ORDER NO. AD9402032C2

Service Manual

Portable Stereo CD System

Radio Cassette

RX-DS35

COMPACT disc DIGITAL AUDIO

*MASH multi-stage noise shaping

Colour

(K) . . . .Black Type

Areas

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

TAPE DECK: AR300 MECHANISM SERIES
TRAVERSE DECK: RAE0113Z MECHANISM SERIES

■ SPECIFICATIONS

General:

Power Requirement:	AC; 230~240 V, 50 Hz Battery; 12 V (Eight R20/LR20, UM-1 batteries) Memory Back-up for Computer/Clock; 6 V (Four R6/LR6, UM-3 batteries)
Power Consumption:	40 W (AC only)
Power Output:	40 W (PMPO)
Speaker:	10 cm PM Dynamic speaker 2.7Ω
Input:	MIX MIC; 5 mV, 200~600Ω, Ø3.5
Output:	HEADPHONES; 32Ω, Ø3.5
Dimensions:	450 (W)×187 (H)×266 (D) mm
Weight:	4.4 kg without batteries

CD Player:

Sampling Frequency:	44.1 kHz
Decording:	16-bit linear
Beam Source:	Semiconductor laser (wavelength 780 nm)
No. of Channels:	2 channels, stereo
Frequency Range:	20~20,000 Hz (+1/−2 dB)
Dynamic Range:	78.0 dB
S/N Ration:	76.5 dB
Wow and Flutter:	Less than possible measurement data
D/A Converter:	MASH (1 bit DAC)

Radio:

Frequency Range:	FM; 87.5~108.0 MHz (50 kHz step) LW; 144~288 kHz (9 kHz step) MW; 522~1611 kHz (9 kHz step)
Intermediate Frequency:	FM; 10.7 MHz LW/MW; 459 kHz
Sensitivity:	FM; 3.1 µV/0.5 mW H.P. output (−3 dB Limit Sens.) LW; 158 µV/m/0.5 mW H.P.output (Max.) MW; 141 µV/m/0.5 mW H.P. output (Max.)

Tape Recorder:

Frequency Range:	Normal; 40~16,000 Hz
Recording System:	AC bias, AC erase
Tape Speed:	4.8 cm/s
Monitor System:	Variable sound monitor
Track System:	4-track 2-channel stereo recording and playback

***MASH is a trademark of NTT.**

Notes:

1. Weights and dimensions shown are approximate.
2. Design and specifications are subject to change without notice.

Panasonic

■ Contents

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

■ Precaution of Laser Diode

CAUTION: This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pick up lens.

Wave length: 780 nm
Maximum output radiation power from pick up: 100 µW/VDE

Laser radiation from the pick up lens is safety level, but be sure the followings:

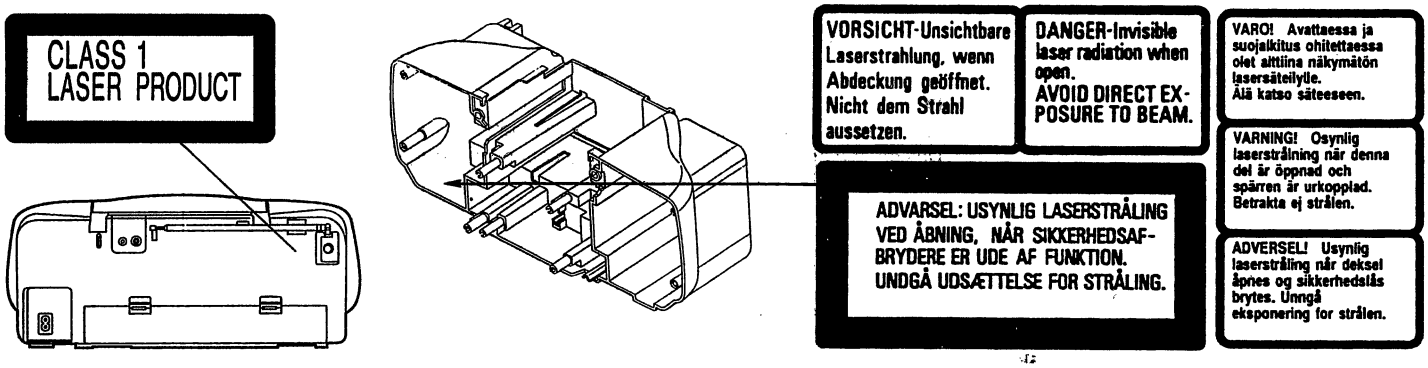
1. Do not disassemble the optical pick up unit, since radiation from exposed laserd diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pick up lens for a long time.

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

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

Die strahlung an der lasereinheit ist ungefährlich, wenn folgende punkte beachtet werden:

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdiode gefährlich ist.
2. Den 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.



■ Caution for AC Mains Lead [for (EB) area]

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark ⓐ or the BSI mark ⓚ on the body of the fuse.

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

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

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

IMPORTANT

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

Blue: Neutral
Brown: Live

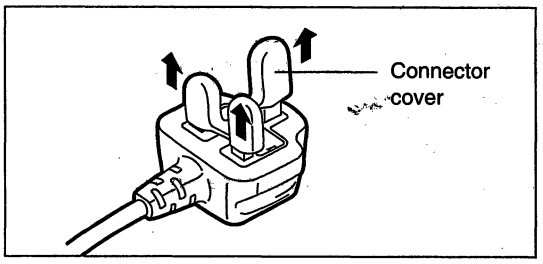
As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:
The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

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

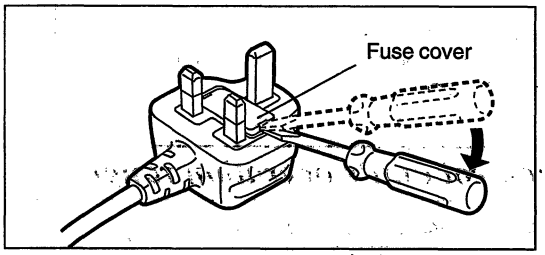
Before use

Remove the connector cover as follows.

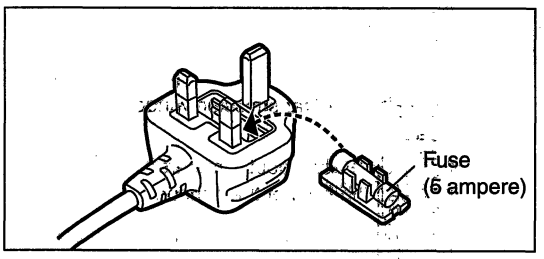


How to replace the fuse

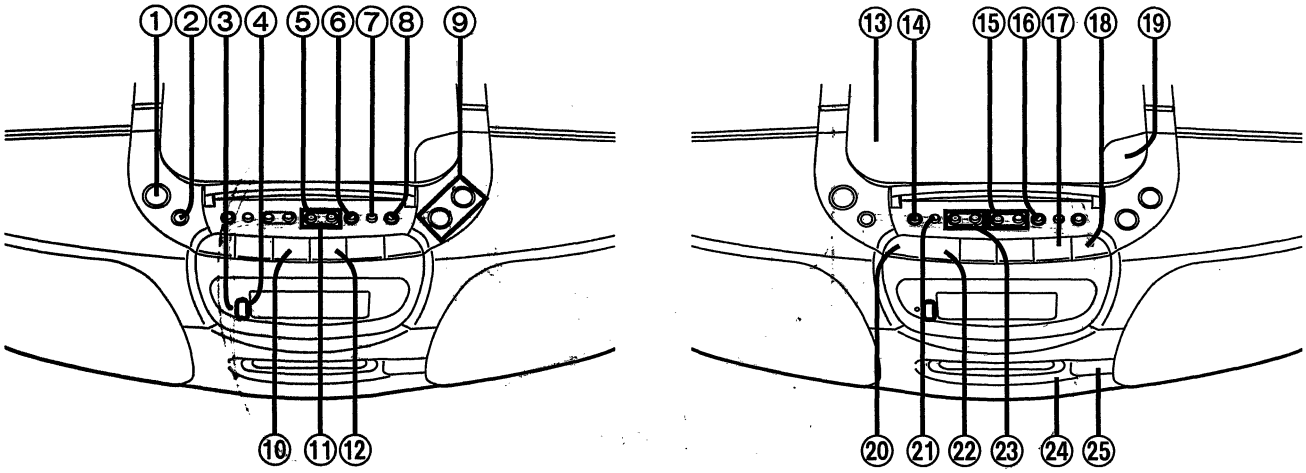
1. Remove the fuse cover with a screwdriver.



2. Replace the fuse and attach the fuse cover.



■ Location of Controls



No.	*Name*

Common controls

① **Power "STDBY ⏻ (AC)/ON" switch [POWER, STDBY ⏻ (AC)/ON]**
Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

② **Preset equalizer button (PRESET EQ)**

③ **Power/battery check/standby indicator (POWER/BATT, STANDBY ⏻)**
The indicator lights green when the unit is turned on.
When the AC mains is used, it functions as an AC connection indicator. (The indicator colour changes to red when the unit is turned off.)
When the unit is operated on batteries, it functions as a battery check indicator.

④ **Remote control signal sensor (SENSOR)**

⑤ **Time set buttons (TIME SET)**

⑥ **Time adjust button (ADJUST)**

⑦ **Time check button (TIME CHECK)**

⑧ **Timer button (TIMER)**

⑨ **Volume buttons (VOLUME)**

Radio controls

⑩ **Band select button (BAND)**

⑪ **Tuning buttons (TUNING/CD)**

⑫ **Preset tuning button (PRESET TUNING)**

No.	*Name*

CD controls

⑬ **CD lid**

⑭ **Easy CD recording button (EASY CD REC)**

⑮ **Skip/Search buttons (−/ ⏮, +/ ⏭)**

⑯ **Memory button (MEMORY)**

⑰ **Play/pause button (▶/⏸ PLAY/PAUSE)**

⑱ **Stop/clear button (■ STOP/CLEAR)**

⑲ **CD lid open button (⏏ CD)**

Tape controls

⑳ **Stop button (■ STOP)**

㉑ **Rec pause button (● ⏸)**

㉒ **Play/direction button (◀ ▶ PLAY/DIR)**

㉓ **Rewind/Fast forward button (REW, FF)**

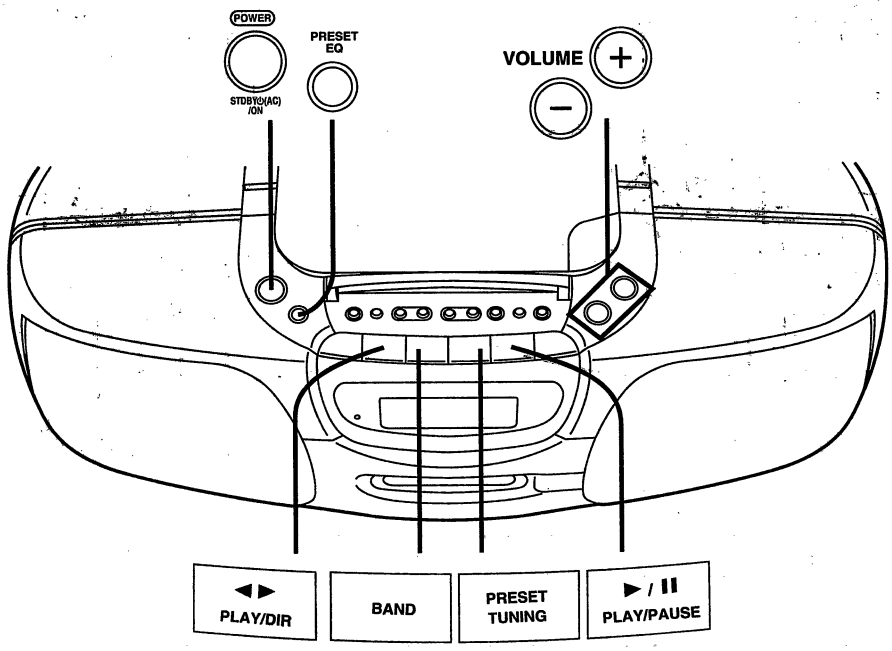
㉔ **Tape lid**

㉕ **Tape lid open button (⏏)**

Colors used for the lettering of the button names:
The lettering used for the names of the buttons is color-coded according to function.

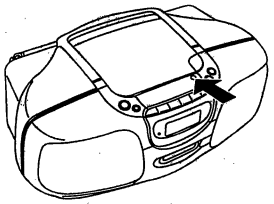
CD:	Green
Tape:	Blue
Radio:	Yellow
Recording:	Red

■ Common Operations



To open the operation panel

Press in the direction of the arrow.



Turning the power on

Press POWER.
Press it again to turn the unit off.

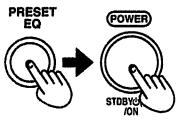
Using POWER on the remote control:
The power can be turned on and off while the unit is being powered by a household AC outlet.

Beep tone heard during operation

When one of the function buttons is pressed, one beep is heard to verify that the button has been properly operated. When one of the buttons has been pressed in error, two beeps are heard as a warning.

If you prefer not to have the beep tone function

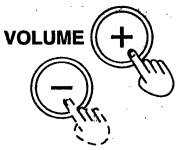
(Main unit only)



While holding PRESET EQ down while the unit is off, press POWER.
The "BEEP" display appears first followed by "OFF".

To use the beep tone function, repeat the same operation while the unit is off.
(The "BEEP" display appears first followed by "ON".)

Adjusting the volume



Press – VOLUME + to adjust the volume to the desired level.
The volume level can be adjusted from "–– dB" (lowest) to "0 dB" (highest).

The volume can be adjusted even when the power is off (only when using AC power).

One-touch play

(Only when the unit is powered by a household AC outlet)

If a CD or tape is installed, pressing a single button from the unit-off state will automatically turn on the power and start play.

To listen to a CD:
Press ▶/❚❚ PLAY/PAUSE.

To listen to a tape:
Press ◀ ▶ PLAY/DIR.

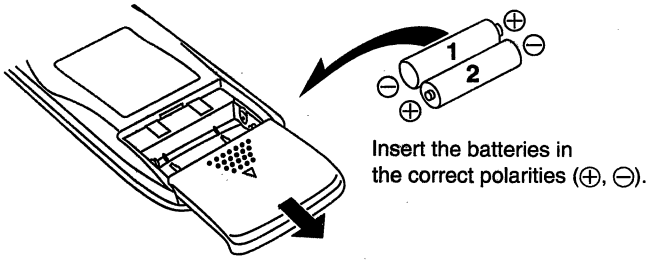
To listen to the radio:
Press BAND.
(Main unit only)
Press PRESET TUNING.

For your reference:
- The same operations can be executed using the remote control.
- Even when the unit is powered by batteries, play can be started simply by pressing one of the above buttons provided that the power-on state has been established.

■ Concerning the Remote Control

Battery installation

Insert two R03 (UM-4, not included) batteries as illustrated.



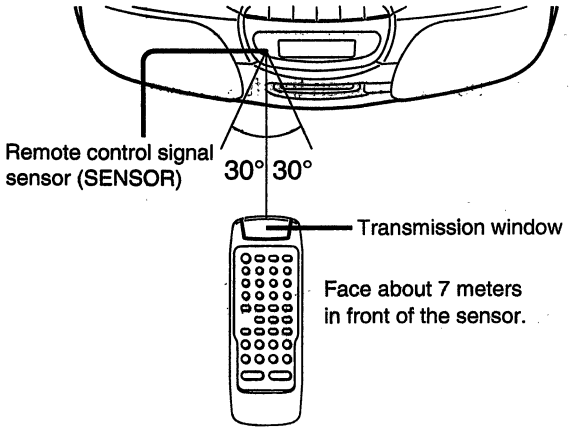
Insert the batteries in the correct polarities (⊕, ⊖).

To remove the batteries, pull out the ⊕ side of battery No.1.

Battery life

The battery life is about one year.
Although the battery life varies depending on how often the device is used, the batteries should be replaced about once every year on the average.
The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when transmitter is held close to the front panel.

Remote control unit's operation range



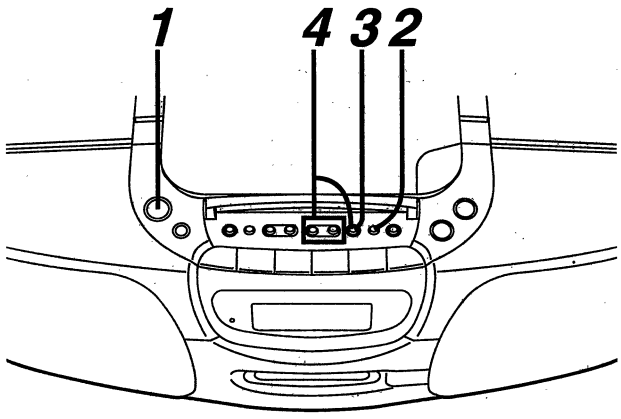
How to use the remote control unit properly

- Do not place obstacles between the remote control signal sensor and remote control unit.
- Do not expose the remote control signal sensor to direct sunlight or to the bright light of an invertor fluorescent light.
- Take care to keep the remote control signal sensor and the transmission window free from dust.

To prevent malfunctioning of the remote control unit:
- Do not disassemble or reconstruct the unit.
- Do not place heavy objects on top of it.
- Do not leave it where it will be exposed to direct sunlight.
- Do not spill beverages or other liquids over it.

■ Setting the Clock

The clock has a 24-hour display.



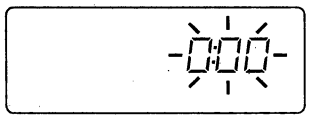
Example: Setting the clock to 16:20;

1 

Press POWER.
(This switches on the power.)

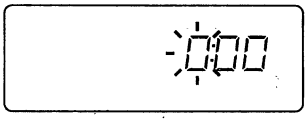
2 

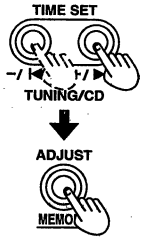
Press TIME CHECK to display the present time.
→Timer on/off time
Original display←**Present time**←
(The display changes each time the button is pressed.)



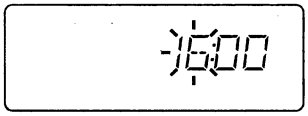
3 

Press ADJUST.

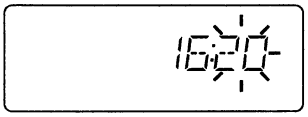


4 

Set the clock.
1. (Setting the hour)
Press TIME SET to display the hour (16).



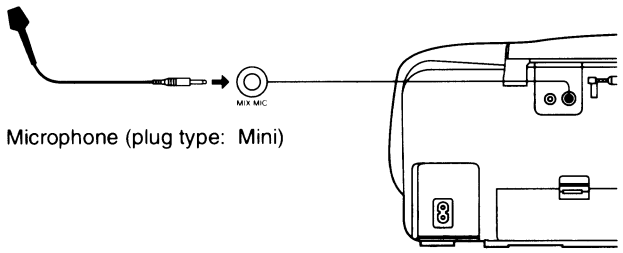
Press ADJUST.
2. (Setting the minute)
Press TIME SET to display the minute (20).



Press ADJUST.
(The clock now starts operating, and the display returns to its original status.)

■ Using Microphone/Headphones

Karaoke

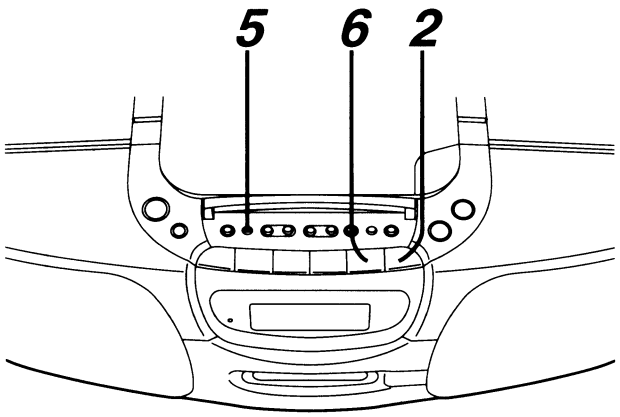


Microphone (plug type: Mini)

Rear panel

1. **Lower the volume and connect the microphone (optional accessory).**
2. **Start playing a CD or tape or turn on the radio.**
3. **Start karaoke singing and adjust the volume.**

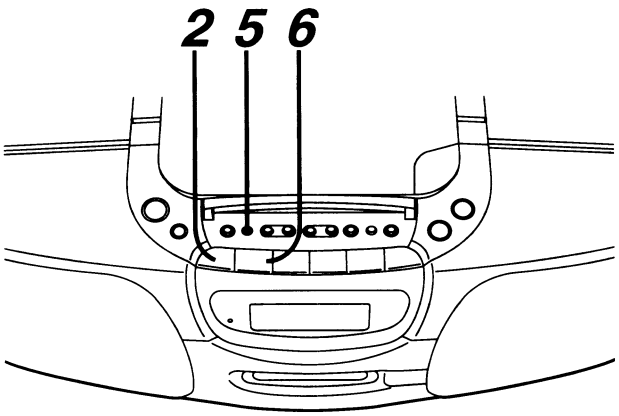
Recording karaoke sound with accompaniment from a CD



1. **Lower the volume and connect the microphone.**
2. **Insert the CD and press ■ STOP/CLEAR.**
3. **Load the tape.**
4. **Select the mode using REV MODE on the remote control.**
5. **Press ● II.**
6. **Press ▶/II PLAY/PAUSE and start the karaoke.**

Play and recording start.

Recording the sound through the microphone



1. **Lower the volume and connect the microphone.**
2. **Press ■ STOP.**
3. **Load the tape.**
4. **Select the mode using REV MODE on the remote control.**
5. **Press ● II.**
6. **Press ◀ ▶ PLAY/DIR.**

Recording starts.

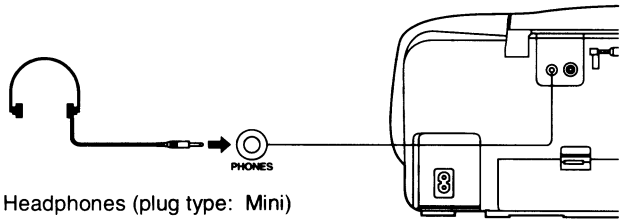
For your reference:

- To record, have the leader tape wound up first.
- Disconnect the microphone when it is not going to be used.
- If howling (a prolonged wailing noise) occurs while the microphone is used, use the microphone further away from the speakers or turn down the volume.

Note

When karaoke singing with accompaniment from a CD, sound is heard only while the CD is playing. No sound is heard in the stop or pause mode.

Listening to sound with headphones



Headphones (plug type: Mini)

Rear panel

Lower the volume and connect the headphones (not included).

Avoid listening for prolonged periods of time to prevent hearing damage.

■ Self-diagnosis Guide

Indicating Procedure

To indicate Self-Diagnostic Function

(For H and F only; U is indicated automatically.)

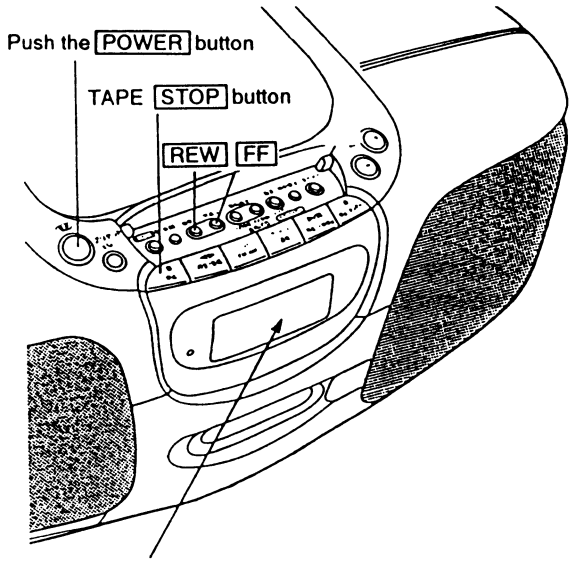
1. Open the cassette holder.
2. Pressing the TAPE [STOP] button, press the [FF] button simultaneously.
   (Keep pushing both buttons for about 2 seconds till a beep is heard.)
3. There appears "T" at the left end of the LCD indication section.
4. Insert a cassette tape, either A or B side of which has the erase preventing piece folded. Then close the cassette holder.
   (**NOTE:** The tape has to be taken up nearly halfway.)
5. Press the [FF] button for fast forwarding for about 5 seconds, then press the TAPE [STOP] button and take out the cassette tape.
6. Insert a cassette tape, both A and B sides of which have the erase preventing pieces respectively, and close the cassette holder.
   (**NOTE:** The tape has to be taken up by fast forwarding for about 10 seconds.)
7. Pressing the [REW] button rewinds the tape for 3 ~ 5 seconds till it stops automatically.
8. Pressing the TAPE [STOP] button makes an error indication appear.
   In case of doubled failures, the indication changes at each push of the TAPE [STOP] button.
9. If there is nothing unusual, the counter indication takes the place.

To resume Ordinary Indication

Press the [POWER] button to turn off power supply.
To have the indication appear again, take the above-stated steps 1 and 2.

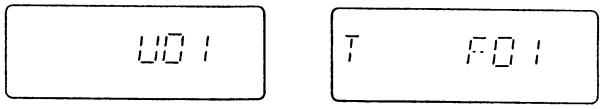
NOTE: Errors are memorized. To clear the memory after correction of fault, disconnect batteries and AC power source, and reset the device by pressing the [POWER] button continuously for 5 seconds or longer.

Indicating Position



Self-Diagnostic Function Indication

(Example)



Indication Text

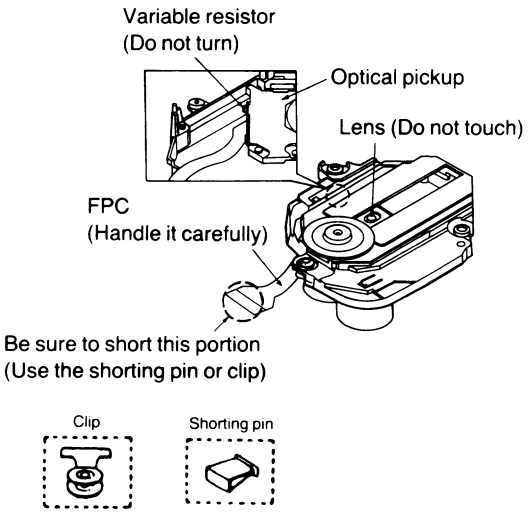
Symbol	Trouble	Remedy
U 01	When the unit is operated on batteries, power supply ceases soon after the [POWER] button is set to ON.	It is due to consumption of batteries. Replace the batteries with new ones.
U 02	Setting the [POWER] button to ON causes no supply of power.	Check the power plug (AC), or insert batteries (DC).
H 01	Irregular action of cassette mechanism. (Example) Pressing the FWD PLAY button results in REW PLAY action.	The cassette mechanism mode switch and plunger are defective. (Check and replace them.)
H 02	No recording can be made, or the unit is placed in the recording mode though the erase preventing piece has been broken.	The erase preventing switch contacts improperly, or there is a shortcircuit. (Check and replace the switch.)
H 03	Pressing the [PLAY] button fails to play the tape. Pressing the [PLAY] button causes the motor to rotate though no cassette tape is in.	The cassette half detect switch contacts improperly, or there is a shortcircuit. (Check and replace the switch.)
F 01	When the [PLAY] button is pressed, the tape runs a little and stops soon.	The hall IC is defective and, as the result, reel pulse is out of order. (Check and replace the IC.)
F 15	When CD [PLAY] button is pressed at POWE OFF condition or at any mode set other than CD, start of play delays (about 8 seconds or thereabout).	CD mechanism's optical pickup rest switch contacts improperly. (Check and replace the switch.)

■ Handling Precautions for Traverse Deck

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

•Handling of traverse deck (optical pickup)

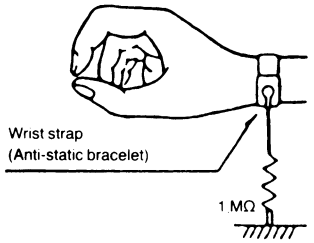
1. Do not subject the traverse deck (optical pickup) to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an anti-static shorting pin is inserted into the flexible board (FPC board). When removing or connecting the shorting pin, finish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

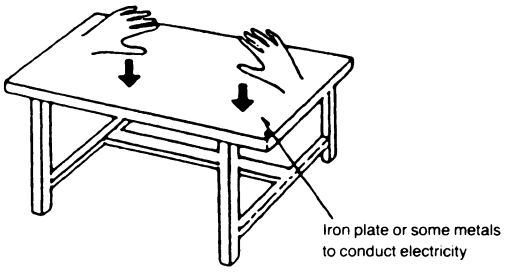


•Grounding for electrostatic breakdown prevention

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.

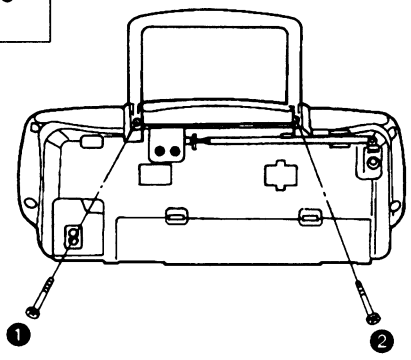
Caution:
The static electricity of your clothes will not be grounded through the wrist strap. So, take care not to let your clothes touch the traverse deck (optical pickup).



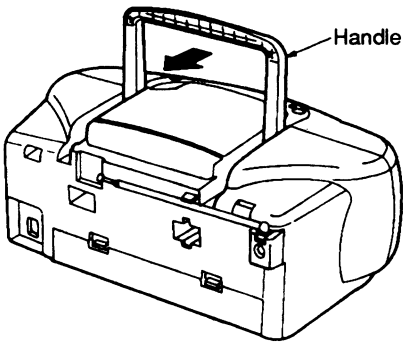


■ Disassembly Instructions

Ref. No. 1	Removal of the Handle
Procedure 1	

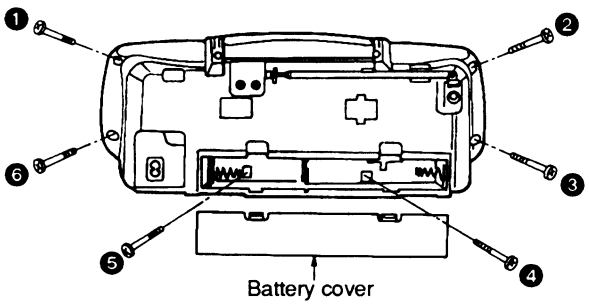


1. Remove 2 screws (❶, ❷).

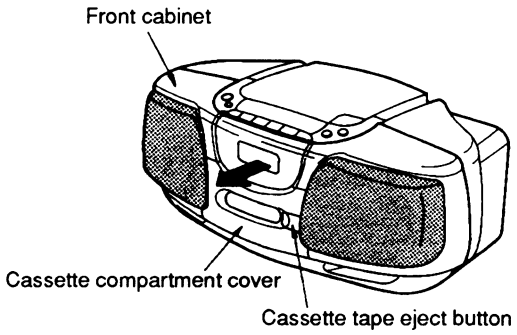


2. Remove the handle in the direction of the arrow.

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

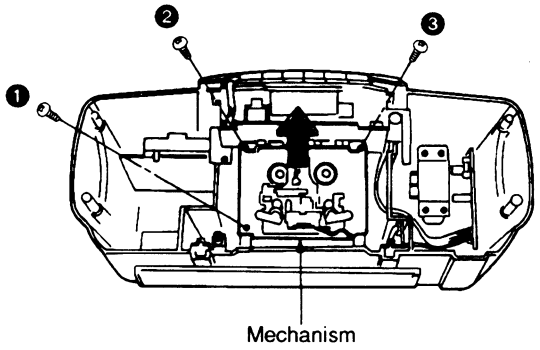


1. Remove the battery cover.
2. Remove 6 screws (❶~❻).



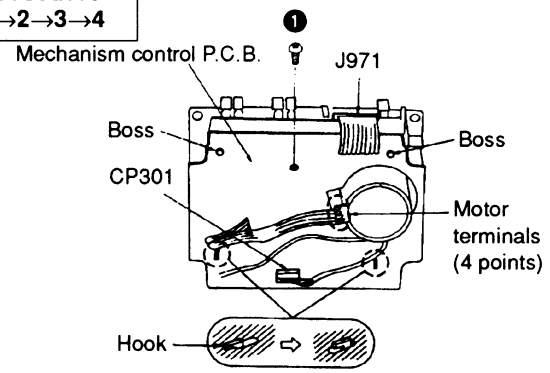
3. Press the cassette tape eject button and open the cassette compartment cover.
4. Remove the front cabinet in the direction of the arrow.

Ref. No. 3	Removal of the Mechanism
Procedure 1→2→3	



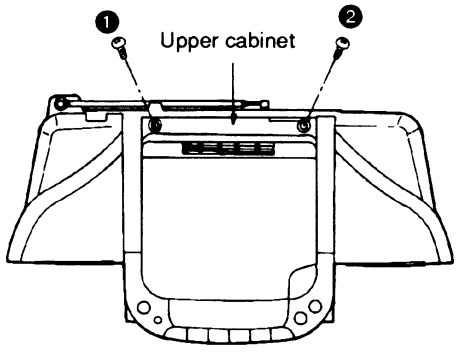
1. Remove 3 screws (❶~❸).
2. Pull out the mechanism in the direction of the arrow.

Ref. No. 4	Removal of the Mechanism Control P.C.B.
Procedure 1→2→3→4	

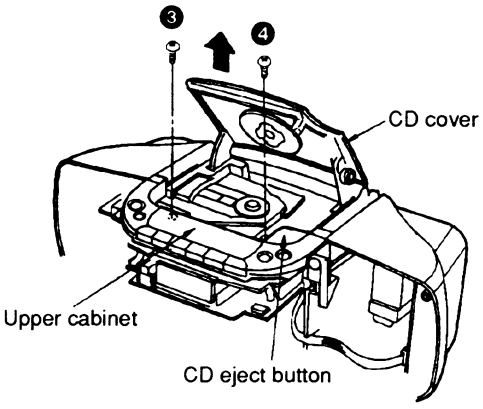


1. Disconnect 2 connectors (CP301, J971).
2. Unsolder 4 motor terminals.
3. Remove the screw (❶).
4. Release 2 bosses.
5. Release 2 hooks by moving the mechanism control P.C.B.

Ref. No. 5	Removal of the Upper Cabinet
Procedure 1→2→5	



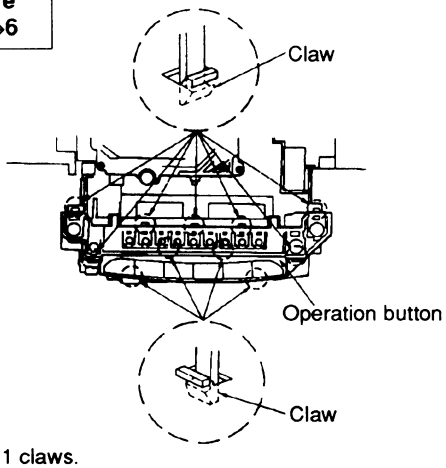
1. Remove 2 screws (❶, ❷).



2. Press the CD eject button and open the CD cover.
3. Remove 2 screws (❸, ❹).
4. Lift up the upper cabinet in the direction of the arrow.

Ref. No. 6	Removal of the Operation Button

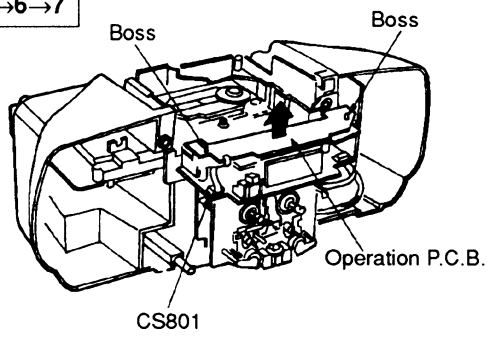
Procedure 1→2→5→6



- Release 11 claws.

Ref. No. 7	Removal of the Operation P.C.B.

