CDX-616

SERVICE MANUAL

REVISED

AEP Model
UK Model

Discard the SERVICE MANUAL (No. 9-926-404-11)
previously issued.

Model Name Using Similar Mechanism	CDX-605
CD Drive Mechanism Type	MG-250C-137
Optical Pick-up Name	KSS-521A/J2N

SPECIFICATIONS

System	Compact disc digital audio system
Frequency response	10 – 20,000 Hz
Wow and flutter	Below the measurable limit
Signal-to-noise ratio	94 dB
Outputs	BUS control output (8 pins) Analog audio output (RCA pin)
Current drain	800 mA (during CD playback) 800 mA (during loading or ejecting a disc)
Operating temperature	–10°C to +55°C
Dimensions	Approx. 262 × 90 × 181.5 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 2.1 kg
Power requirement	12 V DC car battery (negative ground)
Supplied accessories	Disc magazine (1) Parts for installation and connections (1 set)

Design and specifications subject to change without notice.

COMPACT DISC CHANGER

MICROFILM

SONY®

TABLE OF CONTENTS

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ 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.

SECTION 1
SERVICING NOTES

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.

Laser Diode Properites
- Material: GaAlAs
- Wavelength: 780 nm
- Emission Duration: continuous
- Laser Output Power: less than 44.6 μW*

  * This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

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

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

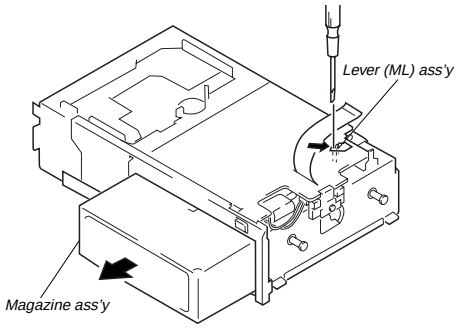
Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

DISC MAGAZINE GETTING OUT PROCEDURE ON THE POWER SUPPLY IS OFF

Remove the CASE (LOWER) assembly beforehand

1) Press the lever (ML) assy to arrow direction.
2) Removal the magazine assy.

Note: Take out the magazine only when the tray is completely within the magazine. If the disk or tray is sticking out, turn on the power and eject the magazine.



SECTION 2
GENERAL

This section is extracted from instruction manual.

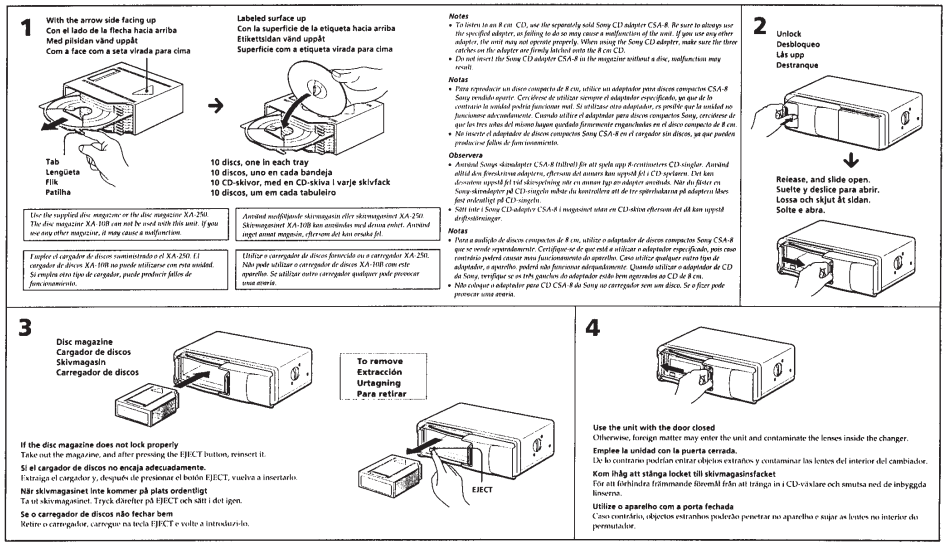
Precautions
Moisture condensation
On a rainy day or in a very damp area, moisture may condense on the lenses inside the unit. Should this occur, the unit will not operate properly. In this case, **remove the disc magazine and wait for about an hour until the moisture has evaporated.**

Precauciones
Condensación de humedad
En los días lluviosos o en zonas muy húmedas, puede condensarse humedad en las lentes del interior de la unidad. Si esto ocurre, ésta no funcionará correctamente. En este caso, **extraiga el cargador de discos y espere durante una hora aproximadamente hasta que la humedad se evapore.**

Säkerhetsföreskrifter
Att observera angående fuktbildning
Om det regnar eller är mycket fuktigt ute kan fukt kondenseras på linserna inuti enheten. När detta sker fungerar inte enheten som den ska. **Ta då bort skivmagasinet och vänta i ungefär en timme tills fukten har avdunstat.**

Precauções
Condensação de humidade
Num dia chuvoso ou numa zona muito húmida, pode ocorrer uma condensação de humidade nas lentes do interior do aparelho o que provocará um funcionamento deficiente do aparelho. Se isso acontecer, **retire o carregador de discos e aguarde cerca de uma hora até que a humidade se evapore.**

Inserting a disc / Inserción de discos / Sätt i en en CD-skiva / Introduzir um disco



Notes on the disc magazine / Notas sobre el cargador de discos / Att observera angående skivmagasinet / Notas sobre o carregador de discos

- Do not leave the disc magazine in locations with high temperatures and high humidity such as on a car dashboard or in the rear window where the disc magazine will be subjected to direct sunlight.
- Do not place more than one disc at a time onto one tray, otherwise the changer and the discs may be damaged.
- Do not drop the disc magazine or subject it to a violent shock.

- No deje el cargador de discos en lugares con temperatura y humedad altas, como en el salpicadero o en la bandeja trasera del automóvil, donde podría quedar sometido a la luz solar directa.
- No inserte más de un disco en una bandeja de una vez, ya que en caso contrario el cambiador y los discos pueden dañarse.
- No deje caer el cargador de discos ni lo someta a golpes violentos.

- Lämna inte skivmagasinet på en plats där det utsätts för extrem värme och/eller fukt, som t ex ovanpå instrumentbrädan eller på bakhyllan längst bak i bilen, eftersom den då kan fägga i direkt solljus.
- Sätt inte i mer än en CD-skiva i taget i varje skivfack, annars kan CD-växlaren och CD-skivorna skadas.
- Tappa inte skivmagasinet. Utsätt det inte heller för stötar.

- Não deixe o carregador de discos em locais demasiado quentes ou húmidos como, por exemplo, no tablier ou na prateleira traseira do automóvel, onde estará sujeito à incidência directa dos raios solares.
- Não coloque mais do que um disco ao mesmo tempo em cada um dos tabuleiros pois, se o fizer, pode danificar tanto o carregador como os discos.
- Não deixe cair, nem sujeite o carregador a choques violentos.

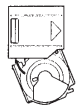
When the tray comes out / Si la bandeja se sale / När skivfacket kommer ut / Se o tabuleiro sair para fora do acrregador

Normally, the trays will not comes out of the magazine. However, if they are pulled out of the magazine, it is easy to re-insert them.

Normalmente, las bandejas no se salen del cargador. No obstante, si esto ocurre, pueden volver a insertarse con facilidad.

Vanligen kommer inte skivfacken ut ur magasinet. Om de emellertid skulle råka tas ur magasinet är det enkelt att sätta i dem igen.

Normalmente, os tabuleiros não saiem do carregador. No entanto, se os puxar para fora do carregador, é fácil voltar a colocá-los.



With the cut-away portion of the tray facing you, insert the right corner of the tray in the slot, then push in the left corner until it clicks.
Note
Do not insert the tray upside down or in the wrong direction.

Con la parte de corte de la bandeja hacia afuera, inserte la esquina derecha de dicha bandeja en la ranura y, a continuación, ejerza presión en la esquina izquierda hasta oír un chasquido.
Nota
No inserte la bandeja al revés o en la dirección incorrecta.

Håll skivfacket med hålet mot dig och skjut in dess högra hörn i springan i magasinet. Tryck sedan in det vänstra hörnet tills ett klick hörs.
Observera
Sätt inte i skivfacket upp och ner eller åt fel håll.

Com a parte cortada do tabuleiro voltada para si, introduza o canto direito do tabuleiro na ranhura e, em seguida, empurre o canto esquerdo até ouvir um clique.
Nota
Não coloque o tabuleiro ao contrário ou na direcção errada.

Notes on compact discs / Notas sobre los discos compactos / Att observera angående CD-skivor / Notas sobre os discos compactos

A dirty or defective disc may cause sound drop-outs during playback. To enjoy optimum sound, handle the disc as follows.

Handle the disc by its edge, and to keep the disc clean, do not touch the unlabeled surface.

Un disco sucio o defectuoso causará la pérdida de sonido durante la reproducción. Para obtener un óptimo nivel de sonido, tome los discos como se indica a continuación.

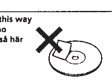
Maneje el disco por los bordes. Para mantenerlo limpio, no toque la superficie sin etiqueta.

En smutsig eller skadad CD-skiva kan orsaka ljudbortfall vid uppspelning. För att undvika detta hanterar du CD-skivan enligt följande.

Undvik att smutsa ned CD-skivan genom att hålla i den endast i kanten och undvika att vidröra den oskyddade ytan.

Um disco sujo ou defeituoso podem causar perdas de som durante a leitura. Para obter de um som excelente, pegue nos discos como ilustrado a seguir.

Para não sujar o disco pegue-lhe pelas bordas e não toque no lado que não tem etiqueta.



Do not stick paper or tape on the disc.

No adhiera papeles ni cinta sobre el disco.

Klistra inte fast etiketter eller dylikt på CD-skivan.

Não cole papel ou fita adesiva no disco.

Do not expose discs to direct sunlight or heat sources such as hot air-ducts. Do not leave discs in a car parked in direct sunlight where there can be a considerable rise in the temperature inside the car.

No exponga los discos a la luz solar directa ni a fuentes térmicas, como conductos de aire caliente. No deje los discos en un automóvil aparcado bajo la luz solar directa donde pueda producirse un considerable aumento de temperatura en el interior de dicho automóvil.

Utsätt inte CD-skivor för direkt solljus eller värmekällor som varluftsventiler. Lämna inte CD-skivor i bilen om den står parkerad i direkt solljus, eftersom kraftiga temperaturstegringar skadligt för skivorna.

Não exponha os discos à luz solar directa ou a fontes de calor como condutas de ar quente. Não deixe os discos dentro de um automóvel estacionado ao sol pois pode ocorrer um aumento considerável de temperatura no seu interior.

Before playing, clean the discs with an optional cleaning cloth. Wipe each disc in the direction of the arrows.

Do not use solvents such as benzine, thinner, commercially available cleaners or antistatic spray intended for analog discs.

Antes de reproducir un disco, límpielo con un paño limpiador opcional. Hágalo en el sentido de las flechas.

No emplee disolventes tales como bencina, diluyente de pintura, ni limpiadores o aerosoles destinados a discos analógicos.

Torka CD-skivan med en rengöringsduk (medföljer inte) innan du spelar den. Torka från mitten ut mot kanten (i pilarnas riktning).

Använd inte lösningsmedel som bensin och thinner, eller rengöringsmedel och antistatspray avsedda för vinylskivor.

Antes de iniciar a reprodução, limpe os discos com um pano de limpeza (venda avulsa). Limpe o disco no sentido indicado pelas setas.

Não utilize solventes tais como benzina, diluentes, produtos de limpeza disponíveis no mercado ou aerossóis anti-estáticos destinados a discos de gravação analógica.

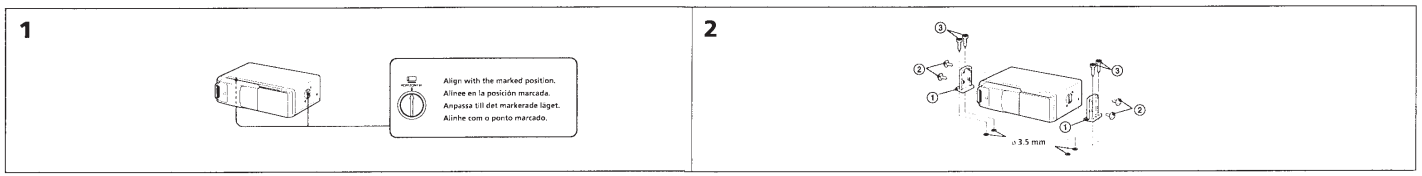
Installation

Precautions

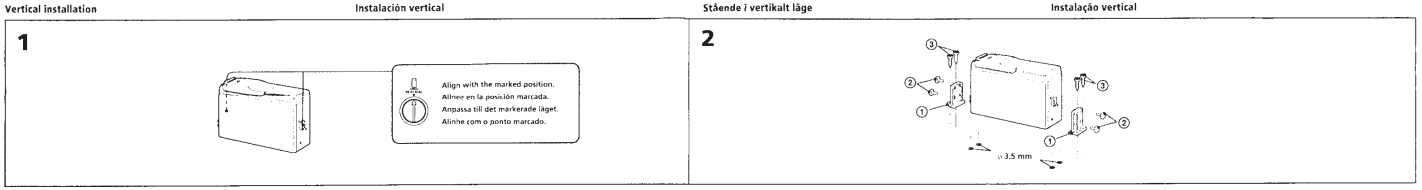
- Choose the mounting location carefully, observing the following:
  - The unit is not subject to temperatures exceeding 55°C (such as in a car parked in direct sunlight).
  - The unit is not subject to direct sunlight.
  - The unit is not near heat sources (such as heaters).
  - The unit is not exposed to rain or moisture.
  - The unit is not exposed to excessive dust or dirt.
  - The unit is not subject to excessive vibration.
  - The fuel tank should not be damaged by the tapping screws.
  - There should be no wire harnesses or pipes under the place where you are going to install the unit.
  - The spare tire, tools or other equipment in or under the trunk should not be interfered with or damaged by the screws or the unit itself.
- Be sure to use only the supplied mounting hardware for a safe and secure installation.
- Use only the supplied screws.
- Make holes of ø 3.5 mm only after making sure there is nothing on the other side the mounting surface.

How to install the unit

Horizontal installation



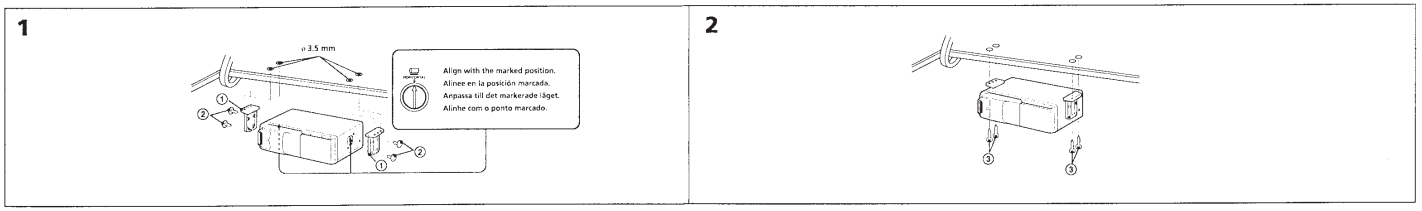
Vertical installation



Suspended installation

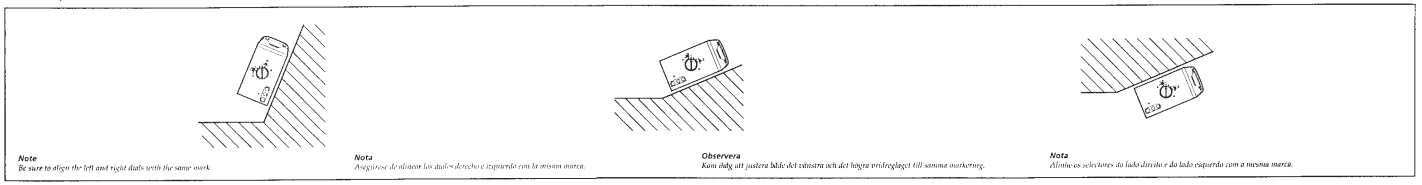
When the unit is to be installed under the rear tray etc. in the trunk compartment, make sure the following provisions are made.

- Choose the mounting location carefully so the unit can be installed horizontally.
- Make sure the unit does not hinder the movement of the torsion bar spring etc. of the trunk lid.



Inclined installation

After installing the unit, align the dials with one of the marks so the arrows are as vertical as possible.



Note
Be sure to align the left and right dials with the same mark.

Instalación

Precauciones

- Elija cuidadosamente el lugar de montaje, teniendo en cuenta lo siguiente:
  - La unidad no quede sometida a temperaturas superiores a los 55°C (como en un automóvil aparcado a la luz solar directa).
  - La unidad no quede sometida a la luz solar directa.
  - La unidad no quede cercana a fuentes térmicas (como aparatos de calefacción).
  - La unidad no quede expuesta a la lluvia o a la humedad.
  - La unidad no quede expuesta a polvo o suciedad excesivos.
  - La unidad no quede sometida a vibraciones excesivas.
  - El depósito de combustible no deberá dañarse con los tornillos autorroscantes.
  - No deberá haber mazos de conductores ni tubos debajo del lugar donde vaya a instalar la unidad.
  - La rueda de repuesto, las herramientas, u otros equipos situados dentro o debajo del portaequipajes no deberán verse interferidos ni dañados por los tornillos ni por la propia unidad.
- Para realizar una instalación segura, emplee solamente la ferretería de montaje suministrada.
- Utilice sólo los tornillos suministrados.
- Antes de hacer los orificios de ø 3,5 mm, compruebe que no haya nada en el otro lado de la superficie de montaje.

Forma de instalar la unidad

Instalación horizontal

Instalación vertical

Instalación suspendida

Cuando desee instalar la unidad debajo de la bandeja trasera, etc. en el interior del portaequipajes, tenga en cuenta lo siguiente:

- Elija cuidadosamente el lugar de montaje de forma que la unidad pueda instalarse horizontalmente.
- Cerciórese de que la unidad no impida el movimiento del resorte de la barra de torsión, etc., de la tapa del portaequipajes.

Instalación sobre una superficie inclinada

Después de instalar la unidad, alinee los diales con una de las marcas, de forma que la flecha quede orientada en posición vertical tanto como sea posible.

Nota
Asegúrese de alinear los diales derecho e izquierdo con la misma marca.

Montering

Säkerhetsföreskrifter

- Var noga vid monteringslägets val. Observera följande:
  - Utsätt inte enheten för temperaturer som överstiger 55°C (som t ex i en bil parkerad i direkt solljus).
  - Utsätt inte enheten för direkt solljus.
  - Placera inte enheten i närheten av värmekällor (som varmluftsventiler m.m.).
  - Undvik att enheten utsätts för regn eller fukt.
  - Undvik att enheten utsätts för mycket damm eller smuts.
  - Undvik att enheten utsätts kraftiga vibrationer eller skakningar.
  - Att bränsletanken inte skadas när du drar åt de självgängande skruvarna.
  - Att det inte finns några kabelhärvor, rör, ledningar eller slangar under platsen där CD-skivväxlaren monteras.
  - Att reservdäcket, verktygen i bagageutrymmet eller delarna under det inte skadas när du drar åt skruvarna eller av CD-växlare.
- Var noga med att endast använda de medföljande monteringstillbehören för att vara säker på att CD-skivväxlaren monteras ordentligt och på ett korrekt sätt.
- Använd endast medföljande skruvar.
- Kontrollera först att det inte finns något på andra sidan monteringsytan som kan ta skada när du borrar hålen (ø 3,5 mm).

Montering

Liggande i horisontellt läge

Stående i vertikalt läge

Hängande montering

Observera följande när CD-växlare monteras i bagageutrymmet, under hatthyllan längst bak i bilen osv:

- Var noga när du väljer monteringsläge för att vara säker på att CD-skivväxlaren kan monteras liggande i horisontell ställning.
- var noga med att kontrollera att CD-växlaren inte hindrar fjäderns rörelser i torsionsarmen eller liknande i bakluckan.

Placera på lutande underlag

När du har placerat enheten där du vill ha den, justerar du vridreglaget till den markering som gör att pilen är så nära lodrät position som möjligt.

Observera
Kom ihåg att justera både det vänstra och det högra vridreglaget till samma markering.

Instalação

Precauções

- Seleccione cuidadosamente o local de montagem, observando os seguintes pontos:
  - O aparelho não está sujeito a temperaturas superiores a 55°C (tal como no interior de automóveis estacionados sob a luz solar directa);
  - O aparelho não está sujeito à luz solar directa;
  - O aparelho não está próximo de fontes de calor (tais como aquecedores);
  - O aparelho não está sujeito à chuva ou humidade;
  - O aparelho não está exposto a muito pó ou sujidade;
  - O aparelho não está sujeito a vibrações excessivas.
  - Verificar se os parafusos de fixação não vão danificar o depósito de combustível
  - Verificar se não existem feixes de cabos ou tubos no local onde será instalado o aparelho.
  - Verificar se o aparelho ou os parafusos de fixação não vão danificar ou interferir com os pneus sobressalentes, as ferramentas ou outros equipamentos colocados no porta-bagagens.
- Para que a instalação fique bem feita e seja segura, utilize unicamente o material fornecido para a montagem.
- Utilize apenas os parafusos fornecidos.
- Certifique-se de que não existe nada no lado de trás da superfície de montagem e faça furos com um diâmetro de 3,5 mm.

Como instalar o aparelho

Instalação horizontal

Instalação vertical

Instalação suspensa

Se for instalar o aparelho por baixo prateleira traseira, no porta-bagagens, etc., tome as seguintes precauções:

- escolha um local de instalação que permita que o aparelho seja montado na horizontal;
- certifique-se de que o aparelho não atrapalhará o movimento da mola do fecho da porta do porta bagagens, etc.

Instalação inclinada

Depois de ter instalado o aparelho, alinhe os selectores com uma das marcas para que a seta fique o mais próximo possível da posição vertical.

Nota
Alinhe os selectores da lado direito e do lado esquerdo com a mesma marca.

Connections/Conexiones/ Anslutningar/Ligações

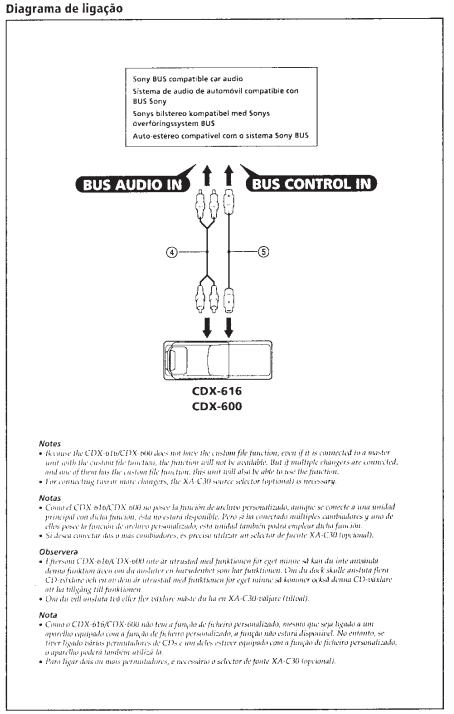
For details, refer to the Installation/ Connections manual of each product.

Con respecto a los detalles, consulte el manual de instalación/conexiones de cada producto.

Vi hänvisar till häftena över montering/ anslutningarna som levereras med bilstereon och de andra ljudkällorna.

Para maiores detalhes, consulte o manual de instalação/ligação de cada produto.

Connection diagram/Diagrama de conexión/Kopplingsdiagram/ Diagrama de ligação



Notes

- *Because the CDX-616/CDX-600 does not have the custom file function, even if it is connected to a master unit with the custom file function, the function will not be available. But if multiple changers are connected, and one of them has the custom file function, this unit will also be able to use the function.*
- *For connecting four or more changers, the XA-C30 source selector (optional) is necessary.*

Notas

- *Como el CDX-616/CDX-600 no posee la función de archivo personalizado, aunque se conecte a una unidad principal con dicha función, ésta no estará disponible. Pero si ha conectado múltiples cambiadores y uno de ellos posee la función de archivos personalizados, esta unidad también podrá emplear dicha función.*
- *Si desea conectar dos o más cambiadores, es preciso utilizar un selector de fuente XA-C30 (opcional).*

Observera

- *I försatta CDX-616/CDX-600 inte är utrustad med funktionen för eget namn så kan du inte använda denna funktion även om du ansluter en huvudenhet som har funktionen. Om du dock skulle ansluta flera CD-växlare och en av dem är utrustad med funktionen för eget namn så kommer också denna CD-växlare att ha tillgång till funktionen.*
- *Om du vill ansluta två eller fler växlare måste du ha en XA-C30-väljare (tillval).*

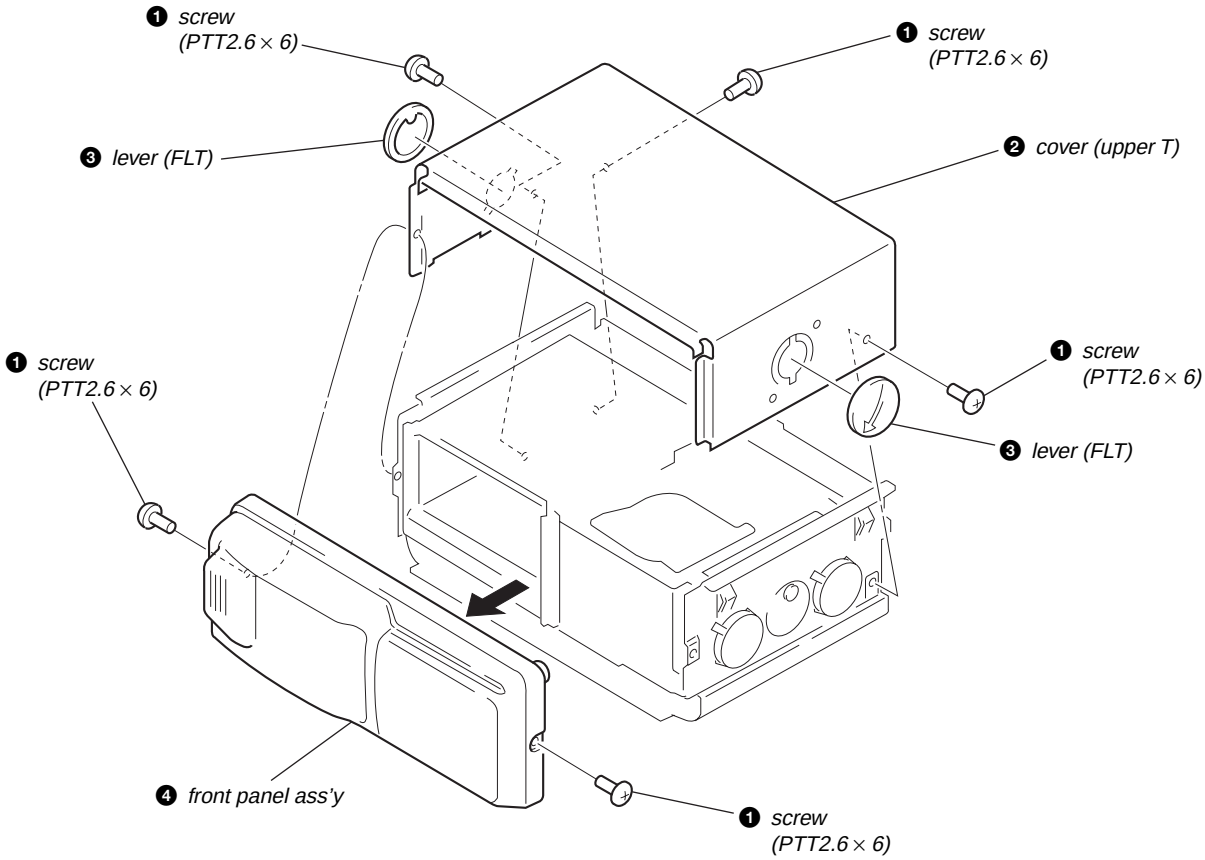
Nota

- *Como o CDX-616/CDX-600 não tem a função de ficheiro personalizado, mesmo que seja ligado a um aparelho equipado com a função de ficheiro personalizado, a função não estará disponível. No entanto, se tiver ligado várias permutadores de CDs e um deles estiver equipado com a função de ficheiro personalizado, o aparelho poderá também utilizá-la.*
- *Para ligar três ou mais permutadores, é necessário o selector de fonte XA-C30 (opcional).*

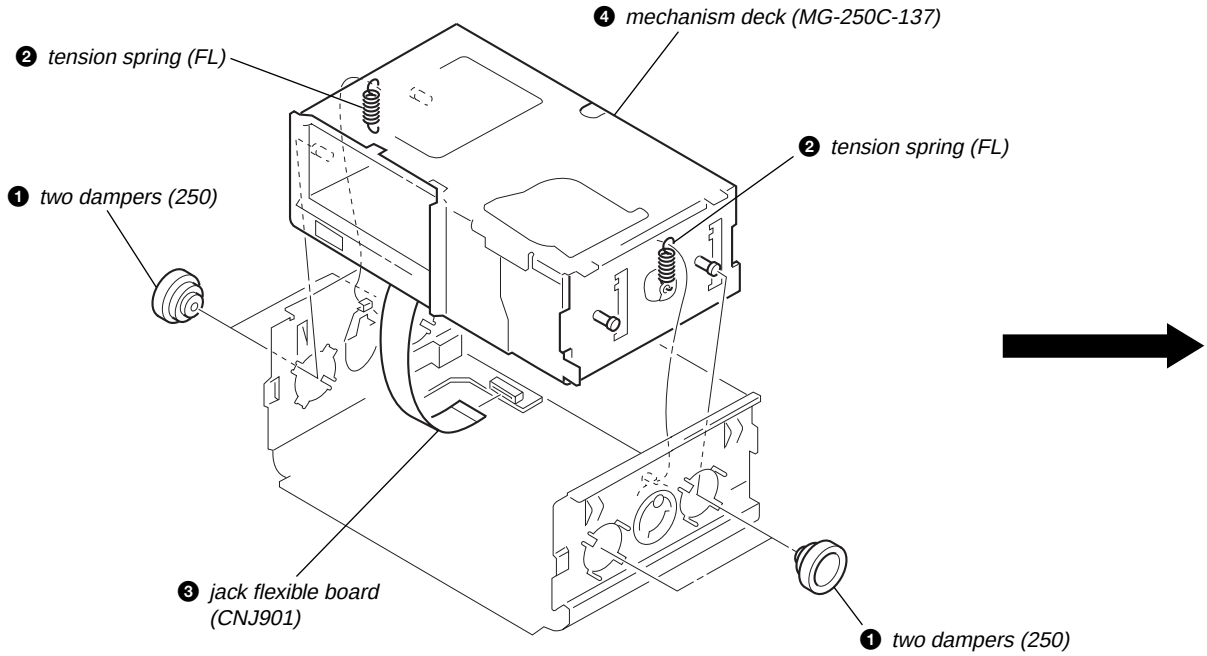
SECTION 3
DISASSEMBLY

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

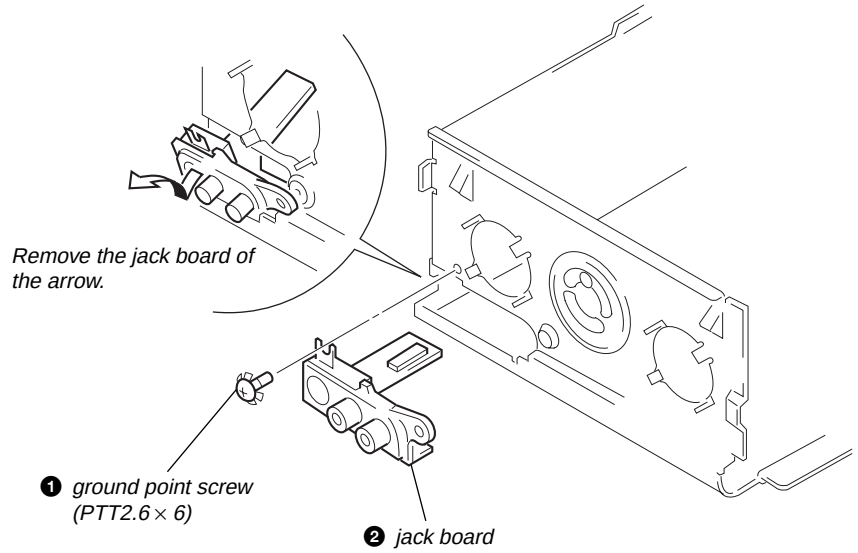
COVER (UPPER T), FRONT PANEL ASS'Y



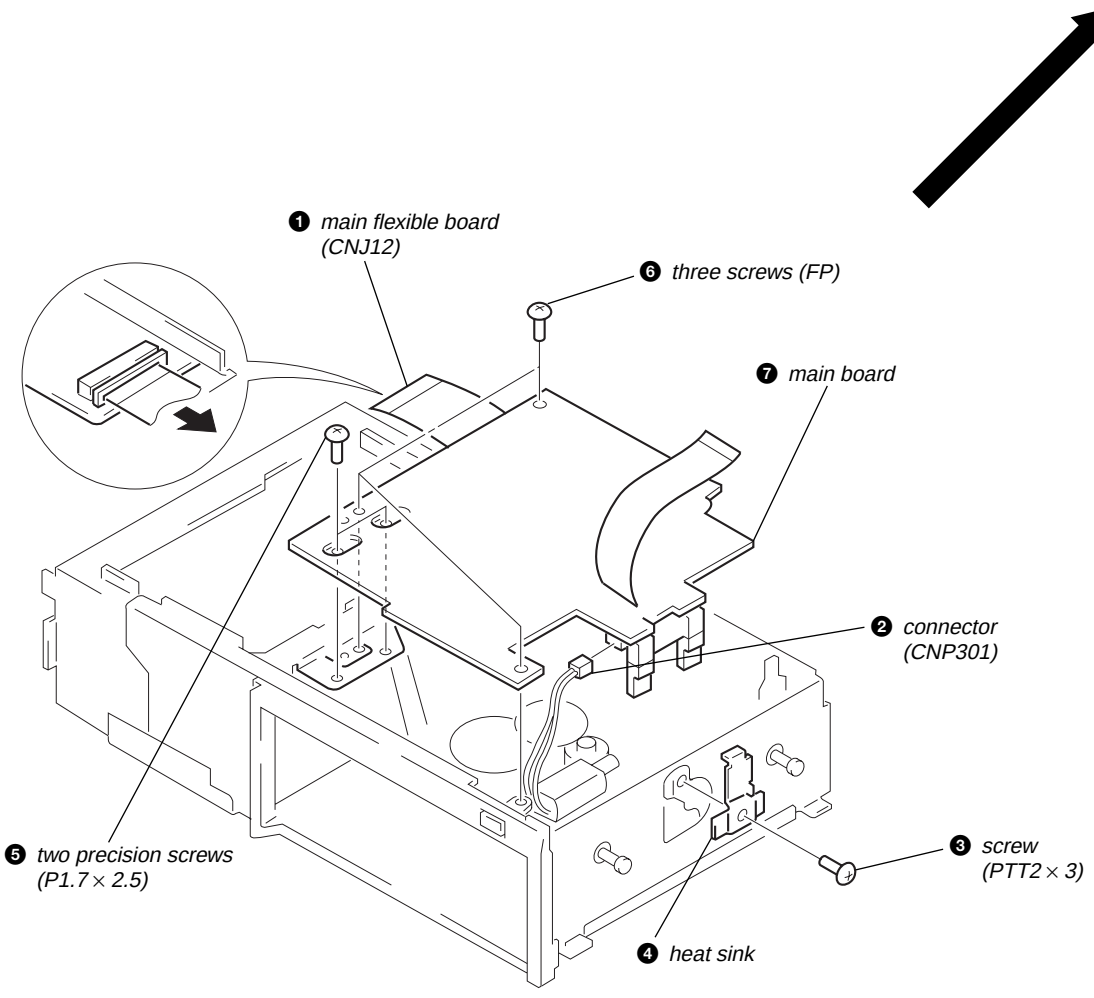
MECHANISM DECK (MG-250C-137)



