

CDX-3180

SERVICE MANUAL

AEP Model
UK Model



Model Name Using Similar Mechanism	CDX-4170R
CD Drive Mechanism Type	MG-363X-121
Optical Pick-up Name	KSS-521A

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	90 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below measurable limit

Tuner section

FM

Tuning range	87.5 - 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	11 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	60 dB (stereo), 60 dB (mono)

Harmonic distortion at 1 kHz

1.0% (stereo),
0.5% (mono)

Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

MW/LW

Tuning range	MW: 531 - 1,602 kHz LW: 153 - 281 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30 μ V LW: 35 μ V

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 - 8 ohms
Maximum power output	40 W $\times$ 4 (at 4 ohms)

General

Outputs	Line outputs (2) Power aerial relay control lead Power amplifier control lead Telephone ATT control lead
Tone controls	Bass $\pm$ 10 dB at 100 Hz Treble $\pm$ 10 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 188 $\times$ 57 $\times$ 184.4 mm (w/h/d)
Mounting dimensions	Approx. 183 $\times$ 53 $\times$ 163 mm (w/h/d)
Mass	Approx. 1.3 kg
Supplied accessories	Parts for installation and connections (1 set) Front panel case (1)

Design and specifications are subject to change without notice.

FM/MW/LW COMPACT DISC PLAYER



SONY®

SERVICE NOTE

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

NOTES ON PICK-UP FLEXIBLE BOARD

The pick-up flexible board in this set is secured to the optical pick-up with an adhesive tape. Once the tape is removed, an adhering force becomes weak, and it cannot be reused.

Therefore, if the optical pick-up is replaced, replace also the pick-up flexible board with a new one.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK $\triangle$ OR DOTTED LINE WITH MARK $\triangle$ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE $\triangle$ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

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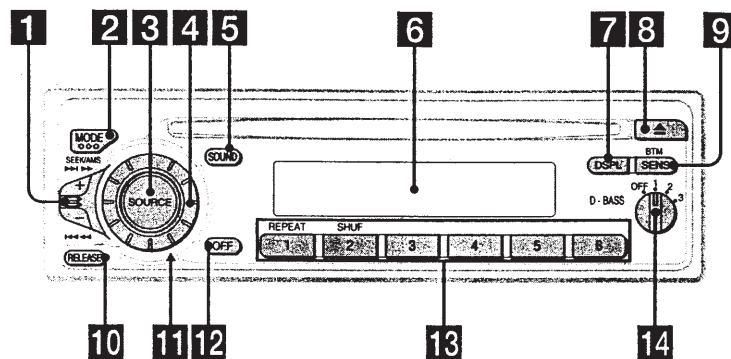
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6. ELECTRICAL PARTS LIST

Location of controls



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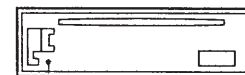
Refer to the pages for details.

- | | |
|--|---|
| <p>1 SEEK/AMS (seek/Automatic Music Sensor/manual search) control 7, 8</p> <p>2 MODE (band select) button 7, 8</p> <p>3 SOURCE (source select) button 6, 7, 8</p> <p>4 Dial (volume/bass/treble/left-right/front-rear control) 6, 10</p> <p>5 SOUND button 6, 10, 11</p> <p>6 Display window</p> <p>7 DSPL (display mode change/time set) button 6, 8</p> <p>8 Δ (eject) button 6</p> <p>9 BTM/SENS (Best Tuning Memory/sensitivity adjust) button 7, 8</p> | <p>10 RELEASE (front panel release) button 5, 13</p> <p>11 Reset button (located on the front side of the unit hidden by the front panel) 5</p> <p>12 OFF button 5, 6</p> <p>13 During radio reception:
Number buttons 8</p> <p>During CD playback:
① REPEAT button 7
② SHUF button 7</p> <p>14 D-BASS dial 11</p> |
|--|---|

Getting Started

Resetting the unit

Before operating the unit for the first time or after replacing the car battery, you must reset the unit.
Press the reset button with a pointed object, such as a ballpoint pen.



Reset button

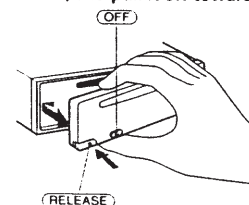
Notes

- Pressing the reset button will erase all the memorized program and memory functions.
- When you connect the power supply cord to the unit or reset the unit, wait for about 10 seconds before you insert a disc. Do not insert a disc within these 10 seconds, otherwise, the unit will not be reset, and you will have to press the reset button again.

Detaching the front panel

You can detach the front panel of this unit to prevent the unit from being stolen.

- Press **OFF**.
- Press **RELEASE** to open up the front panel. Then slide the front panel a little to the left, and pull it off towards you.

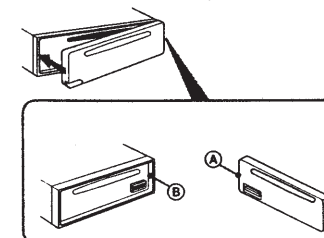


Notes

- Be sure not to drop the panel when detaching it from the unit.
- If you press **RELEASE** to detach the panel while the unit is still on, the unit will turn off automatically to prevent the speakers from being damaged.
- When you carry the front panel with you, put it in the supplied front panel case.

Attaching the front panel

Align part **A** of the front panel to part **B** of the unit as illustrated, and push until it clicks.



Notes

- Be sure not to attach the front panel upside down.
- Do not press the front panel hard against the unit when attaching it. Press it lightly against the unit.
- Do not press hard or put excessive pressure on the display window of the front panel.
- Do not expose the front panel to direct sunlight, heat sources such as hot air ducts, and do not leave it in a humid place. Never leave it on the dashboard of a car parked in direct sunlight where there may be a considerable rise in temperature.

Caution alarm

If you turn the ignition key switch to the OFF position without removing the front panel, the caution alarm will beep for a few seconds. If you connect an optional power amplifier and do not use the built-in amplifier, the beep tone will be disabled.

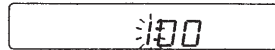
Setting the clock

The clock has a 24-hour digital indication.

Example: Set the clock to 10:08

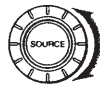
- 1 Press **(OFF)** or **(DSPL)** during operation.
If the POWER SELECT function is set to "ON," press **(OFF)**. If it is set to "OFF," press **(DSPL)**.

- 2 Press **(DSPL)** for two seconds.



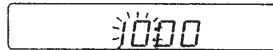
The hour digit flashes.

- 1 Set the hour digits.

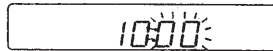


To go back

To go forward



- 2 Press **(SOUND)** momentarily.



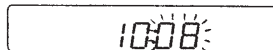
The minute digits flash.

- 3 Set the minute digits.

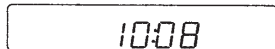


To go back

To go forward



- 3 Press **(DSPL)** momentarily.



The clock is activated.

Note

If the car has no accessory position on the ignition key switch, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started CD playback.

CD Player

Listening to a CD

Simply insert the CD.
Playback starts automatically.

Labelled side up



If a CD is already inserted, press **(SOURCE)** repeatedly until "CD" appears.



Elapsed playing time

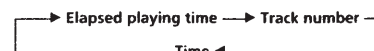
Note

To play back an 8 cm CD, use the optional Sony compact disc single adapter (CSA-8).

To	Press
Stop playback	(▲) or (OFF)
Eject the CD	(▲)

Changing the displayed items

Each time you press **(DSPL)**, the item changes as follows:



Locating a specific track

— Automatic Music Sensor (AMS)

During playback, push the SEEK/AMS control up or down momentarily.

To locate succeeding tracks



To locate preceding tracks

Locating a specific point in a track

— Manual Search

During playback, push the SEEK/AMS control up or down for two seconds. Release when you have found the desired point.

To search forward



To search backward

Note

If "L L L L" or "R R R R" appears in the display, you have reached the beginning or the end of the disc and you cannot go any further.

Playing a CD in various modes

Playing tracks repeatedly

— Repeat Play

Press **(1)** during playback.
"REI" appears in the display.

When the currently played track is over, it will be played again from the beginning.

To cancel this mode, press again.

Playing tracks in random order

— Shuffle Play

Press **(2)** during playback.
"SHUF" appears in the display.

All tracks on the CD are played in random order.

To cancel this mode, press again.

Radio

Memorizing stations automatically

— Best Tuning Memory (BTM)

This function selects from the currently received band the stations with the strongest signals and memorizes them in order of their frequency.

PREVENTING ACCIDENTS!

When tuning in while driving, use the automatic tuning instead of manual tuning.

- 1 Press **(SOURCE)** repeatedly to select the tuner.

Each time you press **(SOURCE)**, the mode changes as follows:
CD ↔ TUNER

- 2 Press **(MODE)** repeatedly to select the band.

Each time you press **(MODE)**, the mode changes as follows:



- 3 Press **(BTM/SENS)** for two seconds.
The unit stores stations in the order of their frequencies on the number buttons.

Notes

- The unit does not store stations with weak signals. If only a few stations are received, some number buttons remain empty.
- When a number is indicated in the display, the unit starts storing stations from the one currently displayed.
- If a CD is not in the unit, only the tuner band appears even if you press **(SOURCE)**.

Memorizing only the desired stations

You can store up to 6 stations on each band (18 for FM I, FM II and FM III, 6 for each MW and LW) in the order of your choice.

- 1 Press **(SOURCE)** repeatedly to select the tuner.
- 2 Press **(MODE)** repeatedly to select the band.
- 3 Push the SEEK/AMS control up or down to tune in the station that you want to store on the number button.
- 4 Press the desired number button (1 to 6) for two seconds until "MEM" appears.
The number button indication appears in the display.

EN

Note

If you try to store another station on the same number button, the previously stored station will be erased.

Receiving the memorized stations

- 1 Press **(SOURCE)** repeatedly to select the tuner.
- 2 Press **(MODE)** repeatedly to select the band.
- 3 Press the number button (1 to 6) momentarily where the desired station is stored.

If you cannot tune in a preset station

Push the SEEK/AMS control up or down momentarily to search for the station (automatic tuning).
Scanning stops when the unit receives a station. Push the SEEK/AMS control up or down repeatedly until the desired station is received.

Note

If the automatic tuning stops too frequently, press **(BTM/SENS)** momentarily until "LCL" appears in the display (local seek mode). Only the stations with relatively strong signals will be tuned in.

Tip

If you know the frequency of the station you want to listen to, push the SEEK/AMS control up or down for two seconds until the desired frequency appears (manual tuning).

If FM stereo reception is poor

— Monaural Mode

Press **(BTM/SENS)** momentarily until "MONO" appears.

The sound improves, but becomes monaural ("ST" disappears).

To go back to the normal mode, press again until "MONO" disappears.

Changing the displayed items

Each time you press **(DSPL)**, the items alternate between the frequency and time.

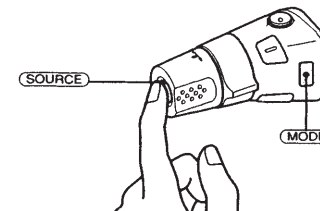
Other Functions

You can connect an optional rotary commander (RM-X4S) with this unit.

Using the rotary commander

The rotary commander works by pressing buttons and/or rotating controls.

By pressing buttons (the SOURCE and MODE buttons)



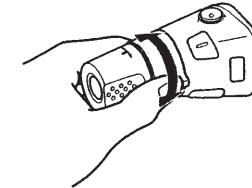
Each time you press **(SOURCE)**, the source changes as follows:

TUNER ↔ CD

Pressing **(MODE)** changes the operation in the following ways;

Tuner : FM I → FM II → FM III → MW → LW

By rotating the control (the SEEK/AMS control)



Rotate the control momentarily and release it to:

- Locate a specific track on a disc. Rotate and hold the control until you locate the specific point in a track, then release it to start playback.
- Tune in stations automatically. Rotate and hold the control to tune in a specific station.

By pushing in and rotating the control (the PRESET/DISC control)



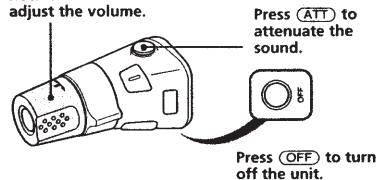
Push in and rotate the control to: Receive the stations memorised on the number buttons.

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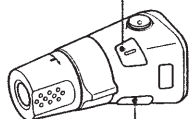
CD Player/Radio

Other operations

Rotate the VOL control to adjust the volume.



Press (SOUND) to adjust the volume and sound menu.



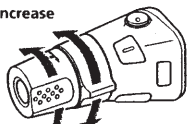
Press (DSPL) to change the displayed items.

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Changing the operative direction

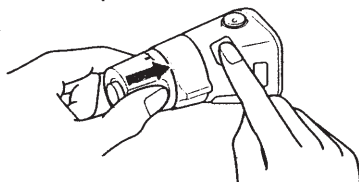
The operative direction of controls is factory-set as in the illustration below.

To increase



To decrease

If you need to mount the rotary commander on the right side of the steering column, you can reverse the operative direction.



Press (SOUND) for two seconds while pushing the VOL control.

Adjusting the sound characteristics

You can adjust bass, treble, balance and fader. Each source can store the bass and treble level independently.

1 Select the item you want to adjust by pressing (SOUND) repeatedly.

VOL (volume) → BAS (bass) → TRE (treble) → BAL (left-right) → FAD (front-rear)

2 Adjust the selected item by rotating the dial.

Adjust within three seconds after selecting the item. (After three seconds, the dial functions as volume control.)

Changing the sound and beep tone

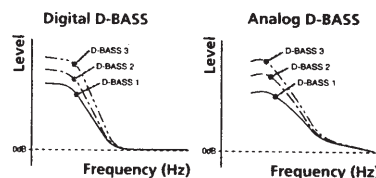
Boosting the bass sound — D.bass

You can enjoy clear and powerful bass sound. The D-bass function boosts the low frequency signal with a sharper curve than conventional bass boost.

You can hear the bass line more clearly even if the vocal sound is the same volume. You can emphasize and adjust the bass sound easily with the D-BASS dial. This effect is similar to the one you get when you use an optional subwoofer system.

Moreover, the Digital D-bass* function creates even sharper and more powerful bass sound than Analog D-bass.

* Digital D-bass is available during CD playback.



Adjusting the bass curve

Turn the D-BASS dial to adjust the bass level (1, 2 or 3).

"D-BASS" appears in the display.

During CD playback, "DIGITAL D-BASS" appears in the display.

To cancel, turn the dial to the OFF position.

Note

If the bass sound becomes distorted, adjust the D-bass dial or volume control.

Attenuating the beep tone

Press (6) while pressing (SOUND).

To obtain the beep tone again, press these buttons again.

Note

If you connect an optional power amplifier and do not use the built-in amplifier, the beep tone will be disabled.

Turning on the clock display — Power Select Function

Only for cars with an accessory position on the ignition key switch

To turn the Power Select Function ON

Press (OFF) while pressing (SOUND).

The Power select Function ties the clock display power to the accessory position on the ignition key switch.

To avoid battery wear, the clock is not displayed while the unit is initializing.

EN

Other Functions

Connections

Caution

- This unit is designed for negative earth 12 V DC operation only.
- Connect the power connecting cord ⑥ to the unit and speakers before connecting it to the auxiliary power connector.
- Run all earth wires to a common earth point.
- Connect the yellow cord to a free car circuit rated higher than the unit's fuse rating. If you connect this unit in series with other stereo components, the car circuit they are connected to must be rated higher than the sum of the individual component's fuse rating. If there are no car circuits rated as high as the unit's fuse rating, connect the unit directly to the battery. If no car circuits are available for connecting this unit, connect the unit to a car circuit rated higher than the unit's fuse rating in such a way that if the unit blows its fuse, no other circuits will be cut off.

If your car has no accessory position on the ignition key switch — POWER SELECT Function

To turn the Power Select Function on Press **OFF** while pressing **SOUND**. The Power Select Function ties the clock display power to the accessory position on the ignition key switch. To avoid battery wear, the clock is not displayed while the unit is initializing.

Reset button

When the installation and connections are complete, be sure to press the reset button with a ballpoint pen etc.

Notes of connection example

Note on the control leads
The power aerial control lead (blue) supplies +12 V DC when you turn on the tuner.

Memory hold connection
When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Notes on speaker connection

- Before connecting the speakers, turn the unit off.
- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.
- Do not attempt to connect the speakers in parallel.
- Do not connect any active speakers (with built-in amplifiers) to the speaker terminals of the unit. Doing so may damage the active speakers. Therefore, be sure to connect passive speakers to these terminals.

Warning
If you have a power aerial without a relay box, connecting this unit with the supplied power connecting cord ⑥ may damage the aerial.

Conexiones

Precauciones

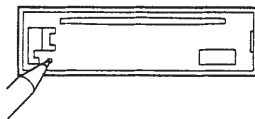
- Esta unidad ha sido diseñada para alimentarse solamente con 12 V CC, negativo a masa.
- Conecte el cable de conexión de alimentación ⑥ a la unidad y a los altavoces antes de hacerlo al conector de alimentación auxiliar.
- Conecte todos los conductores de puesta a masa a un punto común.
- Conecte el cable amarillo a un circuito libre del automóvil que tenga una capacidad superior a la del fusible de la unidad. Si conecta esta unidad en serie con otros componentes estereofónicos, el circuito del automóvil al que se encuentran conectados debe tener una capacidad superior a la de la suma de las capacidades de los fusibles de cada componente. Si ningún circuito del automóvil tiene una capacidad tan alta como la del fusible de la unidad, conecte ésta directamente a la batería. Si el automóvil no dispone de ningún circuito para conectar esta unidad, conéctela a un circuito del automóvil con capacidad superior a la del fusible de la unidad, de forma que si se funde el fusible de ésta, no se interrumpa ningún otro circuito.

Si el automóvil no dispone de posición para accesorios en la llave de encendido — Función de POWER SELECT

Para activar la función de selección de alimentación Presione **OFF** mientras presiona **SOUND**. La función de selección de alimentación conecta la alimentación de la indicación del reloj con la posición para accesorios en el interruptor de la llave de encendido. Para evitar el desgaste de la batería, el reloj no aparece durante la inicialización de la unidad.

Botón de reposición

Cuando finalice la instalación y las conexiones, cerciórese de presionar el botón de reposición con un bolígrafo, etc.



Notas de ejemplo de conexiones

Nota sobre conductores de control
El conductor de control de la antena motorizada (azul) suministrará +12 V CC cuando conecte la alimentación del sintonizador.

Conexión para protección de la memoria
Si conecta el conductor de entrada amarillo, el circuito de la memoria recibirá siempre alimentación, incluso aunque sitúe la llave de encendido en la posición OFF.

Notas sobre la conexión de los altavoces

- Antes de conectar los altavoces, desconecte la alimentación de la unidad.
- Utilice altavoces con una impedancia de 4 a 8 ohmios, y con la potencia máxima admisible adecuada, ya que de lo contrario podría dañarlos.
- No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los del altavoz izquierdo a los del derecho.
- No intente conectar los altavoces en paralelo.
- No conecte altavoces activos (con amplificadores incorporados) a los terminales de altavoces de la unidad. Si lo hiciera, podría dañar tales altavoces. Por lo tanto, cerciórese de conectar altavoces pasivos a estos terminales.

Advertencia
Si dispone de una antena motorizada sin dispositivo de relé, la conexión de esta unidad con el cable de conexión de alimentación ⑥ suministrado puede dañar la antena.

Connexions

Advertência

- Este aparelho foi projectado para funcionar somente com corrente contínua de 12 V com massa negativa.
- Ligue o cabo de alimentação de corrente ⑥ ao aparelho e aos alifalantes antes de o ligar ao conector de corrente auxiliar.
- Ligue todos os fios de terra num ponto de massa comum.
- Ligue o cabo amarelo a um circuito livre do automóvel com uma capacidade nominal superior à do fusível do aparelho. Se ligar este aparelho em série com outros componentes estéreo, o circuito do automóvel a que estão ligados deve ter uma capacidade nominal superior à soma da capacidade dos fusíveis de cada componente. Se nenhum circuito do automóvel tiver uma capacidade tão alta como a do fusível do aparelho, ligue o aparelho directamente à bateria. Se o automóvel não tiver nenhum circuito disponível para ligação do aparelho, ligue-o a um circuito com uma capacidade superior à do fusível do aparelho para que se o fusível do aparelho se fundir, nenhum dos outros circuitos seja cortado.

Se o seu automóvel não estiver equipado com uma chave de ignição com posição acessórios — Função POWER SELECT

Para activar a função de selecção de alimentação (Power Select) Carregue simultaneamente em **OFF** e em **SOUND**. A função de selecção de alimentação liga a visualização do relógio à posição acessórios da chave de ignição. Para evitar o desgaste da bateria, o relógio não está visível durante a inicialização do aparelho.

Botão de reinicialização

Quando terminar a instalação e as ligações, não se esqueça de carregar no botão de reinicialização com a ponta de uma caneta, etc.

Notas sobre o exemplo de ligação

Nota sobre os fios de controlo
O fio de controlo da antena eléctrica (azul) fornece uma corrente contínua (CC) de +12 V quando se liga o sintonizador.

Ligação para alimentação contínua da memória
Quando ligar o fio amarelo de entrada de alimentação for, os circuitos de memória ficarão com alimentação contínua, mesmo se a chave de ignição estiver desligada.

Notas sobre a ligação dos altifalantes

- Antes de ligar os altifalantes, desligue o aparelho.
- Utilize altifalantes com impedância de 4 a 8 ohm, e com capacidade admissível de potência adequada. Caso contrário, os altifalantes poderão sofrer avarias.
- Não ligue os terminais do sistema de altifalantes ao chasis do automóvel, e não ligue os terminais do altifalante direito aos terminais do altifalante esquerdo.
- Não tente ligar os altifalantes em paralelo.
- Não ligue nenhum sistema de altifalantes activos (com amplificadores incorporados) aos terminais dos altifalantes do aparelho. Caso o faça, poderá avariar o sistema de altifalantes activos. Portanto, não se esqueça de ligar altifalantes passivos a estes terminais.

Atenção
Se a antena eléctrica não tiver uma caixa de relé, o facto de ligar esta aparelho com a cabo de alimentação ⑥ fornecido, pode provocar danos na antena.

