

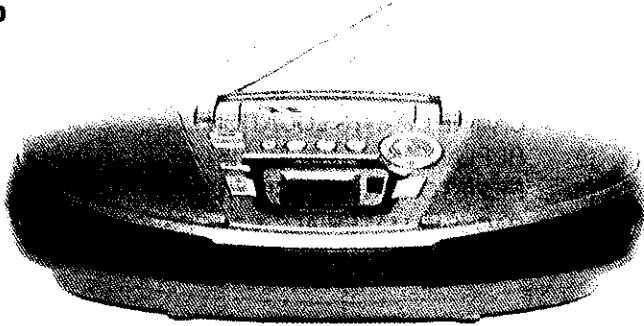
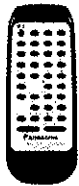
Service Manual

Portable Stereo CD System

Radio Cassette

RX-ES30

COMPACT
disc
 DIGITAL AUDIO

***MASH**
 multi-stage noise shaping


Colour

(S) Silver Type

Area

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

TAPE DECK : AR2 MECHANISM SERIES
TRAVERSE DECK : RAE0152Z-M MECHANISM SERIES

* MASH is a trademark of NTT.

Specifications

Radio

Frequency Range

FM 87.5 - 108 MHz(50 kHz steps)
 AM 522 - 1629 kHz(9 kHz steps)

Intermediate Frequency

FM 10.7 MHz
 AM 459 kHz

Sensitivity

FM 16 dB/50 mW
 AM 53 dB/m/50 mW

TAPE RECORDER

Track system 4 track, 2 channel, stereo

Recording System AC bias

Tape Speed 4.8 cm/s

Erasing System AC erase

Monitor System Variable sound monitor

Frequency range

Normal position 50 - 12000 Hz
 High position 50 - 13000 Hz

Notes :

Specifications are subject to change without notice.
 Weight and dimensions are approximate.

CD PLAYER

Sampling frequency 44.1 kHz

Decoding 16 - bit linear

Beam source Semiconductor laser (wavelength; 780 nm)

No. of channels 2 channel; stereo

Wow and flutter Below measurable unit

Digital filter 4fs

D/A converter MASH (1 bit DAC)

General

Power requirement

AC

230-240V, 50 Hz

Power consumption: 30W

Battery

12 V (Eight R20/LR20, D, UM-1 batteries)

• Do not use rechargeable type batteries

Memory back-up for computer

6V (Four "AA" size, UM-3, R6/LR6 batteries)

• Do not use rechargeable type batteries

8 cm 5.4 Ω x 2

Speakers

Jacks

Output

Phones: 3.5 mm stereo (16 - 32 Ω)

Dimensions (W x H x D)

521 x 146 x 270 mm

Weight

4.4 kg without batteries

WARNING

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

Panasonic®

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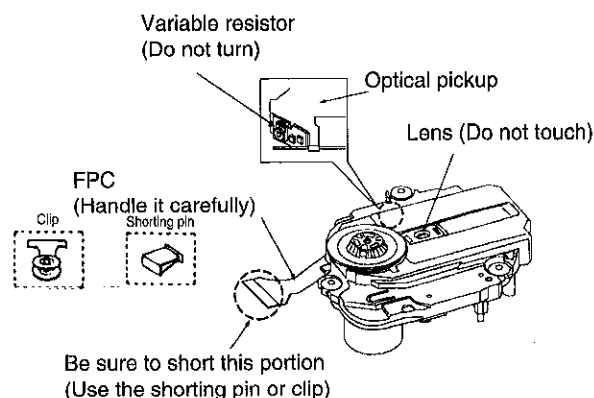
Handling Precautions For Traverse Deck

The laser diode in the traverse deck (optical pickup) may break down due to potential difference caused by static electricity of clothes or human body.

So, be careful of electrostatic breakdown during repair of the traverse deck (optical pickup).

• Handling of traverse deck (optical pickup)

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 antistatic shorting pin is inserted into the flexible board (FPC board).
When removing or connecting the short pin, finish the job in as short time as possible.
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.

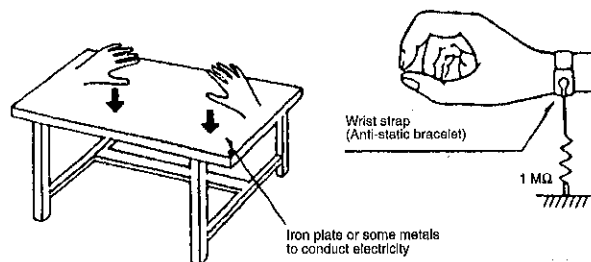


• Grounding for electrostatic breakdown prevention

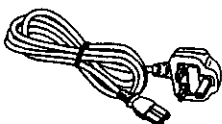
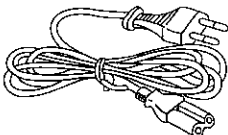
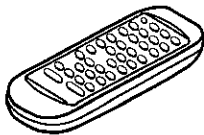
1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

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).



Accessories

 AC power cord for United Kingdom	 AC power cord for Others	 Remote control transmitter
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■ Precaution of Laser Diode

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

Wavelength: 780 nm

Maximum output radiation power from pick up: 100 μ W/VDE

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

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

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

Wellenlänge : 780nm

Maximale strahlungsleistung der lasereinheit : 100 μ W/VDE

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

1. Die lasereinheit nicht zerlegen, da die strahlung an der freigelegten laserdioden gefährlich ist.
2. Den werkseitig justierten einstellregler der lasereinheit nicht verstellen.
3. Nicht mit optischen instrumenten in die fokussierlinse blicken.
4. Nicht über längere zeit in die fokussierlinse blicken.

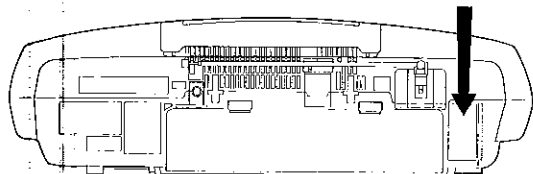
ADVASEL: I dette a apparat anvendes laser.

CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

■ Use of Caution Labels



DANGER	INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
ADVASEL	USYNLIG LASERSTRÅLNING VED ÅBNING. NÅR SIKKERHEDSAFBRYDERE ER LØST AF FUNKTION. UNDGÅ UDSETELSE FOR STRÅLING.
VARO!	AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALLITAIN NÄKYMÄTÖNTÄ LASERSÄTELYLLÄ. ÄLÄ KATSO SÄTEESEEN.
VARNING	ÖSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRÄKTA EJ STRÅLEN
ADVASEL	USYNLIG LASERSTRÅLNING NÄR DØKSEL ÅPNES OG SIKKERHEDSLÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
VORSICHT	UNSIHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

(Inside of product)

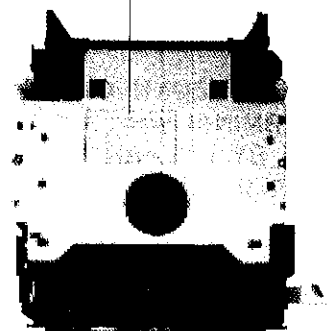
(Indersiden af apparatet)

(Tuotteen sisällä)

(Apparatens insida)

(Produktets innsida)

(Im Inneren des Gerätes)



■ Caution for AC Mains Lead

(For "EB" area code model only.)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION !

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OFF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted, please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

IMPORTANT

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

Blue: Neutral
Brown: Live

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

Remove the connector cover.

How to replace the fuse

The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.

Figure A

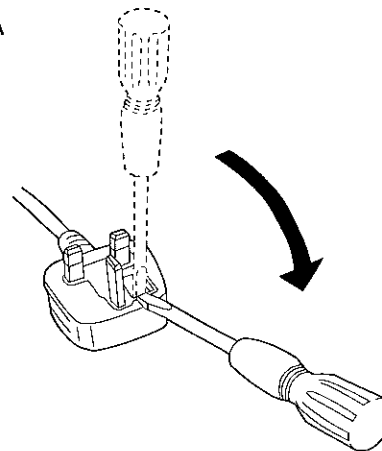
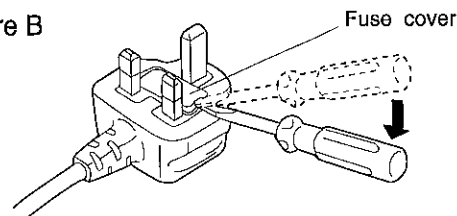


Figure B



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

Figure A

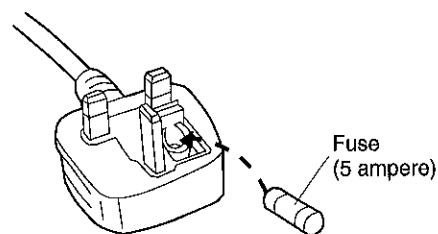
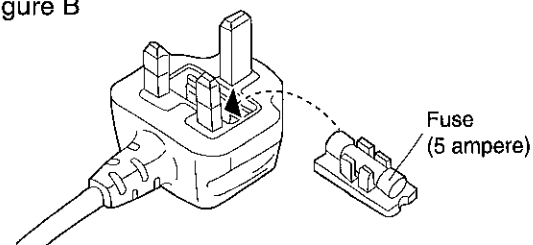


Figure B



Location of Controls

Basic controls

A

Number	Designation
--------	-------------

- ① Standby/on switch (⏻/⏻)
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 Display panel
- ③ Remote control signal sensor (SENSOR)
- ④ Play timer/record timer button (⏻PLAY/REC)
- ⑤ Time adjust/preset tuning/CD track select/equalizer jog (⏮/⏭/⏮/⏭)
- ⑥ Equalizer mode button (EQ MODE)
- ⑦ Standby Indicator (⏻)
When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.
- ⑧ Clock/timer button (CLOCK/TIMER)
- ⑨ Volume control buttons (VOLUME +, -)
- ⑩ Speaker

Cassette deck controls

B

Number	Designation
--------	-------------

- ⑪ Deck eject button (DECK ⏮)
- ⑫ Record/record pause button (●/● II REC/REC PAUSE)
- ⑬ Fast forward/rewind/TPS buttons
(FF [TPS] / + / ⏭, REW [TPS] / - / ⏮)
- ⑭ Tape mode select/stop button (■ TAPE/CD)
- ⑮ Cassette play/direction button (⏮ ⏭ TAPE)
- ⑯ Deck

Tuner/CD controls

C

Number	Designation
--------	-------------

- ⑰ CD mode select/stop button (■ TAPE/CD)
- ⑱ Band button (TUNER BAND)
- ⑲ CD play/pause button (▶/⏮ CD)
- ⑳ Preset tuning/CD track select jog
(⏮/⏭/⏮/⏭)
- ㉑ CD program/clear, tuner preset button
(●MEMORY - CLEAR)
- ㉒ CD recording mode button (CD REC MODE)
- ㉓ Tuning/CD search buttons
(FF [TPS] / + / ⏭, REW [TPS] / - / ⏮, TUNING)
- ㉔ CD tray
- ㉕ CD tray open button (⏮ CD OPEN)

Normal play

press [P/⏏].
When using batteries for the power supply)

- 1** Press **TAPE/CD** to select the CD mode.
Tape → Cd
(The display changes each time the button is pressed.)
"NO DISC" indicates a disc has not been inserted.
- 2** Press **[△ CD OPEN]**, then insert a CD.
Insert the CD with the label facing up.
- 3** Push the CD tray to close it.
- 4** Press **▶/III CD**.
Plays to the last track and automatically stops.
- 5** Adjust the volume level.

To stop playing:
Press [■ TAPE/CD].
To stop play from the
Press [■/CLEAR].

Press **[▶/|| CD]** to pause play.
Press **[▶/|| CD]** to return to play mode.

Note

- The unit cannot be turned on from the remote control when batteries are being used to power the unit.
 - If interference occurs to radios or televisions, place the unit further away from this equipment.
- Do not use irregular shape CDs. **A**

Hint

- Pressing **[▶/■ CD]** automatically turns the unit on, and if a CD is inserted, begins play (only when AC power is supplied).
- The volume can be adjusted even in the unit off mode. (Available only from the main unit)

Skipping tracks

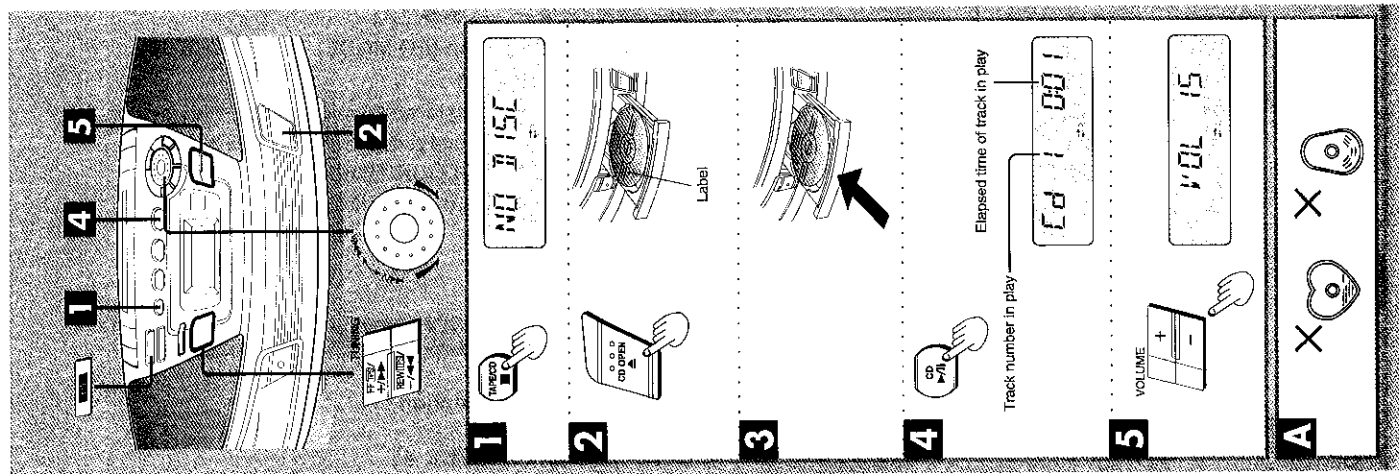
Main unit : Dial [/ ] to skip tracks.
Remote control : Press the button once for each track to be skipped.

	Backward	Forward
Main unit	⏮ / V	⏭ / ^
Remote control	⏮	⏭

Searching backward and forward

Keep the button pressed during play or pause mode.

	Backward	Forward
Main unit	◀	▶
Remote control	◀	▶



Location of Controls

Remote Control

Number	Designation
⑤	Sleep timer button (SLEEP)
⑦	Numbered button
⑧	Random play button (RANDOM)
⑨	Repeat button (REPEAT)
⑩	CD program/tuner memory button (PGMMEMORY)
⑪	Tuning buttons (← TUNE →)
⑫	Tape counter reset button (C-RESET)
⑬	Display select button (DISPLAY)
⑭	Reverse mode select button (REV MODE)
⑮	Timer fader button (TIMER FADER)
⑯	Sound virtualizer button (SOUND VIRTUALIZER)
⑰	Preset EQ button (PRESET EQ)
⑱	CD skip/search buttons (◀◀, ▶▶)
⑲	CD stop/program clear button (■/CLEAR)
⑳	FM mode/BP button (FM MODE/BP)
㉑	Fast forward/TPS button (FF/FF)
㉒	Rewind/TPS button (REW/TPS)
㉓	Tape stop button (■)

When the unit is supplied with AC power, buttons such as **1** function the same way as the buttons on the main unit. To save power, the unit cannot be turned on from the remote control when batteries are used.

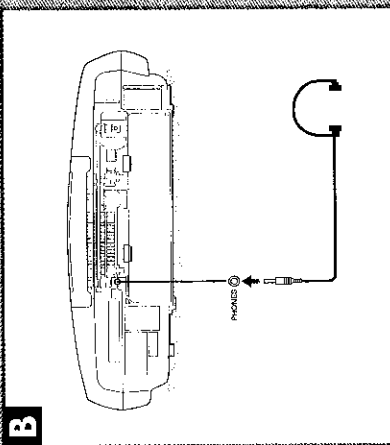
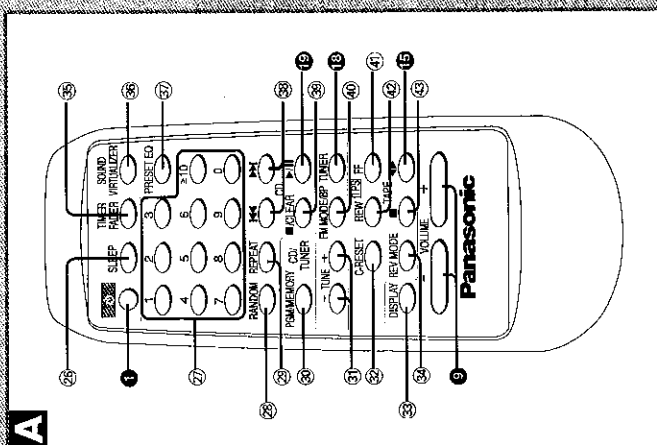
Using Headphones B

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

Plug type: 3.5 mm stereo

Note

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



Starting play from a selected track (Direct play)

(Only from the remote control)
Preparation: Press [REPEAT].
If "REPEAT" is illuminated, press [CLEAR] again to clear it.
Select the track number with the numbered buttons.
Play starts at the selected track and continues to the last track.

To select a track numbered 10 or more
Example
Track 20: [2] [0] → [0] → [0]
Track 35: [3] [5] → [3] → [5]

Repeating tracks

(Only from the remote control)
Press [REPEAT] before or during play.

1- [REPEAT] → [REPEAT] → off (no display)

(The display changes each time the button is pressed.)

Press [REPEAT] to begin play if you are in the stop mode.

To repeat only one track:
Press [REPEAT] to display "1- [REPEAT] : 1".

To repeat all tracks on the CD:
Press [REPEAT] to display "1- [REPEAT] : 3".

To repeat programmed tracks:
1 Program desired tracks (steps 1 to 4).
2 Press [REPEAT] to display "1- [REPEAT] : 4".
3 Press [REPEAT] to begin play.

To clear the repeat function:

Press [REPEAT] to cancel "1- [REPEAT] : 4" or "1- [REPEAT] : 3".
Pressing [CD OPEN] will cancel repeat function.

Random play

(Only from the remote control)

1 Press [RANDOM] to select the CD mode.

2 Press [RANDOM] when CD is in stop mode.

"RANDOM" is not displayed if pressed when CD is in play mode.

3 Press [REPEAT].

All tracks play at random, and play automatically stops.

To cancel random play:

- Press [RANDOM] to clear "RANDOM" display.
- If cancelled during random play, the CD plays from the track in play to the end of the CD, and automatically stops.
- Pressing [CD OPEN] will cancel random function.

Note

- Random play cannot be used in combination with program play.
- Skipping to tracks which have already been played is not possible.
- Searching forward and backward are possible only within the track in play.
- Tracks cannot be selected with the remote control's numbered buttons during random play. ("E" is displayed.)

Selecting and listening to favourite tracks (Program play)

Up to 36 tracks can be programmed.

1 Press [TAPE/CD] to select the CD mode.
When "RANDOM" is displayed, press [RANDOM] on the remote control to clear the display.

2 Dial [4] [5] [0] [5] → [4] [5] [0] [5] to select the desired track.

3 Press [MEMORY - CLEAR] to record the selection.

4 Continue programming by repeating steps 2 and 3.

5 Press [REPEAT].
Selected tracks play in the programmed sequence, and play automatically stops.

When using the remote control:

- Press [MEMORY - CLEAR] to select the CD mode.
- Press [PROGRAM MEMORY], "PGM" illuminates.
- Press the numbered buttons to select the track to be programmed.
- Press [REPEAT].

To cancel program play:

(From the main unit)
Keep [MEMORY - CLEAR] pressed when CD is in stop mode until "CLEAR" is displayed.
(From the remote control)
Press [MEMORY - CLEAR] when CD is in stop mode to display "CLEAR".
Pressing [CD OPEN] will cancel program function.

When "FULL" is displayed:

Total play time of the programmed tracks exceeds 100 minutes.
Tracks can still be programmed and played.

When "FULL" is displayed:

36 tracks have already been programmed. No further tracks can be programmed.

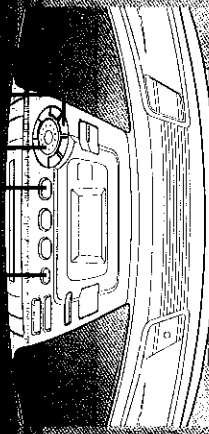
Memory retention of programmed tracks:

Track programming is retained even if play is stopped or the unit is turned off.
The display "Cd-P" indicates that programming is retained in the memory.

To check programming:

While "Cd-P" display is on, dial [4] [5] [0] [5] → [4] [5] [0] [5].
The track number and its play sequence can be checked each time the jog is dialed.

1 5 2 3



1

Total number of tracks

CD 10 4505

2

Track number

CD 3 435

3

Play sequence

CD 3 --01

4

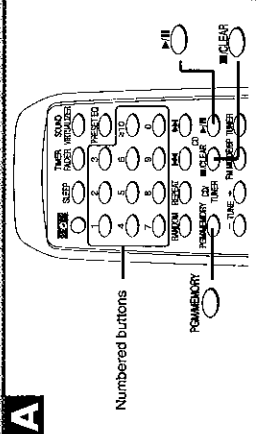
Total play time of programmed tracks

CD 8 4025

5

Programmed track

CD 3 001



Recording Radio Programs

- 1 Press [DECK ▲] and load the cassette with the side to be recorded facing up.
- 2 Select desired radio station.
- 3 Press [REV MODE] on the remote control to select the mode.
 ➡ : Records onto both sides, starting with the side facing up.
 ⇄ : Records one side only.
- 4 Press [●●● II REC/REC PAUSE].
 "FWD REC" is displayed and recording begins. "REV REC" is displayed when recording begins while "◀" is displayed.

To stop recording:
Press [■ TAPE/CD].

To stop recording temporarily:
Press [●●● II REC/REC PAUSE].

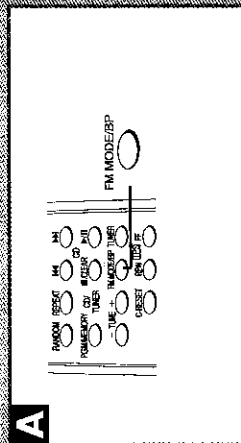
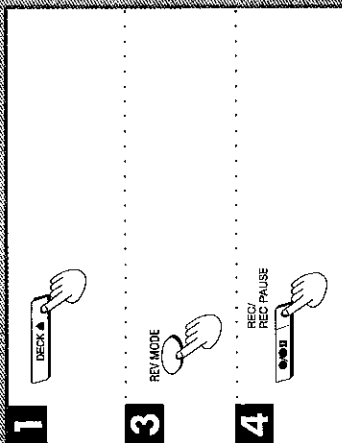
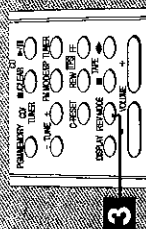
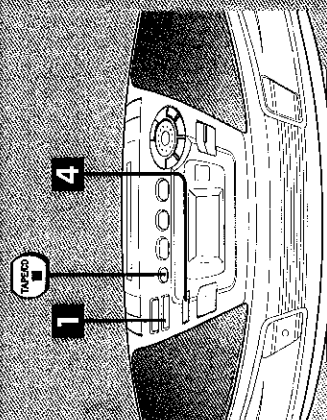
To resume recording, press [●●● II REC/REC PAUSE].