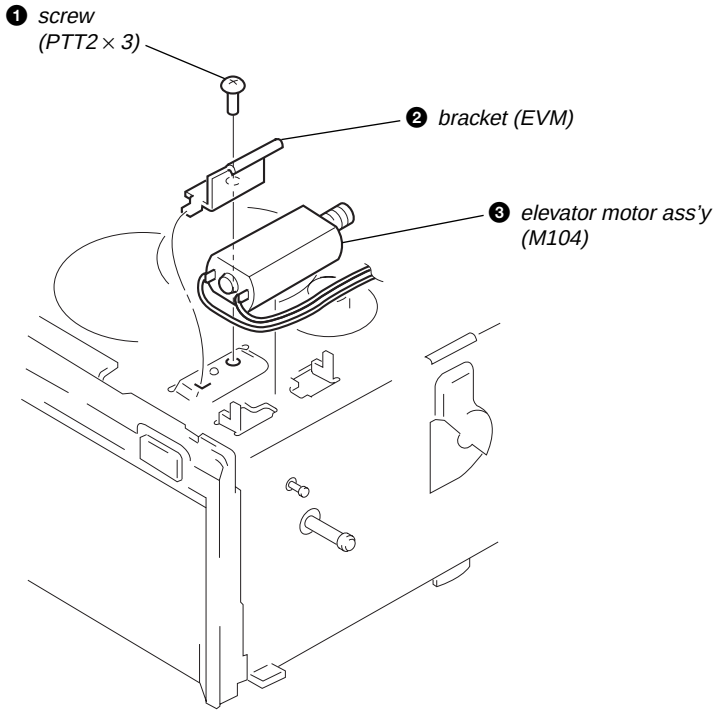
JACK BOARD



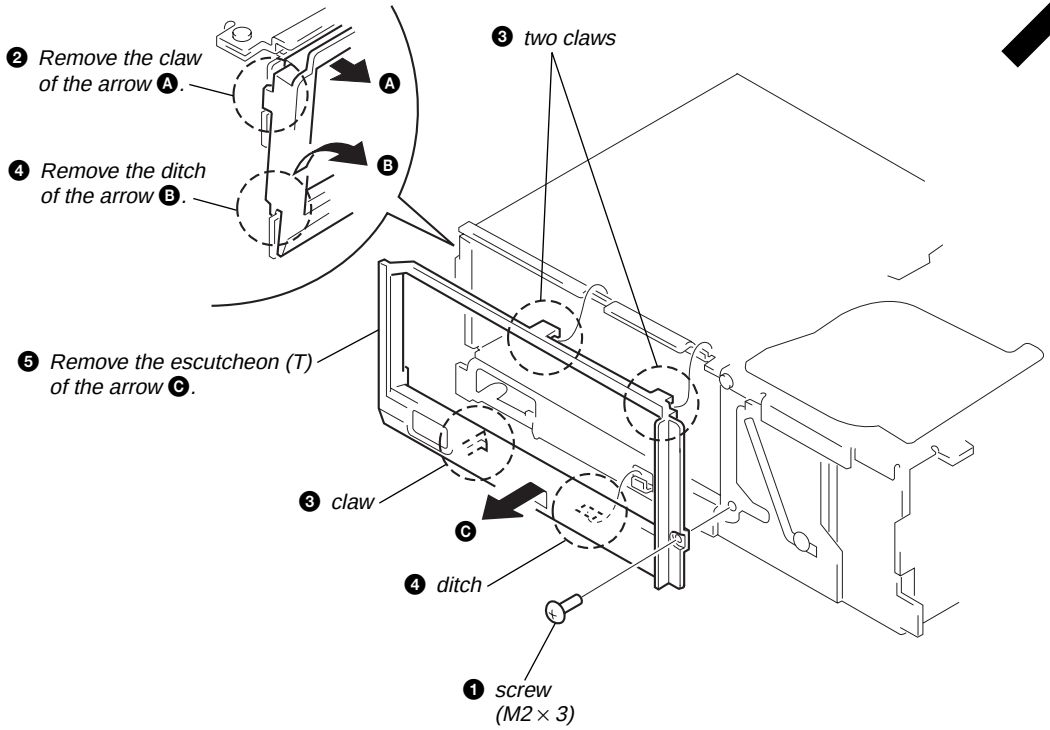
MAIN BOARD



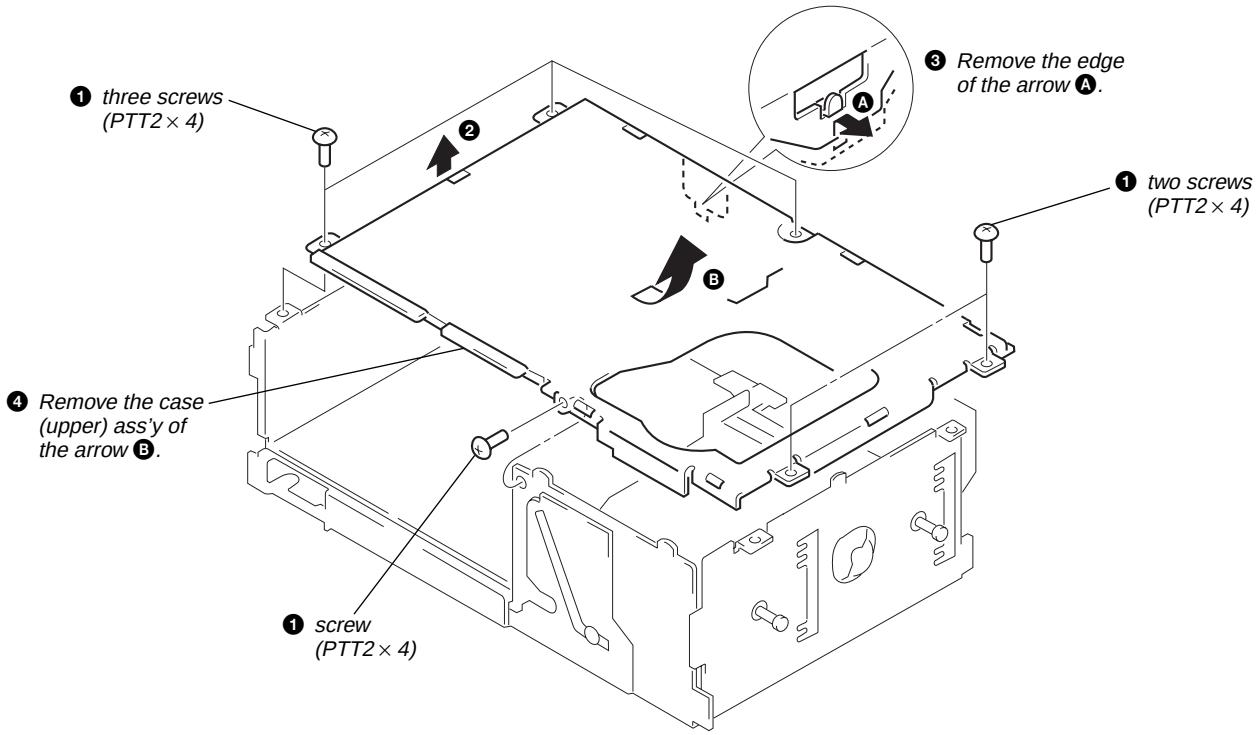
ELEVATOR MOTOR ASS'Y (M104)



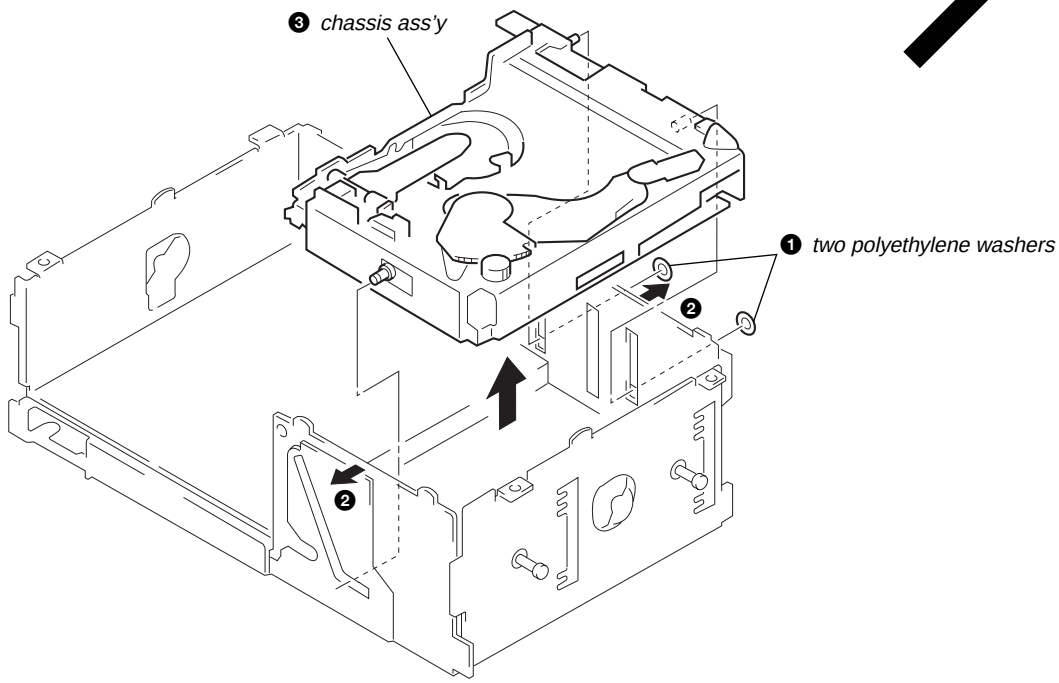
ESCUTCHEON (T)



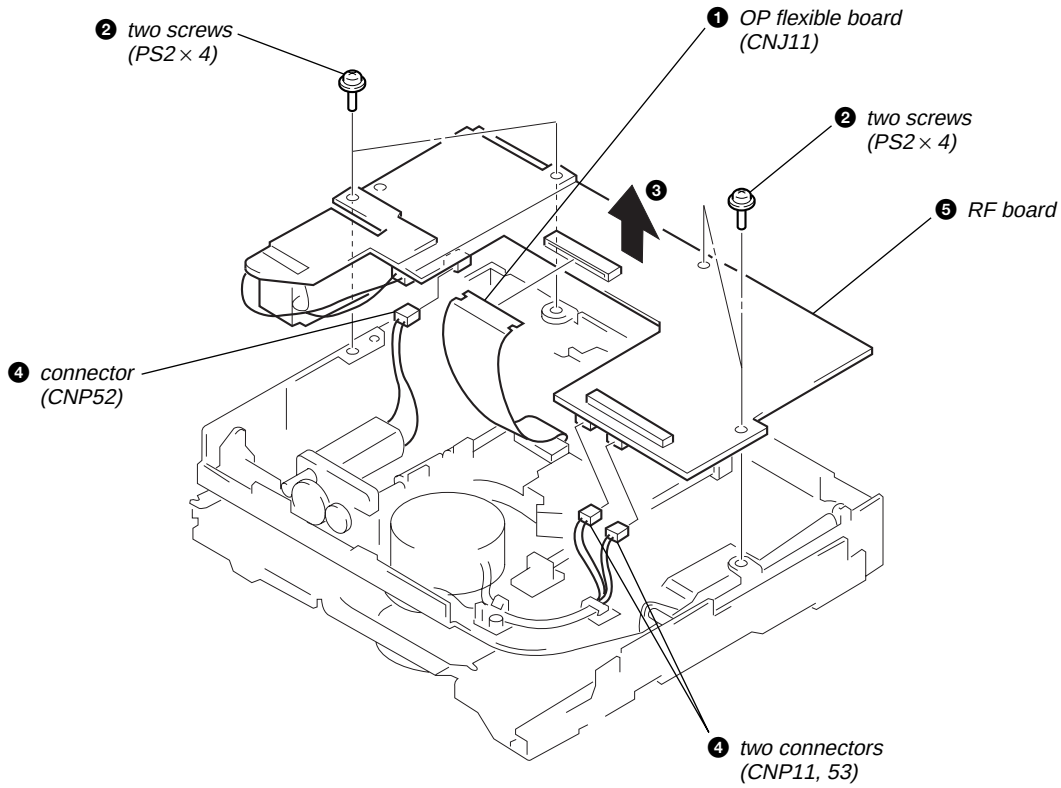
CASE (UPPER) ASS'Y



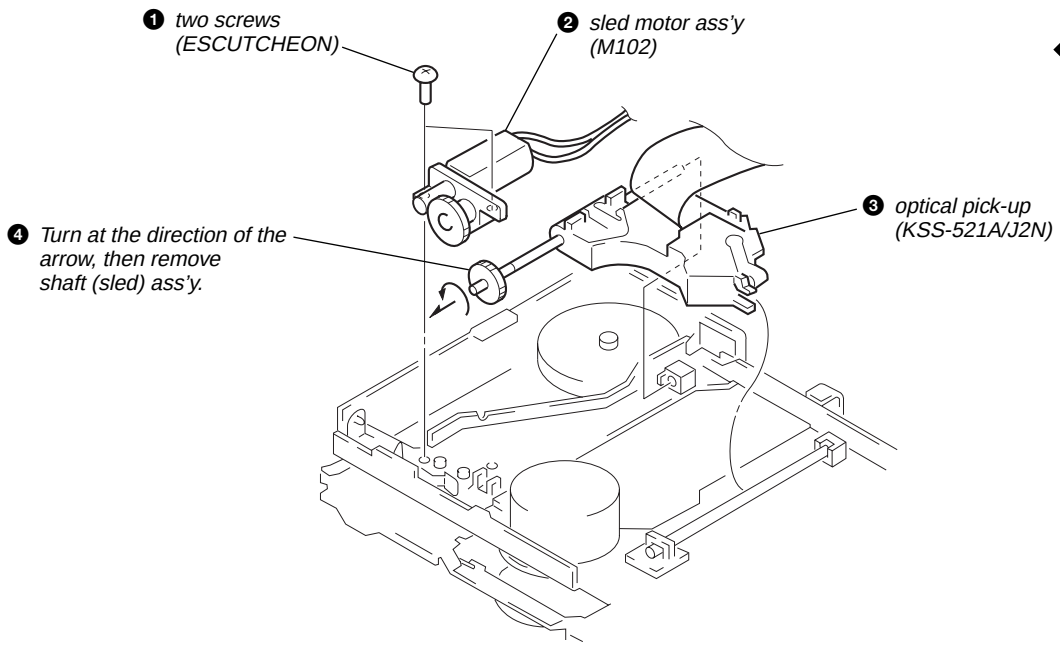
CHASSIS ASS'Y



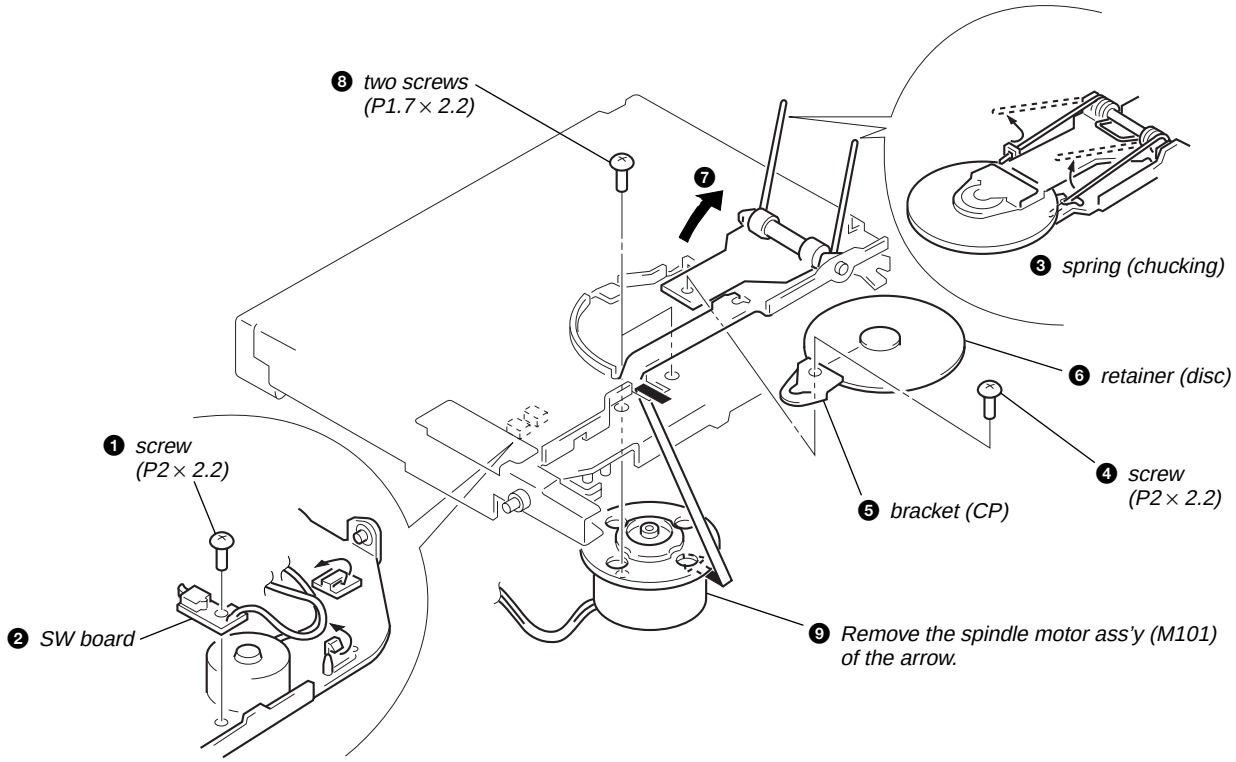
RF BOARD



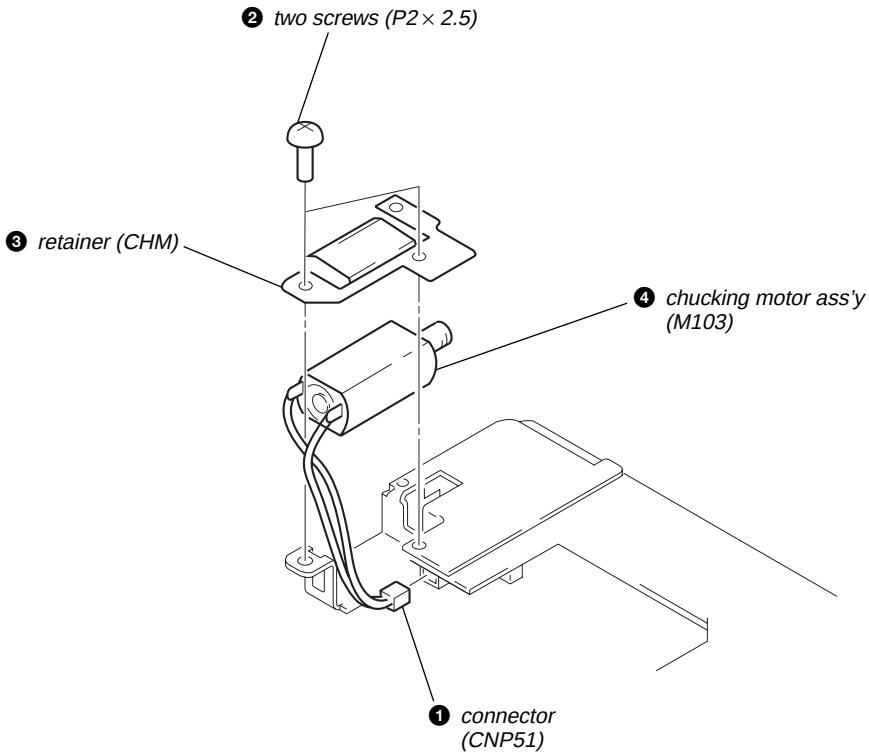
SLED MOTOR ASS'Y (M102), OPTICAL PICK-UP (KSS-521A/J2N)



SW BOARD, SPINDLE MOTOR ASS'Y (M101)



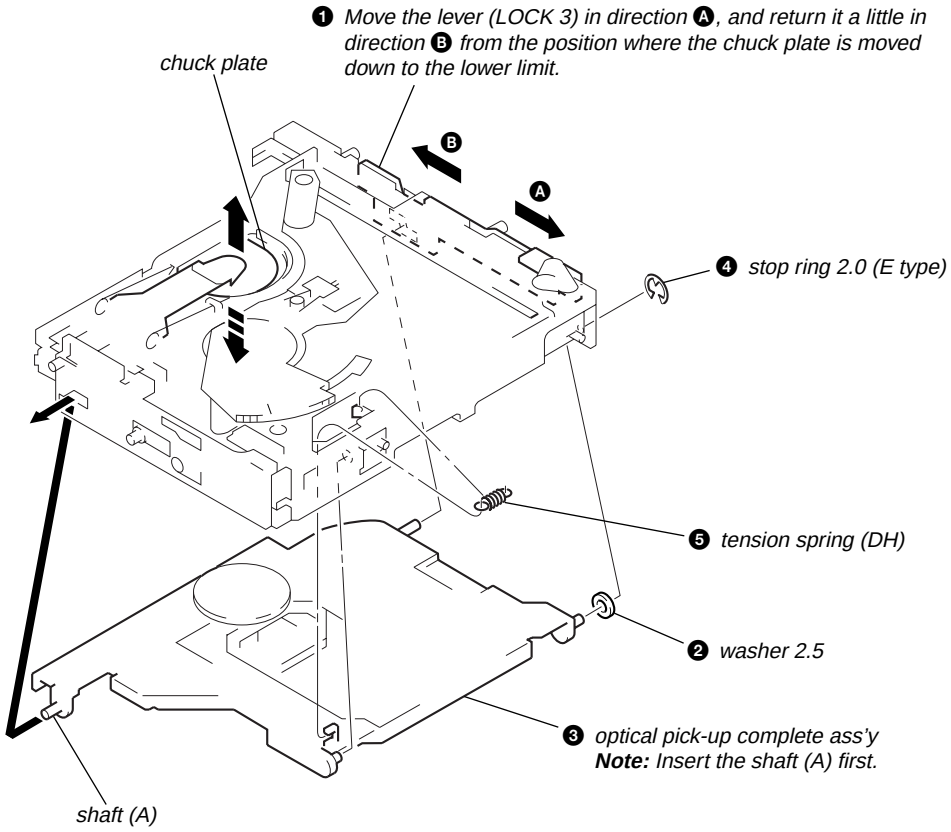
CHUCKING MOTOR ASS'Y (M103)



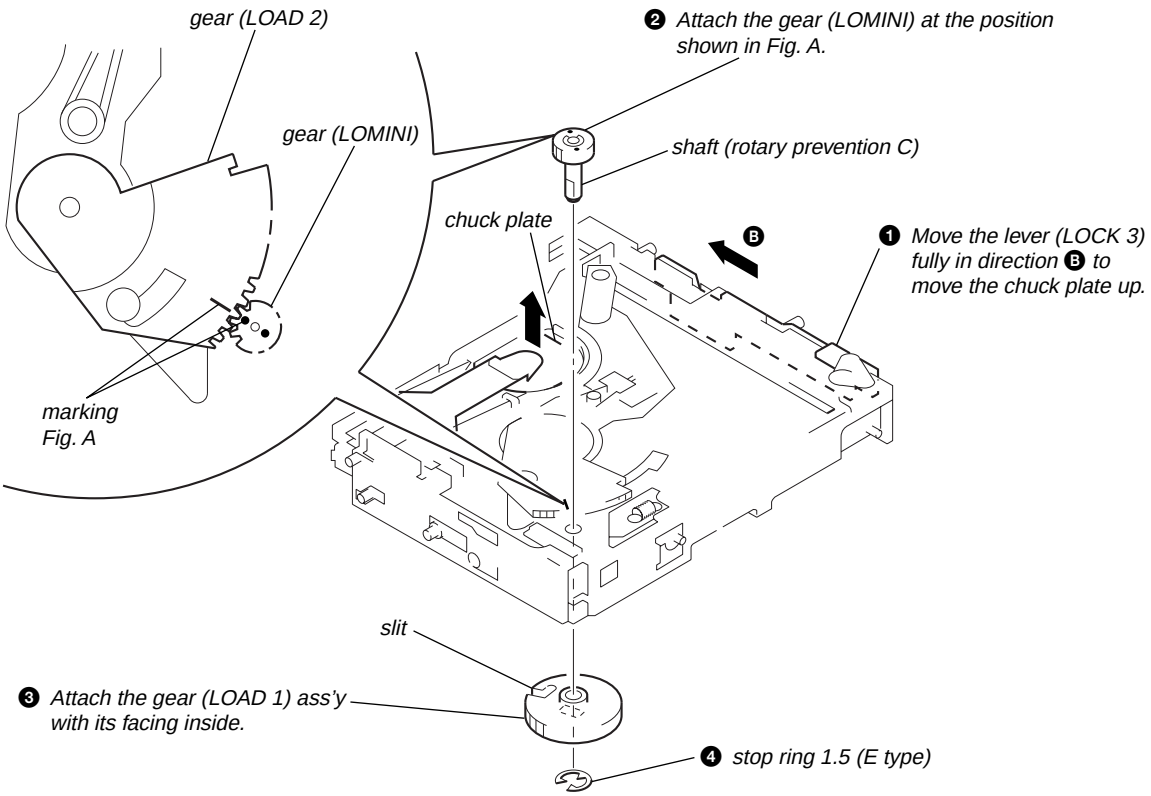
SECTION 4
MECHANISM DECK ASSEMBLY

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

OPTICAL PICK-UP COMPLETE ASS'Y

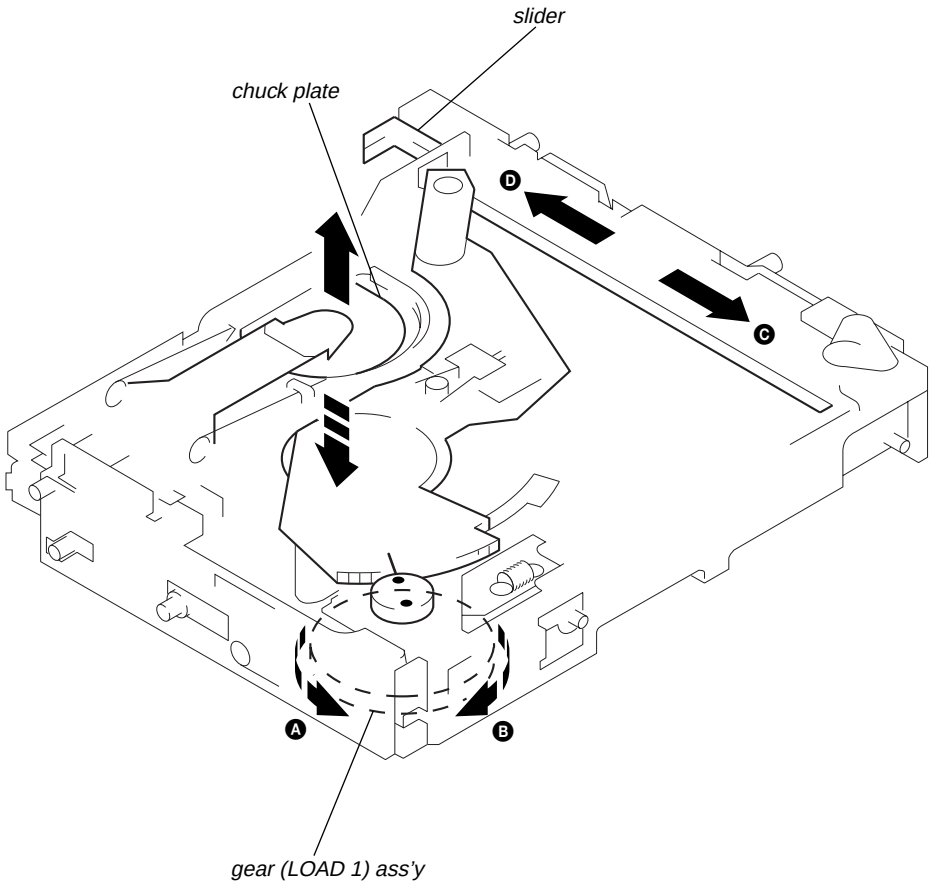


GEAR (LOMINI)/(LOAD 1) ASS'Y



OPERATION CHECK

❶ *Confirm that the slider moves in direction Ⓒ to move down the chuck plate if the gear (LOAD 1) is rotated in direction Ⓐ or the chuck plate moves up and the slider moves in direction Ⓓ if the gear is rotated in direction Ⓑ.*

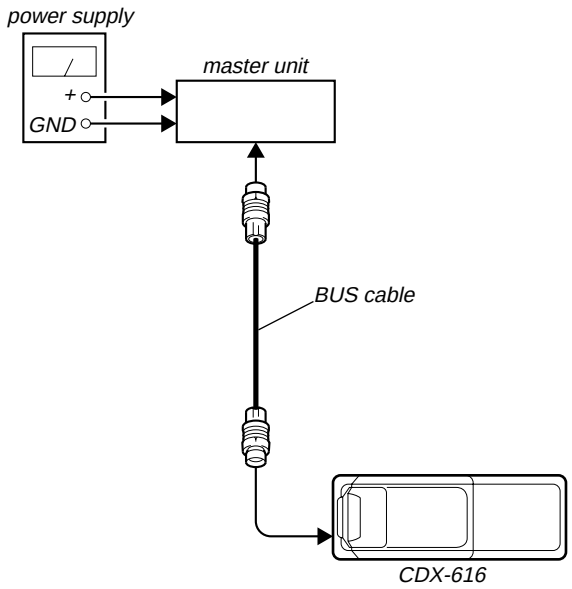


SECTION 5
MECHANICAL ADJUSTMENTS

• Elevator Height (Address) Adjustment

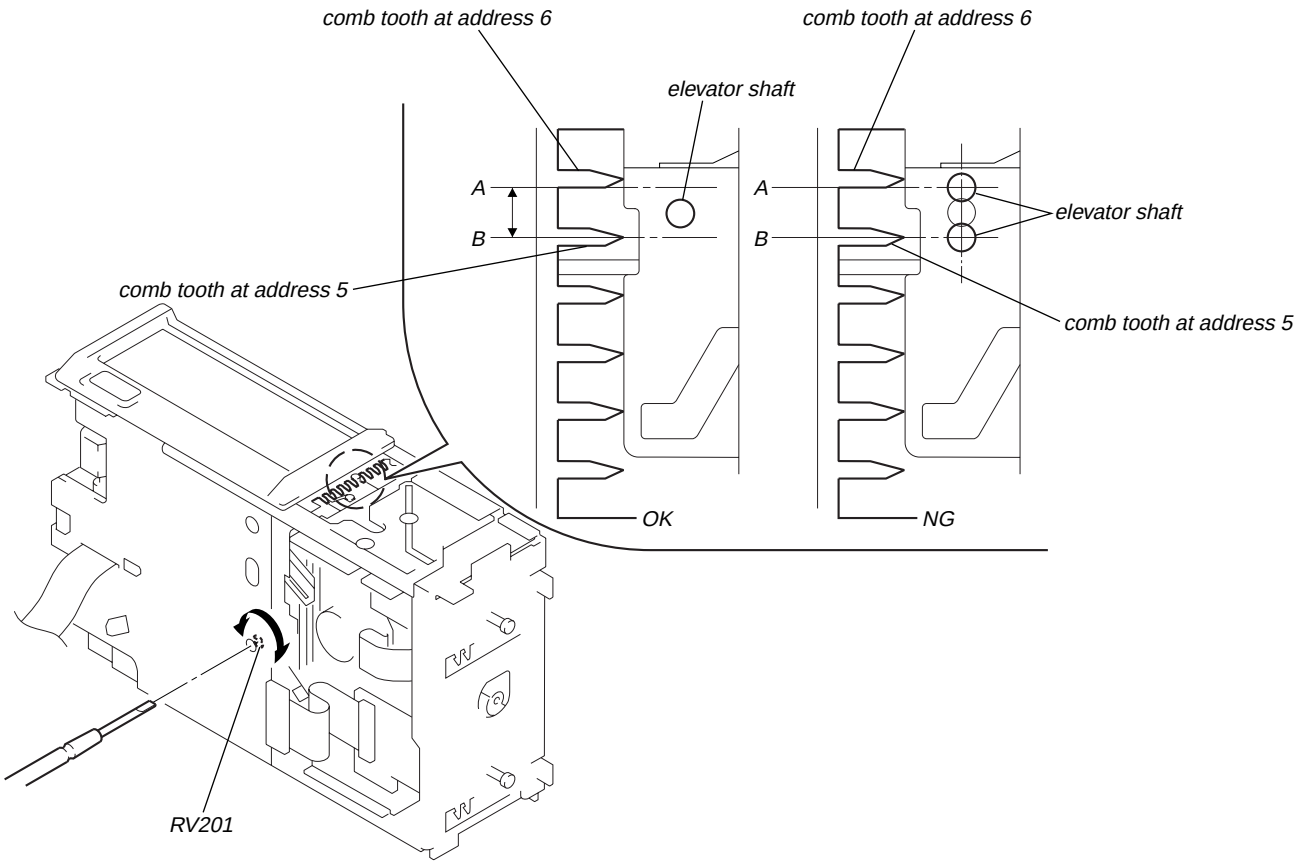
Note: This adjustments is necessary when the system controller (IC201), variable resistor (RV201), slider (R), slider (L), or chassis (ELV) was replaced for any repair.

Connection:



Adjustment Method:

1. Connect this set to the master unit (e.g. MDX-C670/C670RDS), load a disc magazine, and place the set vertically as shown below.
2. Connect the regulated power supply to the master unit, and turn the power on.
3. Press the DISC button on the master unit and select DISC 5.
4. At this time, if the elevator shaft does not position between comb teeth A and B at addresses 5 and 6 as shown below, adjust the following.
5. Press repeatedly the DISC + and – buttons on the master unit so that the elevator shafts moves from address 6 to address 5, or from 5 to 6. At this time, adjust RV201 on the main board so that the elevator shaft positions smoothly between comb teeth A and B.
6. Further, place the set horizontally and make same adjustment as mentioned above.
7. After adjustment at addresses 5 to 6 is finished, check all operations from addresses 1 to 10 with the set placed vertically and horizontally respectively to confirm that the elevator shaft positions in a range between comb teeth A to B.

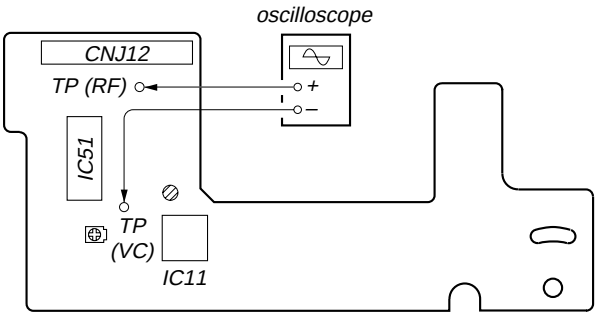


SECTION 6
ELECTRICAL ADJUSTMENTS

Note:
1. Perform adjustments as given.
2. Power supply voltage: DC14.4 V (more than 3A).