Anslutning

Sökerhetsföreskrifter

- Denna bilstereo är endast avsedd för anslutning till ett negativt jordat, 12 V bilbatteri.
- Anslut strömkabeln ⑥ till enheten och högtalarna innan du ansluter den till den yttre strömanslutningen.
- Dra samtliga jordledningar till en och samma jordningspunkt.
- Anslut den gula kabeln till en ledig bilkrets som har en säkring med ett högre än ampere än enheten. Om du seriekopplar denna enhet med andra stereokomponenter, måste den bilkrets de är kopplade till ha en säkring med en högre ampere än summan av de enskilda komponenternas ampere. Om det inte finns någon bilkrets som har en säkring med ett lika högt ampere som enheten, ska du ansluta enheten direkt till batteriet. Om det inte finns några bilkretsar att ansluta denna enhet till ska du ansluta enheten till en enhet som har en säkring med ett högre ampere än enheten för att förhindra att inga andra kretsar klipps av om säkringen smälter.

Montera bilstereo i en bil vars tändlås inte har något strömläge — POWER SELECT-funktionen

Endast för bilar som har ett tillbehörsäge på tändlåset. Du sätter på Power Select-funktionen genom att trycka på **OFF** medan du håller **SOUND** intryckt. Med Power Select-funktionen kopplas strömmen till klockvisningen till tillbehörslaget på tändlåset. För att minska batterislitaget visas inte klockan när enheten initialiseras.

Nollställningsknappen

Kom ihåg att använda en penna eller något annat spetsigt föremål för att trycka på nollställningsknappen när anslutningen och monteringen är klar.

Att observera angående anslutningsexempen

Att observera angående de olika styrkablarna
Motorantennens styrkabel ANT REM (blå) leder 12 V likström när bilradion slås på.

Anslutning för minnesstöd
När du anslutit den gula, ingående strömkabeln försörjs minneskretsen med ström hela tiden, även när tändlåset slås ifrån.

Att observera angående högtalarnas anslutning

- Slå av bilstereon innan du ansluter högtalarna.
- Anslut endast högtalare, vars impedans varierar från 4 till 8 ohm och som har tillräcklig effekthanteringskapacitet för att skydda högtalarna mot skador.
- Anslut inte något av högtalaruttagen till bilens chassi. Anslut inte heller uttagen på höger högtalare till uttagen på vänster högtalare.
- Anslut inte högtalarna parallellt.
- Anslut inte aktiva högtalare (med inbyggda slutsteg) till bilstereons högtalaruttag, eftersom de kan skada de aktiva högtalarna.
- Var noga med att bara ansluta passiva högtalare till dessa uttag.

Varning
Om du har en motorantenn utan reläbox kan antennen skadas om du ansluter enheten med den medföljande strömkabeln ⑥.

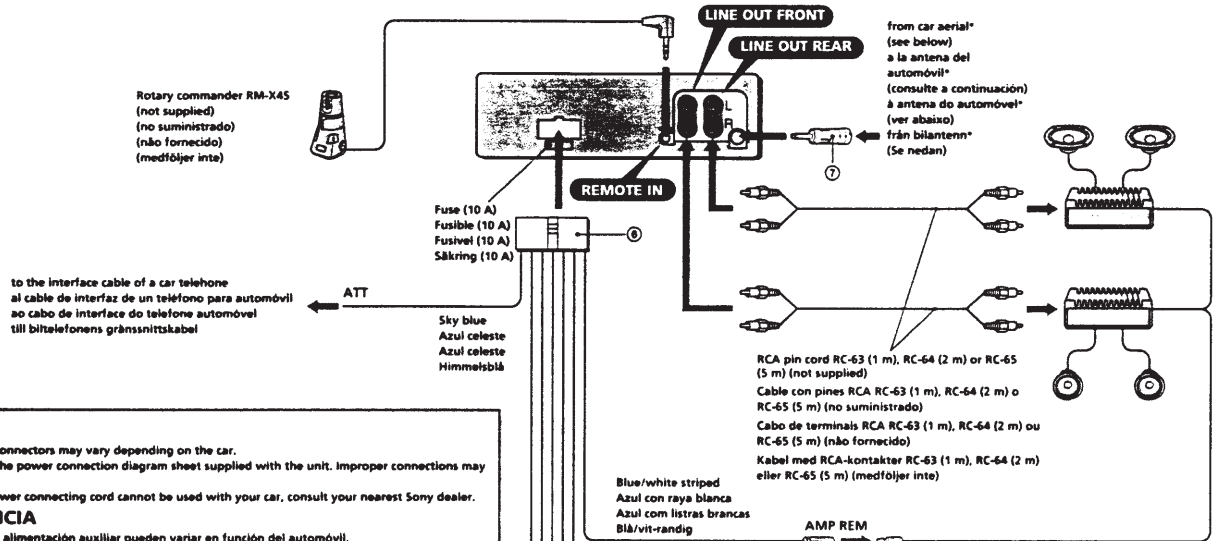
Connection example
Ejemplo de conexiones
Exemplo de ligações
Anslutningarna enligt exemplet

* **Note for the aerial connecting**
 If your car aerial is an ISO (International Organization for Standardization) type, use the supplied adapter ① to connect it. First connect the car aerial to the supplied adapter, then connect it to the aerial jack of the master unit.

* **Nota sobre la conexión de la antena**
 Si la antena del automóvil es del tipo ISO (International Organization for Standardization), emplee el adaptador suministrado para ① conectarla. En primer lugar, conecte la antena del automóvil al adaptador suministrado y, a continuación, a la toma de antena de la unidad principal.

* **Nota referente à ligação da antena**
 Se a antena do automóvel for uma antena de tipo ISO (International Organization for Standardization), utilize o adaptador fornecido ① para fazer a ligação respectiva. Ligue primeiro a antena do automóvel ao adaptador fornecido e depois a ficha tipo jack do sistema principal.

* **Angående antennanslutning**
 Om motorantennen är av ISO-typ (International Organization for Standardization), använder du medföljande adapter ① för att ansluta den. Anslut först motorantennen till medföljande adapter och därefter till antennuttaget på huvudenheten.



WARNING

Auxiliary power connectors may vary depending on the car. Be sure to check the power connection diagram sheet supplied with the unit. Improper connections may damage your car. If the supplied power connecting cord cannot be used with your car, consult your nearest Sony dealer.

ADVERTENCIA

Los conectores de alimentación auxiliar pueden variar en función del automóvil. Asegúrese de consultar el diagrama de conexión de alimentación suministrado con la unidad. Las conexiones incorrectas pueden dañar el automóvil. Si no es posible utilizar el cable de conexión de alimentación suministrado con el automóvil, póngase en contacto con el proveedor Sony más próximo.

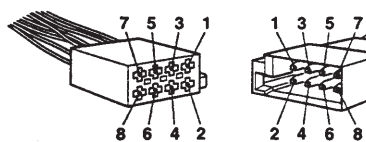
ATENÇÃO

Os conectores de corrente auxiliares podem variar de carro para carro. Não se esqueça de verificar o diagrama de ligação de corrente fornecido com o aparelho. As ligações mal executadas podem danificar o seu carro. Se não puder utilizar o cabo de alimentação fornecido no seu carro, contacte o agente Sony da sua zona.

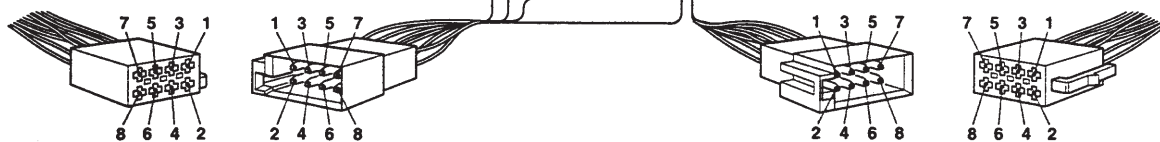
VARNING

Typen av yttre strömanslutning varierar från bil till bil. Kontrollera strömanslutningsschemat som medföljer enheten så att du ansluter på rätt sätt. Felaktig anslutning kan skada bilen. Kontakta närmaste Sony-återförsäljare om den medföljande strömkabeln inte passar till din bil.

to a car's auxiliary power connector a un conector de alimentación auxiliar del automóvil a um conector de alimentação auxiliar do automóvel till bilens yttre strömanslutning



to a car's speaker connector a un conector de altavoces del automóvil verso un conector del difusor de l'auto till bilens högtalaranslutning



Yellow Amarillo Gul	continuous power supply suministro de alimentación continua alimentação de corrente continua kontinuerlig strömförsörjning	Red Rojo Vermelho Röd	switched power supply suministro de alimentación alimentação de corrente comutada switchad strömförsörjning
Blue Azul Blå	power aerial control antena eléctrica antena eléctrica elektrisk seriell	Black Negro Preto Svart	earth toma de tierra Terra jord

Positions 1, 2, 3 and 6 do not have pins. Las posiciones 1, 2, 3 y 6 no disponen de pines. As posições 1, 2, 3 e 6 não têm pinos. Positionerna 1, 2, 3 och 6 saknar stift.

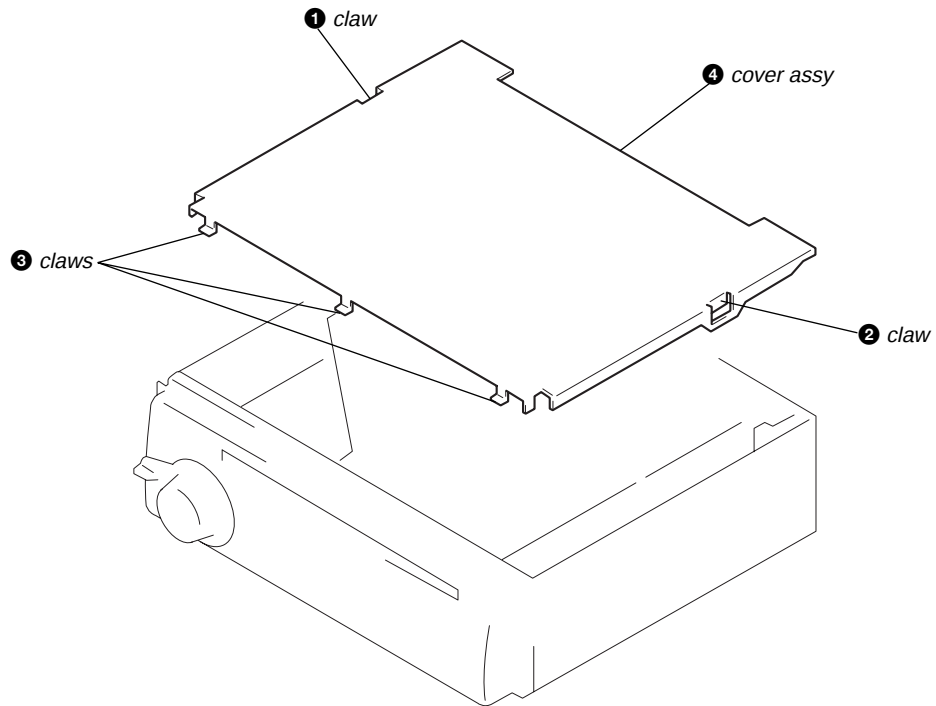
1	Purple Púrpura Morkilla	Speaker, Rear, Right Altavoz, parte posterior, derecho Altifalante, Parte de trás, Direito Högtalare, bakre, höger	5	White Blanco Vit	Speaker, Front, Left Altavoz, parte frontal, izquierdo Altifalante, Parte da frente, Esquerdo Högtalare, främre, vänster
2		Speaker, Rear, Right Altavoz, parte posterior, derecho Altifalante, Parte de trás, Direito Högtalare, bakre, höger	6		Speaker, Front, Left Altavoz, parte frontal, izquierdo Altifalante, Parte da frente, Esquerdo Högtalare, främre, vänster
3	Grey Gris Cinza Grå	Speaker, Front, Right Altavoz, parte frontal, derecho Altifalante, Parte da frente, Direito Högtalare, främre, höger	7	Green Verde Grön	Speaker, Rear, Left Altavoz, parte posterior, izquierdo Altifalante, Parte de trás, Esquerdo Högtalare, bakre, vänster
4		Speaker, Front, Right Altavoz, parte frontal, derecho Altifalante, Parte da frente, Direito Högtalare, främre, höger	8		Speaker, Rear, Left Altavoz, parte posterior, izquierdo Altifalante, Parte de trás, Esquerdo Högtalare, bakre, vänster

Negative polarity positions 2, 4, 6, and 8 have striped cords. Las posiciones de polaridad negativa 2, 4, 6 y 8 tienen cables con raya. As posições 2, 4, 6 e 8 (polaridade negativa) têm cabos às riscas. De negativa polpositionerna 2, 4, 6 och 8 har randiga kablar.

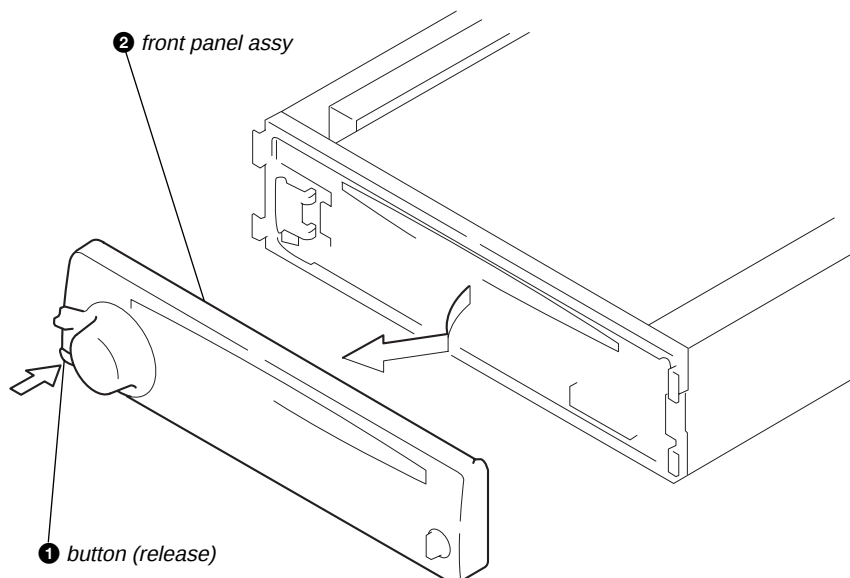
SECTION 2 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

