm
Weight	7.7 kg

Notes :

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

■ CONTENTS

■ ACCESSORIES

AC power supply cord.....1 pc. 	FM indoor antenna .....1 pc. 
Remote control transmitter RAK-SC307WM.....1 pc. 	Remote control batteries UM-4, AAA, R03.....2 pcs. 
LW/MW loop antenna SLA9Z5T.....1 pc. 	Antenna holder.....1 pc. 
Attaching plug .....1 pc. (For United Kingdom only) 	Mounting screws.....2 pcs. 

■ PRECAUTION OF LASER DIODE

CAUTION : This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from t pick up lens.
Wave length : 780 nm
Maximum output radiation power from pick up : 100 mW/VDE

Laser radiation from the pick up lens 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 pickup 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 gefährliich ist.
2. Den werksseitig justierten einstellregler der lasereinreit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

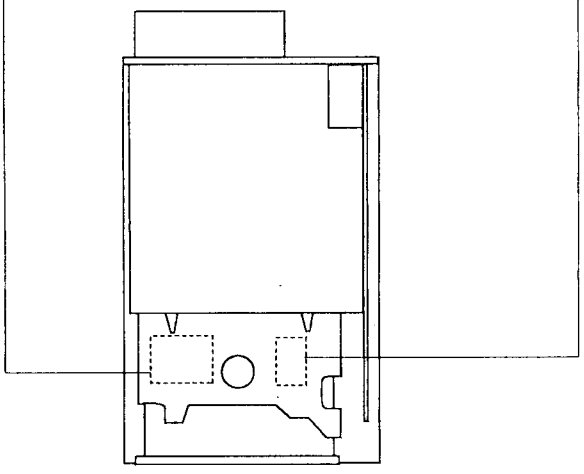
ADVARSEL: I dette a apparat anvendes laser.

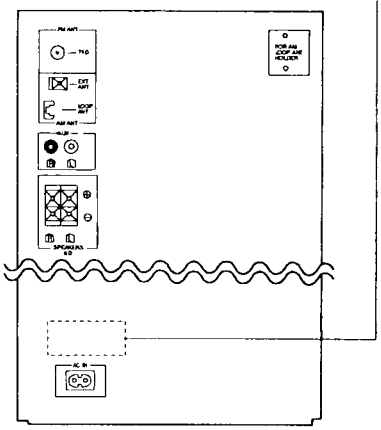
RQLS0021

RQLS0051

SQWD7

Obs:
Apparaten innehåller laser
Komponent av höger laserklass än klass 1.





■ HANDLE 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).

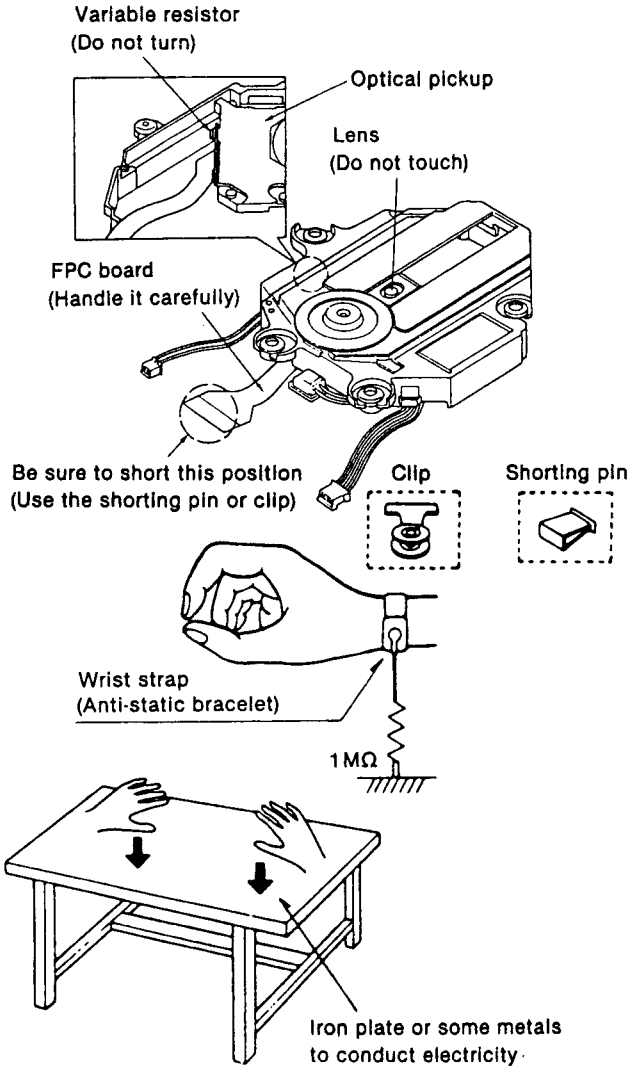
- **Handling of traverse deck (optical pickup)**

1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode , an anti-static shorting pin is inserted into the flexible board (FPC board).
   When removing or connecting the short pin, finish the job in as short time as possible.
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).



■ PROTECTION CIRCUITRY

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

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

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

if this occurs, follow the procedure outlines below:

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

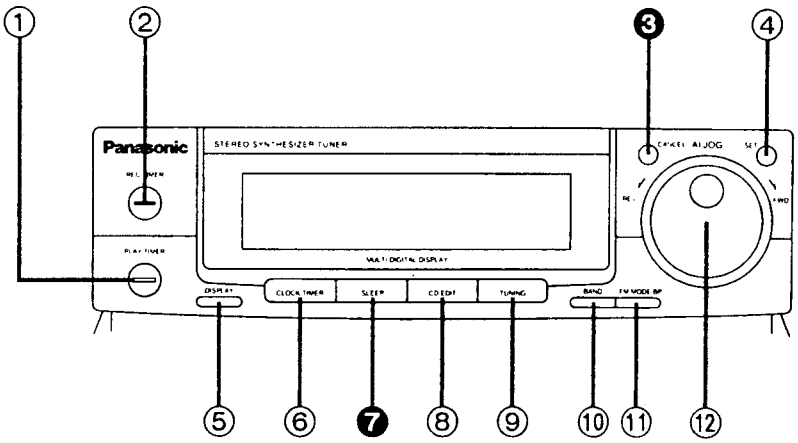
Note:
When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR AND ADJUSTMENT

Disconnect AC power, Discharge both Power Supply Capacitors C541 and C542 through a 10Ω, 5W resistor to ground.
DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may distroy solid state devices.
After repairs are completed, restore power gradually using a variac, to avoid overcurrent.
Current consumption at 230V, 50 Hz in NO SIGNAL mode should be less than 350mA.

■ FRONT PANEL CONTROLS AND FUNCTIONS

The functions indicated by the numbers with black background (for example ❸) can also be activated from the remote control transmitter.



Tuner

■ Tuner control

① Timer play button (PLAY TIMER)
Use for timer play (when you want play to begin automatically at a preset time).

② Timer recording button (REC TIMER)
Use for timer recording (when you want to begin recording automatically at a preset time).

❸ Cancel button (CANCEL)
Press to cancel the contents chosen with the jog dial.

④ Set button (SET)
Press to set various functions.

⑤ Display select button (DISPLAY)
Press to select the display (mode display, clock, tape counter, etc.).

⑥ Clock/timer button (CLOCK/TIMER)
Use to select the desired timer mode or to adjust the clock.

❼ Sleep timer button (SLEEP)
Press when you want the system to turn itself off.

⑧ Compact disc edit-recording mode select button (CD EDIT)
Press to select the desired edit-recording mode.

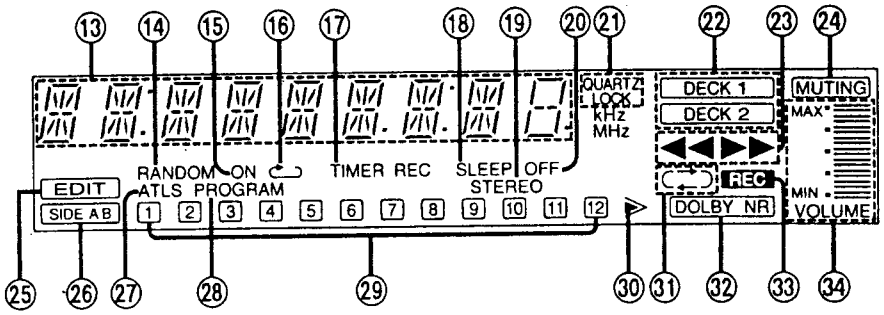
⑨ Tuning mode select button (TUNING)
Press to select the preset, manual or auto tuning mode.

⑩ Band select button (BAND)
Press to select the LW, MW or FM radio band.

⑪ FM mode/beat proof button (FM MODE/BP)
Press to select the FM listening mode (stereo or monaural) during FM broadcasts or to reduce the unwanted beat signals (whistle) during recording of a LW/MW broadcast.

⑫ Jog dial (AI JOG)
Use to select the contents of the mode, i.e., select tracks in CD player mode or stations in the tuner mode, as well as many other functions.

Multi digital display



⑬ **Alphanumeric display**
Shows the selected source, present time, tape counter and the contents of the timer setting, received frequencies, CD edit-recording mode, volume level, etc.

⑭ **Random play indicator (RANDOM)**
Lights during the random play mode of the compact disc.

⑮ **Timer on-time indicator (ON)**
Shows the timer on-time (the time the system is set to go on).

⑯ **Repeat play indicator (↻)**
Lights during the repeat play mode of the compact disc.

⑰ **Timer recording indicator (TIMER REC)**
Lights when you press the timer recording button.

⑱ **Sleep timer indicator (SLEEP)**
Lights when you press the sleep timer button.

⑲ **FM stereo indicator (STEREO)**
Lights when you receive an FM stereo broadcast. It will not light if you are using the FM mode/beat proof button to select monaural mode.

⑳ **Timer off-time indicator (OFF)**
Shows the timer off-time (the time the system is set to shut off).

㉑ **Quartz lock indicator (QUARTZ LOCK)**
Lights when you precisely tune in a broadcast station.

㉒ **Deck 1/deck 2 indicator (DECK 1, DECK 2)**
Lights to show which deck is operational (deck 1 or deck 2).

㉓ **Tape direction indicators (◄, ►)**
Shows the direction of tape travel.

㉔ **Muting indicator (MUTING)**
Lights when you activate the muting mode.

㉕ **Compact disc edit-recording indicator (EDIT)**
Lights when you use the edit-recording from a compact disc.

㉖ **Tape side indicator (SIDE A, B)**
Shows which side of the cassette tape (A or B) will be recorded on when you use the edit-recording of a compact disc.

㉗ **Automatic tape level setting indicator (ATLS)**
Lights when you use ATLS recording.

㉘ **Program indicator (PROGRAM)**
Lights during the program play mode of the compact disc.

㉙ **Matrix display (1–12)**
Shows the number of tracks and preset channels.

㉚ **Over indicator (➤)**
Lights if there are 13 or more tracks on the disc.

㉛ **Reverse mode indicators (⇄) (⇉) (⊂⇉⊃)**
Shows which of the reverse modes you selected with the reverse mode button.

㉜ **Dolby noise reduction indicator (DOLBY NR)**
Lights when you activate the Dolby noise reduction system.

㉝ **Recording indicator (REC)**
Lights when the system is in the recording (recording standby) mode.

㉞ **Volume level indicator**
Shows the volume level.

Amplifier

■ Amplifier controls

㉟ **Power "STANDBY ⏻/ON" switch (POWER STANDBY ⏻/ON)**
This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the STANDBY ⏻ position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

㊱ **Spectrum analysis display**
Shows the spectrum analysis level for each frequency range.

㊲ **Full range level display**
Shows the full range level.

㊳ **Super bass indicator**
Lights when you activate the super bass mode.

㊴ **Equalizer controls (GRAPHIC EQUALIZER LEVEL)**
Use to adjust the equalization level.
These controls are for compensation of tonal quality. By sliding the controls at each of the indicated frequencies in the "+" direction, the tonal quality is increased, and by sliding them in the "–" direction, the tonal quality is decreased.

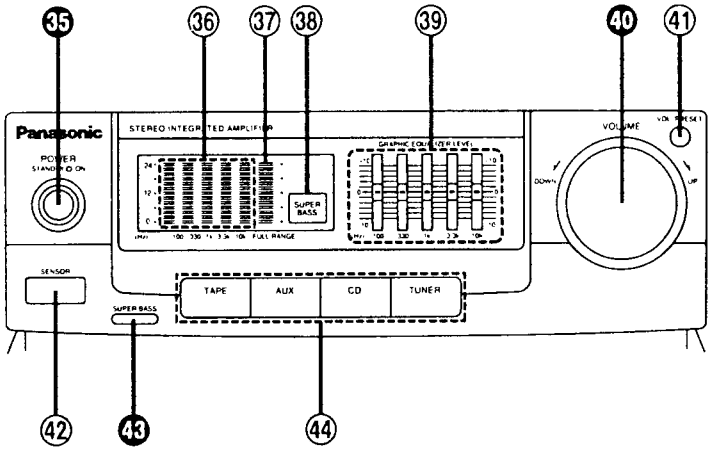
㊵ **Volume level control (VOLUME)**
Turn to adjust the volume level.
When turning the control, the alphanumeric display shows the volume level.
Note that –– dB is the lowest volume setting and 0 dB is the highest.

㊶ **Volume preset button (VOL PRESET)**
Use to preset volume for timer play.

㊷ **Remote control signal sensor (SENSOR)**
Receives the signals from the remote control.

㊸ **Super bass button (SUPER BASS)**
Press to boost the dynamic low-frequency ranges.

㊹ **Input select buttons (TAPE, AUX, CD, TUNER)**
Press to select the sound source.



Cassette deck

45 Deck 1 cassette holder

46 Reverse-side playback button (◁)
Press to start the playback or recording (deck 2) in the reverse direction.

47 Stop button (□)
Press to stop the tape.

48 Forward-side playback button (▷)
Press to start the playback or recording (deck 2) in the forward direction.

49 Deck 2 cassette holder

50 Record/record standby button (REC PAUSE)
Press to put deck 2 into the record standby mode.

51 Tape counter reset button (COUNTER RESET)
Press to reset the tape counter indicator to 000.

52 Deck 1 cassette eject button (▲ EJECT)
Press to open the deck 1 cassette holder.

53 Deck 1/deck 2 select button (DECK 1/2)
Press to select the deck to be operated.

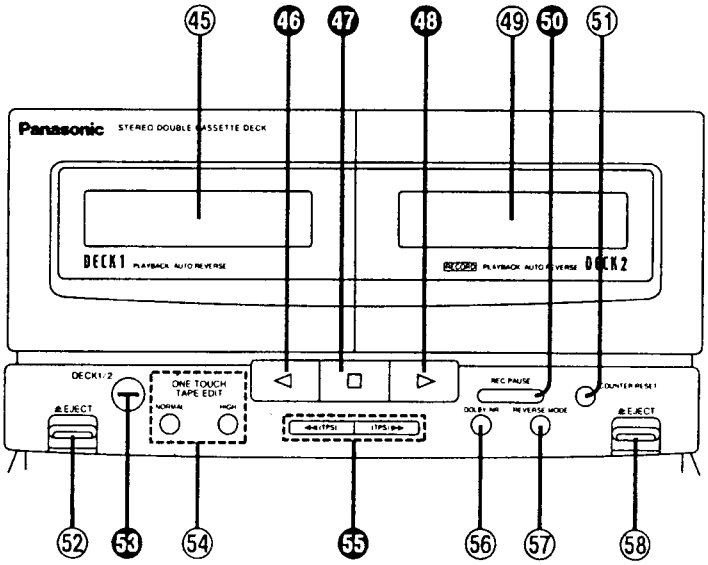
54 One-touch tape edit buttons (ONE TOUCH TAPE EDIT)
Press to start the tape-to-tape recording.

55 Fast-forward/rewind/tape program sens (TPS) buttons [◀◀ (TPS), (TPS) ▶▶]
Press to advance or rewind the tape, or to quickly search the beginning of a track while the tape is being played.

56 Dolby noise reduction button (DOLBY NR)
Use to reduce the hissing noise heard from the tape. T system has the Dolby B-type noise reduction system.

57 Reverse mode select button (REVERSE MODE)
Press to select the reverse mode (for playback and recordin

58 Deck 2 cassette eject button (▲ EJECT)
Press to open the deck 2 cassette holder.



Compact disc player

⑲ **Disc tray**

⑳ **Stop button (□)**
Press to stop the disc play.

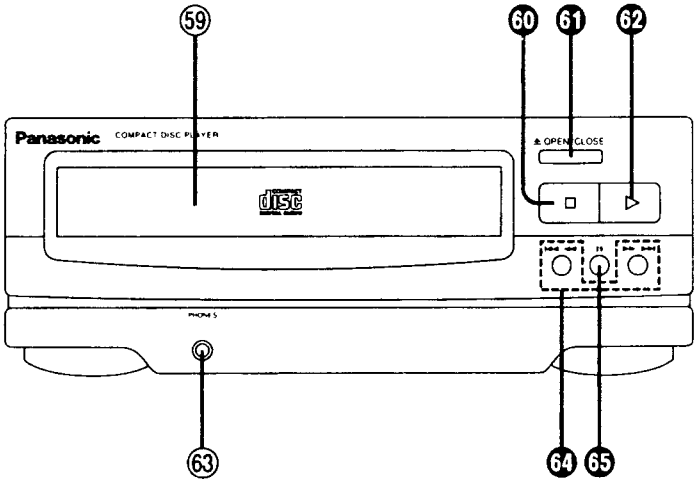
㉑ **Disc tray open/close button (▲ OPEN/CLOSE)**
Press to open and close the disc tray.

㉒ **Play button (▷)**
Press to start disc play.

㉓ **Headphones jack (PHONES)**
Plug headphones cord into this jack.

㉔ **Skip/search buttons (⏮/◀◀ • ▶▶/⏭)**
Press to move forward or backward through the tracks on a disc, or to hear disc sound at high speed while searching in the play mode.

㉕ **Pause button (❚❚)**
Press to stop the disc play temporarily.



■ REMOTE CONTROL OPERATION

Common operation controls

The function description of buttons ㉟, ㊵ and ㊸ is as described under "Amplifier controls" on page 6.

㊶ **CD input select button (CD)**
Press to select the CD source.

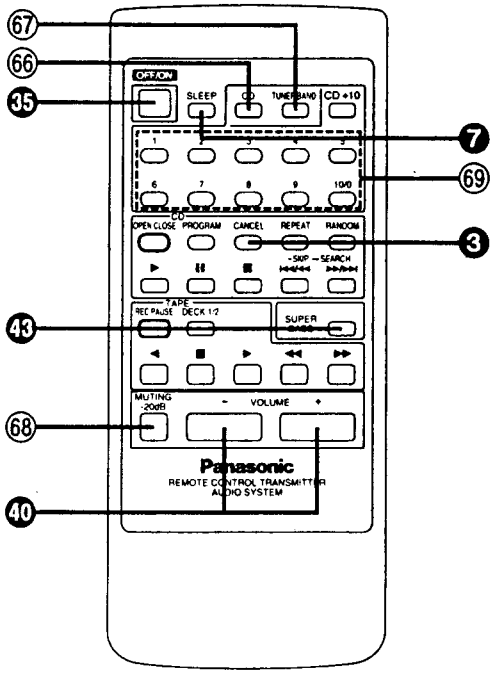
㊷ **Tuner input select button (TUNER/BAND)**
Press to select the tuner source.

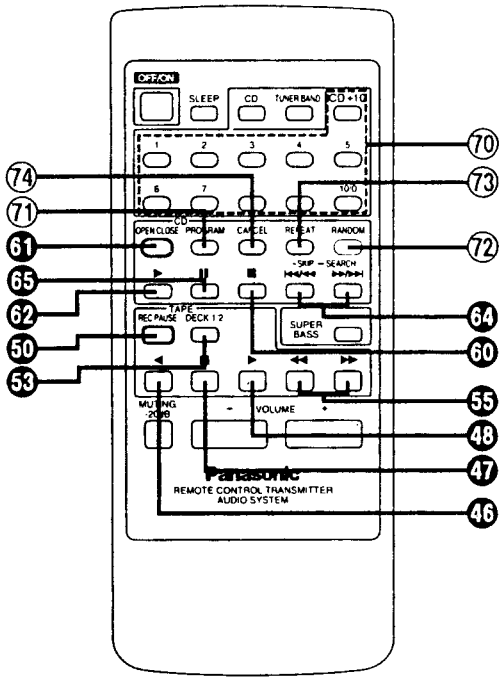
㊹ **Muting button (MUTING −20 dB)**
Press to temporarily attenuate (mute) the volume level.

Tuner controls

The function description of buttons ❸ and ❼ is as described under "Tuner control" on page 5.

㊾ **Preset-tuning buttons (1–10/0)**
Press to select the preset channel of the tuner.





Compact disc controls

The function description of buttons ⑥⓪, ⑥①, ⑥②, ⑥④ and ⑥⑤ is as described under "Compact disc player" on page 8.

⑦⓪ Numeric buttons (1–10/0, +10)
Use to specify the compact disc's track.

⑦① Program button (PROGRAM)
Press to activate the program play mode. You can then enter specific tracks using the numeric buttons.

⑦② Random button (RANDOM)
Press to play the disc's tracks in random order.

⑦③ Repeat button (REPEAT)
Press to activate the repeat mode.

⑦④ Cancel button (CANCEL)
Press to change the program.

Cassette deck controls

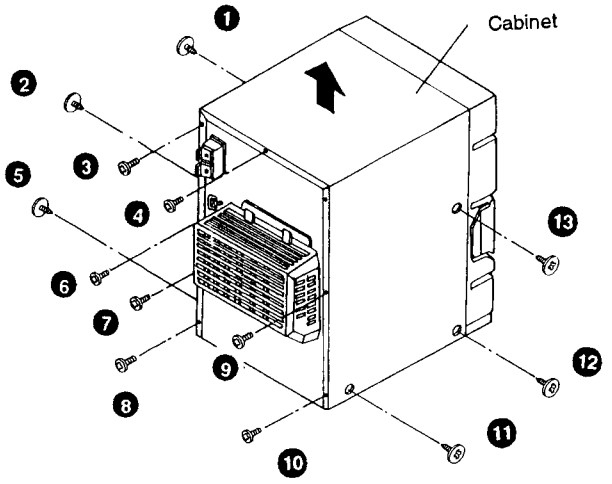
■ Cassette deck section
The function description of buttons ④⑧, ④⑦, ④⑥, ⑤⓪, ⑤③ and ⑤⑤ is as described under "Cassette deck" on page 7.

■ DISASSEMBLY INSTRUCTIONS

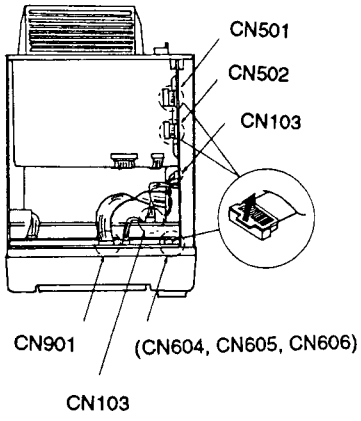
"ATTENTION SERVICER"
Some chassis components may have sharp edges. Be careful when disassembling and servicing.

Ref. No. 1	Removal of the Cabinet
Procedure 1	

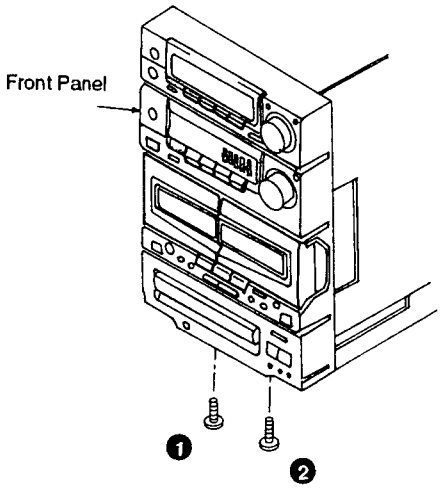
• Remove the 13 screws (❶ ~ ⓭).



Ref. No. 2	Removal of the Front Cabinet
Procedure 1 ➡ 2	

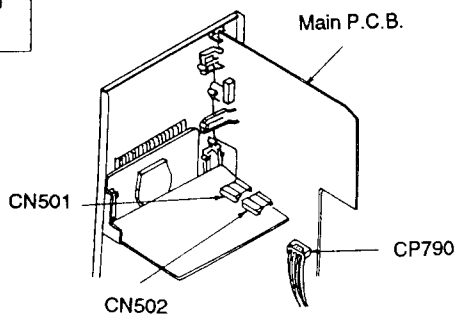


1. Remove 2 flat cable (CN103, CN901).
2. Remove 3 connectors (CN604, CN605, CN606).

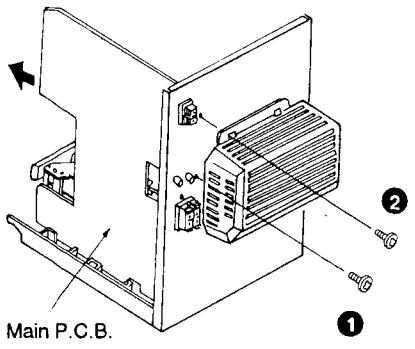


3. Remove 2 screws (❶ , ❷).

Ref. No. 3	Removal of the Main P.C.B.
Procedure 1 ➡ 2 ➡ 3	

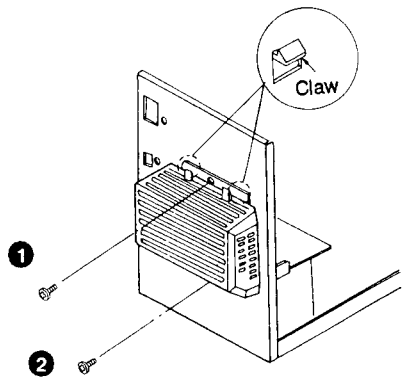


1. Remove 3 connectors (CN501, CN502, CP790).

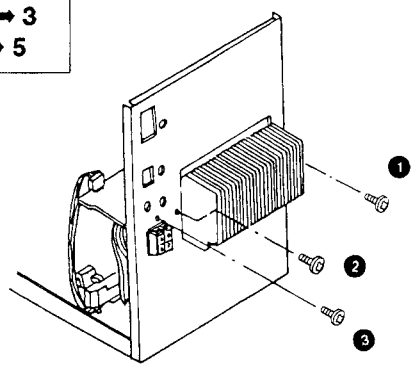


3. Remove 2 screws (❶ ~ ❷).
4. Remove the main P.C.B. in the direction of arrow.

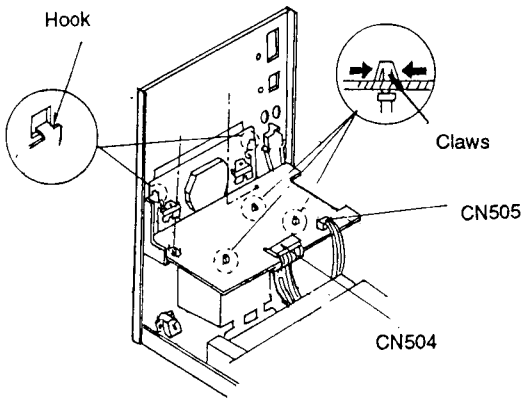
Ref. No. 4	Removal of the Heat Sink Cover
Procedure 1 ➡ 4	1. Remove 2 screws (❶ , ❷). 2. Release 2 claws.



Ref. No. 5	Removal of the Power Amp. P.C.B.
Procedure 1 ➡ 2 ➡ 3 ➡ 4 ➡ 5	

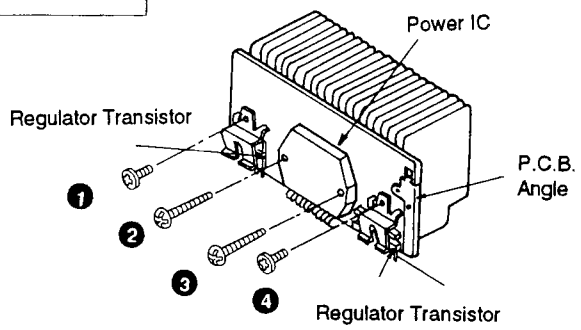


1. Remove 3 screws (❶ ~ ❸).



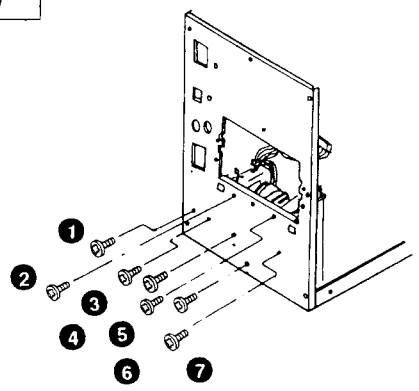
2. Remove 2 connectors (CN504, CN505).
3. Push 3 claws in the direction of the arrow and then remove the Power Amp. P.C.B.

Ref. No. 6	Removal of the Power IC and Regulator Transistor
Procedure 1 ➡ 2 ➡ 3 ➡ 4 ➡ 5 ➡ 6	1. Remove 4 screws (❶ ~ ❹). 2. Unsolder the Power IC and Regulator Transistc

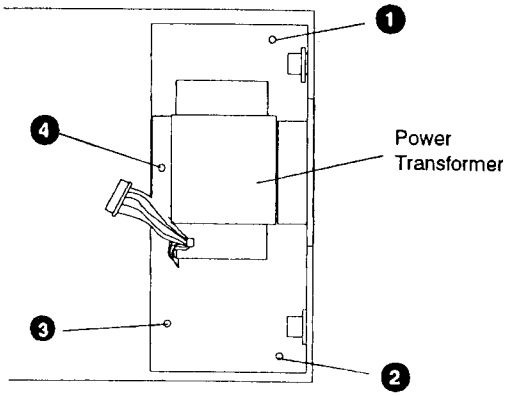


- When mounting the Power IC and regulator transistors, appl silicone compound (RFKX0002) to the rear side of Power IC an regulator transistors.

Ref. No. 7	Removal of the Rear Panel
Procedure 1 ➡ 2 ➡ 3 ➡ 4 ➡ 5 ➡ 7	Remove 7 screws (❶ ~ ❼).

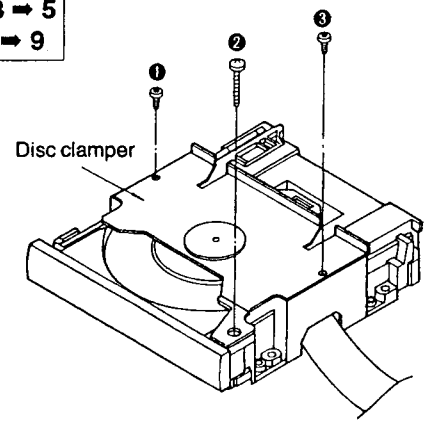


Ref. No. 8	Removal of the Power Transforme
Procedure 1 ➡ 2 ➡ 3 ➡ 4 ➡ 5 ➡ 7 ➡ 8	• Remove 4 screws (❶ ~ ❹).



Ref. No. 9	Removal of Disc Clamper

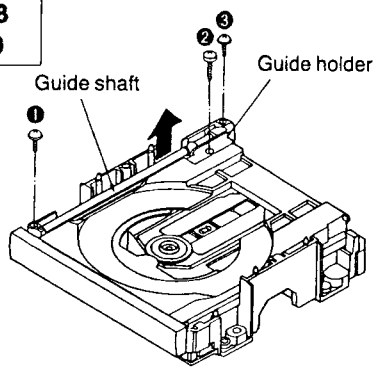
Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9



•Remove the 3 screws (❶~❸).

Ref. No. 10	Removal of the Guide shaft and Guide Shaft Holder

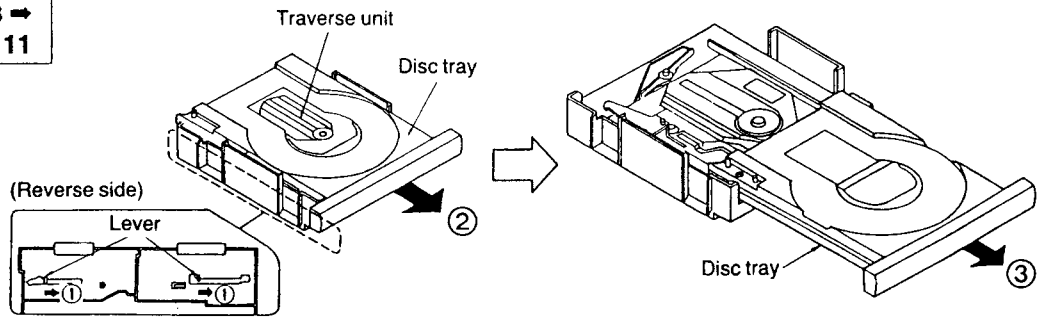
Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10



1. Remove the 3 screws (❶~❸).
2. Remove the guide shaft and guide shaft holder in the direction of the arrow.

Ref. No. 11	Removal of the Disc Tray

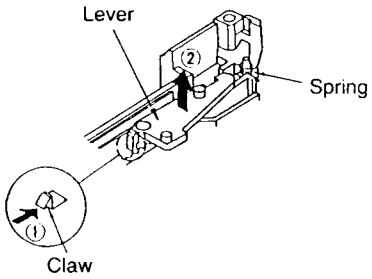
Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11



1. Move the lever in the direction of arrow ① until the traverse unit goes down and the disc tray slightly in the direction of the ②.
2. Remove the disc tray in the direction of the arrow ③.

Ref. No. 12	Removal of the Lever

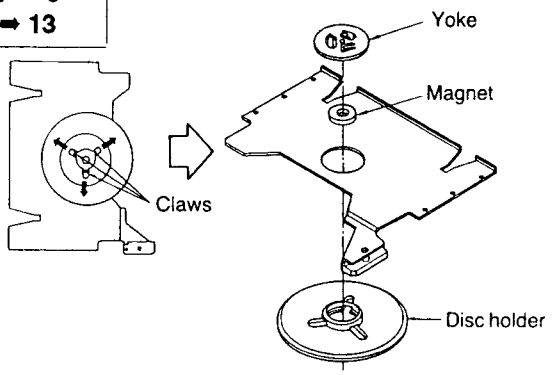
Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11 ➡ 12



1. Remove the spring.
2. Remove the claw in the direction of the arrow ① and then remove the lever in the direction of the arrow ② .

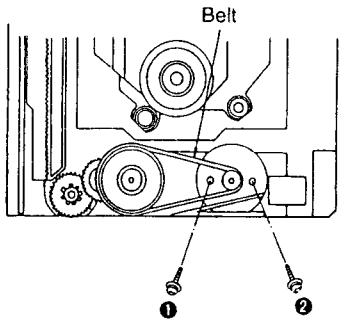
Ref. No. 13	Removal of the Magnet and Holder

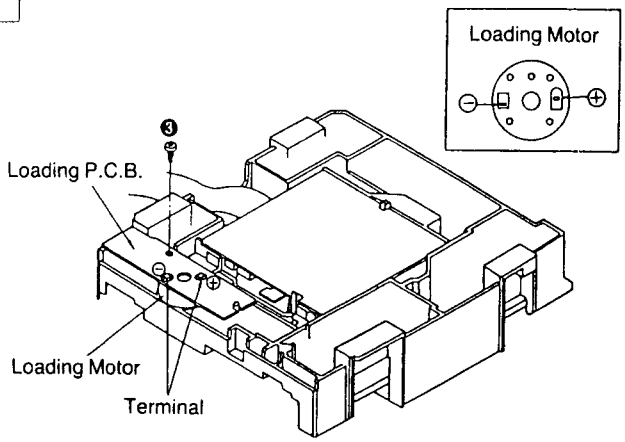
Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 13



•Remove the 3 claws.

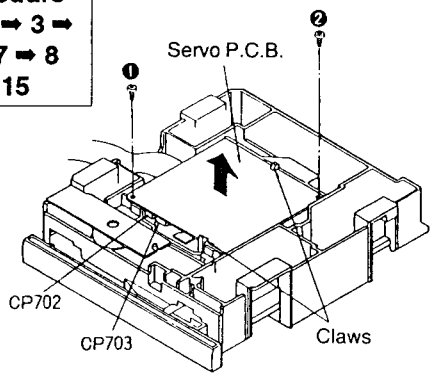
Ref. No. 14	Removal of the Loading P.C.B. and Loading Motor
Procedure 1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11 ➡ 12 ➡ 14	

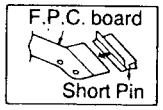




1. Remove the belt.
2. Remove the 2 screws (❶~❷).
3. Remove the screw (❸).
4. Unsolder the 2 terminals of loading motor.

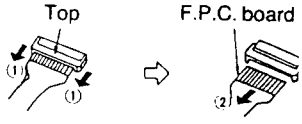
Ref. No. 15	Removal of the Servo P.C.B.
Procedure 1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 15	

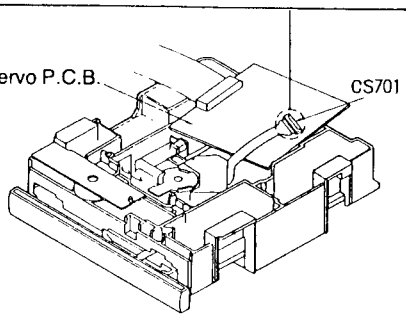




Note:
Insert a short pin into the traverse deck's F.P.C. board.

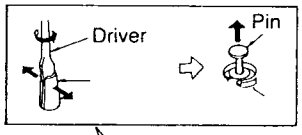
•Removal of the F.P.C. board
Push the top of the connector in the direction of the arrow ①, and then Pull Out the flat cable in the direction of the arrow ②.

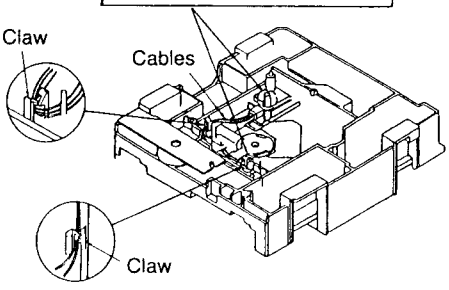


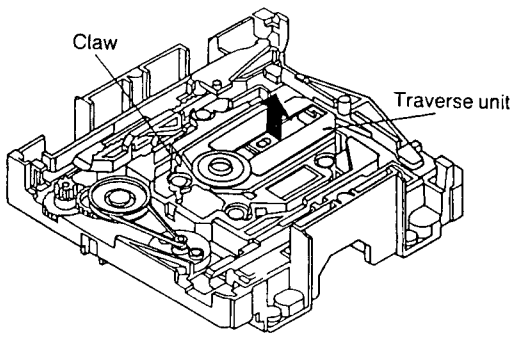


1. Remove the 2 screws (❶, ❷).
2. Remove the 2 claws.
3. Remove the servo P.C.B. in the direction of the arrow.
4. Remove the 2 connectors (CP702, CP703).
5. Remove the F.P.C. Board (CS701).

Ref. No. 16	Removal of the Traverse Unit
Procedure 1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11 ➡ 12 ➡ 14 ➡ 15 ➡ 16	



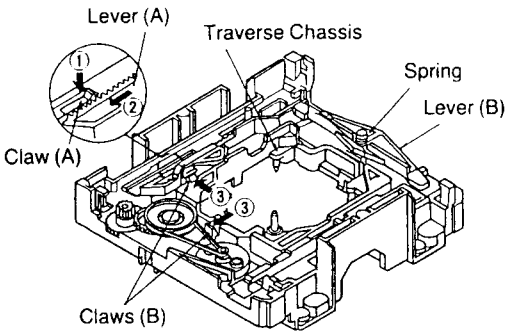




1. Release the cables from the code clampers.
2. Remove the 2 pin in the direction of the arrow.
3. Remove the claw and remove the traverse unit in the direction of the arrow.

Ref. No. 17	Removal of the Traverse Chassis

Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11 ➡ 12 ➡ 14 ➡ 15 ➡ 16 ➡ 17

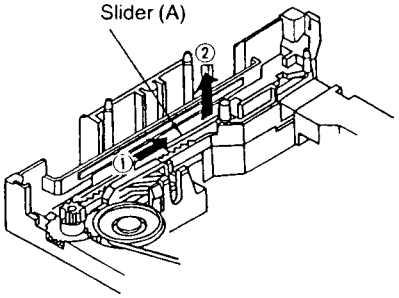


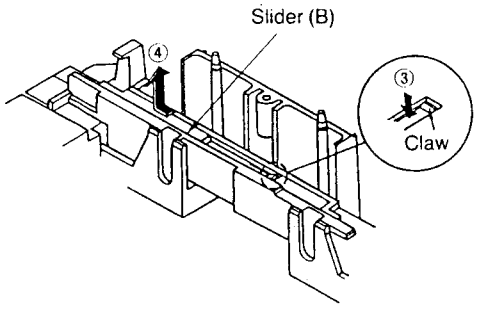
■ Remove the traverse chassis.
1. Push the claw (A) in the direction of arrow ①, and then move the slider (A) in the direction of the arrow ②.
2. Push 2 claws (B) in the direction of arrow ③, and then remove the traverse chassis.

■ Remove the lever (B)
1. Push the claw (A) in the direction of the arrow ①, and then move the lever (A) in the direction of the arrow ②.
2. Remove the spring.
3. Remove the lever (B) in the direction of the arrow ④.

Ref. No. 18	Removal of the Slider (A) and Slider (B)

Procedure
1 ➡ 2 ➡ 3 ➡ 5 ➡ 7 ➡ 8 ➡ 9 ➡ 10 ➡ 11 ➡ 12 ➡ 14 ➡ 15 ➡ 16 ➡ 17 ➡ 18



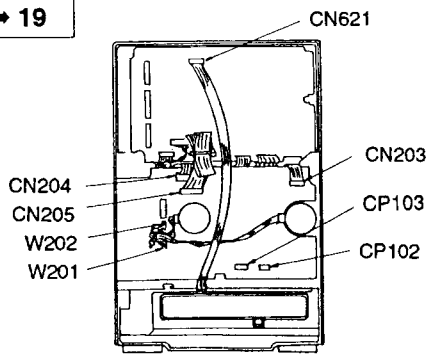


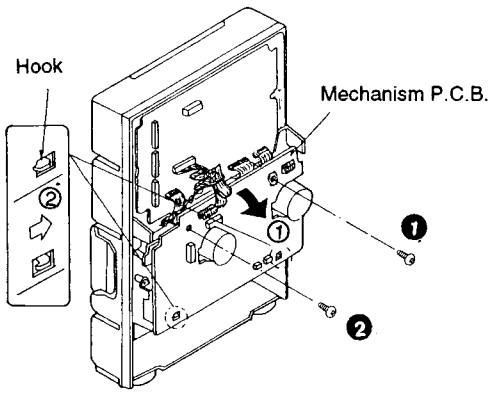
■ Removal of the Slider (A)
•Move the slider (A) in the direction of the arrow ①, and remove the slider (A) in the direction of the arrow ②.

■ Removal of the slider (B)
•Push the claw in the direction of the arrow ③, and remove the slider (B) in the direction of the arrow ④.

Ref. No. 19	Removal of the Mechanism Control P.C.B.

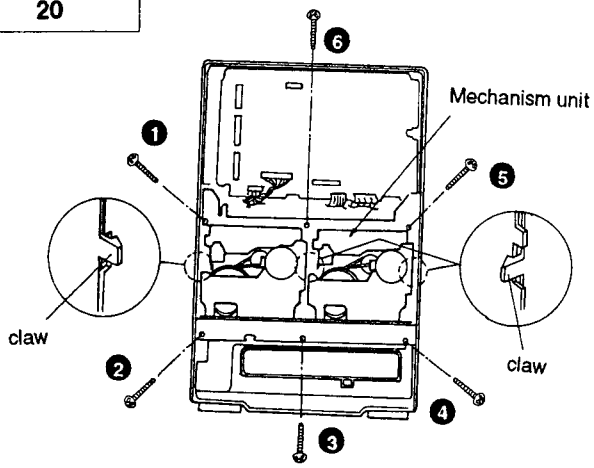
Procedure
1 ➡ 2 ➡ 19



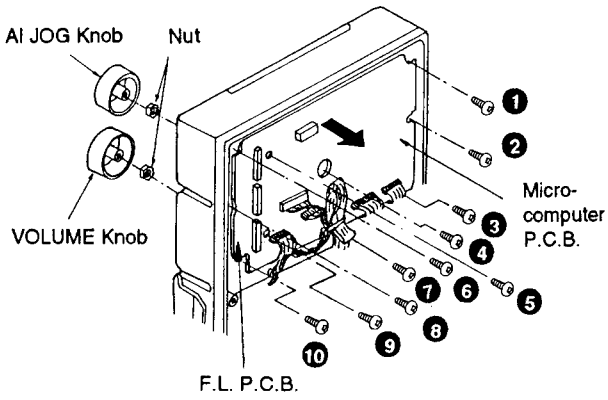


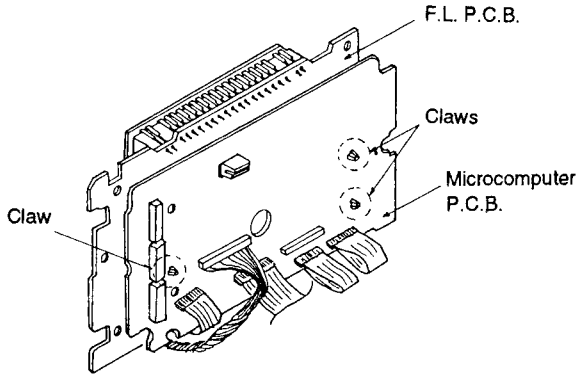
1. Remove the 2 connectors (CP103, CP102).
2. Remove 4 flat cables (CN203, CN204, CN205, CN621).
3. Unsolder 2 wires (W201, W202).
4. Remove 2 screws (❶, ❷).
5. Remove the Mechanism control P.C.B. in the direction of the arrow ①.
6. Push the P.C.B. from the hooks in the direction of the arrow ②.

Ref. No. 20	Removal of the Mechanism Unit
Procedure 1 ➡ 2 ➡ 19 ➡ 20	1. Remove 6 screws (❶ ~ ❻). 2. Remove 2 claws.



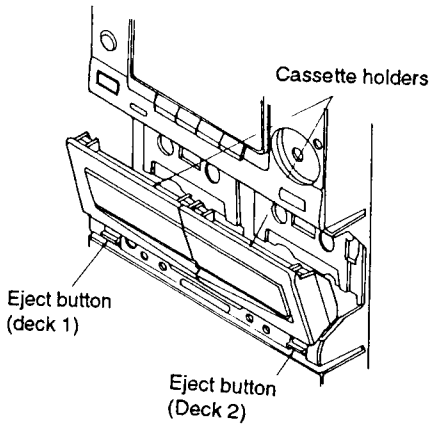
Ref. No. 21	Removal of the FL P.C.B. and Micro-computer P.C.B.
Procedure 1 ➡ 2 ➡ 19 ➡ 20 ➡ 21	1. Pull out the 2 knobs (volume and AI JOG knobs). 2. Remove the 2 nuts. 3. Remove 10 screws (❶ ~ ❿). 4. Remove the FL P.C.B. and Microcomputer P.C.B.

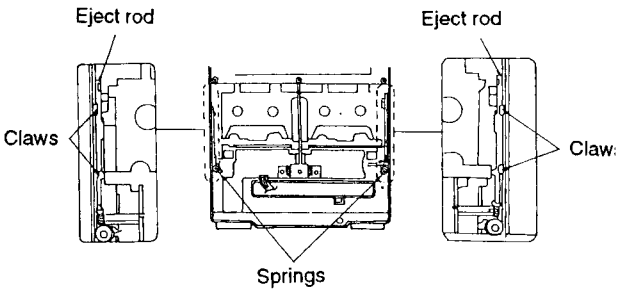




5. Unhook and remove the wire clamper.
6. Remove 3 claws and then remove the Microcomputer P.C.B.

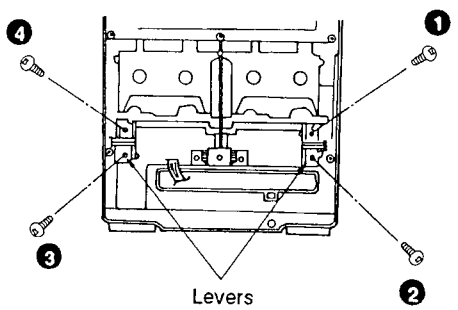
Ref. No. 22	Removal of the Eject rod (Deck 1 & Deck 2).
Procedure 1 ➡ 2 ➡ 19 ➡ 22	1. Press the eject buttons (Deck 1 & Deck 2).





2. Remove 2 springs (Deck 1 & Deck 2).
3. Remove the 4 claws and then remove the eject rods.

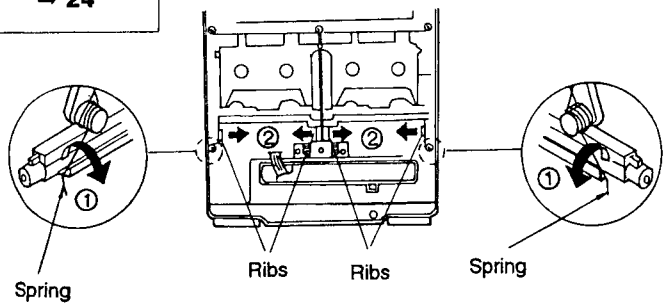
Ref. No. 23	Removal of the Eject levers (Deck & Deck 2)
Procedure 1 ➡ 2 ➡ 19 ➡ 20 ➡ 22 ➡ 23	• Remove 4 screws (❶ ~ ❹)



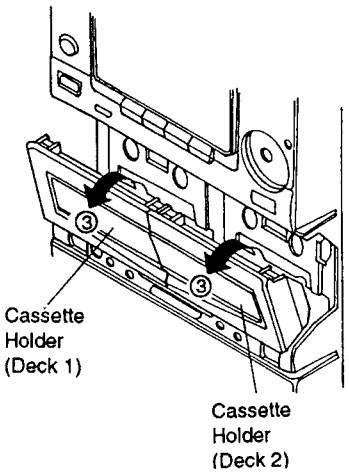
Ref. No. 24 — Removal of the Cassette Holder (Deck 1 & Deck 2)

Procedure
1 ➡ 2 ➡ 19 ➡ 20 ➡ 22 ➡ 23 ➡ 24

1. Remove 2 springs in the direction of the arrow ①.
2. Push the ribs in the direction of the arrows ②.



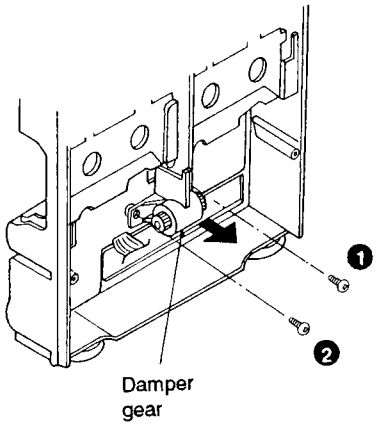
3. Remove the cassette holder in the direction of the arrows ③.



