

Service Manual

Portable Stereo CD System

Radio Cassette
RX-ED55

COMPACT
disc
DIGITAL AUDIO

MASH *
multi-stage noise shaping



Colour
(S) Silver Type

Areas
(GC) Asia, Latin
America, Middle
East and Africa.

* MASH is a trademark of NTT

Tape Deck: AR2 Mechanism Series
Traverse Deck: RAE0152Z Mechanism Series

Specifications

Radio

Frequency range :

FM ; 87.50 – 108.00 MHz (50 kHz steps)
AM ; 531 – 1602 kHz (9 kHz steps)
530 – 1600 kHz (10 kHz steps)

Intermediate frequency :

FM ; 10.7 MHz
AM ; 450 kHz

Sensitivity :

FM ; 3.1 μ V/ 50 mW output (Max.)
AM ; 224 μ V/ m/ 50 mW output (Max.)

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 : Less than possible measurement data
D/A converter : MASH (1 bit DAC)

Notes:

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

Tape Recorder

Track system : 4 track, 2 channel, stereo
Monitor system : Variable sound monitor
Recording system : AC bias
Erasing system : AC erase
Frequency range :
Normal position ; 50 – 12000 Hz
High position ; 50 – 13000 Hz
Tape speed : 4.8 cm/s

General

Power output : 50 W (PMPO)
Speakers : 8 cm, 3 Ω \times 2
Jack :
Output ; PHONES : 3.5 mm stereo (32 Ω)
Power requirement :
AC ; 110 – 127 V/200 – 220 V/230 – 250 V, 50/60 Hz
Power consumption ; 40 W
Battery ; 12 V [Eight R20/LR20 (D, UM-1) batteries]
(Do not use rechargeable type batteries)
Memory back-up ; 6 V [Four R6/LR6 (AA, UM-3) batteries]
(Do not use rechargeable type batteries)
Dimensions (W \times H \times D): 470 \times 143 \times 270 mm
Weight: 4.4 kg without batteries

⚠ WARNING

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

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CAUTION:

THIS PRODUCT UTILIZES A LASER.

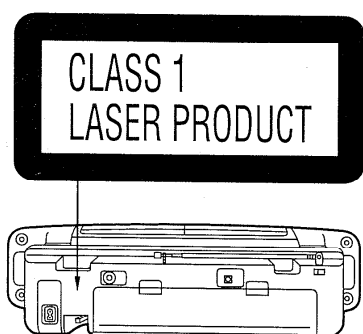
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Precaution of Laser Diode

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

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

1. Do not disassemble the 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.



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

(Inside of product)

(Indersiden af apparatet)

(Tuotteen sisällä)

(Apparatens insida)

(Produktets innsida)

(Im Inneren des Gerätes)

■ 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 protect the laser diode against electrostatic breakdown, short the flexible board (FFC board) with a clip or similar object.
3. Take care not to apply excessive stress to the flexible board (FFC board).
4. Do not turn the variable resistor (laser power adjustment). It has already been adjusted.

● Grounding for electrostatic breakdown prevention

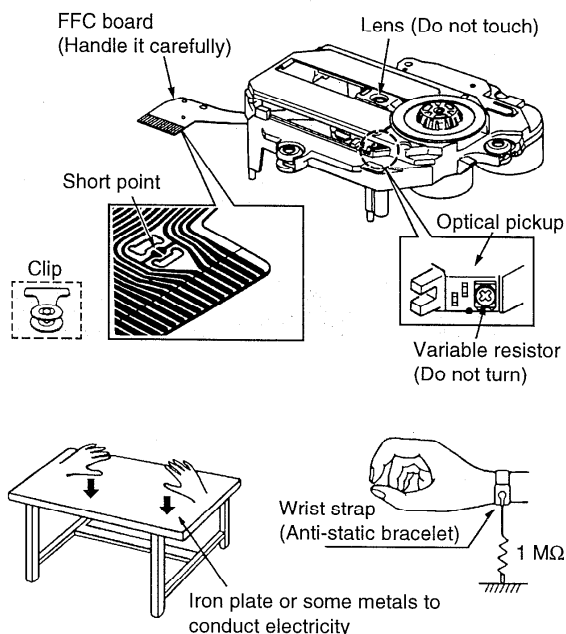
1. Human body grounding
Use the anti-static wrist strap to discharge the static electricity from your body.
2. Work table grounding
Put a conductive material (sheet) or steel sheet on the area where the traverse deck (optical pickup) is placed, and ground the sheet.

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).

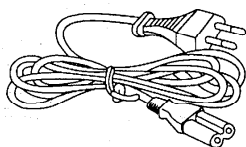
Caution when Replacing the Traverse Deck:

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

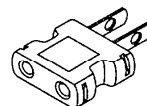


■ Accessories

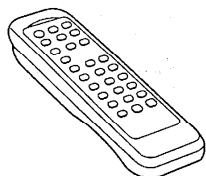
- AC power cord 1 pc.



- AC power plug adaptor 1 pc.



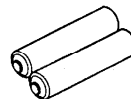
- Remote control transmitter 1 pc.



- Batteries

(UM-4, "AAA", R03) 2 pcs.

Note: These are available on sales route.



■ Power Sources

Operating unit on AC power

- ① Set the voltage. Use a flat-head screwdriver to turn the voltage selector on the rear to the voltage setting for the area in which you will be using the system. **A**
- ② Connect the included AC power cord to the AC IN socket of the unit and your household AC outlet. **B**

If the power plug does not fit your socket, use the power plug adaptor (included) as illustrated. **C**

Operating unit on battery power (Not included)

Install memory batteries first.

Battery installation and removal **D**

Place unit on a soft cloth when installing and removing batteries to avoid damaging the front panel.

- ① Open the battery cover on the rear panel.
- ② Install batteries in the order indicated in the diagram.

Remove batteries by inserting finger into hole on the bottom of the unit and pushing out. **E**

Battery life **F**

When "U01" is displayed, replace all the batteries with new ones.

Memory batteries (Not included)

What is memory?

Memory is the information which can be programmed into the unit such as:

- Time
- Timer programming
- CD programming
- Radio stations

If memory batteries are not used, the memory is cancelled at the following times.

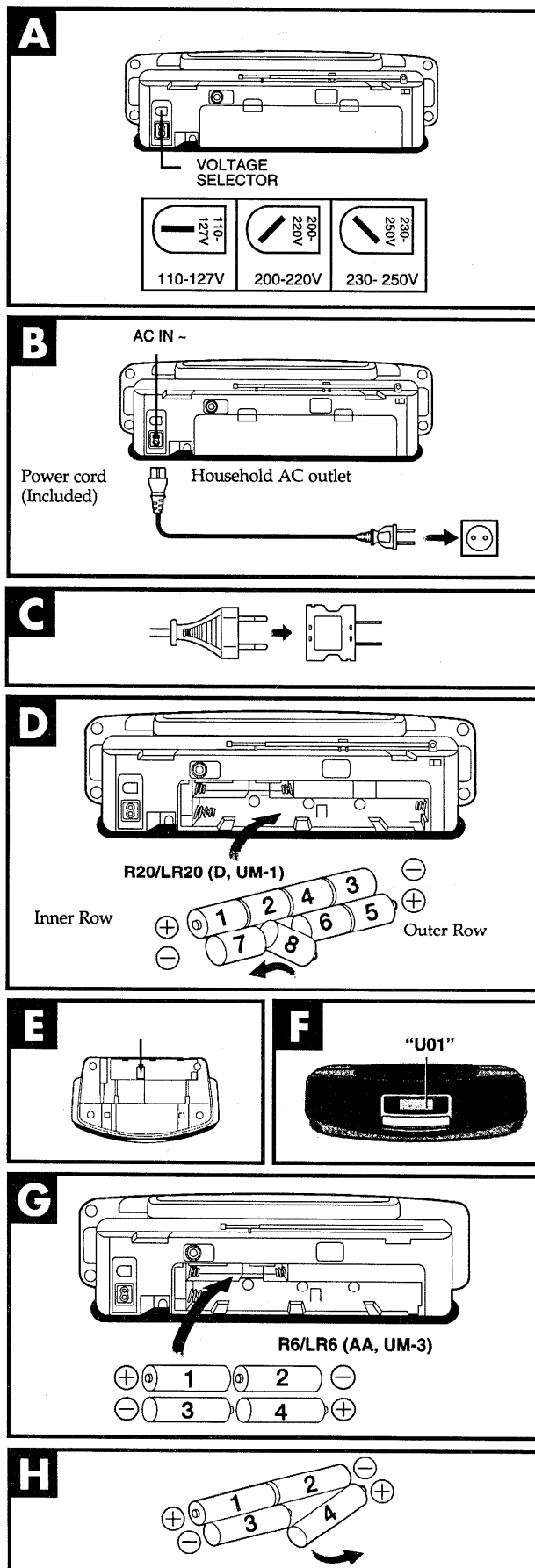
- In electric failures
- When the cable plug is removed from the AC outlet
- When using batteries as the power source, the cord is inserted into the unit while disconnected from the AC outlet

Battery installation and removal **G H**

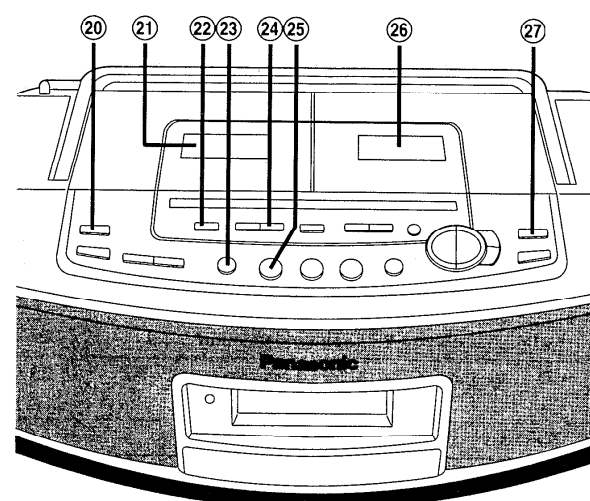
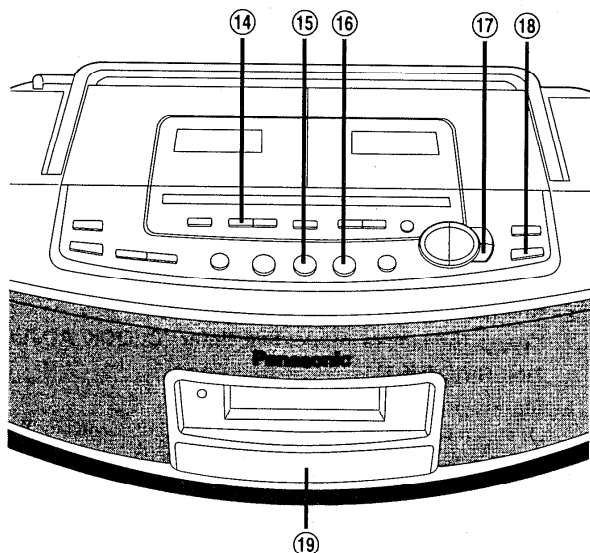
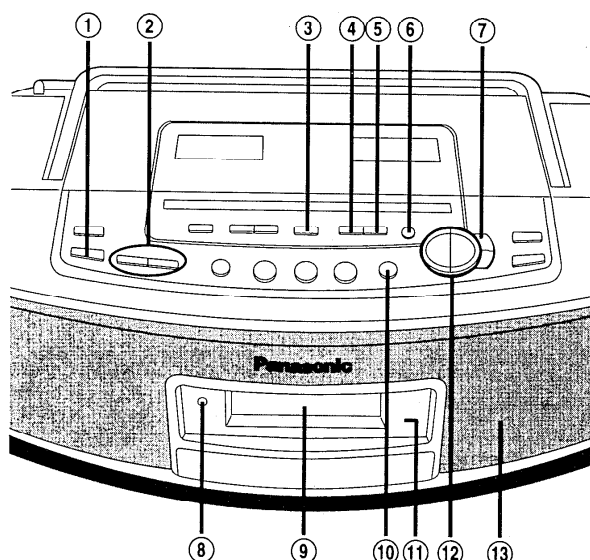
Lift the negative end of the number 4 battery to remove batteries.

Replacing batteries

- The service life of these batteries is approximately one year. To preserve the memory contents, connect the power cord to the household AC outlet before replacing all the memory batteries with new ones.
- When disconnecting the power cord, first turn the unit off by pressing **POWER**. The service life of the memory back-up batteries is reduced if the power cord is disconnected from the household AC outlet and the unit power is still on.



Location of Controls



Basic controls

- ① **Power standby/on switch (POWER)**
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 **Volume control buttons (+, - VOLUME)**
- ③ **Sound virtualizer button (S.VIRTUALIZER)**
- ④ **Play timer/record timer button (TIMER, •PLAY•REC)**
- ⑤ **Sleep timer button (SLEEP)**
- ⑥ **Timer fader button (TIMER.FADER)**
- ⑦ **Clock/timer button (CLOCK ADJUST/TIMER ADJUST)**
- ⑧ **Standby indicator (STANDBY)**
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.
- ⑨ **Display panel**
- ⑩ **Button (■ CLEAR) functions change according to the operation mode when pressed.**

| Mode | Function |
|-----------------------|--|
| CD play/ Tape play | Stop play |
| CD stop/ Tape stop | Selects between CD and cassette (each time it's pressed) |

- ⑪ **Remote control signal sensor (SENSOR)**
- ⑫ **Button (REW ◀◀ / - TFS, FF ▶▶ / + TFS, TIMER/TUNE/CD) functions change according to the operation mode when pressed.**

| Mode | Function |
|-----------------|---------------------------------------|
| Time adjustment | Setting time |
| Radio | Selecting broadcast station |
| CD play | Skip track, search track |
| CD stop | Selects track |
| Tape play | Returns to the beginning of the track |
| Tape stop | Fast forward, rewind |

- ⑬ **Speaker**

Tuner/CD controls

- ⑭ **CD recording mode button (CD REC MODE)**
- ⑮ **Band button (TUNER BAND)**
- ⑯ **CD play/pause button (CD ▶ / ||)**
- ⑰ **Tuning mode select button (TUNE MODE)**
- ⑱ **CD tray open/close button (▲ CD OPEN/CLOSE)**
- ⑲ **CD tray**

Cassette deck controls

- ⑳ **Deck 1 eject button (▲ DECK 1)**
- ㉑ **Deck 1**
- ㉒ **Record/record pause button (● / ● || REC/REC PAUSE)**
- ㉓ **Deck 1/2 select button (1/2 DECK)**
- ㉔ **Tape edit button (TAPE EDIT)**
- ㉕ **Cassette play/direction button (TAPE ◀ ▶)**
- ㉖ **Deck 2**
- ㉗ **Deck 2 eject button (▲ DECK 2)**

■ Concerning the Remote Control

Battery (included) installation and removal A

Remove the batteries by pulling the positive side of the battery up.

Battery life

The battery life is about one year.

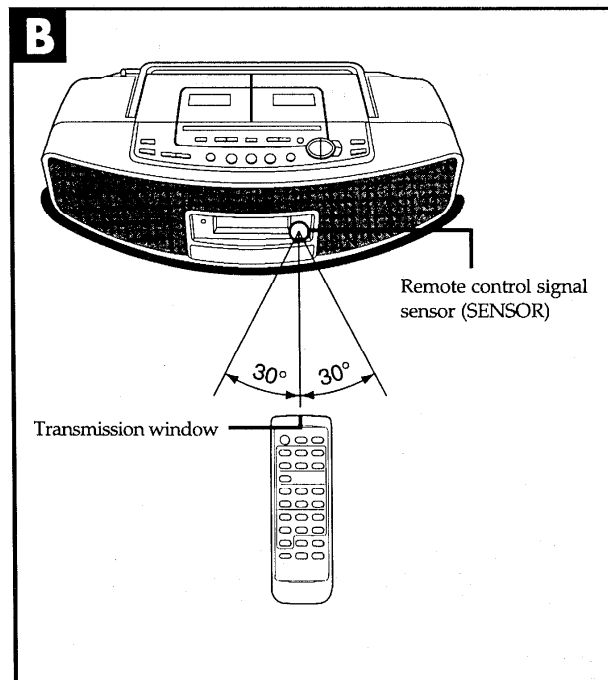
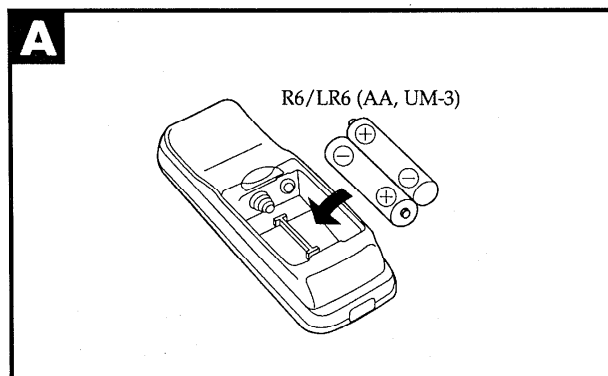
Although the battery life varies depending on how often the device is used, the batteries should be replaced about once every year on the average.

The batteries should be replaced if commands from the remote control transmitter do not operate the unit even when transmitter is held close to the front panel.

Correct method of use B

Operation caution

- Do not expose the remote control signal sensor to direct sunlight or bright fluorescent lighting.
- Take care to keep the remote control signal sensor and end of the remote control unit free from dust.



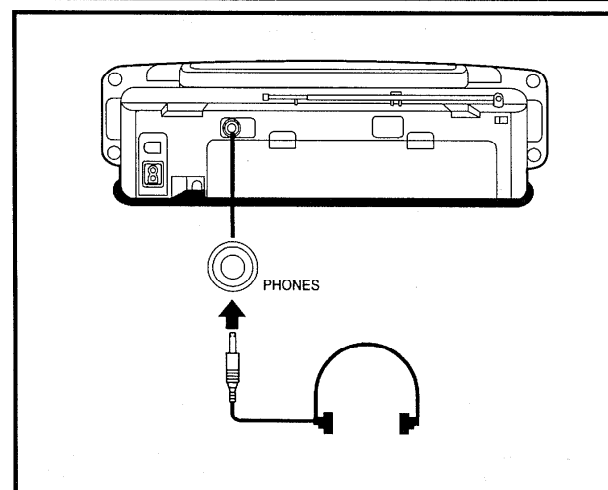
■ Using Headphones

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.

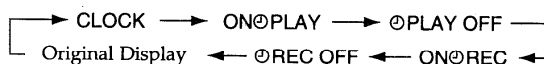


■ Setting the Clock

The clock has a 24-hour display.

Example: Setting the clock to 16:20;

- 1** Press **POWER**.
(This turns the unit on.)
- 2** Press **CLOCK ADJUST/TIMER ADJUST** to select "CLOCK".



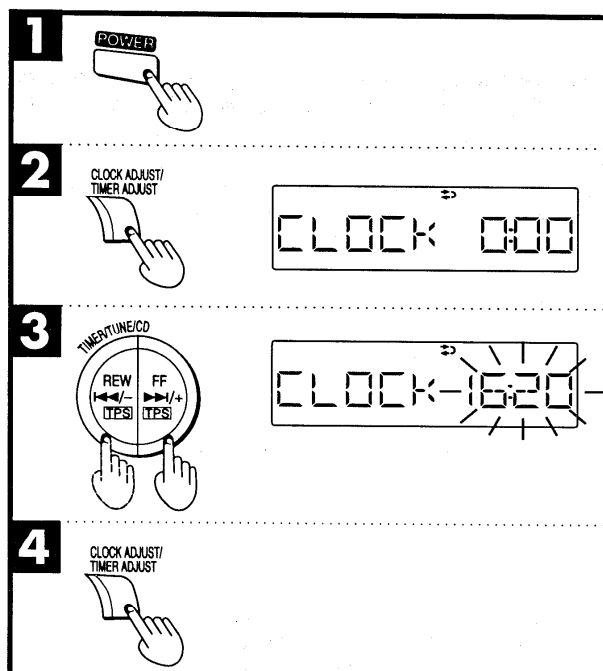
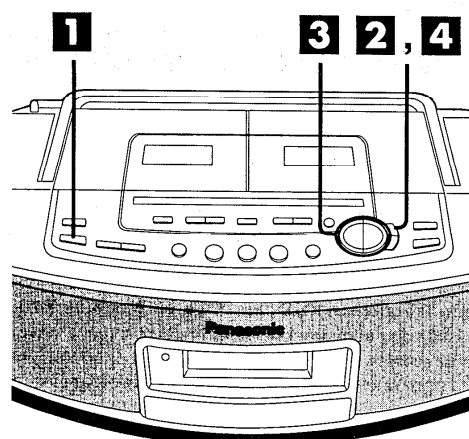
(The display changes each time the button is pressed.)

- 3** Press **▶▶/+** or **◀◀/-** to show desired time.
The time display can be changed in one minute units by tapping the buttons, and quickly by holding down the buttons.
- 4** While the time display is flashing;
Press **CLOCK ADJUST/TIMER ADJUST**.
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

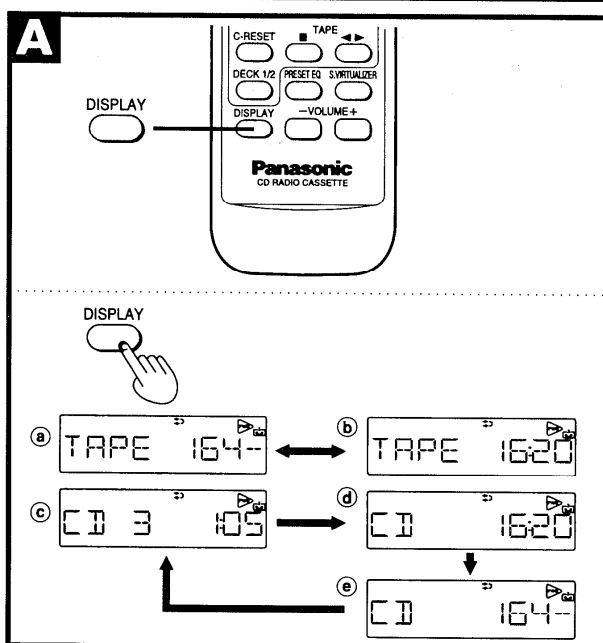
(Available only from the remote control)

Press **DISPLAY** when the unit is on.

The display changes each time the button is pressed.

- 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

(Available only from the remote control)

Four types of sound quality can be selected.

Press PRESET EQ to select desired sound quality.

The various sound quality effects are shown on the display each time the button is pressed.

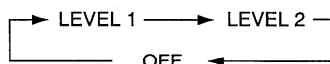
- Ⓐ Gives added punch to rock and other music (XBS)
- Ⓑ Lightens pop and other music (CLEAR)
- Ⓒ Allows BGM enjoyment (SOFT)
- Ⓓ Enhances vocals (VOCAL)
- Ⓔ No sound quality effects used

Using the "live" effect (Sound Virtualizer)

The "live" effect allows enjoyment of the 3-D feeling of listening to live music. Compared with earlier surround sound systems, the sound 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 **SVIRTUALIZER to select the desired level.**

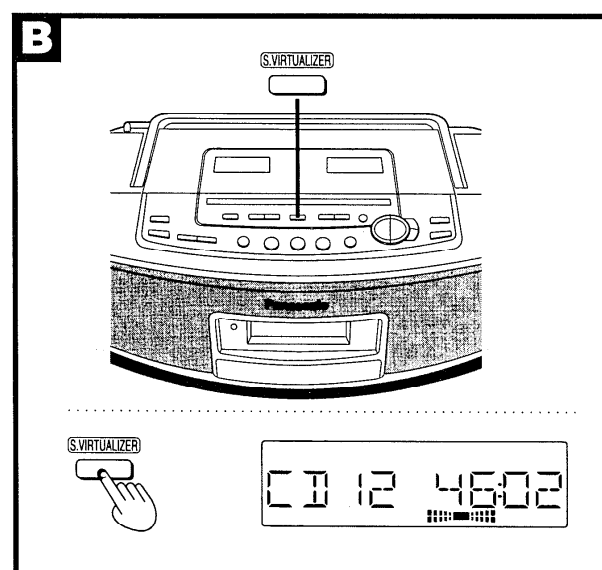
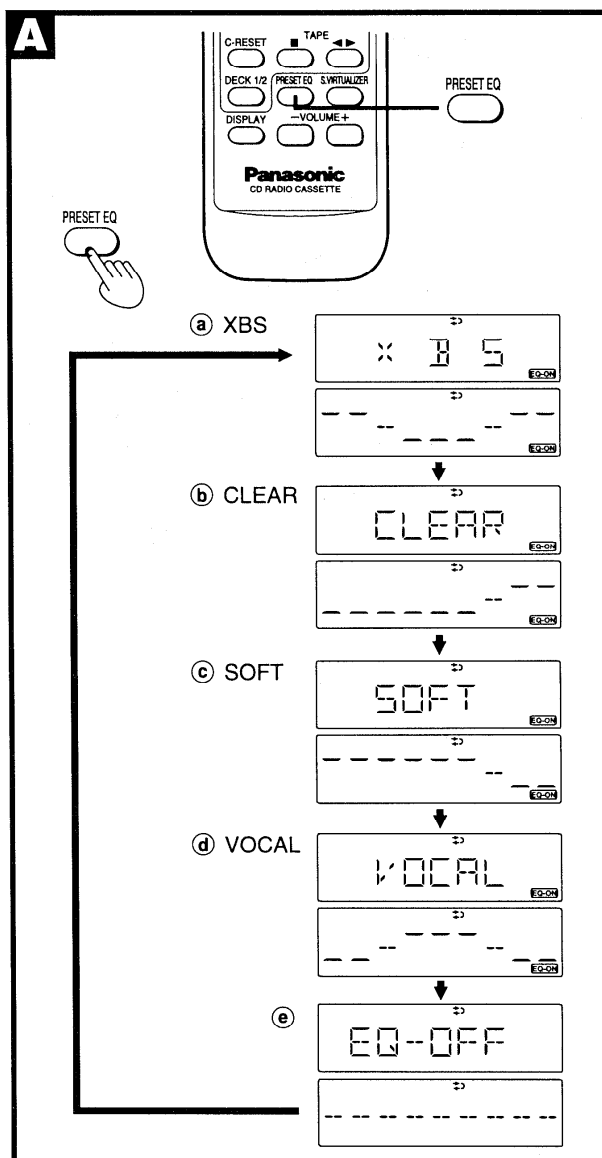


(The display changes each time the button is pressed.)

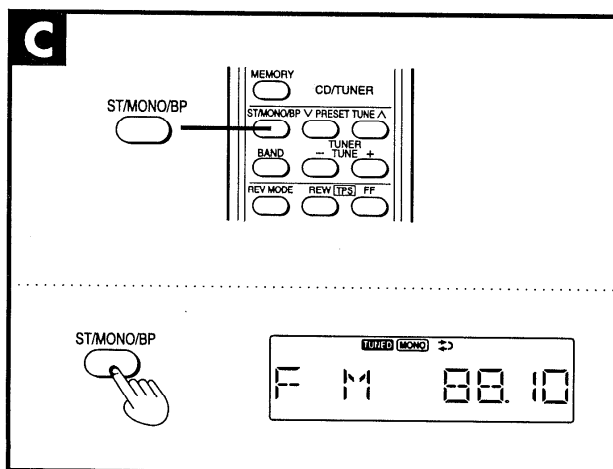
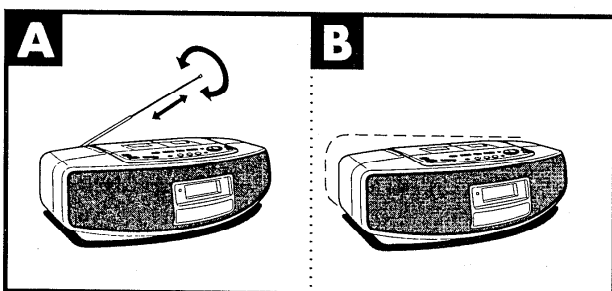
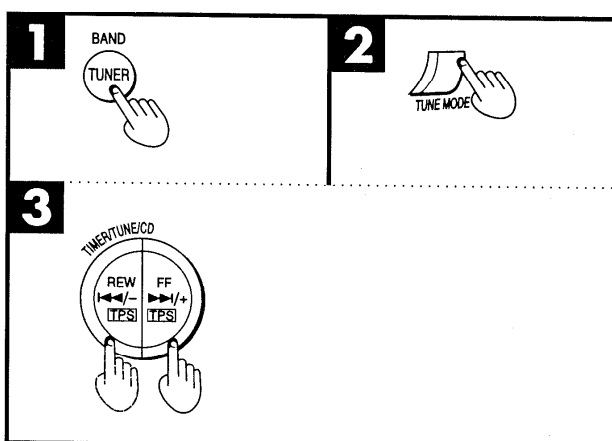
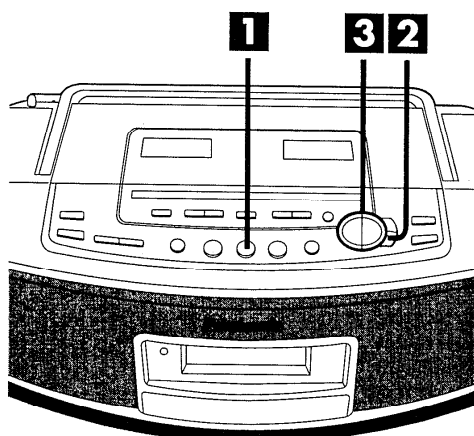
To cancel:

Press **S**VIRTUALIZER to select the "OFF" indication.

- **When listening through headphones**
The effect is less discernable than through the unit speakers.
- **When high sounds are felt to be too strong**
High-range sounds are difficult to listen to with some kinds of music. In this case, adjust the music using the preset equalizer until music reaches a pleasant range.
- **When excessive interference in the FM stereo reception occurs**
If interference increases, cancel the sound virtualizer effect.



■ Listening to the Radio



Press **POWER** on the main unit.

(When batteries are used for the power supply)

- 1** Press **TUNER BAND** to display "AM" or "FM".
AM ↔ FM
(The display changes each time the button is pressed.)
- 2** Press **TUNE MODE** to select "MANUAL".
- 3** Press **▶▶/+** or **◀◀/-** to select the station.

| | Down | Up |
|----------------|------|------|
| Main unit | ◀◀/- | ▶▶/+ |
| Remote control | - | + |

Adjust the frequency until "TUNED" is displayed on the panel.

Automatic tuning:

Keep **▶▶/+** or **◀◀/-** depressed until the frequency display starts to change. A station with good reception is automatically selected and the selection process then stops.

To stop automatic tuning, press **▶▶/+** or **◀◀/-** again.

Note

- The automatic tuning may stop without a station having been tuned in when interference is encountered on neighboring airwaves. In such a case, tune in a station by tapping **▶▶/+** or **◀◀/-**.

Hint

- Pressing **TUNER BAND** will automatically turn the unit on and the previously set station will automatically be tuned. This works only when AC power is used.
- The volume can be adjusted even in the unit off mode.

Adjusting the antenna

For FM reception: **A**

Adjust the length and direction of the whip antenna.

For AM reception: **B**

Adjust the direction in which the main unit is pointed.

For your reference:

Radio broadcasts may be hard to receive in a moving vehicle or in a building because the signal may be weakened. In such cases, use the unit near a window.

When interference of FM stereo reception occurs **C**

(Available only from the remote control)

Set the sound to the monaural mode to reduce the noise.

Press **ST/MONO/BP**.

The "MONO" display appears.

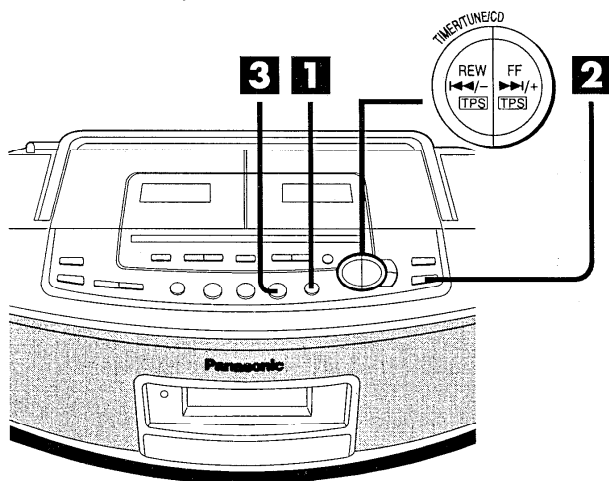
The monaural sound is set but noise is reduced and the sound becomes clearer.