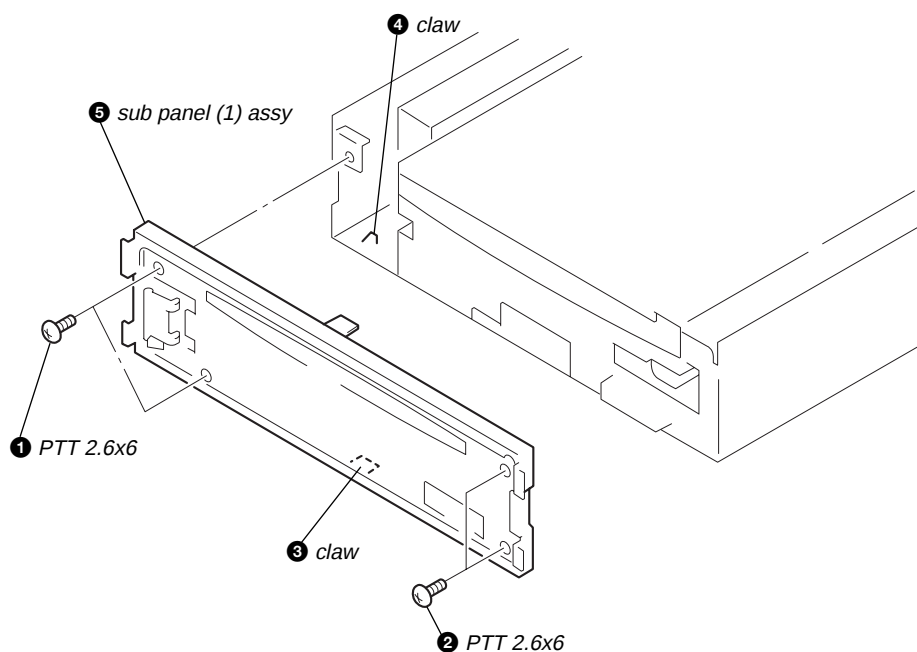
2-1. COVER ASSY



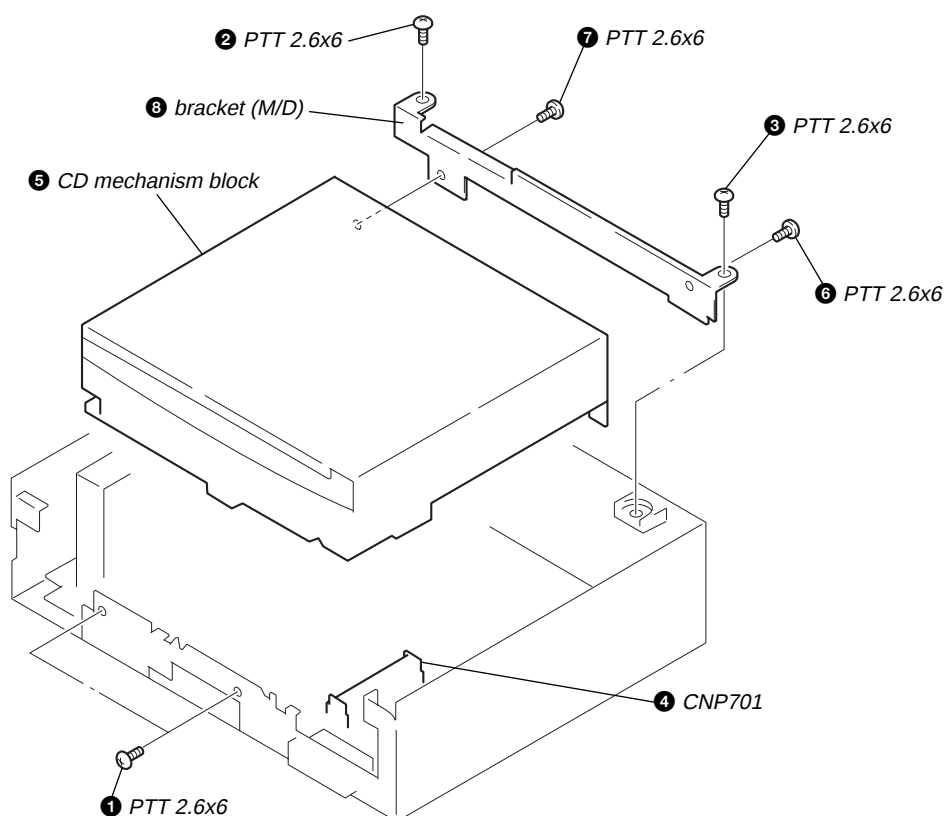
2-2. FRONT PANEL ASSY



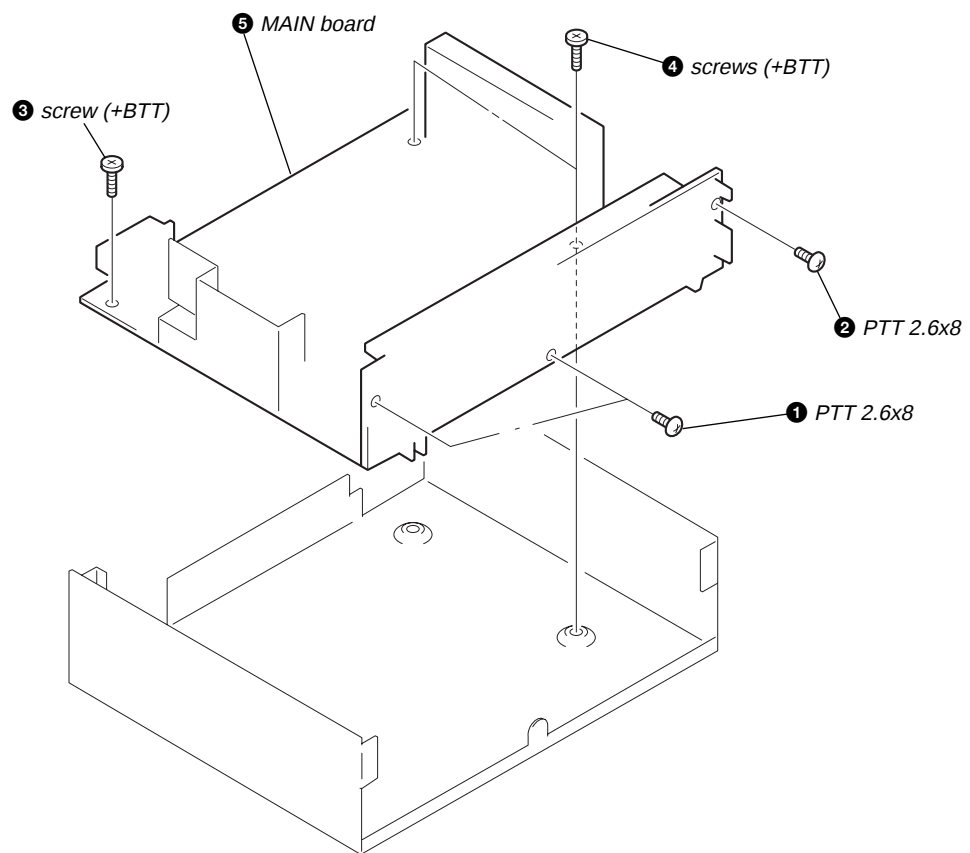
2-3. SUB PANEL (1) ASSY



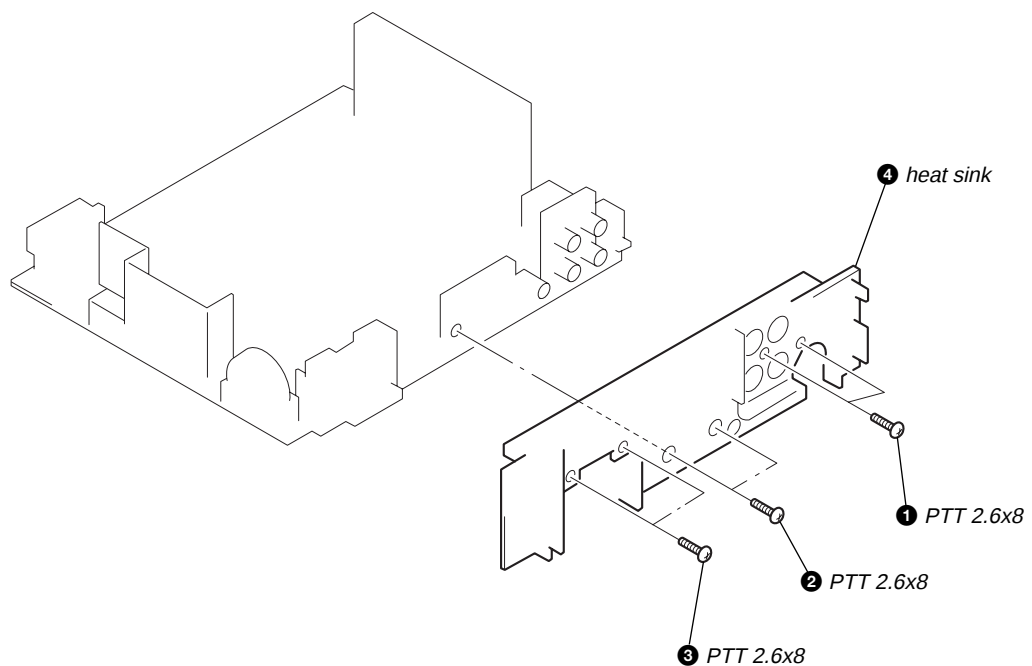
2-4. CD MECHANISM BLOCK



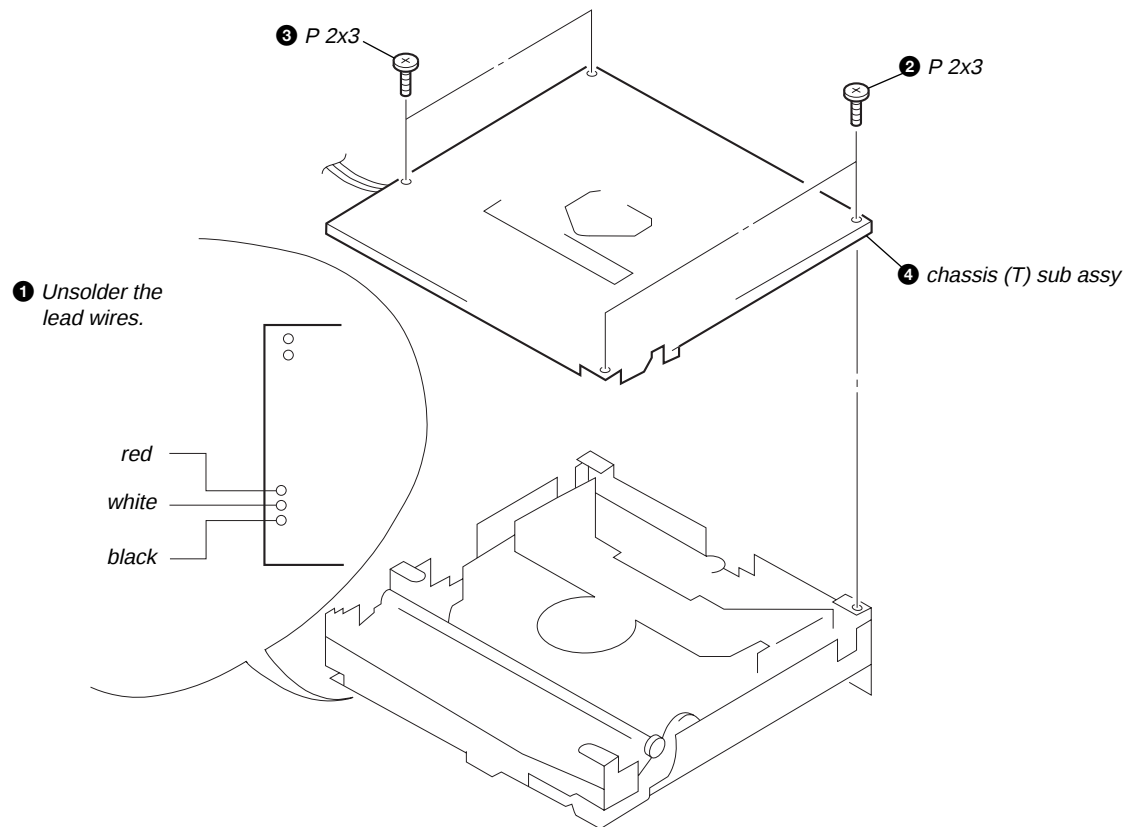
2-5. MAIN BOARD



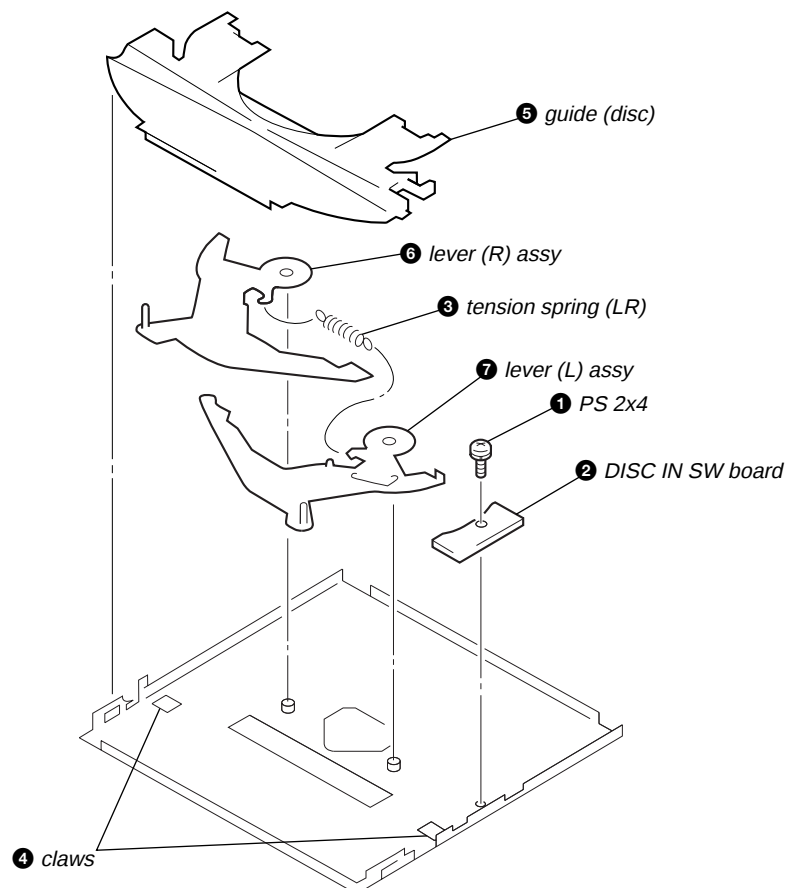
2-6. HEAT SINK



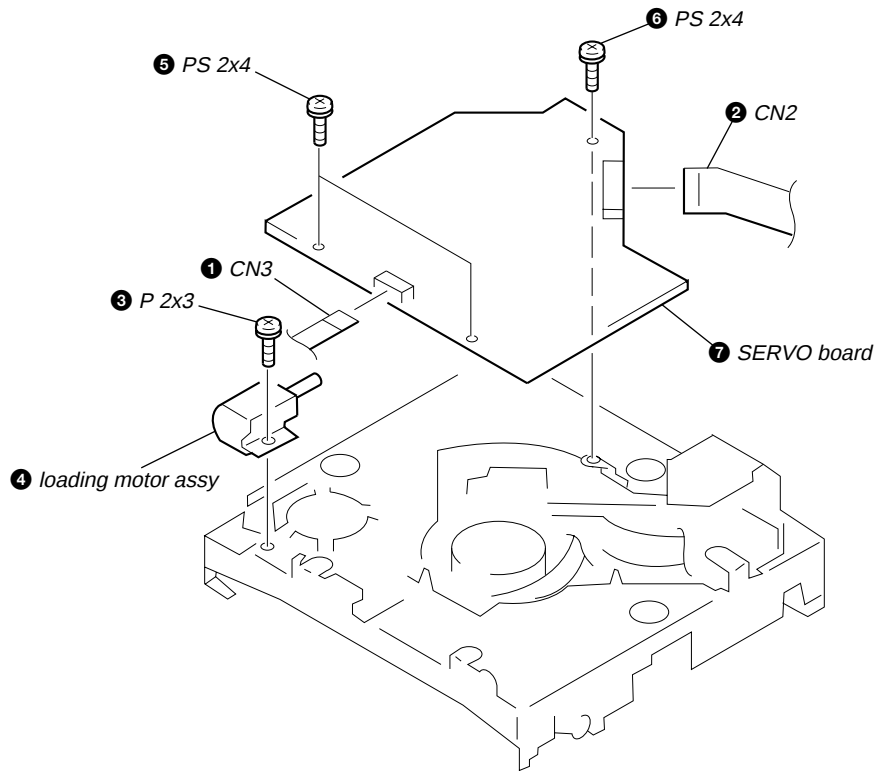
2-7. CHASSIS (T) SUB ASSY



2-8. LEVER ASSY

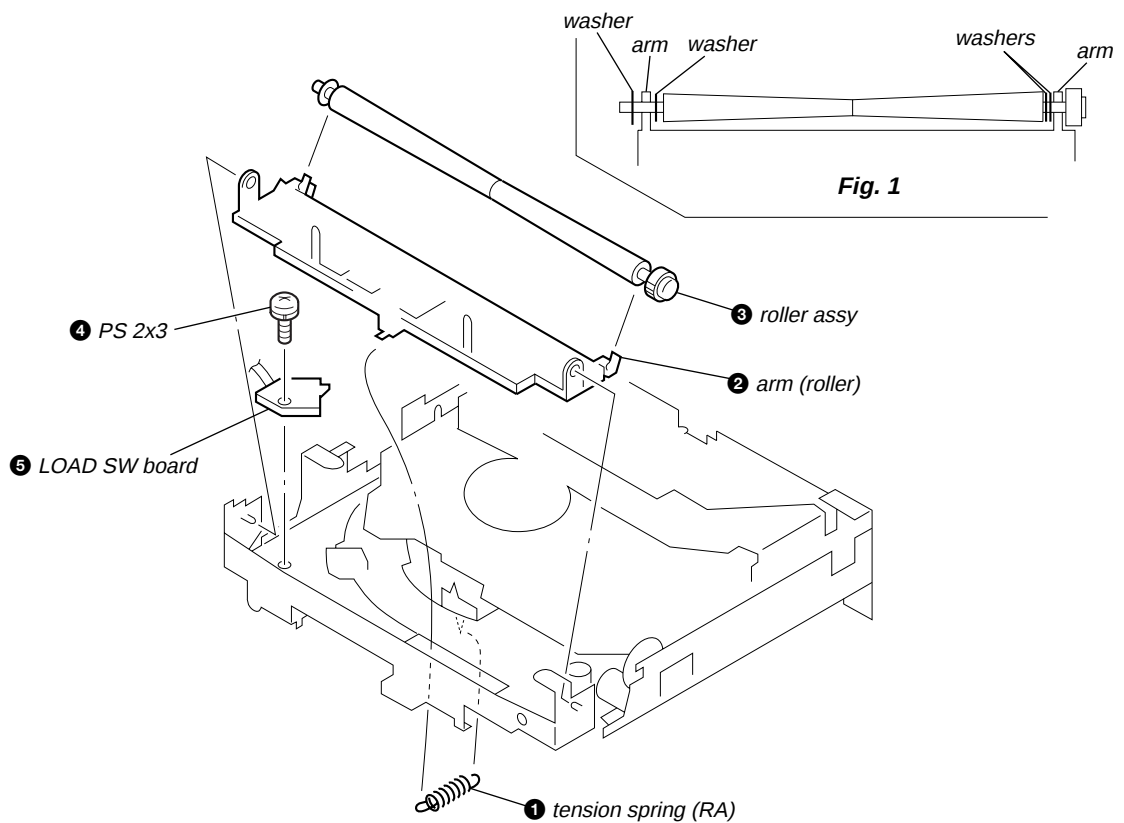


2-9. SERVO BOARD

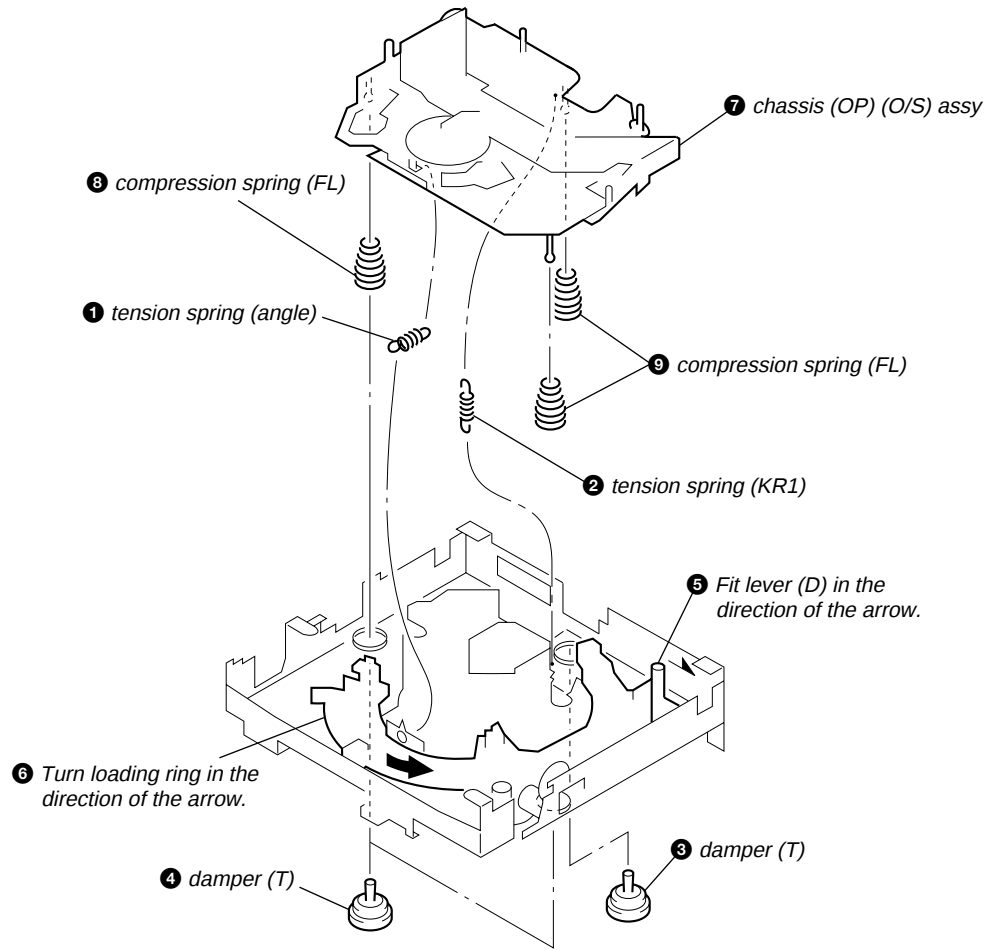


2-10. ROLLER ASSY

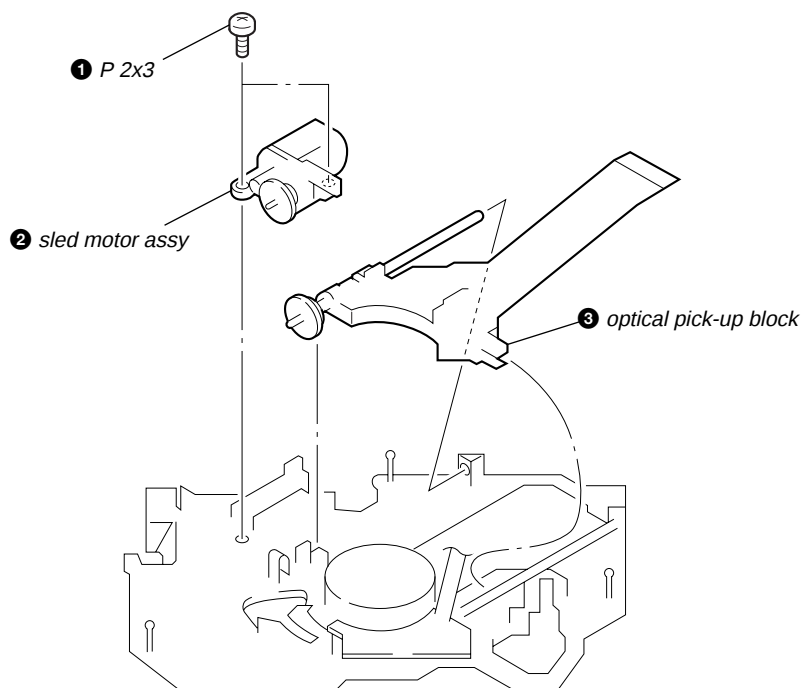
- When installing, take note of the positions arm (roller) and washers. (Fig. 1)



2-11. CHASSIS (OP) (O/S) ASSY



2-12. OPTICAL PICK-UP BLOCK



SECTION 3 ELECTRICAL ADJUSTMENTS

TEST MODE

This set have the test mode function. In the test mode, FM Auto Scan/Stop Level and MW Auto Scan/Stop Level adjustments can be performed easier than it in ordinary procedure.

<Set the Test Mode>

1. Set the "OFF" mode.
2. Push the preset **[4]** button.
3. Push the preset **[5]** button.
4. Press the preset **[1]** button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test Mode>

1. Push the **[OFF]** button.

TUNER SECTION

0 dB = 1 μ V

Cautions during repair

When the tuner unit is defective, replace it by a new one because its internal block is difficult to repair.

Note on Adjustment

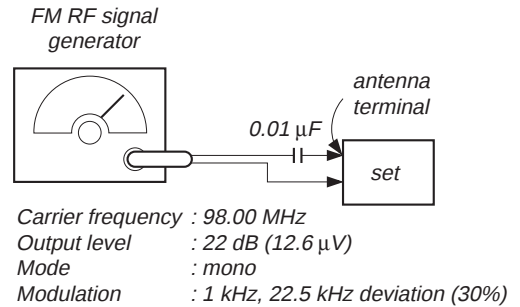
The adjustments of tuner section, should be performed according to the following sequence.

1. FM Auto Scan/Stop Level Adjustment
2. FM Stereo Separation Adjustment
3. MW Auto Scan/Stop Level Adjustment

FM Auto Scan/Stop Level Adjustment

Setting :

D-BASS switch : OFF
SOURCE button : FMI



Procedure :

1. Set to the test mode.
2. Push the **[SOURCE]** button and set to FMI.
Display



3. Push the preset **[3]** button.
Display



4. Adjust with the volume RV2 on TU1 so that the "FMI" indication turns to "FMII" indication on the display window. But, in case of already indicated "FMII", turn the RV2 so that put out light "I" indication and adjustment.
Display

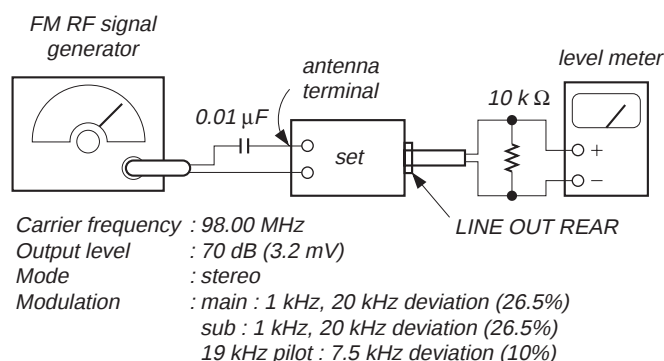


Adjustment Location : See page 17.

FM Stereo Separation Adjustment

Setting :

D-BASS switch : OFF
SOURCE button : FMI



Procedure :

FM stereo signal generator output channel	Level meter connection	Level meter reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV4 on TU1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV4 on TU1 for minimum reading.

L-CH stereo separation : Ⓐ – Ⓑ

R-CH stereo separation : Ⓒ – Ⓓ

The separations of both channels should be equal.

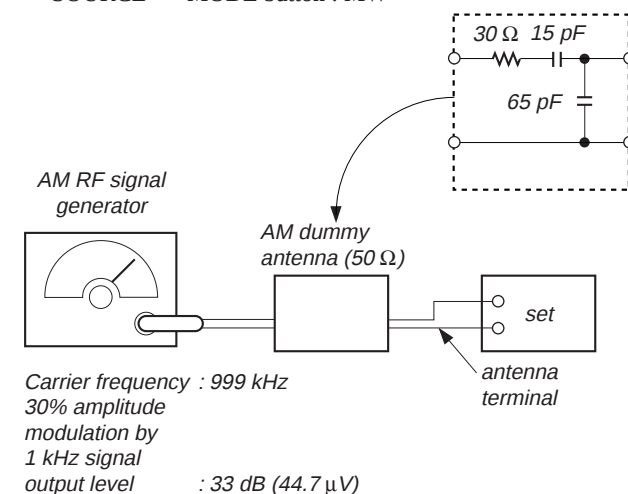
Specification : Separation more than 28 dB

Adjustment Location : See page 17.

