

# MDX-61

## SERVICE MANUAL

Ver 1.1 2001.08

US Model  
Canadian Model  
AEP Model  
UK Model  
E Model



This set is automatic electrical adjustment.

Model Name Using Similar Mechanism	MDX-60
Base Mechanism Type	MG-798-133
Optical Pick-Up Name	KMS-193C/J2N

### SPECIFICATIONS

System	Mini disc digital audio system	Current drain	300 mA (MD playback)
Laser Diode Properties	Material: GaAlAs		600 mA (during loading or ejecting a disc)
	Wavelength: 780nm	Dimensions	Approx. 176×83.5×125 mm (7×3 <sup>3</sup> / <sub>8</sub> ×5 in.) (w/h/d)
	Emission Duration: Continuous		not incl. projecting parts and controls
	Laser out-put Power: Less than 44.6μW*	Mass	Approx. 1.1 kg (2 lb. 7 oz.)
	* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.	Power requirement	12 V DC car battery (negative ground)
Frequency response	20–20,000 Hz	Supplied accessories	Mounting hard ware (1 set) Bus cable 5.5 m (1) RCA pin cord 5.5 m (1)
Wow and flutter	Below measurable limit		
Signal-to-noise ratio	95 dB		
Output	Bus control output (8 PIN) Analog audio output (RCA PIN)		

- U.S. and foreign patents licensed from Dolby Laboratories Licensing Corporation.
- Design and specifications subject to change without notice.

## MINIDISC CHANGER

9-925-528-12  
2001H0500-1  
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**Sony Corporation**  
e Vehicle Company  
Shinagawa Tec Service Manual Production Group

# SONY®

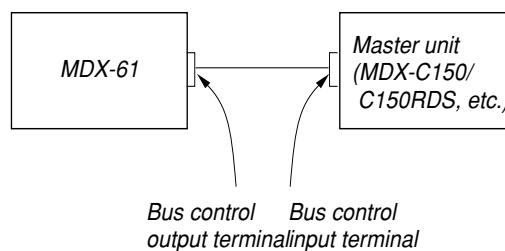
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## SERVICING NOTE

### [To place this set in the play mode]

This set does not have the key control function, and therefore it cannot activate the play mode by itself. Also, the key control to this set is done through a serial communication with the master unit (SONY Bus System compatible car audio, TV tuner, source selector, etc.). Accordingly, if repairing this set, connect as shown below:



## CAUTION

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

### SAFETY-RELATED COMPONENT WARNING!!

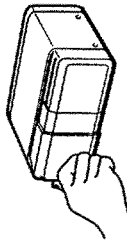
COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

### ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

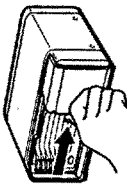
LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

**Preparations/Preparatifs/Vorbereitungen/Preparazione**

**1** Slide the door open until it clicks.  
Ouvrez le panneau frontal en le faisant coulisser jusqu'à ce qu'il s'encliquette.



Öffnen Sie die Klappe, indem Sie sie zur Seite schieben, bis sie einrastet.  
Aprire lo sportello facendolo scorrere fino a udire uno scatto.



About one minute after opening the door, the inside compartment will be lit.  
Le compartiment intérieur s'éclaire environ une minute après avoir ouvert le panneau frontal.

Das Innere des Fachs wird nach dem Öffnen der Klappe ungefähr eine Minute lang beleuchtet.  
Dopo circa un minuto dall'apertura della porta, lo scomparto interno si illumina.

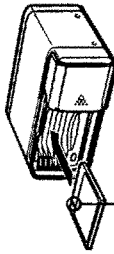
**Do not reach into the changer, you may get hurt.**

**N'introduisez pas les doigts à l'intérieur du changeur. Vous risqueriez de vous blesser.**

**Greifen Sie nicht in den Wechsler. Andernfalls besteht Verletzungsgefahr.**

**Non introdurre le dita nell'apparecchio. È pericoloso.**

**2** Insert an MD until it clicks.  
Introduisez un MD jusqu'à ce qu'il s'encliquette.  
Legen Sie eine MD ein. Achten Sie darauf, daß sie einrastet.  
Inserire un minidisco fino a sistemarlo con uno scatto.