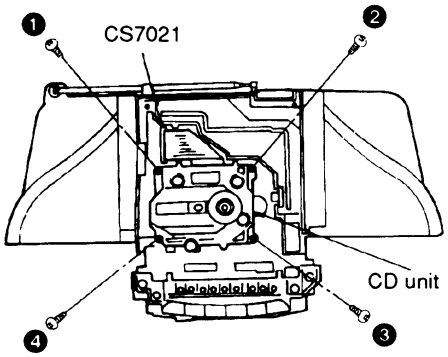
Procedure 1→2→5→6→7



1. Disconnect the connector (CS801).
2. Lift up the operation P.C.B. and release 2 bosses in the direction of the arrow.

Ref. No. 8	Removal of the CD Unit

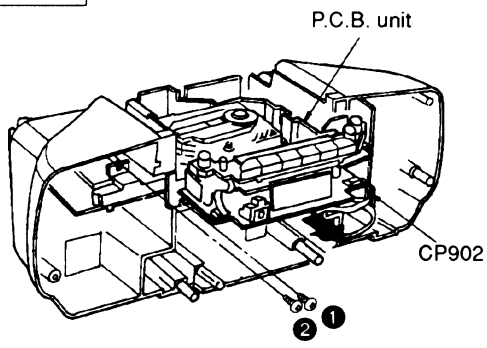
Procedure 1→2→5→8



1. Disconnect the connector (CS7021).
2. Remove 4 screws (❶~❹).

Ref. No. 9	Removal of the P.C.B. Unit

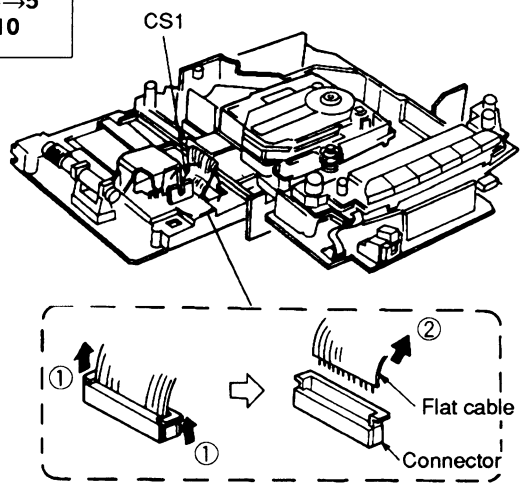
Procedure 1→2→3→5→9



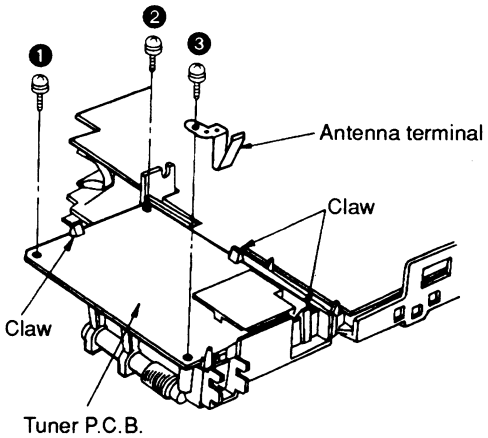
1. Disconnect the connector (CP902).
2. Remove 2 screws (❶, ❷).
3. Remove the P.C.B. unit in the direction of the arrow.

Ref. No. 10	Removal of the Tuner P.C.B.

Procedure 1→2→3→5→9→10

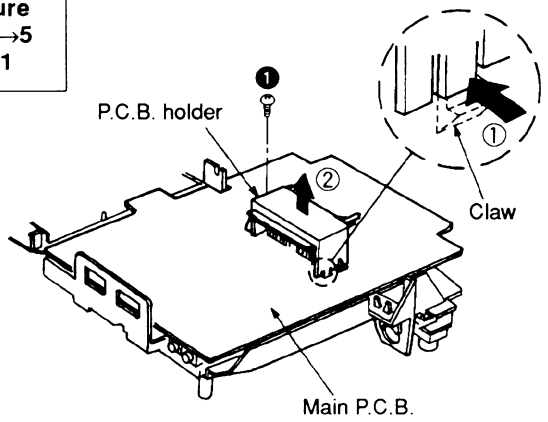


1. Disconnect the connector (CS1).

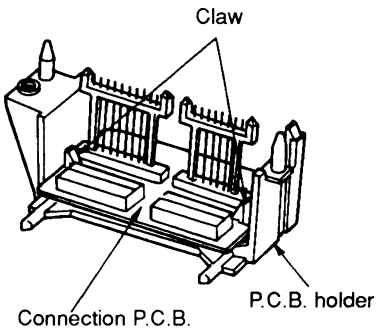


2. Remove 3 screws (❶~❸).
3. Remove the antenna terminal.
4. Release 3 claws.

Ref. No. 11	Removal of the Connection P.C.B.
Procedure 1→2→3→5 →9→11	

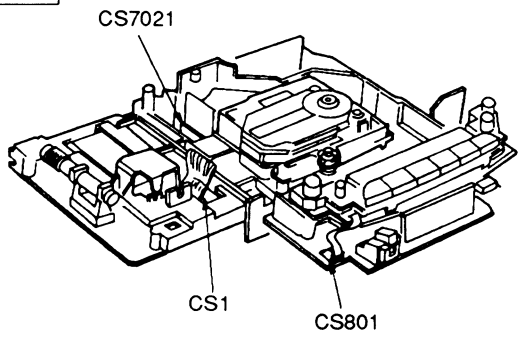


1. Remove the screw (❶).
2. Push the claw in the direction of the arrow ① and remove the P.C.B. holder in the direction of the arrow ②.

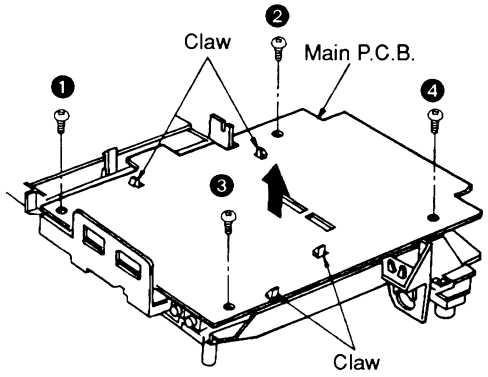


3. Release 2 claws.

Ref. No. 12	Removal of the Main P.C.B.
Procedure 1→2→3→5 →9→11→12	

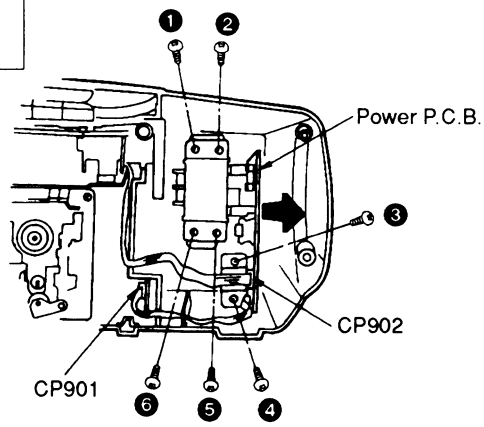


1. Disconnect 3 connector (CS1, CS801, CS7021).



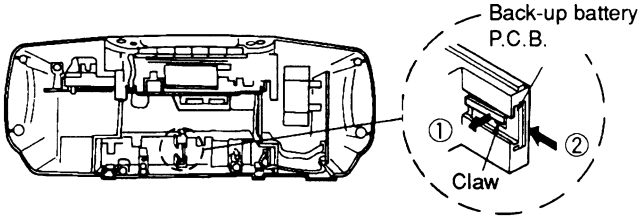
2. Remove 4 screws (❶~❹).
3. Release 4 claws and remove the main P.C.B. in the direction of the arrow.

Ref. No. 13	Removal of the Power P.C.B.
Procedure 1→2→13	



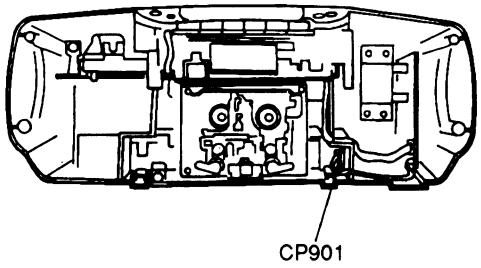
1. Disconnect 2 connector (CP901, CP902).
2. Remove 6 screws (❶~❻).
3. Pull out the power P.C.B. in the direction of the arrow.

Ref. No. 14	Removal of the Back-up Battery P.C.B.
Procedure 1→2→3→14	

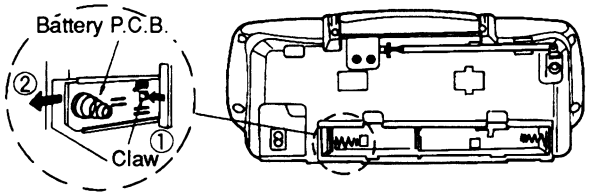


- Remove the back-up battery P.C.B. in the direction of the arrow ② with pulling the claw in the direction of the arrow ①.

Ref. No. 15	Removal of the Battery P.C.B.
Procedure 1→2→15	

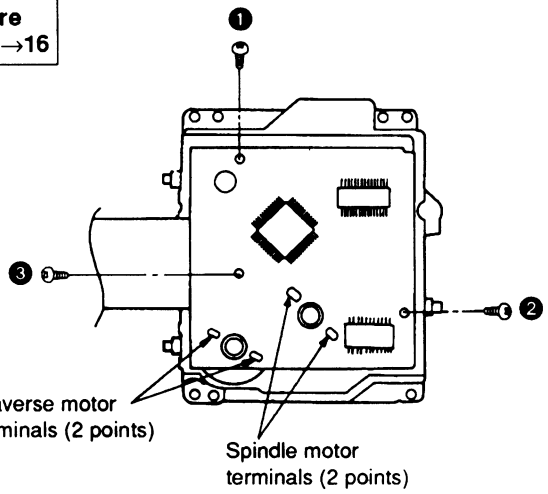


1. Disconnect the connector (CP901).



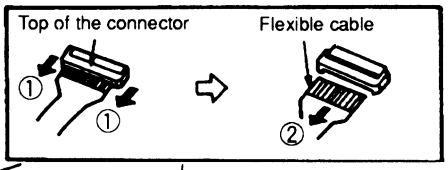
2. Remove the P.C.B. in the direction of the arrow ② with pushing the claw in the direction of the arrow ①.

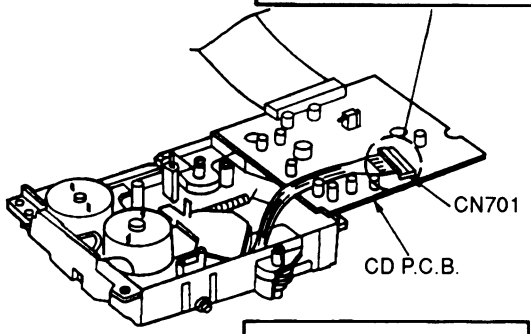
Ref. No. 16	Removal of the CD P.C.B.
Procedure 1→2→5→8→16	



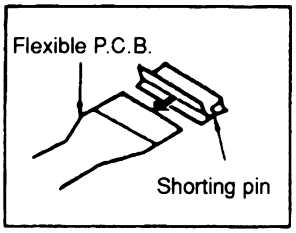
1. Remove 3 screws (❶~❸).
2. Unsolder 2 spindle motor terminals.
3. Unsolder 2 traverse motor terminals.

※Slide the top of the connector in the direction of the arrow ① and disconnect the flexible cable in the direction of the arrow ②.



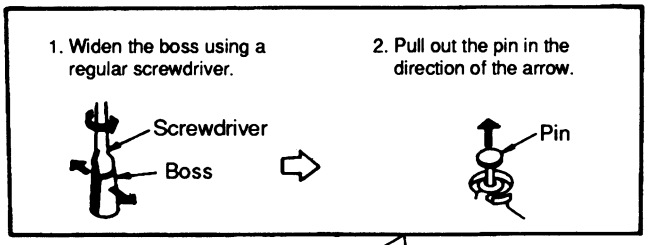


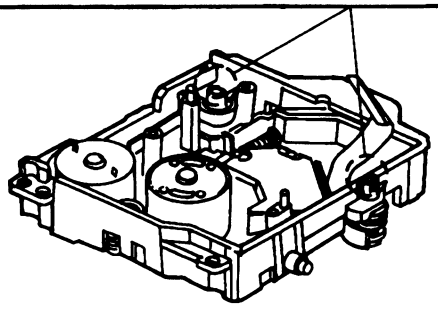
4. Disconnect the connector (CN701).



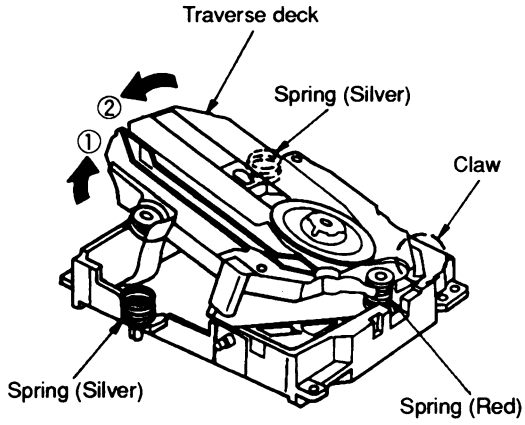
Note: insert the shorting pin into the flexible cable for optical pickup.
(Refer to "HANDLING PRECAUTIONS FOR TRAVERSE DECK" on page 5.)

Ref. No. 17	Removal of the Traverse Deck
Procedure 1→2→5→8 →16→17	



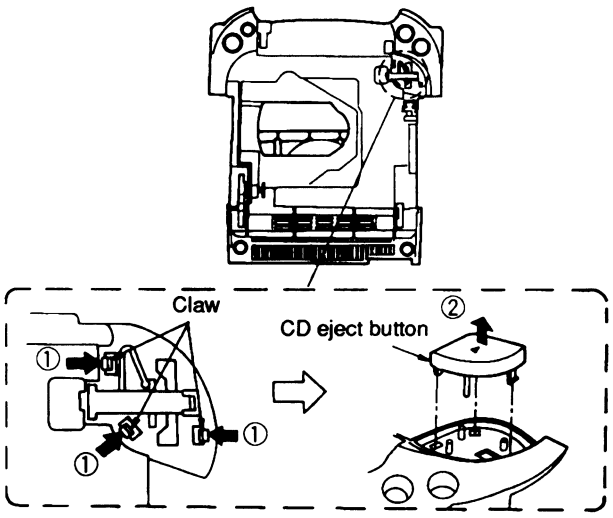


1. Remove 2 pins.



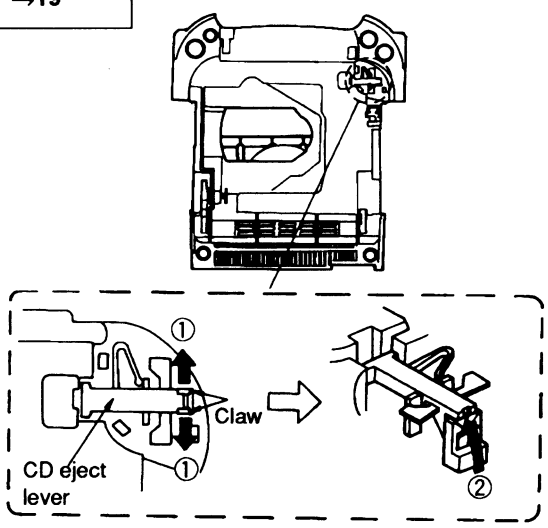
2. Remove the traverse deck in the direction of the arrow with releasing the claw.
Note: Since 3 springs can be also removed together with the traverse deck, be careful not to lose them.

Ref. No. 18	Removal of the CD Eject Button
Procedure 1→2→5→18	



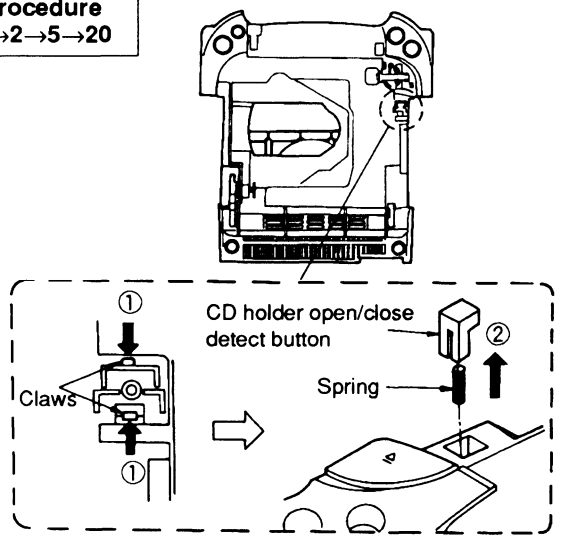
1. Release 3 claws in the direction of the arrow ①.
2. Remove the CD eject button in the direction of the arrow ②.

Ref. No. 19	Removal of the CD Eject lever
Procedure 1→2→5→18 →19	



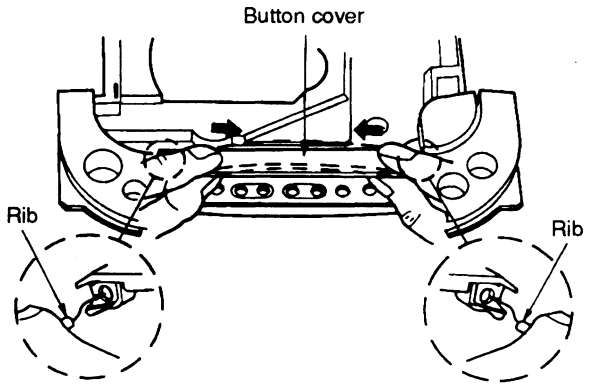
1. Release 2 claws in the direction of the arrow ①.
2. Remove the CD eject lever in the direction of the arrow ②.

Ref. No. 20	Removal of the CD Holder Open/Close Detect Button
Procedure 1→2→5→20	



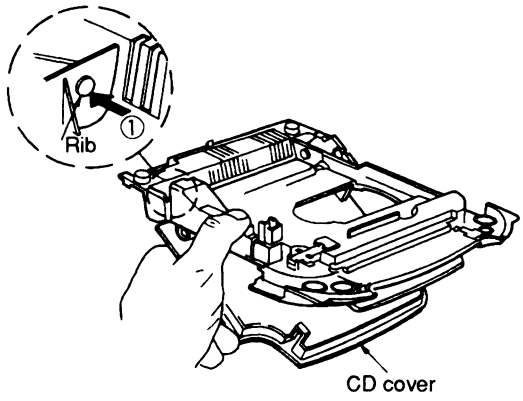
1. Release 2 claws in the direction of the arrow ①.
2. Remove the CD open/close detect button in the direction of the arrow ②.

Ref. No. 21	Removal of the Button Cover
Procedure 1→2→5→21	

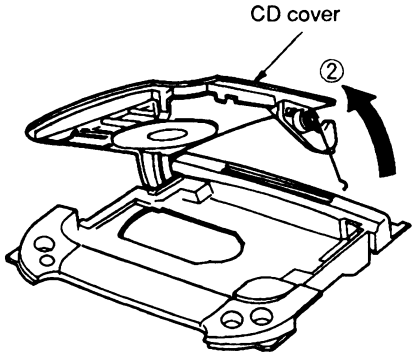


1. Open the button cover.
2. Remove the button cover in the direction of the arrow.

Ref. No. 22	Removal of the CD Cover
Procedure 1→2→5→22	

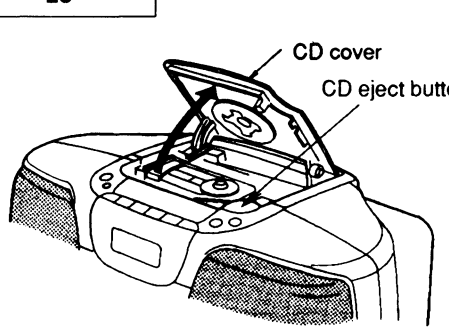


1. Open the CD cover and release the rib in the direction of the arrow ①.

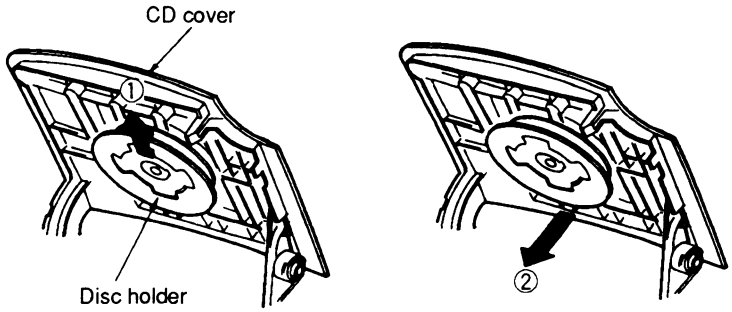


2. Remove the CD cover in the direction of the arrow ②.

Ref. No. 23	Removal of the Disc holder
Procedure 23	

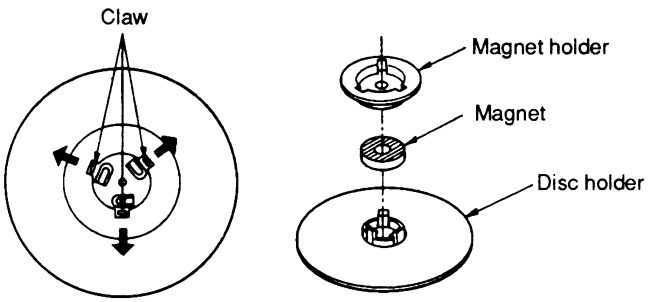


1. Press the CD eject button and open the CD cover.



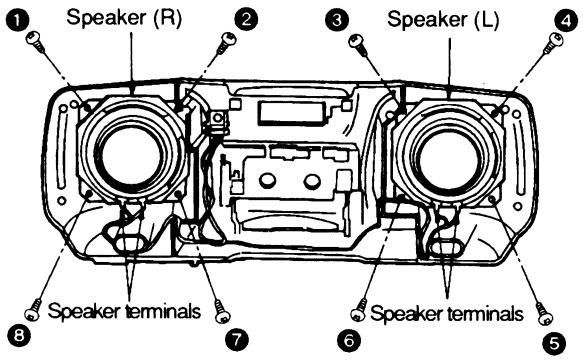
2. Remove the disc holder in the direction of the arrow ② with sliding the disc holder in the direction of the arrow ①.

Ref. No. 24	Removal of the Magnet
Procedure 23→24	



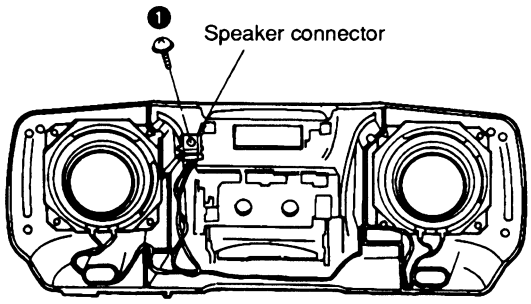
1. Release 3 claws in the direction of the arrows.
2. The disc holder is disassemblied as shown in the right figure.

Ref. No. 25	Removal of the Speaker
Procedure 1→2→25	



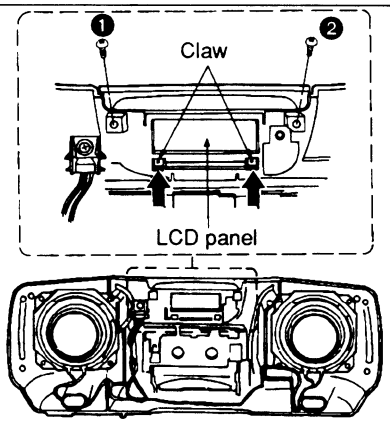
1. Remove 8 screws (❶~❽).
2. Unsolder 4 speaker terminals.

Ref. No. 26	Removal of the Speaker Connector
Procedure 1→2→26	



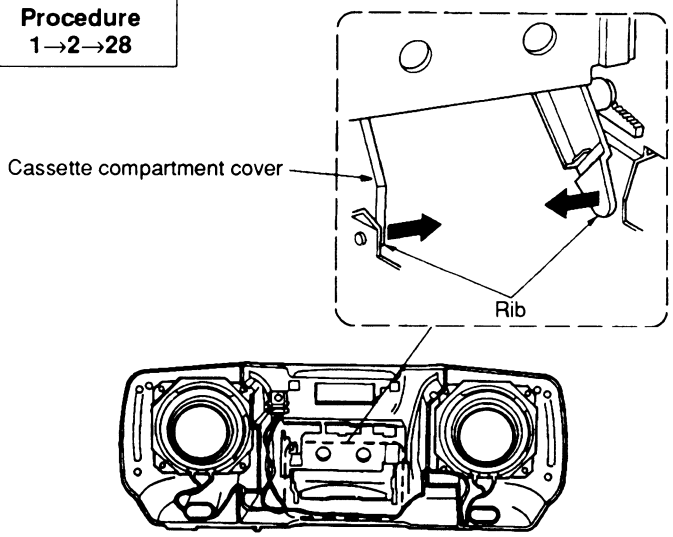
- Remove the screw (❶).

Ref. No. 27	Removal of the LCD Panel
Procedure 1→2→27	



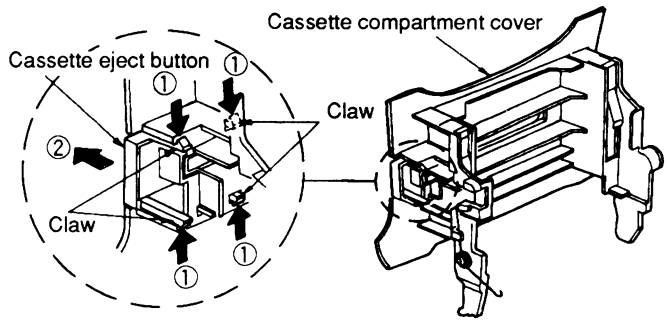
1. Remove 2 screws (❶, ❷).
2. Remove the LCD panel with pushing the claw in the direction of the arrows.

Ref. No. 28	Removal of the Cassette Compartment Cover
Procedure 1→2→28	



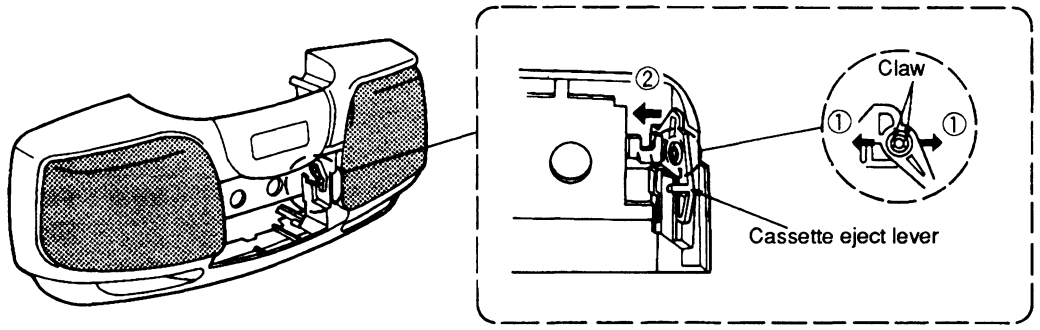
- Release 2 ribs in the direction of the arrows.

Ref. No. 29	Removal of the Cassette Eject Button
Procedure 1→2→28→29	



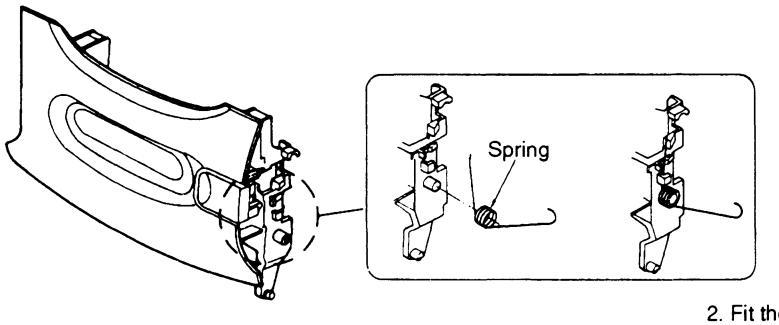
- Remove the cassette eject button in the direction of the arrow ② with pushing the claw in the direction of the arrow ①.

Ref. No. 30	Removal of the Cassette Eject lever
Procedure 1→2→28→30	

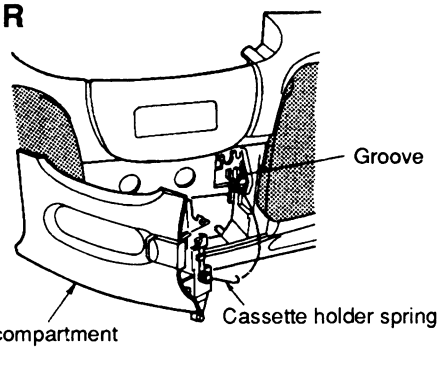


- Remove the cassette eject lever in the direction of the arrow ② with pushing the claws in the direction of the arrow ①.

■ INSTALLATION OF THE CASSETTE COMPARTMENT COVER

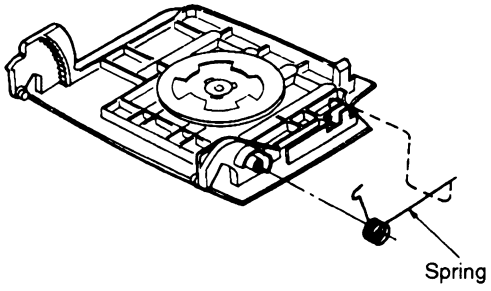


1. Install the spring.

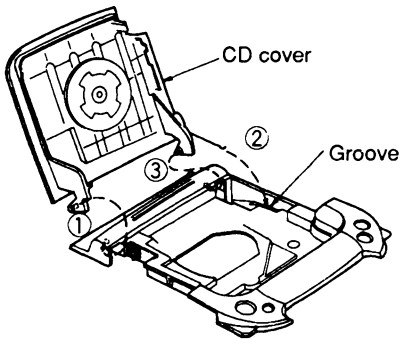


2. Fit the spring of the cassette compartment cover into the groove of the cabinet.

■ INSTALLATION OF THE CD COVER

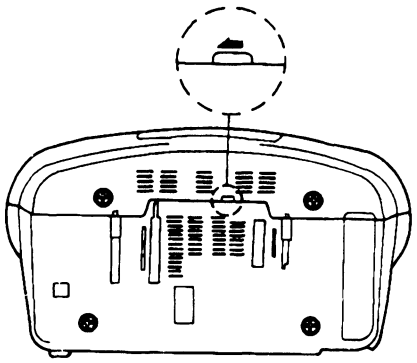


1. Install the spring to the CD cover.



2. Install the CD cover to the top panel in the order of the ① arrows through ③.

■ MEASURE FOR TAPE TROUBLE

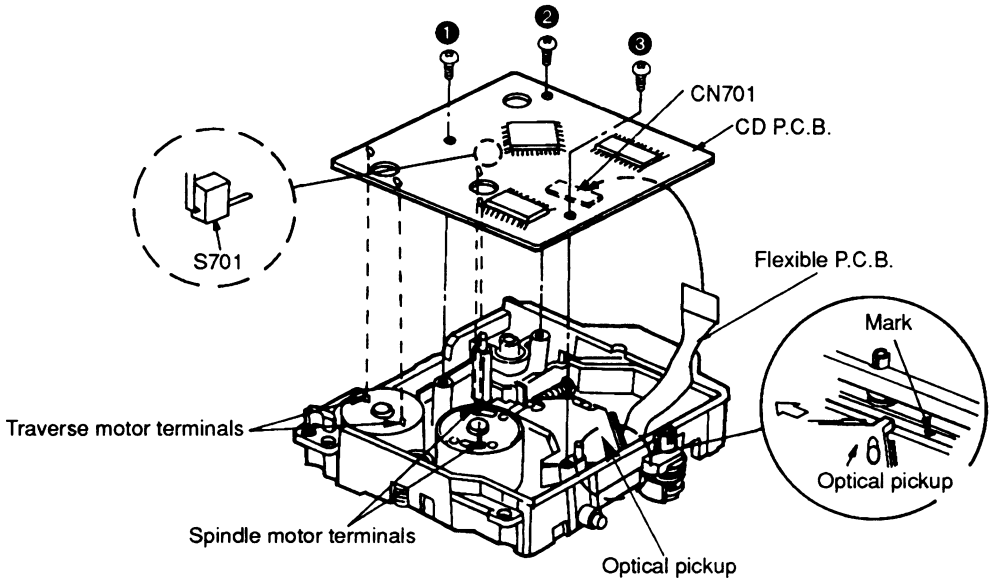


- If a cassette tape can not be removed from the deck since it is caught by the capstan or pinch roller insert a thin driver into the holes in the bottom side of this unit and remove the winded tape with rotating the motor pulley in the direction of the arrow.

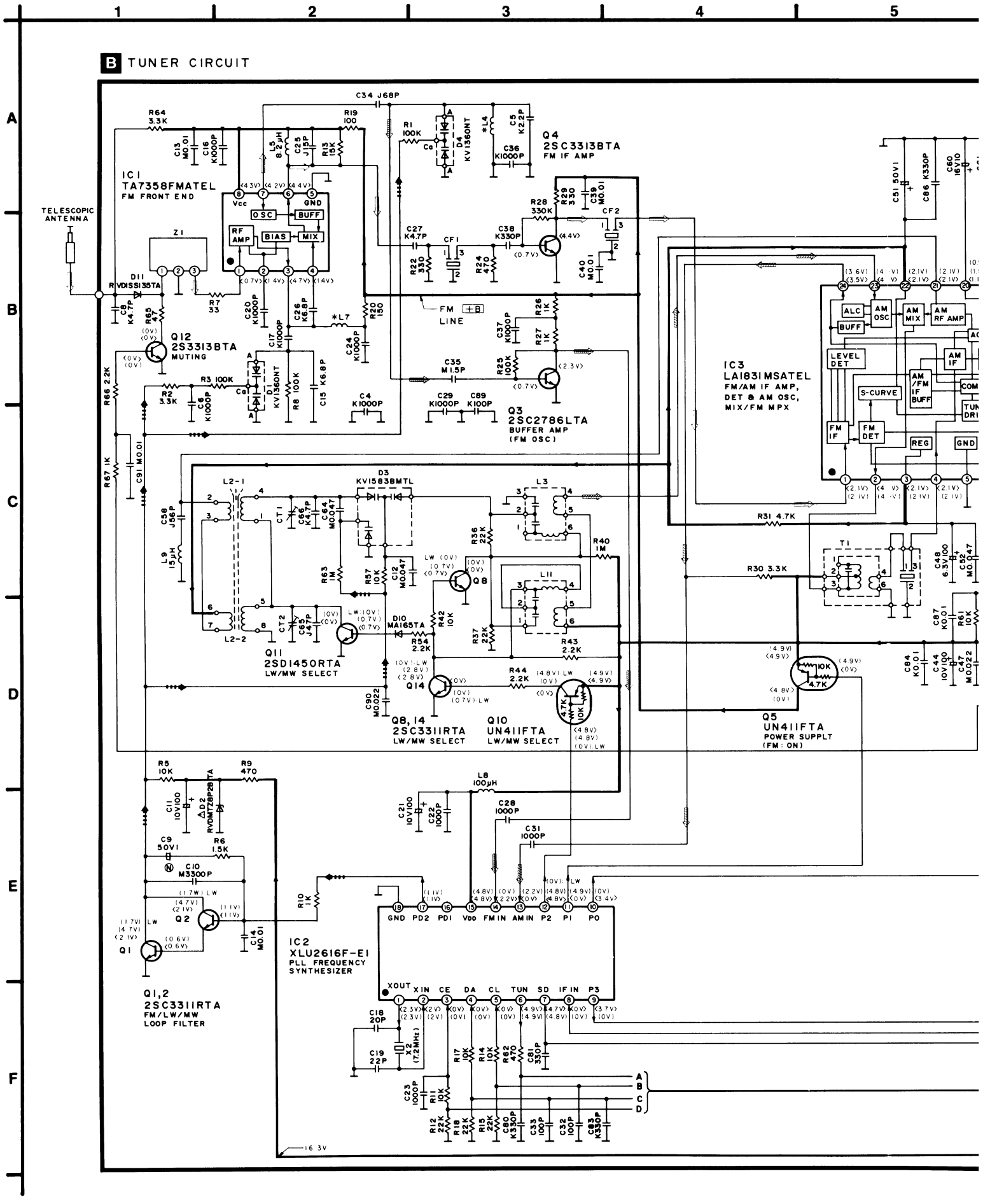
■ INSTALLATION OF CD P.C.B.