Ref. No. 25 — Removal of the Damper Gear

Procedure
1 ➡ 2 ➡ 19 ➡ 20 ➡ 22 ➡ 23 ➡ 24 ➡ 25

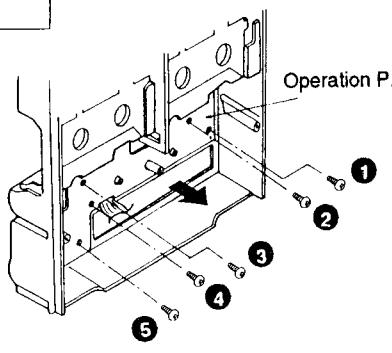
1. Remove 2 screws (❶, ❷).
2. Pull out the damper gear in the direction of the arrow.



Ref. No. 26 — Removal of the operation P.C.B. (Cassette Deck/CD)

Procedure
1 ➡ 2 ➡ 19 ➡ 20 ➡ 22 ➡ 23 ➡ 24 ➡ 25 ➡ 26

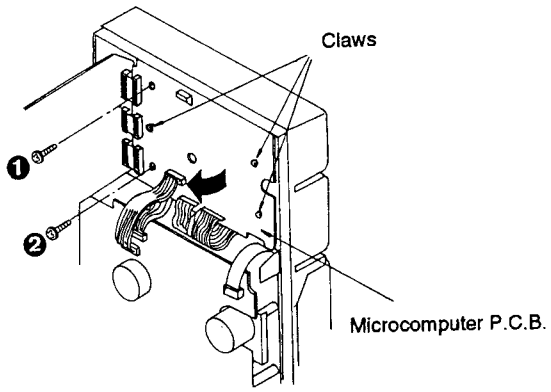
1. Remove 5 screws (❶ ~ ❺).
2. Remove the operation P.C.B. in the direction of the arrow.

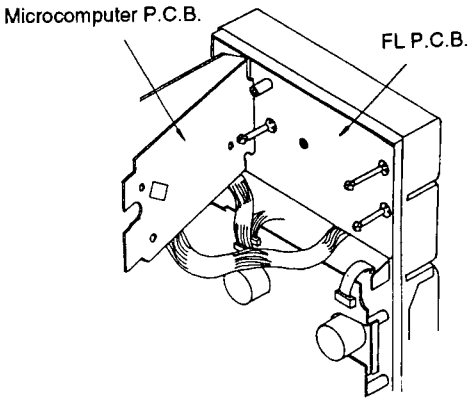


Ref. No 27 — How to check the FL P.C.B. and Microcomputer P.C.B.

Procedure
1 ➡ 27

1. Remove 2 screws (❶, ❷).
2. Release 2 claws.
3. Move the Microcomputer P.C.B. in the direction of the arrow.

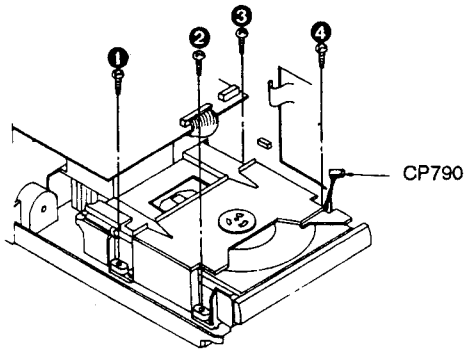


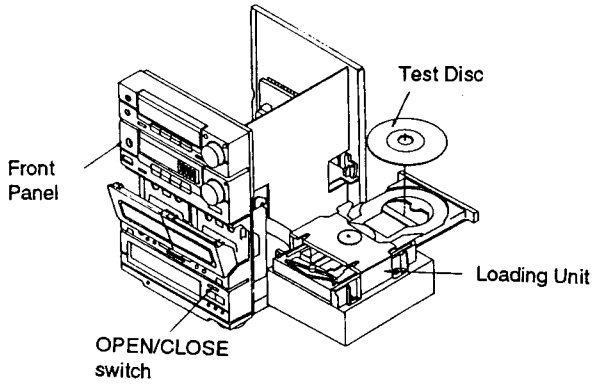


4. When checking the soldered surface of the P.C.B. (FL and Microcomputer) and replace the parts, do as shown in the figure above.

Ref. No. 28	How to check the Servo P.C.B.
Procedure 1 ➡ 2 ➡ 19 ➡ 20 ➡ 28	

1. Remove the connector CP790.
2. Remove 4 screws (❶ ~ ❹).





3. Reinstall the front panel to the body and reconnect all the flat cables and connectors.
4. Place the loading unit sideways as shown in figure.
5. Set the test disc.

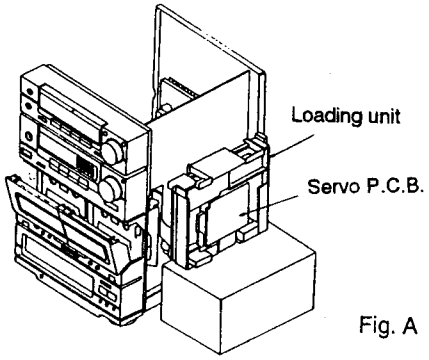
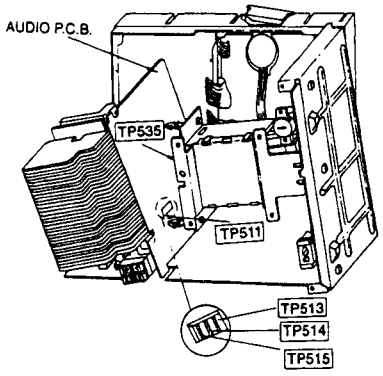


Fig. A

6. When checking the soldered side of the Servo P.C.B., do as shown in fig. A.

Ref. No. 29	How to check the Audio P.C.B.
Procedure 1 ➡ 29	

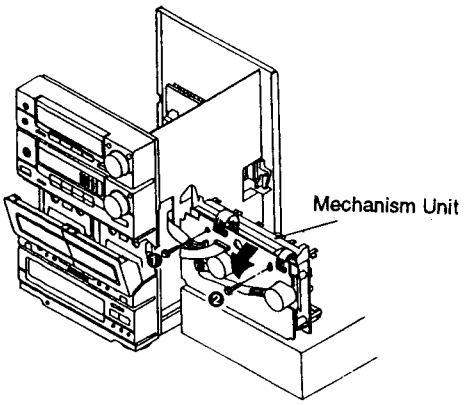


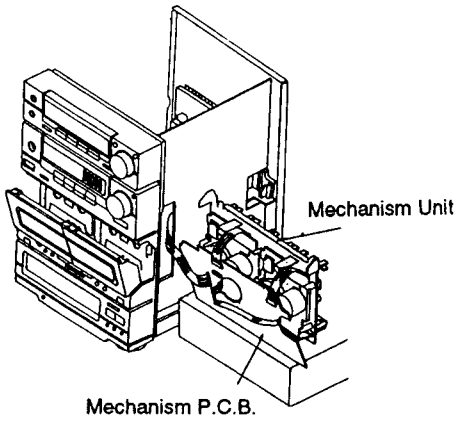
1. Place the Audio P.C.B. as shown in figure with all the flat cables and connectors connected.
2. When checking the soldered surface of the Audio P.C.B., do as shown in figure.

Note : Audio PCB can be checked by disconnect from main P.C.B.

3. Connect jumper wire between TP511 and TP535.
4. Apply a AF signal to TP515 (Lch) or TP513 (Rch) and TP514 (GND) by using a AF OSC.

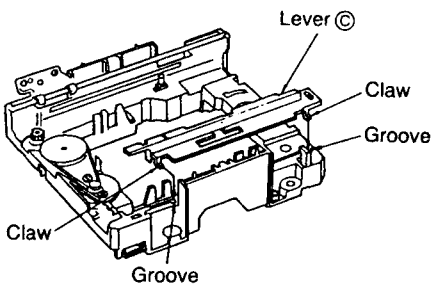
Ref. No. 30	How to check the Mechanism P.C.B.
Procedure 1 ➡ 29	1. Set up the mechanism unit as shown In figure. 2. Remove 2 screws (❶ ~ ❷). 3. Remove the Mechanism P.C.B. In the direction of arrow.



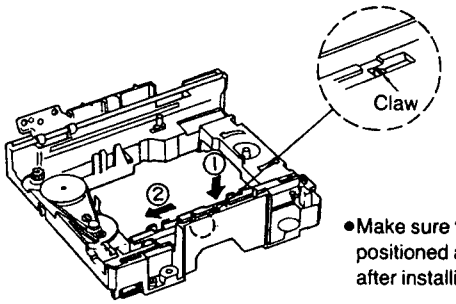


4. When checking the soldered surface of the mechanism P.C.B., do as shown in the figure.

■ CD UNIT ASSEMBLY

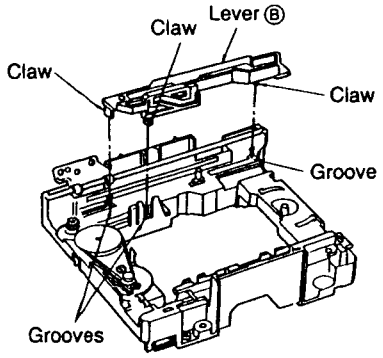


1. Install Lever Ⓒ on the chassis by fitting the claws of Lever Ⓒ in the two grooves of the chassis.

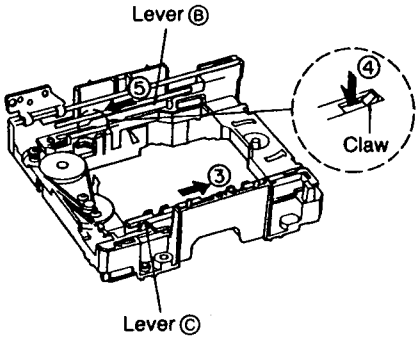


•Make sure that the claw is positioned as shown above after installing Lever Ⓒ.

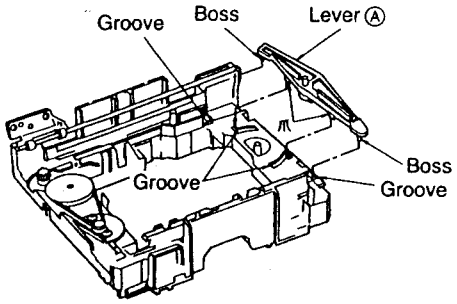
2. Slide Lever Ⓒ in the direction of arrow ② while keeping it held down lightly in the direction of arrow ①.



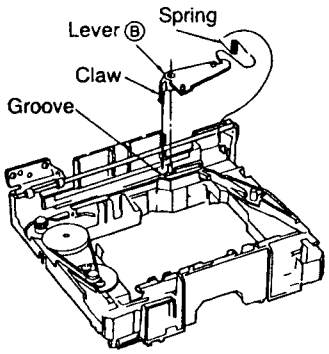
3. Install Lever Ⓑ on the chassis by fitting the claws of Lever Ⓑ in the three grooves of the chassis as shown above.



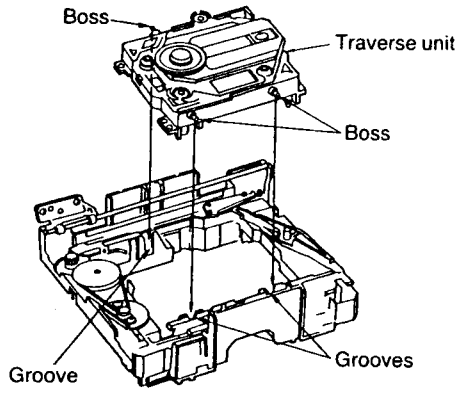
4. Slide Lever Ⓒ fully in the direction of arrow ③.
5. Keep holding down the claw in the direction of arrow ④ and slide Lever Ⓑ in the direction of arrow ⑤ to stop. (Slide but very little.)



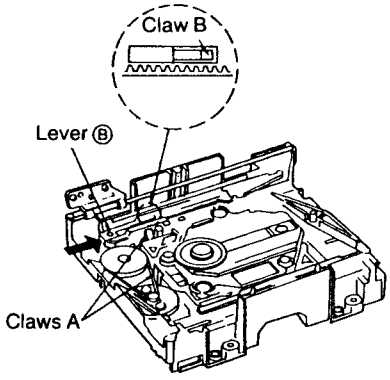
6. Install Lever Ⓐ on the chassis by fitting the two claws of Lever Ⓐ in the two grooves of the chassis and the two bosses in the two grooves as shown above.



7. Install Lever Ⓑ on the chassis by fitting the claw of Lever Ⓑ in the groove of the chassis.
8. Install the spring on Lever Ⓑ and the chassis.

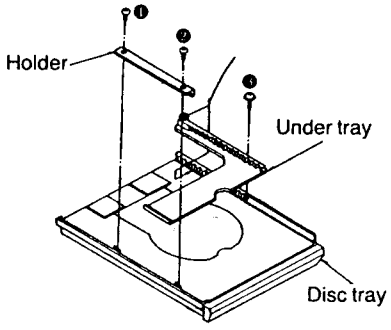


9. Install the traverse unit on the chassis by fitting the three bosses of the traverse unit in the three grooves of the chassis.



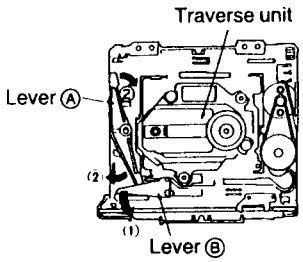
10. Make sure that the traverse unit is engaged with the two claws Ⓐ.
11. Slide Lever Ⓑ in the direction of the arrow. Be sure to check if claw Ⓑ is set as shown above. (Slide Lever Ⓑ but very little.)

■ INSTALLING DISC TRAY UNIT

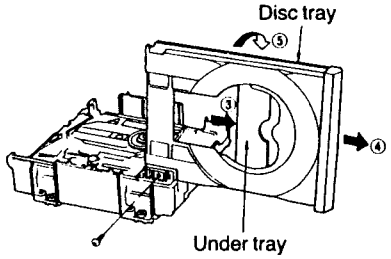


1. Install the under tray on the disc tray.
2. Install the holder on the disc tray with the two screws ❶ and ❷.
3. Screw the under tray on the disc tray ❸.
   Make sure that the under tray moves smoothly after installing the disc tray unit.

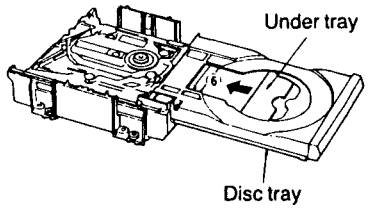
■ INSTALLING DISC TRAY



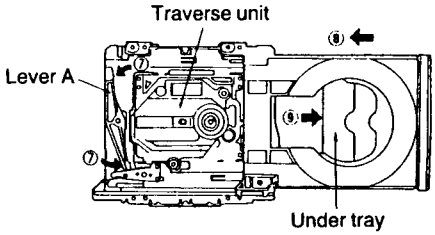
1. Move Lever Ⓑ in the direction of arrow ① and Lever Ⓐ in the direction of arrow ②. (The traverse unit rises.)



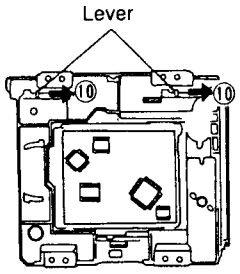
2. Screw the disc tray on the slider as shown above.
3. Slide the under tray fully in the direction of arrow ③.
4. Slide the disc tray fully in the direction of arrow ④.
5. Lay the disc tray down in the direction of arrow ⑤.

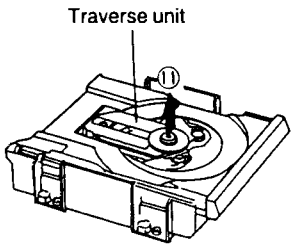


6. Slide the under tray in the direction of arrow ⑥.
7. Hold the disc tray and slide the under tray fully in the direction of arrow ⑥. (Slide but very little and the loading gear is engaged with disc tray gear.)



8. Move Lever A in the direction of arrow ⑦. (The traverse unit is lowered.)
9. Slide the disc tray in the direction of arrow ⑧.
(Make sure that the under tray is moved in the direction of arrow ⑨.)





10. Slide the lever in the direction of arrow ⑩ and check if the traverse unit rises in the direction of arrow ⑪.

■ MEASUREMENTS AND ADJUSTMENTS

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

Caution : It is very dangerous to look or touch the laser beam. (laser radiation is invisible)
With the unit turned "on", laser radiation is emitted from the pickup lens.
Avoid exposure to the laser beam, especially when performing adjustments.

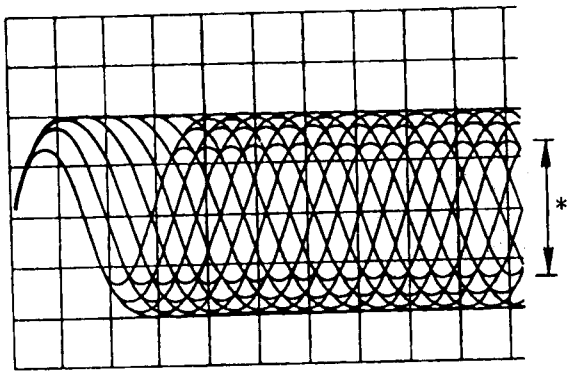
Measuring Instruments and Special Tools

* Test discs
1. Playability test disc (SZZP1054C).
2. Uneven test disc (SZZP1056C).
* Musical program disc (ordinary).
* Extension cable kit (RFKZ0009).
* Dual-beam oscilloscope with bandwidth of 30 MHz or better (with EXT. trigger and 1 : 1 probe).
* Allen wrench (M2.0) (SZZP1101C).
* Lock paint (RZZ0L01)

(1) MECHANICAL ADJUSTMENT

- When the traverse deck is replaced, making adjustments is not necessary. (The traverse deck ass'y is already adjusted.)
- Make adjustments to improve playability if the traverse deck has not been replaced.

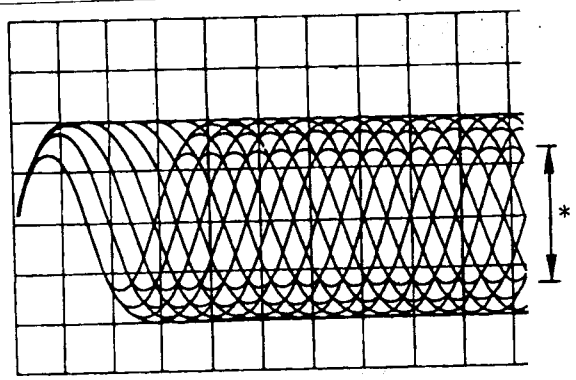
1. Connect the oscilloscope's CH. 1 probe across TP702 (RF) (+) and TP703 (V-Ref.) (–) on the servo P.C.B.
   Oscilloscope setting : VOLT .....200mV.
   SWEEP .....0.5µs.
   Input coupling .....AC.
2. Switch the player power **ON**, and play track **19** on the test disc (SZZ1056C).
3. Leave the player in play mode, and place the traverse deck as shown in Ref. No. 28 page 17.
4. Alternately adjust the two mechanical adjusting screws with the 2.0mm allen wrench (SZZP1101C) until the RF signal amplitude variation on the oscilloscope is minimized. (Refer to Fig. 2 on page 22)
5. After completing the adjustment, lock the **mechanical adjusting screws** with lock paint (RZZ0L01).



* Most stretched eye pattern

(2) BEST EYE (PD BALANCE) AJUSTMENT

1. Connect the oscilloscope's CH. 1 probe across TP702 (RF) (+) and TP703 (V-Ref.) (–) on the servo P.C.B.
   Oscilloscope setting: VOLT.....200mV
   SWEEP.....0.5µs.
   Input coupling AC.
2. Switch the player power ON, and play the 1 KHz (track 1) on the test disc (SZZP1054C).
3. Adjust VR701 until the vertical fluctuation of RF signal is minimized and the eye pattern is moststretched. (Refer to Fig. 1 on page 22)



* Most stretched eye pattern

(3) CHECK OF PLAY OPERATION AFTER ADJUSTMENT

*** Checking skip Search**
1. Play an ordinary musical program disc.
2. Press the skip button to check for normal skip search operation (in both the forward and reverse directions).

*** Checking Manual Search**
1. Play an ordinary musical program disc.
2. Press the manual search button to check for smooth manual search operations at either low or high speed (in both the forward adn reverse directions).

*** Checking Playability**
1. Play the 0.7mm black dot and the 0.7mm wedge on the test disc (SZZP1054C) and verify that no sound skip or noise occurs.
2. Play the middle tracks of the uneven test disc (SZZP1056C) and verify that no sound skip or noise occurs.

- **Adjustment points**

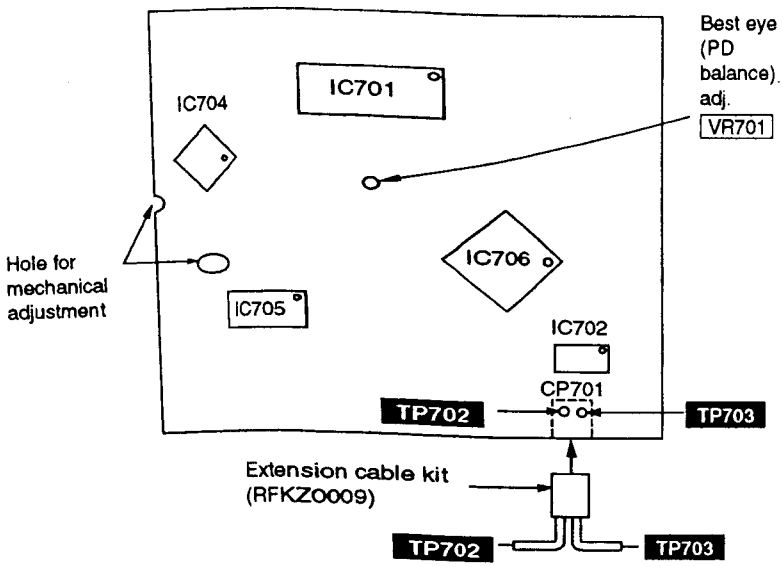


Fig.1

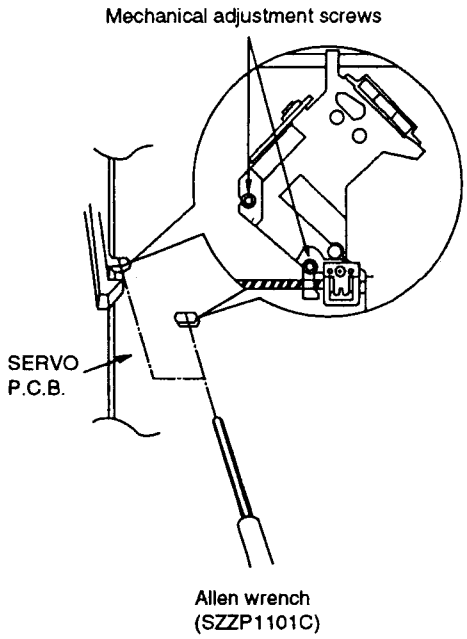


Fig.2

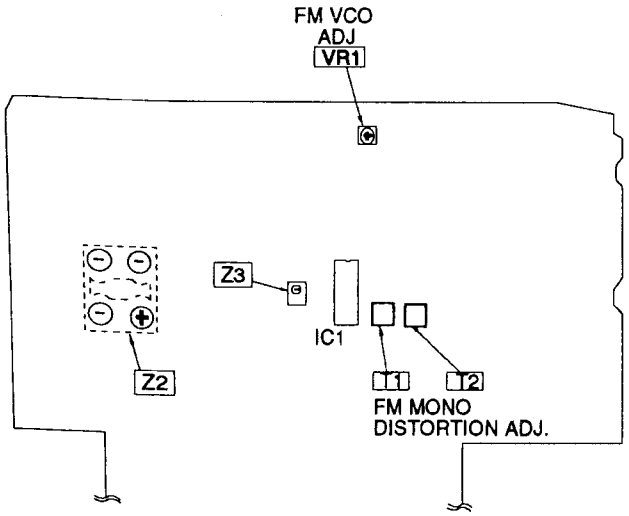


Fig. 3

AM/FM TUNER SECTION

Note: For Z2 (AM IFT) and Z1 (AM ANT and OSC coil), they are supplied as adjusted parts. So, do not turn the cores of the parts.

Control positions and equipment used

- FM signal generator (AM and FM-SG)
- Oscilloscope
- Distortion analyzer
- Dummy antenna (75Ω unbalanced)
- AC and DC electronic voltmeter (EVM)
- Digital frequency counter
- Capacitor (50 V 1 μF)
- Resistor (330 kΩ, 1 kΩ, 1 MΩ)
- Equalizer control.....Center
- Balance control.....Center

Measurement condition

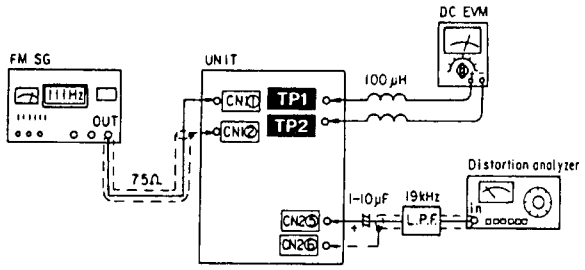
- Volume control.....Maximum

FM IF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequncy display and signal generator to **100.10 MHz.**
4. Adjust the core of **T1** so that the voltage measured in signal mode is **0mV (0 ±30mV)** in 300 mV range.
5. Adjust **T2** so that the distortion factor of L-ch is minimized.
6. Repeat steps 4 and 5.
7. Make sure that the distortion factors of L-ch and R-ch are nearly the same and minimum.

Note: The adjusting screwdriver used should be made of resin.

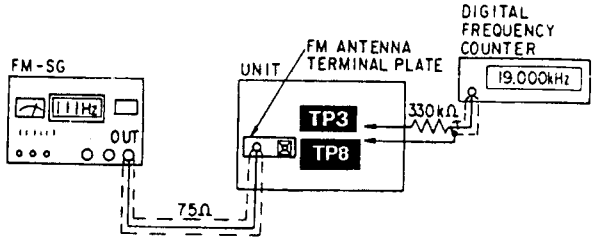
FM SIGNAL GENERATOR CONDITION
Modulation.....100%
Modulation frequency.....1kHz
Output level.....66dB



FM STEREO ADJUSTMENT (FREE RUN)

1. Test equipment connection is shown in figure.
2. Place unit into "**FM STEREO**" position.
3. Place the radio dial and signal generator setting to 98MHz.
4. Adjust **VR1** for **19 kHz ± 50 Hz** on frequency counter reading.
5. Tune a stereo broadcast and confirm the frequency stays at 19 kHz.

AM SIGNAL GENERATOR CONDITION
Modulation.....30%
Modualtion frequency.....40%
Output level.....66dB



• CASSETTE DECK SECTION

(Please refer to fig. 4 for the adjustment point.)

MEASUREMENT CONDITION :

- Make sure heads are clean
- Make sure capstan and pressure roller are clean

TEST TAPE:

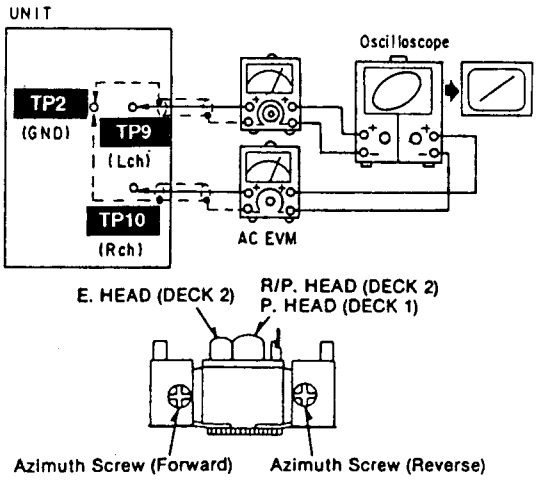
- Head azimuth adjustment (8 kHz, –20 dB): QZZCFM
- Tape speed adjustment (3 kHz, –10 dB): QZZCWAT
- Normal reference blank tape: QZZCRA
- CrO_2 reference blank tape: QZZCRX

HEAD AZIMUTH ADJUSTMENT (DECK 1, 2)

1. Playback the azimuth adjustment portion (8 kHz, –20 dB) of the test tape (QZZCFM). Vary the azimuth adjusting screw until the outputs of the L-ch and R-ch are maximized and the lisajous waveform, as illustrated, approaches 0 degrees.

Note:
If L-CH and R-CH are not maximized at the same point, adjust to the point where the levels of each channel are maximized and equal.

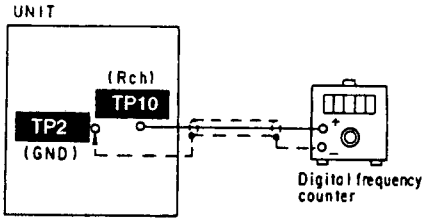
2. Perform the same adjustment in the play mode.
3. After the adjustment, apply screwlock to the azimuth adjusting screw.



TAPE SPEED ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown in figure.
2. Set the unit to "**TAPE**" position.
3. Playback the middle part of the test tape (QZZCWAT).
4. Adjust **VR201** (DECK 1) and **VR202** (DECK 2) so that the output is within the standard value.
5. Set the unit to "**HIGH**" position of editing speed button.
6. Adjust **VR203** (DECK 2) so that the output is within the standard value.

Note:
1. The normal speed adjustment must be done before the High speed adjustment.
2. When adjusting the high speed, short circuit between **TP1** and **TP2**.

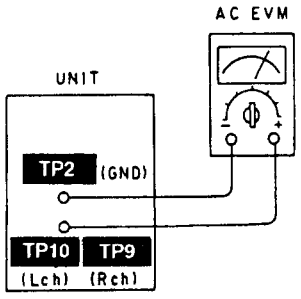


DECK 1 Standard value : 2995~3025 Hz (Normal)
DECK 2 Standard value : 2995~3025 Hz (Normal)

Standard value : 5100~5700 Hz (High)

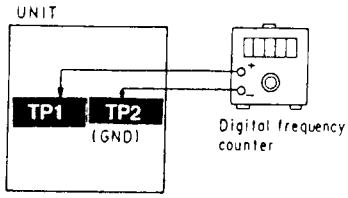
PLAYBACK GAIN ADJUSTMENT (DECK 1, 2)

1. Test equipment connection is shown in figure.
2. Playback test tape (QZZCFM: 315Hz, –10dB).
3. Adjust **VR101, VR102** (DECK 1) and **VR103, VR104** (DECK 2) to read **390 ± 10 mV** on the AC Electronic Voltmeter. (AC EVM)



BIAS OSC FREQUENCY ADJUSTMENT (DECK 2)

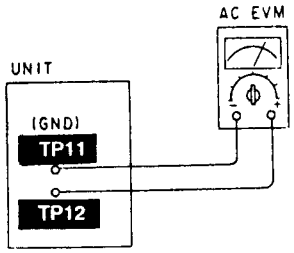
1. Test equipment connection is shown in figure.
2. Set the unit to "**TAPE**" position.
3. Place cassette deck into **REC** mode.
4. Adjust **L201** for **99 ± 4 kHz** on frequency counter reading.



ERASE CURRENT CHECK (DECK 2)

1. Test equipment connection is shown in figure.
2. Insert the normal tape (QZZCRA).
3. Place cassette deck into **REC** mode.
4. Make sure that the output is within the standard value.
5. Insert the CrO_2 tape (QZZCRX).
6. Repeat steps 3, 4.

DECK 2 Standard value (Normal): more than mV
DECK 2 Standard value (CrO_2): more than 70 mV



• Cassette Deck Adjustment Point

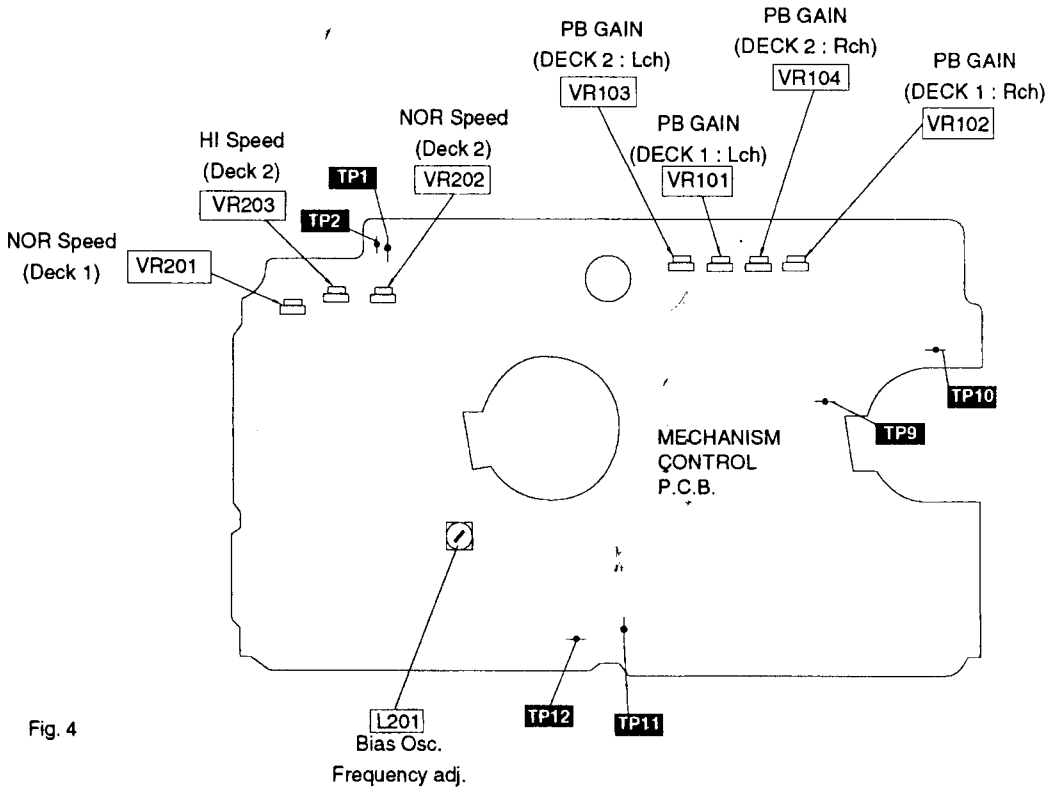


Fig. 4

■ TERMINAL FUNCTIONS OF IC

• IC105 (BU2040F-E2) : I/O Expander

Pin No.	Mark	I/O Division	Function
1	GND	—	GND
2	DATA	I	Data input
3	CLK	I	Clock input
4	TAPE	O	TAPE drive signal control
5	HI SPEED	O	HIGH speed drive signal control
6	DOLBY	I/O	DOLBY drive signal output
7	BP1	O	BEAT PROOF control (bit 1)
8	DMT	O	MUTING control signal output for deck sel.

Pin No.	Mark	I/O Division	Function
9	BP2	O	BEAT PROOF control (bit 2)
10	IH	O	Deck select control terminal
11	REC	O	REC drive signal control
12	2M	O	Motor speed control signal
13	3M	O	Motor speed control signal
14	2PL	O	Solenoid drive control signal
15	1PL	O	Solenoid drive control signal
16	VDD	I	+5V

• IC702 (TC0372DM2R) : Spindle motor drive

Pin No.	Mark	I/O Division	Function
1	GND	—	GND
2	NC	—	——
3	VOUT1	O	Spindle motor control
4	VCC	I	+7.5V
5	VOUT2	O	Spindle motor control
6	NC	—	GND
7	NC	—	GND
8	GND	—	GND

Pin No.	Mark	I/O Division	Function
9	GND	—	GND
10	NC	—	GND
11	-VIN2	I	Spindle motor control
12	+VIN2	I	Spindle motor control
13	+VIN1	I	Spindle motor control
14	-VIN1	I	Spindle motor contrl
15	NC	—	GND
16	GND	—	GND

• IC703 (AN8377N) : Traverse motor drive

Pin No.	Mark	I/O Division	Function
1	LRCK	I	Clock input
2	BLCK	I	Serial data bit clock input
3	SRDATA	I	Serial data input
4	COT1	—	Ground
5	COT2		
6	TEST		
7	VDD	I	Power supply (+5V input)
8	X2	—	Ground
9	X1		
10	VSS	—	Ground
11	AVDDL	I	Power supply (+5V input)
12	OUT.L	O	AF signal output (Lch)

Pin No.	Mark	I/O Division	Function
13	AVSS.L	—	Ground
14	AVSS.R	—	Ground
15	OUT.R	O	AF signal output (Rch)
16	AVDD.R	I	Power supply input
17	/RST	I	Reset signal input
18	PWM	—	———
19	TP	—	Ground
20	WVEL	I	High speed status signal input
21	DEMPH	I	De-emphasis signal input
22	CSEL	I	+5V input
23	192FS	—	———
24	768FS	O	Clock output (f=16.9344 MHz)

- **IC701 (AN8800SCE2): Servo amp**

Pin No.	Mark	I/O Division	Function
1	LDG	I	APC loop gain select
2	LDP	I	APC monitor PD polarity select
3	LD	O	Laser power auto control output
4	LPD	I	LD power monitor PD signal
5	GND	—	GND terminal
6	LDON	I	LD APC ON/OFF ("H": ON, "L" OFF)
7	AMPI	I	RF signal (X30 amp)
8	AMPO	O	
9	RF IN	I	RF AGC signal input
10	RF EQ	—	GND terminal
11	C. AGC	I	AGC detection capacitor input
12	ARF	O	RF signal output
13	C. SBDO	I	Dropout detection capacitor input
14	RF DET	O	RF detection signal ("L": detecting)
15	BDO	O	Dropout detection output
16	Vcc	I	power supply terminal
17	SDO	O	Dropout detection pulse output
18	VAD+	O	Power supply terminal for A/D converter (+)
19	VREF	O	Reference voltage output
20	VAD-	O	Power supply terminal for A/D converter (-)
21	OFTR	O	Off track detection ("H": det.)

Pin No.	Mark	I/O Division	Function
22	PLAY	I	Play signal ("H": ON, "L": OFF)
23	WVEL	I	Double velocity ("H": double, "L":single)
24	TES	I	Tracking error shunt ("H": shunt, "L": output)
25	PTO	O	Potentio amp output
26	PTI	I	Potentio amp input
27	PBO	O	Potentio buffer output
28	POT	I	Potentio buffer input
29	CROSS	O	Tracking error zero cross output
30	TE	O	Tracking error signal
31	TE BAL	I	Oscillation det. signal
32	TBAL	I	Tracking balance adj. input
33	VDET	O	Oscillation det. signal ("H": det.)
34	FE	O	Focusing error signal
35	FBL2	I	Focusing balance 2
36	FBL1	I	Focusing balance 1
37	Vcc	I	Power supply terminal
38	GND	—	GND terminal
39	PDBD	I	Photo detector Bch input with delay
40	PDA	I	Photo detector Ach input without delay
41	PDB	I	Photo detector Ach input with delay
42	PDAD	I	Photo detector Bch input without delay

• IC704 (MN6650) : Digital Servo Processor

Pin No.	Mark	I/O Division	Function
1	TES	O	Tracking error signal output
2	PLAY	O	play signal output
3	/RFDET	I	RF detection signal input
4	DO	I	Dropout signal input
5	OFT	I	Off track signal input
6	ARF	I	RF signal input
7	WVEL	O	High speed status signal output
8	PBO	I	Potension buffer signal input
9	TE	I	Tracking error signal input
10	FE	I	Focus error signal input
11	VR2	I	A/D reference voltage input
12	VR1	I	A/D reference voltage input
13	LDON	O	Laser power control signal output
14	VSS	—	Ground
15	AVSS	—	Ground
16	AVDD	I	Power supply (+5 V input)
17	VDD	I	Power supply (+5 V input)
18	TRV	O	Traverse servo control output
19	TVD	O	Traverse drive output
20	FOD	O	Focus drive output
21	TRD	O	Tracking drive output
22	KICK	O	Track kick signal output

Pin No.	Mark	I/O Division	Function
23	/TEST	I	+5 V input
24	VSS	—	Ground
25	CLVS	I	Spindle servo signal input
26	/TRON	O	Tracking servo signal output
27	MDATA	I	Command data input
28	MCLK	I	Command clock signal input
29	MLD	I	Command load signal input
30	SENSE	O	Sense signal output
31	/FLOCK	O	Focus servo signal output
32	/TLOCK	I	Tracking servo signal output
33	/RST	I	Reset signal input (L:Reset)
34	XI	I	Clock input (fXI= 16.9344MHz)
35	T0	—	Open
36	T1		
37	T2		
38	T3		
39	T4	—	Ground
40	T5		
41	T6		
42	VDET	I	Vibration detecting signal input
43	TBAL	O	Tracking balance adjustment output
44	TRCRS	I	Track cross signal input

• IC705 (MN6475) : Digital filter

Pin No.	Mark	I/O Division	Function
1	LRCK	I	Clock input
2	BCLK	I	Serial data clock input
3	SRDATA	I	Serial data input
4	COT1	—	Ground
5	COT2		
6	TEST		
7	VDD	I	Power supply (+5V input)
8	X2	—	Clock (f=33.8688 MHz)
9	X1		
10	VSS	—	Ground
11	AVDDL	I	Power supply (+5V input)
12	OUT.L	O	AF singal output (Lch)

Pin No.	Mark	I/O Division	Function
13	AVSS.L	—	Ground
14	AVSS.R	—	Ground
15	OUT.R	O	AF signal output (Rch)
16	AVDD.R	I	Power supply input
17	/RST	I	Reset signal input
18	PWM	—	—
19	TP	—	Ground
20	WVEL	I	High speed status signal input
21	DEMPH	I	De-emphassis signal input
22	CSEL	I	+5V input
23	192FS	—	—
24	768FS	O	Clock output (f=16.9344 MHz)

• IC706 (MN6

Pin No.	Mark
1	AVSS
2	IREF
3	ARF
4	DRF
5	DSLF
6	PLLF
7	AVDD
8	RSEL
9	TBUS7
16	TBUS0
17	FLAG
18	IPFLAG
19	FCLK
20	BYTCK
21	WDCK
22	/RST
23	TX
24	LDG
25	RDG
26	SRDATA
27	SCK
28	LRCK
29	XCK
30	PMCK
31	CSEL
32	PSEL
33	X1
34	X2
35	VSS

• IC706 (MN6626) : Digital signal processor

Pin No.	Mark	I/O Division	Function
1	AVSS	—	Ground
2	IREF	I	Reference current input
3	ARF	I	RF signal input
4	DRF	I	DSL bias input
5	DSLF	O	DSL loop filter
6	PLLF	I	PLL loop filter
7	AVDD	I	Power supply (+5V input)
8	RSEL	I	+5V input
9 ~ 16	TBUS7 ~ TBUS0	—	Test terminal (Ground)
17	FLAG	—	————
18	IPFLAG		
19	FCLK		
20	BYTCK		
21	WDCK		
22	/RST	I	Reset signal input
23	TX	O	Digital audio interface signal output
24	LDG	—	————
25	RDG		
26	SRDATA	O	Serial data output
27	SCK	O	Serial bit clock output
28	LRCK	O	Clock output
29	XCK	O	Clock output (f=16.9344 MHz)
30	PMCK	—	————
31	CSEL	I	+5V input
32	PSEL	—	Ground
33	X1	I	Clock input (f=16.9344MHz)
34	X2	—	————
35	VSS	—	Ground

Pin No.	Mark	I/O Division	Function
36	SUBQ	O	Sub-code (Q data) output
37	SQCK	I	Sub-code (Q data) clock input f=7.3kHz)
38	/CLDCK	—	————
39	BLKCK	O	Sub-code block (Q data) clock f=75Hz)
40	DEMPH	O	De-emphasis ON signal outpout
41	MEMP	I	Emphasis signal input
42	MLD	I	Command load signal input
43	MCLK	I	Command clock signal input
44	MDATA	I	Command data input
45	DMUTE	I	Muting control signal input
46	SMCK	O	Clock output (f=4.2336MHz)
47	STAT	O	Status signal output
48	CRC	—	————
49	SUBC	—	————
50	SBCK	I	Clock for sub-code serial output
51	/TRON	I	Tracking servo ON signal input
52	CLVS	O	Spindle servo signal output
53	PC	—	————
54	ECM	O	Spindle motor control signal output
55	ECS	O	Spindle motor control signal output
56	VDD	I	Power supply (+5V input)
57	/TEST	I	+5V input
58	SSEL	I	+5V input
59	MSEL	—	————
60	RESY	—	————
61	DO	I	Drop out signal input
62	EFM	—	————
63	PCK		
64	PDO		

- **IC901 (MND2410RLAA2) : Main microcomputer**

Pin No.	Mark	I/O Division	Function
1	VDD	I	Power supply +5.6V
2	OSC1	I	Reference OSC terminal (connected
3	OSC2	I	to crystal oscillator 4 MHz)
4	VSS	—	GND
5	XI	I	Clock OSC terminal (connected to
6	XO	O	ceramic oscillator 32 kHz)
7	VREF–	I	Reference voltage input
8	ADIN7	I	Deck 2 Forward Rec, Inh. switch select input terminal
9	ADIN6	I	Deck 2 cassette half detection signal input "HI" level in half detection switch in ON mode. "LOW" level in half detection switch in OFF mode.
10	ADIN5	I	Deck 1 cassette half detection signal input "HI" level half detection switch in ON mode. "LOW" level in half detection switch in OFF mode.
11	ADIN4	—	Not used
12	ADIN3	I	Key control signal input (EDIT, TUNING, MODE, TITLE, DISPLAY, BAND)
13	ADIN2	I	Cassette operation control signal
14	ADIN1	I	CD operation control signal
15	ADIN0	I	Key control signal input (TIMER, SET, TAPE, SLEEP, CANCEL, TUNER)
16	VREF+	I	Reference voltage input (+5)
17	JOGA	I	JOG dial signal input
18	JOGB	I	JOG dial signal input
19	DC DET	—	Not used
20	PWM	—	Not used
21	MKDATA	—	Not used
22	MKCLK	—	Not used
23	ACLK	O	Audio control clock signal output
24	ADATA	O	Audio control data output
25	VOL B	I	Main volume control signal
26	PWRCNT	O	Output for voltage control signal
27	MUTE A	O	Output for muting control signal
28	VOL A	I	Main volume control signal
29	MBP1	—	Not used
30	MBP2	—	Not used
31	REMOCON IN	I	Remote control receiving signal
32	BLKCK	I	Sub-code block, clock signal (CD)
33	STATUS	I	CD start control signal input

Pin No.	Mark	I/O Division	Function
34	CD RST	I/O	CD reset control signal in/output
35	RST	I	Micro computer reset control signal input
36	MLD / PLL CL	O	CD Process signal output and PLL tuner clock signal output
37	MDATA/ PLL CE	O	CD process data signal output and PLL tuner strobe signal output
38	MCLK / PLL DATA	O	CD Process clock control signal output and PLL tuner data signal output
39	SQCK	I	CD subcode clock signal
40	SUBQ	I	CD sub-code data input
41	NC	—	—
42	NC	—	—
43	CM	—	GND
44	TLOCK / TUNED	I	Tracking signal input and tuner received monitor signal input
45	FLOCK / STEREO	I	Focus Servo clock signal and FM ST received signal input
46	REST	I	Reset Signal input
47	CD OPEN	I	CD open detection switch signal input
48	CD CLOSE	I	CD close detection switch signal input
49	SENSE	I	DISC sense signal input
50	AC DET (HALT)	I	Power down detection signal input
51	NC	—	—
52	CS	I/O	8 bit signal data in/output
53	DATA	I/O	8 bit signal in/output
54	CLK	I/O	Serial clock data signal in/output
55	—	—	—
56	S. BASS	O	Super Bass control signal
57	MUTE C	—	—
58	NC	—	—
59	NC	—	—
60	SRDY	I/O	8 bit serial data in/output
61	—	—	GND
62	—	—	GND
63	—	—	GND
64	—	—	GND
65	—	—	GND
66	—	—	GND
67	—	—	GND
68 ~ 100	—	—	—

- **IC951 (M50754-190SP) : FL microcomputer**

Pin No.	Mark	I/O Division	Function
1	VCC	—	Power supply +5V
2	P65	I/O	Segment serial output for FL
3	P64	I/O	Segment serial output for FL
4	P63	O	Segment serial output for FL
5~15	NC	—	—
16	SRDY	I/O	Serial data (8 bit) in/output
17	CLK	I/O	Serial clock control signal in/output
18	NC	—	—
19	DATA	I/O	8 bit data control signal
20	CS	I/O	8 bit data control signal
21~23	NC	—	—
24	P51	—	GND

Pin No.	Mark	I/O Division	Function
25	HALT	I	Power off detection input "Level" = OFF
26	CNVSS	—	GND
27	RESET	I	Reset control signal input
28	XIN	I	Ceramic Oscillator connection (Input)
29	XOUT	O	Ceramic Oscillator connection (Output)
30	XCIN	—	GND
31	NC	—	—
32	VSS	—	GND
33	NC	—	—
34~37	P54~57	—	GND
38	-VP	I	Pull down voltage input
39	P1 ~ P14 1G ~ 12G	O	Segment signal output for FL

- **IC307 (BU2040F-E2) : I/O Expander**

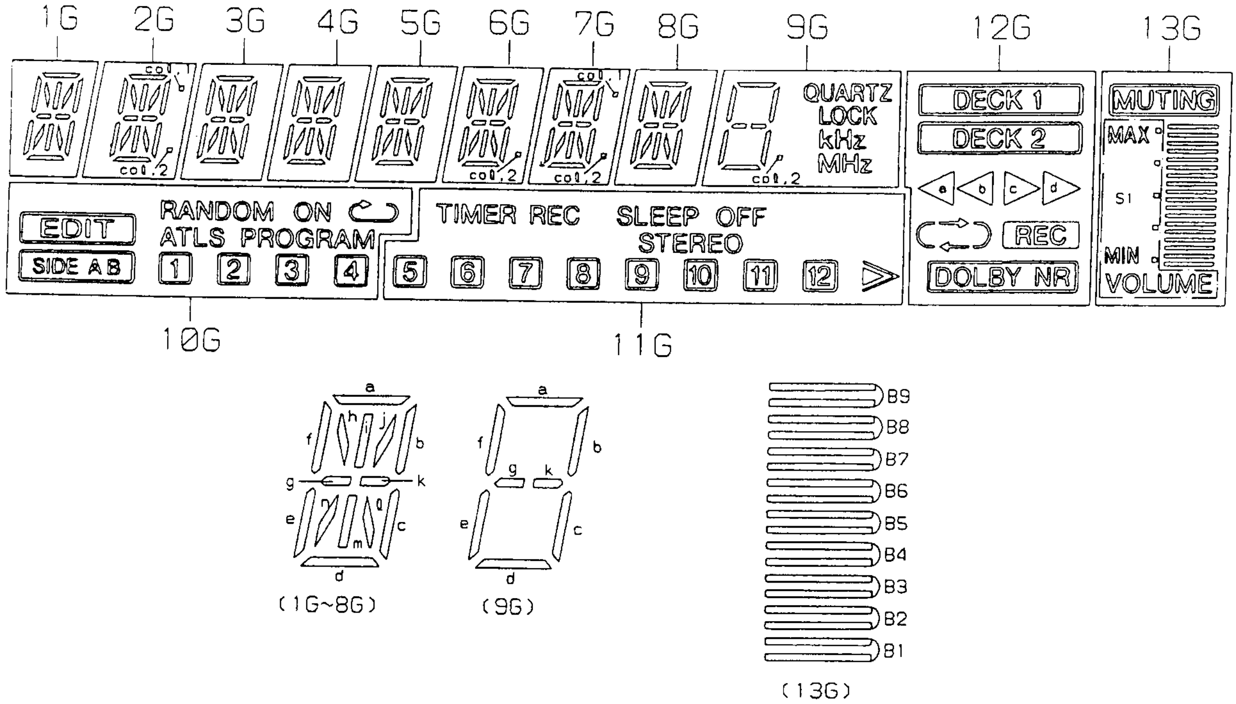
Pin No.	Mark	I/O Division	Function
1	GND	—	GND
2	DATA	I	Data input
3	CLK	I	Clock input
4	CD	O	CD drive signal output
5	TAPE	O	TAPE drive signal output
6	TUN	O	TUNER drive signal output
7	MUT. B	O	Mute control (bit 2) output
8	MO/ST	O	MONO/STEREO drive signal output