Insert an MD with the arrow and label facing up.  
Introduisez un MD avec la flèche et l'étiquette orientées vers le haut.

Legen Sie eine MD mit dem Pfeil und der Beschriftung nach oben ein.  
Inserire un minidisco con la freccia e l'etichetta rivolte verso l'alto.

**Notes**  
• Do not insert an MD with the label facing downwards.  
• Make sure the MD's shutter is closed before inserting it into the magazine.

**Remarques**  
• N'introduisez pas un MD avec l'étiquette vers le bas.  
• Assurez-vous que le volet du MD est fermé avant de l'introduire dans le magazine.

**Minirecchi**  
• Legen Sie eine MD nicht mit der Beschriftung nach unten ein.  
• Achten Sie darauf, daß der Verschluss der MD geschlossen ist, bevor Sie sie in das Magazin einlegen.

**Note**  
• Non inserire minidisco con l'etichetta rivolta verso il basso.  
• Accertarsi che l'attuatore del minidisco sia chiuso prima di collocarlo nel cassetto.

**3** Slide the door closed until it clicks.  
Refermez le panneau frontal en le faisant coulisser jusqu'à ce qu'il s'encliquette.



Always use the unit with the door closed.  
Otherwise, foreign matter may enter the unit and contaminate the lenses inside the changer.

Le panneau frontal doit toujours être fermé en cours d'utilisation.

Corpi estranei potrebbero penetrare nell'apparecchio e sporcare le lenti interne del cambiatore.

**Note**  
When an MD is inserted and the door is closed, or the next button of the connected car audio is pressed, the unit will be automatically erased and read the information on the MDs. After the information on all of the MDs in the disc magazine has been read, the unit is ready to play.

**Minirecchi**

Wenn Sie eine MD in den Wechsler einlegen und die Klappe schließen oder die Rücksetztaete an der eingeschlossenen Autoanlage drücken, wird das Gerät automatisch gelöscht, und die Informationen auf der MD werden eingelesen.  
Wenn die Informationen aller MDs im MD-Magazin eingelesen wurden, ist das Gerät bereit für die Wiedergabe.

Verwenden Sie das Gerät immer nur mit geschlossener Klappe.  
Andernfalls können Fremdkörper in das Gerät gelangen und die Linsen im Inneren des Wechslers verschmutzen.

Utilizzare sempre l'apparecchio con lo sportello chiuso.

Corpi estranei potrebbero penetrare nell'apparecchio e sporcare le lenti interne del cambiatore.

**Nota**

Quando viene inserito un minidisco nel cambiatore o viene premuto il pulsante di reimpostazione dell'autonoleggio collegata, l'apparecchio si attiva automaticamente e legge i dati dei minidischi. Al termine della lettura di tutti i dati dei minidischi presenti nel cambiatore, l'apparecchio è pronto per la riproduzione.

**To remove an MD/Pour retirer un MD/Estrazione di un minidisco**

You can remove MDs anytime except while one is playing.  
Vous pouvez retirer des MD à tout moment sauf en cours de lecture.  
Sie können MDs außer während der Wiedergabe einer MD jederzeit entnehmen.  
I minidischi possono essere estratti in qualsiasi momento tranne durante la riproduzione.



Press the EJECT button.  
Appuyez sur la touche EJECT.  
Drücken Sie die Taste EJECT.  
Premere il tasto EJECT.

**Notes**  
• When removing two or more MDs, remove them in order from the upper tray.  
• Do not press the EJECT button while the unit is playing or reading an MD.

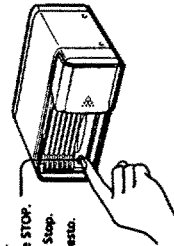
**Remarques**  
• Si vous retirez deux MD ou plus, commencez par le plateau supérieur.  
• N'appuyez pas sur la touche EJECT pendant que l'appareil est en cours de lecture ou de reproduction d'un MD.