MW Auto Scan/Stop Level Adjustment

Setting :

D-BASS switch : OFF
SOURCE → MODE button : MW



Procedure :

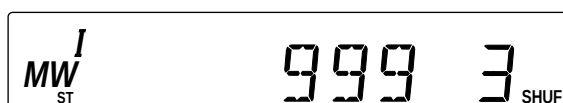
- Set to the test mode. (See page 15.)
- Push the **SOURCE** button.
- Push the **MODE** button and set to MW.
Display



- Push the preset **[3]** button.
Display



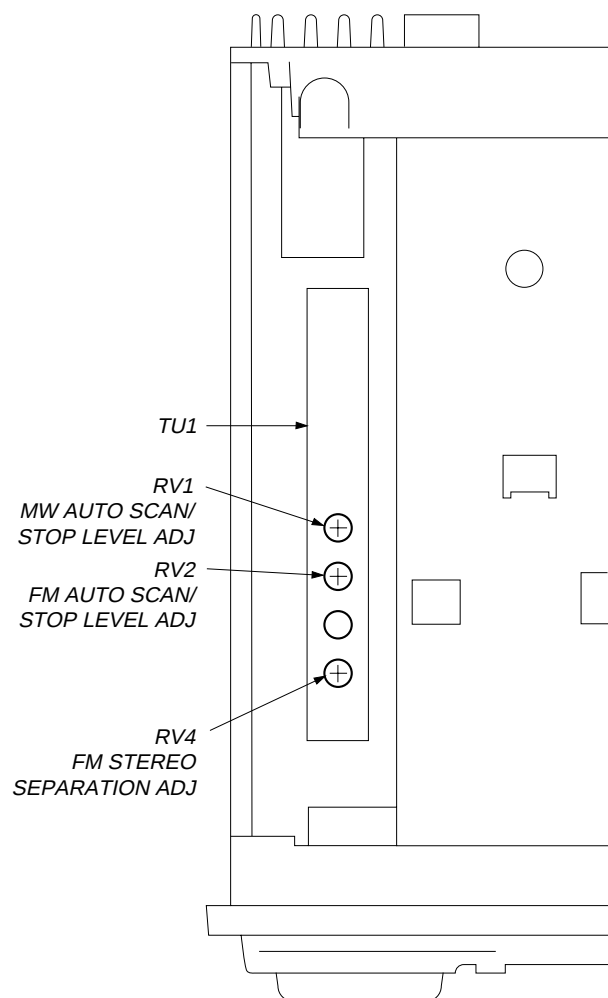
- Adjust with the volume RV1 on TU1 so that the “I” indication on the display window.
But, in case of already indicated “I”, turn the RV1 so that put out light “I” indication and adjustment.
Display



Adjustment Location : See page 17.

Adjustment Location : tuner unit (TU1)

—set upper view—



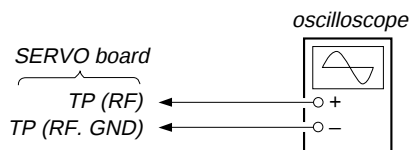
CD SECTION

Note:

1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10 M Ω impedance.
4. Clean an objective lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

Focus Bias Adjustment

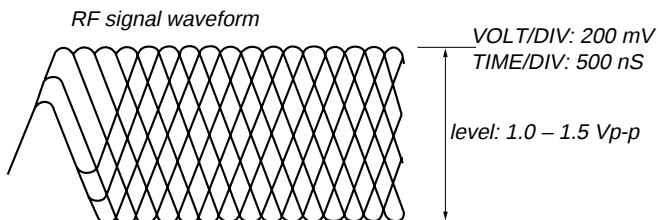
Setting: This adjustment is performed with the set placed horizontally.



Procedure:

1. Connect an oscilloscope between TP (RF) and TP (RF. GND) on the SERVO board.
2. Connect the power supply.
3. Push the **[RESET]** button (S801) on the MAIN board.
4. Insert the disc (YEDS-18) and playback.
5. Adjust RV1 so that the oscilloscope waveform is clear and check RF signal level is correct or not.

Note: Clear RF signal waveform means that the sharp “ $\approx$ ” can be clearly distinguished at the center of the waveform.



- When observing the eye pattern, set the oscilloscope to AC range and raise the vertical sensitivity so that it may be easily seen.

Adjustment Location: servo board

Focus Gain Adjustment (Coarse adjustment)

This adjustment is not required unless the following parts are replaced:

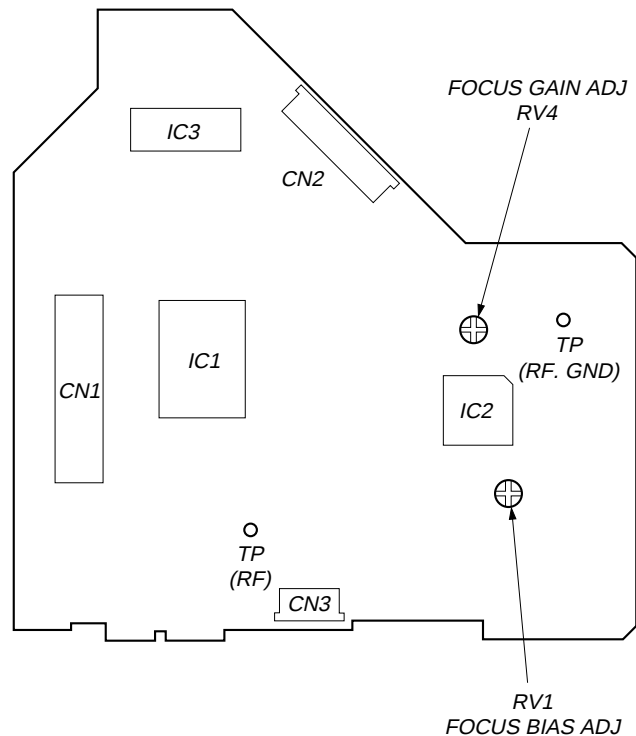
- Optical pick-up
- RV4

Procedure:

1. Set RV4 to the standard position. (mechanical center)
 2. Check whether operation noise (while noise type) caused by the 2-axis device (lens section of the optical pick-up) is abnormally loud.
If the operation noise is too loud, turn RV4 slightly counter-clockwise.
- If the gain is too low:
Focus does not function and no music is selected.
 - If the gain is too high:
Noise caused by scratches and dust is heard and the operation becomes unstable.

Adjustment Location: servo board

Adjustment Location: servo board (component side)



SECTION 4 DIAGRAMS

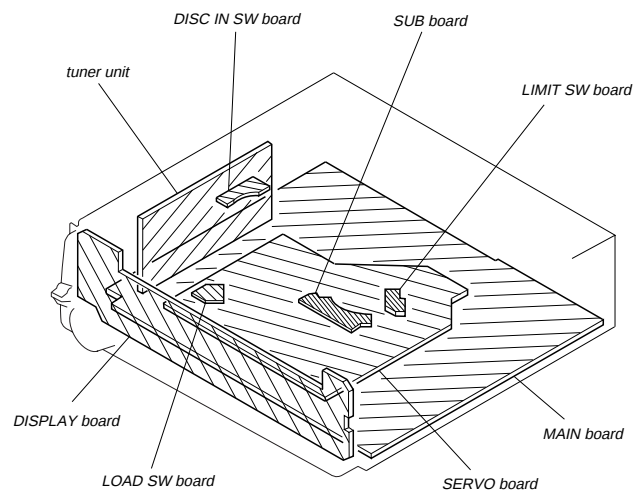
4-1. IC PIN DESCRIPTION

• IC801 μ PD17705GC-526-3B9 (SYSTEM CONTROL)

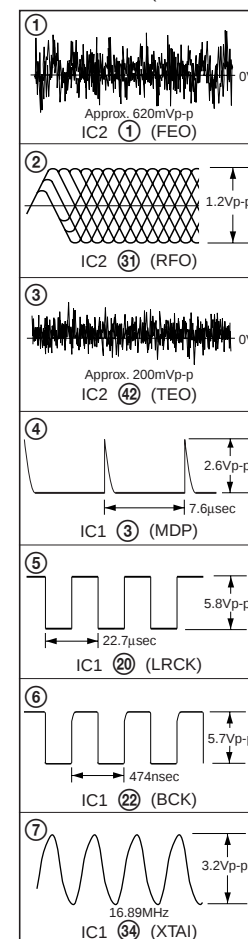
Pin No.	Pin Name	I/O	Pin Description
1	SIRCS	I	SIRCS input (A/D)
2	$\overline{\text{IN-SW}}$	I	CD mechanism position detection
3	$\overline{\text{D-SW}}$	I	CD mechanism position detection
4	$\overline{\text{SELF-SW}}$	I	CD mechanism position detection
5	$\overline{\text{L-SW}}$	I	LIMIT switch
6	LM-EJ	O	Loading motor control (Eject direction)
7	LM-LOD	O	Loading motor control (Loading direction)
8	ANT-ON	O	Power control for amplifier.
9	MONO	O	Force MONO output (Not used.)
10	SD	I	SD signal input
11	BAND-SW	I	Band plan setting of general area.
12	AREA1-SW	I	Destination select 1
13	AREA2-SW	I	Destination select 2
14, 15	RE1, 2	I	Rotary encoder input 1, 2
16	$\overline{\text{SEEK}}$	O	SEEK output
17 – 20	NC	—	Not used.
21	GND3	—	GND
22 – 24	KEYIN3 – 1	I	A/D key input 3 – 1
25	ROT-IN	I	Rotary commander input
26	S-METER	I	FM and MW/LW common signal meter A/D conversion input.
27	$\overline{\text{TEST-SW}}$	I	TEST mode select input
28	AM-IFC	I	MW/LW center frequency input
29	FM-IFC	I	FM center frequency input
30	VDD2	—	Power supply (+5 V)
31	VCOH-FM	I	Local oscillation frequency input (FM)
32	VCOL-AM	I	Local oscillation frequency input (MW/LW)
33	GND2	—	GND
34	NC	—	Not used.
35	EO1-PDOUT	O	Error out output
36	TESTO	—	Fixed at “L”.
37	AM-ON(TU-ON)	O	MW/LW power output (MW/LW select)
38	FM-ON(FM/ $\overline{\text{AM}}$)	O	FM power output (FM select)
39	LCL/ $\overline{\text{DX}}$	O	LOCAL/ $\overline{\text{DX}}$ select (“H” : LOCAL, “L” : DX)
40	BEEP	O	BEEP output
41	$\overline{\text{ACC-IN}}$	I	Accessory input
42	SCOR	I	SUBQ data read request
43	MUTE	O	System mute output
44	$\overline{\text{AMP-MUTE}}$	O	Power amplifier mute output
45	TEL-MUTE	O	Telephone mute output
46	NC	—	Not used.
47	VOL-CE	O	Electric volume chip select
48	VOL-CLK	O	Electric volume serial clock
49	VOL-DATA	O	Electric volume serial data
50	EMPHO	O	De-emphasis control output
51	PW-ON	O	System power control
52	MD-ON	O	Loading motor power
53	CD-ON	O	Servo drive power
54	ILL-ON	O	Illumination output
55, 56	MOD1, 2	O	Bus boost control 1, 2
57	NC	—	Not used.
58	LCD-CE	O	LCD drive chip select output

Pin No.	Pin Name	I/O	Pin Description
59	EZ-SEL	I	SHIFT + input
60	SENS	I	Information input from servo IC.
61	FOK	I	Focus OK input
62	$\overline{\text{LD-ON}}$	O	Laser diode control
63	NC	—	Not used. (Connect to GND.)
64	$\overline{\text{ST/MONO}}$	I/O	Used for both STEREO indicator display input and force MONO output. (FM)
65	LCD-CKO	O	LCD driver serial clock output
66	LCD-SO	O	LCD driver serial data output
67	C.ALARM	O	Caution alarm output
68	SQ-CKO	O	Q data read serial clock output
69	CD-RST	O	Servo IC/DAC reset output
70	SQ-SI	I	Q data input
71	CD-SO	O	Serial data output to servo IC.
72	CD-LAT	O	Data latch output to servo IC.
73	CD-CKO	O	Serial clock output to servo IC.
74	VREF	—	Not used.
75	GND1	—	GND
76	X-OUT	—	Crystal oscillator connection (4.5 MHz)
77	X-IN	I	Crystal oscillator connection (4.5 MHz)
78	BU-IN	I	Back-up detection
79	VDD1	—	Power supply (+5 V)
80	$\overline{\text{RESET}}$	I	RESET input

4-2. CIRCUIT BOARDS LOCATION



• Waveforms (MODE:PLAY)



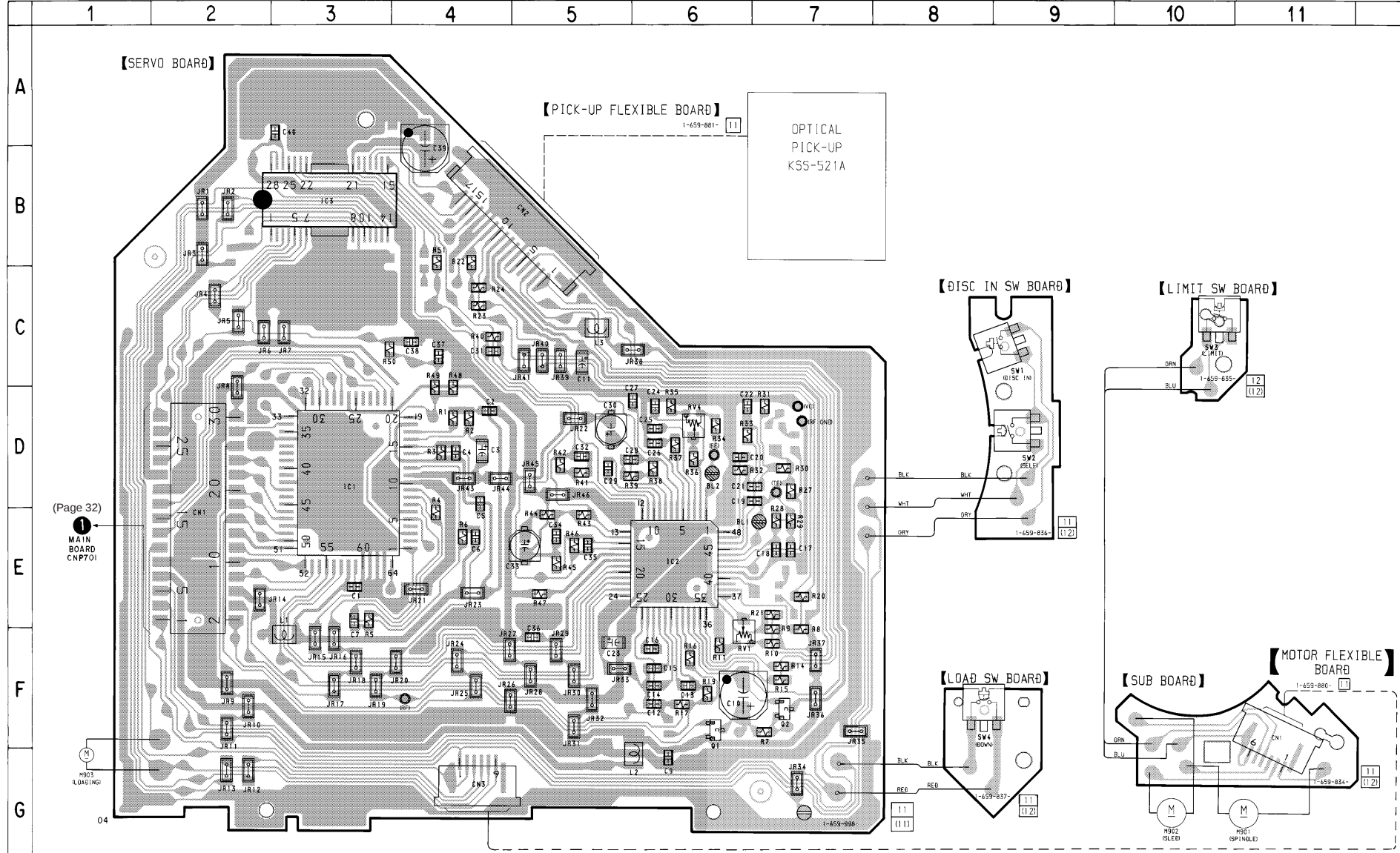
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

- $\boxed{B+}$: B+ Line.
- $\boxed{}$: adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : CD PLAY
- * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- $\Rightarrow$: CD

4-3. PRINTED WIRING BOARDS — CD MECHANISM SECTION —



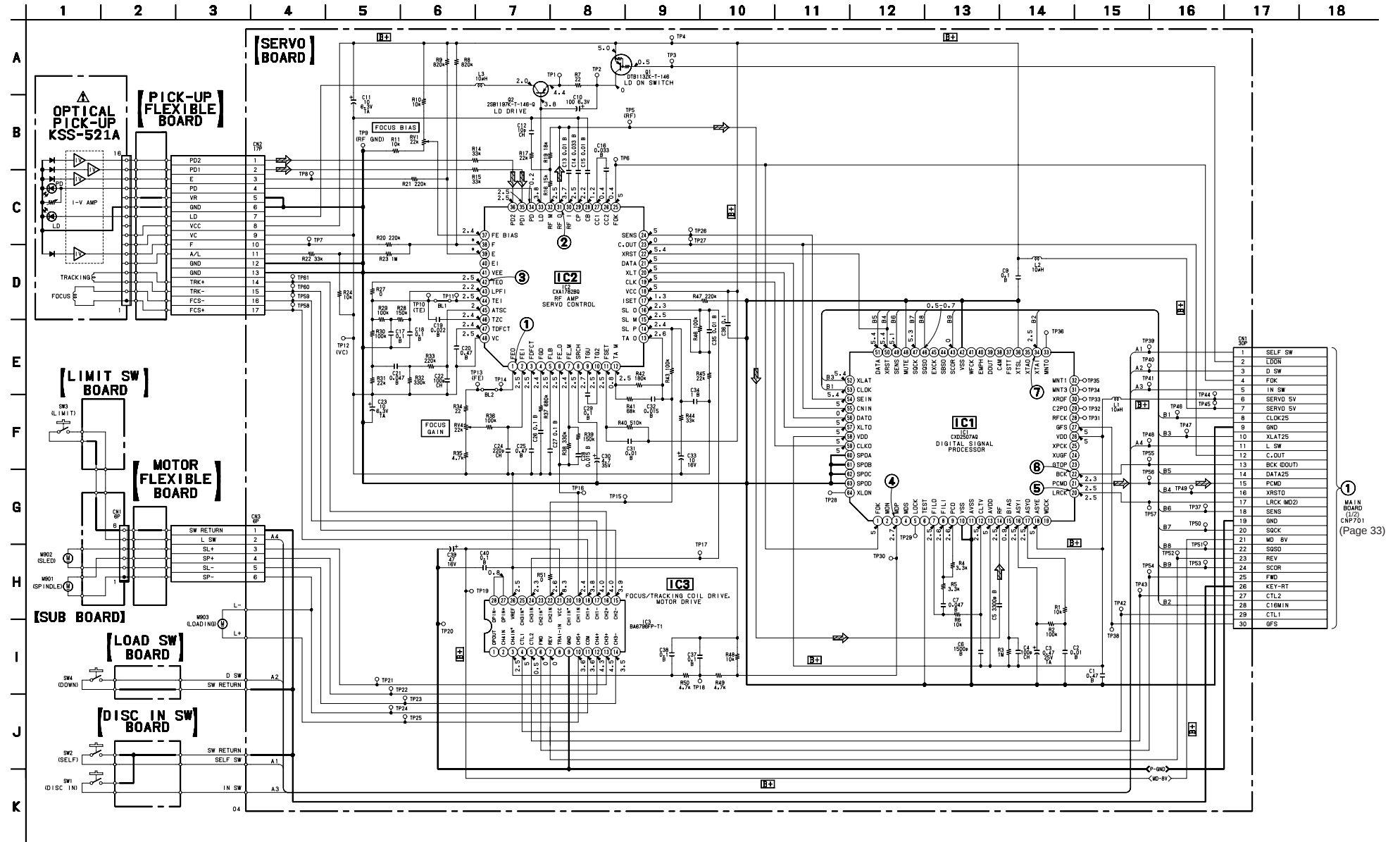
• Semiconductor Location

Ref. No.	Location
IC1	D-3
IC2	E-6
IC3	B-3
Q1	F-6
Q2	F-7

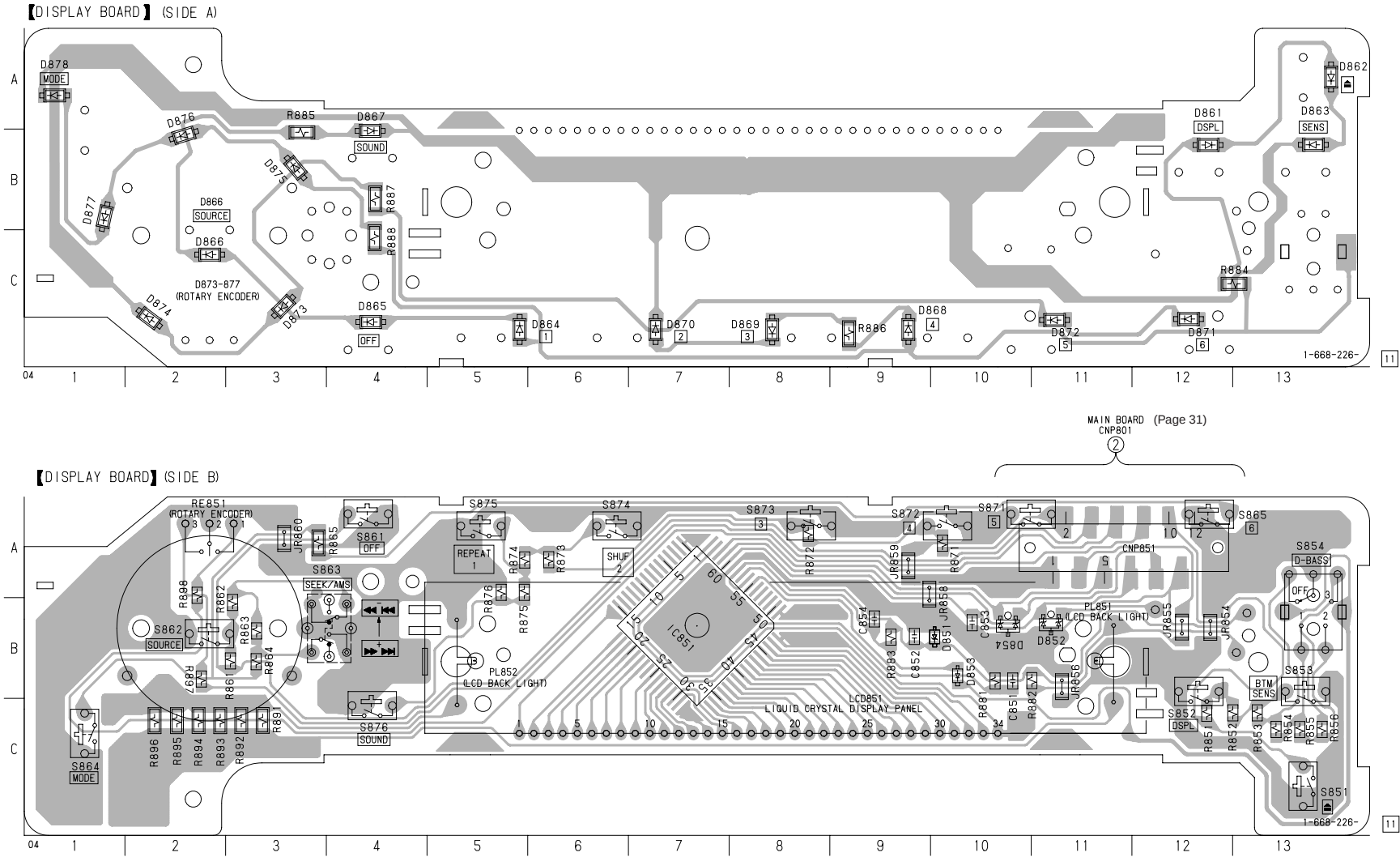
Note:

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.