• FOCUS BIAS CHECK

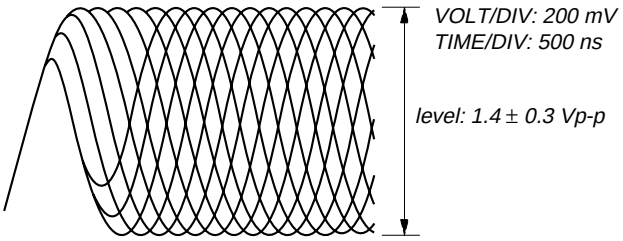
[RF BOARD] – Conductor Side –



Procedure:
1. Connect the oscilloscope to TP (RF) and TP (VC) on the RF board.
2. Put the set into play mode by loading the disc.
3. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

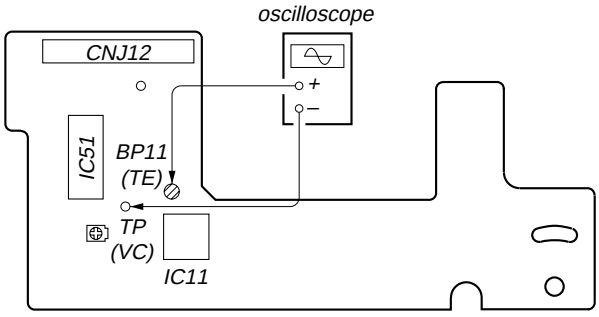
Note:
Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



• TRACKING OFFSET CHECK

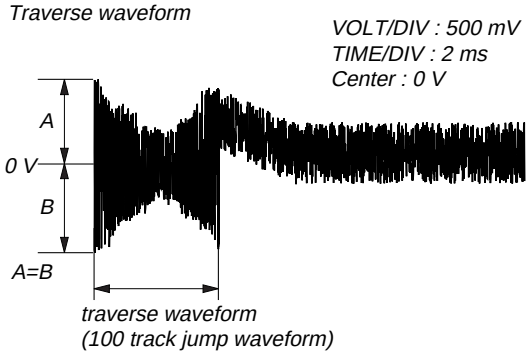
[RF BOARD] – Conductor Side –



Procedure:
1. Connect the oscilloscope to BP11 (TE) and TP (VC) on the RF board.
2. Put the set into play mode by loading the disc.
3. Press the ⏮ AMS ⏭ button, and check the traverse waveform*.
4. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0 V dc, and check this level.

* Traverse waveform: This is the tracking error wave form appears when crossing the track.

Traverse waveform

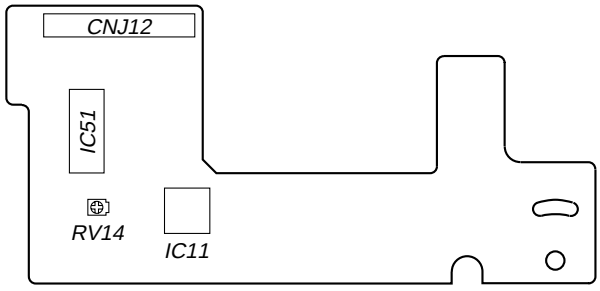


• FOCUS GAIN ADJUSTMENT (COARSE ADJUSTMENT)

This adjustment is to be performed when replacing the following parts.

- Optical Pick-up Block
- RV14

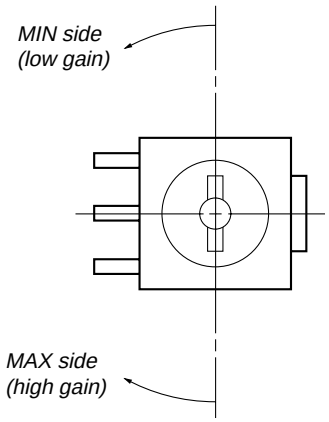
[RF BOARD] – Conductor Side –



Procedure:

1. Set RV14 (RF board) to the standard position.
2. Check that there is not an abnormal amount of operation noise (white noise) from the 2-axis devise. If there is, turn RV14 slightly clockwise.

[RF BOARD] – Conductor Side –

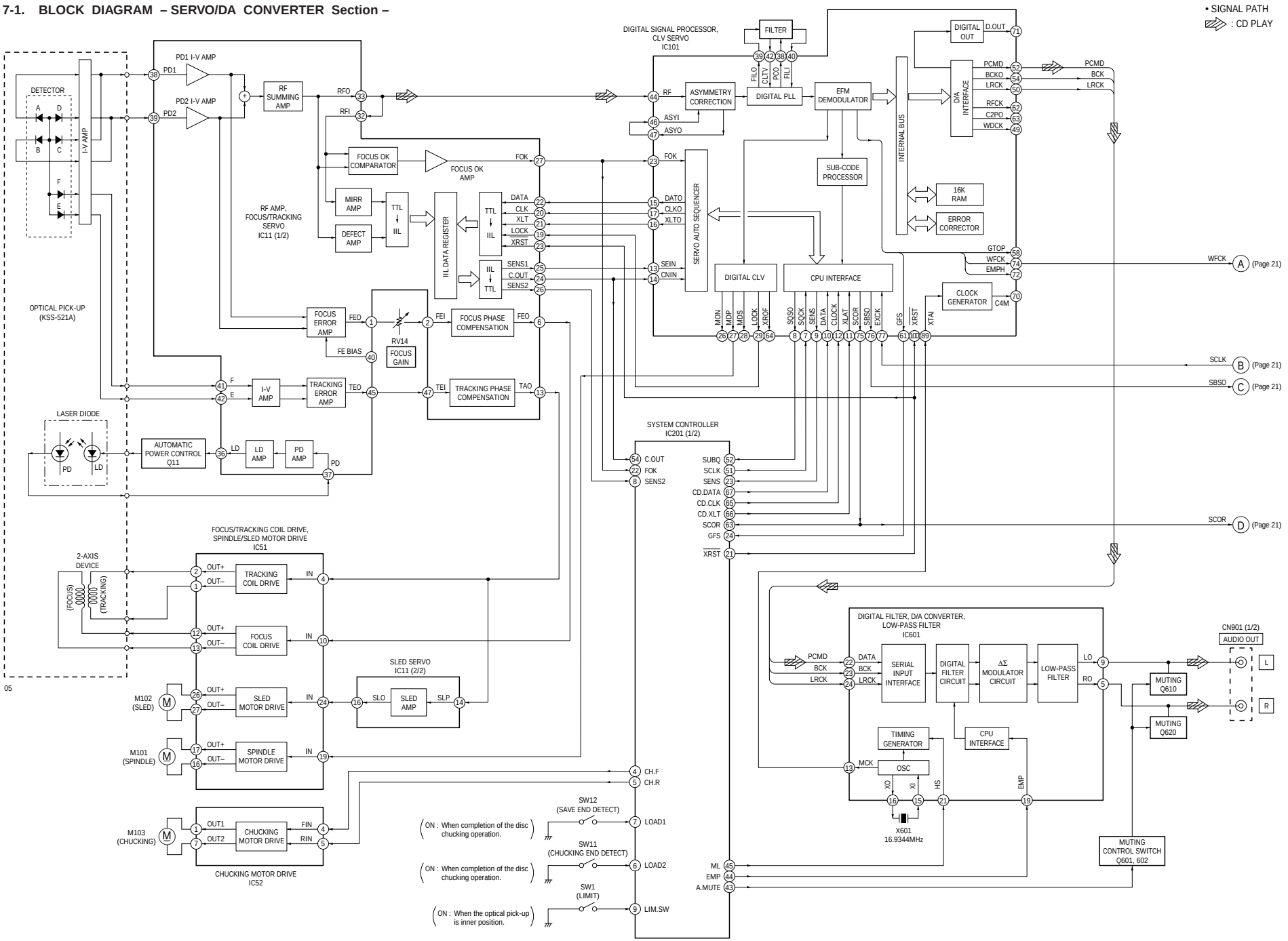


RV14 standard position

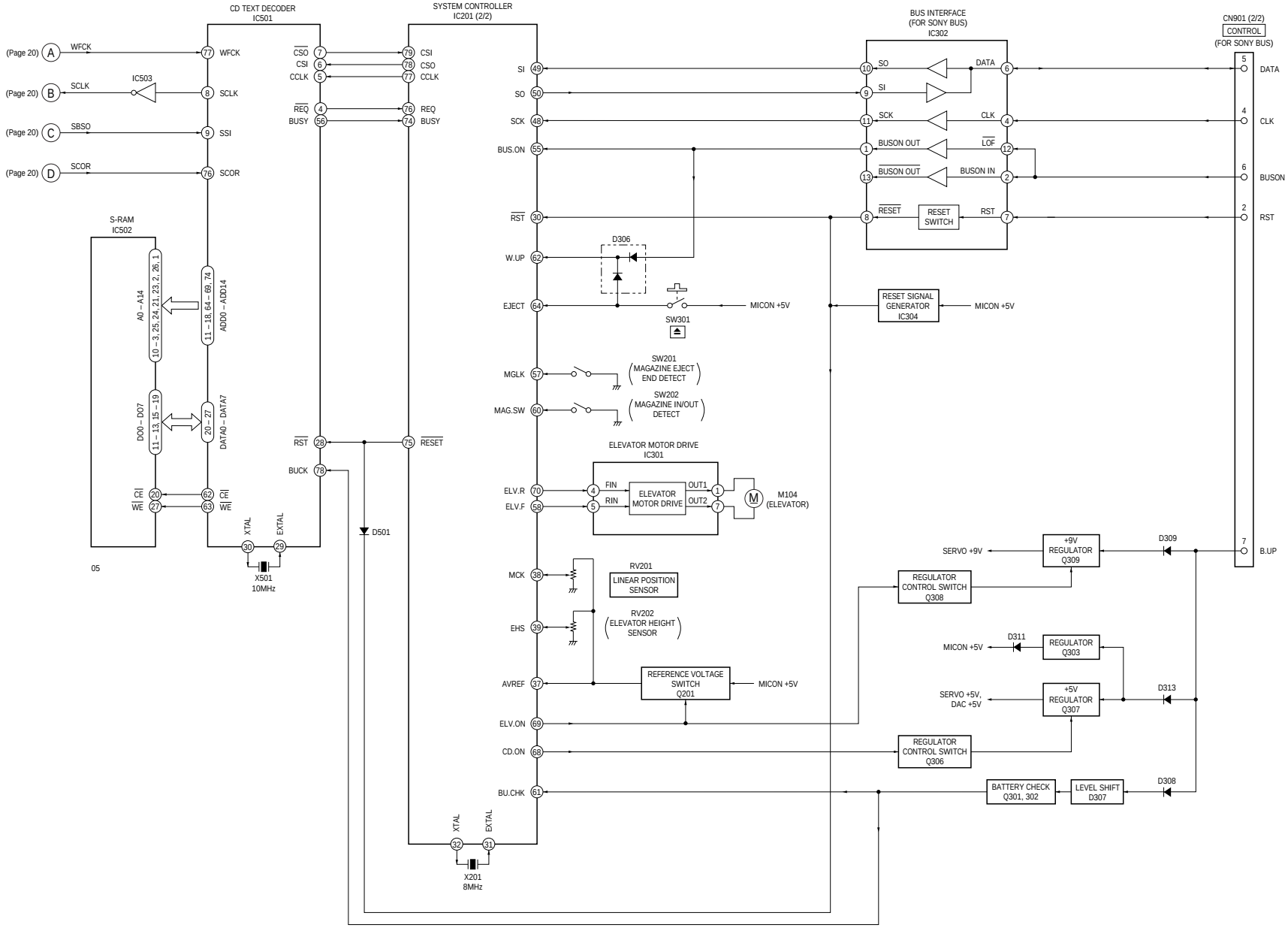
- **When gain is lowered...**
  The set does not play because of no focus operation.
- **When gain is highered...**
  Operation noise is heard due to a scratch or a dust, then operation will be unstable.

SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM – SERVO/DA CONVERTER Section –



7-2. BLOCK DIAGRAM – CD TEXT DECODER/BUS CONTROL/POWER SUPPLY Section –



7-3. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ⚬—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

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

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

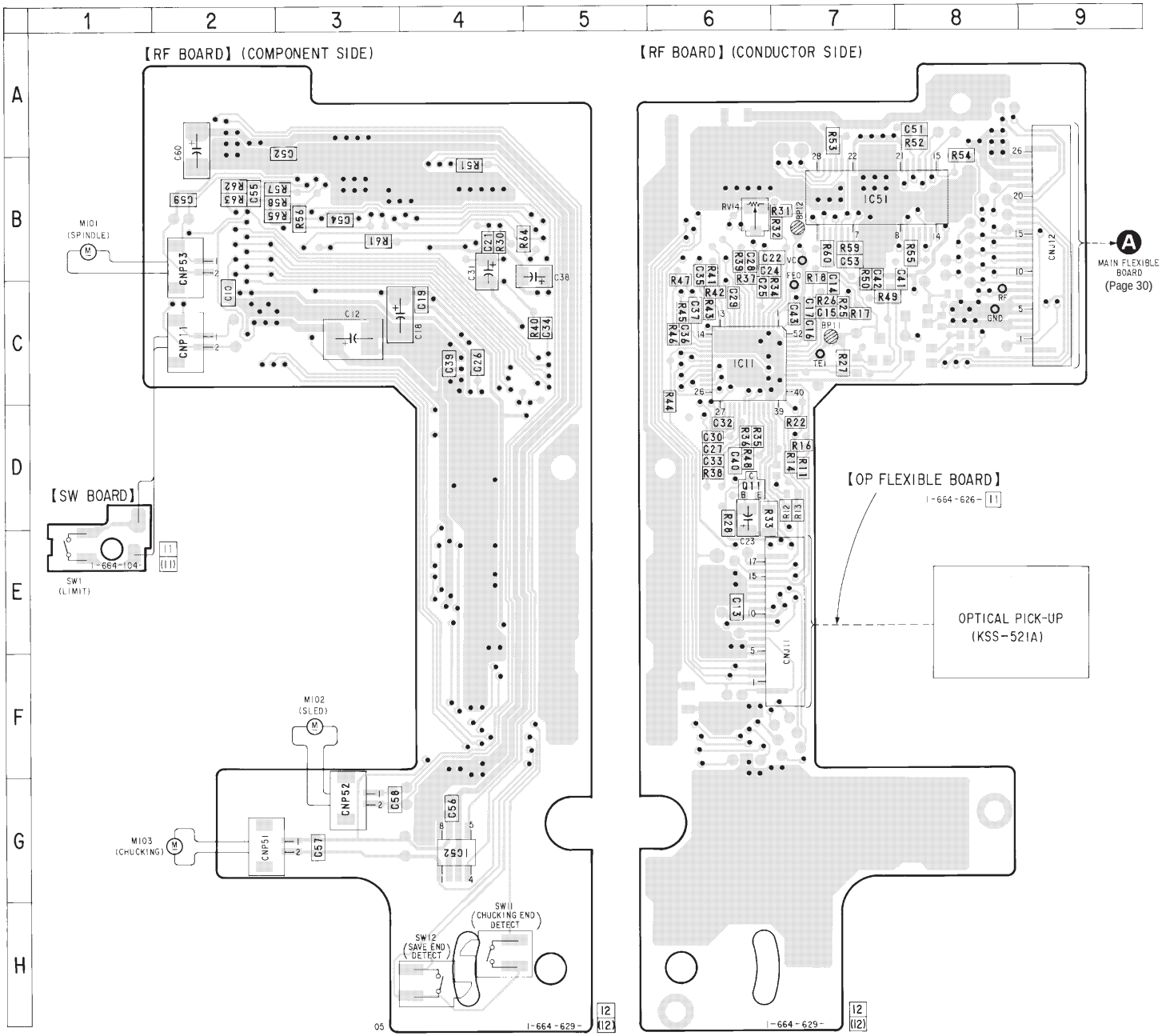
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from CD changer controller.
- Voltages 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 MΩ). 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.
  ⇨ : CD PLAY

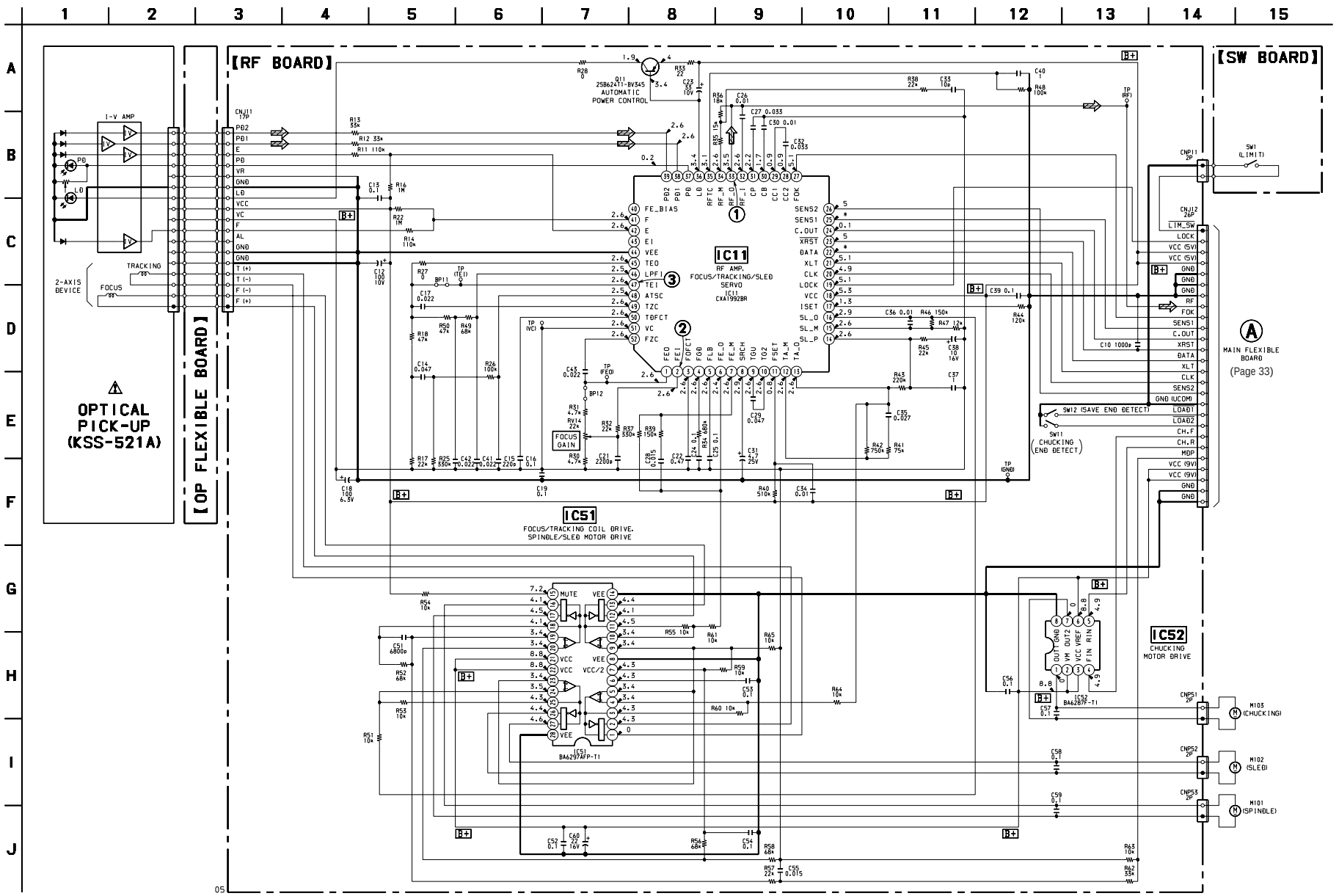
7-4. PRINTED WIRING BOARDS – RF/SW Boards –

• **Semiconductor Location**

Ref. No.	Location
IC11	C-6
IC51	B-7
IC52	G-4
Q11	D-6



7-5. SCHEMATIC DIAGRAM – RF/SW Boards – • See page 39 for Waveforms. • See page 41 for IC Block Diagrams.

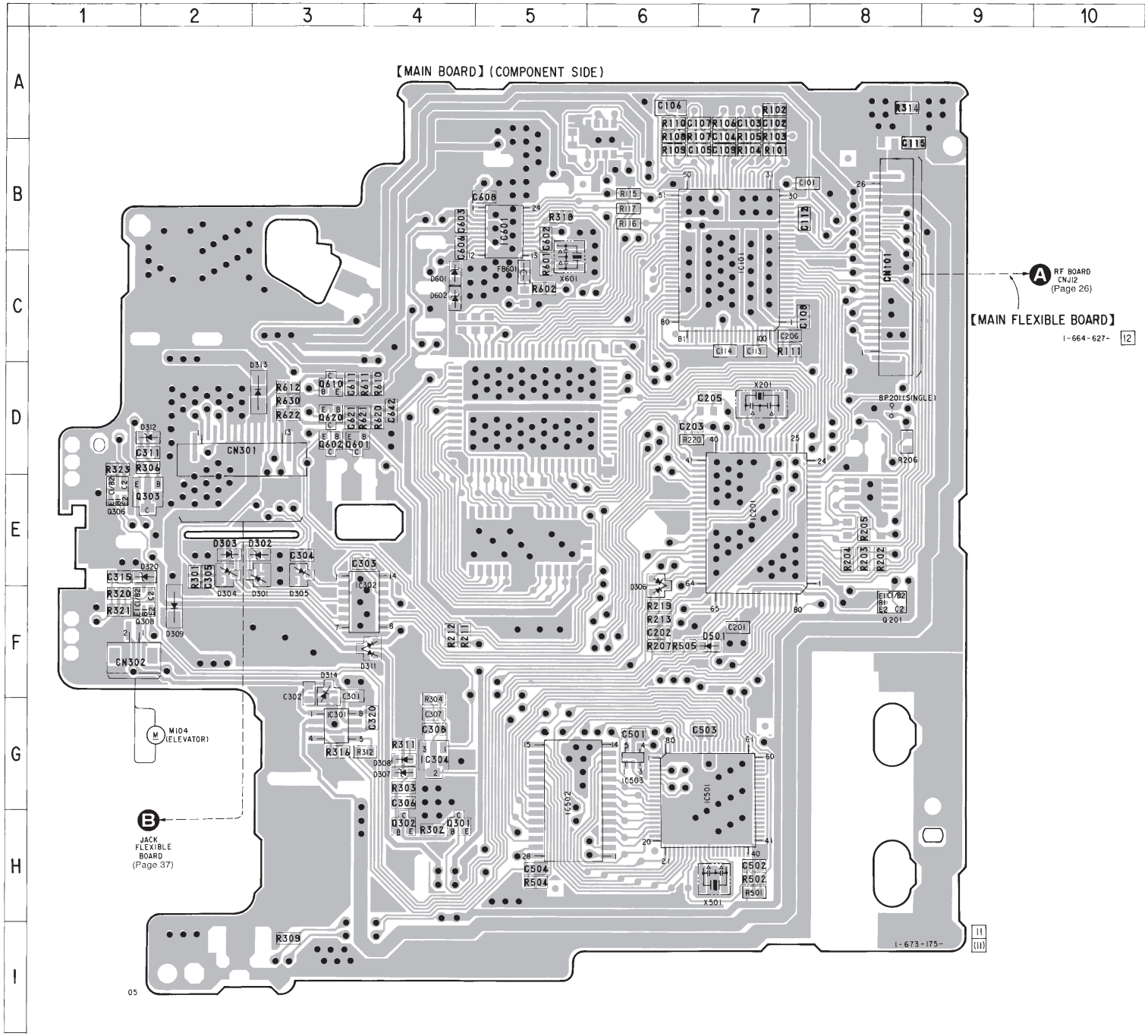


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

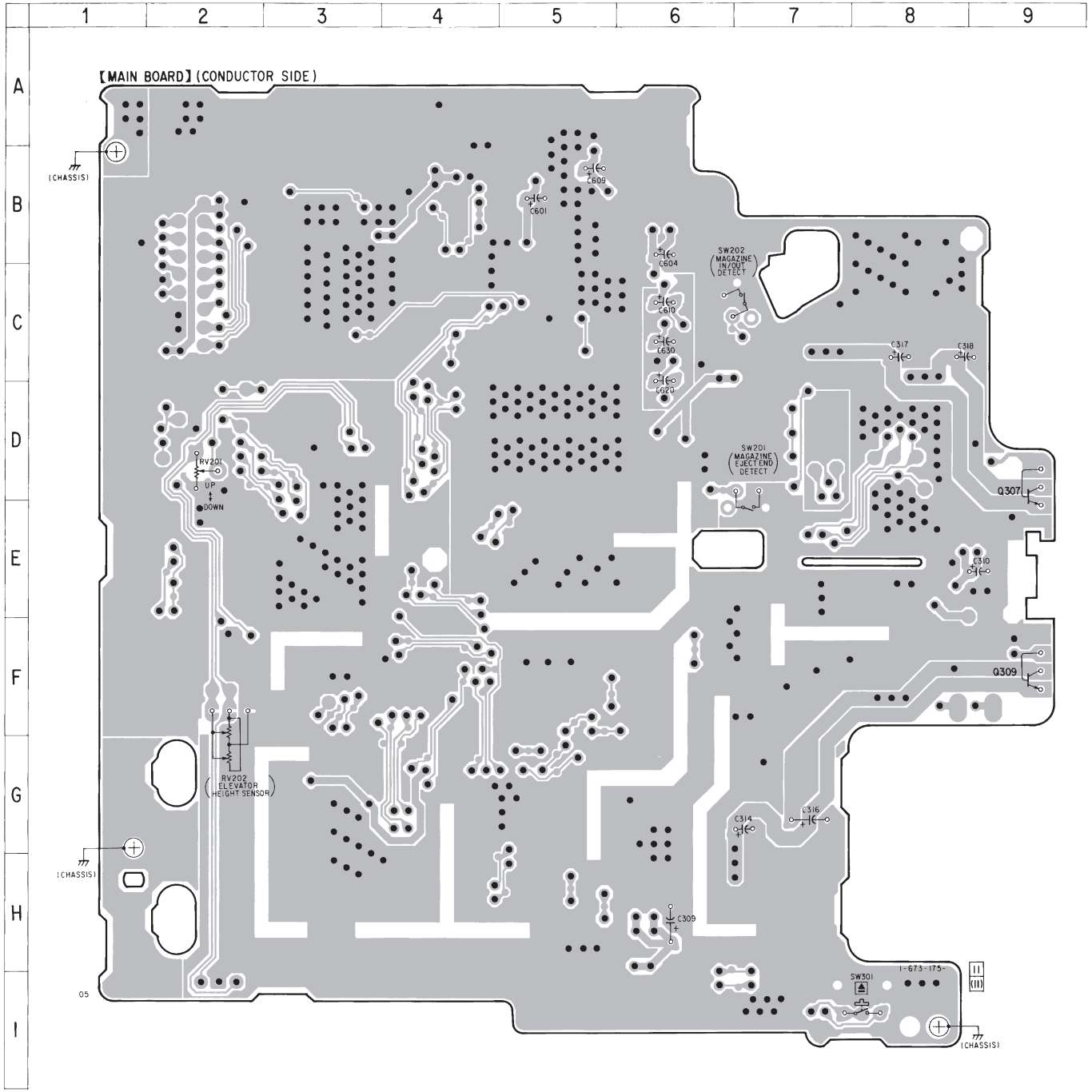
7-6. PRINTED WIRING BOARD – MAIN Board (Component Side) –

- **Semiconductor Location (Component Side)**

Ref. No.	Location
D301	E-3
D302	E-3
D303	E-2
D304	E-2
D305	E-3
D306	F-6
D307	G-4
D308	G-4
D309	F-2
D311	F-4
D312	D-2
D313	D-3
D314	F-3
D320	E-2
D501	F-7
D601	C-4
D602	C-4
IC101	C-7
IC201	E-7
IC301	G-3
IC302	F-4
IC304	G-4
IC501	G-7
IC502	G-5
IC503	G-6
IC601	B-5
Q201	F-8
Q301	H-4
Q302	H-4
Q303	E-2
Q306	E-1
Q308	F-2
Q601	D-3
Q602	D-3
Q610	D-3
Q620	D-3



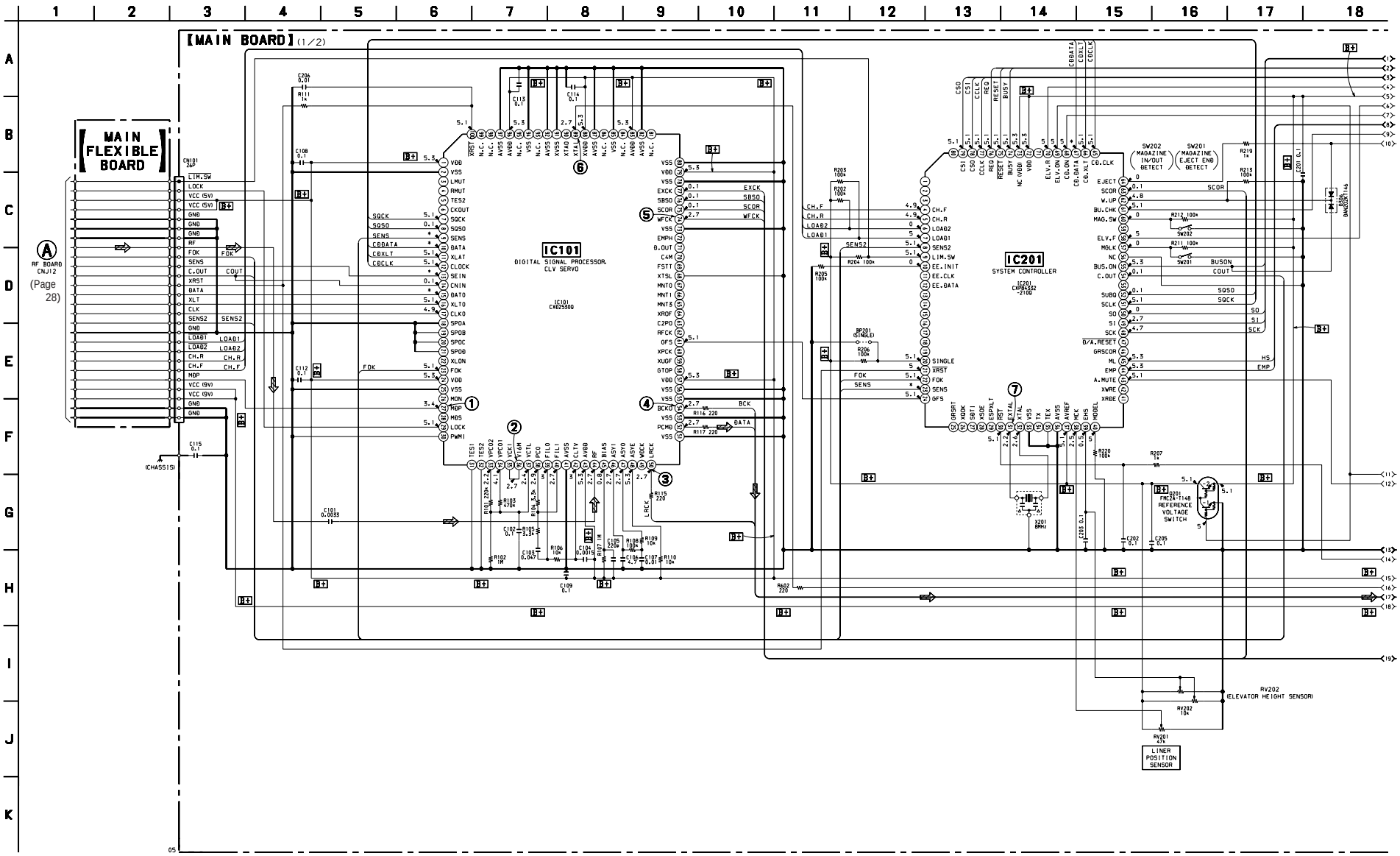
7-7. PRINTED WIRING BOARD – MAIN Board (Conductor Side) –



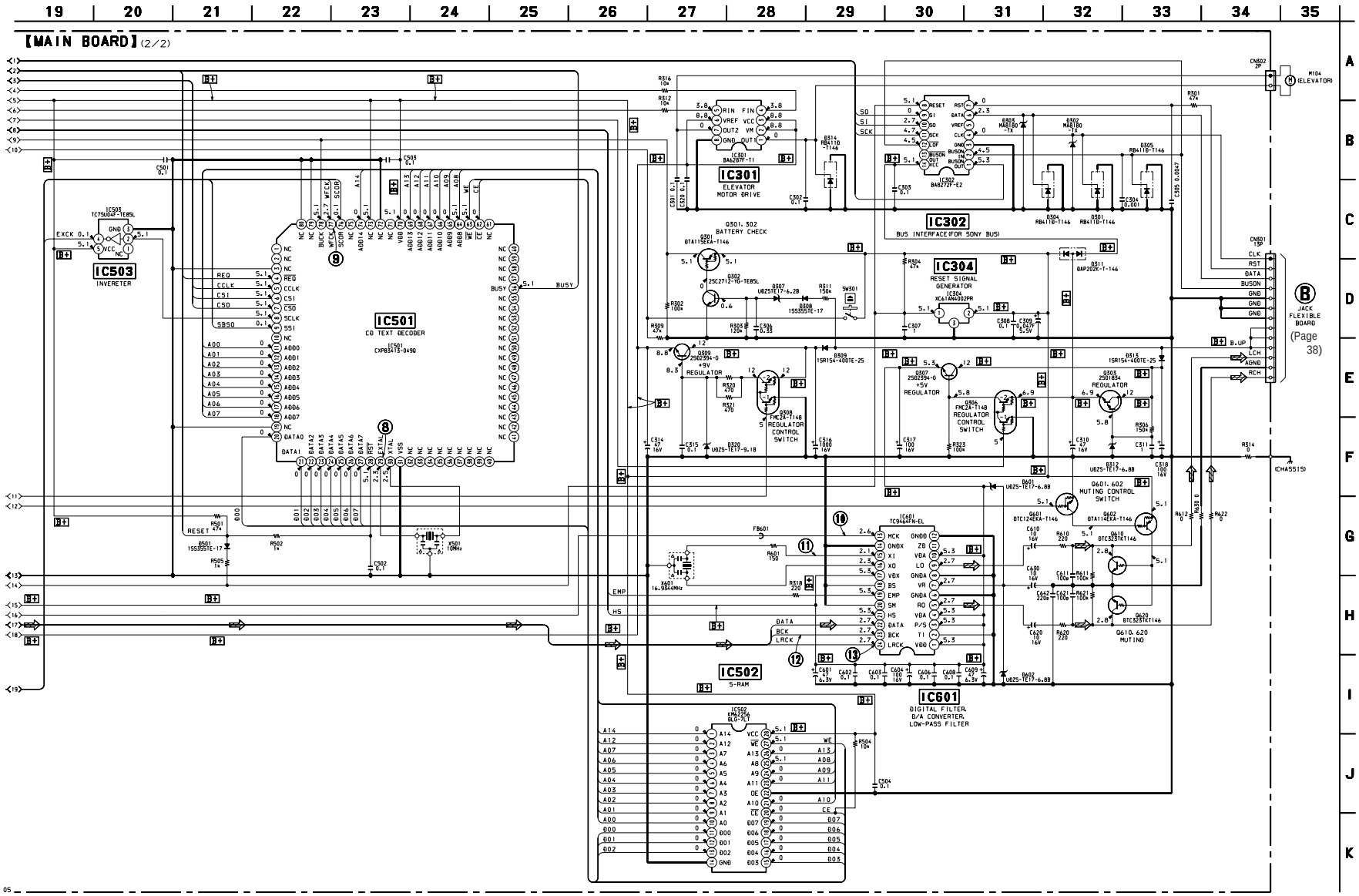
- **Semiconductor Location (Conductor Side)**

Ref. No.	Location
Q307	D-9
Q309	F-9

7-8. SCHEMATIC DIAGRAM – MAIN Board (1/2) – **• See page 39 for Waveforms. • See page 42 for IC Block Diagrams.**

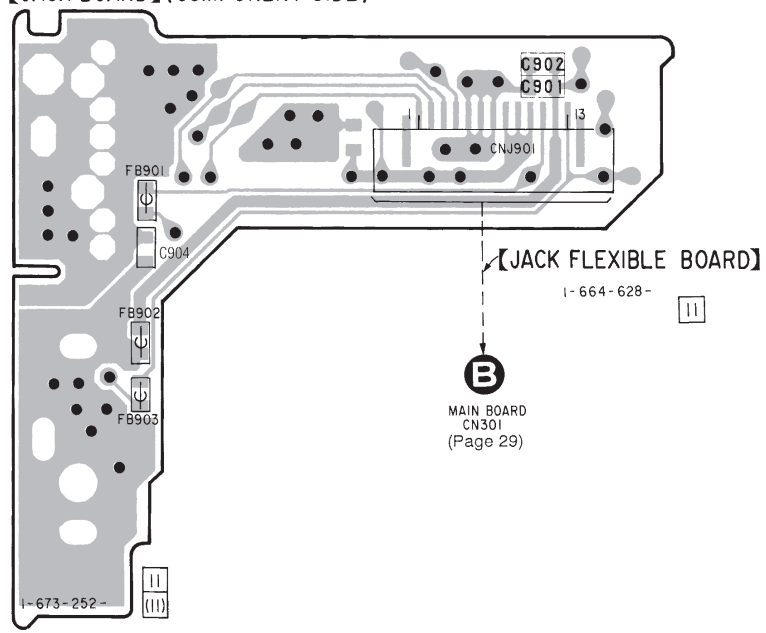


7-9. SCHEMATIC DIAGRAM – MAIN Board (2/2) – • See page 40 for Waveforms. • See page 43 for IC Block Diagrams.