**Minirecchi**  
• Wenn Sie zwei oder mehr MDs entnehmen, nehmen Sie zunächst die in dem weiter oben liegenden Fachern heraus.  
• Drücken Sie die Taste EJECT nicht, während das Gerät eine MD abspielt oder die Informationen auf der MD entbitt.

**Note**  
• Quando si estraggono due o più minidischi, procedere all'estrazione a partire dal contenitore più in alto.  
• Non premere il tasto EJECT durante la riproduzione o la lettura di un minidisco.

**To remove the MD in the play position/Pour retirer le MD en position de lecture/Estrazione di un minidisco pronto per la riproduzione**

Press the stop button.  
Appuyez sur la touche STOP.  
Drücken Sie die Taste Stop.  
Premere il tasto di arresto.



The MD backs out to the loading position.  
Press the EJECT button, and remove the MD.  
You can also remove an MD in this way while it's playing.

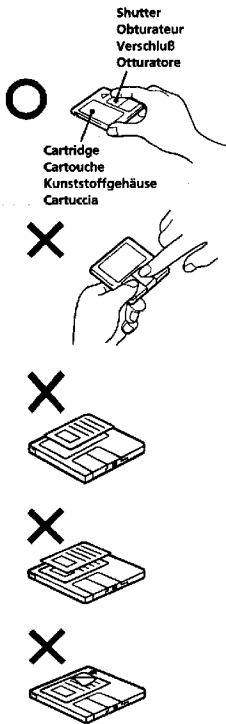
Le MD quitte la position de chargement.  
Appuyez sur la touche EJECT et retirez le MD.  
Vous pouvez retirer un MD de cette façon lorsqu'il est en cours de lecture ou dans la position de lecture.

Die MD wird an die Einlegeposition gebracht.  
Drücken Sie die Taste EJECT, und nehmen Sie die MD heraus.  
Auf diese Art können Sie eine MD herausnehmen, die gerade abgespielt wird bzw. die sich an der Wiedergabeposition befindet.

Il minidisco ritorna nella posizione di caricamento.  
Premere il tasto EJECT ed estrarre il minidisco.  
Seguire questa procedura per estrarre un minidisco pronto per la riproduzione o in fase di riproduzione.

## Features

- Sony BUS system compatible with mobile MD changers.
- **Direct-in system** for inserting and removing MDs easily.
- **No waiting time to change discs** in continuous play.
- Efficient operation in the dark as lighting in the changer compartment comes on when you open its door.
- 1 bit Digital/Analog converter for high quality sound reproduction.



## Notes on minidisks

Since the MD itself is housed in a cartridge, free from accidental contact with your fingers and dust etc., it can withstand a certain degree of rough handling. However, dirt or dust on the surface of the cartridge or a warped cartridge may cause a malfunction in the unit. To enjoy optimum sound quality, observe the following.

**Never touch the surface of the MD itself by deliberately opening the shutter on the cartridge.**

## Notes on mounting labels

Be sure to mount labels on cartridges correctly, as failing to do so may cause an MD to become stuck in the changer.

- Mount the label in a suitable position.
- Remove old labels before putting new ones on.
- Replace labels that are beginning to peel away from the MD.

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

Make sure that it is not left on the dashboard or the rear tray of a car etc. where the temperature can also be excessive.

## Cleaning

Wipe the surface of the MD cartridge from time to time with a soft dry cloth.

## 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 MD and wait for about an hour until the moisture evaporates.

# Installation/Installation/ Installation/Installazione

## Precautions

- Avoid installing the unit in a place:
  - subject to temperatures exceeding 55°C (such as in a car parked in direct sunlight).
  - subject to direct sunlight.
  - near heat sources (such as heaters).
  - exposed to rain or moisture.
  - exposed to excessive dust or dirt.
  - subject to excessive vibration.
- Choose the mounting location carefully, observing the following:
  - 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.
- Before installing in a glove box or on a console box, be sure the installation will not interfere with the main unit's cords and cables, and that the installation belt does not prevent the cover from opening.