4-4. SCHEMATIC DIAGRAM — CD MECHANISM SECTION — • Refer to page 22 for Waveforms and Note and page 37 for IC Block Diagrams.



4-5. PRINTED WIRING BOARD — DISPLAY SECTION —



• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
(D851)	B-10	D869	C-8
(D852)	B-11	D870	C-7
(D853)	B-10	D871	C-12
(D854)	B-10	D872	C-11
D861	B-12	D873	C-3
D862	A-13	D874	C-2
D863	B-13	D875	B-3
D864	C-5	D876	B-2
D865	C-4	D877	B-1
D866	C-2	D878	A-1
D867	B-4		
D868	C-9	(IC851)	B-7

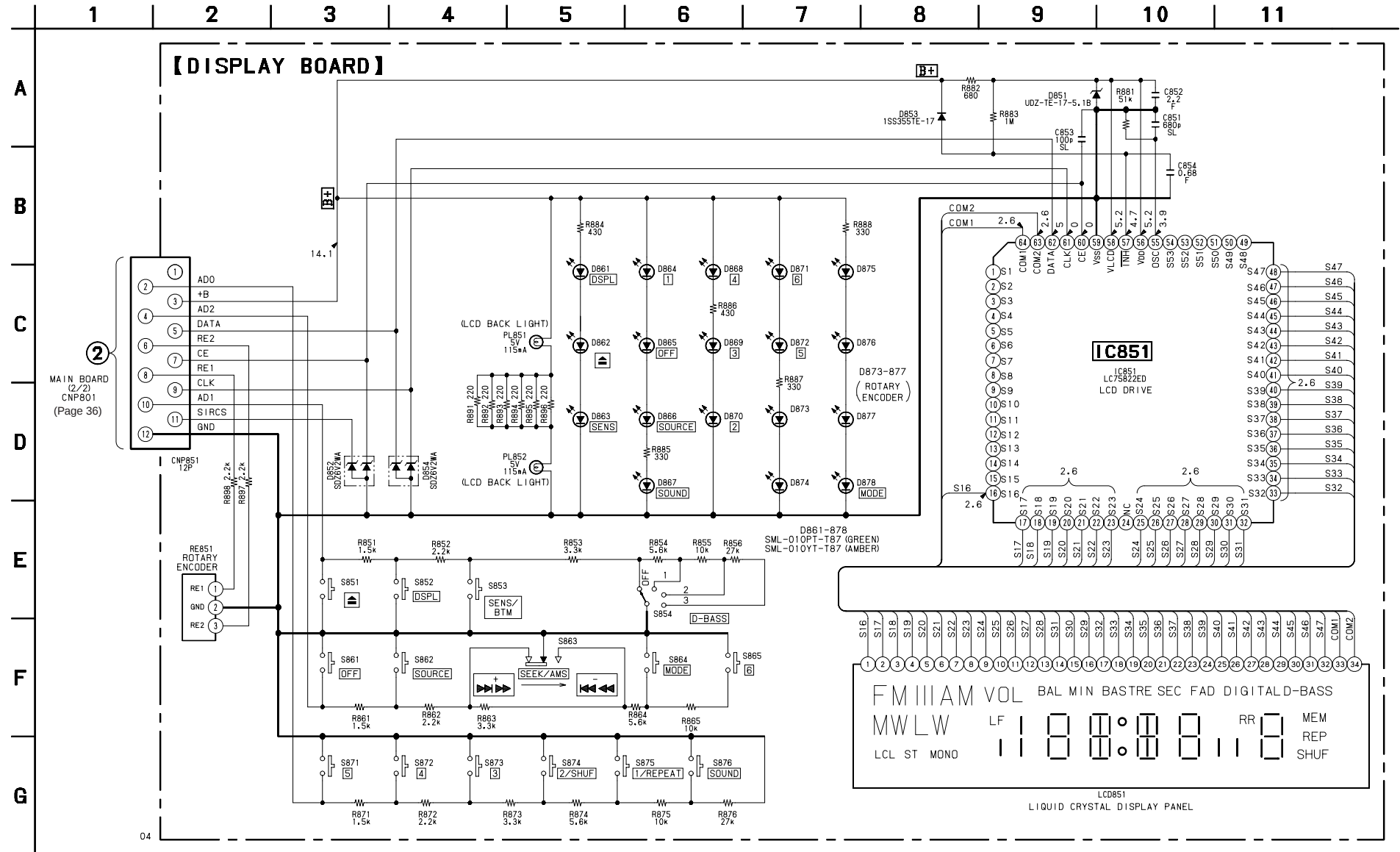
Note:

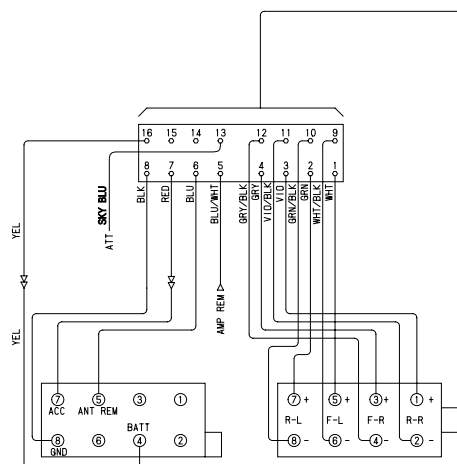
- : Through hole.
- ▨ : Pattern from the side which enables seeing.
(The other layer's patterns are not indicated.)

Caution:
Pattern face side: Parts on the pattern face side seen from the (Side B) pattern face are indicated.
Parts face side: Parts on the parts face side seen from the (Side A) parts face are indicated.

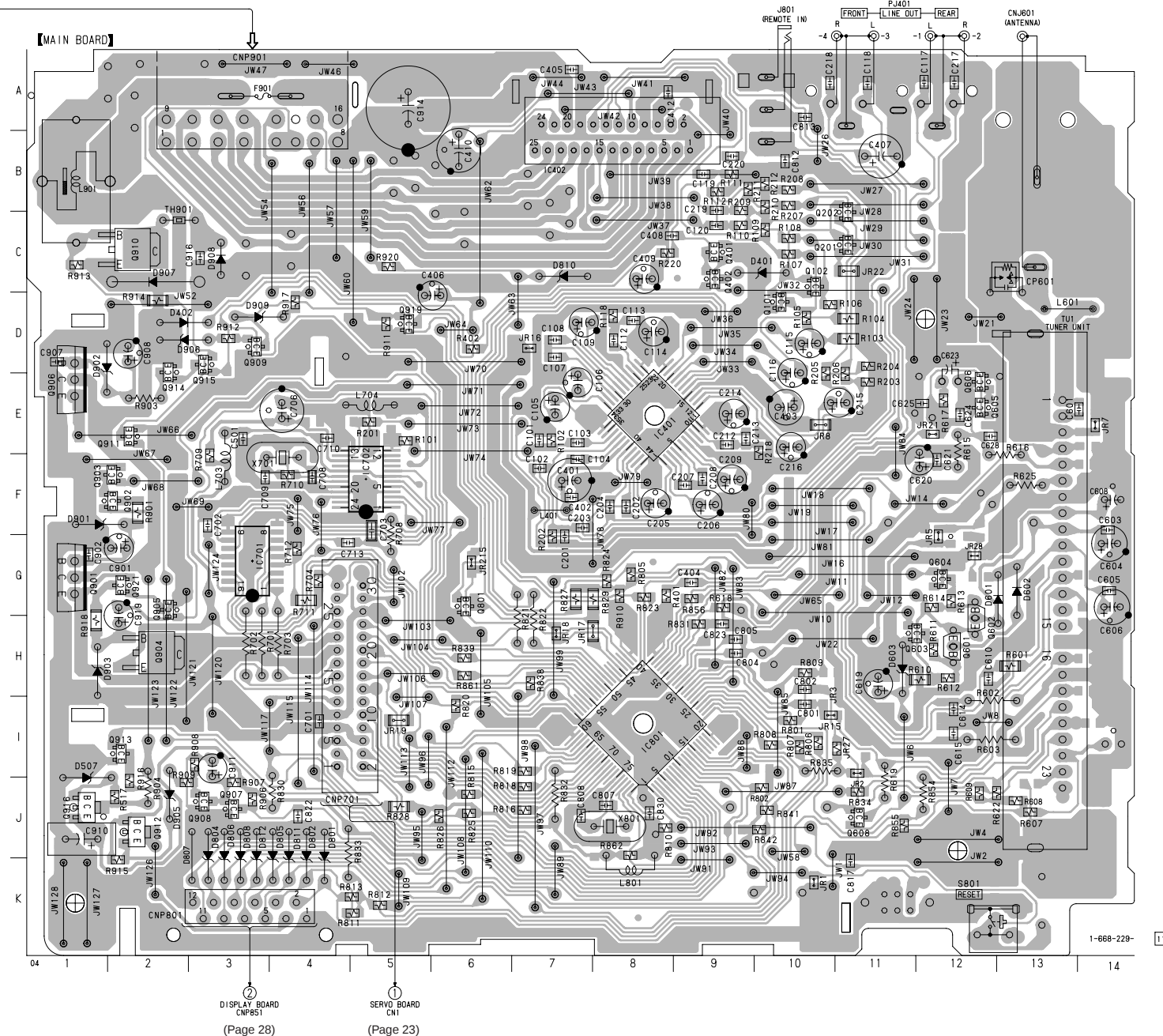
() : SIDE B

4-6. SCHEMATIC DIAGRAM — DISPLAY SECTION —





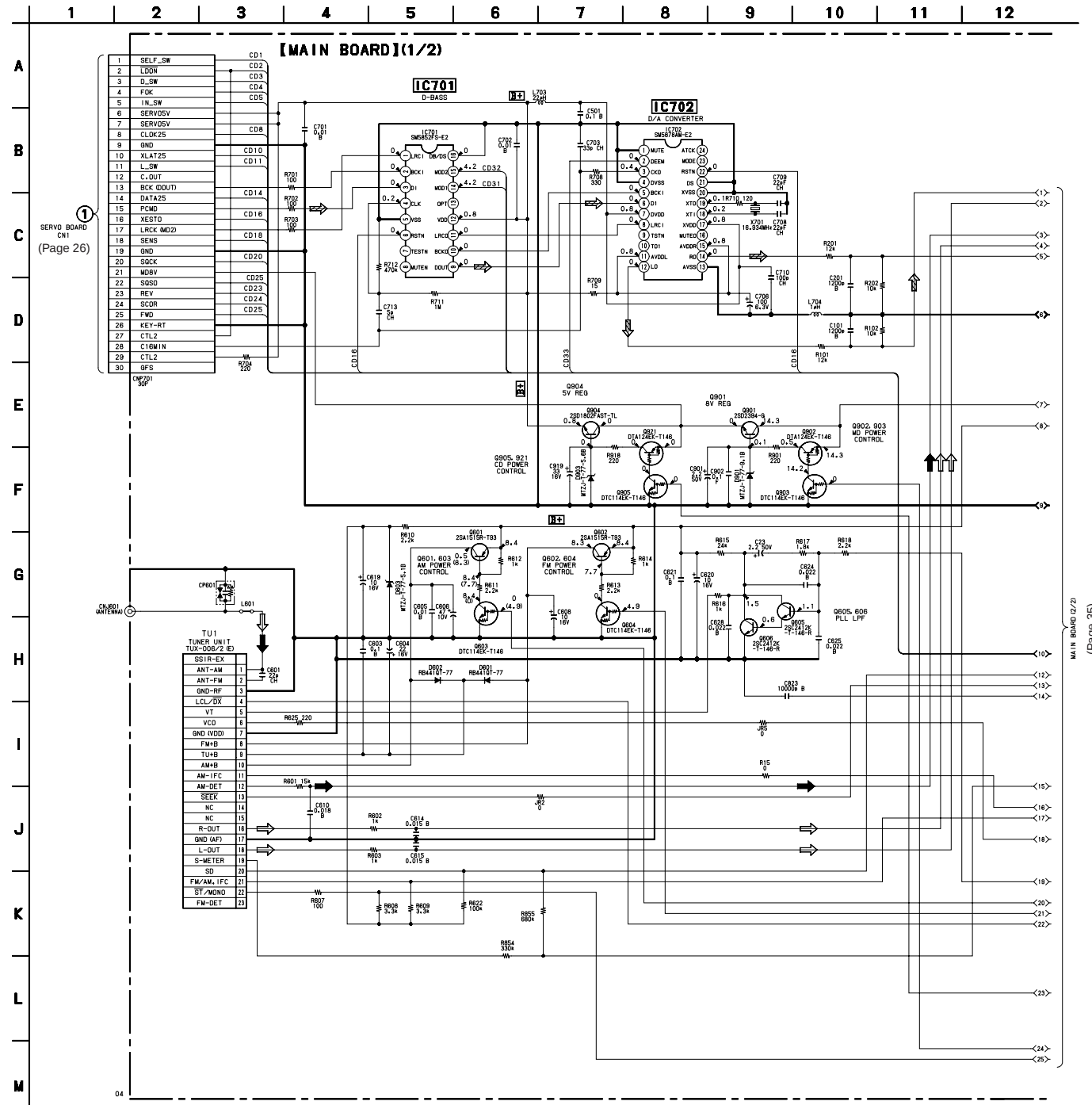
Ref. No.	Location	Ref. No.	Location
D401	C-9	Q102	C-10
D402	D-3	Q201	C-11
D507	I-1	Q202	B-11
D601	G-12	Q401	C-9
D602	G-13	Q402	C-9
D603	H-11	Q601	H-12
D801	J-4	Q602	H-12
D802	J-4	Q603	H-11
D804	J-3	Q604	G-12
D805	J-4	Q605	E-12
D806	J-3	Q606	E-12
D808	J-3	Q801	G-6
D810	C-7	Q901	G-1
D811	J-4	Q902	E-2
D812	J-3	Q903	E-2
D901	F-1	Q904	H-2
D902	D-2	Q905	G-2
D903	H-1	Q906	E-1
D905	J-2	Q907	J-3
D906	D-3	Q908	J-3
D907	C-2	Q909	D-3
D908	C-3	Q100	C-2
D909	D-3	Q911	E-2
		Q912	J-2
IC401	E-8	Q913	I-2
IC402	B-8	Q914	E-3
IC701	G-3	Q915	E-3
IC702	F-5	Q916	J-1
IC801	I-8	Q919	D-5
		Q921	G-2
Q101	D-10		



Note:

-  : parts extracted from the component side.
-  : internal component.
-  : Pattern from the side which enables seeing.

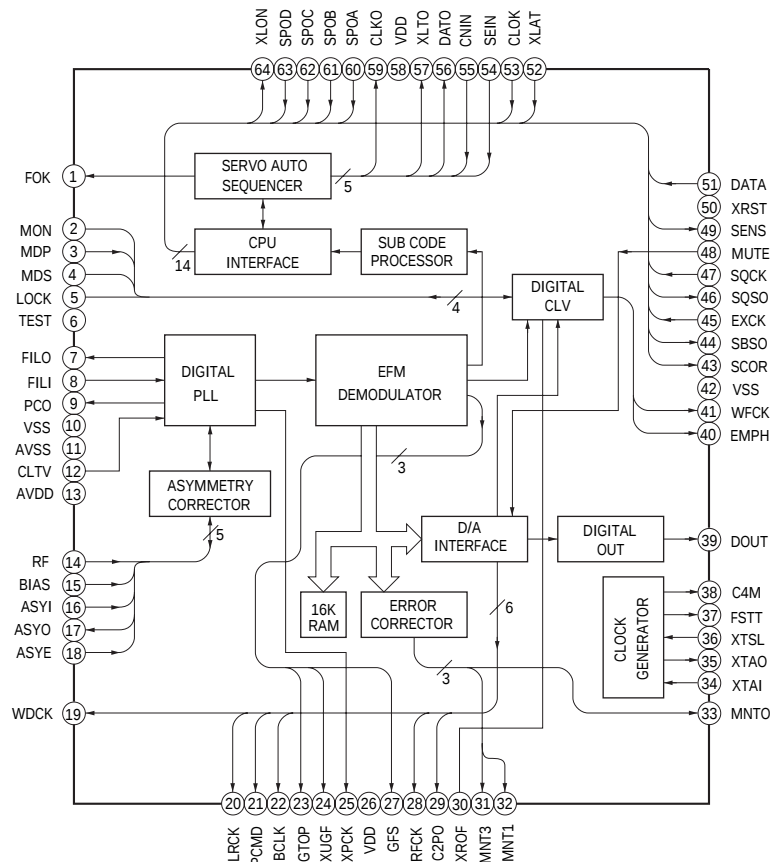
4-8. SCHEMATIC DIAGRAM — MAIN SECTION (1/2) — • Refer to page 39 for IC Block Diagrams.