Pin No.	Mark	I/O Division	Function
9	VOL.MUT	O	Muting controls signal drive signal output
10	BASS	O	BASS drive signal output
11	AUX	O	AUX drive signal output
12	ALTS1	O	Attenuator control (bit 1)
13	ALTS2	O	Attenuator control (bit 2)
14	LO OPEN	O	Open loop control signal output
15	LO CLOSE	O	Close loop control signal output
16	VDD	I	+5V

INTERNAL CONNECTION OF FL

TUNER SECTION (FL951 : RSL0117-F)

- **Grid connection diagram**



Pin connection

PIN NO.	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31
CONNECTION	F2	F2	NP	NP	13G	P15	P16	P1	P2	P3	P4	P5	P6	P7	P8

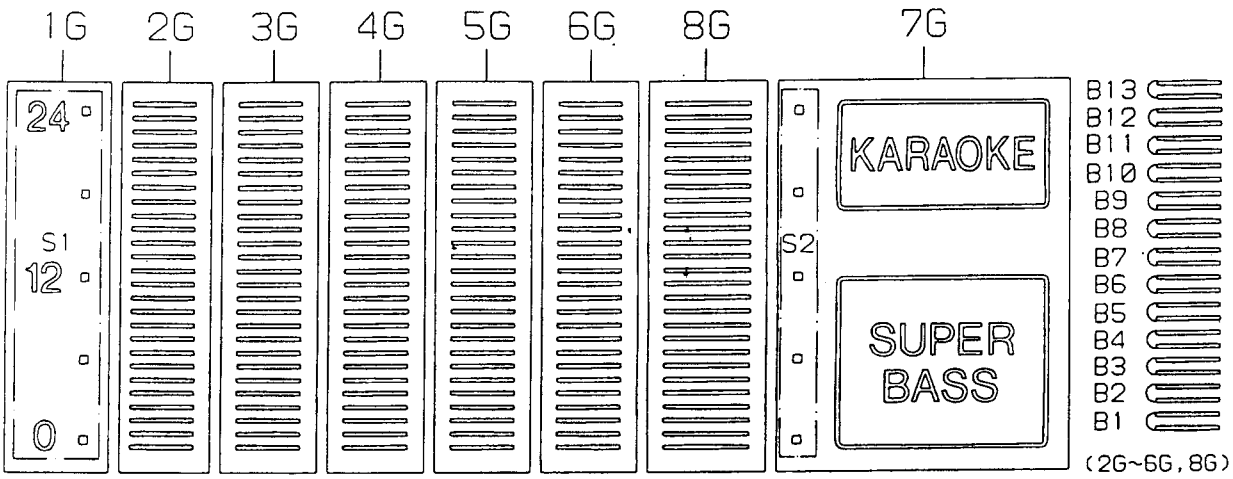
PIN NO.	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16
CONNECTION	12G	11G	10G	9G	1G	2G	3G	4G	5G	6G	7G	8G	NC	NC	P9

PIN NO.	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	P10	P11	P12	P13	P14	NC	NC	NC	NC	NC	NC	NP	NP	F1	F1

NOTE 1) F1,F2 --- Filament
2) NP ------ No pin
3) NC ------ No connection
4) 1G~12G --- Grid

	1G	2G	3G	4G	5G	6G	7G	8G	9G	10G	11G	12G	13G
P1	a	a	a	a	a	a	a	a	a	[4]	[5]	DECK 1	S1
P2	b	b	b	b	b	b	b	b	b	[3]	[6]	DECK 2	B1
P3	f	f	f	f	f	f	f	f	f	[2]	[7]	◁ (a)	B2
P4	i	i	i	i	i	i	i	i	QUARTZ LOCK	[1]	[8]	◁ (b)	B3
P5	h	h	h	h	h	h	h	h	–	B	[9]	(c) ▷	B4
P6	j	j	j	j	j	j	j	j	–	A	[10]	(d) ▷	B5
P7	g	g	g	g	g	g	g	g	g	SIDE	[11]	C	B6
P8	k	k	k	k	k	k	k	k	k	↩	[12]	⇅	B7
P9	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	ℓ	MHz	RANDOM	⩥	ↄ	B8
P10	n	n	n	n	n	n	n	n	kHz	–	STEREO	REC	B9
P11	e	e	e	e	e	e	e	e	e	–	TIMER	DOLBY NR	MUTING
P12	m	m	m	m	m	m	m	m	–	PROGRAM	REC	–	–
P13	c	c	c	c	c	c	c	c	c	–	–	–	–
P14	d	d	d	d	d	d	d	d	d	ATLS	SLEEP	–	–
P15	–	col,1	–	–	–	–	col,1	–	–	EDIT	–	–	–
P16	–	col,2	–	–	–	col,2	col,2	–	col,2	ON	OFF	–	–

- **GRAPHIC EQUALIZER SECTION (FL952 : RSL0118-F)**
  - **Grid connection diagram**



- **Pin connection**

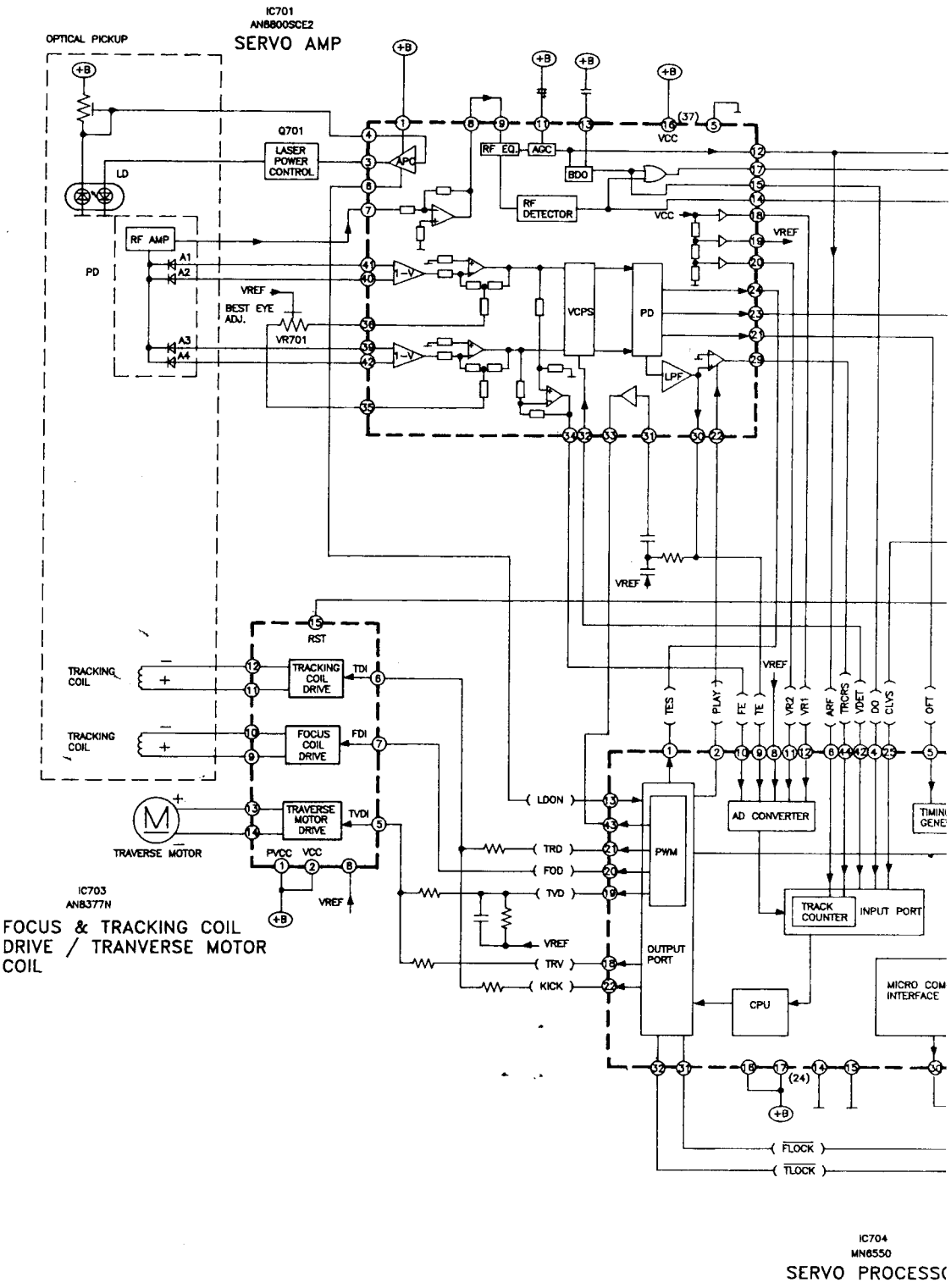
PIN NO.	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1
CONNECTION	F2	F2	NP	NC	P16	P15	P14	P13	P12	P11	P10	P9	P8	P7	P6	P5	P4	P3	P2	P1	8G	7G	6G	5G	4G	3G	2G	1G	NC	NP	F1	F1

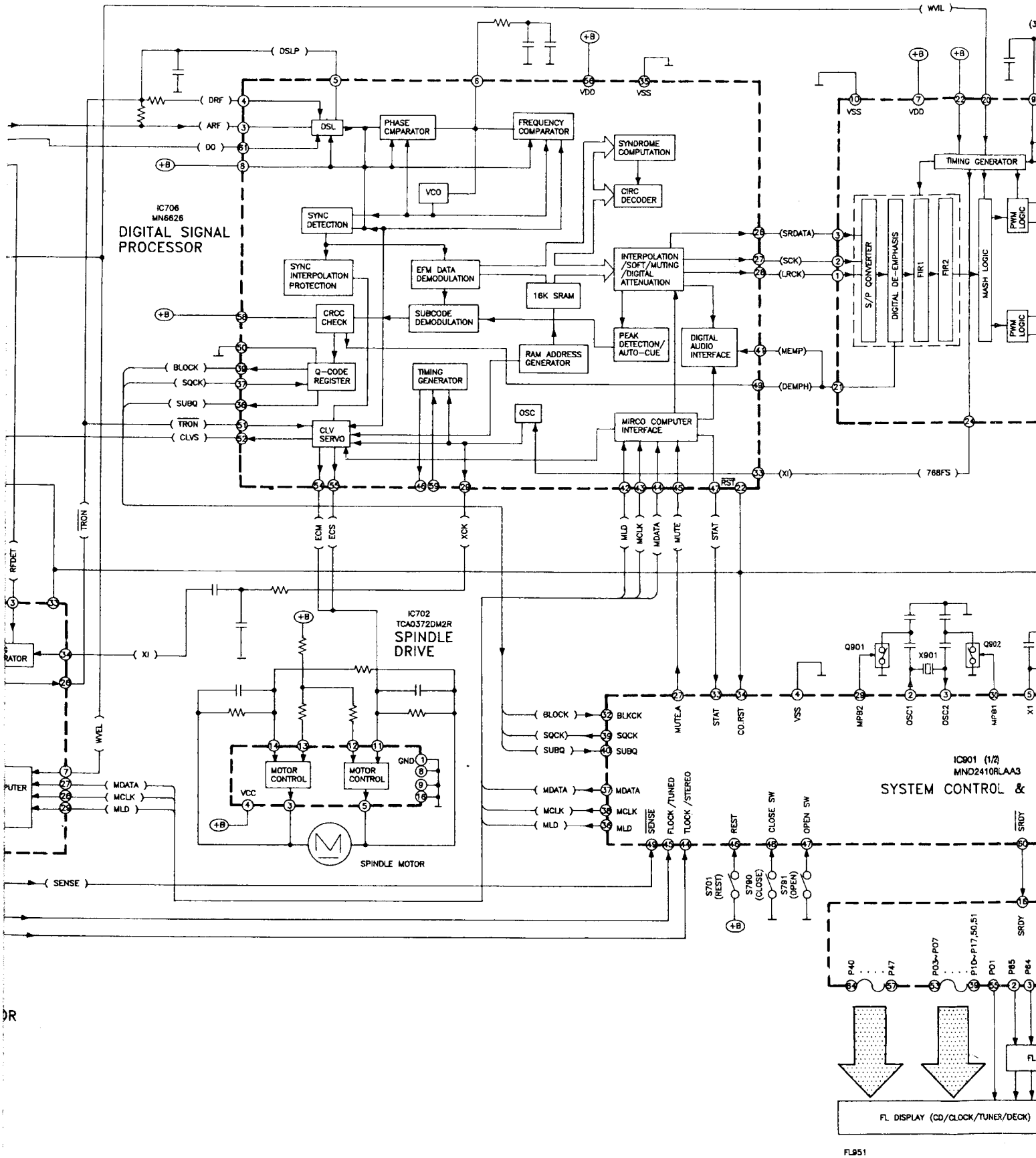
NOTE 1) F1,F2 --- Filament 3) NC ------ No connection
2) NP ------ No pin 4) 1G~8G --- Grid

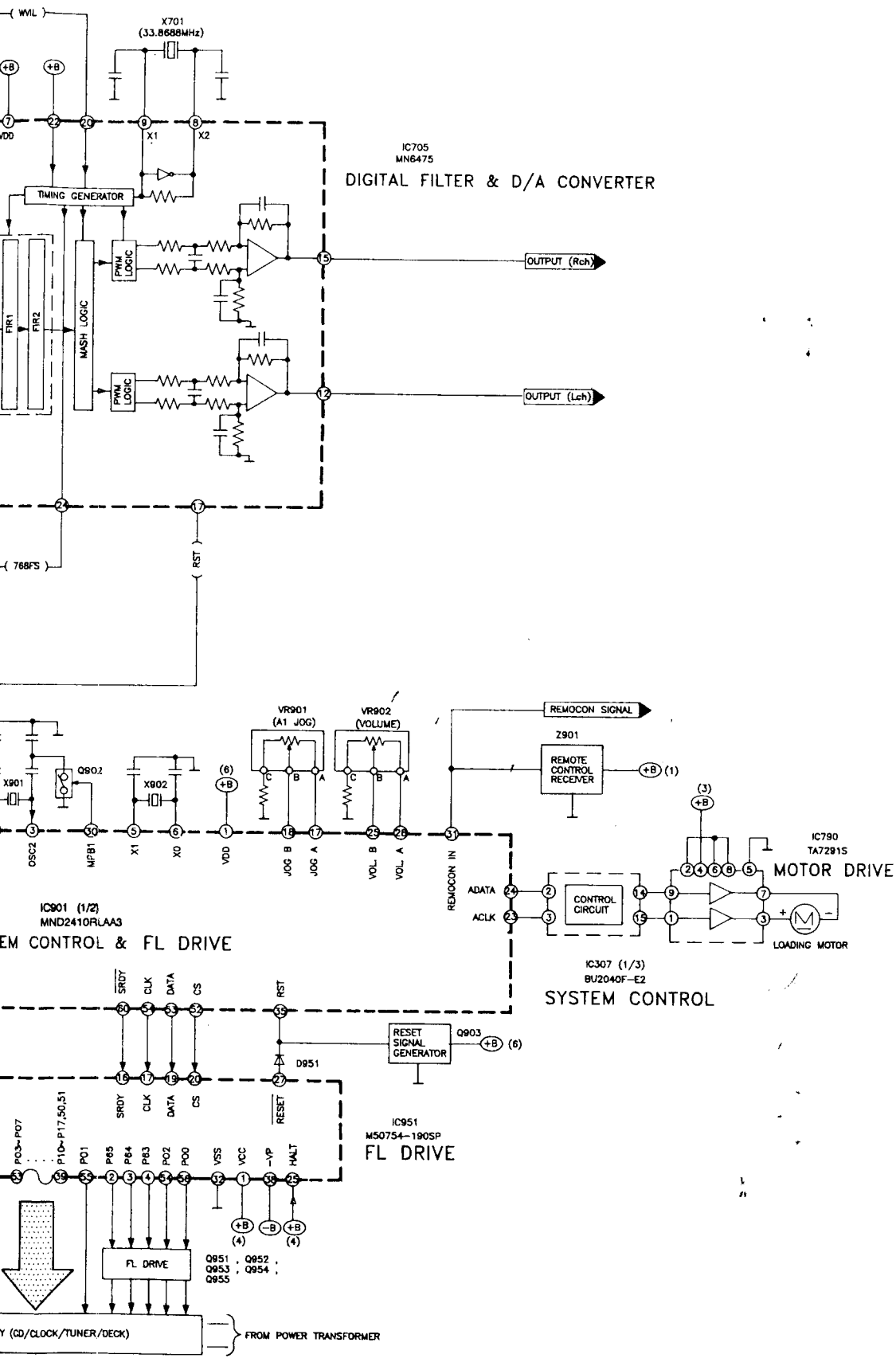
- **Anode connection diagram**

	1G	2G	3G	4G	5G	6G	7G	8G
P1	–	B1	B1	B1	B1	B1	–	B1
P2	–	B2	B2	B2	B2	B2	–	B2
P3	–	B3	B3	B3	B3	B3	–	B3
P4	–	B4	B4	B4	B4	B4	–	B4
P5	–	B5	B5	B5	B5	B5	–	B5
P6	–	B6	B6	B6	B6	B6	–	B6
P7	–	B7	B7	B7	B7	B7	–	B7
P8	–	B8	B8	B8	B8	B8	–	B8
P9	–	B9	B9	B9	B9	B9	–	B9
P10	–	B10	B10	B10	B10	B10	–	B10
P11	–	B11	B11	B11	B11	B11	–	B11
P12	–	B12	B12	B12	B12	B12	–	B12
P13	–	B13	B13	B13	B13	B13	–	B13
P14	S1	–	–	–	–	–	S2	–
P15	–	–	–	–	–	–	KARAOKE	–
P16	–	–	–	–	–	–	SUPER BASS	–

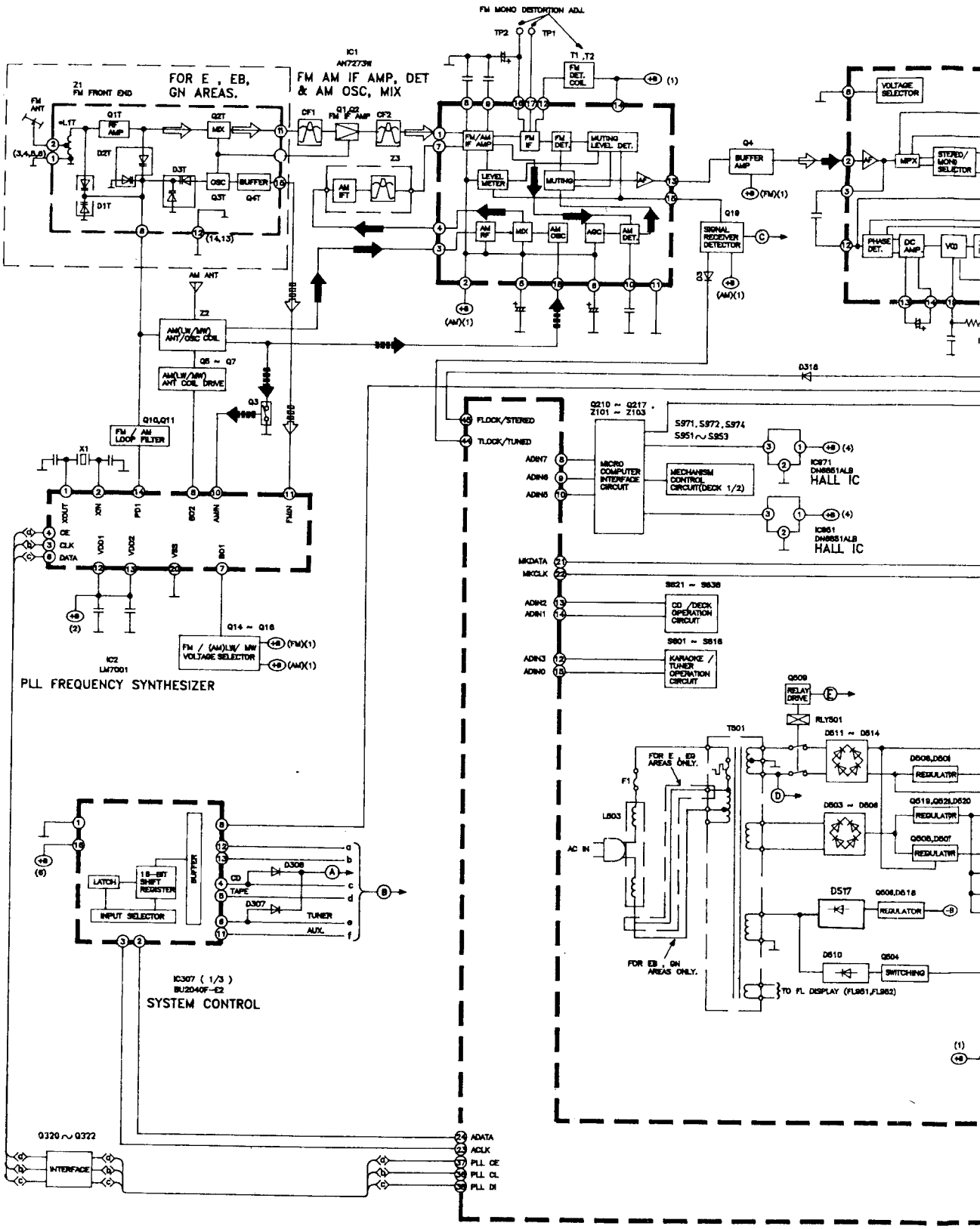
■ BLOCK DIAGRAM

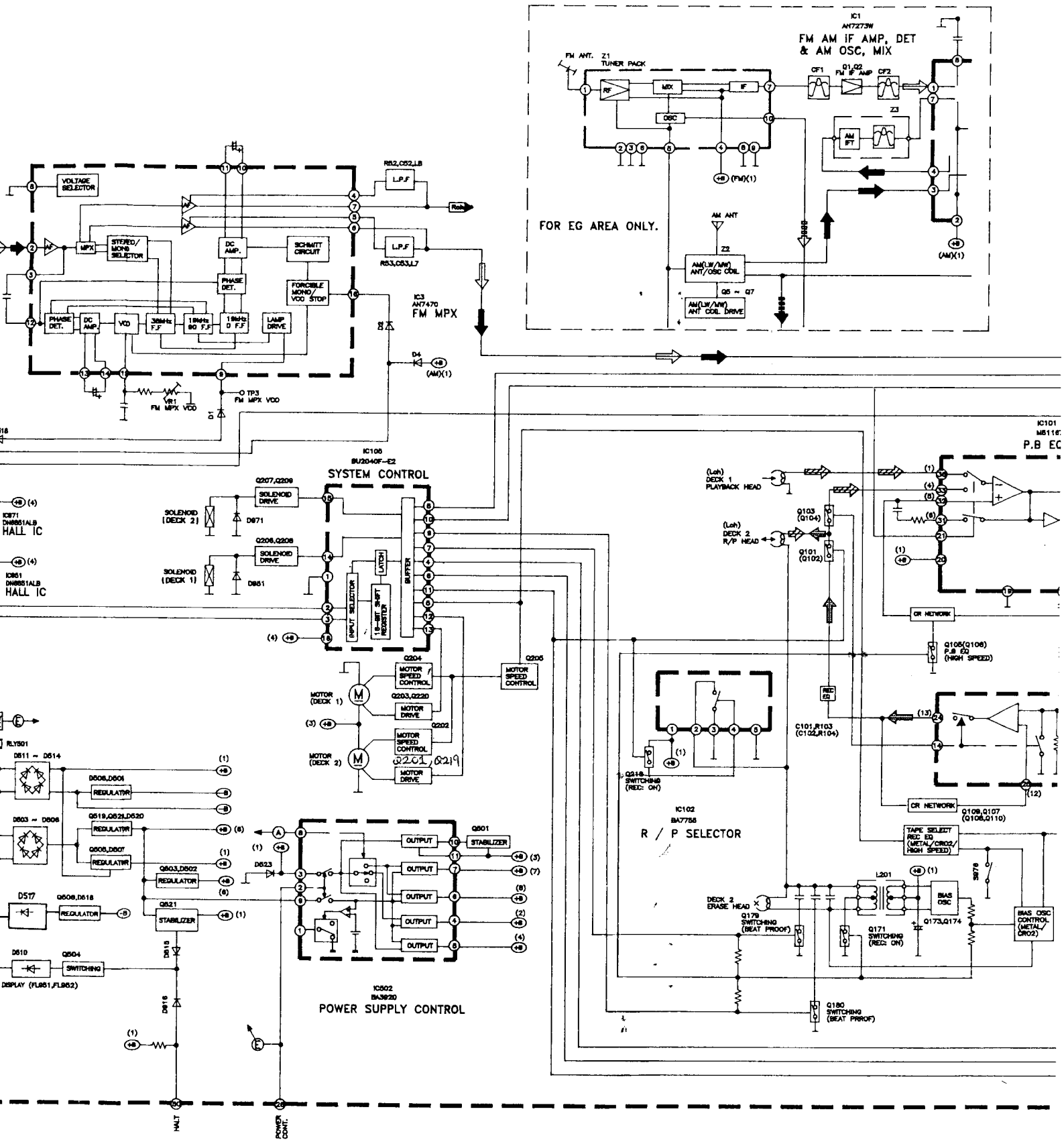


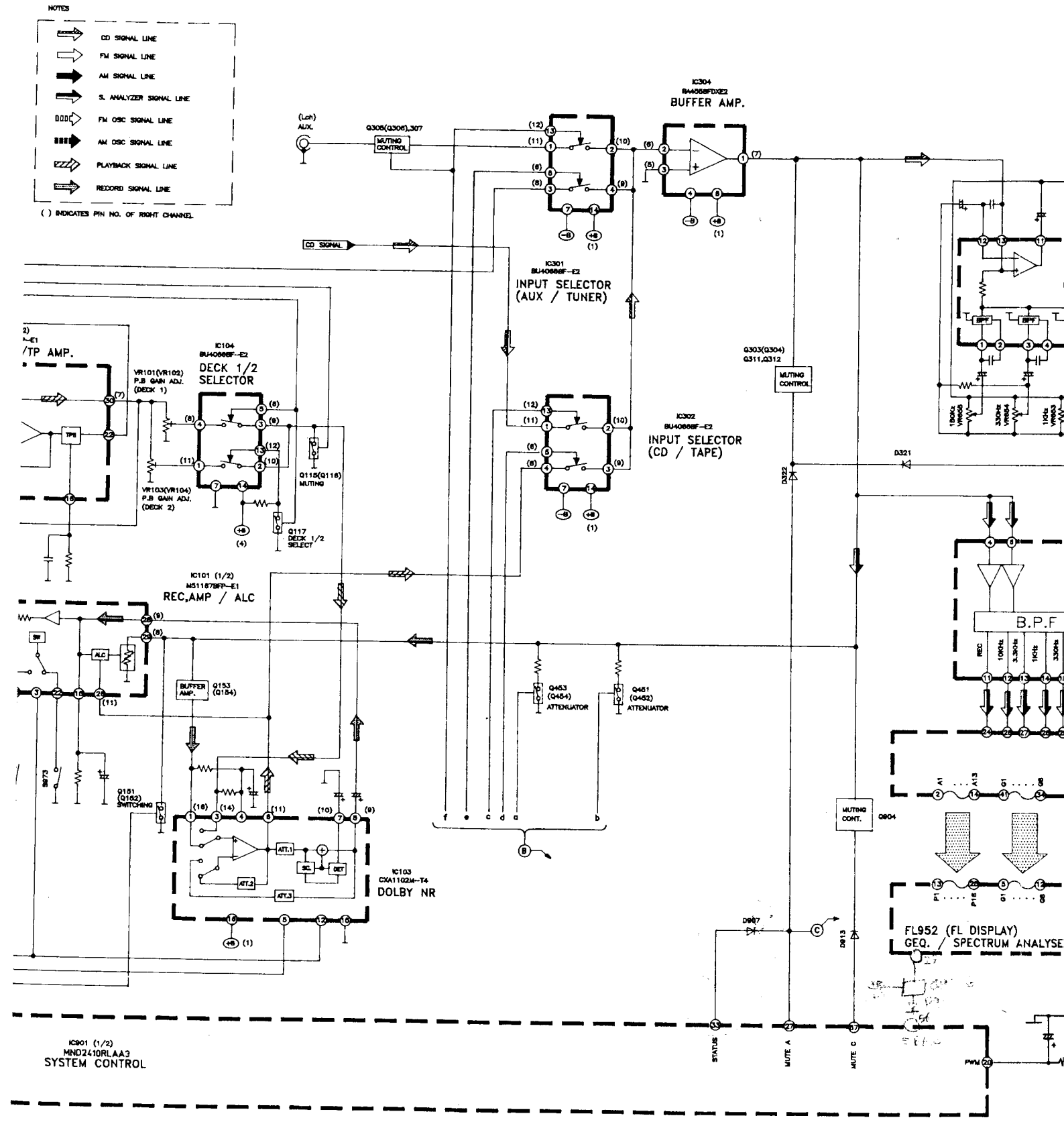

IC706
MN6626
DIGITAL SIGNAL PROCESSOR
DSLP
DRF
ARF
DO
+B
DSL
PHASE CMPARATOR
FREQUENCY COMPARATOR
VCO
SYNDROME COMPUTATION
CIRC DECODER
SYNC DETECTION
SYNC INTERPOLATION PROTECTION
EFM DATA DEMODULATION
16K SRAM
INTERPOLATION /SOFT/MUTING /DIGITAL ATTENUATION
CRCC CHECK
SUBCODE DEMODULATION
PEAK DETECTION/ AUTO-CUE
DIGITAL AUDIO INTERFACE
RAM ADDRESS GENERATOR
BLOCK
SQCK
SUBQ
TRON
CLVS
Q-CODE REGISTER
TIMING GENERATOR
OSC
CLV SERVO
MIRCO COMPUTER INTERFACE
VDD
VSS
WVIL
TIMING GENERATOR
S/P CONVERTER
DIGITAL DE-EMPHASIS
FIR1
FIR2
MASH LOGIC
PWM LOGIC
(SRDATA)
(SCK)
(LRCK)
(MEMP)
(DEMPH)
(XI)
768FS
RST
ECM
ECS
XCK
MLD
MCLK
MDATA
MUTE
STAT
RFDET
TRON
WVEL
XI
IC702
TCA0372DM2R
SPINDLE DRIVE
MOTOR CONTROL
MOTOR CONTROL
VCC
GND
SPINDLE MOTOR
SENSE
BLKCK
MUTEA
CO.RST
MPB2
OSC1
OSC2
MPB1
X1
Q901
X901
Q902
IC901 (1/2)
MND2410RLAA3
SYSTEM CONTROL &
FLOCK /TUNED
FLOCK /STEREO
REST
CLOSE SW
OPEN SW
S701 (REST)
S790 (CLOSE)
S791 (OPEN)
SRDY
P40 ..... P47
P03~P07
P10~P17,50,51
P01
P85
P84
FL DISPLAY (CD/CLOCK/TUNER/DECK)
FL951

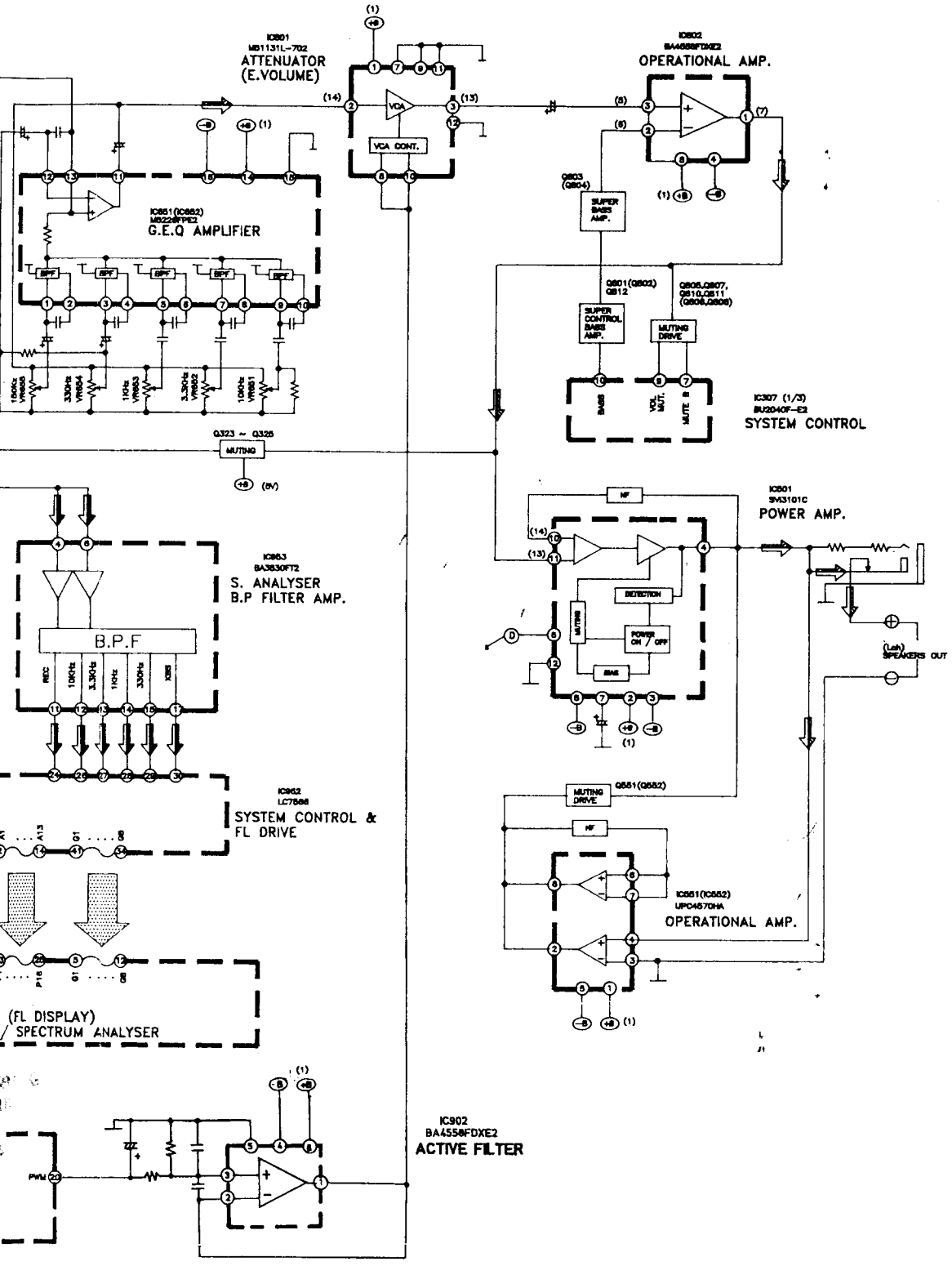

X701
(33.8688MHz)
IC705
MN6475
DIGITAL FILTER & D/A CONVERTER
TIMING GENERATOR
PWM LOGIC
FIR1
FIR2
MASH LOGIC
OUTPUT (Rch)
OUTPUT (Lch)
X1
X2
RST
768FS
VR901
(A1 JOG)
VR902
(VOLUME)
REMOCON SIGNAL
Z901
REMOTE CONTROL RECEIVER
Q902
Q903
X901
X902
OSC2
MFB1
VDD
JOG B
JOG A
VOL B
VOL A
REMOCON IN
IC790
TA7291S
MOTOR DRIVE
ADATA
ACLK
CONTROL CIRCUIT
LOADING MOTOR
IC901 (1/2)
MND2410RLAA3
EM CONTROL & FL DRIVE
IC307 (1/3)
BU2040F-E2
SYSTEM CONTROL
SRDY
CLK
DATA
CS
RESET SIGNAL GENERATOR
D951
RESET
IC951
M50754-190SP
FL DRIVE
P10~P17,50,51
P03~P07
P01
P65
P64
P63
P02
P00
VSS
VCC
-VP
HALT
FL DRIVE
Q951 ; Q952 ;
Q953 ; Q954 ;
Q955
Y (CD/CLOCK/TUNER/DECK)
FROM POWER TRANSFORMER

■ BLOCK DIAGRAM



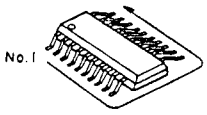

IC1
AN7273W
FM AM IF AMP, DET
& AM OSC, MIX
FM ANT. Z1
TUNER PACK
RF
MIX
IF
OSC
CF1
Q1,Q2
FM IF AMP
CF2
Z3
AM IFT
+B (FM)(1)
FOR EG AREA ONLY.
AM ANT
Z2
AM(LW/MW) ANT/OSC COIL
Q5 ~ Q7
AM(LW/MW) ANT COIL DRIVE
+B (AM)(1)
VOLTAGE SELECTOR
STEREO/ MONO SELECTOR
MPX
DC AMP.
SCHMITT CIRCUIT
PHASE DET.
FORCIBLE MONO/ VCO STOP
L.P.F
R52,C52,L8
R53,C53,L7
IC3
AN7470
FM MPX
PHASE DET.
DC AMP.
VCO
38kHz F.F
19kHz BP F.F
19kHz D F.F
LAMP DRIVE
VR1
FM MPX VCO
TP3
FM MPX VCO
D4
(AM)(1)
IC105
SU2040F-E2
SYSTEM CONTROL
SOLENOID DRIVE
Q207,Q208
Q206,Q209
SOLENOID (DECK 2)
SOLENOID (DECK 1)
D871
D851
LATCH
BUFFER
INPUT SELECTOR
18-BIT SHIFT REGISTER
IC871
DN8851ALB
HALL IC
IC851
DN8851ALB
HALL IC
Q204
Q205
MOTOR SPEED CONTROL
MOTOR DRIVE
Q203,Q220
Q202
Q201,Q219
MOTOR (DECK 1)
MOTOR (DECK 2)
RLY501
D511 ~ D514
D503 ~ D506
D508,D509
REGULATOR
Q519,Q521,D520
Q508,D507
Q503,D502
Q521
STABILIZER
D517
Q508,D518
Q510
Q504
SWITCHING
DISPLAY (FL851,FL852)
D523
D515
D516
IC502
BA3820
POWER SUPPLY CONTROL
Q501
STABILIZER
OUTPUT
HALT
POWER CONT.
IC102
BA7758
R / P SELECTOR
(Loh) DECK 1 PLAYBACK HEAD
(Loh) DECK 2 R/P HEAD
Q103 (Q104)
Q101 (Q102)
Q318 SWITCHING (REC: ON)
C101,R103 (C102,R104)
REC EQ
CR NETWORK
Q105(Q106) P.B EQ (HIGH SPEED)
Q109,Q107 (Q108,Q110)
TAPE SELECT REC EQ (METAL/CRO2/ HIGH SPEED)
DECK 2 ERASE HEAD
L201
BIAS OSC
Q179 SWITCHING (BEAT PROOF)
Q171 SWITCHING (REC: ON)
Q173,Q174
BIAS OSC CONTROL (METAL/ CRO2)
Q180 SWITCHING (BEAT PRROF)
P.B EQ


NOTES
CD SIGNAL LINE
FM SIGNAL LINE
AM SIGNAL LINE
S. ANALYZER SIGNAL LINE
FM OSC SIGNAL LINE
AM OSC SIGNAL LINE
PLAYBACK SIGNAL LINE
RECORD SIGNAL LINE
( ) INDICATES PIN NO. OF RIGHT CHANNEL
IC304
BUFFER AMP.
(Lch) AUX.
Q305(Q306),307
MUTING CONTROL
CD SIGNAL
IC301
INPUT SELECTOR
(AUX / TUNER)
IC302
INPUT SELECTOR
(CD / TAPE)
Q303(Q304)
Q311,Q312
MUTING CONTROL
D321
D322
IC104
DECK 1/2
SELECTOR
VR101(VR102)
P.B GAIN ADJ.
(DECK 1)
VR103(VR104)
P.B GAIN ADJ.
(DECK 2)
Q115(Q116)
MUTING
Q117
DECK 1/2
SELECT
/TP AMP.
IC101 (1/2)
REC,AMP / ALC
BUFFER AMP.
Q153
(Q154)
Q453
(Q454)
ATTENUATOR
Q451
(Q452)
ATTENUATOR
B.P.F
Q151
(Q152)
SWITCHING
IC103
CXA1102M-T4
DOLBY NR
MUTING CONT.
Q904
D907
D913
FL952 (FL DISPLAY)
GEQ. / SPECTRUM ANALYSE
IC901 (1/2)
MN2410RLAA3
SYSTEM CONTROL
STATUS
MUTE A
MUTE C
PWM


IC801
MB1131L-702
ATTENUATOR
(E.VOLUME)
VCA
VCA CONT.
IC802
BA4558FDXE2
OPERATIONAL AMP.
Q803
(Q804)
SUPER BASS AMP.
IC851(IC852)
MB224FPE2
G.E.Q AMPLIFIER
BPF
Q801(Q802)
Q812
Q805,Q807,
Q810,Q811
(Q806,Q808)
SUPER CONTROL BASS AMP.
MUTING DRIVE
BASS
VOL MUT.
MUTE B
IC307 (1/3)
BU2040F-E2
SYSTEM CONTROL
Q323 ~ Q325
MUTING
(5V)
IC501
SVI3101C
POWER AMP.
HF
DETECTION
MUTING
POWER ON / OFF
BIAS
(Lch)
SPEAKERS OUT
IC863
BA3830FT2
S. ANALYSER
B.P FILTER AMP.
B.P.F
REC
10KHz
3.3KHz
1KHz
330Hz
XBS
IC862
LC7586
SYSTEM CONTROL &
FL DRIVE
Q551(Q552)
IC551(IC552)
UPC4570HA
OPERATIONAL AMP.
(FL DISPLAY)
/ SPECTRUM ANALYSER
IC902
BA4558FDXE2
ACTIVE FILTER
PWM

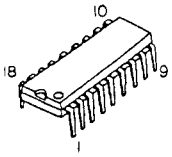
• TERMINAL GUIDE OF ICs, TRANSISTORS AND DIODES

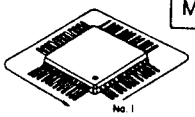
BA4558FDXE2



TCA0372DM2R	16Pin	M51167BFP-E1	36Pin
MN6475	24Pin	M5226FPE2	16Pin
AN8800SCE2	42Pin	BU4066BF-E2	14Pin
BU2040F-E2	16Pin	BA3830FTA	18Pin
CXA1102M-T4	16Pin		

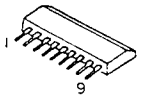
AN7273W



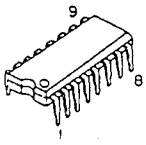


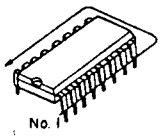
MN6650	44Pin
MN6626	64Pin
MND2410RLAA3	100Pin

TA7291S
UPC4570HA



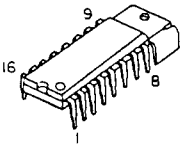
LM7001



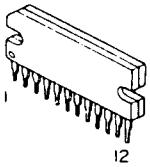


M50754-190SP	64Pin
LC7566	42Pin

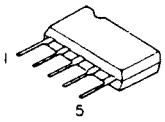
AN8377N



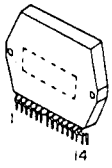
BA3920



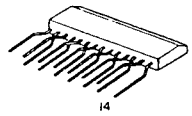
BA7755



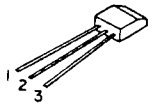
SVI3101C



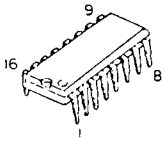
M51131L-702



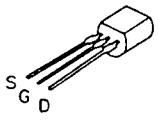
DN6851ALB



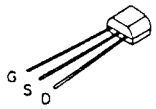
AN7470

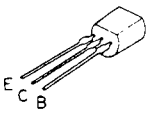


2SK301QTA



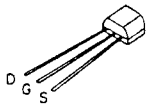
2SK544F-AC

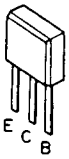




2SB621RTA
2SD1302STA
2SD592RTA
2SD965RTA
2SC1675FL1L2
2SA564RTA
2SC2001KTA
2SA564QTA

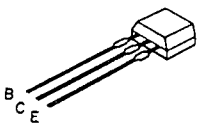
2SJ40CDTA





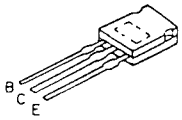
BA1A4ZTA
BN1A4MTA
BA1L4ZTA
2SC2784FTA
2SC2787LTA
2SD1450STA

BA1A4MTA
BN1L3NTA
BA1L4MTA
2SC2785FTA
2SC2786MTA
2SA933SSTA

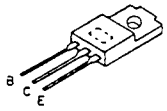


RVTDTA114EST
RVTDTC124EST
RVTDTA143XST
RVTDTC144TST
2SC1740SLNET
2SC1740SLNST
2SC1740SQSTA

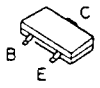
2SB1357ETA
2SD2037EFTA

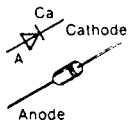


2SB1185E
2SD1762DE



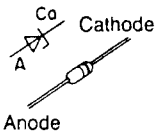
2SB709



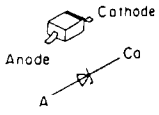


1SS291TA
1SR35200TB
RVD1SS133TA

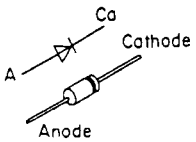
MA4300MHTA

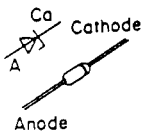


MA110TW



RLI54M11
1D3E

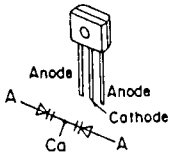




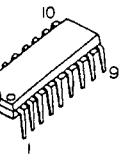
RVDMTZ4R7BTA
RVDMTZ3R6BTA
RVDMTZ8R2CTA
RVDMTZ15CTA
RVDMTZ12CTA
RVDMTZ6R2CTA

RVDMTZ5R6CTA
RVDMTZ6R2BTA
RVDMTZ6R8ATA
RVDMTZ6R8BTA
RVDMTZ5R1CTA

SVC211SPA-PL

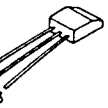


AN7273W

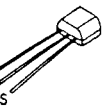


0SP	64Pin
	42Pin

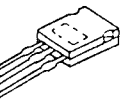
N6851ALB



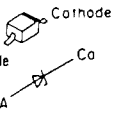
SJ40CDTA



1357ETA
2037EFTA



MA110TW



■ SCHEMATIC DIAGRAM (Parts list on page 74 ~ 85)

(This schematic diagram may be modified at any time with the development of new technology)

Note :

< for CD circuit S>

- S701 : Reset switch.
- S790, 791 : Disc tray open/close detection switch.
- VR701 : Best eye adjustment VR.

: Positive voltage lines and negative voltage lines.

: CD signal lines.

< for Mechanism control circuit >

- S951 : Deck 1 mode detect switch.
- S952 : Deck 1 tape detect switch.
- S953 : Deck 1 tape select switch.
- S971 : Deck 2 mode detect switch.
- S972 : Deck 2 tape detect switch.
- S973 : Deck 2 tape tab switch (REV).
- S974 : Deck 2 tape tab switch (FWD).
- S975 : Deck 2 tape select switch (CrO_2).
- S976 : Deck 2 tape select switch (Metal).

- VR101 : Deck 1 Lch playback gain adjustment VR (Dolby).
- VR102 : Deck 1 Rch playback gain adjustment VR (Dolby).
- VR103 : Deck 2 Lch playback gain adjustment VR (Dolby).
- VR104 : Deck 2 Rch playback gain adjustment VR (Dolby).
- VR201 : Deck 1 tape speed adjustment VR (Normal).
- VR202 : Deck 2 tape speed adjustment VR (Normal).
- VR203 : Deck 2 tape speed adjustment VR (High).

General

- 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.
  * The parenthesized are the values of voltage generated during playing (Test disc 1 kHz, L + R, 0 dB), others are voltage values in stop mode.

  << >>.....Tape Recording No mark.....Tape Playback

- Important safety notice:
  Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacture's specified parts,

Caution!