## Mounting angle adjustment/Réglage de l'angle de montage/Einstellen des Montagewinkels/ Regolazione dell'inclinazione di montaggio

You may install the unit at any positive angle as long as it is attached to a secure part of the car.

Vous pouvez installer l'appareil sous n'importe quel angle positif, pour peu qu'il soit fixé à un endroit sûr de la voiture.

Sie können das Gerät in jedem beliebigen positiven Winkel an einem unbeweglichen Teil im Wageninneren montieren.

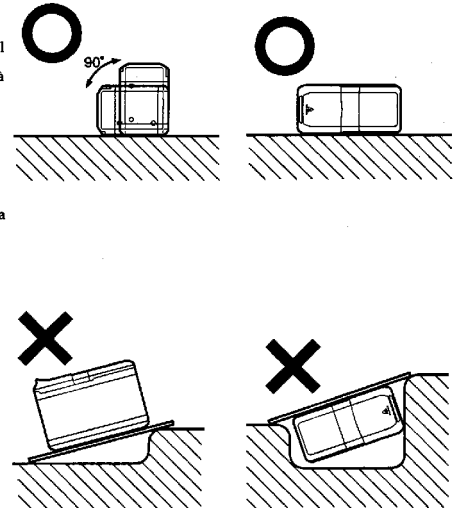
L'apparechio può essere installato con qualsiasi inclinazione di grado positivo, a condizione che sia montato su una parte fissa dell'auto.

Do not install the unit on a detached mounting board for placement on uneven surfaces or upside down.

N'installez pas l'appareil sur une plaque de montage amovible en vue d'une installation sur un support inégal ou à l'envers.

Installieren Sie das Gerät nicht auf einer losen Montageplatte, wie sie zur Montage auf unebenen Oberflächen erhältlich ist, und nicht auf dem Kopf stehend.

Non installare l'apparechio su un piano di montaggio, su superfici inclinate o capovolto.



## Use the supplied screws/Utilisez les vis fournies/

## Verwenden Sie die mitgelieferten Schrauben/Utilizzare le viti in dotazione

Be sure to install this unit with the supplied screws ③. If you have to find replacement screws, use screws with the following specifications.

Installez cet appareil à l'aide des vis fournies ③. Si vous étiez amené à utiliser des vis de remplacement, sélectionnez des vis satisfaisant aux spécifications suivantes.

Installieren Sie das Gerät möglichst mit den mitgelieferten Schrauben ③. Falls Sie Ersatzschrauben benötigen sollten, verwenden Sie Schrauben mit folgenden Spezifikationen.

Installare l'apparechio con le viti in dotazione ③. Se si necessita di viti sostitutive, utilizzare viti che rispondano ai seguenti requisiti.

Replacement screw max. size

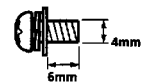
M4 × 6mm

Vis de remplacement max. M4 × 6mm

Ersatzschraube max. Größe M4 × 6mm

Viti sostitutive Dimensione max.

M4 × 6mm



**To prevent damage to the unit, do not use screws longer than 6 mm.**

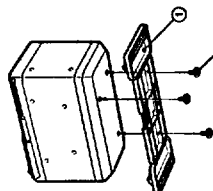
**Pour éviter d'endommager l'appareil, n'utilisez pas de vis d'une longueur supérieure à 6 mm.**

**Um das Gerät nicht zu beschädigen, dürfen Sie keine Schrauben verwenden, die länger als 6 mm sind.**

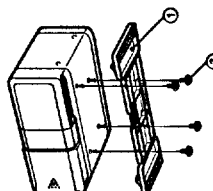
**Per evitare danni all'apparechio, non utilizzare viti più lunghe di 6 mm.**

**Under the passenger's seat or floor installation/Installation sous le siege du passager ou sur le plancher/Installation unter dem Beifahrersitz bzw. auf dem Boden/Installazione sotto il sedile o sul pavimento del lato passeggero**