To return to stereo sound, press **ST/MONO/BP** again to turn off the "MONO" display.

It is normally best to keep "MONO" off.

This way FM stereo programs will automatically be heard in stereo.

■ Listening to CDs



Press **POWER** on the main unit.

(When batteries are used for the power supply)

1 Press **■ CLEAR** to select the CD mode.

CD ↔ TAPE

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

"PANASONIC" appears when no CD is inserted.

2 Press **▲ CD OPEN/CLOSE**, insert a CD and press **▲** again.

Insert the CD with the label facing up.

3 Press **▶/||**.

Plays to the last track and automatically stops.

To stop playing:

Press **■ CLEAR**.

Press ▶/|| to pause play.

Press ▶/|| to return to play mode.

Notes

- If interference occurs to radios or televisions, place the unit as far as possible from this equipment.
- Do not use irregular shape CDs (heart-shape, octagonal, etc.). **A**

Hint

- Pressing ▶/|| 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.

Skipping tracks

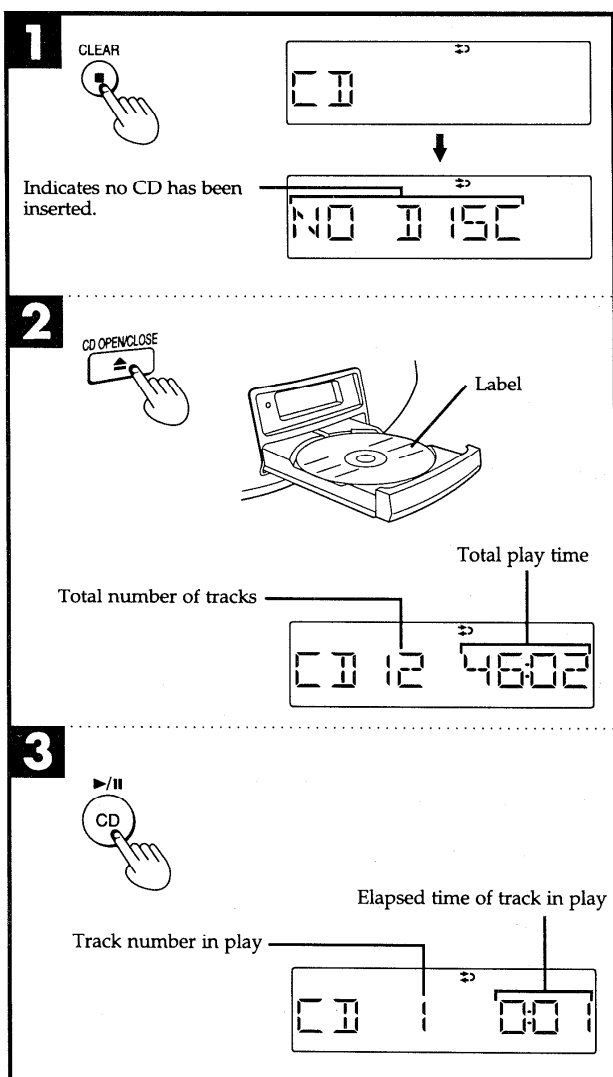
Press the button once for each track to be skipped.

| | Backward | Forward |
|----------------|----------|---------|
| Main unit | ⏮ /- | ⏭ /+ |
| Remote control | ⏮ | ⏭ |

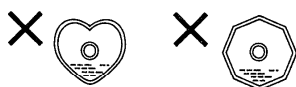
Searching tracks

Keep the button pressed during play or pause mode.

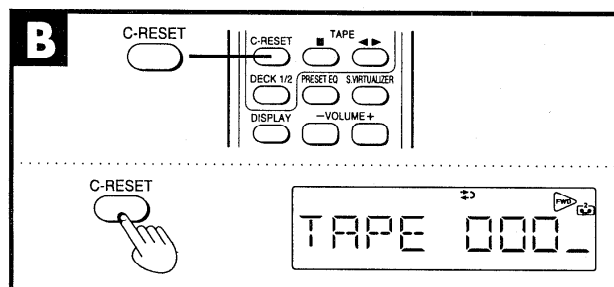
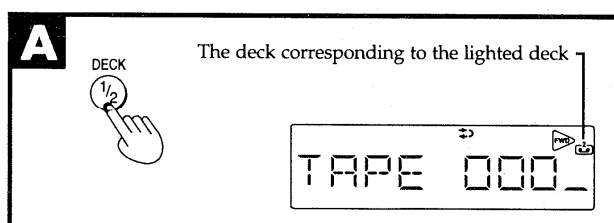
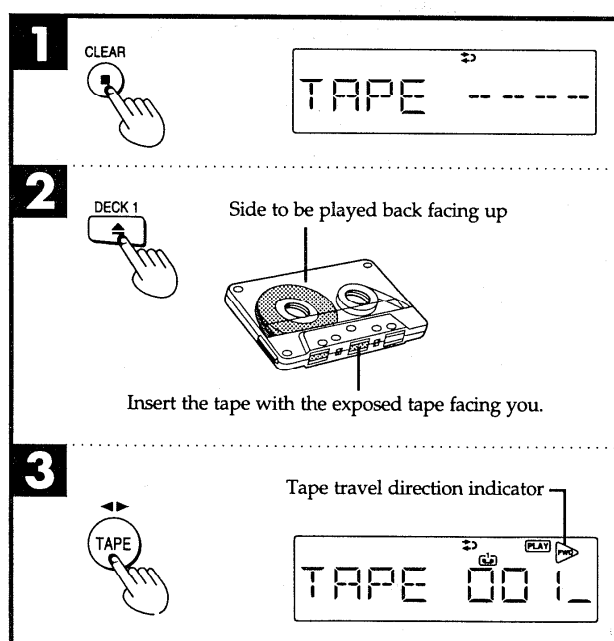
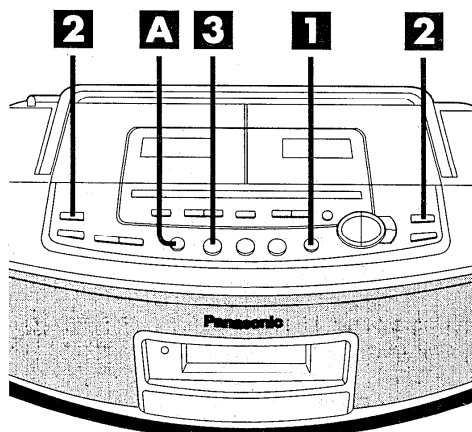
| | Backward | Forward |
|----------------|----------|---------|
| Main unit | ⏮ /- | ⏭ /+ |
| Remote control | ⏮ | ⏭ |



A



■ Listening to Cassettes



Tapes can be played back either in deck 1 or deck 2.
Normal, high position and metal tapes can be used.

Press **POWER** on the main unit.

(When batteries are used for the power supply)

1 Press **■ CLEAR** to select the tape mode.

CD ↔ TAPE

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

"PANASONIC" appears when no CD is inserted.

2 Press **▲ DECK 1** or **▲ DECK 2**, load the tape and close the lid.

The direction is automatically set to play the top side ("FWD" is displayed).

3 Press **◀▶**.

"FWD" is displayed and play begins. ("REV" is displayed when play begins while "◀" is displayed.)

▶ : The side which is facing up is played back.

◀ : The reverse side is played back.

To stop play:

Press **■ CLEAR**.

To listen to the other side of the tape:

Press **◀▶** during playback.

Hint

- Pressing **◀▶** automatically turns the unit on, and if a tape is inserted, begins play (only when AC power is supplied).
- The volume can be adjusted even in the unit off mode.

Changing the operation deck

The deck loaded last is automatically selected.

Press **1/2 DECK** to select deck 1 or 2. **A**

Notes

- When one deck is fast forwarding or rewinding and the other is selected and play begins by pressing **◀▶**, fast forwarding or rewinding stops.
- When one deck is playing and the other is selected and **▶▶/1+** or **◀◀/-** pressed, play stops.

To reset the tape counter to "000"

(Available only from the remote control)

Press **C-RESET**. **B**

Types of tapes which can be played on this unit:

The unit automatically identifies type of tape.

| | |
|------------------------|---|
| Normal position/TYPE I | ○ |
| High position/TYPE II | ○ |
| Metal position/TYPE IV | ○ |

Self-Diagnostic Function

Display procedure

Cassette tapes to have ready

- Cassette tape with erasure-prevention tab removed on one side only (A or B)
- Music cassette tape with erasure-prevention tabs intact on both sides (A and B)

Note: In either case, rewind the cassette tape to near the middle.

To enter the self-diagnostic mode

1. Connect the unit to the power supply and turn the power on.
2. Set reverse mode to "←". (Use the remote control attached to main unit, since the reverse mode cannot be set from the main unit.)
3. Check that there is no cassette tape in the tape compartment.
4. Press the stop button (■) to enter the CD mode.
5. Hold down the stop button (■) for at least 2 seconds, and then keep pressing together with the FF button (▶▶/▶▶) for another 2 seconds. "T" will then appear on the LCD display.
(This indicates that the unit has switched from normal display mode to self-diagnostic mode.)

To view the display

• To view the self-diagnostic display for tape decks 1 and 2:

1. Load a cassette tape into tape deck 1 with the erasure-prevention tab removed on one side only (A or B).
2. Press the FF button (▶▶/▶▶), to perform the fast-forward winding operation for about 5 seconds. And then stop winding using the stop button (■).
3. Remove the cassette tape, and load a music cassette (containing at least 4 seconds of music and both erasure-prevention tabs intact).
4. Press the tape button (◀▶). When play begins, press either the FF button (▶▶/▶▶) or the REW button (◀◀/◀◀), and perform the TPS (tape program search) operation in the direction in which the music is recorded.
5. After TPS operation has completed (when the beginning of music is found and the unit switches back to play mode), stop the tape by pressing the stop button (■).
6. Repeat steps 1 to 5 above for tape deck 2.
7. If an error is detected when the stop button (■) is pressed, a self-diagnostic display appears on the LCD display. (If no error occurs, the LCD display shows the tape counter.)
If there is more than one error, the error display changes each time the stop button (■) is pressed.
To change between the self-diagnostic display for tape deck 1 and tape deck 2, press the tape deck select button (DECK 1/2).

• To view the self-diagnostic display for the CD player:

1. Press the CD tray Open/Close button (▲) to open the CD tray.
2. After the tray has been fully opened, press the CD tray Open/Close button (▲) again to close the CD tray.
3. Press the stop button (■). If there is an error, a self-diagnostic display appears on the LCD display. (If no error occurs, the LCD display shows the "T".)

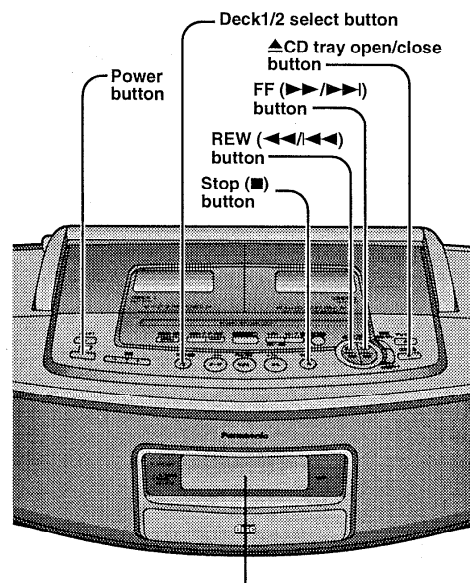
Note: If this procedure is performed for tape decks 1 and 2 and the CD player, and an error occurs for each, the LCD display alternates between the self-diagnostic codes for tape decks 1 and 2 and the CD player each time the stop button (■) is pressed.
(If there is no error, the LCD display shows the tape counter.)

To return to normal display mode

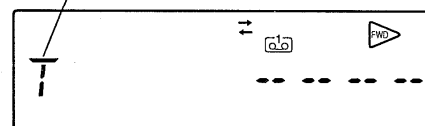
- Press the power switch once to turn the power off, then press it again to turn the power back on.
To view the self-diagnostic display once again, perform steps 1 to 5 of "Entering self-diagnostic mode" above, then press the stop button (■).

Clearing the self-diagnostic memory

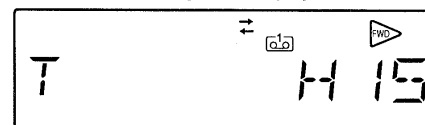
- The self-diagnostic error code is stored in memory. To clear memory, first correct the error, and then remove the batteries (including the unit, clock, and memory battery) and disconnect the AC power supply. Then, press and hold down the power switch for at least 5 seconds.
- Always be sure to clear memory after an error has been corrected.



This display indicates that the unit is in self-diagnostic mode.



Example of a self-diagnostic display



Display content Note: Items marked with (*) are automatically displayed, and do not require the procedure described in the section "Viewing the display."

| Display code | Symptom or condition | Cause and method of correction |
|--------------|--|---|
| *U01 | When operating on batteries, power goes off immediately after being turned on. | The batteries are depleted. Replace with new batteries. |
| *U02 | Power cannot be switched on. | Check the power cord (AC) or insert fresh batteries. |
| H01 | Cassette deck does not operate correctly. | Faulty cassette deck mechanism mode detection switch (Deck 1: S951, Deck 2: S971) and plunger. (Check and replace) |
| H02 | Unit does not record, or the unit goes into recording mode even when the erasure-prevention tabs have been removed from the cassette. | Faulty erasure-prevention tab detection switch (S974, S975) or short-circuit. (Check and replace) |
| H03 | Tape does not play, even when the tape deck play button is pressed. The motor operates when the tape deck play button is pressed, even when no cassette is loaded in the deck. | Faulty tape detection switch (Deck 1: S952, Deck 2: S972) or short-circuit. (Check and replace) |
| H15 | The CD tray closes immediately after it is opened. | Faulty contact in the CD tray open detection switch (S790). (Check and replace) |
| H16 | The CD tray opens immediately after it is closed. | Faulty contact of the CD tray close detection switch (S791). (Check and replace) |
| F01 | When the tape Play button is pressed, the tape advances only slightly and then stops. | Reel pulse error. (Faulty Hall IC) (Check and replace) |
| F02 | TPS (tape program search) does not work. | Faulty TPS signal detection or faulty plunger control. (Check and replace mechanism control IC) |
| F15 | When the CD Play button is pressed when either the power is off, or from some function other than CD, it takes excessive time (5 seconds or more) for the CD to play. | Faulty traverse inner circumference position detection switch (S701). (Check and replace) |
| *F26 | When the CD operation mode is selected by pressing the tape/CD Stop button (■), "F26" is shown on the LCD display, and a CD does not play even when it has been loaded. | Communication error between servo-processor IC and microprocessor IC. |
| F75 | When a CD is loaded, "NO DISC" is displayed and the CD does not play. | Faulty CD circuit power supply. (Faulty power supply IC or CD circuit power supply system.) (Check and replace) Flexible circuit board has become disconnected or broken wiring. (Check and replace) Faulty servo-processor IC. (Check and replace) |

■ Operation Checks and Main Component Replacement Procedures

NOTE

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. Refer the parts No. on the page of "Main Component Replacement Procedures", if necessary.

● Contents

■ Checking Procedures for each P.C.B.

| | Page. |
|--------------------------------------|--------|
| 1. Checking for the CD servo P.C.B.. | 13,14. |
| 2. Checking for the main P.C.B.. | 14. |

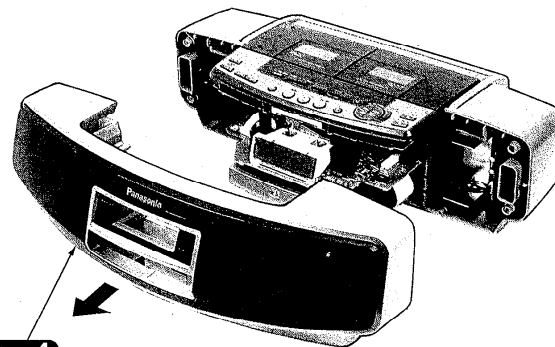
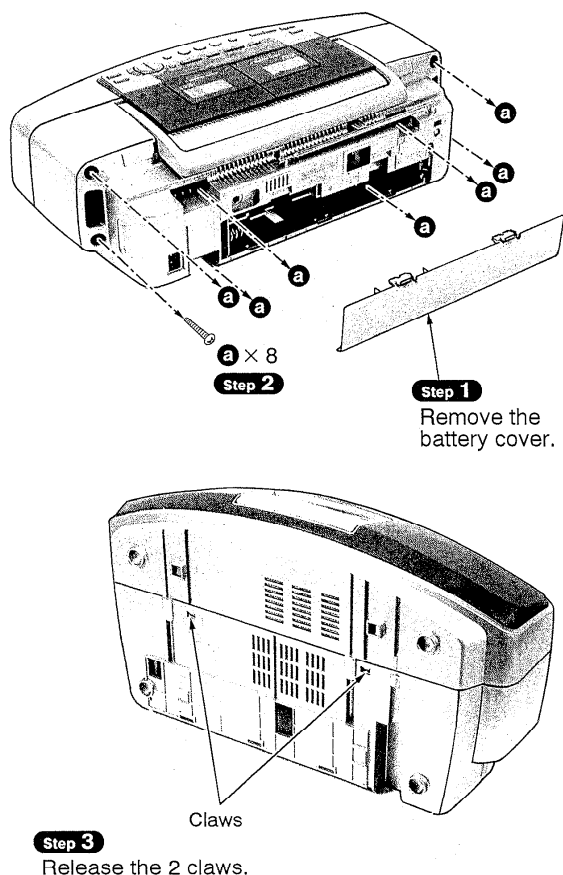
■ Main Component Replacement Procedures

| | |
|--|--------|
| 1. Replacement for the traverse deck ass'y. | 14~16. |
| 2. Replacement for the belt, loading motor ass'y and loading switch. | 17. |
| 3. Replacement for the handle. | 17. |
| 4. Replacement for the pinch roller ass'y and head block. | 17,18. |
| 5. Replacement for the motor ass'y, capstan belt A, capstan belt B and winding belt. | 19,20. |
| 6. Replacement for the parts mounted on mechanism P.C.B.. | 20. |
| 7. Replacement for the cassette lid ass'y. | 20,21. |

| | |
|----------------------------|-----|
| ■ Measure for tape trouble | 21. |
|----------------------------|-----|

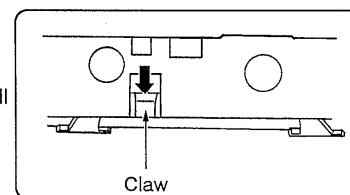
■ Checking procedures for each P.C.B.

1. Checking for the CD servo P.C.B.

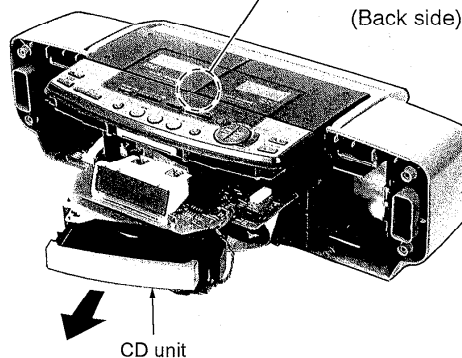


Step 5

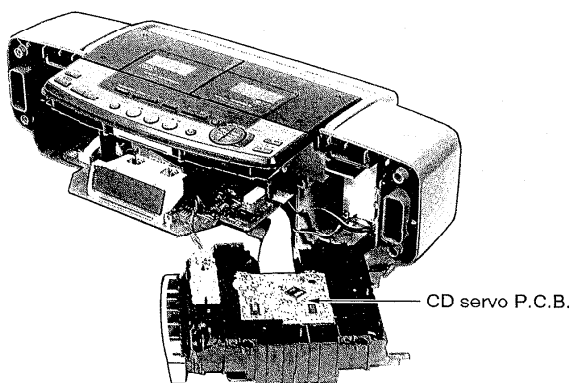
Release the claw from back side, and then pull out the CD unit.



(Back side)



- Check the CD servo P.C.B. as shown below.

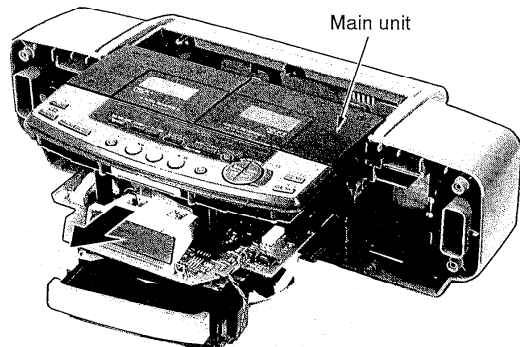


2. Checking for the main P.C.B.

- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.

Step 1

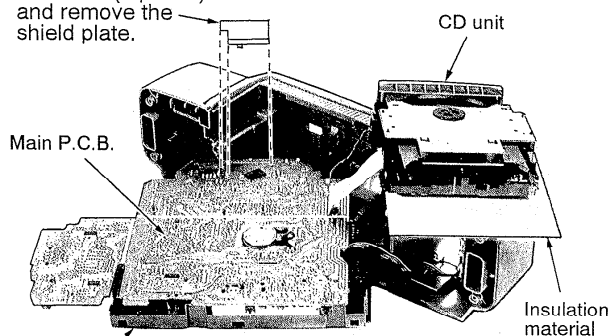
Pull out the main unit.



- Check the main P.C.B. as shown below.

Step 3

Unsolder (3 points) and remove the shield plate.



Step 2

Upset the main unit.

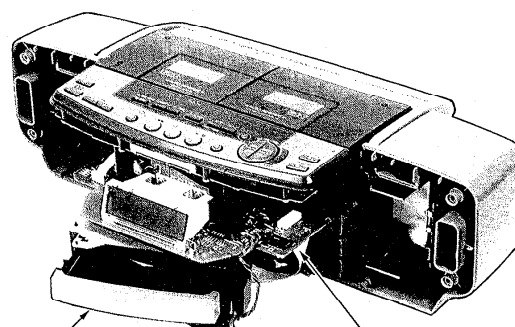
NOTE

Place the CD unit on the insulation material.

Main Component Replacement Procedures

1. Replacement for the traverse deck ass'y

- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.



Step 3

Remove the CD unit.

Step 2

Remove the connector (CP790).

Step 1

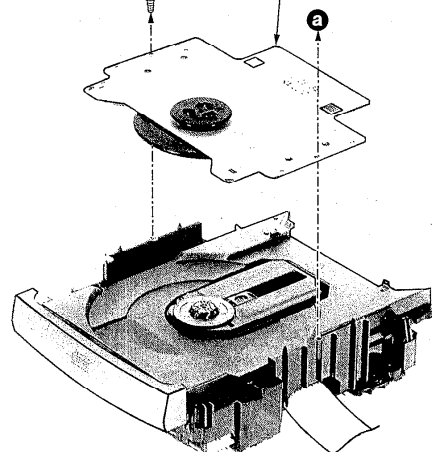
Pull the FFC.

Step 4

a × 2

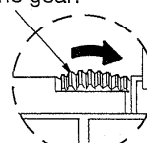
Step 5

Remove the disc clasper ass'y.



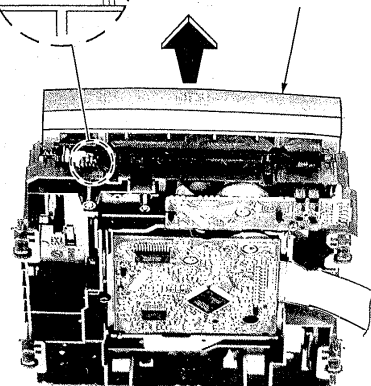
Step 6

Rotate the gear.



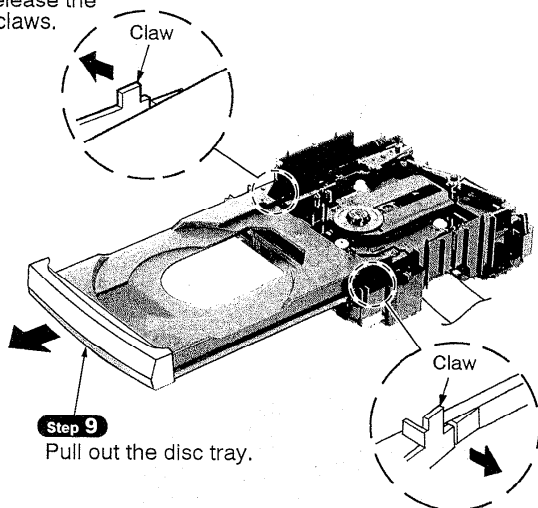
Step 7

Pull out the disc tray.



Step 8

Release the
2 claws.

**Step 9**

Pull out the disc tray.

Step 11

$\phi \times 2$

Step 10

b

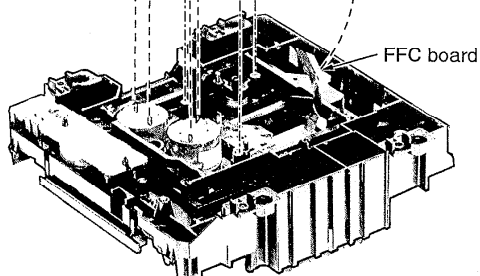
c

Step 13

Remove the
connector.

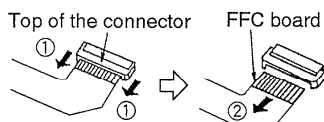
Step 12

Unsolder.



■ Removal for the FFC board

※ Side the top of the connector
in the direction of the arrow ①
and disconnect of the FFC board
in the direction of the arrow ②.

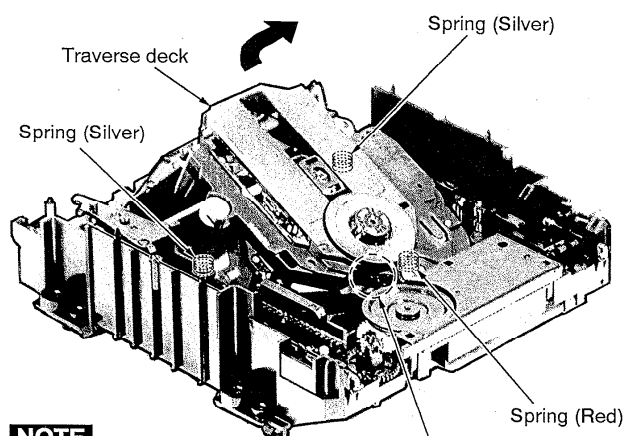
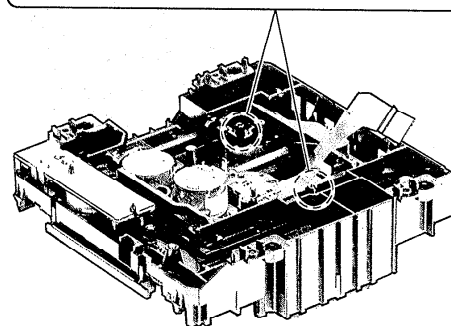
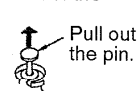
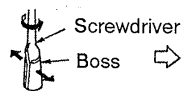
**NOTE**

Solder the short point of FFC board.
(Refer to "Handling Precautions for Traverse deck"
on page 3.)

Step 14

1. Widen the boss using
a regular screwdriver.

2. Pull out the pin in
the direction of the
arrow.

**NOTE**

Be careful not to lose the 3 springs
because those will also be removed
on removal of the traverse unit ass'y.

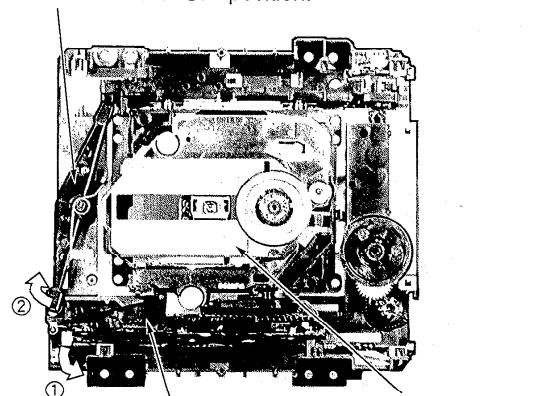
Step 15

Release the claw.

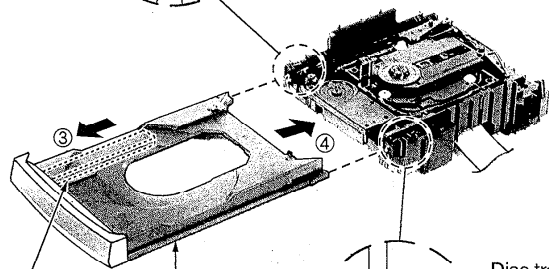
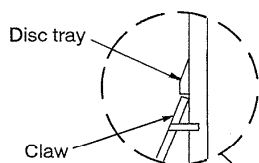
Installation of the disc tray after replacement

Step 2

Operate the lever and then locate the
traverse deck to "UP" position.

**Step 1**

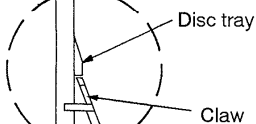
Release the lock lever.



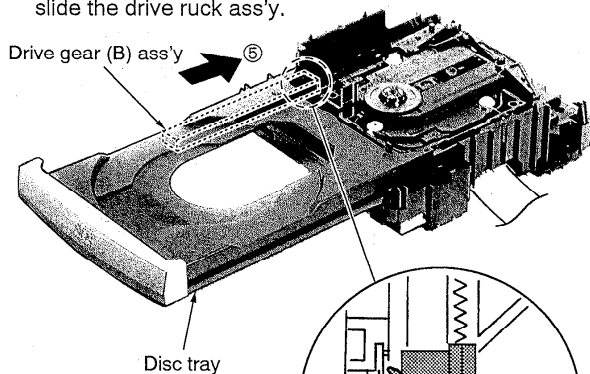
Step 3
Move the drive rack ass'y in the direction of arrow ③.

Step 4
Install the disc tray.

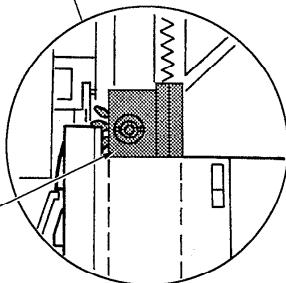
Step 5
Hook the disc tray on the claws.



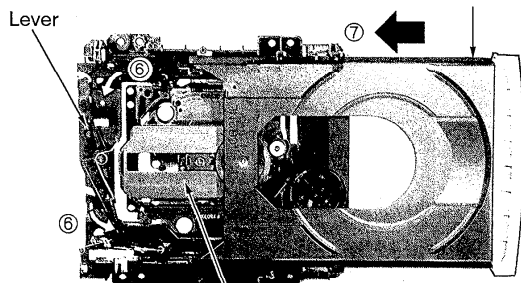
Step 6
Hold the disc tray and slide the drive rack ass'y.



Drive gear (B) ass'y



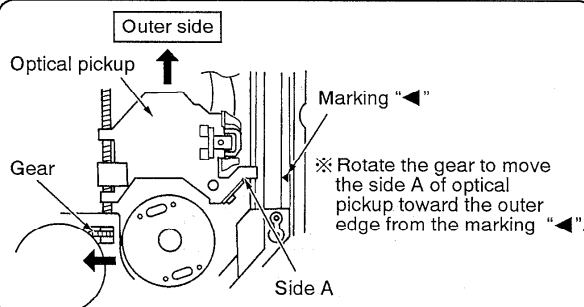
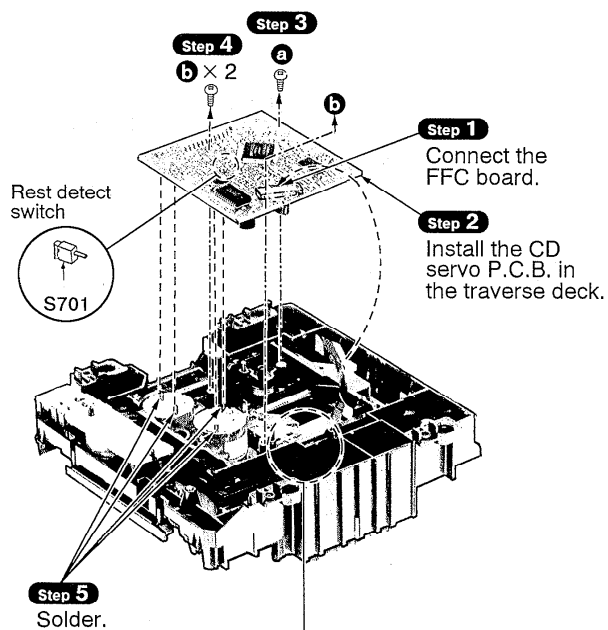
Step 7
Operate the lever, and then locate the traverse deck to "DOWN" position.