1. When installing CD P.C.B., move the optical pickup to the more external side than the mark (▲).
   (When the optical pickup is not moved, the switch (S701) on the CD P.C.B. may be broken.)
2. Connect the flexible cable to the connector (CN701).
3. Install the CD P.C.B. to the traverse unit with 3 screws (❶~❸).
4. Solder 2 traverse motor terminals and 2 spindle motor terminals.

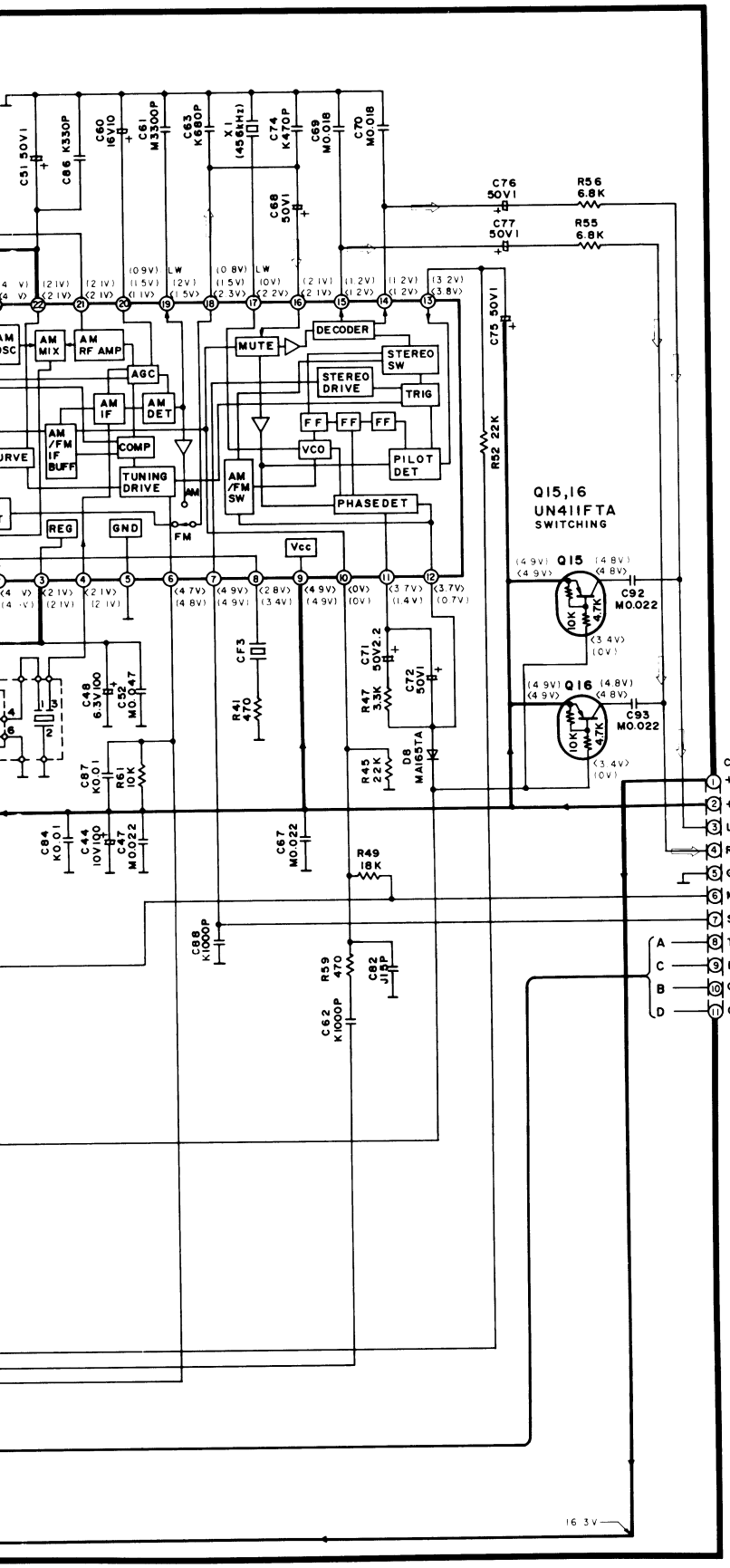
Note: • Insert the flexible cable into the connector and lock securely.
• After installing the motor with screws, solder each motor terminal.



■ Schematic Diagram •Tuner circuit (Parts list on pages 56~61)



5 6 7 8 9

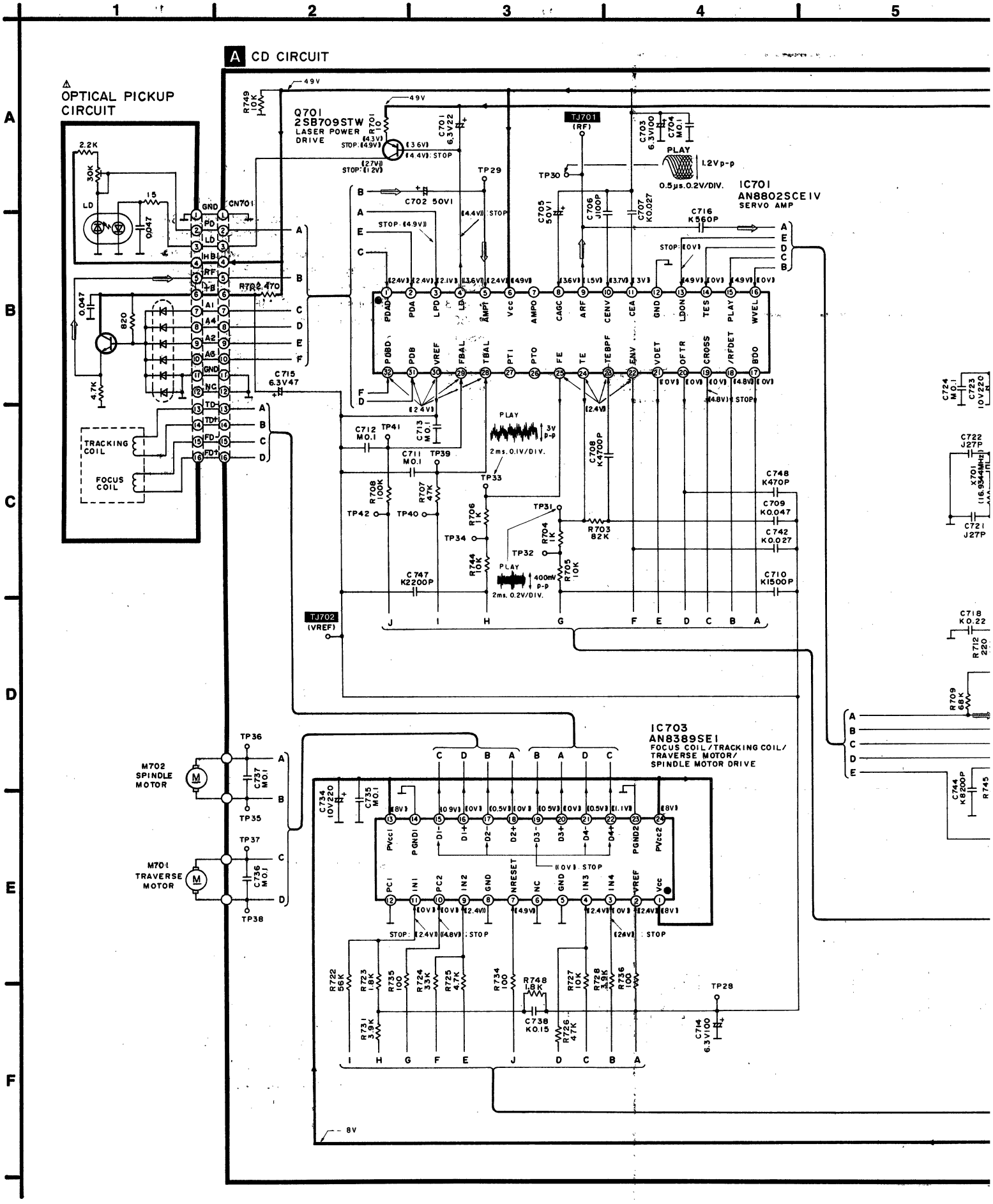


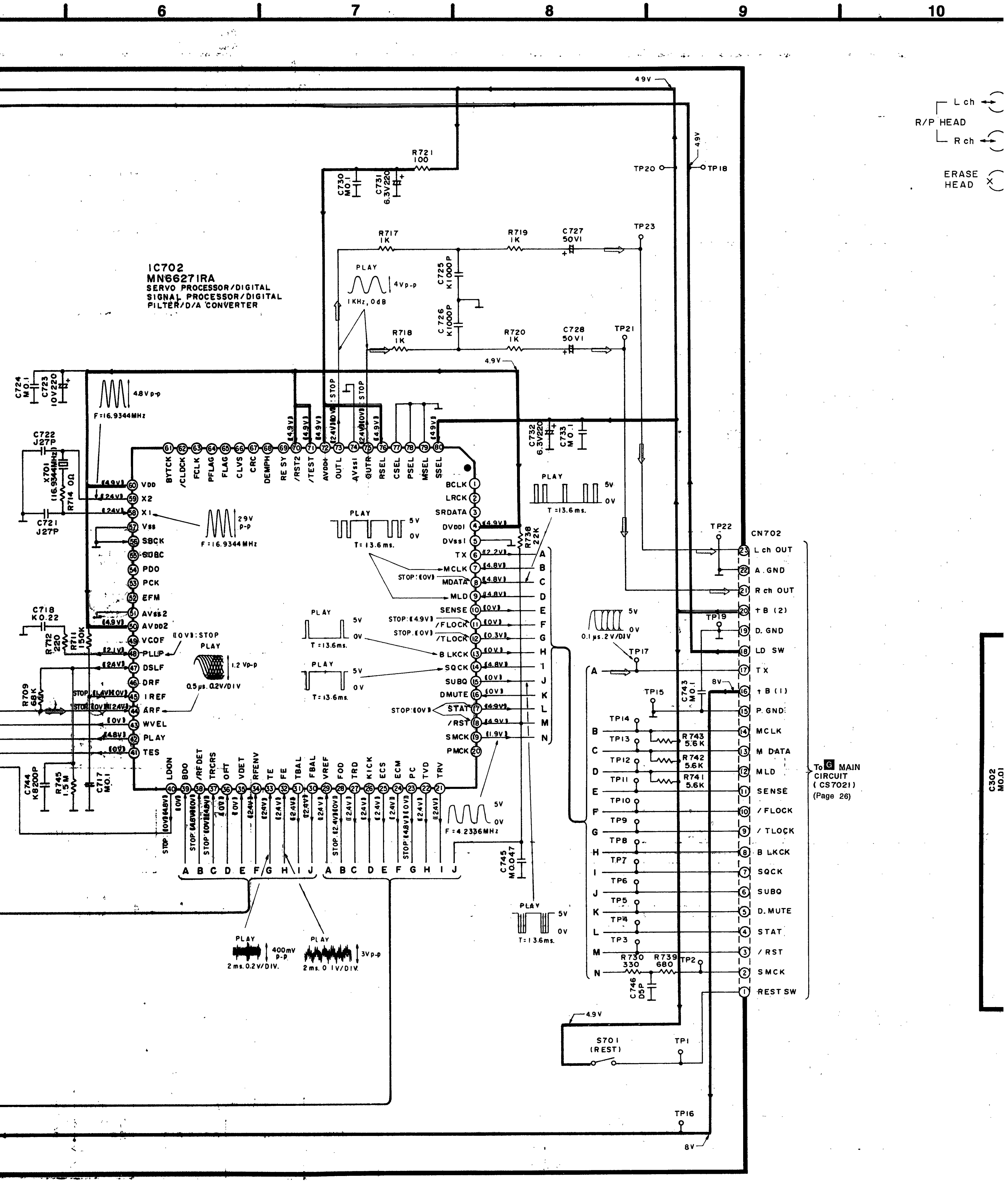
: FM Signal Line
: FM OSC Signal Line
: MW/LW OSC Signal Line
: FM/MW/LW Vcap Control Signal Line
: +B Line

Notes:

- DC voltage measurements are taken with electronics voltmeter. The negative terminal of the battery provides negative meter connection point.
  ( )...MW/LW < >...FM
- 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.
- **This schematic diagram may be modified at any time with the development of new technology.**

■ Schematic Diagram •CD circuit and mechanism control circuit (Parts list on pages 56~61)

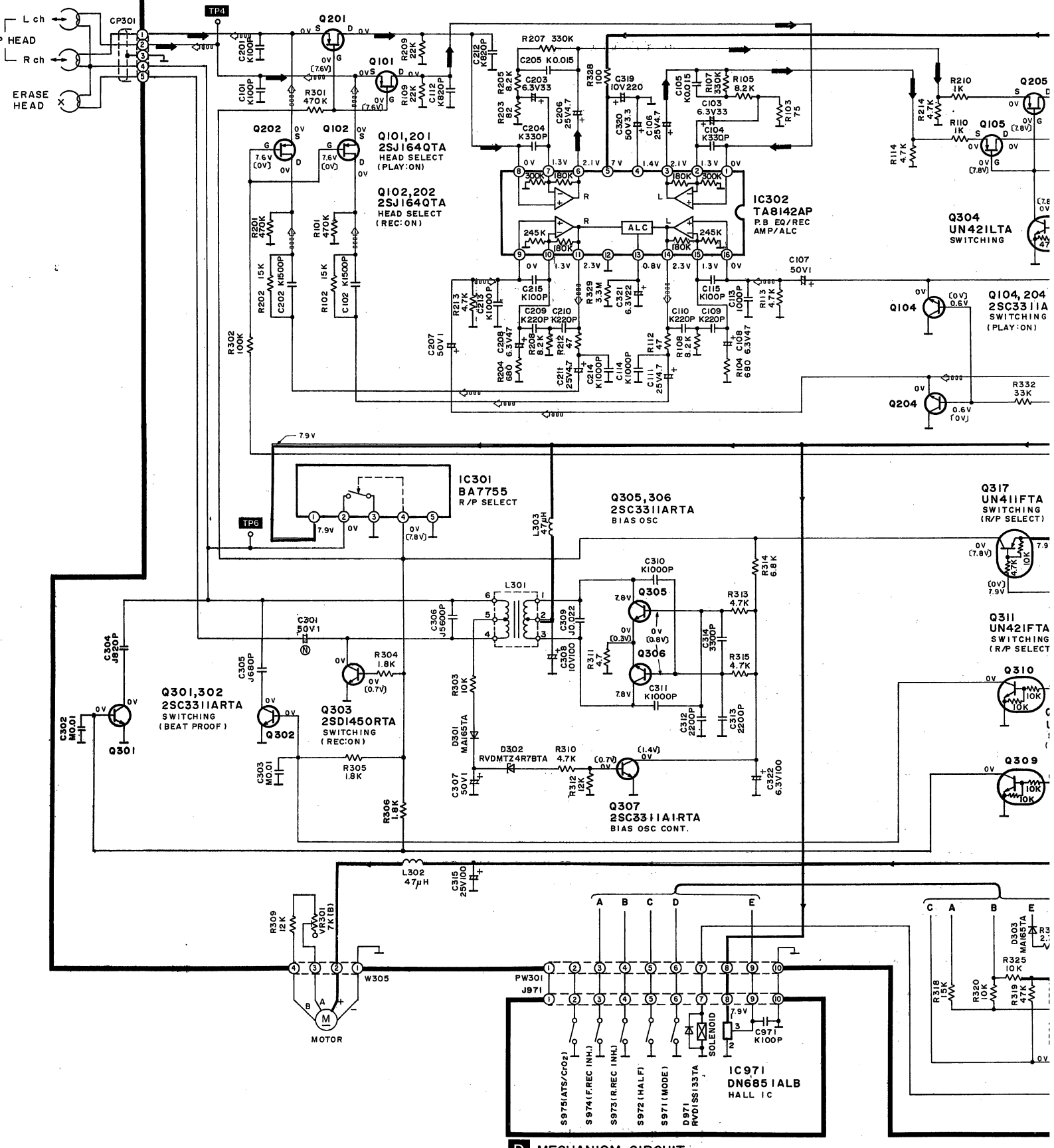




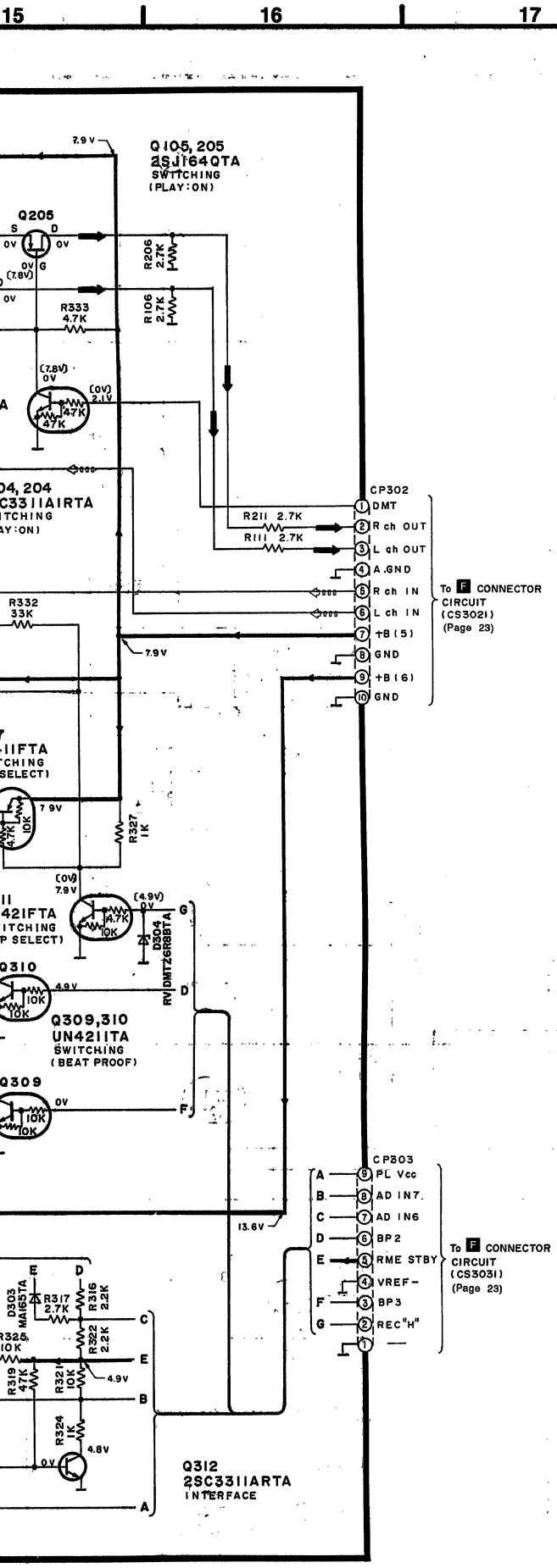
6
7
8
9
10
IC702
MN66271RA
SERVO PROCESSOR/DIGITAL
SIGNAL PROCESSOR/DIGITAL
PILTER/D/A CONVERTER
R721
100
C730
M0.1
C731
6.3V220
R717
1K
R719
1K
C727
50V1
TP23
TP20
TP18
C725
K1000P
C726
K1000P
R718
1K
R720
1K
C728
50V1
TP21
PLAY
4Vp-p
1KHz, 0dB
4.9V
C724
M0.1
C723
10V220
4.8Vp-p
F=16.9344MHz
C722
J27P
X701
(16.9344MHz)
R714 0Ω
C721
J27P
2.9V p-p
F=16.9344MHz
C718
K0.22
R712
220
R711
150K
R709
68K
C744
K8200P
R745
1.5M
C717
M0.1
C732
6.3V220
C733
M0.1
R738
22K
C745
M0.047
T=13.6ms.
F=4.2336MHz
0.5µs. 0.2V/DIV
1.2 Vp-p
0.1µs.2V/DIV
400mV p-p
2ms.0.2V/DIV.
3Vp-p
2ms. 0 1V/DIV.
VDD
X2
X1
VSS
SBCK
SUBC
PDO
PCK
EFM
AVSS2
AVDD2
VCOF
PLLF
DSLF
DRF
IREF
ARF
WVEL
PLAY
TES
BYTCK
/CLDCK
FCLK
PFLAG
FLAG
CLVS
CRC
DEMPH
RESY
/RST2
/TEST
AVDD+
OUTL
AVSS1
OUTR
RSEL
CSEL
PSEL
MSEL
SSEL
BCLK
LRCK
SRDATA
DVDD1
DVSS1
TX
MCLK
MDATA
MLD
SENSE
/FLOCK
/TLOCK
BLKCK
SQCK
SUBQ
DMUTE
STAT
/RST
SMCK
PMCK
LDON
BDO
/RFDET
TRCRS
OFT
VDET
RFENV
TE
FE
TBAL
FBAL
VREF
FOD
TRD
KICK
ECS
ECM
PC
TVD
TRV
CN702
L ch OUT
A.GND
R ch OUT
+B (2)
D.GND
LD SW
TX
+B (1)
P.GND
MCLK
M DATA
MLD
SENSE
/FLOCK
/TLOCK
B LKCK
SQCK
SUBQ
D.MUTE
STAT
/RST
SMCK
REST SW
TP22
TP19
TP17
TP15
C743
M0.1
TP14
TP13
TP12
TP11
TP10
TP9
TP8
TP7
TP6
TP5
TP4
TP3
TP2
R743
5.6K
R742
5.6K
R741
5.6K
R730
330
R739
680
C746
D5P
S701
(REST)
TP1
TP16
8V
To G MAIN CIRCUIT (CS7021) (Page 26)
R/P HEAD
L ch
R ch
ERASE HEAD
C302
M0.01

10 11 12 13 14 15

C MECHANISM CONTROL CIRCUIT



D MECHANISM CIRCUIT



Notes:

<CD circuit>

- S701 : Rest switch

<Mechanism control circuit>

- S971 : Mode detect switch
- S972 : Cassette tape insertion detect switch
- S973 : Reverse side record prevention tab detect switch
- S974 : Forward side record prevention tab detect switch
- VR301 : Tape speed adjustment VR
- DC voltage measurements are taken with electronics voltmeter. The negative terminal of the battery provides negative meter connection point.

No mark...TAPE PLAYBACK
[ ]...TUNER
(( ))...CD
[ ]...RECORD

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

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

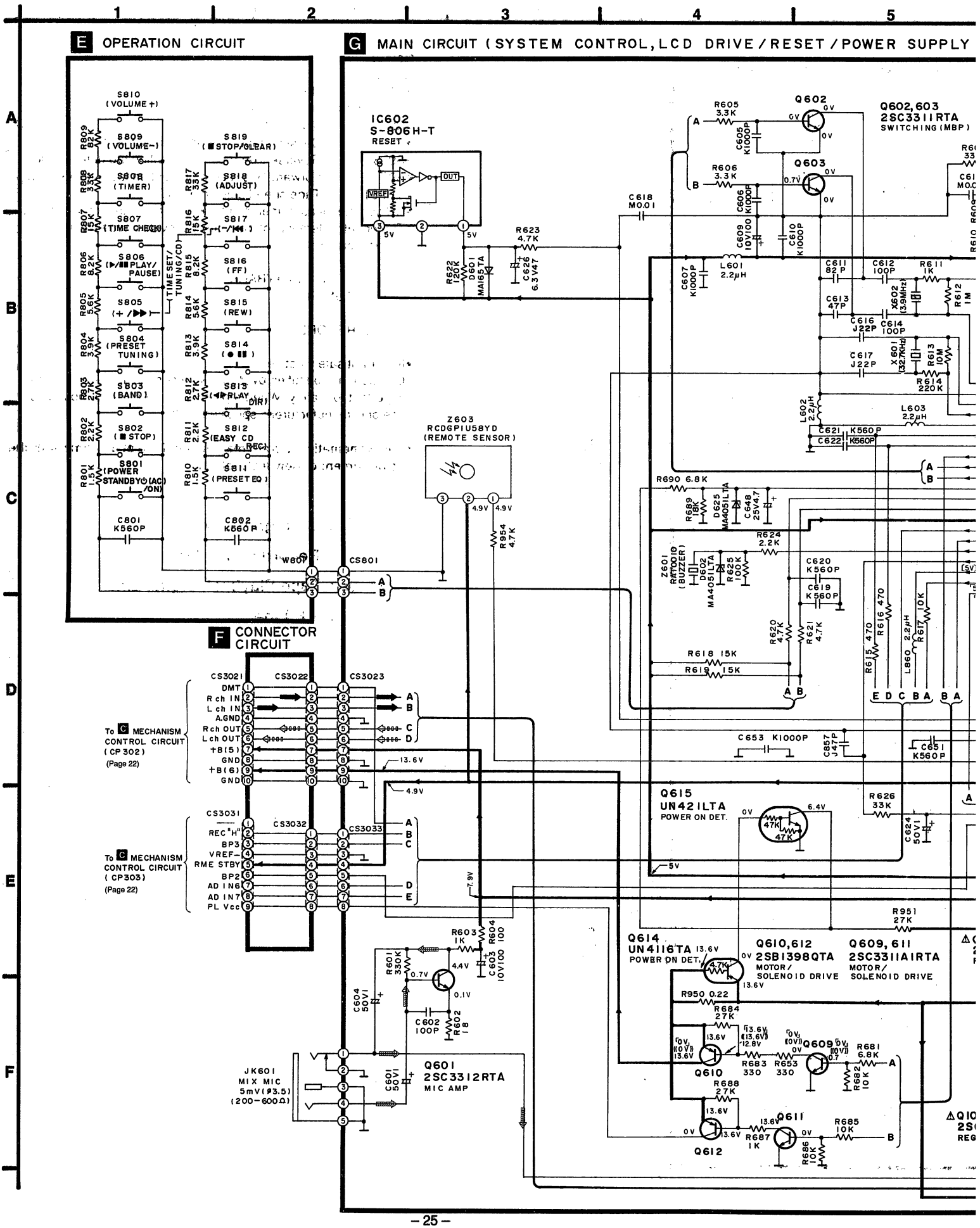
: CD Signal Line

: Record Signal Line

: Tape Playback Signal Line

: +B Line

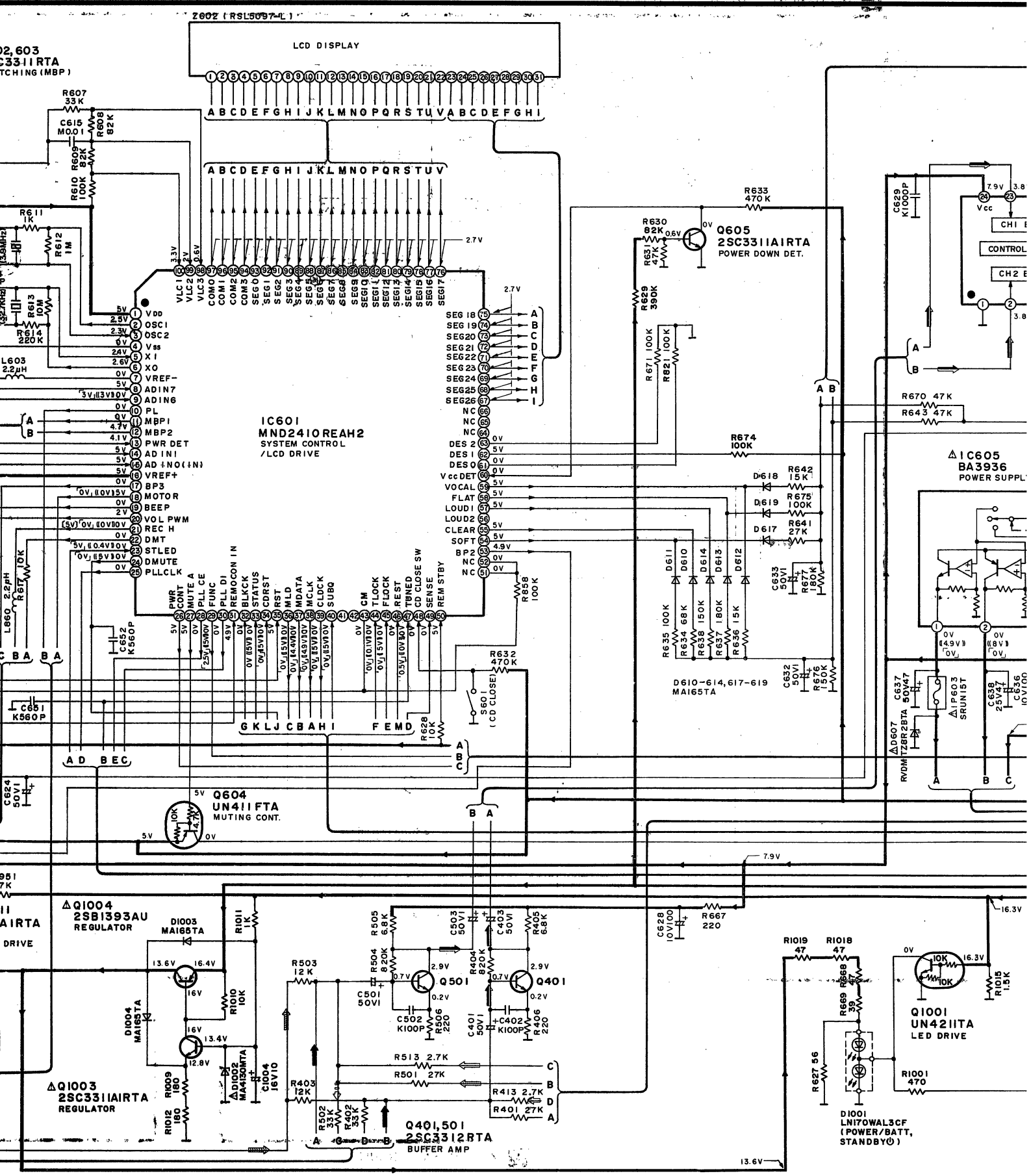
■ Schematic Diagram •Operation circuit, main circuit and power supply circuit (Parts list on pages

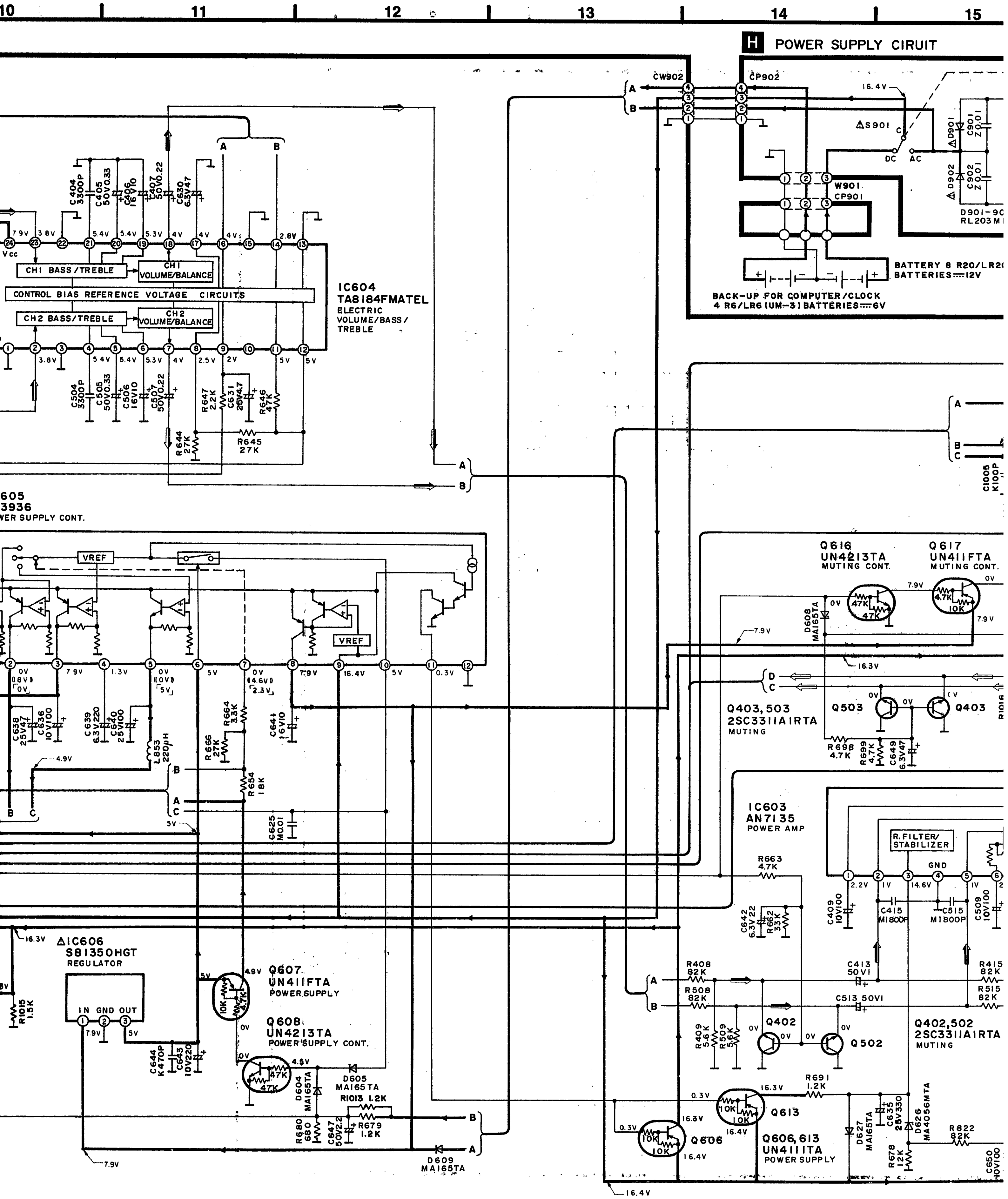


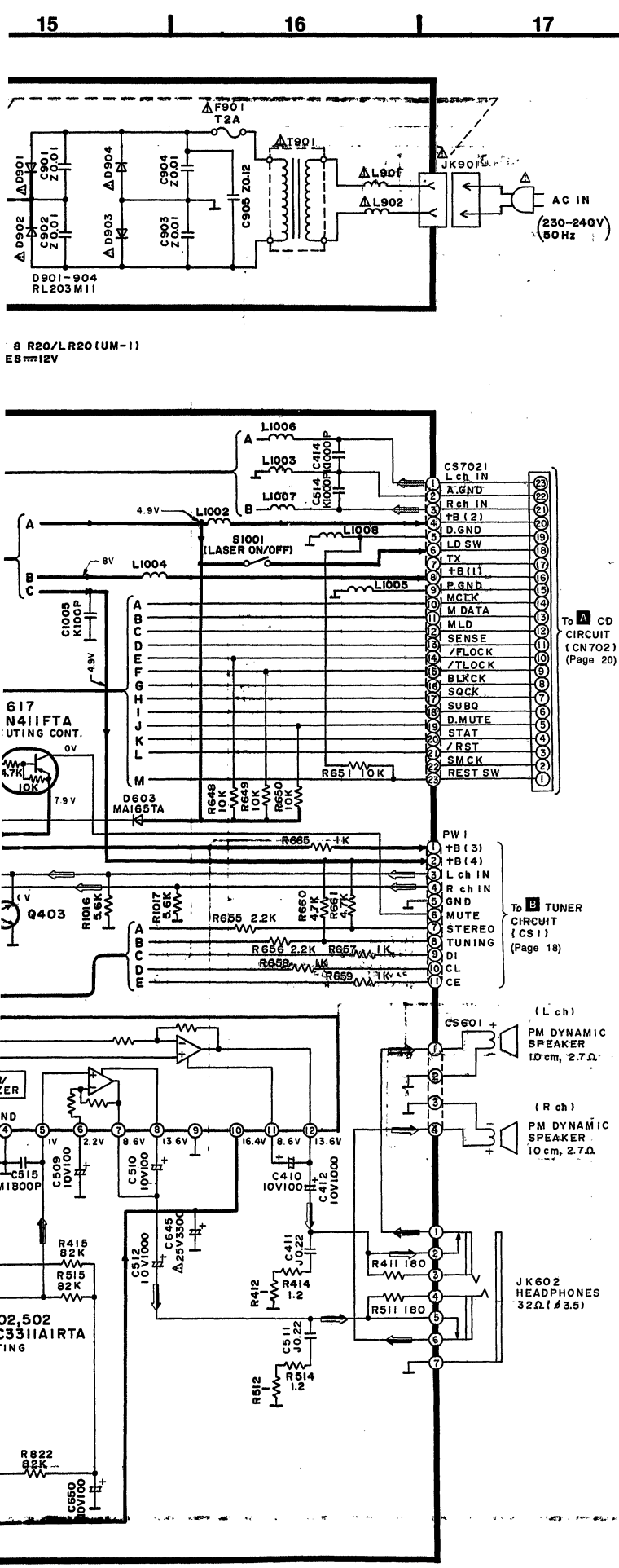
list on pages 56~61)

6 7 8 9 10

SUPPLY CONT. / E.VOLUME / BASS / TREBLE / POWER AMP / REGULATOR)




H POWER SUPPLY CIRUIT
CW902
CP902
ΔS901
DC
AC
ΔD901
ΔD902
C901 Z0.01
C902 Z0.01
W901
CP901
D901-90
RL203M
BATTERY 8 R20/LR20
BATTERIES 12V
BACK-UP FOR COMPUTER/CLOCK
4 R6/LR6 (UM-3) BATTERIES 6V
IC604
TA8184FMATEL
ELECTRIC
VOLUME/BASS/
TREBLE
CH1 BASS/TREBLE
CH1 VOLUME/BALANCE
CONTROL BIAS REFERENCE VOLTAGE CIRCUITS
CH2 BASS/TREBLE
CH2 VOLUME/BALANCE
Vcc
C404 3300P
C405 50V0.33
C406 16V10
C407 50V0.22
C630 6.3V47
C504 3300P
C505 50V0.33
C506 16V10
C507 50V0.22
R647 2.2K
C631 25V4.7
R646 47K
R644 27K
R645 27K
605
3936
WER SUPPLY CONT.
VREF
C638 25V47
C636 10V100
C639 6.3V220
C640 25V100
L853 220μH
R666 27K
R664 3.3K
R654 18K
C641 16V10
C625 M0.01
ΔIC606
S81350HGT
REGULATOR
IN GND OUT
R1015 1.5K
C644 K470P
C643 10V220
Q607
UN411FTA
POWER SUPPLY
Q608
UN4213TA
POWER SUPPLY CONT.
D604 MA165TA
D605 MA165TA
R1013 1.2K
R680 680
C647 50V22
R679 1.2K
D609 MA165TA
Q616
UN4213TA
MUTING CONT.
Q617
UN411FTA
MUTING CONT.
D608 MA165TA
Q403, 503
2SC3311AIRTA
MUTING
Q503
Q403
R698 4.7K
R699 4.7K
C649 6.3V47
C1005 K100P
IC603
AN7135
POWER AMP
R.FILTER/
STABILIZER
GND
R663 4.7K
C409 10V100
C415 M1800P
C515 M1800P
C509 10V100
C642 6.3V22
R662 33K
R408 82K
R508 82K
C413 50V1
C513 50V1
R409 5.6K
R509 5.6K
Q402
Q502
R415 82K
R515 82K
Q402,502
2SC3311AIRTA
MUTING
R691 1.2K
Q613
Q606
Q606, 613
UN4111TA
POWER SUPPLY
D627 MA165TA
C635 25V330
D626 MA4056MTA
R678 12K
R822 82K
C650 10V100
R1016



Notes:

- ●S601 : CD cover open/close detect switch
- ●S801 : Power switch (POWER)
- ●S802 : Tape function/stop switch (STOP)
- ●S803 : Tuner function/band select switch (BAND)
- ●S804 : Preset tuning switch (PRESET TUNING)
- ●S805 : Time set/tuning/CD skip switch (+/▶▶|)
- ●S806 : CD play/pause switch (PLAY/PAUSE)
- ●S807 : Time check switch (TIME CHECK)
- ●S808 : Timer set switch (TIMER)
- ●S809 : Volume down switch (VOLUME −)
- ●S810 : Volume up switch (VOLUME +)
- ●S811 : Preset EQ switch (PRESET EQ)
- ●S812 : Easy recording switch (EASY REC)
- ●S813 : Tape play/direction switch (PLAY/DIR)
- ●S814 : Record pause switch (● ❚❚)
- ●S815 : Tape rewind switch (REW)
- ●S816 : Tape fast forward switch (FF)
- ●S817 : Time set/tuning/CD skip switch (−/|◀◀)
- ●S818 : Adjust/memory switch (ADJUST/MEMORY)
- ●S819 : CD stop/clear switch (STOP/CLEAR)
- ●S901 : AC/DC select switch in "DC" position
- ●S1001 : Laser on/off switch

●Battery current:

Vol. min...198 mA (FM)	Vol. max...1110 mA (FM)
183 mA (MW/LW)	840 mA (MW/LW)
264 mA (TAPE)	1220 mA (TAPE)
380 mA (CD)	1410 mA (CD)

Measurement instruction

MW/LW:	74 dB/m, 30% Mod.
FM:	60 dB, 30% Mod.
TAPE:	315 Hz, 0 dB
CD:	1 kHz, 0 dB

●DC voltage measurements are taken with electronics voltmeter.
The negative terminal of the battery provides negative meter connection point.