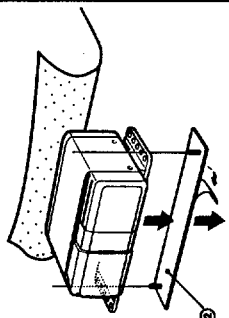
**1** Attach part ① to the unit with the supplied screws ②.  
 Bringen Sie Teil ① mit den mitgelieferten Schrauben ② am Gerät an.  
 Vertical installation  
 Installation verticale  
 Verticale installation  
 Installazione verticale



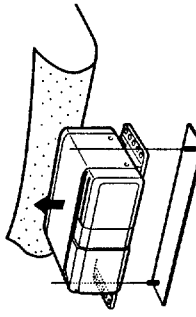
Horizontal installation  
 Installation horizontale  
 Horizontale installation  
 Installazione orizzontale



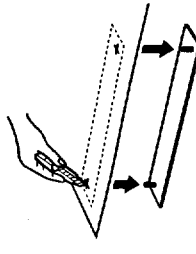
**2** Decide on the installation position, and remove any dirt or stains from that surface. Place the backing onto the mounting pad ③, then peel the backing and stick ④ to the floor.  
 Choisissez la position d'installation et nettoyez la surface de montage de toute trace de poussière ou de souillures. Placez le changeur sur le support de montage ③, décollez-en la protection et fixez-le ④ sur le plancher.  
 Legen Sie die Montagestelle fest, und entfernen Sie Staub oder Schmutz von der Oberfläche.  
 Stellen Sie das Gerät auf die Montageunterlage ③, lösen Sie dann die Schutzfolie, und kleben Sie ④ auf den Boden.  
 Scegliere la posizione di installazione ed eliminare eventuali tracce di sporco o macchie dalla superficie. Sistemare il cambiatore sul tappetino di montaggio ③, quindi staccare la pellicola antiodore e applicare il tappetino al pavimento.



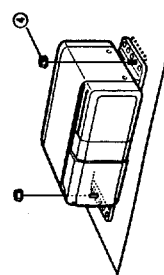
**3** Remove the MD changer.  
 Retirez le changeur de MD.  
 Nehmen Sie das MID-Wechselsystem herunter.  
 Togliere il cambiatore MD.



**4** Make cuts in the carpet with a box knife.  
 Découpez le tapis de sol à l'aide d'un cutter.  
 Schneiden Sie mit einem Cutter-Messer eine geeignete Aussparung in die Fußmatte.  
 Tagliare il tappetino con un temperino.

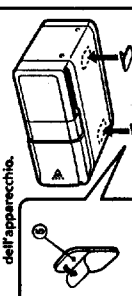


**5** Mount firmly with the nuts ①.  
 Fixez l'ensemble solidement au moyen des écrous ①.  
 Befestigen Sie das Gerät mit den Muttern ①.  
 Fissare l'apparecchio con gli appositi dadi ①.



**Glove box or console box installation/Installation dans une boîte à gants ou sur un boîtier de console/Installation im Handschuhfach oder im Konsolenfach/Installazione nel vano portaoggetti o nel cruscotto**

**1** Tear off the backing, and attach the double-sided adhesive tapes ⑤ to the bottom of the unit.  
 Décollez la protection et appliquez les bandes adhésives double face ⑤ sur le fond de l'appareil.  
 Lösen Sie die Schutzfolie, und bringen Sie die Doppelklebestreifen ⑤ an der Umseite des Geräts an.  
 Staccare la pellicola antiodore e applicare il nastro adesivo ⑤ a doppio lato nella parte inferiore dell'apparecchio.



**2** Remove any dirt or stains from the surface you're going to mount the unit on, then attach the unit.  
 Éliminez la poussière ou les souillures de la surface de montage de l'appareil et fixez ensuite l'appareil dessus.  
 Entfernen Sie Staub oder Schmutz von der Oberfläche, auf der Sie das Gerät montieren wollen, und bringen Sie dann das Gerät an.  
 Eliminare eventuali tracce di sporco o macchie dalla superficie su cui verrà montato l'apparecchio e quindi collocarvi quest'ultimo.