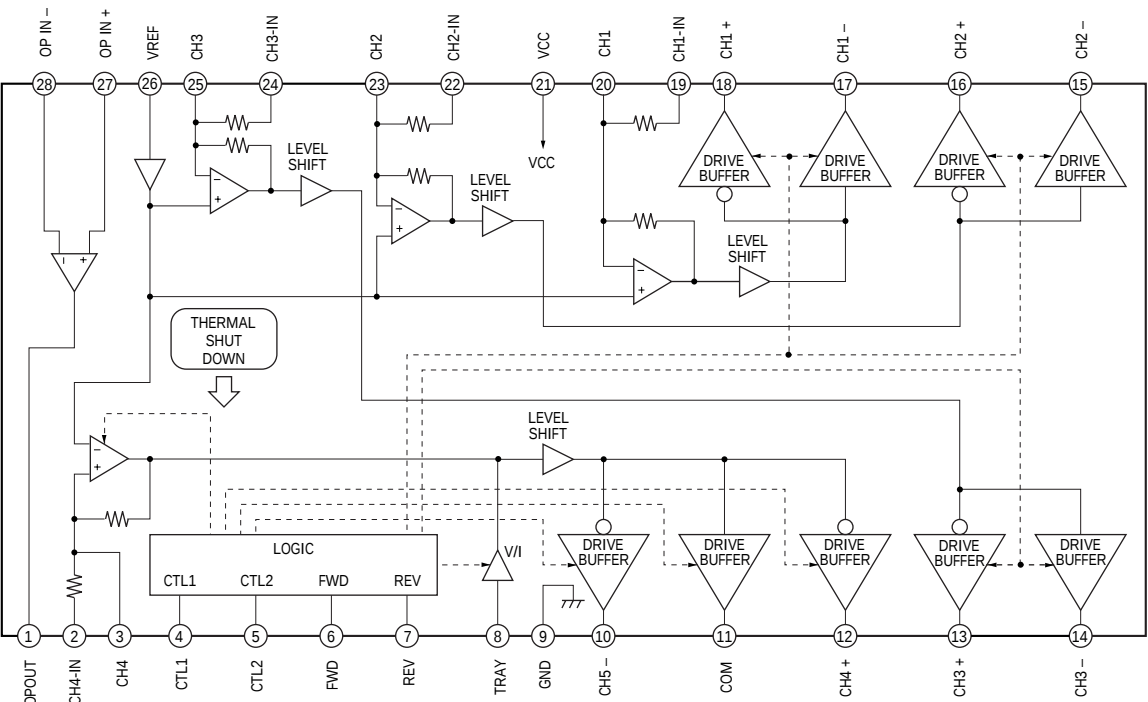


• IC Block Diagrams

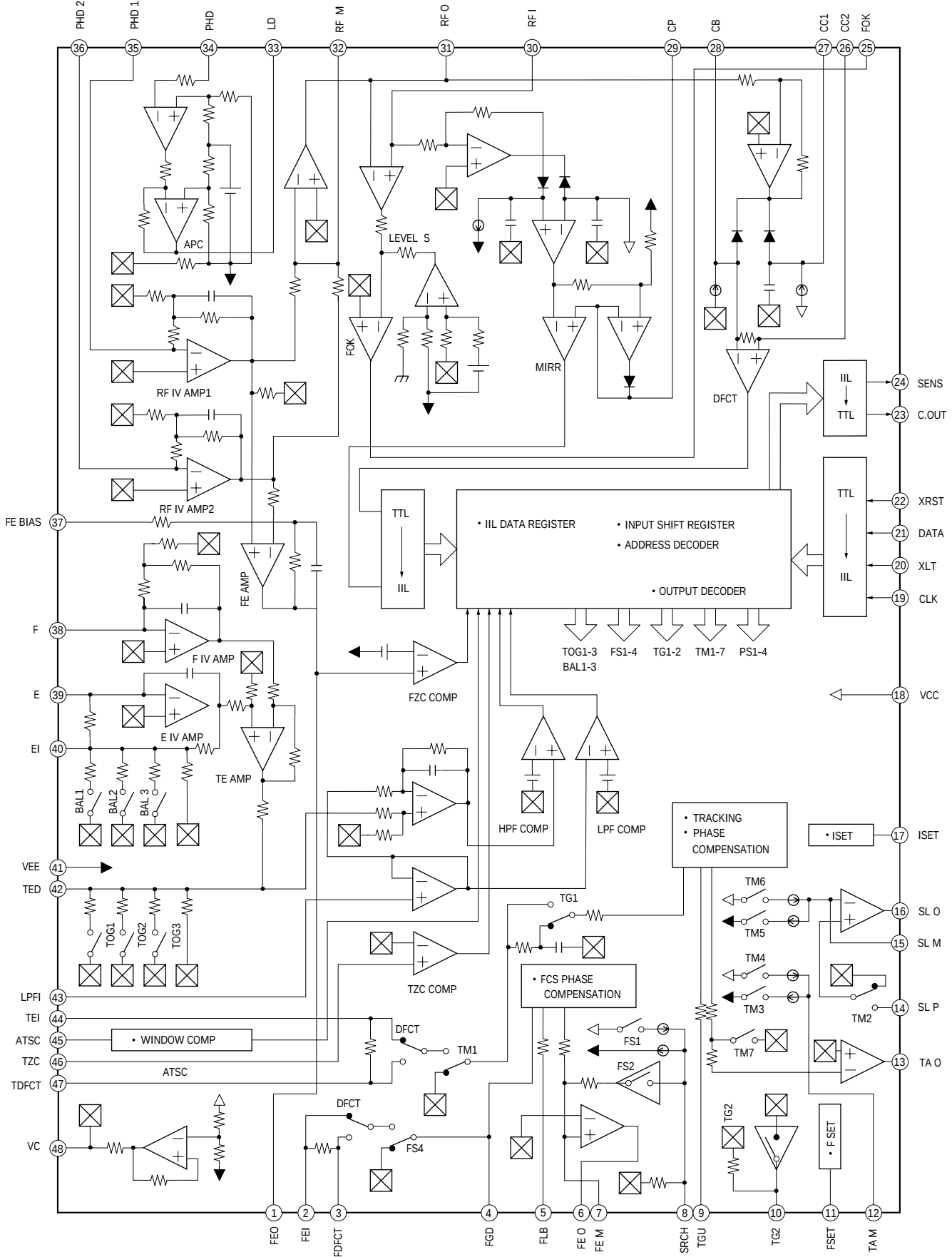
IC1 CXD2507AQ



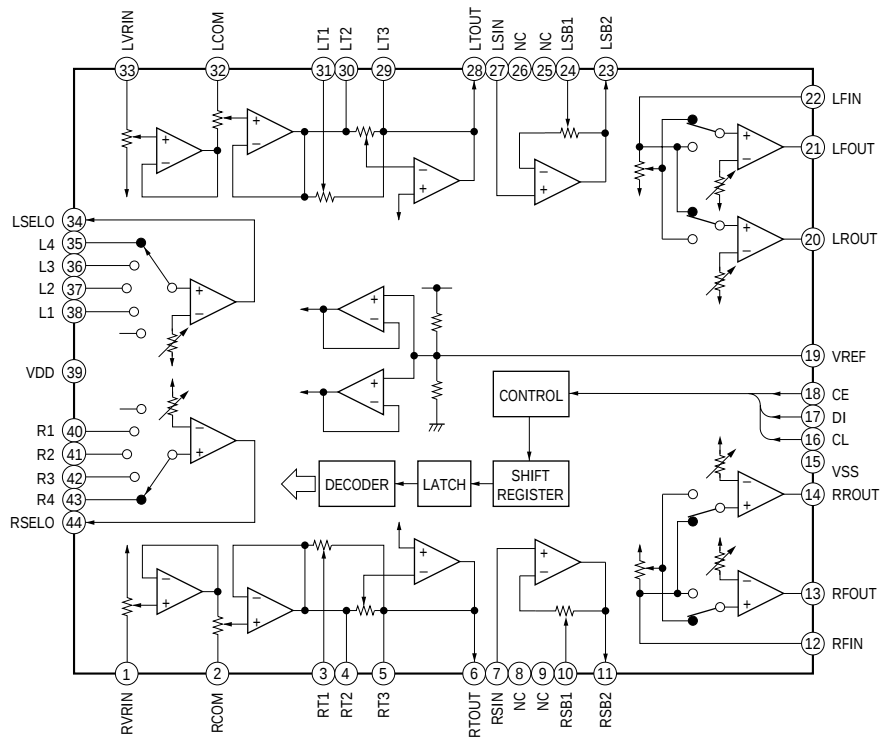
IC3 BA6796FP



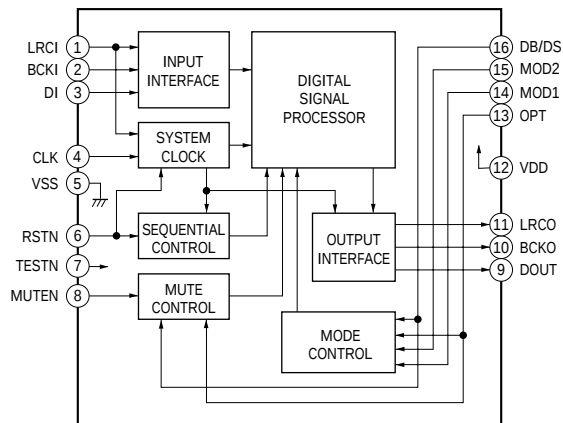
IC2 CXA1782BQ



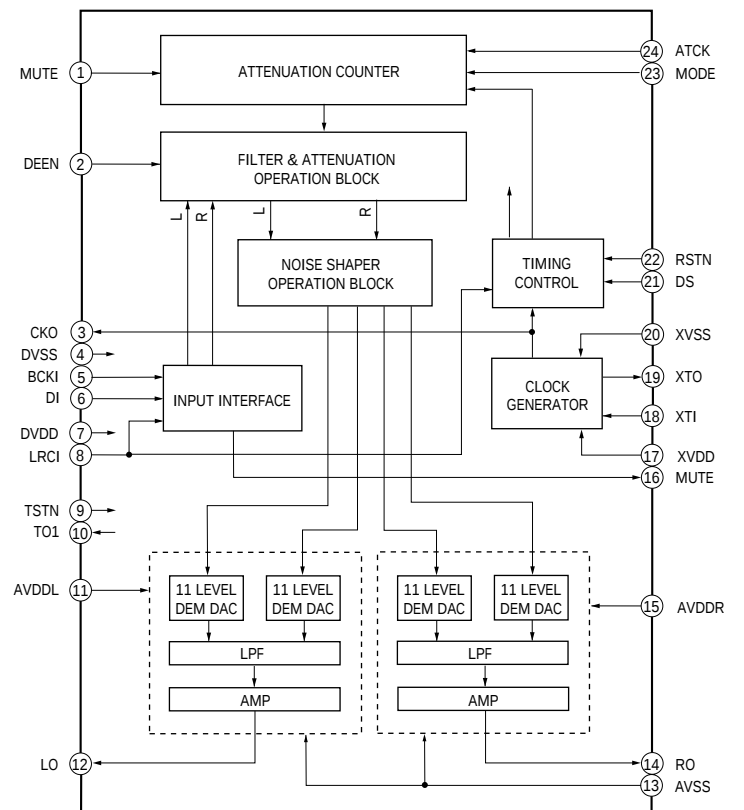
IC401 LC75374E



IC701 SM5852FS



IC702 SM5878AM



SECTION 5 EXPLODED VIEWS

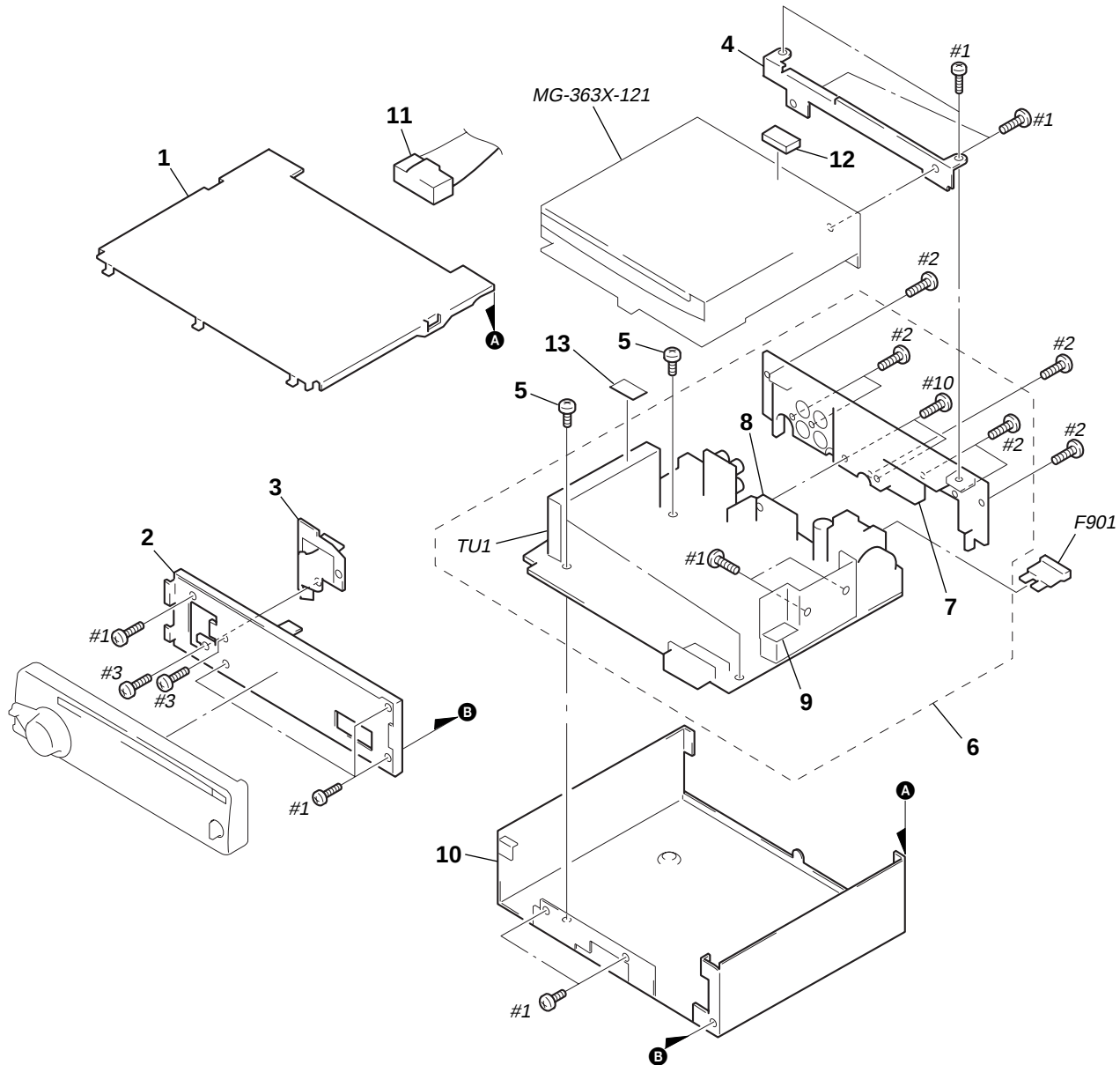
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.

- Color Indication of Appearance Parts
Example :
KNOB, BALANCE (WHITE) ... (RED)
Parts Color Cabinet's Color
- Accessories and packing materials and hardware (# mark) list are given in the last of this parts list.

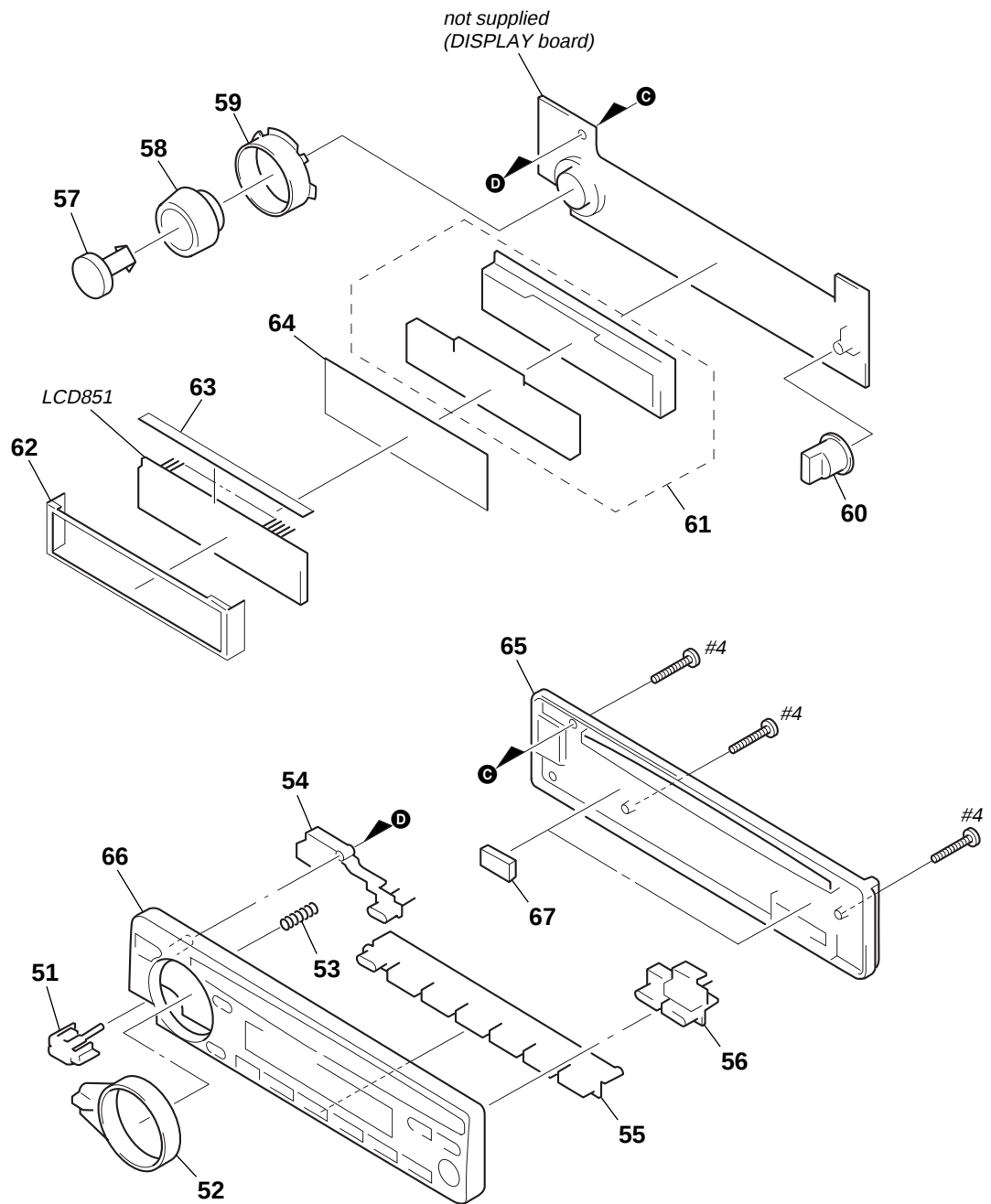
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

5-1. CHASSIS SECTION



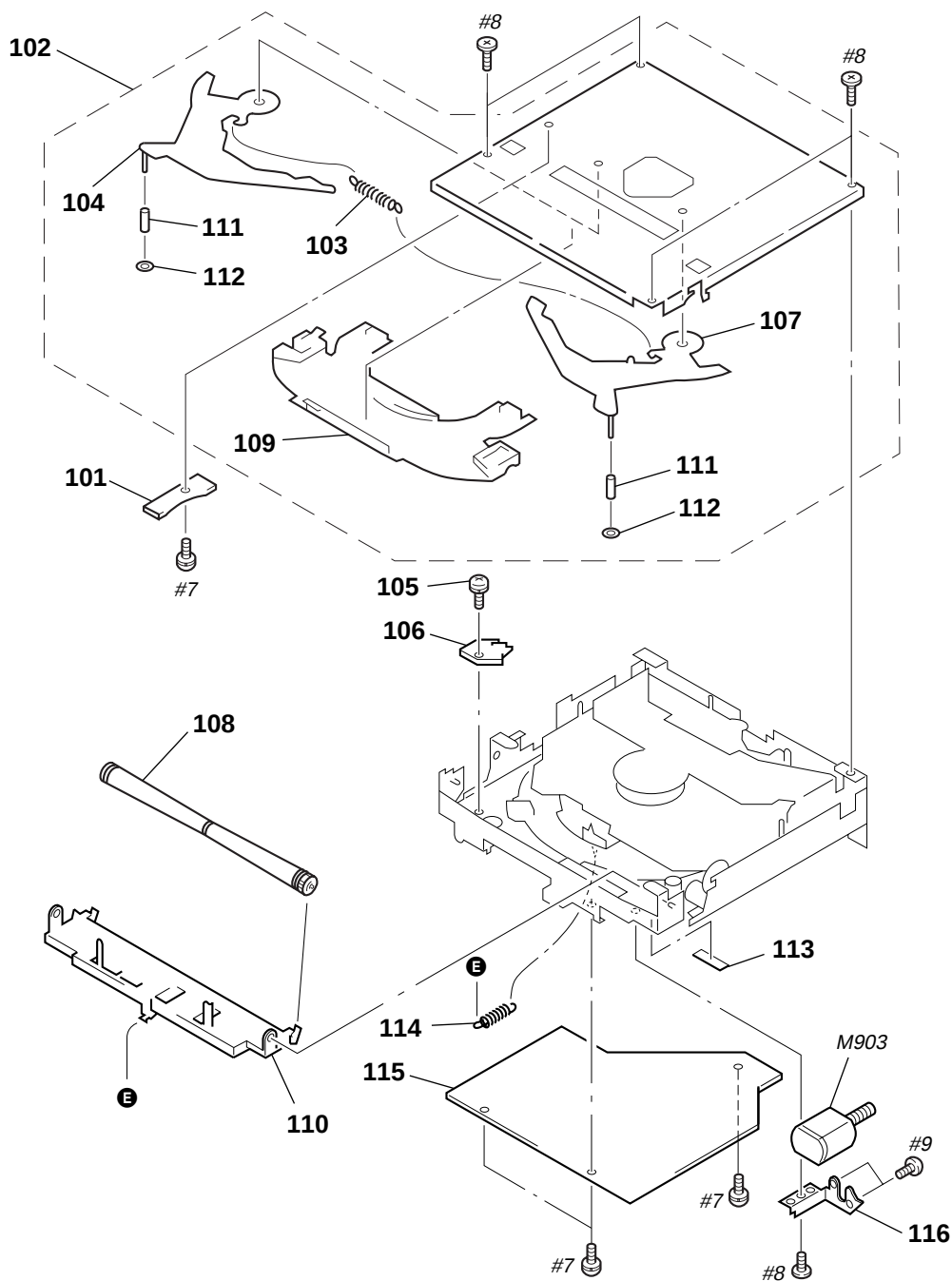
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3374-926-1	COVER ASSY		* 9	3-009-350-01	BRACKET (REG)	
2	X-3374-808-1	PANEL (1) ASSY, SUB		* 10	3-020-104-01	CHASSIS (MAIN)	
3	X-3368-104-2	LOCK ASSY		11	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
* 4	3-019-564-01	BRACKET (M/D)		* 12	3-024-285-01	CUSHION (RUBBER)	
5	3-922-535-11	SCREW (+BTT)		13	3-937-650-01	PLATE (C), GROUND	
* 6	A-3294-352-A	MAIN BOARD, COMPLETE		F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
* 7	3-019-556-11	HEAT SINK		TU1	A-3282-029-A	TUNER UNIT (TUX-006/2(E))	
* 8	3-019-565-01	BRACKET (IC)					

5-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-019-549-01	BUTTON (RELEASE)		60	3-019-543-01	KNOB (D-BASS)	
52	3-019-544-01	KNOB (SEEK/AMS)		* 61	X-3374-803-1	HOLDER (LCD) ASSY	
53	3-375-373-01	SPRING (RELEASE)		* 62	3-019-557-01	PLATE (LCD), GROUND	
54	3-019-550-01	BUTTON (MODE/SOUND)		63	3-019-558-01	SHEET (D), LCD	
55	3-019-552-01	BUTTON (1-6)		* 64	3-019-561-01	SHEET, LCD COLOR	
56	3-019-551-01	BUTTON (EJECT)		65	3-019-538-01	PANEL, FRONT BACK	
57	3-019-545-01	BUTTON (SOURCE)		66	X-3374-976-1	FRONT PANEL ASSY	
58	3-019-547-01	KNOB (VOL)		* 67	3-023-946-01	SHEET (H), BACK	
59	3-019-548-01	RING		LCD851	1-803-007-11	DISPLAY PANEL, LIQUID CRYSTAL	

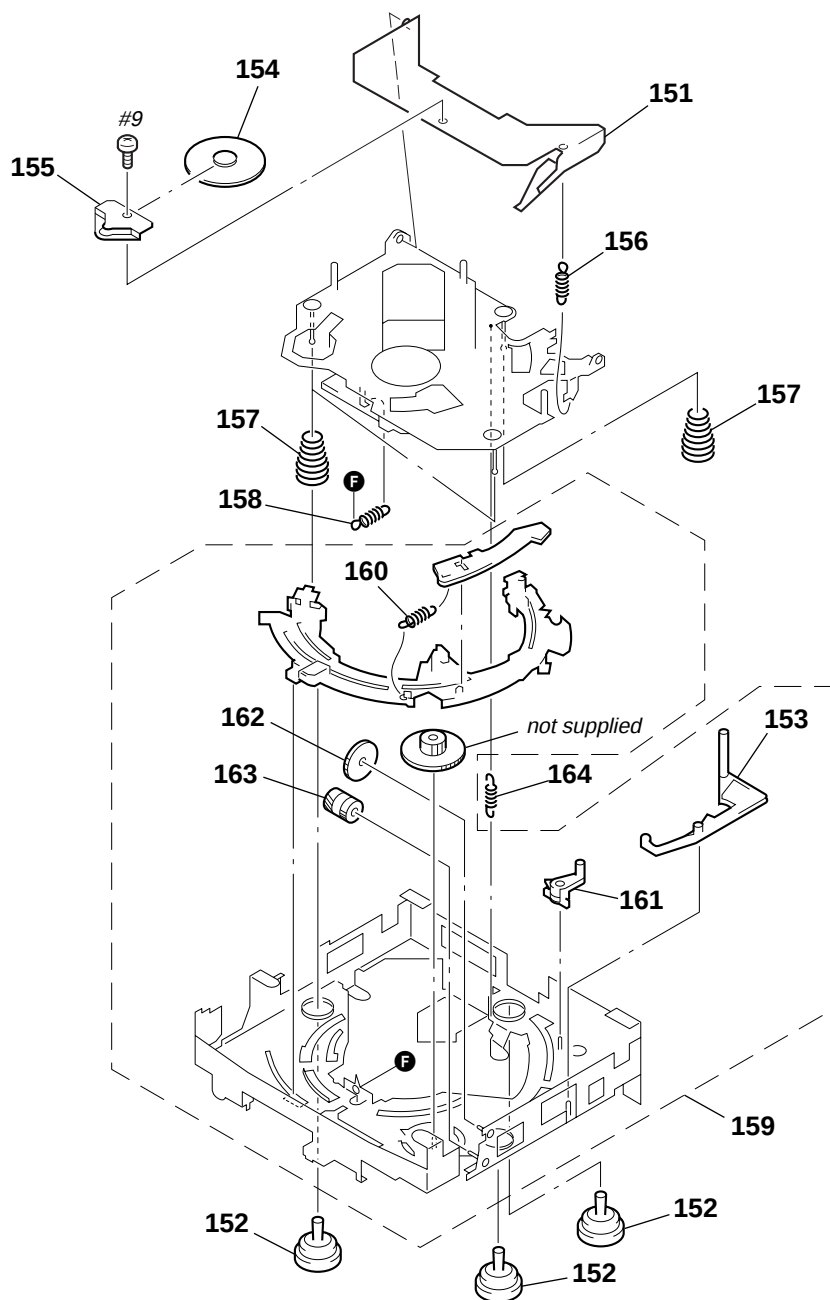
5-3. CD MECHANISM SECTION (1) (MG-363X-121)