When there is too much interference during AM recording

(Available only from the remote control)

Press [FM MODE/BP].

Select "bP1" or "bP2" whichever yields less noise.



Recording from CDs

Normal recording

Recording and CD play begin simultaneously. Getting ready: Insert the CD.

- 1 Press [DECK ▲] and load the cassette with the side to be recorded facing up.
 Tape length must be longer than the CD play time.
- 2 Press [REV MODE] on the remote control to select the mode.
 ➡ : Records onto both sides, starting with the side facing up.
 ⇄ : Records one side only.
- 3 Press [■ TAPE/CD] to select the CD mode.
 TAPE → CD
 (The display changes each time the button is pressed.)
- 4 Press [●●● II REC/REC PAUSE].
 "FWD REC" is displayed and recording and CD play begin simultaneously. "REV REC" is displayed when recording begins while "◀" is displayed.

To stop recording:
Press [■ TAPE/CD].

To pause recording:
Press [●●● II REC/REC PAUSE] (CD will also pause).

To begin recording again, press [●●● II REC/REC PAUSE].

After recording

When CD play is finished, the cassette simultaneously stops.

To continue recording a different CD on the same cassette:

1. Press [▲ CD OPEN] and replace the CD.
2. Press [●●● II REC/REC PAUSE].

Recording favourite tracks

1. Program desired tracks (→ steps 2 to 4) after step 3.
2. Press [●●● II REC/REC PAUSE].

To skip tracks not to be recorded

1. Press [●●● II REC/REC PAUSE] during recording.
 CD will also pause.
2. Dial [◀/▶/V] to display the number of the next track to be recorded.
3. Press [●●● II REC/REC PAUSE] to begin recording again.

Easy CD recording (Auto)

Recording all tracks or programmed tracks of a CD in programmed order.

- It is not necessary to rewind the cassette. Recording always begins from the beginning of the side facing up.
- If the side ends in the middle of a track, the track which was cut off is recorded on the opposite side from the beginning.

Getting ready: Insert the CD.

1 Press [TAPE/CD] to select the CD mode.

2 Press [CD REC MODE] to display "AUTO".

AUTO → 1-REC → OFF

(The display changes each time the button is pressed.)
The necessary tape length will be displayed. (Example: Tape of 51 minutes or more necessary to record all tracks.)

3 Insert a cassette which is longer than that displayed in step 2.

Insert with the side to be recorded first up.

4 Press [REW/REC PAUSE].
Automatically rewinds, and recording from the first track begins after a 10 second interval.

Reverse mode is displayed as "REV".

① Rewinding tape

② Recording 10 second interval

③ Recording begins

The unit stops when recording finishes.

To stop recording (CD will also stop):

Press [TAPE/CD].

To record favourite tracks:

- Program desired tracks (→ steps 2 to 4) after step 1.
- Continue to perform above steps 2 to 4 to start recording.

Note

- Auto CD recording cannot be used in combination with random play and repeat play.
- "C-----" is displayed if the tape required for recording exceeds 120 minutes.

One track recording (1 TRACK)

Records one track from the CD and stops. This function is convenient when recording different tracks from various CDs. Recording can begin from any place on the tape. Getting ready: Insert a CD.

1 Press [DECK Δ] and load the cassette with the side to be recorded facing up.

Recording direction is automatically set to begin from the side facing up (the "▶" indicator is displayed).

Find the position on the tape where recording is to begin.

2 Press [TAPE/CD] to select the CD mode.

3 Press [CD REC MODE] to display "1-REC".

AUTO → 1-REC → OFF

(The display changes each time the button is pressed.)

4 Dial [◀/▶/⏮/⏭] to select the track to be recorded.
Omit this step when recording the first track on the CD.

5 Press [REW/REC PAUSE].

CD play and recording begin simultaneously. Records only one track and stops.

Reverse mode is displayed as "REV".

- If the track is interrupted when the end of the cassette is reached, recording automatically begins again from the beginning of the track on the opposite side (if recording was begun on the opposite side, recording stops at the end of the present side).

To continue recording with another CD:

Press [Δ CD OPEN], insert a CD and follow steps 4 and 5.

To stop recording (CD will also stop):

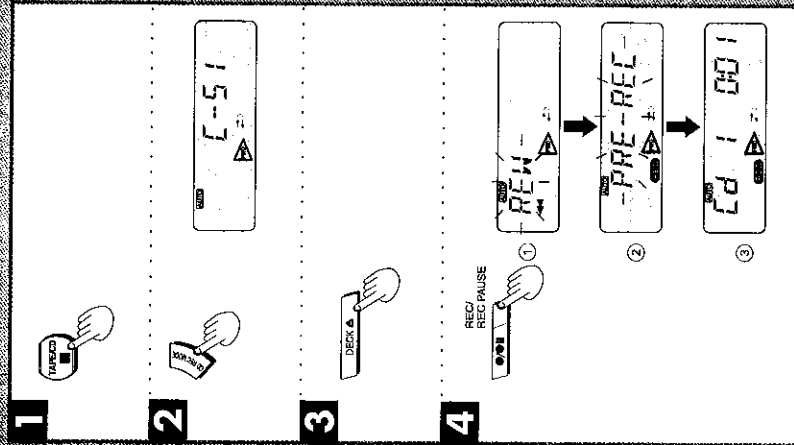
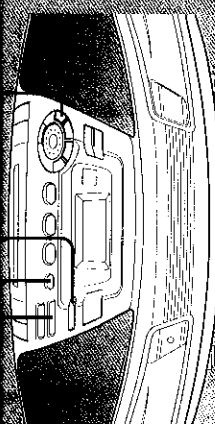
Press [TAPE/CD].

Hint

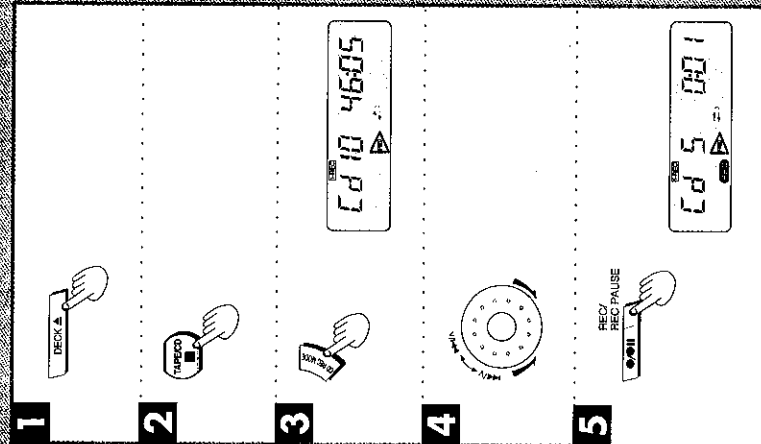
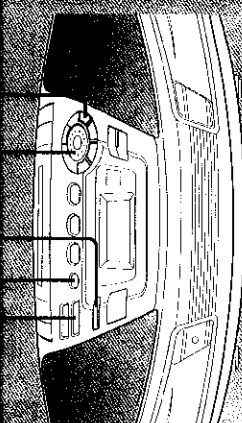
Try listening to the track to check the type of song it is before recording. Press [CD REC MODE] to display "1-REC", then press [▶/⏭ CD] to play the CD.

Press [REW/REC PAUSE] to record a song you like during CD play. The track is recorded from the beginning.

3 1 4 2



1 2 5 4 3



Using the Timer

Using the Recording Timer

Select this timer when you want to use the timer to record a mid-night program or while you are out.
The clock has a 24-hour display.
Make sure that you have completed "Setting the Clock".
Example: Recording from 13:30 to 14:30

Setting the start and finish times

- 1 Press [ON] to turn the unit on.
- 2 Press [CLOCK/TIMER] four times to set "ON" and "OREC" flashing.
They flash for about 10 seconds.

→ CLOCK → ON OPLAY → OFF OREC → ON OREC →
(The display changes each time the button is pressed.)

- 3 (Within 10 seconds)
Dial [←/→/↑/↓] to set the start time.
2 Press [CLOCK/TIMER].
Finish time flashes.

- 4 Dial [←/→/↑/↓] to set the finish time.
2 Press [CLOCK/TIMER].
Display returns to original mode.
When "E" is displayed:
Check whether start and finish are set for the same time.

Note
The set time remains active until changed.

Programming recording

- 5 Get the music source ready.

- 1 Select radio station.
 - 2 Insert cassette into deck.
 - 3 Press [REV MODE] on the remote control to select the mode.
- Reduce the volume level now if you do not wish to listen during recording.
 - (Available only from the remote control)
 - If there is excessive interference when recording an AM station, press [FM MODE/BSF] to select "BP1" or "BP2" which ever yields less noise.

Setting the timer function

- 6 Press [OPLAY/REC] to display "OREC".

Each time it is pressed: OPLAY → OREC → off (no display)

If the play timer has not been set

Each time it is pressed: OREC → off (no display)

When "E" is displayed:

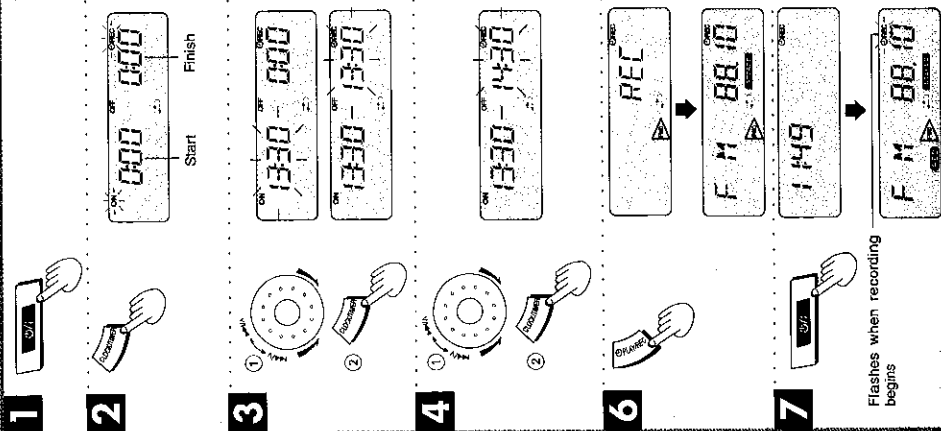
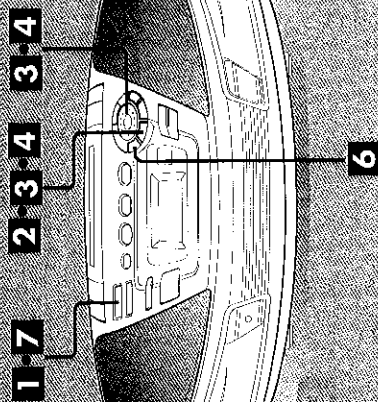
Check whether the clock has been set.

- 7 Press [ON] to turn the unit off.

Programming can be checked when the unit is off.
The unit turns on approximately 30 seconds before the set start time and recording begins.

To clear the timer function:

Press [OPLAY/REC] when the unit is on to clear the "OREC" indicator.



Using the Timer

Using the Play Timer

Select this timer when you want to use the timer as an alarm clock. You can wake up with listening to music (CD, tuner or tape) at a desired volume level and time.
The clock has a 24-hour display.
Make sure that you have completed "Setting the Clock".
Example: Setting CD play from 7:30 to 8:30 on play timer.

Setting the start and finish times

- 1 Press [ON] to turn the unit on.
- 2 Press [CLOCK/TIMER] twice to set "ON" and "OPLAY" flashing.
They flash for about 10 seconds.

→ CLOCK → ON OPLAY → OFF OPLAY →
(The display changes each time the button is pressed.)

- 3 (Within 10 seconds)
Dial [←/→/↑/↓] to set the start time.
2 Press [CLOCK/TIMER].
Finish time flashes.

- 4 Dial [←/→/↑/↓] to set the finish time.
2 Press [CLOCK/TIMER].
Display returns to original mode.
When "E" is displayed:
Check whether start and finish are set for the same time.

Note
The set time remains active until changed.

Programming play

- 5 Get the music source ready.

- 1 Listening to the radio.
- 2 Listening to CDs.
- 3 Listening to cassettes.

- 6 Press VOLUME (+), (-) to adjust volume for time of play.
The volume set here remains effective even if it is changed after step 7.

Setting the timer function

- 7 Press [OPLAY/REC] to display "OPLAY".

Each time it is pressed:

OPLAY → OREC → off (no display)

If the record timer has not been set

Each time it is pressed: OPLAY → off (no display)

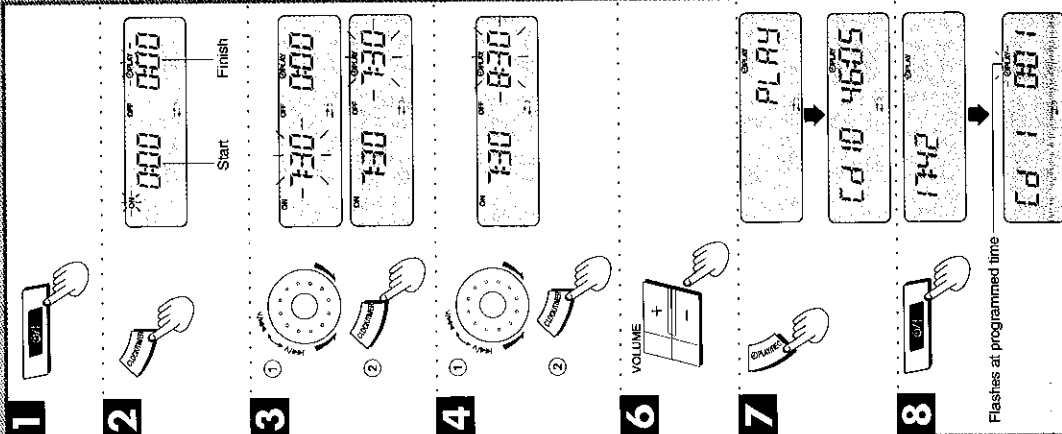
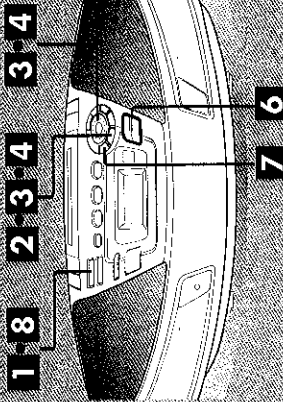
When "E" is displayed:

Check whether the clock has been set.

- 8 Press [ON] to turn the unit off.

Programming can be checked when the unit is off.

To clear the timer function:
Press [OPLAY/REC] when the unit is on to clear the "OPLAY" display.



Using the Timer

Using the sleep timer

Using the sleep and play timers in combination

Example: Falling asleep listening to FM programming and waking up the next morning listening to a CD. **A**

1. Program the play timer for CD play.
2. Select the desired radio station and set the sleep timer. Play starts at the set volume even if it was reduced after setting the timer.

When programmed times overlap **B**

- When play is programmed to begin before the sleep timer turns the unit off, the play timer is not activated. The unit turns off after the programmed sleep timer is completed. Always set the sleep timer so that the unit turns off by the time the play timer is programmed to begin.

Using the sleep and recording timers in combination

Example: Falling asleep listening to a CD and recording

1. Program the recording timer to record the FM programming and insert recording cassette into deck.
2. Insert the CD and set the sleep timer.

When programmed times overlap **D**

- When recording is programmed to begin before the sleep timer turns the unit off, the recording timer is not activated. The unit turns off after the programmed sleep timer is completed. Always set the sleep timer so that the unit turns off by the time the recording timer is programmed to begin.

Note

The play and recording timers cannot be used together.

Using the timer fader function (Timer Fader)

(Only from the remote control)

- Using timer fader and sleep timer in combination

Volume will decrease slowly with time till power is turned off at the end of sleep.

Select this function to provide much comfortable sleep when listening to tape, CD or radio with sleep mode.

- Using timer fader and play timer in combination

Volume will increase from 0 to last set volume level gradually.

Select this function to provide a more comfortable wake up when using the play timer as an alarm.

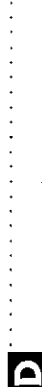
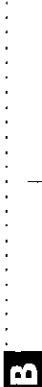
Press [TIMER FADER] to indicate "FADER" **E**

To cancel the TIMER FADER function:

- Press [TIMER FADER] again to cancel.
- "FADER" goes off.

Note

- All timer functions are affected while "FADER" is displayed.
- Timer mode works everyday as long as "FADER" is displayed.
- If record timer is used, there will be no effect to the recording.



Using the Timer

Using the Play/Recording Timer

To play music after programming:

- ① Begin playing of desired music source. Programming for the play/record time remains in the memory even if the volume or source is changed during play.
- ② After playing music, turn the unit off.
- Direction displayed when unit is turned off is activated in the play/recording timer. After playing music, check the direction ("▶" or "◀") of the cassette to be played or recorded before turning the unit off.
- When using the play timer with a CD, check the setting of the random, repeat or programmed play mode before turning the unit off.

To change the source or volume of the play timer function:

Press [PLAY/REC] to clear the "PLAY" indicator and follow steps **B** to **E**

To change the radio station to be recorded:

Press [PLAY/REC] to clear the "REC" indicator and follow steps **B** to **E**

To use the timer at the same time daily:

Check that "PLAY" or "REC" is displayed and turn the unit off.

Note

Always turn the unit off before the programmed start time. The timer does not activate if unit is on.

To check programming

Press [CLOCK/TIMER] when unit is off.

The display automatically changes in the following order.

Display example: Play CD from 7:30 to 8:30 on play timer. **A**

- ① Programmed time
- ② Programmed music source
- ③ Timer volume
- ④ Original display

Using the Sleep Timer

(Only from the remote control)

The unit off time can be set up to two hours ahead of the present time. It lets you fall asleep while listening to music.

Press [SLEEP] to select the desired time. **B**

→ 30 → 60 → 90 → 120

SLEEP OFF

(The display changes each time the button is pressed.)

The unit is turned off after the set time has elapsed.

To release the timer function:

Press [SLEEP] to select "SLEEP OFF".

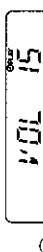
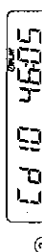
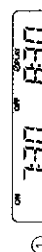
To check the time remaining during operation:

Press [SLEEP].

To change the time remaining during operation:

Press [SLEEP] to show the remaining time then press [SLEEP] to select the desired time.

(Continued on next page)



Time setting

SLEEP 30

Setting the Clock

The clock has a 24-hour display.
Example: Setting the clock to 13:30;

- 1** Press [D/L].
(This turns the unit on.)
- 2** Press [CLOCK/TIMER].
“CLOCK” is displayed.

- 3** Dial [◀] [▶] [V] [Δ] [Λ] to show desired time.
The time display can be changed in one minute units by dialing the jog.
Time
If the jog is dialed in quick succession, the time display will change in 10 minute units.
- 4** While the time display is flashing:
Press [CLOCK/TIMER].
The clock now starts operating, and the display returns to its original status.

To display the clock (When the unit is on): **A**
(Available only from the remote control)

Press [DISPLAY] when the unit is on.

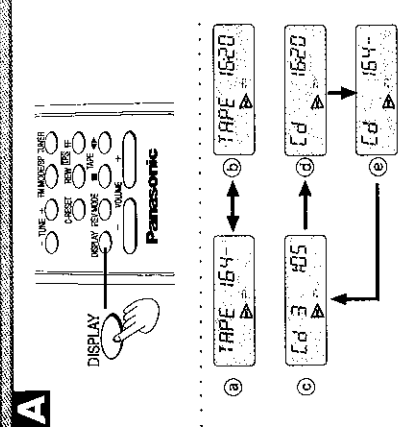
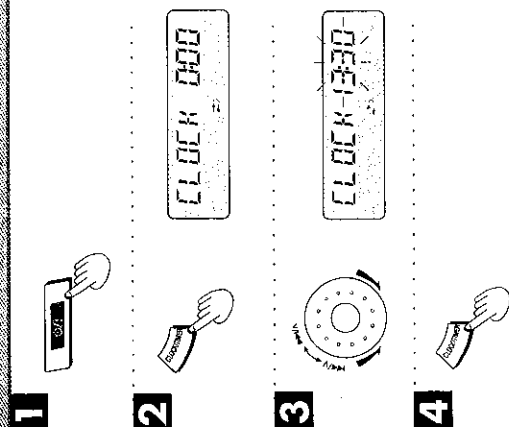
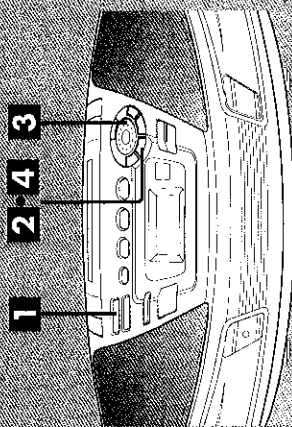
Selecting the Display A

(Only from the remote control)

Press [DISPLAY] when the unit is on.

- When using the cassette
 - (a) Tape counter
 - (b) Present time
- When using the radio or CD
 - (c) Frequency/play status
 - (d) Present time
 - (e) Tape counter

"----" appears on the tape counter display when a cassette has not been inserted.



Changing the Sound Quality

Selecting equalizer effects

Four types of sound quality can be selected.

- 1** Press [EQ MODE].
(The present sound quality effect will display.)
- 2** Dial [◀▶↶↷] to select desired sound quality.
When it is turned clockwise, the displayed image of the sound quality effect changes in the following sequence.

When using the remote control **A**

Press **[PRESET EQ]**.
The displayed image of a sound quality effect changes each time the button is pressed.

Note

- Recordings are not affected by changes in sound quality.
- The effect when listening through headphones is different to that heard from the speakers.
- Select a different sound quality if treble sounds are too strong.

Using the "live" effect (Sound Virtualizer)

(Only from the remote control)

The "live" effect allows enjoyment of the 3-D feeling listening to live music. Compared with earlier surround sound systems, the 5.1 surround virtualizer leaves middle-range sounds such as vocals clear and gives natural width and depth to music. Sound virtualizer is effective with stereo sound.

Press [SOUND VIRTUALIZER] to display

To cancel:

Press [SOUND VIRTUALIZER] to clear the " " indicator.

Note

- The effect is not as apparent when listening through headphones.
- Cancel this effect if noise increases when listening to FM radio.
- Recordings are not affected by changes in sound quality.

■ Operation Checks

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

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.
4. Refer the Parts No. on the page of "Main Component Replacement Procedures", if necessary.