**Notes**

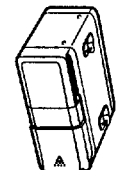
- Before attaching the unit, be sure that nothing interferes with the operation of the unit, and that the unit does not interfere with the glove box or console box cover.
- When you install the main unit in a glove box, be sure to install the unit at a positive angle.

**Precautions**

- Avant de fixer l'appareil, assurez-vous que rien ne puisse gêner son fonctionnement et que l'appareil n'entre pas l'ouverture du couvercle de la boîte à gants ou du boîtier de console.
- Si vous installez l'appareil principal dans une boîte à gants, montez-le suivant un angle positif.

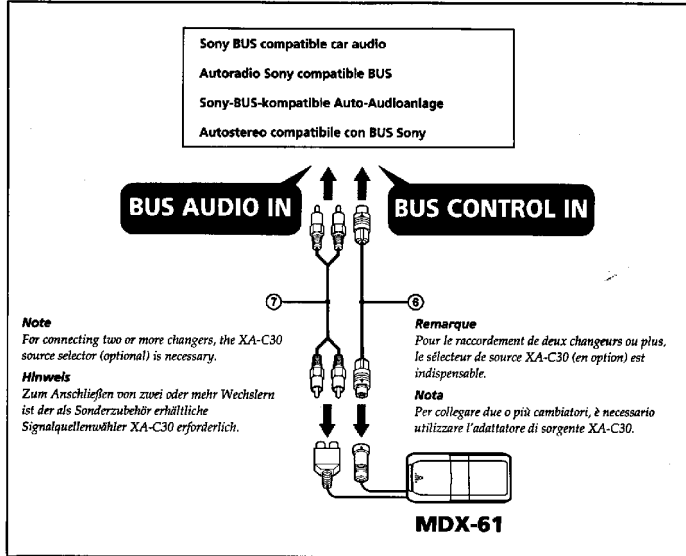
**Attenzione**

- Prima di collocare l'apparecchio, verificare che nulla ostacoli il funzionamento del vano portaoggetti o del cruscotto.
- Quando l'apparecchio centrale viene installato in un vano portaoggetti, verificare di installare l'apparecchio con un'inclinazione di grado positivo.