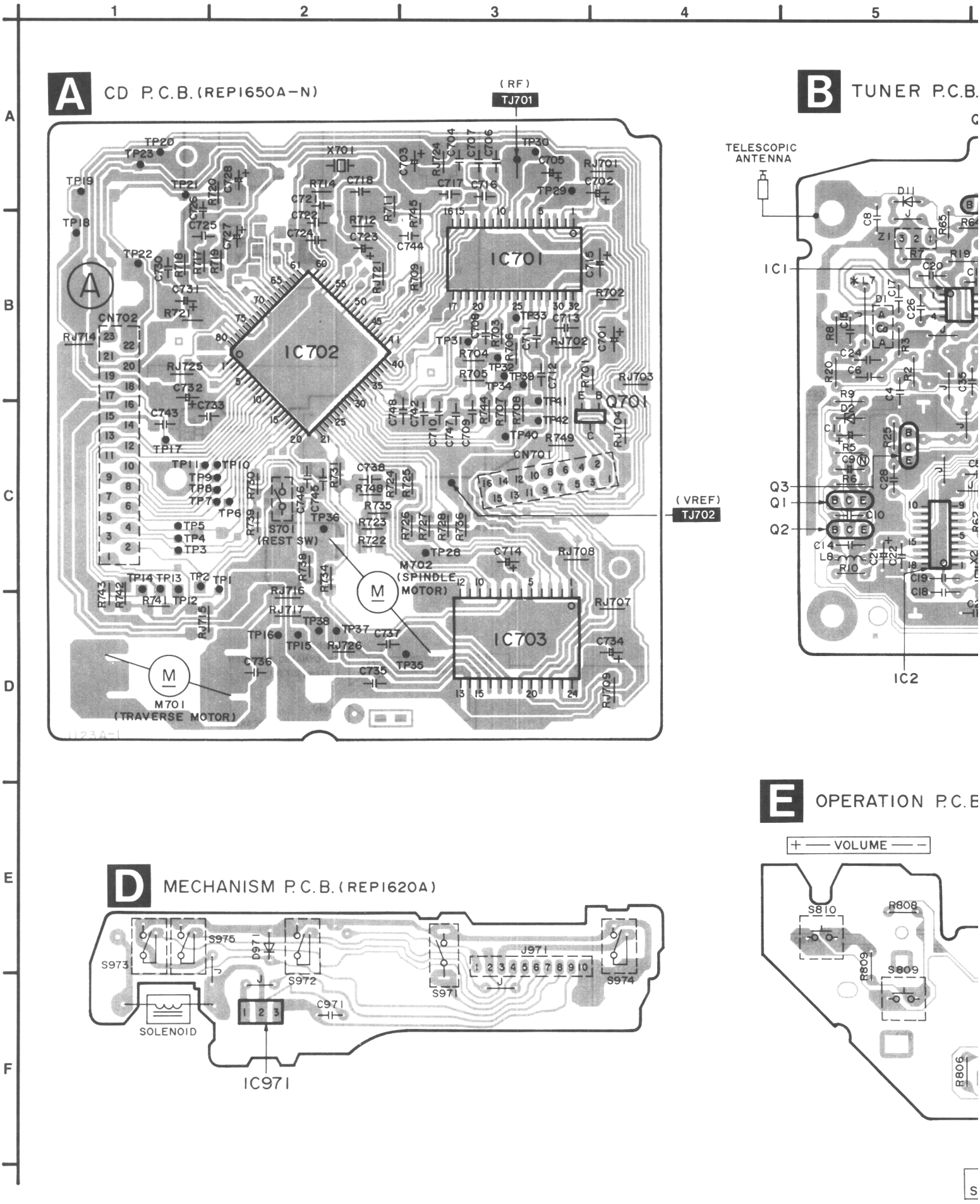
No mark...TAPE PLAYBACK ⌈ ⌋...TUNER (( ))...CD

●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.

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

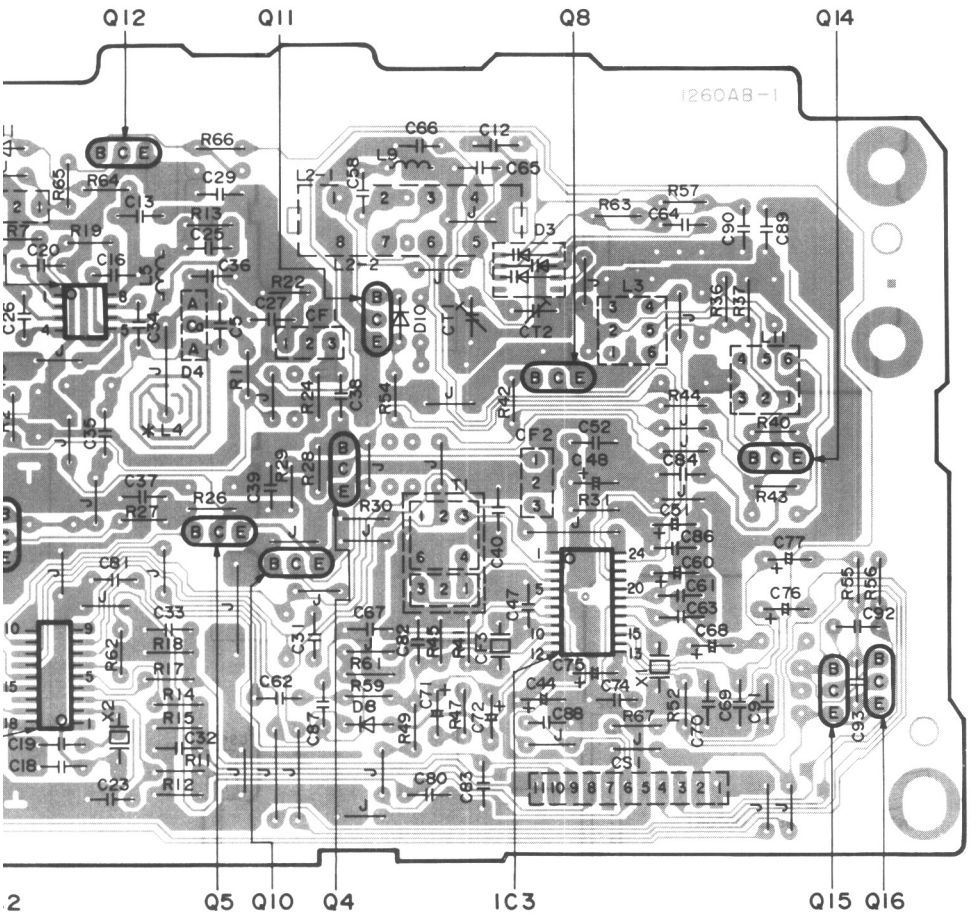
: FM Signal Line
: Record Signal Line
: Tape Playback Signal Line
: CD Signal Line
: Mic Signal Line
: Main Signal Line
: +B Line

■ Printed Circuit Board Diagram

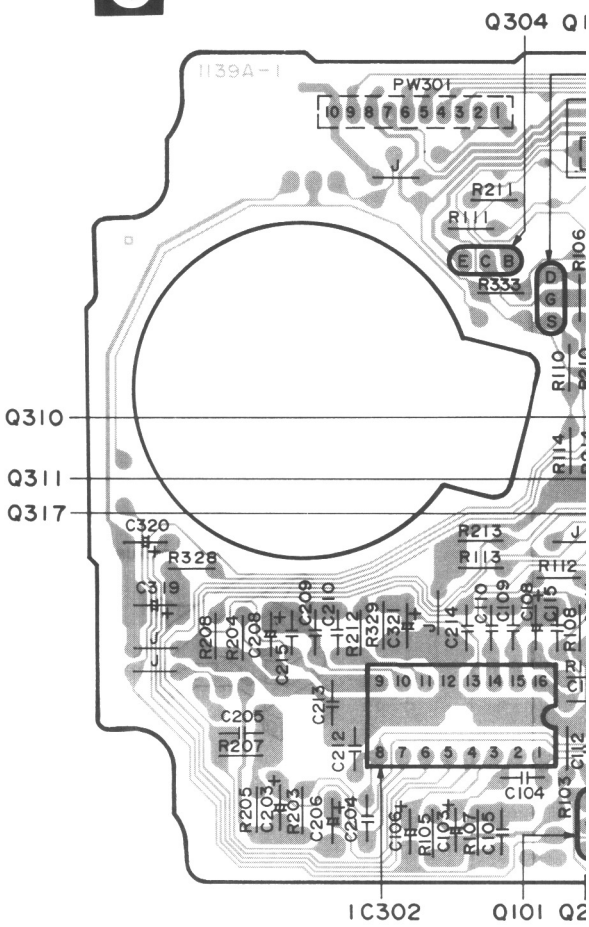


6 7 8 9 10

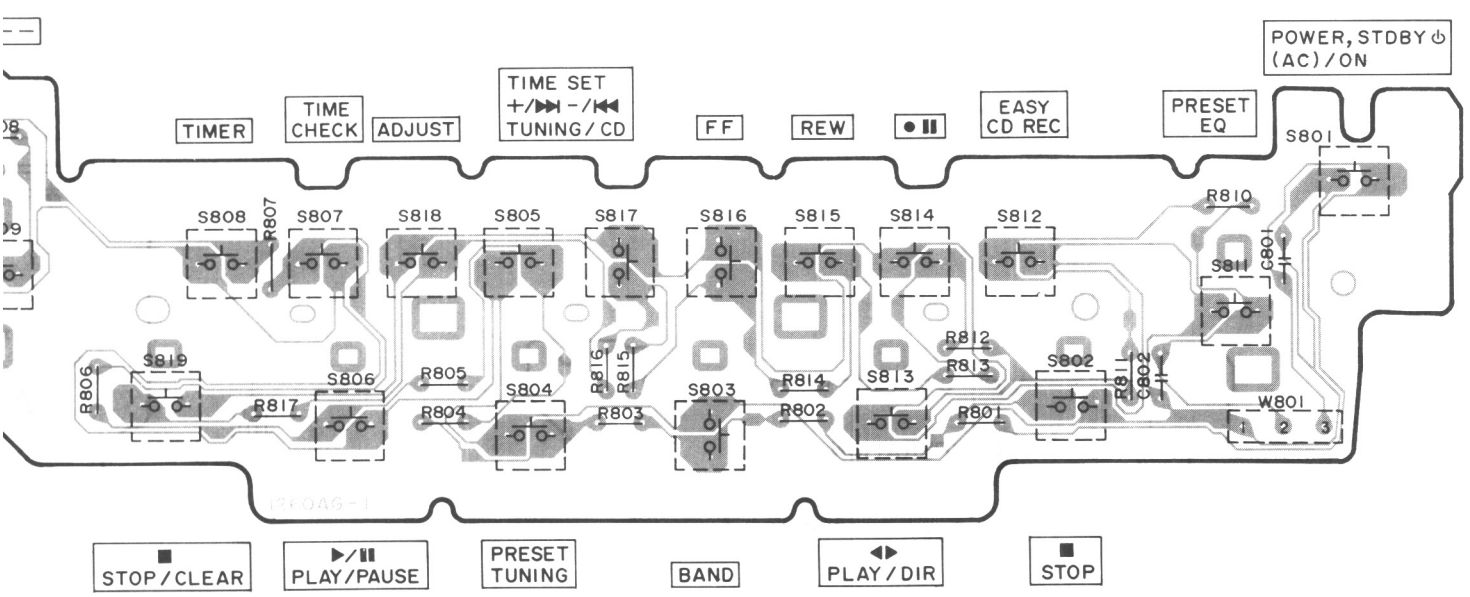
R P.C.B. (REP1747B)



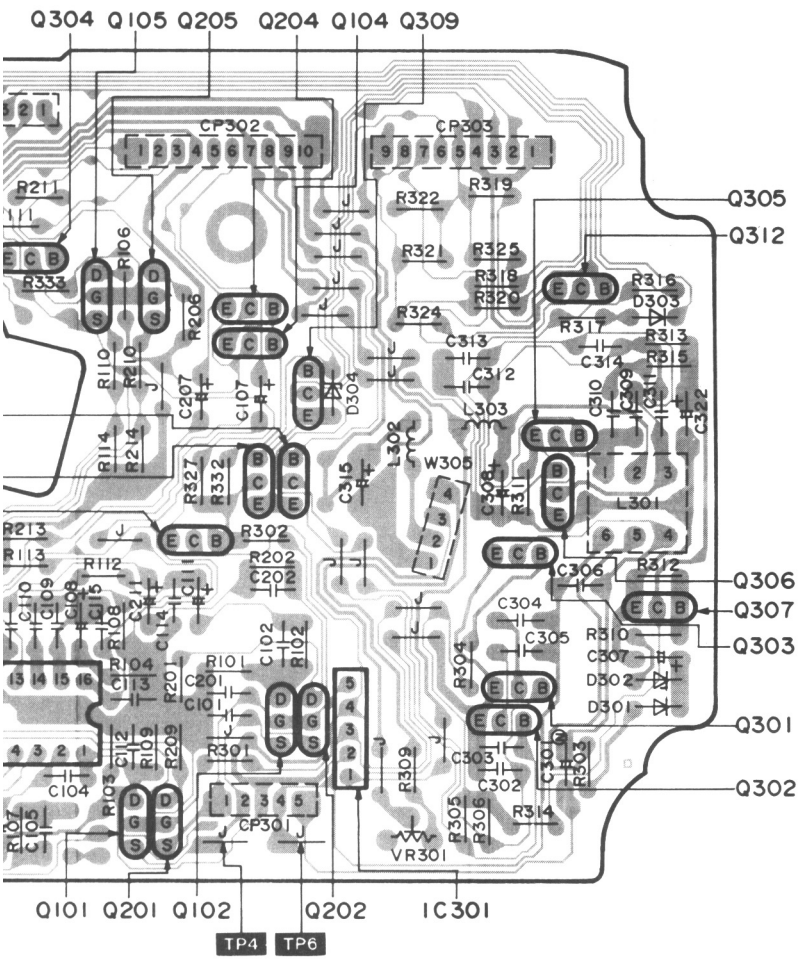
C MECHANISM CONTROL P.C.



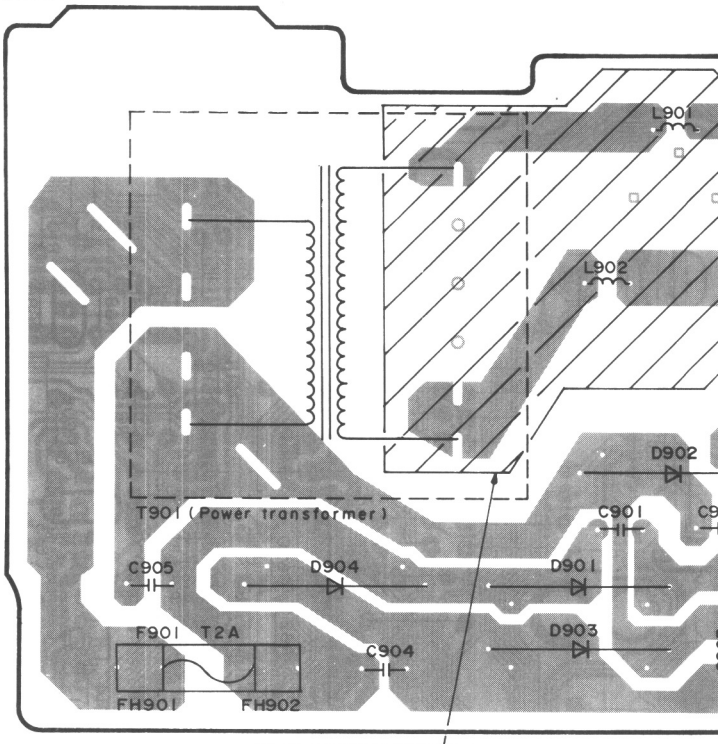
N P.C.B. (REP1747B)



ROL P.C.B. (REPI746B)

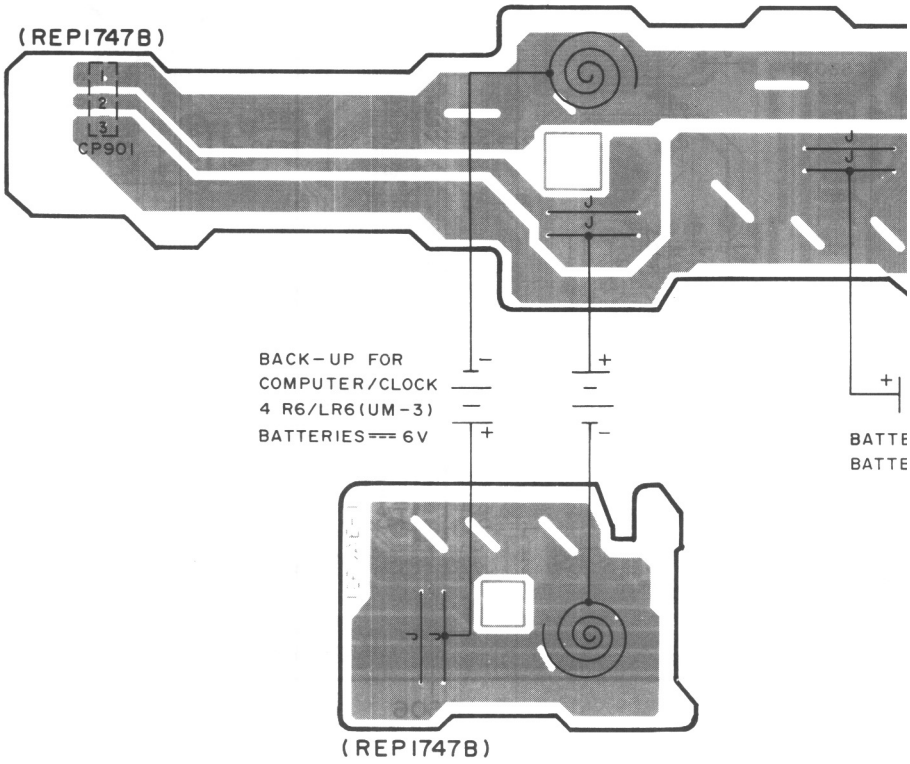


H POWER SUPPLY P.C.B. (REPI747B)

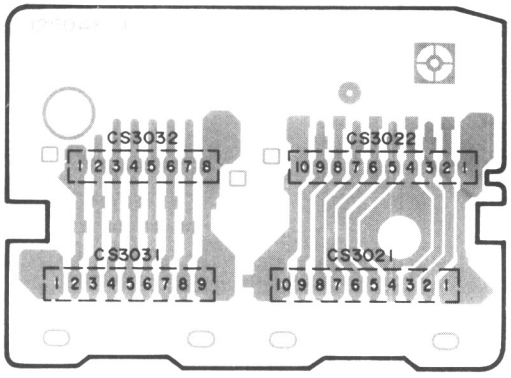


CAUTION
RISK OF ELECTRIC SHOCK
AC voltage line. Please do not touch this portion.

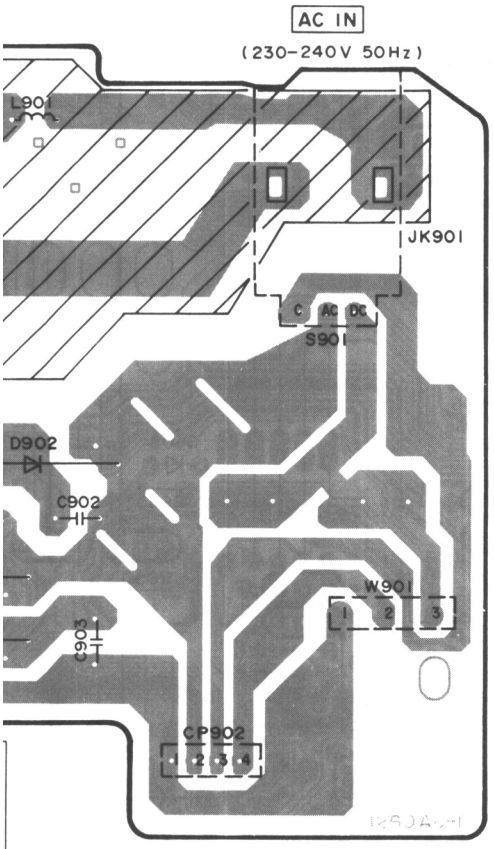
(REPI747B)

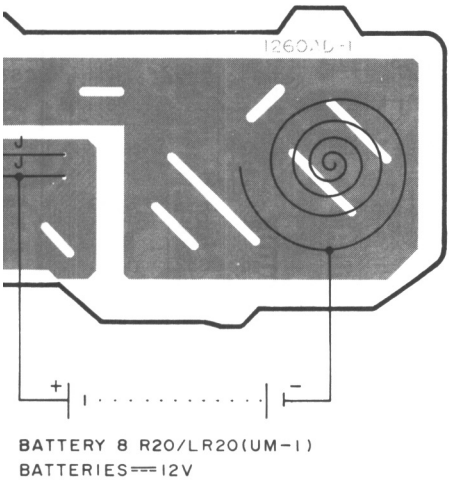


F CONNECTOR P.C.B. (REPI747B)



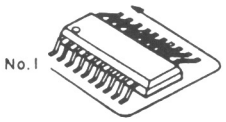
5 | 16 | 17 | 18 | 19



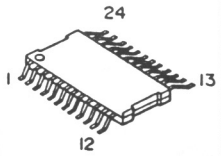


BATTERY 8 R20/LR20(UM-1)
BATTERIES=== 12V

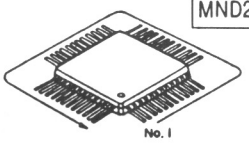
TA7358FMATEL	8 Pin	XLU2616F-E1	18Pin
		LA1831MSATEL	24Pin
		TA8184FMATEL	24Pin
		AN8802SCE1V	32Pin



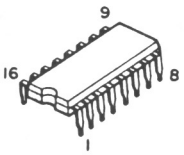
AN8389SE1



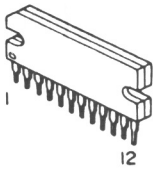
MN66271RA	80Pin
MND2410REAH1	100Pin



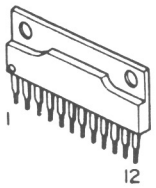
TA8142AP



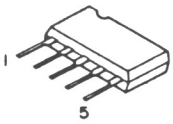
BA3936



AN7135



BA7755



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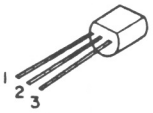
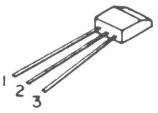
S81350HG



DN6851ALB

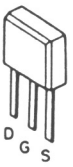


2SC2786LTA
2SC3311AIRTA
2SC3311R
2SC3311AR
2SC3312RTA
2SC3313B

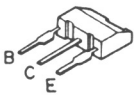
2SD1450RTA
UN411FTA
UN4111
UN4116
UN421FTA
UN421LTA