• Contents

	page
• Checking Procedure for each major P.C.B.	
1. Checking for the Servo, Main, CD Leaf SW, LED and Panel P.C.B.	13 ~ 14
2. Checking for the Battery and Power P.C.B.	14
3. Replacement for the Traverse Deck	15 ~ 16

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

ACHTUNG : • Die Lasereinheit nicht zerlegen.
• Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

■ Checking Procedure For Each Major P.C.B.

1. Checking for the Servo, Main, CD Leaf SW, Led and Panel P.C.B.

Step 1

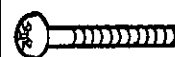
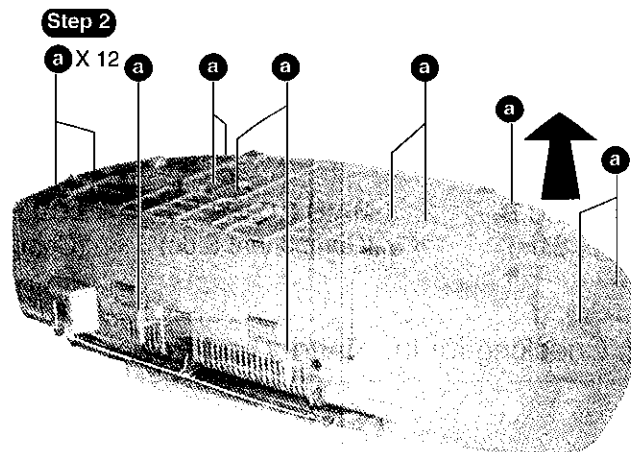
Press the CD OPEN button and pull out the CD Lid in the direction of arrow.



CD OPEN button

Step 3

Lift up the bottom cabinet to open the set in the direction of arrow.



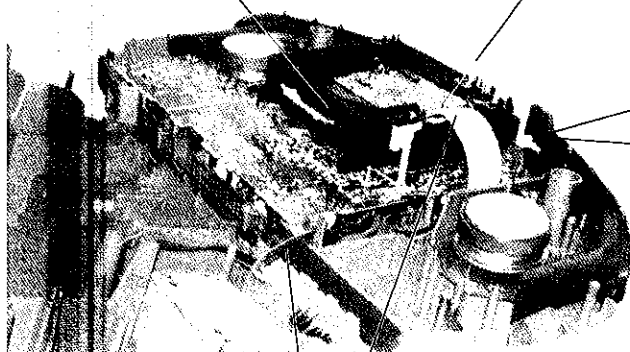
[XTV3+20G-M]

a

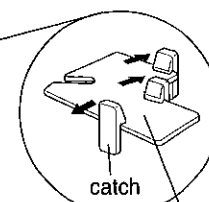
(Brass)

CD LOADING MECHANISM

SERVO P.C.B.
(Solder Side)



connectors



CD LEAF SW P.C.B.

Step 4

Release the two connectors as shown.
Release both catches and remove the CD Leaf SW P.C.B.
Remove the CD loading mechanism.



[XTBS26+10J]

(b)

(Brass)

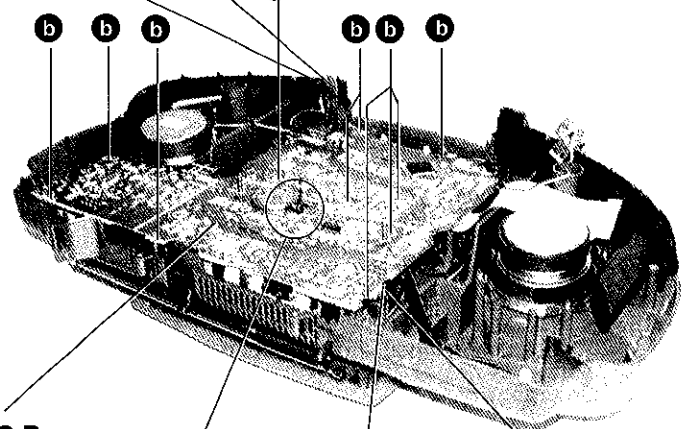
Step 6

Release the catch and remove the Led P.C.B.

LED P.C.B.
(Solder Side)

Step 5

(b) X 10



MAIN P.C.B.
(Solder Side)

Step 7

Desolder the motor wire connected to the Main P.C.B.

Step 9

Flip the Main P.C.B.

connector

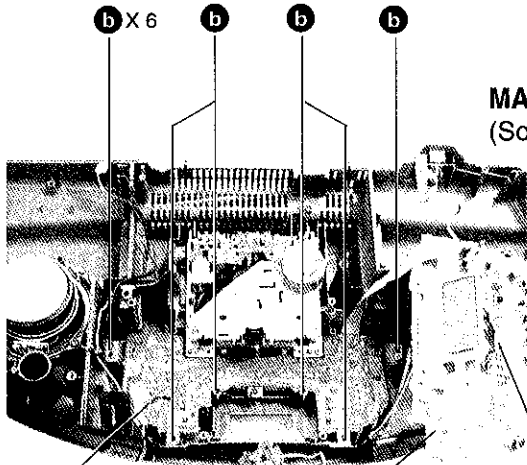
connector

Step 8

Remove the connectors connected to the Main P.C.B.

Step 10

(b) X 6

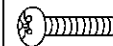


PANEL P.C.B.
(Solder Side)

MAIN P.C.B.
(Component Side)

LCD BACKLIGHT P.C.B.
(Component Side)

2. Checking for the Battery and Power P.C.B.



[XTV3+12G-M]

(c)

(Brass)

SMALL BATTERY P.C.B.
(Solder Side)

Step 11

(c) X 3

POWER P.C.B.
(Component Side)

Step 12

Check the Power P.C.B. and Battery P.C.B.

BATTERY SUPPORT P.C.B.
(Component Side)

Step 13

To remove small Battery P.C.B., release the catch.

Step 14

To remove both Battery P.C.B.
Pull out the small and support Battery P.C.B.

3. Replacement for the traverse deck.



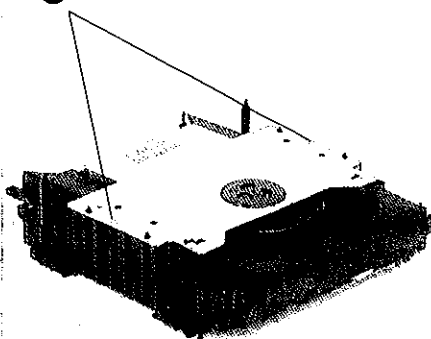
[XTV26+6G]



(Brass)

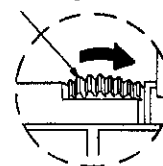
Step 1

d X 2



Step 2

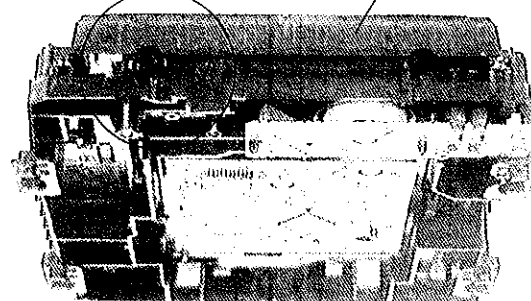
Rotate the gear.



Step 3



CD TRAY

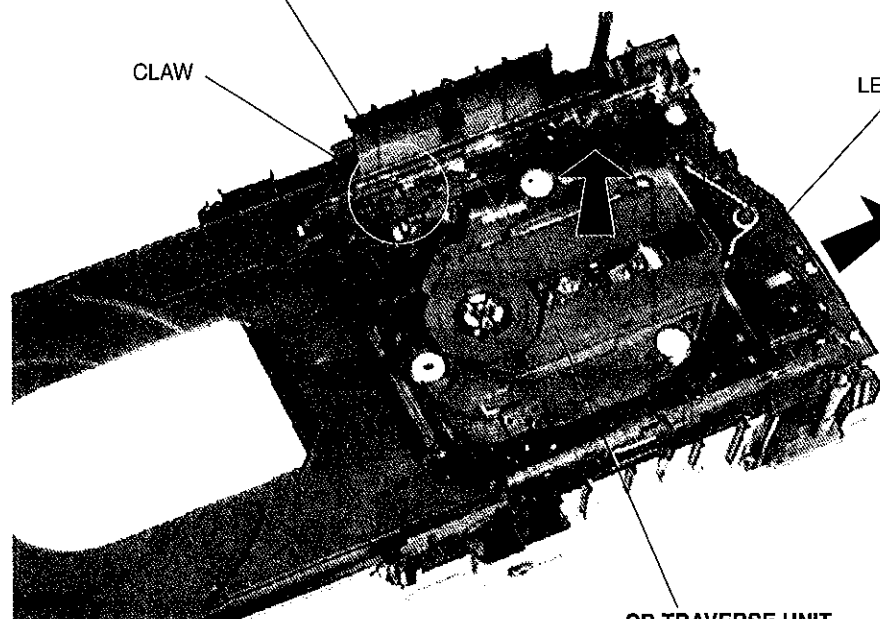


Step 4

Release the claw and pull the lever.

CLAW

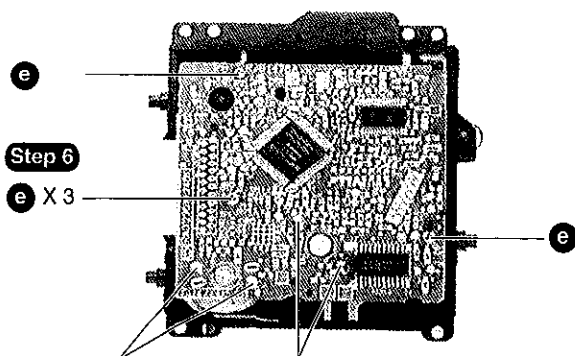
LEVER



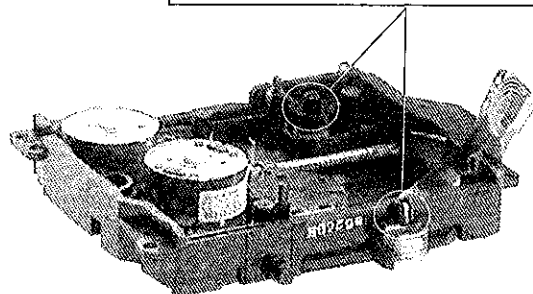
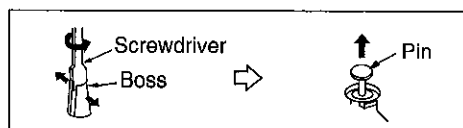
CD TRVERSE UNIT

Step 5

Take out the CD traverse unit.



Terminals of traverse motor Terminals of spindle motor



Step 10

Widen 2 bosses by using a flat tip screwdriver and remove 2 pins.

Step 7

Desolder 2 terminals of spindle motor.

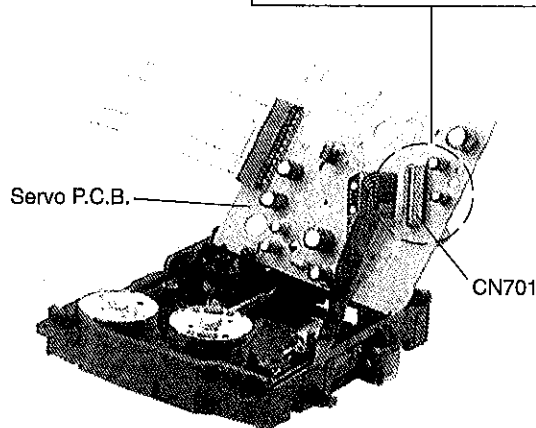
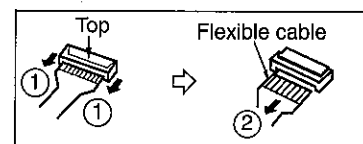
Step 8

Desolder 2 terminals of traverse motor.

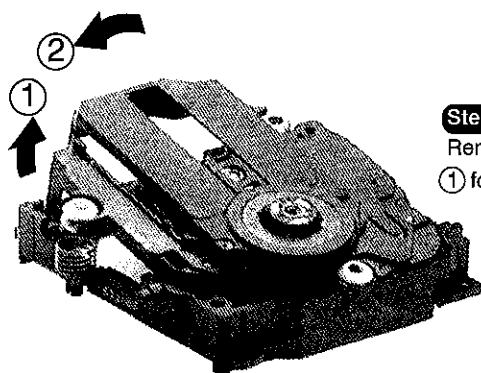
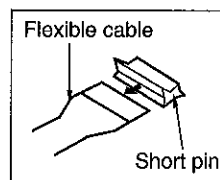
Step 9

Remove the flexible cable from CN701.

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



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



Step 11

Remove the Traverse Deck Ass'y in the direction of arrow ① follow by ②.

■ Measurements and Adjustments

● Tuner Section

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Measuring Condition

1. Set volume control to maximum.
2. Set power source voltage to 12V DC.
3. Output of signal generator should be no higher than necessary to obtain an output reading.

Note: No AM-IF and FM STEREO alignment is necessary as Tuner IC is used.

■ AM - RF ALIGNMENT

SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING	INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE)	ADJUSTMENT (Shown in Fig.1)	REMARKS
CONNECTIONS	FREQUENCY				
Fashion a loop of several turns of wire and radiate signal into the loop ant. of receiver.	594 kHz	Tune to signal	Headphone Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	L6 (AM OSC Coll)	Adjust for maximum output.
"	1,503 kHz	"	"	CT1 (AM ANT Trimmer)	Adjust for maximum output.

● Cassette Deck Section

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Measuring Instruments

- Digital frequency counter

Test Tape

- Tape speed adjustment (3kHz, -10 dB) : C-WAT

Note: No Azimuth Head Alignments is required due to Aztec Head is used in the cassette mechanism.

Measuring condition

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

● Tape Speed Alignment

TEST TAPE	EQUIPMENT CONNECTION ELECTRONIC COUNTER	ADJUSTMENT	SPECIFICATION	REMARKS
C-WAT (3 kHz, -10dB)	Headphone Jack (32Ω) (Fabricate the plug as shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.)	—	3000 ± 90 Hz	Playback mode

● ALIGNMENT POINTS

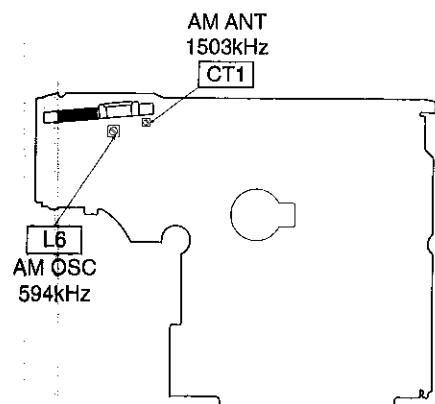


Fig. 1

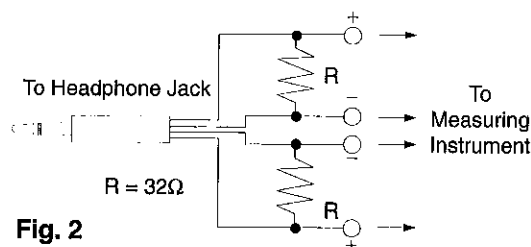


Fig. 2

Terminal Guide of IC's , Transistors and Doides

BA4558FE2 	AN7317 	LC72131D 	TA2008AN 	2SA1037AKSTX DTC114YKA146 	LA4663
BA7755A 	AN8837SBE1 AN8780NSBE2 BH3857FV-E2 	MN101C16ARB MN662746RPK1 	BA1L3MTA BA1L3NTA BN1L3NTA 	RVTDTA114EST 2SC1740SRTA 2SA933SSTA 2SC1740SLNRT RVTDTA143XST BA1A4MTA BA1A4PTA 	2SB1566E
2SJ498CTA 	2SA952LTA 2SC2001KTA 2SC1845FTA 2SD965RTA 	S-80733ANY-Z S81350HC-Z ON2180RLC 	KV1360NTM SVC346T-AA 	2SB1240RTV2 	2SB1030RTA 2SC3311ARTA
SLR325VRT31 		RVD1SS133TA 1SR35400V MA165TA 		MTZJ12BTA MTZJ5R1BTA MTZJ6R2BTA MTZJ8R2BTA MTZJ9R1BTA MTZJ7R5ATA 	1N5402BM21

Terminal Function Of IC's

• IC703 (AN8780NSBE2) Focus coil / tracking coil / traverse motor / spindle motor drive

Pin No.	Mark	I/O	Function
1	RESET OUT	O	Reset output
2	NC	-	-
3	IN2	I	Motor driver 2 input
4	PC2	I	Power out 2 input
5	NC	-	-
6	IN1	I	Motor driver 1 input
7	PVCC1	I	Power supply for Driver 1
8	PGND1	-	Ground for Driver 1
9	NC	-	-
10	D1-	O	Motor driver 1(-) output
11	D1+	O	Motor driver 1(+) output
12	D2-	O	Motor driver 2(-) output
13	D2+	O	Motor driver 2(+) output
14	D3-	O	Motor driver 3(-) output
15	D3+	O	Motor driver 3(+) output

Pin No.	Mark	I/O	Function
16	D4-	O	Motor driver 4(-) output
17	D4+	O	Motor driver 4(+) output
18	NC	-	-
19	PGND2	-	Ground for Driver 2
20	PVCC2	I	Power supply for Driver 2
21	VCC	I	Power supply
22	VREF	I	Reference voltage
23	IN4	I	Motor driver 4 input
24	IN3	I	Motor driver 3 input
25	RESET IN	I	Reset input
26	NC	-	-
-	FIN	-	Ground

• IC701 (AN8837SBE1) Servo Amplifier

Pin No.	Mark	I/O	Function
1	PDE	I	Tracking signal input 1
2	PDF	I	Tracking signal input 2
3	VCC	I	Power supply
4	PDA	I	Focus signal input 1
5	PDB	I	Focus signal input 2
6	LPD	I	APC Amp. Input
7	LD	O	APC Amp. Output
8	RF	O	RF addition output
9	RFIN	I	RF signal input
10	CSBRT	-	Capacitor for OFTR connection terminal
11	CEA	-	HPF Amp.
12	BDO	O	BDO output
13	LDON	-	APC control
14	GND	-	Ground

Pin No.	Mark	I/O	Function
15	RFDET	O	NRFDET output
16	CROSS	O	CROSS output
17	OFTR	O	OFTR output
18	VDET	O	VDET output
19	ENV	O	3 TENV output
20	ENVOFF	-	ENV control
21	TEBPF	I	VDET input
22	TEIN	I	TE Amp. input
23	TEOUT	O	TE Amp. output
24	FEOUT	O	FE Amp. output
25	FEIN	I	FE Amp. input
26	VREF	O	Reference voltage output
27	TBAL	-	TBAL control
28	FBAL	-	FBAL control

• IC901 (MN101C16ARB) System Microprocessor

Pin No.	Mark	I/O	Function
1-4	COM 3-0	O	LCD COMMON OUTPUT
5-7	VLC 3-1	-	LCD BIAS
8	VDD	-	VDD +5V
9	OSC2	O	4.19 MHz CERAMIC OSC OUTPUT
10	OSC1	I	4.19 MHz CERAMIC OSC INPUT
11	VSS	-	GROUND
12	X1	I	32.768kHz OSC INPUT
13	X0	O	32.768kHz OSC OUTPUT
14	MMOD	I	MICROPROCESSOR MODE SET TO "L"
15	VREF	-	ANALOG REFERENCE GROUND
16	AI JOG1	I	AI JOG INPUT 1
17	AI JOG2	I	AI JOG INPUT 2
18	KEY1	A/D	KEY INPUT 1
19	KEY2	A/D	KEY INPUT 2
20	PDET	A/D	POWER SUPPLY VOLTAGE DETECT
21-22	UNUSED	I	CONNECT TO GND
23	ADL_IN	A/D	DECK MECHANISM CONDITION INPUT
24	VREF+	O	+5V REFERENCE FOR A/D
25	NC	O	NO CONNECTION
26	SUBQ	I	CD SUBCODE DATA INPUT
27	SQCK	O	CD SUBCODE DATA CLOCK
28	MBP1	O	MICRO-P BEAT PROOF CONTROL OUTPUT 1
29	MBP2	O	MICRO-P BEAT PROOF CONTROL OUTPUT 2
30	T_MUTE	O	TUNER MUTE
31	PLL DO	I	PLL IF COUNT INPUT
32	RESET	I	SYSTEM RESET INPUT
33	PLL DA	O	PLL DATA OUTPUT
34	PLL CLK	O	PLL CLOCK OUTPUT
35	PLL CE	O	PLL CHIP ENABLE OUTPUT
36-37	UNUSED	O	NO CONNECTION
38	BLKCK	I	CD SUBCODE BLOCK CLOCK INPUT
39	RMT_IN	I	REMOTE CONTROL INPUT