Traverse deck

Step 8
Press the disc tray.

Installation of the CD servo P.C.B. after replacement

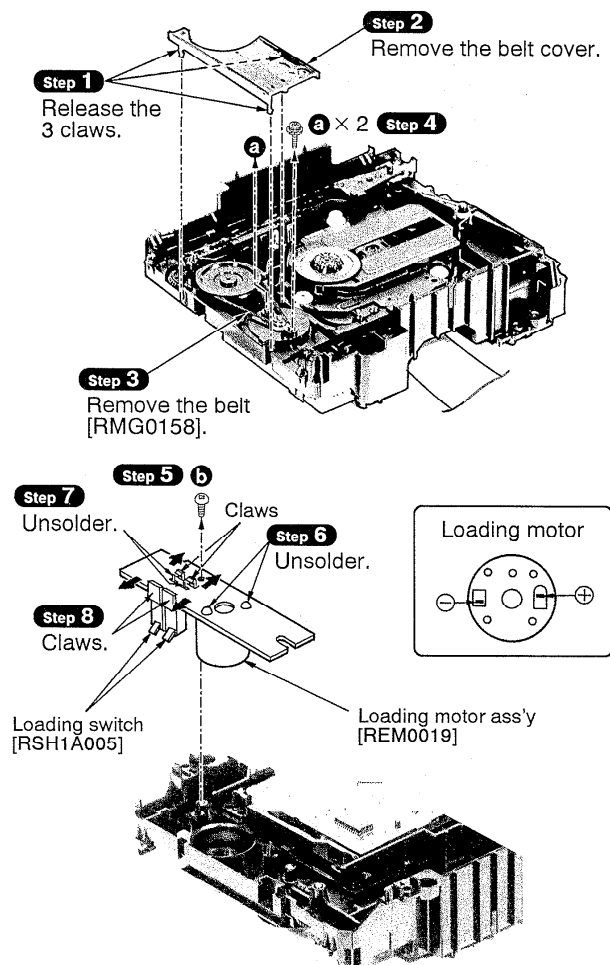


NOTE

Before installing the CD servo P.C.B., move the optical pickup toward the outer edge from the mark "◀". [Otherwise, the rest detect switch (S701) mounted on the CD servo P.C.B. may be damaged.]

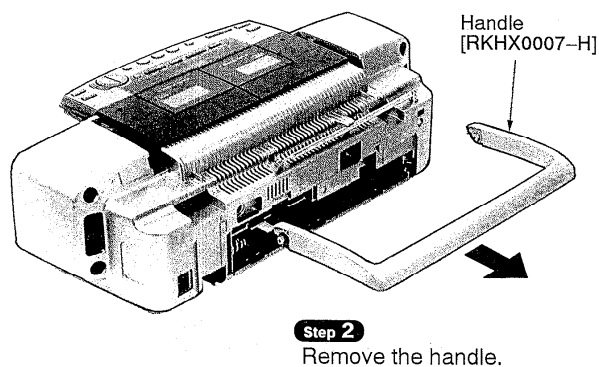
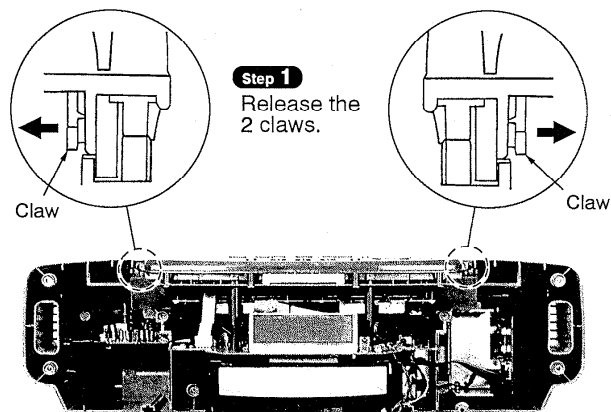
2. Replacement for the belt, loading motor ass'y and loading switch

- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.
- Follow the **Step 1** ~ **Step 9** of the item 1 in main component replacement procedures on pages 14 and 15.



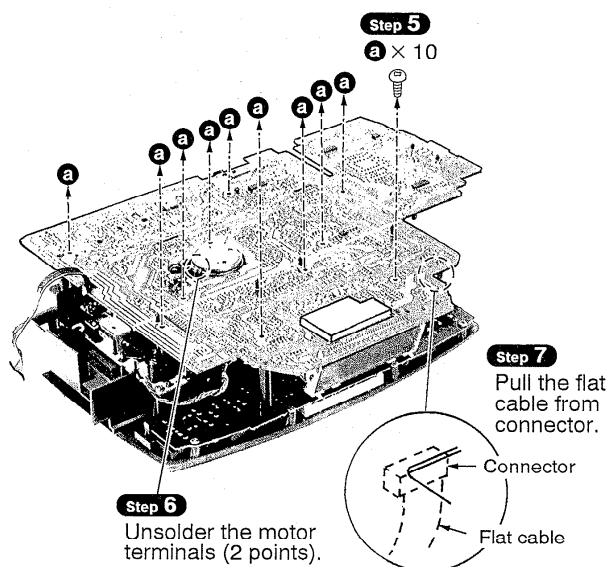
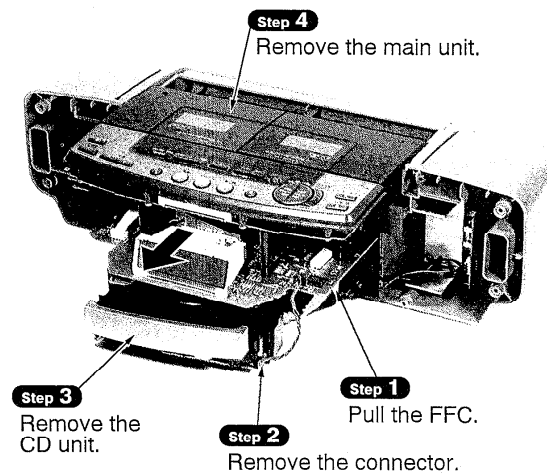
3. Replacement for the handle

- Follow the **Step 1** ~ **Step 4** of the item 1 in checking procedure for each P.C.B. on page 13.



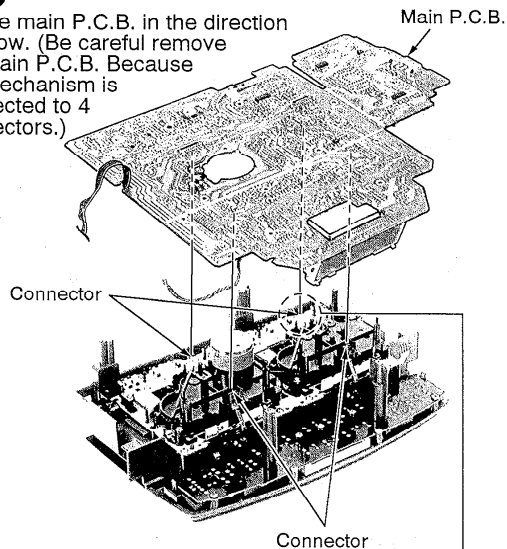
4. Replacement for the pinch roller ass'y and head block

- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.



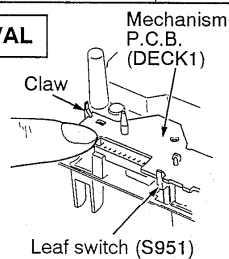
Step 8

Lift the main P.C.B. in the direction of arrow. (Be careful remove the main P.C.B. Because the mechanism is connected to 4 connectors.)



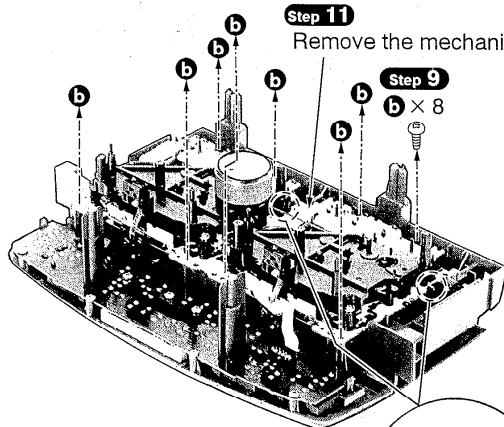
NOTE FOR MAIN P.C.B. REMOVAL

When removing the main P.C.B., press the mechanism P.C.B. with finger not to fall free. (Refer to figure right) [Otherwise, the leaf switch (S951) may be damaged because the mechanism P.C.B. is removed at the same time when removing the mechanism P.C.B. connector.]



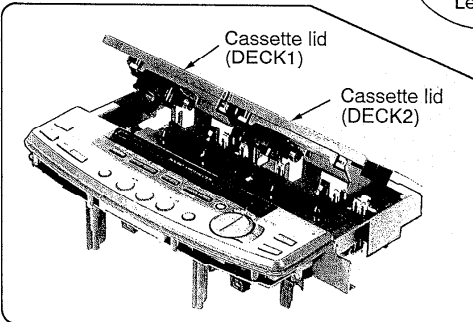
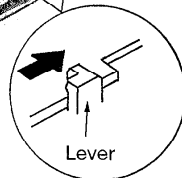
Step 11

Remove the mechanism unit.



Step 10

Press the lever in the direction of arrow, and then open the cassette lid.

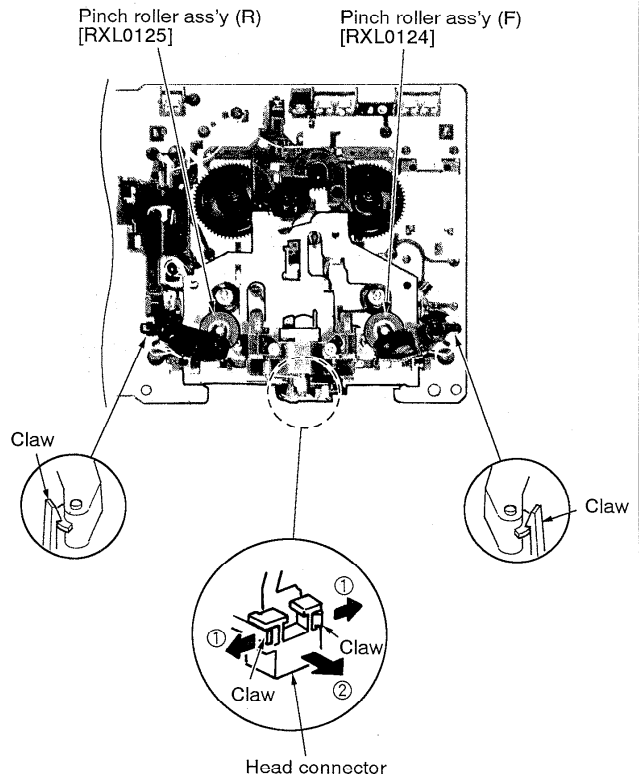


※ The illustration below shows DECK2 mechanism. For DECK1 mechanism, perform the same procedure as DECK2.

Step 12

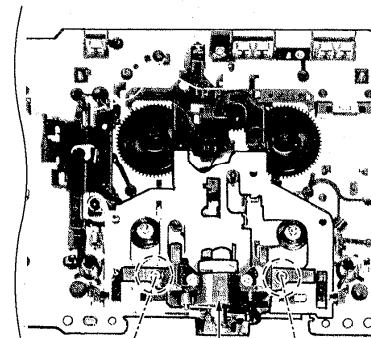
Release the 2 claws, and then remove the pinch roller (R),(F).

Pinch roller ass'y (R) [RXL0125] Pinch roller ass'y (F) [RXL0124]



Step 13

Release the 2 claws, and then remove the head connector.



Step 14

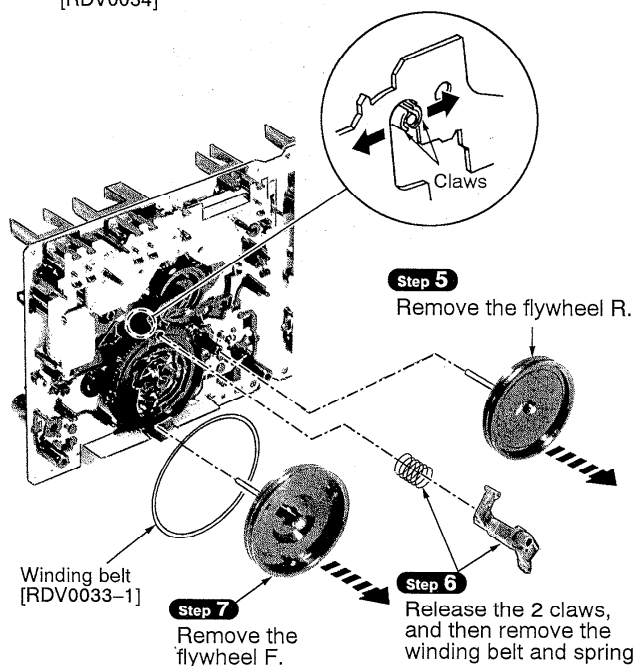
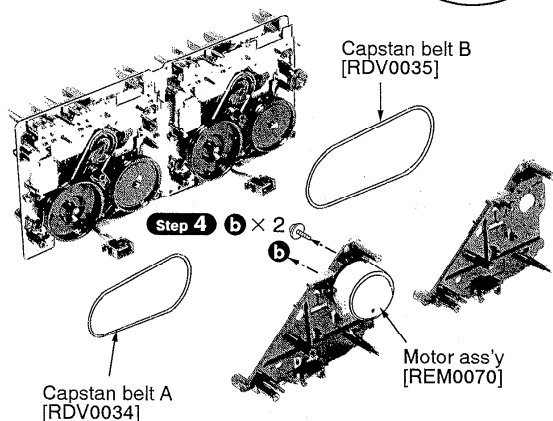
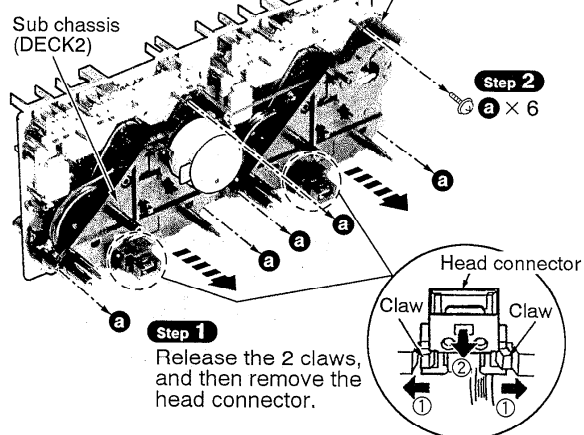
Head block
DECK1 : RED0038
DECK2 : RED0037

5. Replacement for the motor ass'y, capstan belt A, capstan belt B and winding belt

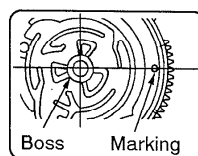
- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.
- Follow the **Step 1** ~ **Step 11** of the item 4 in main component replacement procedures on pages 17 and 18.

Step 3

Remove the sub chassis.



Installing the belt



Step 1

The boss and marking should be positioned horizontally.

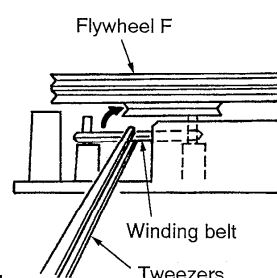
Step 2

Put the winding belt on the pulley temporarily.

Boss

Step 3

Install the flywheel F.

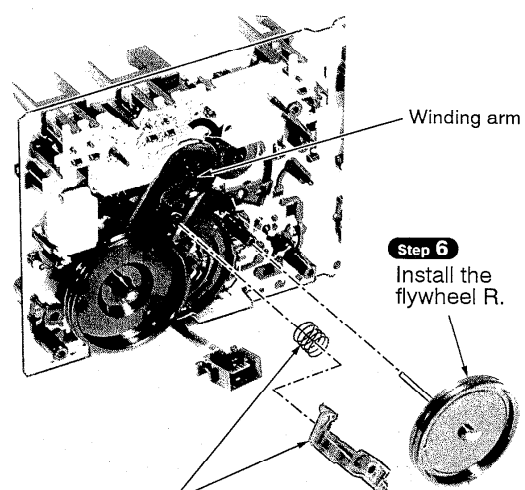


Step 4

Put the winding belt on the flywheel F.

NOTE

Take care not stick the grease on the belt.

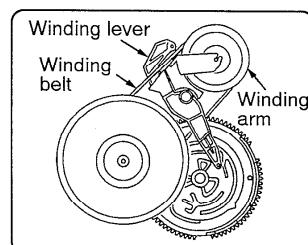


Step 5

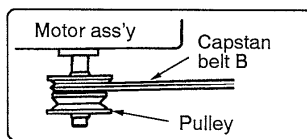
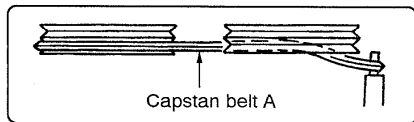
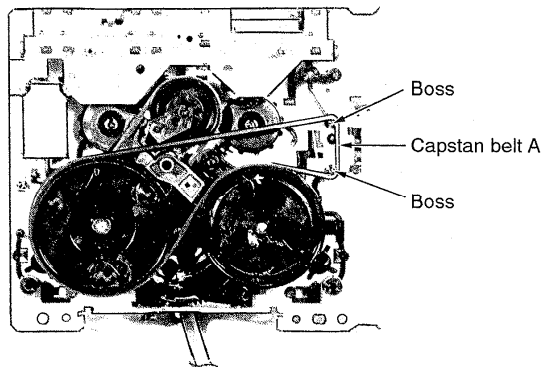
Install the winding lever and spring while pressing the winding arm in the direction of arrow. (The winding lever must be inserted completely and latched with claws.)

NOTE

The winding lever should be positioned as shown right.

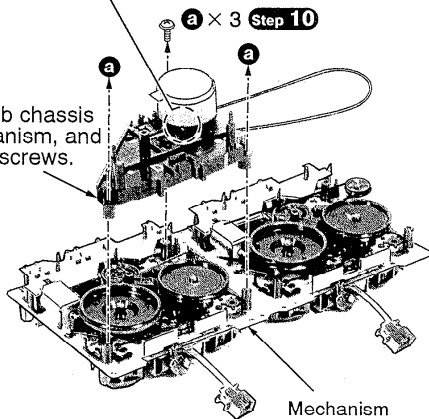


Step 7 Put the capstan belt A temporarily as shown below.

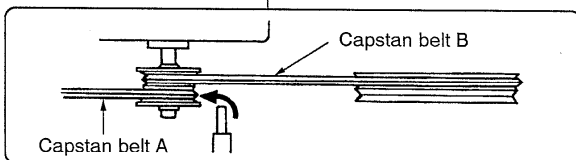
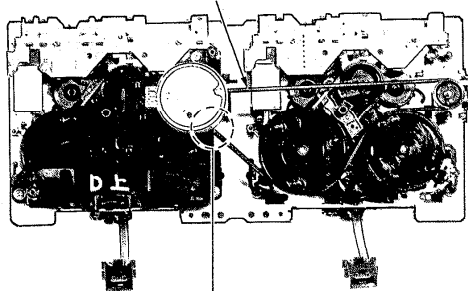


Step 8 Put the capstan belt B on the motor ass'y pulley.

Step 9 Install the sub chassis to the mechanism, and then tighten screws.



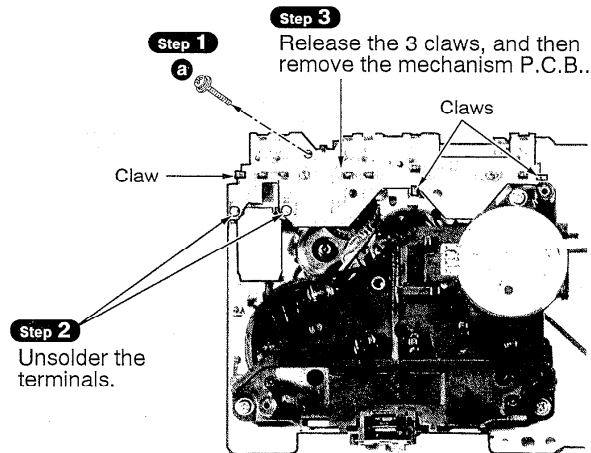
Step 11 Put the capstan belt B as shown below.



Step 12 Put the capstan belt A on the motor ass'y pulley.

6. Replacement for the parts mounted on mechanism P.C.B.

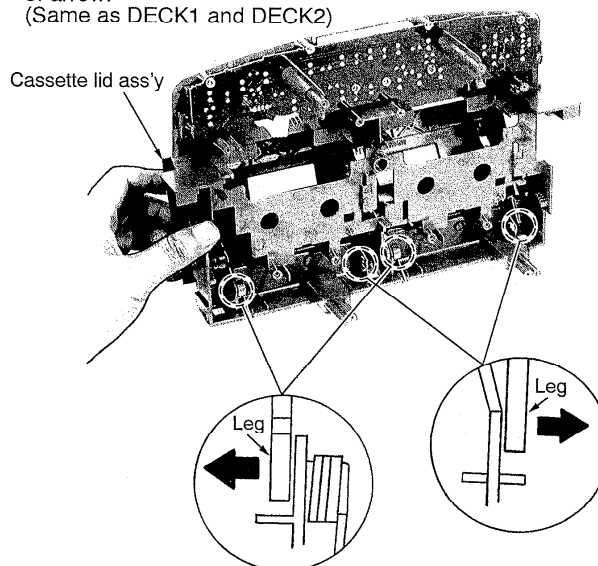
- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.
- Follow the **Step 1** ~ **Step 11** of the item 4 in main component replacement procedures on pages 17 and 18.



7. Replacement for the cassette lid ass'y

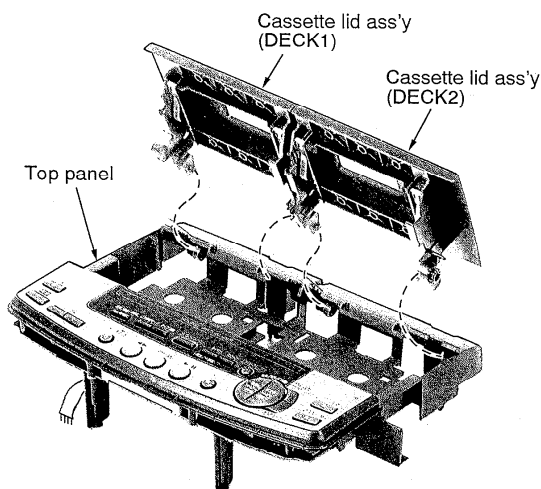
- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.
- Follow the **Step 1** ~ **Step 11** of the item 4 in main component replacement procedures on pages 17 and 18.

Step 1 With the cassette lid ass'y closed manually, release the legs of cassette lid ass'y in the direction of arrow.
(Same as DECK1 and DECK2)

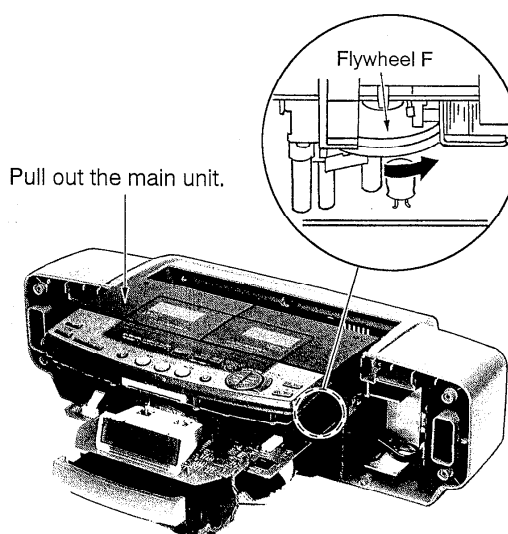


Step 2

Remove the cassette lid ass'y from top panel.

**Measure for tape trouble**

- Follow the **Step 1** ~ **Step 5** of the item 1 in checking procedure for each P.C.B. on page 13.



- If a cassette tape cannot be removed from the deck since the tape is caught by the capstan or pinch roller during playback or recording, rotate the flywheel F in the direction of arrow to remove the tape.

Schematic Diagram

| | Page |
|---|---------|
| A CD circuit | 22, 23 |
| B Main (Tuner) circuit | 24, 25 |
| B Main (Deck) circuit | 26, 27 |
| B Main (Power Amp.) circuit | 28 - 31 |
| C Mechanism (DECK 2) circuit | 27 |
| D Mechanism (DECK 1) circuit | 27 |

Notes :

- S701 : Rest switch.
- S790 : Disc tray open detect switch.
- S791 : Disc tray close detect switch.
- S861 : Power switch. (POWER)
- S862 : Deck 1 eject switch. (▲ DECK 1)
- S863 : Volume down switch. (-)
- S864 : Volume up switch. (+)
- S865 : Deck 1/2 select switch. (DECK 1/2)
- S866 : Tape play/Direction switch. (TAPE ◀▶)
- S867 : Tuner/band select switch. (TUNER/BAND)
- S868 : CD play/pause switch. (CD ▶/||)
- S869 : CD and tape Stop/clear switch. (■/Clear)
- S870 : Rewind/Skip/TPS switch. (REW ◀◀/▶▶/TPS)
- S871 : Disc tray open/close switch. (▲ CD OPEN/CLOSE)
- S881 : Record/Rec pause switch. (●/●|| REC/REC PAUSE)
- S882 : CD recording mode select switch. (CD REC MODE)
- S883 : Tape edit switch. (TAPE EDIT)
- S884 : Sound virtualizer switch. (SOUND VIRTUALIZER)
- S885 : Timer switch. (TIMER ●PLAY/●REC)
- S886 : Sleep timer switch. (SLEEP)
- S887 : Timer fader switch. (TIMER FADER)
- S888 : FF/Skip/TPS switch. (FF ▶▶/I+/TPS)
- S889 : Clock/Timer adjust switch. (CLOCK ADJUST/TIMER ADJUST)
- S890 : Tuning mode select switch. (TUNE MODE)
- S891 : Deck 2 eject switch. (▲ DECK 2)
- S901 : AC/DC select switch.
- S902 : Voltage select switch.
- S951 : Deck 1 mode detect switch.
- S952 : Deck 1 half detect switch.

| | Page |
|---|------|
| E Loading motor circuit | 28 |
| F Lamp circuit | 28 |
| G Operation circuit | 28 |
| H Power supply circuit | 31 |
| I Battery terminal circuit | 31 |

- S953 : Deck 1 CrO₂ tape detect switch.
- S971 : Deck 2 mode detect switch.
- S972 : Deck 2 half detect switch.
- S973 : Deck 2 CrO₂ tape detect switch.
- S974 : Deck 2 reverse side record prevention tab detect switch.
- S975 : Deck 2 forward side record prevention tab detect switch.