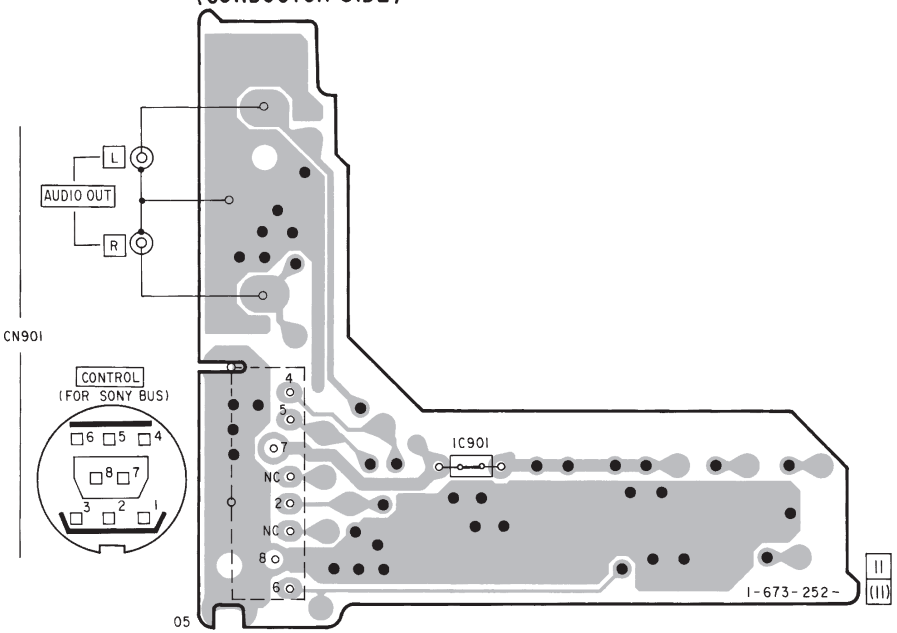


7-10. PRINTED WIRING BOARD – JACK Board –

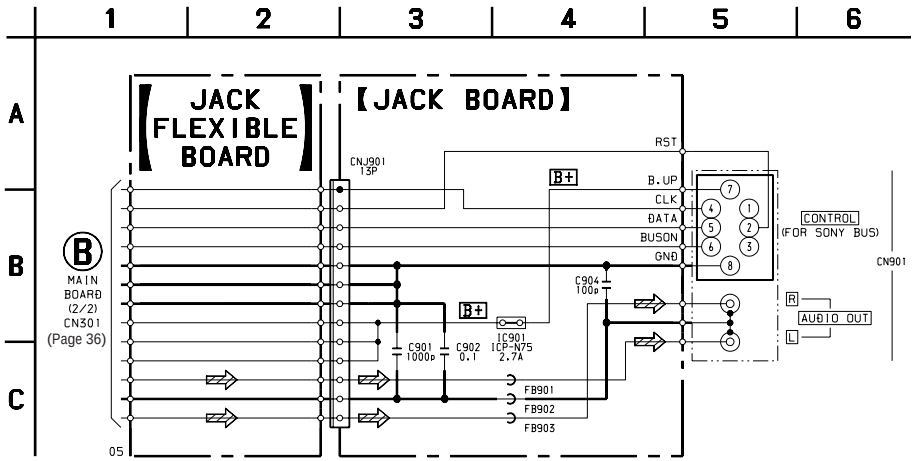
【JACK BOARD】(COMPONENT SIDE)



【JACK BOARD】
(CONDUCTOR SIDE)



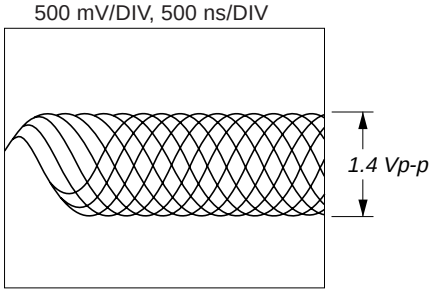
7-11. SCHEMATIC DIAGRAM – JACK Board –



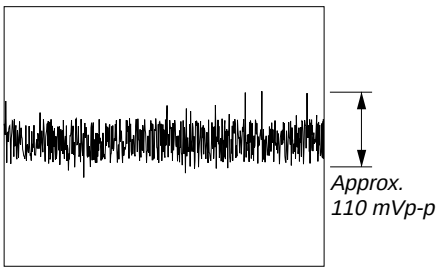
• **Waveforms**

– RF Board –

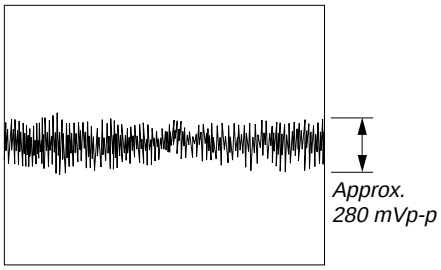
❶ IC11 ㉝ (RF O)
500 mV/DIV, 500 ns/DIV



❷ IC11 ② (FEI)
50 mV/DIV, 1 µs/DIV

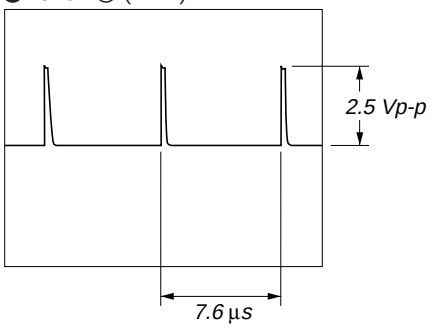


❸ IC11 ㊼ (TEI)
200 mV/DIV, 500 µs/DIV

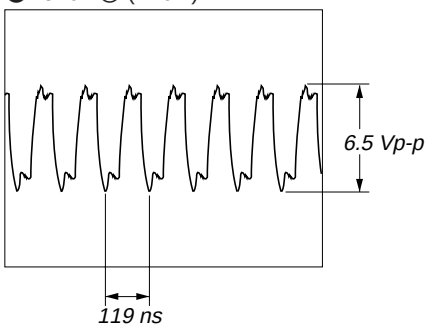


– MAIN Board (1/2) –

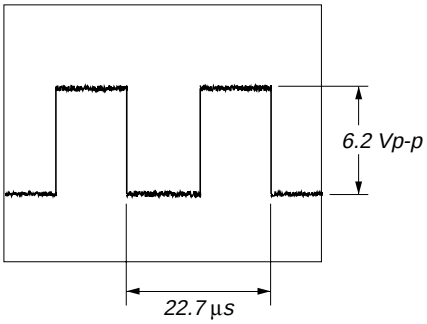
❶ IC101 ㉗ (MDP)



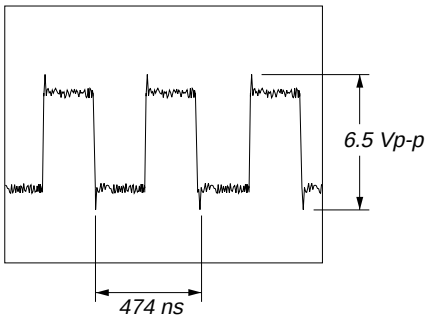
❷ IC101 ㊱ (V16M)



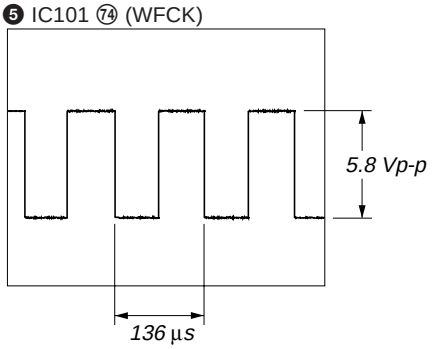
❸ IC101 ㊿ (LRCK)



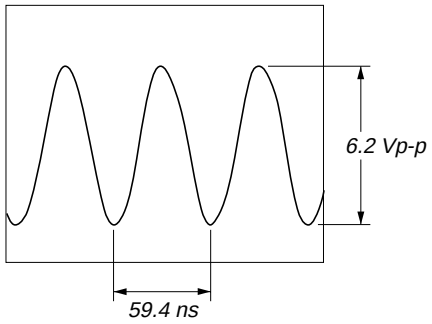
❹ IC101 ㊿④ (BCKO)



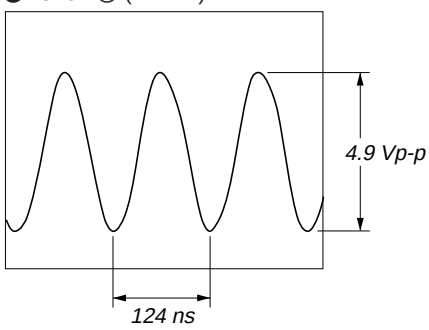
❺ IC101 ㉞ (WFCK)



❻ IC101 ㊽ (XTAI)

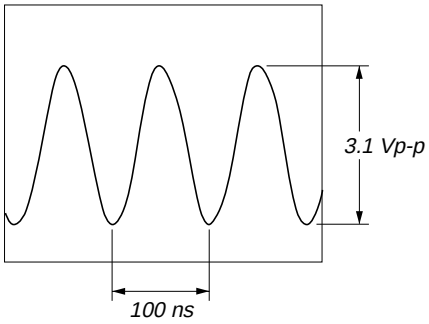


❼ IC201 ㉛ (EXTAL)

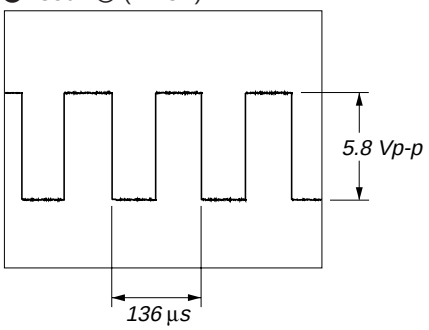


– MAIN Board (2/2) –

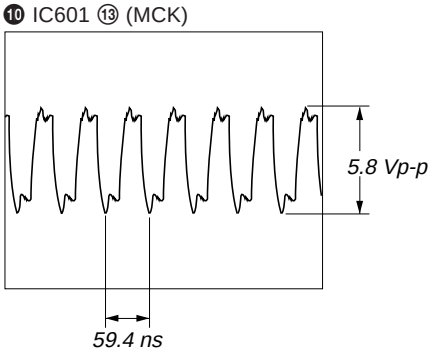
❽ IC501 ㉙ (EXTAL)



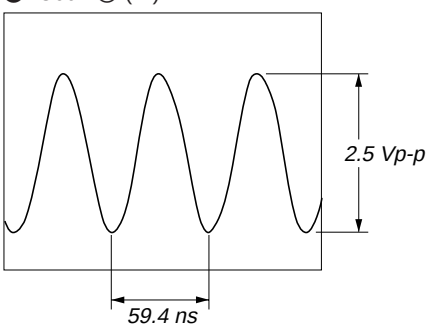
❾ IC501 ㊼ (WFCK)



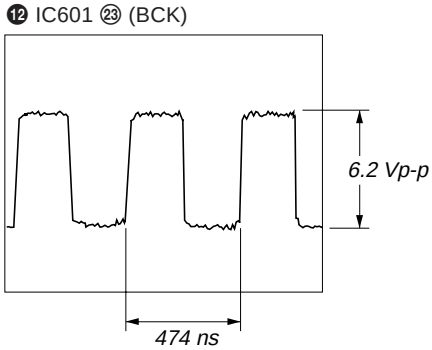
❿ IC601 ⑬ (MCK)



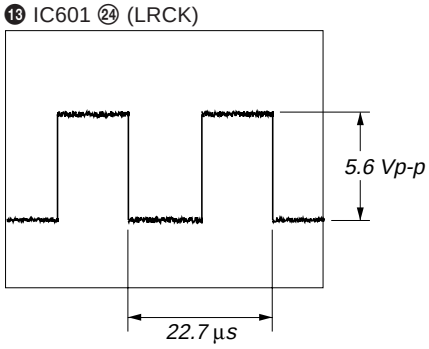
⓫ IC601 ⑮ (XI)



⓬ IC601 ㉓ (BCK)



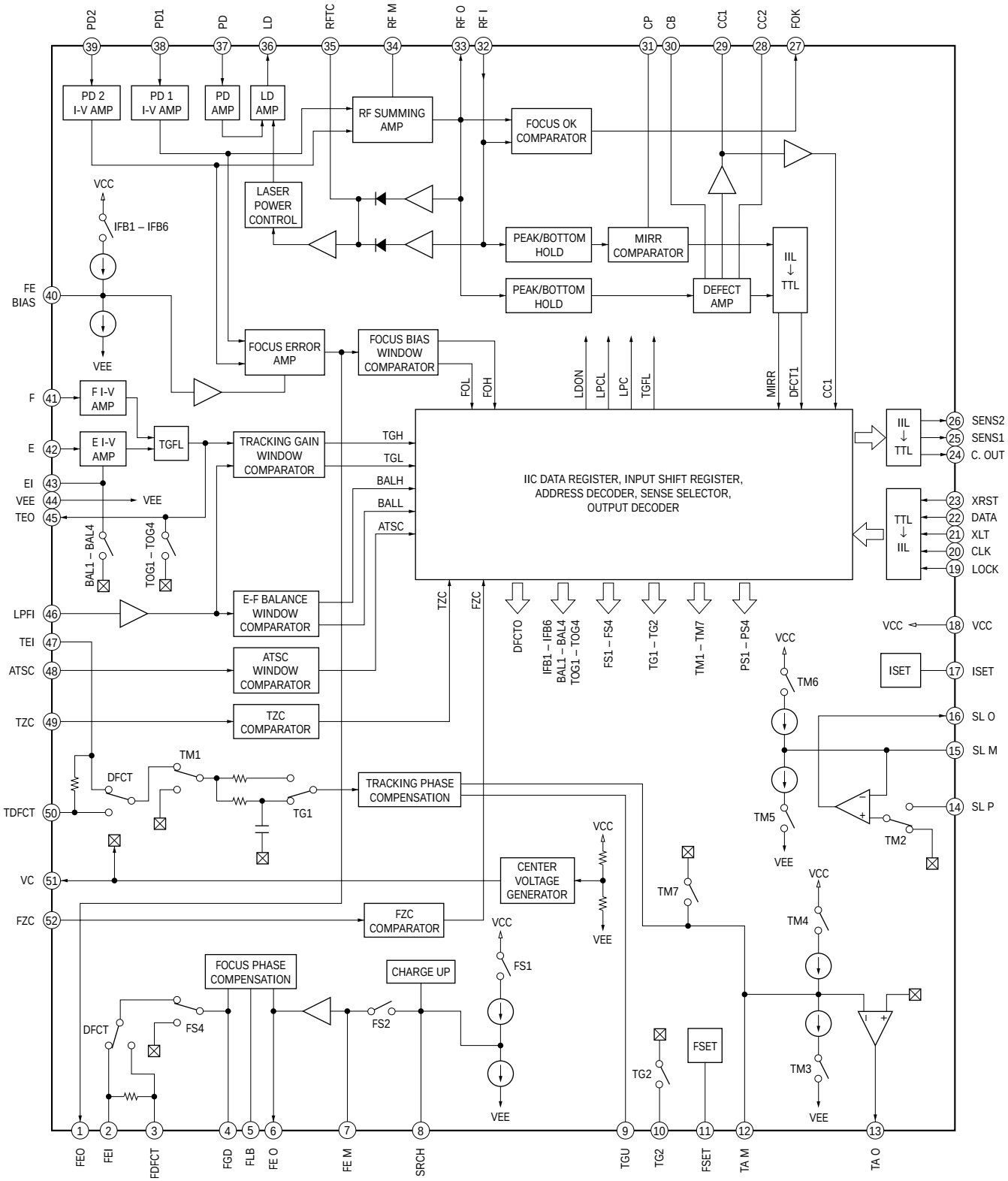
⓭ IC601 ㉔ (LRCK)



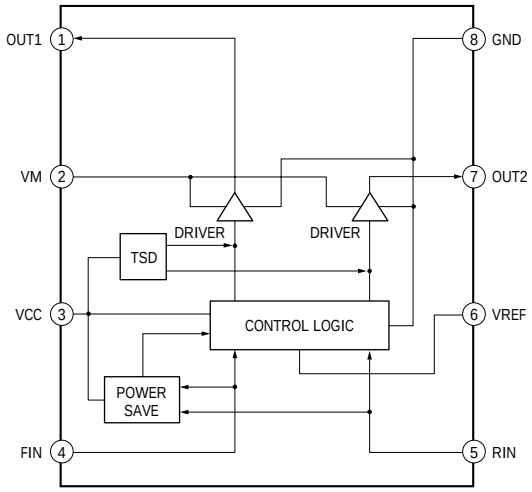
• **IC Block Diagrams**

– RF Board –

IC11 CXA1992BR

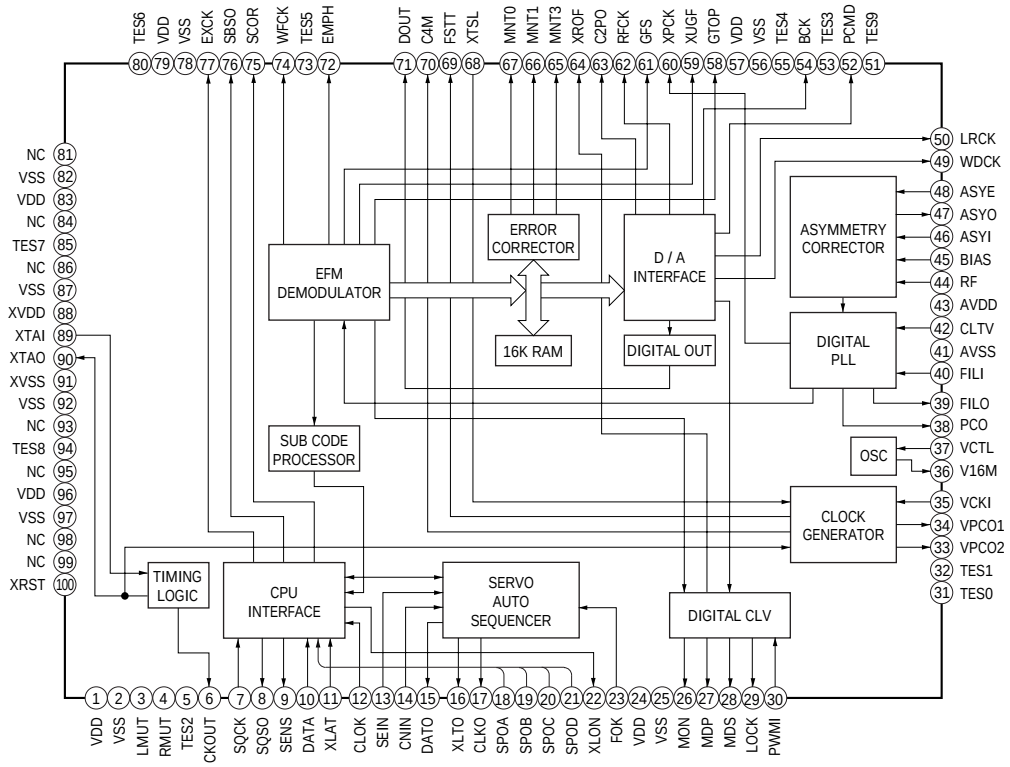


IC52 BA6287F-T1

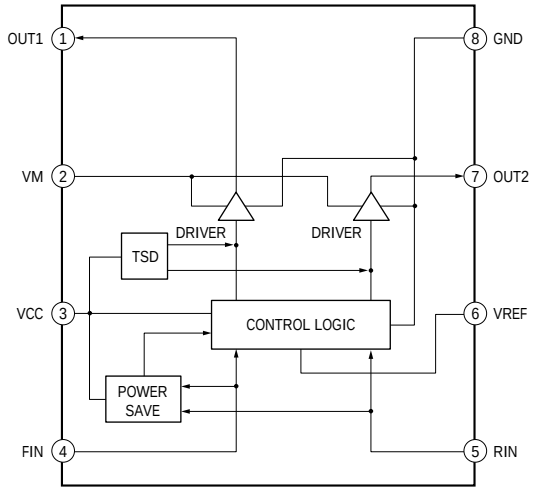


– MAIN Board –

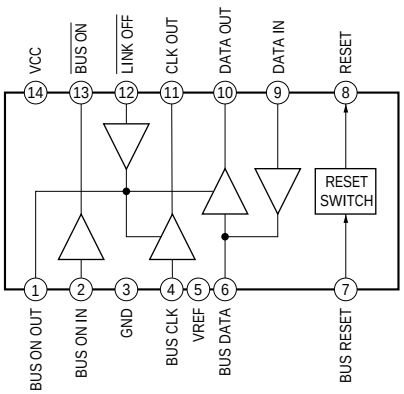
IC101 CXD2530Q



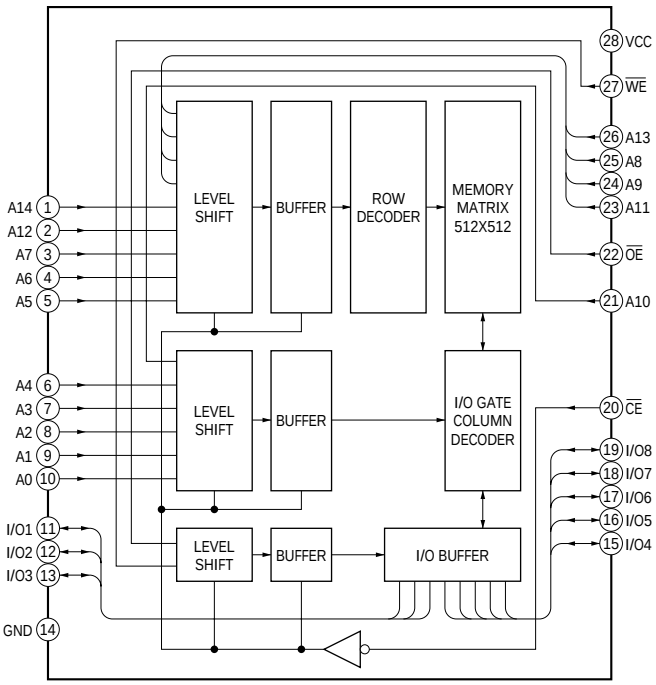
IC301 BA6287F-T1



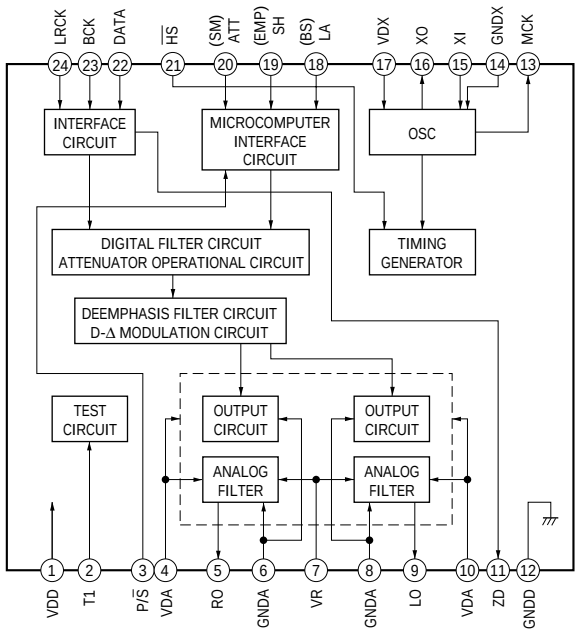
IC302 BA8272F-E2



IC502 KM62256DLG-7LT



IC601 TC9464FN-EL



7-12. IC PIN FUNCTION DESCRIPTION

• MAIN BOARD IC201 CXP84332-210Q (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Function
1 to 3	—	O	Not used (open)
4	CH.F	O	Motor drive signal (load chucking direction) output to the chucking motor drive (IC52) "L" active *1
5	CH.R	O	Motor drive signal (save direction) output to the chucking motor drive (IC52) "L" active *1
6	LOAD2	I	Chucking end detect switch (SW11) input terminal "L": When completion of the disc chucking operation
7	LOAD1	I	Save end detect switch (SW12) input terminal "L": When completion of the disc chucking operation
8	SENS2	I	Internal status signal (sense signal) input from the CXA1992BR (IC11)
9	LIM.SW	I	Sled limit in detect switch (SW1) input terminal "L": When the optical pick-up is inner position
10	EE.INIT	I	Initialize signal input for the EEPROM "H": format Fixed at "L" in this set
11	EE.CLK	O	Serial data transfer clock signal output terminal Not used (open)
12	EE.DATA	I/O	Two-way data bus with the EEPROM Not used (open)
13 to 19	—	O	Not used (open)
20	SINGLE	I	Setting terminal for the single disc/multiple discs mode "L": single mode, "H": multiple discs mode (fixed at "H")
21	$\overline{\text{XRST}}$	O	System reset signal output to the CXA1992BR (IC11) and CXD2530Q (IC101) "L": reset
22	FOK	I	Focus OK signal input from the CXA1992BR (IC11) "L": NG, "H": OK
23	SENS	I	Internal status signal (sense signal) input from the CXD2530Q (IC101)
24	GFS	I	Guard frame sync signal input from the CXD2530Q (IC101) "L": NG, "H": OK
25	GRSRT	O	Reset signal output terminal "L": reset Not used (open)
26	XQOK	O	Subcode Q OK pulse signal output terminal "L" active Not used (open)
27	SDTI	I	ESP status signal input terminal Not used (open)
28	XSOE	O	ESP status read enable signal output terminal "L" active Not used (open)
29	ESPXLT	O	ESP latch pulse signal output terminal "L" active Not used (open)
30	$\overline{\text{RST}}$	I	System reset signal input from the SONY bus interface (IC302) and reset signal generator (IC304) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
31	EXTAL	I	Main system clock input terminal (8 MHz)
32	XTAL	O	Main system clock output terminal (8 MHz)
33	VSS	—	Ground terminal
34	TX	O	Sub system clock output terminal Not used (open)
35	TEX	I	Sub system clock input terminal Not used (fixed at "L")
36	AVSS	—	Ground terminal (for A/D converter)
37	AVREF	I	Reference voltage (+5V) input terminal (for A/D converter)
38	MCK	I	Input of signal for the fine adjustment (linear position sensor adjustment; RV201) of elevator position (A/D input)
39	EHS	I	Elevator height position detect input from the RV202 (elevator height sensor) (A/D input)
40	MODEL	I	Setting terminal for the destination (fixed at "L" in this set)
41	XRDE	O	D-RAM read enable signal output terminal "L" active Not used (open)
42	XWRE	O	D-RAM write enable signal output terminal "L" active Not used (open)
43	A.MUTE	O	Audio line muting on/off control signal output terminal "H": muting on
44	EMP	O	Emphasis mode output to the D/A converter (IC601) "H": emphasis on
45	ML	O	Fast speed dubbing control signal output to the D/A converter (IC601) "L": fast speed
46	GRSCOR	I	Subcode sync (S0+S1) detection signal input terminal Not used (open)

Pin No.	Pin Name	I/O	Function
47	$\overline{\text{D/A.RESET}}$	O	Reset signal output terminal "L": reset Not used (open)
48	SCK	I	Serial data transfer clock signal input from the SONY bus interface (IC302)
49	SI	I	Serial data input from the SONY bus interface (IC302)
50	SO	O	Serial data output to the SONY bus interface (IC302)
51	SCLK	O	Subcode Q data reading clock signal output to the CXD2530Q (IC101)
52	SUBQ	I	Subcode Q data input from the CXD2530Q (IC101)
53	—	O	Not used (open)
54	C.OUT	I	Track number count signal input from the CXA1992BR (IC11)
55	BUS.ON	I	Bus on/off control signal input from the SONY bus interface (IC302) "H": bus on
56	NC	I	Not used (fixed at "L")
57	MGLK	I	Magazine eject operation completion detect switch (SW201) input "L": eject completed
58	ELV.F	O	Motor drive signal (elevator up direction) output to the elevator motor drive (IC301) "L" active *2
59	—	O	Not used (open)
60	MAG.SW	I	Magazine in/out detect switch (SW202) input "L": magazine detected
61	BU.CHK	I	Battery detection signal input terminal "H": battery on
62	W.UP	I	Bus on or eject switch (SW301) input terminal "H": bus on or eject switch pushing
63	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD2530Q (IC101)
64	EJECT	I	Eject switch (SW301) input terminal "H" active
65	CD.CLK	O	Serial data transfer clock signal output to the CXD2530Q (IC101)
66	CD.XLT	O	Serial data latch pulse signal output to the CXD2530Q (IC101)
67	CD.DATA	O	Serial data output to the CXD2530Q (IC101)
68	CD.ON	O	D/A converter and servo section power supply on/off control signal output "H": power on
69	ELV.ON	O	Mechanism deck section power supply on/off control signal output "H": power on
70	ELV.R	O	Motor drive signal (elevator down direction) output to the elevator motor drive (IC301) "L" active *2
71	—	O	Not used (open)
72	VDD	—	Power supply terminal (+5V)
73	NC (VDD)	—	Connected to the power supply (+5V)
74	BUSY	I	Busy monitor input from the CD text decoder (IC501) "L": busy status
75	$\overline{\text{RESET}}$	O	Reset signal output to the CD text decoder (IC501) "L": reset
76	REQ	I	Data request signal input from the CD text decoder (IC501) "L" active
77	CCCLK	O	Command clock signal output to the CD text decoder (IC501)
78	CSO	O	Command data output to the CD text decoder (IC501)
79	CSI	I	Command data input from the CD text decoder (IC501)
80	—	I	Not used (open)

*1 chucking motor (M103) control

Mode / Terminal	STOP	LOAD CHUCKING	SAVE	BRAKE
CH.F (pin ④)	"H"	"L"	"H"	"L"
CH.R (pin ⑤)	"H"	"H"	"L"	"L"

*2 elevator motor (M104) control

Mode / Terminal	STOP	ELEVATOR UP	ELEVATOR DOWN	BRAKE
ELV.F (pin ㊽)	"H"	"L"	"H"	"L"
ELV.R (pin ㊿)	"H"	"H"	"L"	"L"

• **MAIN BOARD IC501 CXP83413-049Q (CD TEXT DECODER)**

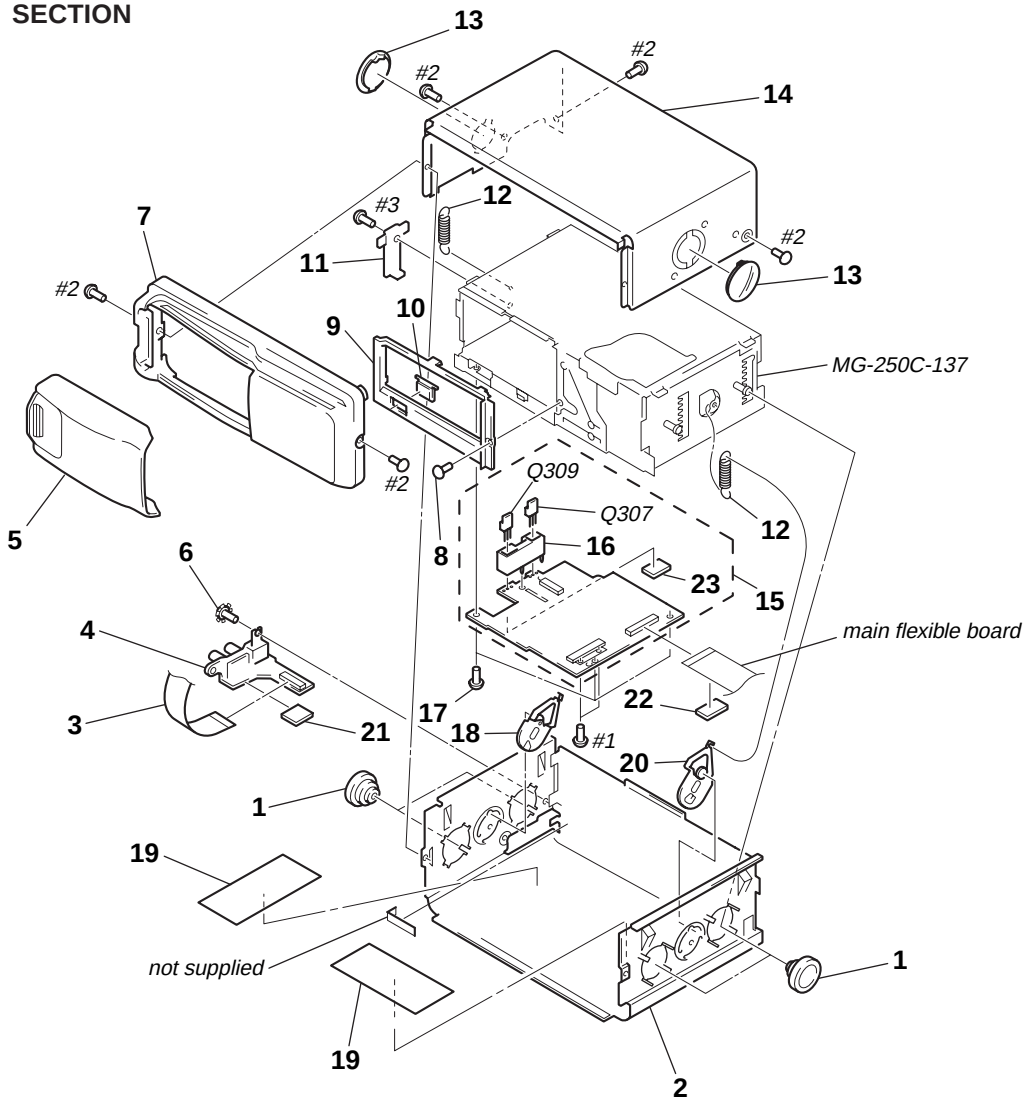
Pin No.	Pin Name	I/O	Function
1, 2	NC	O	Not used (open)
3	NC	I	Not used (fixed at "L")
4	$\overline{\text{REQ}}$	O	Request signal output to the system controller (IC201) "L" active
5	CCLK	I	Serial data transfer clock signal input from the system controller (IC201)
6	CSI	I	Serial data input from the system controller (IC201)
7	$\overline{\text{CSO}}$	O	Serial data output to the system controller (IC201)
8	SCLK	O	Clock signal output for subcode data reading to the CXD2530Q (IC101)
9	SSI	I	Subcode data input from the CXD2530Q (IC101)
10	NC	O	Not used (open)
11 to 18	ADD0 to ADD7	O	Address signal output to the S-RAM (IC502)
19	NC	I	Not used (fixed at "L")
20 to 27	DATA0 to DATA7	I/O	Two-way data bus with the S-RAM (IC502)
28	$\overline{\text{RST}}$	I	System reset signal input from the system controller (IC201), SONY bus interface (IC302) and reset signal generator (IC304) "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
29	EXTAL	I	System clock input terminal (10 MHz)
30	XTAL	O	System clock output terminal (10 MHz)
31	VSS	—	Ground terminal
32 to 55	NC	O	Not used (open)
56	BUSY	O	Busy signal output to the system controller (IC201) "L": busy status
57 to 61	NC	O	Not used (open)
62	$\overline{\text{CE}}$	O	Chip enable signal output to the S-RAM (IC502) "L" active
63	$\overline{\text{WE}}$	O	Data write enable signal output to the S-RAM (IC502) "L" active
64 to 69	ADD8 to ADD13	O	Address signal output to the S-RAM (IC502)
70	VDD	—	Power supply terminal (+5V)
71	NC	O	Not used (open)
72	NC	I	Not used (fixed at "L")
73	NC	I	Not used (fixed at "H")
74	ADD14	O	Address signal output to the S-RAM (IC502)
75	NC	O	Not used (open)
76	SCOR	I	Subcode sync (S0+S1) detection signal input from the CXD2530Q (IC101)
77	WFCK	I	Write frame clock (7.35 kHz) signal input from the CXD2530Q (IC101)
78	BUCK	I	Backup power supply detection signal input terminal (used also to reset standby)
79, 80	NC	I	Not used (fixed at "L")

SECTION 8
EXPLODED VIEWS

NOTE:
- -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
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of the electrical parts list.