UN4211
UN4213
UN4214TA

2SJ164QTA

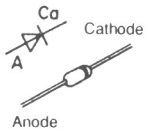


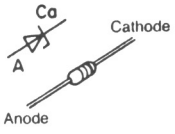
2SB1398QTA



2SB709S

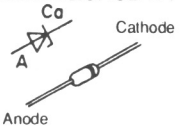
MA165
RVD1SS133TA



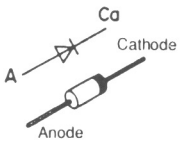


MA4051-L
MA4056MTA
MA4130M

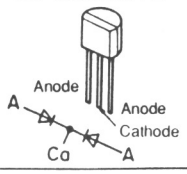
RVDMTZ4R7BTA
RVDMTZ8R2BTA
RVDMTZ6R8BTA



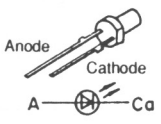
RL203M11



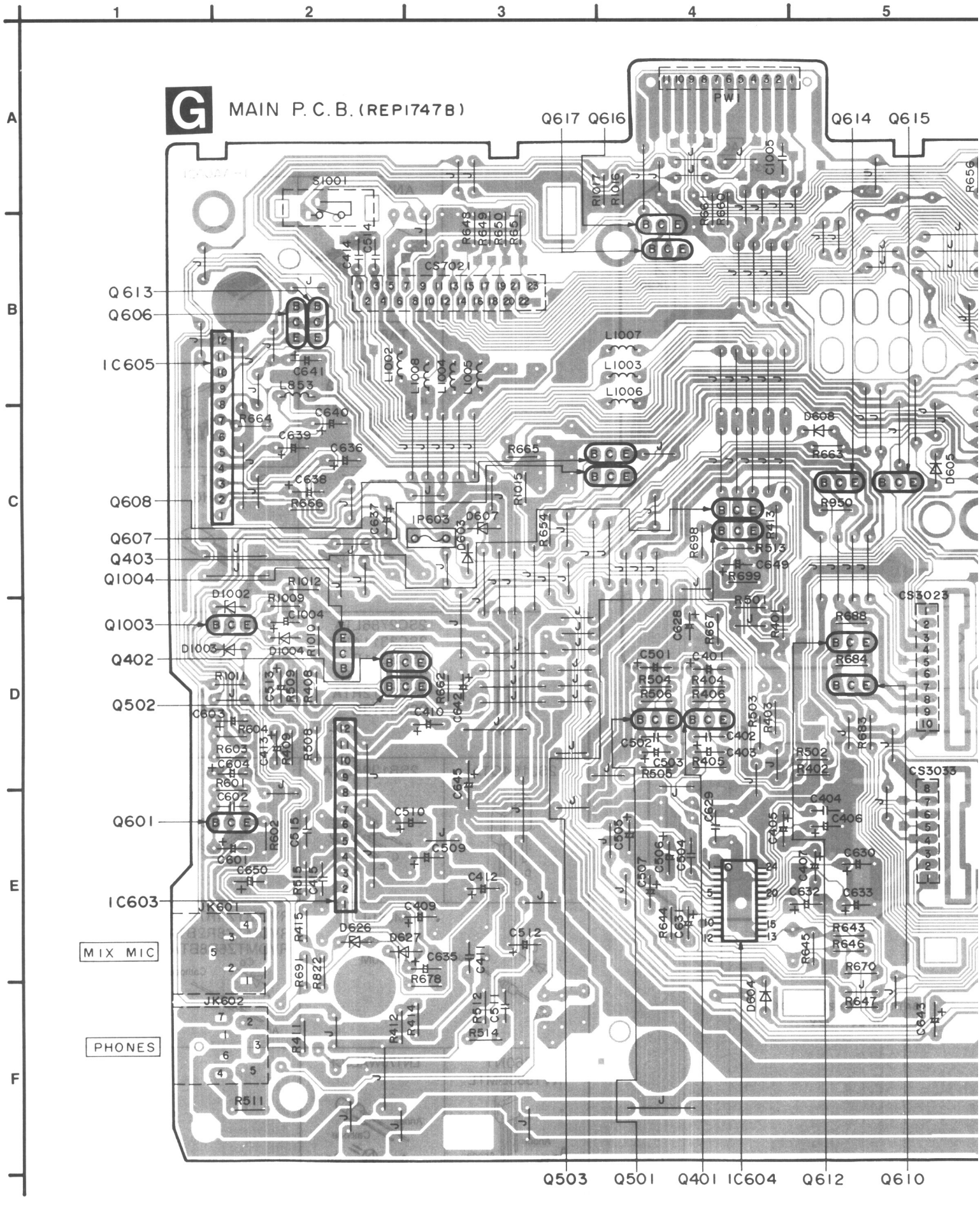
KV1360NT
KV1583BMTL

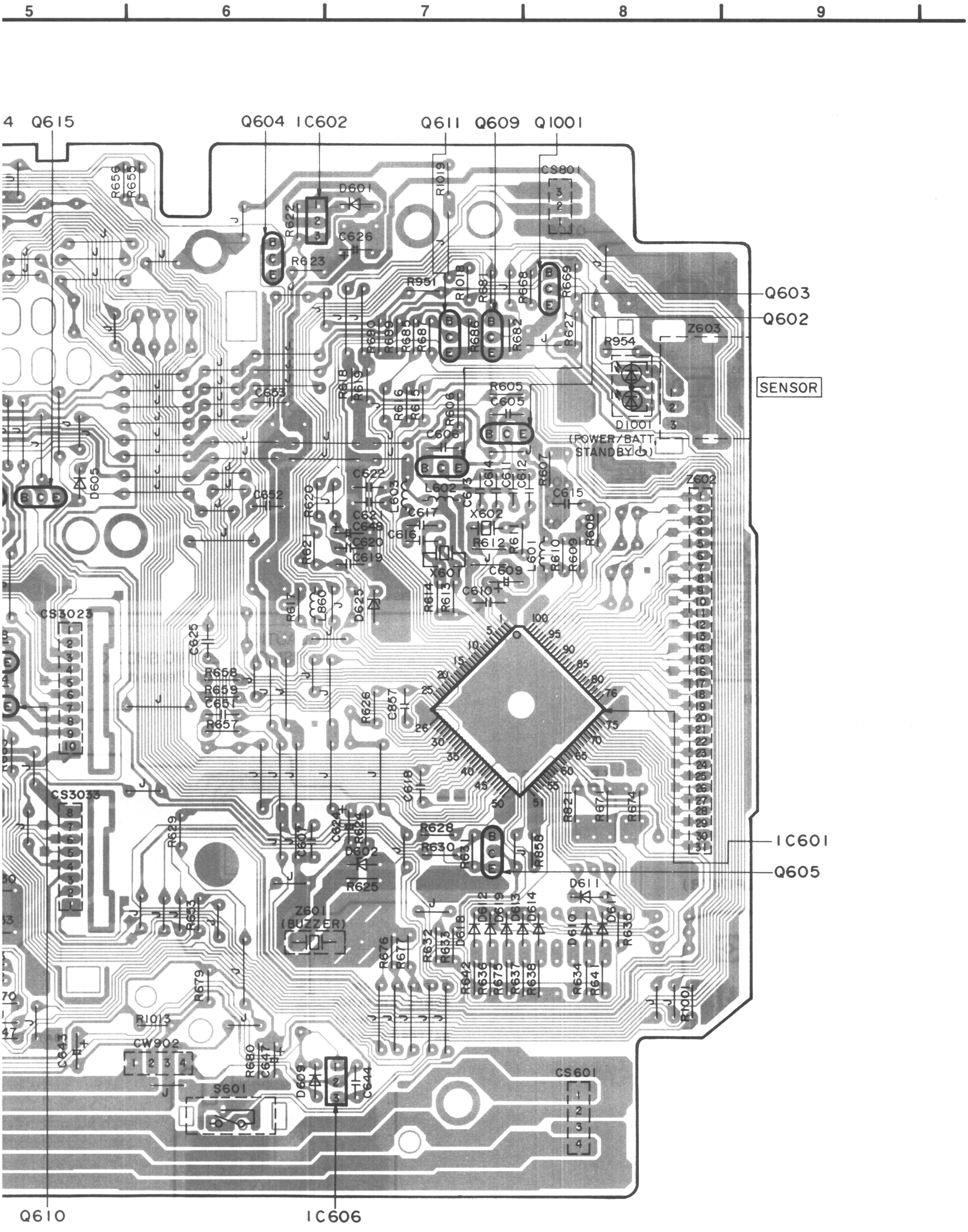


LN170WAL3CF

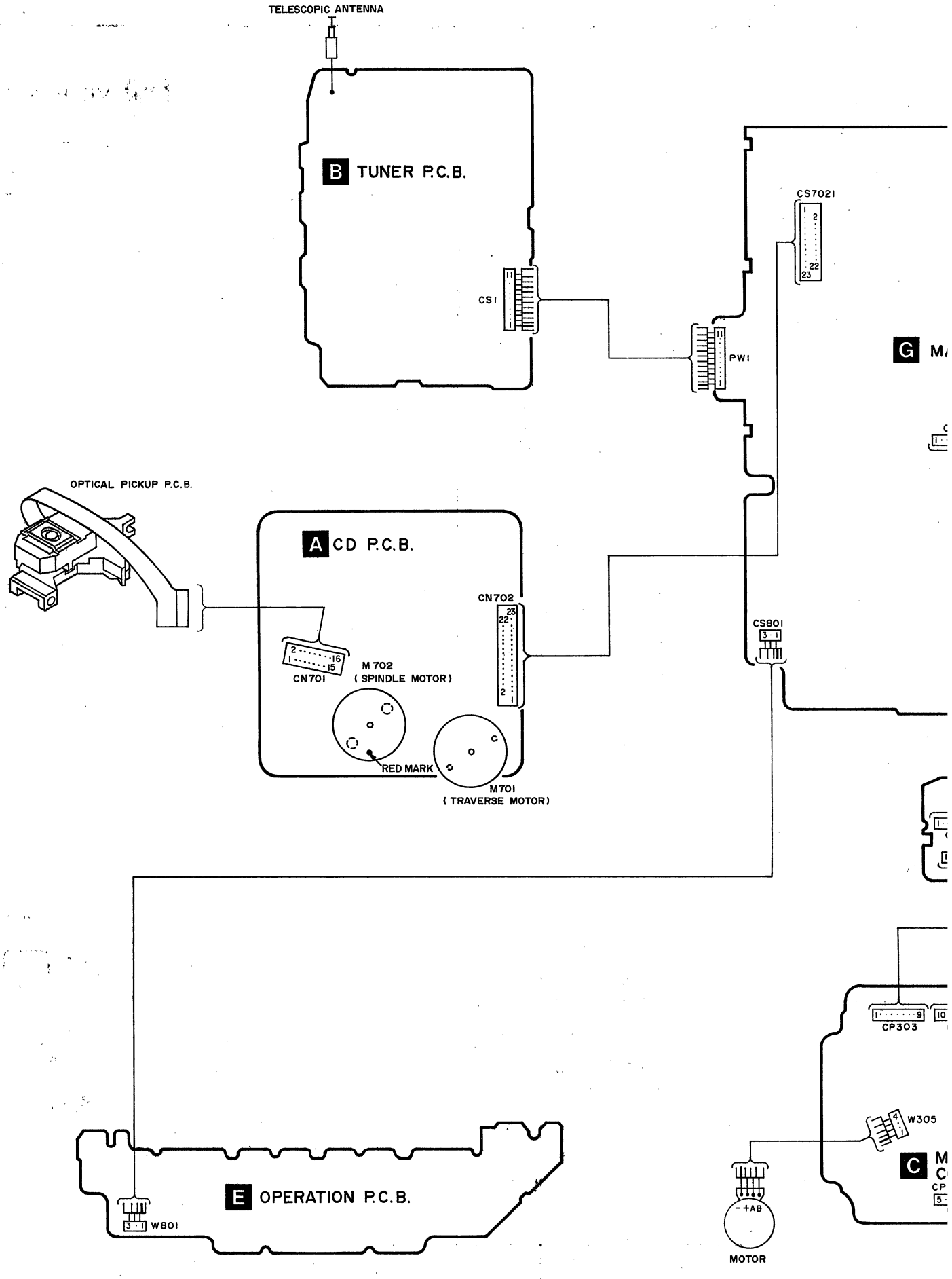


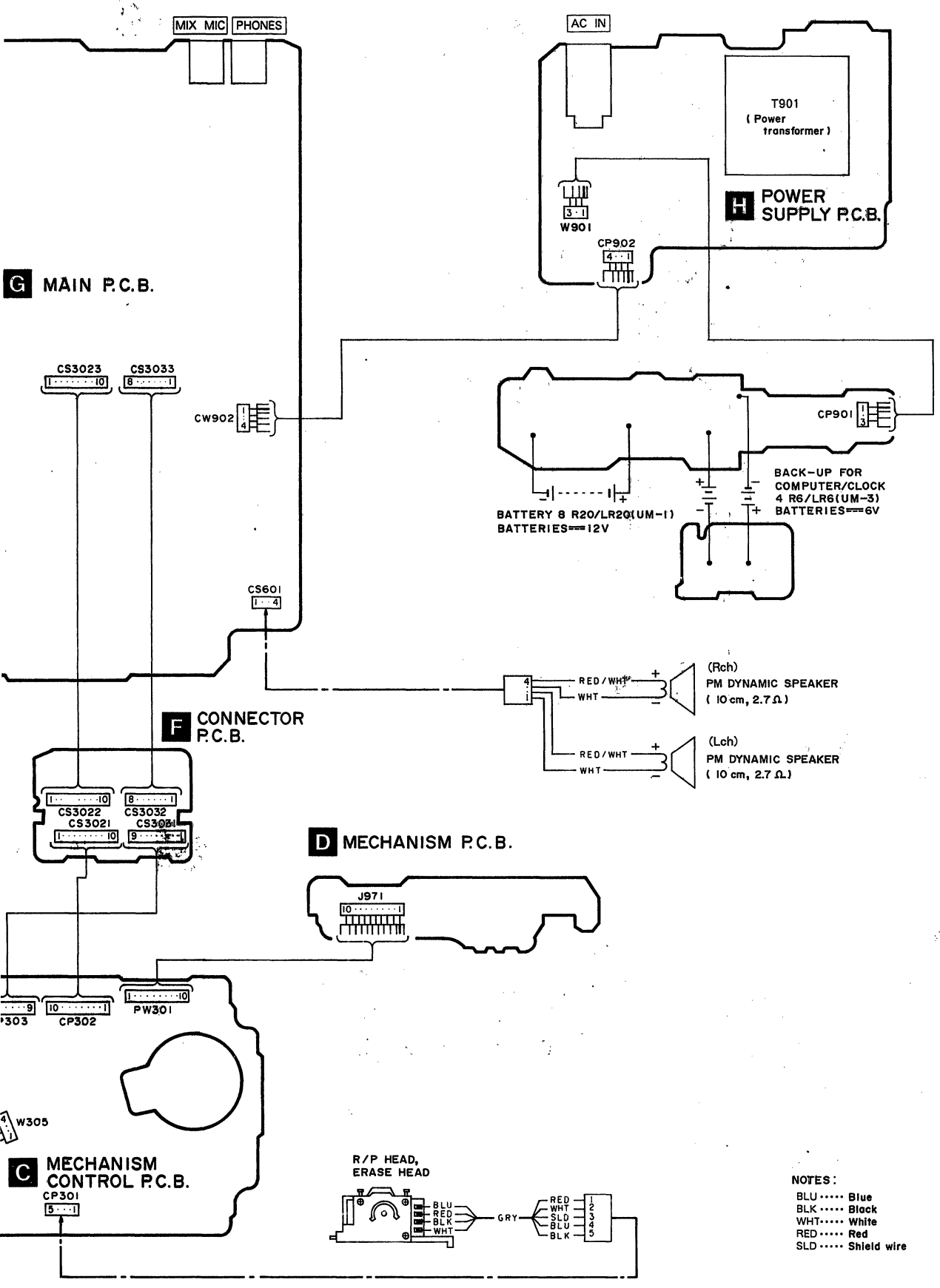
■ Printed Circuit Board Diagram




5
6
7
8
9
Q615
Q604
IC602
Q611
Q609
Q1001
Q603
Q602
SENSOR
(POWER/BATT. STANDBY)
IC601
Q605
Q610
IC606
CS3023
CS3033
CW902
S601
CS601
Z601 (BUZZER)
Z602
Z603
D1001
CS801

■ Wiring Connection Diagram

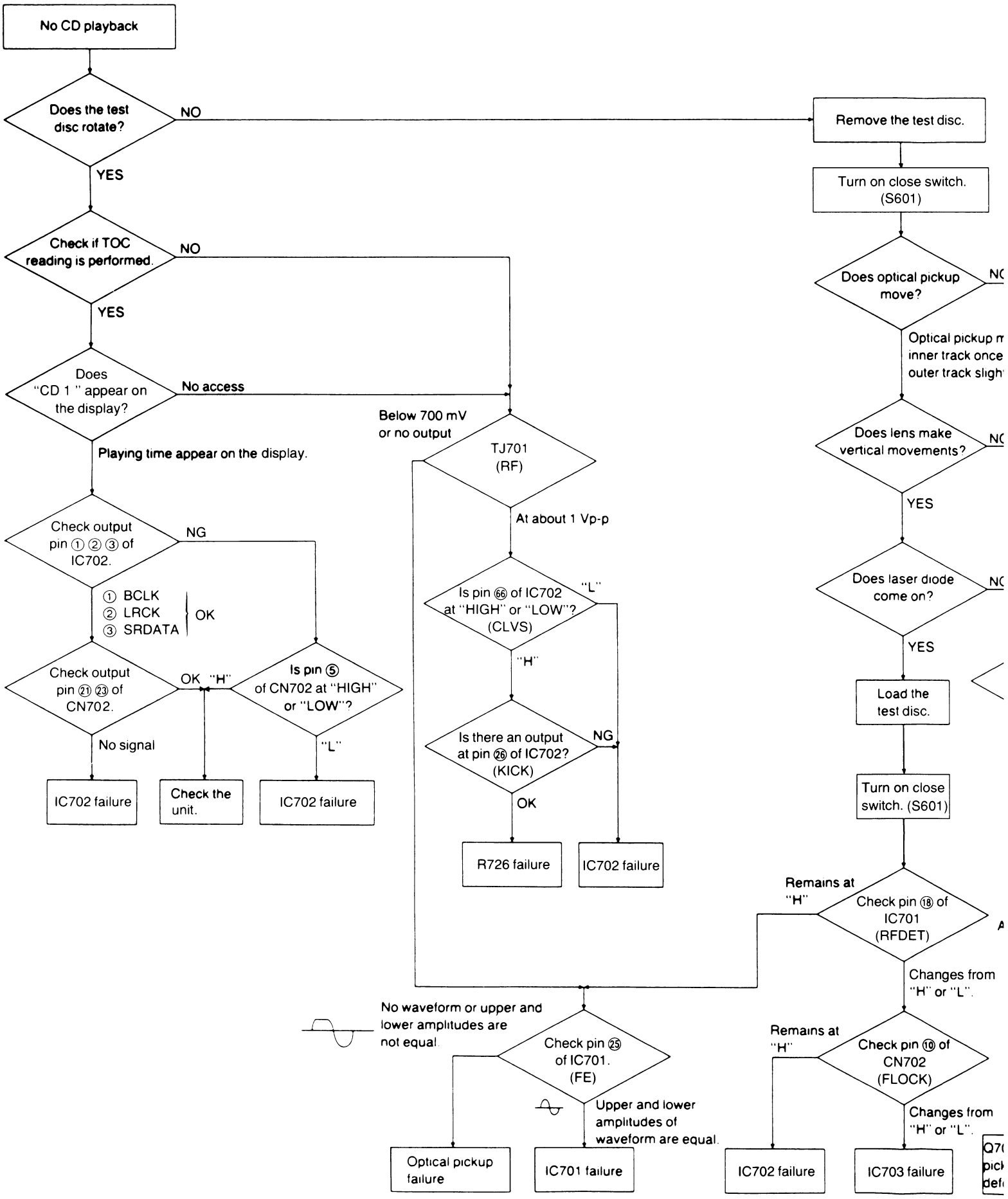


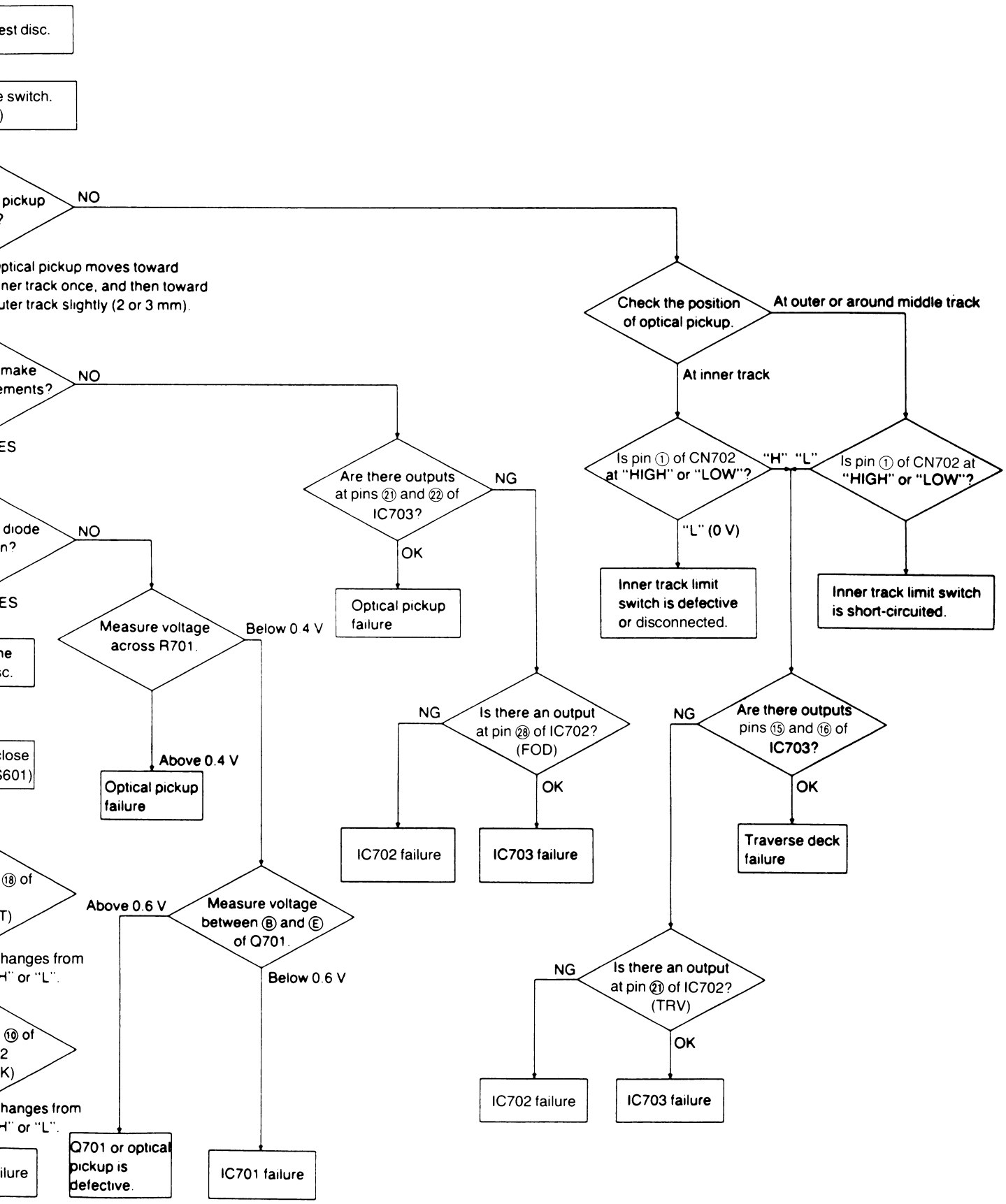


NOTES:

BLU ····· Blue
BLK ····· Black
WHT····· White
RED ····· Red
SLD ····· Shield wire

■ Troubleshooting Guide (CD section)




est disc.
e switch.
)
pickup
?
NO
ptical pickup moves toward
ner track once, and then toward
uter track slightly (2 or 3 mm).
Check the position of optical pickup.
At outer or around middle track
At inner track
make
ements?
NO
ES
Are there outputs at pins ㉑ and ㉒ of IC703?
NG
OK
Optical pickup failure
Is pin ① of CN702 at "HIGH" or "LOW"?
"H" "L"
Is pin ① of CN702 at "HIGH" or "LOW"?
"L" (0 V)
Inner track limit switch is defective or disconnected.
Inner track limit switch is short-circuited.
diode
n?
NO
ES
Measure voltage across R701.
Below 0.4 V
Above 0.4 V
Optical pickup failure
NG
Is there an output at pin ㉘ of IC702? (FOD)
OK
IC702 failure
IC703 failure
NG
Are there outputs pins ⑮ and ⑯ of IC703?
OK
Traverse deck failure
⑱ of
T)
Above 0.6 V
Measure voltage between Ⓑ and Ⓔ of Q701.
Below 0.6 V
hanges from
H" or "L".
⑩ of
2
K)
hanges from
H" or "L".
NG
Is there an output at pin ㉑ of IC702? (TRV)
OK
IC702 failure
IC703 failure
ilure
Q701 or optical pickup is defective.
IC701 failure

■ Self Check Function

The self check function is equipped with this unit, and the condition of the unit can be checked using this function.
Use this function before or after repair.

●SETTING OF SELF CHECK FUNCTION

1. Connect the AC power cord of this unit to an AC outlet and turn the unit on.
2. Press the numeric keys "4" and then "7" on the remote controller while holding down the tape stop (STOP) button on this unit. The LCD indicators will appear as refer to Fig. 1.
   (This display indicates the self check mode is ON.)

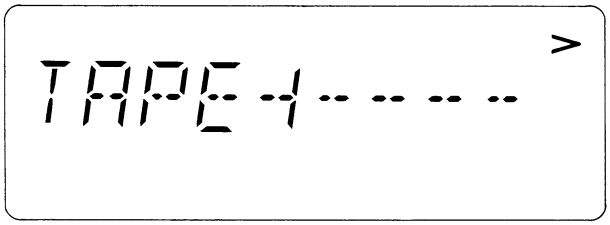


Fig. 1

●CHECK OF MALFUNCTION OF SWITCHES (TACT SWITCH)

1. Press the numeric key "3" on the remote controller.
2. All indicators on the LCD will disappear.
3. When the tact switches except POWER switch are pressed in sequence the corresponding indicators will appear on the LCD as shown in Table 1 and Fig. 2.
   Note: Do not press POWER switch. If the switch is pressed, the unit is turned off and self check mode is cancelled.
4. When the display in Fig. 2 appears, all the LCD indicators will go on. (Refer to Fig. 3.)
5. If any indicator does not appear on the LCD, the corresponding switch is considered abnormal.

Segment	Button	Segment	Button	Segment	Button
①	PRESET EQ	⑪	TIME SET +/ ▶▶|	㉑	STOP
②	EASY CD REC	⑫	ADJUST	㉑	PLAY/DIR
③	●❚❚	⑬	TIME CHECK	㉓	BAND
④	REW	⑭	TIMER	㉔	PRESET TUNING
⑤	FF	⑮	VOLUME –	㉕	PLAY/PAUSE
⑥	TIME SET –/ |◀◀	⑯	VOLUME +	㉖	STOP/CLEAR

Table 1

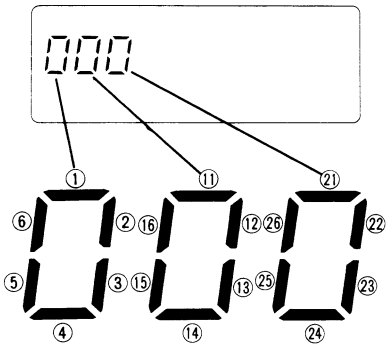


Fig. 2

●CHECK OF ALL INDICATOR ON THE LCD

1. Press the numeric key "8" on the remote controller.
2. All the LCD indicators will go on. (Refer to Fig. 3.)
   If any indicator does not appear, the LCD or LCD drive circuit is considered abnormal.

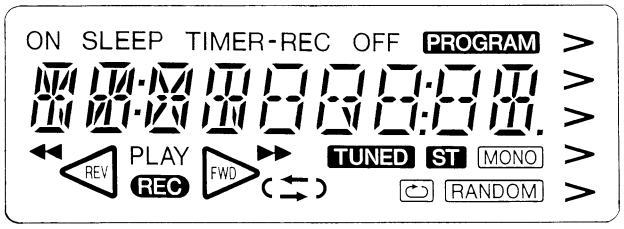
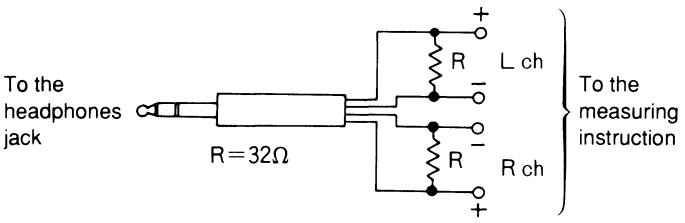


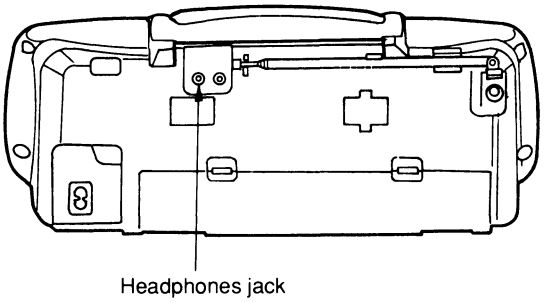
Fig. 3

- To cancel the self check mode, turn off this unit by pressing the power button.
- The unit comes to the self check mode by pressing the numeric keys "4", "5" and "10" on the remote controller, but the self check can not be performed.
- The self check mode will be cancelled by pressing the numeric keys "6" and "9" on the remote controller.

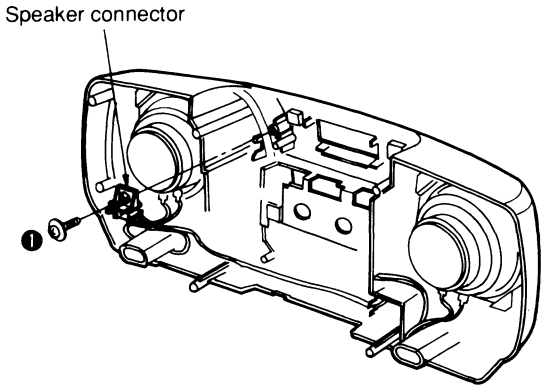
■ Preparations for Check and Adjustment of P.C.B.

•Fabricate the measuring instrument as shown below to measure the audio output from the headphones jack for check and adjustment of the P.C.B.

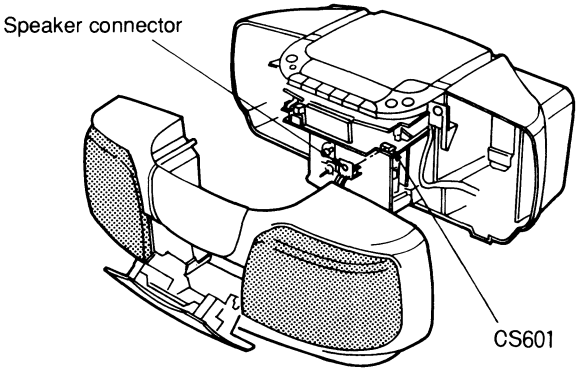




•When you measure the audio output from the speaker without using the measuring instrument for the headphones output, make connections shown below.



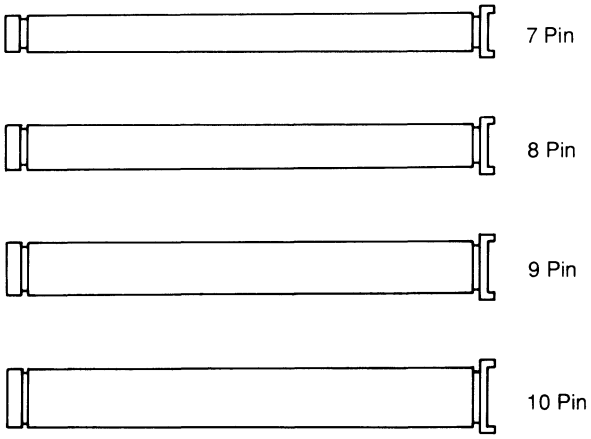
1. Remove the screw (❶).
2. Remove the speaker wires and the speaker connector from the front cabinet.



3. Connect the speaker connector to the speaker output connector (CS601).

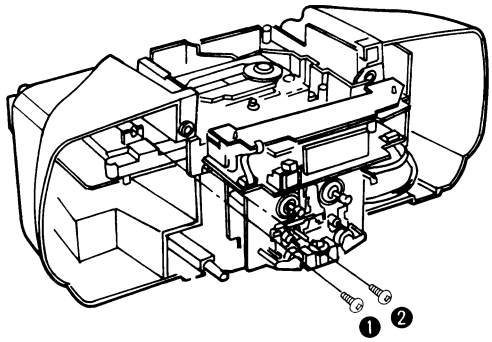
•The following extension cable kit is necessary to check and adjust the unit's P.C.B.

•RFKZ0048 (A set of 4 extention cables)

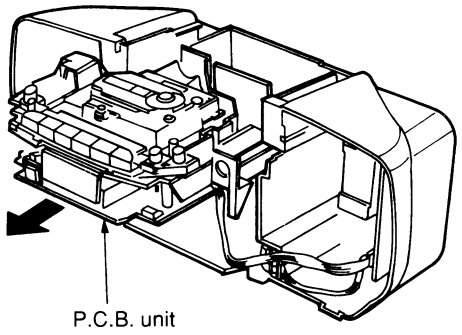


●Check and Adjustment of the Tuner P.C.B.

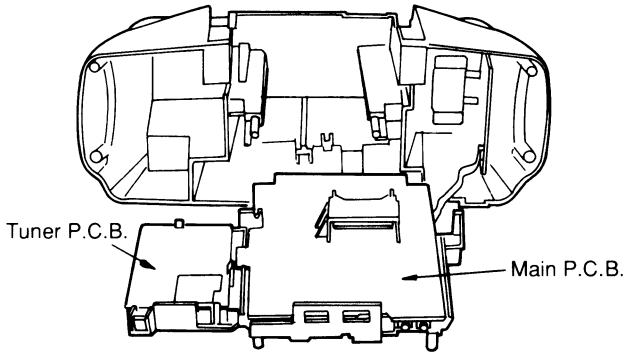
1. Remove the upper cabinet as explained on the page 10 in the Disassembly Instructions. (Ref. No. 5 Removal of the Upper Cabinet)



2. Remove 2 screws (❶, ❷).



3. Pull out the P.C.B. unit in the direction of the arrow.

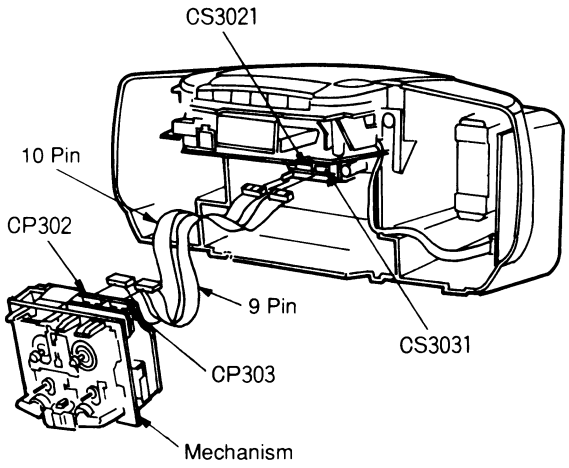


4. Put the P.C.B. unit as shown in the left figure.

●Check and adjust the tuner P.C.B. in this condition.

●Check and Adjustment of the Mechanism Control P.C.B.

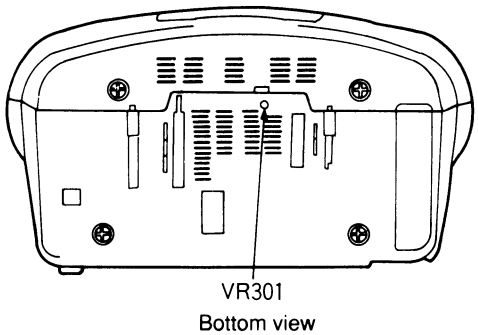
1. Remove the mechanism as explained on page 10 in the Disassembly Instructions. (Ref. No. 3 Removal of the Mechanism)



2. Connect 2 extension cables.

●Check and adjustment the mechanism control P.C.B. in this condition.

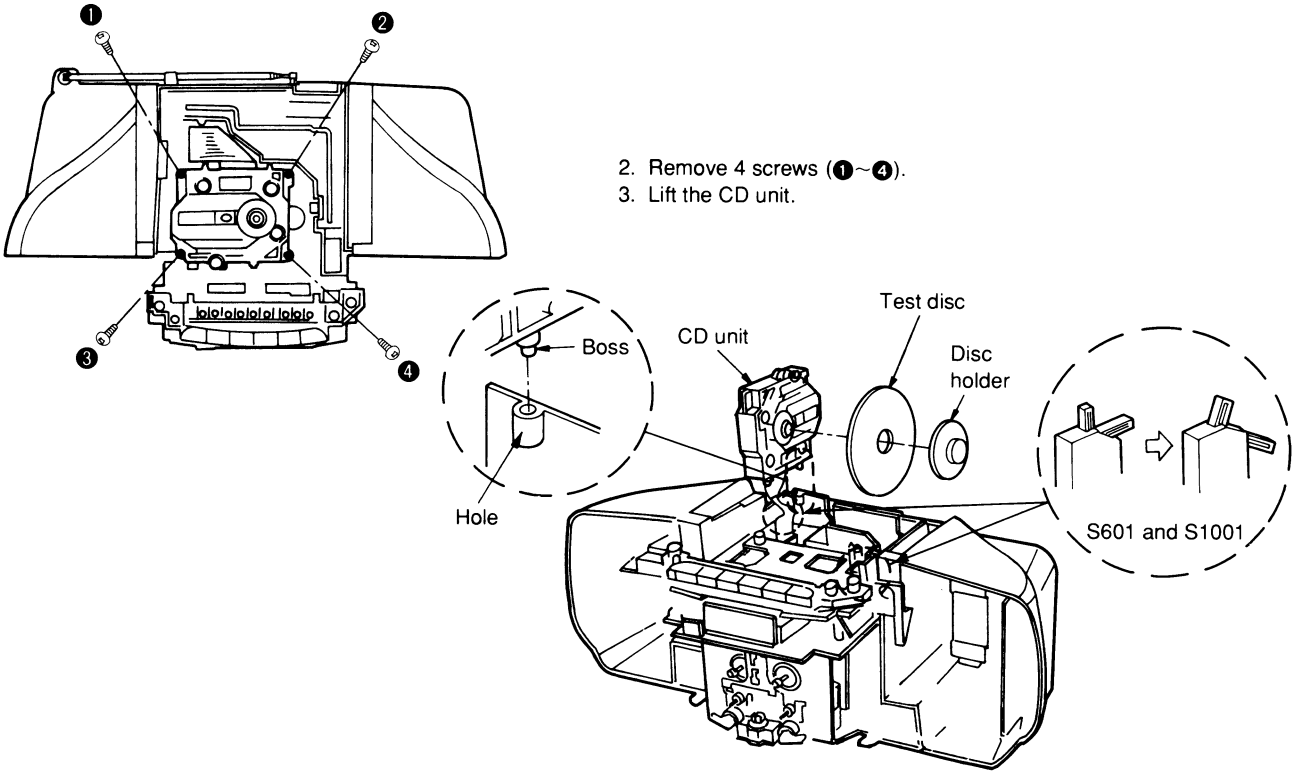
<When adjusting only tape speed>



●Insert the screwdriver through the hole for tape speed adjustment on the bottom of this unit.
Then adjust VR301 on the mechanism control P.C.B.

•Check and Adjustment of the CD P.C.B.

1. Remove the upper cabinet as explained on page 10 in the Disassembly Instructions. (Ref. No. 5 Removal of the Upper Cabinet)



2. Remove 4 screws (❶~❹).
3. Lift the CD unit.
4. Insert the boss on the CD unit into the hole and fix to make the CD unit stand.
5. Remove the disc holder as explained on page 15 in the Disassembly Instructions. (Ref. No. 23 Removal of the Disc Holder)
6. Fix a test disc with the disc holder.
7. Set switch (S601 and S1001) to ON.

•Check and adjustment the CD P.C.B. in this condition.

■ Measurements and Adjustments

<TUNER SECTION>

•ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
•Set power source voltage to 12 V DC. •Set function to TUNER/MW or LW.	•Set volume level to −12 dB. •Output of signal generator should be no higher than necessary to obtain an output reading.

•MW-RF ALIGNMENT

(The parts other than the ones listed below are aligned at the factory before they are supplied. Therefore, alignment of those parts is unnecessary when used for replacement.)

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1.)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	594 kHz	Tune to signal	Headphones Jack (32Ω) (Fabricate the plug as shown in Page 40 and then connect the lead wires of the plug to the measuring instrument.)	(*1) L2-1 (MW ANT Coil)	Adjust for maximum output. Adjust L2-1 by moving coil along the ferrite core.
〃	1503 kHz	〃	〃	CT1 (MW ANT Trimmer)	Adjust for maximum output.
(*1) Fix antenna coil with wax after completing alignment.					

•LW-RF ALIGNMENT

(The parts other than the ones listed below are aligned at the factory before they are supplied. Therefore, alignment of those parts is unnecessary when used for replacement.)

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Refer to Fig. 1.)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver.	153 kHz	Tune to signal	Headphones Jack (32Ω) (Fabricate the plug as shown in Page 40 and then connect the lead wires of the plug to the measuring instrument.)	(*2) L2-2 (LW ANT Coil)	Adjust for maximum output. Adjust L2-2 by moving coil along the ferrite core.
〃	270 kHz	〃	〃	CT2 (LW ANT Trimmer)	Adjust for maximum output.
(*2) Fix antenna coil with wax after completing alignment.					

•ALIGNMENT POINT

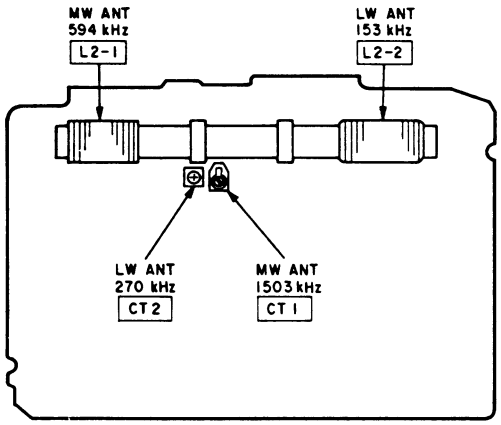


Fig. 1

<CASSETTE DECK SECTION>

•ALIGNMENT INSTRUCTION

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT	
•Set power source voltage to 12 V DC. •Set function to TAPE.	•Set volume control to −12 dB. •Output of signal generator should be no higher than necessary to obtain an output reading.

•HEAD AZIMUTH ALIGNMENT

TEST TAPE	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT	SPECIFICATION	REMARKS
QZZCFM (8 kHz, −20 dB)	Headphones Jack (32Ω) (Fabricate the plug shown in Page 40 and then connect the lead wires of the plug to the measuring instrument.)	Azimuth Screw (Refer to Fig. 2.)	Maximum output	1. Insert the test tape (QZZCFM) and start playback in the forward direction. 2. Adjust the azimuth screw for maximum waveform on the oscilloscope and the similar output on L and R channels. 3. When adjusting the azimuth in the reverse direction, repeat the adjustment a several times because of a little slip on the forward direction side.

•TAPE SPEED ALIGNMENT

TEST TAPE	INDICATOR (FREQUENCY COUNTER)	ADJUSTMENT	REMARKS
QZZCWAT (3 kHz, −10 dB)	Headphones jack (32Ω) (Fabricate the plug shown in page 34 and then connect the lead wires of the plug to the measuring instrument.)	VR301 (Refer to Fig. 4.)	(Specification: 3000±40 Hz) 1. Insert a test tape (QZZCWAT) in DECK1 and start playback in forward direction. 2. Adjust VR301 until the frequency is set to 3000±20 Hz on the frequency counter. 3. Check that the frequency is set to within ±40 Hz for playback in forward direction after playback in reverse direction.