Battery current:

| | | | |
|-------------|---------------|-------------|---------------|
| Vol. min... | 401 mA (FM) | Vol. max... | 870 mA (FM) |
| | 386 mA (AM) | | 677 mA (AM) |
| | 482 mA (TAPE) | | 770 mA (TAPE) |
| | 548 mA (CD) | | 1625 mA (CD) |

Measurement instruction

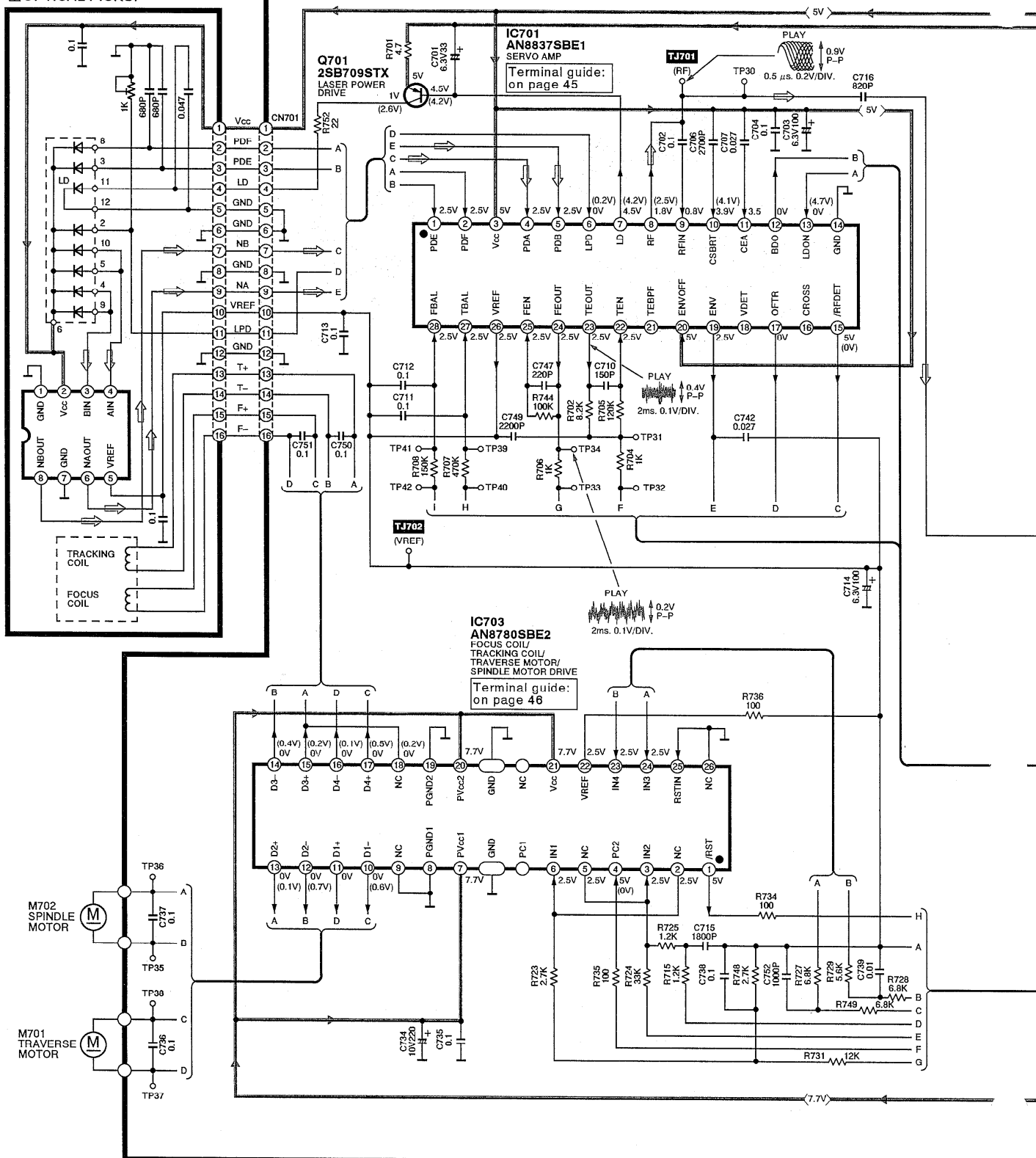
| | |
|-------|-------------------|
| AM: | 74 dB/m, 30% Mod. |
| FM: | 60 dB, 30% Mod. |
| TAPE: | 315 Hz, 0 dB |
| CD: | 1 kHz, 0 dB |

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

| | |
|-------------------------|-------------------------|
| No mark ... CD (Stop) | () ... CD (Playback) |
| < > ... FM | [] ... AM |
| [] ... Tape (Playback) | (()) ... Tape (Record) |

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

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





□ → : FM signal line

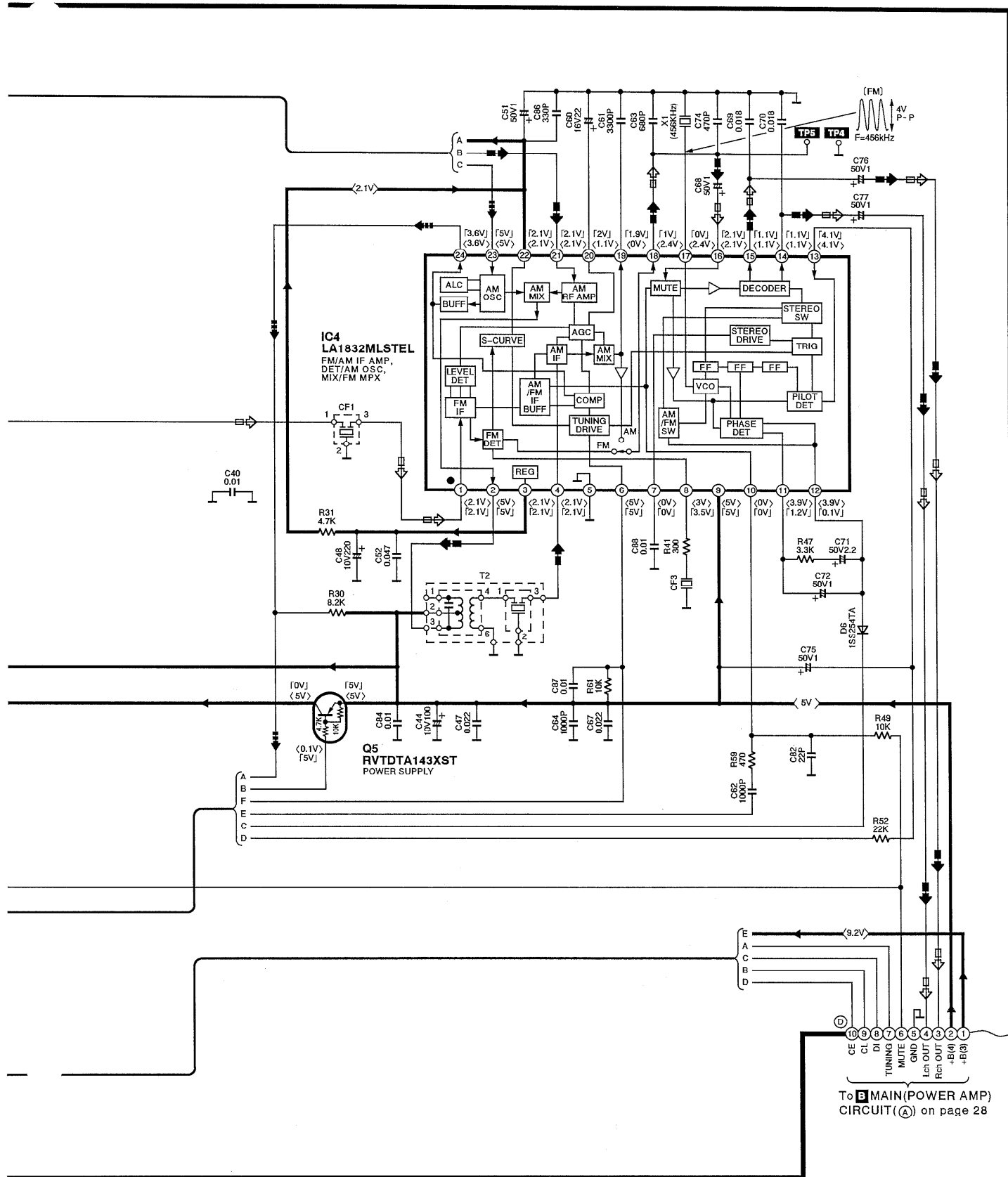
■ → : AM signal line

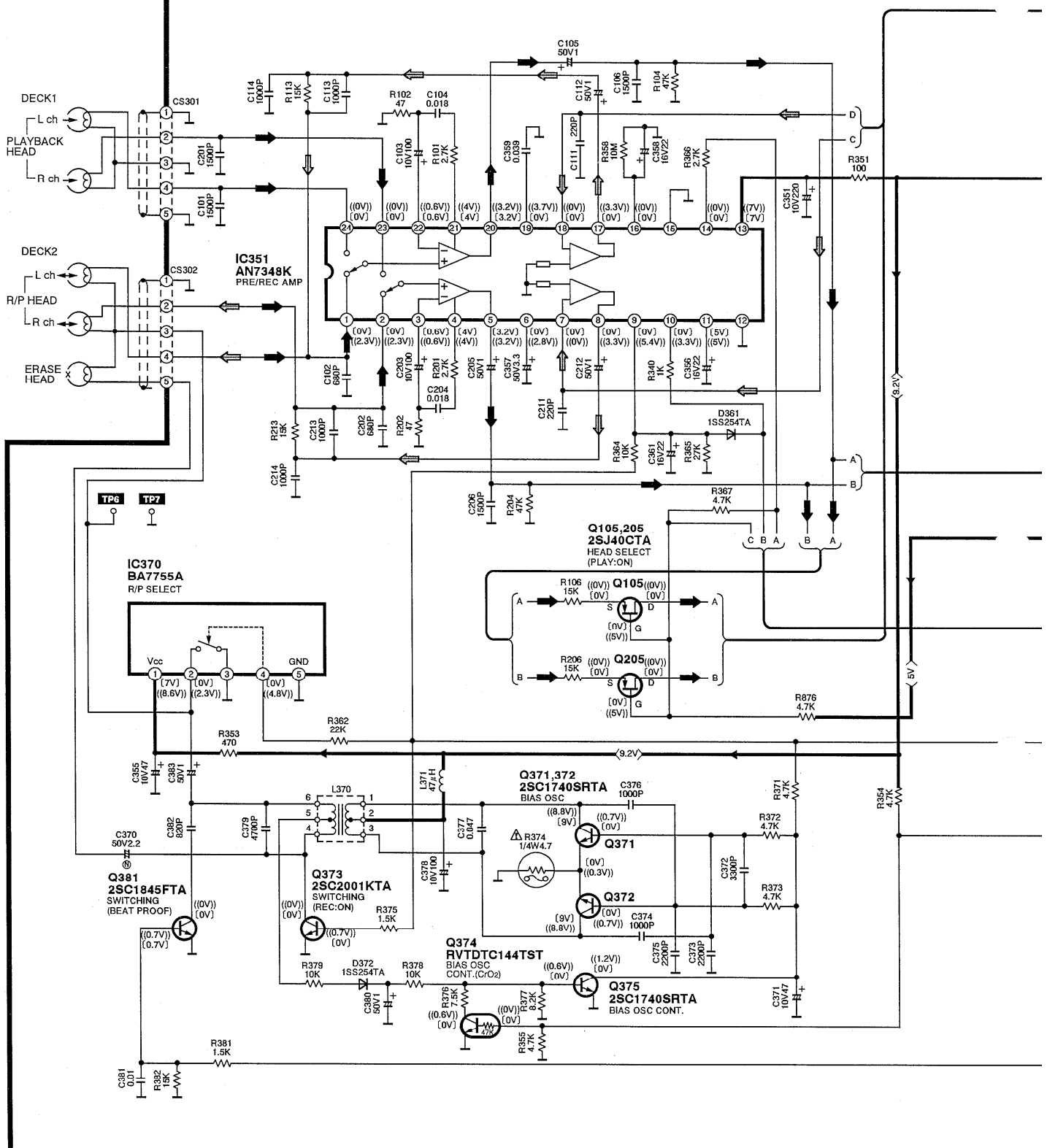
▬ → : FM/AM/ V cap Control signal line

□□□ → : FM OSC signal line

■ ■ ■ → : AM OSC signal line

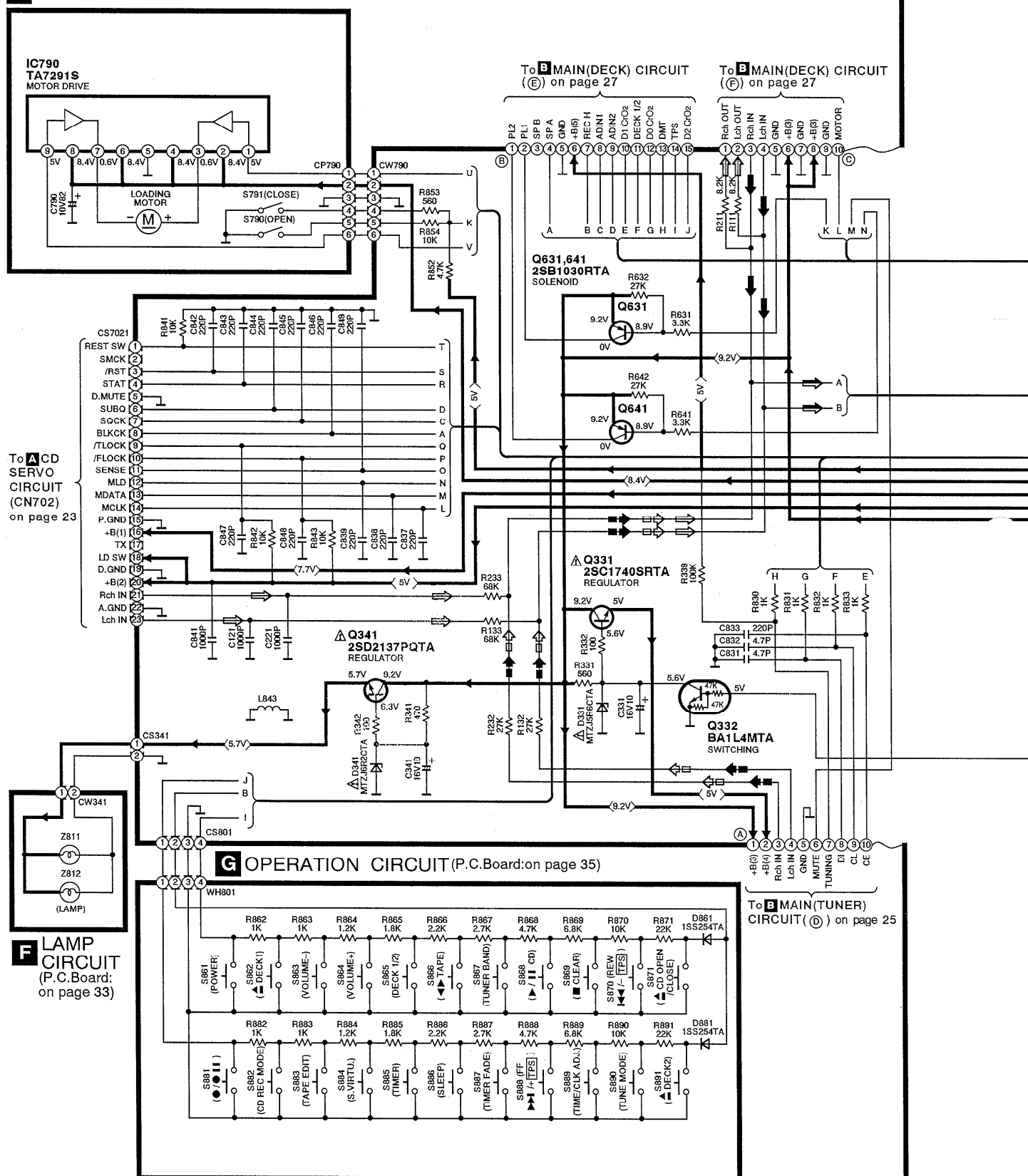
— → : +B line




B MAIN(DECK) CIRCUIT (P.C.Board: on pages 34,35)




E LOADING MOTOR CIRCUIT (P.C.Board: on page 33)




 : FM signal line


 : Tape playback signal line

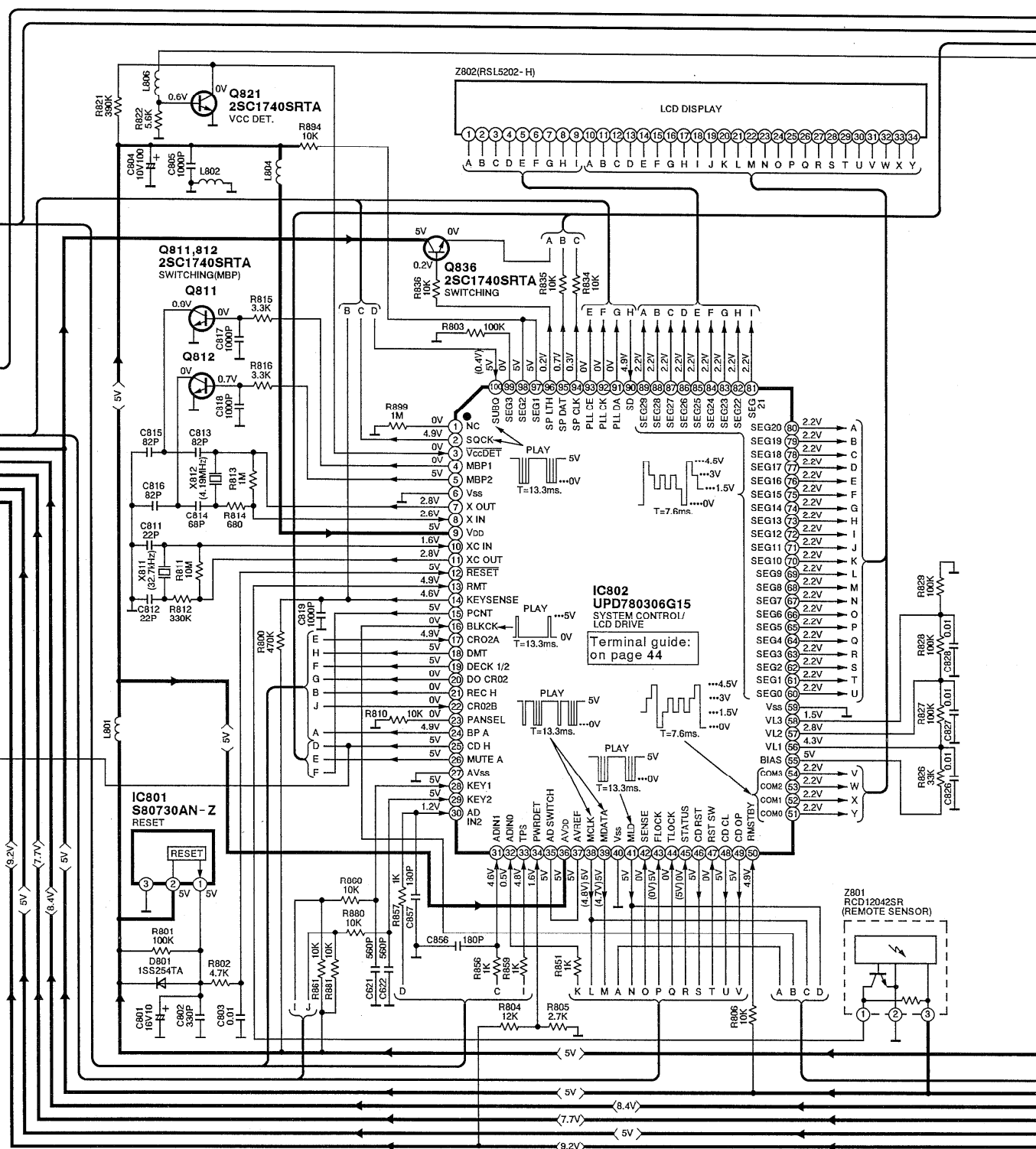
 : AM signal line

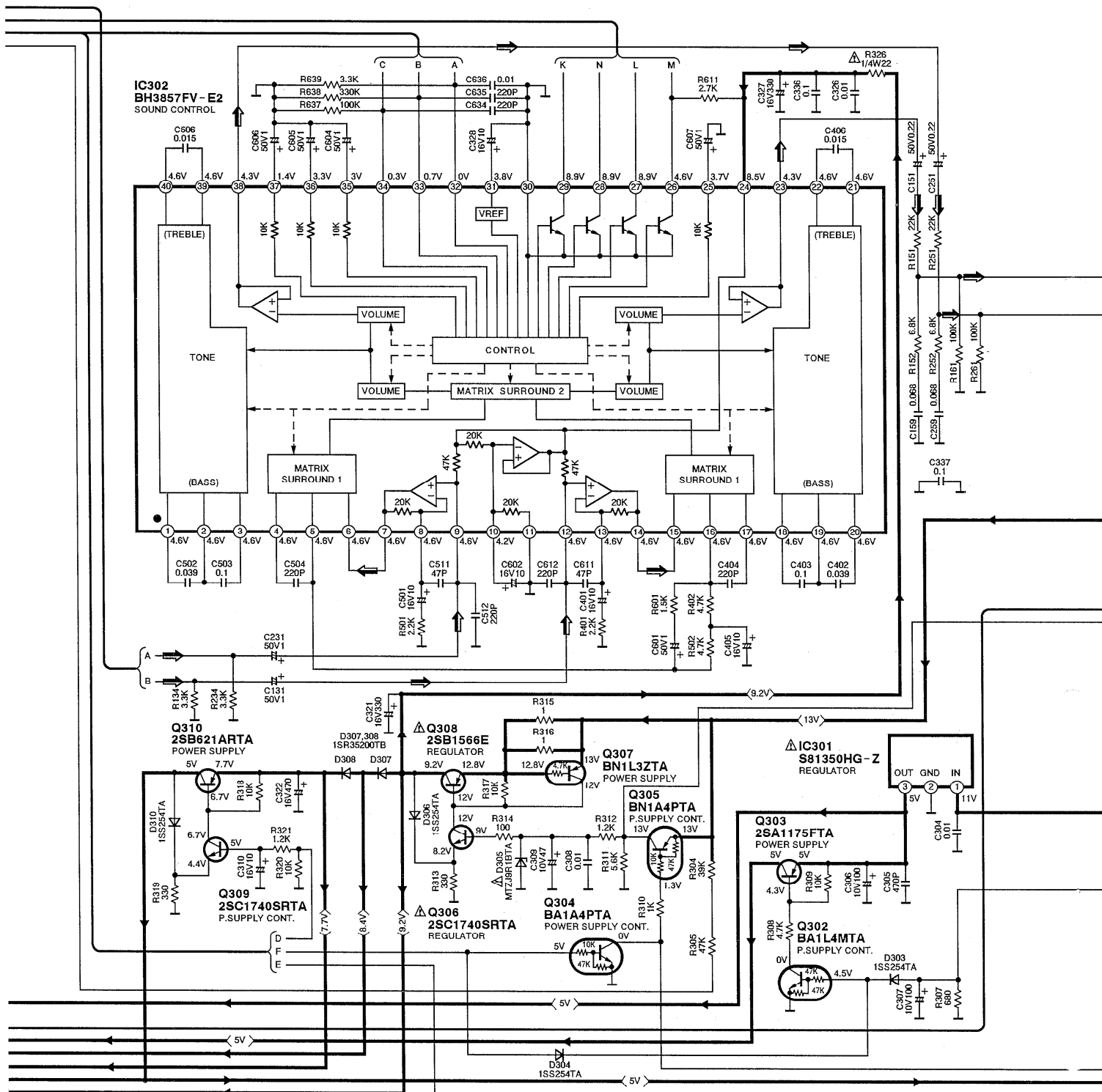
 : Record signal line

 : CD signal line

 : Main signal line

 : +B line

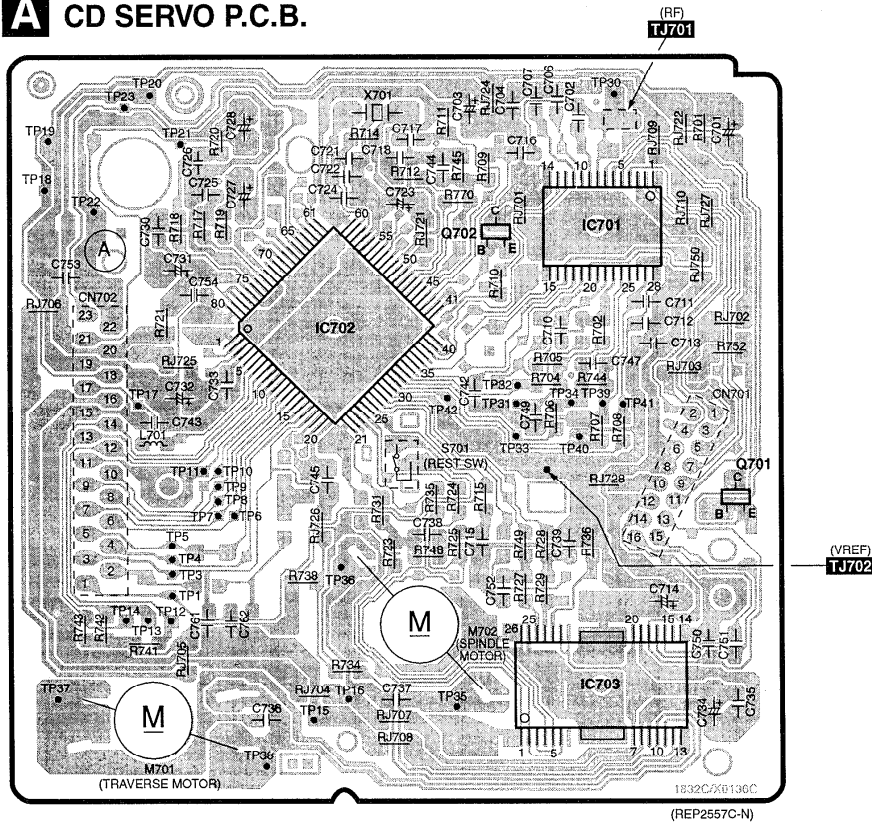
B MAIN(POWER AMP) CIRCUIT (P.C.Board: on pages 34,35)




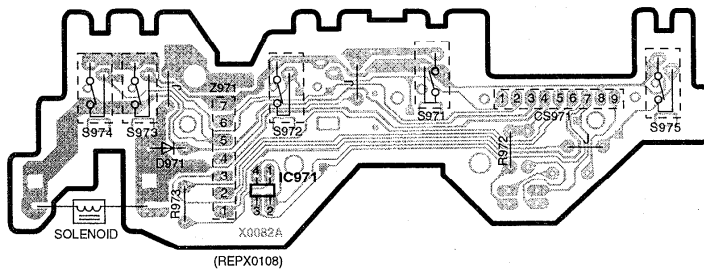
Printed Circuit Board Diagram

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

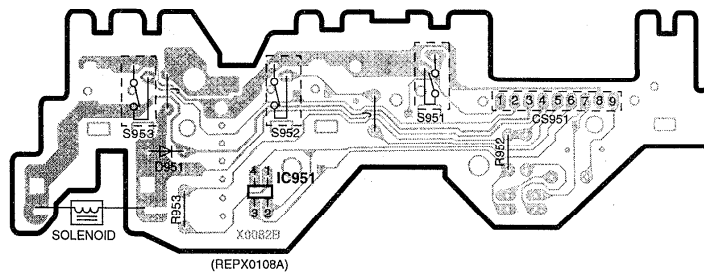
A CD SERVO P.C.B.

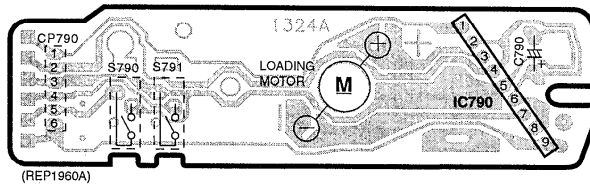
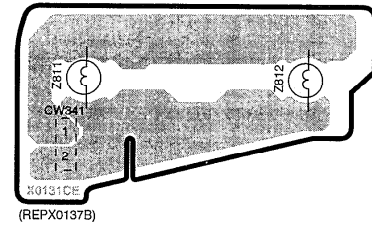
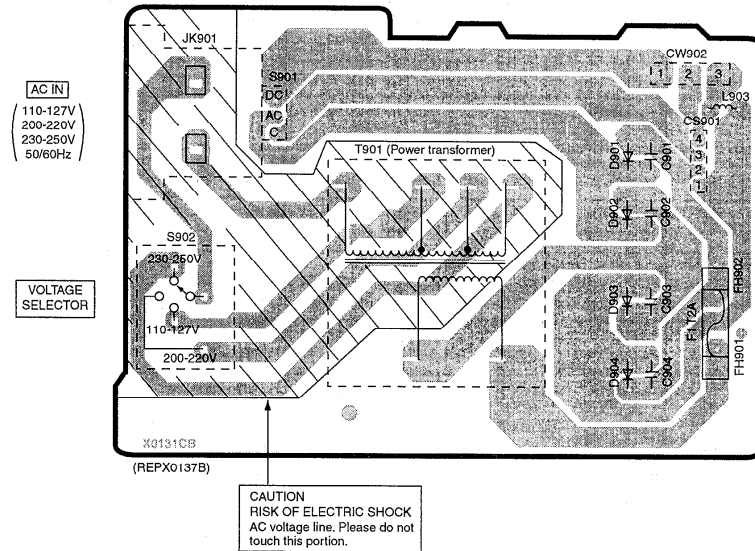
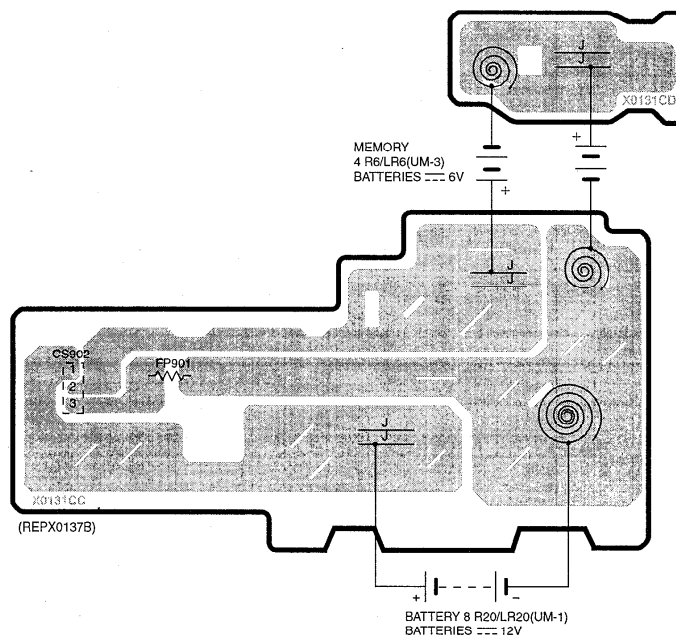


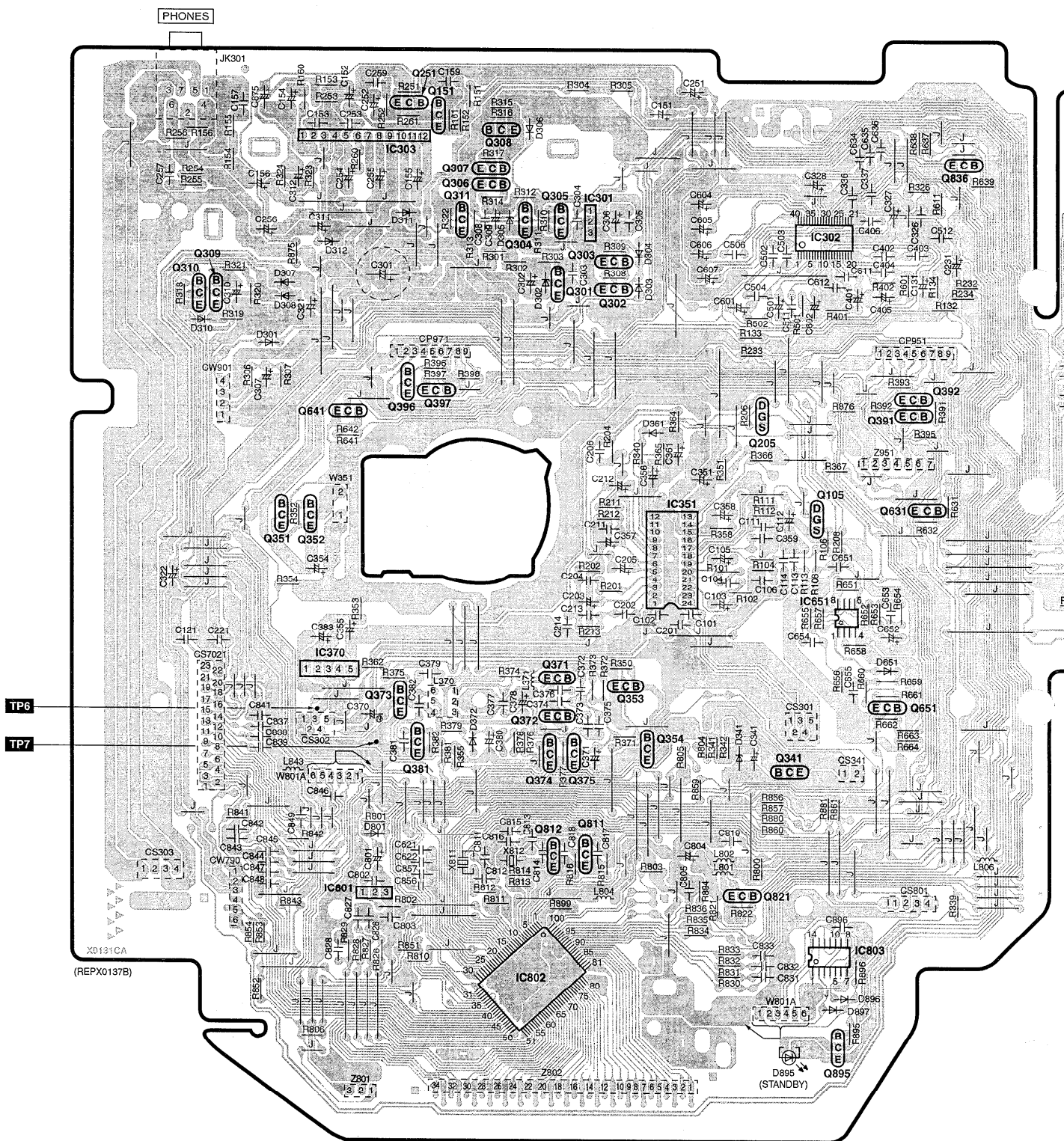
C MECHANISM (DECK2) P.C.B.