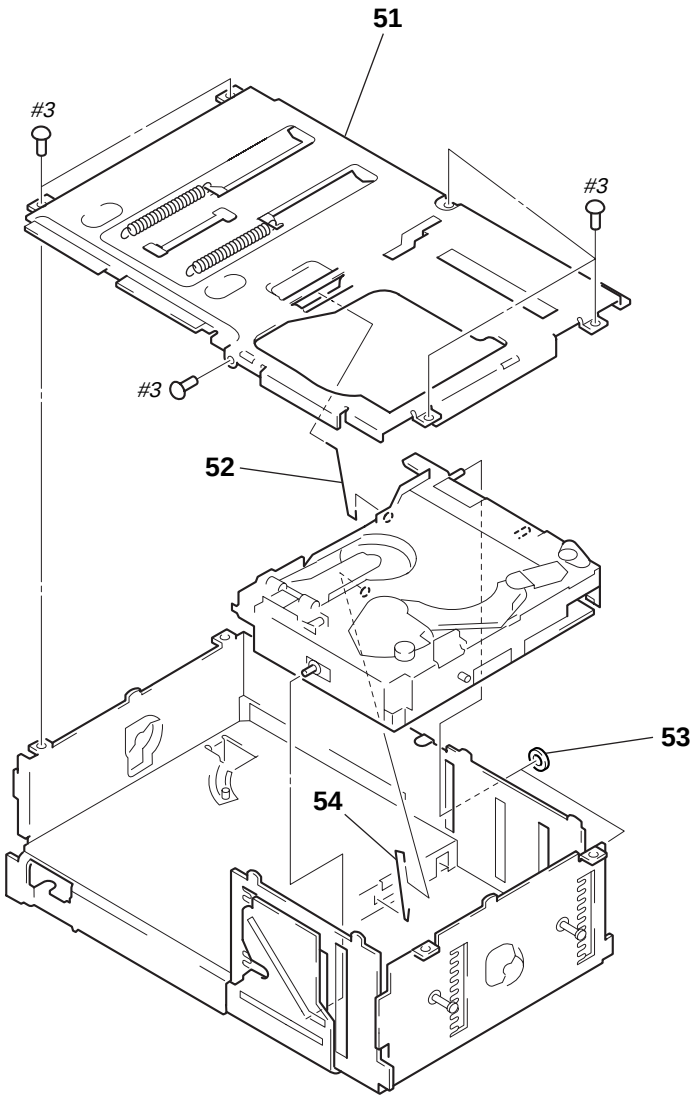
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) COVER SECTION



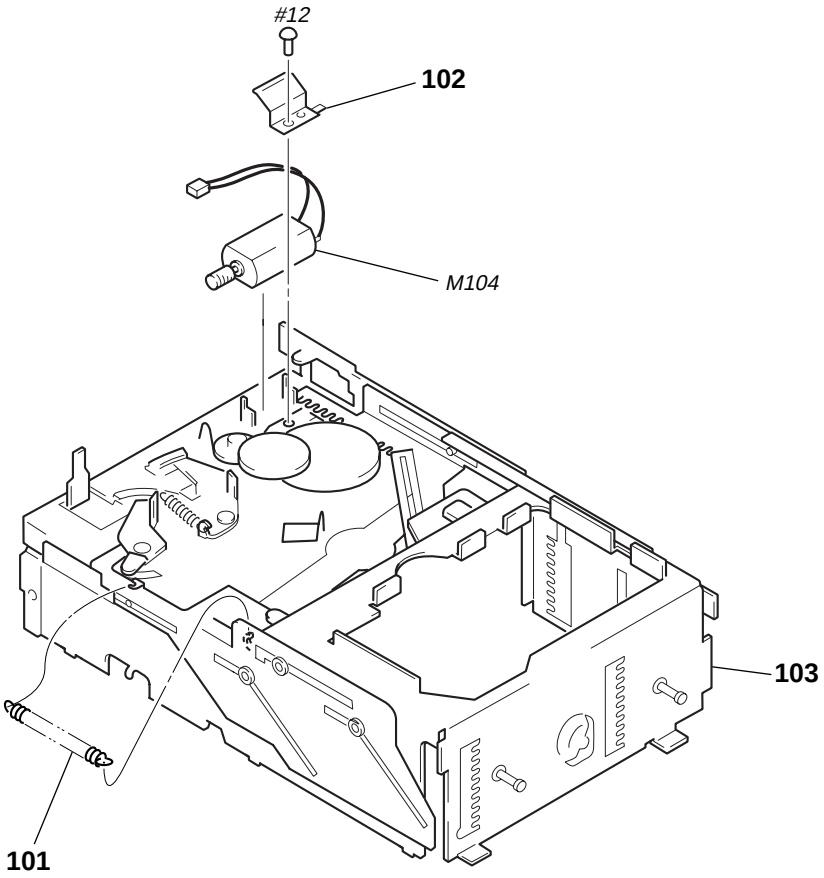
Ref. No.	Part No.	Description	Remark
1	3-010-104-01	DAMPER (250)	
* 2	3-010-097-01	COVER (LOWER T)	
3	1-664-628-11	JACK FLEXIBLE BOARD	
* 4	1-673-252-11	JACK BOARD	
5	X-3376-772-1	DOOR (616T) ASSY	
6	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
7	3-022-002-52	PANEL (T), FRONT	
8	3-012-388-01	SCREW (M2X3)	
9	3-022-006-01	ESCUTCHEON (T)	
10	3-022-007-01	BUTTON (EJT) (⏏)	
* 11	3-022-012-01	HEAT SINK (T)	
12	3-010-103-01	SPRING (FL), TENSION	
13	3-010-101-01	LEVER (FLT)	
* 14	3-010-096-01	COVER (UPPER T)	
* 15	A-3317-431-A	MAIN BOARD, COMPLETE	
* 16	3-032-997-01	HOLDER (TR4)	
17	3-935-636-11	SCREW (FP)	
18	X-3375-357-1	ARM (FLT) ASSY	
* 19	3-013-658-01	SHEET (FJT), PROTECTION	
20	X-3375-360-1	ARM (FRT) ASSY	
* 21	3-024-065-01	CUSHION (EJECT)	
22	3-024-067-01	CUSHION (T), BATTERY	
23	3-028-802-01	SPACER (MOUNT 30)	
Q307	8-729-019-00	TRANSISTOR 2SD2394-G	
Q309	8-729-019-00	TRANSISTOR 2SD2394-G	

(2) MECHANISM DECK SECTION-1 (MG-250C-137)



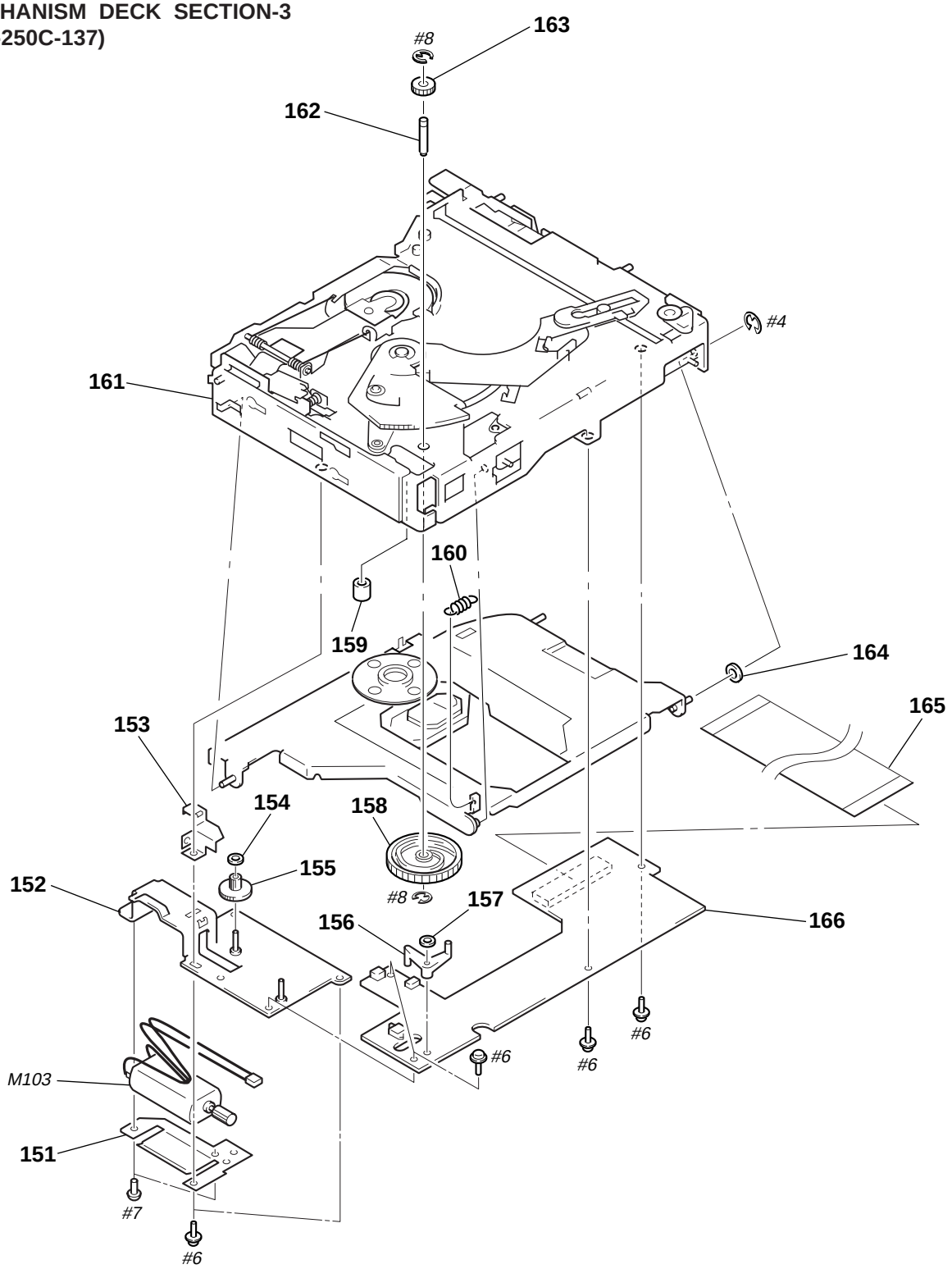
Ref. No.	Part No.	Description	Remark
51	X-3375-497-1	CHASSIS (U) SUB ASSY	
52	3-024-161-01	SPRING (SUT)	
53	4-965-759-01	WASHER, POLYETHYLENE	
54	3-011-997-01	SPRING (STOPPER. LOWER)	

(3) MECHANISM DECK SECTION-2 (MG-250C-137)



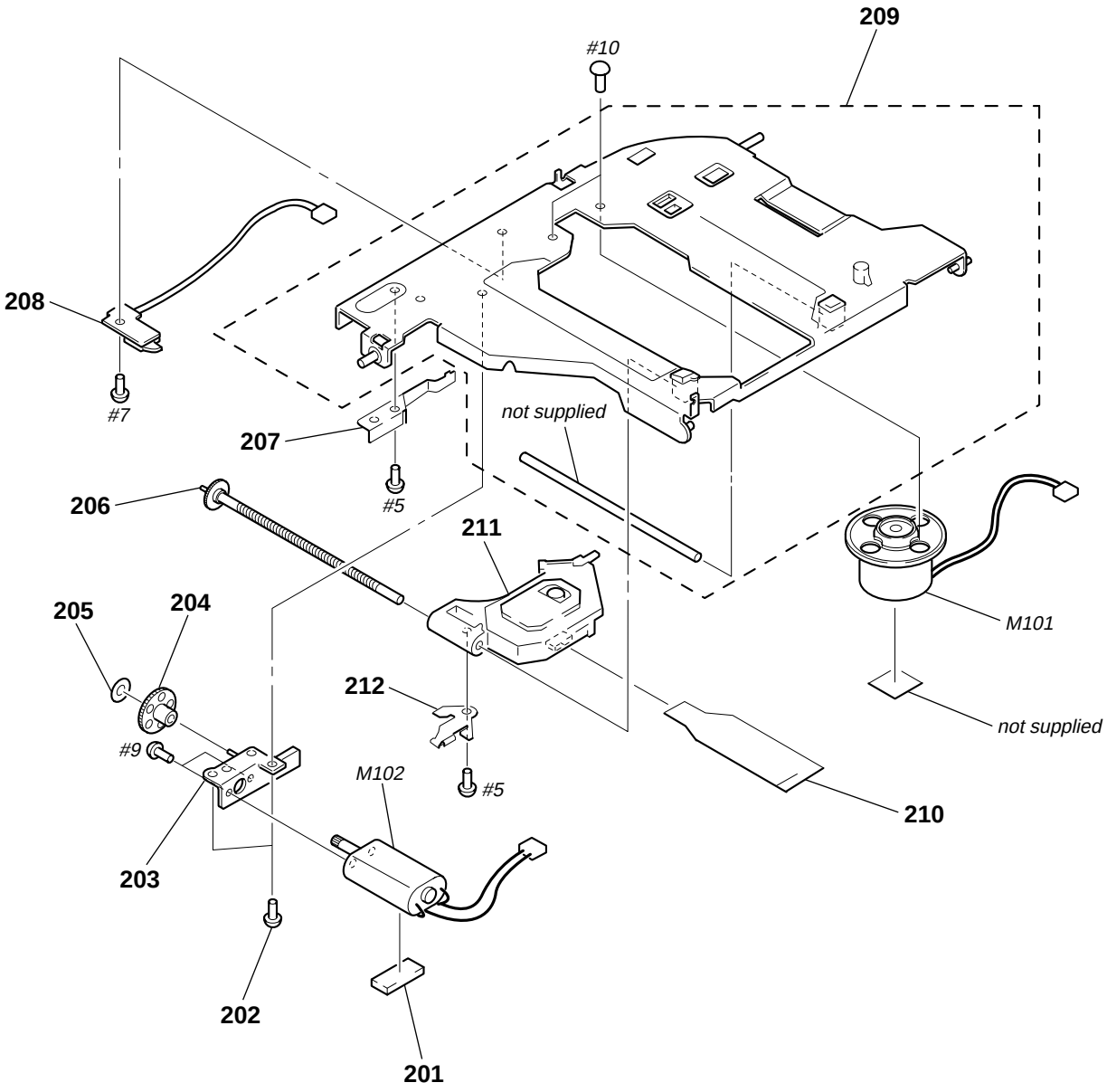
Ref. No.	Part No.	Description	Remark
101	3-024-170-01	SPRING (SB), TENSION	
* 102	3-024-172-01	BRACKET (EVM)	
103	X-3375-498-4	CHASSIS (D) SUB ASSY	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	

(4) MECHANISM DECK SECTION-3 (MG-250C-137)



Ref. No.	Part No.	Description	Remark
* 151	3-024-150-01	RETAINER (CHM)	
* 152	X-3375-445-1	BRACKET (CHM) ASSY	
153	3-010-270-01	COVER (CHM)	
154	3-321-813-01	WASHER, COTTER POLYETHYLENE	
155	3-017-139-01	GEAR (WORM LOAD A)	
156	3-010-255-01	ARM (LSW)	
157	3-573-936-00	STOPPER, REEL	
158	X-3373-552-1	GEAR (LOAD 1) ASSY	
159	3-010-252-01	ROLLER (CRE)	
160	3-010-268-01	SPRING (DH), TENSION	
* 161	A-3290-194-F	CHASSIS (EVY) (MAIN) ASSY	
162	3-010-254-01	SHAFT (ROTARY PREVENTION C)	
163	3-010-253-01	GEAR (LOMINI)	
164	3-701-438-11	WASHER, 2.5	
165	1-664-627-11	MAIN FLEXIBLE BOARD	
* 166	A-3313-586-A	RF BOARD, COMPLETE	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	

(5) MECHANISM DECK SECTION-4 (MG-250C-137)



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
201	3-911-215-02	SHEET (LEAD RETAINER)	
202	3-920-362-01	SCREW (ESCUTCHEON)	
203	X-3373-229-1	BASE (SLED) ASSY	
204	3-010-258-01	GEAR (SLED MID)	
205	3-573-936-00	STOPPER, REEL	
206	A-3291-958-A	SHAFT (SLED) ASSY	
207	3-010-263-01	DETENT (SHAFT THRUST)	

Ref. No.	Part No.	Description	Remark
* 208	1-664-104-11	SW BOARD	
* 209	A-3301-077-A	BASE (OPT) (J) ASSY	
210	1-664-626-11	OP FLEXIBLE BOARD	
⚠211	8-820-010-05	OPTICAL PICK-UP KSS-521A/J2RP	
212	3-010-262-01	DETENT (SLED)	
M101	A-3291-956-A	MOTOR SUB ASSY, SPINDLE	
M102	A-3291-955-A	MOTOR SUB ASSY, SLED	

JACK **MAIN**

SECTION 9
ELECTRICAL PARTS LIST

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. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ 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
*	1-673-252-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C901	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C904	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN901	1-779-077-31	PLUG, CONNECTOR (CONTROL, AUDIO OUT)			
CNJ901	1-778-775-21	CONNECTOR, FPC 13P			
		< FERRITE BEAD >			
FB901	1-500-445-21	FERRITE	0uH		
FB902	1-500-445-21	FERRITE	0uH		
FB903	1-500-445-21	FERRITE	0uH		
		< IC LINK >			
IC901	1-532-686-21	LINK, IC			
**********					
*	A-3317-431-A	MAIN BOARD, COMPLETE			
		**********			
	3-028-802-01	SPACER (MOUNT 30)			
*	3-032-997-01	HOLDER (TR4)			
		< CAPACITOR >			
C101	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C104	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C105	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C106	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C107	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C202	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V

Ref. No.	Part No.	Description			Remark
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C206	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C306	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C307	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C310	1-124-589-11	ELECT	47uF	20%	16V
C311	1-164-346-11	CERAMIC CHIP	1uF		16V
C314	1-124-589-11	ELECT	47uF	20%	16V
C315	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C316	1-115-466-00	ELECT	1000uF	20%	16V
C317	1-126-382-11	ELECT	100uF	20%	16V
C318	1-126-382-11	ELECT	100uF	20%	16V
C320	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C501	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C502	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C601	1-126-513-11	ELECT	47uF	20%	6.3V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C604	1-126-382-11	ELECT	100uF	20%	6.3V
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C609	1-126-513-11	ELECT	47uF	20%	6.3V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C621	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C630	1-126-157-11	ELECT	10uF	20%	16V
C642	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
		< CONNECTOR >			
CN101	1-770-351-11	CONNECTOR, FPC 26P			
CN301	1-770-350-21	CONNECTOR, FPC 13P			
* CN302	1-580-055-21	PIN, CONNECTOR (SMD) 2P			

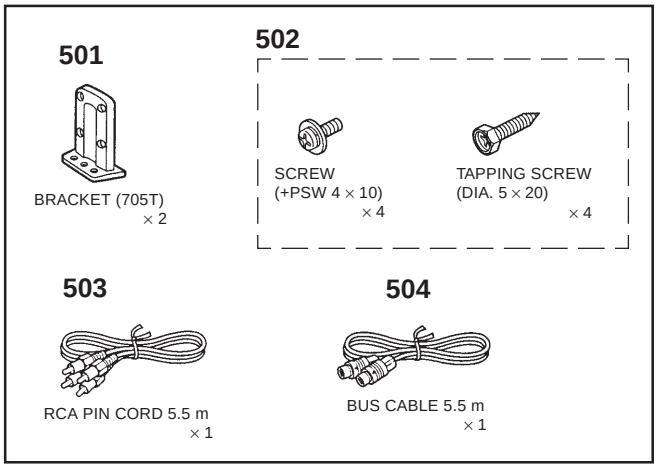
Ref. No.	Part No.	Description	Remark
		< DIODE >	
D301	8-719-975-40	DIODE RB411D-T146	
D302	8-719-017-94	DIODE MA8180-TX	
D303	8-719-017-94	DIODE MA8180-TX	
D304	8-719-975-40	DIODE RB411D-T146	
D305	8-719-975-40	DIODE RB411D-T146	
D306	8-719-914-43	DIODE DAN202K-T-146	
D307	8-719-069-56	DIODE UDZS-TE17-6.2B	
D308	8-719-988-61	DIODE 1SS355TE-17	
D309	8-719-053-18	DIODE 1SR154-400TE-25	
D311	8-719-914-44	DIODE DAP202K-T-146	
D312	8-719-069-57	DIODE UDZS-TE17-6.8B	
D313	8-719-053-18	DIODE 1SR154-400TE-25	
D314	8-719-975-40	DIODE RB411D-T146	
D320	8-719-069-60	DIODE UDZS-TE17-9.1B	
D501	8-719-988-61	DIODE 1SS355TE-17	
D601	8-719-069-57	DIODE UDZS-TE17-6.8B	
D602	8-719-069-57	DIODE UDZS-TE17-6.8B	
		< FERRITE BEAD >	
FB601	1-500-445-21	FERRITE 0uH	
		< IC >	
IC101	8-752-384-15	IC CXD2530Q	
IC201	8-752-903-71	IC CXP84332-210Q	
IC301	8-759-040-83	IC BA6287F-T1	
IC302	8-759-444-86	IC BA8272F-E2	
IC304	8-759-363-81	IC XC61AN4002PR	
IC501	8-752-904-83	IC CXP83413-049Q	
IC502	8-759-497-29	IC KM62256DLG-7LT	
IC503	8-759-243-19	IC TC7SU04F-TE85L	
IC601	8-759-494-78	IC TC9464FN-EL	
		< TRANSISTOR >	
Q201	8-729-047-76	TRANSISTOR FMC2A-T148	
Q301	8-729-028-62	TRANSISTOR DTA115EKA-T146	
Q302	8-729-230-49	TRANSISTOR 2SC2712-YG-TE85L	
Q303	8-729-921-12	TRANSISTOR 2SD1834-T101	
Q306	8-729-047-76	TRANSISTOR FMC2A-T148	
Q307	8-729-019-00	TRANSISTOR 2SD2394-G	
Q308	8-729-047-76	TRANSISTOR FMC2A-T148	
Q309	8-729-019-00	TRANSISTOR 2SD2394-G	
Q601	8-729-901-00	TRANSISTOR DTC124EKA-T146	
Q602	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q610	8-729-015-39	TRANSISTOR DTC323TKT146	
Q620	8-729-015-39	TRANSISTOR DTC323TKT146	
		< RESISTOR >	
R101	1-216-105-00	RES, CHIP 220K 5% 1/10W	
R102	1-216-121-00	RES, CHIP 1M 5% 1/10W	
R103	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R104	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R105	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R106	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R107	1-216-121-00	RES, CHIP 1M 5% 1/10W	
R108	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R109	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R110	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R111	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R115	1-216-033-00	METAL CHIP 220 5% 1/10W	
R116	1-216-033-00	METAL CHIP 220 5% 1/10W	
R117	1-216-033-00	METAL CHIP 220 5% 1/10W	
R202	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R203	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R204	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R205	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R206	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R207	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R211	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R212	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R213	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R219	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R220	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R301	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R302	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R303	1-216-099-00	METAL CHIP 120K 5% 1/10W	
R304	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R306	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R309	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R311	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R312	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R314	1-216-295-00	SHORT 0	
R316	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R318	1-216-033-00	METAL CHIP 220 5% 1/10W	
R320	1-216-041-00	METAL CHIP 470 5% 1/10W	
R321	1-216-041-00	METAL CHIP 470 5% 1/10W	
R323	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R501	1-216-089-00	RES, CHIP 47K 5% 1/10W	
R502	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R504	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R505	1-216-049-11	RES, CHIP 1K 5% 1/10W	
R601	1-216-029-00	METAL CHIP 150 5% 1/10W	
R602	1-216-033-00	METAL CHIP 220 5% 1/10W	
R610	1-216-033-00	METAL CHIP 220 5% 1/10W	
R611	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R612	1-216-295-00	SHORT 0	
R620	1-216-033-00	METAL CHIP 220 5% 1/10W	
R621	1-216-097-00	RES, CHIP 100K 5% 1/10W	
R622	1-216-295-00	SHORT 0	
R630	1-216-295-00	SHORT 0	
		< VARIABLE RESISTOR >	
RV201	1-223-834-11	RES, ADJ, CARBON 47K	
RV202	1-225-412-11	RES, VER, SLIDE 10K (ELEVATOR HEIGHT SENSOR)	
		< SWITCH >	
SW201	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE EJECT END DETECT)	
SW202	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE IN/OUT DETECT)	
SW301	1-571-532-21	SWITCH, TACTIL (⏏)	

MAIN **RF**

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X201	1-767-261-21	VIBRATOR, CERAMIC (8MHz)			
X501	1-767-510-11	VIBRATOR, CERAMIC (10MHz)			
X601	1-767-366-21	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
*	A-3313-586-A	RF BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C12	1-113-500-11	TANTALUM CHIP	100uF	20%	10V
C13	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C14	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C15	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C16	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C17	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C18	1-111-253-11	TANTALUM CHIP	100uF	20%	6.3V
C19	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C21	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C22	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C23	1-113-682-11	TANTALUM CHIP	33uF	20%	10V
C24	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C25	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C26	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C27	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C28	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C29	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C31	1-113-987-11	TANTALUM CHIP	4.7uF	20%	25V
C32	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C33	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C35	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C36	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C38	1-104-913-11	TANTALUM CHIP	10uF	20%	16V
C39	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C40	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C41	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C42	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C53	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C54	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C55	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C56	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C57	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C58	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C59	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C60	1-104-914-11	TANTALUM CHIP	22uF	20%	16V
		< CONNECTOR >			
CNJ11	1-778-776-21	CONNECTOR, FPC 17P			
CNJ12	1-778-777-21	CONNECTOR, FPC 26P			
* CNP11	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP51	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP52	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
* CNP53	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
		< IC >			
IC11	8-752-082-14	IC CXA1992BR			
IC51	8-759-071-79	IC BA6297AFP-T1			
IC52	8-759-040-83	IC BA6287F-T1			
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR 2SB624T1-BV345			
		< RESISTOR >			
R11	1-218-348-11	RES, CHIP	110K	5%	1/16W
R12	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-839-11	METAL CHIP	33K	5%	1/16W
R14	1-218-348-11	RES, CHIP	110K	5%	1/16W
R16	1-216-857-11	METAL CHIP	1M	5%	1/16W
R17	1-216-837-11	METAL CHIP	22K	5%	1/16W
R18	1-216-841-11	METAL CHIP	47K	5%	1/16W
R22	1-216-857-11	METAL CHIP	1M	5%	1/16W
R25	1-216-851-11	METAL CHIP	330K	5%	1/16W
R26	1-216-845-11	METAL CHIP	100K	5%	1/16W
R27	1-216-295-00	SHORT	0		
R28	1-216-295-00	SHORT	0		
R30	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R31	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R32	1-216-837-11	METAL CHIP	22K	5%	1/16W
R33	1-216-158-00	RES, CHIP	22	5%	1/8W
R34	1-216-855-11	METAL CHIP	680K	5%	1/16W
R35	1-216-835-11	METAL CHIP	15K	5%	1/16W
R36	1-216-836-11	METAL CHIP	18K	5%	1/16W
R37	1-216-851-11	METAL CHIP	330K	5%	1/16W
R38	1-216-837-11	METAL CHIP	22K	5%	1/16W
R39	1-216-847-11	METAL CHIP	150K	5%	1/16W
R40	1-218-273-11	RES, CHIP	510K	5%	1/16W
R41	1-218-296-11	RES, CHIP	75K	5%	1/16W
R42	1-202-930-11	RES, CHIP	750K	5%	1/16W
R43	1-216-849-11	METAL CHIP	220K	5%	1/16W
R44	1-216-846-11	METAL CHIP	120K	5%	1/16W
R45	1-216-837-11	METAL CHIP	22K	5%	1/16W
R46	1-216-847-11	METAL CHIP	150K	5%	1/16W
R47	1-216-834-11	METAL CHIP	12K	5%	1/16W
R48	1-216-845-11	METAL CHIP	100K	5%	1/16W
R49	1-216-093-00	RES, CHIP	68K	5%	1/10W
R50	1-216-841-11	METAL CHIP	47K	5%	1/16W
R51	1-216-073-00	METAL CHIP	10K	5%	1/10W
R52	1-216-093-00	RES, CHIP	68K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-073-00	METAL CHIP	10K	5%	1/10W
R55	1-216-073-00	METAL CHIP	10K	5%	1/10W
R56	1-216-093-00	RES, CHIP	68K	5%	1/10W
R57	1-216-081-00	METAL CHIP	22K	5%	1/10W
R58	1-216-093-00	RES, CHIP	68K	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-073-00	METAL CHIP	10K	5%	1/10W
R61	1-216-073-00	METAL CHIP	10K	5%	1/10W
R62	1-216-085-00	METAL CHIP	33K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R63	1-216-073-00	METAL CHIP	10K	5%	1/10W
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W
R65	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV14	1-238-091-11	RES, ADJ, CERMET	22K		
		< SWITCH >			
SW11	1-762-946-12	SWITCH, PUSH (1 KEY) (CHUCKING END DETECT)			
SW12	1-762-946-12	SWITCH, PUSH (1 KEY) (SAVE END DETECT)			
**********					
*	1-664-104-11	SW BOARD			
		*********			
		< SWITCH >			
SW1	1-572-688-11	SWITCH, PUSH (1 KEY) (LIMIT)			
**********					
		MISCELLANEOUS			
		**********			
3	1-664-628-11	JACK FLEXIBLE BOARD			
165	1-664-627-11	MAIN FLEXIBLE BOARD			
210	1-664-626-11	OP FLEXIBLE BOARD			
⚠211	8-820-010-05	OPTICAL PICK-UP KSS-521A/J2RP			
M101	A-3291-956-A	MOTOR SUB ASSY, SPINDLE			
M102	A-3291-955-A	MOTOR SUB ASSY, SLED			
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)			
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)			
**********					
		**********			
		HARDWARE LIST			
		**********			
#1	7-627-852-07	SCREW, PRECISION +P 1.7X2.5			
#2	7-685-792-09	SCREW +PTT 2.6X6 (S)			
#3	7-685-781-09	SCREW +PTT 2X4 (S)			
#4	7-624-104-04	STOP RING 2.0, TYPE-E			
#5	7-627-554-07	SCREW, PRECISION +P 2X2.2			
#6	7-628-253-00	SCREW +PS 2X4			
#7	7-627-553-27	SCREW, PRECISION +P 2X2.5			
#8	7-624-102-04	STOP RING 1.5, TYPE-E			
#9	7-627-850-28	SCREW, PRECISION +P 1.4X3			
#10	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE3			
#12	7-685-780-09	SCREW +PTT 2X3 (S)			
**********					
		ACCESSORIES & PACKING MATERIALS			
		**********			
	3-865-033-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH, SWEDISH, PORTUGUESE) (AEP, UK)			
	3-865-033-21	MANUAL, INSTRUCTION (FRENCH, GERMAN, DUTCH, ITALIAN) (AEP, UK)			
	3-865-033-31	MANUAL, INSTRUCTION (GERMAN, RUSSIAN) (German)			
	A-3291-950-C	MAGAZINE (250T) ASSY			
**********					

Ref. No.	Part No.	Description	Remark
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
501	3-011-778-01	BRACKET (705T)	
* 502	X-3369-824-1	SCREW ASSY	
503	1-590-874-11	CORD, CONNECTION (RCA PIN CORD 5.5m)	
504	1-590-519-81	CORD (WITH CONNECTOR) (BUS CABLE 5.5m)	



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

9-926-404-12

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Personal & Mobile Communication Company

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CDX-616

SONY

AEP Model
UK Model

SERVICE MANUAL

SUPPLEMENT-1

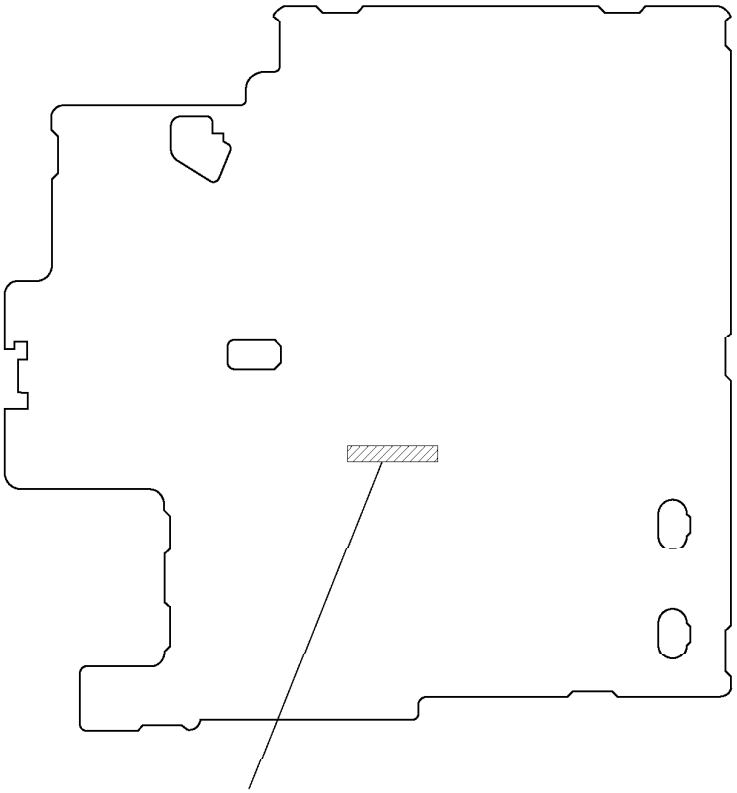
File this supplement with the service manual.