# Connections/Connexions/ Anschluß/Collegamenti

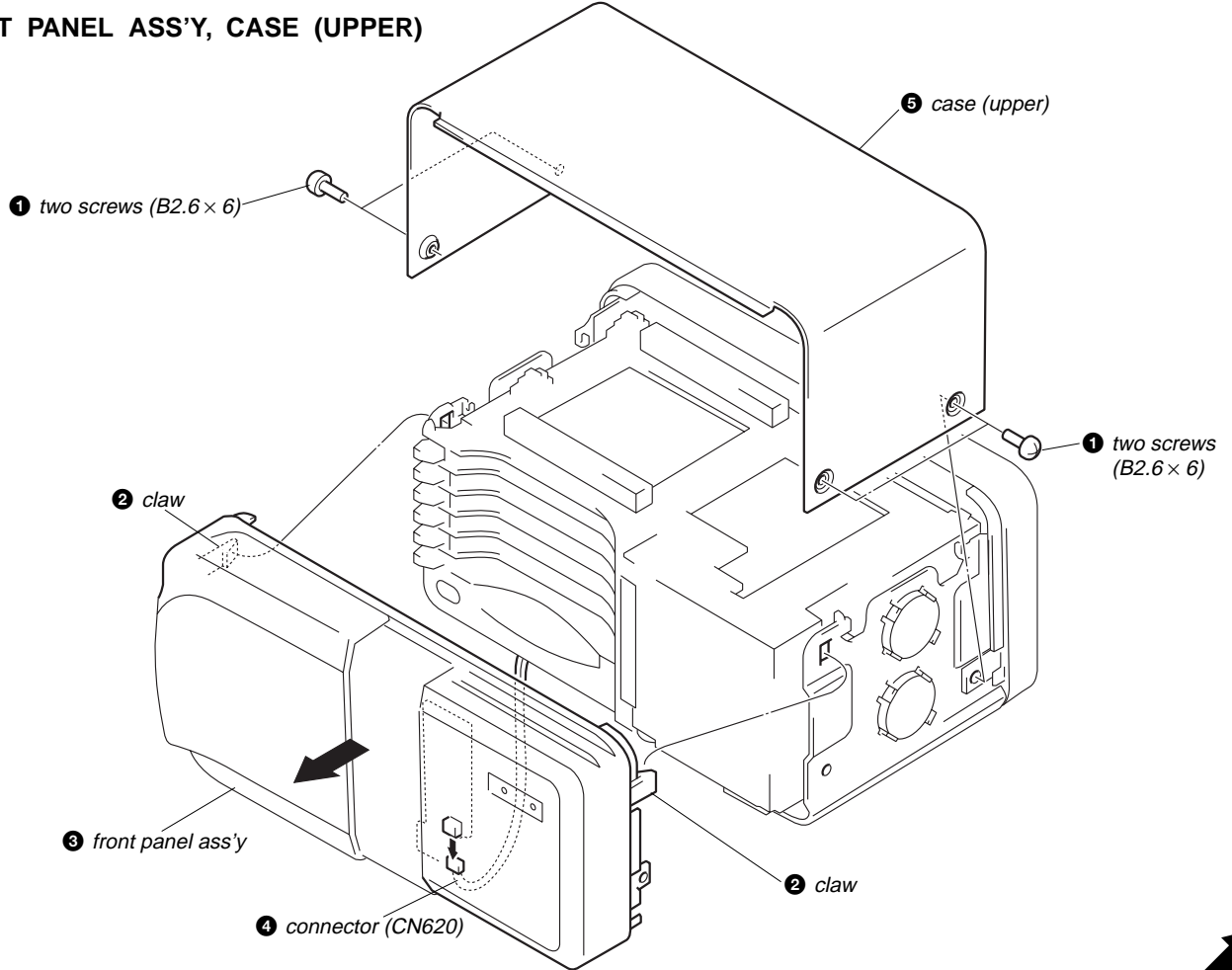
For details, refer to the Installation/Connection manuals of each product.  
Pour plus de détails, consulter le manuel d'installation/raccordement fourni avec chaque appareil.  
Einzelheiten entnehmen Sie bitte der Installations-/Anschlußanleitung des jeweiligen Geräts.  
Per maggiori dettagli, fare riferimento al manuale di installazione/di collegamento dei singoli prodotti.