Ref. No.	Part No.	Description
* 101	1-659-836-11	DISC IN SW BOARD
* 102	A-3291-816-B	CHASSIS (T) SUB ASSY
103	3-931-909-01	SPRING (LR), TENSION
104	X-3371-501-1	LEVER (L) ASSY
105	3-338-737-01	SCREW (2X3), + PS
* 106	1-659-837-11	LOAD SW BOARD
107	X-3371-502-1	LEVER (R) ASSY
108	A-3301-203-A	ROLLER ASSY
109	3-931-908-01	GUIDE (DISC)

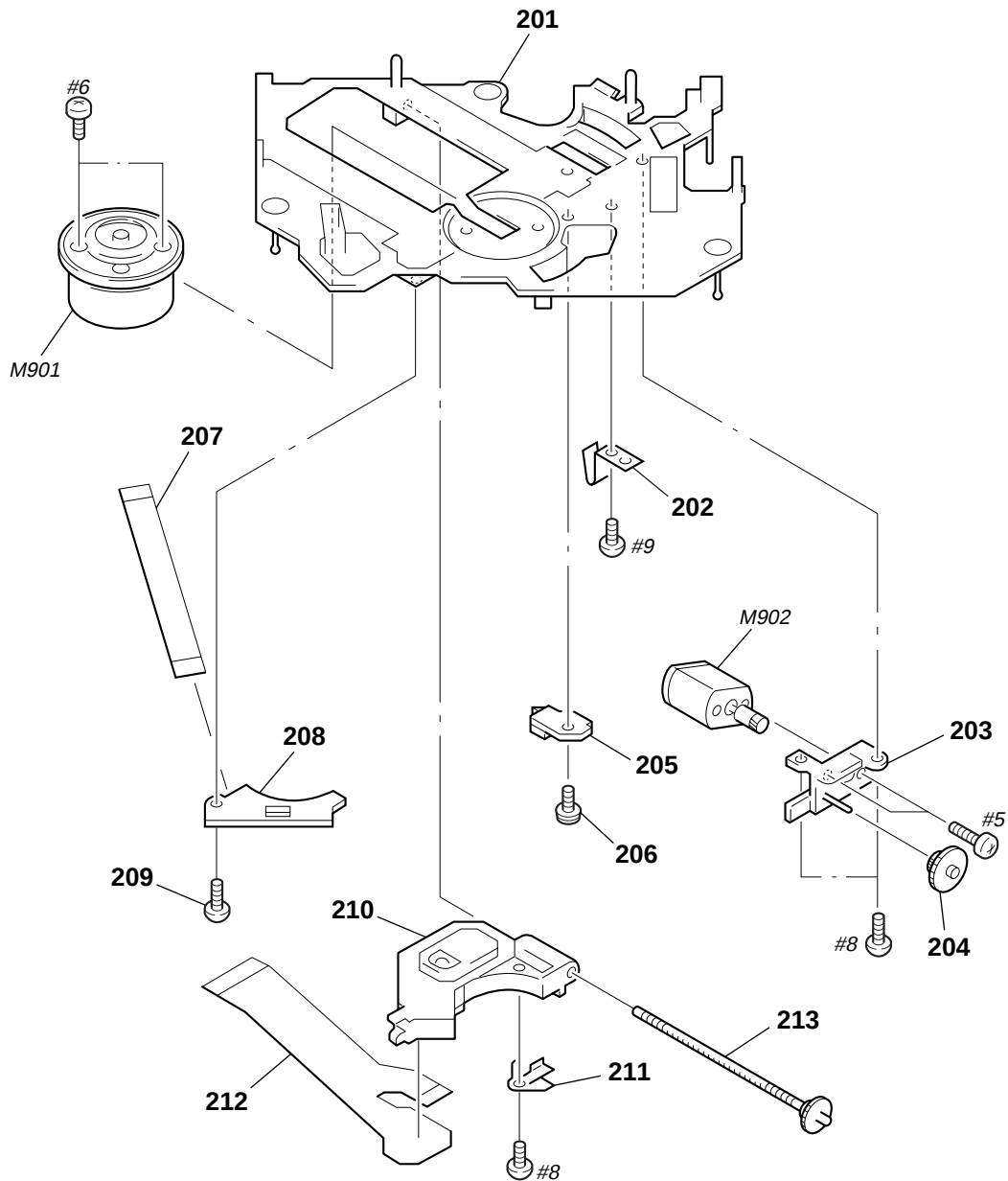
Ref. No.	Part No.	Description
110	3-931-902-03	ARM (ROLLER)
111	3-936-756-01	ROLLER (D)
112	3-321-393-01	WASHER, STOPPER
* 113	3-939-139-01	SPACER
114	3-931-916-01	SPRING (RA), TENSION
* 115	A-3309-227-A	SERVO BOARD, COMPLETE
* 116	3-007-530-01	BRACKET (MOTOR)
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING

5-4. CD MECHANISM SECTION (2)
(MG-363X-121)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-931-893-01	ARM, CHUCKING		158	3-019-805-01	SPRING (KF1), TENSION	
152	3-931-897-01	DAMPER (T)		* 159	A-3291-677-G	CHASSIS (M) ASSY	
153	3-931-879-02	LEVER (D)		160	3-931-883-01	SPRING (TR), TENSION	
* 154	3-913-404-11	RETAINER (DISC)		161	3-931-881-01	LEVER (LOCK)	
155	3-931-894-01	BRACKET (CP)		162	3-931-882-02	GEAR (MDL)	
156	3-931-895-01	SPRING (CH), TENSION		163	3-007-537-01	WHEEL (U), WORM	
157	3-931-898-01	SPRING (FL), COMPRESSION		164	3-019-806-01	SPRING (KR1), TENSION	

5-5. CD MECHANISM SECTION (3) (MG-363X-121)



The components identified by
mark  or dotted line with mark.
 are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 201	X-3374-022-1	CHASSIS (OP) (O/S) ASSY		209	3-909-607-01	SCREW	
202	3-931-829-01	SPRING (SL), PLATE		△ 210	8-820-010-06	PICK-UP, OPTICAL KSS-521A/K1RP	
203	X-3371-504-1	BASE (DRIVING) ASSY		211	3-931-834-01	SPRING (FEED), PLATE	
204	3-931-832-01	GEAR (SL MIDWAY)		212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
* 205	1-659-835-12	LIMIT SW BOARD		213	A-3291-669-A	SHAFT (FEED) ASSY	
206	3-338-737-01	SCREW (2X3), + PS		M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
207	1-659-880-11	MOTOR FLEXIBLE BOARD		M902	A-3291-674-A	MOTOR ASSY, SLED	
* 208	1-659-834-11	SUB BOARD					

SECTION 6 ELECTRICAL PARTS LIST

DISC IN SW

DISPLAY

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA.: μ A.. uPA.: μ PA..
uPB.: μ PB.. uPC.: μ PC.. uPD.: μ PD..
- CAPACITORS
uF: μ F
- COILS
uH: μ H

The components identified by mark Δ or dotted line with mark. Δ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-659-836-11	DISC IN SW BOARD *****		D869	8-719-067-77	LED SML-010PT-T87 (3) (GREEN)	
		< SWITCH >		D869	8-719-069-64	LED SML-010YT-T87 (3) (AMBER)	
SW1	1-572-288-11	SWITCH, PUSH (DISC IN)		D870	8-719-067-77	LED SML-010PT-T87 (2) (GREEN)	
SW2	1-572-288-11	SWITCH, PUSH (SELF)		D870	8-719-069-64	LED SML-010YT-T87 (2) (AMBER)	
*****				D871	8-719-067-77	LED SML-010PT-T87 (6) (GREEN)	
		DISPLAY BOARD *****		D871	8-719-069-64	LED SML-010YT-T87 (6) (AMBER)	
*	X-3374-803-1	HOLDER (LCD) ASSY		D872	8-719-067-77	LED SML-010PT-T87 (5) (GREEN)	
*	3-019-557-01	PLATE (LCD), GROUND		D872	8-719-069-64	LED SML-010YT-T87 (5) (AMBER)	
	3-019-558-01	SHEET (D), LCD		D873	8-719-067-77	LED SML-010PT-T87 (GREEN)	
*	3-019-561-01	SHEET, LCD COLOR		D873	8-719-069-64	LED SML-010YT-T87 (AMBER)	
		< CAPACITOR >		D874	8-719-067-77	LED SML-010PT-T87 (GREEN)	
C851	1-163-137-00	CERAMIC CHIP 680PF 5% 50V		D874	8-719-069-64	LED SML-010YT-T87 (AMBER)	
C852	1-164-505-11	CERAMIC CHIP 2.2uF 16V		D875	8-719-067-77	LED SML-010PT-T87 (GREEN)	
C853	1-163-117-00	CERAMIC CHIP 100PF 5% 50V		D875	8-719-069-64	LED SML-010YT-T87 (AMBER)	
C854	1-165-321-11	CERAMIC CHIP 0.68uF 10% 16V		D876	8-719-067-77	LED SML-010PT-T87 (GREEN)	
		< CONNECTOR >		D876	8-719-069-64	LED SML-010YT-T87 (AMBER)	
CNP851	1-764-423-11	PIN, CONNECTOR 12P		D877	8-719-067-77	LED SML-010PT-T87 (GREEN)	
		< DIODE >		D877	8-719-069-64	LED SML-010YT-T87 (AMBER)	
D851	8-719-976-99	DIODE DTZ5.1B		D878	8-719-067-77	LED SML-010PT-T87 (MODE) (GREEN)	
D852	8-719-068-68	DIODE SDZ6V2WA		D878	8-719-069-64	LED SML-010YT-T87 (MODE) (AMBER)	
D853	8-719-988-62	DIODE 1SS355				< IC >	
D854	8-719-068-68	DIODE SDZ6V2WA		IC851	8-759-369-90	IC LC75822ED	
D861	8-719-067-77	LED SML-010PT-T87 (DSPL) (GREEN)				< JUMPER RESISTOR >	
D861	8-719-069-64	LED SML-010YT-T87 (DSPL) (AMBER)		JR854	1-216-296-00	SHORT 0	
D862	8-719-067-77	LED SML-010PT-T87 (Δ) (GREEN)		JR855	1-216-296-00	SHORT 0	
D862	8-719-069-64	LED SML-010YT-T87 (Δ) (AMBER)		JR856	1-216-296-00	SHORT 0	
D863	8-719-067-77	LED SML-010PT-T87 (SENS) (GREEN)		JR858	1-216-296-00	SHORT 0	
D863	8-719-069-64	LED SML-010YT-T87 (SENS) (AMBER)		JR859	1-216-296-00	SHORT 0	
D864	8-719-067-77	LED SML-010PT-T87 (1) (GREEN)		JR860	1-216-296-00	SHORT 0	
D864	8-719-069-64	LED SML-010YT-T87 (1) (AMBER)				< LIQUID CRYSTAL DISPLAY >	
D865	8-719-067-77	LED SML-010PT-T87 (OFF) (GREEN)		LCD851	1-803-007-11	DISPLAY PANEL, LIQUID CRYSTAL	
D865	8-719-069-64	LED SML-010YT-T87 (OFF) (AMBER)				< PILOT LAMP >	
D866	8-719-067-77	LED SML-010PT-T87 (SOURCE) (GREEN)		PL851	1-517-665-11	LAMP, PILOT	
				PL852	1-517-665-11	LAMP, PILOT	
D866	8-719-069-64	LED SML-010YT-T87 (SOURCE) (AMBER)				< RESISTOR >	
D867	8-719-067-77	LED SML-010PT-T87 (SOUND) (GREEN)		R851	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
D867	8-719-069-64	LED SML-010YT-T87 (SOUND) (AMBER)		R852	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
D868	8-719-067-77	LED SML-010PT-T87 (4) (GREEN)		R853	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
D868	8-719-069-64	LED SML-010YT-T87 (4) (AMBER)		R854	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	

DISPLAY	LIMIT SW	LOAD SW	MAIN
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Ref. No.	Part No.	Description			Remark
R855	1-216-073-00	METAL CHIP	10K	5%	1/10W
R856	1-216-083-00	METAL CHIP	27K	5%	1/10W
R861	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R862	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R863	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R864	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R865	1-216-222-00	RES,CHIP	10K	5%	1/8W
R871	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R872	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R873	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R874	1-216-067-00	METAL CHIP	5.6K	5%	1/10W
R875	1-216-073-00	METAL CHIP	10K	5%	1/10W
R876	1-216-083-00	METAL CHIP	27K	5%	1/10W
R881	1-216-090-00	METAL CHIP	51K	5%	1/10W
R882	1-216-045-00	METAL CHIP	680	5%	1/10W
R883	1-216-121-00	RES,CHIP	1M	5%	1/10W
R884	1-216-189-00	RES,CHIP	430	5%	1/8W
R885	1-216-186-00	RES,CHIP	330	5%	1/8W
R886	1-216-189-00	RES,CHIP	430	5%	1/8W
R887	1-216-186-00	RES,CHIP	330	5%	1/8W
R888	1-216-186-00	RES,CHIP	330	5%	1/8W
R891	1-216-182-00	RES,CHIP	220	5%	1/8W
R892	1-216-182-00	RES,CHIP	220	5%	1/8W
R893	1-216-182-00	RES,CHIP	220	5%	1/8W
R894	1-216-182-00	RES,CHIP	220	5%	1/8W
R895	1-216-182-00	RES,CHIP	220	5%	1/8W
R896	1-216-182-00	RES,CHIP	220	5%	1/8W
R897	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R898	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
< ROTARY ENCODER >					
RE851	1-475-014-11	ENCODER, ROTARY			
< SWITCH >					
S851	1-572-704-31	SWITCH, KEYBOARD (▲)			
S852	1-572-704-31	SWITCH, KEYBOARD (DSPL)			
S853	1-572-704-31	SWITCH, KEYBOARD (SENS/BTM)			
S854	1-762-937-11	SWITCH, ROTARY (D-BASS)			
S861	1-572-704-31	SWITCH, KEYBOARD (OFF)			
S862	1-572-704-31	SWITCH, KEYBOARD (SOURCE)			
S863	1-771-290-11	SWITCH, SLIDE (SEEK/AMS)			
S864	1-762-719-21	SWITCH, TACTILE (MODE)			
S865	1-572-704-31	SWITCH, KEYBOARD (6)			
S871	1-572-704-31	SWITCH, KEYBOARD (5)			
S872	1-762-719-21	SWITCH, TACTILE (4)			
S873	1-762-719-21	SWITCH, TACTILE (3)			
S874	1-762-719-21	SWITCH, TACTILE (2/SHUF)			
S875	1-762-719-21	SWITCH, TACTILE (1/REPEAT)			
S876	1-572-704-31	SWITCH, KEYBOARD (SOUND)			

Ref. No.	Part No.	Description	Remark			
*	1-659-835-12	LIMIT SW BOARD *****				
< SWITCH >						
SW3	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)	*****			
*	1-659-837-11	LOAD SW BOARD *****				
< SWITCH >						
SW4	1-572-288-11	SWITCH, PUSH (DOWN)	*****			
*	A-3294-352-A	MAIN BOARD, COMPLETE *****				
*	3-009-350-01	BRACKET (REG)				
*	3-019-556-11	HEAT SINK				
*	3-019-565-01	BRACKET (IC)				
	7-685-792-09	SCREW +PTT 2.6X6 (S)				
	7-685-793-09	SCREW +PTT 2.6X8 (S)				
	7-685-794-09	SCREW +PTT 2.6X10 (S)				
< CAPACITOR >						
C101	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V	
C102	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C103	1-164-346-11	CERAMIC CHIP	1uF		16V	
C104	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	
C105	1-126-160-11	ELECT	1uF	20%	50V	
C106	1-126-160-11	ELECT	1uF	20%	50V	
C107	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C108	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C109	1-126-157-11	ELECT	10uF	20%	16V	
C112	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C113	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C114	1-126-157-11	ELECT	10uF	20%	16V	
C115	1-126-157-11	ELECT	10uF	20%	16V	
C116	1-126-157-11	ELECT	10uF	20%	16V	
C117	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C118	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C119	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C120	1-164-005-11	CERAMIC CHIP	0.47uF		25V	
C201	1-163-010-11	CERAMIC CHIP	0.0012uF	10%	50V	
C202	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C203	1-164-346-11	CERAMIC CHIP	1uF		16V	
C204	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	
C205	1-126-160-11	ELECT	1uF	20%	50V	
C206	1-126-160-11	ELECT	1uF	20%	50V	
C207	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C208	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C209	1-126-157-11	ELECT	10uF	20%	16V	
C212	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C213	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C214	1-126-157-11	ELECT	10uF	20%	16V		C823	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C215	1-126-157-11	ELECT	10uF	20%	16V		C830	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	
C216	1-126-157-11	ELECT	10uF	20%	16V		C831	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V	
C217	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		C901	1-124-257-00	ELECT	2.2uF	20%	50V	
C218	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		C902	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C219	1-164-005-11	CERAMIC CHIP	0.47uF		25V		C907	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C220	1-164-005-11	CERAMIC CHIP	0.47uF		25V		C908	1-124-465-00	ELECT	0.47uF	20%	50V	
C401	1-124-584-00	ELECT	100uF	20%	10V		C910	1-110-654-11	DOUBLE LAYERS	0.047F		5.5V	
C402	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V		C911	1-124-257-00	ELECT	2.2uF	20%	50V	
C403	1-124-234-00	ELECT	22uF	20%	16V		C914	1-126-768-11	ELECT	2200uF	20%	16V	
C404	1-163-109-00	CERAMIC CHIP	47PF	5%	50V		C916	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C405	1-163-038-00	CERAMIC CHIP	0.1uF		25V		C919	1-124-242-00	ELECT	33uF	20%	25V	
C406	1-124-589-11	ELECT	47uF	20%	16V				< JACK >				
C407	1-124-465-00	ELECT	0.47uF	20%	50V								
C408	1-164-346-11	CERAMIC CHIP	1uF		16V		CNJ601	1-764-808-21	JACK (ANTENNA)				
C409	1-126-163-11	ELECT	4.7uF	20%	50V				< CONNECTOR >				
C410	1-124-589-11	ELECT	47uF	20%	16V								
C412	1-163-038-00	CERAMIC CHIP	0.1uF		25V								
C501	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		CNP701	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P				
C601	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		CNP801	1-764-422-11	PLUG, CONNECTOR 12P				
C603	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		CNP901	1-774-701-11	PIN, CONNECTOR 16P				
C604	1-124-234-00	ELECT	22uF	20%	16V				< DISCHARGE GAP >				
C605	1-164-232-11	CERAMIC CHIP	0.01uF		50V								
C606	1-126-785-11	ELECT	47uF	20%	10V		CP601	1-519-504-11	GAP, DISCHARGE				
C608	1-126-157-11	ELECT	10uF	20%	16V				< DIODE >				
C610	1-163-024-00	CERAMIC CHIP	0.018uF	10%	50V								
C614	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V		D401	8-719-109-71	DIODE RD3.9ES-B1				
C615	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V		D402	8-719-991-33	DIODE 1SS133T-77				
C619	1-126-157-11	ELECT	10uF	20%	16V		D507	8-719-109-89	DIODE RD5.6ESB2				
C620	1-126-157-11	ELECT	10uF	20%	16V		D601	8-719-986-73	DIODE RB441Q				
C621	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		D602	8-719-986-73	DIODE RB441Q				
C623	1-124-257-00	ELECT	2.2uF	20%	50V		D603	8-719-109-85	DIODE RD5.1ES-B2				
C624	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V		D801	8-719-109-93	DIODE RD6.2ESB2				
C625	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V		D802	8-719-109-93	DIODE RD6.2ESB2				
C628	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V		D804	8-719-109-93	DIODE RD6.2ESB2				
C701	1-164-232-11	CERAMIC CHIP	0.01uF		50V		D805	8-719-109-93	DIODE RD6.2ESB2				
C702	1-164-232-11	CERAMIC CHIP	0.01uF		50V		D806	8-719-109-93	DIODE RD6.2ESB2				
C703	1-163-169-00	CERAMIC CHIP	33PF	5%	50V		D808	8-719-109-93	DIODE RD6.2ESB2				
C706	1-124-584-00	ELECT	100uF	20%	10V		D810	8-719-109-93	DIODE RD6.2ESB2				
C708	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		D811	8-719-109-93	DIODE RD6.2ESB2				
C709	1-163-235-11	CERAMIC CHIP	22PF	5%	50V		D812	8-719-109-93	DIODE RD6.2ESB2				
C710	1-163-251-11	CERAMIC CHIP	100PF	5%	50V		D901	8-719-929-15	DIODE MTZJ-T-77-9.1B				
C713	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V		D902	8-719-923-60	DIODE MTZJ-T-77-9.1A				
C801	1-164-232-11	CERAMIC CHIP	0.01uF		50V		D903	8-719-109-89	DIODE RD5.6ESB2				
C802	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		D905	8-719-109-93	DIODE RD6.2ESB2				
C804	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		D906	8-719-923-91	DIODE MTZJ-T-77-16A				
C805	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V		D907	8-719-049-38	DIODE 1N5404TU				
C807	1-163-099-00	CERAMIC CHIP	18PF	5%	50V		D908	8-719-200-82	DIODE 11ES2				
C808	1-163-234-11	CERAMIC CHIP	20PF	5%	50V		D909	8-719-109-97	DIODE RD6.8ES-B2				
C812	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V				< FUSE >				
C813	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V								
C817	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V		F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A				
C822	1-164-232-11	CERAMIC CHIP	0.01uF		50V								