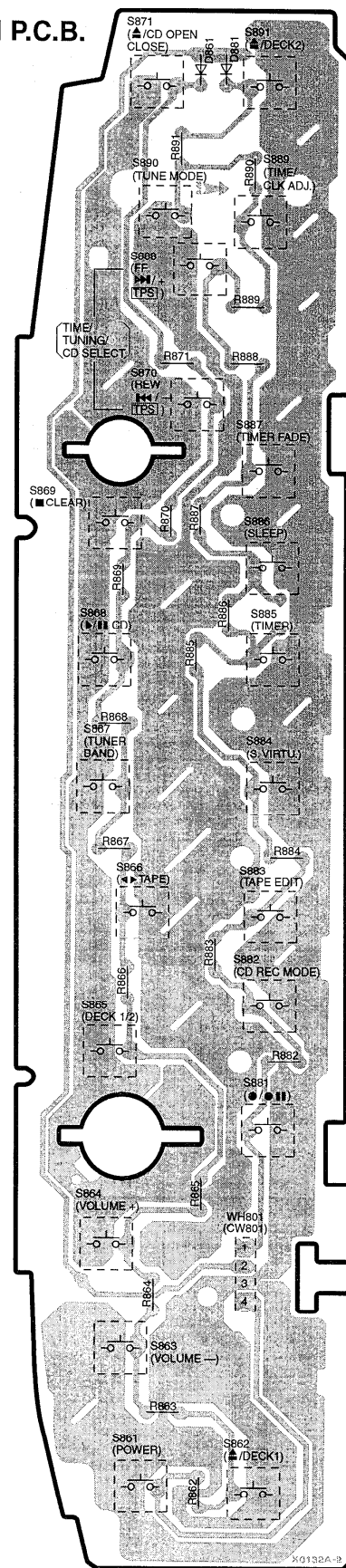
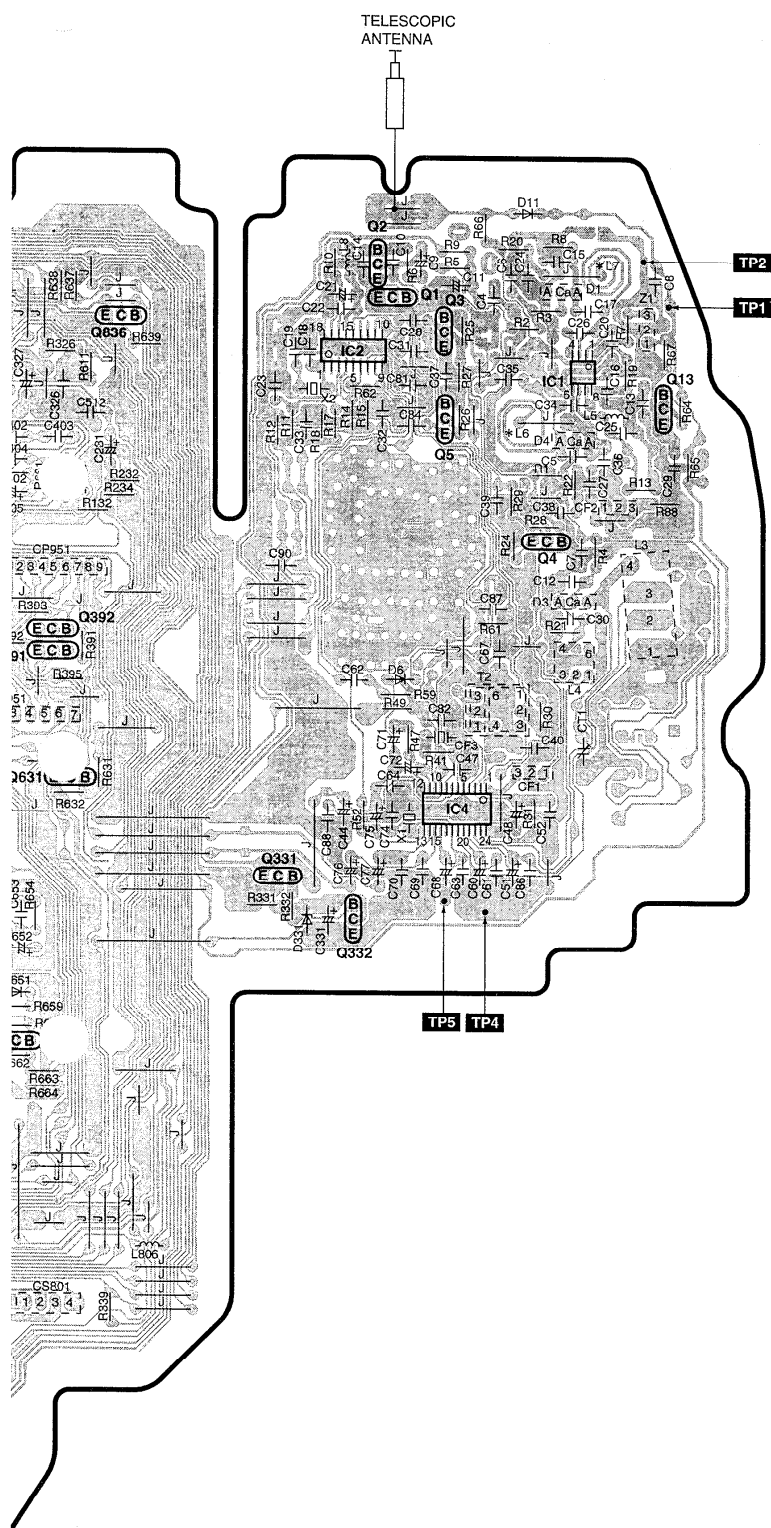
D MECHANISM (DECK1) P.C.B.



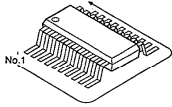
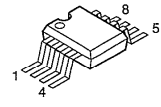
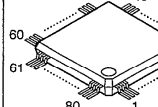
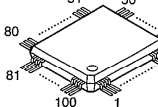
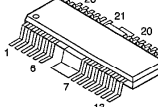
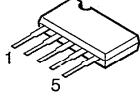
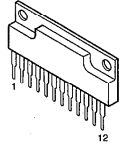
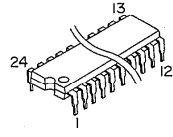
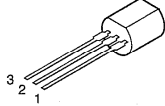
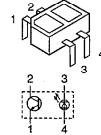
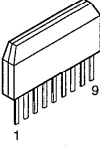
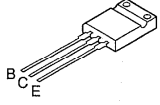

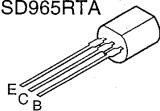
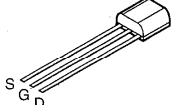
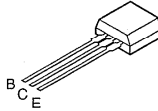
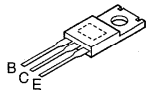
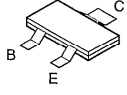
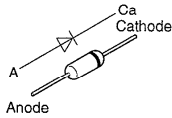
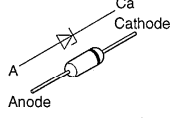
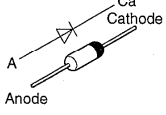
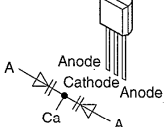
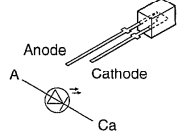
E LOADING MOTOR P.C.B.**F** LAMP P.C.B.**H** POWER SUPPLY P.C.B.**I** BATTERY TERMINAL P.C.B.

B MAIN P.C.B.

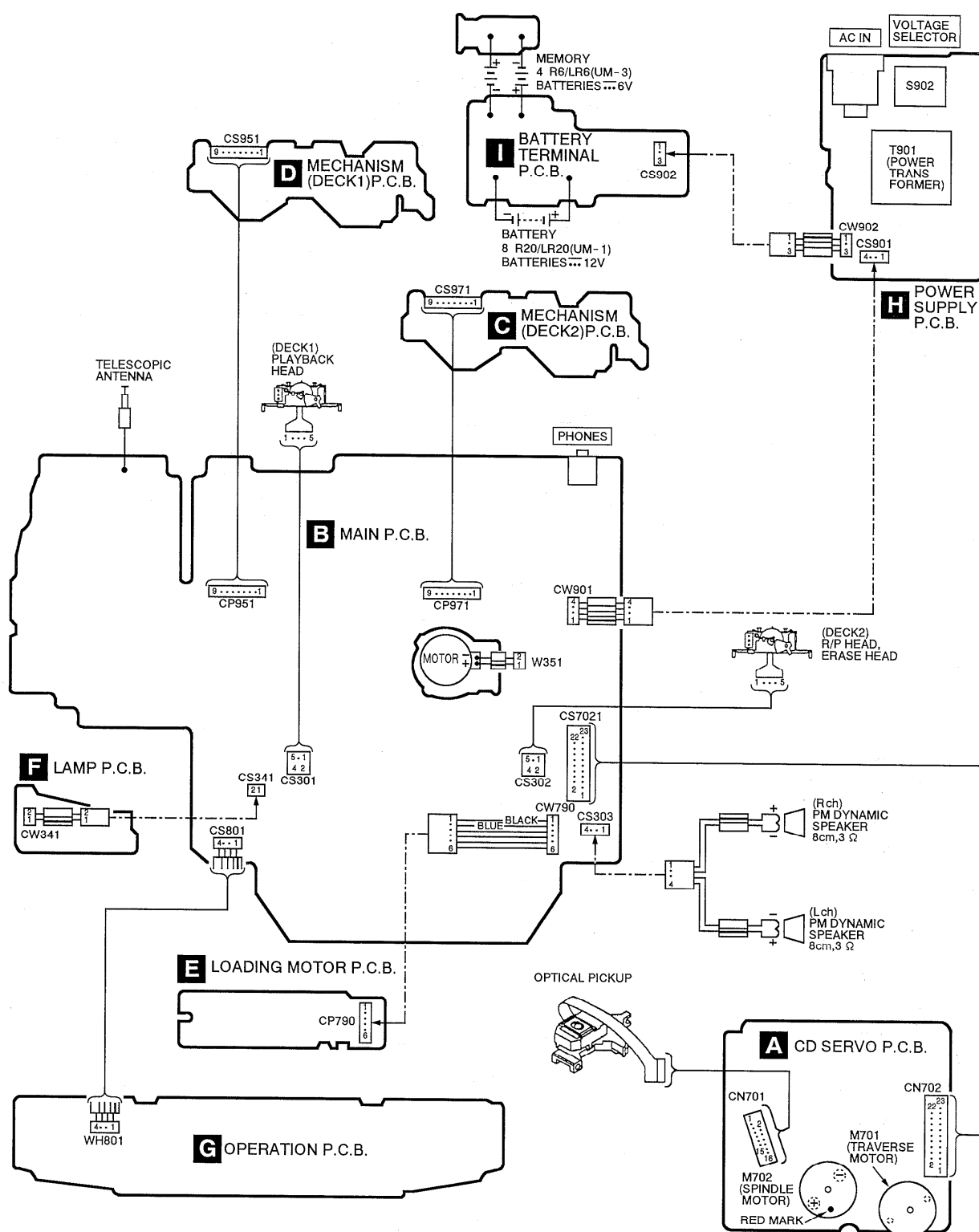
OPERATION P.C.B.



■ Type Illustration of IC's, Transistors and Diodes

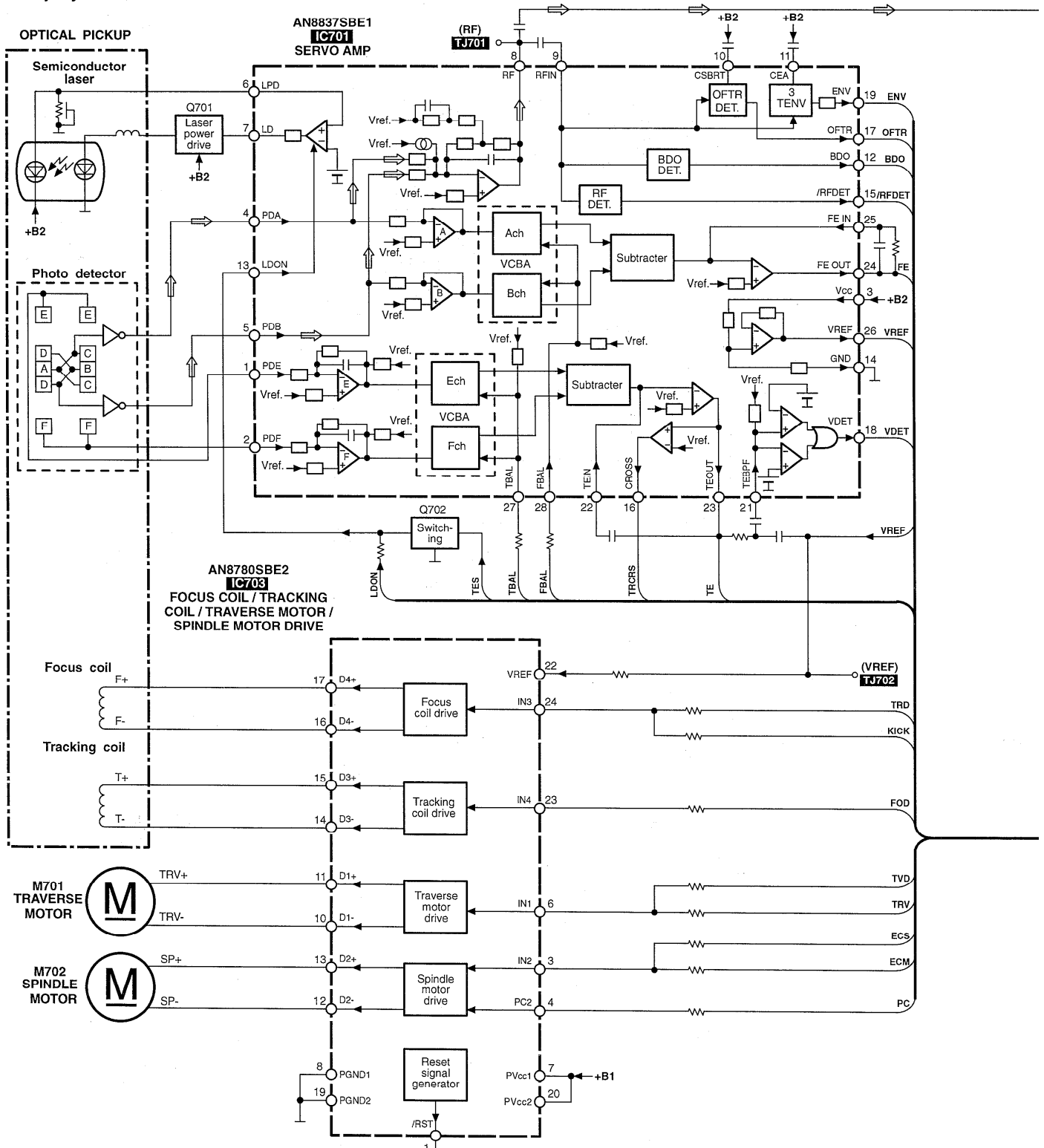
| | | | | | | | | | | | | | | | | | |
|---|--|--|---|--|--|-------------|---|--------------|------------|------------|------------|--|--|--|---|--|---|
|  <p>No.1</p> | <table><tr><td>TA7358FMATEL</td><td>8PIN</td></tr><tr><td>TC74HC74AFNE</td><td>14PIN</td></tr><tr><td>BU2616F-E2</td><td>18PIN</td></tr><tr><td>LA1832MLSTEL</td><td>24PIN</td></tr><tr><td>AN8837SBE1</td><td>28PIN</td></tr><tr><td>BH3857FV-E2</td><td>40PIN</td></tr></table> | TA7358FMATEL | 8PIN | TC74HC74AFNE | 14PIN | BU2616F-E2 | 18PIN | LA1832MLSTEL | 24PIN | AN8837SBE1 | 28PIN | BH3857FV-E2 | 40PIN | BA4558FE2  | MN662746RPK1  | UPD780306G15  | AN8780SBE2  |
| TA7358FMATEL | 8PIN | | | | | | | | | | | | | | | | |
| TC74HC74AFNE | 14PIN | | | | | | | | | | | | | | | | |
| BU2616F-E2 | 18PIN | | | | | | | | | | | | | | | | |
| LA1832MLSTEL | 24PIN | | | | | | | | | | | | | | | | |
| AN8837SBE1 | 28PIN | | | | | | | | | | | | | | | | |
| BH3857FV-E2 | 40PIN | | | | | | | | | | | | | | | | |
| BA7755A  | AN7135  | AN7348K  | S80730AN-Z S81350HG-Z  | 0N2180RLC  | TA7291S  | | | | | | | | | | | | |
| 2SD2137PQTA  |  <table><tr><td>2SA1175FTA</td><td>BA1L4MTA</td></tr><tr><td>2SB1030RTA</td><td>BN1A4MTA</td></tr><tr><td>2SC2786LTA</td><td>BN1A4PTA</td></tr><tr><td>2SC3313BTA</td><td>BN1L3ZTA</td></tr><tr><td>BA1A4PTA</td><td></td></tr></table> | 2SA1175FTA | BA1L4MTA | 2SB1030RTA | BN1A4MTA | 2SC2786LTA | BN1A4PTA | 2SC3313BTA | BN1L3ZTA | BA1A4PTA | | 2SB621ARTA 2SC1845FTA 2SC2001KTA 2SD965RTA  | 2SJ40CTA  | 2SC1740SRTA RVTDTA143XST RVTDTA144TST  | | | |
| 2SA1175FTA | BA1L4MTA | | | | | | | | | | | | | | | | |
| 2SB1030RTA | BN1A4MTA | | | | | | | | | | | | | | | | |
| 2SC2786LTA | BN1A4PTA | | | | | | | | | | | | | | | | |
| 2SC3313BTA | BN1L3ZTA | | | | | | | | | | | | | | | | |
| BA1A4PTA | | | | | | | | | | | | | | | | | |
| 2SB1566E  | 2SB709STX DTC114YKA146  |  <table><tr><td>1SS254TA</td></tr><tr><td>MA165TA</td></tr><tr><td>RB4411QT-77</td></tr><tr><td>RVD1SS135TA</td></tr></table> | 1SS254TA | MA165TA | RB4411QT-77 | RVD1SS135TA |  <table><tr><td>MTZJ5R6BTA</td></tr><tr><td>MTZJ5R6CTA</td></tr><tr><td>MTZJ6R2CTA</td></tr><tr><td>MTZJ9R1BTA</td></tr><tr><td>MTZJ12BTA</td></tr></table> | MTZJ5R6BTA | MTZJ5R6CTA | MTZJ6R2CTA | MTZJ9R1BTA | MTZJ12BTA | | | | | |
| 1SS254TA | | | | | | | | | | | | | | | | | |
| MA165TA | | | | | | | | | | | | | | | | | |
| RB4411QT-77 | | | | | | | | | | | | | | | | | |
| RVD1SS135TA | | | | | | | | | | | | | | | | | |
| MTZJ5R6BTA | | | | | | | | | | | | | | | | | |
| MTZJ5R6CTA | | | | | | | | | | | | | | | | | |
| MTZJ6R2CTA | | | | | | | | | | | | | | | | | |
| MTZJ9R1BTA | | | | | | | | | | | | | | | | | |
| MTZJ12BTA | | | | | | | | | | | | | | | | | |
| 1SR35200TB  | KV1360NTM KV1520NTM  | RVD5LB55VR  | | | | | | | | | | | | | | | |

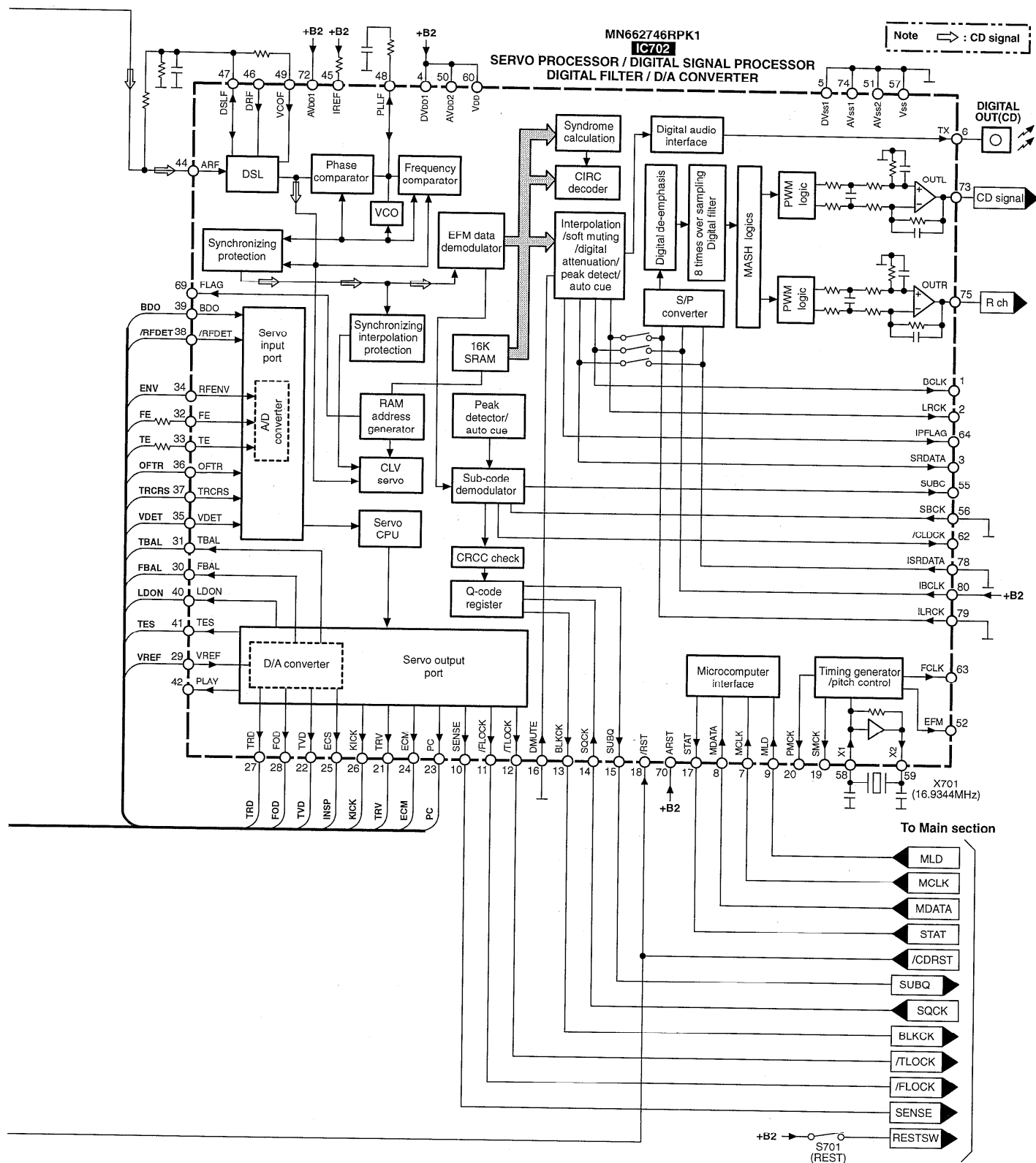
Wiring Connection Diagram



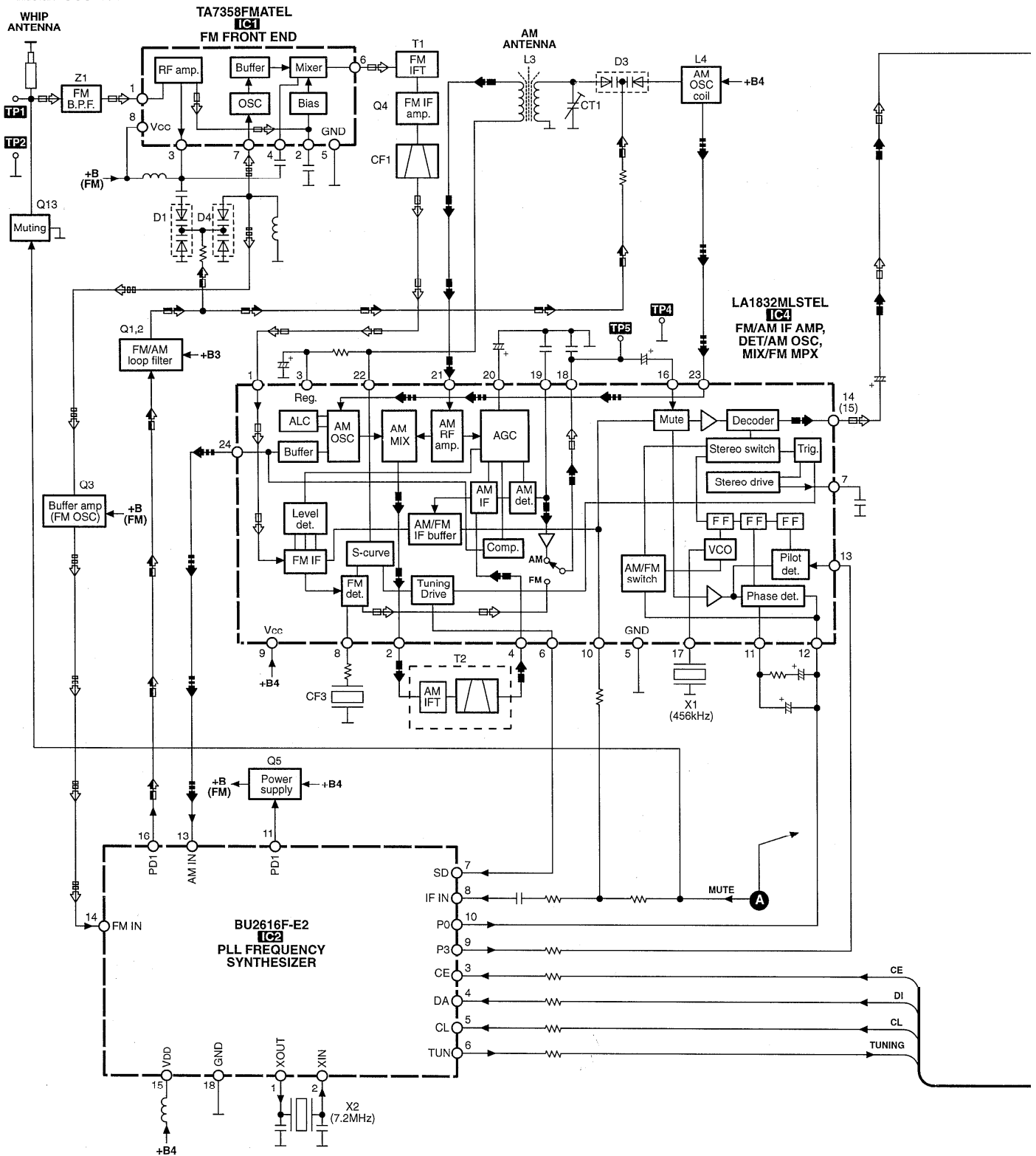
Block Diagram

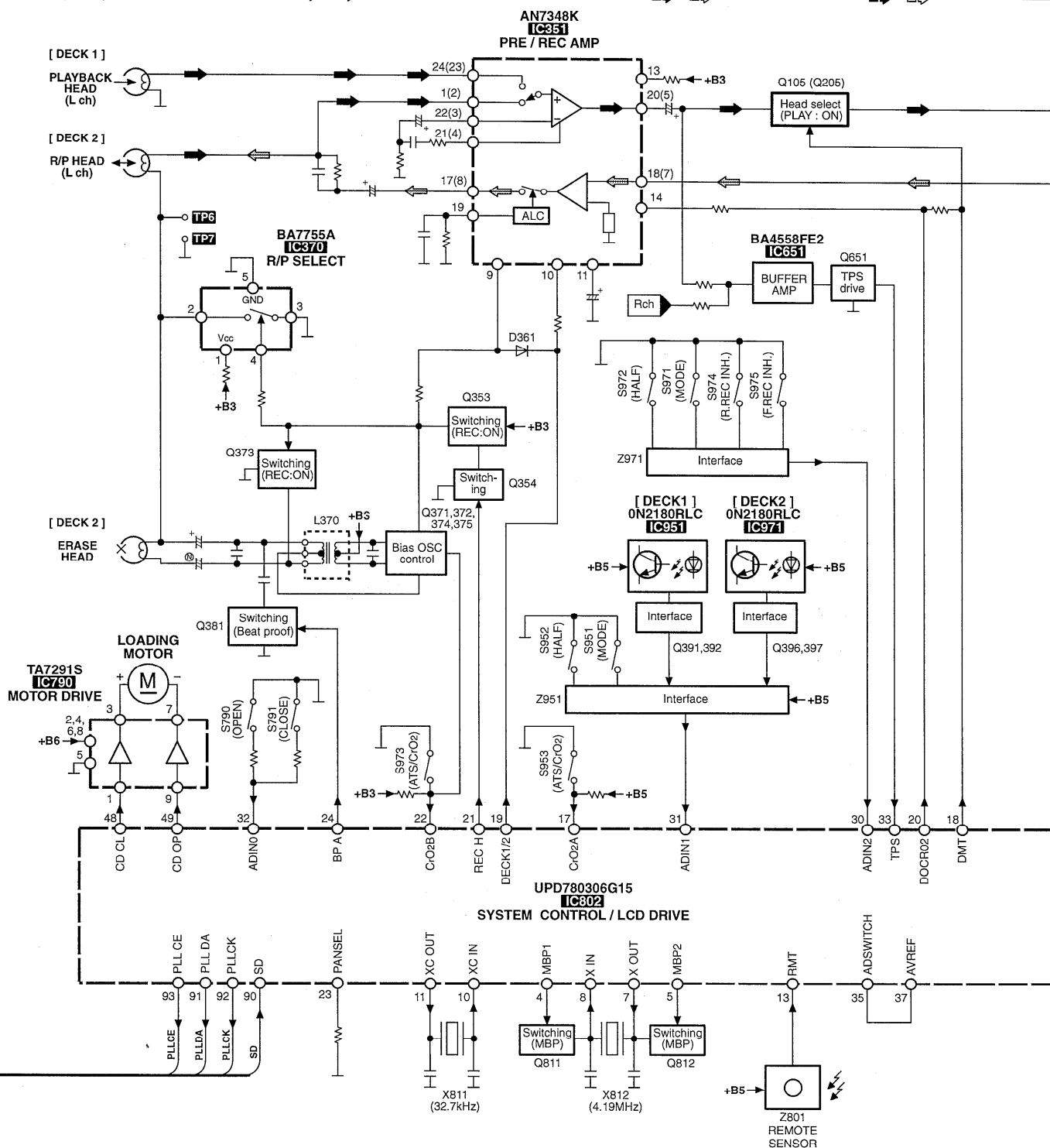
CD player section

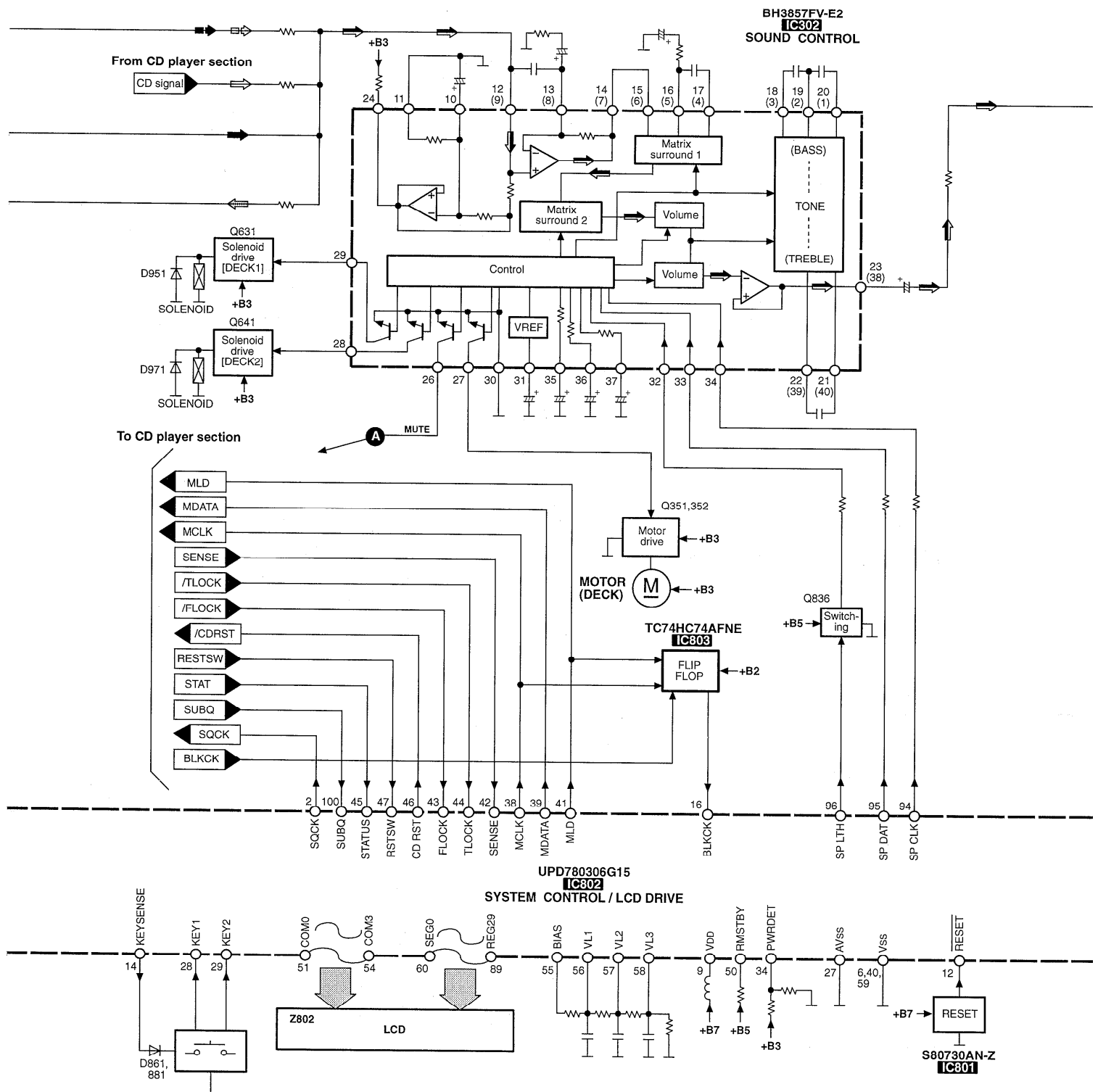


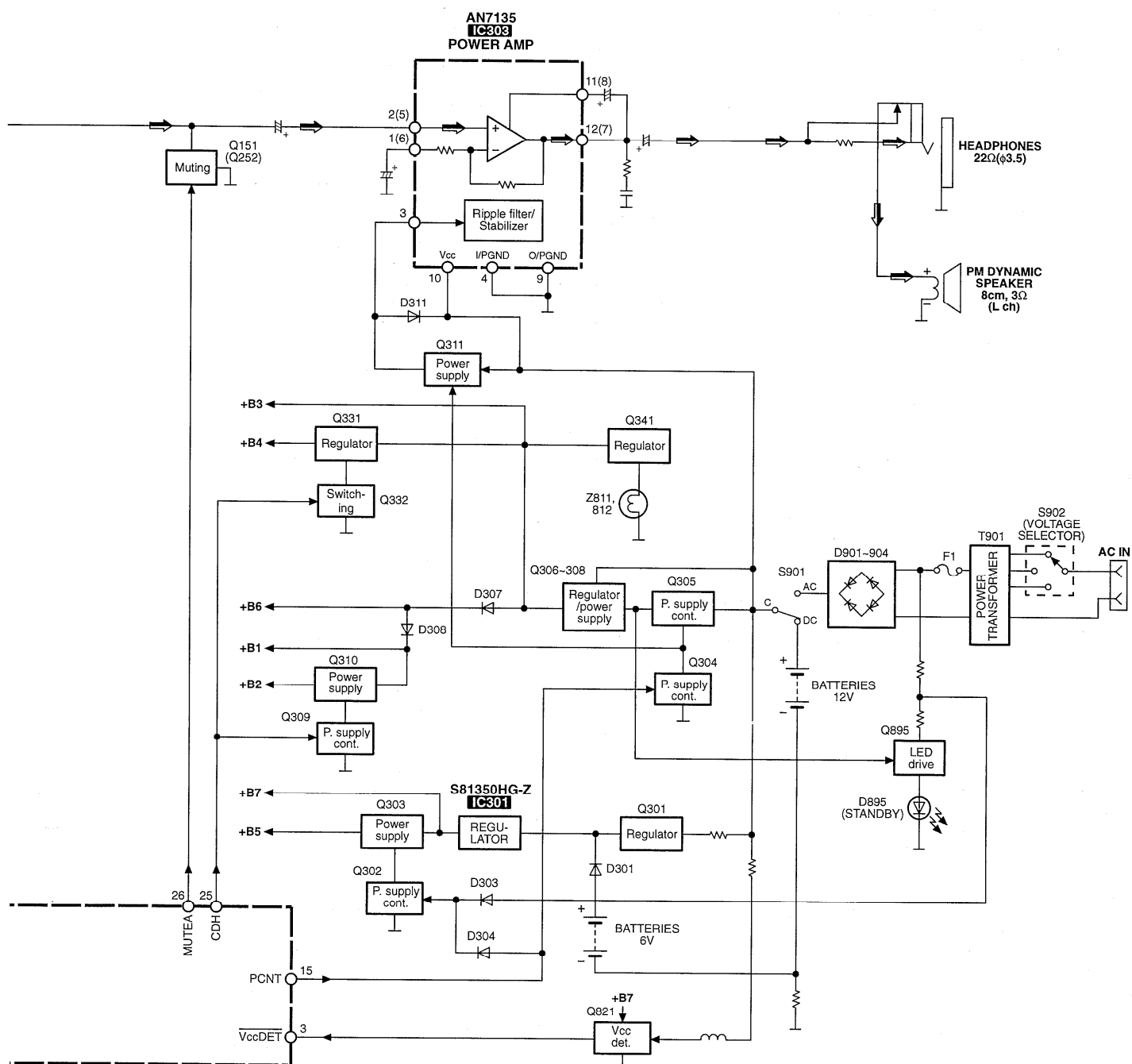


● Main section









Notes

- : CD signal : FM signal : FM OSC signal
 : AM signal : AM OSC signal : FM/AM Vcap signal
 : Playback signal : REC signal : Main signal
- 2) () indicates pin No. of right channel.