IC, LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

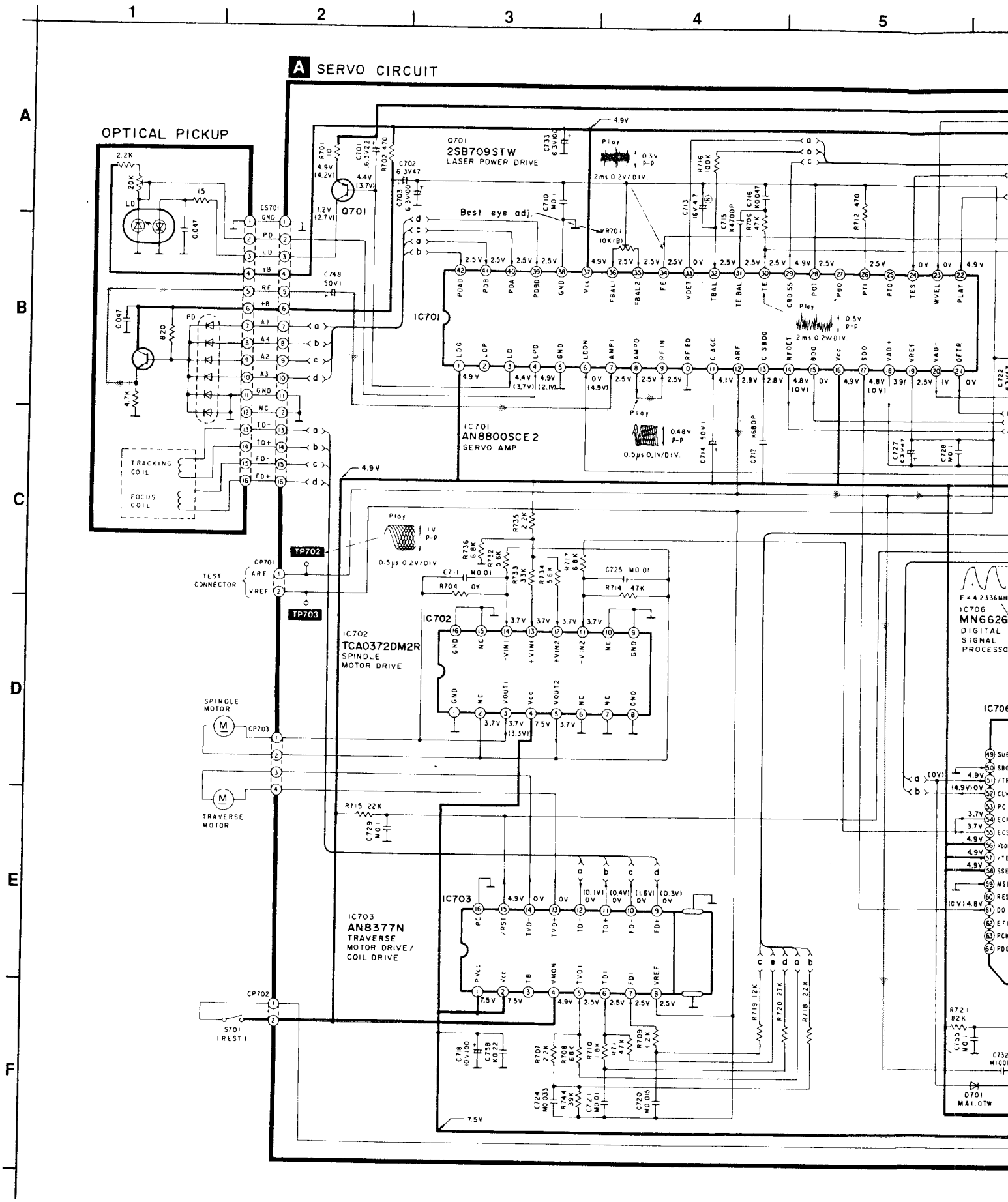
- Cover the parts boxes made of plastics with aluminium foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

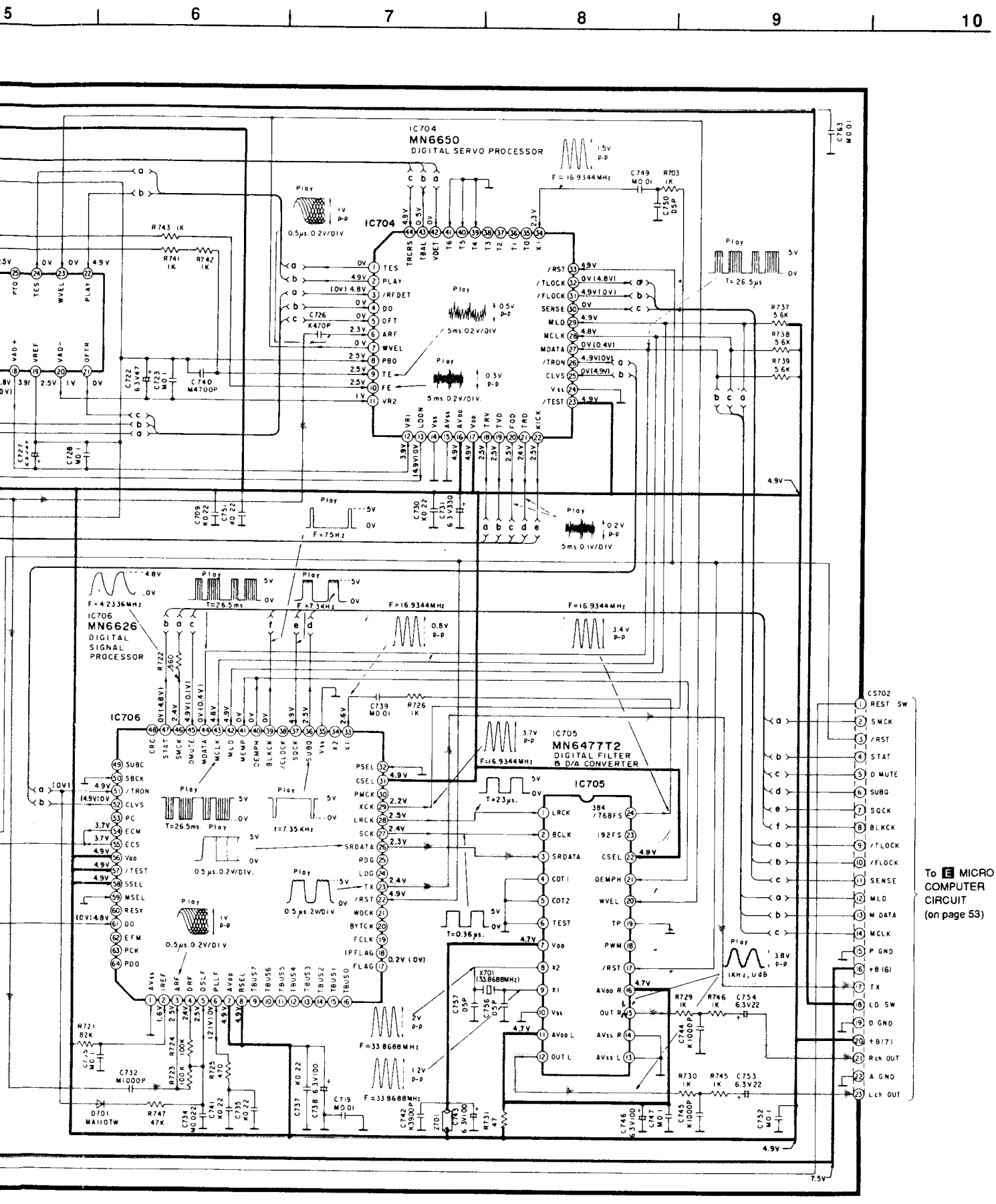
: Playback signal lines

: Recording signal lines

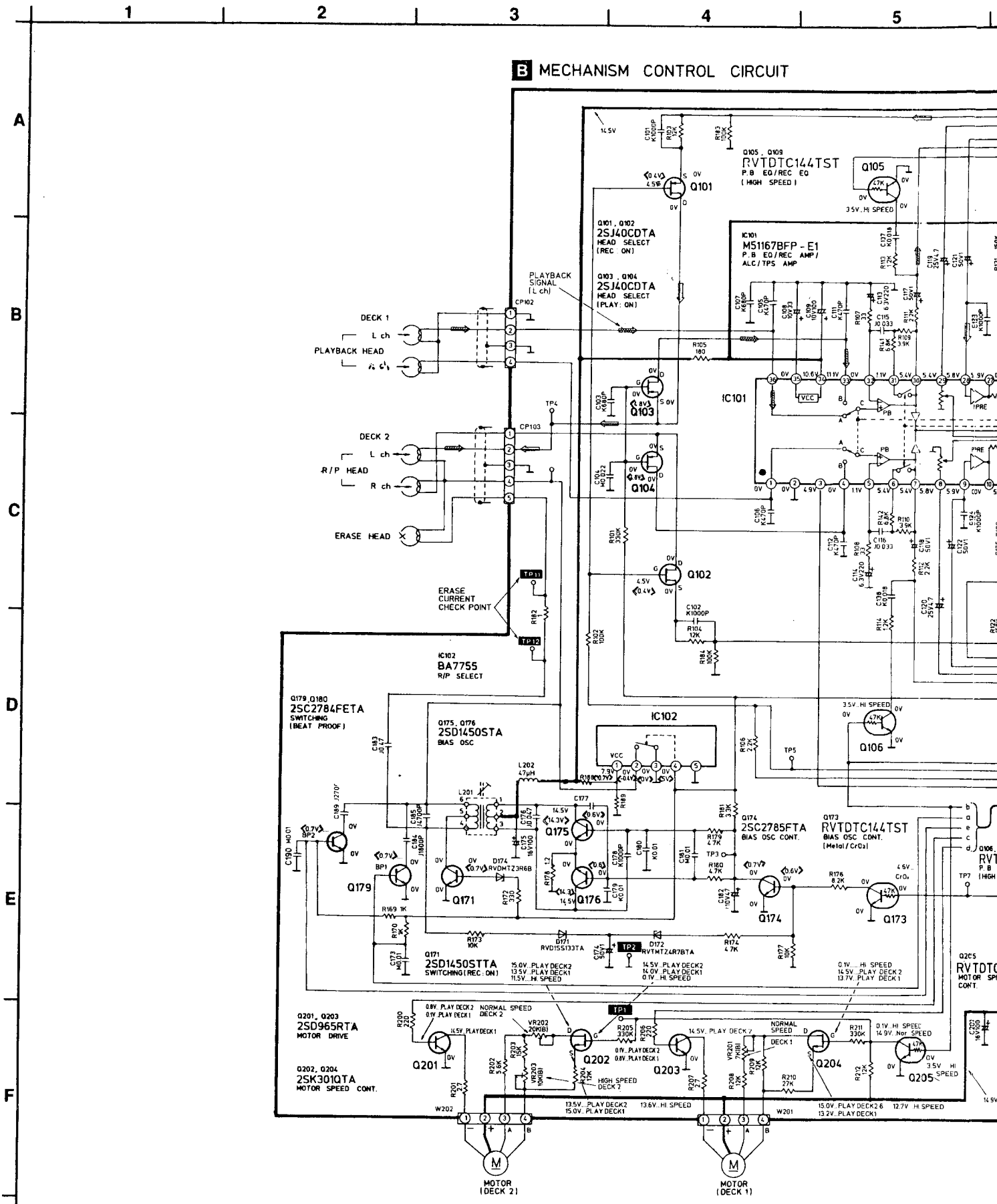
: CD signal lines

SCHEMATIC DIAGRAM

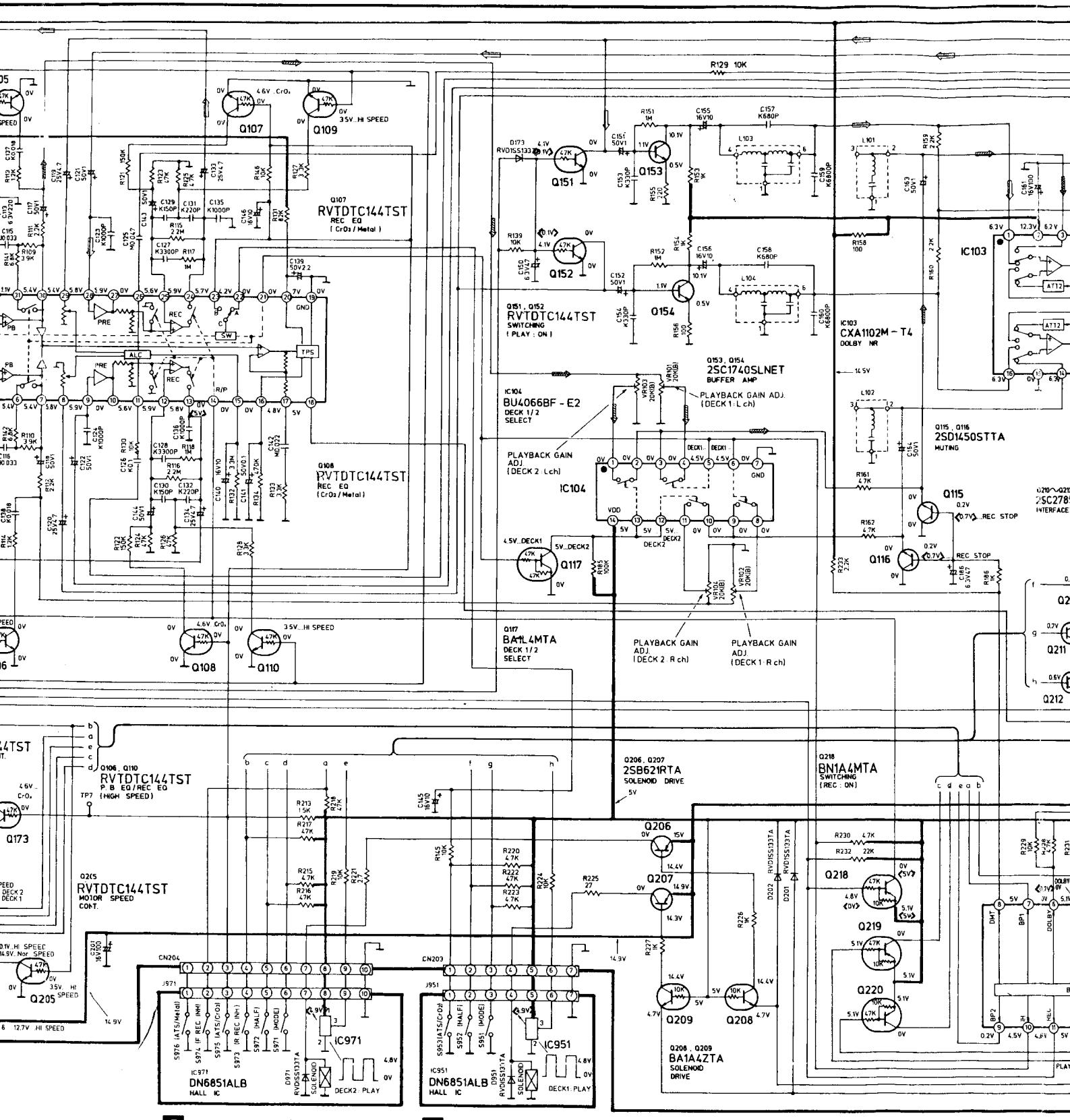



IC704
MN6650
DIGITAL SERVO PROCESSOR
IC706
MN6626
DIGITAL SIGNAL PROCESSOR
IC705
MN6477T2
DIGITAL FILTER & D/A CONVERTER
To E MICRO COMPUTER CIRCUIT (on page 53)

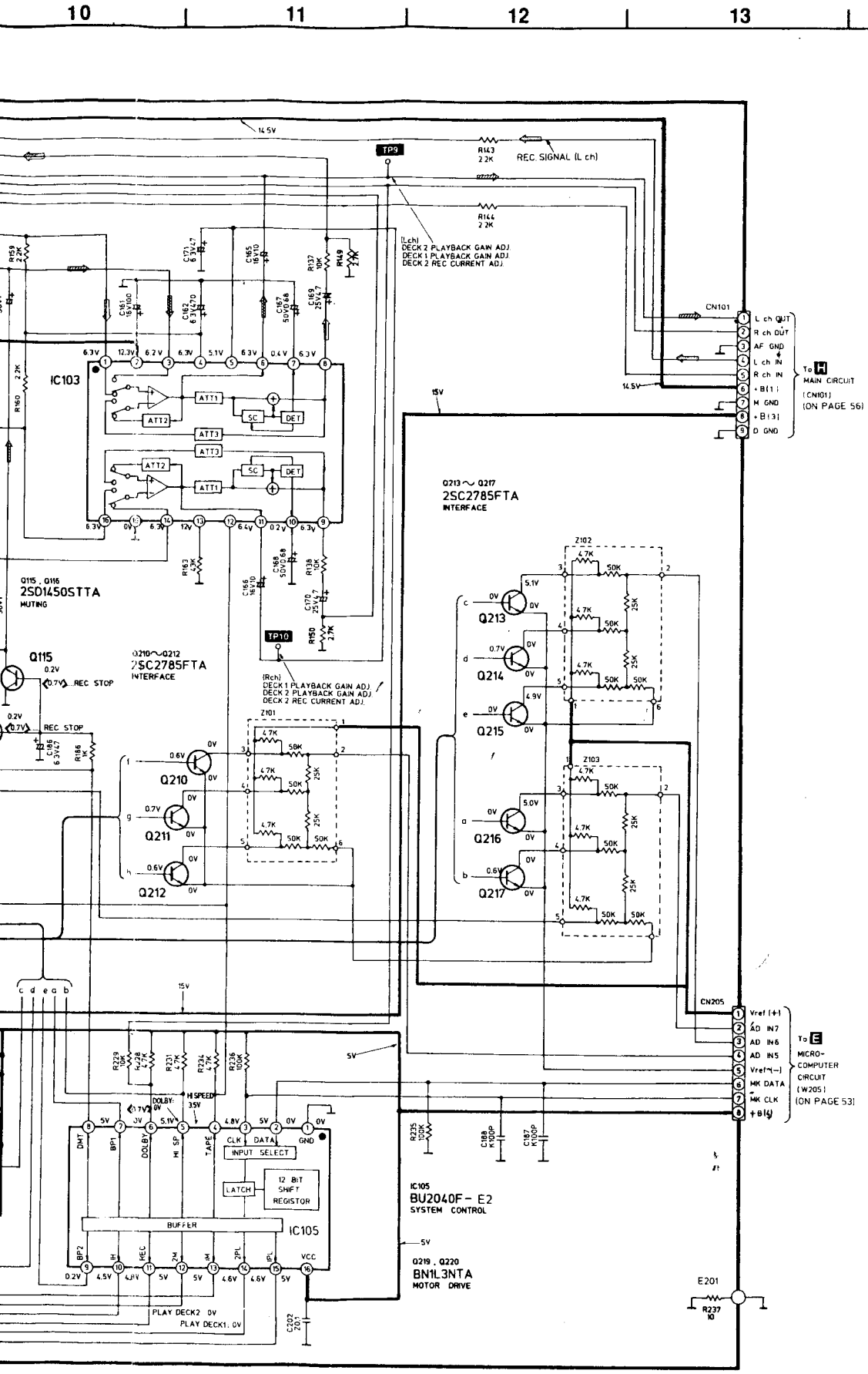
■ SCHEMATIC DIAGRAM (Tape Deck)



5 6 7 8 9 10



C MECHANISM (DECK2) CIRCUIT D MECHANISM (DECK1) CIRCUIT


10
11
12
13
14
14.5V
TP9
R143 2.2K
REC. SIGNAL (L ch)
R144 2.2K
(Lch)
DECK 2 PLAYBACK GAIN ADJ.
DECK 1 PLAYBACK GAIN ADJ.
DECK 2 REC CURRENT ADJ.
CN101
L ch OUT
R ch OUT
AF GND
L ch IN
R ch IN
+B(11)
M GND
+B(3)
D GND
To H MAIN CIRCUIT (CN101) (ON PAGE 56)
IC103
ATT1
ATT2
ATT3
SC
DET
15V
Q213 ~ Q217
2SC2785FTA
INTERFACE
Z102
Z103
Q213
Q214
Q215
Q216
Q217
Q115 , Q116
2SD1450STTA
MUTING
Q115
REC STOP
Q210~Q212
2SC2785FTA
INTERFACE
Z101
Q210
Q211
Q212
TP10
(Rch)
DECK 1 PLAYBACK GAIN ADJ.
DECK 2 PLAYBACK GAIN ADJ.
DECK 2 REC CURRENT ADJ.
CN205
Vref (+)
AD IN7
AD IN6
AD IN5
Vref(-)
MK DATA
MK CLK
+B(4)
To E MICRO-COMPUTER CIRCUIT (W205) (ON PAGE 53)
INPUT SELECT
LATCH
12 BIT SHIFT REGISTOR
BUFFER
IC105
IC105
BU2040F - E2
SYSTEM CONTROL
Q219 , Q220
BN1L3NTA
MOTOR DRIVE
E201
PLAY DECK2 0V
PLAY DECK1 0V

Note :

< for FL circuit >

- •S601 : Tuner switch
- •S602 : CD switch
- •S603 : Aux. switch
- •S604 : Tape switch
- •S605 : Super bass switch
- •S606 : Power on/off switch
- •S607 : Play timer switch
- •S608 : Record timer switch
- •S609 : Volume preset switch
- •S610 : Set switch
- •S611 : Cancel switch
- •S612 : FM mode switch
- •S613 : Band switch
- •S614 : Tuning switch
- •S615 : CD edit switch
- •S616 : Display switch
- •S617 : Clock / Timer switch
- •S618 : Sleep switch
- •S621 : REV mode switch
- •S622 : Reset switch
- •S623 : Dolby switch
- •S624 : Record switch
- •S625 : Edit switch (Normal)
- •S626 : Edit switch (High Speed)
- •S627 : Stop switch
- •S628 : Rew switch
- •S629 : Play switch (REV)
- •S630 : Play switch (FWD)
- •S631 : FF switch
- •S632 : Deck 1/2 switch
- •S633 : Stop switch (CD)
- •S634 : Play switch (CD)
- •S635 : Pause switch (CD)
- •S636 : FWD skip switch (CD)
- •S637 : REV skip switch (CD)
- •S638 : Open / Close switch (CD)

- •VR651 : Graphic E.Q. (10kHz) control VR
- •VR652 : Graphic E.Q. (3.3kHz) control VR
- •VR653 : Graphic E. Q. (1kHz) control VR
- •VR654 : Graphic E.Q. (330Hz) control VR
- •VR655 : Graphic E.Q. (100Hz) control VR
- •VR901 : AI jog control VR
- •VR902 : Main volume control VR

< for tuner circuit >

- •VR1 : VCO adjustment VR

< for main circuit >

- •S790 : Disk tray close detect switch
- •S791 : Disk tray open detect switch

General

•DC voltages measurement are taken with electronic voltmeter.
The negative terminal of the battery provides negative meter connection point.

No mark....Tape Playback
< >....FM mode
( )....AM mode
┌┘ ....CD mode
{ }....Tuner mode
[ ]....Other mode
⟦ ⟧....Aux. mode
( )....TAPE mode

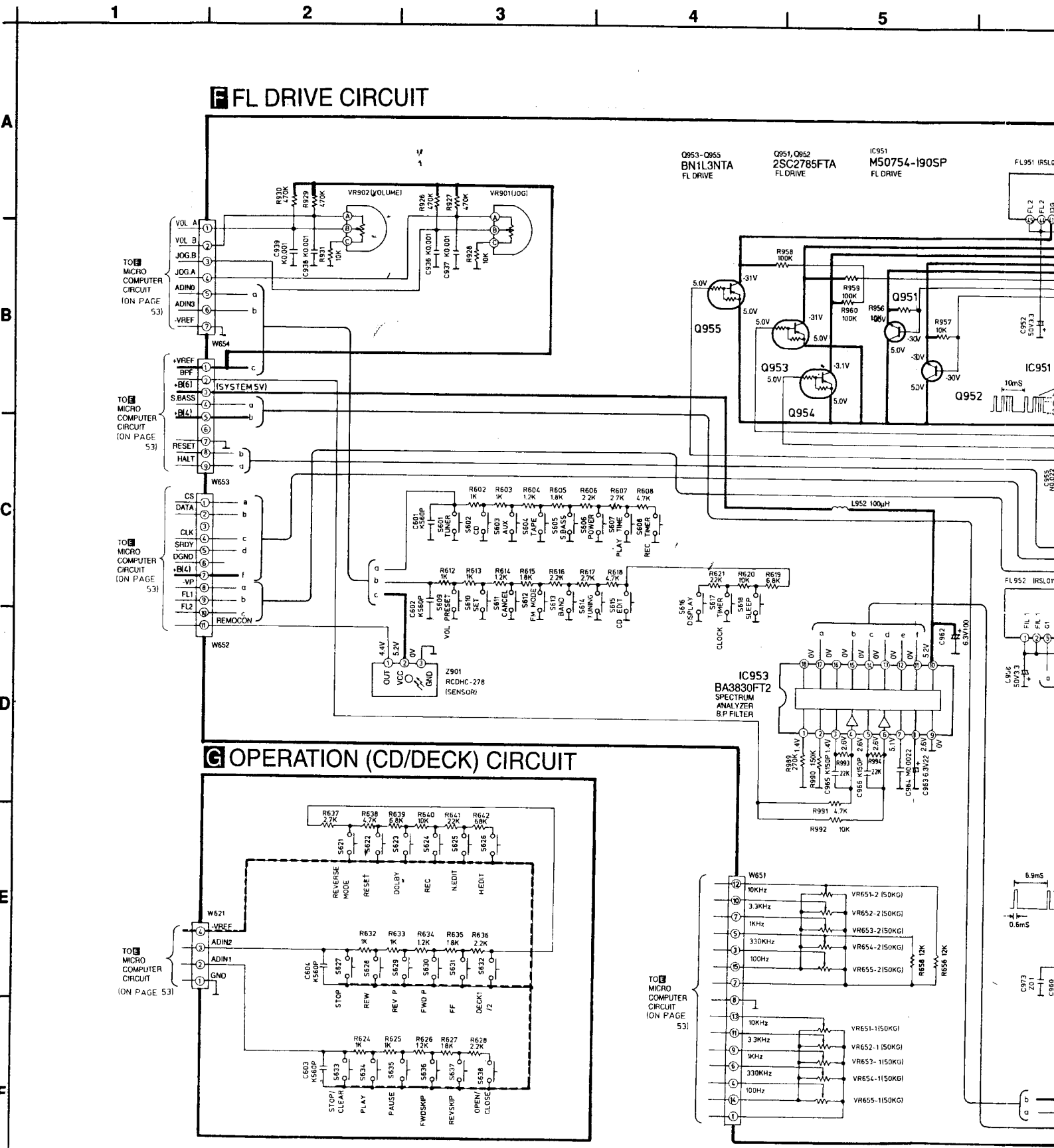
•Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

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

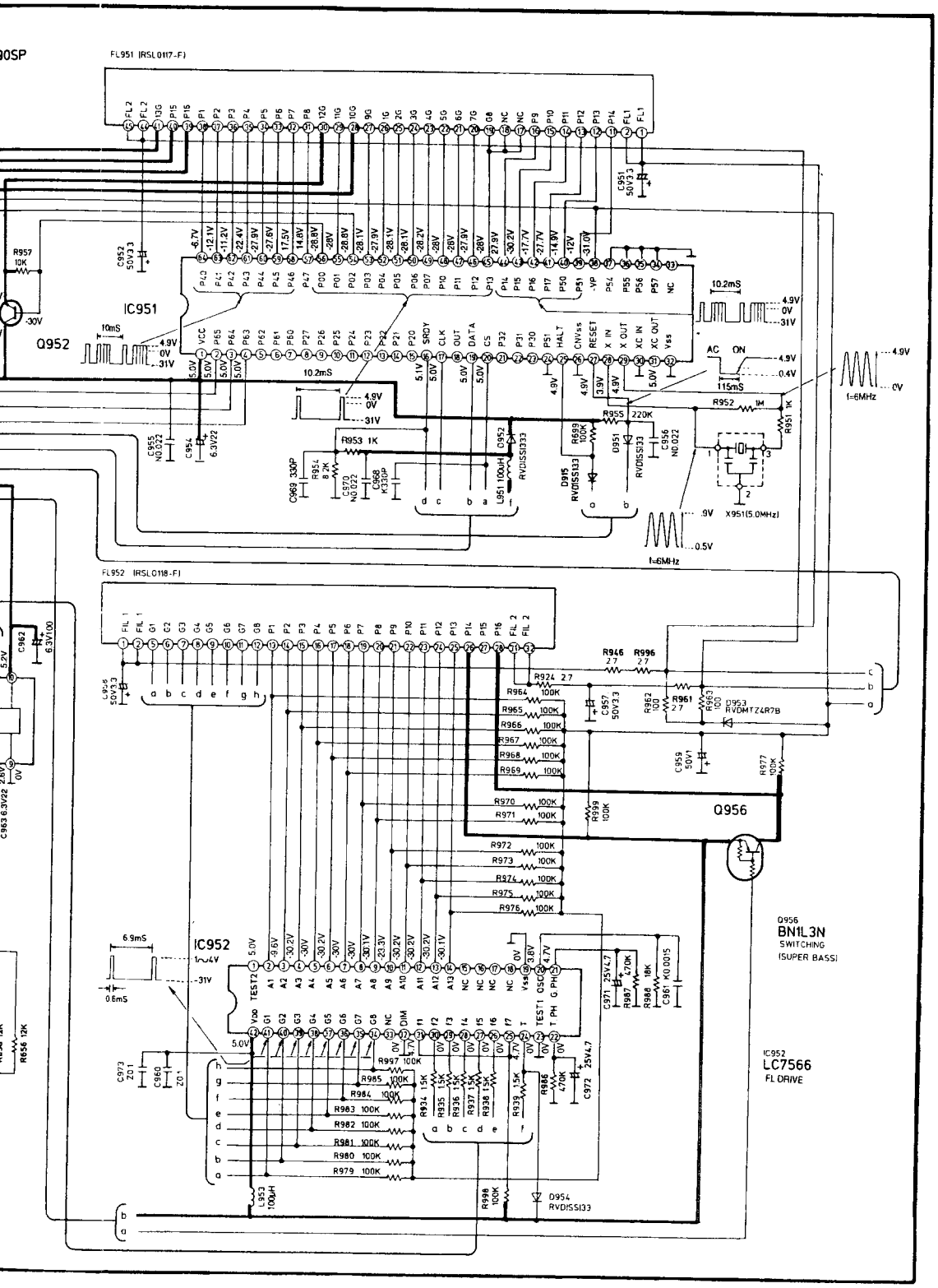
•This schematic diagram may be modified at any time with the development of new technology.

- : Positive Voltage Line
- : FM Signal Line
- : AM Signal Line
- : AF (FM / AM) Signal Line
- : AM Osc Signal Line
- : FM Osc Signal Line
- : Negative Voltage Line
- : Recording Signal Line
- : Playback Signal Line
- : Positive Voltage Line
- : Negative Voltage Line
- : CD Signal Line

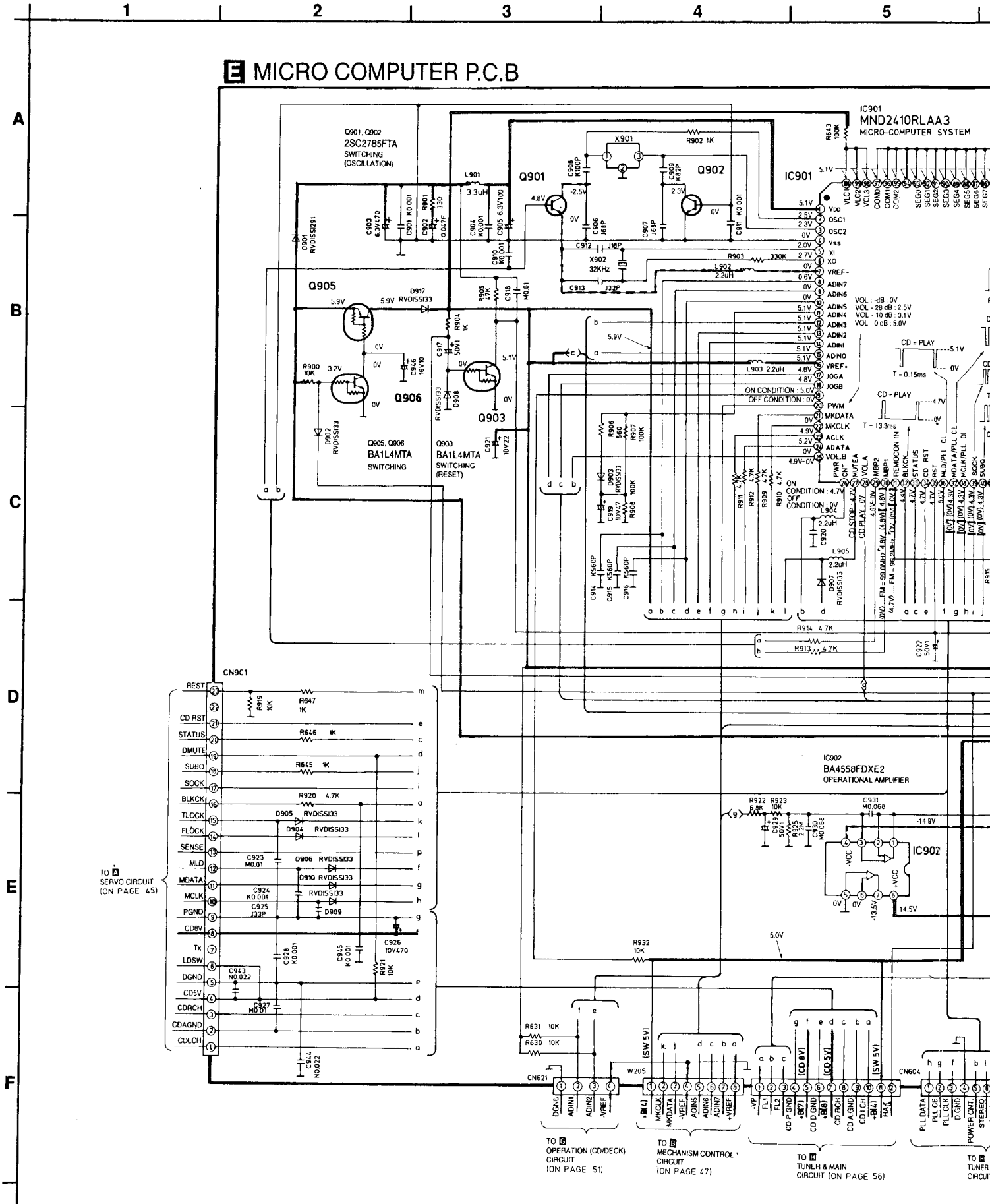
■ SCHEMATIC DIAGRAM



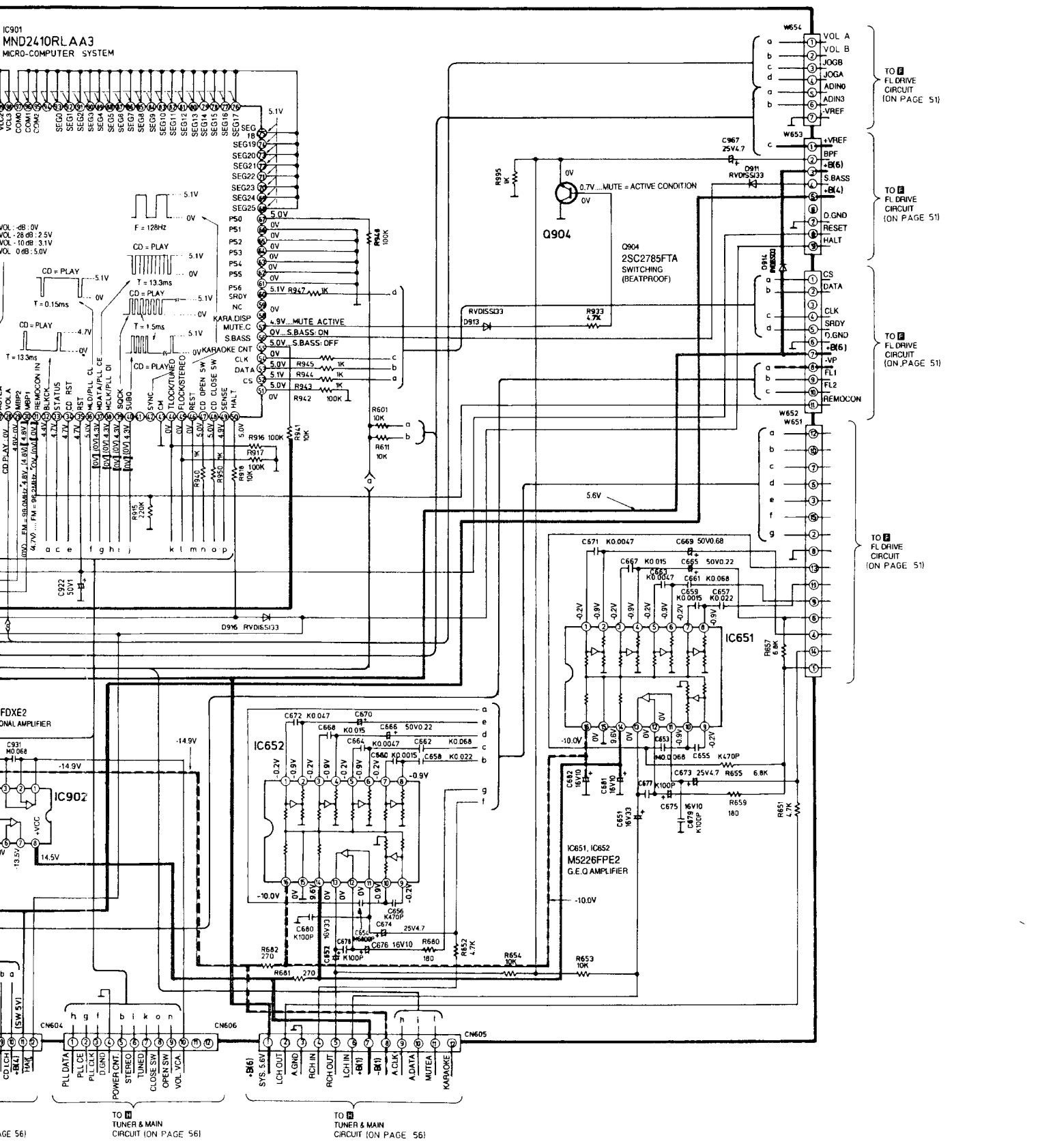
6 7 8 9 10


FL951 (RSL0117-F)
IC951
Q952
FL952 (RSL0118-F)
IC952
LC7566
FL DRIVE
Q956
BN1L3N
SWITCHING
(SUPER BASS)
X951(5.0MHz)
f=6MHz
10.2mS
10mS
6.9mS
0.6mS
115mS

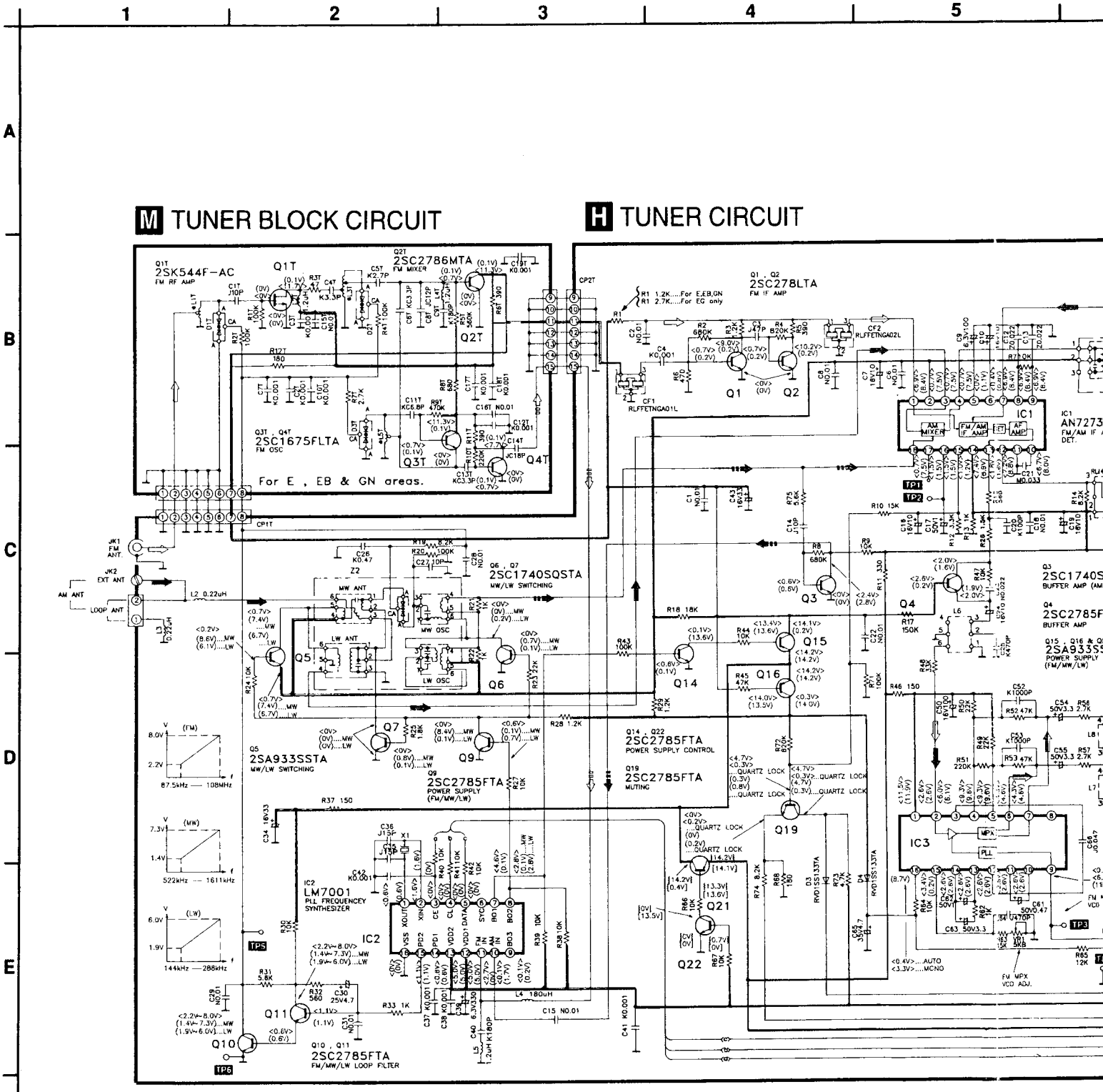
■ SCHEMATIC DIAGRAM



5 6 7 8 9 10

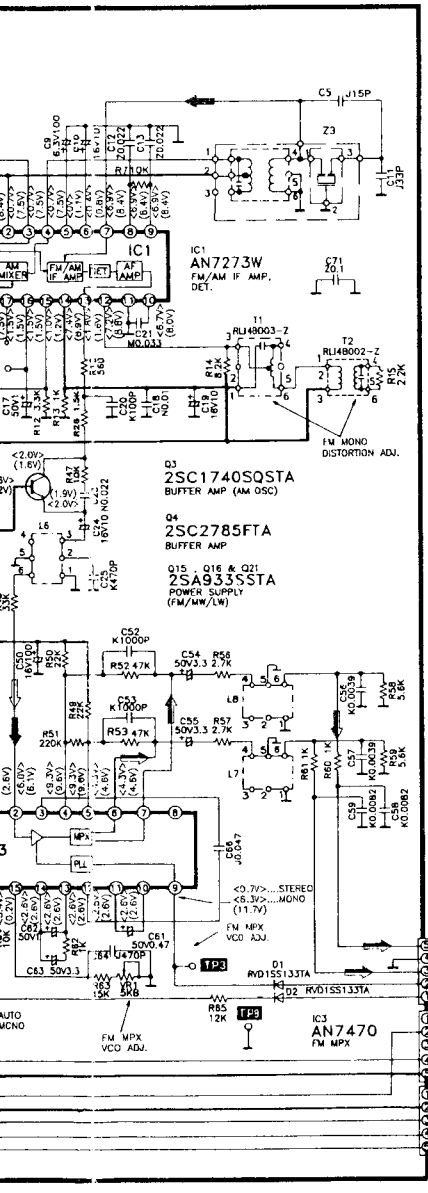

IC901
MND2410RLAA3
MICRO-COMPUTER SYSTEM
Q904
2SC2785FTA
SWITCHING
(BEATPROOF)
0.7V....MUTE = ACTIVE CONDITION
KARA.DISP
MUTE.C
S.BASS
KARAOKE CNT
4.9V....MUTE ACTIVE
0V....S.BASS: ON
5.0V....S.BASS: OFF
W654
W653
W652
W651
VOL A
VOL B
JOGB
JOGA
ADIN0
ADIN3
VREF
+VREF
BPF
+B(6)
S.BASS
+B(4)
D.GND
RESET
HALT
CS
DATA
CLK
SRDY
D.GND
+B(6)
-VP
FL1
FL2
REMOCON
TO F FL DRIVE CIRCUIT (ON PAGE 51)
IC651
IC652
IC651, IC652
M5226FPE2
G.E.Q AMPLIFIER
IC902
FDXE2
ONAL AMPLIFIER
CN604
CN606
CN605
PLL DATA
PLL CE
PLL CLK
D.GND
POWER CNT.
STEREO
TUNED
CLOSE SW
OPEN SW
VOL. VCA
SYS. 5.6V
LCH OUT
A.GND
RCH IN
RCH OUT
LCH IN
A.CLK
A.DATA
MUTEA
KARAOKE
TO H TUNER & MAIN CIRCUIT (ON PAGE 56)
5.6V
-14.9V
14.5V
-10.0V

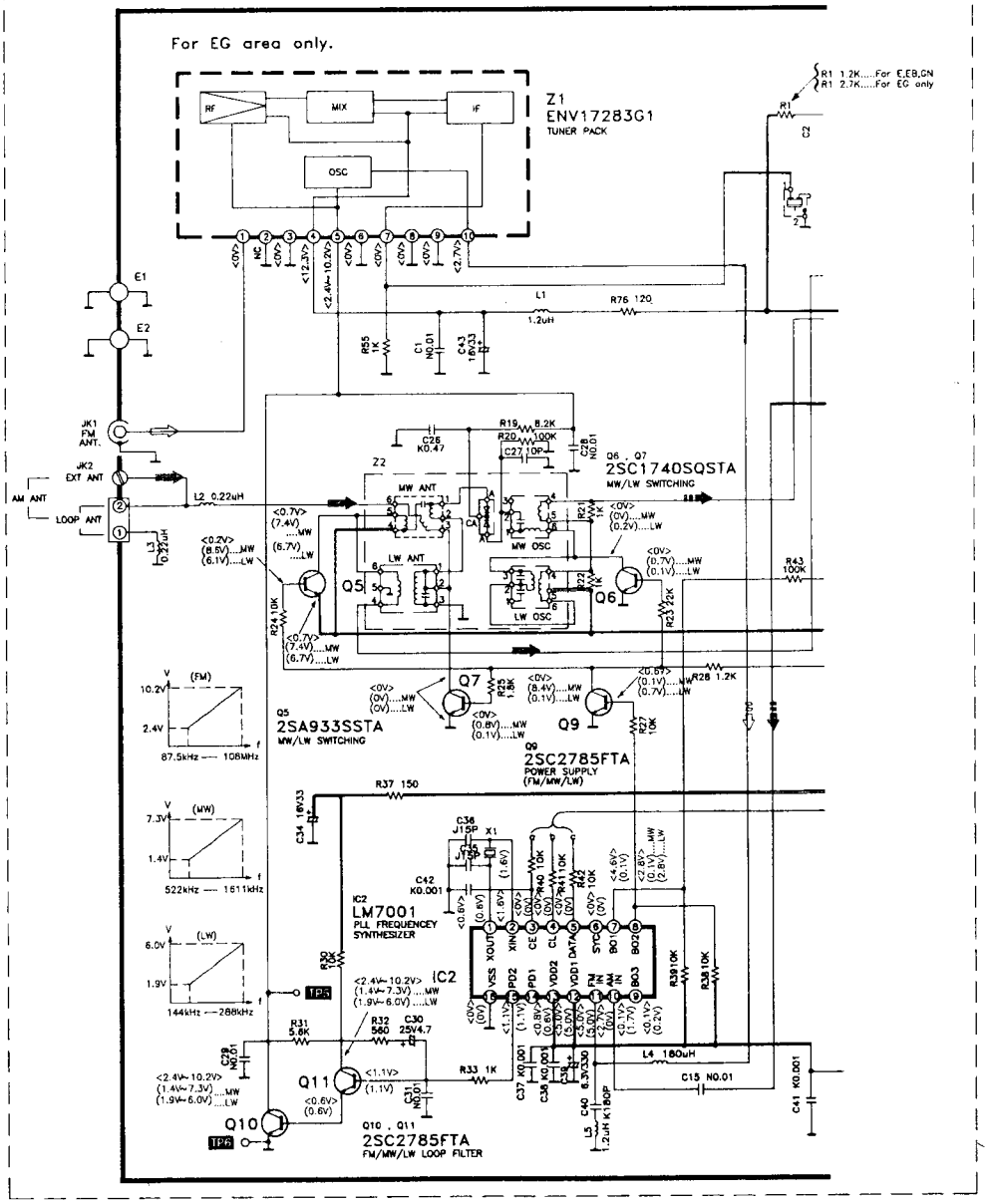
■ SCHEMATIC DIAGRAM



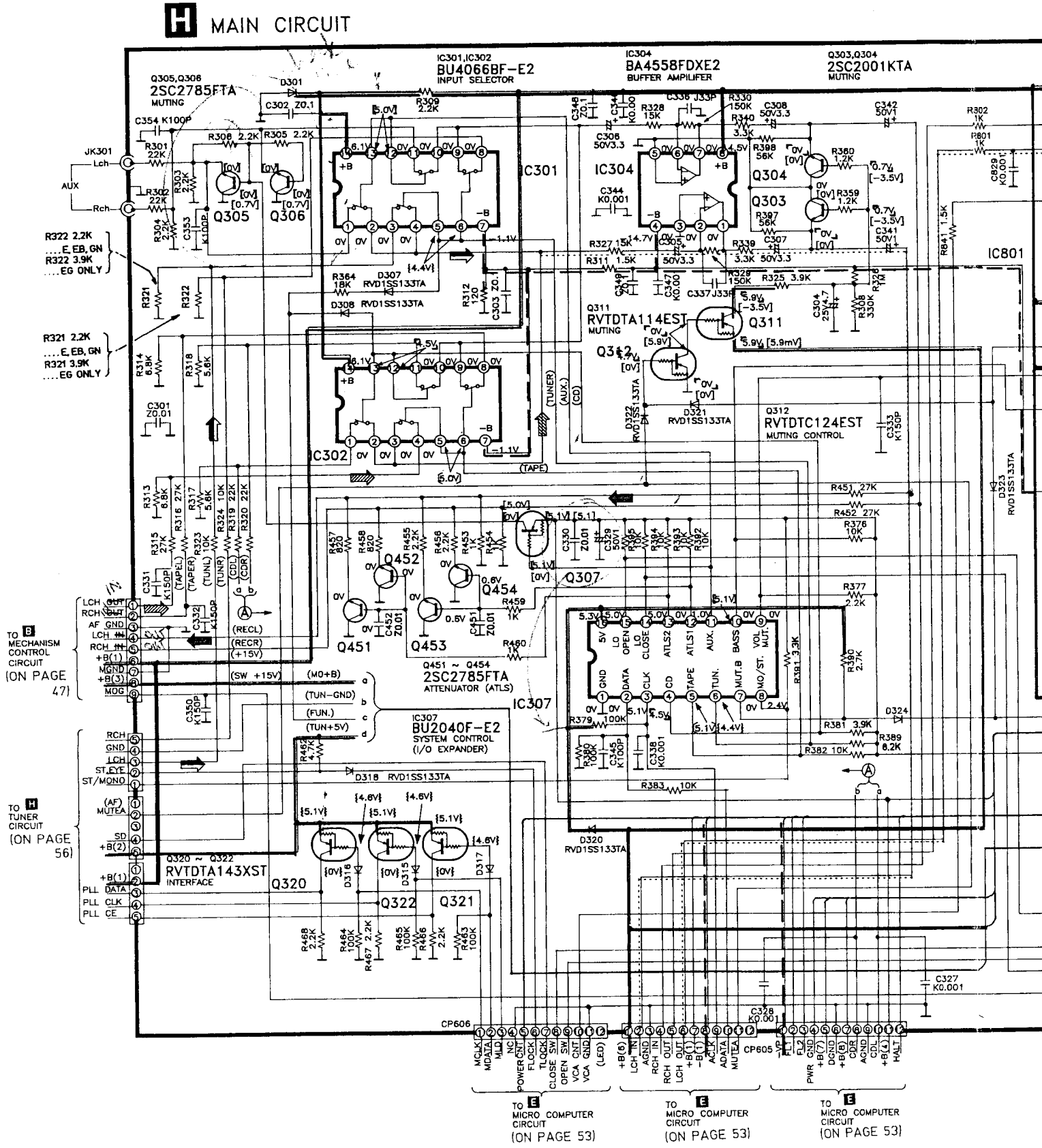
5 6 7 8 9 10

H TUNER CIRCUIT



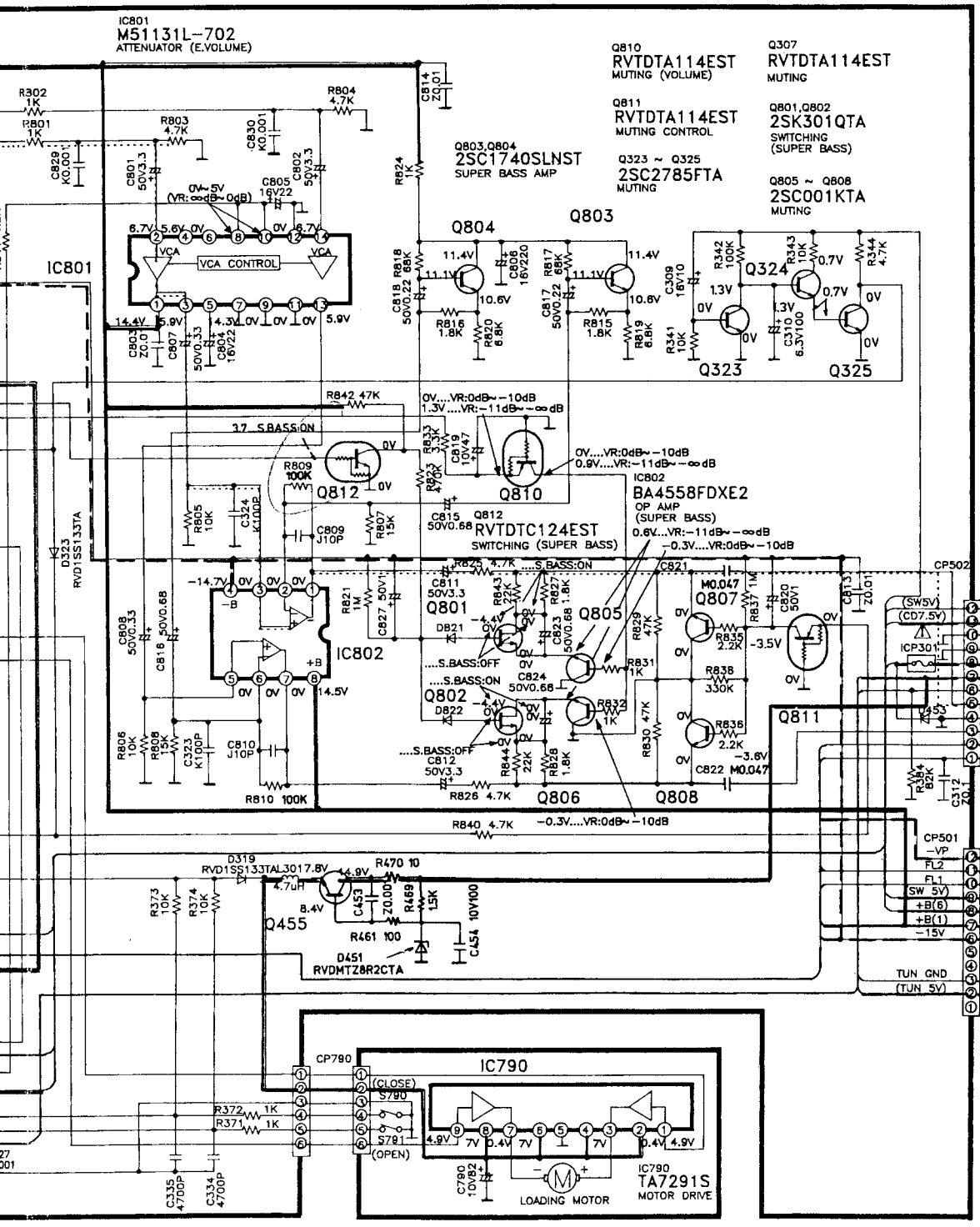


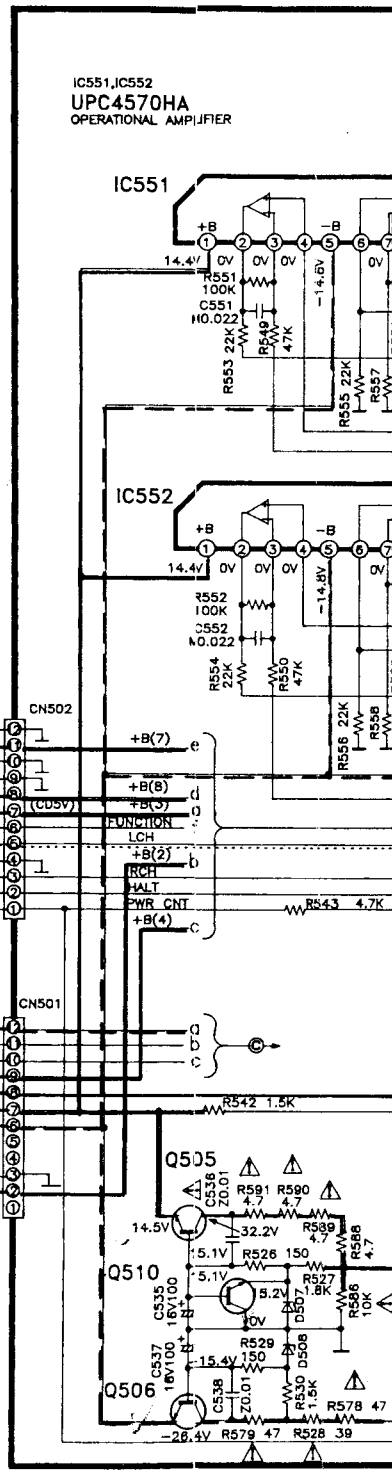
SCHEMATIC DIAGRAM



6 7 8 9 10 11

I POWER AMP.