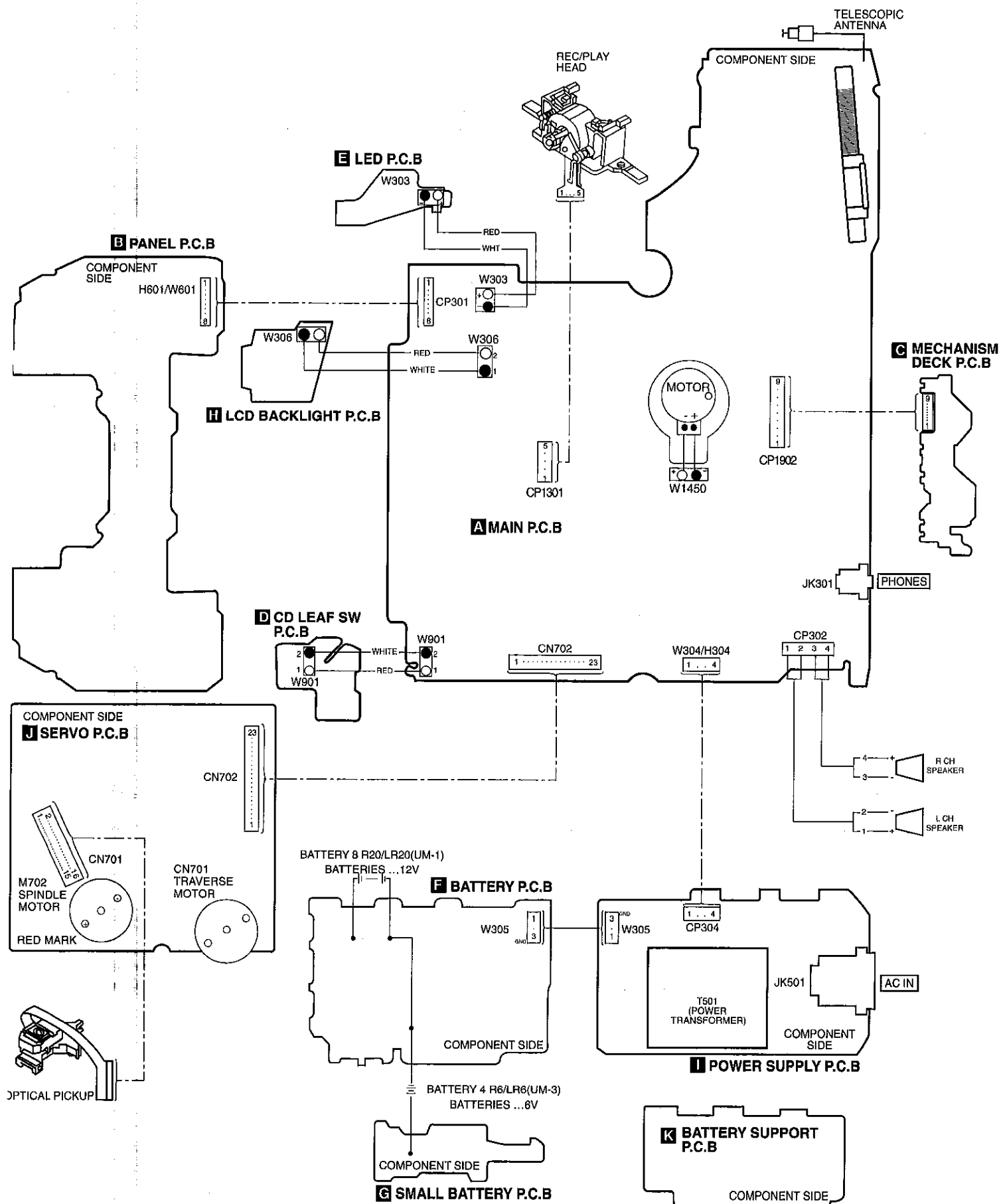
Pin No.	Mark	I/O	Function
40	TPS	I	TAPE MECHA TPS INPUT
41	CRO2	I	CHROME TAPE DETECTING SWITCH
42	UNUSED	I	CONNECT TO GND
43	SP_CLK	O	SOUND PROCESSOR SERIAL CLOCK (SP_CLK)
44	SP_DAT	O	SOUND PROCESSOR SERIAL CLOCK (SP_DAT)
45	SP_LTH	O	SOUND PROCESSOR LATCH CONTROL (SP_LTH)
46	BP	O	BEAT PROOF FOR AM
47	DMT	O	TAPE MUTE OUTPUT
48	PHOTO_1	I	DECK PHOTO SWITCH
49	PCNT	O	POWER CONTROL OUTPUT
50	LAMP_H	O	LCD BACK LIGHT CONTROL OUTPUT
51	CD_L	O	CD UNIT POWER CONTROL
52	TU_L	O	TUNER POWER CONTROL
53	MUTE_A	O	AUDIO MUTE OUTPUT
54	UNUSED	O	NO CONNECTION
55	MCLK	O	CD SIGNAL PROCESSOR CONTROL CLOCK OUTPUT
56	MDATA	O	CD SIGNAL PROCESSOR CONTROL DATA OUTPUT
57	MLD	O	CD SIGNAL PROCESSOR CONTROL LOAD OUTPUT
58	STAT	I	CD STATUS INPUT
59	CD_RESET	O	CD RST OUTPUT
60	REST_SW	I	CD LIMIT SW INPUT FOR THE MOST INNER POINT
61	REM_STBY	I	REMOTE STANDBY
62	VCCDET	I	DC DETECT INPUT
63	CL_SW	I	CD CLOSE DETECT SW INPUT
64-66	UNUSED	O	NO CONNECTION
67	EDATA	I/O	E ² PROM DATA
68	ECLK	I/O	E ² PROM CLOCK
69	ECS	I/O	E ² PROM SELECT
70-72	REG_1-3	I	REGIN SETTING 1-3
73-74	UNUSED	O	NO CONNECTION
75-100	SEG26-0	O	LCD SEGMENT DRIVE OUTPUT

• IC702 (MN662746RPK1) Servo processor / digital signal processor / digital filter / D/A converter

Pin No.	Mark	I/O	Function
1	BCLK	O	Bit clock for SRDATA
2	LRCK	O	L,R discriminatory signal "H": Lch audio data, "L": Rch audio data
3	SRDATA	O	Serial data output
4	DVDDI	I	Power supply for digital circuit
5	DVSSI	I	Ground for digital circuit
6	TX	O	Digital/ Audio/ Interface signal output
7	MCLK	I	Microcomputer/ Command/ Clock signal
8	MDATA	I	Microcomputer/ Command/ Data signal input
9	MLD	I	Microcomputer/ Command/ Load signal input "L": Load
10	SENSE	O	Sense signal output (OFT, FESL, NACEND, NWTEND, DATA)
11	/FLOCK	O	Focus/ Servo drawback signal "L": drawback
12	/TLOCK	O	Switching command, Tracking/ Servo drawback,
	/VDET		Vibration detect signal "L": drawback "H": detection
13	BLKCK	O	Subcode/Block/Clock signal (fBLKCK=75Hz)
14	SQCK	I	Clock signal for Subcode Q register
15	SUBQ	O	Subcode Q data output
16	DMUTE	I	Muting input "H": mute
17	STAT	O	Status signal (CRC, RESY, CLVS, TTSTOP, SQOK, FLAG6, SENSE,/FLOCK,/TLOCK)
18	/RST	I	Reset input "L": reset
19	SMCK	O	MSEL=at "H" clock signal 8.4672MHz output MSEL=at "L" clock signal 4.2336MHz output
20	PMCK	O	Clock signal 88.2KHz output
21	TRV	O	Test terminal (this terminal should be opened)
22	TVD	O	Drive and forced drive for Traverse output
23	PC	O	Spindle motor ON output "L": ON
24	ECM	O	Spindle motor driving signal (forced mode)
25	ECS	O	Spindle motor driving signal (servo error signal)
26	KICK	O	Test terminal (Hi-z fixed)
27	TRD	O	Tracking drive and Kick pulse output
28	FOD	O	Focus drive output (TVD, ECS, TRD, FOD, FBAL, TBAL, DSLF2)
29	VREF	I	Reference voltage (TVD, ECS, TRD, FOD, FBAL, TBAL, DSLF2)
30	FBAL	O	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 (analog input)
35	VDET	I	Test terminal (fixed to VDD or VSS)
36	OFT	I	Off track signal input "H": off track
37	TRCRS	I	Test terminal (fixed to VDD or VSS)
38	/RFDET	I	RF detection signal input "L": detection
39	BDO	I	Dropout signal input "H": dropout
49	LDON	O	Laser ON signal output "H": on
41	TES	O	Tracking error shunt signal output "H": shunt
42	PLAY	O	Play signal output "H": play
43	WVEL	O	Double speed status signal output "H": double speed

Pin No.	Mark	I/O	Function
44	ARF	I	RF signal input
45	IREF	I	Reference current input
46	DRF	I	Bias for DSL
47	DSLIF	I/O	Loop filter for DSL
48	PLLIF	I/O	Loop filter for PLL
49	DSLIF2	O	DSL unbalance current correction
50	AVDD2	I	Power supply for analog circuit (DSL, PLL, DA output, AD)
51	AVSS2	I	Ground for analog circuit (DSL, PLL, DA output, AD)
52	EFM/CK384	O	Switching command signal • EFM signal output • 16.9344 MHz clock output
53	PCK	O	PLL sampling clock output fPCK=4.3218MHz
54	CK176	O	176.4KHz clock output
55	SUBC	O	Subcode serial output
56	SBCK	I	Clock for subcode serial output
57	VSS	I	Ground for oscillation circuit
58	X1	O	Crystal oscillation circuit input f=16.9344MHz
59	X2	O	Crystal oscillation circuit output f=16.9344MHz
60	VDD	I	Power supply for oscillation circuit
61	TRVSTP	O	Traverse STOP signal "H": STOP mode
62	/CLDCK	O	Subcode frame clock signal fCLDCK=7.35KHz
63	FCLK	O	Crystal frame clock signal fFCLK=7.35KHz
64	IPFLAG	O	Compensation flag signal "H": compensation
65	FLAG	O	Flag signal output
66	CLVS	O	Spindle servo phase synchronizing signal output "H": CLV "L": rough servo
67	CRC	O	Sub-code CRC checked output "H": OK "L": NG
68	RESY	O	Frame resynchronizing signal output "H": synchronized "L": out of synchronizing
69	FLAG6	O	Flag6 output "L": address reset
70	ARST	I	Test terminal usually "H"
71	/TEST	I	Test terminal normally "H"
72	AVDD1	I	Power supply for analog circuit
73	OUTL	O	Lch audio output
74	AVSS1	I	Ground for analog circuit
75	OUTR	I	Rch audio output
76	RSEL	I	RF signal polarity assignment input at "H" level RSEL="H", at "L" level RSEL="L"
77	FSEL	I	Noise filter on/off switching input "H": filter off "L": filter on
78	PSEL	I	Switching command input • Test terminal (normally: "L") • SRDATA input
79	MSEL	I	Switching command input • Switching frequency of SMCK output "H": SMCK=8.4672MHz "L": SMCK=4.2336MHz • LRCK input (SMCK=4.2336MHz fixed) "H": Lch data "L": Rch data
80	SSEL	I	Switching command input • Switching mode of SUBQ terminal "H": Q code buffer mode "L": CLDCK synchronized mode • BCLK input (Q code buffer mode fixed)

Wiring Connection Diagram



Schematic Diagram

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

Note :

• S501	:	AC INLET switch	• S623	:	MEMORY switch
• S601	:	POWER switch	• S624	:	VOLUME DECREASE switch
• S602	:	DECK EJECT switch	• S625	:	VOLUME INCREASE switch
• S603	:	REC PAUSE switch	• S626	:	CLOCK/TIMER switch
• S604	:	FF TPS/+FF switch	• S627	:	PLAY/REC TIMER switch
• S605	:	REW TPS/-/REW switch	• S701	:	REST switch
• S606	:	STOP switch	• S901	:	CD LEAF switch
• S607	:	TAPE PLAY switch	• S971	:	MODE switch
• S608	:	TUNER BAND switch	• S972	:	LEAF switch
• S609	:	CD PLAY/PAUSE switch	• S973	:	LEAF switch
• S621	:	PRESET EQ switch	• S974	:	LEAF switch
• S622	:	CD REC switch	• S975	:	LEAF switch

Battery current :

Vol. min. 400 mA (RADIO)
 570 mA (RADIO REC)
 490 mA (TAPE)
 560 mA (CD)
 720 mA (CD REC)

Vol. max. 1900 mA (RADIO)
 2250 mA (RADIO REC)
 2530 mA (TAPE)
 3010 mA (CD)
 3160 mA (CD REC)

Measurement Instruction

(RADIO : AM - 74 dB/m , 30% Mod.
 FM - 60 dB/M , 30% Mod.
 TAPE : 315 Hz , 0 dB
 CD : 1 kHz , 0 dB)

Signal line

	:	+B Line		:	FM Signal Line
	:	FM/AM Signal Line		:	Record Signal Line
	:	AM Signal Line		:	CD Signal Line
	:	AM OSC Signal Line		:	Playback Signal Line
	:	Main Signal Line			

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

< >	:	FM	()	:	AM	No mark	:	Tape
[]	:	Standby	{ }	:	Power On	(())	:	CD

Importance safety notice:

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

Caution !

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

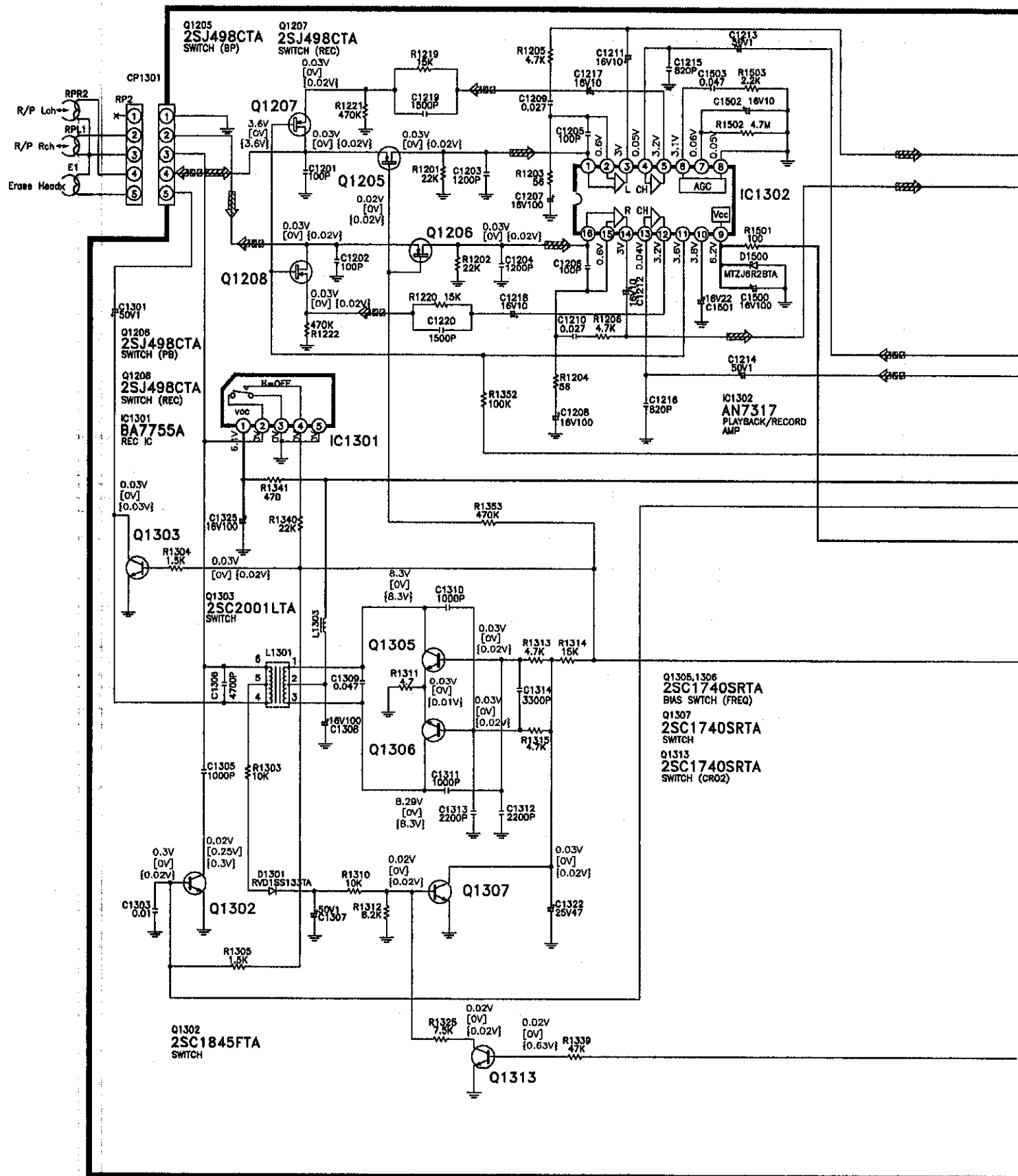
A MAIN CIRCUIT
(P.C.BOARD ON PAGE 34)