MAIN

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
< IC >						Q904	8-729-015-11	TRANSISTOR	2SD1802	FAST-TL	
IC401	8-759-487-82	IC	LC75374E			Q905	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
	8-759-490-74	IC	TDA7384			Q906	8-729-209-15	TRANSISTOR	2SD2012		
	8-759-473-70	IC	SM5852FS-E2			Q907	8-729-620-06	TRANSISTOR	2SC3052-EF		
	8-759-498-36	IC	SM5878AM-E2			Q908	8-729-620-06	TRANSISTOR	2SC3052-EF		
	8-759-529-19	IC	uPD17705GC-526-3B9			Q909	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
< JACK >						Q910	8-729-822-84	TRANSISTOR	2SB1202	FAST	
J801	1-566-822-41	JACK (REMOTE IN)				Q911	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
						Q912	8-729-101-07	TRANSISTOR	2SB798-DL		
						Q913	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
						Q914	8-729-901-05	TRANSISTOR	DTA124EK		
< JUMPER RESISTOR >						Q915	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
JR1	1-216-295-00	SHORT	0			Q916	8-729-920-85	TRANSISTOR	2SD1664-QR		
JR2	1-216-295-00	SHORT	0			Q919	8-729-027-43	TRANSISTOR	DTC114EKA	T146	
JR5	1-216-295-00	SHORT	0			Q921	8-729-901-05	TRANSISTOR	DTA124EK		
JR7	1-216-295-00	SHORT	0			< RESISTOR >					
JR8	1-216-296-00	SHORT	0			R101	1-216-075-00	METAL CHIP	12K	5%	1/10W
JR15	1-216-295-00	SHORT	0			R102	1-216-073-00	METAL CHIP	10K	5%	1/10W
JR16	1-216-295-00	SHORT	0			R103	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
JR17	1-216-296-00	SHORT	0			R104	1-216-214-00	RES,CHIP	4.7K	5%	1/8W
JR18	1-216-073-00	METAL CHIP	10K	5%	1/10W	R105	1-216-049-11	RES,CHIP	1K	5%	1/10W
JR19	1-216-296-00	SHORT	0			R106	1-216-049-11	RES,CHIP	1K	5%	1/10W
JR21	1-216-295-00	SHORT	0			R107	1-216-077-00	METAL CHIP	15K	5%	1/10W
JR22	1-216-296-00	SHORT	0			R108	1-216-077-00	METAL CHIP	15K	5%	1/10W
JR28	1-216-295-00	SHORT	0			R109	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
JR215	1-216-295-00	SHORT	0			R110	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
< COIL >						R111	1-216-079-00	METAL CHIP	18K	5%	1/10W
L703	1-410-513-11	INDUCTOR	22uH			R112	1-216-079-00	METAL CHIP	18K	5%	1/10W
L704	1-414-142-11	INDUCTOR	1uH			R118	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
L801	1-410-513-11	INDUCTOR	22uH			R201	1-216-075-00	METAL CHIP	12K	5%	1/10W
L901	1-416-539-11	INDUCTOR	0uH			R202	1-216-073-00	METAL CHIP	10K	5%	1/10W
< JACK >						R203	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
PJ401	1-764-697-11	JACK, PIN 4P (LINE OUT FRONT/REAR)				R204	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
						R205	1-216-049-11	RES,CHIP	1K	5%	1/10W
						R206	1-216-049-11	RES,CHIP	1K	5%	1/10W
						R207	1-216-077-00	METAL CHIP	15K	5%	1/10W
< TRANSISTOR >						R208	1-216-077-00	METAL CHIP	15K	5%	1/10W
Q101	8-729-920-21	TRANSISTOR	DTC314TKH04			R209	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
Q102	8-729-920-21	TRANSISTOR	DTC314TKH04			R210	1-216-129-00	METAL CHIP	2.2M	5%	1/10W
Q201	8-729-920-21	TRANSISTOR	DTC314TKH04			R211	1-216-079-00	METAL CHIP	18K	5%	1/10W
Q202	8-729-920-21	TRANSISTOR	DTC314TKH04			R212	1-216-079-00	METAL CHIP	18K	5%	1/10W
Q401	8-729-027-52	TRANSISTOR	DTC124EKA-T146			R218	1-216-059-00	METAL CHIP	2.7K	5%	1/10W
Q402	8-729-901-05	TRANSISTOR	DTA124EK			R220	1-216-073-00	METAL CHIP	10K	5%	1/10W
Q601	8-729-111-52	TRANSISTOR	2SB984-K			R401	1-216-113-00	METAL CHIP	470K	5%	1/10W
Q602	8-729-111-52	TRANSISTOR	2SB984-K			R402	1-216-049-11	RES,CHIP	1K	5%	1/10W
Q603	8-729-027-43	TRANSISTOR	DTC114EKA-T146			R517	1-216-077-00	METAL CHIP	15K	5%	1/10W
Q604	8-729-027-43	TRANSISTOR	DTC114EKA-T146			R601	1-216-226-00	RES,CHIP	15K	5%	1/8W
Q605	8-729-620-06	TRANSISTOR	2SC3052-EF			R602	1-249-417-11	CARBON	1K	5%	1/4W
Q606	8-729-620-06	TRANSISTOR	2SC3052-EF			R603	1-249-417-11	CARBON	1K	5%	1/4W
Q801	8-729-027-43	TRANSISTOR	DTC114EKA-T146			R607	1-216-025-00	RES,CHIP	100	5%	1/10W
Q901	8-729-019-00	TRANSISTOR	2SD2394-G			R608	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q902	8-729-901-05	TRANSISTOR	DTA124EK			R609	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
Q903	8-729-027-43	TRANSISTOR	DTC114EKA-T146								

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
R610	1-216-206-00	RES,CHIP	2.2K	5%		1/8W	R841	1-216-105-00	RES,CHIP	220K	5%		1/10W
R611	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	R842	1-216-105-00	RES,CHIP	220K	5%		1/10W
R612	1-216-049-11	RES,CHIP	1K	5%		1/10W	R854	1-247-891-00	CARBON	330K	5%		1/4W
R613	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	R855	1-216-117-00	METAL CHIP	680K	5%		1/10W
R614	1-216-049-11	RES,CHIP	1K	5%		1/10W	R856	1-216-049-11	RES,CHIP	1K	5%		1/10W
R615	1-247-864-11	CARBON	24K	5%		1/4W	R861	1-216-049-11	RES,CHIP	1K	5%		1/10W
R616	1-249-417-11	CARBON	1K	5%		1/4W	R862	1-216-005-00	METAL CHIP	15	5%		1/10W
R617	1-216-055-00	METAL CHIP	1.8K	5%		1/10W	R901	1-216-182-00	RES,CHIP	220	5%		1/8W
R618	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	R903	1-249-411-11	CARBON	330	5%		1/4W
R622	1-216-097-00	RES,CHIP	100K	5%		1/10W	R904	1-249-395-11	CARBON	15	5%		1/4W
R625	1-247-815-00	CARBON	220	5%		1/4W	R906	1-216-089-00	RES,CHIP	47K	5%		1/10W
R701	1-247-807-11	CARBON	100	5%		1/4W	R907	1-216-105-00	RES,CHIP	220K	5%		1/10W
R702	1-247-807-11	CARBON	100	5%		1/4W	R908	1-216-065-00	METAL CHIP	4.7K	5%		1/10W
R703	1-247-807-11	CARBON	100	5%		1/4W	R909	1-216-079-00	METAL CHIP	18K	5%		1/10W
R704	1-216-033-00	METAL CHIP	220	5%		1/10W	R910	1-216-105-00	RES,CHIP	220K	5%		1/10W
R708	1-249-411-11	CARBON	330	5%		1/4W	R911	1-216-079-00	METAL CHIP	18K	5%		1/10W
R709	1-216-005-00	METAL CHIP	15	5%		1/10W	R912	1-216-049-11	RES,CHIP	1K	5%		1/10W
R710	1-216-027-00	METAL CHIP	120	5%		1/10W	R913	1-216-049-11	RES,CHIP	1K	5%		1/10W
R711	1-216-270-00	RES,CHIP	1M	5%		1/8W	R914	1-216-206-00	RES,CHIP	2.2K	5%		1/8W
R712	1-216-113-00	METAL CHIP	470K	5%		1/10W	R915	1-216-049-11	RES,CHIP	1K	5%		1/10W
R801	1-216-053-00	METAL CHIP	1.5K	5%		1/10W	R916	1-216-057-00	METAL CHIP	2.2K	5%		1/10W
R802	1-216-105-00	RES,CHIP	220K	5%		1/10W	R917	1-216-077-00	METAL CHIP	15K	5%		1/10W
R805	1-216-105-00	RES,CHIP	220K	5%		1/10W	R918	1-216-182-00	RES,CHIP	220	5%		1/8W
R806	1-216-053-00	METAL CHIP	1.5K	5%		1/10W	R920	1-216-049-11	RES,CHIP	1K	5%		1/10W
R807	1-216-053-00	METAL CHIP	1.5K	5%		1/10W	< SWITCH >						
R808	1-216-053-00	METAL CHIP	1.5K	5%		1/10W	S801	1-692-431-21	SWITCH, TACTILE (RESET)				
R809	1-216-073-00	METAL CHIP	10K	5%		1/10W	< THERMISTOR >						
R810	1-216-105-00	RES,CHIP	220K	5%		1/10W	TH901	1-809-148-11	THERMISTOR PTH8L07AR2R0M1B510				
R811	1-216-073-00	METAL CHIP	10K	5%		1/10W	< TUNER >						
R812	1-216-073-00	METAL CHIP	10K	5%		1/10W	TU1	A-3282-029-A	TUNER UNIT (TUX-006/2(E))				
R813	1-216-073-00	METAL CHIP	10K	5%		1/10W	< VIBRATOR >						
R815	1-216-049-11	RES,CHIP	1K	5%		1/10W	X701	1-579-345-11	VIBRATOR, CERAMIC (16.934MHz)				
R816	1-216-049-11	RES,CHIP	1K	5%		1/10W	X801	1-760-223-11	VIBRATOR, CRYSTAL (4.5MHz)				
R818	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	*****						
R819	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	*	A-3309-227-A	SERVO BOARD, COMPLETE				
R820	1-216-057-00	METAL CHIP	2.2K	5%		1/10W	*****						
R821	1-249-417-11	CARBON	1K	5%		1/4W	< CAPACITOR >						
R822	1-249-417-11	CARBON	1K	5%		1/4W	C1	1-107-823-11	CERAMIC CHIP	0.47uF	10%		16V
R823	1-216-049-11	RES,CHIP	1K	5%		1/10W	C2	1-164-232-11	CERAMIC CHIP	0.01uF			50V
R824	1-216-105-00	RES,CHIP	220K	5%		1/10W	C3	1-135-145-11	TANTALUM CHIP	0.47uF	10%		35V
R825	1-216-105-00	RES,CHIP	220K	5%		1/10W	C4	1-163-251-11	CERAMIC CHIP	100PF	5%		50V
R826	1-216-105-00	RES,CHIP	220K	5%		1/10W	C5	1-164-182-11	CERAMIC CHIP	0.0033uF	10%		50V
R827	1-216-234-00	RES,CHIP	33K	5%		1/8W	C6	1-163-011-11	CERAMIC CHIP	0.0015uF	10%		50V
R828	1-216-254-00	RES,CHIP	220K	5%		1/8W	C7	1-163-809-11	CERAMIC CHIP	0.047uF	10%		25V
R829	1-216-254-00	RES,CHIP	220K	5%		1/8W	C9	1-164-004-11	CERAMIC CHIP	0.1uF	10%		25V
R830	1-247-887-00	CARBON	220K	5%		1/4W	C10	1-126-206-11	ELECT CHIP	100uF	20%		6.3V
R831	1-216-089-00	RES,CHIP	47K	5%		1/10W	C11	1-135-259-11	TANTAL. CHIP	10uF	20%		6.3V
R832	1-247-887-00	CARBON	220K	5%		1/4W							
R833	1-249-395-11	CARBON	15	5%		1/4W							
R834	1-216-049-11	RES,CHIP	1K	5%		1/10W							
R835	1-249-417-11	CARBON	1K	5%		1/4W							
R838	1-216-049-11	RES,CHIP	1K	5%		1/10W							
R839	1-216-049-11	RES,CHIP	1K	5%		1/10W							

SERVO

Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
C12	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V	JR13	1-216-296-00	SHORT	0		
C13	1-164-232-11	CERAMIC CHIP	0.01uF		50V	JR14	1-216-296-00	SHORT	0		
C14	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	JR15	1-216-296-00	SHORT	0		
C15	1-164-232-11	CERAMIC CHIP	0.01uF		50V	JR16	1-216-296-00	SHORT	0		
C16	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	JR17	1-216-296-00	SHORT	0		
C17	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR18	1-216-296-00	SHORT	0		
C18	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR19	1-216-296-00	SHORT	0		
C19	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	JR20	1-216-296-00	SHORT	0		
C20	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	JR21	1-216-296-00	SHORT	0		
C21	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	JR22	1-216-296-00	SHORT	0		
C22	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	JR23	1-216-296-00	SHORT	0		
C23	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V	JR24	1-216-296-00	SHORT	0		
C24	1-163-259-11	CERAMIC CHIP	220PF	5%	50V	JR25	1-216-296-00	SHORT	0		
C25	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V	JR26	1-216-296-00	SHORT	0		
C26	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR27	1-216-296-00	SHORT	0		
C27	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR28	1-216-296-00	SHORT	0		
C28	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	JR29	1-216-296-00	SHORT	0		
C29	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR30	1-216-296-00	SHORT	0		
C30	1-126-603-11	ELECT CHIP	4.7uF	20%	35V	JR31	1-216-296-00	SHORT	0		
C31	1-164-232-11	CERAMIC CHIP	0.01uF		50V	JR32	1-216-296-00	SHORT	0		
C32	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	JR33	1-216-296-00	SHORT	0		
C33	1-124-779-00	ELECT CHIP	10uF	20%	16V	JR34	1-216-296-00	SHORT	0		
C34	1-109-982-11	CERAMIC CHIP	1uF	10%	10V	JR35	1-216-296-00	SHORT	0		
C35	1-164-232-11	CERAMIC CHIP	0.01uF		50V	JR36	1-216-296-00	SHORT	0		
C36	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR37	1-216-296-00	SHORT	0		
C37	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR38	1-216-296-00	SHORT	0		
C38	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR39	1-216-296-00	SHORT	0		
C39	1-126-204-11	ELECT CHIP	47uF	20%	16V	JR40	1-216-296-00	SHORT	0		
C40	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	JR41	1-216-296-00	SHORT	0		
		< CONNECTOR >				JR43	1-216-296-00	SHORT	0		
CN1	1-764-616-12	HOUSING, CONNECTOR (PC BOARD) 30P				JR44	1-216-296-00	SHORT	0		
CN2	1-565-728-11	CONNECTOR, FPC 17P				JR45	1-216-296-00	SHORT	0		
CN3	1-770-347-21	CONNECTOR, FPC 6P				JR46	1-216-296-00	SHORT	0		
		< IC >									
IC1	8-752-372-94	IC CXD2507AQ									
IC2	8-752-074-34	IC CXA1782BQ									
IC3	8-759-354-16	IC BA6796FP-T1									
		< JUMPER RESISTOR >									
JR1	1-216-296-00	SHORT	0								
JR2	1-216-296-00	SHORT	0								
JR3	1-216-296-00	SHORT	0								
JR4	1-216-296-00	SHORT	0								
JR5	1-216-296-00	SHORT	0								
JR6	1-216-296-00	SHORT	0								
JR7	1-216-296-00	SHORT	0								
JR8	1-216-296-00	SHORT	0								
JR9	1-216-296-00	SHORT	0								
JR10	1-216-296-00	SHORT	0								
JR11	1-216-296-00	SHORT	0								
JR12	1-216-296-00	SHORT	0								
		< COIL >									
						L1	1-412-058-11	INDUCTOR CHIP	10uH		
						L2	1-412-058-11	INDUCTOR CHIP	10uH		
						L3	1-412-058-11	INDUCTOR CHIP	10uH		
		< TRANSISTOR >									
						Q1	8-729-904-60	TRANSISTOR	DTB113ZK		
						Q2	8-729-904-86	TRANSISTOR	2SB1197K-Q		
		< RESISTOR >									
						R1	1-216-073-00	METAL CHIP	10K	5%	1/10W
						R2	1-216-097-00	RES,CHIP	100K	5%	1/10W
						R3	1-216-121-00	RES,CHIP	1M	5%	1/10W
						R4	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
						R5	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
						R6	1-216-073-00	METAL CHIP	10K	5%	1/10W
						R7	1-216-009-00	METAL CHIP	22	5%	1/10W
						R8	1-216-119-00	METAL CHIP	820K	5%	1/10W
						R9	1-216-119-00	METAL CHIP	820K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R10	1-216-073-00	METAL CHIP	10K	5%	1/10W
R11	1-216-073-00	METAL CHIP	10K	5%	1/10W
R14	1-216-085-00	METAL CHIP	33K	5%	1/10W
R15	1-216-085-00	METAL CHIP	33K	5%	1/10W
R16	1-216-077-00	METAL CHIP	15K	5%	1/10W
R17	1-216-081-00	METAL CHIP	22K	5%	1/10W
R19	1-216-079-00	METAL CHIP	18K	5%	1/10W
R20	1-216-105-00	RES,CHIP	220K	5%	1/10W
R21	1-216-105-00	RES,CHIP	220K	5%	1/10W
R22	1-216-085-00	METAL CHIP	33K	5%	1/10W
R23	1-216-121-00	RES,CHIP	1M	5%	1/10W
R24	1-216-073-00	METAL CHIP	10K	5%	1/10W
R27	1-216-295-00	SHORT	0		
R28	1-216-101-00	METAL CHIP	150K	5%	1/10W
R29	1-216-097-00	RES,CHIP	100K	5%	1/10W
R30	1-216-097-00	RES,CHIP	100K	5%	1/10W
R31	1-216-081-00	METAL CHIP	22K	5%	1/10W
R32	1-216-109-00	METAL CHIP	330K	5%	1/10W
R33	1-216-105-00	RES,CHIP	220K	5%	1/10W
R34	1-216-009-00	METAL CHIP	22	5%	1/10W
R35	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R36	1-216-097-00	RES,CHIP	100K	5%	1/10W
R37	1-216-117-00	METAL CHIP	680K	5%	1/10W
R38	1-216-109-00	METAL CHIP	330K	5%	1/10W
R39	1-216-101-00	METAL CHIP	150K	5%	1/10W
R40	1-216-114-00	RES,CHIP	510K	5%	1/10W
R41	1-216-093-00	METAL CHIP	68K	5%	1/10W
R42	1-216-103-00	METAL CHIP	180K	5%	1/10W
R43	1-216-097-00	RES,CHIP	100K	5%	1/10W
R44	1-216-085-00	METAL CHIP	33K	5%	1/10W
R45	1-216-081-00	METAL CHIP	22K	5%	1/10W
R46	1-216-097-00	RES,CHIP	100K	5%	1/10W
R47	1-216-105-00	RES,CHIP	220K	5%	1/10W
R48	1-216-073-00	METAL CHIP	10K	5%	1/10W
R49	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R50	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R51	1-216-295-00	SHORT	0		

< VARIABLE RESISTOR >

RV1	1-238-091-11	RES, ADJ, CERMET	22K
RV4	1-238-091-11	RES, ADJ, CERMET	22K

* 1-659-834-11 SUB BOARD

< CONNECTOR >

CN1	1-770-347-21	CONNECTOR, FPC 6P
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Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS *****	
11	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
207	1-659-880-11	MOTOR FLEXIBLE BOARD	
△ 210	8-820-010-06	PICK-UP, OPTICAL KSS-521A/K1RP	
212	1-659-881-11	PICK-UP FLEXIBLE BOARD	
F901	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) 10A	
M901	X-3371-664-2	MOTOR ASSY (SPINDLE)	
M902	A-3291-674-A	MOTOR ASSY, SLED	
M903	A-3291-676-A	MOTOR SUB ASSY, LOADING	

		ACCESSORIES & PACKING MATERIALS *****	
3-861-738-11		MANUAL, INSTRUCTION (ENGLISH,SPANISH, PORTUGUESE,SWEDISH) (AEP,UK)	
3-861-738-21		MANUAL, INSTRUCTION (FRENCH,GERMAN, DUTCH,ITALIAN) (AEP)	
3-861-770-11		MANUAL, INSTRUCTION, INSTALL (ENGLISH, SPANISH,PORTUGUESE,SWEDISH) (AEP,UK)	
3-861-770-21		MANUAL, INSTRUCTION, INSTALL (FRENCH, GERMAN,DUTCH,ITALIAN) (AEP)	
	X-3374-927-1	CASE ASSY	

		***** HARDWARE LIST *****	
#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	
#2	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#3	7-621-772-10	SCREW +B 2X4	
#4	7-685-106-19	SCREW +P 2X10 TYPE 2 NON-SLIT	
#5	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#6	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE 3	
#7	7-628-253-00	SCREW +PS 2X4	
#8	7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3	
#9	7-627-553-17	SCREW, PRECISION +P 2X2 TYPE 3	
#10	7-685-794-09	SCREW +PTT 2.6X10 (S)	

The components identified by
mark △ or dotted line with mark.
Are critical for safety.
Replace only with part number
specified.

Ref. No.	Part No.	Description	Remark
PARTS FOR INSTALLATION AND CONNECTIONS			

251	3-916-161-31	FRAME	
252	X-3374-928-1	COLLAR ASSY	
253	3-386-828-01	SCREW, FITTING	
254	3-349-410-01	BUSHING	
255	3-388-078-01	KEY	
256	X-3370-077-1	SCREW ASSY (AE.KEY), FITTING	
257	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
258	1-465-459-21	ADAPTOR, ANTENNA	