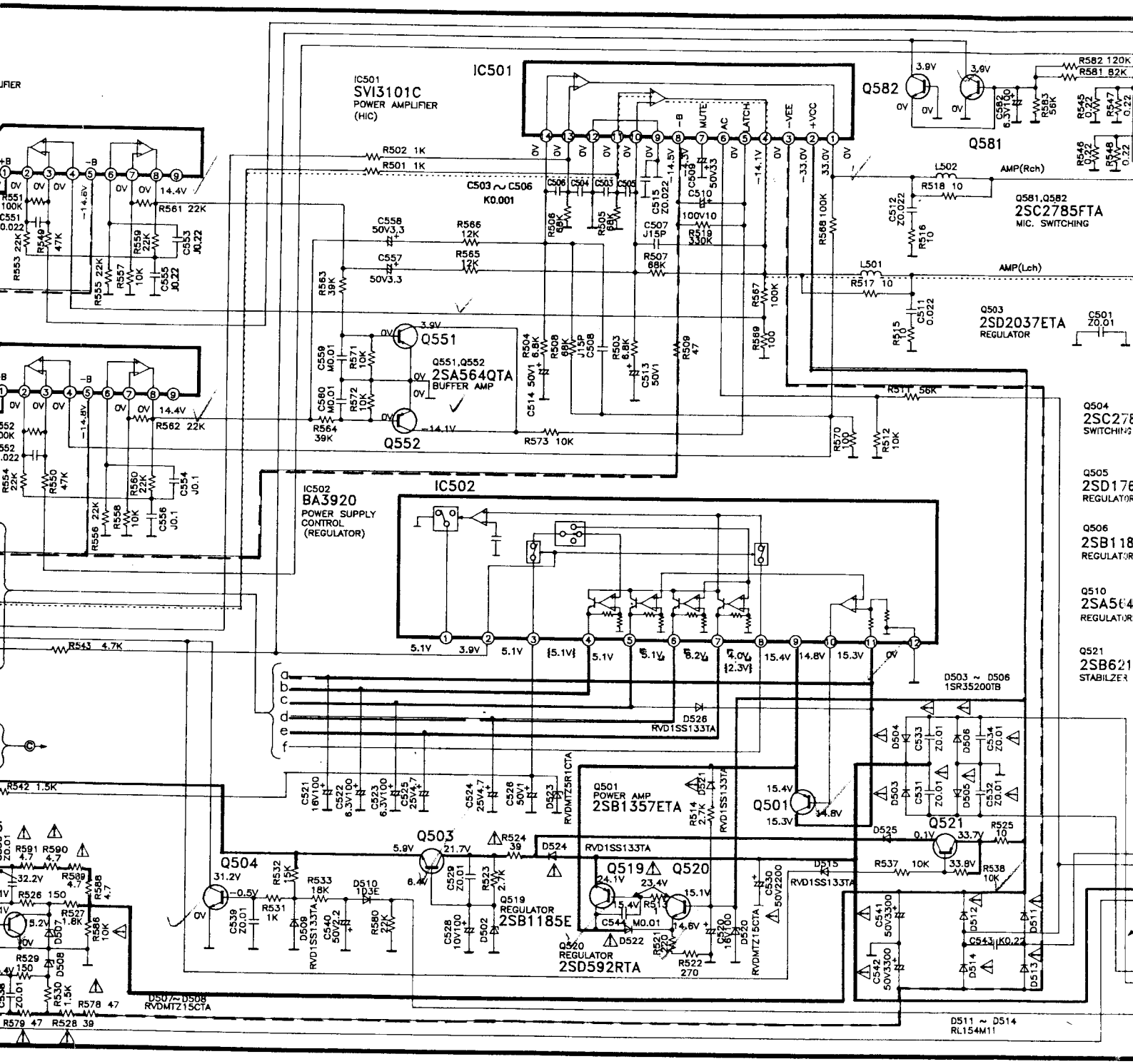




K LOADING MOTOR CIRCUIT

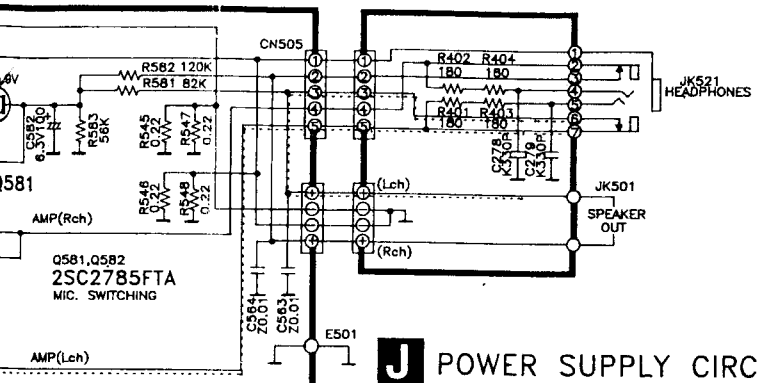
11 12 13 14 15

OWER AMP. CIRCUIT

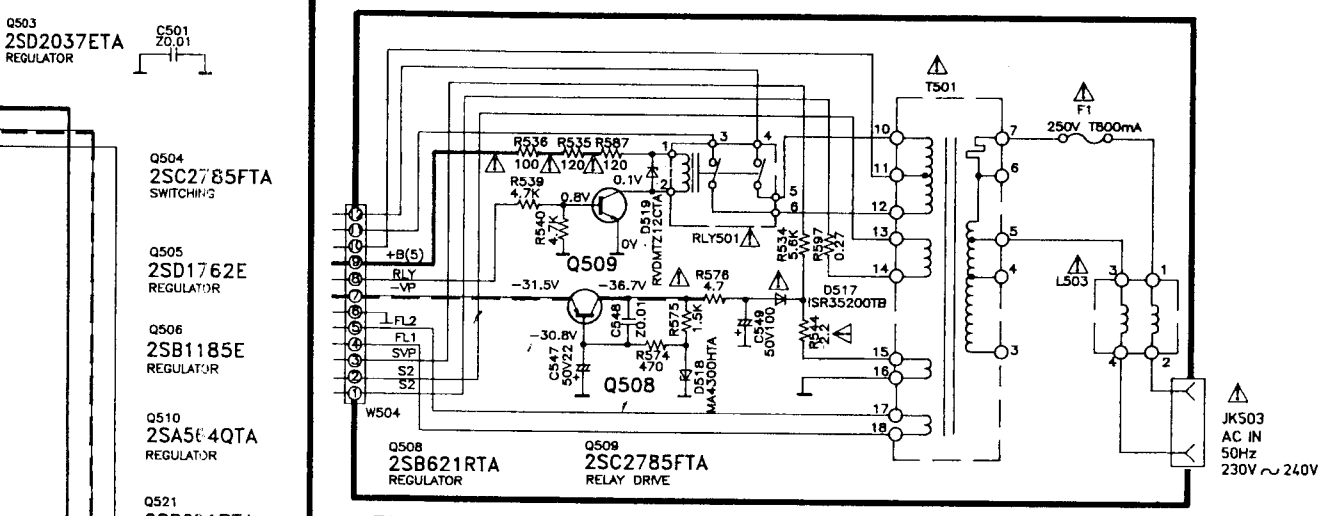


16 17 18 19

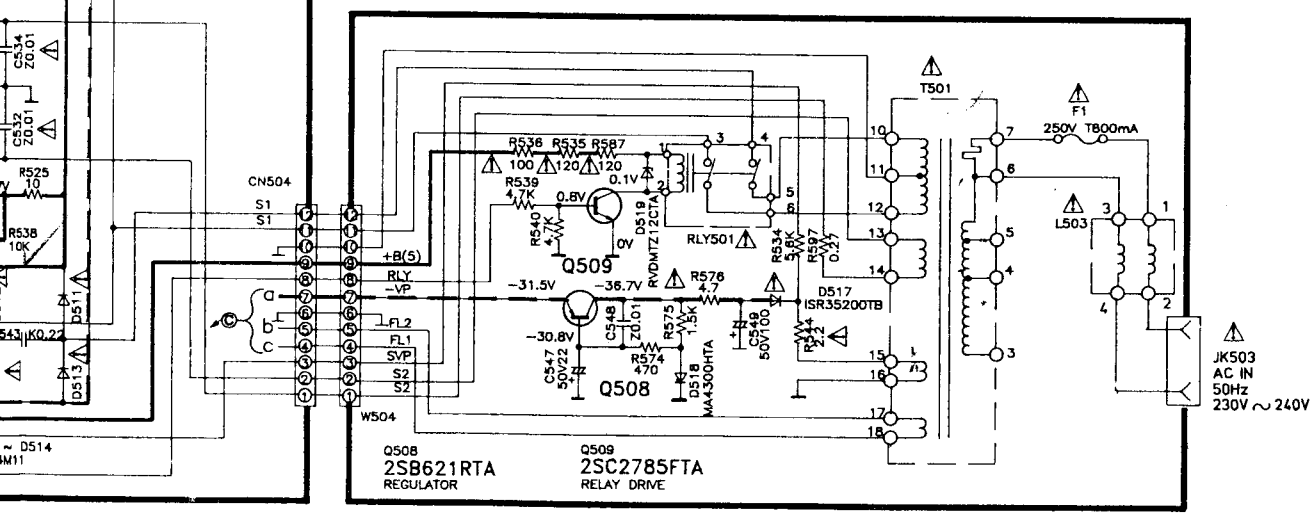
L HEADPHONE/SPEAKER CIRCUIT



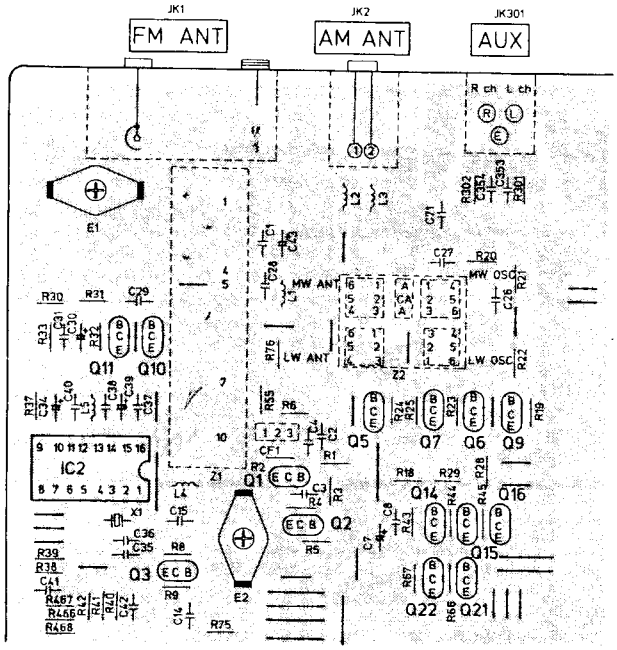
J POWER SUPPLY CIRCUIT FOR EB AND GN AREAS.



J POWER SUPPLY CIRCUIT FOR E AND EG AREAS.

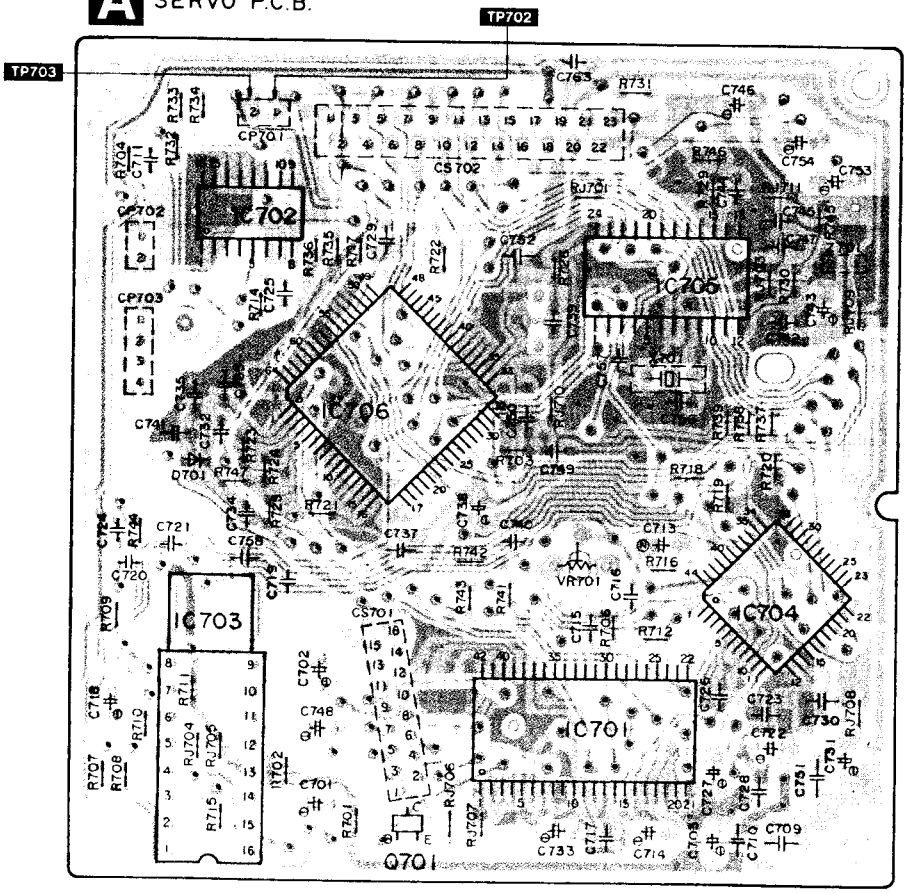


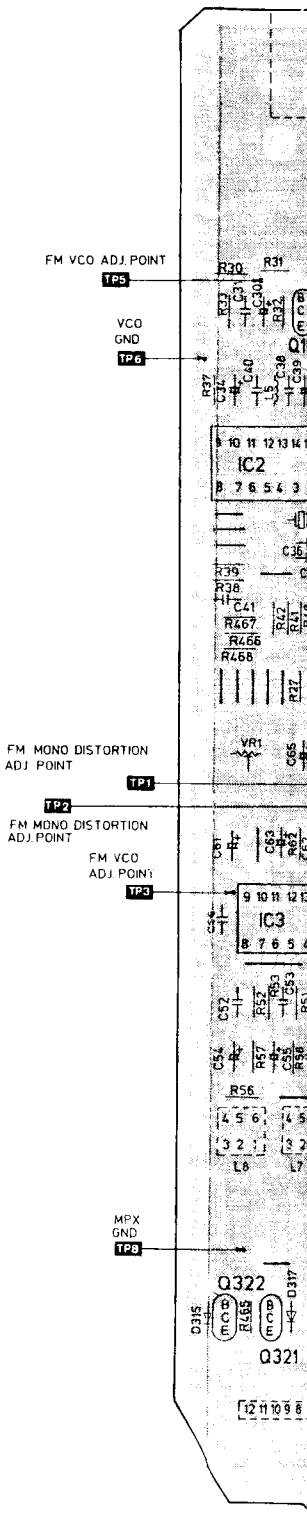
■ S ■ PRINTED CIRCUIT BOARDS

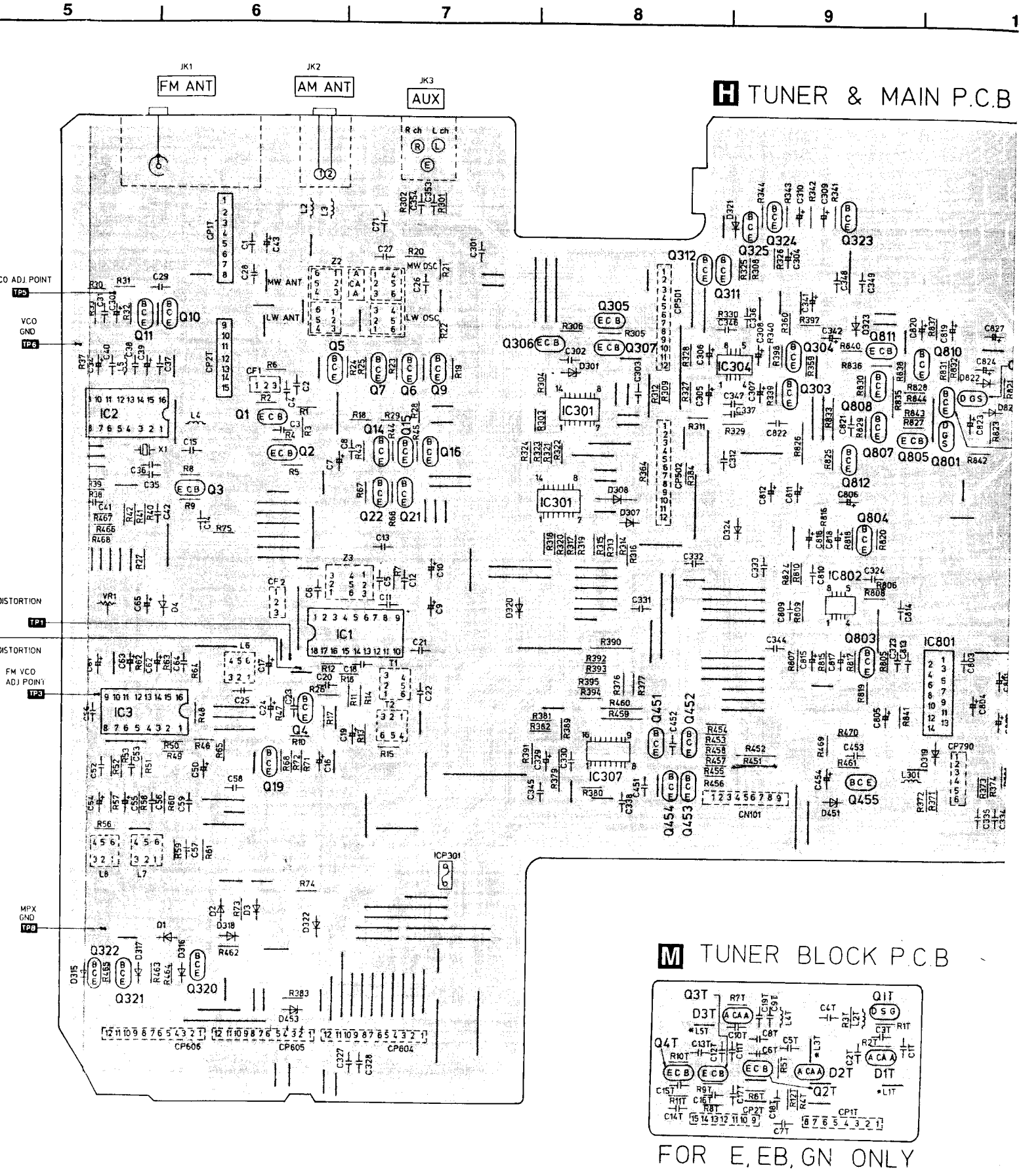


TUNER & MAIN P.C.B **H**
(REP1378D).....EG

A SERVO P.C.B.

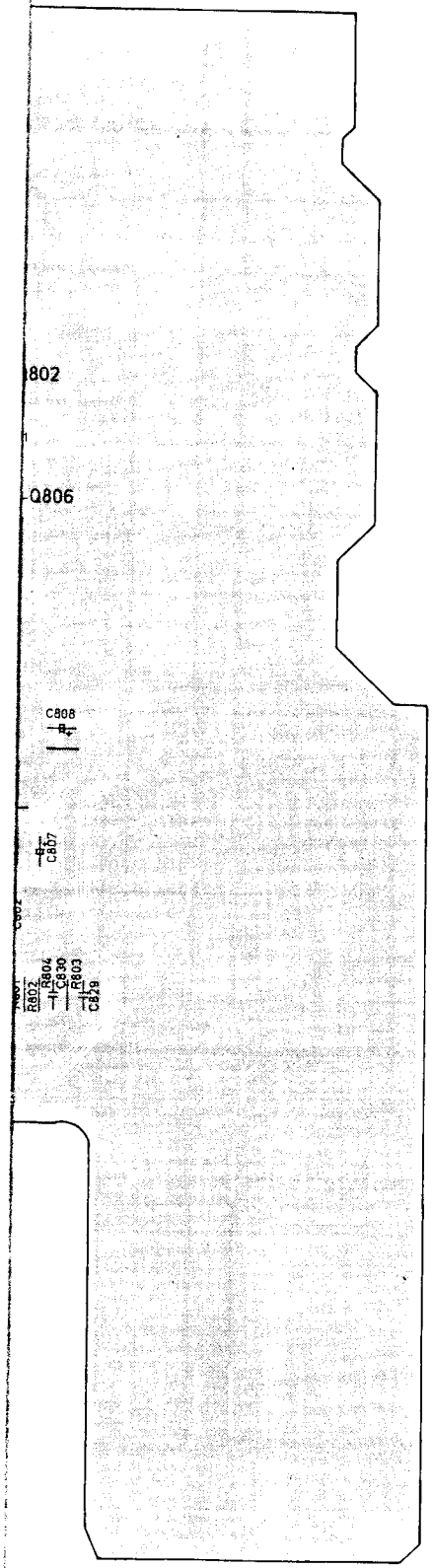




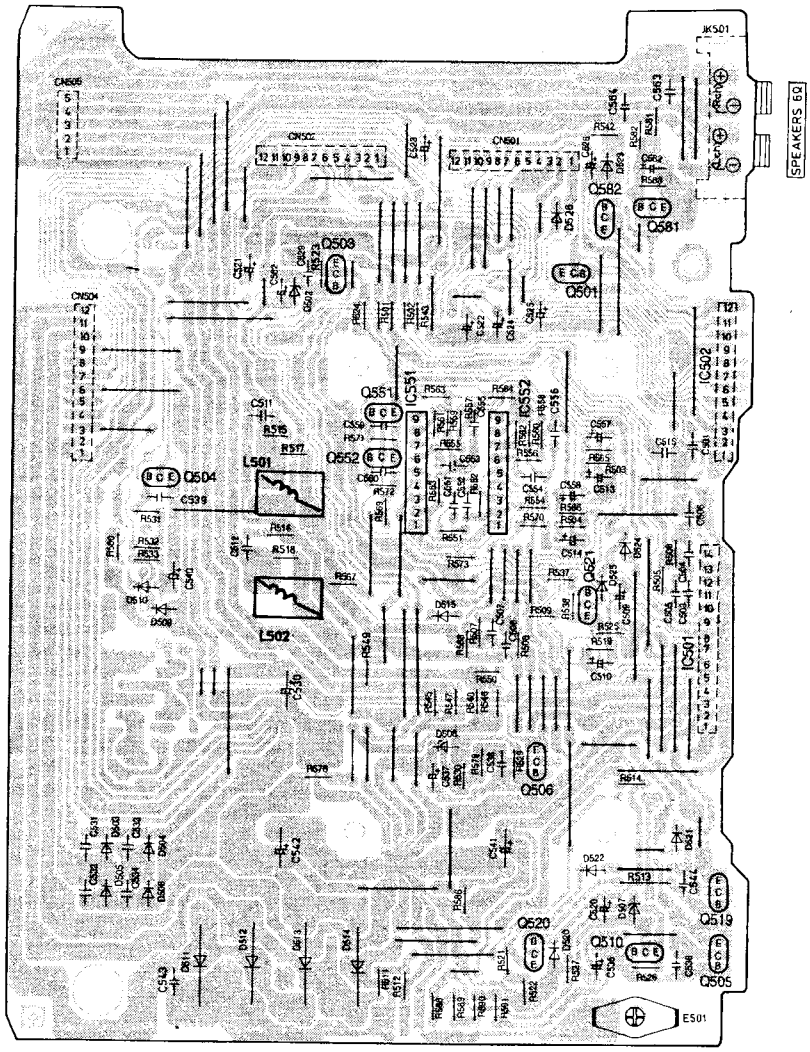

5
6
7
8
9
JK1
FM ANT
JK2
AM ANT
JK3
AUX
H TUNER & MAIN P.C.B
VCO ADJ POINT
TP5
VCO GND
TP6
DISTORTION
TP1
DISTORTION
FM VCO ADJ POINT
TP3
MPX GND
TP8
IC1
IC2
IC3
IC301
IC304
IC307
IC802
IC801
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q9
Q10
Q11
Q14
Q15
Q16
Q19
Q21
Q22
Q303
Q304
Q305
Q306
Q307
Q311
Q312
Q320
Q321
Q322
Q323
Q324
Q325
Q451
Q452
Q453
Q454
Q455
Q801
Q803
Q804
Q805
Q807
Q808
Q810
Q811
Q812
M TUNER BLOCK P.C.B
FOR E, EB, GN ONLY

0 11 12 13 14 15

(REP1378C)....E,EB
(REP1378F).....GN



I POWER AMP P.C.B



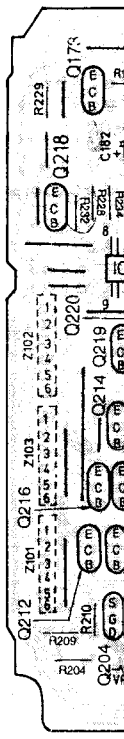
(REP1382C)...E,EG
(REP1382B)....EB
(REP1382D)....GN

Notes:

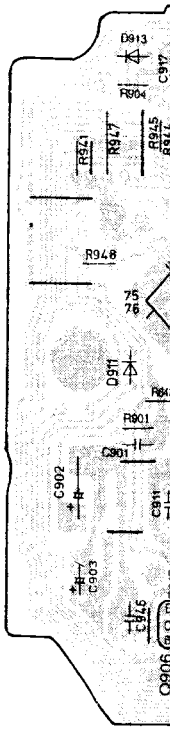
This diagram shows a front view of the small outline type IC mounting surface.

1. The circuit shown in (▬) on the conductor indicates printed circuit on the back side of the printed circuit board.
2. The circuit shown in (▬) on the conductor indicates printed circuit on the front side of the printed circuit board.
3. The symbols (●) shown in the circuit board indicate connection points between conductors on the front side and back side of the circuit board.

- **This circuit board diagram may be modified at any time with the development of new technology.**

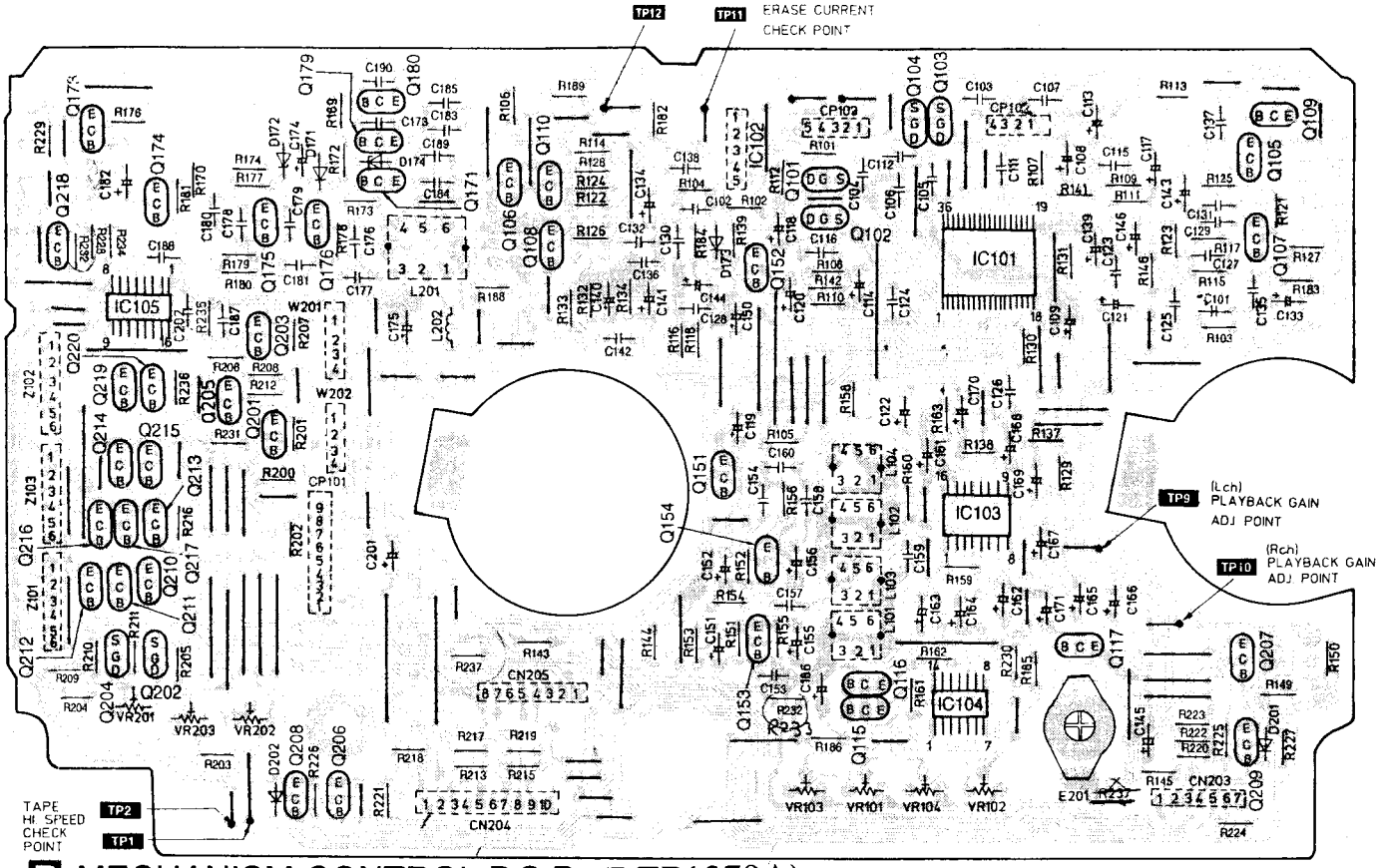


B ME

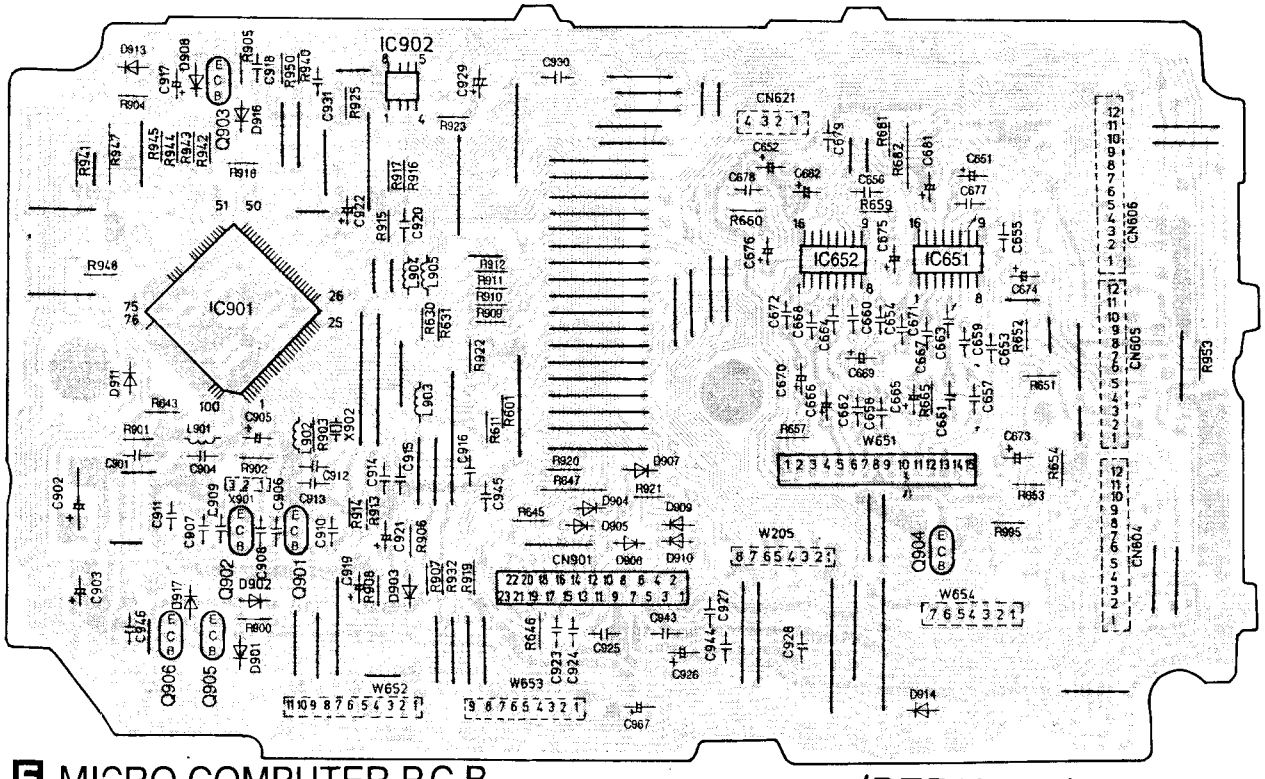


E MICRO

15 16 17 18 19



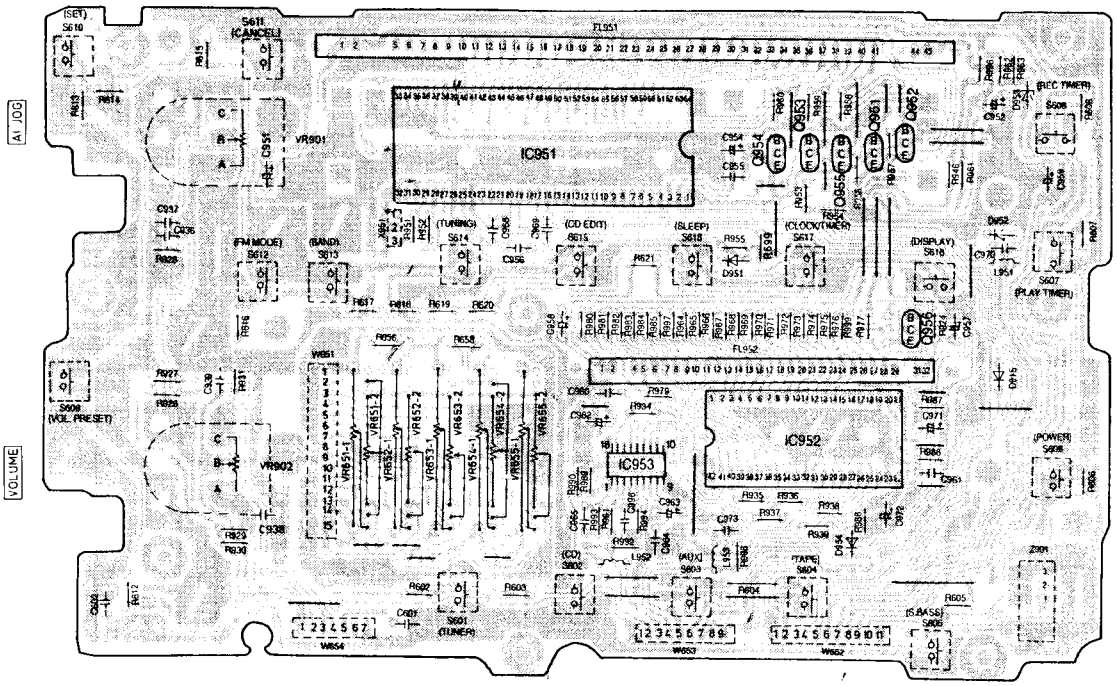
B MECHANISM CONTROL P.C.B (REP1379A)



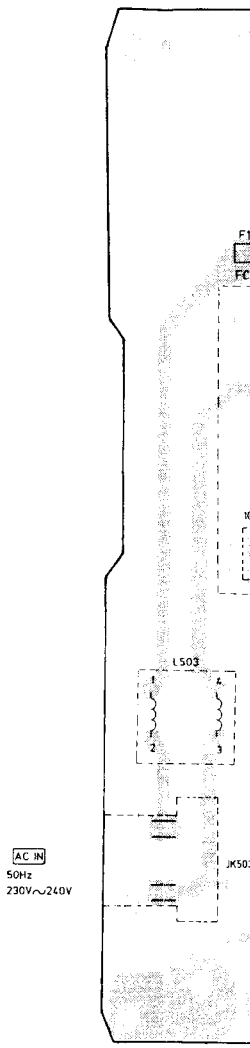
E MICRO COMPUTER P.C.B (REP1380B)

■ PRINTED CIRCUIT BOARDS (Main P.C.B.)

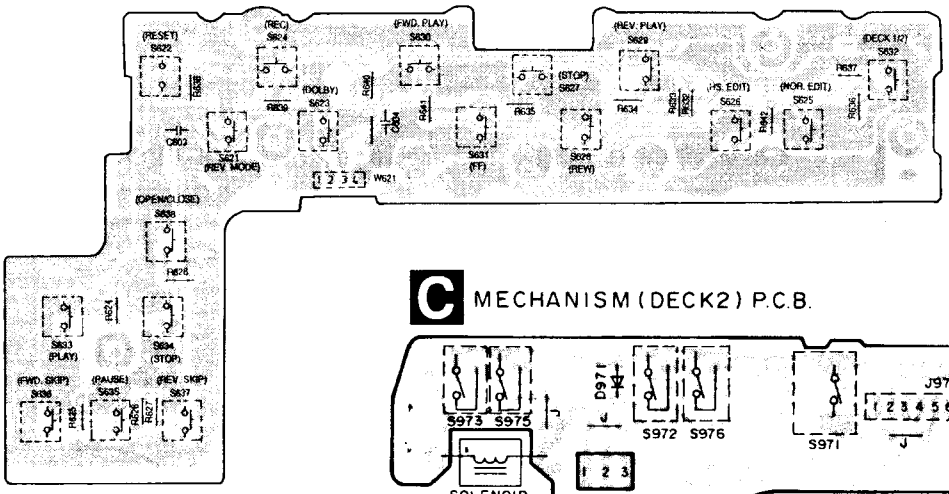
F FL DRIVE P.C.B (REP1380B)



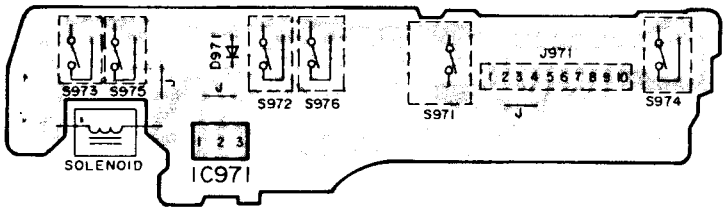
J POWER



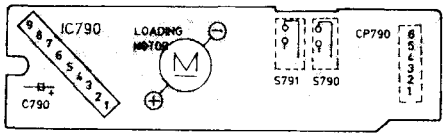
G OPERATION (CD/DECK) P.C.B (REP1380B)



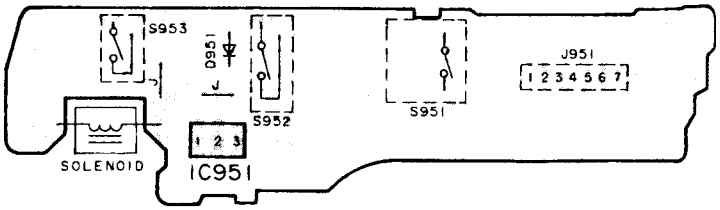
C MECHANISM (DECK2) P.C.B.



K LOADING MOTOR P.C.B (REP0767)

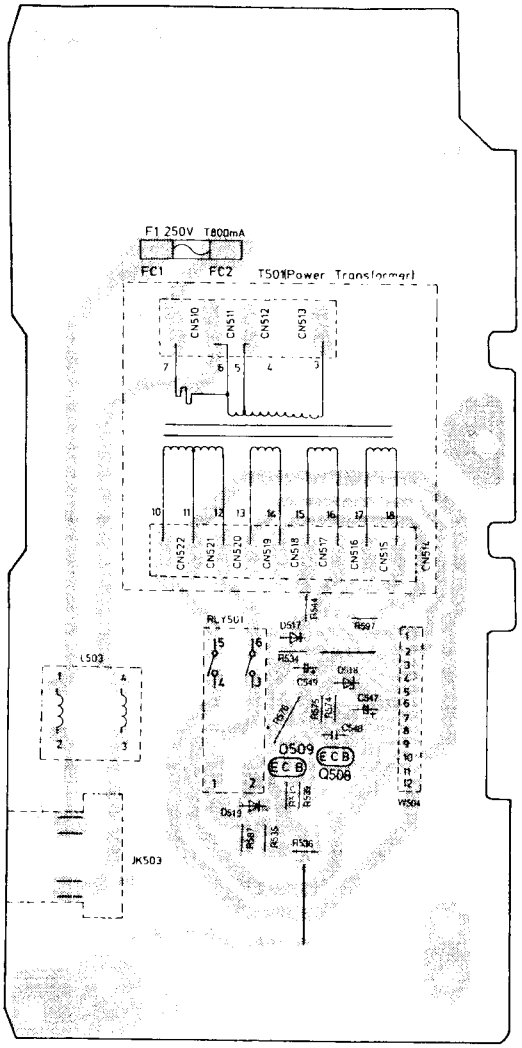


D MECHANISM (DECK1) P.C.B.