■ Terminal Function of IC's

● IC802 (UPD780306G15): System control / LCD drive

| Pin No. | Terminal Name | I/O | Function |
|---------|---------------|-----|---|
| 1 | NC | – | No used, connected to GND |
| 2 | SQCK | O | CD sub-code data clock output |
| 3 | VccDET | I | Power detect signal input |
| 4, 5 | MBP1, 2 | O | Beat proof control signal output |
| 6 | Vss | – | GND |
| 7 | X OUT | O | Main clock (4.19 MHz) |
| 8 | X IN | I | |
| 9 | Vbd | – | Power supply (+5 V) |
| 10 | XC IN | I | Sub clock (32.7 kHz) |
| 11 | XC OUT | O | |
| 12 | RESET | I | System reset signal input |
| 13 | RMT | I | Remote control signal input |
| 14 | KEYSENSE | O | Operation switch signal output |
| 15 | PCNT | O | Power control signal output |
| 16 | BLKCK | I | CD sub-code block clock input |
| 17 | CRO2A | I | DECK1 high position tape detect signal input |
| 18 | DMT | O | Tape signal muting control signal output |
| 19 | DECK 1/2 | O | Deck 1/2 select signal output |
| 20 | DO CRO2 | O | Tape equalizer control signal output |
| 21 | REC H | O | Recording control signal output |
| 22 | CRO2B | I | DECK 2 high position tape detect signal input |
| 23 | PANSEL | – | No used, connected to GND |
| 24 | BP A | O | Beat proof control signal output |
| 25 | CD H | O | CD operation control signal output |
| 26 | MUTE A | O | Muting signal output |
| 27 | AVss | – | GND |
| 28, 29 | KEY1, 2 | I | Operation switch signal input |
| 30 | ADIN2 | I | Deck2 switch signal input |
| 31 | ADIN1 | I | Deck1 switch signal input |
| 32 | ADIN0 | I | CD tray open/close detect signal input |
| 33 | TPS | I | TPS signal input |
| 34 | PWRDET | I | DC power supply detect signal input |

| Pin No. | Terminal Name | I/O | Function |
|---------|---------------|-----|---|
| 35 | AD SWITCH | O | Reference voltage output for operation switch |
| 36 | AVDD | I | Power supply (+5 V) |
| 37 | AVREF | I | Reference voltage input for operation switch |
| 38 | MCLK | O | IC702 control clock output |
| 39 | MDATA | O | IC702 control data output |
| 40 | Vss | – | GND |
| 41 | MLD | O | IC702 load signal output |
| 42 | SEMSE | I | IC702 sense signal input |
| 43 | FLOCK | I | CD focus lock signal input |
| 44 | TLOCK | I | CD tracking signal input |
| 45 | STATUS | I | IC702 status signal input |
| 46 | CD RST | O | CD circuit reset signal output |
| 47 | RST SW | I | S701 signal input |
| 48 | CD CL | O | Disc tray close signal output |
| 49 | CD OP | O | Disc tray open signal output |
| 50 | RMSTBY | I | Remote control STBY signal input |
| 51~54 | COM0~3 | O | LCD common drive signal output |
| 55 | BIAS | O | LCD bias |
| 56~58 | VL1~3 | I | LCD drive voltage input |
| 59 | Vss | – | GND |
| 60~89 | SEG0~29 | O | LCD segment drive signal output |
| 90 | SD | I | PLL signal detect input |
| 91 | PLL DA | O | PLL data output |
| 92 | PLL CK | O | PLL clock output |
| 93 | PLL CE | O | PLL chip enable output |
| 94 | SP CLK | O | Sound control IC control clock output |
| 95 | SP DATA | O | Sound control IC control data output |
| 96 | SP LTH | O | Sound control IC latch output |
| 97, 98 | SEG1, 2 | – | No used, connected to VDD |
| 99 | SEG3 | – | No used, Connected to GND |
| 100 | SUBQ | I | CD sub-code data input |

• IC701 (AN8837SBE1) : Servo Amp.

| No. | Terminal Name | I/O | Function |
|-----|---------------|-----|--|
| 1 | PDE | I | Tracking signal input terminal 1 (E ch) |
| 2 | PDF | I | Tracking signal input terminal 2 (F ch) |
| 3 | VCC | I | Power supply terminal |
| 4 | PDA | I | Focus signal input terminal 1 (A ch) |
| 5 | PDB | I | Focus signal input terminal 2 (B ch) |
| 6 | LPD | I | Laser PD signal |
| 7 | LD | O | Laser power auto control output |
| 8 | RF | O | RF amp terminal |
| 9 | RF IN | I | AGC input terminal |
| 10 | CSBRT | I | OFTR capacitor connection terminal |
| 11 | CEA | I | HPF-AMP capacitor connection terminal |
| 12 | BDO | O | Dropout detection control |
| 13 | LDON | I | LD APC ON/OFF ("H": ON, "L": OFF) |
| 14 | GND | — | GND terminal |
| 15 | /RFDET | O | RF det. signal output terminal ("L": det.) |
| 16 | CROSS | O | Tracking error zero cross output |
| 17 | OFTR | O | Off track detection ("H": det.) |
| 18 | VDET | O | Oscillation det. signal ("H": det.) |
| 19 | ENV | O | Envelope signal output terminal |
| 20 | ENVOFF | I | Not used, connected to power supply |
| 21 | TEBPF | O | Oscillation detect input terminal |
| 22 | TEN | I | Tracking error signal |
| 23 | TEOUT | O | Tracking error signal |
| 24 | FEOUT | O | Focus error signal |
| 25 | FEN | I | Focusing error signal |
| 26 | VREF | O | Reference voltage output terminal |
| 27 | TBAL | I | Tracking balance adj. input |
| 28 | FBAL | I | Focus balance adj. input |

• IC702 (MN662746RPK1) : Servo Processor, Digital Signal Processor, Digital Filter, D/A Converter

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

IC702 Continued

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

| Pin No. | Terminal Name | I/O | Function |
|---------|---------------|-----|---|
| 72 | AVDD1 | — | Power supply input (for analog circuit) |
| 73 | OUTL | O | Left channel audio signal output |
| 74 | AVSS1 | — | GND |
| 75 | OUTR | O | Right channel audio signal output |
| 76 | RSEL | I | RF signal polarity assignment input (at "H" level: RSEL = "H") (at "L" level: RSEL = "L") |
| 77 | CSEL | I | Crystal oscillating frequency designation input ("L": 16.9344 MHz, "H": 33.8688 MHz) |
| 78 | PSEL | I | Test terminal (Connected to GND) |
| 79 | MSEL | I | SMCK oscillating frequency designation input ("L": 4.2336 MHz, "H": 8.4672 MHz) |
| 80 | SSEL | I | SUBQ output mode select ("H": Q-code buffer mode) |

• IC703 (AN8780NSBE2): Focus Coil / Tracking Coil / Traverse Motor / Spindle Motor Drive

| No. | Terminal Name | I/O | Function |
|-----|---------------|-----|---|
| 1 | /RST | — | Not used, open |
| 2 | NC | — | — |
| 3 | IN2 | I | Motor driver (2) input |
| 4 | PC2 | I | Turntable motor drive signal ("L": ON) |
| 5 | NC | — | Not used, open |
| 6 | IN1 | I | Motor driver (1) input |
| 7 | PVcc1 | I | Driver power supply terminal (1) |
| 8 | PGND1 | — | Driver GND terminal (1) |
| 9 | NC | — | Not used, connected to GND |
| 10 | D1— | O | Motor driver (1) output terminal (—) |
| 11 | D1+ | O | Motor driver (1) output terminal (+) |
| 12 | D2— | O | Motor driver (2) output terminal (—) |
| 13 | D2+ | O | Motor driver (2) output terminal (+) |
| 14 | D3— | O | Motor driver (3) output terminal (—) |
| 15 | D3+ | O | Motor driver (3) output terminal (+) |
| 16 | D4— | O | Motor driver (4) output terminal (—) |
| 17 | D4+ | O | Motor driver (4) output terminal (+) |
| 18 | NC | — | Not used, open |
| 19 | PGND2P | — | Driver GND terminal (2) |
| 20 | PVcc2 | I | Driver power supply (2) |
| 21 | VCC | I | Power supply terminal |
| 22 | VREF | I | Reference voltage Input terminal |
| 23 | IN4 | I | Motor driver (4) input |
| 24 | IN3 | I | Motor driver (3) input |
| 25 | RSTIN | I | Reset terminal (Not used, connected to GND) |
| 26 | NC | — | Not used, connected to GND |

Measurements and Adjustments

• ALIGNMENT INSTRUCTION

| READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT | |
|---|--|
| <ul style="list-style-type: none"> Set selector switch to AM or TAPE. Set volume level to 40. | <ul style="list-style-type: none"> Output of signal generator should be no higher than necessary to obtain an output reading. |

• AM ALIGNMENT

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

| SIGNAL GENERATOR or SWEEP GENERATOR | | RADIO DIAL SETTING | INDICATOR (ELECTRONIC VOLTMETER or OSCILLOSCOPE) | ADJUSTMENT (Refer to Fig. 1) | REMARKS |
|--|-----------|--------------------|---|------------------------------|---|
| CONNECTIONS | FREQUENCY | | | | |
| AM-RF ALIGNMENT | | | | | |
| Fashion a loop of several turns of wire and radiate a signal into the loop ant. of receiver. | 594 kHz | Tune to signal | Headphones Jack (32Ω) <small>(Fabricate the plug as shown in Fig.2 and then connect the lead wires of the plug to the measuring instrument.)</small> | (*1) L3 (AM ANT) | Adjust for maximum output. Adjust L3 by moving coil along the ferrite core. |
| 〃 | 1503 kHz | 〃 | 〃 | CT1 (AM ANTI) | Adjust for maximum output. |
| (*1) Fix antenna coil with wax after completing alignment. | | | | | |

• HEAD AZIMUTH ALIGNMENT

| TEST TAPE | INDICATOR ELECTRONIC VOLT-METER or OSCILLOSCOPE | ADJUSTMENT | REMARKS |
|--|---|------------------------------------|--|
| QZZCFM (8 kHz, -20 dB) | Headphones Jack (32 Ω) (Fabricate the plug shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.) | Azimuth Screw (Shown in Fig. 3) | 1. Insert the test tape (QZZCFM) and start playback. 2. Adjust the azimuth screw for maximum waveform on the oscilloscope and the similar output on L and R channels. |
| Caution: <ul style="list-style-type: none"> Please remove the screw-locking bond left on the head base when replacing the azimuth screw. After the adjustment, apply screwlock to the azimuth adjusting screw and spring. (Screw-locking bond: RZZ0L01) | | | |

• TAPE SPEED ALIGNMENT

| TEST TAPE | INDICATOR ELECTRONIC VOLT-METER or OSCILLOSCOPE | ADJUSTMENT | REMARKS |
|----------------------------|---|-------------------------------|--|
| QZZCWAT (3 kHz, -10 dB) | Headphones Jack (32 Ω) (Fabricate the plug shown in Fig. 2 and then connect the lead wires of the plug to the measuring instrument.) | Motor VR (Shown in Fig. 4) | 1. Insert the test tape (QZZCWAT) in DECK2 and start FWD playback. 2. Adjust motor VR until the frequency is set to 3000 ± 60 Hz on the frequency counter. 3. Check that the frequency is set to within ± 60 Hz for playback in forward direction after playback in reverse direction. |

• ALIGNMENT POINT

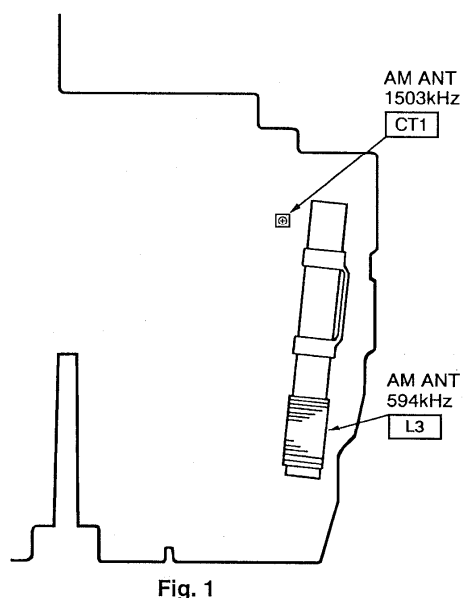


Fig. 1

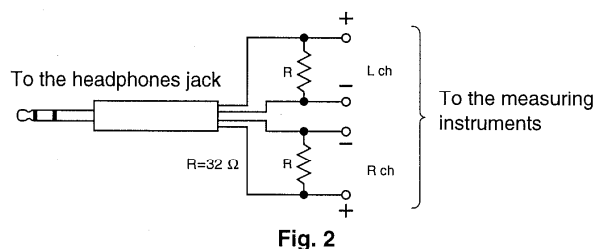


Fig. 2

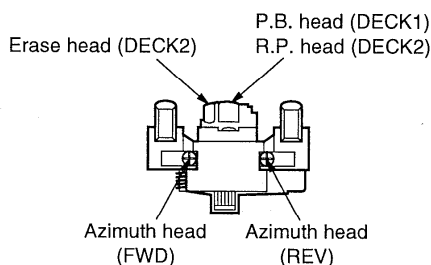


Fig. 3

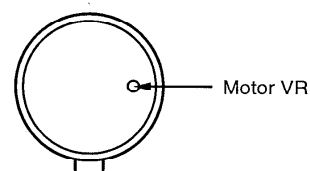
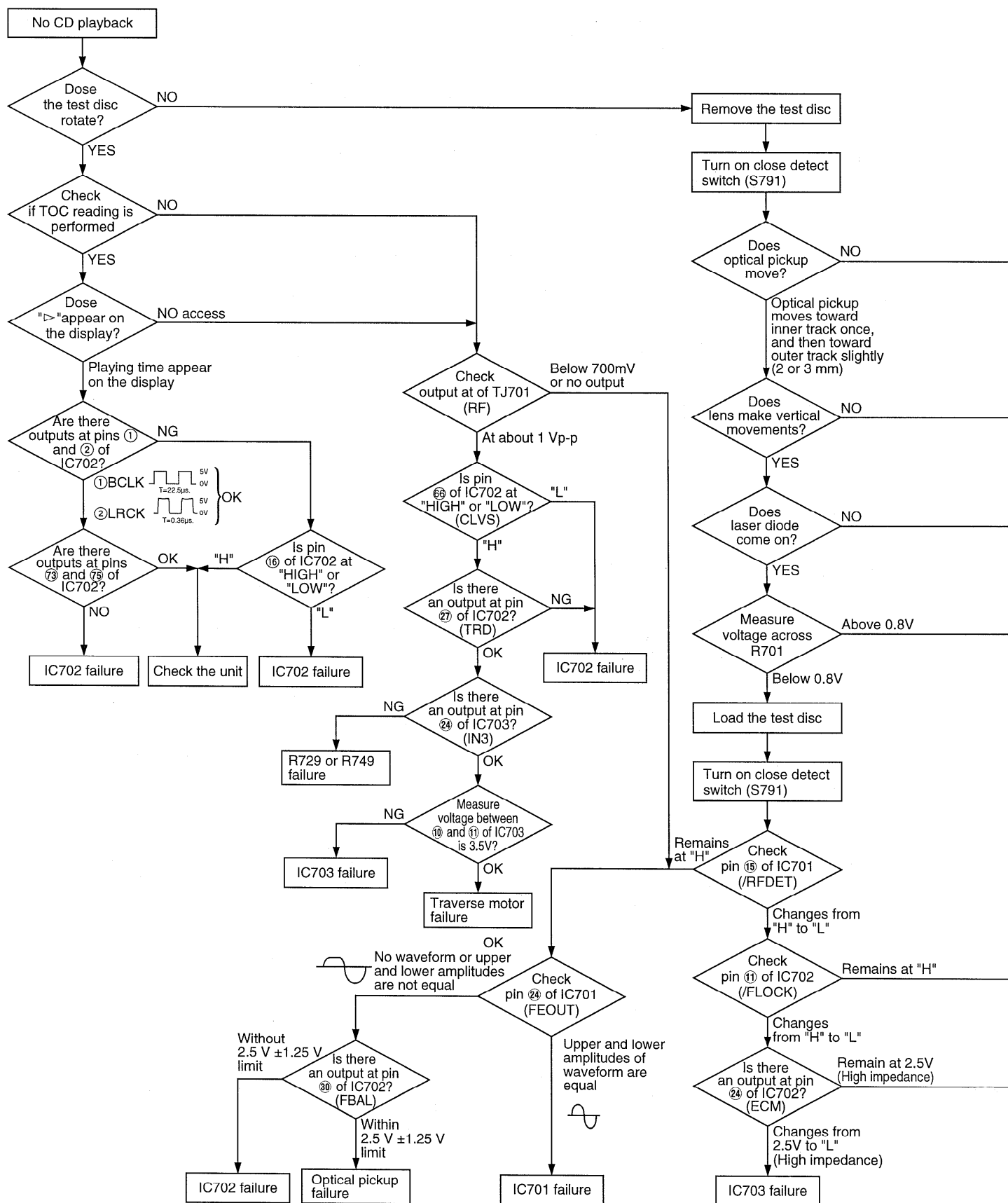
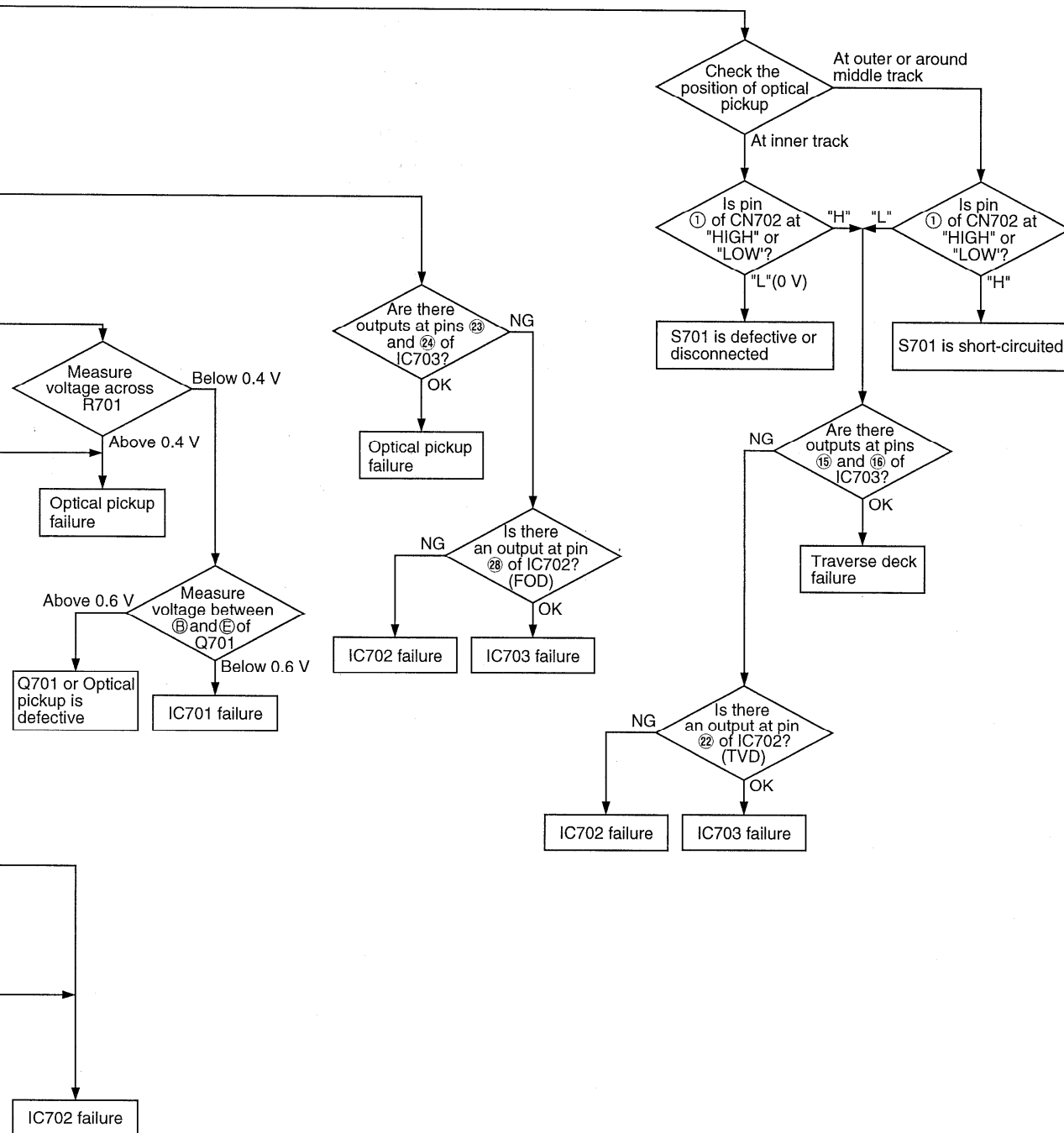


Fig. 4

Troubleshooting Guide





■ Replacement Parts List

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 manufacture's specified parts shown in the parts list.

* ALL parts are supplied by MESA.