•RECORD BIAS VOLTAGE CHECK

TEST TAPE	INDICATOR ELECTRONIC VOLTMETER or OSCILLOSCOPE	ADJUSTMENT	SPECIFICATION	REMARKS
Use Normal tape.	TP6 ...(+) TP4 ...(−) (Refer to Fig. 4 and 5.)	——	15~18 mV	Insert the tape with erase-prevention tabs in deck and start recording.

•ALIGNMENT POINT

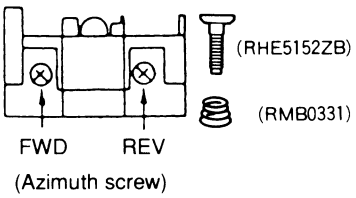


Fig. 2

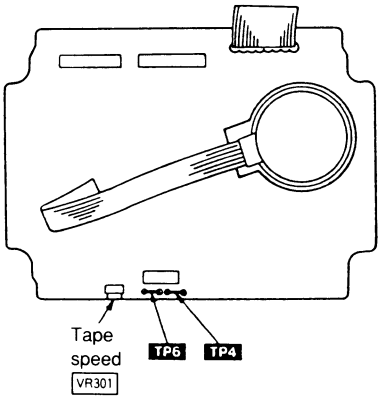
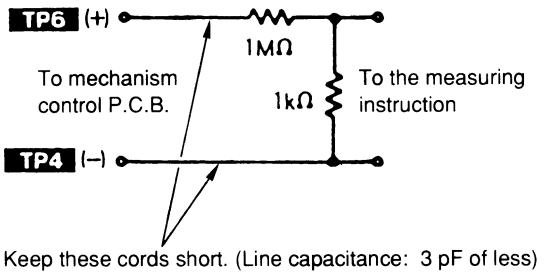


Fig. 4



Keep these cords short. (Line capacitance: 3 pF of less)

•In order not to influence the bias oscillation, divide the voltage with 1 MΩ and 1 kΩ resistors, and measure the voltage across the 1 kΩ resistor.

Fig. 5

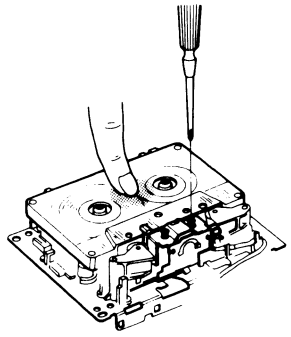


Fig. 3

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

<CD SECTION>

Caution:
It is very dangerous to look at 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.

•Preparation for Adjustment

1. Set up the unit following the procedure described in "Check and Adjustment for the CD P.C.B.". (See page 42.)
2. After completing the setup procedure, switch the unit off then switch it on again (to adjust the unit with the CD unit placed in an upright position).

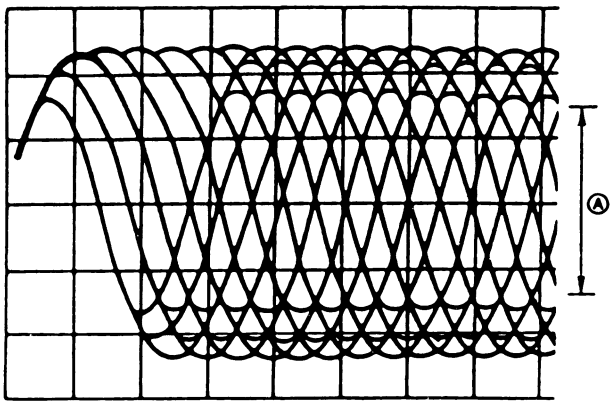
Measuring Instruments and Special Tools

- Test disc
  1. Playability test disc (SZZP1054C)
  2. Uneven test disc (SZZP1056C)
- Hexagonal wrench (M2.0) (SZZP1101C)
- **Oscilloscope**

(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 when the traverse deck has not been replaced. Make the electrical adjustments first.

1. Connect the oscilloscope's CH. 1 probe across **TJ701** (+) and **TJ702** (VREF) on the Servo P.C.B.
   Oscilloscope setting:
   VOLT ..... 200 mV
   SWEEP ..... 0.5 µsec
   Input coupling ..... AC
2. Switch the player power **ON**, and play track **19** on the test disc (SZZP1056C).
3. Leave the player in Play mode and place it as shown in the figure on the right.
4. Alternately adjust the two mechanical adjusting screws with the 2.0 mm allen wrench (SZZP1101C) until the RF signal amplitude on the oscilloscope is maximize. (Shown in Fig. 7)
5. After completing the adjustment, lock the **mechanical adjustments** with lock paint (RZZ0L01).



Ⓐ **Maximize the amplitude.**

●NEW DIGITAL SERVO CIRCUIT

A digital servo circuit employed in this unit is a new type circuit. All adjustment VRs, which are equipped with conventional digital servo circuits, are removed from the electric section. Therefore, only mechanical adjustments are necessary.

(2) 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 and reverse directions).**
- **Checking playability**
  1. **Play the 0.7 mm black dot and the 0.7 mm 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 and verify that no sound skip or noise occurs.**

●Locations of Adjustments

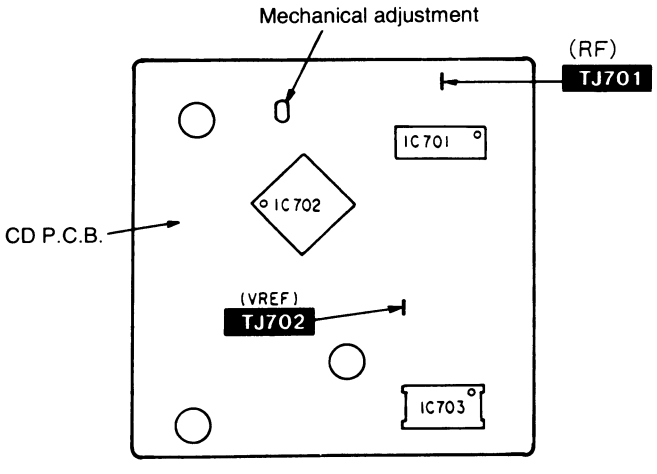


Fig. 6

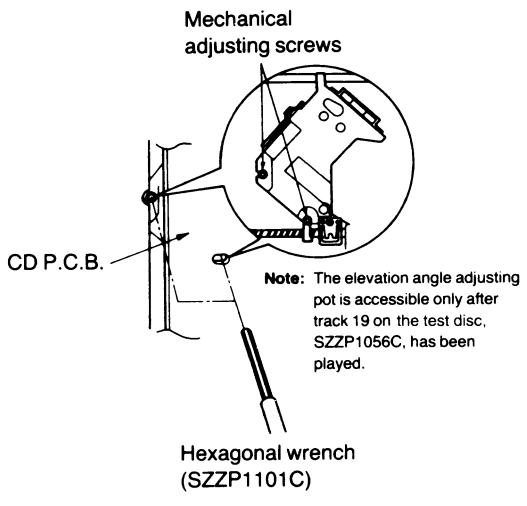


Fig. 7

■ Function of IC Terminals

•IC701 (AN8802SCE1V)

Pin No.	Terminal Name	I/O	Function
1	PDAD	I	PD A channel signal input with delay
2	PDA	I	PD A channel signal input without delay
3	LPD	I	Laser PD connection
4	LD	O	Power supply for LD driving
5	AMPI	I	RF amplifier input
6	Vcc	I	Power supply connection
7	AMPO	O	RF amplifier output (no use, open)
8	CAGC	I	AGC loop filter connection
9	ARF	O	RF AGC output
10	CENV	I	Capacitor connection for RF detection
11	CEA	I	Capacitor connection for HPF amplifier
12	GND	—	Ground connection
13	LDON	I	ON/OFF input of LD APC ("H": ON, "L": OFF)
14	TES	I	Tracking error shunt signal input ("H": shunt)
15	PLAY	I	Play signal input ("H": PLAY)
16	WVEL	I	WVEL control
17	BDO	O	BDO output
18	/RFDET	O	NRFDET output
19	CROSS	O	CROSS output
20	OFTR	O	OFTR output
21	VDET	O	VDET output
22	ENV	O	ENV output
23	TEBPF	I	Vibration detection input
24	TE	O	Tracking error output
25	FE	O	Focus error output
26	PTO	O	Potentioamplifier output (no use, open)
27	PTI	I	Potentioamplifier inversion input (no use, open)
28	TBAL	I	Tracking balance input
29	FBAL	I	Focus balance input
30	VREF	O	VREF output
31	PDB	I	PD B channel signal input without delay
32	PDBD	I	PD B channel signal input with delay

•IC702 (MN66271RA)

Pin No.	Terminal Name	I/O	Function
1	BCLK	O	Bit clock output for serial data (no used, open)
2	LRCK	O	L/R identification signal output (no use, open)
3	SRDATA	O	Serial data output (no used, open)
4	$DV_{DD}1$	I	Power supply input (for digital circuit)
5	$DV_{SS}1$	—	GND (for digital circuit)
6	TX	O	Digital audio interface signal output
7	MCLK	I	Microprocessor command clock signal input (Latches data at first transition)
8	MDATA	I	Microprocessor command data signal input
9	MLD	I	Microprocessor command load signal input
10	SENSE	O	Sence signal output (OFT, FESL, MAGEND, NAJEND, POSAD, SFG)
11	/FLOCK	O	Focus servo feeding signal output ("L": Feed)
12	/TLOCK	O	Tracking servo feeding signal output ("L": Feed)
13	BLKCK	O	Sub-code block clock signal output (fBLKCK=75 Hz during normal playback)
14	SQCK	I	External clock signal input for sub-code Q register
15	SUBQ	O	Sub-code Q code output
16	DMUTE	I	Muting input ("H": Mute)
17	STAT	O	Status signal output (CRC, CUE, CLVS, TTSTVP, FCLV, SQCK)
18	/RST	I	Reset input
19	SMCK	O	1/2-divided clock signal of crystal oscillating at MSEL="H" (fSMCK=8.4672 MHz) 1/4-divided clock signal of crystal oscillating at MSEL="L" (fSMCK=4.2336 MHz)
20	PMCK	O	1/192-divided clock signal of crystal oscillating (fPMCK=88.2 KHz) (no use, open)
21	TRV	O	Traverse forced feed output
22	TVD	O	Traverse drive output
23	PC	O	Spindle motor ON signal output ("L": ON)
24	ECM	O	Spindle motor drive signal output (forced mode output)
25	ECS	O	Spindle motor drive signal output (servo error signal output)
26	KICK	O	Kick pulse output
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output

Pin No.	Terminal Name	I/O	Function
29	VREF	I	D/A (drive) output (TVD, ECS, TRD, FOD, FBAL, TBAL) Reference voltage input
30	FBAL	I	Focus balance adjustment output
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF envelope signal input
35	VDET	I	Vibration detection signal input ("H": detection)
36	OFT	I	Off-track signal input ("H": off track)
37	TRCRS	I	Track cross signal input
38	/RFDET	I	RF detection signal input ("L": detection)
39	BDO	I	Dropout signal input ("H": Dropout)
40	LDON	O	Laser on signal output ("H": ON)
41	TES	O	Tracking error shunt signal output ("H": shunt)
42	PLAY	O	Play signal out ("H": PLAY)
43	WVEL	O	Double speed status signal output ("H": Double speed)
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	—	DSL bias (no use, open)
47	DSLF	I/O	DSL loop filter
48	PLLF	I/O	PLL loop filter
49	VCOF	—	VCO ioop filter (no use, open)
50	AVDD2	I	Power supply input (for analog circuit)
51	AVSS2	—	GND (for analog circuit)
52	EFM	—	EFM signal output (not use, open)
53	PCK	—	PLL extraction clock output (fPCK=4.321 MHz during normal playback) (no use, open)
54	PDO	—	Phase comparison signal of EFM and PCK signals (no use, open)
55	SUBC	—	Sub-code serial data output (no use, open)
56	SBCK	I	Clock input for sub-code serial data (no use, GND)
57	Vss	—	GND
58	X1	I	Crystal oscillating circuit input (f=16.9344 MHz)
59	X2	O	Crystal oscillation circuit output (f=16.9344 MHz)
60	VDD	I	Power supply input (for oscillating circuit)
61	BYTCK	—	Byte clock output (no use, open)

Pin No.	Terminal Name	I/O	Function
62	/CLDCK	—	Sub-code frame clock signal output (fCLDCK=7.35 kHz during normal playback) (no use, open)
63	FCLK	—	Crystal frame clock signal output (fFCLK=7.35 kHz, double=14.7 kHz)
64	PFLAG	—	Interpolation flag output ("H": Interpolation) (no use, open)
65	FLAG	—	Flage output (no use, open)
66	CLVS	—	Spindle servo phase synchronizing signal output ("H": CLV, "L": rough servo) (no use, open)
67	CRC	—	Sub-code CRC checked output ("H": OK, "L": NG) (no use, open)
68	DEMPH	—	De-emphasis ON signal output ("H": ON) (no use, open)
69	RESY	—	Frame resynchronizing signal output (no use, open)
70	/RST2	I	Reset input through MASH circuit ("L": Reset)
71	/TEST	I	Test input
72	AVDD1	I	Power supply input (for analog circuit)
73	OUTL	O	Left channel audio signal output
74	AVSS1	—	GND
75	OUTR	O	Right channel audio signal output
76	RSEL	I	RF signal polarity assignment input (at "H" level, RSEL="H"; at "L" level, RSEL=L)
77	CSEL	I	Crystal oscillating frequency designation input ("L": 16.9344 MHz, "H": 33/8688 MHz)
78	PSEL	—	Test input (normally, "L") (no use, GND)
79	MSEL	—	Output frequency switching for SMCK terminal "H": SMCK=8.4672 MHz "L": SMCK=4.2336 MHz (no use, GND)
80	SSEL	I	Output mode switching of SUBQ terminal ("H": Q code buffer mode)

●IC703 (AN8389SE1)

Pin No.	Terminal Name	I/O	Function
1	V_{CC}	I	Power supply
2	VREF	I	VREF input
3	IN4	I	Motor driver (4) input
4	IN3	I	Motor driver (3) input
5	GND	—	Ground connection
6	NC	—	No connection
7	NRESET	I	Reset input
8	GND	—	Ground connection
9	IN2	I	Motor driver (2) input
10	PC2	I	PC2 (power cut) input
11	IN1	I	Motor driver (1) input
12	PC1	I	PC1 (power cut) input (no use, GND)
13	PVCC1	I	Power supply (1) for driver
14	PGND1	—	Ground connection (1) for driver
15	D1−	O	Motor driver (1) reverse-action output
16	D1+	O	Motor driver (1) forward-action output
17	D2−	O	Motor driver (2) reverse-action output
18	D2+	O	Motor driver (2) forward-action output
19	D3−	O	Motor driver (3) reverse-action output
20	D3+	O	Motor driver (3) forward-action output
21	D4−	O	Motor driver (4) reverse-action output
22	D4+	O	Motor driver (4) forward-action output
23	PGND2	—	Ground connection (2) for driver
24	PVCC2	I	Power supply (2) for driver

●IC2 (XLU2616F-E1)

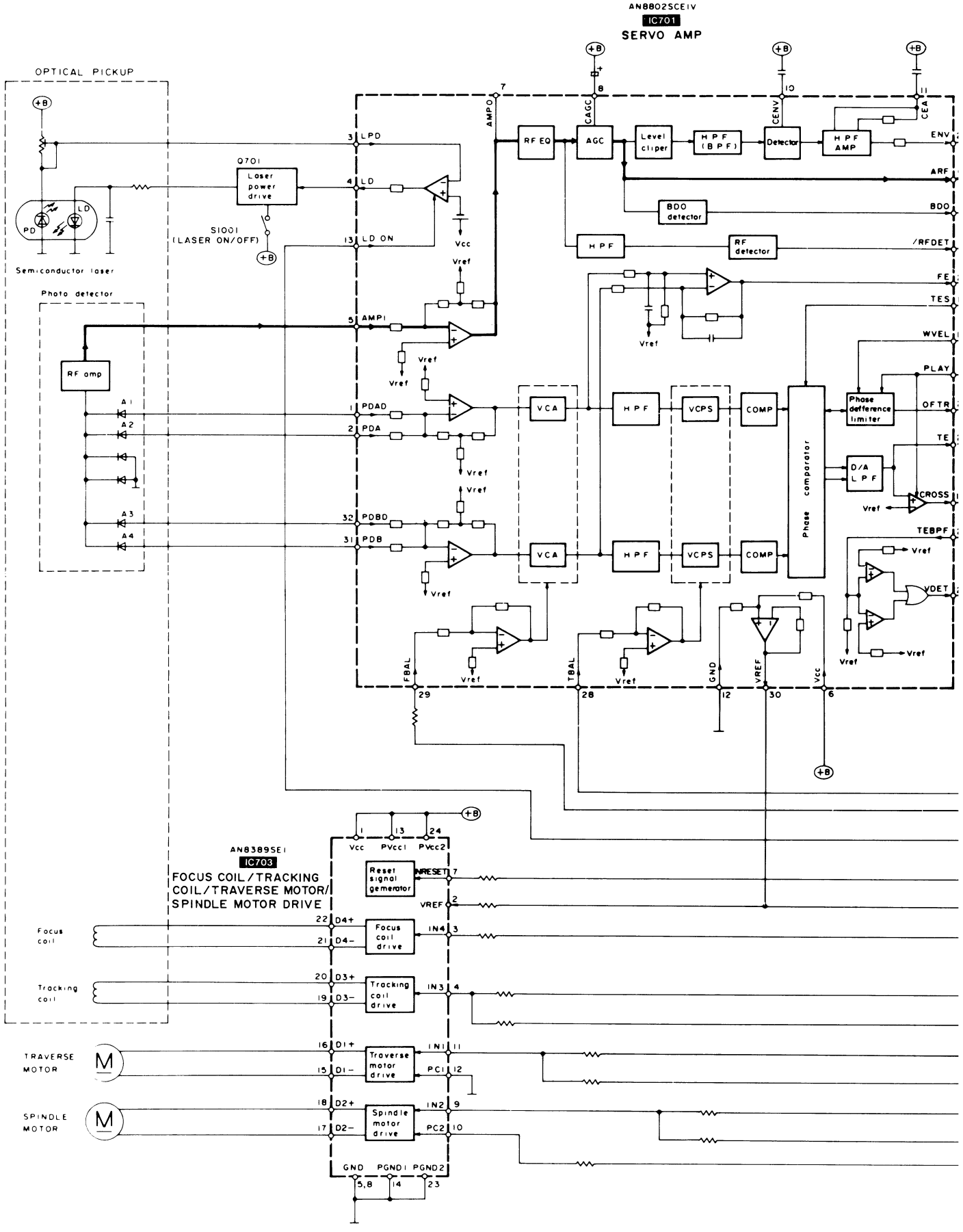
Pin No.	Terminal Name	I/O	Function
1	X OUT	O	Connect to ceramic oscillator
2	X IN	I	
3	CE	I	PLL tuner strobe signal input
4	DA	I	PLL tuner data input
5	CL	I	PLL tuner clock signal input
6	TUN	O	Tuner sending mode output
7	SD	I	Broadcast receiving signal input
8	IF IN	I	IF signal input
9	P3	O	Tuner mono/stereo switching signal output
10	P0	O	Power control signal output (for AM circuit)
11	P1	O	Power control signal output (for FM circuit)
12	P2	—	——
13	AM IN	I	AM OSC signal input
14	FM IN	I	FM OSC signal input
15	V_{DD}	I	Power supply input (+9 V)
16	PD1	O	Variable capacitor-diode control signal output
17	PD2	—	——
18	GND	—	GND

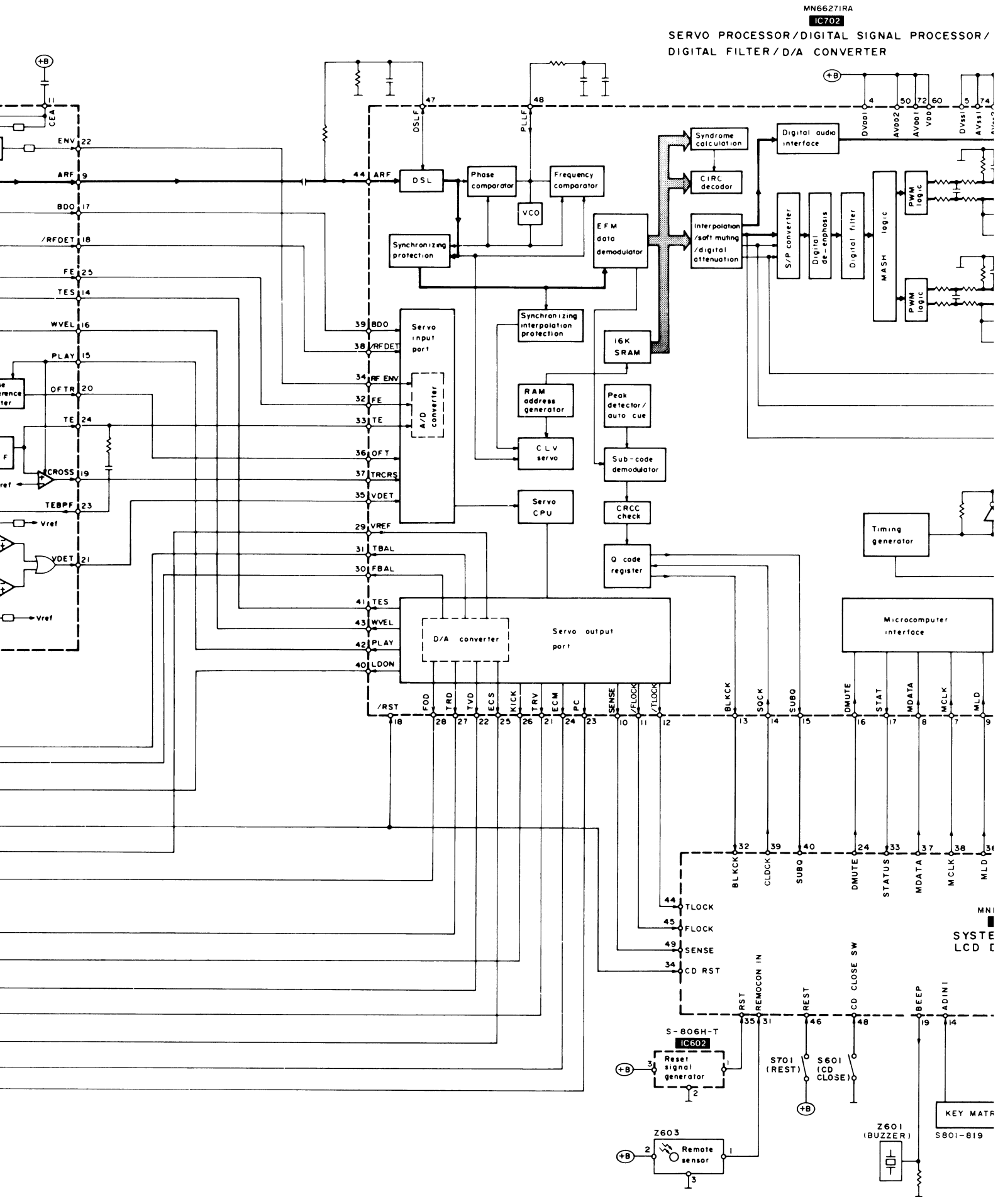
●IC601 (MND2410REAH2)

Pin No.	Terminal Name	I/O	Function
1	V_{DD}	I	Power supply input (+5 V)
2	OSC1	O	Clock output (3.9 MHz)
3	OSC2	I	Clock input (3.9 MHz)
4	V_{SS}	—	GND
5	XI	I	Clock input (32 kHz)
6	XO	O	Clock output (32 kHz)
7	VREF−	—	AD converter reference voltage (GND)
8	AD IN7	I	Leaf switch signal input (DECK)
9	AD IN6	I	Leaf switch signal input (DECK)
10	PL	O	Solenoid control signal output (H: ON)
11	MBP1	O	Beat proof control signal output
12	MBP2	O	Beat proof control signal output
13	PWR DET	I	Power detection signal input (L: ON)
14	AD IN1	I	AD converter signal input (operation switches)
15	AD IN0	I	AD converter signal input (operation switches)
16	VREF+	—	AD converter reference voltage (GND)
17	BP3	O	Beat proof control signal output (H: ON)
18	MOTOR	O	Deck motor control signal output
19	BEEP	O	Beep signal output
20	VOL PWM	O	PWM output (Volume control)
21	REC H	O	Deck record mode control signal output (H: REC)
22	DMT	O	Deck muting control signal output (L: MUTE)
23	ST LED	I	Tuner stereo signal input
24	DMUTE	O	CD muting control signal output (H: MUTE)
25	PLL CLK	O	PLL tuner clock signal output
26	PWR CONT	O	Power supply circuit control (H: POWER ON)
27	MUTE A	O	Muting control signal output (L: MUTE)
28	PLL CE	O	PLL tuner strobe signal output
29	FUNC	O	Function control signal output (TUNER: I, CD: H, TAPE: L)
30	PLL DI	O	PLL tuner control data signal output
31	REMOCON IN	I	Remote control signal input
32	BLKCK	I	Sub code block clock input
33	STATUS	I	CD status signal input
34	CD RST	I	CD reset signal input (L: RESET)
35	RST	I	System reset signal input (L: RESET)
36	MLD	O	CD signal process strobe signal output
37	MDATA	O	CD signal process data output
38	MCLK	O	CD signal process clock signal output

Pin No.	Terminal Name	I/O	Function
39	CLDCK	O	CD sub-code reading clock output
40	SUBQ	I	CD sub-code data input
41	———	—	———
42	———	—	———
43	CM	I	1-chip microprocessor mode setting input (L: 1-chip)
44	TLOCK	I	CD tracking clock signal input (L: Tracking OK)
45	FLOCK	I	CD focus lock signal input (L: Focus OK)
46	REST	I	CD traverse position detection switch signal input (H: most inside posistion)
47	TUNED	I	PLL tuner receiving signal input (L: Tuned)
48	CD CLOSE SW	I	CD tray close detection switch signal input (L: Close)
49	SENSE	I	CD sense signal input (H: Detect)
50	REM STBY	I	Remote control sensor power control (H: ON, 4 MHz)
51	NC	—	———
52	NC	—	———
53	BP2	O	Beat proof control signal output (L: ON)
54	SOFT	O	Preset EQ. control signal output (SOFT: L)
55	CLEAR	O	Preset EQ. control signal output (CLEAR: L)
56	LOUD2	O	Loudness control signal output (Less than −10 dB: H)
57	LOUD1	O	Loudness control signal output (Less than −6 dB: H)
58	FLAT	O	Preset EQ. control signal output (FLAT: L)
59	VOCAL	O	Preset EQ. control signal output (VOCAL: L)
60	V_{CC} DET	I	Power detection signal input (L: ON)
61	DES0	I	Connected to +5 V
62	DES1	I	Connected to GND
63	DES2	I	Connected to GND
64	NC	—	———
65	NC	—	———
66	NC	—	———
67 ~ 93	SEG26 ~ SEG0	O	LCD segment signal output
94 ~ 97	COM3 ~ COM1	O	LCD common signal output
98 ~ 100	VLC3 ~ VLC1	I	LCD bias reference voltage input

■ Block Diagram •CD circuit




MN6627IRA
IC702
SERVO PROCESSOR/DIGITAL SIGNAL PROCESSOR/
DIGITAL FILTER/D/A CONVERTER
+B
CE4
ENV
ARF
BDO
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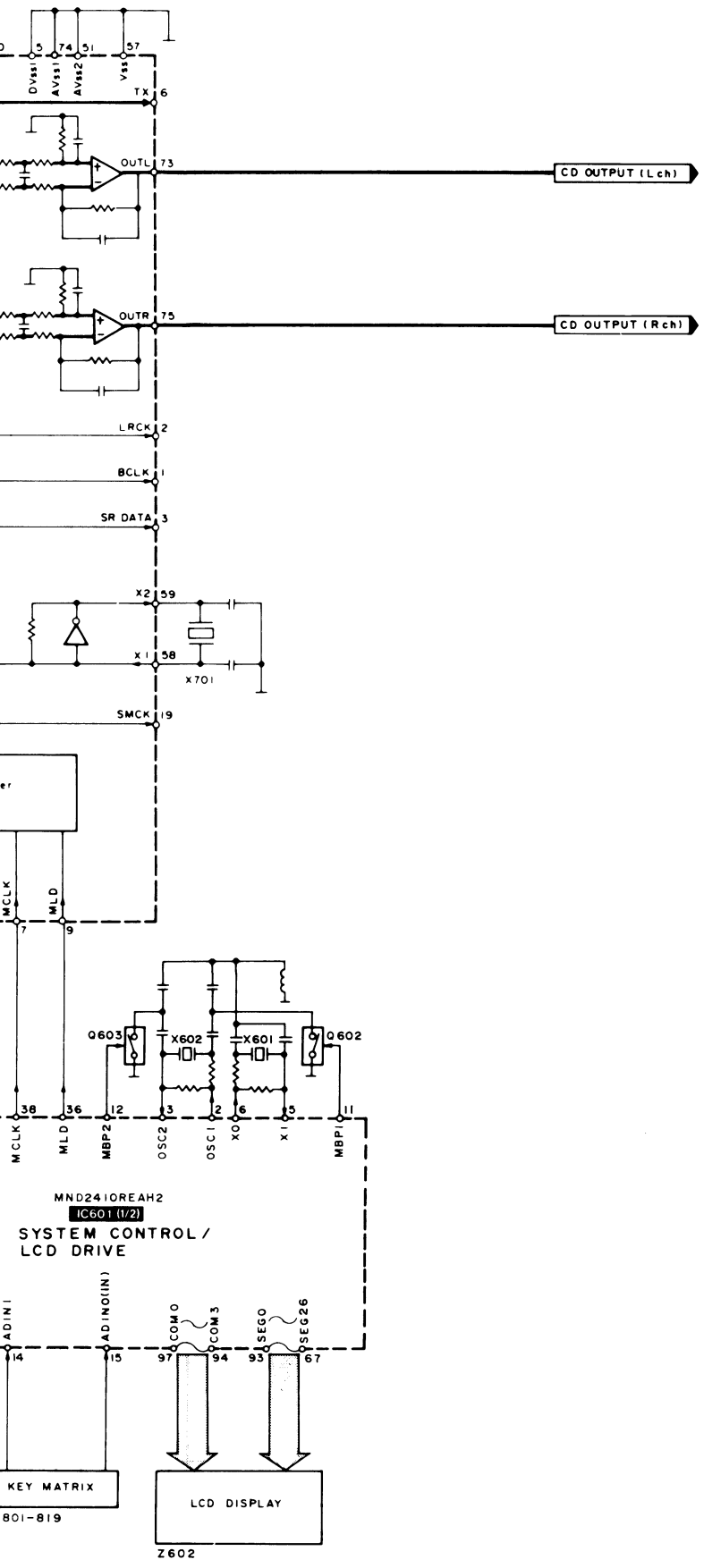
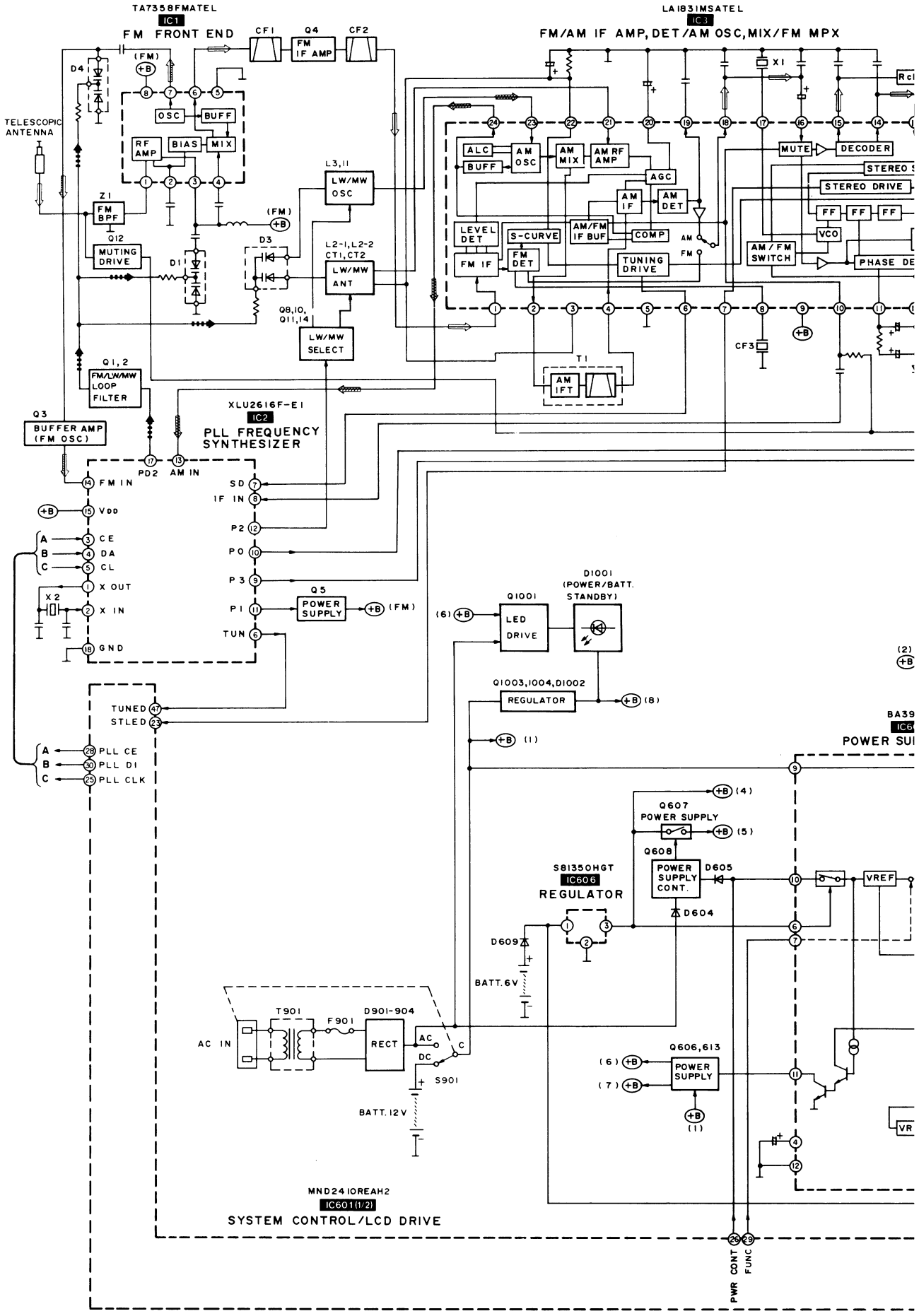
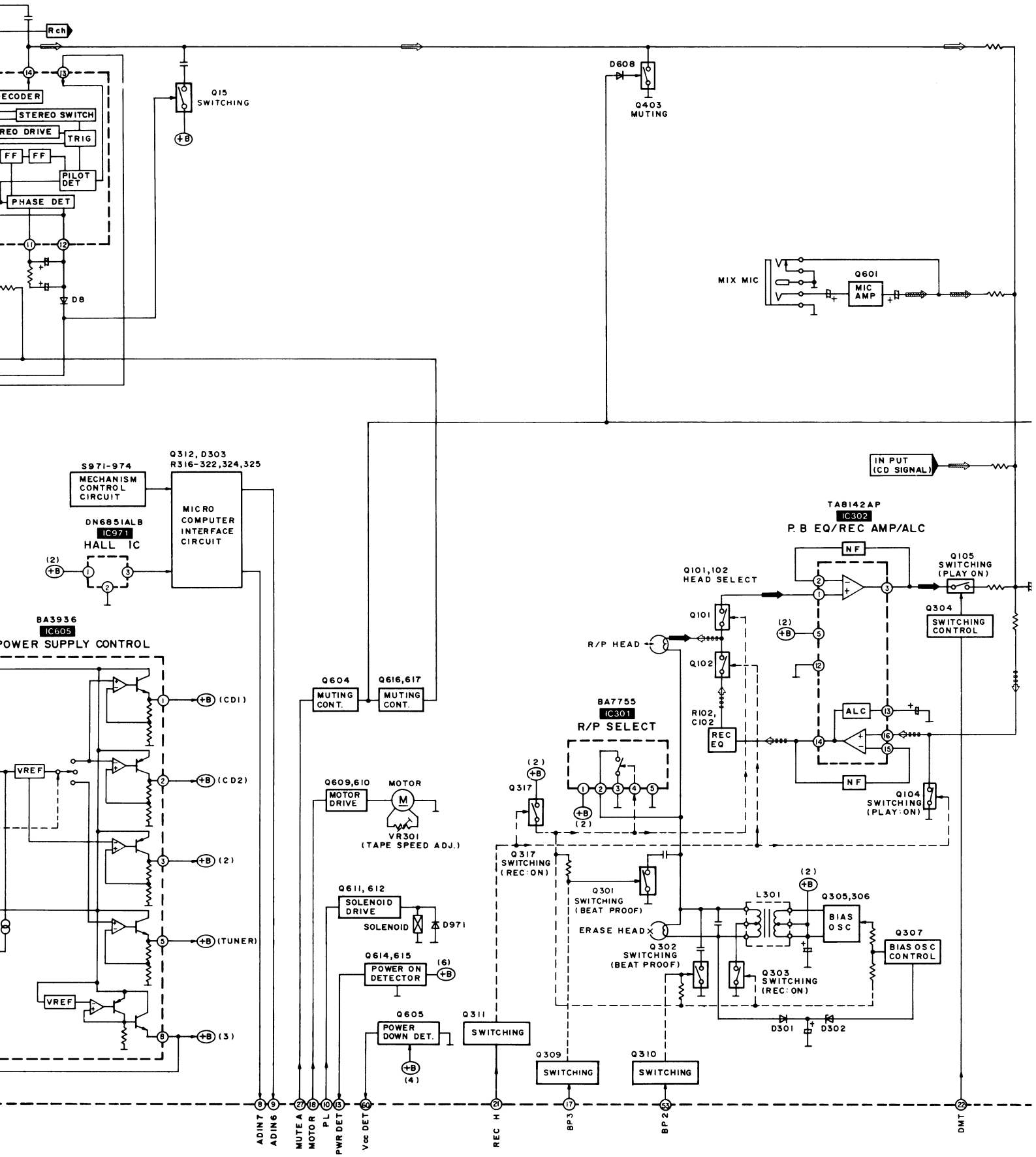
FE
TES
WVEL
PLAY
OFTR
TE
XCROSS
TEBPF
Vref
VDET
DSLF
PLLF
DSL
Phase comparator
Frequency comparator
VCO
Synchronizing protection
Synchronizing interpolation protection
Servo input port
A/D converter
RF ENV
TBAL
FBAL
Servo CPU
RAM address generator
C L V servo
16K SRAM
EFM data demodulator
Peak detector/ auto cue
Sub-code demodulator
CRCC check
Q code register
Syndrome calculation
CIRC decoder
Interpolation /soft muting /digital attenuation
Digital audio interface
S/P converter
Digital de-enphasis
Digital filter
MASH logic
PWM logic
Timing generator
Servo output port
D/A converter
Microcomputer interface
/RST
FOD
TRD
TVD
ECS
KICK
TRV
ECM
PC
SENSE
/FLOCK
/TLOCK
BLKCK
SOCK
SUBQ
DMUTE
STAT
MDATA
MCLK
MLD
CLDCK
STATUS
TLOCK
FLOCK
CD RST
REMOCON IN
REST
CD CLOSE SW
BEEP
ADINI
S-806H-T
IC602
Reset signal generator
S701 (REST)
S601 (CD CLOSE)
Z603
Remote sensor
Z601 (BUZZER)
KEY MATR
S801-819