Subject: Main/Jack Board Modification

(ECN-CS804777)

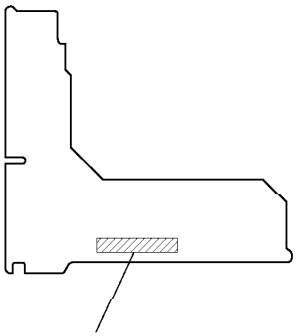
1. DISCRIMINATION

– MAIN BOARD (Component Side) –



Former : 1-673-175-11
New : 1-674-306-11

– JACK BOARD (Conductor Side) –



Former : 1-673-252-11
New : 1-674-307-11

2. DIAGRAMS

2-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- ● : Through hole.
- △ : internal component.
- ▒▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

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

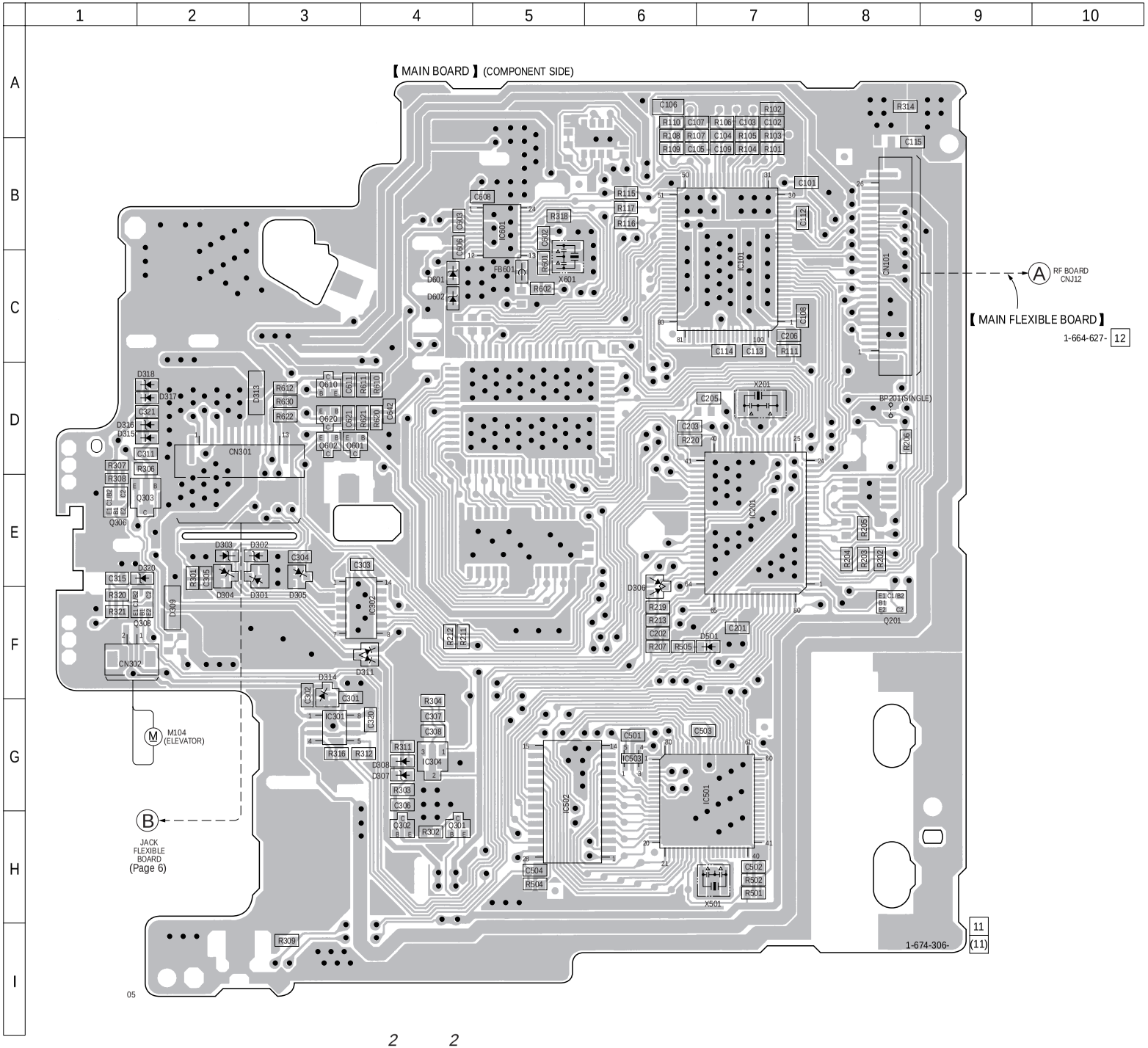
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- B+ : B+ Line.
- ▬ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from CD changer controller.
- Voltages 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 MΩ). 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.
  ⇨ : CD PLAY

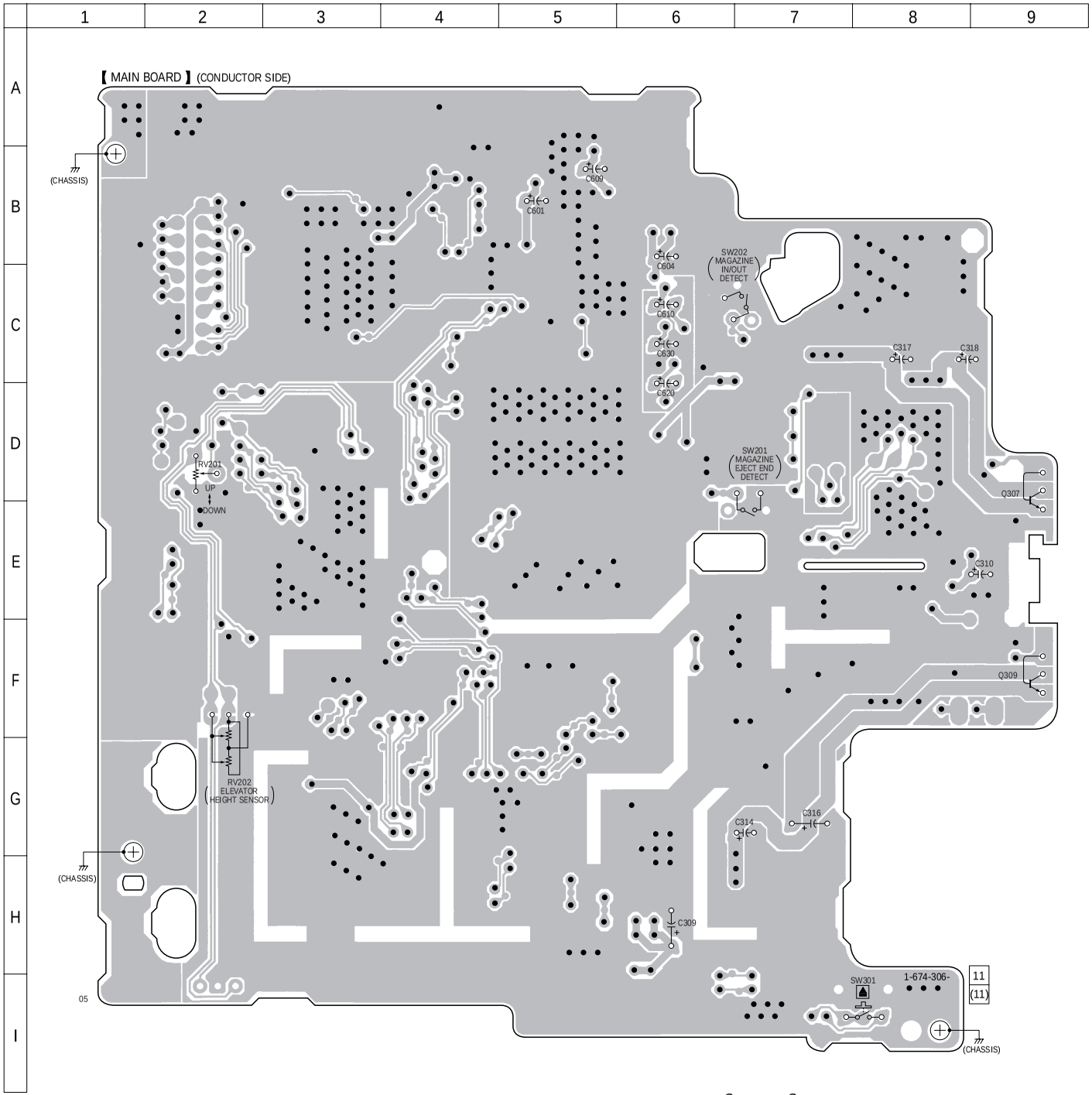
2-2. PRINTED WIRING BOARD – MAIN Board (Component Side) –

- **Semiconductor Location (Component Side)**

Ref. No.	Location
D301	E-3
D302	E-3
D303	E-2
D304	E-2
D305	E-3
D306	F-6
D307	G-4
D308	G-4
D311	F-4
D314	F-3
D315	D-2
D316	D-2
D317	D-2
D318	D-2
D320	E-2
D501	F-7
D601	C-4
D602	C-4
IC101	C-7
IC201	E-7
IC301	G-3
IC302	F-4
IC304	G-4
IC501	G-7
IC502	G-5
IC503	G-6
IC601	B-5
Q201	F-8
Q301	H-4
Q302	H-4
Q303	E-2
Q306	E-1
Q308	F-2
Q601	D-3
Q602	D-3
Q610	D-3
Q620	D-3



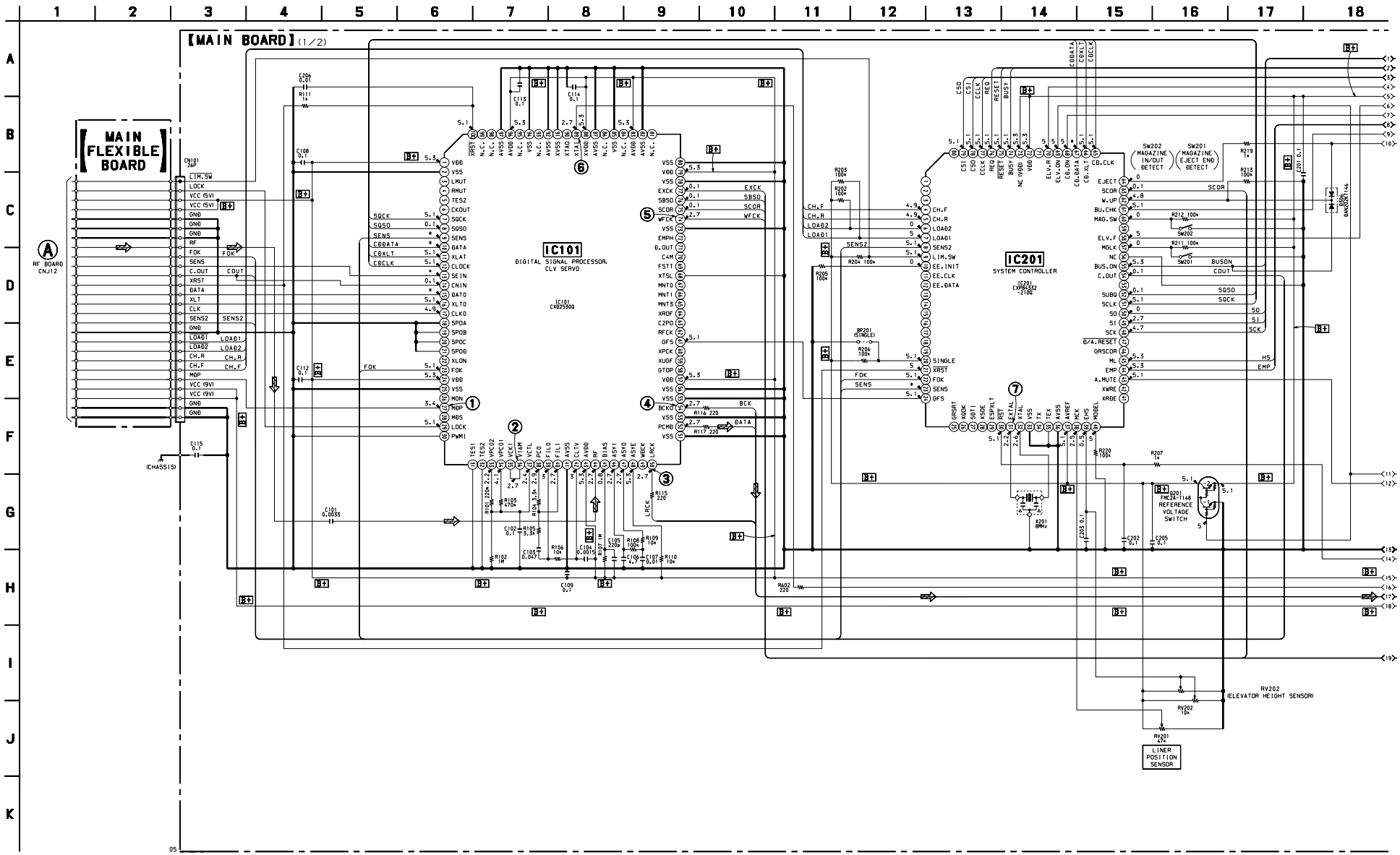
2-3. PRINTED WIRING BOARD – MAIN Board (Conductor Side) –



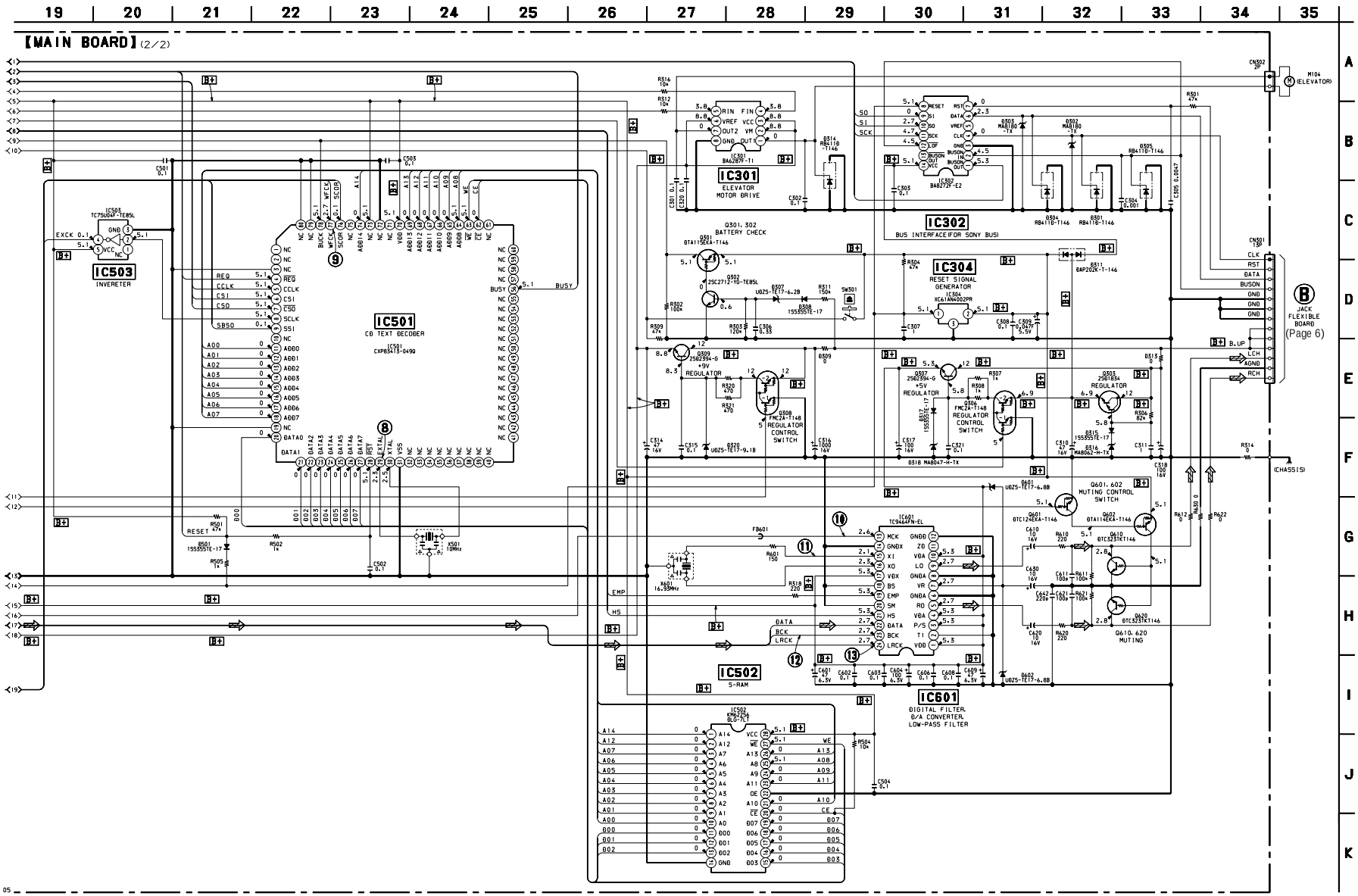
- **Semiconductor Location (Conductor Side)**

Ref. No.	Location
D307	D-9
Q309	F-9

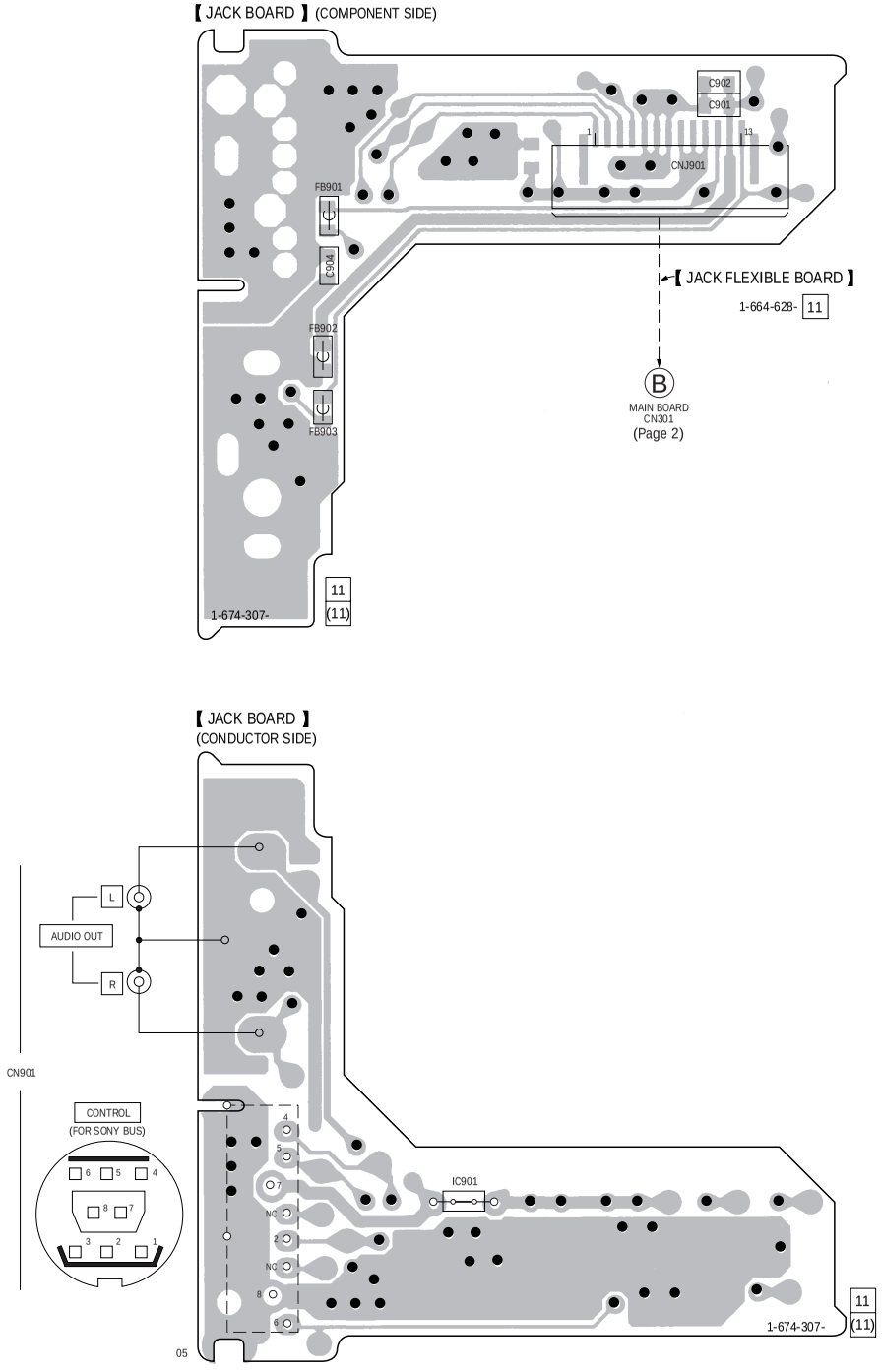
2-4. SCHEMATIC DIAGRAM – MAIN Board (1/2) –



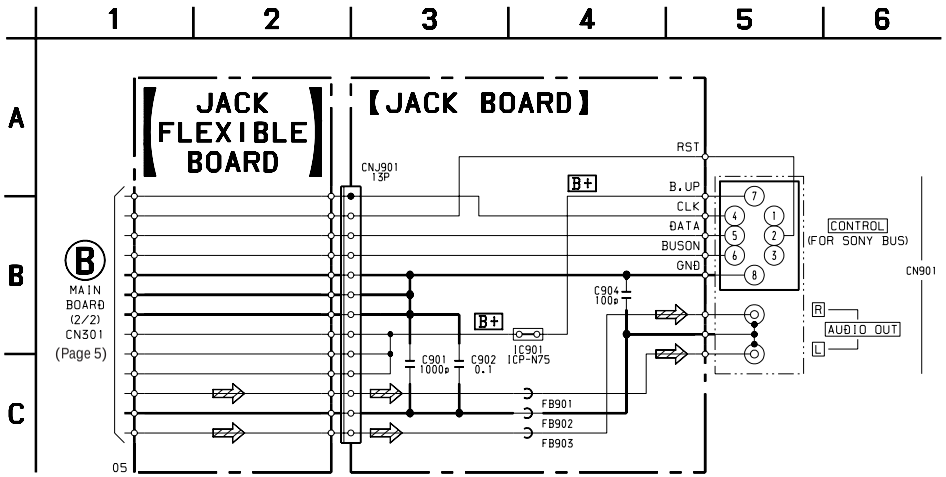
2-5. SCHEMATIC DIAGRAM – MAIN Board (2/2) –



2-6. PRINTED WIRING BOARD – JACK Board –



2-7. SCHEMATIC DIAGRAM – JACK Board –



3. ELECTRICAL PARTS LIST

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. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

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

Ref. No.	Part No.	Description			Remark
*	1-674-307-11	JACK BOARD			
		**********			
		< CAPACITOR >			
C901	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C904	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN901	1-779-077-31	PLUG, CONNECTOR (CONTROL, AUDIO OUT)			
CNJ901	1-778-775-21	CONNECTOR, FPC 13P			
		< FERRITE BEAD >			
FB901	1-500-445-21	FERRITE	0uH		
FB902	1-500-445-21	FERRITE	0uH		
FB903	1-500-445-21	FERRITE	0uH		
		< IC LINK >			
IC901	1-532-686-21	LINK, IC			
**********					
*	A-3317-431-A	MAIN BOARD, COMPLETE			
		**********			
	3-028-802-01	SPACER (MOUNT 30)			
*	3-032-997-01	HOLDER (TR4)			
*	3-939-139-01	SPACER			
		< CAPACITOR >			
C101	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C104	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C105	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C106	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C107	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-038-00	CERAMIC CHIP	0.1uF		25V

Ref. No.	Part No.	Description			Remark
C202	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C206	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C306	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C307	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C310	1-124-589-11	ELECT	47uF	20%	16V
C311	1-164-346-11	CERAMIC CHIP	1uF		16V
C314	1-124-589-11	ELECT	47uF	20%	16V
C315	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C316	1-115-466-11	ELECT	1000uF	20%	16V
C317	1-126-382-11	ELECT	100uF	20%	16V
C318	1-126-382-11	ELECT	100uF	20%	16V
C320	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C321	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C501	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C502	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C601	1-126-513-11	ELECT	47uF	20%	6.3V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C604	1-126-382-11	ELECT	100uF	20%	6.3V
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C609	1-126-513-11	ELECT	47uF	20%	6.3V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C621	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C630	1-126-157-11	ELECT	10uF	20%	16V
C642	1-163-001-11	CERAMIC CHIP	220PF	10%	50V

MAIN

Ref. No.	Part No.	Description	Remark
		< CONNECTOR >	
CN101	1-770-351-11	CONNECTOR, FPC 26P	
CN301	1-770-350-21	CONNECTOR, FPC 13P	
* CN302	1-580-055-21	PIN, CONNECTOR (SMD) 2P	
		< DIODE/SHORT >	
D301	8-719-975-40	DIODE RB411D-T146	
D302	8-719-017-94	DIODE MA8180-TX	
D303	8-719-017-94	DIODE MA8180-TX	
D304	8-719-975-40	DIODE RB411D-T146	
D305	8-719-975-40	DIODE RB411D-T146	
D306	8-719-914-43	DIODE DAN202K-T-146	
D307	8-719-069-56	DIODE UDZS-TE17-6.2B	
D308	8-719-988-61	DIODE 1SS355TE-17	
D309	1-216-296-00	SHORT 0	
D311	8-719-914-44	DIODE DAP202K-T-146	
D313	1-216-296-00	SHORT 0	
D314	8-719-975-40	DIODE RB411D-T146	
D315	8-719-988-61	DIODE 1SS355TE-17	
D316	8-719-422-67	DIODE MA8062-H-TX	
D317	8-719-988-61	DIODE 1SS355TE-17	
D318	8-719-976-96	DIODE MA8047-H-TX	
D320	8-719-069-60	DIODE UDZS-TE17-9.1B	
D501	8-719-988-61	DIODE 1SS355TE-17	
D601	8-719-069-57	DIODE UDZS-TE17-6.8B	
D602	8-719-069-57	DIODE UDZS-TE17-6.8B	
		< FERRITE BEAD >	
FB601	1-500-445-21	FERRITE 0uH	
		< IC >	
IC101	8-752-384-15	IC CXD2530Q	
IC201	8-752-903-71	IC CXP84332-210Q	
IC301	8-759-040-83	IC BA6287F-T1	
IC302	8-759-444-86	IC BA8272F-E2	
IC304	8-759-363-81	IC XC61AN4002PR	
IC501	8-752-904-83	IC CXP83413-049Q	
IC502	8-759-497-29	IC KM62256DLG-7LT	
IC503	8-759-243-19	IC TC7SU04F-TE85L	
IC601	8-759-494-78	IC TC9464FN-EL	
		< TRANSISTOR >	
Q201	8-729-047-76	TRANSISTOR FMC2A-T148	
Q301	8-729-028-62	TRANSISTOR DTA115EKA-T146	
Q302	8-729-230-49	TRANSISTOR 2SC2712-YG-TE85L	
Q303	8-729-921-12	TRANSISTOR 2SD1834-T101	
Q306	8-729-047-76	TRANSISTOR FMC2A-T148	
Q307	8-729-019-00	TRANSISTOR 2SD2394-G	
Q308	8-729-047-76	TRANSISTOR FMC2A-T148	
Q309	8-729-019-00	TRANSISTOR 2SD2394-G	
Q601	8-729-901-00	TRANSISTOR DTC124EKA-T146	
Q602	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q610	8-729-015-39	TRANSISTOR DTC323TKT146	
Q620	8-729-015-39	TRANSISTOR DTC323TKT146	
		< RESISTOR >	
R101	1-216-105-00	RES, CHIP 220K 5%	1/10W
R102	1-216-121-00	RES, CHIP 1M 5%	1/10W
R103	1-216-113-00	METAL CHIP 470K 5%	1/10W
R104	1-216-061-00	RES, CHIP 3.3K 5%	1/10W
R105	1-216-061-00	RES, CHIP 3.3K 5%	1/10W
R106	1-216-073-00	METAL CHIP 10K 5%	1/10W
R107	1-216-121-00	RES, CHIP 1M 5%	1/10W
R108	1-216-097-00	RES, CHIP 100K 5%	1/10W
R109	1-216-073-00	METAL CHIP 10K 5%	1/10W
R110	1-216-073-00	METAL CHIP 10K 5%	1/10W
R111	1-216-049-11	RES, CHIP 1K 5%	1/10W
R115	1-216-033-00	METAL CHIP 220 5%	1/10W
R116	1-216-033-00	METAL CHIP 220 5%	1/10W
R117	1-216-033-00	METAL CHIP 220 5%	1/10W
R202	1-216-097-00	RES, CHIP 100K 5%	1/10W
R203	1-216-097-00	RES, CHIP 100K 5%	1/10W
R204	1-216-097-00	RES, CHIP 100K 5%	1/10W
R205	1-216-097-00	RES, CHIP 100K 5%	1/10W
R206	1-216-097-00	RES, CHIP 100K 5%	1/10W
R207	1-216-049-11	RES, CHIP 1K 5%	1/10W
R211	1-216-097-00	RES, CHIP 100K 5%	1/10W
R212	1-216-097-00	RES, CHIP 100K 5%	1/10W
R213	1-216-097-00	RES, CHIP 100K 5%	1/10W
R219	1-216-049-11	RES, CHIP 1K 5%	1/10W
R220	1-216-097-00	RES, CHIP 100K 5%	1/10W
R301	1-216-089-00	RES, CHIP 47K 5%	1/10W
R302	1-216-097-00	RES, CHIP 100K 5%	1/10W
R303	1-216-099-00	METAL CHIP 120K 5%	1/10W
R304	1-216-089-00	RES, CHIP 47K 5%	1/10W
R306	1-216-095-00	METAL CHIP 82K 5%	1/10W
R307	1-216-049-11	RES, CHIP 1K 5%	1/10W
R308	1-216-049-11	RES, CHIP 1K 5%	1/10W
R309	1-216-089-00	RES, CHIP 47K 5%	1/10W
R311	1-216-101-00	METAL CHIP 150K 5%	1/10W
R312	1-216-073-00	METAL CHIP 10K 5%	1/10W
R314	1-216-295-00	SHORT 0	
R316	1-216-073-00	METAL CHIP 10K 5%	1/10W
R318	1-216-033-00	METAL CHIP 220 5%	1/10W
R320	1-216-041-00	METAL CHIP 470 5%	1/10W
R321	1-216-041-00	METAL CHIP 470 5%	1/10W
R501	1-216-089-00	RES, CHIP 47K 5%	1/10W
R502	1-216-049-11	RES, CHIP 1K 5%	1/10W
R504	1-216-073-00	METAL CHIP 10K 5%	1/10W
R505	1-216-049-11	RES, CHIP 1K 5%	1/10W
R601	1-216-029-00	METAL CHIP 150 5%	1/10W
R602	1-216-033-00	METAL CHIP 220 5%	1/10W
R610	1-216-033-00	METAL CHIP 220 5%	1/10W
R611	1-216-097-00	RES, CHIP 100K 5%	1/10W
R612	1-216-295-00	SHORT 0	
R620	1-216-033-00	METAL CHIP 220 5%	1/10W
R621	1-216-097-00	RES, CHIP 100K 5%	1/10W
R622	1-216-295-00	SHORT 0	
R630	1-216-295-00	SHORT 0	
		< VARIABLE RESISTOR >	
RV201	1-223-834-11	RES, ADJ, CARBON 47K	
RV202	1-225-412-11	RES, VAR, SLIDE 10K (ELEVATOR HEIGHT SENSOR)	

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW201	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE EJECT END DETECT)	
SW202	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE IN/OUT DETECT)	
SW301	1-571-532-21	SWITCH, TACTIL (⏏)	
		< VIBRATOR >	
X201	1-767-261-21	VIBRATOR, CERAMIC (8MHz)	
X501	1-767-510-11	VIBRATOR, CERAMIC (10MHz)	
X601	1-767-366-21	VIBRATOR, CERAMIC (16.93MHz)	

9-926-404-81

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CDX-616

SONY

AEP Model
UK Model

SERVICE MANUAL

SUPPLEMENT-2

File this supplement with the service manual.

Subject: Mechanism Deck Modification (MG-250D-137)

(ECN-CSA00840)

The mechanism deck was changed from MG-250C-137 to MG-250D-137.
At the same time, MAIN and JACK boards were been changed.
This supplement contains only a new type mechanism deck and boards.