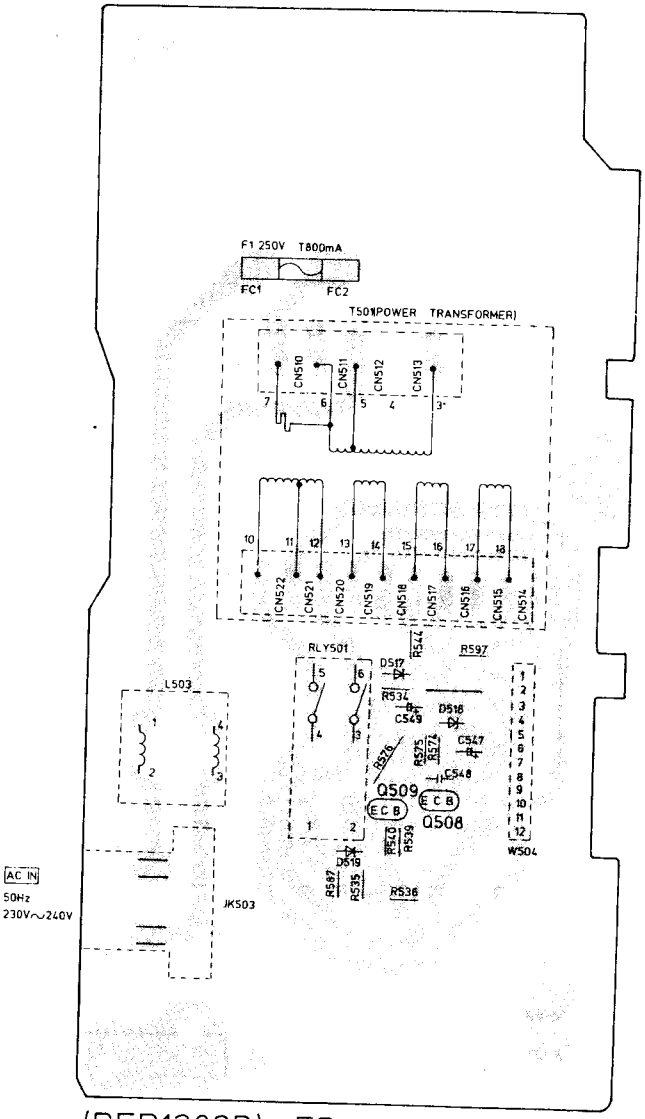


6 7 8 9 10

J POWER SUPPLY P.C.B (REP1382C)....E,EG



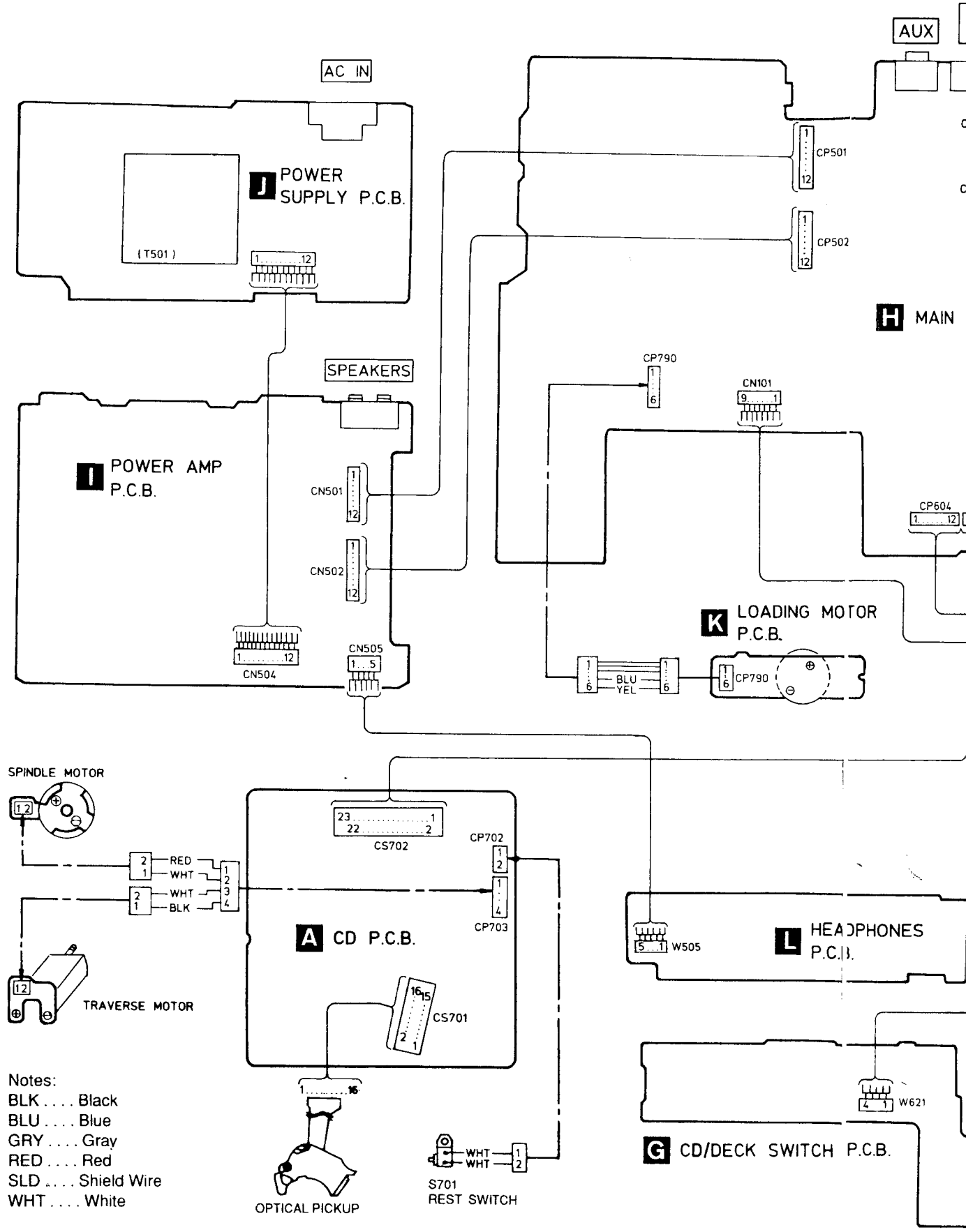
J POWER SUPPLY P.C.B



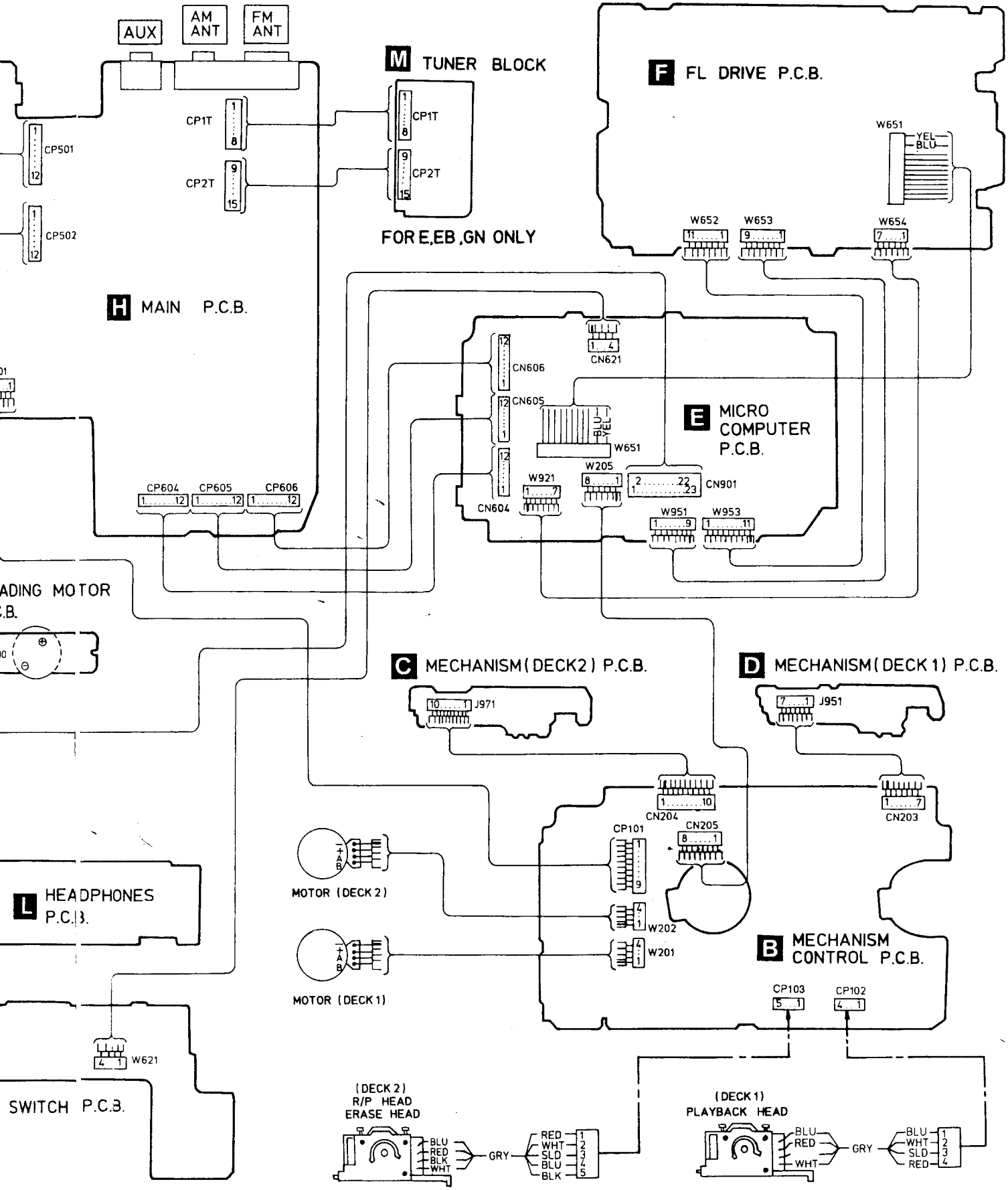
(REP1382B)....EB
(REP1382D)....GN

L HEADPHONE P.C.B (REP1380B)

WIRING CONNECTION DIAGRAM



Notes:
BLK . . . . Black
BLU . . . . Blue
GRY . . . . Gray
RED . . . . Red
SLD . . . . Shield Wire
WHT . . . . White


AUX
AM ANT
FM ANT
M TUNER BLOCK
CP1T
CP2T
FOR E,EB,GN ONLY
F FL DRIVE P.C.B.
W651
W652
W653
W654
CP501
CP502
H MAIN P.C.B.
CN606
CN605
CN604
CN621
E MICRO COMPUTER P.C.B.
W921
W205
CN901
W951
W953
CP604
CP605
CP606
ADING MOTOR
C MECHANISM(DECK2) P.C.B.
D MECHANISM(DECK 1) P.C.B.
J971
J951
CN204
CN203
CP101
CN205
MOTOR (DECK 2)
W202
W201
MOTOR (DECK 1)
L HEADPHONES P.C.B.
B MECHANISM CONTROL P.C.B.
CP103
CP102
W621
SWITCH P.C.B.
(DECK 2) R/P HEAD ERASE HEAD
BLU RED BLK WHT
GRY
RED WHT SLD BLU BLK
(DECK 1) PLAYBACK HEAD
BLU RED WHT
GRY
BLU WHT SLD RED

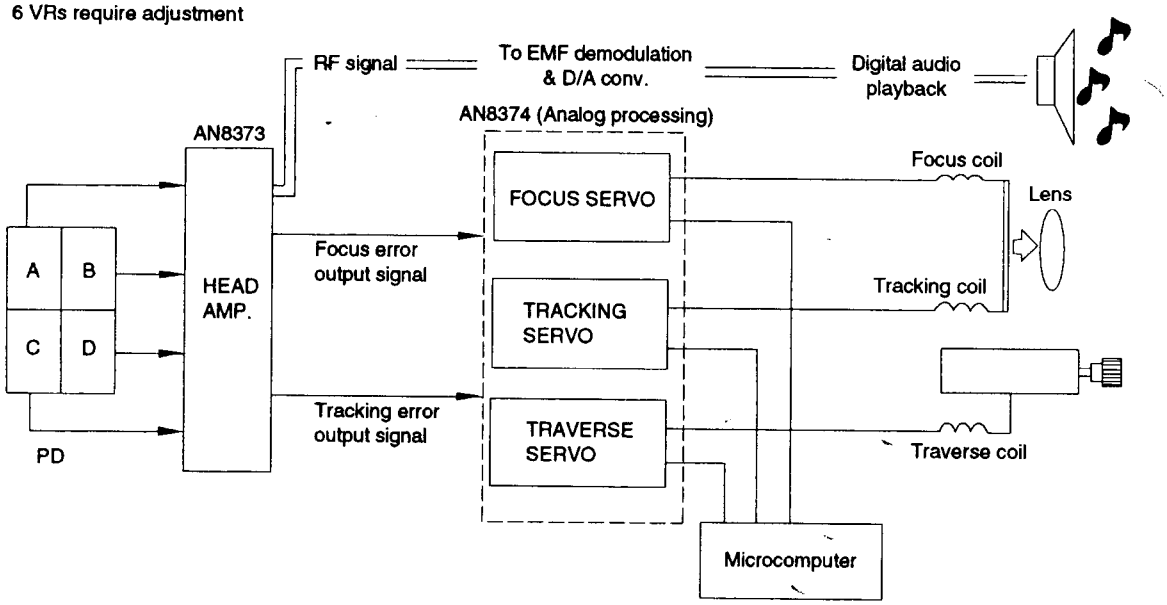
■ DIGITAL SERVO SYSTEM

The newly-developed digital servo system is adopted in the servo circuit of the unit's CD player instead of the ordinary analog servo system.

1. The diagrams shown below represent differences between the analog servo and digital servo systems. The HEAD AMP. output signals (i.e., focus error and tracking error output signals) are analog. These analog signals are converted to the 8-bits digital signals through the MN6650. The MN6650 performs the following adjustments automatically; focus offset, tracking offset, focus gain, tracking gain and tracking balance adjustments. The outputs from the MN6650 such as the focus coil driving signal, tracking coil driving signal, and traverse motor driving signal are converted to analog signals again and sent to the coils and motor to perform proper servo control for a disc.

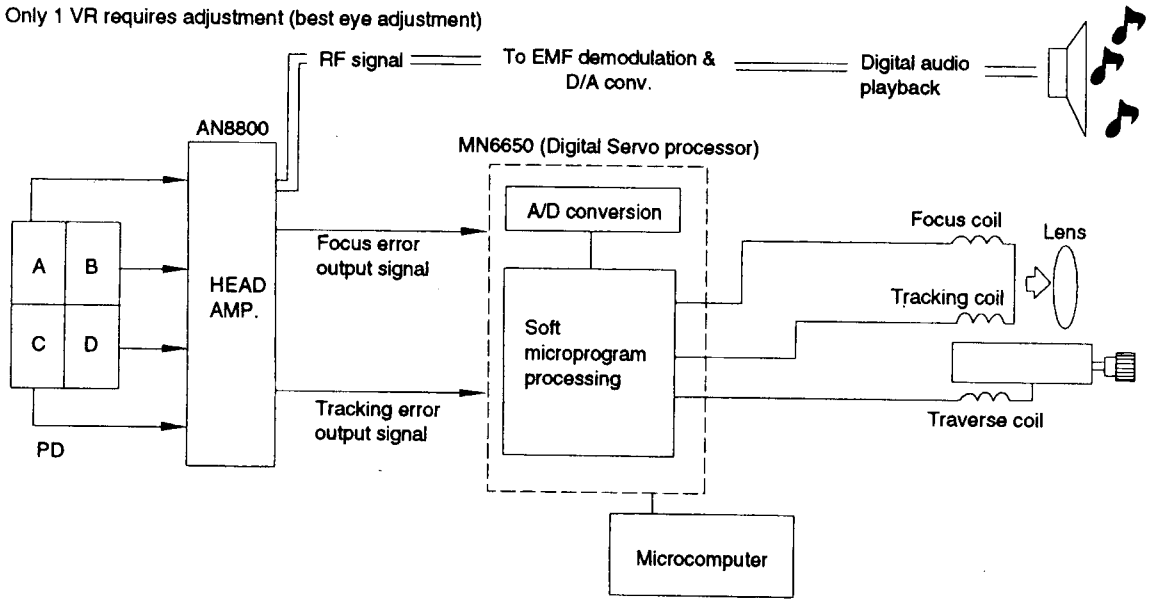
ANALOG SERVO SYSTEM

6 VRs require adjustment



DIGITAL SERVO SYSTEM

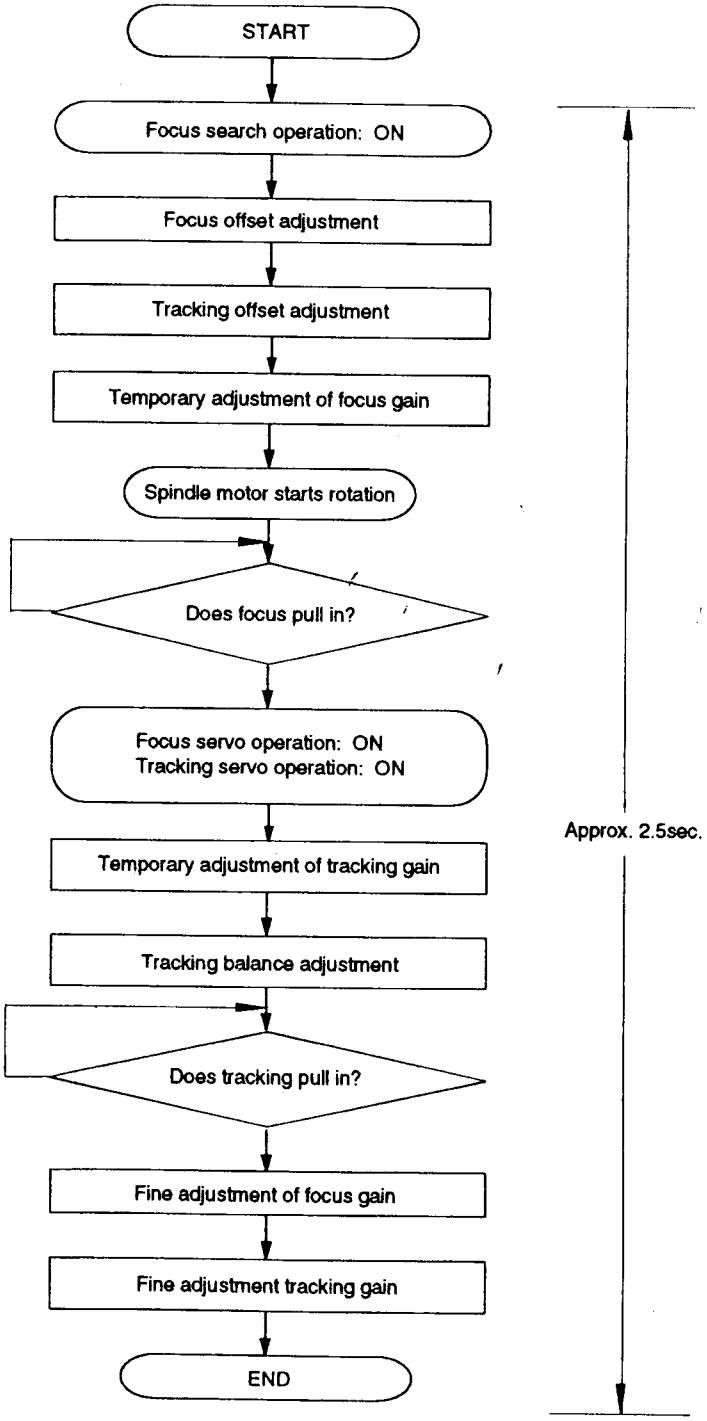
Only 1 VR requires adjustment (best eye adjustment)



2. The servo processor IC MN6650 of the newly-developed digital servo circuit automatically performs the following adjustments which were originally adjusted in the conventional analog servo circuit:
(1) Focus offset, (2) Tracking offset, (3) Focus gain, (4) Tracking gain, and (5) Tracking balance. Therefore, you do not have to perform the above-mentioned electrical adjustments manually. Only the best eye (PD balance) needs to be adjusted. You can obtain an optimum servo control for a disc to play.
[You must perform the best eye (PD balance) adjustment manually.

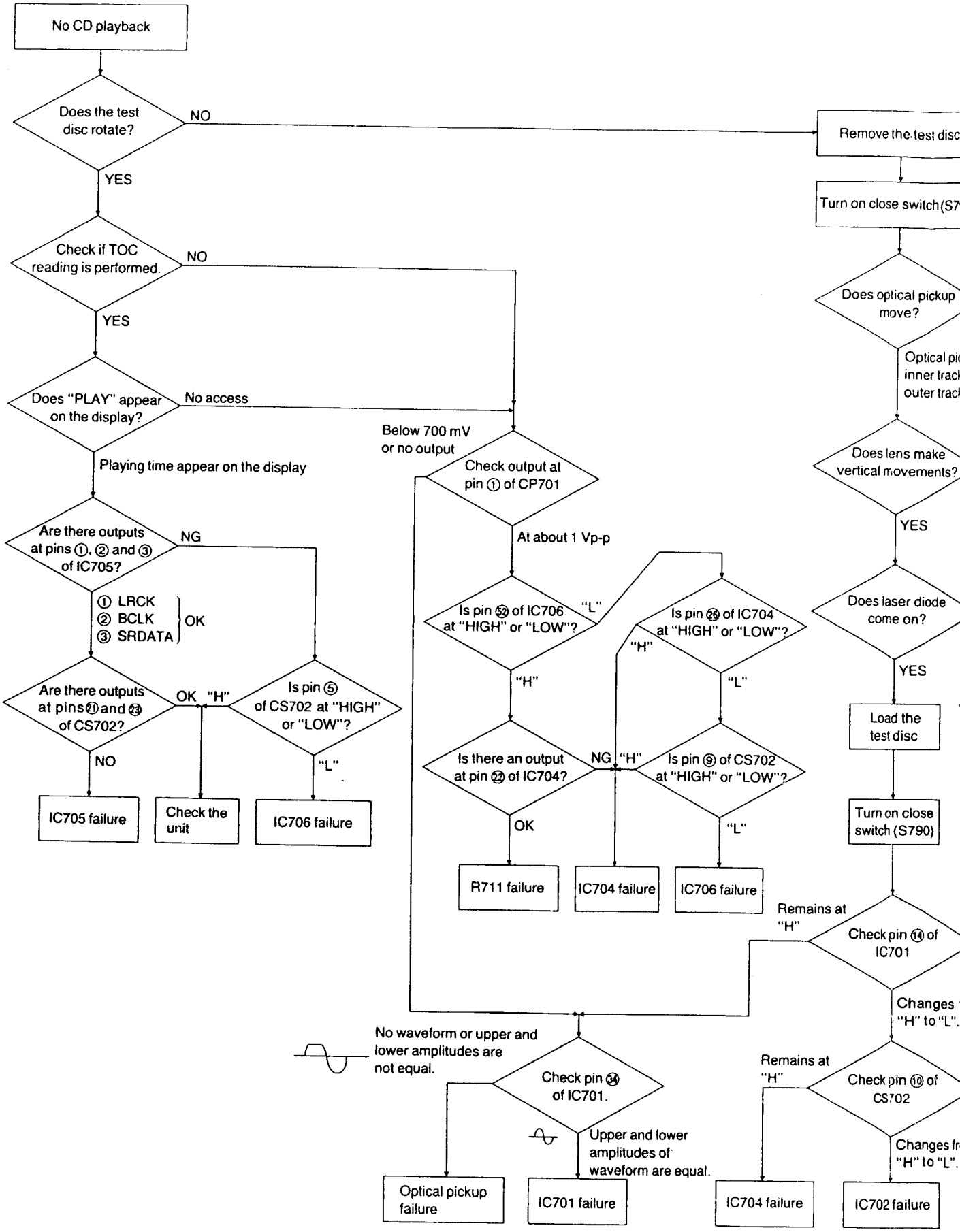
The following flow chart shows the sequence of automatic adjustments.

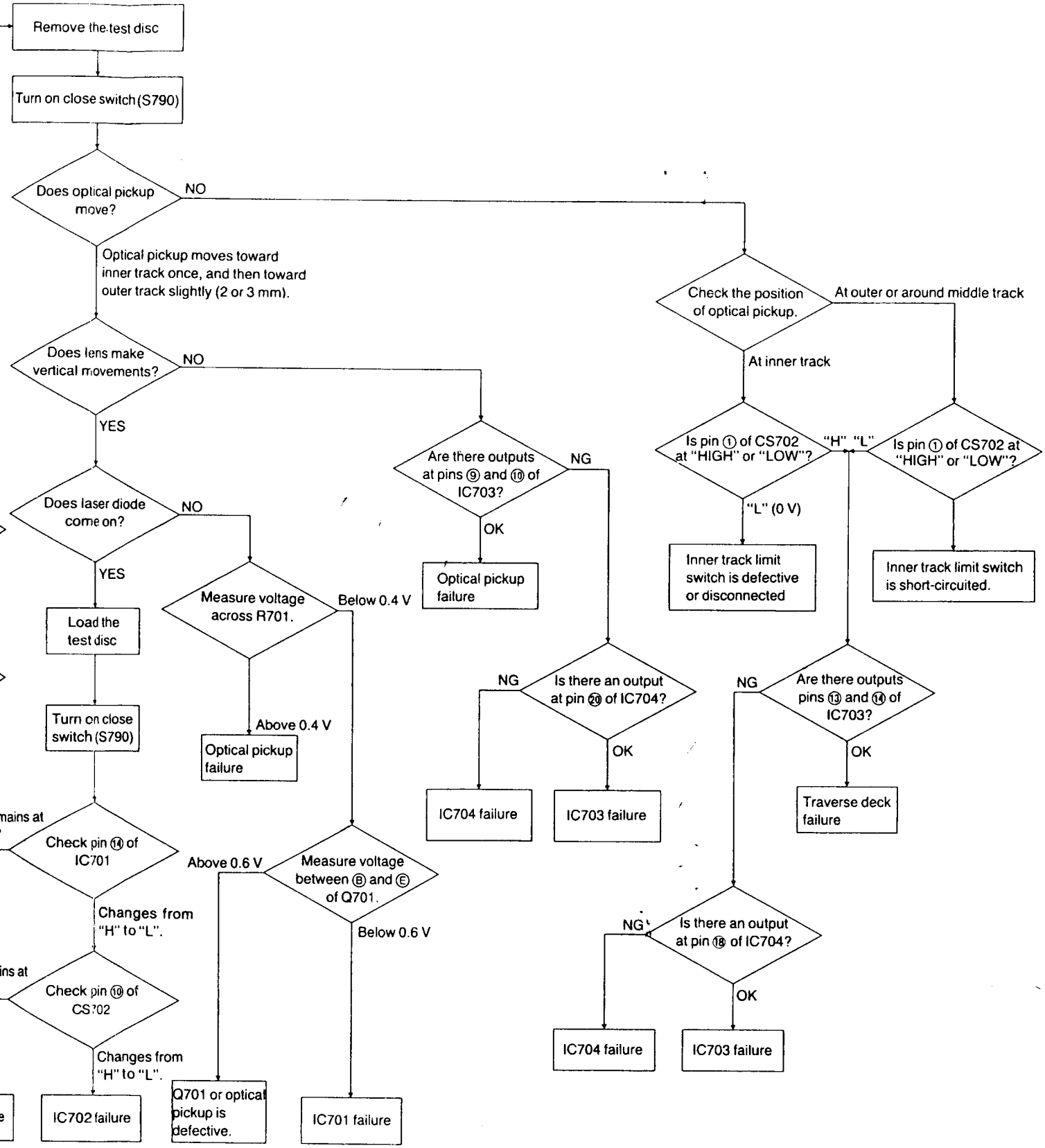
• Flow chart on automatic adjustment sequence



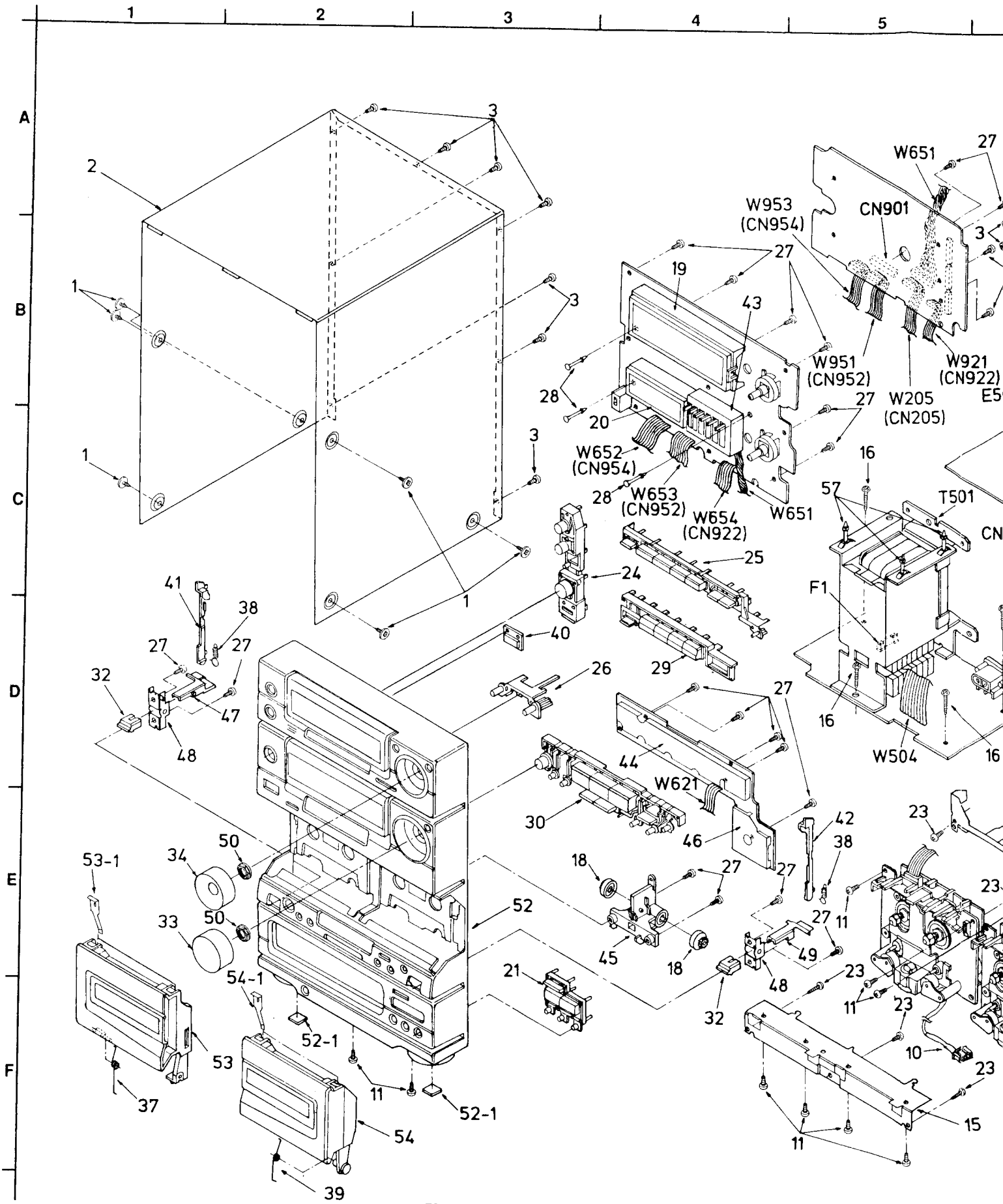
• Because the microcomputer precisely performs automatic adjustments as shown in the flow chart, it will take approx. 5 seconds to finish reading TOC data if a used disc is eccentric one or its surface is warped.

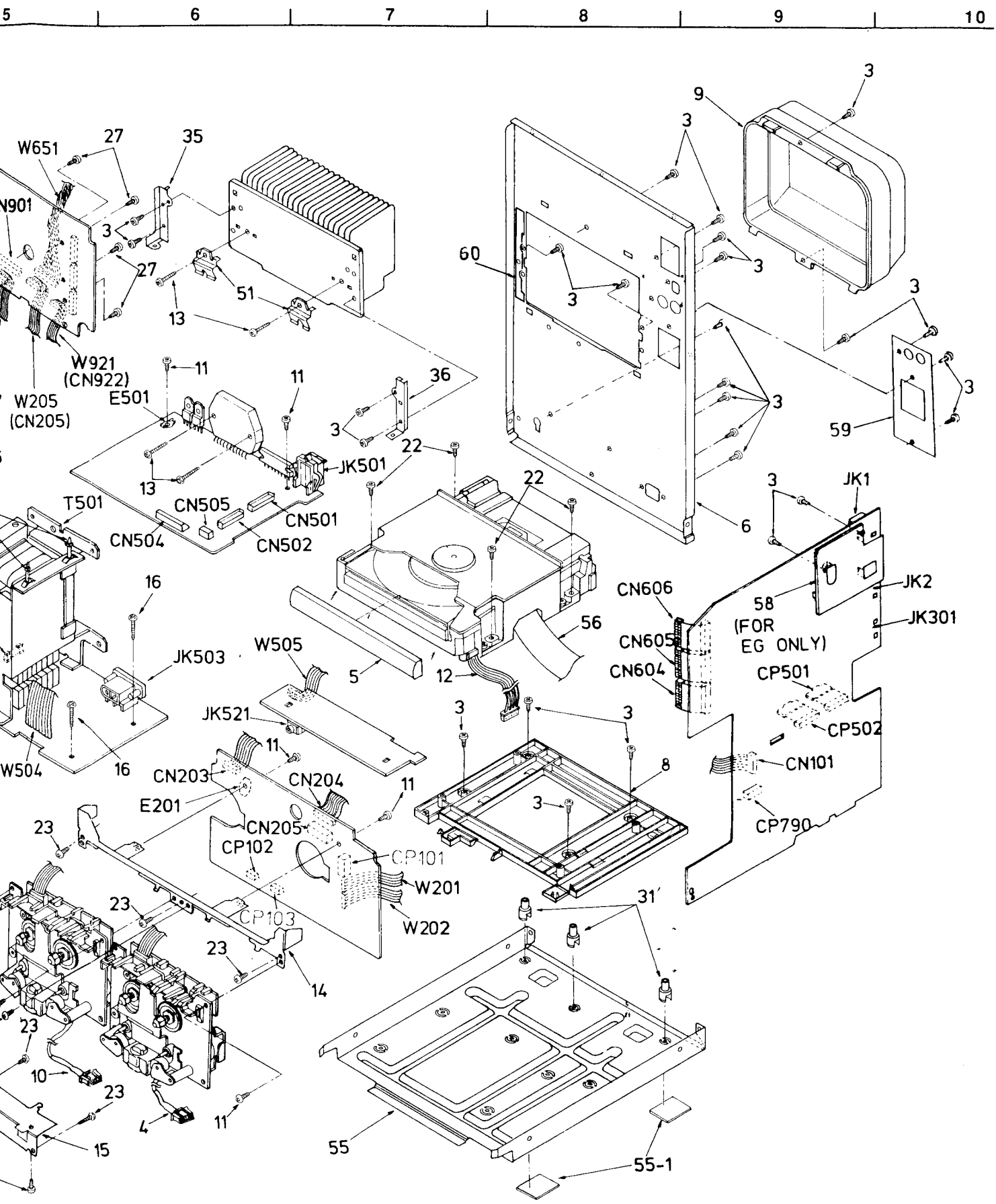
■ TROUBLESHOOTING GUIDE




Remove the test disc
Turn on close switch (S790)
Does optical pickup move?
NO
Optical pickup moves toward inner track once, and then toward outer track slightly (2 or 3 mm).
Does lens make vertical movements?
NO
YES
Does laser diode come on?
NO
YES
Load the test disc
Turn on close switch (S790)
mains at
Check pin ⑭ of IC701
Changes from "H" to "L".
ins at
Check pin ⑩ of CS702
Changes from "H" to "L".
IC702 failure
Measure voltage across R701.
Below 0.4 V
Above 0.4 V
Optical pickup failure
Above 0.6 V
Measure voltage between Ⓑ and Ⓔ of Q701.
Below 0.6 V
Q701 or optical pickup is defective.
IC701 failure
Are there outputs at pins ⑨ and ⑩ of IC703?
NG
OK
Optical pickup failure
Is there an output at pin ⑳ of IC704?
NG
OK
IC704 failure
IC703 failure
Check the position of optical pickup.
At outer or around middle track
At inner track
Is pin ① of CS702 at "HIGH" or "LOW"?
"H" "L"
Is pin ① of CS702 at "HIGH" or "LOW"?
"L" (0 V)
Inner track limit switch is defective or disconnected
Inner track limit switch is short-circuited.
Are there outputs pins ⑬ and ⑭ of IC703?
NG
OK
Traverse deck failure
Is there an output at pin ⑱ of IC704?
NG
OK
IC704 failure
IC703 failure

■ CABINET PARTS LOCATION




5
6
7
8
9
10
W651
27
35
N901
3
27
51
13
W921
(CN922)
W205
(CN205)
11
E501
11
36
3
13
JK501
22
22
T501
CN505
CN501
CN504
CN502
16
JK503
W504
16
W505
5
12
56
JK521
11
CN203
CN204
E201
CN205
CP102
CP101
W201
W202
CP103
11
23
23
23
14
23
10
23
4
11
15
55
31
55-1
3
9
3
3
60
3
3
3
3
3
59
3
6
3
JK1
JK2
58
JK301
(FOR
EG ONLY)
CN606
CN605
CN604
CP501
CP502
CN101
CP790
8
3
3
3

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 indications in the Remarks columns specify the areas. (refer to the cover page for area.)
Parts without these indications can be used for all areas.
[M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No	Part No.	Part Name & Description	Remarks
		CABINET & CHASSIS	
1	RHD30007	SCREW	
2	RFKKACH33PK	TOP CABINET ASS'Y	[M]
3	XTB3+8JFZ	SCREW	
4	REX0305	R/P HEAD WIRE	[M]
5	RGK0473-K	CD LID	[M]
6	RGR0141B-B	REAR PANEL	[M] (E)
6	RGR0141B-C	REAR PANEL	[M] (EB)
6	RGR0141B-A	REAR PANEL	[M] (EG)
6	RGR0141B-D	REAR PANEL	[M] (GN)
8	RMR0535-W	CD SUPPORT	[M]
9	RMV0047	HEAT SINK COVER	[M]
10	REX0450	WIRE ASS'Y	[M]
11	XTV26+6F	SCREW	
12	REX0435	WIRE ASS'Y	[M]
13	XTW3+15T	SCREW	
14	RMA0570	CASSETTE ANGLE/UPPER	[M]
15	RMA0571	CASSETTE ANGLE/LOWER	[M]
16	XTB3+20J	SCREW	
18	RDG0129	DAMPER GEAR	[M]
19	RMN0173	TUNER FL HOLDER	[M]
20	RSC0268	SPE-ANA HOLDER	[M]
21	RGU0743-K	BUTTON, CD	[M]
22	XTB3+12JFZ	SCREW	
23	XTB3+12JFR	SCREW	
24	RGU0737-K	BUTTON, POWER/TIMER	[M]
25	RGU0738-K	BUTTON, TUNER	[M]
26	RGU0741-K	BUTTON, SET/CANCEL	[M]
27	XTBS26+10J	SCREW	
28	SHR8005	PANEL PCB SUPPORT	
29	RGU0739-K	BUTTON, INPUT SEL.	[M]
30	RGU0742-K	BUTTON, CASSETTE	[M]
31	SHE187-3	TRANS PCB SUPPORT	
32	RGU0750-K	KNOB, EJECT	[M]
33	RGW0148-K	KNOB, VOLUME	[M]
34	RGW0147-K	KNOB, AI JOG	[M]
35	RMA0575	HEAT SINK ANGLE L	[M]
36	RMA0576	HEAT SINK ANGLE R	[M]

Ref. No	Part No.	Part Name & Description	Remarks
37	RMB0237	CASS. OPEN SPRING L	[M]
38	RMB0239	EJECT ROD SPRING	[M]
39	RMB0238	CASS. OPEN SPRING R	[M]
40	RKW0209-Q	SENSOR WINDOW	[M]
41	RMM0087	EJECT ROD L	[M]
42	RMM0088	EJECT ROD R	[M]
43	RSC0269	GEQ SHIELD PLATE	[M]
44	RSC0271	CASSETTE SHIELD PLATE	[M]
45	RMS0352	DAMPER GEAR HOLDER	[M]
46	RSC0272	CD SHIELD PLATE	[M]
47	RML0252	EJECT LEVER L	[M]
48	RML0254	EJECT LEVER STAND	[M]
49	RML0253	EJECT LEVER R	[M]
50	SNE4021	NUT	
51	RMC0158-S	TRANSISTOR HOLDER	[M]
52	RFKGACH33EK	FRONT PANEL ASS'Y	[M]
52-1	SHS3276	LEG FELT (5MM)	[M]
53	RFKLACH33PAK	CASS. LID (L) ASS'Y	[M]
53-1	RUS757ZAA	SPRING	[M]
54	RFKLACH33PBK	CASS. LID (R) ASS'Y	[M]
54-1	RUS757ZAA	SPRING	[M]
55	RFKJACH33PK	BOTTOM BOARD ASS'Y	[M]
55-1	SHG1654-S	LEG FELT (1.6MM)	[M]
56	REE0395	FFC	[M]
57	SHR9755	POWER PCB SUPPORT	
58	RSC0279	TUNER SHIELD PLATE	[M](EG)
59	RMQ0302	HEAT PROTECTOR	[M]
60	RMQ0306	HEAT PROTECTOR SHEET	[M]
		WIRES	
W504	REX0451	WIRE ASS'Y	[M]
W651	REX0434	WIRE ASS'Y	[M]

Ref. No	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUITS	
IC1	AN7273W	IC, FM AM IF & DET	
IC2	LM7001	IC, PLL	
IC3	AN7470	IC, FM MPX	
IC101	M51167BFP-E1	IC, REC/PLAY	
IC102	BA7755	IC, ANALOG SW	
IC103	CXA1102M-T4	IC, DOLBY	
IC104	BU4066BF-E2	IC, ANALOG SW	
IC105	BU2040F-E2	IC, I/O EXPANDER	[M]
IC301	BU4066BF-E2	IC, ANALOG SW	
IC302	BU4066BF-E2	IC, ANALOG SW	
IC304	BA4558FDXE2	IC, OP AMP	[M]
IC307	BU2040F-E2	IC, I/O EXPANDER	[M]
IC501	SVI3101C	IC, HIC	⚠
IC502	BA3920	IC, REGULATOR	⚠
IC551	UPC4570HA	IC, OP AMP	[M]
IC552	UPC4570HA	IC, OP AMP	[M]
IC651	M5226FPE2	IC, G.EQ	
IC652	M5226FPE2	IC, G.EQ	
IC801	M51131L-702	IC, ELECTRONIC VOLUME	
IC802	BA4558FDXE2	IC, OP AMP	[M]
IC901	MND2410RLAA3	IC, MAIN MICRO-COM	[M]
IC902	BA4558FDXE2	IC, OP AMP	[M]
IC951	M50754-190SP	IC, FL MICRO-COM	[M] (MAIN)
IC952	LC7566	IC, FL	
IC953	BA3830FT2	IC, BANDPASS FILTER	
IC951	DN6851ALB	IC, HALL (DECK1)	(DECK)
IC971	DN6851ALB	IC, HALL (DECK2)	(DECK)
		IC PROTECTOR	
ICP301	SRUN20T	IC PROTECTOR	
		TRANSISTORS	
Q1	2SC2787LTA	TRANSISTOR	
Q1T	2SK544F-AC	TRANSISTOR	(E/EB/GN)
Q2T	2SC2786MTA	TRANSISTOR	(E/EB/GN)
Q2	2SC2787LTA	TRANSISTOR	
Q3T	2SC1675FL1L2	TRANSISTOR	(E/EB/GN)
Q3	2SC1740SQSTA	TRANSISTOR	
Q4T	2SC1675FL1L2	TRANSISTOR	(E/EB/GN)
Q4	2SC2785FTA	TRANSISTOR	
Q5	2SA933SSTA	TRANSISTOR	
Q6	2SC1740SQSTA	TRANSISTOR	
Q7	2SC1740SQSTA	TRANSISTOR	

Ref. No	Part No.	Part Name & Description	Remarks
Q9	2SC2785FTA	TRANSISTOR	
Q10	2SC2785FTA	TRANSISTOR	
Q11	2SC2785FTA	TRANSISTOR	
Q14	2SC2785FTA	TRANSISTOR	
Q15	2SA933SSTA	TRANSISTOR	
Q16	2SA933SSTA	TRANSISTOR	
Q19	2SC2785FTA	TRANSISTOR	
Q21	2SA933SSTA	TRANSISTOR	
Q22	2SC2785FTA	TRANSISTOR	
Q101	2SJ40CDTA	TRANSISTOR	
Q102	2SJ40CDTA	TRANSISTOR	
Q103	2SJ40CDTA	TRANSISTOR	
Q104	2SJ40CDTA	TRANSISTOR	
Q105	RVTDTC144TST	TRANSISTOR	[M]
Q106	RVTDTC144TST	TRANSISTOR	[M]
Q107	RVTDTC144TST	TRANSISTOR	[M]
Q108	RVTDTC144TST	TRANSISTOR	[M]
Q109	RVTDTC144TST	TRANSISTOR	[M]
Q110	RVTDTC144TST	TRANSISTOR	
Q115	2SD1450STA	TRANSISTOR	
Q116	2SD1302STA	TRANSISTOR	
Q117	BA1L4MTA	TRANSISTOR	[M]
Q151	RVTDTC144TST	TRANSISTOR	[M]
Q152	RVTDTC144TST	TRANSISTOR	[M]
Q153	2SC1740SLNET	TRANSISTOR	
Q154	2SC1740SLNET	TRANSISTOR	
Q171	2SD1302STA	TRANSISTOR	
Q173	RVTDTC144TST	TRANSISTOR	[M]
Q174	2SC2785FTA	TRANSISTOR	
Q175	2SD1302STA	TRANSISTOR	
Q176	2SD1302STA	TRANSISTOR	
Q179	2SC2784FTA	TRANSISTOR	[M]
Q180	2SC2784FTA	TRANSISTOR	[M]
Q201	2SD965RTA	TRANSISTOR	
Q202	2SK301QTA	TRANSISTOR	[M]
Q203	2SD965RTA	TRANSISTOR	
Q204	2SK301QTA	TRANSISTOR	[M]
Q205	RVTDTC144TST	TRANSISTOR	[M]
Q206	2SB621RTA	TRANSISTOR	
Q207	2SB621RTA	TRANSISTOR	
Q208	BA1A4ZTA	TRANSISTOR	[M]
Q209	BA1A4ZTA	TRANSISTOR	[M]
Q210	2SC2785FTA	TRANSISTOR	
Q211	2SC2785FTA	TRANSISTOR	
Q212	2SC2785FTA	TRANSISTOR	
Q213	2SC2785FTA	TRANSISTOR	
Q214	2SC2785FTA	TRANSISTOR	
Q215	2SC2785FTA	TRANSISTOR	

Ref. No	Part No.	Part Name & Description	Remarks
Q216	2SC2785FTA	TRANSISTOR	
Q217	2SC2785FTA	TRANSISTOR	
Q218	BN1A4MTA	TRANSISTOR	[M]
Q219	BN1L3NTA	TRANSISTOR	[M]
Q220	BN1L3NTA	TRANSISTOR	[M]
Q303	2SC2001KTA	TRANSISTOR	
Q304	2SC2001KTA	TRANSISTOR	
Q305	2SC2785FTA	TRANSISTOR	
Q306	2SC2785FTA	TRANSISTOR	
Q307	RVTDTA114EST	TRANSISTOR	
Q311	RVTDTA114EST	TRANSISTOR	
Q312	RVTDTC124EST	TRANSISTOR	[M]
Q320	RVTDTA143XST	TRANSISTOR	
Q321	RVTDTA143XST	TRANSISTOR	
Q322	RVTDTA143XST	TRANSISTOR	
Q323	2SC2785FTA	TRANSISTOR	
Q324	2SC2785FTA	TRANSISTOR	
Q325	2SC2785FTA	TRANSISTOR	
Q451	2SC2785FTA	TRANSISTOR	
Q452	2SC2785FTA	TRANSISTOR	
Q453	2SC2785FTA	TRANSISTOR	
Q454	2SC2785FTA	TRANSISTOR	
Q455	2SD2037EFTA	TRANSISTOR	
Q501	2SB1357ETA	TRANSISTOR	[M] ⚠
Q503	2SD2037EFTA	TRANSISTOR	
Q504	2SC2785FTA	TRANSISTOR	
Q505	2SD1762DE	TRANSISTOR	⚠
Q506	2SB1185E	TRANSISTOR	
Q508	2SB621RTA	TRANSISTOR	
Q509	2SC2785FTA	TRANSISTOR	
Q519	2SB1185E	TRANSISTOR	⚠
Q520	2SD592RTA	TRANSISTOR	⚠
Q521	2SB621RTA	TRANSISTOR	
Q551	2SA564QTA	TRANSISTOR	
Q552	2SA564QTA	TRANSISTOR	
Q581	2SC2785FTA	TRANSISTOR	
Q582	2SC2785FTA	TRANSISTOR	
Q801	2SK301QTA	TRANSISTOR	[M]
Q802	2SK301QTA	TRANSISTOR	[M]
Q803	2SC1740SLNST	TRANSISTOR	
Q804	2SC1740SLNST	TRANSISTOR	
Q805	2SC2001KTA	TRANSISTOR	
Q806	2SC2001KTA	TRANSISTOR	
Q807	2SC2001KTA	TRANSISTOR	
Q808	2SC2001KTA	TRANSISTOR	
Q810	RVTDTA114EST	TRANSISTOR	
Q811	RVTDTA114EST	TRANSISTOR	
Q812	RVTDTC124EST	TRANSISTOR	[M]

Ref. No	Part No.	Part Name & Description	Remarks
Q901	2SC2785FTA	TRANSISTOR	
Q902	2SC2785FTA	TRANSISTOR	
Q903	BA1L4MTA	TRANSISTOR	[M]
Q904	2SC2785FTA	TRANSISTOR	
Q905	BN1A4MTA	TRANSISTOR	[M]
Q906	BA1A4MTA	TRANSISTOR	[M]
Q951	2SC2785FTA	TRANSISTOR	
Q952	2SC2785FTA	TRANSISTOR	
Q953	BN1L3NTA	TRANSISTOR	[M]
Q954	BN1L3NTA	TRANSISTOR	[M]
Q955	BN1L3NTA	TRANSISTOR	[M]
Q956	BN1L3NTA	TRANSISTOR	[M]
		DIODES	
D1T	SVC211SPA-AL	DIODE	(E/EB/GN)
D1	RVD1SS133TA	DIODE	
D2T	SVC211SPA-AL	DIODE	(E/EB/GN)
D2	RVD1SS133TA	DIODE	
D3T	SVC211SPA-AL	DIODE	(E/EB/GN)
D3	RVD1SS133TA	DIODE	
D4	RVD1SS133TA	DIODE	
D171	RVD1SS133TA	DIODE	
D172	RVDMTZ4R7BTA	DIODE	
D173	RVD1SS133TA	DIODE	
D174	RVDMTZ3R6BTA	DIODE	[M]
D201	RVD1SS133TA	DIODE	
D202	RVD1SS133TA	DIODE	
D301	RVDMTZ6R2BTA	DIODE	
D307	RVD1SS133TA	DIODE	
D308	RVD1SS133TA	DIODE	
D315	RVD1SS133TA	DIODE	
D316	RVD1SS133TA	DIODE	
D317	RVD1SS133TA	DIODE	
D318	RVD1SS133TA	DIODE	
D319	RVD1SS133TA	DIODE	
D320	RVD1SS133TA	DIODE	
D321	RVD1SS133TA	DIODE	
D322	RVD1SS133TA	DIODE	
D323	RVD1SS133TA	DIODE	
D324	RVD1SS133TA	DIODE	
D451	RVDMTZ8R2CTA	DIODE	[M]
D453	RVDMTZ6R8BTA	DIODE	
D502	RVDMTZ6R8ATA	DIODE	[M]
D503	1SR35200TB	DIODE	⚠
D504	1SR35200TB	DIODE	⚠
D505	1SR35200TB	DIODE	⚠
D506	1SR35200TB	DIODE	⚠

Ref. No	Part No.	Part Name & Description	Remarks
D507	RVDMTZ15CTA	DIODE	[M]
D508	RVDMTZ15CTA	DIODE	[M]
D509	RVD1SS133TA	DIODE	
D510	1D3E	DIODE	[M] ⚠
D511	RL154M11	DIODE	[M] ⚠
D512	RL154M11	DIODE	[M] ⚠
D513	RL154M11	DIODE	[M] ⚠
D514	RL154M11	DIODE	[M] ⚠
D515	RVD1SS133TA	DIODE	
D517	1SR35200TB	DIODE	⚠
D518	MA4300MHTA	DIODE	
D519	RVDMTZ12CTA	DIODE	
D520	RVDMTZ15CTA	DIODE	[M]
D521	RVD1SS133TA	DIODE	⚠
D522	RVD1SS133TA	DIODE	⚠
D523	RVDMTZ5R1CTA	DIODE	
D524	RVD1SS133TA	DIODE	⚠
D525	RVD1SS133TA	DIODE	
D526	RVD1SS133TA	DIODE	
D821	RVD1SS133TA	DIODE	
D822	RVD1SS133TA	DIODE	
D901	1SS291TA	DIODE	
D902	RVD1SS133TA	DIODE	
D903	RVD1SS133TA	DIODE	
D904	RVD1SS133TA	DIODE	
D905	RVD1SS133TA	DIODE	
D906	RVD1SS133TA	DIODE	
D907	RVD1SS133TA	DIODE	
D908	RVD1SS133TA	DIODE	
D909	RVD1SS133TA	DIODE	
D910	RVD1SS133TA	DIODE	
D911	RVD1SS133TA	DIODE	
D913	RVD1SS133TA	DIODE	
D914	RVD1SS133TA	DIODE	
D915	RVD1SS133TA	DIODE	
D916	RVD1SS133TA	DIODE	
D917	RVD1SS133TA	DIODE	
D951	RVD1SS133TA	DIODE	
D952	RVD1SS133TA	DIODE	
D953	RVDMTZ4R7BTA	DIODE	
D954	RVD1SS133TA	DIODE	
D971	RVD1SS133TA	DIODE	
		VARIABLE RESISTORS	
VR1	EVNDXAA00B53	VR, FM MPX VCO ADJ.	
VR101	RVNCC24B1T-A	VR, PB GAIN ADJ (DECK1:L)	
VR102	RVNCC24B1T-A	VR, PB GAIN ADJ (DECK1:R)	