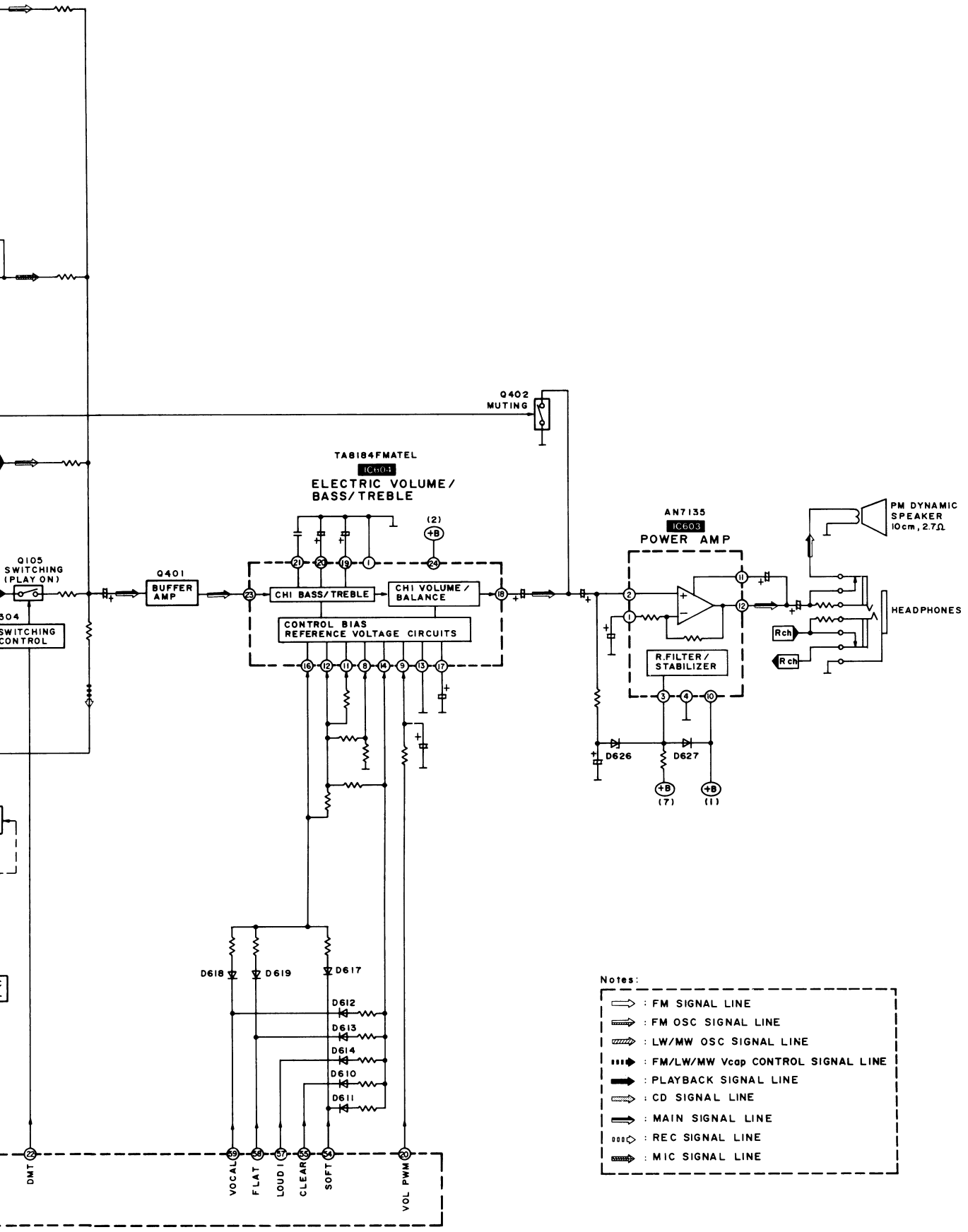
CESSOR /


DVss1
AVss1
AVss2
Vss
TX 6
OUTL 73
CD OUTPUT (L ch)
OUTR 75
CD OUTPUT (R ch)
LRCK 2
BCLK 1
SR DATA 3
X2 59
X1 58
X701
SMCK 19
MCLK
MLD
Q603
X602
X601
Q602
MBP2
OSC2
OSC1
XO
XI
MBP1
MND2410REAH2
IC601 (1/2)
SYSTEM CONTROL /
LCD DRIVE
ADIN1
ADINO(IN)
COM0
COM3
SEG0
SEG26
KEY MATRIX
801-819
LCD DISPLAY
Z602

■ Block Diagram •Main circuit




Rch
ECODER
STEREO SWITCH
REO DRIVE
TRIG
FF
FF
PILOT DET
PHASE DET
D8
Q15 SWITCHING
+B
D608
Q403 MUTING
MIX MIC
Q601
MIC AMP
S971-974
MECHANISM CONTROL CIRCUIT
Q312, D303
R316-322,324,325
MICRO COMPUTER INTERFACE CIRCUIT
DN6851ALB
IC971
HALL IC
(2)
+B
BA3936
IC605
POWER SUPPLY CONTROL
VREF
+B (CD1)
+B (CD2)
+B (2)
+B (TUNER)
+B (3)
Q604
MUTING CONT.
Q616,617
MUTING CONT.
Q609,610
MOTOR DRIVE
MOTOR
VR301
(TAPE SPEED ADJ.)
Q611, 612
SOLENOID DRIVE
SOLENOID
D971
Q614,615
POWER ON DETECTOR
(6)
+B
Q605
POWER DOWN DET.
+B
(4)
Q311
SWITCHING
Q309
SWITCHING
Q310
SWITCHING
IN PUT
(CD SIGNAL)
TA8142AP
IC302
P.B EQ/REC AMP/ALC
NF
Q105
SWITCHING
(PLAY ON)
Q304
SWITCHING CONTROL
Q101,102
HEAD SELECT
Q101
Q102
R/P HEAD
R102,
C102
REC EQ
ALC
NF
Q104
SWITCHING
(PLAY ON)
BA7755
IC301
R/P SELECT
Q317
SWITCHING
(REC ON)
Q301
SWITCHING
(BEAT PROOF)
ERASE HEAD
Q302
SWITCHING
(BEAT PROOF)
L301
Q305,306
BIAS OSC
Q307
BIAS OSC CONTROL
Q303
SWITCHING
(REC ON)
D301
D302
ADIN7
ADIN6
MUTE A
MOTOR
PL
PWR DET
Vcc DET
REC H
BP3
BP2
DMT


Q402
MUTING
TA8184FMATEL
IC604
ELECTRIC VOLUME/
BASS/TREBLE
AN7135
IC603
POWER AMP
PM DYNAMIC
SPEAKER
10cm, 2.7Ω
HEADPHONES
Rch
Rch
Q105
SWITCHING
(PLAY ON)
Q401
BUFFER
AMP
CH1 BASS/TREBLE
CH1 VOLUME/
BALANCE
CONTROL BIAS
REFERENCE VOLTAGE CIRCUITS
R.FILTER/
STABILIZER
SWITCHING
CONTROL
D626
D627
D618
D619
D617
D612
D613
D614
D610
D611
DMT
VOCAL
FLAT
LOUD
CLEAR
SOFT
VOL PWM
Notes:
: FM SIGNAL LINE
: FM OSC SIGNAL LINE
: LW/MW OSC SIGNAL LINE
: FM/LW/MW Vcap CONTROL SIGNAL LINE
: PLAYBACK SIGNAL LINE
: CD SIGNAL LINE
: MAIN SIGNAL LINE
: REC SIGNAL LINE
: MIC SIGNAL LINE

■ 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.
*Warning: This product uses a diode. Refer to caution statements on page 2.
*The "(SF)" mark denotes the standard part.

Ref. No.	Part No.	Part Name & Description	Remarks
		INTEGRATED CIRCUIT(S)	
IC1	TA7358FMATEL	IC, FM FRONT END	
IC2	XLU2616F-E1	IC, PLL FREQ. SYNTHESIZER	
IC3	LA1831MSATEL	IC, FM/AM IF AMP	
IC301	BA7755	IC, R/P SELECT	
IC302	TA8142AP	IC, P. B. EQ/REC/AMP/ALC	
IC601	MND2410REAH2	IC, SYSTEM CONT. /LCD DRIVE	
IC602	S-806H-T	IC, RESET	
IC603	AN7135	IC, POWER AMP	
IC604	TA8184FMATEL	IC, ELECTRIC VOLUME	
IC605 ⚠	BA3936	IC, POWER SUPPLY CONT	
IC606 ⚠	S81350HG	IC, REGURATOR	
IC701	AN8802SCE1V	IC, SERVO AMP	
IC702	MN66271RA	IC, SERVO PROCESSOR	
IC703	AN8389SE1	IC, COIL/MOTOR DRIVE	
IC971	DN6851ALB	IC, HALL	
		TRANSISTOR(S)	
Q1, 2	2SC3311R	TRANSISTOR	
Q3	2SC2786LTA	TRANSISTOR	
Q4	2SC3313B	TRANSISTOR	
Q5	UN411FTA	TRANSISTOR	
Q8	2SC3311R	TRANSISTOR	
Q10	UN411FTA	TRANSISTOR	
Q11	2SD1450RTA	TRANSISTOR	
Q12	2SC3313B	TRANSISTOR	
Q14	2SC3311R	TRANSISTOR	
Q15, 16	UN411FTA	TRANSISTOR	
Q101, 102	2SJ164QTA	TRANSISTOR	
Q104	2SC3311AIRTA	TRANSISTOR	
Q105	2SJ164QTA	TRANSISTOR	
Q201, 202	2SJ164QTA	TRANSISTOR	
Q204	2SC3311AIRTA	TRANSISTOR	
Q205	2SJ164QTA	TRANSISTOR	
Q301, 302	2SC3311AR	TRANSISTOR	
Q303	2SD1450RTA	TRANSISTOR	
Q304	UN421LTA	TRANSISTOR	
Q305, 306	2SC3311AR	TRANSISTOR	
Q307	2SC3311AIRTA	TRANSISTOR	
Q309, 310	UN4211	TRANSISTOR	
Q311	UN421FTA	TRANSISTOR	
Q312	2SC3311AR	TRANSISTOR	
Q317	UN411FTA	TRANSISTOR	
Q401	2SC3312RTA	TRANSISTOR	
Q402, 403	2SC3311AIRTA	TRANSISTOR	
Q501	2SC3312RTA	TRANSISTOR	
Q502, 503	2SC3311AIRTA	TRANSISTOR	

Ref. No.	Part No.	Part Name & Description	Remarks
Q601	2SC3312RTA	TRANSISTOR	
Q602, 603	2SC3311R	TRANSISTOR	
Q604	UN411FTA	TRANSISTOR	
Q605	2SC3311AIRTA	TRANSISTOR	
Q606	UN4111	TRANSISTOR	
Q607	UN411FTA	TRANSISTOR	
Q608	UN4213	TRANSISTOR	
Q609	2SC3311AIRTA	TRANSISTOR	
Q610	2SB1398QTA	TRANSISTOR	
Q611	2SC3311AIRTA	TRANSISTOR	
Q612	2SB1398QTA	TRANSISTOR	
Q613	UN4111	TRANSISTOR	
Q614	UN4116	TRANSISTOR	
Q615	UN421LTA	TRANSISTOR	
Q616	UN4213	TRANSISTOR	
Q617	UN411FTA	TRANSISTOR	
Q701	2SB709S	TRANSISTOR	
Q1001	UN4211	TRANSISTOR	
Q1003 ⚠	2SC3311AIRTA	TRANSISTOR	
Q1004 ⚠	2SB1393AU	TRANSISTOR	
		DIODE(S)	
D1	KV1360NT	DIODE	
D2 ⚠	RVDMTZ8R2BTA	DIODE	
D3	KV1583BMTL	DIODE	
D4	KV1360NT	DIODE	
D8	MA165	DIODE	
D10	MA165	DIODE	
D11	RVD1SS135TA	DIODE	
D301	MA165	DIODE	
D302	RVDMTZ4R7BTA	DIODE	
D303	MA165	DIODE	
D304	RVDMTZ6R8BTA	DIODE	
D601	MA165	DIODE	
D602	MA4051-L	DIODE	
D603-605	MA165	DIODE	
D607 ⚠	RVDMTZ8R2BTA	DIODE	
D608-614	MA165	DIODE	
D617-619	MA165	DIODE	
D625	MA4051-L	DIODE	
D626	MA4056MTA	DIODE	
D627	MA165	DIODE	
D901-904⚠	RL203M11	DIODE	
D971	RVD1SS133TA	DIODE	
D1001	LN170WAL3CF	LED	
D1002 ⚠	MA4130M	DIODE	
D1003, 1004	MA165	DIODE	

Ref. No.	Part No.	Part Name & Description	Remarks
		VARIABLE RESISTOR(S)	
VR301	RRN6B05B73TA	V. R, TAPE SPEED ADJ.	
		COMPONENT COMBINATION(S)	
Z1	RXABPWB6A	COMPONENT COMBINATION	
Z601	RAT0010	BUZZER	
Z602	RSL5097-L	LCD DISPLAY	
Z603	RCDGP1U58YD	REMOTE SENSOR	
		COIL(S)	
L2	RLV6C012-0	COIL	
L3	RL02B011-T	COIL	
L5	RLQZP8R2JT-Y	COIL	
L8	ELEXT101KA9	COIL	
L9	ELEXT150KA9	COIL	
L11	RL01B004-T	COIL	
L301	RL08C002M-T	COIL	
L302, 303	RLQZB470KT-D	COIL	
L601-603	ELEXT2R2KA9	COIL	
L853	RLQB221JTA-Y	COIL	
L860	ELEXT2R2KA9	COIL	
L901, 902⚠	RLL500050T-Y	COIL	
L1002-1008	RLL500050T-Y	COIL	
		TRANSFORMER(S)	
T1	RLI2Z014-T	TRANSFORMER	
T901 ⚠	RTP1U1B002AX	TRANSFORMER	
		FILTER(S)	
CF1, 2	RLFFETMLA02D	CERAMIC FILTER	
CF3	RLFDFTD05M	CERAMIC FILTER	
		OSCILLATOR(S)	
X1	RSXZ456KM01	OSCILLATOR(456KHz)	
X2	RSXC7M20S04T	OSCILLATOR(7. 2MHz)	
X601	RSXD32K7S03	OSCILLATOR(32. 7KHz)	
X602	RVBCSA3R9MGT	OSCILLATOR(3. 9MHz)	
X701	RSXZ16M9M02T	OSCILLATOR(16. 9344MHz)	
		FUSE(S)	
F901 ⚠	XBA2C20TB0	FUSE T2A	
		SWITCH(ES)	
S601	RSH1A012-U	SW, CD OPEN/CLOSE	
S701	RSM0006-P	SW, REST	
S801	EVQ21405R	SW, POWER STANDBY	
S802	EVQ21405R	SW, STOP	
S803	EVQ21405R	SW, BAND	
S804	EVQ21405R	SW, PRESET TUNING	
S805	EVQ21405R	SW, +/CD SKIP	
S806	EVQ21405R	SW, PLAY/PAUSE	
S807	EVQ21405R	SW, TIME CHECK	
S808	EVQ21405R	SW, TIMER	
S809	EVQ21405R	SW, VOLUME -	
S810	EVQ21405R	SW, VOLUME +	
S811	EVQ21405R	SW, PRESET EQ	
S812	EVQ21405R	SW, EASY REC	
S813	EVQ21405R	SW, PLAY DIR	
S814	EVQ21405R	SW, REC PAUSE	

Ref. No.	Part No.	Part Name & Description	Remarks
S815	EVQ21405R	SW, REW	
S816	EVQ21405R	SW, FF	
S817	EVQ21405R	SW, -/CD SKIP	
S818	EVQ21405R	SW, ADJUST/MEMORY	
S819	EVQ21405R	SW, STOP/CLEAR	
S901 ⚠	RJJ1SE01-H	SW, AC/DC	
S971	RSH1A89ZD-U	SW, MODE DETECT	
S972	RSH1A90YD-U	SW, HALF	
S973	RSH1A90YD-U	SW, R. REC INH	
S974	RSH1A90YD-U	SW, F. REC INH	
S975	RSH1A90YD-U	SW, ATS/CrO2	
S1001	RSH1A012-U	SW, LASER ON/OFF	
		CONNECTOR(S)	
CN701	RJU035T016-1	CONNECTOR(16P)	
CN702	RJS1A6723-1Q	CONNECTOR(23P)	
CP301	RJP5G18ZA	CONNECTOR(5P)	
CP302	RJT028W010-2	CONNECTOR(10P)	
CP303	RJT028W009-2	CONNECTOR(9P)	
CP901	RJT029W003-1	CONNECTOR(3P)	
CP902	RJT029W004	CONNECTOR(4P)	
CS1	RJS1A5211	CONNECTOR(11P)	
CS601	RJT060B04	CONNECTOR(4P)	
CS801	RJS1A5203	CONNECTOR(3P)	
CS3021	RJU028W010	SOCKET(10P)	
CS3022	RJT066H10B	CONNECTOR(10P)	
CS3023	RJU066H10M	CONNECTOR(10P)	
CS3031	RJU028W009-1	CONNECTOR(9P)	
CS3032	RJT066H08B	CONNECTOR(8P)	
CS3033	RJU066H08M	CONNECTOR(8P)	
CS7021	RJS1A6823	CONNECTOR(23P)	
		TRIMMER	
CT1	RCV10AF1T-S	TRIMMER CAPACITOR	
CT2	ECRLA020E53R	VARIABLE CAPACITOR	
		FUSE HOLDER	
FH901, 902	EYF52BC	FUSE HOLDER	
		I. C PROTECTOR	
IP603 ⚠	SRUN15	I. C. P	
		JACK(S)	
JK601	RJJ1D25ZA-C	JACK, MIX MIC	
JK602	RJJD7S2YA-C	JACK, HEADPHONES	
JK901 ⚠	RJJ1SE01-H	JACK, AC IN(S901)	

Notes : • Capacity values are in microfarads (uF) unless specified otherwise, P=Pico-farads(pF) F=Farads(F)
• Resistance values are in ohms, unless specified otherwise, 1K=1,000(OHM) , 1M=1,000k(OHM)

Ref. No.	Part No.	Values & Remarks
		RESISTORS
R1	ERDS2TJ104	1/4W 100K
R2	ERDS2TJ332	1/4W 3.3K
R3	ERDS2TJ104	1/4W 100K
R5	ERDS2TJ103	1/4W 10K
R6	ERDS2TJ152	1/4W 1.5K
R7	ERDS2TJ330	1/4W 33
R8	ERDS2TJ104	1/4W 100K
R9	ERDS2TJ471	1/4W 470
R10	ERDS2TJ102	1/4W 1K
R11	ERDS2TJ103	1/4W 10K
R12	ERDS2TJ223	1/4W 22K
R13	ERDS2TJ153	1/4W 15K
R14	ERDS2TJ103	1/4W 10K
R15	ERDS2TJ223	1/4W 22K
R17	ERDS2TJ103	1/4W 10K
R18	ERDS2TJ223	1/4W 22K
R19	ERDS2TJ101	1/4W 100
R20	ERDS2TJ151	1/4W 150
R22	ERDS2TJ331	1/4W 330
R24	ERDS2TJ471	1/4W 470
R25	ERDS2TJ104	1/4W 100K
R26, 27	ERDS2TJ102	1/4W 1K
R28	ERDS2TJ334	1/4W 330K
R29	ERDS2TJ331	1/4W 330
R30	ERDS2TJ332	1/4W 3.3K
R31	ERDS2TJ472	1/4W 4.7K
R36, 37	ERDS2TJ223	1/4W 22K
R40	ERDS2TJ105T	1/4W 1M
R41	ERDS2TJ471	1/4W 470
R42	ERDS2TJ103	1/4W 10K
R43, 44	ERDS2TJ222	1/4W 2.2K
R45	ERDS2TJ223	1/4W 22K
R47	ERDS2TJ332	1/4W 3.3K
R49	ERDS2TJ183T	1/4W 18K
R52	ERDS2TJ223	1/4W 22K
R54	ERDS2TJ222	1/4W 2.2K
R55, 56	ERDS2TJ682T	1/4W 6.8K
R57	ERDS2TJ103	1/4W 10K
R59	ERDS2TJ471	1/4W 470
R61	ERDS2TJ103	1/4W 10K
R62	ERDS2TJ471	1/4W 470
R63	ERDS2TJ105T	1/4W 1M
R64	ERDS2TJ332	1/4W 3.3K
R65	ERDS2TJ470	1/4W 47
R66	ERDS2TJ222	1/4W 2.2K
R67	ERDS2TJ102	1/4W 1K
R101	ERDS2TJ474	1/4W 470K
R102	ERDS2TJ153	1/4W 15K
R103	ERDS2TJ750	1/4W 75
R104	ERDS2TJ681	1/4W 680
R105	ERDS2TJ822	1/4W 8.2K
R106	ERDS2TJ272T	1/4W 2.7K
R107	ERDS2TJ334	1/4W 330K
R108	ERDS2TJ822	1/4W 8.2K
R109	ERDS2TJ223	1/4W 22K
R110	ERDS2TJ102	1/4W 1K
R111	ERDS2TJ272T	1/4W 2.7K
R112	ERDS2TJ470	1/4W 47
R113, 114	ERDS2TJ472	1/4W 4.7K
R201	ERDS2TJ474	1/4W 470K
R202	ERDS2TJ153	1/4W 15K
R203	ERDS2TJ820	1/4W 82
R204	ERDS2TJ681	1/4W 680
R205	ERDS2TJ822	1/4W 8.2K
R206	ERDS2TJ272T	1/4W 2.7K
R207	ERDS2TJ334	1/4W 330K
R208	ERDS2TJ822	1/4W 8.2K
R209	ERDS2TJ223	1/4W 22K
R210	ERDS2TJ102	1/4W 1K
R211	ERDS2TJ272T	1/4W 2.7K
R212	ERDS2TJ470	1/4W 47
R213, 214	ERDS2TJ472	1/4W 4.7K
R301	ERDS2TJ474	1/4W 470K
R302	ERDS2TJ104	1/4W 100K
R303	ERDS2TJ103	1/4W 10K
R304-306	ERDS2TJ182	1/4W 1.8K
R309	ERDS2TJ123	1/4W 12K
R310	ERDS2TJ472	1/4W 4.7K
R311	ERDS2TJ4R7T	1/4W 4.7
R312	ERDS2TJ123	1/4W 12K
R313	ERDS2TJ472	1/4W 4.7K
R314	ERDS2TJ682T	1/4W 6.8K
R315	ERDS2TJ472	1/4W 4.7K
R316	ERDS2TJ222	1/4W 2.2K
R317	ERDS2TJ272T	1/4W 2.7K
R318	ERDS2TJ153	1/4W 15K
R319	ERDS2TJ473	1/4W 47K
R320, 321	ERDS2TJ103	1/4W 10K
R322	ERDS2TJ222	1/4W 2.2K
R324	ERDS2TJ102	1/4W 1K
R325	ERDS2TJ103	1/4W 10K
R327	ERDS2TJ102	1/4W 1K
R328	ERDS2TJ101	1/4W 100
R329	ERDS2TJ335T	1/4W 3.3M
R332	ERDS2TJ333	1/4W 33K
R333	ERDS2TJ472	1/4W 4.7K
R401	ERDS2TJ273	1/4W 27K
R402	ERDS2TJ333	1/4W 33K
R403	ERDS2TJ123	1/4W 12K
R404	ERDS2TJ824	1/4W 820K
R405	ERDS2TJ682T	1/4W 6.8K
R406	ERDS2TJ221	1/4W 220
R408	ERDS2TJ823T	1/4W 82K
R409	ERDS2TJ562	1/4W 5.6K
R411	ERDS2TJ181T	1/4W 180
R412	ERDS2TJ1R0	1/4W 1.0
R413	ERDS2TJ272T	1/4W 2.7K
R414	ERDS2TJ1R2	1/4W 1.2
R415	ERDS2TJ823T	1/4W 82K
R501	ERDS2TJ273	1/4W 27K
R502	ERDS2TJ333	1/4W 33K
R503	ERDS2TJ123	1/4W 12K
R504	ERDS2TJ824	1/4W 820K
R505	ERDS2TJ682T	1/4W 6.8K
R506	ERDS2TJ221	1/4W 220
R508	ERDS2TJ823T	1/4W 82K
R509	ERDS2TJ562	1/4W 5.6K
R511	ERDS2TJ181T	1/4W 180
R512	ERDS2TJ1R0	1/4W 1.0
R513	ERDS2TJ272T	1/4W 2.7K
R514	ERDS2TJ1R2	1/4W 1.2
R515	ERDS2TJ823T	1/4W 82K
R601	ERDS2TJ334	1/4W 330K
R602	ERDS2TJ180T	1/4W 18
R603	ERDS2TJ102	1/4W 1K
R604	ERDS2TJ101	1/4W 100
R605, 606	ERDS2TJ332	1/4W 3.3K
R607	ERDS2TJ333	1/4W 33K
R608, 609	ERDS2TJ823T	1/4W 82K
R610	ERDS2TJ104	1/4W 100K
R611	ERDS2TJ102	1/4W 1K
R612	ERDS2TJ105T	1/4W 1M
R613	ERDS2TJ106T	1/4W 10M
R614	ERDS2TJ224T	1/4W 220K
R615, 616	ERDS2TJ471	1/4W 470
R617	ERDS2TJ103	1/4W 10K
R618, 619	ERDS2TJ153	1/4W 15K
R620, 621	ERDS2TJ472	1/4W 4.7K
R622	ERDS2TJ124T	1/4W 120K
R623	ERDS2TJ472	1/4W 4.7K
R624	ERDS2TJ222	1/4W 2.2K
R625	ERDS2TJ104	1/4W 100K
R626	ERDS2TJ333	1/4W 33K
R627	ERDS2TJ560T	1/4W 56

Ref. No.	Part No.	Values & Remarks
R628	ERDS2TJ103	1/4W 10K
R629	ERDS2TJ394	1/4W 390K
R630	ERDS2TJ823T	1/4W 82K
R631	ERDS2TJ473	1/4W 47K
R632, 633	ERDS2TJ474	1/4W 470K
R634	ERDS2TJ683	1/4W 68K
R635	ERDS2TJ104	1/4W 100K
R636	ERDS2TJ153	1/4W 15K
R637	ERDS2TJ184T	1/4W 180K
R638	ERDS2TJ154	1/4W 150K
R641	ERDS2TJ273	1/4W 27K
R642	ERDS2TJ153	1/4W 15K
R643	ERDS2TJ473	1/4W 47K
R644, 645	ERDS2TJ273	1/4W 27K
R646	ERDS2TJ473	1/4W 47K
R647	ERDS2TJ222	1/4W 2.2K
R648-651	ERDS2TJ103	1/4W 10K
R653	ERDS2TJ331	1/4W 330
R654	ERDS2TJ183T	1/4W 18K
R655, 656	ERDS2TJ222	1/4W 2.2K
R657-659	ERDS2TJ102	1/4W 1K
R660, 661	ERDS2TJ472	1/4W 4.7K
R662	ERDS2TJ333	1/4W 33K
R663	ERDS2TJ472	1/4W 4.7K
R664	ERDS2TJ332	1/4W 3.3K
R665	ERDS2TJ102	1/4W 1K
R666	ERDS2TJ273	1/4W 27K
R667	ERDS2TJ221	1/4W 220
R668	ERDS2TJ470	1/4W 47
R669	ERDS2TJ390	1/4W 39
R670	ERDS2TJ473	1/4W 47K
R671	ERDS2TJ104	1/4W 100K
R674, 675	ERDS2TJ104	1/4W 100K
R676	ERDS2TJ154	1/4W 150K
R677	ERDS2TJ184T	1/4W 180K
R678	ERDS2TJ123	1/4W 12K
R679	ERDS2TJ122	1/4W 1.2K
R680	ERDS2TJ681	1/4W 680
R681	ERDS2TJ682T	1/4W 6.8K
R682	ERDS2TJ103	1/4W 10K
R683	ERDS2TJ331	1/4W 330
R684	ERDS2TJ273	1/4W 27K
R685, 686	ERDS2TJ103	1/4W 10K
R687	ERDS2TJ102	1/4W 1K
R688	ERDS2TJ273	1/4W 27K
R689	ERDS2TJ183T	1/4W 18K
R690	ERDS2TJ682T	1/4W 6.8K
R691	ERDS2TJ122	1/4W 1.2K
R698, 699	ERDS2TJ472	1/4W 4.7K
R701	ERJ6GEYJ100	1/10W 10
R702	ERJ6GEYJ471V	1/10W 470
R703	ERJ6GEYJ823	1/10W 82K

Ref. No.	Part No.	Values & Remarks
R704	ERJ6GEYJ102A	1/10W 1K
R705	ERJ6GEYJ103V	1/10W 10K
R706	ERJ6GEYJ102A	1/10W 1K
R707	ERJ6GEYJ473V	1/10W 47K
R708	ERJ6GEYJ104V	1/10W 100K
R709	ERJ6GEYJ683V	1/10W 68K
R711	ERJ6GEYJ154V	1/10W 150K
R712	ERJ6GEYJ221V	1/10W 220
R714	ERJ6GEY0R00A	1/10W 0.00
R717-720	ERJ6GEYJ102A	1/10W 1K
R721	ERJ6GEYJ101V	1/10W 100
R722	ERJ6GEYJ563V	1/10W 56K
R723	ERJ6GEYJ182V	1/10W 1.8K
R724	ERJ6GEYJ333V	1/10W 33K
R725	ERJ6GEYJ472V	1/10W 4.7K
R726	ERJ6GEYJ473V	1/10W 47K
R727	ERJ6GEYJ103V	1/10W 10K
R728	ERJ6GEYJ392V	1/10W 3.9K
R730	ERJ6GEYJ331V	1/10W 330
R731	ERJ6GEYJ392V	1/10W 3.9K
R734-736	ERJ6GEYJ101V	1/10W 100
R738	ERJ6GEYJ223V	1/10W 22K
R739	ERJ6GEYJ681V	1/10W 680
R741-743	ERJ6GEYJ562V	1/10W 5.6K
R744	ERJ6GEYJ103V	1/10W 10K
R745	ERJ6GEYJ155V	1/10W 1.5M
R748	ERJ6GEYJ182V	1/10W 1.8K
R749	ERJ8GEYJ103V	1/8W 10K
R801	ERDS2TJ152	1/4W 1.5K
R802	ERDS2TJ222	1/4W 2.2K
R803	ERDS2TJ272T	1/4W 2.7K
R804	ERDS2TJ392T	1/4W 3.9K
R805	ERDS2TJ562	1/4W 5.6K
R806	ERDS2TJ822	1/4W 8.2K
R807	ERDS2TJ153	1/4W 15K
R808	ERDS2TJ333	1/4W 33K
R809	ERDS2TJ823T	1/4W 82K
R810	ERDS2TJ152	1/4W 1.5K
R811	ERDS2TJ222	1/4W 2.2K
R812	ERDS2TJ272T	1/4W 2.7K
R813	ERDS2TJ392T	1/4W 3.9K
R814	ERDS2TJ562	1/4W 5.6K
R815	ERDS2TJ822	1/4W 8.2K
R816	ERDS2TJ153	1/4W 15K
R817	ERDS2TJ333	1/4W 33K
R821	ERDS2TJ104	1/4W 100K
R822	ERDS2TJ823T	1/4W 82K
R858	ERDS2TJ104	1/4W 100K
R950	ERX12SJWR22E	1/2W 0.22
R951	ERDS2TJ273	1/4W 27K
R954	ERDS2TJ472	1/4W 4.7K
R1001	ERDS2TJ471	1/4W 470