— : +B line

 : Main signal line

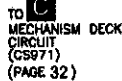
 : Playback signal line

 : Record signal line



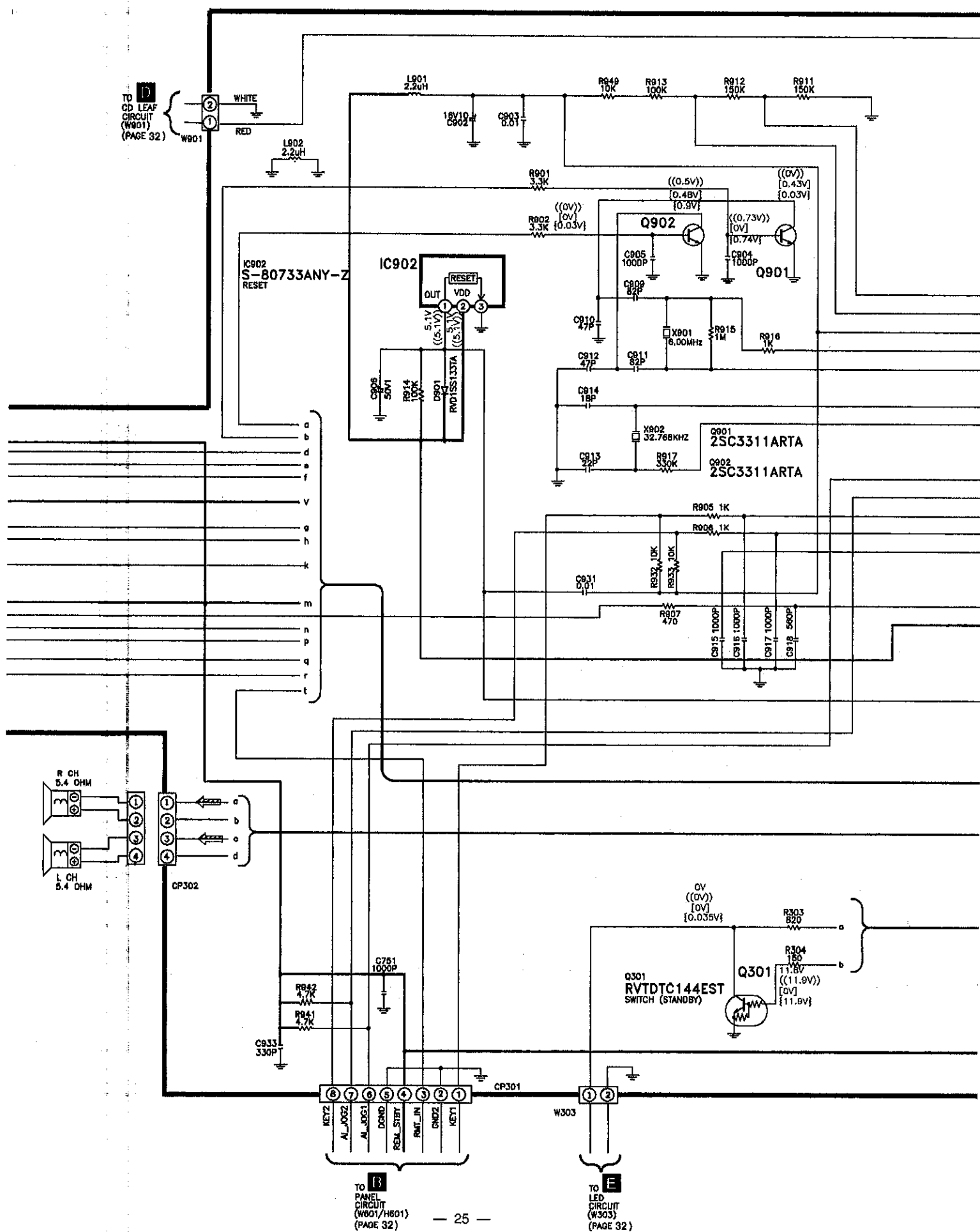
 : Playback signal line

☞ : Record signal line



— : +B line

⇒ : Main signal line



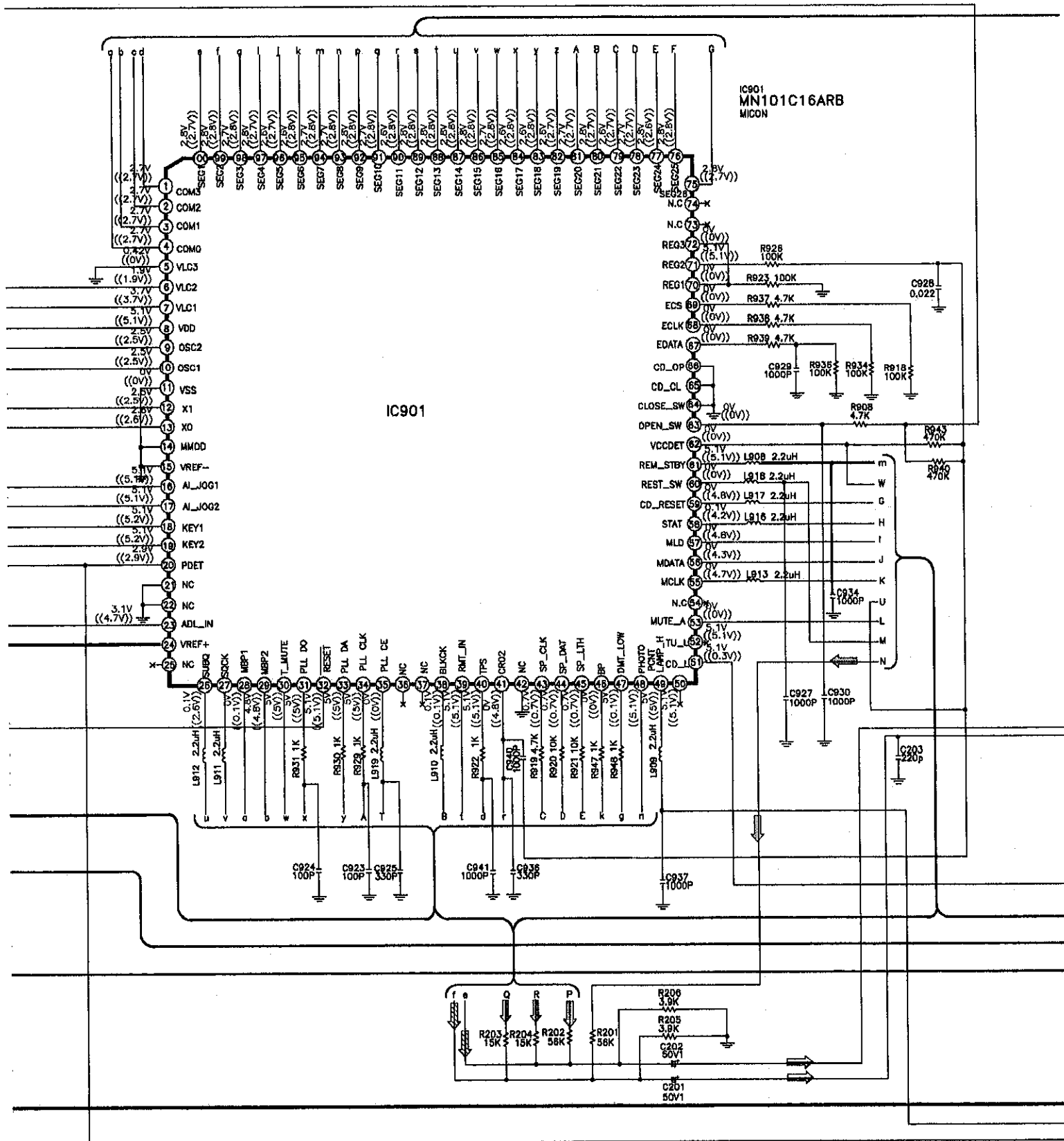
— : +B line

⇒ : Main signal line

⚡ : Playback signal line

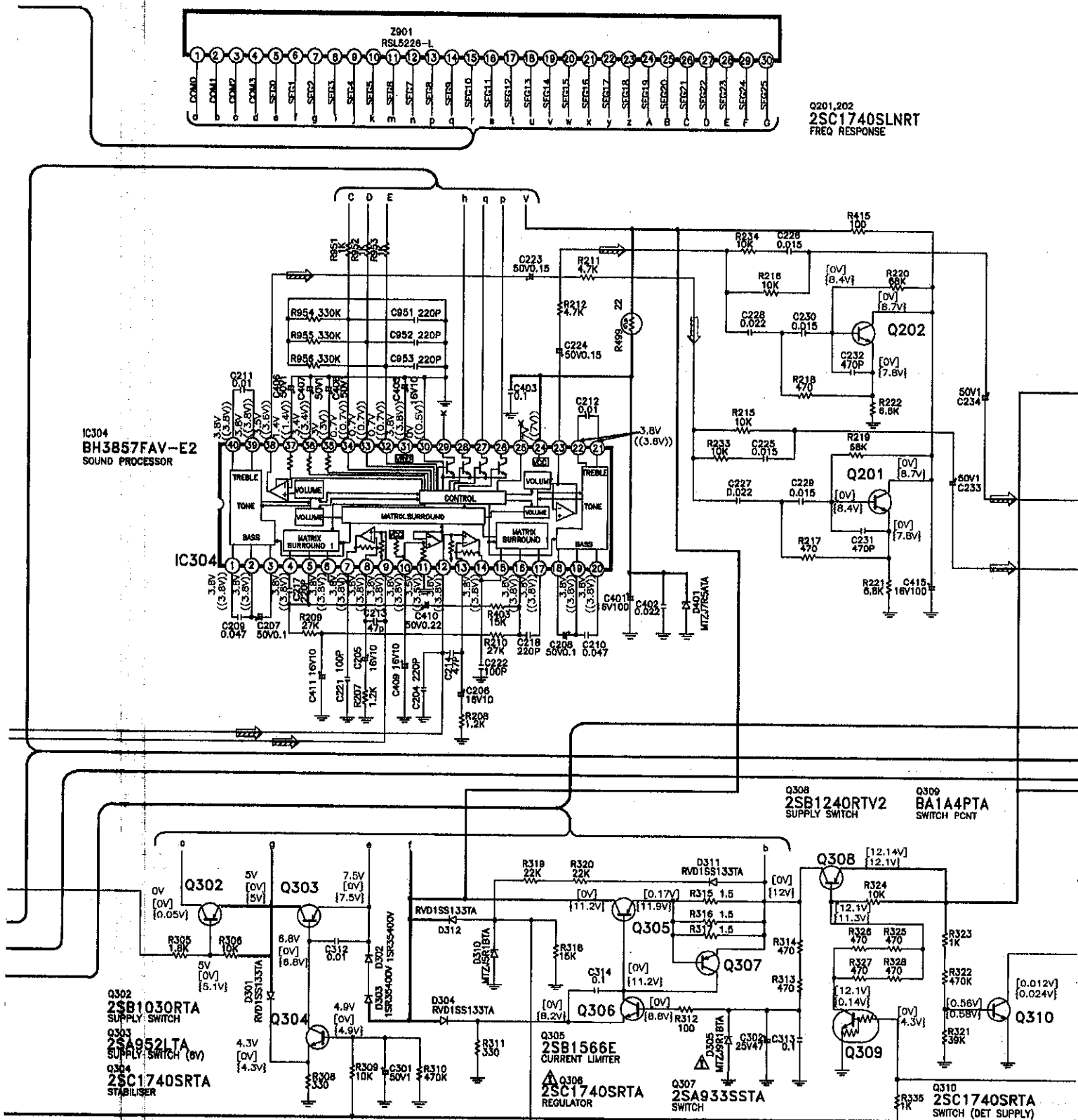
⇒ : FM/AM signal line

⇒ : CD signal line

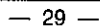


— : +B line

⇒ : Main signal line

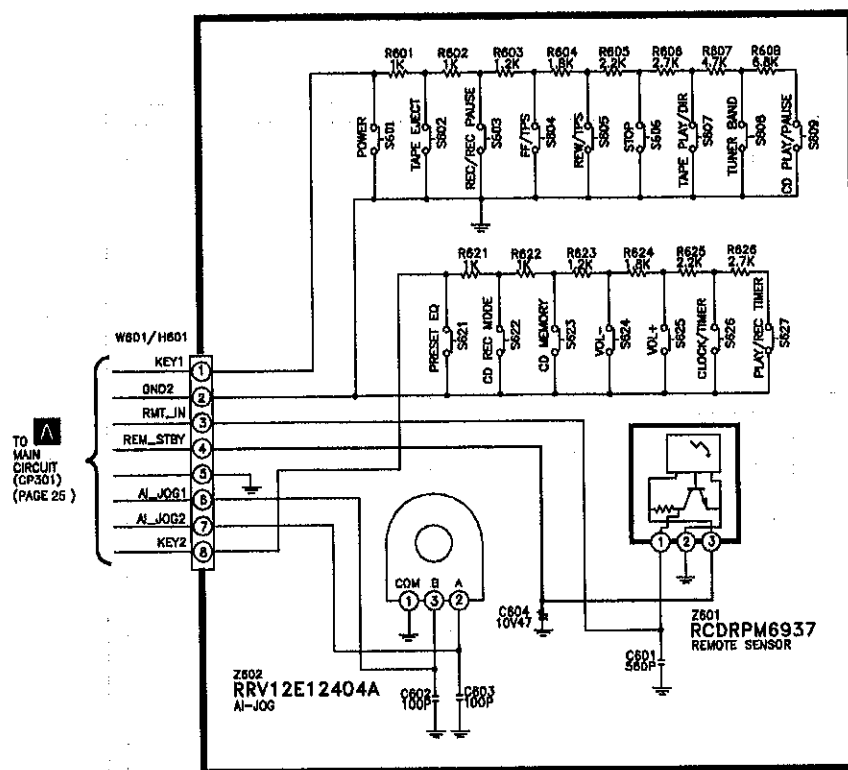
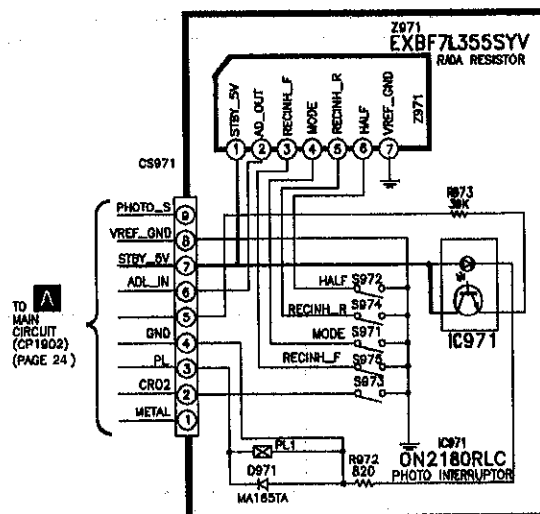
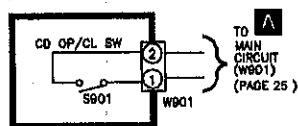
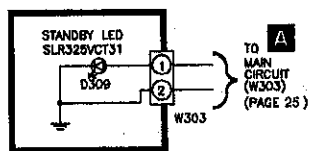
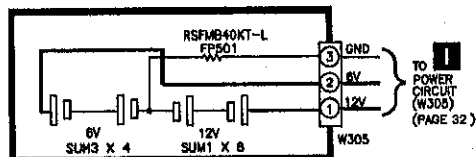
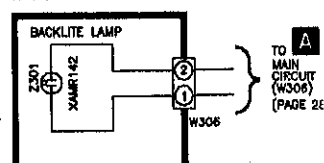
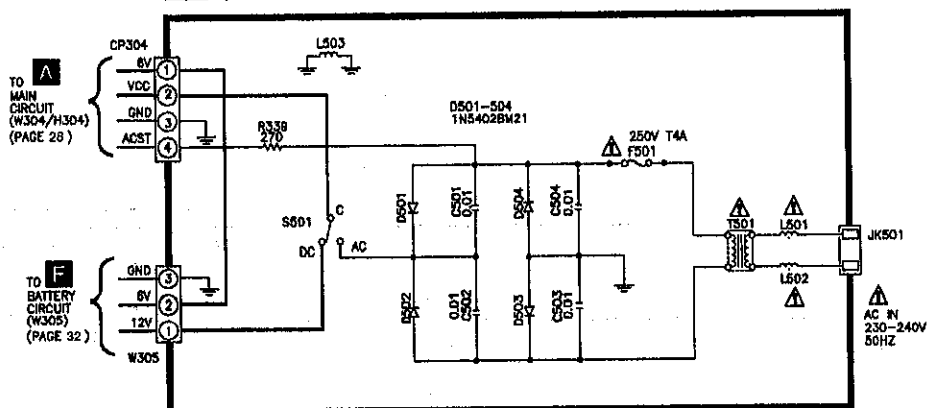






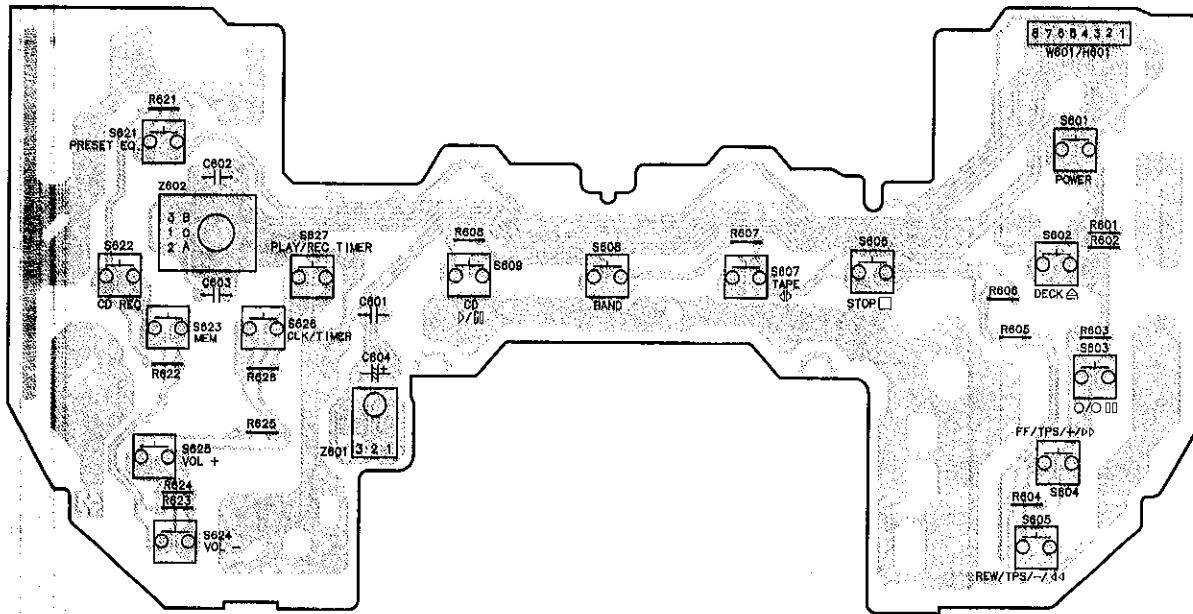


— : +B line

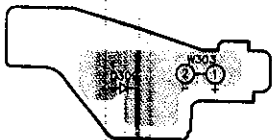
B PANEL CIRCUIT
(P.C.BOARD ON PAGE 33)**C** MECHANISM DECK CIRCUIT
(P.C.BOARD ON PAGE 33)**D** CD LEAF SWITCH
(P.C.BOARD ON PAGE 33)**E** LED CIRCUIT
(P.C.BOARD ON PAGE 33)**F** BATTERY CIRCUIT
(P.C.BOARD ON PAGE 36)**H** LCD BACKLIGHT CIRCUIT
(P.C.BOARD ON PAGE 33)**I** POWER CIRCUIT
(P.C.BOARD ON PAGE 36)

Printed Circuit Board (This printed circuit board diagram may be modified at any time with the development of new technology.)

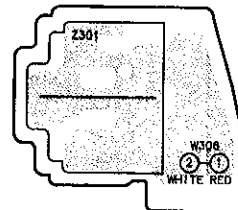
B PANEL P.C.B (REPX0183A)



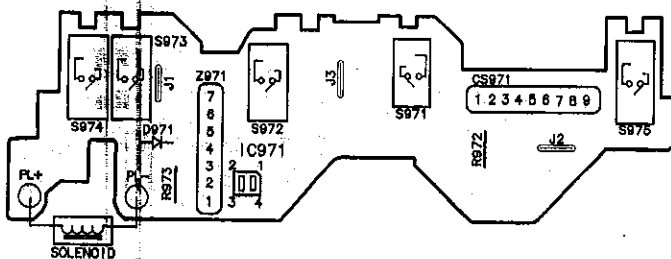
E LED P.C.B (REPX0182A)



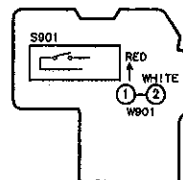
H LCD BACKLIGHT P.C.B (REPX0182A)



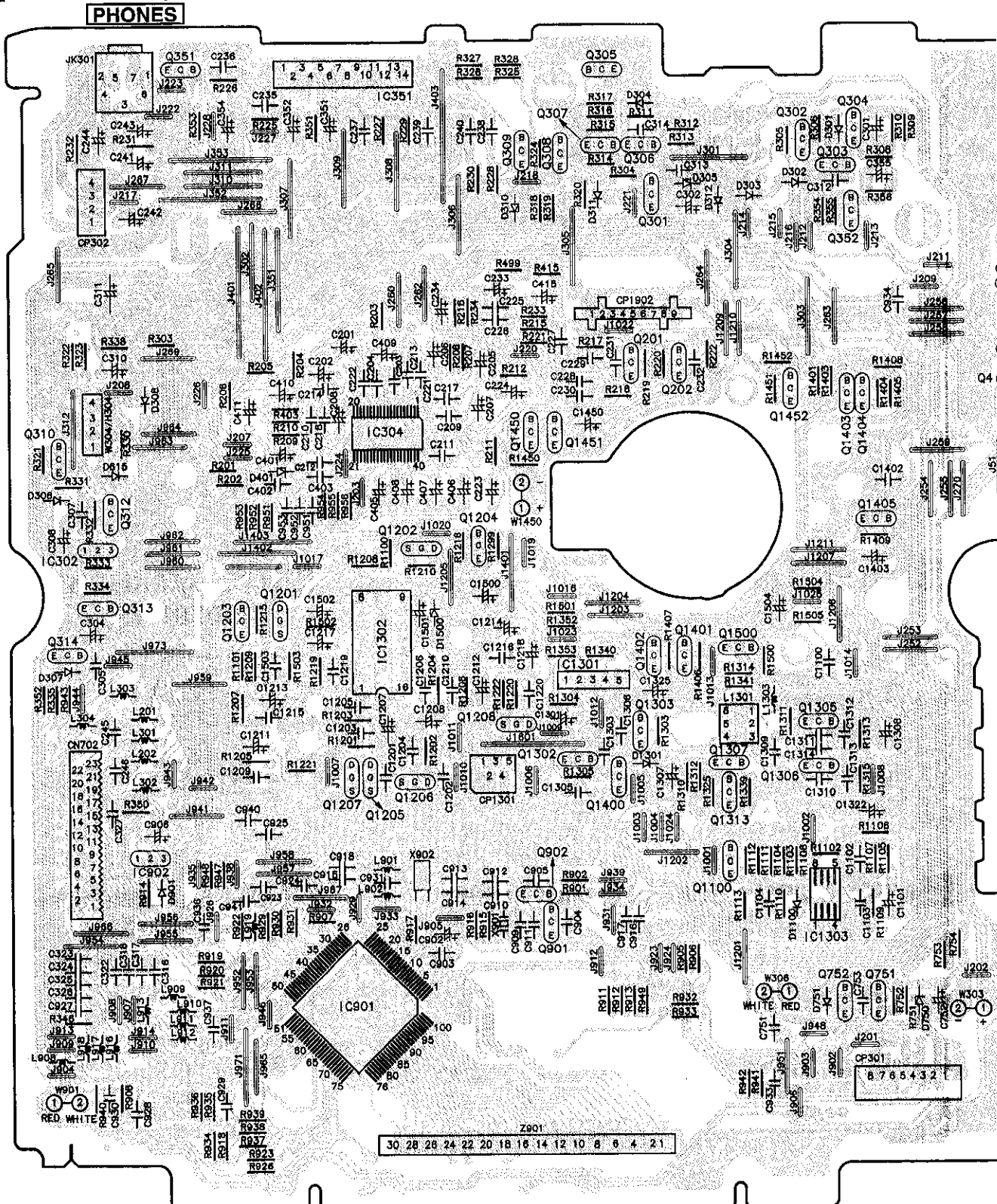
C MECHANISM DECK P.C.B (REPX0108)

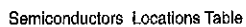


D CD LEAF SWITCH P.C.B (REPX0182A)



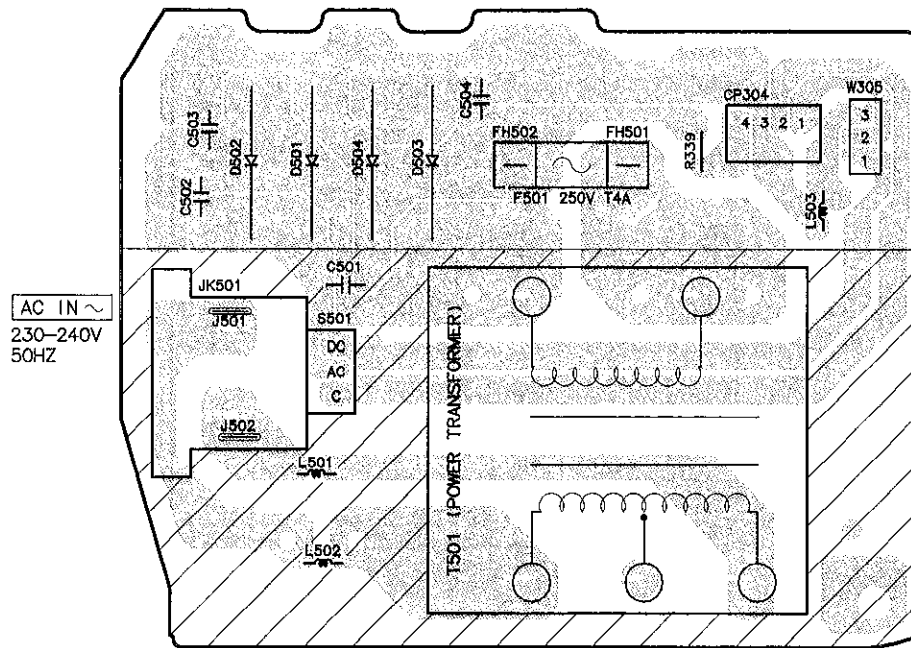
A MAIN P.C.B (REPX0182A)





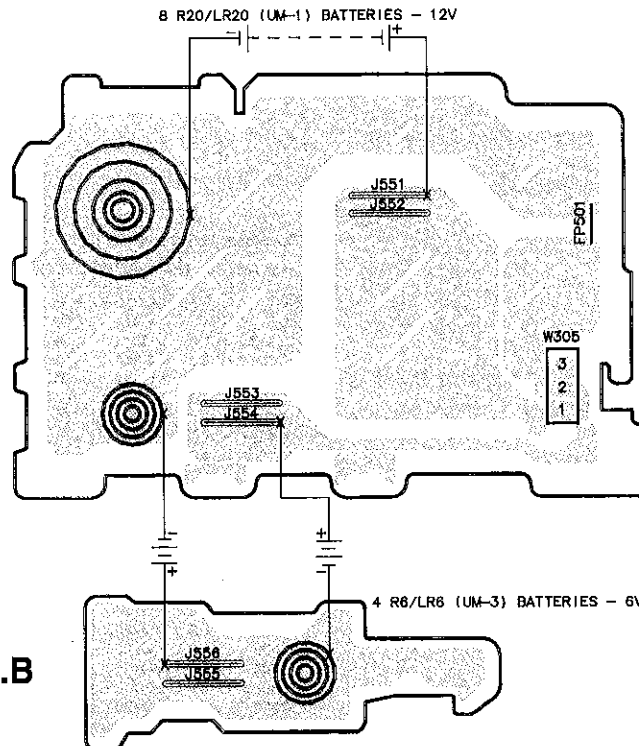
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IC1	K3	Q310	A4	Q1400	E6	D615	B4	L902	D7		
IC2	I3	Q312	B5	Q1401	F6	D750	G8	L908	A8		
IC302	D5	Q313	B5	Q1402	E5	D751	G8	L909	B8		
IC304	D4	Q314	A5	Q1403	G4	D901	B7	L910	B8		
IC351	D2	Q351	B1	Q1404	G4	D1100	F7	L911	B8		
IC901	C8	Q352	G2	Q1405	G5	D1301	E6	L912	B8		
IC902	B7	Q751	G8	Q1450	E4	D1500	D5	L913	B8		
IC1301	E6	Q752	G8	Q1451	E4	CN702	A6	L916	B8		
IC1302	A6	Q901	D7	Q1452	F4	CP301	G9	L917	B8		
IC1303	G7	Q902	E7	Q1500	F5	CP302	A2	L918	B8		
Q1	J4	Q1100	F7	D1	I2	CP1301	D7	L919	C7		
Q2	H3	Q1201	C5	D2	K2	CP1902	E3	L1301	F6		
Q3	H3	Q1202	D5	D3	J3	CT1	I2	L1303	F6		
Q4	H4	Q1203	C5	D301	G2	L2	K2	T1	K3		
Q201	E3	Q1204	D5	D302	F2	L3	J2	Z901	D9		
Q202	F3	Q1205	C6	D303	F2	L4	K2	CF1	K3		
Q301	E2	Q1206	D6	D304	E2	L7	I3	CF3	K3		
Q302	F2	Q1207	C6	D305	F2	L8	K2	X2	K4		
Q303	G2	Q1208	D6	D306	A4	L201	B6	X3	I4		
Q304	G2	Q1302	E6	D307	A6	L202	B6	X901	D7		
Q305	E1	Q1303	E6	D308	B4	L301	B6	X902	D7		
Q306	E2	Q1305	G6	D310	D2	L302	B6	JK301	B1		
Q307	E2	Q1306	G6	D311	E2	L303	B6				
Q308	E2	Q1307	F6	D312	F2	L304	A6				
Q309	E2	Q1313	F6	D401	C4	L901	D7				

I POWER P.C.B (REPX0182A)



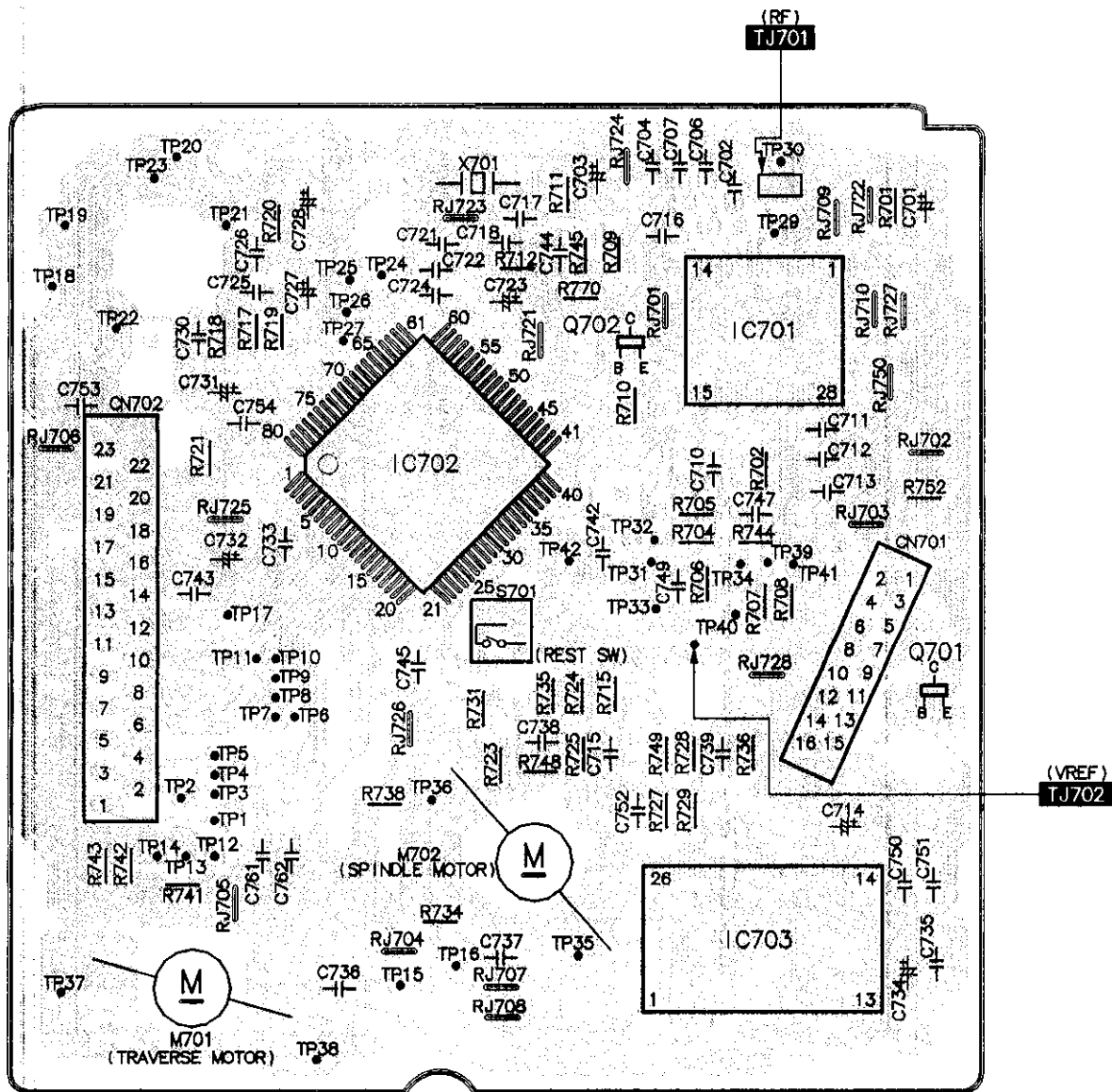
CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE. PLEASE DO NOT
TOUCH THIS PORTION.