Ref. No	Part No.	Part Name & Description	Remarks
VR103	RVNCC24B1T-A	VR, PB GAIN ADJ (D2:L)	
VR104	RVNCC24B1T-A	VR, PB GAIN ADJ (D2:R)	
VR201	RVNCC73B1T-A	VR, TAPE SPEED ADJ. (D1)	
VR202	RVNCC24B1T-A	VR, TAPE SPEED ADJ. (D2)	
VR203	RVNCC14B1T-A	VR, TAPE SPEED ADJ. (D2)	
VR651	EWAJQAW05G54	VR, G.EQ (10KHz)	[M]
VR652	EWAJQAW05G54	VR, G.EQ (3.3KHz)	[M]
VR653	EWAJQAW05G54	VR, G.EQ (1KHz)	[M]
VR654	EWAJQAW05G54	VR, G.EQ (330Hz)	[M]
VR655	EWAJQAW05G54	VR, G.EQ (100Hz)	[M]
VR901	EVQWPJF1524B	VR, AI JOG	[M]
VR902	EVQWQAF1524B	VR, MAIN	[M]
		COMPONENT COMBINATION	
Z1	ENV17283G1	TUNER PACK	[M] (EG)
Z2	RLA6Z002-T	COMPONENT COMBINATION	
Z3	RLI2Z003-T	COMPONENT COMBINATION	[M]
Z101	EXBF6L306SYV	COMPONENT COMBINATION	
Z102	EXBF6L306SYV	COMPONENT COMBINATION	
Z103	EXBF6L306SYV	COMPONENT COMBINATION	
Z901	RCDHC-278	INFRARED SENSOR	
		COILS & TRANSFORMERS	
L1	RLQZP1R2KT-Y	COIL	(EG)
L2	ELEPKR22MA	COIL	
L2T	RLQZP1R2KT-Y	COIL, RF CHOKE	(E/EB/GN)
L3	ELEPKR22MA	COIL	
L4	RLQZPR82KT-Y	COIL, RF CHOKE	
L4T	RLQZP1R2KT-Y	COIL, RF CHOKE	(E/EB/GN)
L5	RLQZP1R2KT-Y	COIL, RF CHOKE	
L6	SLM1B10-1M	COIL, AB FILTER	
L7	RLM2B003-K	COIL, MPX FILTER	
L8	RLM2B003-K	COIL, MPX FILTER	
L101	RLE9B001-1M	COIL, TRAP	[M]
L102	RLE9B001-1M	COIL, TRAP	[M]
L103	RLE2B001-1M	COIL, TRAP	[M]
L104	RLE2B001-1M	COIL, TRAP	[M]
L201	RL08C002-T	COIL, BIAS OSC	
L202	RLQZB470KT-D	COIL, RF CHOKE	
L301	RLQZB4R7KT-D	COIL	[M]
L501	SLQY07G-40	COIL	
L502	SLQY07G-40	COIL	
L503	RLQZ600-W	COIL, AC LINE FILTER	[M] ⚠
L901	RLQZP3R3KT-Y	COIL, RF CHOKE	
L902	RLQZP2R2KT-Y	COIL, RF CHOKE	
L903	RLQZP2R2KT-Y	COIL, RF CHOKE	

Ref. No	Part No.	Part Name & Description	Remarks
L904	RLQZP2R2KT-Y	COIL, RF CHOKE	
L905	RLQZP2R2KT-Y	COIL, RF CHOKE	
L951	RLQZP101KT-Y	COIL, RF CHOKE	
L952	RLQZP101KT-Y	COIL, RF CHOKE	
L953	RLQZP101KT-Y	COIL, RF CHOKE	
T1	RLI4B002-Z	COIL, FM DET	
T2	RLI4B003-Z	COIL, FM DET	
T501	RTP1M3B004-V	POWER TRANSFORMER	[M] ⚠
		CERAMIC FILTER	
CF1	RLFFETNGA01L	FM CF	
CF2	RLFFETNGA02L	FM CF	
		CRYSTAL RESONATORS	
X1	SVQ49U722T-S	CRYSTAL 7.2MHZ	
X901	RSXZ4M19M01T	CERAMIC RESONATOR	[M]
X902	RSXD32K7S02	CRYSTAL	[M]
X951	RSXY6M00M01T	CRYSTAL 6MHZ	[M]
		FUSES	
F1	XBA2C08TB0	FUSE	⚠
		FUSE CLIPS	
FC1	EYF52BC	FUSE CLIP	
FC2	EYF52BC	FUSE CLIP	
		DISPLAY TUBE	
FL951	RSL0117-F	MAIN FL	[M]
FL952	RSL0118-F	G.EQ FL	[M]
		SWITCHES	
S601	EVQ21405R	SW, TUNER	
S602	EVQ21405R	SW, CD	
S603	EVQ21405R	SW, AUX	
S604	EVQ21405R	SW, TAPE	
S605	EVQ21405R	SW, S.BASS	
S606	EVQ21405R	SW, POWER	
S607	EVQ21405R	SW, PLAY TIMER	
S608	EVQ21405R	SW, REC TIMER	
S609	EVQ21405R	SW, VOL. PRESET	
S610	EVQ21405R	SW, SET	
S611	EVQ21405R	SW, CANCEL	

Ref. No	Part No.	Part Name & Description	Remarks
S612	EVQ21405R	SW, FM MODE	
S613	EVQ21405R	SW, BAND	
S614	EVQ21405R	SW, TUNING	
S615	EVQ21405R	SW, CD EDIT	
S616	EVQ21405R	SW, DISPLAY	
S617	EVQ21405R	SW, CLOCK/TIMER	
S618	EVQ21405R	SW, SLEEP	
S621	EVQ21405R	SW, REV. MODE	
S622	EVQ21405R	SW, RESET	
S623	EVQ21405R	SW, DOLBY	
S624	EVQ21405R	SW, REC	
S625	EVQ21405R	SW, NOR. EDIT	
S626	EVQ21405R	SW, HS. EDIT	
S627	EVQ21405R	SW, STOP	
S628	EVQ21405R	SW, REW	
S629	EVQ21405R	SW, REV. PLAY	
S630	EVQ21405R	SW, FWD. PLAY	
S631	EVQ21405R	SW, FF	
S632	EVQ21405R	SW, DECK 1/2	
S633	EVQ21405R	SW, STOP(CD)	
S634	EVQ21405R	SW, PLAY(CD)	
S635	EVQ21405R	SW, PAUSE(CD)	
S636	EVQ21405R	SW, FWD. SKIP(CD)	
S637	EVQ21405R	SW, REV. SKIP(CD)	
S638	EVQ21405R	SW, OPEN/CLOSE(CD)	
S951	RSH1A89ZB-U	SW, MODE (DECK1)	
S952	RSH1A90YB-U	SW, HALF (DECK1)	
S953	RSH1A90YB-U	SW, ATS (DECK1)	
S971	RSH1A89ZB-U	SW, MODE (DECK2)	
S972	RSH1A90YB-U	SW, HALF (DECK2)	
S973	RSH1A90YB-U	SW, R. REC INHL (DECK2)	
S974	RSH1A90YB-U	SW, F.REC INHL (DECK2)	
S975	RSH1A90YB-U	SW, ATS (DECK2)	
S976	RSH1A90YB-U	SW, ATS (DECK2)	
		JACKS	
JK1	RJH5301	JACK, ANT TERMINAL	[M] (GN)
JK1	RJH8201	JACK, ANT TERMINAL	[M](E/EB/EG)
JK2	SJS208	JACK, LOOP ANT TERMINAL	
JK301	SJF3068N	JACK, RCA TERMINAL	
JK501	SJF5406-1	JACK, SP TERMINAL	[M]
JK503	SJS9236	JACK, AC INLET	⚠(E/EB/EG)
JK503	SJSD16	JACK, AC INLET	⚠ (GN)
JK521	RJJD7S2YA-C	JACK, HP	

 SA-CH33

Remarks
[M] (GN)
[M](E/EB/EG)
[M]
⚠(E/EB/EG)
⚠ (GN)

Ref. No	Part No.	Part Name & Description	Remarks
		CONNECTORS	
CN101	RHR196ZA	WIRE HOLDER(9P)	
CN103	RJS9T4ZA	MOLEX(9P)	
CN203	RHR194ZA	WIRE HOLDER(7P)	
CN204	RHR197ZA	WIRE HOLDER(10P)	
CN205	RHR195ZA	WIRE HOLDER(8P)	
CN501	RJU005A012	CONNECTOR SOCKET(12P)	
CN502	RJU005A012	CONNECTOR SOCKET(12P)	
CN504	RJP12G9YA	CONNECTOR(12P)	
CN505	RJS5T5ZA	MOLEX(5P)	
CN510	RJS1A1101T1	CONNECTOR	
CN511	RJS1A1101T1	CONNECTOR	
CN512	RJS1A1101T1	CONNECTOR	
CN513	RJS1A1101T1	CONNECTOR	
CN514	RJS1A1101T1	CONNECTOR	
CN515	RJS1A1101T1	CONNECTOR	
CN516	RJS1A1101T1	CONNECTOR	
CN517	RJS1A1101T1	CONNECTOR	
CN518	RJS1A1101T1	CONNECTOR	
CN519	RJS1A1101T1	CONNECTOR	
CN520	RJS1A1101T1	CONNECTOR	
CN521	RJS1A1101T1	CONNECTOR	
CN522	RJS1A1101T1	CONNECTOR	
CN604	RJU005A012	CONNECTOR(12P)	
CN605	RJU005A012	CONNECTOR(12P)	
CN606	RJU005A012	CONNECTOR(12P)	
CN621	RJS4T5ZA	MOLEX(4P)	
CN901	RJS1A6823	CONNECTOR (23P)	
CN921	RHR194ZA	CABLE HOLDER(7P)	
CN922	RHR194ZA	CABLE HOLDER(7P)	
CN951	RHR196ZA	CABLE HOLDER(9P)	
CN952	RHR196ZA	CABLE HOLDER(9P)	
CN953	RHR198ZA	CABLE HOLDER(11P)	
CN954	RHR198ZA	CABLE HOLDER(11P)	
CP1T	SJT30839MB	CONNECTOR(8P)	(E/EB/GN)
CP2T	SJT30739MB	CONNECTOR(6P)	(E/EB/GN)
CP101	RJP5G18ZA	CONNECTOR(5P)	
CP102	RJP4G18ZA	CONNECTOR(4P)	
CP501	RJT005W012	CONNECTOR(12P)	
CP502	RJT005W012	CONNECTOR(12P)	
CP604	RJT005W012	CONNECTOR(12P)	
CP605	RJT005W012	CONNECTOR(12P)	
CP606	RJT005W012	CONNECTOR(12P)	
CP790	RJP6G18ZA	CONNECTOR(6P)	

Ref. No	Part No.	Part Name & Description	Remarks
		EARTH TERMINALS	
E1	SNE1004-1	EARTH TERMINAL	(EG)
E2	SNE1004-1	EARTH TERMINAL	(EG)
E201	SNE1004-1	EARTH TERMINAL	
E501	SNE1004-1	EARTH TERMINAL	
		RELAY	
RLY501	RSY0007-C	RELAY	⚠
		< SERVO P.C.B. >	
		INTEGRATED CIRCUITS	
IC701	AN8800SCE2	IC, SERVO AMP.	
IC702	TCA0372DM2R	IC, SPINDLE MOTOR DR.	
IC703	AN8377N	IC, TRAVERSE MOTOR DR.	
IC704	MN6650	IC, DIGITAL SERVO PRO.	
IC705	MN6475	IC, DIGITAL FILTER	
IC706	MN6626	IC, DIGITAL SIGNAL PRO.	
IC709	TA7291S	IC, MOTOR DRIVE	
		TRANSISTOR	
Q701	2SB709	TRANSISTOR	
		DIODE	
D701	MA110TW	DIODE	
		VARIABLE RESISTOR	
VR701	EVNDXAA00B14	VR, BEST EYE ADJ.	
		OSCILLATOR	
X701	RSXZ33M8M01T	OSCILLATOR	
		SWITCHES	
S790	RSH1A005	SW, DISC TRAY CLOSE	
S791	RSH1A005	SW, DISC TRAY OPEN	

■ RESISTORS & CAPACITORS

Notes : * 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)

Ref. No.	Part No.	Values & Remarks
	RESISTORS	
R1T (E/EB/GN)	ERDS2TJ104T	100K 1/4W
R1 (E/EB/GN)	ERDS2TJ122T	1.2K 1/4W
R1 (EG)	ERDS2TJ272T	2.7K 1/4W
R2T (E/EB/GN)	ERDS2TJ104T	100K 1/4W
R2	ERDS2TJ684T	680K 1/4W
R3	ERDS2TJ122T	1.2K 1/4W
R3T (E/EB/GN)	ERDS2TJ470T	47 1/4W
R4T (E/EB/GN)	ERDS2TJ104T	100K 1/4W
R4	ERDS2TJ824T	820K 1/4W
R5	ERDS2TJ391T	390 1/4W
R5T (E/EB/GN)	ERDS2TJ564T	560K 1/4W
R6T (E/EB/GN)	ERDS2TJ391T	390 1/4W
R6	ERDS2TJ471T	470 1/4W
R7	ERDS2TJ103T	10K 1/4W
R7T (E/EB/GN)	ERDS2TJ272T	2.7K 1/4W
R8T (E/EB/GN)	ERDS2TJ681T	680 1/4W
R8	ERDS2TJ684T	680K 1/4W
R9	ERDS2TJ103T	10K 1/4W
R9T (E/EB/GN)	ERDS2TJ474T	470K 1/4W
R10	ERDS2TJ153T	15K 1/4W
R10T (E/EB/GN)	ERDS2TJ224T	220K 1/4W
R11	ERDS2TJ331T	330 1/4W
R11T (E/EB/GN)	ERDS2TJ391T	390 1/4W
R12T(E/EB/GN)	ERDS2TJ181T	180 1/4W
R12	ERDS2TJ332T	3.3K 1/4W
R13	ERDS2TJ102T	1K 1/4W
R14	ERDS2TJ822T	8.2K 1/4W
R15	ERDS2TJ222T	2.2K 1/4W
R16	ERDS2TJ561T	560 1/4W
R17	ERDS2TJ154T	150K 1/4W
R18	ERDS2TJ183T	18K 1/4W
R19	ERDS2TJ822T	8.2K 1/4W
R20	ERDS2TJ104T	100K 1/4W
R21	ERDS2TJ102T	1K 1/4W
R22	ERDS2TJ102T	1K 1/4W
R23	ERDS2TJ223T	22K 1/4W
R24	ERDS2TJ103T	10K 1/4W
R25	ERDS2TJ182T	1.8K 1/4W
R26	ERDS2TJ152T	1.5K 1/4W
R27	ERDS2TJ103T	10K 1/4W
R28	ERDS2TJ122T	1.2K 1/4W

Ref. No.	Part No.	Values & Remarks
R29	ERDS2TJ122T	1.2K 1/4W
R30	ERDS2TJ103T	10K 1/4W
R31	ERDS2TJ562T	5.6K 1/4W
R32	ERDS2TJ561T	560 1/4W
R33	ERDS2TJ102T	1K 1/4W
R37	ERDS2TJ151T	150 1/4W
R38	ERDS2TJ103T	10K 1/4W
R39	ERDS2TJ103T	10K 1/4W
R40	ERDS2TJ103T	10K 1/4W
R41	ERDS2TJ103T	10K 1/4W
R42	ERDS2TJ103T	10K 1/4W
R43	ERDS2TJ104T	100K 1/4W
R44	ERDS2TJ103T	10K 1/4W
R45	ERDS2TJ473T	47K 1/4W
R46	ERDS2TJ151T	150 1/4W
R47	ERDS2TJ103T	10K 1/4W
R48	ERDS2TJ333T	33K 1/4W
R49	ERDS2TJ223T	22K 1/4W
R50	ERDS2TJ223T	22K 1/4W
R51	ERDS2TJ224T	220K 1/4W
R52	ERDS2TJ473T	47K 1/4W
R53	ERDS2TJ473T	47K 1/4W
R55 (EG)	ERDS2TJ102T	1K 1/4W
R56	ERDS2TJ272T	2.7K 1/4W
R57	ERDS2TJ272T	2.7K 1/4W
R58	ERDS2TJ562T	5.6K 1/4W
R59	ERDS2TJ562T	5.6K 1/4W
R60	ERDS2TJ102T	1K 1/4W
R61	ERDS2TJ102T	1K 1/4W
R62	ERDS2TJ102T	1K 1/4W
R63	ERDS2TJ153T	15K 1/4W
R64	ERDS2TJ103T	10K 1/4W
R65	ERDS2TJ123T	12K 1/4W
R66	ERDS2TJ103T	10K 1/4W
R67	ERDS2TJ103T	10K 1/4W
R68	ERDS2TJ181T	180 1/4W
R71	ERDS2TJ104T	100K 1/4W
R72	ERDS2TJ824T	820K 1/4W
R73	ERDS2TJ472T	4.7K 1/4W
R74	ERDS2TJ822T	8.2K 1/4W
R75	ERDS2TJ562T	5.6K 1/4W
R76 (EG)	ERDS2TJ121T	120 1/4W
R101	ERDS2TJ334T	330K 1/4W
R102	ERDS2TJ104T	100K 1/4W

Ref. No.	Part No.	Values & Remarks
R103	ERDS2TJ123T	12K 1/4W
R104	ERDS2TJ123T	12K 1/4W
R105	ERDS2TJ181T	180 1/4W
R106	ERDS2TJ222T	2.2K 1/4W
R107	ERDS2TJ330T	33 1/4W
R108	ERDS2TJ330T	33 1/4W
R109	ERDS2TJ392T	3.9K 1/4W
R110	ERDS2TJ392T	3.9K 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	ERDS2TJ225T	2.2M 1/4W
R116	ERDS2TJ225T	2.2M 1/4W
R117	ERDS2TJ105T	1M 1/4W
R118	ERDS2TJ105T	1M 1/4W
R121	ERDS2TJ154T	150K 1/4W
R122	ERDS2TJ154T	150K 1/4W
R123	ERDS2TJ473T	47K 1/4W
R124	ERDS2TJ473T	47K 1/4W
R125	ERDS2TJ472T	4.7K 1/4W
R126	ERDS2TJ472T	4.7K 1/4W
R127	ERDS2TJ332T	3.3K 1/4W
R128	ERDS2TJ332T	3.3K 1/4W
R129	ERDS2TJ103T	10K 1/4W
R130	ERDS2TJ103T	10K 1/4W
R131	ERDS2TJ823T	82K 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

Ref. No
R154
R155
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Ref. No.	Part No.	Values & Remarks
R154	ERDS2TJ102T	1K 1/4W
R155	ERDS2TJ221T	220 1/4W
R156	ERDS2TJ221T	220 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
R169	ERDS2TJ102T	1K 1/4W
R170	ERDS2TJ102T	1K 1/4W
R172	ERDS2TJ331T	330 1/4W
R173	ERDS2TJ103T	10K 1/4W
R174	ERDS2TJ472T	4.7K 1/4W
R176	ERDS2TJ822T	8.2K 1/4W
R177	ERDS2TJ103T	10K 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
R200	ERDS2TJ221T	220 1/4W
R201	ERDS2TJ2R7T	2.7 1/4W
R202	ERDS2TJ562T	5.6K 1/4W
R203	ERDS2TJ153T	15K 1/4W
R204	ERDS2TJ123T	12K 1/4W
R205	ERDS2TJ334T	330K 1/4W
R206	ERDS2TJ221T	220 1/4W
R207	ERDS2TJ2R7T	2.7 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
R213	ERDS2TJ152T	1.5K 1/4W
R215	ERDS2TJ472T	4.7K 1/4W
R216	ERDS2TJ473T	47K 1/4W
R217	ERDS2TJ473T	47K 1/4W
R218	ERDS2TJ473T	47K 1/4W
R219	ERDS2TJ103T	10K 1/4W
R220	ERDS2TJ472T	4.7K 1/4W
R221	ERDS2TJ2R7T	2.7 1/4W

Ref. No.	Part No.	Values & Remarks
R222	ERDS2TJ473T	47K 1/4W
R223	ERDS2TJ472T	4.7K 1/4W
R224	ERDS2TJ103T	10K 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	ERDS2TJ472T	4.7K 1/4W
R232	ERDS2TJ102T	1K 1/4W
R233	ERDS2TJ222T	2.2K 1/4W
R234	ERDS2TJ472T	4.7K 1/4W
R235	ERDS2TJ104T	100K 1/4W
R236	ERDS2TJ104T	100K 1/4W
R237	ERDS2TJ100T	10 1/4W
R301	ERDS2TJ223T	22K 1/4W
R302	ERDS2TJ223T	22K 1/4W
R303	ERDS2TJ222T	2.2K 1/4W
R304	ERDS2TJ222T	2.2K 1/4W
R305	ERDS2TJ222T	2.2K 1/4W
R306	ERDS2TJ222T	2.2K 1/4W
R308	ERDS2TJ334T	330K 1/4W
R309	ERDS2TJ222T	2.2K 1/4W
R311	ERDS2TJ152T	1.5K 1/4W
R312	ERDS2TJ121T	120 1/4W
R313	ERDS2TJ682T	6.8K 1/4W
R314	ERDS2TJ682T	6.8K 1/4W
R315	ERDS2TJ273T	27K 1/4W
R316	ERDS2TJ273T	27K 1/4W
R317	ERDS2TJ562T	5.6K 1/4W
R318	ERDS2TJ562T	5.6K 1/4W
R319	ERDS2TJ223T	22K 1/4W
R320	ERDS2TJ223T	22K 1/4W
R321 (E/EB/GN)	ERDS2TJ222T	2.2K 1/4W
R321 (EG)	ERDS2TJ392T	3.9K 1/4W
R322 (E/EB/GN)	ERDS2TJ222T	2.2K 1/4W
R322 (EG)	ERDS2TJ392T	3.9K 1/4W
R323	ERDS2TJ103T	10K 1/4W
R324	ERDS2TJ103T	10K 1/4W
R325	ERDS2TJ392T	3.9K 1/4W
R326	ERDS2TJ105T	1M 1/4W
R327	ERDS2TJ153T	15K 1/4W
R328	ERDS2TJ153T	15K 1/4W
R329	ERDS2TJ154T	150K 1/4W
R330	ERDS2TJ154T	150K 1/4W
R339	ERDS2TJ332T	3.3K 1/4W
R340	ERDS2TJ332T	3.3K 1/4W

Ref. No.	Part No.	Values & Remarks
R341	ERDS2TJ103T	10K 1/4W
R342	ERDS2TJ104T	100K 1/4W
R343	ERDS2TJ103T	10K 1/4W
R344	ERDS2TJ472T	4.7K 1/4W
R359	ERDS2TJ122T	1.2K 1/4W
R360	ERDS2TJ122T	1.2K 1/4W
R364	ERDS2TJ183T	18K 1/4W
R371	ERDS2TJ102T	1K 1/4W
R372	ERDS2TJ102T	1K 1/4W
R373	ERDS2TJ103T	10K 1/4W
R374	ERDS2TJ103T	10K 1/4W
R376	ERDS2TJ103T	10K 1/4W
R377	ERDS2TJ222T	2.2K 1/4W
R379	ERDS2TJ104T	100K 1/4W
R380	ERDS2TJ104T	100K 1/4W
R381	ERDS2TJ392T	3.9K 1/4W
R382	ERDS2TJ103T	10K 1/4W
R383	ERDS2TJ103T	10K 1/4W
R384	ERDS2TJ823T	82K 1/4W
R389	ERDS2TJ822T	8.2K 1/4W
R390	ERDS2TJ272T	2.7K 1/4W
R391	ERDS2TJ332T	3.3K 1/4W
R392	ERDS2TJ103T	10K 1/4W
R393	ERDS2TJ103T	10K 1/4W
R394	ERDS2TJ103T	10K 1/4W
R395	ERDS2TJ103T	10K 1/4W
R397	ERDS2TJ563T	56K 1/4W
R398	ERDS2TJ563T	56K 1/4W
R401	ERDS2TJ181T	180 1/4W
R402	ERDS2TJ181T	180 1/4W
R403	ERDS2TJ181T	180 1/4W
R404	ERDS2TJ181T	180 1/4W
R451	ERDS2TJ273T	27K 1/4W
R452	ERDS2TJ273T	27K 1/4W
R453	ERDS2TJ102T	1K 1/4W
R454	ERDS2TJ102T	1K 1/4W
R455	ERDS2TJ222T	2.2K 1/4W
R456	ERDS2TJ222T	2.2K 1/4W
R457	ERDS2TJ821T	820 1/4W
R458	ERDS2TJ821T	820 1/4W
R459	ERDS2TJ102T	1K 1/4W
R460	ERDS2TJ102T	1K 1/4W
R461	ERDS2TJ101T	100 1/4W
R462	ERDS2TJ472T	4.7K 1/4W
R463	ERDS2TJ104T	100K 1/4W
R464	ERDS2TJ104T	100K 1/4W
R465	ERDS2TJ104T	100K 1/4W
R466	ERDS2TJ222T	2.2K 1/4W

Ref. No.	Part No.	Values & Remarks
R467	ERDS2TJ222T	2.2K 1/4W
R468	ERDS2TJ222T	2.2K 1/4W
R469	ERDS2TJ152T	1.5K 1/4W
R470	ERG1SJ100E	10 1W
R501	ERDS2TJ102T	1K 1/4W
R502	ERDS2TJ102T	1K 1/4W
R503	ERDS2TJ682T	6.8K 1/4W
R504	ERDS2TJ682T	6.8K 1/4W
R505	ERDS2TJ683T	68K 1/4W
R506	ERDS2TJ683T	68K 1/4W
R507	ERDS2TJ683T	68K 1/4W
R508	ERDS2TJ683T	68K 1/4W
R509	ERD25FVJ470T	47 1/4W
R511	ERDS2TJ563T	56K 1/4W
R512	ERDS2TJ103T	10K 1/4W
R513	ERDS2TJ1R0T	1 1/4W
R514	ERDS1FVJ272T	2.7K 1/2W ⚠
R515	ERDS1FVJ100T	10 1/2W ⚠
R516	ERDS1FVJ100T	10 1/2W ⚠
R517	ERDS2TJ100T	10 1/4W
R518	ERDS2TJ100T	10 1/4W
R519	ERDS2TJ334T	330K 1/4W
R521	ERDS1FVJ221T	220 1/2W ⚠
R522	ERDS1FVJ271T	270 1/2W ⚠
R523	ERDS2TJ272T	2.7K 1/4W
R524	ERD2FCG390	39 1/4W ⚠
R525	ERDS1FVJ100T	10 1/2W ⚠
R526	ERDS2TJ151T	150 1/4W
R527	ERDS1FVJ182T	1.8K 1/2W ⚠
R528	ERD2FCG390	39 1/4W ⚠
R529	ERDS2TJ151T	150 1/4W
R530	ERDS1FVJ152T	1.5K 1/2W ⚠
R531	ERDS2TJ102T	1K 1/4W
R532	ERDS2TJ153T	15K 1/4W
R533	ERDS2TJ183T	18K 1/4W
R534	ERDS2TJ562T	5.6K 1/4W
R535	ERDS1FVJ121T	120 1/2W ⚠
R536	ERDS1FVJ101T	100 1/2W ⚠
R537	ERDS2TJ103T	10K 1/4W
R538	ERDS2TJ103T	10K 1/4W
R539	ERDS2TJ472T	4.7K 1/4W
R540	ERDS2TJ472T	4.7K 1/4W
R542	ERDS2TJ152T	1.5K 1/4W
R543	ERDS2TJ472T	4.7K 1/4W
R544	ERDS2TJ1R0T	1 1/4W ⚠
R545	ERX1SJR22E	0.22 1W
R546	ERX1SJR22E	0.22 1W
R547	ERX1SJR22E	0.22 1W

Ref. No.	Part No.	Values & Remarks
R548	ERX1SJR22E	0.22 1W
R549	ERDS2TJ473T	47K 1/4W
R550	ERDS2TJ473T	47K 1/4W
R551	ERDS2TJ104T	100K 1/4W
R552	ERDS2TJ104T	100K 1/4W
R553	ERDS2TJ223T	22K 1/4W
R554	ERDS2TJ223T	22K 1/4W
R555	ERDS2TJ223T	22K 1/4W
R556	ERDS2TJ223T	22K 1/4W
R557	ERDS2TJ103T	10K 1/4W
R558	ERDS2TJ103T	10K 1/4W
R559	ERDS2TJ223T	22K 1/4W
R560	ERDS2TJ223T	22K 1/4W
R561	ERDS2TJ223T	22K 1/4W
R562	ERDS2TJ223T	22K 1/4W
R563	ERDS2TJ393T	39K 1/4W
R564	ERDS2TJ393T	39K 1/4W
R565	ERDS2TJ123T	12K 1/4W
R566	ERDS2TJ123T	12K 1/4W
R567	ERDS2TJ104T	100K 1/4W
R568	ERDS2TJ104T	100K 1/4W
R569	ERDS2TJ101T	100 1/4W
R570	ERDS2TJ101T	100 1/4W
R571	ERDS2TJ103T	10K 1/4W
R572	ERDS2TJ103T	10K 1/4W
R573	ERDS2TJ103T	10K 1/4W
R574	ERDS2TJ471T	470 1/4W
R575	ERDS2TJ152T	1.5K 1/4W
R576	ERD2FCJ4R7P	4.7 1/4W ⚠
R578	ERDS1FVJ470T	47 1/2W ⚠
R579	ERDS1FVJ470T	47 1/2W ⚠
R580	ERDS2TJ223T	22K 1/4W
R581	ERDS2TJ823T	82K 1/4W
R582	ERDS2TJ124T	120K 1/4W
R583	ERDS2TJ563T	56K 1/4W
R586	ERDS2TJ103T	10K 1/4W ⚠
R587	ERDS1FVJ121T	120 1/2W ⚠
R588	ERDS1FVJ4R7T	4.7 1/2W ⚠
R589	ERDS1FVJ4R7T	4.7 1/2W ⚠
R590	ERDS1FVJ4R7T	4.7 1/2W ⚠
R591	ERDS1FVJ4R7T	4.7 1/2W ⚠
R597	ERX12SJR27E	0.27 1/2W ⚠ [M]
R601	ERDS2TJ103T	10K 1/4W
R602	ERDS2TJ102T	1K 1/4W
R603	ERDS2TJ102T	1K 1/4W
R604	ERDS2TJ122T	1.2K 1/4W
R605	ERDS2TJ182T	1.8K 1/4W
R606	ERDS2TJ222T	2.2K 1/4W

Ref. No.	Part No.	Values & Remarks
R607	ERDS2TJ272T	2.7K 1/4W
R608	ERDS2TJ472T	4.7K 1/4W
R611	ERDS2TJ103T	10K 1/4W
R612	ERDS2TJ102T	1K 1/4W
R613	ERDS2TJ102T	1K 1/4W
R614	ERDS2TJ122T	1.2K 1/4W
R615	ERDS2TJ182T	1.8K 1/4W
R616	ERDS2TJ222T	2.2K 1/4W
R617	ERDS2TJ272T	2.7K 1/4W
R618	ERDS2TJ472T	4.7K 1/4W
R619	ERDS2TJ682T	6.8K 1/4W
R620	ERDS2TJ103T	10K 1/4W
R621	ERDS2TJ223T	22K 1/4W
R624	ERDS2TJ102T	1K 1/4W
R625	ERDS2TJ102T	1K 1/4W
R626	ERDS2TJ122T	1.2K 1/4W
R627	ERDS2TJ182T	1.8K 1/4W
R628	ERDS2TJ222T	2.2K 1/4W
R630	ERDS2TJ103T	10K 1/4W
R631	ERDS2TJ103T	10K 1/4W
R632	ERDS2TJ102T	1K 1/4W
R633	ERDS2TJ102T	1K 1/4W
R634	ERDS2TJ122T	1.2K 1/4W
R635	ERDS2TJ182T	1.8K 1/4W
R636	ERDS2TJ222T	2.2K 1/4W
R637	ERDS2TJ272T	2.7K 1/4W
R638	ERDS2TJ472T	4.7K 1/4W
R639	ERDS2TJ682T	6.8K 1/4W
R640	ERDS2TJ103T	10K 1/4W
R641	ERDS2TJ223T	22K 1/4W
R642	ERDS2TJ683T	68K 1/4W
R643	ERDS2TJ104T	100K 1/4W
R645	ERDS2TJ102T	1K 1/4W
R646	ERDS2TJ102T	1K 1/4W
R647	ERDS2TJ102T	1K 1/4W
R651	ERDS2TJ472T	4.7K 1/4W
R652	ERDS2TJ472T	4.7K 1/4W
R653	ERDS2TJ103T	10K 1/4W
R654	ERDS2TJ103T	10K 1/4W
R655	ERDS2TJ682T	6.8K 1/4W
R656	ERDS2TJ682T	6.8K 1/4W
R657	ERDS2TJ123T	12K 1/4W
R658	ERDS2TJ123T	12K 1/4W
R659	ERDS2TJ181T	180 1/4W
R660	ERDS2TJ181T	180 1/4W
R681	ERDS2TJ271T	270 1/4W
R682	ERDS2TJ271T	270 1/4W
R699	ERDS2TJ104T	100K 1/4W

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Ref. No.	Part No.	Values & Remarks
R801	ERDS2TJ102T	1K 1/4W
R802	ERDS2TJ102T	1K 1/4W
R803	ERDS2TJ472T	4.7K 1/4W
R804	ERDS2TJ472T	4.7K 1/4W
R805	ERDS2TJ103T	10K 1/4W
R806	ERDS2TJ103T	10K 1/4W
R807	ERDS2TJ153T	15K 1/4W
R808	ERDS2TJ153T	15K 1/4W
R809	ERDS2TJ104T	100K 1/4W
R810	ERDS2TJ104T	100K 1/4W
R815	ERDS2TJ182T	1.8K 1/4W
R816	ERDS2TJ182T	1.8K 1/4W
R817	ERDS2TJ683T	68K 1/4W
R818	ERDS2TJ683T	68K 1/4W
R819	ERDS2TJ682T	6.8K 1/4W
R820	ERDS2TJ682T	6.8K 1/4W
R821	ERDS2TJ105T	1M 1/4W
R823	ERDS2TJ474T	470K 1/4W
R824	ERDS2TJ102T	1K 1/4W
R825	ERDS2TJ472T	4.7K 1/4W
R826	ERDS2TJ472T	4.7K 1/4W
R827	ERDS2TJ182T	1.8K 1/4W
R828	ERDS2TJ182T	1.8K 1/4W
R829	ERDS2TJ473T	47K 1/4W
R830	ERDS2TJ473T	47K 1/4W
R831	ERDS2TJ102T	1K 1/4W
R832	ERDS2TJ102T	1K 1/4W
R833	ERDS2TJ332T	3.3K 1/4W
R835	ERDS2TJ222T	2.2K 1/4W
R836	ERDS2TJ222T	2.2K 1/4W
R837	ERDS2TJ105T	1M 1/4W
R838	ERDS2TJ334T	330K 1/4W
R840	ERDS2TJ472T	4.7K 1/4W
R841	ERDS2TJ152T	1.5K 1/4W
R842	ERDS2TJ473T	47K 1/4W
R843	ERDS2TJ223T	22K 1/4W
R844	ERDS2TJ223T	22K 1/4W
R900	ERDS2TJ103T	10K 1/4W
R901	ERDS2TJ331T	330 1/4W
R902	ERDS2TJ102T	1K 1/4W
R903	ERDS2TJ334T	330K 1/4W
R904	ERDS2TJ102T	1K 1/4W
R905	ERDS2TJ473T	47K 1/4W
R906	ERDS2TJ561T	560 1/4W
R907	ERDS2TJ104T	100K 1/4W
R908	ERDS2TJ104T	100K 1/4W
R909	ERDS2TJ472T	4.7K 1/4W
R910	ERDS2TJ472T	4.7K 1/4W

Ref. No.	Part No.	Values & Remarks
R911	ERDS2TJ472T	4.7K 1/4W
R912	ERDS2TJ472T	4.7K 1/4W
R913	ERDS2TJ472T	4.7K 1/4W
R914	ERDS2TJ472T	4.7K 1/4W
R915	ERDS2TJ224T	220K 1/4W
R916	ERDS2TJ104T	100K 1/4W
R917	ERDS2TJ104T	100K 1/4W
R918	ERDS2TJ103T	10K 1/4W
R919	ERDS2TJ103T	10K 1/4W
R920	ERDS2TJ472T	4.7K 1/4W
R921	ERDS2TJ103T	10K 1/4W
R922	ERDS2TJ682T	6.8K 1/4W
R923	ERDS2TJ103T	10K 1/4W
R924	ERDS2TJ2R7T	2.7 1/4W
R925	ERDS2TJ225T	2.2M 1/4W
R926	ERDS2TJ474T	470K 1/4W
R927	ERDS2TJ474T	470K 1/4W
R928	ERDS2TJ103T	10K 1/4W
R929	ERDS2TJ474T	470K 1/4W
R930	ERDS2TJ474T	470K 1/4W
R931	ERDS2TJ103T	10K 1/4W
R932	ERDS2TJ103T	10K 1/4W
R933	ERDS2TJ472T	4.7K 1/4W
R934	ERDS2TJ152T	1.5K 1/4W
R935	ERDS2TJ152T	1.5K 1/4W
R936	ERDS2TJ152T	1.5K 1/4W
R937	ERDS2TJ152T	1.5K 1/4W
R938	ERDS2TJ152T	1.5K 1/4W
R939	ERDS2TJ152T	1.5K 1/4W
R940	ERDS2TJ102T	1K 1/4W
R941	ERDS2TJ103T	10K 1/4W
R942	ERDS2TJ104T	100K 1/4W
R943	ERDS2TJ102T	1K 1/4W
R944	ERDS2TJ102T	1K 1/4W
R945	ERDS2TJ102T	1K 1/4W
R946	ERDS2TJ2R7T	2.7 1/4W
R947	ERDS2TJ102T	1K 1/4W
R948	ERDS2TJ104T	100K 1/4W
R950	ERDS2TJ102T	1K 1/4W
R951	ERDS2TJ102T	1K 1/4W
R952	ERDS2TJ105T	1M 1/4W
R953	ERDS2TJ102T	1K 1/4W
R954	ERDS2TJ822T	8.2K 1/4W
R955	ERDS2TJ224T	220K 1/4W
R956	ERDS2TJ103T	10K 1/4W
R957	ERDS2TJ103T	10K 1/4W
R958	ERDS2TJ104T	100K 1/4W
R959	ERDS2TJ104T	100K 1/4W

Ref. No.	Part No.	Values & Remarks
R960	ERDS2TJ104T	100K 1/4W
R961	ERDS2TJ2R7T	2.7 1/4W
R962	ERDS2TJ101T	100 1/4W
R963	ERDS2TJ101T	100 1/4W
R964	ERDS2TJ104T	100K 1/4W
R965	ERDS2TJ104T	100K 1/4W
R966	ERDS2TJ104T	100K 1/4W
R967	ERDS2TJ104T	100K 1/4W
R968	ERDS2TJ104T	100K 1/4W
R969	ERDS2TJ104T	100K 1/4W
R970	ERDS2TJ104T	100K 1/4W
R971	ERDS2TJ104T	100K 1/4W
R972	ERDS2TJ104T	100K 1/4W
R973	ERDS2TJ104T	100K 1/4W
R974	ERDS2TJ104T	100K 1/4W
R975	ERDS2TJ104T	100K 1/4W
R976	ERDS2TJ104T	100K 1/4W
R977	ERDS2TJ104T	100K 1/4W
R979	ERDS2TJ104T	100K 1/4W
R980	ERDS2TJ104T	100K 1/4W
R981	ERDS2TJ104T	100K 1/4W
R982	ERDS2TJ104T	100K 1/4W
R983	ERDS2TJ104T	100K 1/4W
R984	ERDS2TJ104T	100K 1/4W
R985	ERDS2TJ104T	100K 1/4W
R986	ERDS2TJ474T	470K 1/4W
R987	ERDS2TJ474T	470K 1/4W
R988	ERDS2TJ183T	18K 1/4W
R989	ERDS2TJ274T	270K 1/4W
R990	ERDS2TJ154T	150K 1/4W
R991	ERDS2TJ472T	4.7K 1/4W
R992	ERDS2TJ103T	10K 1/4W
R993	ERDS2TJ223T	22K 1/4W
R994	ERDS2TJ223T	22K 1/4W
R995	ERDS2TJ102T	1K 1/4W
R996	ERDS2TJ2R7T	2.7 1/4W
R997	ERDS2TJ104T	100K 1/4W
R998	ERDS2TJ104T	100K 1/4W
R999	ERDS2TJ104T	100K 1/4W
	CAPACITORS	
C1	ECBT1C103NS5	0.01 16V
C1T(E/EB/GN)	ECBT1H100JC5	10P 50V
C2	ECBT1C103NS5	0.01 16V
C2T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C3T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C3	ECBT1H470J5	47P 50V

Ref. No.	Part No.	Values & Remarks
C4	ECBT1H102KB5	0.001 50V
C4T(E/EB/GN)	ECBT1H3R3KC5	3.3P 50V
C5	ECBT1H150J5	15P 50V
C5T(E/EB/GN)	ECBT1H2R7KC5	2.7P 50V
C6	ECBT1C103NS5	0.01 16V
C6T(E/EB/GN)	ECBT1H3R3KC5	3.3P 50V
C7	ECEA1CU100B	10 16V
C7T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C8	ECBT1C103NS5	0.01 16V
C8T(E/EB/GN)	ECBT1H120JC5	12P 50V
C9	ECEA0JU101B	100 6.3V
C9T(E/EB/GN)	ECBT1H181KB5	180P 50V
C10	ECEA1CU100B	10 16V
C10T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C11	ECBT1H330J5	33P 50V
C11T(E/EB/GN)	ECBT1H6R8KC5	6.8P 50V
C12	ECKR1H223ZF5	0.022 50V
C12T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C13	ECKR1H223ZF5	0.022 50V
C13T(E/EB/GN)	ECBT1H3R3KC5	3.3P 50V
C14	ECBT1H100JC5	10P 50V
C14T(E/EB/GN)	ECBT1H180JC5	18P 50V
C15	ECBT1C103NS5	0.01 16V
C15T(E/EB/GN)	ECBT1C103NS5	0.01 16V
C16	ECEA1CU100B	10 16V
C16T(E/EB/GN)	ECBT1C103NS5	0.01 16V
C17	ECEA1HU010B	1 50V
C17T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C18	ECBT1C103NS5	0.01 16V
C18T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C19	ECEA1CU100B	10 16V
C19T(E/EB/GN)	ECBT1H102KB5	0.001 50V
C20	ECBT1H101KB5	100P 50V
C21	ECFR1C333MR	0.033 16V
C22	ECBT1C103NS5	0.01 16V
C23	ECBT0J223NS5	0.022 6.3V
C24	ECEA1CU100B	10 16V
C25	ECBT1H471KB5	470P 50V
C26	ECFR1C473KR	0.047 16V
C27	ECBT1H100JC5	10P 50V
C28	ECBT1C103NS5	0.01 16V
C29	ECBT1C103NS5	0.01 16V
C30	ECEA25M4R7RB	4.7 25V
C31	ECBT1C103NS5	0.01 16V
C34	ECEA1CU330B	33 16V
C35	ECBT1H150J5	15P 50V
C36	ECBT1H150J5	15P 50V
C37	ECBT1H102KB5	0.001 50V

Ref. No.	Part No.	Values & Remarks
C38	ECBT1H102KB5	0.001 50V
C39	ECEA0JU221B	220 6.3V
C40	ECBT1H181KB5	180P 50V
C41	ECBT1H102KB5	0.001 50V
C42	ECBT1H102KB5	0.001 50V
C43	ECEA1CU330B	33 16V
C50	ECEA1CU101B	100 16V
C52	ECBT1H102KB5	0.001 50V
C53	ECBT1H102KB5	0.001 50V
C54	ECEA1HU3R3B	3.3 50V
C55	ECEA1HU3R3B	3.3 50V
C56	ECFR1C392JR	3900P 16V
C57	ECFR1C392JR	3900P 16V
C58	ECFR1C822JR	8200P 16V
C59	ECFR1C822JR	8200P 16V
C61	ECEA1HUR47	0.47 50V
C62	ECEA1HU010B	1 50V
C63	ECEA1HU3R3B	3.3 50V
C64	ECQP2A471JZT	470P 100V
C65	ECEA1VU4R7B	4.7 35V
C66	ECQV1H473JZ3	0.047 50V
C71	ECBT1H104ZF5	0.1 50V
C101	ECBT1H102KB5	0.001 50V
C102	ECBT1H102KB5	0.001 50V
C103	ECBT1H681KB5	680P 50V
C104	ECFR1C223MR	0.022 16V
C105	ECBT1H471KB5	470P 50V
C106	ECBT1H471KB5	470P 50V
C107	ECBT1H681KB5	680P 50V
C108	ECEA1AU330B	33 10V
C109	ECEA1AU101B	100 10V
C111	ECBT1H471KB5	470P 50V
C112	ECBT1H471KB5	470P 50V
C113	ECEA0JU221B	220 6.3V
C114	ECEA0JU221B	220 6.3V
C115	ECFR1C333JR	0.033 16V
C116	ECFR1C333JR	0.033 16V
C117	ECEA1HK010B	1 50V
C118	ECEA1HU010B	1 50V
C119	ECEA1EU4R7B	4.7 25V
C120	ECEA1EU4R7B	4.7 25V
C121	ECEA1HU010B	1 50V
C122	ECEA1HU010B	1 50V
C123	ECBT1H102KB5	0.001 50V
C124	ECBT1H102KB5	0.001 50V
C125	ECFR1C473MR	0.047 16V
C126	ECFR1C473MR	0.047 16V
C127	ECBT1C332KR5	3300P 16V

Ref. No.	Part No.	Values & Remarks
C128	ECBT1C332KR5	3300P 16V
C129	ECBT1H151KB5	150P 50V
C130	ECBT1H151KB5	150P 50V
C131	ECBT1H221KB5	220P 50V
C132	ECBT1H221KB5	220P 50V
C133	ECEA1EU4R7B	4.7 25V
C134	ECEA1EU4R7B	4.7 25V
C135	ECBT1H102KB5	0.001 50V
C136	ECBT1H102KB5	0.001 50V
C137	ECFR1C183KR	0.018 16V
C138	ECFR1C183KR	0.018 16V
C139	ECEA1HU2R2B	2.2 50V
C140	ECEA1CU100B	10 16V
C141	ECEA1HU0R1B	0.1 50V
C142	ECFR1C223MR	0.022 16V
C143	ECEA1HU010B	1 50V
C144	ECEA1HU010B	1 50V
C145	ECEA1CU100B	10 16V
C146	ECEA1CU100B	10 16V
C150	ECEA1AU470B	47 10V
C151	ECEA1HU010B	1 50V
C152	ECEA1HU010B	1 50V
C153	ECBT1H331KB5	330P 50V
C154	ECBT1H331KB5	330P 50V
C155	ECEA1CU100B	10 16V
C156	ECEA1CU100B	10 16V
C157	ECBT1H681KB5	680P 50V
C158	ECBT1H681KB5	680P 50V
C159	ECBT1C682KR5	6800P 16V
C160	ECBT1C682KR5	6800P 16V
C161	ECEA1CU101B	100 16V
C162	ECA0JM471B	470P 6.3V
C163	ECEA1HU010B	1 50V
C164	ECEA1HK010B	1 50V
C165	ECEA1CK100B	10 16V
C166	ECEA1CU100B	10 16V
C167	ECEA50ZR68B	0.68 50V
C168	ECEA50ZR68B	0.68 50V
C169	ECEA1EU4R7B	4.7 25V
C170	ECEA1EU4R7B	4.7 25V
C171	ECEA0JKS470B	47 6.3V
C173	ECBT1C103MS5	0.01 16V
C174	ECEA1EU4R7B	4.7 25V
C175	ECEA1CU101B	100 16V
C176	ECQV1H473JZ3	0.047 50V
C177	ECBT1H102KB5	0.001 50V
C178	ECBT1H102KB5	0.001 50V
C179	ECBT1C103MS5	0.01 16V

Ref. N
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Ref. No.	Part No.	Values & Remarks
C180	ECFR1C103MR	0.01 16V
C181	ECBT1C103MS5	0.01 16V
C182	ECEA1EU4R7B	4.7 25V
C183	ECQV1H474JZ3	0.47 50V
C184	ECQP1152JZ	1500P 100V
C185	ECQP2A472JZ	4700P 100V
C186	ECEA1AU470B	47 10V
C187	ECBT1H101KB5	100P 50V
C188	ECBT1H101KB5	100P 50V
C189	ECQP1272JZ	2700P 100V
C190	ECBT1C103MS5	0.01 16V
C201	ECEA1CK101B	100 16V
C202	ECBT1H104ZF5	0.1 50V
C278	ECBT1H331KB5	330P 50V
C279	ECBT1H331KB5	330P 50V
C302	ECFR1E104ZF5	0.1 25V
C303	ECFR1E104ZF5	0.1 25V
C304	ECEA1EU4R7B	4.7 25V
C305	ECEA1HU3R3B	3.3 50V
C306	ECEA1HU3R3B	3.3 50V
C307	ECEA1HU3R3B	3.3 50V
C308	ECEA1HU3R3B	3.3 50V
C309	ECEA1CU100B	10 16V
C310	ECEA0JU101B	100 6.3V
C312	ECFR1E104ZF5	0.1 25V
C323	ECBT1H101KB5	100P 50V
C324	ECBT1H101KB5	100P 50V
C327	ECBT1H102KB5	0.001 50V
C328	ECBT1H102KB5	0.001 50V
C329	ECEA1HU010B	1 50V
C330	ECKR1H103ZF5	0.01 50V
C331	ECBT1H151KB5	150P 50V
C332	ECBT1H151KB5	150P 50V
C333	ECBT1H151KB5	150P 50V
C334	ECKR1H472KB5	4700P 50V
C335	ECKR1H472KB5	4700P 50V
C336	ECBT1H330J5	33P 50V
C337	ECBT1H330J5	33P 50V
C338	ECBT1H102KB5	0.001 50V
C341	ECEA1HU010B	1 50V
C342	ECEA1HU010B	1 50V
C344	ECBT1H102KB5	0.001 50V
C345	ECKR1H101KB5	100P 50V
C346	ECBT1H102KB5	0.001 50V
C347	ECBT1H102KB5	0.001 50V
C348	ECFR1E104ZF5	0.1 25V
C349	ECFR1E104ZF5	0.1 25V
C350	ECBT1H151KB5	150P 50V