Ref. No.	Part No.	Values & Remarks
R1009	ERDS2TJ181T	1/4W 180
R1010	ERDS2TJ103	1/4W 10K
R1011	ERDS2TJ102	1/4W 1K
R1012	ERDS2TJ181T	1/4W 180
R1013	ERDS2TJ122	1/4W 1.2K
R1015	ERDS2TJ152	1/4W 1.5K
R1016, 1017	ERDS2TJ562	1/4W 5.6K
R1018, 1019	ERDS2TJ470	1/4W 47
		CHIP JUMPERS
J701-704	ERJ8GEY0R00A	1/8W 0.00
J707-709	ERJ8GEY0R00A	1/8W 0.00
J714-717	ERJ8GEY0R00A	1/8W 0.00
J721	ERJ6GEY0R00A	1/10W 0.00
J724-726	ERJ6GEY0R00A	1/10W 0.00
		TEST JUMPER
TJ701, 702	EYF8CU	TEST JUMPER
		CAPACITORS
C4	RCBS1H102KBY	50V 1000P
C5	ECBT1H2R2KC5	50V 2.2P
C6	RCBS1H102KBY	50V 1000P
C8	ECBT1H4R7KC5	50V 4.7P
C9	ECEA1HKN010B	50V 1U
C10	ECBT1C332MR5	16V 3300P
C11	ECEA1AKA101B	10V 100U
C12	ECFR1C473MR	16V 0.047U
C13	ECFR1C103MR	16V 0.01U
C14	ECBT1C103MS5	16V 0.01U
C15	ECBT1H6R8KC5	50V 6.8P
C16, 17	RCBS1H102KBY	50V 1000P
C18	ECBT1H200JC5	50V 20P
C19	ECBT1H220JC5	50V 22P
C20	RCBS1H102KBY	50V 1000P
C21	ECEA1AKA101B	10V 100U
C22-24	RCBS1H102KBY	50V 1000P
C25	ECBT1H150JC5	50V 15P
C26	ECBT1H6R8KC5	50V 6.8P
C27	ECBT1H4R7KC5	50V 4.7P
C28, 29	RCBS1H102KBY	50V 1000P
C31	RCBS1H102KBY	50V 1000P
C32, 33	ECBT1H101KB5	50V 100P
C34	ECBT1H680J5	50V 68P
C35	ECBT1H1R5M5	50V 1.5P
C36, 37	RCBS1H102KBY	50V 1000P
C38	ECBT1H331KB5	50V 330P
C39, 40	ECBT1C103MS5	16V 0.01U
C44	ECEA1AU101	10V 100U

Ref. No.	Part No.	Values & Remarks
C47	ECFR1C223MR	16V 0.022U
C48	ECEA0JU101B	6.3V 100U
C51	ECEA1HKA010B	50V 1U
C52	ECFR1C473MR	16V 0.047U
C58	ECBT1H560J5	50V 56P
C60	ECEA1CKA100B	16V 10U
C61	ECBT1C332MR5	16V 3300P
C62	RCBS1H102KBY	50V 1000P
C63	ECBA1H681KB5	50V 680P
C64	ECFR1C473MR	16V 0.047U
C65	ECBT1H470J5	50V 47P
C66	ECBT1H4R7KC5	50V 4.7P
C67	ECFR1C223MR	16V 0.022U
C68	ECEA1HKA010B	50V 1U
C69, 70	ECFR1C183MR	16V 0.018U
C71	ECEA1HKA2R2B	50V 2.2U
C72	ECEA1HKA010B	50V 1U
C74	ECBT1H471KB5	50V 470P
C75-77	ECEA1HKA010B	50V 1U
C80, 81	ECBT1H331KB5	50V 330P
C82	ECBT1H150JC5	50V 15P
C83	ECBT1H331KB5	50V 330P
C84	ECBT1C103MS5	16V 0.01U
C86	ECBT1H331KB5	50V 330P
C87	ECBT1C103MS5	16V 0.01U
C88	RCBS1H102KBY	50V 1000P
C89	ECBT1H101KB5	50V 100P
C90	ECBT0J223MS5	6.3V 0.022U
C91	ECBT1C103MS5	16V 0.01U
C92, 93	ECBT0J223MS5	6.3V 0.022U
C101	ECBT1H101KB5	50V 100P
C102	ECBT1C152KR5	16V 1500P
C103	ECEA0JU330	6.3V 33U
C104	ECBT1H331KB5	50V 330P
C105	ECFR1C153KR	16V 0.015U
C106	ECEA1EKA4R7B	25V 4.7U
C107	ECEA1HKA010B	50V 1U
C108	ECEA0JU470B	6.3V 47U
C109, 110	ECBT1H221KB5	50V 220P
C111	ECEA1EKA4R7B	25V 4.7U
C112	ECBT1H821KB5	50V 820P
C113, 114	ECBT1H102KB5	50V 1000P
C115	ECBT1H101KB5	50V 100P
C201	ECBT1H101KB5	50V 100P
C202	ECBT1C152KR5	16V 1500P
C203	ECEA0JU330	6.3V 33U
C204	ECBT1H331KB5	50V 330P
C205	ECFR1C153KR	16V 0.015U
C206	ECEA1EKA4R7B	25V 4.7U
C207	ECEA1HKA010B	50V 1U
C208	ECEA0JU470B	6.3V 47U
C209, 210	ECBT1H221KB5	50V 220P

Ref. No.	Part No.	Values & Remarks
C211	ECEA1EKA4R7B	25V 4.7U
C212	ECBT1H821KB5	50V 820P
C213, 214	ECBT1H102KB5	50V 1000P
C215	ECBT1H101KB5	50V 100P
C301	ECEA1HN010	50V 1U
C302, 303	ECBT1C103MS5	16V 0.01U
C304	ECQP2A821JZT	100V 820P
C305	ECQP2A681JZT	100V 680P
C306	ECQP2A562JZT	100V 5600P
C307	ECEA1HKA010B	50V 1U
C308	ECEA1AU101	10V 100U
C309	ECQB1H223JF3	50V 0.022U
C310, 311	ECBT1H102KB5	50V 1000P
C312, 313	ECBT1C222MR5	16V 2200P
C314	ECBT1C332MR5	16V 3300P
C315	ECEA1EU101	25V 100U
C319	ECEA1AU221	10V 220U
C320	ECEA1HKA3R3B	50V 3.3U
C321	ECEA0JKA220B	6.3V 22U
C322	ECEA0JU101B	6.3V 100U
C401	ECEA1HKA010B	50V 1U
C402	ECBT1H101KB5	50V 100P
C403	ECEA1HKA010B	50V 1U
C404	ECBT1C332MR5	16V 3300P
C405	ECEA1HKAR33B	50V 0.33U
C406	ECEA1CKA100B	16V 10U
C407	ECEA1HKAR22B	50V 0.22U
C409, 410	ECEA1AU101	10V 100U
C411	ECQV1H224JM3	50V 0.22U
C412	ECEA1AU102B	10V 1000U
C413	ECEA1HKA010B	50V 1U
C414	RCBS1H102KBY	50V 1000P
C415	ECBT1C182MR5	16V 1800P
C501	ECEA1HKA010B	50V 1U
C502	ECBT1H101KB5	50V 100P
C503	ECEA1HKA010B	50V 1U
C504	ECBT1C332MR5	16V 3300P
C505	ECEA1HKAR33B	50V
C506	ECEA1CKA100B	16V 10U
C507	ECEA1HKAR22B	50V
C509, 510	ECEA1AU101	10V 100U
C511	ECQV1H224JM3	50V 0.22U
C512	ECEA1AU102B	10V 1000U
C513	ECEA1HKA010B	50V 1U
C514	RCBS1H102KBY	50V 1000P
C515	ECBT1C182MR5	16V 1800P
C601	ECEA1HKA010B	50V 1U
C602	ECBT1H101KB5	50V 100P
C603	ECEA1AU101	10V 100U
C604	ECEA1HKA010B	50V 1U
C605-607	RCBS1H102KBY	50V 1000P
C609	ECEA1AU101	10V 100U

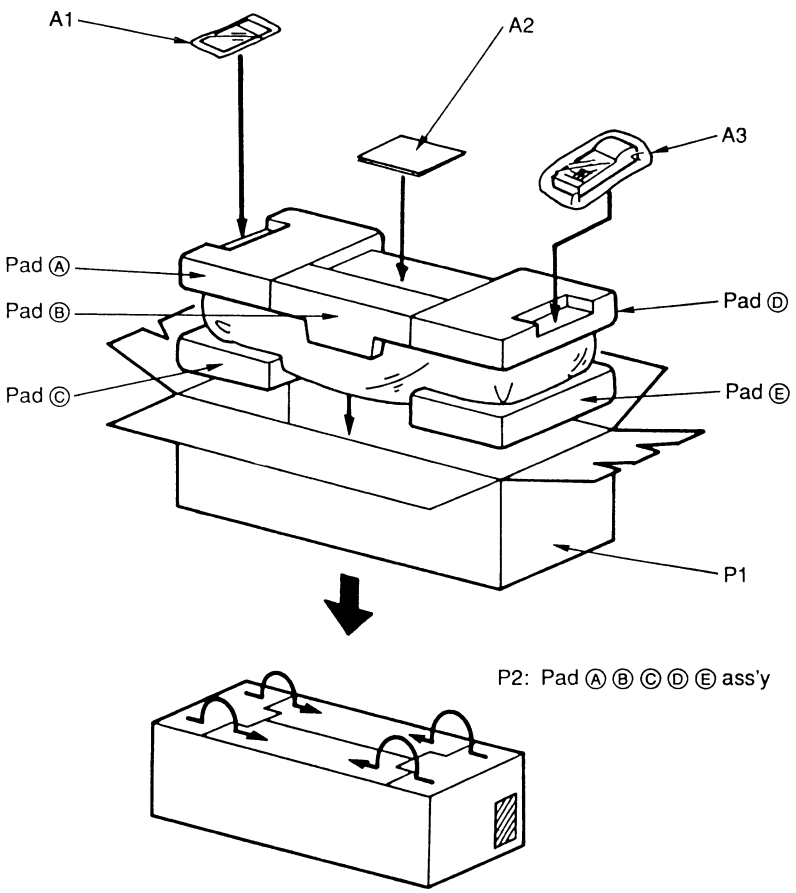
Ref. No.	Part No.	Values & Remarks
C610	RCBS1H102KBY	50V 1000P
C611	ECBT1H820KB5	50V 82P
C612	ECBT1H101KB5	50V 100P
C613	ECBT1H470J5	50V 47P
C614	ECBT1H101KB5	50V 100P
C615	ECBT1C103MS5	16V 0.01U
C616, 617	ECBT1H220JC5	50V 22P
C618	ECBT1C103MS5	16V 0.01U
C619-622	ECBT1H561KB5	50V 560P
C624	ECEA1HKA010B	50V 1U
C625	ECBT1C103MS5	16V 0.01U
C626	ECEA0JKA470B	6.3V 47U
C628	ECEA1AKA101B	10V 100U
C629	RCBS1H102KBY	50V 1000P
C630	ECEA0JU470B	6.3V 47U
C631	ECEA1EKA4R7B	25V 4.7U
C632, 633	ECEA1HKA010B	50V 1U
C635	ECA1EM331B	25V 330U
C636	ECEA1AU101	10V 100U
C637	ECEA1HU470	50V 47U
C638	ECEA1EU470	25V 47U
C639	ECEA0JU221	6.3V 220U
C640	ECEA1EU101	25V 100U
C641	ECEA1CU100	16V 10U
C642	ECEA0JKA220B	6.3V 22U
C643	ECEA1AU221	10V 220U
C644	ECBT1H471KB5	50V 470P
C645	ECEA1EU332E	25V 3300U
C647	ECEA1HKA2R2B	50V 2.2U
C648	ECEA1EKA4R7B	25V 4.7U
C649	ECEA0JKA470B	6.3V 47U
C650	ECEA1AU101	10V 100U
C651, 652	ECBT1H561KB5	50V 560P
C653	RCBS1H102KBY	50V 1000P
C701	ECEA0JKA220	6.3V 22U
C702	ECEA1HKA010I	50V 1U
C703	ECEA0JKA101I	6.3V 100U
C704	ECUZ1E104MBN	25V 0.1U
C705	ECEA1HKA010I	50V 1U
C706	ECUE1H101JCN	50V 100P
C707	ECUV1E273KBN	25V 0.027U
C708	ECUE1H472KBN	50V 4700P
C709	ECUE1C473KBN	16V 0.047U
C710	ECUE1H152KBN	50V 1500P
C711, 712	ECUZ1E104MBN	25V 0.1U
C713	ECUV1C104MBM	16V 0.1U
C714	ECEA0JKA101I	6.3V 100U
C715	ECEA0JKA470I	6.3V 47U
C716	ECUE1H561KBN	50V 560P
C717	ECUZ1E104MBN	25V 0.1U
C718	ECUV1C224KBM	16V 0.22U
C721, 722	ECUE1H270JCN	50V 27P

Ref. No.	Part No.	Values & Remarks
C723	ECEA1AKA221I	10V 220U
C724	ECUV1C104MBM	16V 0.1U
C725, 726	ECUE1H102KBN	50V 1000P
C727, 728	ECEA1HPK010I	50V 1U
C730	ECUZ1E104MBN	25V 0.1U
C731, 732	ECEA0JK221I	6.3V 220U
C733	ECUZ1E104MBN	25V 0.1U
C734	ECEA1AKA221I	10V 220U
C735	ECUZNE104MBN	25V 0.1U
C736	ECUZ1E104MBN	25V 0.1U
C737	ECUZNE104MBN	25V 0.1U
C738	ECUV1C154KBN	16V 0.15U
C742	ECUV1E273KBN	25V 0.027U
C743	ECUZ1E104MBN	25V 0.1U
C744	ECUE1E822KBN	25V 8200P
C745	ECUE1C473MBN	16V 0.047U
C746	ECUE1H050DCN	50V 5P
C747	ECUE1H222KBN	50V 2200P
C748	ECUV1H471KBM	50V 470P
C801, 802	ECBT1H561KB5	50V 560P
C857	ECBT1H470J5	50V 47P
C901-904	ECKR1H103ZF5	50V 0.01U
C905	ECQV1H124JZ3	50V 0.12U
C971	ECBT1H101KB5	50V 100P
C1004	ECEA1CU100	16V 10U
C1005	ECBT1H101KB5	50V 100P

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	
P1	RPG1885	GIFT BOX	(EB)
P1	RPG1884	GIFT BOX	(EG)
P2	RPN0739	PAD ASS'Y	
		ACCESSORY PARTS	
A1 ⚠	VJA0733	AC POWER CORD	(EB)(SF)[VRD]
A1 ⚠	RJA0019-2K	AC POWER CORD	(EG)(SF)
A2	RQT2281-B	INSTRUCTIONS MANUAL	(EB)
A2	RQT2283-E	INSTRUCTIONS MANUAL	(EG)
A3	RAK-RX119WH	REMOTE CONTROLLER	
A3-1	RKK0057-K	BATTERY COVER(REMOTE CONT.)	

Note:
[VRD] : indicates parts that are supplied by Video Recorder Division.

■ Packaging



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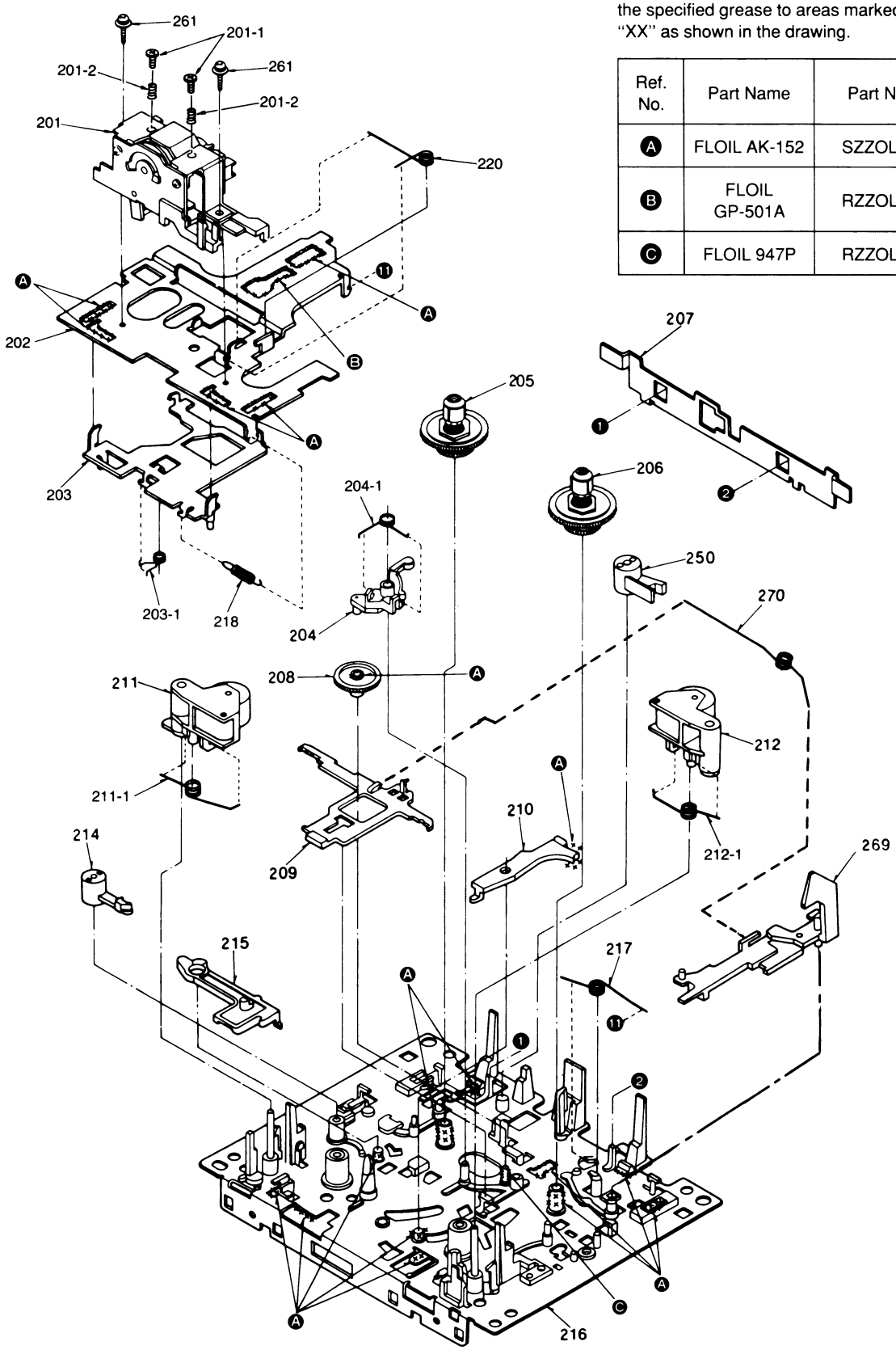
Ref. No.	Part No.	Part Name & Description	Remarks
		MECHANISM PARTS	
201	RXQ0291	HEAD ASS'Y	
201-1	RHE5152ZB	SCREW	
201-2	RMB0331	SPRING	
202	RUA793ZF	CHASSIS	
203	RZLAR300	LEVER ASS'Y	
203-1	RUW143ZA	SPRING	
204	1UB0089ZA	LEVER ASS'Y	
204-1	RUW148ZA	SPRING	
205	1DM0018ZB	REEL TABLE ASS'Y	
206	1DM0017ZB	REEL TABLE ASS'Y	
207	RML0069-1	LEVER	
208	RDG5772ZC	GEAR	
209	RUB508ZB	LEVER	
210	RUB506ZB	LEVER	
211	1UB0088ZB	PINCH ROLLER ASS'Y	
211-1	RMB0310	SPRING	
212	1UB0087ZB	PINCH ROLLER ASS'Y	
212-1	RUW140ZC	SPRING	
214	RNL1ZD	ARM	
215	RUB503ZD	LEVER	
216	RFKRAA0320	CHASSIS ASS'Y	
217	RUW142ZA	SPRING	
218	RUD105ZA	SPRING	
220	RUW139ZA	SPRING	
221	RFKPAA0309	MOTOR ASS'Y	
222	1UE0015ZA	PLUNGER ASS'Y	
223	RUB428ZE	SHAFT	
224	RUL1034ZA	PLATE	
225	RMD5014ZC	SPACER	
226	RDG5927ZG	GEAR	
227	RFKRXDS35-K	FLYWHEEL ASS'Y	
227-1	RNW139ZA	WASHER	
228	1DW0038ZB	FLYWHEEL ASS'Y	
228-1	RNW138ZA	WASHER	
229	1DG0006ZB	GEAR ASS'Y	
230	RUB513ZD	LEVER	
231	1UB0091ZA	LEVER ASS'Y	
231-1	RUW146ZA	SPRING	
232	1DR0011ZB	PULLEY ASS'Y	
233	RDV90ZB	BELT	
234	RDG5769ZA	GEAR	
235	RUQ111ZB	SPRING	
236	RUW145ZA	SPRING	
237	1UB0090ZA	ROD ASS'Y	
237-1	RUB512ZB	ROD	
238	RDG5773ZB	GEAR	
239	RUQ112ZA	SPRING	
240	RUS609ZC	SPRING	
241	RUB514ZB	LEVER	

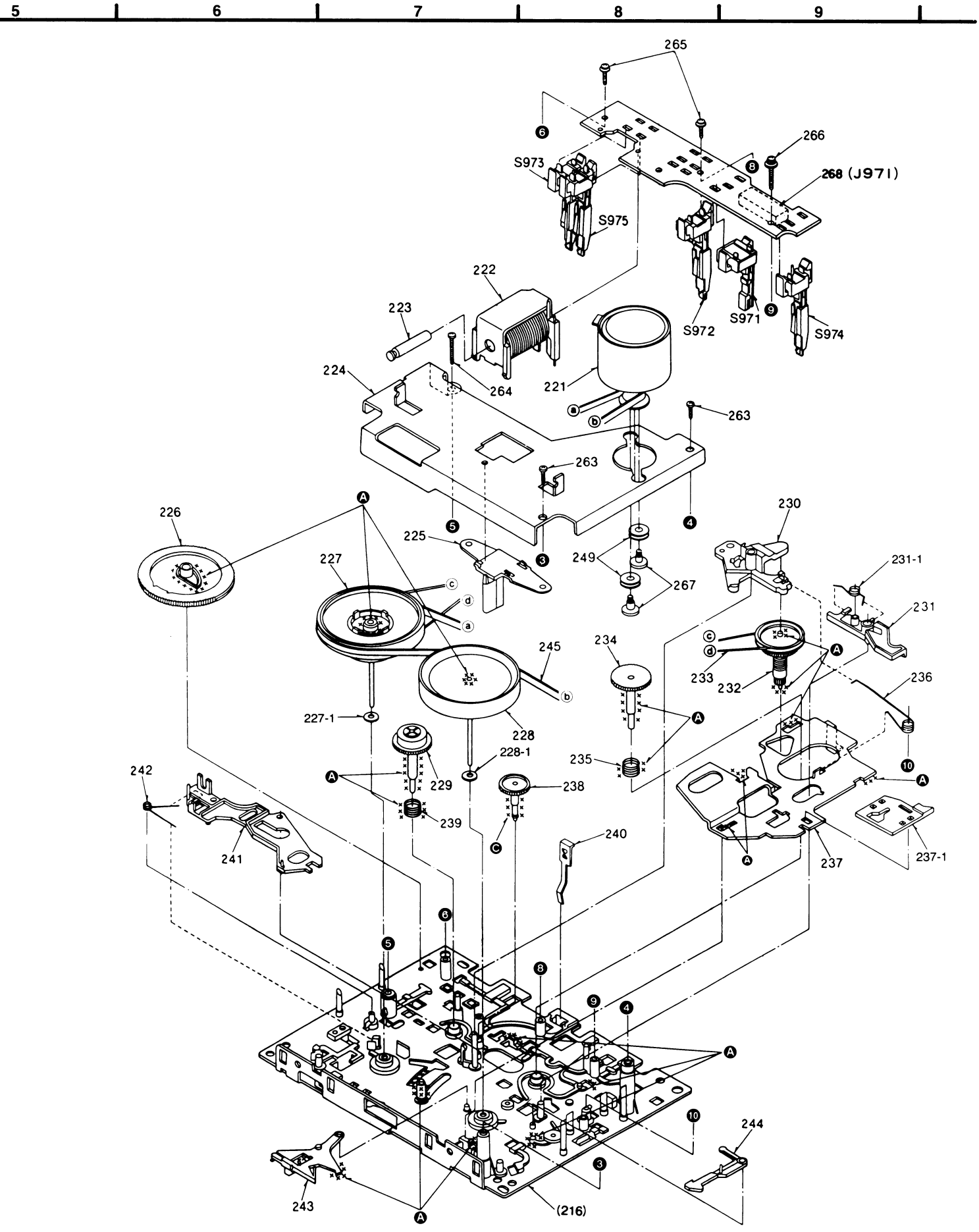
Ref. No.	Part No.	Part Name & Description	Remarks
242	RUW147ZA	SPRING	
243	RUB515ZA	LEVER	
244	RUB509ZA	LEVER	
245	RDV108ZA	BELT	
249	RMG0102-1	RUBBER	
250	RNL180ZB	LEVER	
261	XTW2+6L	SCREW	
263	XTN26+7J	SCREW	
264	RHE5203ZA	SCREW	
265	XTW2+8S	SCREW	
266	XYC2+JF16	SCREW	
267	RHD26002	SCREW	
268	RJS10T7ZA	CONNECTOR(J971)	
269	RUB507ZD	LEVER	
270	RUW144ZA	SPRING	

■ Mechanism Parts Location

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	SZZOL18
Ⓑ	FLOIL GP-501A	RZZOL09
Ⓒ	FLOIL 947P	RZZOL02

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268 (J971)
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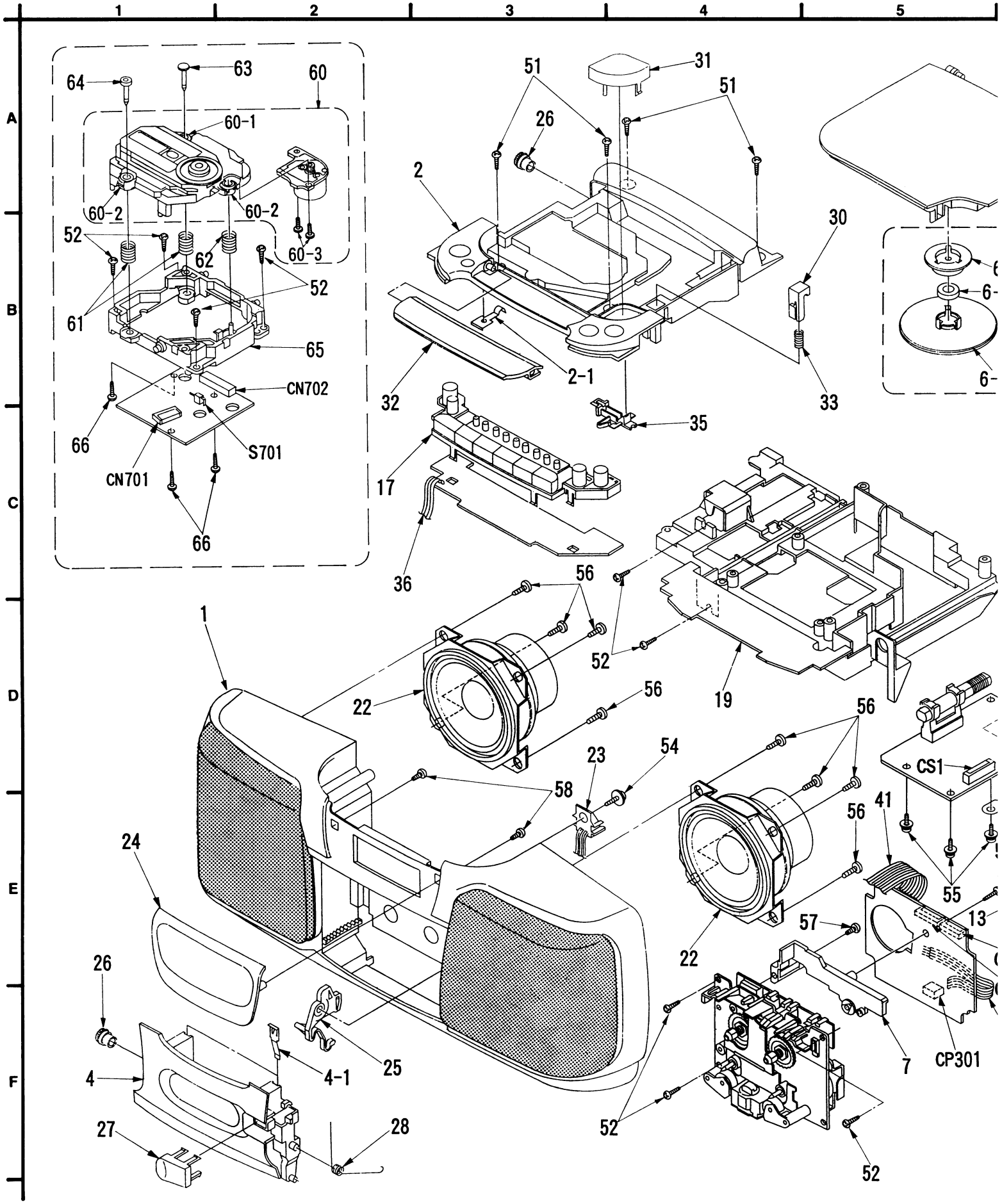
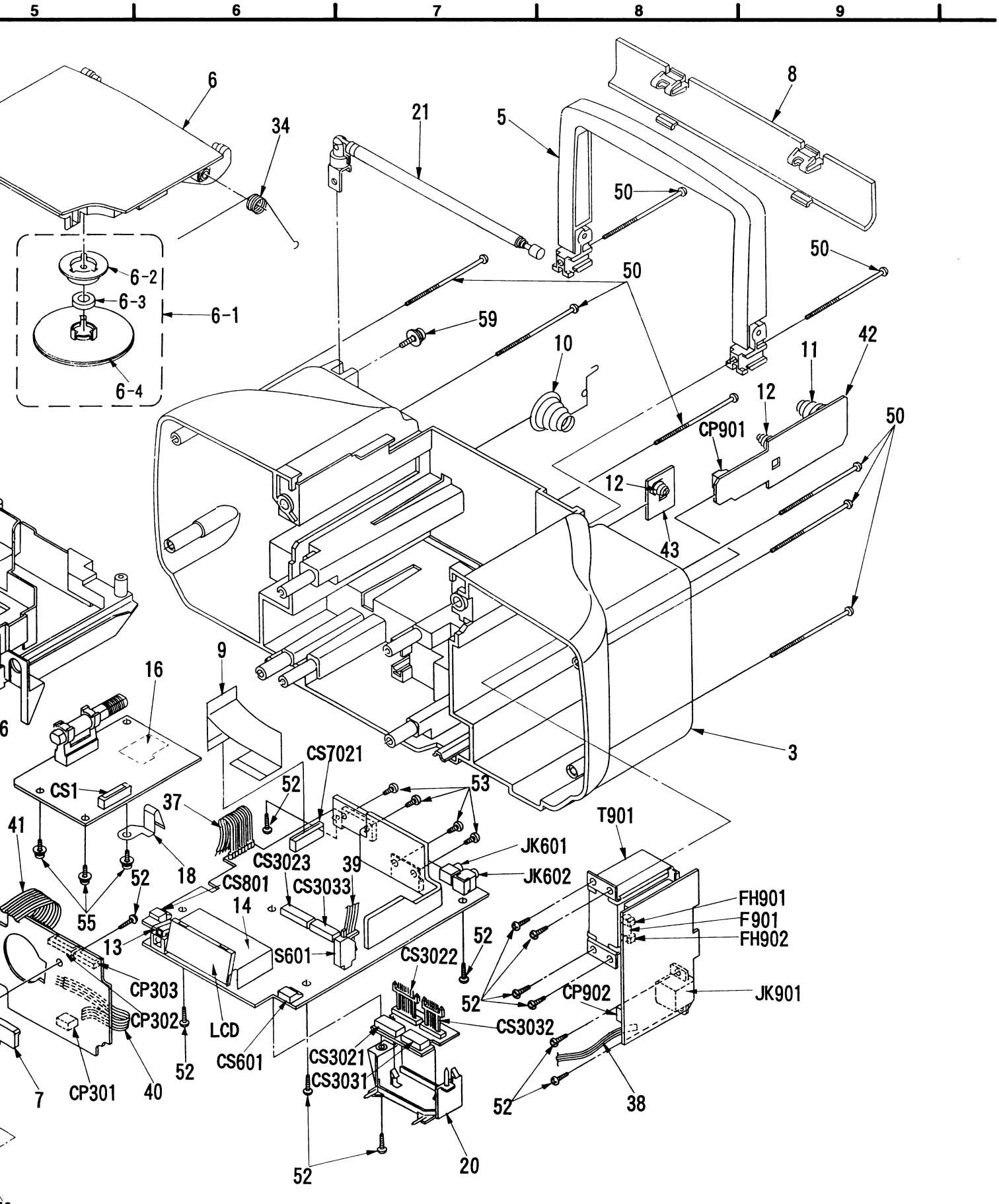
■ Cabinet Parts Location

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CP303
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JK901
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CP302
LCD
CS3032
CS601
CS3021
CS3031
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CP301
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Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET PARTS	
1	RFKKXDS35-KA	FRONT CABINET ASS'Y	
2	RFKKXDS35EKB	TOP PANEL ASS'Y	
2-1	RMC0226	SPRING	
3	RKS0159C-K	REAR CABINET	(EB)
3	RKS0159D-K	REAR CABINET	(EG)
4	RFKLXDS35KA	CASSETTE HOLDER ASS'Y	
4-1	RUS757ZA	SPRING	
5	RFKNXDS35-K	HANDLE ASS'Y	
6	RFKLXDS35KB	CD COVER ASS'Y	
6-1	RYF0201-K	DISC CLAMPER ASS'Y	
6-2	RMQ0152	HOLDER	
6-3	RHM245ZA	MAGNET	
6-4	RFKNXDS55N-K	DISC PAD ASS'Y	
7	RMK0160	CHASSIS	
8	RKK0062-K	BATTERY COVER	
9	REE0528	FPC	
10	RJC931ZC	BATTERY TERMINAL (+/-)	
11	RJC511ZB	BATTERY TERMINAL (-)	
12	RJC751ZA	BATTERY TERMINAL, BACK-UP	
13	RMN0234	LED HOLDER	
14	RMN0235	LCD HOLDER	
16	RSC0326	SHIELD PLATE	
17	RGU0967A-K	OPERATION BUTTON	
18	RJR0115	TERMINAL	
19	RMK0221	CHASSIS	
20	RMR0710-X	CONNECTOR HOLDER	
21	XEARR175ED-Y	ROD ANTENNA	
22	EAS10P497C	SPEAKER	
23	REX0546	WIRE ASS'Y (SPEAKER)	
24	RGP0352B-K	LCD PANEL	
25	RML0204-1	EJECT LEVER (CASSETTE)	
26	RDG0183	GEAR	
27	RGU0970-K	EJECT BUTTON (CASSETTE)	
28	RUW170ZB	SPRING	
30	RGQ0107-K	PIECE	
31	RGU0968-K	EJECT BUTTON (CD)	
32	RKF0341-K	COVER (OPERATION BUTTON)	
33	RMB0243	SPRING	
34	RME0155	SPRING	
35	RML0114	EJECT LEVER (CD)	
36	RWJ1103085KX	FLAT CABLE (W801)	
37	RWJ1111080XX	FLAT CABLE (PW1)	
38	REX0548	WIRE ASS'Y (CW901)	
39	REX0547	WIRE ASS'Y (CW902)	
40	RWJ4704125KR	FLAT CABLE (W305)	
41	RWJ1110075QQ	FLAT CABLE (PW301)	
42	RFKBXDS35AK	BATTERY P.C.B. (MAIN)	
43	RFKBXDS35BK	BATTERY P.C.B. (BACK-UP)	
50	XTV3+40GFZ	SCREW	
51	XTV3+12GFZ	SCREW	
52	XTV3+12G	SCREW	
53	XTV3+10F	SCREW	
54	RHD30044	SCREW	
55	RHD30006	SCREW	
56	XTV3+10G	SCREW	
57	XTN26+6B	SCREW	
58	XTV26+8G	SCREW	
59	XYN3+F12FY	SCREW	
60	RAE0113Z	TRAVERSE DECK ASS'Y	
60-1	SHGD112	RUBBER (A)	
60-2	SHGD113-1	RUBBER (B)	
60-3	SNSD38	SCREW	
61	RME0109	SPRING (A)	
62	RME0142	SPRING (B)	
63	RMS0123-1	PIN (A)	
64	RMS0350	PIN (B)	
65	RMR0698-K	CHASSIS	
66	XTV2+6G	SCREW	

Printed in Japan
F940212000HS/KH/HH