F BATTERY P.C.B (REPX0182A)

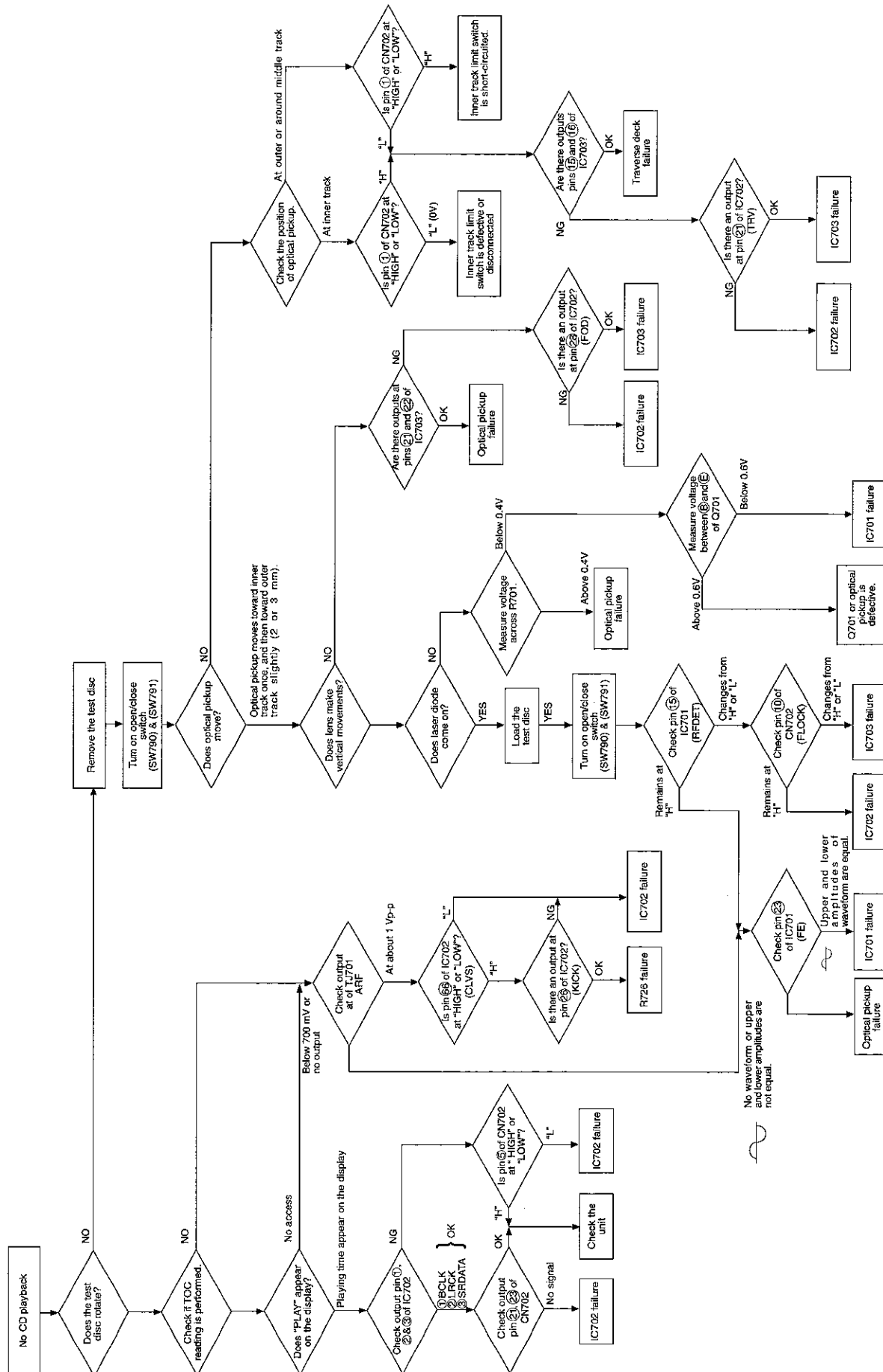


G SMALL BATTERY P.C.B (REPX0182A)

J CD SERVO P.C.B (REPX0144)

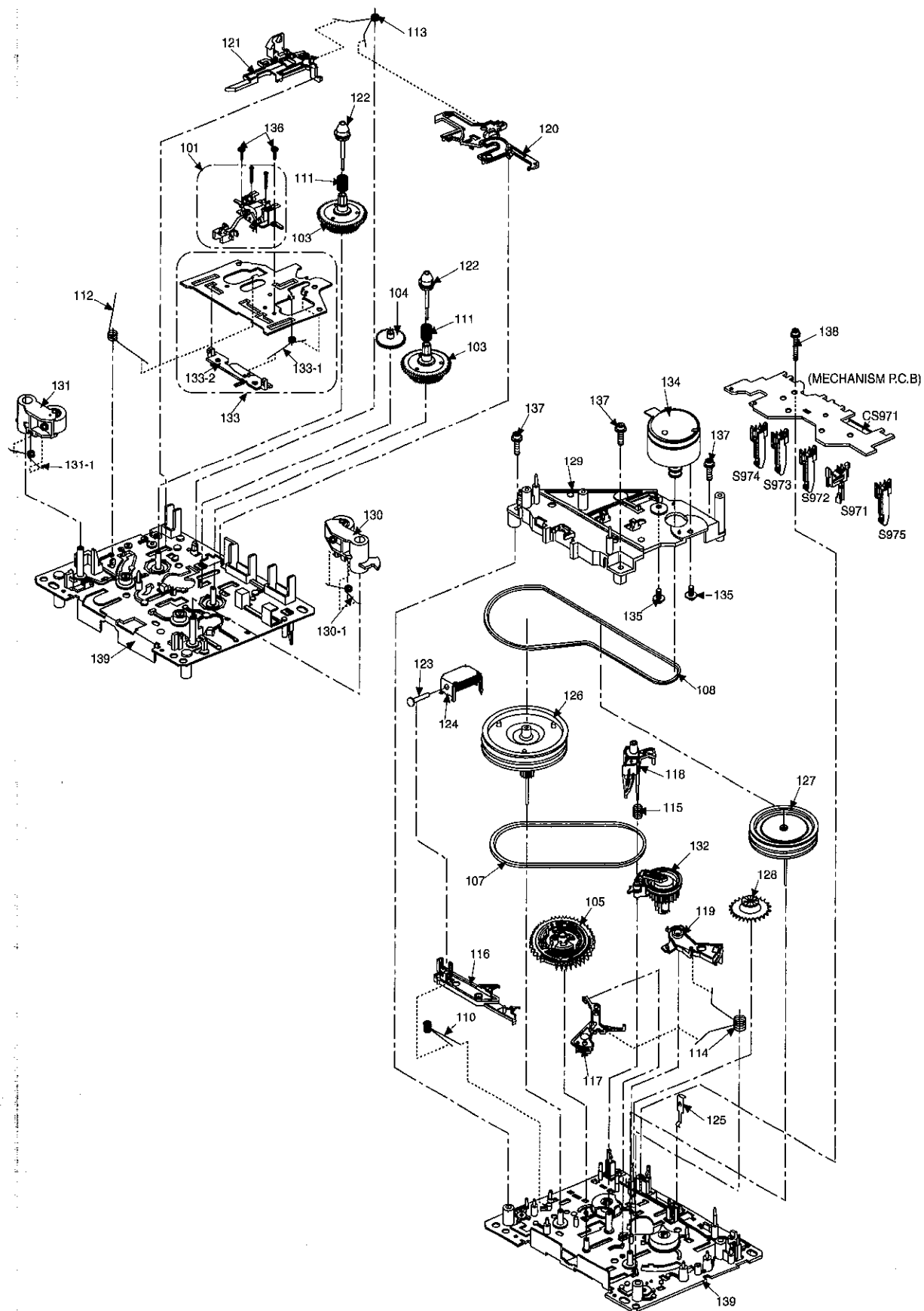


■ Troubleshooting Guide



Mechanism Parts Location (RAA4109)

Note : Refer to Mechanism Parts List on page 40



■ Mechanism Parts List

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

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		CASSETTE DECK		125	RMC0061	PACK SPRING	[M]				
				126	RXF0049	FLYWHEEL 'F' ASS'Y	[M]				
101	RED0059	R/P HEAD BLOCK UNIT	[M]	127	RXF0050	FLYWHEEL 'R' ASS'Y	[M]				
103	RDG0300	REEL BASE GEAR	[M]	128	RXG0040	FF RELAY GEAR ASS'Y	[M]				
104	RDG0301	WINDING RELAY GEAR	[M]	129	RMK0283A-J	SUB CHASSIS	[M]				
105	RDK0026	MAIN GEAR	[M]	130	RXL0124	PINCH ARM 'F' ASS'Y	[M]				
107	RDV0033-1	WINDING BELT	[M]	130-1	RMB0401	PINCH ARM SPRING 'F'	[M]				
108	RDV0034-1	CAPSTAN BELT 'A'	[M]	131	RXL0125	PINCH ARM 'R' ASS'Y	[M]				
110	RMB0312	TRIGGER LEVER SPRING	[M]	131-1	RMB0402	PINCH ARM SPRING 'R'	[M]				
111	RMB0400	REEL SPRING	[M]	132	RXL0126	WINDING ARM ASS'Y	[M]				
112	RMB0403	HEAD PANEL SPRING	[M]	133	RXQ0412	HEAD PANEL ASS'Y	[M]				
113	RMB0404	BRAKE ROD SPRING	[M]	133-1	RMB0405	FR ROD SPRING	[M]				
114	RMB0406	FR LEVER SP	[M]	133-2	RMM0132	FR ROD	[M]				
115	RMB0408	THRUST SPRING	[M]	134	RFKPXES50GCK	CAP MOTOR ASS'Y	[M]				
116	RML0370	TRIGGER LEVER	[M]	135	RHD26022	MOTOR SCREW	[M]				
117	RML0371	FR LEVER	[M]	136	XTW2+5L	HEAD BLOCK UNIT SCREW	[M]				
118	RML0372	WINDING LEVER	[M]	137	XTW26+10S	SUB-CHASSIS SCREW	[M]				
119	RML0374	EJECT LEVER	[M]	138	XYC2+JF17	PCB EARTH SCREW	[M]				
120	RMM0131	BRAKE ROD	[M]	139	RFKJSTR280PP	MAIN CHASSIS ASS'Y	[M]				
121	RMM0133-1	EJECT ROD	[M]								
122	RMQ0519	REEL HUB	[M]								
123	RMS0398-1	MOVING CORE	[M]								
124	RSJ0003	PLUNGER	[M]								

■ Loading Mechanism Parts List

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

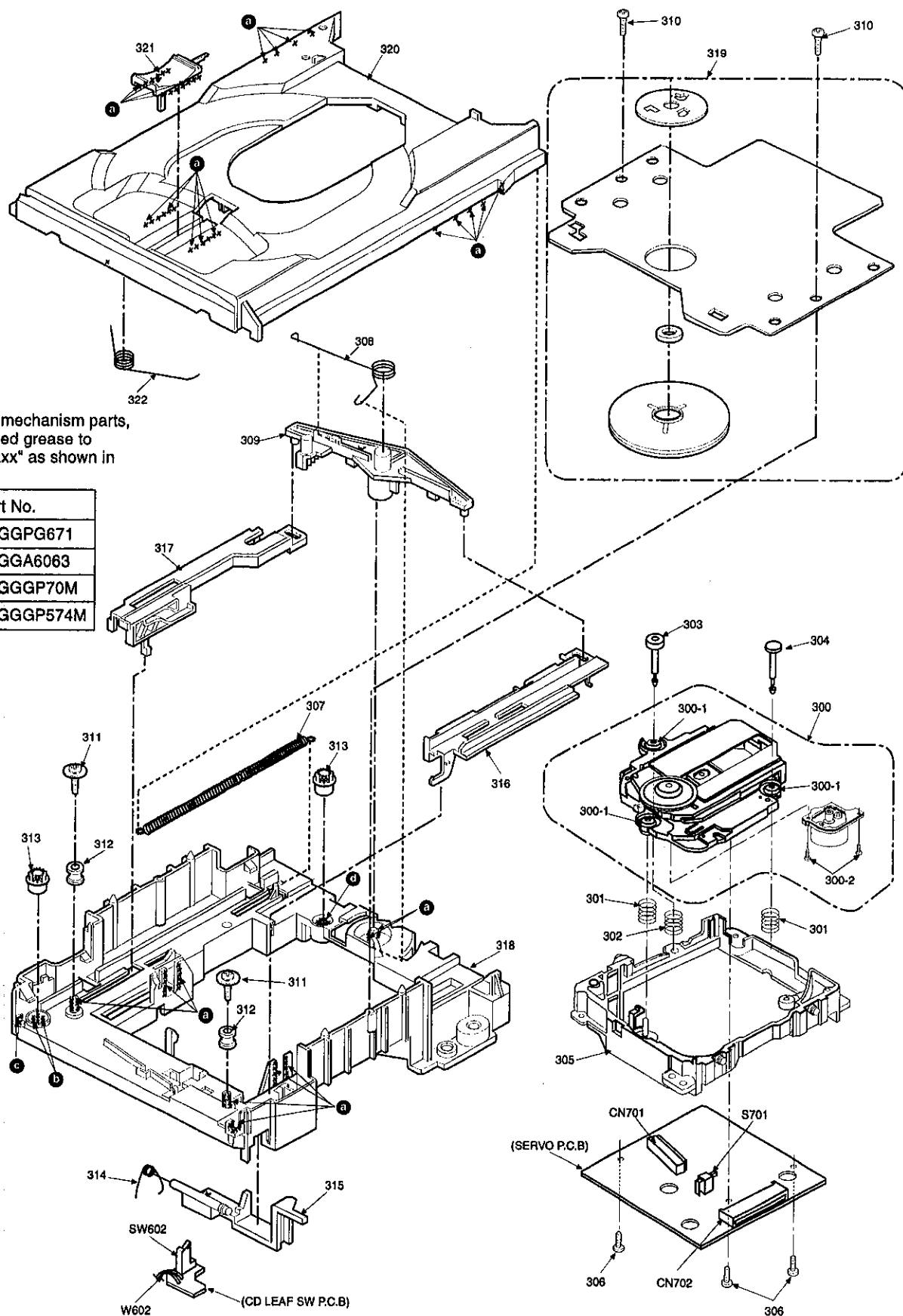
Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		TRAVERSE DECK		307	RMB0566	CD OPEN SPRING	[M]	318	RMK0388	CD CHASSIS	[M]
				308	RME0267	ASSIST SPRING	[M]	319	RFKNXDS16EBK	DISC HOLDER ASS'Y	[M]
300	RAE0152Z-M	TRAVERSE	[M]	309	RMM0207	CHANGE LEVER	[M]	320	RGQ0233-K	CD TRAY	[M]
300-1	SHGD113-1	FLOATING CUSHION	[M]	310	XTV26+8G	SCREW	[M]	321	RGQ0234-K	DISC HOLD PIECE	[M]
300-2	SNSD38	TRV MOTOR ASS'Y SCREW	[M]	311	RHD26016	SCREW	[M]	322	RME0269	DISC HOLD PIECE SPR	[M]
301	RME0109	FLOATING SPRING B	[M]	312	RDP0103	ROLLER	[M]				
302	RME0142	FLOATING SPRING A	[M]	313	RDG0183-J	DAMPER GEAR	[M]				
303	RMS0350	FIXED PIN A	[M]	314	RME0268	CD EJECT LEVER SPR	[M]				
304	RMS0123-1	FIXED PIN B	[M]	315	RML0535	CD LOCK LEVER	[M]				
305	RMR0698-K	TRY CHASSIS	[M]	316	RMM0206	UP/DOWN LEVER B	[M]				
306	XTN2+6G	PCB SCREW	[M]	317	RMM0205	UP/DOWN LEVER A	[M]				

Loading Mechanism Parts Location

Note : Refer to Mechanism Parts List on page 32.

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

Ref No.	Part No.
a	RZGGPG671
b	RZGGA6063
c	RZGGGP70M
d	RZGGGP574M



Replacement Parts List

- Notes: *
- Important safety notice:
Components identified by $\triangle$ mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc. are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
 - The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
 - Parts without these indications can be used for all areas.
 - [M] Indicates in the Remarks columns indicates parts supplied by MESA.
 - Warning : This product uses a laser diode. Refer to caution statements on page 3.
 - ACHTUNG :
 - Die Lasereinheit nicht zerlegen.
 - Die Lasereinheit darf nur gegen eine vom Hersteller spezifizierte Einheit ausgetauscht werden.

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS									
1	RAS8P19-H	SPEAKER	[M]	35	RGWX0048-A	JOG KNOB	[M]	Q312	2SC2001KTA	TRANSISTOR	[M]
2	REE0842	CD PFC	[M]	36	RGCX0003	LCD COVER	[M]	Q313	2SB1030RTA	TRANSISTOR	[M]
3	REXX0189	SPEAKER WIRE	[M]	37	RDLX0001	COLOUR FILTER	[M]	Q314	RVTDC144EST	TRANSISTOR	[M]
4	RKH0042-H	HANDLE	[M]	38	RMVX0040	LAMP COVER	[M]	Q351	2SC2001KTA	TRANSISTOR	[M]
5	RFKKXES30EBS	UPPER CAB. ASS'Y	[M]	39	RDG0183-J	DAMPER GEAR	[M]	Q352	2SC1740SRTA	TRANSISTOR	[M]
5-1	RKWX0134-Q	LCD PANEL	[M]	41	XTW3+12Q	WASHER HEAD SCREW	[M]	Q701	2SA1037AKSTX	TRANSISTOR	[M]
6	RFKJXES30EBS	BOTTOM CAB. ASS'Y	[M]EB			INTEGRATED CIRCUITS		Q702	DTC114YKA146	TRANSISTOR	[M]
6	RFKJXES30EGS	BOTTOM CAB. ASS'Y	[M]EG	IC1	TA2008AN	IC, TUNER	[M]	Q751	2SC1740SRTA	TRANSISTOR	[M]
6	RFKJXES30E-S	BOTTOM CAB. ASS'Y	[M]E	IC2	LC72131D	IC, PLL	[M]	Q752	2SB1030RTA	TRANSISTOR	[M]
6-1	RJC91008	+ BATT. TERMINAL	[M]	IC302	S81350HG-Z	IC, 5V REGULATOR $\triangle$	[M]	Q901	2SC3311ARTA	TRANSISTOR	[M]
6-2	RKA0059-K	LEG RUBBER	[M]	IC304	BH3857FV-E2	IC, AUDIO	[M]	Q902	2SC3311ARTA	TRANSISTOR	[M]
7	RMXX0038	HEAT SINK	[M]	IC351	LA4663	IC, POWER $\triangle$	[M]	Q1100	2SC1740SRTA	TRANSISTOR	[M]
8	RFKLXES30EBS	CASS HOLDER ASS'Y	[M]	IC701	AN8837SBE1	IC, HEAD AMP	[M]	Q1201	2SJ498CTA	TRANSISTOR	[M]
8-1	RKWX0133-Q	CASS. PANEL	[M]	IC702	MN662746RPK1	IC, LSI	[M]	Q1202	2SJ498CTA	TRANSISTOR	[M]
8-2	RUS757ZAA	CASS HALF SPRING	[M]	IC703	AN8780NSBE2	IC	[M]	Q1203	2SC1740SRTA	TRANSISTOR	[M]
10	RGKX0044-H	CD TRAY LID	[M]	IC901	MN101C16ARB	IC, MICON	[M]	Q1204	2SC1740SRTA	TRANSISTOR	[M]
11	RYQX0025-S	OPERATION BUTTON UN	[M]	IC902	S-80733ANY-Z	IC, RESET	[M]	Q1205	2SJ498CTA	TRANSISTOR	[M]
12	RMR1155-K	CD FIXTURE	[M]	IC971	0N2180RLC	IC, PHOTO INTERRUPTOR	[M]	Q1206	2SJ498CTA	TRANSISTOR	[M]
13	RKK0073-H	BATT. COVER	[M]	IC1301	BA7755A	IC, SW	[M]	Q1207	2SJ498CTA	TRANSISTOR	[M]
14	RMB0448-J	CASS EJECT LEVER SPR	[M]	IC1302	AN7317	IC, PLAYBACK/RECORD	[M]	Q1208	2SJ498CTA	TRANSISTOR	[M]
15	RMM0163	CASS. LOCK ROD	[M]	IC1303	BA4558FE2	IC	[M]	Q1302	2SC1845FTA	TRANSISTOR	[M]
16	RMAX0045	TRANSFORMER BRACKET	[M]			TRANSISTORS		Q1303	2SC2001KTA	TRANSISTOR	[M]
17	RMEX0008	CASS. OPEN SPRING	[M]	Q1	2SC1740SRTA	TRANSISTOR	[M]	Q1305	2SC1740SRTA	TRANSISTOR	[M]
18	RKTX0005-H	PORT (L)	[M]	Q2	2SC1740SRTA	TRANSISTOR	[M]	Q1306	2SC1740SRTA	TRANSISTOR	[M]
19	RKTX0006-H	PORT (R)	[M]	Q3	2SJ498CTA	TRANSISTOR	[M]	Q1307	2SC1740SRTA	TRANSISTOR	[M]
20	RKQ0224-K	HANDLE FIXTURE	[M]	Q4	2SJ498CTA	TRANSISTOR	[M]	Q1313	2SC1740SRTA	TRANSISTOR	[M]
21	RMNX0025-W	LCD HOLDER	[M]	Q201	2SC1740SLNRT	TRANSISTOR	[M]	Q1400	BA1A4MTA	TRANSISTOR	[M]
22	RMB0567	CD EJECT BTN SPRING	[M]	Q202	2SC1740SLNRT	TRANSISTOR	[M]	Q1401	BN1L3NTA	TRANSISTOR	[M]
23	RGUX0320-H	CD EJECT BUTTON	[M]	Q301	RVTDC144EST	TRANSISTOR	[M]	Q1402	BA1L3NTA	TRANSISTOR	[M]
24	RMN0505	REMOCON SHIELD	[M]	Q302	2SB1030RTA	TRANSISTOR	[M]	Q1403	2SC1740SRTA	TRANSISTOR	[M]
25	RME0270	R. ANTENNA TERMINAL	[M]	Q303	2SA952LTA	TRANSISTOR	[M]	Q1404	2SC1740SRTA	TRANSISTOR	[M]
27	XEARR210C-Y	ROD ANTENNA	[M]	Q304	2SC1740SRTA	TRANSISTOR	[M]	Q1405	2SC2001KTA	TRANSISTOR	[M]
28	XTBS2B+10J	SCREW	[M]	Q305	2SB1566E	TRANSISTOR	[M]	Q1450	RVTDTA143XST	TRANSISTOR	[M]
29	XTV3+12G	SP. MOUNTING SCREW	[M]	Q306	2SC1740SRTA	TRANSISTOR $\triangle$	[M]	Q1451	2SD965RTA	TRANSISTOR	[M]
30	XTV3+20G	SCREW	[M]	Q307	2SA933SSTA	TRANSISTOR	[M]	Q1452	2SB1030RTA	TRANSISTOR	[M]
31	XTV3+8F	POWER AMP IC SCREW	[M]	Q308	2SB1240RTV2	TRANSISTOR	[M]	Q1500	BA1L3MTA	TRANSISTOR	[M]
32	XTV3+6F	SCREW	[M]	Q309	BA1A4PTA	TRANSISTOR	[M]				
33	XYN3+F12FY	R.ANTENNA SCREW	[M]	Q310	2SC1740SRTA	TRANSISTOR	[M]				