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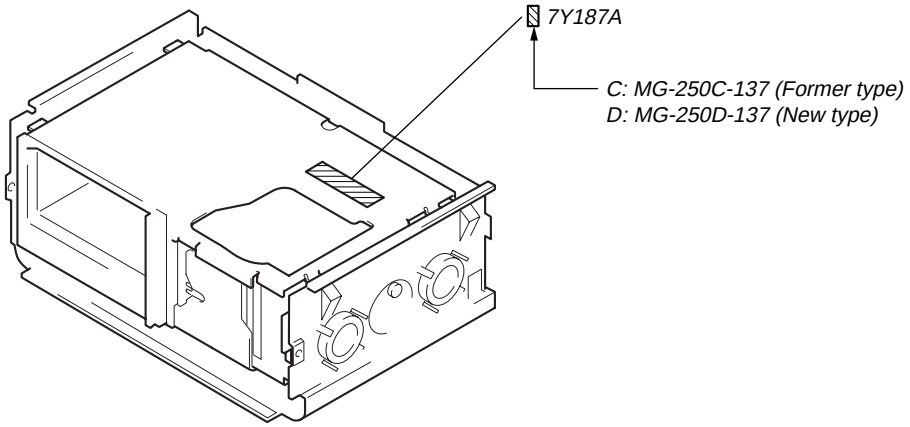
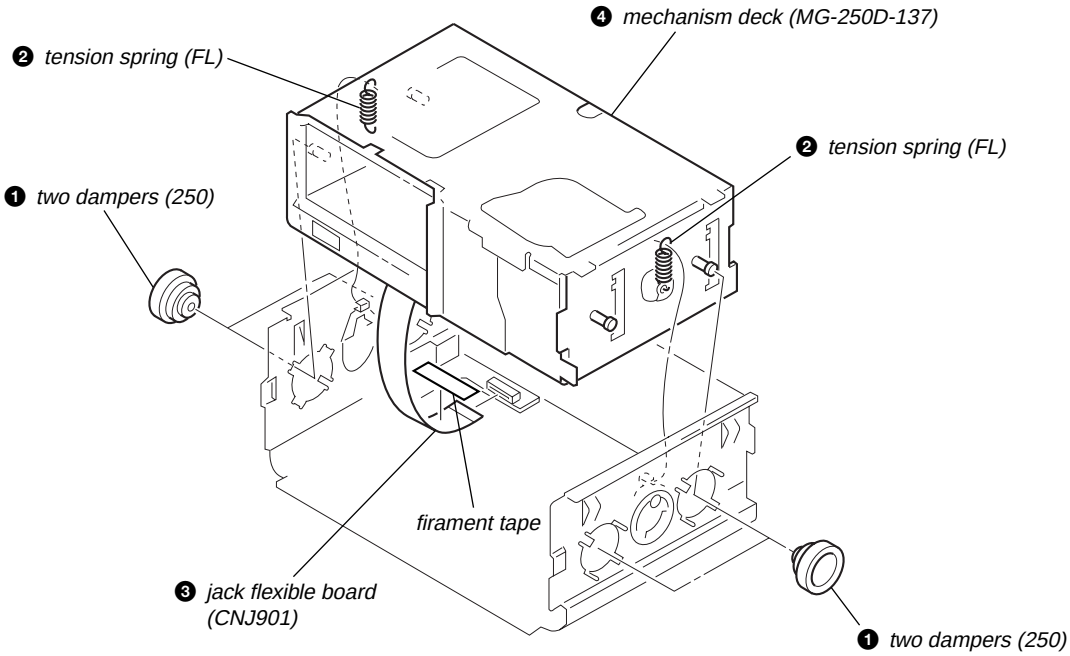
1. NEW/FORMER DISCRIMINATION



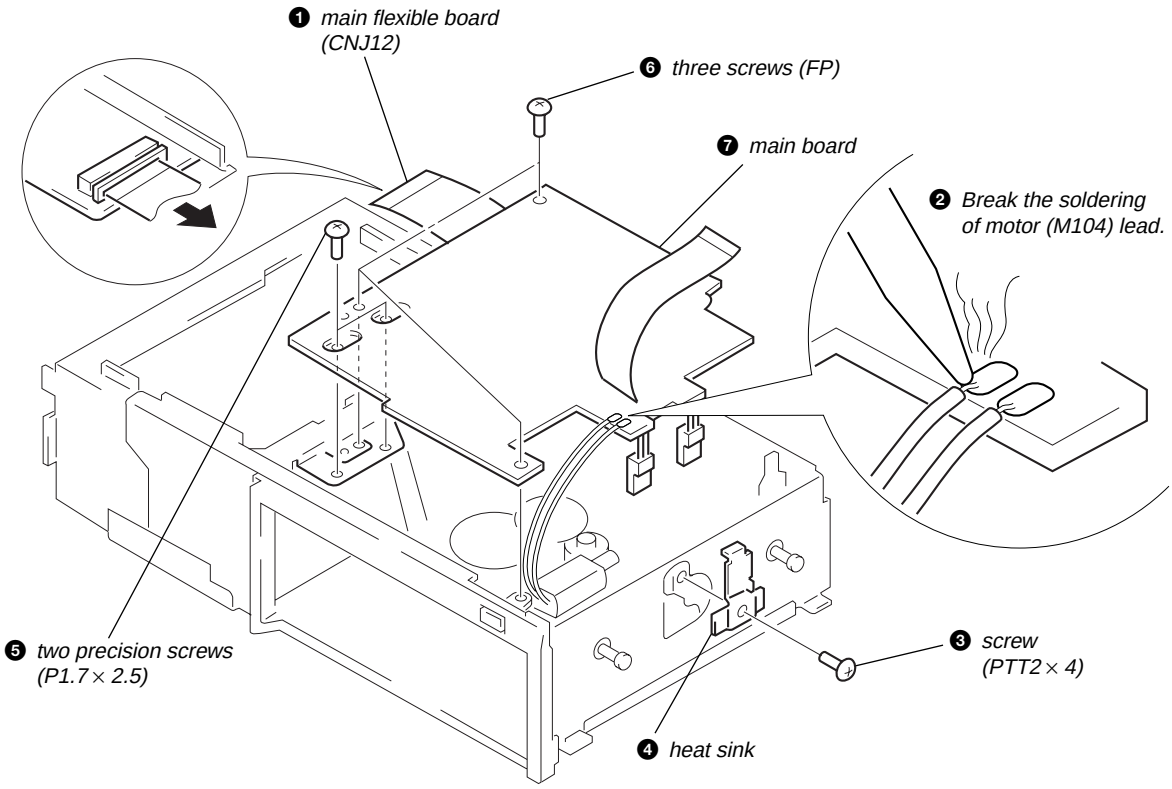
2. DISASSEMBLY

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

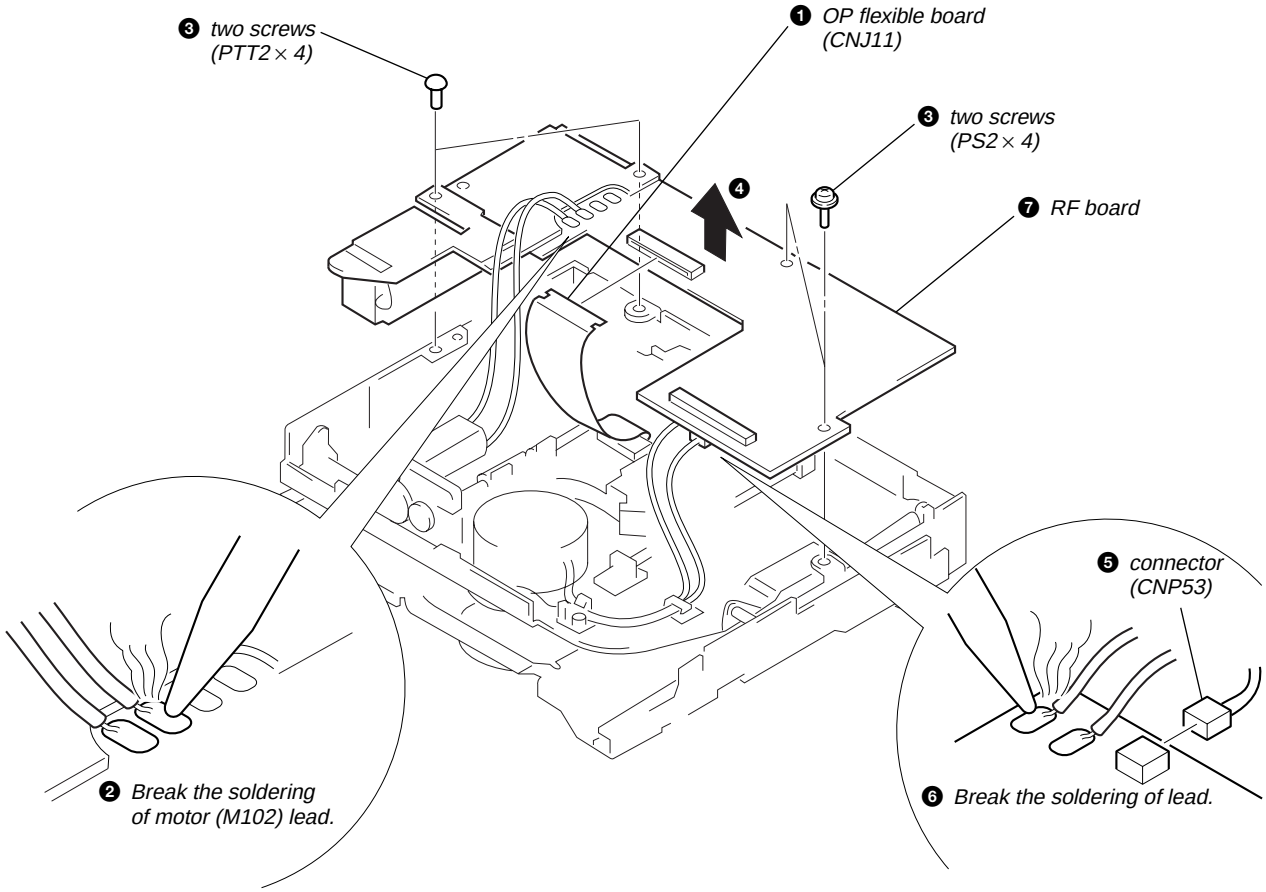
MECHANISM DECK (MG-250D-137)



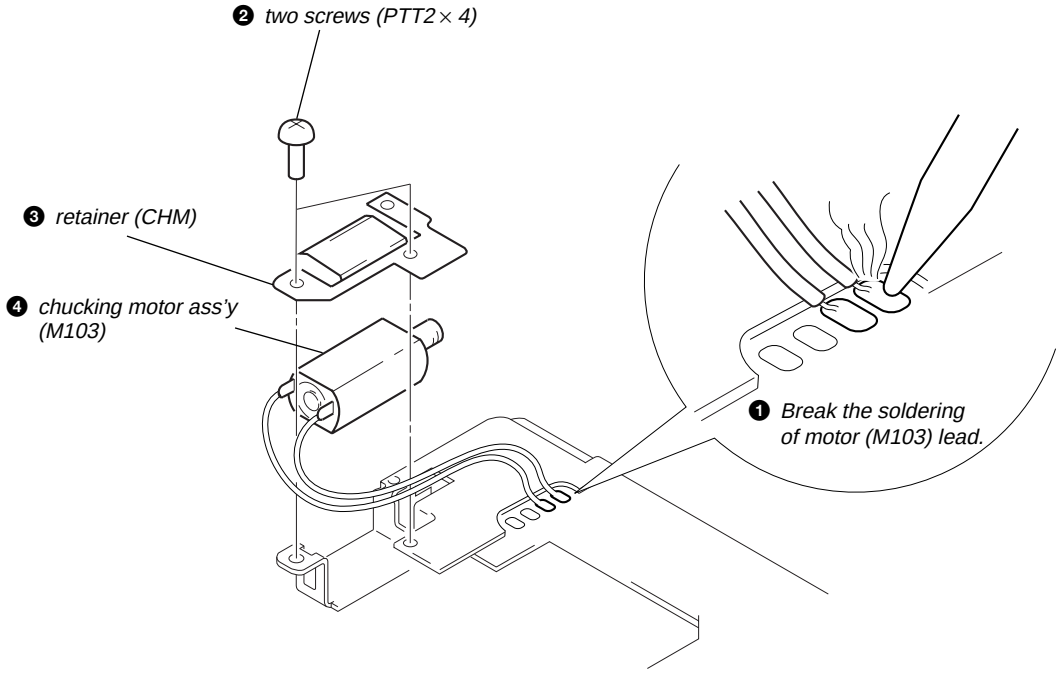
MAIN BOARD



RF BOARD



CHUCKING MOTOR ASS'Y (M103)



3. DIAGRAMS

3-1. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note on Printed Wiring Board:

- o—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ● : Through hole.
- ▒▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

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

Note on Schematic Diagram:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.

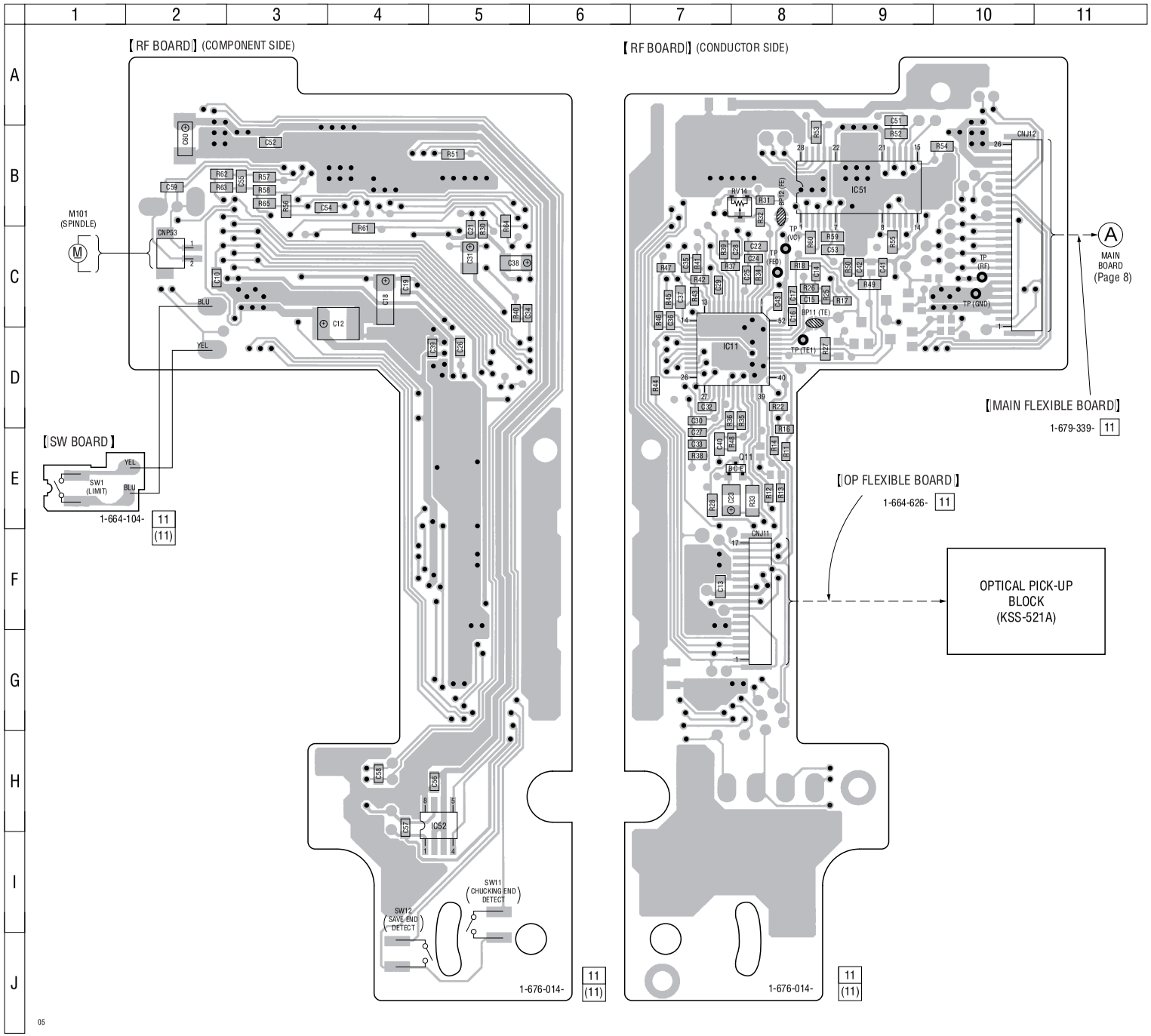
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- B+ : B+ Line.
- ▬ : adjustment for repair.
- Power voltage is dc 14.4V and fed with regulated dc power supply from CD changer controller.
- Voltages 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 MΩ). 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.
  ⇨ : CD PLAY

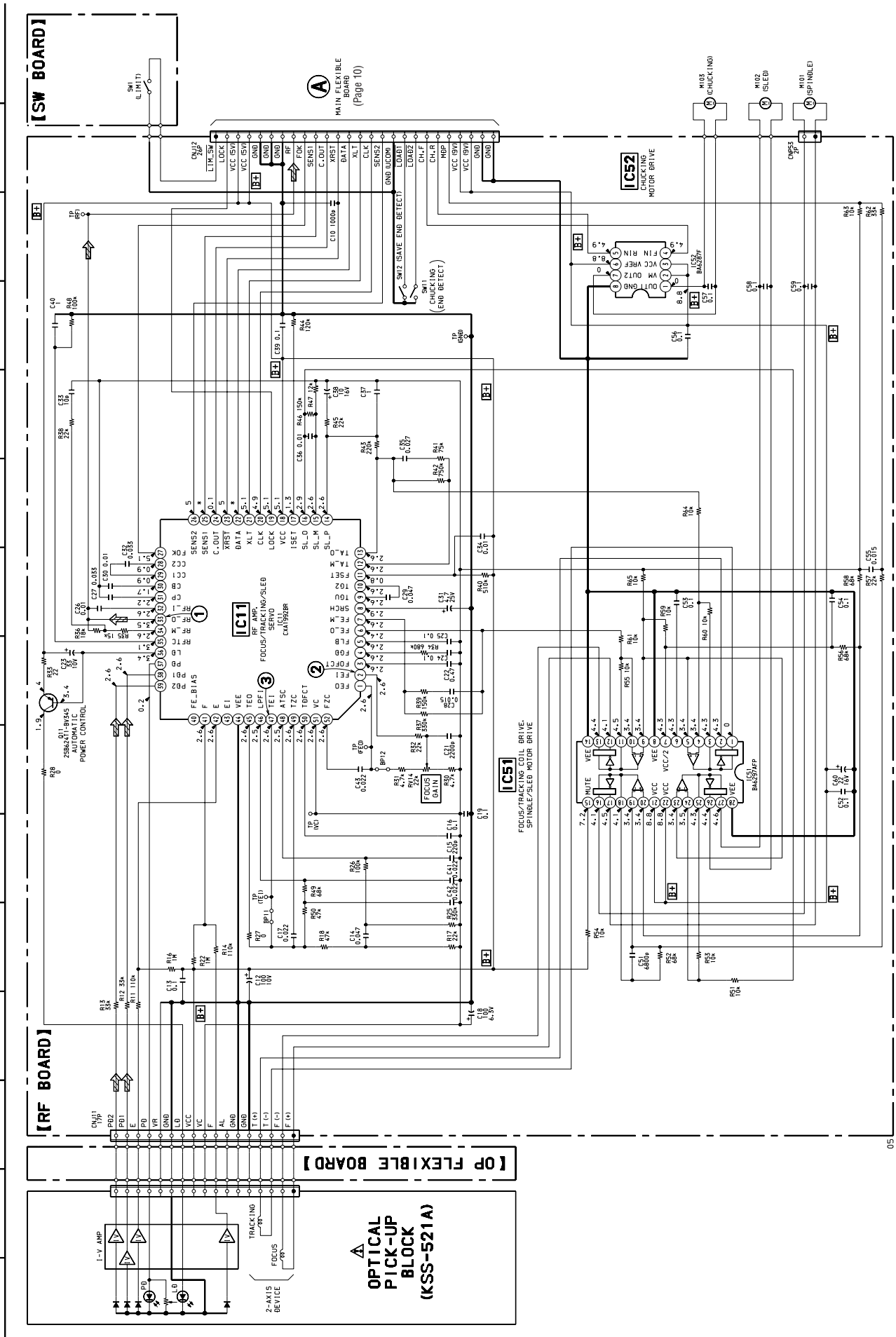
3-2. PRINTED WIRING BOARDS – RF/SW Boards –

• **Semiconductor Location**

Ref. No.	Location
IC11	D-7
IC51	B-9
IC52	H-4
Q11	E-8



3-3. SCHEMATIC DIAGRAM – RF/SW Boards –

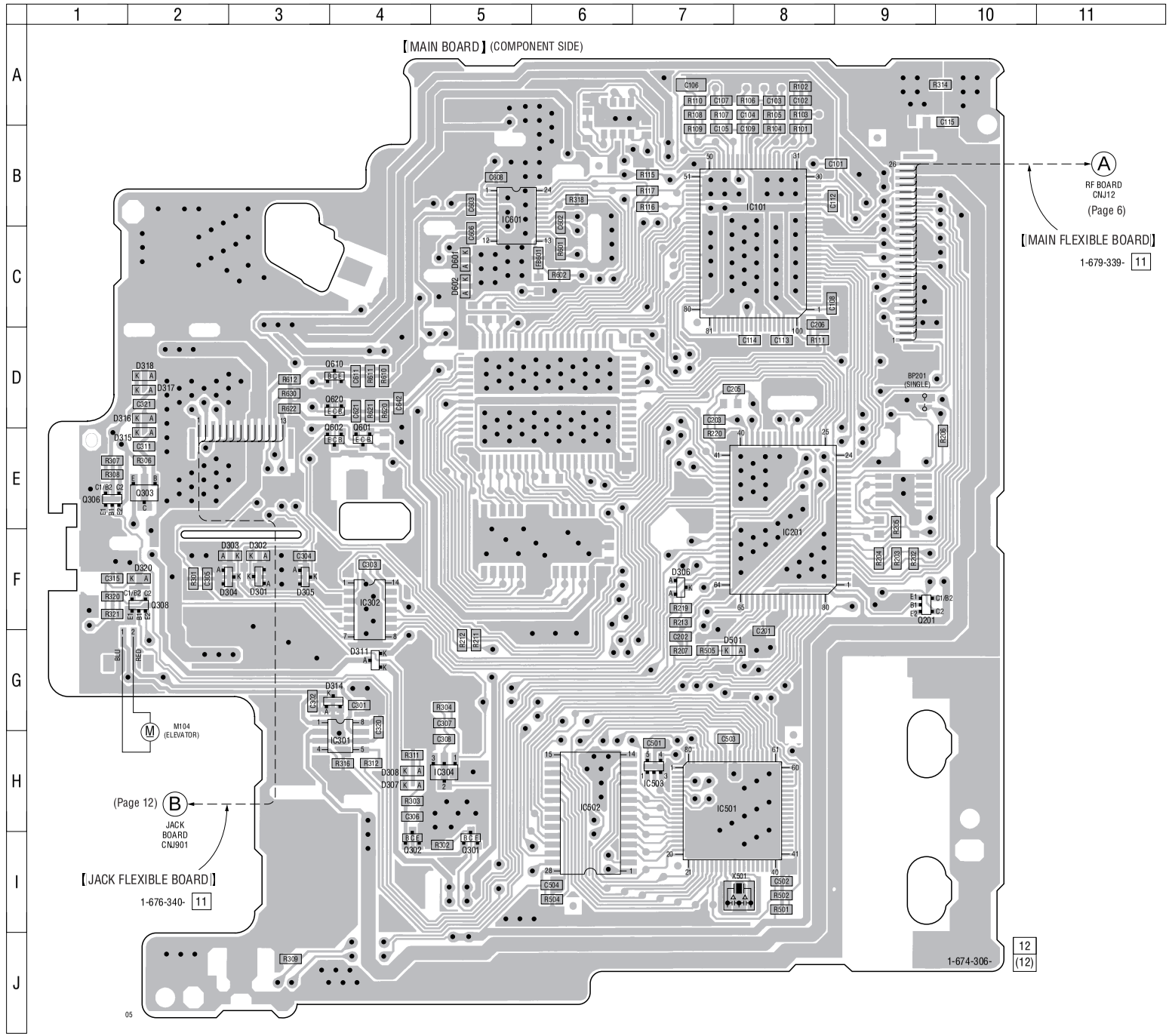


Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

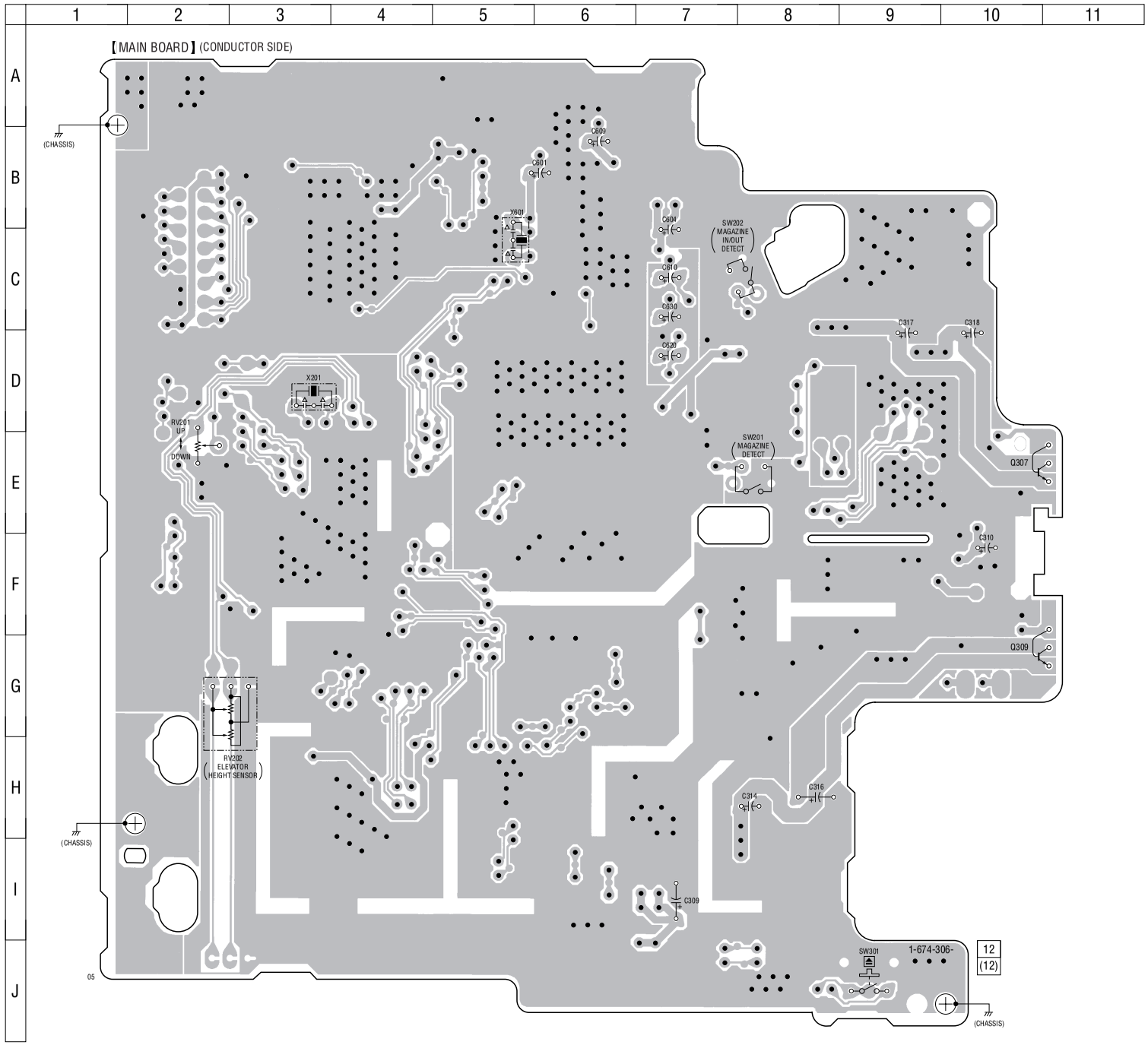
3-4. PRINTED WIRING BOARDS – MAIN Board (Component Side) –

- **Semiconductor Location**

Ref. No.	Location
D301	F-3
D302	F-3
D303	F-3
D304	F-3
D305	F-3
D306	F-7
D307	H-4
D308	H-4
D311	G-4
D314	G-4
D315	E-2
D316	D-2
D317	D-2
D318	D-2
D320	F-2
D501	G-7
D601	C-5
D602	C-5
IC101	C-8
IC202	E-9
IC301	H-4
IC302	F-4
IC304	H-5
IC501	H-7
IC502	H-6
IC503	H-7
IC601	B-5
Q201	F-9
Q301	I-5
Q302	I-4
Q303	E-2
Q306	E-1
Q308	F-2
Q601	E-4
Q602	E-4
Q610	D-4
Q620	D-4



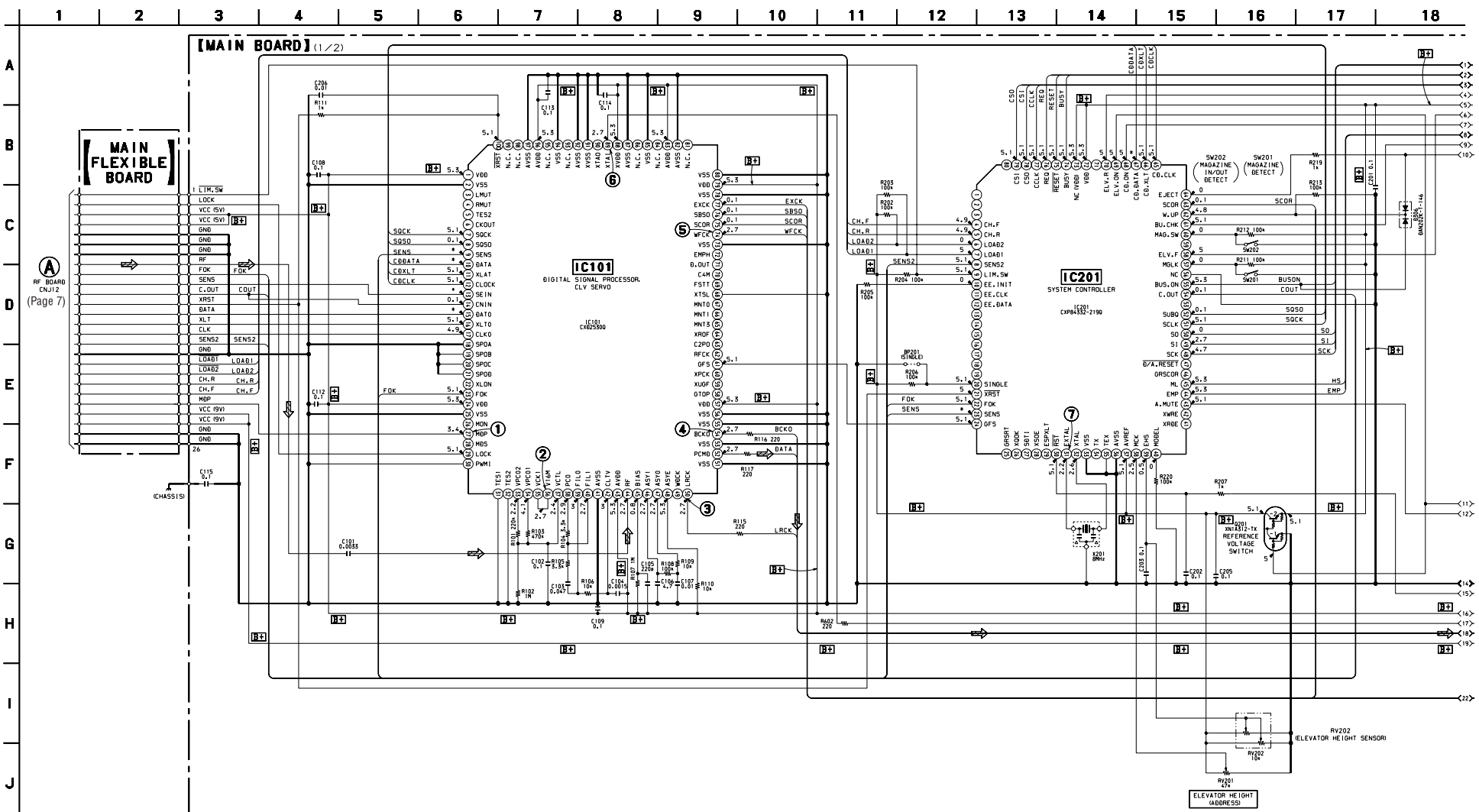
3-5. PRINTED WIRING BOARD – MAIN Board (Conductor Side) –



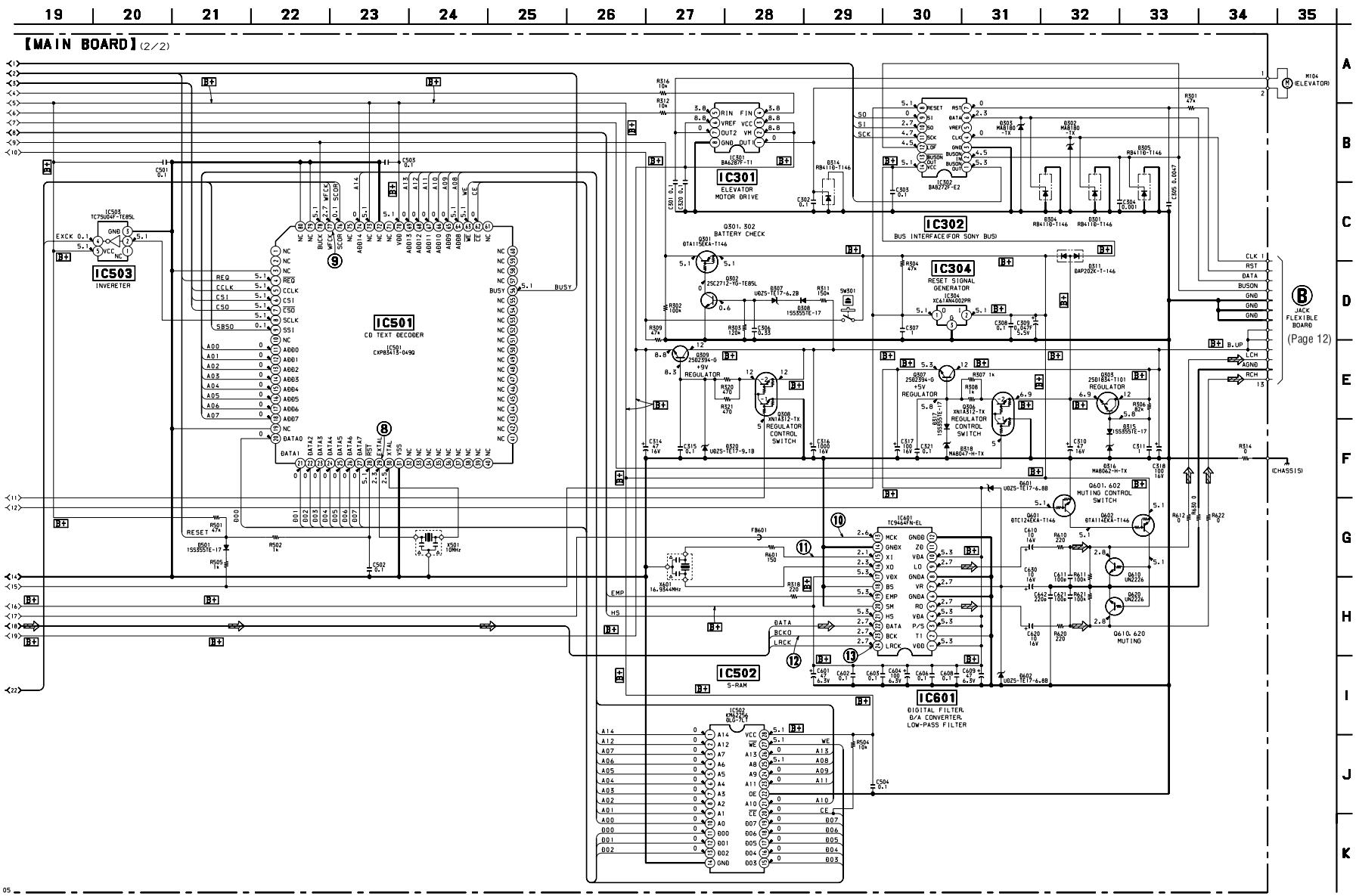
- **Semiconductor Location**

Ref. No.	Location
Q307	E-11
Q309	G-11

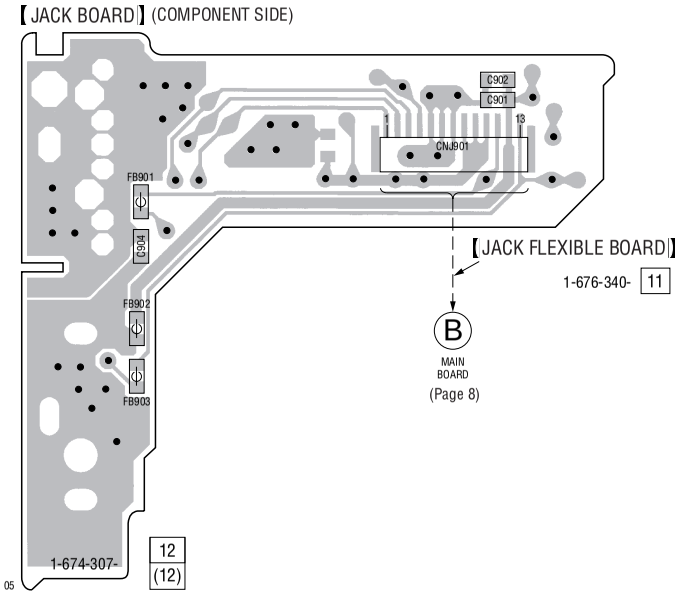
3-6. SCHEMATIC DIAGRAM – MAIN Board (1/2) –

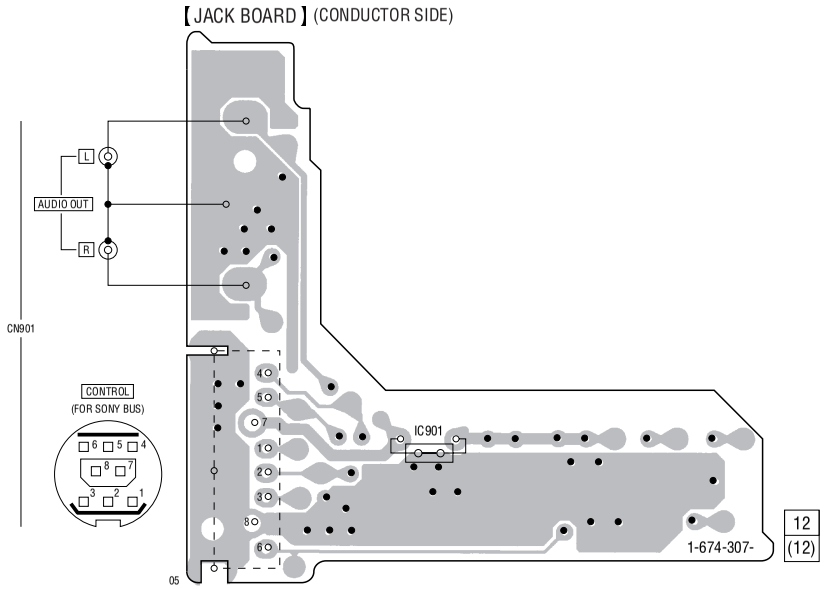


3-7. SCHEMATIC DIAGRAM – MAIN Board (2/2) –

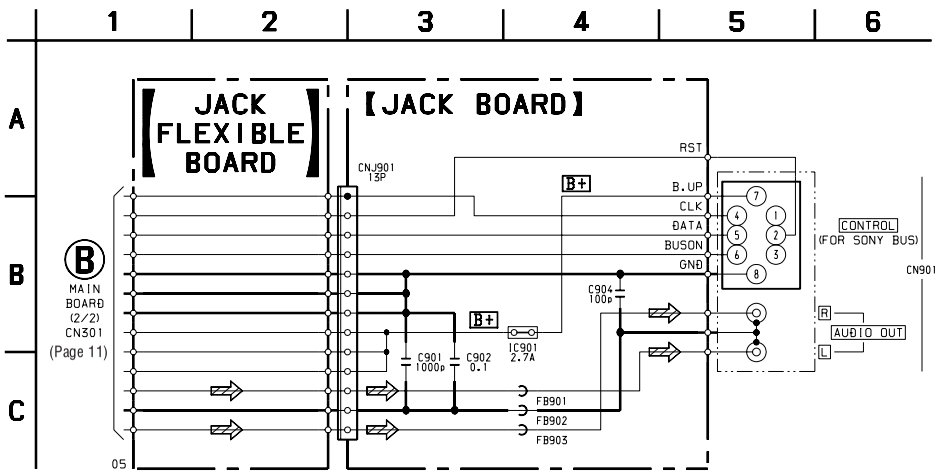


3-8. PRINTED WIRING BOARDS – JACK Board –





3-9. SCHEMATIC DIAGRAM – JACK Board –



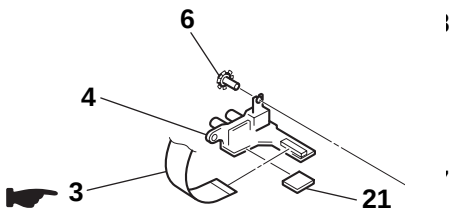
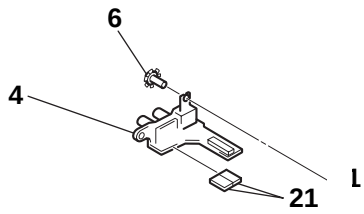
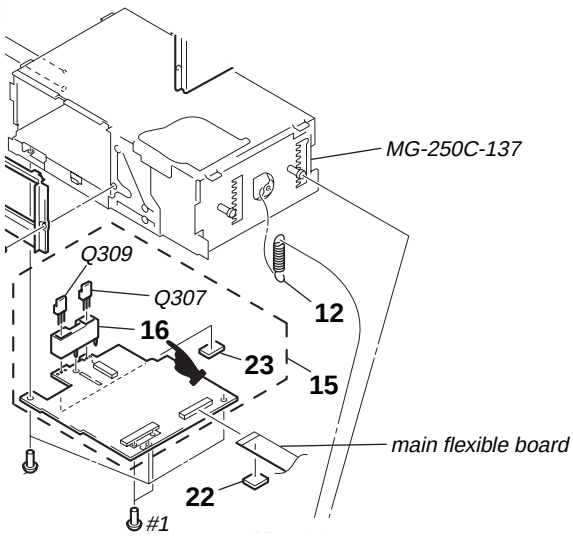
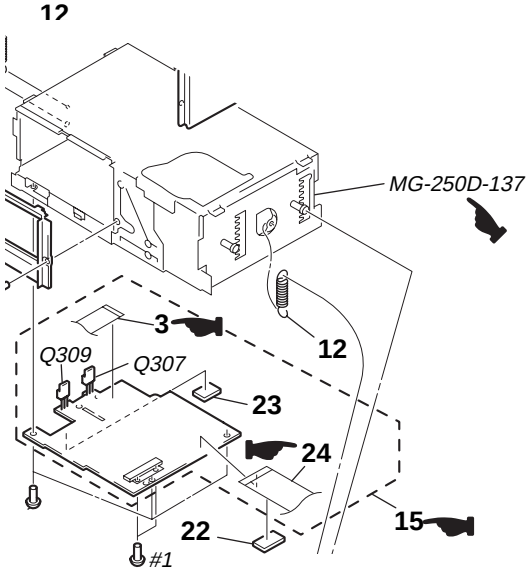
4. EXPLODED VIEWS

NOTE:
- -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
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of the electrical parts list.