Ref. No.	Part No.	Values & Remarks
C353	ECBT1H101KB5	100P 50V
C354	ECBT1H101KB5	100P 50V
C451	ECKR1H103ZF5	0.01 50V
C452	ECKR1H103ZF5	0.01 50V
C453	ECKR1H103ZF5	0.01 50V
C454	ECEA1AU101B	100 10V
C501	ECFR1E104ZF5	0.1 25V
C503	ECBT1H102KB5	0.001 50V
C504	ECBT1H102KB5	0.001 50V
C505	ECBT1H102KB5	0.001 50V
C506	ECBT1H102KB5	0.001 50V
C507	ECBT1H150JC5	15P 50V
C508	ECBT1H150JC5	15P 50V
C509	ECEA1HU220B	22 50V
C510	ECEA2AU100B	10 100V
C511	ECKR1H223ZF5	0.022 50V
C512	ECKR1H223ZF5	0.022 50V
C513	ECEA1HU010B	1 50V
C514	ECEA1HU010B	1 50V
C515	ECBT1E223ZF5	0.022 25V
C520	ECEA1CU101B	100 16V
C521	ECEA1CU101B	100 16V
C522	ECEA0JU101B	100 6.3V
C523	ECEA0JU101B	100 6.3V
C524	ECEA1EU4R7B	4.7 25V
C525	ECEA1EU4R7B	4.7 25V
C526	ECEA1HU010B	1 50V
C528	ECEA1AU101B	100 10V
C529	ECKR1H103ZF5	0.01 50V
C530	ECEA1HU222E	2200 50V ⚠
C531	ECKR1H103ZF5	0.01 50V ⚠
C532	ECKR1H103ZF5	0.01 50V ⚠
C533	ECKR1H103ZF5	0.01 50V ⚠
C534	ECKR1H103ZF5	0.01 50V ⚠
C535	ECEA1CU101B	100 16V
C536	ECBT1E103ZF5	0.01 25V ⚠
C537	ECEA1CU101B	100 16V
C538	ECKR1H103ZF5	0.01 50V
C539	ECKR1H103ZF5	0.01 50V
C540	ECEA1HU2R2B	2.2 50V
C541	ECEA1HU332UE	3300 50V ⚠
C542	ECEA1HU332UE	3300 50V ⚠
C543	ECQE1224JZ	0.22 100V
C544	ECBT1C103MS5	0.01 16V
C547	ECEA1HU330B	33 50V
C548	ECKR1H103ZF5	0.01 50V
C549	ECEA1HU101B	100 50V ⚠
C551	ECBT0J223MS5	0.022 6.3V

Ref. No.	Part No.	Values & Remarks
C552	ECBT0J223MS5	0.022 6.3V
C553	ECQV1H104JZ3	0.1 50V
C554	ECQV1H104JZ3	0.1 50V
C555	ECQV1H224JZ3	0.22 50V
C556	ECQV1H224JZ3	0.22 50V
C557	ECEA1HU3R3B	3.3 50V
C558	ECEA1HU3R3B	3.3 50V
C559	ECBT1C103MS5	0.01 16V
C560	ECBT1C103MS5	0.01 16V
C563	ECKR1H103ZF5	0.01 50V
C564	ECKR1H103ZF5	0.01 50V
C582	ECEA0JN101SB	100 6.3V
C601	ECBT1H561KB5	560P 50V
C602	ECBT1H561KB5	560P 50V
C603	ECBT1H561KB5	560P 50V
C604	ECBT1H561KB5	560P 50V
C651	ECEA1CU330B	33 16V
C652	ECEA1CU330B	33 16V
C653	ECBT1C682MR5	6800P 16V
C654	ECBT1C682MR5	6800P 16V
C655	ECBT1H471KBY	470P 50V
C656	ECBT1H471KBY	470P 50V
C657	ECFR1C223KR	0.022 16V
C658	ECFR1C223KR	0.022 16V
C659	ECBT1C152KR5	1500P 16V
C660	ECBT1C152KR5	1500P 16V
C661	ECFR1C683KR	0.068 16V
C662	ECFR1C683KR	0.068 16V
C663	ECBT1C472KR5	4700P 16V
C664	ECBT1C472KR5	4700P 16V
C665	ECEA1HUR22B	0.22 50V
C666	ECEA1HUR22B	0.22 50V
C667	ECFR1C153KR	0.015 16V
C668	ECFR1C153KR	0.015 16V
C669	ECEA1HKR68B	0.68 50V
C670	ECEA1HKR68B	0.68 50V
C671	ECFR1C473KR	0.047 16V
C672	ECFR1C473KR	0.047 16V
C673	ECEA1EU4R7B	4.7 25V
C674	ECEA1EU4R7B	4.7 25V
C675	ECEA1CU100B	10 16V
C676	ECEA1CU100B	10 16V
C677	ECBT1H101KB5	100P 50V
C678	ECBT1H101KB5	100P 50V
C679	ECBT1H101KB5	100P 50V
C680	ECBT1H101KB5	100P 50V
C681	ECEA1CU100B	10 16V
C682	ECEA1CU100B	10 16V

Ref. No.	Part No.	Values & Remarks
C801	ECEA1HU3R3B	3.3 50V
C802	ECEA1HU3R3B	3.3 50V
C803	ECKR1H103ZF5	0.01 50V
C804	ECEA1CU220B	22 16V
C805	ECEA1CU220B	22 16V
C806	ECEA1CU221B	220 16V
C807	ECEA1HUR33B	0.33 50V
C808	ECEA1HUR33B	0.33 50V
C809	ECBT1H100JC5	10P 50V
C810	ECBT1H100JC5	10P 50V
C811	ECEA1HU3R3B	3.3 50V
C812	ECEA1HU3R3B	3.3 50V
C813	ECKR1H103ZF5	0.01 50V
C814	ECKR1H103ZF5	0.01 50V
C815	ECEA1HKR68B	0.68 50V
C816	ECEA1HKR68B	0.68 50V
C817	ECEA1HUR22B	0.22 50V
C818	ECEA1HUR22B	0.22 50V
C819	ECEA1AU470B	47 10V
C820	ECEA1HU010B	1 50V
C821	ECFR1C473MR	0.047 16V
C822	ECFR1C473MR	0.047 16V
C823	ECEA1HKR68B	0.68 50V
C824	ECEA1HKR68B	0.68 50V
C827	ECEA1HU010B	1 50V
C829	ECBT1H102KB5	0.001 50V
C830	ECBT1H102KB5	0.001 50V
C901	ECBT1H102KB5	0.001 50V
C902	EECS5R5H473	47K 5.5V [M]
C903	ECEA0JU471B	470 6.3V
C904	ECBT1H102KB5	0.001 50V
C905	ECEA0JU101B	100 6.3V
C906	ECBT1H680J5	68P 50V
C907	ECBT1H680J5	68P 50V
C908	ECBT1H101KB5	100P 50V
C909	ECBT1H820KB5	82P 50V
C910	ECBT1H102KB5	0.001 50V
C911	ECBT1H102KB5	0.001 50V
C912	ECBT1H180JC5	18P 50V
C913	ECBT1H220JC5	22P 50V
C914	ECBT1H561KB5	560P 50V
C915	ECBT1H561KB5	560P 50V
C916	ECBT1H561KB5	560P 50V
C917	ECEA1HU010B	1 50V
C918	ECBT1C103MS5	0.01 16V
C919	ECEA1AU470B	47 10V
C920	ECBT1C103MS5	0.01 16V
C921	ECEA1AU220B	22 10V

Ref. No.	Part No.	Values & Remarks
C922	ECEA1HU010B	1 50V
C923	ECBT1C103MS5	0.01 16V
C924	ECBT1H102KB5	0.001 50V
C925	ECBT1H330J5	33P 50V
C926	ECEA1AU471B	470 10V
C927	ECBT1C103MS5	0.01 16V
C928	ECBT1H102KB5	0.001 50V
C929	ECEA1HU010B	1 50V
C930	ECFR1C683MR	0.068 16V
C931	ECFR1C683MR	0.068 16V
C936	ECBT1H102KB5	0.001 50V
C937	ECBT1H102KB5	0.001 50V
C938	ECBT1H102KB5	0.001 50V
C939	ECBT1H102KB5	0.001 50V
C943	ECBT0J223NS5	0.022 6.3V
C944	ECBT0J223NS5	0.022 6.3V
C945	ECBT1H102KB5	0.001 50V
C946	ECEA1CU100B	10 16V
C951	ECEA1HKS3R3B	3.3 50V
C952	ECEA1HKS3R3B	3.3 50V
C954	ECEA0JKS220	22 6.3V
C955	ECBT0J223NS5	0.022 6.3V
C956	ECBT0J223NS5	0.022 6.3V
C957	ECEA1HKS3R3B	3.3 50V
C958	ECEA1HKS3R3B	3.3 50V
C959	ECEA1HK010B	1 50V
C960	ECBT1H104ZF5	0.1 50V
C961	ECBT1C152KR5	1500P 16V
C962	ECEA0JKS101B	100 6.3V
C963	ECEA0JKS220	22 6.3V
C964	ECBT1C222MR5	2200P 16V
C965	ECBT1H151KB5	150P 50V
C966	ECBT1H151KB5	150P 50V
C967	ECEA1EU4R7B	4.7 25V
C968	ECBT1H331KB5	330P 50V
C969	ECBT1H331KB5	330P 50V
C970	ECBT0J223NS5	0.022 6.3V
C971	ECEA1EU4R7	4.7 25V
C972	ECEA1EU4R7	4.7 25V
C973	ECBT1H104ZF5	0.1 50V
C999	ECEA1CU471B	470 16V
	<SERVO P.C.B.>	
	RESISTORS	
R701	ERJ6GEYJ100	10 1/10W
R702	ERJ6GEYJ471V	470 1/10W
R703	ERJ6GEYJ102V	1K 1/10W

Ref. No.	Part No.	Values & Remarks
R704	ERJ6GEYJ103V	10K 1/10W
R706	ERJ6GEYJ473V	47K 1/10W
R707	ERJ6GEYJ222V	2.2K 1/10W
R708	ERJ6GEYJ683V	68K 1/10W
R709	ERJ6GEYJ122V	1.2K 1/10W
R710	ERJ6GEYJ182V	1.8K 1/10W
R711	ERJ6GEYJ473V	47K 1/10W
R712	ERJ6GEYJ471V	470 1/10W
R714	ERJ6GEYJ473V	47K 1/10W
R715	ERJ6GEYJ223V	22K 1/10W
R716	ERJ6GEYJ104V	100K 1/10W
R717	ERJ6GEYJ682V	6.8K 1/10W
R718	ERJ6GEYJ223V	22K 1/10W
R719	ERJ6GEYJ123V	12K 1/10W
R720	ERJ6GEYJ 273V	27K 1/10W
R721	ERJ6GEYJ823	82K 1/10W
R722	ERJ6GEYJ102V	1K 1/10W
R723,724	ERJ6GEYJ104V	100K 1/10W
R725	ERJ6GEYJ471V	470 1/10W
R726	ERJ6GEYJ102V	1K 1/10W
R729,730	ERJ6GEYJ102V	1K 1/10W
R731	ERJ8GEYJ470V	47 1/8W
R732	ERJ6GEYJ562V	5.6K 1/10W
R733	ERJ6GEYJ332V	3.3K 1/10W
R734	ERJ6GEYJ562V	5.6K 1/10W
R735	ERJ6GEYJ222V	2.2K 1/10W
R736	ERJ6GEYJ682V	6.8K 1/10W
R737-739	ERJ6GEYJ562V	5.6K 1/10W
R741-743	ERJ6GEYJ102V	1K 1/10W
R744	ERJ6GEYJ393V	39K 1/10W
R745,746	ERJ6GEYJ102V	1K 1/10W
R747	ERJ6GEYJ473V	47K 1/10W
R748	ERJ8GEYJ180V	18 1/8W
	CAPACITORS	
C701	ECEA0JKA220	22 6.3V
C702	ECEA0JKS470	47 6.3V
C703	ECEA0JKS101I	100 6.3V
C709	ECUV1C224KBM	0.22 16V
C710	ECUV1C104MBM	0.1 16V
C711	ECUV1E103MBN	0.01 25V
C713	ECEA1CSN4R7I	4.7 16V
C714	ECEA1HKS010	1 50V
C715	ECUV1H472KBN	4700P 50V
C716	ECUV1C473KBN	0.047 16V
C717	ECUV1H681KBN	680P 50V
C718	ECEA1AKS1011	100 10V

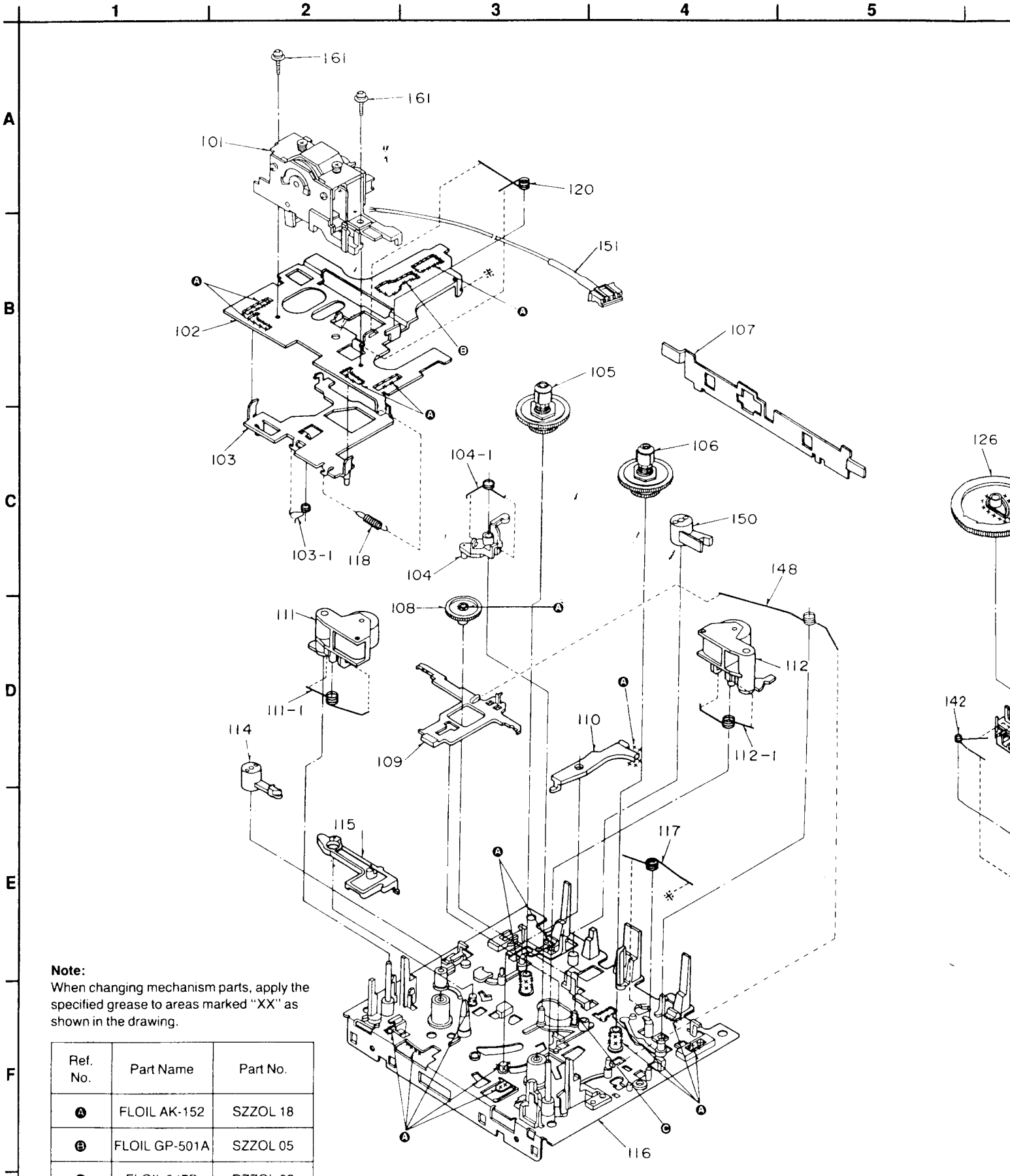
Ref. No.	Part No.	Values & Remarks
C719	ECUV1E103MBN	0.01 25V
C720	ECUV1E153MBN	0.015 25V
C721	ECUV1E103MBN	0.01 25V
C722	ECEA0JKS470	47 6.3V
C723	ECUV1C104MBM	0.1 16V
C724	ECUV1E333MBN	0.033 25V
C725	ECUV1E103MBN	0.01 25V
C726	ECUV1H471KBN	470P 50V
C727	ECEA0JKS470	47 6.3V
C728,729	ECUV1C104MBM	0.1 16V
C730	ECUV1C224KBM	0.22 16V
C731	ECEA0JKS331I	330 6.3V
C732	ECUV1H102MBN	1000P 50V
C733	ECEA0JKS101I	100 6.3V
C734	ECUV1E223MBN	0.022 25V
C735	ECUV1C224KBM	0.22 16V
C737	ECUV1C224KBM	0.22 16V
C738	ECEA0JKS101I	100 6.3V
C739	ECUV1E103MBN	0.01 25V
C740	ECUV1H472MBN	4700P 50V
C741	ECUV1C224KBM	0.22 16V
C742	ECUV1C104MBM	0.1 16V
C743	ECEA0JKS331I	330 6.3V
C744,745	ECUV1H102KBN	1000P 50V
C746	ECEA0JKS101I	100 6.3V
C747	ECUV1C104MBM	0.1 16V
C748	ECEA1HKS010	1 50V
C749	ECUV1E103MBN	0.01 25V
C750	ECUV1H050DCN	5P 50V
C751	ECUV1C224KBM	0.22 16V
C752	ECUV1C104MBM	0.1 16V
C753,754	ECEA1HKS010	1 50V
C755	ECUV1C104MBM	0.1 16V
C756,757	ECUV1H050DCN	5P 50V
C758	ECUV1C224KBM	0.22 16V
C763	ECUV1E103MBN	0.01 25V

MECHANISM PARTS LOCATION

Notes : [M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST	
		DECK 1	
101	RXQ0051-2	HEAD BLOCK (PLAYBACK)	
102	RUA793ZF	HEAD PANEL	
103	RUB501ZB	ROD	
103-1	RUW143ZA	SPRING	
104	1UB0089ZA	ARM	
104-1	RUW148ZA	SPRING	
105	1DM0018ZA	REEL TABLE (R)	
106	1DM0017ZA	REEL TABLE (F)	
107	RML0069-1	LEVER	
108	RDG5772ZC	GEAR	
109	RUB508ZA	BRAKE ROD	
110	RUB506ZA	LEVER	
111	1UB0088ZA	ARM (R)	
111-1	RUW141ZA	SPRING	
112	1UB0087ZA	ARM (F)	
112-1	RUW140ZA	SPRING	
114	RNL1ZD	DAMPER ARM A	
115	RUB503ZD	MAIN LEVER	
116	RUA792XE	CHASSIS	[M]
117	RUW142ZA	SPRING	
118	RUD105ZA	SPRING	
120	RUW139ZA	SPRING	
121	RFM133ZA	DC MOTOR	
122	1UE0015ZA	PLUNGER	
123	RUB428ZE	MOVING IRON CORE	
124	RUL1030ZE	FW BRACKET	[M]
125	RMD5014ZC	FW SUPPORT BASE	
126	RDG5927ZG	GEAR	
127	1DW0037ZA	FLYWHEEL (F) ASSY	
127-1	RNW139ZA	WASHER	
128	1DW0038ZA	FLYWHEEL (R) ASSY	
128-1	RNW138ZA	WASHER	
129	1DG0006ZA	REEL TABLE GEAR	
130	RUB513ZD	ARM	
131	1UB0091ZA	LEVER	
131-1	RUW146ZA	SPRING	
132	1DR0011ZA	MAIN PULLEY	
133	RDV90ZB	BELT	
134	RDG5769ZA	REEL TABLE GEAR	
135	RUQ111ZB	SPRING	
136	RUW145ZA	SPRING	
137	1UB0090ZA	ROD	
137-1	RUB512ZB	FF ROD	
138	RDG5773ZA	GEAR	
139	RUQ112ZA	SPRING	
140	RUS609ZC	TAPE PRESSURE SPRING	
141	RUB514ZC	LEVER	
142	RUW147ZA	SPRING	
143	RUB515ZA	LEVER	
144	RUB509ZA	LEVER	
145	RDV108ZA	CAPSTAN BELT	
148	RUW144ZA	SPRING	
149	RHG3032ZA	RUBBER CUSHION	
150	RNL180ZB	DAMPER ARM B	
151	REX0450	LEAD WIRE BLOCK (4P)	[M]
161	XTW2+6L	SCREW	
163	XTN26+7J	SCREW	
164	RHE5203ZA	SCREW	
165	XTW2+8S	SCREW	
166	XYC2+JF16	SCREW	
167	RHD26002	SCREW	
168	RJS10T7ZA	CONNECTOR (10P) , J971	

■ MECHANISM PARTS LOCATION • Deck 1

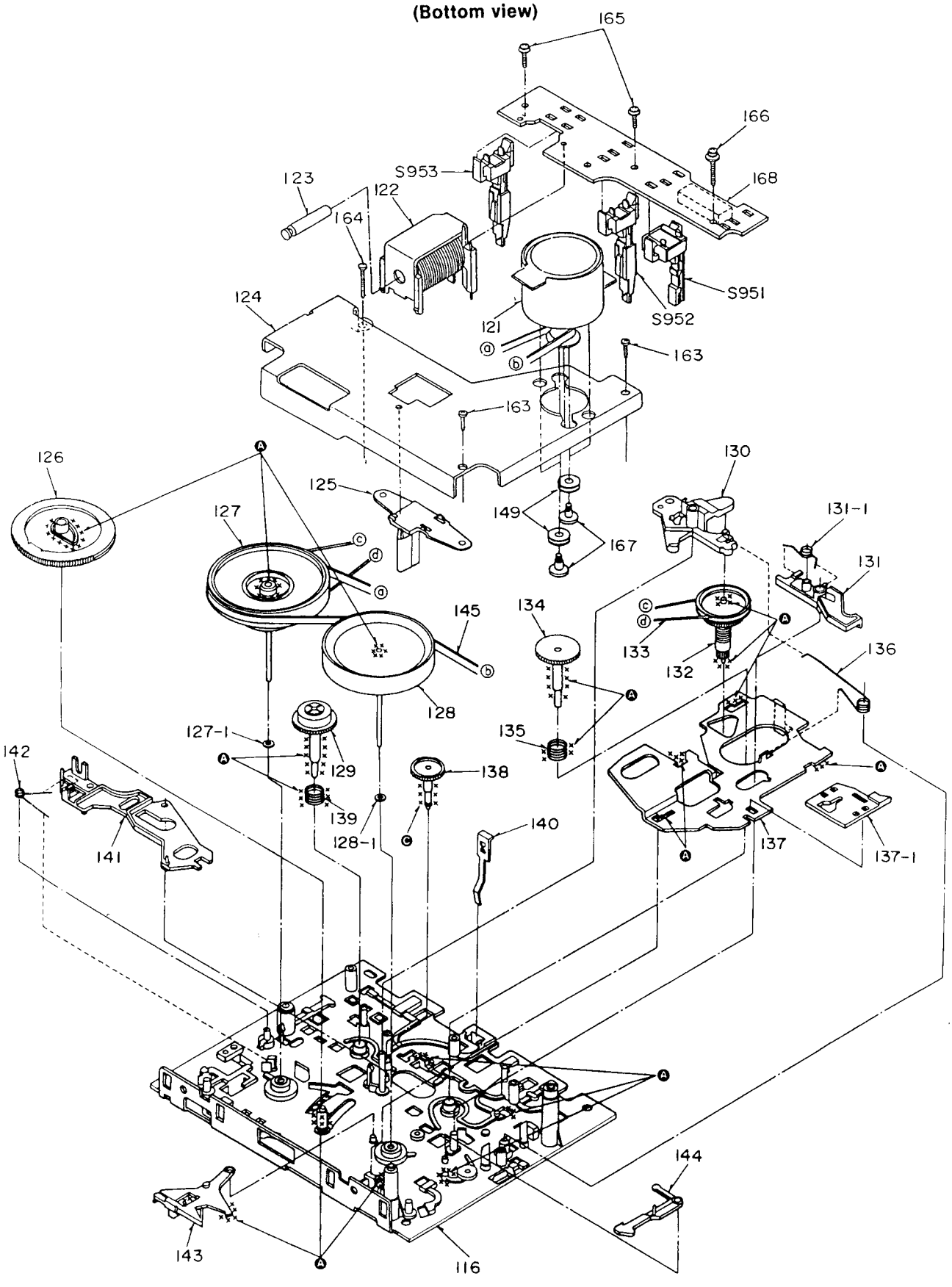


Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

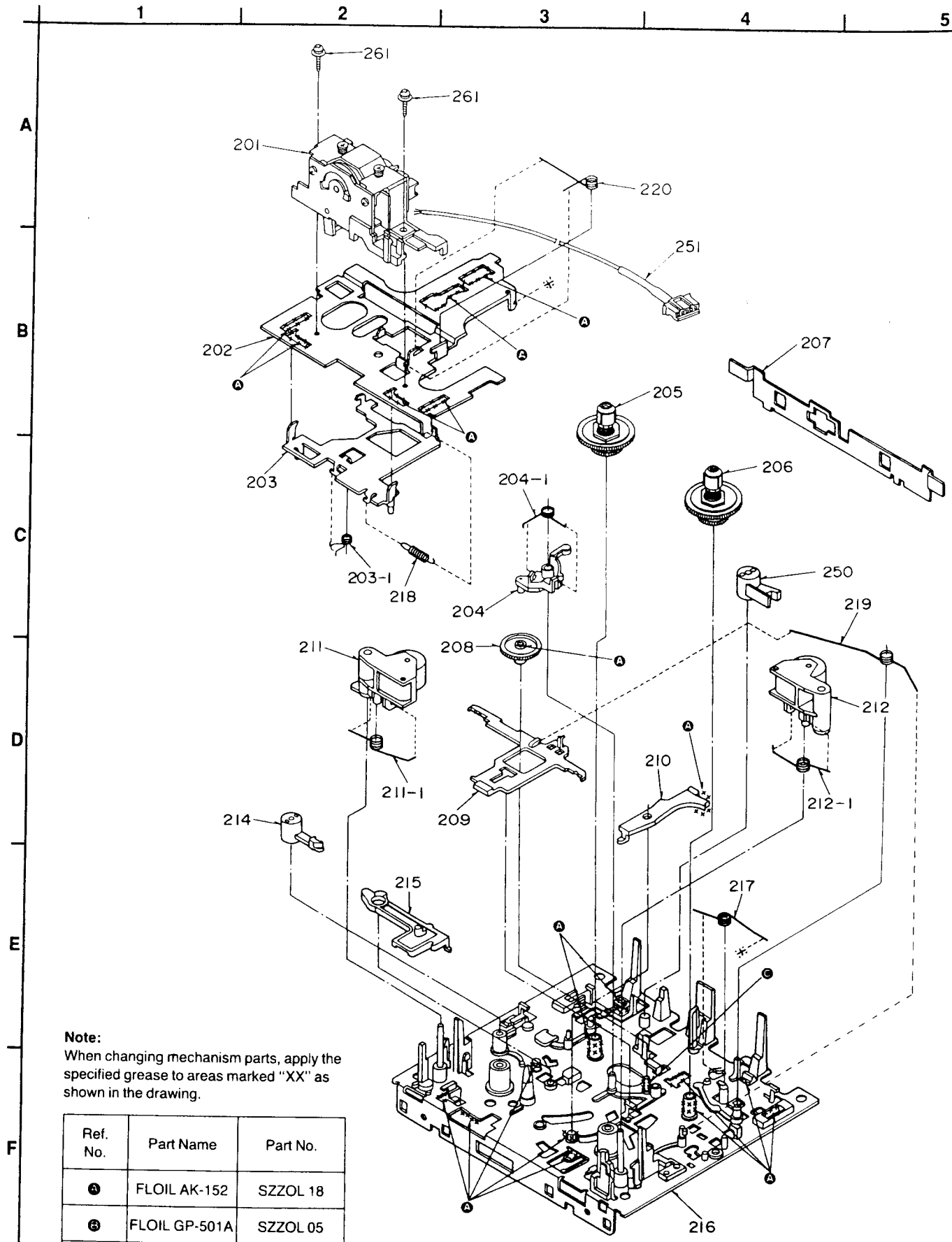
Ref. No.	Part Name	Part No.
Ⓐ	FLOIL AK-152	SZZOL 18
Ⓑ	FLOIL GP-501A	SZZOL 05
Ⓒ	FLOIL 947P	RZZOL 02

6 7 8 9 10

(Bottom view)



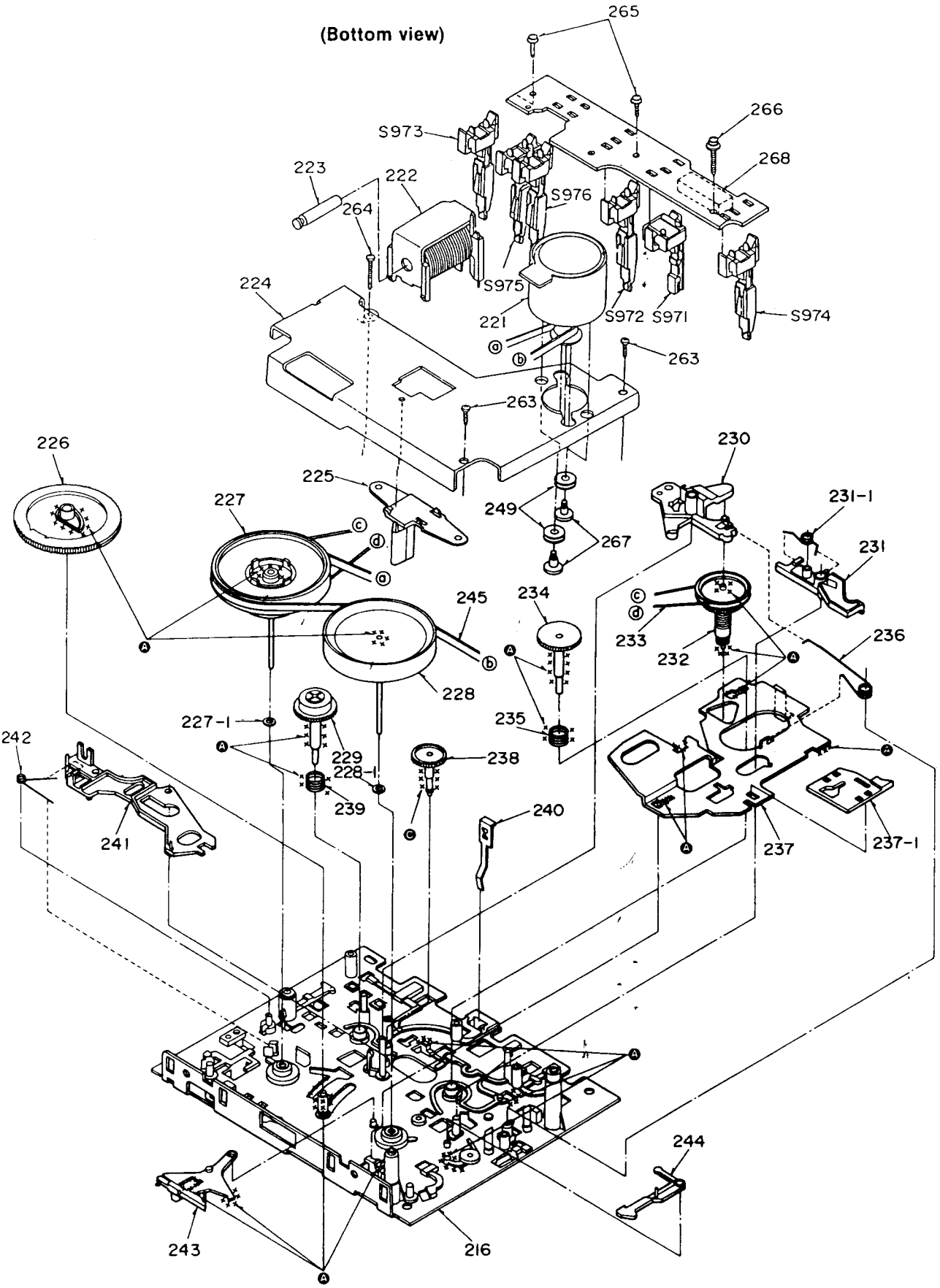
■ MECHANISM PARTS LOCATION • Deck 2



Note:
When changing mechanism parts, apply the specified grease to areas marked "XX" as shown in the drawing.

Ref. No.	Part Name	Part No.
Ⓐ	FLOIL AK-152	SZZOL 18
Ⓑ	FLOIL GP-501A	SZZOL 05
Ⓒ	FLOIL 947P	RZZOL 02

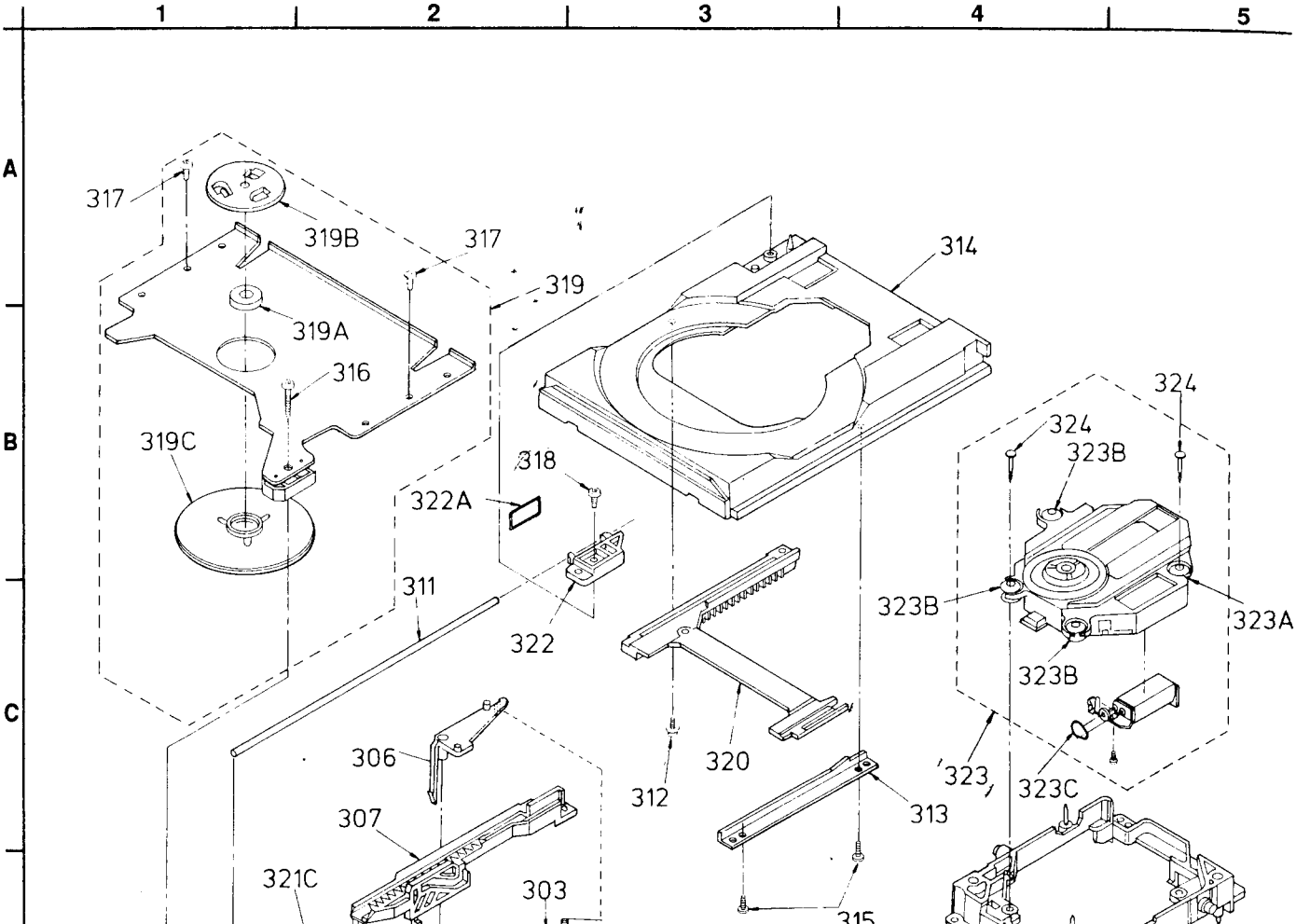
5 | 6 | 7 | 8 | 9 | 10


(Bottom view)
265
266
S973
268
223
222
S976
264
224
S975
S972
S971
S974
221
263
263
226
230
225
227
249
231-1
267
231
245
234
233
232
236
228
227-1
235
242
229
238
228-1
239
240
241
237
237-1
244
243
216

Ref. No	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS LIST	
		DECK 2	
201	RXQ0007-2	HEAD BLOCK (REC. / PB.)	
202	RUA793ZF	HEAD PANEL	
203	RUB501ZB	ROD	
203-1	RUW143ZA	SPRING	
204	1UB0089ZA	ARM	
204-1	RUW148ZA	SPRING	
205	1DM0018ZA	REEL TABLE (R)	
206	1DM0017ZA	REEL TABLE (F)	
207	RML0069-1	LEVER	
208	RDG5772ZC	GEAR	
209	RUB508ZA	BRAKE ROD	
210	RUB506ZA	LEVER	
211	1UB0088ZA	ARM (R)	
211-1	RUW141ZA	SPRING	
212	1UB0087ZA	ARM (F)	
212-1	RUW140ZA	SPRING	
214	RNL1ZD	DAMPER ARM A	
215	RUB503ZD	MAIN LEVER	
216 ★	RUA792XE	CHASSIS	[M]
217	RUW142ZA	SPRING	
218	RUD105ZA	SPRING	
219	RUW144ZA	SPRING	
220	RUW139ZA	SPRING	
221	RFM133ZA	DC MOTOR	
222	1UE0015ZA	PLUNGER	
223	RUB428ZE	MOVING IRON CORE	
224	RUL1030ZE	FW BRACKET	[M]
225	RMD5014ZC	FW SUPPORT BASE	
226	RDG5927ZG	GEAR	
227	1DW0037ZA	FLYWHEEL (F) ASSY	
227-1	RNW139ZA	WASHER	
228	1DW0038ZA	FLYWHEEL (R) ASSY	
228-1	RNW138ZA	WASHER	
229	1DG0006ZA	REEL TABLE GEAR	
230	RUB513ZD	ARM	
231	1UB0091ZA	LEVER	
231-1	RUW146ZA	SPRING	
232	1DR0011ZA	MAIN PULLEY	
233	RDV90ZB	BELT	
234	RDG5769ZA	REEL TABLE GEAR	
235	RUQ111ZB	SPRING	
236	RUW145ZA	SPRING	
237	1UB0090ZA	ROD	

Ref. No	Part No.	Part Name & Description	Remarks
237-1	RUB512ZB	FF ROD	
238	RDG5773ZA	GEAR	
239	RUQ112ZA	SPRING	
240	RUS609ZC	TAPE PRESSURE SPRING	
241	RUB514ZC	LEVER	
242	RUW147ZA	SPRING	
243	RUB515ZA	LEVER	
244	RUB509ZA	LEVER	
245	RDV108ZA	CAPSTAN BELT	
249	RHG3032ZA	RUBBER CUSHION	
250	RNL180ZB	DAMPER ARM B	
251	REX0305	LEAD WIRE BLOCK (5P)	[M]
261	XTW2+6L	SCREW	
263	XTN26+7J	SCREW	
264	RHE5203ZA	SCREW	
265	XTW2+8S	SCREW	
266	XYC2+JF16	SCREW	
267	RHD26002	SCREW	
268	RJS10T7ZA	CONNECTOR (10P) , J971	

■ TRAVERSE DECK LOCATION

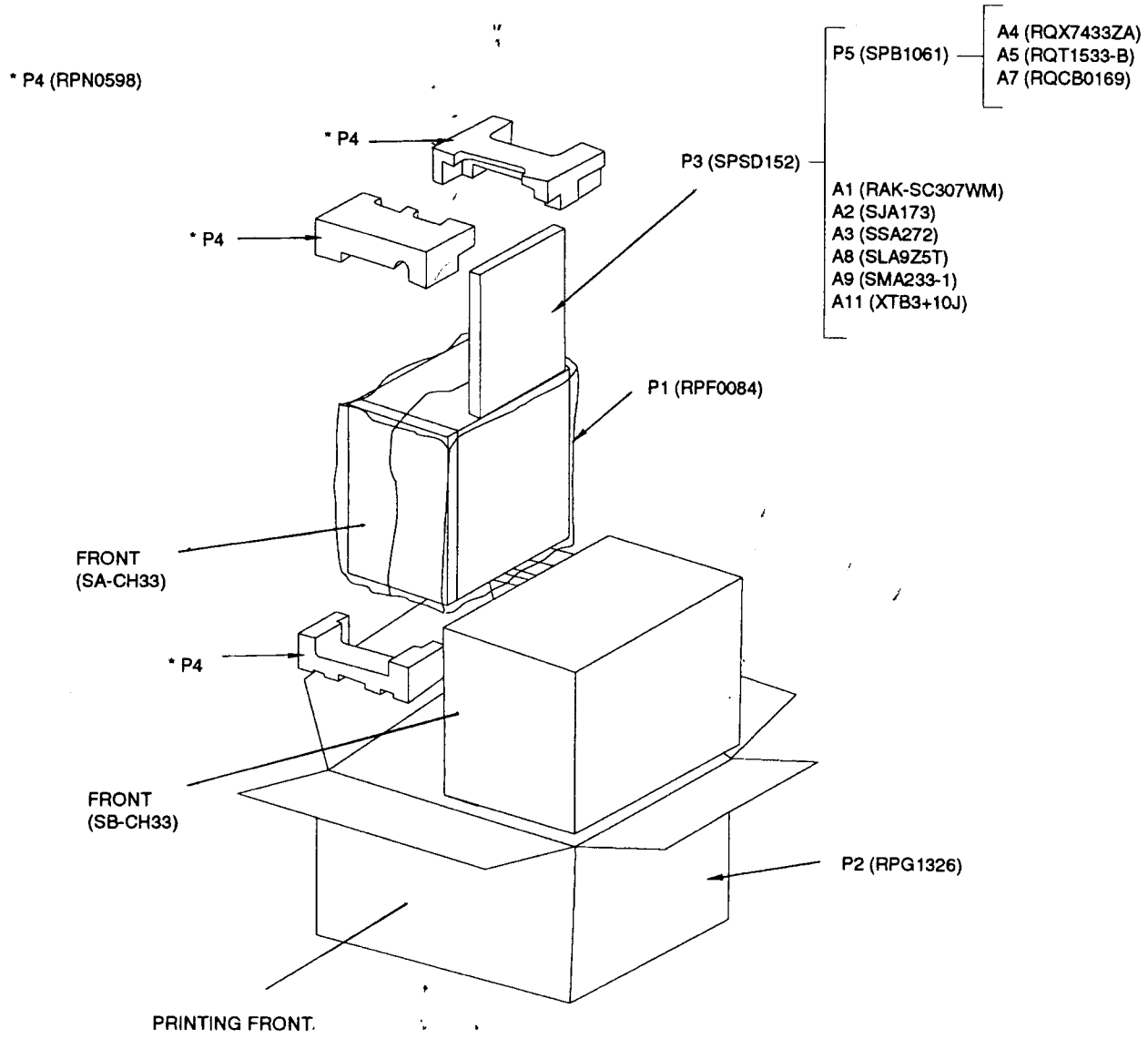


■ REPLACEMENT PARTS LIST

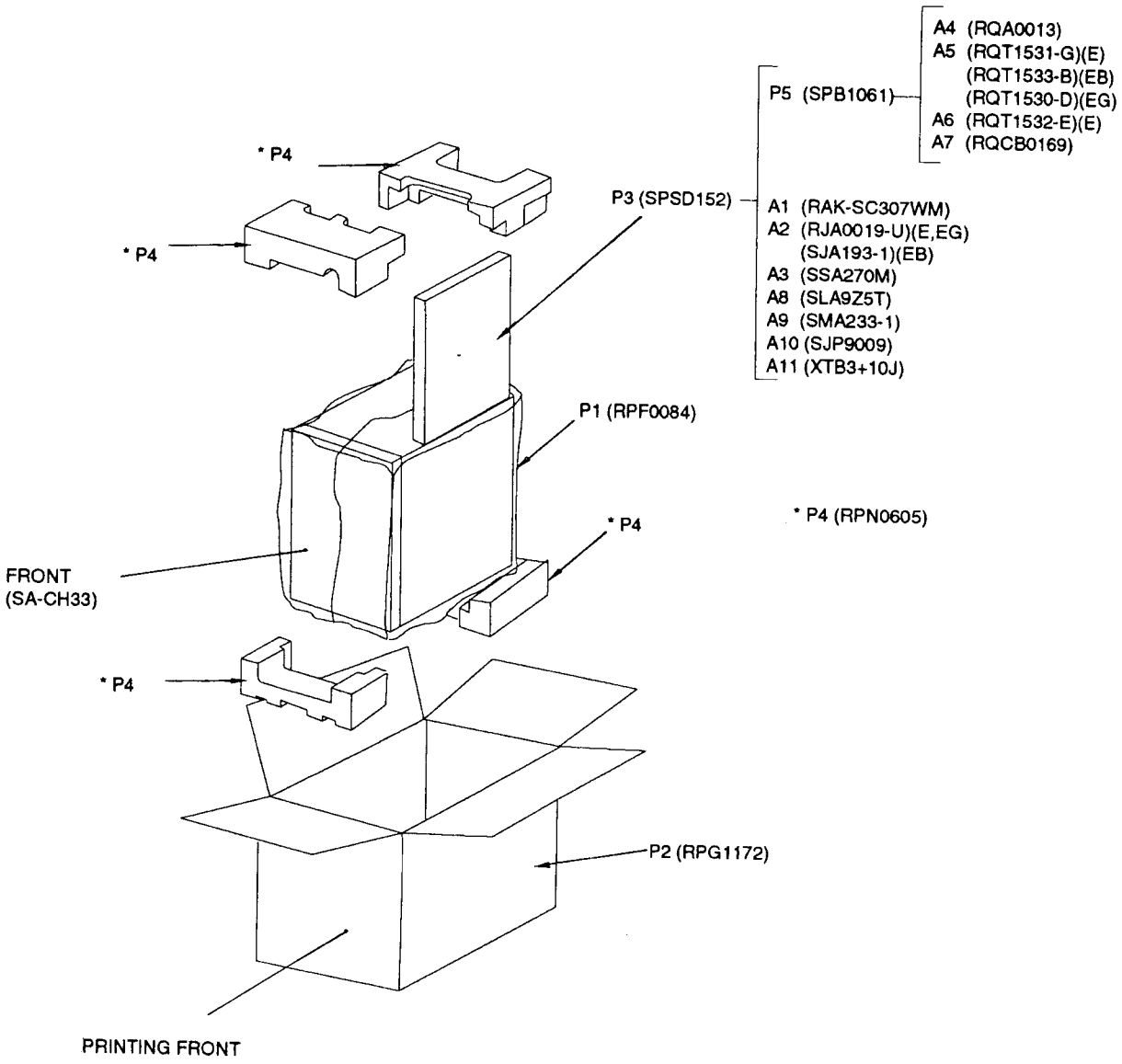
Notes : * Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
* The parenthesized indications in the Remarks columns specify the areas. (refer to the cover page for area.)
Parts without these indications can be used for all areas.
[M] Indicates in Remarks columns parts that are supplied by MESA.

Ref. No	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK	
301	REM0019	MOTOR ASS'Y	
302	RMK0105	CHASSIS	
303	RME0063	SPRING	
304	RMG0158	BELT	
305	RML0177	LEVER	
306	RML0178	LEVER	
307	RMM0058	SLIDE PLATE	
308	XTN26+6G	SCREW	
309	XYN2+F6FZ	SCREW	
310	RHD20012	SCREW	
311	RMU0046	SHAFT	
312	RHD20009-1	SCREW	
313	RMA0328	GUIDE	
314	RMK0103	TRAY	
315	XTN2+8G	SCREW	
316	XTB3+25GFZ	SCREW	
317	XTN26+6G	SCREW	
318	XTN3+8JFZ	SCREW	
319	RXQ0122	DISC CLAMPER ASS'Y	
319A	RHM245ZA	MAGNET	
319B	RMR0334	MAGNET HOLDER	
319C	RXQ0123	DISC PAD	
320	RFKNLDN7N-K	DRIVE GEAR (2) ASS'Y	
321	RFKJXDT77-H	MECHANICAL CHASSIS ASS'Y	
321A	RDG0142	GEAR	
321B	RDG0143	GEAR	
321C	RDP0041	PULLEY	
321D	SDRD14	ROLLER	
322	RFKNXDT77C-H	SHAFT HOLDER	
322A	RMG0159	RUBBER	
323	SODD110Z	TRAVERSE UNIT	
323A	SHGD112	RUBBER A	
323B	SHGD113-1	RUBBER B	
323C	RDV0014	BELT	
324	RMS0123-1	PIN	
325	RMM0059	SLIDE PLATE	
326	XTV26+6G	SCREW	
327	RME0087	SPRING	
328	REE0217-1	CABLE ASS'Y	
329	RJP2G17ZA	CONNECTOR (CP701, CP702)	
330	RJP4G17ZA	CONNECTOR (CP703)	
331	RJP6G17ZA	CONNECTOR (CP790)	
332	RJU035T016-1	CONNECTOR (CS701)	
333	RJS1A6723-1Q	CONNECTOR (CS702)	
		PACKING MATERIALS	
A1	RAK-SC307WM	REMOTE CONTROL UNIT	[M]
A1-1	RKK0008-KE	BATTERY COVER	[M]
A2	RJA0019-U	AC CORD	[M](E/EG) ⚠
A2	SJA193-1	AC CORD	(EB) ⚠
A2	SJA173	AC CORD	(GN) ⚠
A3	SSA270M	FM ANT	(E,EB,EG)
A3	SSA272	FM ANT	(GN)
A4	RQA0013	GUARANTEE CARD	(E,EB,EG)
A4	RQX7433ZA	GUARANTEE CARD	(GN)
A5	RQT1531-G	INST. MNL. (ENG/ESP/FRN)	[M] (E)
A5	RQT1533-B	INSTRUCTION MANUAL	[M](EB,GN)
A5	RQT1530-D	INSTRUCTION MANUAL	[M] (EG)
A6	RQT1532-E	INST. MNL. (DEU/NED/SVN)	[M] (E)
A7	RQCB0169	SERVICE CENTER LIST	
A8	SLA9Z5T	LOOP ANT	[M]
A9	SMA233-1	ANT HOLDER	
A10	SJP9009	ANT ADAPTOR	(EB)
A11	XTB3+10J	SCREW	
		ACCESSORIES	
P1	RPF0084	BAG(SET)	[M]
P2	RPG1172	GIFT BOX	[M](E,EB,EG)
P2	RPG1326	GIFT BOX	[M] (GN)
P3	SPSD152	ACCESSORY CASE	
P4	RPN0605	POLYFOAM	[M](E,EB,EG)
P4	RPN0598	POLYFOAM	[M] (GN)
P5	SPB1061	VINYL BAG	

■ PACKING (SC-CH33GN)



• SA-CH33 (E,EB,EG)



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