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		DIODES									
D1	SVC346T-AA	DIODE	[M]	S625	EVQ21405R	SW, VOL +	[M]	L918	RLQZP2R2KT-Y	COIL	[M]
D2	KV1360NTM	DIODE	[M]	S626	EVQ21405R	SW, CLK/TIMER	[M]	L919	RLQZP2R2KT-Y	COIL	[M]
D3	KV1360NTM	DIODE	[M]	S627	EVQ21405R	SW, PLAY/REC TIMER	[M]	L1301	RL08B003-K	BIAS OSC COIL	[M]
D301	RVD1SS133TA	DIODE	[M]	S701	RSH1A043-U	SW, REST	[M]	L1303	RLQA470JT1-Y	AXIAL COIL	[M]
D302	1SR35400V	DIODE	[M]	S901	RSH1A005	SW, LEAF	[M]	T1	RLI2B014-T	AM IFT	[M]
D303	1SR35400V	DIODE	[M]	S971	RSH1A018-3U	SW, MODE	[M]	T501	RTP1L1B011-X	TRANSFORMER 	[M]
D304	RVD1SS133TA	DIODE	[M]	S972	RSH1A019-2U	SW, LEAF	[M]				
D305	MTZJ9R1BTA	DIODE 	[M]	S973	RSH1A019-2U	SW, LEAF	[M]			COMPONENT COMBINATION	
D306	MTZJ12BTA	DIODE 	[M]	S974	RSH1A019-2U	SW, LEAF	[M]	Z301	XAMR142	BACKLITE LAMP	[M]
D307	RVD1SS133TA	DIODE	[M]	S975	RSH1A019-2U	SW, LEAF	[M]	Z801	RCDRPM6937	REMOTE SENSOR	[M]
D308	RVD1SS133TA	DIODE	[M]			CONNECTORS		Z802	RRV12E12404A	AI-JOG	[M]
D309	SLR325VRT31	DIODE	[M]	CN701	RJS2A6016	16P FFC CONNECTOR	[M]	Z901	RSL5226-L	LCD	[M]
D310	MTZJ5R1BTA	DIODE	[M]	CN702	RJS1A6723-1Q	23P FFC CONNCECTOR	[M]	Z971	EXBF7L355SYV	RADAR RESISTOR	[M]
D311	RVD1SS133TA	DIODE	[M]	CN702	RJS1A9423	FFC CONNECTOR	[M]			CERAMIC FILTERS	
D312	RVD1SS133TA	DIODE	[M]	CP301	RJS1A5208	8P CONNECTOR	[M]	CF1	RLFFETNL02AL	FM CERAMIC FILTER	[M]
D401	MTZJ7R5ATA	DIODE	[M]	CP302	RJP4G9YA	CONNECTOR	[M]	CF3	RLFDFT20AL	FM DISCRIMINATOR	[M]
D501	1N5402BM21	DIODE	[M]	CP304	RJP4G4YA	LEAF SW 4P POST	[M]			OSCILLATORS	
D502	1N5402BM21	DIODE	[M]	CP1301	RJS1A6805-J	5P CONNECTOR SOCKET	[M]	X2	RSXZ456KM01	19KHZ OSC	[M]
D503	1N5402BM21	DIODE	[M]	CP1902	RJT071K09A	9P B-B PIN	[M]	X3	RSXC7M20S04T	XTAL 7.2MHZ	[M]
D504	1N5402BM21	DIODE	[M]	CS971	RJU071H09M1	CONNECTOR	[M]	X701	RSXZ16M9M01T	CERAMIC OSC	[M]
D615	RVD1SS133TA	DIODE	[M]			COILS & TRANSFORMERS		X901	RSXZ8M00D01T	6MHZ RESONATOR	[M]
D750	MTZJ8R2BTA	DIODE	[M]	L2	RLQY30S1W	COIL	[M]	X902	RSXD32K7S02	32.768HKZ XTAL	[M]
D751	RVD1SS133TA	DIODE	[M]	L3	RLV2C042-0	F. ANT	[M]			FUSES & FUSE HOLDERS	
D901	RVD1SS133TA	DIODE	[M]	L4	RLD4Y45W	COIL	[M]	F501	XBA2C40TB0	FUSE 	[M]
D971	MA165TA	DIODE	[M]	L6	RLQ2B130-T	AM OSC COIL	[M]	FH501	RJR0169T	FUSE HOLDER	[M]
D1100	RVD1SS133TA	DIODE	[M]	L7	RLQZP101KT-Y	AXIAL COIL	[M]	FH502	RJR0169T	FUSE HOLDER	[M]
D1301	RVD1SS133TA	DIODE	[M]	L8	RLQY30S1W	COIL	[M]	FP501	RSFMB40KT-L	FUSE PROTECTOR	[M]
D1500	MTZJ6R2BTA	DIODE	[M]	L201	RLS500050T-Y	RF CHOKE COIL	[M]			JACKS	
		TRIMMER		L202	RLS500050T-Y	RF CHOKE COIL	[M]	JK301	RJJ37TK01-1C	JK	[M]
CT1	ECRLA010A53R	TRIMMER CAPACITOR	[M]	L301	RLS500050T-Y	RF CHOKE COIL	[M]	JK501	RJJ1SE01-1H	JK, AC INLET 	[M]
		SWITCHES		L302	RLS500050T-Y	RF CHOKE COIL	[M]			WIRE HOLDERS	
S501	RJJ1SE01-1H	SW, AC INLET (JK501)	[M]	L303	RLS500050T-Y	RF CHOKE COIL	[M]	H304	RJS1A5504	CABLE HOLDER	[M]
S601	EVQ21405R	SW, POWER	[M]	L304	RLS500050T-Y	RF CHOKE COIL	[M]	H601	RMR0317	8P CABLE HOLDER	[M]
S602	EVQ21405R	SW, DECK EJECT	[M]	L501	RLS500050T-Y	RF CHOKE COIL 	[M]			WIRES	
S603	EVQ21405R	SW, REC PAUSE	[M]	L502	RLS500050T-Y	RF CHOKE COIL 	[M]	W303	RWJ0302100KK	LED WIRE	[M]
S604	EVQ21405R	SW, FF TPS/+FF	[M]	L503	RLS500050T-Y	RF CHOKE COIL	[M]	W304	REXX0210	POWER TO MAIN WIRE U	[M]
S605	EVQ21405R	SW, REW TPS/_/REW	[M]	L901	RLQZP2R2KT-Y	COIL	[M]	W305	RWJ0103170KK	POWER-BATT WIRE	[M]
S606	EVQ21405R	SW, STOP	[M]	L902	RLQZP2R2KT-Y	COIL	[M]	W306	RWJ0302100KK	LED WIRE	[M]
S607	EVQ21405R	SW, TAPE PLAY	[M]	L908	RLQZP2R2KT-Y	COIL	[M]	W601	RWJ1108140RR	PANEL TO MAIN WIRE	[M]
S608	EVQ21405R	SW, BAND	[M]	L909	RLQZP2R2KT-Y	COIL	[M]	W901	RWJ4202180KK	CD LEAF SW WIRE	[M]
S609	EVQ21405R	SW, CD PLAY/PAUSE	[M]	L910	RLQZP2R2KT-Y	COIL	[M]	W1450	RWJ0102050KR	MAIN-MECHA MOTOR WIR	[M]
S621	EVQ21405R	SW, PRESET EQ	[M]	L911	RLQZP2R2KT-Y	COIL	[M]				
S622	EVQ21405R	SW, CD REC	[M]	L912	RLQZP2R2KT-Y	COIL	[M]				
S623	EVQ21405R	SW, MEMORY	[M]	L913	RLQZP2R2KT-Y	COIL	[M]				
S624	EVQ21405R	SW, VOL -	[M]	L916	RLQZP2R2KT-Y	COIL	[M]				
				L917	RLQZP2R2KT-Y	COIL	[M]				

Resistors & Capacitors

Notes : • Important safety notice:

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

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
	RESISTORS										
R2	ERDS2TJ103T	10K 1/4W [M]	R210	ERDS2TJ273T	27K 1/4W [M]	R323	ERDS2TJ102T	1K 1/4W [M]	R702	ERJ6GEYJ822A	8.2K 1/10W[M]
R3	ERDS2TJ332T	3.3K 1/4W [M]	R211	ERDS2TJ472T	4.7K 1/4W [M]	R324	ERDS2TJ103T	10K 1/4W [M]	R704	ERJ6GEYJ102A	1K 1/10W[M]
R4	ERDS2TJ472T	4.7K 1/4W [M]	R212	ERDS2TJ472T	4.7K 1/4W [M]	R325	ERDS2TJ471T	470 1/4W [M]	R705	ERJ6GEYJ124A	120K 1/10W[M]
R5	ERDS2TJ221T	220 1/4W [M]	R215	ERDS2TJ103T	10K 1/4W [M]	R326	ERDS2TJ471T	470 1/4W [M]	R706	ERJ6GEYJ102A	1K 1/10W[M]
R6	ERDS2TJ104T	100K 1/4W [M]	R216	ERDS2TJ103T	10K 1/4W [M]	R327	ERDS2TJ471T	470 1/4W [M]	R707	ERJ6GEYJ474A	470K 1/10W[M]
R8	ERDS2TJ104T	100K 1/4W [M]	R217	ERDS2TJ471T	470 1/4W [M]	R328	ERDS2TJ471T	470 1/4W [M]	R708	ERJ6GEYJ154A	150K 1/10W[M]
R9	ERDS2TJ104T	100K 1/4W [M]	R218	ERDS2TJ471T	470 1/4W [M]	R330	ERD2FCVG220T	22 1/4W [M]	R709	ERJ6GEYJ473A	47K 1/10W[M]
R11	ERDS2TJ223T	22K 1/4W [M]	R219	ERDS2TJ683T	68K 1/4W [M]	R331	ERDS2TJ101T	100 1/4W [M]	R710	ERJ6GEYJ103A	10K 1/10W[M]
R12	ERDS2TJ103T	10K 1/4W [M]	R220	ERDS2TJ683T	68K 1/4W [M]	R332	ERDS2TJ222T	2.2K 1/4W [M]	R711	ERJ6GEYJ104A	100K 1/10W[M]
R16	ERDS2TJ104T	100K 1/4W [M]	R221	ERDS2TJ682T	6.8K 1/4W [M]	R333	ERDS2TJ103T	10K 1/4W [M]	R712	ERJ6GEYJ151A	150 1/10W[M]
R17	ERDS2TJ222T	2.2K 1/4W [M]	R222	ERDS2TJ682T	6.8K 1/4W [M]	R334	ERDS2TJ472T	4.7K 1/4W [M]	R715	ERJ6GEYJ122A	1.2K 1/10W[M]
R20	ERDS2TJ223T	22K 1/4W [M]	R225	ERDS2TJ103T	10K 1/4W [M]	R335	ERDS2TJ102T	1K 1/4W [M]	R717	ERJ6GEYJ102A	1K 1/10W[M]
R21	ERDS2TJ123T	12K 1/4W [M]	R226	ERDS2TJ103T	10K 1/4W [M]	R338	ERDS2TJ103T	10K 1/4W [M]	R718	ERJ6GEYJ102A	1K 1/10W[M]
R22	ERDS2TJ102T	1K 1/4W [M]	R227	ERD2FCVJ4R7T	4.7 1/4W [M]	R339	ERDS2TJ271T	270 1/4W [M]	R719	ERJ6GEYJ102A	1K 1/10W[M]
R23	ERDS2TJ223T	22K 1/4W [M]	R228	ERD2FCVJ4R7T	4.7 1/4W [M]	R346	ERDS2TJ103T	10K 1/4W [M]	R720	ERJ6GEYJ102A	1K 1/10W[M]
R24	ERDS2TJ103T	10K 1/4W [M]	R229	ERD2FCVJ4R7T	4.7 1/4W [M]	R350	ERDS2TJ152T	1.5K 1/4W [M]	R721	ERJ8GEYJ101A	100 1/10W[M]
R25	ERDS2TJ223T	22K 1/4W [M]	R230	ERD2FCVJ4R7T	4.7 1/4W [M]	R351	ERDS2TJ103T	10K 1/4W [M]	R723	ERJ6GEYJ272A	2.7K 1/10W[M]
R26	ERDS2TJ103T	10K 1/4W [M]	R231	ERDS2TJ181T	180 1/4W [M]	R352	ERDS2TJ103T	10K 1/4W [M]	R724	ERJ6GEYJ333A	33K 1/10W[M]
R27	ERDS2TJ332T	3.3K 1/4W [M]	R232	ERDS2TJ181T	180 1/4W [M]	R353	ERDS2TJ563T	56K 1/4W [M]	R725	ERJ6GEYJ122A	1.2K 1/10W[M]
R28	ERDS2TJ223T	22K 1/4W [M]	R233	ERDS2TJ103T	10K 1/4W [M]	R354	ERDS2TJ471T	470 1/4W [M]	R727	ERJ6GEYJ682A	6.8K 1/10W[M]
R29	ERDS2TJ103T	10K 1/4W [M]	R234	ERDS2TJ103T	10K 1/4W [M]	R355	ERDS2TJ104T	100K 1/4W [M]	R728	ERJ6GEYJ682A	6.8K 1/10W[M]
R30	ERDS2TJ472T	4.7K 1/4W [M]	R303	ERDS2TJ821T	820 1/4W [M]	R356	ERDS2TJ683T	68K 1/4W [M]	R729	ERJ6GEYJ562A	5.6K 1/10W[M]
R31	ERDS2TJ222T	2.2K 1/4W [M]	R304	ERDS2TJ151T	150 1/4W [M]	R403	ERDS2TJ153T	15K 1/4W [M]	R731	ERJ6GEYJ123A	12K 1/10W[M]
R32	ERDS2TJ471T	470 1/4W [M]	R305	ERDS2TJ182T	1.8K 1/4W [M]	R415	ERDS2TJ101T	100 1/4W [M]	R734	ERJ6GEYJ101A	100 1/10W[M]
R33	ERDS2TJ104T	100K 1/4W [M]	R306	ERDS2TJ103T	10K 1/4W [M]	R499	ERD2FCVG220T	22 1/4W [M]	R735	ERJ6GEYJ101A	100 1/10W[M]
R34	ERDS2TJ333T	33K 1/4W [M]	R308	ERDS2TJ331T	330 1/4W [M]	R601	ERDS2TJ102T	1K 1/4W [M]	R736	ERJ6GEYJ101A	100 1/10W[M]
R35	ERDS2TJ104T	100K 1/4W [M]	R309	ERDS2TJ103T	10K 1/4W [M]	R602	ERDS2TJ102T	1K 1/4W [M]	R738	ERJ6GEYJ223A	22K 1/10W[M]
R91	ERDS2TJ330T	33 1/4W [M]	R310	ERDS2TJ474T	470K 1/4W [M]	R603	ERDS2TJ122T	1.2K 1/4W [M]	R741	ERJ6GEYJ582A	5.8K 1/10W[M]
R92	ERDS2TJ182T	1.8K 1/4W [M]	R311	ERDS2TJ331T	330 1/4W [M]	R604	ERDS2TJ182T	1.8K 1/4W [M]	R742	ERJ6GEYJ582A	5.8K 1/10W[M]
R201	ERDS2TJ563T	56K 1/4W [M]	R312	ERDS2TJ101T	100 1/4W [M]	R605	ERDS2TJ222T	2.2K 1/4W [M]	R743	ERJ6GEYJ582A	5.8K 1/10W[M]
R202	ERDS2TJ563T	56K 1/4W [M]	R313	ERDS2TJ471T	470 1/4W [M]	R606	ERDS2TJ272T	2.7K 1/4W [M]	R744	ERJ6GEYJ104A	100K 1/10W[M]
R203	ERDS2TJ153T	15K 1/4W [M]	R314	ERDS2TJ471T	470 1/4W [M]	R607	ERDS2TJ472T	4.7K 1/4W [M]	R745	ERJ6GEYJ106A	10M 1/10W[M]
R204	ERDS2TJ153T	15K 1/4W [M]	R315	ERDS2TJ1R5T	1.5 1/4W [M]	R608	ERDS2TJ682T	6.8K 1/4W [M]	R748	ERJ6GEYJ272A	2.7K 1/10W[M]
R205	ERDS2TJ392T	3.9K 1/4W [M]	R316	ERDS2TJ1R5T	1.5 1/4W [M]	R621	ERDS2TJ102T	1K 1/4W [M]	R749	ERJ6GEYJ682A	6.8K 1/10W[M]
R206	ERDS2TJ392T	3.9K 1/4W [M]	R317	ERDS2TJ1R5T	1.5 1/4W [M]	R622	ERDS2TJ102T	1K 1/4W [M]	R751	ERDS2TJ101T	100 1/4W [M]
R207	ERDS2TJ122T	1.2K 1/4W [M]	R318	ERDS2TJ153T	15K 1/4W [M]	R623	ERDS2TJ122T	1.2K 1/4W [M]	R752	ERDS2TJ331T	330 1/4W (MAIN) [M]
R208	ERDS2TJ122T	1.2K 1/4W [M]	R319	ERDS2TJ223T	22K 1/4W [M]	R624	ERDS2TJ182T	1.8K 1/4W [M]	R752	ERJ8GEYJ220A	22 1/8W (SERVO) [M]
R209	ERDS2TJ273T	27K 1/4W [M]	R320	ERDS2TJ223T	22K 1/4W [M]	R625	ERDS2TJ222T	2.2K 1/4W [M]	R753	ERD25FVJ330T	33 1/4W [M]
			R321	ERDS2TJ393T	39K 1/4W [M]	R626	ERDS2TJ272T	2.7K 1/4W [M]	R754	ERD25FVJ330T	33 1/4W [M]
			R322	ERDS2TJ474T	470K 1/4W [M]	R701	ERJ6GEYJ4R7A	4.7 1/10W [M]	R770	ERJ6GEYJ224A	220K 1/10W[M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
R901	ERDS2TJ332T	3.3K 1/4W [M]	R1102	ERDS2TJ682T	6.8K 1/4W [M]	R1405	ERDS2TJ823T	82K 1/4W [M]	C39	ECBT1H180JC5	18P 50V [M]
R902	ERDS2TJ332T	3.3K 1/4W [M]	R1103	ERDS2TJ103T	10K 1/4W [M]	R1406	ERDS2TJ331T	330 1/4W [M]	C40	ECBT1C222MR5	2200P 16V [M]
R905	ERDS2TJ102T	1K 1/4W [M]	R1104	ERDS2TJ103T	10K 1/4W [M]	R1407	ERDS2TJ103T	10K 1/4W [M]	C42	ECBT1H330J5	33P 50V [M]
R906	ERDS2TJ102T	1K 1/4W [M]	R1105	ERDS2TJ331T	330 1/4W [M]	R1408	ERDS2TJ332T	3.3K 1/4W [M]	C43	ECBT1H101KB5	100P 50V [M]
R907	ERDS2TJ471T	470 1/4W [M]	R1106	ERDS2TJ682T	6.8K 1/4W [M]	R1409	ERDS2TJ331T	330 1/4W [M]	C44	ECEA1HKA2R2B	2.2 50V [M]
R908	ERDS2TJ472T	4.7K 1/4W [M]	R1107	ERDS2TJ823T	82K 1/4W [M]	R1450	ERDS2TJ331T	330 1/4W [M]	C45	ECBT1H102KB5	1000P 50V [M]
R911	ERDS2TJ154T	150K 1/4W [M]	R1108	ERDS2TJ393T	39K 1/4W [M]	R1451	ERDS2TJ273T	27K 1/4W [M]	C48	ECEA1HKA010B	1 50V [M]
R912	ERDS2TJ154T	150K 1/4W [M]	R1109	ERDS2TJ682T	6.8K 1/4W [M]	R1452	ERDS2TJ102T	1K 1/4W [M]	C49	ECBT1H102KB5	1000P 50V [M]
R913	ERDS2TJ104T	100K 1/4W [M]	R1110	ERDS2TJ102T	1K 1/4W [M]	R1500	ERDS2TJ472T	4.7K 1/4W [M]	C50	ECBT1H102KB5	1000P 50V [M]
R914	ERDS2TJ104T	100K 1/4W [M]	R1111	ERDS2TJ393T	39K 1/4W [M]	R1501	ERDS2TJ101T	100 1/4W [M]	C51	ECEA1HKA010B	1 50V [M]
R915	ERDS2TJ105T	1M 1/4W [M]	R1112	ERDS2TJ822T	8.2K 1/4W [M]	R1502	ERDS2TJ475T	4.7M 1/4W [M]	C53	ECBT1H102KB5	1000P 50V [M]
R916	ERDS2TJ102T	1K 1/4W [M]	R1113	ERDS2TJ563T	56K 1/4W [M]	R1503	ERDS2TJ222T	2.2K 1/4W [M]	C54	ECBT1H102KB5	1000P 50V [M]
R917	ERDS2TJ334T	330K 1/4W [M]	R1201	ERDS2TJ223T	22K 1/4W [M]	R1504	ERDS2TJ683T	68K 1/4W [M]	C91	ECEA1CKA220B	22 16V [M]
R918	ERDS2TJ104T	100K 1/4W [M]	R1202	ERDS2TJ223T	22K 1/4W [M]	R1505	ERDS2TJ103T	10K 1/4W [M]	C92	ECBT1H331KB5	330P 50V [M]
R919	ERDS2TJ472T	4.7K 1/4W [M]	R1203	ERDS2TJ560T	56 1/4W [M]				C98	ECBT1H331KB5	330P 50V [M]
R920	ERDS2TJ103T	10K 1/4W [M]	R1204	ERDS2TJ560T	56 1/4W [M]		CAPACITORS		C99	ECBT1H102KB5	1000P 50V [M]
R921	ERDS2TJ103T	10K 1/4W [M]	R1205	ERDS2TJ472T	4.7K 1/4W [M]	C1	ECBT1H470J5	47P 50V [M]	C201	ECEA1HKA010B	1 50V [M]
R922	ERDS2TJ102T	1K 1/4W [M]	R1206	ERDS2TJ472T	4.7K 1/4W [M]	C2	ECBT1H100JC5	10P 50V [M]	C202	ECEA1HKA010B	1 50V [M]
R923	ERDS2TJ104T	100K 1/4W [M]	R1207	ERDS2TJ472T	4.7K 1/4W [M]	C3	ECFR1C223KR	0.022 16V [M]	C203	ECBT1H221KB5	220P 50V [M]
R926	ERDS2TJ104T	100K 1/4W [M]	R1208	ERDS2TJ472T	4.7K 1/4W [M]	C4	ECBT1H102KB5	1000P 50V [M]	C204	ECBT1H221KB5	220P 50V [M]
R929	ERDS2TJ102T	1K 1/4W [M]	R1209	ERDS2TJ392T	3.9K 1/4W [M]	C5	ECBT1H5R6KC5	5.6P 50V [M]	C205	ECEA1CKA100B	10 16V [M]
R930	ERDS2TJ102T	1K 1/4W [M]	R1210	ERDS2TJ392T	3.9K 1/4W [M]	C6	ECBT1H102KB5	1000P 50V [M]	C206	ECEA1CKA100B	10 16V [M]
R931	ERDS2TJ102T	1K 1/4W [M]	R1215	ERDS2TJ683T	68K 1/4W [M]	C7	ECBT1H150JC5	15P 50V [M]	C207	ECEA1HKA0R1B	0.1 50V [M]
R932	ERDS2TJ103T	10K 1/4W [M]	R1216	ERDS2TJ683T	68K 1/4W [M]	C8	ECBT1H102KB5	1000P 50V [M]	C208	ECEA1HKA0R1B	0.1 50V [M]
R933	ERDS2TJ103T	10K 1/4W [M]	R1219	ERDS2TJ153T	15K 1/4W [M]	C9	ECBT1H102KB5	1000P 50V [M]	C209	ECFR1C473KR	0.047 16V [M]
R934	ERDS2TJ104T	100K 1/4W [M]	R1220	ERDS2TJ153T	15K 1/4W [M]	C10	ECBT1H100JC5	10P 50V [M]	C210	ECFR1C473KR	0.047 16V [M]
R935	ERDS2TJ104T	100K 1/4W [M]	R1221	ERDS2TJ474T	470K 1/4W [M]	C12	ECBT1H331KB5	330P 50V [M]	C211	ECBT1C103MS5	0.01 16V [M]
R936	ERDS2TJ104T	100K 1/4W [M]	R1222	ERDS2TJ474T	470K 1/4W [M]	C13	ECEA1CKA100B	10 16V [M]	C212	ECBT1C103MS5	0.01 16V [M]
R937	ERDS2TJ472T	4.7K 1/4W [M]	R1299	ERDS2TJ333T	33K 1/4W [M]	C14	ECBT1H102KB5	1000P 50V [M]	C213	ECBT1H470J5	47P 50V [M]
R938	ERDS2TJ472T	4.7K 1/4W [M]	R1303	ERDS2TJ103T	10K 1/4W [M]	C15	ECFR1C683MR	0.068 16V [M]	C214	ECBT1H470J5	47P 50V [M]
R939	ERDS2TJ472T	4.7K 1/4W [M]	R1304	ERDS2TJ152T	1.5K 1/4W [M]	C16	ECFR1C823MR	0.082 16V [M]	C217	ECBT1H221KB5	220P 50V [M]
R940	ERDS2TJ474T	470K 1/4W [M]	R1305	ERDS2TJ152T	1.5K 1/4W [M]	C17	ECFR1C823MR	0.082 16V [M]	C218	ECBT1H221KB5	220P 50V [M]
R941	ERDS2TJ472T	4.7K 1/4W [M]	R1310	ERDS2TJ103T	10K 1/4W [M]	C18	ECFR1C153MR	0.015 16V [M]	C221	ECBT1H101KB5	100P 50V [M]
R942	ERDS2TJ472T	4.7K 1/4W [M]	R1311	ERD2FCVJ4R7T	4.7 1/4W [M]	C19	ECFR1C153MR	0.015 16V [M]	C222	ECBT1H101KB5	100P 50V [M]
R943	ERDS2TJ474T	470K 1/4W [M]	R1312	ERDS2TJ822T	8.2K 1/4W [M]	C20	ECEA1HKA010B	1 50V [M]	C223	ECEA1HKA15B	0.15 50V [M]
R947	ERDS2TJ102T	1K 1/4W [M]	R770	ERJ6GEYJ224A	220K 1/10W [M]	C21	ECEA1HKA010B	1 50V [M]	C224	ECEA1HKA15B	0.15 50V [M]
R948	ERDS2TJ102T	1K 1/4W [M]	R1313	ERDS2TJ472T	4.7K 1/4W [M]	C22	ECEA1HKA4R7B	4.7 50V [M]	C225	ECBT1H153KB5	0.015 50V [M]
R949	ERDS2TJ103T	10K 1/4W [M]	R1314	ERDS2TJ153T	15K 1/4W [M]	C23	ECFR1C333MR	0.033 16V [M]	C226	ECBT1H153KB5	0.015 50V [M]
R951	ERDS2TJ102T	1K 1/4W [M]	R1315	ERDS2TJ472T	4.7K 1/4W [M]	C24	ECFR1C333MR	0.033 16V [M]	C227	ECFR1C223KR	0.022 16V [M]
R952	ERDS2TJ102T	1K 1/4W [M]	R1325	ERDS2TJ752T	7.5K 1/4W [M]	C30	ECBT1H331KB5	330P 50V [M]	C228	ECFR1C223KR	0.022 16V [M]
R953	ERDS2TJ102T	1K 1/4W [M]	R1339	ERDS2TJ473T	47K 1/4W [M]	C31	ECBT1C103MS5	0.01 16V [M]	C229	ECBT1H153KB5	0.015 50V [M]
R954	ERDS2TJ334T	330K 1/4W [M]	R1340	ERDS2TJ223T	22K 1/4W [M]	C32	ECBT1H102KB5	1000P 50V [M]	C230	ECBT1H153KB5	0.015 50V [M]
R955	ERDS2TJ334T	330K 1/4W [M]	R1341	ERDS2TJ471T	470 1/4W [M]	C33	ECBT1H102KB5	1000P 50V [M]	C231	ECBT1H471KB5	470P 50V [M]
R956	ERDS2TJ334T	330K 1/4W [M]	R1352	ERDS2TJ104T	100K 1/4W [M]	C34	ECBT1H102KB5	1000P 50V [M]	C232	ECBT1H471KB5	470P 50V [M]
R972	ERDS2TJ821T	820 1/4W [M]	R1353	ERDS2TJ474T	470K 1/4W [M]	C35	ECEA1CKA101B	100 16V [M]	C233	ECEA1HKA010B	1 50V [M]
R973	ERDS2TJ393T	39K 1/4W [M]	R1401	ERDS2TJ472T	4.7K 1/4W [M]	C36	ECA1EM101B	100 25V [M]	C234	ECEA1HKA010B	1 50V [M]
R1100	ERDS2TJ153T	15K 1/4W [M]	R1403	ERDS2TJ104T	100K 1/4W [M]	C37	ECBT1C103MS5	0.01 16V [M]	C235	ECBT1H102KB5	1000P 50V [M]
R1101	ERDS2TJ153T	15K 1/4W [M]	R1404	ERDS2TJ470T	47 1/4W [M]				C236	ECBT1H102KB5	1000P 50V [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
C237	ECQV1H104JZ3	0.1 50V [M]	C504	ECKR1H103ZF5	0.01 50V [M]	C752	ECUZ1H102KB9N	1000P 50V (SERVO) [M]	C1206	ECBT1H101KB5	100P 50V [M]
C238	ECQV1H104JZ3	0.1 50V [M]	C601	ECBT1H561KB5	560P 50V [M]	C753	ECBT1E103ZF5	0.01 25V (MAIN) [M]	C1207	ECEA1CKA101B	100 16V [M]
C239	ECQV1H104JZ3	0.1 50V [M]	C602	ECBT1H101KB5	100P 50V [M]	C753	ECUZ1H471KBM	470P 50V (SERVO) [M]	C1208	ECEA1CKA101B	100 16V [M]
C240	ECQV1H104JZ3	0.1 50V [M]	C603	ECBT1H101KB5	100P 50V [M]	C754	ECUZ1H471KBN	470P 50V [M]	C1209	ECFR1C273KR	0.027 16V [M]
C241	ECEA1CKA100B	10 16V [M]	C604	ECEA1AKA470B	47 10V [M]	C761	ECUZ1H471KBN	470P 50V [M]	C1210	ECFR1C273KR	0.027 16V [M]
C242	ECEA1CKA100B	10 16V [M]	C701	ECEA0JKA330I	33 6.3V [M]	C762	ECUZ1H471KBN	470P 50V [M]	C1211	ECEA1CKA100B	10 16V [M]
C243	ECEA1HKA2R2B	2.2 50V [M]	C702	ECUZ1E104MBN	0.1 25V [M]	C902	ECEA1CKA100B	10 16V [M]	C1212	ECEA1CKA100B	10 16V [M]
C244	ECEA1HKA2R2B	2.2 50V [M]	C703	ECEA0JKA101I	100 6.3V [M]	C903	ECBT1C103MS5	0.01 16V [M]	C1213	ECEA1HKA010B	1 50V [M]
C245	ECBT1H102KB5	1000P 50V [M]	C704	ECUZ1E104MBN	0.1 25V [M]	C904	ECBT1H102KB5	1000P 50V [M]	C1214	ECEA1HKA010B	1 50V [M]
C246	ECBT1H102KB5	1000P 50V [M]	C706	ECUZ1H272KBN	2700P 50V [M]	C905	ECBT1H102KB5	1000P 50V [M]	C1215	ECBT1H821KB5	820P 50V [M]
C301	ECEA1HKA010B	1 50V [M]	C707	ECUZ1E273KBN	0.027 25V [M]	C906	ECEA1HKA010B	1 50V [M]	C1216	ECBT1H821KB5	820P 50V [M]
C302	ECEA1EKA470B	47 25V [M]	C710	ECUV1H151KCN	150P 50V [M]	C909	ECBT1H820KB5	82P 50V [M]	C1217	ECEA1CKA100B	10 16V [M]
C304	ECEA1CKA101B	100 16V [M]	C711	ECUZ1E104ZFN	0.1 25V [M]	C910	ECBT1H470J5	47P 50V [M]	C1218	ECEA1CKA100B	10 16V [M]
C305	ECBT1H471KB5	470P 50V [M]	C712	ECUZ1E104ZFN	0.1 25V [M]	C911	ECBT1H820KB5	82P 50V [M]	C1219	ECBT1C152KR5	1500P 16V [M]
C307	ECBT1H102KB5	1000P 50V [M]	C713	ECUZ1E104MBN	0.1 25V [M]	C912	ECBT1H470J5	47P 50V [M]	C1220	ECBT1C152KR5	1500P 16V [M]
C308	ECEA1CKA101B	100 16V [M]	C714	ECEA0JKA101I	100 6.3V [M]	C913	ECBT1H220JC5	22P 50V [M]	C1301	ECEA1HN010SB	1 50V [M]
C310	ECEA1CKA101B	100 16V [M]	C715	ECUZ1H182KBN	1800P 50V [M]	C914	ECBT1H180JC5	18P 50V [M]	C1303	ECBT1C103MS5	0.01 16V [M]
C311	ECA1EM472E	4700 25V [M]	C716	ECUZ1H821KBN	820P 50V [M]	C915	ECBT1H102KB5	1000P 50V [M]	C1305	ECQP2A102JZT	1000P 100V [M]
C312	ECBT1E103ZF5	0.01 25V [M]	C717	ECUZ1E104ZFN	0.1 25V [M]	C916	ECBT1H102KB5	1000P 50V [M]	C1306	ECQP2A472JZT	4700P 100V [M]
C313	ECBT1H104ZF5	0.1 50V [M]	C718	ECUZ1C224KBN	0.22 16V [M]	C917	ECBT1H102KB5	1000P 50V [M]	C1307	ECEA1HKA010B	1 50V [M]
C314	ECBT1H104ZF5	0.1 50V [M]	C721	ECUZ1H150JCN	15P 50V [M]	C918	ECBT1H561KB5	560P 50V [M]	C1308	ECEA1CKA101B	100 16V [M]
C316	ECBT1H330J5	33P 50V [M]	C722	ECUZ1H150JCN	15P 50V [M]	C923	ECBT1H101KB5	100P 50V [M]	C1309	ECQV1H473JM3	0.047 50V [M]
C317	ECBT1H330J5	33P 50V [M]	C723	ECEA1AKA221I	220 10V [M]	C924	ECBT1H101KB5	100P 50V [M]	C1310	ECBT1H102KB5	1000P 50V [M]
C318	ECBT1H330J5	33P 50V [M]	C724	ECUZ1E104MBN	0.1 25V [M]	C925	ECBT1H331KB5	330P 50V [M]	C1311	ECBT1H102KB5	1000P 50V [M]
C322	ECBT1H221KB5	220P 50V [M]	C725	ECUZ1H102KBN	1000P 50V [M]	C927	ECBT1H102KB5	1000P 50V [M]	C1312	ECBT1C222MR5	2200P 16V [M]
C323	ECBT1H330J5	33P 50V [M]	C726	ECUZ1H102KBN	1000P 50V [M]	C928	ECFR1C223KR	0.022 16V [M]	C1313	ECBT1C222MR5	2200P 16V [M]
C324	ECBT1H330J5	33P 50V [M]	C727	ECA1HAK010XI	1 50V [M]	C929	ECBT1H102KB5	1000P 50V [M]	C1314	ECBT1C332MR5	3300P 16V [M]
C325	ECBT1H221KB5	220P 50V [M]	C728	ECA1HAK010XI	1 50V [M]	C930	ECBT1H102KB5	1000P 50V [M]	C1322	ECEA1EKA470B	47 25V [M]
C326	ECBT1H221KB5	220P 50V [M]	C730	ECUZ1E104ZFN	0.1 25V [M]	C931	ECBT1C103MS5	0.01 16V [M]	C1325	ECEA1CKA101B	100 16V [M]
C327	ECBT1H102KB5	1000P 50V [M]	C731	ECEA0JKA221I	220 6.3V [M]	C933	ECBT1H331KB5	330P 50V [M]	C1402	ECBT1H331KB5	330P 50V [M]
C351	ECEA1CKA100B	10 16V [M]	C732	ECEA0JKA221I	220 6.3V [M]	C934	ECBT1H102KB5	1000P 50V [M]	C1403	ECEA1CKA101B	100 16V [M]
C352	ECEA1CKA101B	100 16V [M]	C733	ECUZ1E104MBN	0.1 25V [M]	C936	ECBT1H331KB5	330P 50V [M]	C1450	ECEA1CKA101B	100 16V [M]
C354	ECA1EM101B	100 25V [M]	C734	ECEA1AKA221I	220 10V [M]	C937	ECBT1H102KB5	1000P 50V [M]	C1500	ECEA1CKA101B	100 16V [M]
C355	ECEA1EKA470B	47 25V [M]	C735	ECUZ1E104ZFN	0.1 25V [M]	C940	ECBT1H102KB5	1000P 50V [M]	C1501	ECEA1CKA220B	22 16V [M]
C401	ECEA1CKA101B	100 16V [M]	C736	ECUZ1E104ZFN	0.1 25V [M]	C941	ECBT1H102KB5	1000P 50V [M]	C1502	ECEA1CKA100B	10 16V [M]
C402	ECFR1C223KR	0.022 16V [M]	C737	ECUZ1E104ZFN	0.1 25V [M]	C951	ECBT1H221KB5	220P 50V [M]	C1503	ECFR1C473KR	0.047 16V [M]
C403	ECBT1H104ZF5	0.1 50V [M]	C738	ECUZ1E104MBN	0.1 25V [M]	C952	ECBT1H221KB5	220P 50V [M]	C1504	ECEA1EKA470B	47 25V [M]
C405	ECEA1CKA100B	10 16V [M]	C739	ECUZ1H103KBN	0.01 50V [M]	C953	ECBT1H221KB5	220P 50V [M]			
C406	ECEA1HKA010B	1 50V [M]	C742	ECUZ1E273KBN	0.027 25V [M]	C1100	ECBT1C103MS5	0.01 16V [M]		CHIP JUMPERS	
C407	ECEA1HKA010B	1 50V [M]	C743	ECUZ1E104ZFN	0.1 25V [M]	C1101	ECEA1HKA3R3B	3.3 50V [M]			
C408	ECEA1HKA010B	1 50V [M]	C744	ECUZ1E183KBN	0.018 25V [M]	C1102	ECBT1H470J5	47P 50V [M]	RJ701	ERJ8GEY0R00A	0 1/10W [M]
C409	ECEA1CKA100B	10 16V [M]	C745	ECUZ1C473KBN	0.047 16V [M]	C1103	ECBT1C472MR5	4700P 16V [M]	RJ702	ERJ8GEY0R00A	0 1/8W [M]
C410	ECEA1HKA2R2B	0.22 50V [M]	C747	ECUV1H221KBN	220P 50V [M]	C1104	ECFR1C104KR	0.1 16V [M]	RJ703	ERJ8GEY0R00A	0 1/8W [M]
C411	ECEA1CKA100B	10 16V [M]	C749	ECUZ1H222KBN	2200P 50V [M]	C1201	ECBT1H101KB5	100P 50V [M]	RJ704	ERJ8GEY0R00A	0 1/8W [M]
C415	ECEA1CKA101B	100 16V [M]	C750	ECUZ1E104MBN	0.1 25V [M]	C1202	ECBT1H101KB5	100P 50V [M]	RJ705	ERJ8GEY0R00A	0 1/8W [M]
C501	ECKR1H103ZF5	0.01 50V [M]	C751	ECBT1H102KB5	1000P 50V (MAIN) [M]	C1203	ECBT1C122MR5	1200P 16V [M]	RJ706	ERJ8GEY0R00A	0 1/8W [M]
C502	ECKR1H103ZF5	0.01 50V [M]	C751	ECUZ1E104MBN	0.1 25V (SERVO) [M]	C1204	ECBT1C122MR5	1200P 16V [M]	RJ707	ERJ8GEY0R00A	0 1/8W [M]
C503	ECKR1H103ZF5	0.01 50V [M]	C752	ECEA1CKA101B	100 16V (MAIN) [M]	C1205	ECBT1H101KB5	100P 50V [M]	RJ708	ERJ8GEY0R00A	0 1/8W [M]

Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks	Ref No.	Part No.	Values & Remarks
RJ709	ERJ8GEY0R00A	0 1/8W [M]	RJ723	ERJ6GEY0R00A	0 1/10W [M]	RJ727	ERJ6GEY0R00A	0 1/10W [M]		TEST JUMPER	
RJ710	ERJ8GEY0R00A	0 1/8W [M]	RJ724	ERJ6GEY0R00A	0 1/10W [M]	RJ728	ERJ6GEY0R00A	0 1/10W [M]	TJ701	EYF8CU	TEST JUMPER [M]
RJ721	ERJ8GEY0R00A	0 1/10W [M]	RJ725	ERJ6GEY0R00A	0 1/10W [M]	RJ750	ERJ8GEY0R00A	0 1/10W [M]			
RJ722	ERJ6GEY0R00A	0 1/10W [M]	RJ726	ERJ6GEY0R00A	0 1/10W [M]						

■ Packing Materials & Accessories

- Notes :
- * Important safety notice : Components identified by $\triangle$ mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.
 - * The parenthesized in the Remarks columns specify the areas. (Refer to the cover page for area.)
 - * Parts without these indication can be used for all areas.
 - * [M] in Remarks column indicates parts supplied by MESA.
 - * The "(SF)" marks denotes standard part.
 - * Remote Control Unit : Supply period for three years from terminal of production.
 - * Reference for O/I book languages are as follows :

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

Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks	Ref No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS				ACCESSORIES		A3	RQT4763-R	O/I BOOK (Ru/Cz/Po)	[M]E
P1	RPGX0559	GIFT BOX	[M]EB EG	A1	RAK-RX949WK	REMOTE CONTROL	[M]	A3	RQT4764-D	O/I BOOK (Ge/It/Fr)	[M]EG
P1	RPGX0578	GIFT BOX	[M]E	A1-1	HTR0216-72PW	R/C BATTERY COVER	[M]	A3	RQT4765-H	O/I BOOK (Du/Da)	[M]EG
P2	RPNX0093	POLYFOAM	[M]	A2	RJA0019-2K	AC CORD (SF)	[M]EG E	A3	RQT4766-B	O/I BOOK (En)	[M]EB
P3	RPHV0001	MIRAMAT	[M]	A2	VJA0733	AC CORD (SF)	[M]EB				
				A3	RQT4762-E	O/I BOOK (En/Sp/Sw)	[M]E				

■ Packaging