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

(1) COVER SECTION

☛ : Indicates modificated portion.

<table>
<tr><th>Page</th><th>Former Type</th><th>New Type</th></tr>
<tr><td rowspan="6">47</td><td> 
</td><td> 
</td></tr>
<tr><td>Ref. No. Part No. Description Remark
* 4 1-673-252-11 JACK BOARD</td><td>Ref. No. Part No. Description Remark
* 4 1-674-307-12 JACK BOARD</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>Ref. No. Part No. Description Remark
3 1-664-628-11 JACK FLEXIBLE BOARD
* 15 A-3317-431-A MAIN BOARD, COMPLETE
* 16 3-032-997-01 HOLDER (TR4)</td><td>Ref. No. Part No. Description Remark
3 1-676-340-11 JACK FLEXIBLE BOARD
* 15 A-3326-235-A MAIN BOARD, COMPLETE
24 1-676-339-11 MAIN FLEXIBLE BOARD</td></tr>
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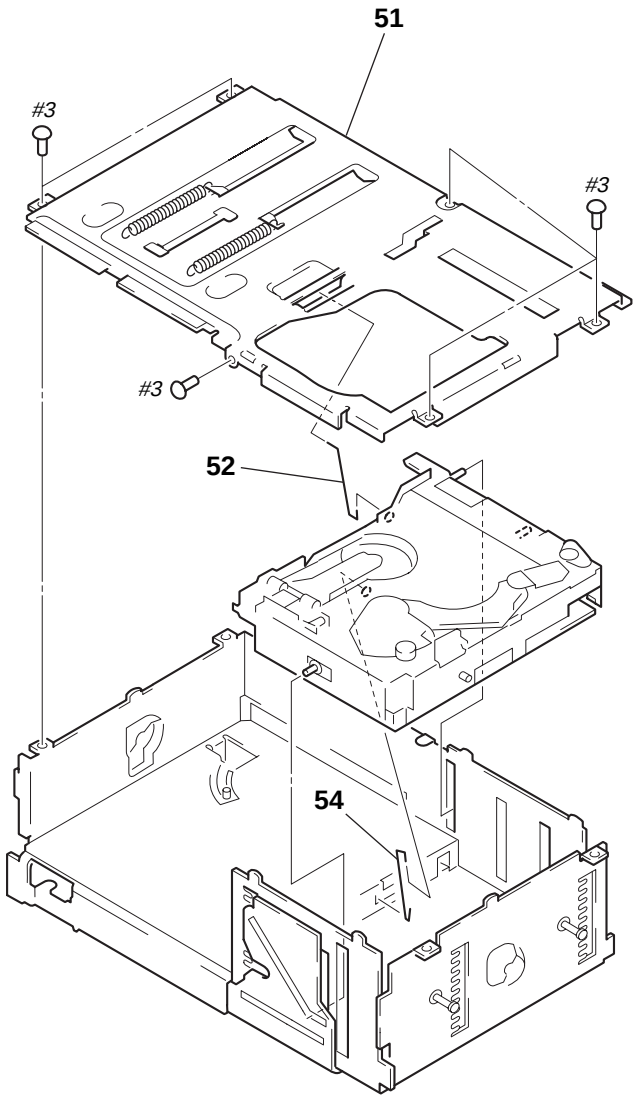
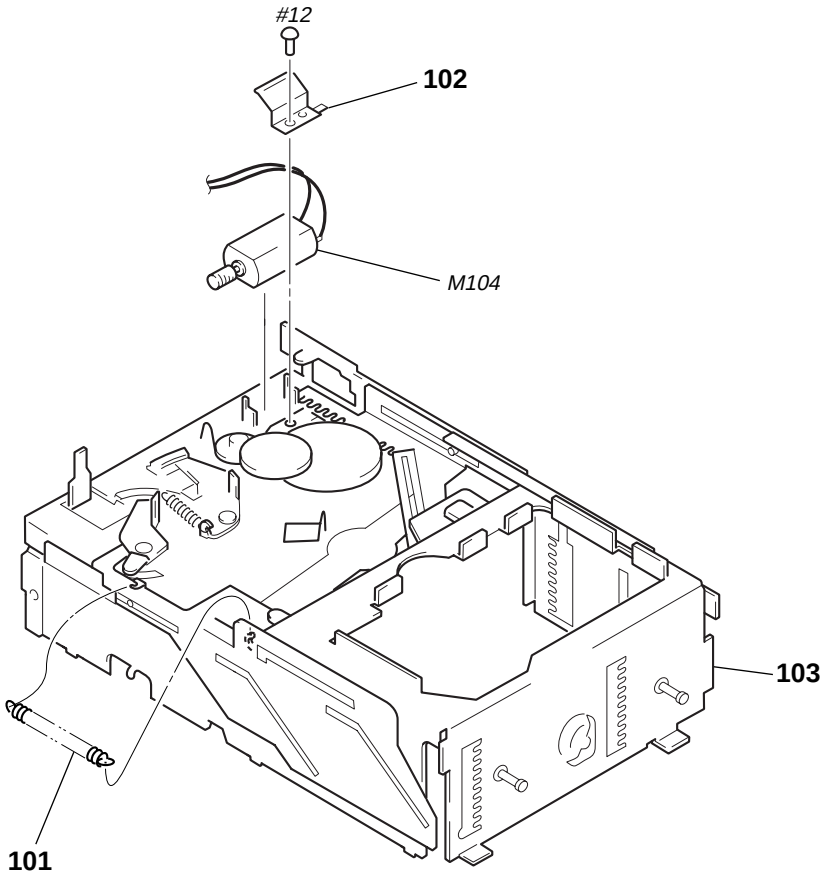
(2) MECHANISM DECK SECTION-1 (MG-250D-137)



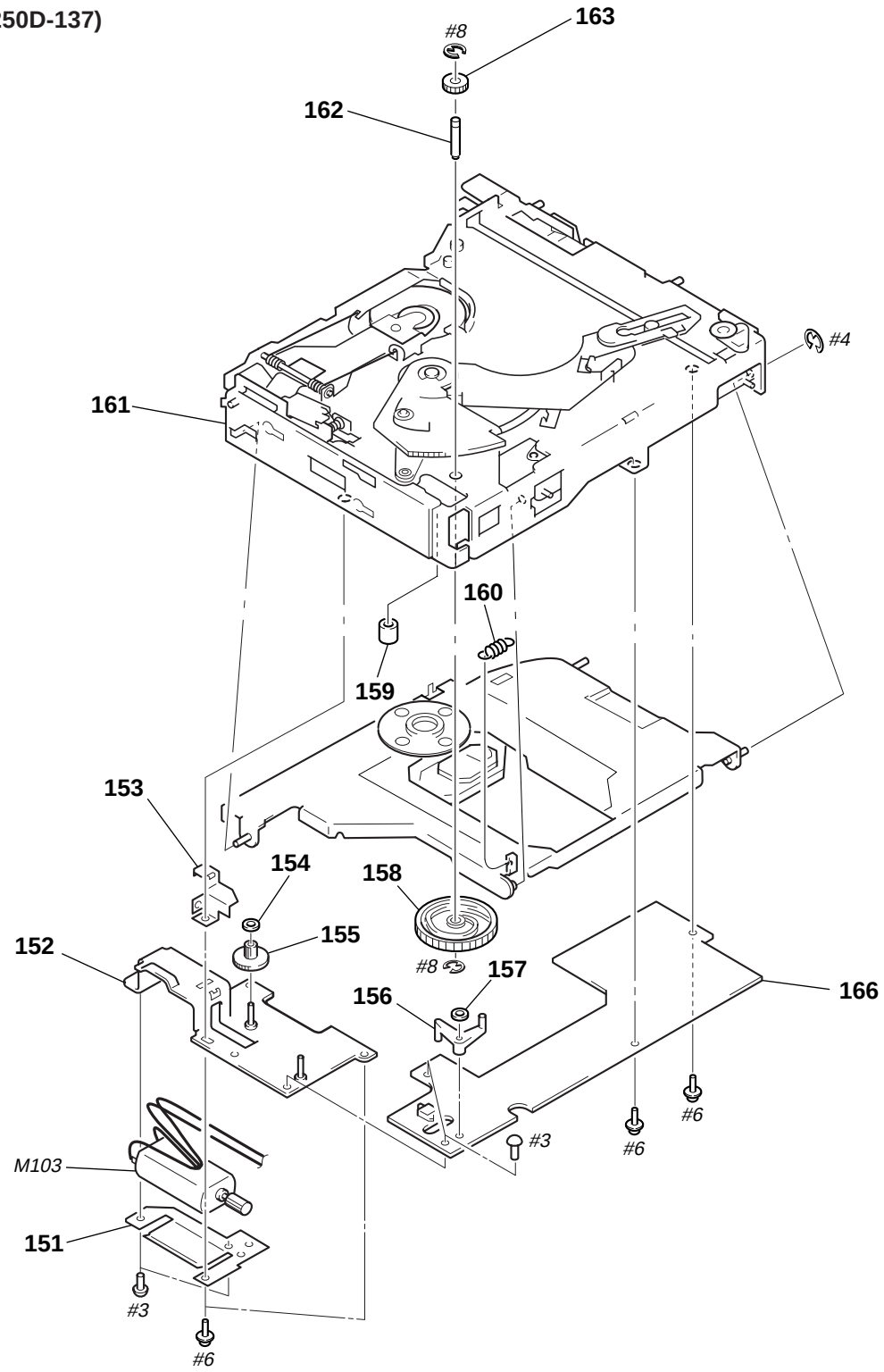
Ref. No.	Part No.	Description	Remark
51	X-3375-497-1	CHASSIS (U) SUB ASSY	
52	3-024-161-01	SPRING (SUT)	
54	3-011-997-01	SPRING (STOPPER. LOWER)	

(3) MECHANISM DECK SECTION-2 (MG-250D-137)



Ref. No.	Part No.	Description	Remark
101	3-024-170-01	SPRING (SB), TENSION	
* 102	3-024-172-01	BRACKET (EVM)	
103	X-3378-136-1	CHASSIS (D.D) SUB ASSY	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	

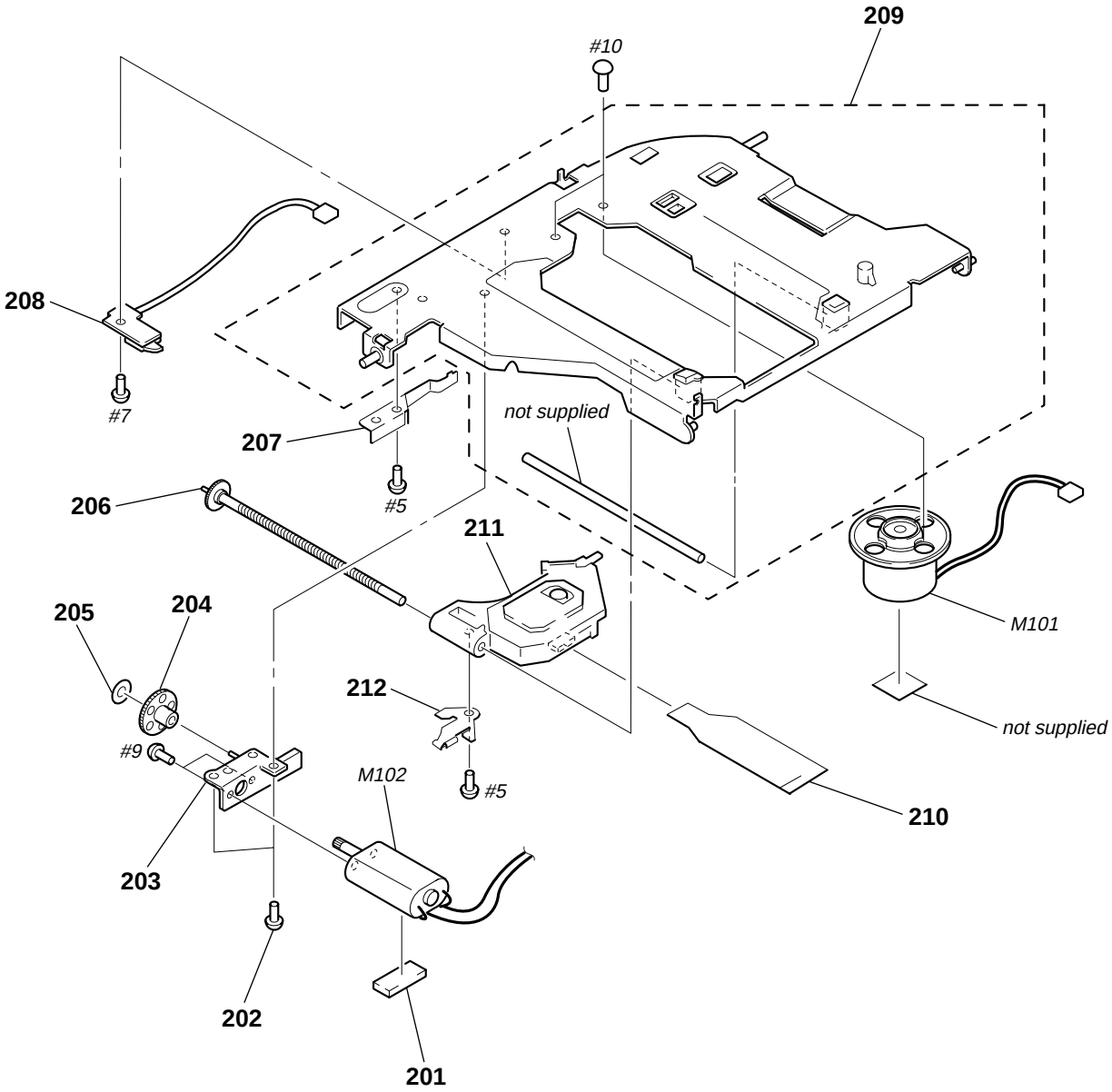
(4) MECHANISM DECK SECTION-3 (MG-250D-137)



Ref. No.	Part No.	Description	Remark
* 151	3-024-150-01	RETAINER (CHM)	
* 152	X-3378-080-1	BRACKET (CHM. D) ASSY	
153	3-010-270-01	COVER (CHM)	
154	3-321-813-01	WASHER, COTTER POLYETHYLENE	
155	3-017-139-01	GEAR (NWL)	
156	3-010-255-01	ARM (NSW)	
157	3-573-936-00	STOPPER, REEL	
158	X-3373-552-1	GEAR (LOAD CAM) ASSY	

Ref. No.	Part No.	Description	Remark
159	3-010-252-01	ROLLER (CRE)	
160	3-010-268-01	SPRING (DH), TENSION	
* 161	A-3290-194-I	MAIN ASSY, CHASSIS (EVY)	
162	3-010-254-01	SHAFT (ROTARY PREVENTION C)	
163	3-010-253-01	GEAR (ML)	
* 166	A-3317-993-A	RF BOARD, COMPLETE	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	

(5) MECHANISM DECK SECTION-4 (MG-250D-137)



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
201	3-911-215-02	SHEET (LEAD RETAINER)	
202	3-920-362-01	SCREW (ESCUTCHEON)	
203	X-3375-219-1	HOLDER (SLED) ASSY	
204	3-022-841-01	GEAR (SD)	
205	3-573-936-00	STOPPER, REEL	
206	A-3291-958-A	SHAFT (SLED) ASSY	
207	3-010-263-01	DETENT (SHAFT THRUST)	

Ref. No.	Part No.	Description	Remark
* 208	1-664-104-11	SW BOARD	
* 209	A-3301-077-B	BASE (OPT) (J) ASSY	
210	1-664-626-11	OP FLEXIBLE BOARD	
⚠211	8-820-010-06	OPTICAL PICK-UP KSS-521A/K1RP	
212	3-010-262-01	DETENT (SLED)	
M101	A-3291-956-B	MOTOR SUB ASSY, SPINDLE	
M102	A-3291-955-A	MOTOR SUB ASSY, SLED	

5. ELECTRICAL PARTS LIST

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. . : µA. . uPA. . : µPA. .
  uPB. . : µPB. . uPC. . : µPC. .
  uPD. . : µPD. .
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ 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
*	1-674-307-12	JACK BOARD			
		**********			
		< CAPACITOR >			
C901	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C902	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C904	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
		< CONNECTOR >			
CN901	1-779-077-31	PLUG, CONNECTOR (CONTROL, AUDIO OUT)			
CNJ901	1-778-775-21	CONNECTOR, FPC 13P			
		< FERRITE BEAD >			
FB901	1-500-445-21	FERRITE	0uH		
FB902	1-500-445-21	FERRITE	0uH		
FB903	1-500-445-21	FERRITE	0uH		
		< IC LINK >			
IC901	1-532-686-21	LINK, IC			
**********					
*	A-3326-235-A	MAIN BOARD, COMPLETE			
		**********			
	1-676-339-11	MAIN FLEXIBLE BOARD			
	1-676-340-11	JACK FLEXIBLE BOARD			
	3-028-802-01	SPACER (MOUNT 30)			
*	3-939-139-01	SPACER			
		< CAPACITOR >			
C101	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C104	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C105	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C106	1-115-566-11	CERAMIC CHIP	4.7uF	10%	10V
C107	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C108	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C112	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C113	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C114	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C115	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C201	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C202	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C203	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C205	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C206	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C304	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C305	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C306	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C307	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C308	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C309	1-125-701-11	DOUBLE LAYER	0.047F		5.5V
C310	1-124-589-11	ELECT	47uF	20%	16V
C311	1-164-346-11	CERAMIC CHIP	1uF		16V
C314	1-124-589-11	ELECT	47uF	20%	16V
C315	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C316	1-115-466-00	ELECT	1000uF	20%	16V
C317	1-126-382-11	ELECT	100uF	20%	16V
C318	1-126-382-11	ELECT	100uF	20%	16V
C320	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C321	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C501	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C502	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C503	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C504	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C601	1-126-513-11	ELECT	47uF	20%	6.3V
C602	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C603	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C604	1-126-382-11	ELECT	100uF	20%	6.3V
C606	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C608	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C609	1-126-513-11	ELECT	47uF	20%	6.3V
C610	1-126-157-11	ELECT	10uF	20%	16V
C611	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C620	1-126-157-11	ELECT	10uF	20%	16V
C621	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C630	1-126-157-11	ELECT	10uF	20%	16V
C642	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
		< DIODE >			
D301	8-719-975-40	DIODE RB411D-T146			
D302	8-719-017-94	DIODE MA8180-TX			
D303	8-719-017-94	DIODE MA8180-TX			

Ref. No.	Part No.	Description			Remark
D304	8-719-975-40	DIODE RB411D-T146			
D305	8-719-975-40	DIODE RB411D-T146			
D306	8-719-914-43	DIODE DAN202K-T-146			
D307	8-719-069-56	DIODE UDZS-TE17-6.2B			
D308	8-719-988-61	DIODE 1SS355TE-17			
D311	8-719-914-44	DIODE DAP202K-T-146			
D314	8-719-975-40	DIODE RB411D-T146			
D315	8-719-988-61	DIODE 1SS355TE-17			
D316	8-719-422-67	DIODE MA8062-H-TX			
D317	8-719-988-61	DIODE 1SS355TE-17			
D318	8-719-976-96	DIODE MA8047-H-TX			
D320	8-719-069-60	DIODE UDZS-TE17-9.1B			
D501	8-719-988-61	DIODE 1SS355TE-17			
D601	8-719-069-57	DIODE UDZS-TE17-6.8B			
D602	8-719-069-57	DIODE UDZS-TE17-6.8B			
		< FERRITE BEAD >			
FB601	1-500-445-21	FERRITE 0uH			
		< IC >			
IC101	8-752-384-15	IC CXD2530Q			
IC201	8-752-912-36	IC CXP84332-219Q			
IC301	8-759-537-09	IC BA6287F-E2			
IC302	8-759-444-86	IC BA8272F-E2			
IC304	8-759-363-81	IC XC61AN4002PR			
IC501	8-752-904-83	IC CXP83413-049Q			
IC502	8-759-497-29	IC LC35256DM-70-TLM			
IC503	8-759-243-19	IC TC7SU04F			
IC601	8-759-494-78	IC TC9464FN-EL			
		< TRANSISTOR >			
Q201	8-729-020-67	TRANSISTOR XN1A312-TX			
Q301	8-729-028-62	TRANSISTOR DTA115EKA-T146			
Q302	8-729-230-49	TRANSISTOR 2SC2712-YG-TE85L			
Q303	8-729-921-12	TRANSISTOR 2SD1834-T101			
Q306	8-729-020-67	TRANSISTOR XN1A312-TX			
Q307	8-729-019-00	TRANSISTOR 2SD2394-G			
Q308	8-729-020-67	TRANSISTOR XN1A312-TX			
Q309	8-729-019-00	TRANSISTOR 2SD2394-G			
Q601	8-729-901-00	TRANSISTOR DTC124EKA-T146			
Q602	8-729-027-23	TRANSISTOR DTA114EKA-T146			
Q610	8-729-015-39	TRANSISTOR UN2226- (TX)			
Q620	8-729-015-39	TRANSISTOR UN2226- (TX)			
		< RESISTOR >			
R101	1-216-105-00	RES-CHIP	220K	5%	1/10W
R102	1-216-121-00	RES-CHIP	1M	5%	1/10W
R103	1-216-113-00	METAL CHIP	470K	5%	1/10W
R104	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R105	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R106	1-216-073-00	METAL CHIP	10K	5%	1/10W
R107	1-216-121-00	RES-CHIP	1M	5%	1/10W
R108	1-216-097-00	RES-CHIP	100K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-049-11	RES-CHIP	1K	5%	1/10W
R115	1-216-033-00	METAL CHIP	220	5%	1/10W

Ref. No.	Part No.	Description			Remark
R116	1-216-033-00	METAL CHIP	220	5%	1/10W
R117	1-216-033-00	METAL CHIP	220	5%	1/10W
R202	1-216-097-00	RES-CHIP	100K	5%	1/10W
R203	1-216-097-00	RES-CHIP	100K	5%	1/10W
R204	1-216-097-00	RES-CHIP	100K	5%	1/10W
R205	1-216-097-00	RES-CHIP	100K	5%	1/10W
R206	1-216-097-00	RES-CHIP	100K	5%	1/10W
R207	1-216-049-11	RES-CHIP	1K	5%	1/10W
R211	1-216-097-00	RES-CHIP	100K	5%	1/10W
R212	1-216-097-00	RES-CHIP	100K	5%	1/10W
R213	1-216-097-00	RES-CHIP	100K	5%	1/10W
R219	1-216-049-11	RES-CHIP	1K	5%	1/10W
R220	1-216-097-00	RES-CHIP	100K	5%	1/10W
R301	1-216-089-00	RES-CHIP	47K	5%	1/10W
R302	1-216-097-00	RES-CHIP	100K	5%	1/10W
R303	1-216-099-00	METAL CHIP	120K	5%	1/10W
R304	1-216-089-00	RES-CHIP	47K	5%	1/10W
R306	1-216-095-00	METAL CHIP	82K	5%	1/10W
R307	1-216-049-11	RES-CHIP	1K	5%	1/10W
R308	1-216-049-11	RES-CHIP	1K	5%	1/10W
R309	1-216-089-00	RES-CHIP	47K	5%	1/10W
R311	1-216-101-00	METAL CHIP	150K	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R314	1-216-295-00	SHORT	0		
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-033-00	METAL CHIP	220	5%	1/10W
R320	1-216-041-00	METAL CHIP	470	5%	1/10W
R321	1-216-041-00	METAL CHIP	470	5%	1/10W
R501	1-216-089-00	RES-CHIP	47K	5%	1/10W
R502	1-216-049-11	RES-CHIP	1K	5%	1/10W
R504	1-216-073-00	METAL CHIP	10K	5%	1/10W
R505	1-216-049-11	RES-CHIP	1K	5%	1/10W
R601	1-216-029-00	METAL CHIP	150	5%	1/10W
R602	1-216-033-00	METAL CHIP	220	5%	1/10W
R610	1-216-033-00	METAL CHIP	220	5%	1/10W
R611	1-216-097-00	RES-CHIP	100K	5%	1/10W
R612	1-216-295-00	SHORT	0		
R620	1-216-033-00	METAL CHIP	220	5%	1/10W
R621	1-216-097-00	RES-CHIP	100K	5%	1/10W
R622	1-216-295-00	SHORT	0		
R630	1-216-295-00	SHORT	0		
		< VARIABLE RESISTOR >			
RV201	1-223-834-11	RES, ADJ, CARBON 47K			
RV202	1-225-951-21	RES, VAR, SLIDE 10K (ELEVATOR HEIGHT SENSOR)			
		< SWITCH >			
SW201	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE DETECT)			
SW202	1-771-540-11	SWITCH, PUSH (1 KEY) (MAGAZINE IN/OUT DETECT)			
SW301	1-571-532-21	SWITCH, TACTIL (⏏)			
		< VIBRATOR >			
X201	1-781-472-21	VIBRATOR, CERAMIC (8MHz)			
X501	1-767-510-11	VIBRATOR, CERAMIC (10MHz)			
X601	1-760-307-11	VIBRATOR, CERAMIC (16.9344MHz)			

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RF

Ref. No.	Part No.	Description			Remark
*	A-3317-993-A	RF BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C10	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C12	1-113-500-11	TANTALUM CHIP	100uF	20%	10V
C13	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C14	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C15	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C16	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C17	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C18	1-111-253-11	TANTALUM CHIP	100uF	20%	6.3V
C19	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C21	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C22	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C23	1-113-682-11	TANTALUM CHIP	33uF	20%	10V
C24	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C25	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C26	1-163-021-11	CERAMIC CHIP	0.01uF	10%	50V
C27	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C28	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C29	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C30	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C31	1-113-987-11	TANTALUM CHIP	4.7uF	20%	25V
C32	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C33	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C34	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C35	1-104-700-11	CERAMIC CHIP	0.027uF	10%	16V
C36	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C37	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C38	1-104-913-11	TANTALUM CHIP	10uF	20%	16V
C39	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C40	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C41	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C42	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C43	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C51	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C52	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C53	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C54	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C55	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C56	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C57	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C58	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C59	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C60	1-104-914-11	TANTALUM CHIP	22uF	20%	16V
		< CONNECTOR >			
CNJ11	1-778-776-21	CONNECTOR, FPC 17P			
CNJ12	1-778-777-21	CONNECTOR, FPC 26P			
* CNP53	1-580-055-21	PIN, CONNECTOR (SMD) 2P			
		< IC >			
IC11	8-752-082-14	IC CXA1992BR			
IC51	8-759-071-79	IC BA6297AFP			
IC52	8-759-537-09	IC BA6287F-E2			

Ref. No.	Part No.	Description			Remark
		< TRANSISTOR >			
Q11	8-729-141-48	TRANSISTOR	2SB624T1-BV345		
		< RESISTOR >			
R11	1-218-348-11	RES-CHIP	110K	5%	1/16W
R12	1-216-839-11	METAL CHIP	33K	5%	1/16W
R13	1-216-839-11	METAL CHIP	33K	5%	1/16W
R14	1-218-348-11	RES-CHIP	110K	5%	1/16W
R16	1-216-857-11	METAL CHIP	1M	5%	1/16W
R17	1-216-837-11	METAL CHIP	22K	5%	1/16W
R18	1-216-841-11	METAL CHIP	47K	5%	1/16W
R22	1-216-857-11	METAL CHIP	1M	5%	1/16W
R25	1-216-851-11	METAL CHIP	330K	5%	1/16W
R26	1-216-845-11	METAL CHIP	100K	5%	1/16W
R27	1-216-295-00	SHORT	0		
R28	1-216-295-00	SHORT	0		
R30	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R31	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R32	1-216-837-11	METAL CHIP	22K	5%	1/16W
R33	1-216-158-00	RES-CHIP	22	5%	1/8W
R34	1-216-855-11	METAL CHIP	680K	5%	1/16W
R35	1-216-835-11	METAL CHIP	15K	5%	1/16W
R36	1-216-836-11	METAL CHIP	18K	5%	1/16W
R37	1-216-851-11	METAL CHIP	330K	5%	1/16W
R38	1-216-837-11	METAL CHIP	22K	5%	1/16W
R39	1-216-847-11	METAL CHIP	150K	5%	1/16W
R40	1-218-273-11	RES-CHIP	510K	5%	1/16W
R41	1-218-296-11	RES-CHIP	75K	5%	1/16W
R42	1-202-930-11	RES-CHIP	750K	5%	1/16W
R43	1-216-849-11	METAL CHIP	220K	5%	1/16W
R44	1-216-846-11	METAL CHIP	120K	5%	1/16W
R45	1-216-837-11	METAL CHIP	22K	5%	1/16W
R46	1-216-847-11	METAL CHIP	150K	5%	1/16W
R47	1-216-834-11	METAL CHIP	12K	5%	1/16W
R48	1-216-845-11	METAL CHIP	100K	5%	1/16W
R49	1-216-093-11	RES-CHIP	68K	5%	1/10W
R50	1-216-841-11	METAL CHIP	47K	5%	1/16W
R51	1-216-073-00	METAL CHIP	10K	5%	1/10W
R52	1-216-093-11	RES-CHIP	68K	5%	1/10W
R53	1-216-073-00	METAL CHIP	10K	5%	1/10W
R54	1-216-073-00	METAL CHIP	10K	5%	1/10W
R55	1-216-073-00	METAL CHIP	10K	5%	1/10W
R56	1-216-093-11	RES-CHIP	68K	5%	1/10W
R57	1-216-081-00	METAL CHIP	22K	5%	1/10W
R58	1-216-093-11	RES-CHIP	68K	5%	1/10W
R59	1-216-073-00	METAL CHIP	10K	5%	1/10W
R60	1-216-073-00	METAL CHIP	10K	5%	1/10W
R61	1-216-073-00	METAL CHIP	10K	5%	1/10W
R62	1-216-085-00	METAL CHIP	33K	5%	1/10W
R63	1-216-073-00	METAL CHIP	10K	5%	1/10W
R64	1-216-073-00	METAL CHIP	10K	5%	1/10W
R65	1-216-073-00	METAL CHIP	10K	5%	1/10W
		< VARIABLE RESISTOR >			
RV14	1-238-091-11	RES, ADJ, CERMET	22K		

Ref. No.	Part No.	Description	Remark
		< SWITCH >	
SW11	1-762-946-12	SWITCH, PUSH (1 KEY) (CHUCKING END DETECT)	
SW12	1-762-946-12	SWITCH, PUSH (1 KEY) (SAVE END DETECT)	
*	1-664-104-11	SW BOARD	
		< SWITCH >	
SW1	1-529-565-11	SWITCH, PUSH (1 KEY) (LIMIT)	
		MISCELLANEOUS	
210	1-664-626-11	OP FLEXIBLE BOARD	
⚠211	8-820-010-06	OPTICAL PICK-UP KSS-521A/K1RP	
M101	A-3291-956-B	MOTOR SUB ASSY, SPINDLE	
M102	A-3291-955-A	MOTOR SUB ASSY, SLED	
M103	A-3301-123-A	ELJ MOTOR ASSY (CHUCKING)	
M104	A-3301-123-A	ELJ MOTOR ASSY (ELEVATOR)	
		HARDWARE LIST	
#3	7-685-781-09	SCREW +PTT 2X4 (S)	
#4	7-624-104-04	STOPRING 2.0, TYPE -E	
#5	7-627-554-07	SCREW, PRECISION +P 2X2.2	
#6	7-628-253-00	SCREW +PS 2X4	
#7	7-627-553-27	SCREW, PRECISION +P 2X2.5	
#8	7-624-102-04	STOPRING 1.5, TYPE-E	
#9	7-627-850-28	SCREW, PRECISION +P 1.4X3	
#10	7-627-000-00	SCREW, PRECISION +P 1.7X2.2 TYPE 3	
#12	7-685-780-09	SCREW +PTT 2X3 (S)	

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

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