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|--------------|-------------------------|-----|---------|
| 1 | RAS8P05-H | SPEAKER | 1 | |
| 2 | RDG0183-L | DAMPER GEAR | 2 | |
| 3 | REEX0042 | WIRE | 1 | |
| 4 | REXX0170 | SPEAKER WIRE | 1 | |
| 5 | RGKX0025-S | CD LID | 1 | |
| 6 | RFKNXED55ESB | CONTROL BUTTON 1 | 1 | |
| 7 | RFKNXED55ESA | CONTROL BUTTON 2 | 1 | |
| 10 | RFGKXED55EBS | FRONT CABINET ASS'Y | 1 | |
| 11 | RFKNXED55ESC | TOP CAB | 1 | |
| 11-1 | RMEX0005 | EJECT SPRING | 2 | |
| 12 | RJRX0004 | ANT WIRE | 1 | |
| 14 | RKH0007-H | HANDLE | 1 | |
| 15 | RKK0073-1K | BATTERY COVER | 1 | |
| 18 | RMB0448-J | LOCK ROD SPRING | 2 | |
| 20 | RMM0163 | CASSETTE LOCK ROD | 2 | |
| 21 | RFKLXED55-SA | CASS HOLDER (L) ASS'Y | 1 | |
| 21-1 | RUST57ZAA | CASS HALF SPRING | 1 | |
| 22 | RFKLXED55-SB | CASS HOLDER (R) ASS'Y | 1 | |
| 22-1 | RUST57ZAA | CASS HALF SPRING | 1 | |
| 23 | RMNX0020-W | LCD HOLDER | 1 | |
| 24 | RMNX0021-K | LED HOLDER | 1 | |
| 25 | RFKHXED55GCS | BACK CABINET ASS'Y | 1 | |
| 25-1 | RJC91005 | BATTERY SPRING | 1 | |
| 26 | RMVX0032 | HEAT SINK | 1 | |
| 27 | RMVX0035 | X-FORMER H/SINK | 1 | |
| 28 | RSCX0038 | MICON SHIELD PLATE | 1 | |
| 29 | XEARR175EA-Y | ROD ANTENNA | 1 | |
| 30 | XTBS26+10J | SCREW (FRONT) | 18 | |
| 31 | XTV3+10F | SCREW (HEAT SINK) | 3 | |
| 32 | XTV3+12G | SCREW | 12 | |
| 33 | XTV3+20G | SCREW | 8 | |
| 34 | XTW3+12Q | WASHER HEAD SCREW | 8 | |
| 35 | XTWS3+8T | SCREW | 1 | |
| 36 | XYN3+F12FY | ROD ANT SCREW | 1 | |
| 101 | RED0037 | R/P HEAD BLOCK UNIT | 1 | |
| 101-1 | RHE5152ZB | SCREW | 1 | |
| 102 | RED0038 | P/B HEAD BLOCK UNIT | 1 | |
| 102-1 | RHE5152ZB | SCREW | 1 | |
| 103 | RDG0300 | REEL BASE GEAR | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|---------|--------------|-------------------------|-----|---------|
| 104 | RDG0301 | WINDING RELAY GEAR | 1 | |
| 105 | RDG0026 | MAIN GEAR | 1 | |
| 106 | RDR0029 | PULLEY | 1 | |
| 107 | RDV0033-1 | WINDING BELT | 1 | |
| 108 | RDV0034 | CAPSTAN BELT 'A' | 1 | |
| 109 | RDV0035 | CAPSTAN BELT 'B' | 1 | |
| 110 | RUW147ZA | SPRING | 1 | |
| 111 | RMB0400 | REEL SPRING | 1 | |
| 112 | RMB0403 | HEAB PANEL SPRING | 1 | |
| 113 | RMB0404 | BRAKE ROD SPRING | 1 | |
| 114 | RMB0406 | FR LEVER SPRING | 1 | |
| 115 | RMB0408 | THRUST SPRING | 1 | |
| 116 | RML0370 | TRIGGER LEVER | 1 | |
| 117 | RML0371 | FR LEVER | 1 | |
| 118 | RML0372 | WINDING LEVER | 1 | |
| 119 | RML0374 | EJECT LEVER | 1 | |
| 120 | RMM0131 | BRAKE ROD | 1 | |
| 121 | RMM0133 | EJECT ROD | 1 | |
| 122 | RMQ0519 | REEL HUB | 1 | |
| 123 | RMS0398-1 | SHAFT | 1 | |
| 124 | RSJ0003 | PLUNGER | 1 | |
| 125 | RUS609ZC | SPRING | 1 | |
| 126 | RXF0049 | FLYWHEEL 'F' ASS'Y | 1 | |
| 127 | RXF0050 | FLYWHEEL 'R' ASS'Y | 1 | |
| 128 | RXG0040 | FF RELAY GEAR ASS'Y | 1 | |
| 129 | RMK0283 | SUB-CHASSIS | 1 | |
| 130 | RXL0124 | PINCH ROLLER 'F' ASS | 1 | |
| 130-1 | RMB0401 | PINCH ARM SPRING 'F' | 1 | |
| 131 | RXL0125 | PINCH ROLLER 'R' ASS | 1 | |
| 131-1 | RMB0402 | PINCH ARM SPRING 'R' | 1 | |
| 132 | RXL0126 | WINDING ARM ASS'Y | 1 | |
| 133 | RXQ0412 | HEAD PANEL ASS'Y | 1 | |
| 133-1 | RMB0405 | F.R ROD SPRING | 1 | |
| 133-2 | RMM0132 | FR ROD | 1 | |
| 134 | REM0070 | CAP MOTOR ASS'Y | 1 | |
| 135 | RHD26022 | MOTOR SCREW | 1 | |
| 136 | XTW2+5L | HEAD BLOCK UNIT SCRE | 1 | |
| 137 | XTW26+10S | SUB-CHASSIS SCREW | 1 | |
| 138 | XYC2+JF17 | PCB EARTH SCREW | 1 | |
| 139 | RFKJXED70-K | CHASSIS ASS'Y | 1 | |
| 301 | RFKJXDT07-K | TRV CHASSIS ASS'Y | 1 | |
| 301-1 | RDG0142 | INTERMEDIATE GEAR | 1 | |
| 301-2 | RDG0193 | DRIVE GEAR (1) | 1 | |
| 301-3 | RDP0065 | INTERMEDIATE PULLEY | 1 | |
| 302 | REM0019 | LOADING MOTOR ASS'Y | 1 | |
| 303 | RMK0255 | BELT COVER | 1 | |
| 304 | RQ0144-K | DISC TRAY | 1 | |
| 305 | RAE0150Z | TRAVERSE UNIT | 1 | |
| 305-1 | SHGD113-1 | FLOATING RUBBER (A) | 1 | |
| 305-2 | SNSD38 | SCREW | 1 | |
| 306 | RMS0350 | FIXED PIN B | 1 | |
| 307 | RMS0123-1 | FIXED PIN A | 1 | |
| 308 | RME0109 | FLOATING SPRING A | 1 | |
| 309 | RME0142 | FLOATING SPRING B | 1 | |
| 310 | RMR0698-K | TRAVERSE CHASSIS | 1 | |
| 311 | XTV2+6G | SCREW | 1 | |
| 312 | RME0063 | LOCK LEVER SPRING | 1 | |
| 313 | RMM0079-1 | SLIDE PLATE (1) | 1 | |
| 314 | RML0178-1 | LOCK LEVER | 1 | |
| 315 | RFKNLPG440-K | DRIVE GEAR (2) ASS'Y | 1 | |
| 316 | RHD20009-1 | SCREW | 1 | |
| 317 | RME0087 | ASSISTANCE SPRING | 1 | |
| 318 | RML0349 | CONVERSION LEVER | 1 | |
| 319 | RMM0059-1 | SLIDE PLATE (2) | 1 | |
| 320 | RMR0334 | FIXED PLATE | 1 | |
| 321 | RHM245ZA | MAGNET | 1 | |
| 322 | RXQ0380 | MAGNET HOLDER ASS'Y | 1 | |
| 323 | XTN26+6G | SCREW | 1 | |
| 324 | RMA0793 | CLAMP PLATE | 1 | |
| 325 | XYN2+F6FZ | SCREW (MOOTOR) | 1 | |
| 326 | RMG0158 | BELT | 1 | |
| 327 | XTN2+6G | SCREW | 1 | |
| A1 | RAK-RX942WK | REMOTE CONTROL | 1 | |
| A1-1 | HTR0213-72PW | R/C BATTERY COVER | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|
| A2 | RQT4217-G | O/I BOOK | 1 | |
| A3 | RJA0019-2K | AC CORD | 1 | |
| A4 | RJP13G04-H | AC CORD ADAPTOR | 1 | |
| C4 | RCBS1H102KB5 | 50V 1000P | 1 | |
| C5 | ECBT1H2R2KC5 | 50V 2.2P | 1 | |
| C6, C7 | RCBS1H102KB5 | 50V 1000P | 2 | |
| C8 | ECBT1H471KB5 | 50V 4.7P | 1 | |
| C9 | ECEA1HKA010B | 50V 1 | 1 | |
| C10 | ECBT1C332MR5 | 16V 3300P | 1 | |
| C11 | ECEA1KA101B | 10V 100 | 1 | |
| C12 | ECFR1C223MR | 16V 0.022 | 1 | |
| C13, 14 | ECBT1C103MS5 | 16V 0.01 | 2 | |
| C15 | ECBT1H681KB5 | 50V 6.8P | 1 | |
| C16, 17 | RCBS1H102KB5 | 50V 1000P | 2 | |
| C18 | ECBT1H200JC5 | 50V 20P | 1 | |
| C19 | ECBT1H220JC5 | 50V 22P | 1 | |
| C20 | RCBS1H102KB5 | 50V 1000P | 1 | |
| C21 | ECEA1KA101B | 10V 100 | 1 | |
| C22-24 | RCBS1H102KB5 | 50V 1000P | 3 | |
| C25 | ECBT1H150JC5 | 50V 15P | 1 | |
| C26 | ECBT1H681KB5 | 50V 6.8P | 1 | |
| C27 | ECBT1H471KB5 | 50V 4.7P | 1 | |
| C28, 29 | RCBS1H102KB5 | 50V 1000P | 2 | |
| C30 | ECBT1H471KB5 | 50V 4.7P | 1 | |
| C31 | RCBS1H102KB5 | 50V 1000P | 1 | |
| C32, 33 | ECBT1H101KB5 | 50V 100P | 2 | |
| C34 | ECBT1H680J5 | 50V 68P | 1 | |
| C35 | ECBT1H155MC5 | 50V 1.5P | 1 | |
| C36, 37 | RCBS1H102KB5 | 50V 1000P | 2 | |
| C38 | ECBT1H331KB5 | 50V 330P | 1 | |
| C39, 40 | ECBT1C103MS5 | 16V 0.01 | 2 | |
| C44 | ECEA1KA101B | 10V 100 | 1 | |
| C47 | ECFR1C223MR | 16V 0.022 | 1 | |
| C48 | ECA1AM221B | 10V 220 | 1 | |
| C51 | ECEA1HKA010B | 50V 1 | 1 | |
| C52 | ECFR1C473MR | 16V 0.047 | 1 | |
| C60 | ECEA1CKA220B | 16V 22 | 1 | |
| C61 | ECBT1C332MR5 | 16V 3300P | 1 | |
| C62 | RCBS1H102KB5 | 50V 1000P | 1 | |
| C63 | ECBT1H681KB5 | 50V 680P | 1 | |
| C64 | RCBS1H102KB5 | 50V 1000P | 1 | |
| C67 | ECFR1C223MR | 16V 0.022 | 1 | |
| C68 | ECEA1HKA010B | 50V 1 | 1 | |
| C69, 70 | ECFR1C183KR | 16V 0.018 | 2 | |
| C71 | ECEA1HKA2R2B | 50V 2.2 | 1 | |
| C72 | ECEA1HKA010B | 50V 1 | 1 | |
| C74 | ECBT1H471KB5 | 50V 470P | 1 | |
| C75-77 | ECEA1HKA010B | 50V 1 | 3 | |
| C81 | ECBT1H331KB5 | 50V 330P | 1 | |
| C82 | ECBT1H220JC5 | 50V 22P | 1 | |
| C84 | ECBT1C103MS5 | 16V 0.01 | 1 | |
| C86 | ECBT1H331KB5 | 50V 330P | 1 | |
| C87, 88 | ECBT1C103MS5 | 16V 0.01 | 2 | |
| C90 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C101 | ECBT1C152KR5 | 16V 1500P | 1 | |
| C102 | ECBT1H681KB5 | 50V 680P | 1 | |
| C103 | ECEA1KA101B | 10V 100 | 1 | |
| C104 | ECFR1C183KR | 16V 0.018 | 1 | |
| C105 | ECEA1HKA010B | 50V 1 | 1 | |
| C106 | ECBT1C152KR5 | 16V 1500P | 1 | |
| C111 | ECBT1H221KB5 | 50V 220P | 1 | |
| C112 | ECEA1HKA010B | 50V 1 | 1 | |
| C113, 14 | ECBT1H102KB5 | 50V 1000P | 2 | |
| C121 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C131 | ECEA1HKA010B | 50V 1 | 1 | |
| C151, 52 | ECEA1HKA2R2B | 50V 0.22 | 2 | |
| C153 | ECBT1H471KB5 | 50V 470P | 1 | |
| C154, 55 | ECEA1KA101B | 10V 100 | 2 | |
| C156 | ECA1AM102B | 10V 1000 | 1 | |
| C157 | ECFR1C104KR | 16V 0.1 | 1 | |
| C159 | ECFR1C683MR | 16V 0.068 | 1 | |
| C201 | ECBT1C152KR5 | 16V 1500P | 1 | |
| C202 | ECBT1H681KB5 | 50V 680P | 1 | |
| C203 | ECEA1KA101B | 10V 100 | 1 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|
| C204 | ECFR1C183KR | 16V 0.018 | 1 | |
| C205 | ECEA1HKA010B | 50V 1 | 1 | |
| C206 | ECBT1C152KR5 | 16V 1500P | 1 | |
| C211 | ECBT1H221KB5 | 50V 220P | 1 | |
| C212 | ECEA1HKA010B | 50V 1 | 1 | |
| C213, 14 | ECBT1H102KB5 | 50V 1000P | 2 | |
| C221 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C231 | ECEA1HKA010B | 50V 1 | 1 | |
| C251, 52 | ECEA1HKA2R2B | 50V 0.22 | 2 | |
| C253 | ECBT1H471KB5 | 50V 470P | 1 | |
| C254, 55 | ECEA1KA101B | 10V 100 | 2 | |
| C256 | ECA1AM102B | 10V 1000 | 1 | |
| C257 | ECFR1C104KR | 16V 0.1 | 1 | |
| C259 | ECFR1C683MR | 16V 0.068 | 1 | |
| C301 | ECA1EM332E | 25V 3300 | 1 | |
| C302 | ECA1CM101B | 16V 100 | 1 | |
| C303 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C304 | ECBT1E103ZF5 | 25V 0.01 | 1 | |
| C305 | ECBT1H471KB5 | 50V 470P | 1 | |
| C306, 07 | ECEA1KA101B | 10V 100 | 2 | |
| C308 | ECBT1E103ZF5 | 25V 0.01 | 1 | |
| C309 | ECEA1KA470B | 10V 47 | 1 | |
| C310 | ECEA1CKA100B | 16V 10 | 1 | |
| C311 | ECA1CM331B | 16V 330 | 1 | |
| C312 | ECEA1KA101B | 10V 100 | 1 | |
| C321 | ECA1CM331B | 16V 330 | 1 | |
| C322 | ECA1CM471B | 16V 470 | 1 | |
| C326 | ECR1H103ZF5 | 50V 0.01 | 1 | |
| C327 | ECA1CM331B | 16V 330 | 1 | |
| C328 | ECEA1CKA100B | 16V 10 | 1 | |
| C331 | ECEA1CKA100B | 16V 10 | 1 | |
| C336, 37 | ECBT1H104ZF5 | 50V 0.1 | 2 | |
| C341 | ECEA1CKA100B | 16V 10 | 1 | |
| C351 | ECA1AM221B | 10V 220 | 1 | |
| C354 | ECEA1CKA100B | 16V 10 | 1 | |
| C355 | ECEA1KA470B | 10V 47 | 1 | |
| C356 | ECEA1CKA220B | 16V 22 | 1 | |
| C357 | ECEA1HKA3R3B | 50V 3.3 | 1 | |
| C358 | ECEA1CKA220B | 16V 22 | 1 | |
| C359 | ECFR1C393KR | 16V 0.039 | 1 | |
| C361 | ECEA1CKA220B | 16V 22 | 1 | |
| C370 | ECEA1HN2R2SB | 50V 2.2 | 1 | |
| C371 | ECEA1KA470B | 10V 47 | 1 | |
| C372 | ECBT1C332MR5 | 16V 3300P | 1 | |
| C373 | ECBT1C222MR5 | 16V 2200P | 1 | |
| C374 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C375 | ECBT1C222MR5 | 16V 2200P | 1 | |
| C376 | ECBT1H102KB5 | 50V 1000P | 1 | |
| C377 | ECQV1H473JZ3 | 50V 0.047 | 1 | |
| C378 | ECEA1KA101B | 10V 100 | 1 | |
| C379 | ECQP2A472JZT | 100V 4700P | 1 | |
| C380 | ECEA1HKA010B | 50V 1 | 1 | |
| C381 | ECBT1C103MS5 | 16V 0.01 | 1 | |
| C382 | ECQP2A821JZT | 100V 820P | 1 | |
| C383 | ECEA1HKA010B | 50V 1 | 1 | |
| C401 | ECEA1CKA100B | 16V 10 | 1 | |
| C402 | ECFR1C393KR | 16V 0.039 | 1 | |
| C403 | ECFR1C104KR | 16V 0.1 | 1 | |
| C404 | ECBT1H221KB5 | 50V 220P | 1 | |
| C405 | ECEA1CKA100B | 16V 10 | 1 | |
| C406 | ECBT0J153MS5 | 6.3V 0.015 | 1 | |
| C501 | ECEA1CKA100B | 16V 10 | 1 | |
| C502 | ECFR1C393KR | 16V 0.039 | 1 | |
| C503 | ECFR1C104KR | 16V 0.1 | 1 | |
| C504 | ECBT1H221KB5 | 50V 220P | 1 | |
| C506 | ECBT0J153MS5 | 6.3V 0.015 | 1 | |
| C511 | ECBT1H470J5 | 50V 47P | 1 | |
| C512 | ECBT1H221KB5 | 50V 220P | 1 | |
| C601 | ECEA1HKA010B | 50V 1 | 1 | |
| C602 | ECEA1CKA100B | 16V 10 | 1 | |
| C604-07 | ECEA1HKA010B | 50V 1 | 4 | |
| C611 | ECBT1H470J5 | 50V 47P | 1 | |
| C612 | ECBT1H221KB5 | 50V 220P | 1 | |
| C621, 22 | ECBT1H561KB5 | 50V 560P | 2 | |
| C634, 35 | ECBT1H221KB5 | 50V 220P | 2 | |

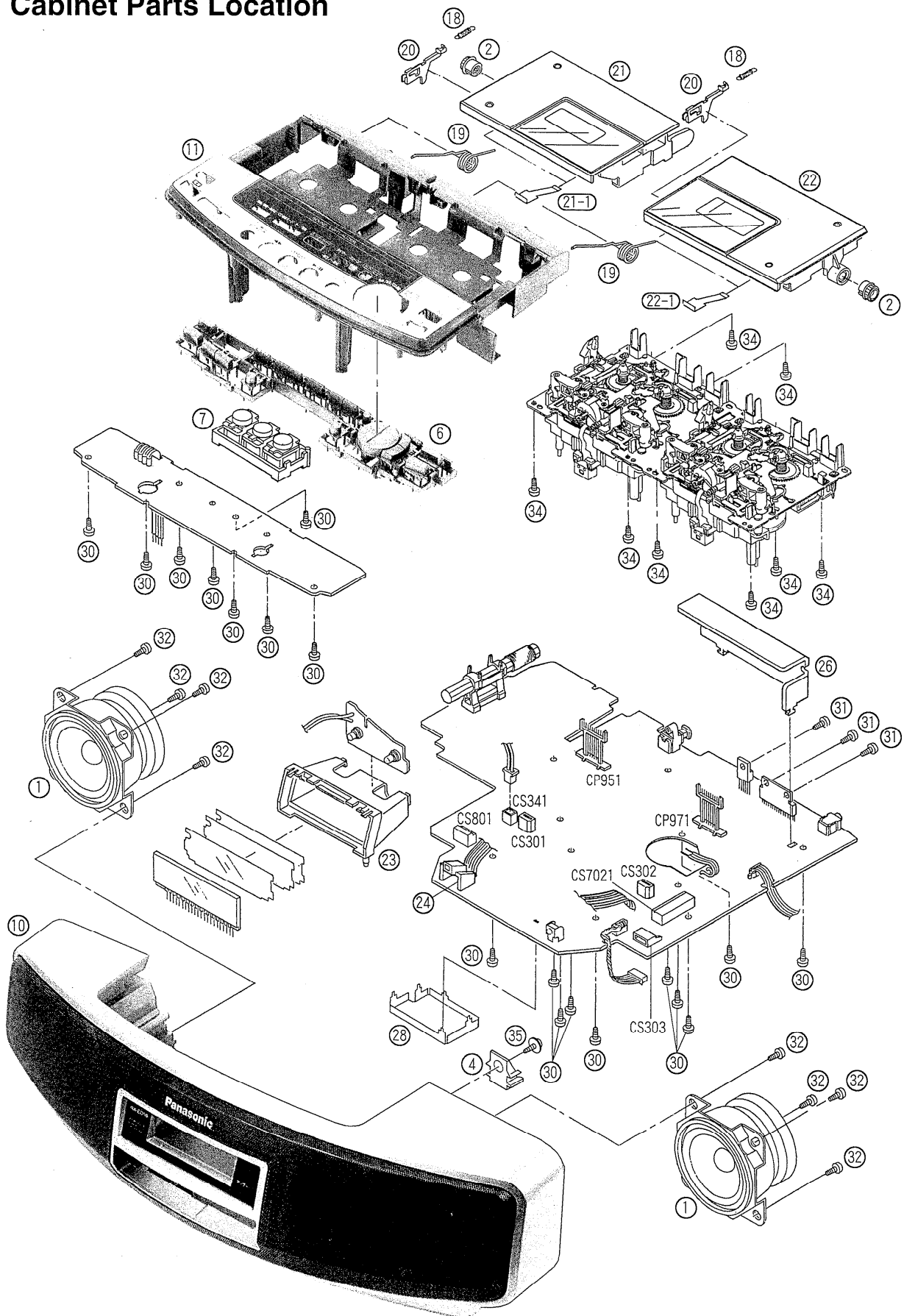
| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks | Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|-----------|--------------|-------------------------|-----|---------|
| C636 | ECBT1C103MS5 | 16V 0.01 | 1 | | CS301, 02 | RJS1A6805-J | CONNECTOR (5P) | 2 | |
| C651 | ECBT1C103MS5 | 16V 0.01 | 1 | | CS303 | RJT060B04 | CONNECTOR (4P) | 1 | |
| C652 | ECEA1HKA3R3B | 50V 3.3 | 1 | | CS341 | RJP2G4YA | CONNECTOR (2P) | 1 | |
| C653 | ECBT1H470J5 | 50V 47P | 1 | | CS801 | RJS4T52A | CONNECTOR (4P) | 1 | |
| C654 | ECBT1C472WR5 | 16V 4700P | 1 | | CS901 | RJT029W004-1 | CONNECTOR (4P) | 1 | |
| C655 | ECFR1C104KR | 16V 0.1 | 1 | | CS902 | RJT029W003-1 | CONNECTOR (3P) | 1 | |
| C701 | ECEA0JKA3301 | 6.3V 33U | 1 | | CS951 | RJU071H09M1 | CONNECTOR (9P) | 1 | |
| C702 | ECUZNE104MBN | 25V 0.1U | 1 | | CS971 | RJU071H09M1 | CONNECTOR (9P) | 1 | |
| C703 | ECEA0JKA1011 | 6.3V 100U | 1 | | CS7021 | RJS1A6223-1 | CONNECTOR (23P) | 1 | |
| C704 | ECUZNE104MBN | 25V 0.1U | 1 | | | | | | |
| C706 | ECUV1H272KBN | 50V 2700P | 1 | | CT1 | ECRLA010A53R | TRIMMER CAPACITOR | 1 | |
| C707 | ECUV1E273KBN | 25V 0.027U | 1 | | | | | | |
| C710 | ECUV1H151KCN | 50V 150P | 1 | | CW341 | REXX0168 | LAMP MAIN WIRE (2P) | 1 | |
| C711, 12 | ECUWNE104ZFN | 25V 0.1U | 2 | | CW790 | REXX0169 | LOADING MOTOR WIRE (6P) | 1 | |
| C713 | ECUZNE104MBN | 25V 0.1U | 1 | | CW901 | REXX0166 | POWER MAIN WIRE (4P) | 1 | |
| C714 | ECEA0JKA1011 | 6.3V 100U | 1 | | CW902 | REXX0167 | POWER BATT WIRE (3P) | 1 | |
| C715 | ECUV1H182KBN | 50V 1800P | 1 | | | | | | |
| C716 | ECUV1H821KBN | 50V 820P | 1 | | D1 | KV1360NTW | DIODE | 1 | |
| C717 | ECUWNE104ZFN | 25V 0.1U | 1 | | D3 | KV1520NTW | DIODE | 1 | |
| C718 | ECUVNC224KBN | 16V 0.22U | 1 | | D4 | KV1360NTW | DIODE | 1 | |
| C721 | ECUV1H070DCN | 50V 7P | 1 | | D6 | 1SS254TA | DIODE | 1 | |
| C722 | ECUV1H100DCN | 50V 10P | 1 | | D11 | RV01SS135TA | DIODE | 1 | |
| C723 | ECEA1AKA2211 | 10V 220U | 1 | | D301 | 1SS254TA | DIODE | 1 | |
| C724 | ECUZNE104MBN | 25V 0.1U | 1 | | △ D302 | MTZJ12BTA | DIODE | 1 | |
| C725, 26 | ECUE1H102KBN | 50V 1000P | 2 | | D303, 04 | 1SS254TA | DIODE | 2 | |
| C727, 28 | ECEA1HPK0101 | 50V 1U | 2 | | △ D305 | MTZJ9R1BTA | DIODE | 1 | |
| C730 | ECUWNE104ZFN | 25V 0.1U | 1 | | D306 | 1SS254TA | DIODE | 1 | |
| C731, 32 | ECEA0JKA2211 | 6.3V 220U | 2 | | D307, 08 | 1SR35200TB | DIODE | 2 | |
| C733 | ECUZNE104MBN | 25V 0.1U | 1 | | D310 | 1SS254TA | DIODE | 1 | |
| C734 | ECEA1AKA2211 | 10V 220U | 1 | | D311 | RB441QT-77 | DIODE | 1 | |
| C735-37 | ECUWNE104ZFN | 25V 0.1U | 3 | | D312 | MTZJ5R6BTA | DIODE | 1 | |
| C738 | ECUZNE104MBN | 25V 0.1U | 1 | | △ D331 | MTZJ5R6CTA | DIODE | 1 | |
| C739 | ECUV1H103KBN | 50V 0.01U | 1 | | △ D341 | MTZJ6R2CTA | DIODE | 1 | |
| C742 | ECUV1E273KBN | 25V 0.027U | 1 | | D361 | 1SS254TA | DIODE | 1 | |
| C743 | ECUWNE104ZFN | 25V 0.1U | 1 | | D372 | 1SS254TA | DIODE | 1 | |
| C744 | ECUV1E123KBN | 25V 0.012U | 1 | | D651 | 1SS254TA | DIODE | 1 | |
| C745 | ECUE1C473KBN | 16V 0.047U | 1 | | D801 | 1SS254TA | DIODE | 1 | |
| C747 | ECUV1H221KBN | 50V 220P | 1 | | D861 | 1SS254TA | DIODE | 1 | |
| C748 | ECUE1H471KBN | 50V 470P | 1 | | D881 | 1SS254TA | DIODE | 1 | |
| C749 | ECUV1H222KBN | 50V 2200P | 1 | | D895 | RVDSLBS5VR | L.E.D | 1 | |
| C750, 51 | ECUZNE104MBN | 25V 0.1U | 2 | | D896, 97 | 1SS254TA | DIODE | 2 | |
| C752 | ECUE1H102KBN | 50V 1000P | 1 | | △ D901-04 | 1SR35200TB | DIODE | 4 | |
| C753 | ECUV1H471KBN | 50V 470P | 1 | | D951 | MA165TA | DIODE | 1 | |
| C754 | ECUE1H471KBN | 50V 470P | 1 | | D971 | MA165TA | DIODE | 1 | |
| C761, 62 | ECUE1H471KBN | 50V 470P | 2 | | | | | | |
| C790 | ECA1AKF820 | 10V 82U | 1 | | △ F1 | XBA2C20TB0 | FUSE | 1 | |
| C801 | ECEA1CKA100B | 16V 10 | 1 | | | | | | |
| C802 | ECBT1H331KB5 | 50V 330P | 1 | | FH901, 02 | RJR0169T | FUSE HOLDER | 2 | |
| C803 | ECBT1C103MS5 | 16V 0.01 | 1 | | | | | | |
| C804 | ECEA1AKA101B | 10V 100 | 1 | | △ FP901 | RSFMB40KT-L | FUSE PROTECTOR | 1 | |
| C805 | ECBT1H102KB5 | 50V 1000P | 1 | | | | | | |
| C811, 12 | ECBT1H220J5 | 50V 22P | 2 | | IC1 | TA7358FMATEL | IC | 1 | |
| C813 | ECBT1H820KB5 | 50V 82P | 1 | | IC2 | BU2616F-E2 | IC | 1 | |
| C814 | ECBT1H680J5 | 50V 68P | 1 | | IC4 | LA1832MLSTEL | IC | 1 | |
| C815, 16 | ECBT1H820KB5 | 50V 82P | 2 | | △ IC301 | S81350HG-Z | IC | 1 | |
| C817-19 | ECBT1H102KB5 | 50V 1000P | 3 | | IC302 | BH3857FV-E2 | IC | 1 | |
| C826-28 | ECBT1C103MS5 | 16V 0.01 | 3 | | IC303 | AN7135 | IC | 1 | |
| C831, 32 | ECBT1H4R7KC5 | 50V 4.7P | 2 | | IC351 | AN7348K | IC | 1 | |
| C833 | ECBT1H221KB5 | 50V 220P | 1 | | IC370 | BA7755A | IC | 1 | |
| C837-39 | ECBT1H221KB5 | 50V 220P | 3 | | IC651 | BA4558FE2 | IC | 1 | |
| C841 | ECBT1H102KB5 | 50V 1000P | 1 | | IC701 | AN8837SBE1 | IC | 1 | |
| C842-49 | ECBT1H221KB5 | 50V 220P | 8 | | IC702 | MN662746RPK1 | IC | 1 | |
| C856, 57 | ECBT1H181KB5 | 50V 180P | 2 | | IC703 | AN8780SBE2 | IC | 1 | |
| C875 | ECEA1CKA220B | 16V 22 | 1 | | IC801 | S80730AN-Z | IC | 1 | |
| C896 | ECBT1H104ZF5 | 50V 0.1 | 1 | | IC802 | UPD780306G15 | IC | 1 | |
| C901-04 | ECKR1H103ZF5 | 50V 0.01 | 4 | | IC803 | TC74HC74AFNE | IC | 1 | |
| | | | | | IC951 | 0N2180RLC | IC | 1 | |
| CF1, F2 | RLFFETMLA02D | CERAMIC FILTER | 2 | | IC971 | 0N2180RLC | IC | 1 | |
| CF3 | RLFDFT14AD | CERAMIC FILTER | 1 | | | | | | |
| CN701 | RJU035T016-1 | CONNECTOR (16P) | 1 | | JK301 | RJJ37TK01-1C | HEADPHONES | 1 | |
| CN702 | RJS1A6723-1Q | CONNECTOR (23P) | 1 | | △ JK901 | RJJ1SE01-1H | AC INLET | 1 | |
| CP951 | RJT071H09A | CONNECTOR (9P) | 1 | | L3 | RLV2C037-0 | C01L | 1 | |
| CP971 | RJT071H09A | CONNECTOR (9P) | 1 | | L4 | RL02B016-T | C01L | 1 | |

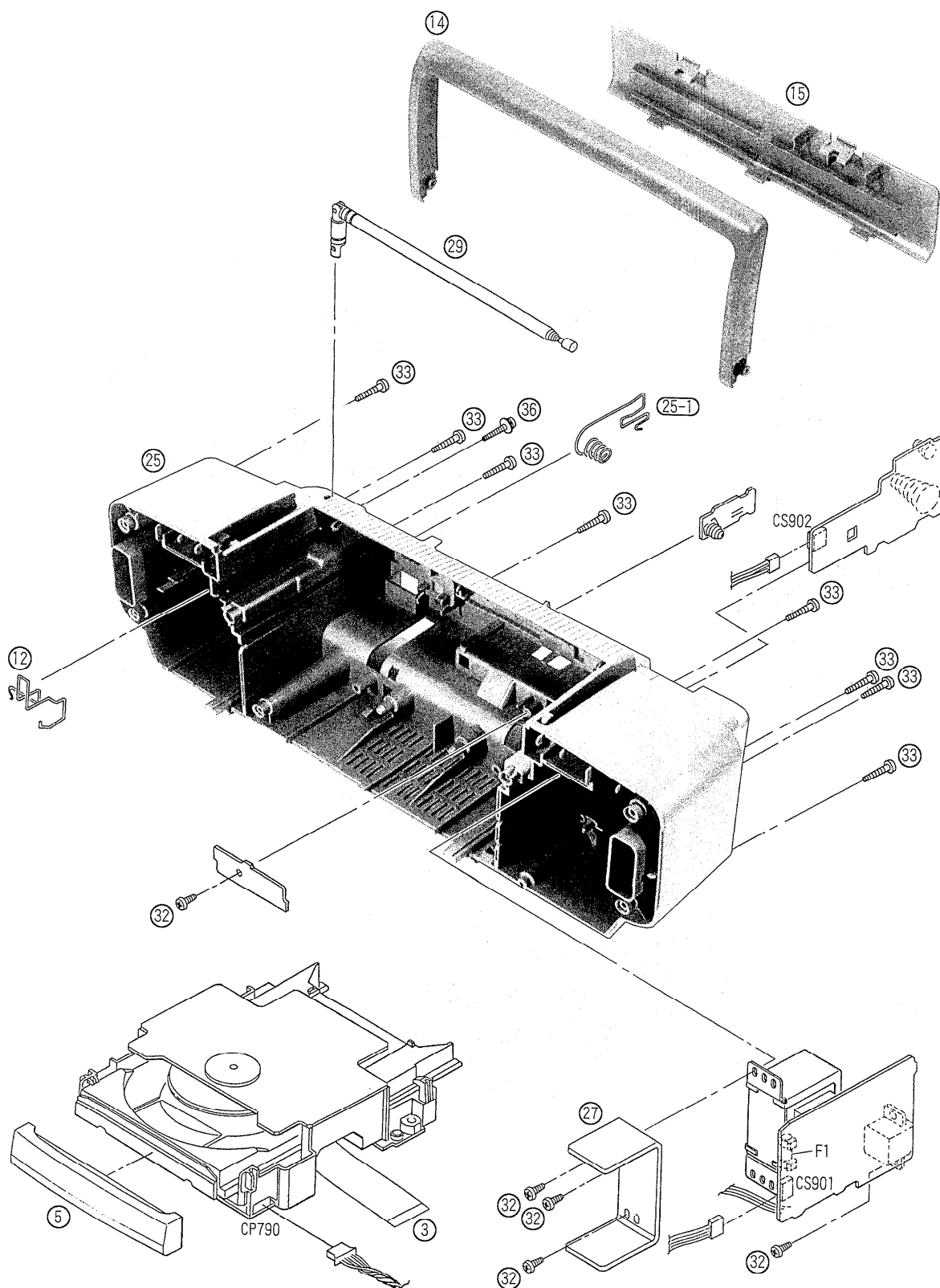
| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks | Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|----------|--------------|-------------------------|-----|---------|
| L5 | RLQZP8R2JT-Y | COIL | 1 | | R19 | ERDS2TJ101T | 1/4W 100 | 1 | |
| L8 | RLQZP101KT-Y | COIL | 1 | | R20 | ERDS2TJ151T | 1/4W 150 | 1 | |
| L370 | RL08B003-K | COIL | 1 | | R21 | ERDS2TJ104T | 1/4W 100K | 1 | |
| L371 | RLQA470JT1-Y | COIL | 1 | | R22 | ERDS2TJ331T | 1/4W 330 | 1 | |
| L701 | RLBN102V-Y | COIL | 1 | | R24 | ERDS2TJ330T | 1/4W 33 | 1 | |
| L801, 02 | RLLS00050T-Y | COIL | 2 | | R25 | ERDS2TJ104T | 1/4W 100K | 1 | |
| L804 | RLQZP2R2KT-Y | COIL | 1 | | R26, 27 | ERDS2TJ102T | 1/4W 1K | 2 | |
| L806 | RLQZP2R2KT-Y | COIL | 1 | | R28 | ERDS2TJ334T | 1/4W 330K | 1 | |
| L843 | RLQA470JT1-Y | COIL | 1 | | R29 | ERDS2TJ331T | 1/4W 330 | 1 | |
| L903 | RLLS00050T-Y | COIL | 1 | | R30 | ERDS2TJ822T | 1/4W 8.2K | 1 | |
| P1 | RPGX0453 | PACKING CASE | 1 | | R31 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| P2 | RPHV0001 | MIRAMAT SHEET | 1 | | R41 | ERDS2TJ301T | 1/4W 300 | 1 | |
| P3 | RPNX0073 | POLYFOAM | 1 | | R47 | ERDS2TJ332T | 1/4W 3.3K | 1 | |
| Q1, Q2 | 2SC1740SRTA | TRANSISTOR | 2 | | R49 | ERDS2TJ103T | 1/4W 10K | 1 | |
| Q3 | 2SC2786LTA | TRANSISTOR | 1 | | R52 | ERDS2TJ223T | 1/4W 22K | 1 | |
| Q4 | 2SC3313BTA | TRANSISTOR | 1 | | R59 | ERDS2TJ471T | 1/4W 470 | 1 | |
| Q5 | RVTDTA143XST | TRANSISTOR | 1 | | R61 | ERDS2TJ103T | 1/4W 10K | 1 | |
| Q13 | 2SC1740SRTA | TRANSISTOR | 1 | | R62 | ERDS2TJ471T | 1/4W 470 | 1 | |
| Q105 | 2SJ40CTA | TRANSISTOR | 1 | | R64 | ERDS2TJ470T | 1/4W 47 | 1 | |
| Q151 | 2SC1740SRTA | TRANSISTOR | 1 | | R65, 66 | ERDS2TJ332T | 1/4W 3.3K | 2 | |
| Q205 | 2SJ40CTA | TRANSISTOR | 1 | | R67 | ERDS2TJ104T | 1/4W 100K | 1 | |
| Q251 | 2SC1740SRTA | TRANSISTOR | 1 | | R88 | ERDS2TJ331T | 1/4W 330 | 1 | |
| Q301 | 2SC2001KTA | TRANSISTOR | 1 | | R101 | ERDS2TJ272T | 1/4W 2.7K | 1 | |
| Q302 | BA1L4MTA | TRANSISTOR | 1 | | R102 | ERDS2TJ470T | 1/4W 47 | 1 | |
| Q303 | 2SA1175FTA | TRANSISTOR | 1 | | R104 | ERDS2TJ473T | 1/4W 47K | 1 | |
| Q304 | BA1A4PTA | TRANSISTOR | 1 | | R106 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q305 | BN1A4PTA | TRANSISTOR | 1 | | R108 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q306 | 2SC1740SRTA | TRANSISTOR | 1 | | R111 | ERDS2TJ822T | 1/4W 8.2K | 1 | |
| Q307 | BN1L3ZTA | TRANSISTOR | 1 | | R112 | ERDS2TJ223T | 1/4W 22K | 1 | |
| Q308 | 2SB1566E | TRANSISTOR | 1 | | R113 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q309 | 2SC1740SRTA | TRANSISTOR | 1 | | R132 | ERDS2TJ273T | 1/4W 27K | 1 | |
| Q310 | 2SB621ARTA | TRANSISTOR | 1 | | R133 | ERDS2TJ683T | 1/4W 68K | 1 | |
| Q311 | BN1A4MTA | TRANSISTOR | 1 | | R134 | ERDS2TJ332T | 1/4W 3.3K | 1 | |
| Q331 | 2SC1740SRTA | TRANSISTOR | 1 | | R151 | ERDS2TJ223T | 1/4W 22K | 1 | |
| Q332 | BA1L4MTA | TRANSISTOR | 1 | | R152 | ERDS2TJ682T | 1/4W 6.8K | 1 | |
| Q341 | 2SD2137PQTA | TRANSISTOR | 1 | | R153 | ERDS2TJ823T | 1/4W 82K | 1 | |
| Q351 | RVTDTA143XST | TRANSISTOR | 1 | | R154 | ERDS2TJ1R2T | 1/4W 1.2 | 1 | |
| Q352 | 2SD965RTA | TRANSISTOR | 1 | | R155 | ERDS2TJ1R0T | 1/4W 1 | 1 | |
| Q353 | RVTDTA143XST | TRANSISTOR | 1 | | R156 | ERDS2TJ221T | 1/4W 220 | 1 | |
| Q354 | BA1L4MTA | TRANSISTOR | 1 | | R160 | ERDS2TJ680T | 1/4W 68 | 1 | |
| Q371, 72 | 2SC1740SRTA | TRANSISTOR | 2 | | R161 | ERDS2TJ104T | 1/4W 100K | 1 | |
| Q373 | 2SC2001KTA | TRANSISTOR | 1 | | R201 | ERDS2TJ272T | 1/4W 2.7K | 1 | |
| Q374 | RVTDTA144TST | TRANSISTOR | 1 | | R202 | ERDS2TJ470T | 1/4W 47 | 1 | |
| Q375 | 2SC1740SRTA | TRANSISTOR | 1 | | R204 | ERDS2TJ473T | 1/4W 47K | 1 | |
| Q381 | 2SC1845FTA | TRANSISTOR | 1 | | R206 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q391, 92 | 2SC1740SRTA | TRANSISTOR | 2 | | R208 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q396, 97 | 2SC1740SRTA | TRANSISTOR | 2 | | R211 | ERDS2TJ822T | 1/4W 8.2K | 1 | |
| Q631 | 2SB1030RTA | TRANSISTOR | 1 | | R212 | ERDS2TJ223T | 1/4W 22K | 1 | |
| Q641 | 2SB1030RTA | TRANSISTOR | 1 | | R213 | ERDS2TJ153T | 1/4W 15K | 1 | |
| Q651 | 2SC1740SRTA | TRANSISTOR | 1 | | R232 | ERDS2TJ273T | 1/4W 27K | 1 | |
| Q701 | 2SB709STX | TRANSISTOR | 1 | | R233 | ERDS2TJ683T | 1/4W 68K | 1 | |
| Q702 | DTA114YKA146 | TRANSISTOR | 1 | | R234 | ERDS2TJ332T | 1/4W 3.3K | 1 | |
| Q811, 12 | 2SC1740SRTA | TRANSISTOR | 2 | | R251 | ERDS2TJ223T | 1/4W 22K | 1 | |
| Q821 | 2SC1740SRTA | TRANSISTOR | 1 | | R252 | ERDS2TJ682T | 1/4W 6.8K | 1 | |
| Q836 | 2SC1740SRTA | TRANSISTOR | 1 | | R253 | ERDS2TJ823T | 1/4W 82K | 1 | |
| Q895 | BA1L4MTA | TRANSISTOR | 1 | | R254 | ERDS2TJ1R2T | 1/4W 1.2 | 1 | |
| R1 | ERDS2TJ104T | 1/4W 100K | 1 | | R255 | ERDS2TJ1R0T | 1/4W 1 | 1 | |
| R2 | ERDS2TJ332T | 1/4W 3.3K | 1 | | R256 | ERDS2TJ221T | 1/4W 220 | 1 | |
| R3 | ERDS2TJ104T | 1/4W 100K | 1 | | R260 | ERDS2TJ680T | 1/4W 68 | 1 | |
| R4, R5 | ERDS2TJ103T | 1/4W 10K | 2 | | R261 | ERDS2TJ104T | 1/4W 100K | 1 | |
| R6 | ERDS2TJ152T | 1/4W 1.5K | 1 | | R301 | ERD2FCVG220T | 1/4W 22 | 1 | |
| R7 | ERDS2TJ330T | 1/4W 33 | 1 | | R302 | ERDS2TJ102T | 1/4W 1K | 1 | |
| R8 | ERDS2TJ104T | 1/4W 100K | 1 | | R303 | ERDS2TJ101T | 1/4W 100 | 1 | |
| R9 | ERDS2TJ471T | 1/4W 470 | 1 | | R304 | ERDS2TJ393T | 1/4W 39K | 1 | |
| R10 | ERDS2TJ102T | 1/4W 1K | 1 | | R305 | ERDS2TJ473T | 1/4W 47K | 1 | |
| R11 | ERDS2TJ103T | 1/4W 10K | 1 | | R306 | ERDS2TJ271T | 1/4W 270 | 1 | |
| R12 | ERDS2TJ223T | 1/4W 22K | 1 | | R307 | ERDS2TJ681T | 1/4W 680 | 1 | |
| R13 | ERDS2TJ153T | 1/4W 15K | 1 | | R308 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| R14 | ERDS2TJ103T | 1/4W 10K | 1 | | R309 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R15 | ERDS2TJ223T | 1/4W 22K | 1 | | R310 | ERDS2TJ102T | 1/4W 1K | 1 | |
| R17 | ERDS2TJ103T | 1/4W 10K | 1 | | R311 | ERDS2TJ562T | 1/4W 5.6K | 1 | |
| R18 | ERDS2TJ223T | 1/4W 22K | 1 | | R312 | ERDS2TJ122T | 1/4W 1.2K | 1 | |
| | | | | | R313 | ERDS2TJ331T | 1/4W 330 | 1 | |
| | | | | | R314 | ERDS2TJ101T | 1/4W 100 | 1 | |
| | | | | | R315, 16 | ERDS2TJ1R0T | 1/4W 1 | 2 | |

| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks | Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|----------|--------------|-------------------------|-----|---------|----------|--------------|-------------------------|-----|---------|
| R317, 18 | ERDS2TJ103T | 1/4W 10K | 2 | | R714 | ERJ6GEYJ121V | 1/10W 120 | 1 | |
| R319 | ERDS2TJ331T | 1/4W 330 | 1 | | R715 | ERJ6GEYJ122V | 1/10W 1.2K | 1 | |
| R320 | ERDS2TJ103T | 1/4W 10K | 1 | | R717-20 | ERJ6GEYJ102A | 1/10W 1K | 4 | |
| R321, 22 | ERDS2TJ122T | 1/4W 1.2K | 2 | | R721 | ERJ6GEYJ101V | 1/10W 100 | 1 | |
| R323 | ERDS2TJ332T | 1/4W 3.3K | 1 | | R723 | ERJ6GEYJ272V | 1/10W 2.7K | 1 | |
| R324 | ERDS2TJ393T | 1/4W 39K | 1 | | R724 | ERJ6GEYJ333V | 1/10W 33K | 1 | |
| △ R326 | ERD2FCVG220T | 1/4W 22 | 1 | | R725 | ERJ6GEYJ122V | 1/10W 1.2K | 1 | |
| R331 | ERDS2TJ561T | 1/4W 560 | 1 | | R727, 28 | ERJ6GEYJ682V | 1/10W 6.8K | 2 | |
| R332 | ERDS2TJ101T | 1/4W 100 | 1 | | R729 | ERJ6GEYJ562V | 1/10W 5.6K | 1 | |
| R339 | ERDS2TJ104T | 1/4W 100K | 1 | | R731 | ERJ6GEYJ123V | 1/10W 12K | 1 | |
| R340 | ERDS2TJ102T | 1/4W 1K | 1 | | R734-36 | ERJ6GEYJ101V | 1/10W 100 | 3 | |
| R341 | ERDS2TJ471T | 1/4W 470 | 1 | | R738 | ERJ6GEYJ223V | 1/10W 22K | 1 | |
| R342 | ERDS2TJ101T | 1/4W 100 | 1 | | R741-43 | ERJ6GEYJ562V | 1/10W 5.6K | 3 | |
| R350 | ERDS2TJ102T | 1/4W 1K | 1 | | R744 | ERJ6GEYJ104V | 1/10W 100K | 1 | |
| R351 | ERDS2TJ101T | 1/4W 100 | 1 | | R745 | ERJ6GEYJ155V | 1/10W 1.5W | 1 | |
| R352 | ERDS2TJ681T | 1/4W 680 | 1 | | R748 | ERJ6GEYJ272V | 1/10W 2.7K | 1 | |
| R353 | ERDS2TJ471T | 1/4W 470 | 1 | | R749 | ERJ6GEYJ682V | 1/10W 6.8K | 1 | |
| R354, 55 | ERDS2TJ472T | 1/4W 4.7K | 2 | | R752 | ERJ8GEYJ220V | 1/8W 22 | 1 | |
| R358 | ERDS2TJ106T | 1/4W 10W | 1 | | R770 | ERJ6GEYJ224V | 1/10W 220K | 1 | |
| R362 | ERDS2TJ223T | 1/4W 22K | 1 | | R800 | ERDS2TJ474T | 1/4W 470K | 1 | |
| R364 | ERDS2TJ103T | 1/4W 10K | 1 | | R801 | ERDS2TJ104T | 1/4W 100K | 1 | |
| R365 | ERDS2TJ273T | 1/4W 27K | 1 | | R802 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| R366 | ERDS2TJ272T | 1/4W 2.7K | 1 | | R803 | ERDS2TJ104T | 1/4W 100K | 1 | |
| R367 | ERDS2TJ472T | 1/4W 4.7K | 1 | | R804 | ERDS2TJ123T | 1/4W 12K | 1 | |
| R371-73 | ERDS2TJ472T | 1/4W 4.7K | 3 | | R805 | ERDS2TJ272T | 1/4W 2.7K | 1 | |
| △ R374 | ERD2FCVJ4R7T | 1/4W 4.7 | 1 | | R806 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R375 | ERDS2TJ152T | 1/4W 1.5K | 1 | | R810 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R376 | ERDS2TJ752T | 1/4W 7.5K | 1 | | R811 | ERDS2TJ106T | 1/4W 10W | 1 | |
| R377 | ERDS2TJ822T | 1/4W 8.2K | 1 | | R812 | ERDS2TJ334T | 1/4W 330K | 1 | |
| R378, 79 | ERDS2TJ103T | 1/4W 10K | 2 | | R813 | ERDS2TJ105T | 1/4W 1W | 1 | |
| R381 | ERDS2TJ152T | 1/4W 1.5K | 1 | | R814 | ERDS2TJ681T | 1/4W 680 | 1 | |
| R382 | ERDS2TJ153T | 1/4W 15K | 1 | | R815, 16 | ERDS2TJ332T | 1/4W 3.3K | 2 | |
| R391 | ERDS2TJ104T | 1/4W 100K | 1 | | R821 | ERDS2TJ394T | 1/4W 390K | 1 | |
| R392 | ERDS2TJ470T | 1/4W 47 | 1 | | R822 | ERDS2TJ562T | 1/4W 5.6K | 1 | |
| R393 | ERDS2TJ563T | 1/4W 56K | 1 | | R826 | ERDS2TJ333T | 1/4W 33K | 1 | |
| R395 | ERDS2TJ103T | 1/4W 10K | 1 | | R827-29 | ERDS2TJ104T | 1/4W 100K | 3 | |
| R396 | ERDS2TJ104T | 1/4W 100K | 1 | | R830-33 | ERDS2TJ102T | 1/4W 1K | 4 | |
| R397 | ERDS2TJ470T | 1/4W 47 | 1 | | R834-36 | ERDS2TJ103T | 1/4W 10K | 3 | |
| R398 | ERDS2TJ563T | 1/4W 56K | 1 | | R841-43 | ERDS2TJ103T | 1/4W 10K | 3 | |
| R401 | ERDS2TJ222T | 1/4W 2.2K | 1 | | R851 | ERDS2TJ102T | 1/4W 1K | 1 | |
| R402 | ERDS2TJ472T | 1/4W 4.7K | 1 | | R852 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| R501 | ERDS2TJ222T | 1/4W 2.2K | 1 | | R853 | ERDS2TJ561T | 1/4W 560 | 1 | |
| R502 | ERDS2TJ472T | 1/4W 4.7K | 1 | | R854 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R601 | ERDS2TJ152T | 1/4W 1.5K | 1 | | R856, 57 | ERDS2TJ102T | 1/4W 1K | 2 | |
| R611 | ERDS2TJ272T | 1/4W 2.7K | 1 | | R859 | ERDS2TJ102T | 1/4W 1K | 1 | |
| R631 | ERDS2TJ332T | 1/4W 3.3K | 1 | | R860, 61 | ERDS2TJ103T | 1/4W 10K | 2 | |
| R632 | ERDS2TJ273T | 1/4W 27K | 1 | | R862, 63 | ERDS2TJ102T | 1/4W 1K | 2 | |
| R637 | ERDS2TJ104T | 1/4W 100K | 1 | | R864 | ERDS2TJ122T | 1/4W 1.2K | 1 | |
| R638 | ERDS2TJ334T | 1/4W 330K | 1 | | R865 | ERDS2TJ182T | 1/4W 1.8K | 1 | |
| R639 | ERDS2TJ332T | 1/4W 3.3K | 1 | | R866 | ERDS2TJ222T | 1/4W 2.2K | 1 | |
| R641 | ERDS2TJ332T | 1/4W 3.3K | 1 | | R867 | ERDS2TJ272T | 1/4W 2.7K | 1 | |
| R642 | ERDS2TJ273T | 1/4W 27K | 1 | | R868 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| R651, 52 | ERDS2TJ682T | 1/4W 6.8K | 2 | | R869 | ERDS2TJ682T | 1/4W 6.8K | 1 | |
| R653 | ERDS2TJ331T | 1/4W 330 | 1 | | R870 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R654 | ERDS2TJ823T | 1/4W 82K | 1 | | R871 | ERDS2TJ223T | 1/4W 22K | 1 | |
| R655 | ERDS2TJ393T | 1/4W 39K | 1 | | R875, 76 | ERDS2TJ472T | 1/4W 4.7K | 2 | |
| R656 | ERDS2TJ682T | 1/4W 6.8K | 1 | | R880, 81 | ERDS2TJ103T | 1/4W 10K | 2 | |
| R657, 58 | ERDS2TJ103T | 1/4W 10K | 2 | | R882, 83 | ERDS2TJ102T | 1/4W 1K | 2 | |
| R659 | ERDS2TJ102T | 1/4W 1K | 1 | | R884 | ERDS2TJ122T | 1/4W 1.2K | 1 | |
| R660 | ERDS2TJ393T | 1/4W 39K | 1 | | R885 | ERDS2TJ182T | 1/4W 1.8K | 1 | |
| R661 | ERDS2TJ822T | 1/4W 8.2K | 1 | | R886 | ERDS2TJ222T | 1/4W 2.2K | 1 | |
| R662 | ERDS2TJ104T | 1/4W 100K | 1 | | R887 | ERDS2TJ272T | 1/4W 2.7K | 1 | |
| R663 | ERDS2TJ682T | 1/4W 6.8K | 1 | | R888 | ERDS2TJ472T | 1/4W 4.7K | 1 | |
| R664 | ERDS2TJ822T | 1/4W 8.2K | 1 | | R889 | ERDS2TJ682T | 1/4W 6.8K | 1 | |
| R701 | ERJ6GEYJ4R7V | 1/10W 4.7 | 1 | | R890 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R702 | ERJ6GEYJ822V | 1/10W 8.2K | 1 | | R891 | ERDS2TJ223T | 1/4W 22K | 1 | |
| R704 | ERJ6GEYJ102A | 1/10W 1K | 1 | | R894 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R705 | ERJ6GEYJ124V | 1/10W 120K | 1 | | R895 | ERDS2TJ391T | 1/4W 390 | 1 | |
| R706 | ERJ6GEYJ102A | 1/10W 1K | 1 | | R896 | ERDS2TJ103T | 1/4W 10K | 1 | |
| R707 | ERJ6GEYJ474V | 1/10W 470K | 1 | | R899 | ERDS2TJ105T | 1/4W 1W | 1 | |
| R708 | ERJ6GEYJ154V | 1/10W 150K | 1 | | R952 | ERDS2TJ821T | 1/4W 820 | 1 | |
| R709 | ERJ6GEYJ473V | 1/10W 47K | 1 | | R953 | ERDS2TJ393T | 1/4W 39K | 1 | |
| R710 | ERJ6GEYJ103V | 1/10W 10K | 1 | | R972 | ERDS2TJ821T | 1/4W 820 | 1 | |
| R711 | ERJ6GEYJ154V | 1/10W 150K | 1 | | R973 | ERDS2TJ393T | 1/4W 39K | 1 | |
| R712 | ERJ6GEYJ221V | 1/10W 220 | 1 | | | | | | |

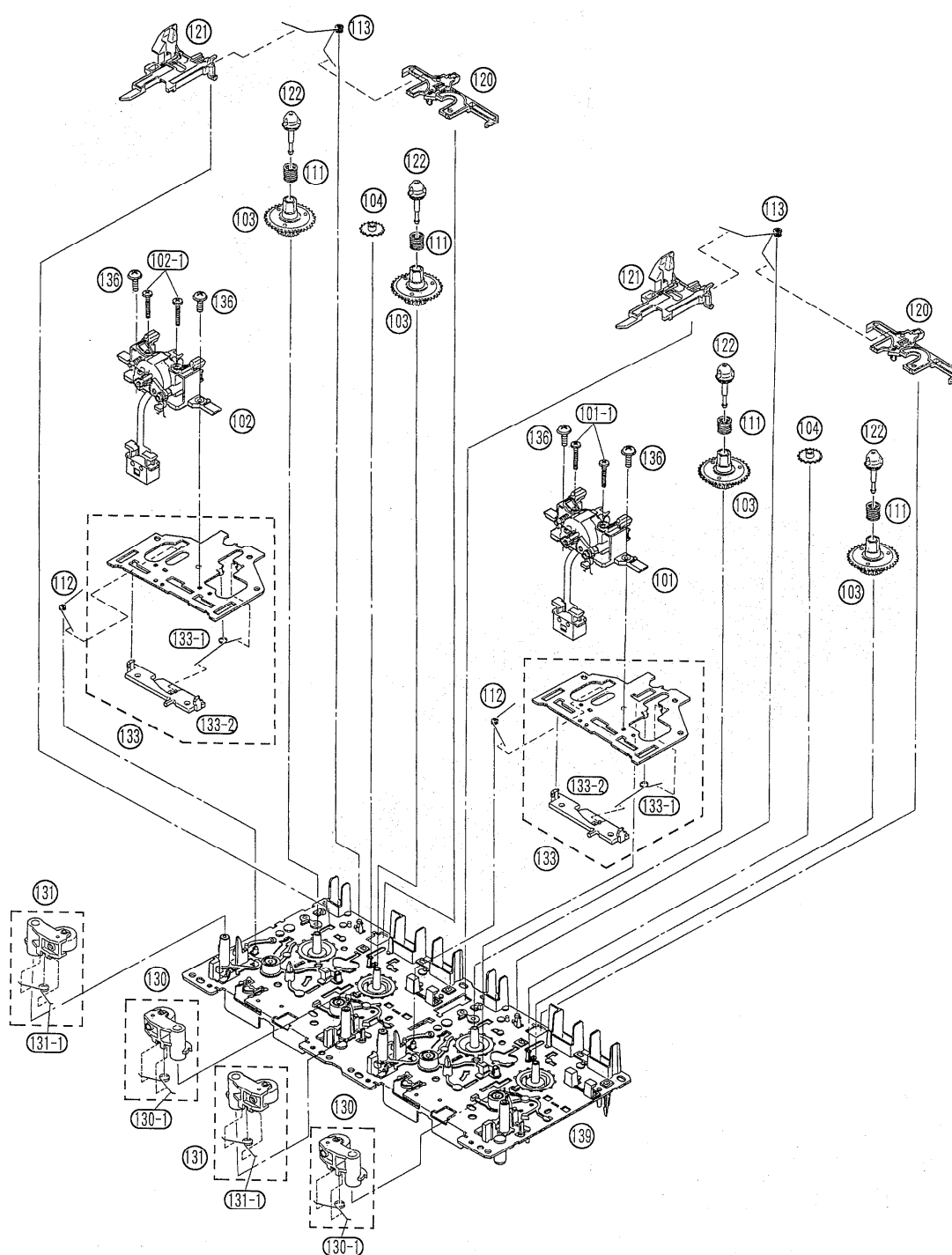
| Ref.No. | Part No. | Part Name & Description | Pcs | Remarks |
|-----------|--------------|-------------------------|-----|---------|
| RJ701 | ERJ6GEY0R00A | 1/10W 0 | 1 | |
| RJ702-10 | ERJ8GEY0R00A | 1/8W 0 | 9 | |
| RJ721, 22 | ERJ6GEY0R00A | 1/10W 0 | 2 | |
| RJ724-28 | ERJ6GEY0R00A | 1/10W 0 | 5 | |
| RJ750 | ERJ6GEY0R00A | 1/10W 0 | 1 | |
| S701 | RSH1A043-U | SW | 1 | |
| S861-71 | EVQ21405R | SW | 11 | |
| S881-91 | EVQ21405R | SW | 11 | |
| △ S901 | RJJ1SE01-1H | SW | 1 | |
| △ S902 | RSR3A01ZA-H | SW | 1 | |
| S951 | RSH1A018-1U | SW | 1 | |
| S952, 53 | RSH1A019-2U | SW | 2 | |
| S971 | RSH1A018-1U | SW | 1 | |
| S972-75 | RSH1A019-2U | SW | 4 | |
| T2 | RL12Z010-T | AM 1FT | 1 | |
| △ T901 | RTP1U1E009-X | POWER TRANSFORMER | 1 | |
| TJ701 | EYF8CU | TEST JUMPER | 1 | |
| W351 | RWJ4702055KR | MOTOR WIRE | 1 | |
| W801 | RWJ1106190KK | WIRE | 1 | |
| WH801 | RJS1A5504 | CABLE HOLDER (4P) | 1 | |
| X1 | RSXZ456KM01 | OSCILLATOR | 1 | |
| X2 | RSXC7M20S04T | OSCILLATOR | 1 | |
| X701 | RSXB16M9J02T | OSCILLATOR | 1 | |
| X811 | RSXD32K7L01 | OSCILLATOR | 1 | |
| X812 | RSXZ4M19M01T | OSCILLATOR | 1 | |
| Z1 | RCRBM7002-H | BPF | 1 | |
| Z801 | RCD12042SR | REMOTE SENSOR | 1 | |
| Z802 | RSLS202-H | LCD DISPLAY | 1 | |
| Z811, 12 | XAMR139 | LAMP | 2 | |
| Z951 | EXBF7L355SYV | RADA RESISTOR | 1 | |
| Z971 | EXBF7L355SYV | RADA RESISTOR | 1 | |

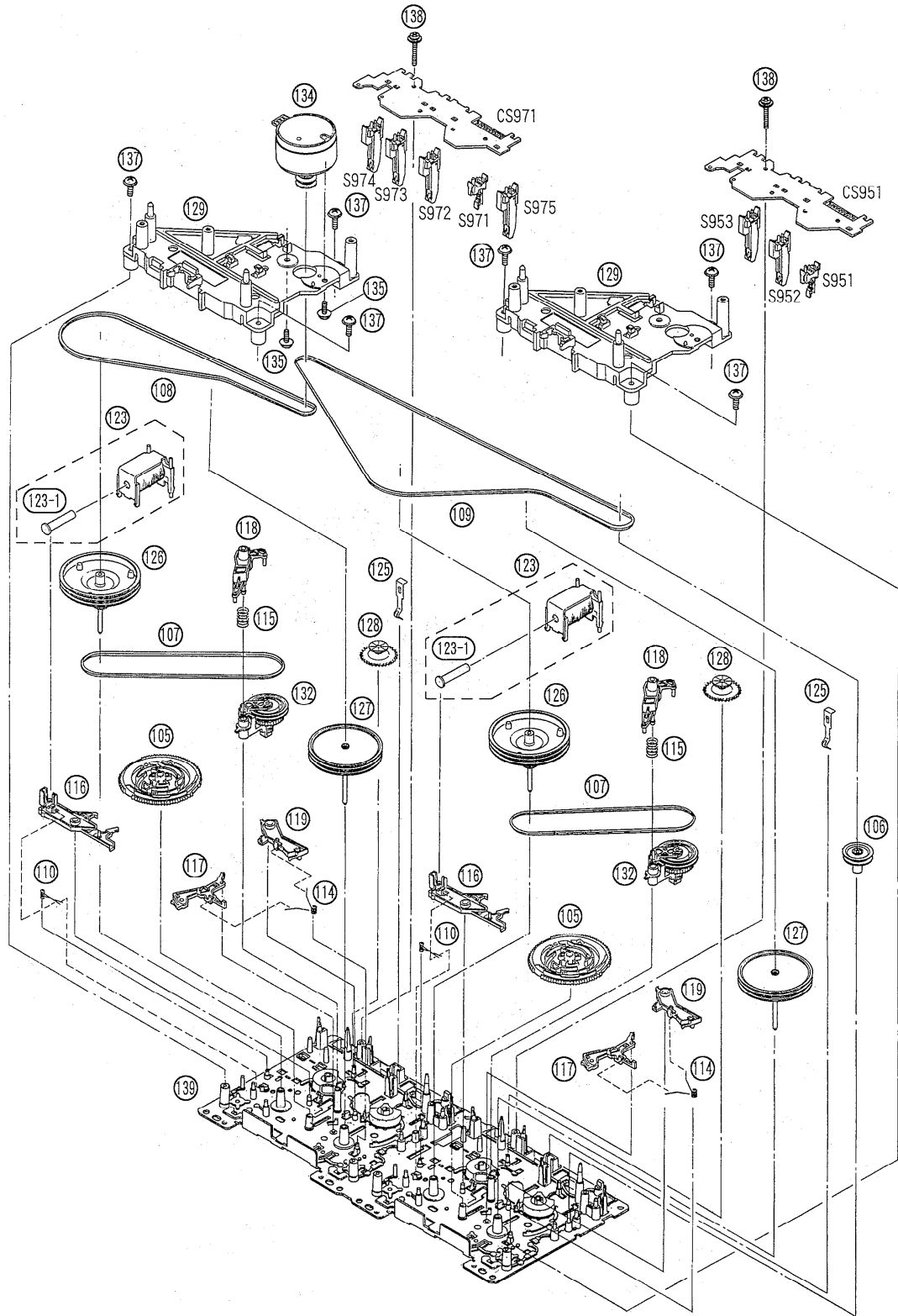
■ Cabinet Parts Location





■ Mechanism Parts Location



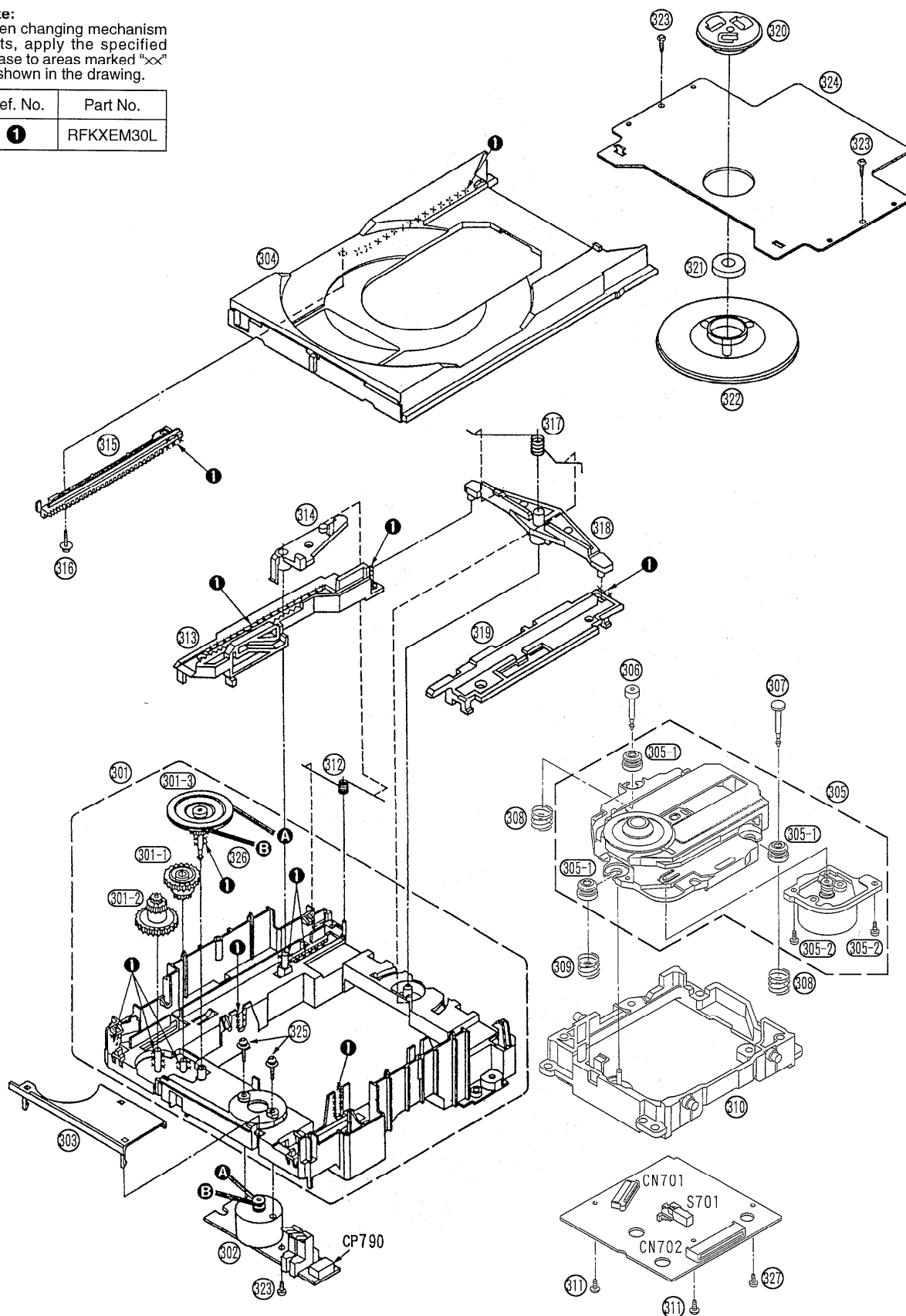


■ Loading Unit Parts Location

Note:

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

| Ref. No. | Part No. |
|----------|-----------|
| 1 | RFKXEM30L |



■ Packaging