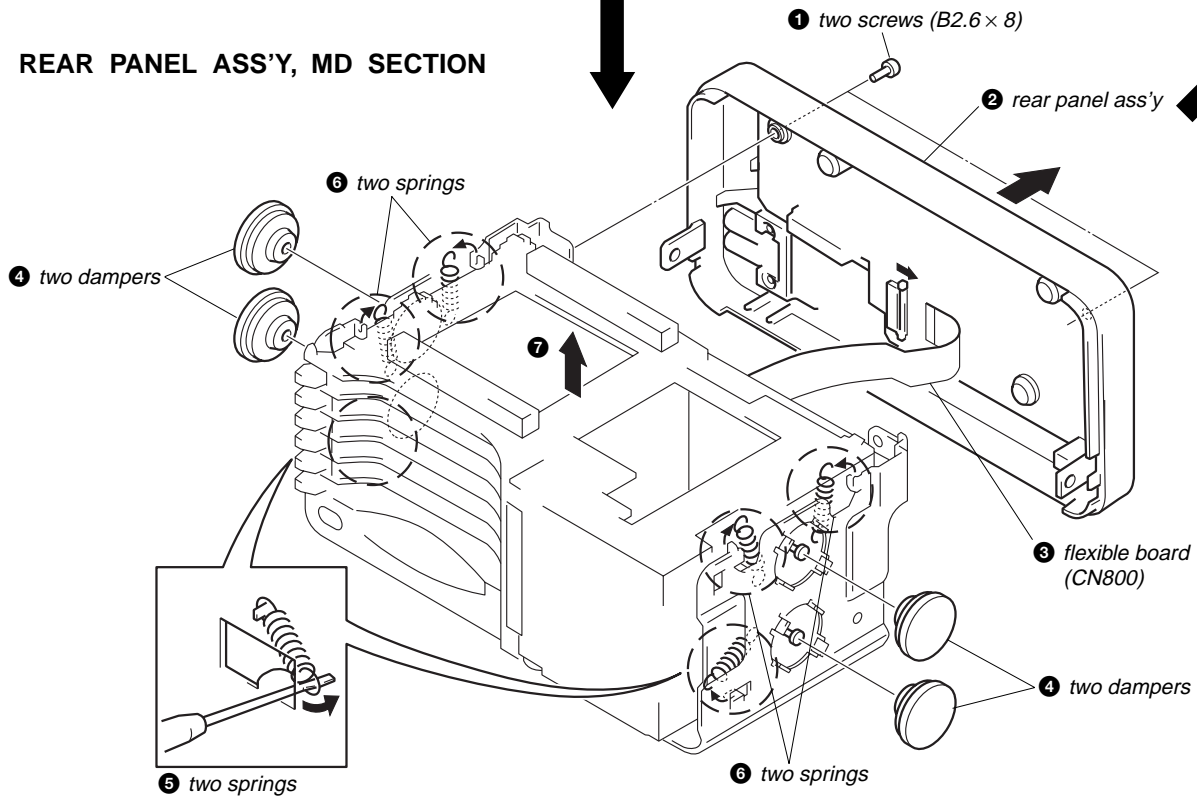
## SECTION 2 DISASSEMBLY

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

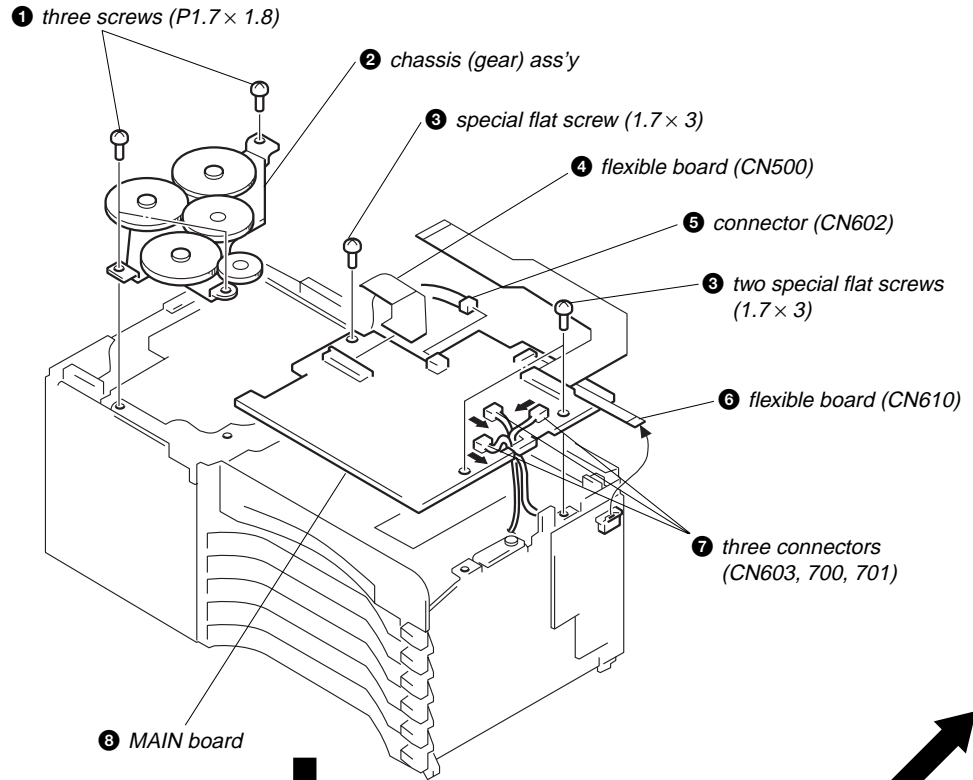
### FRONT PANEL ASS'Y, CASE (UPPER)



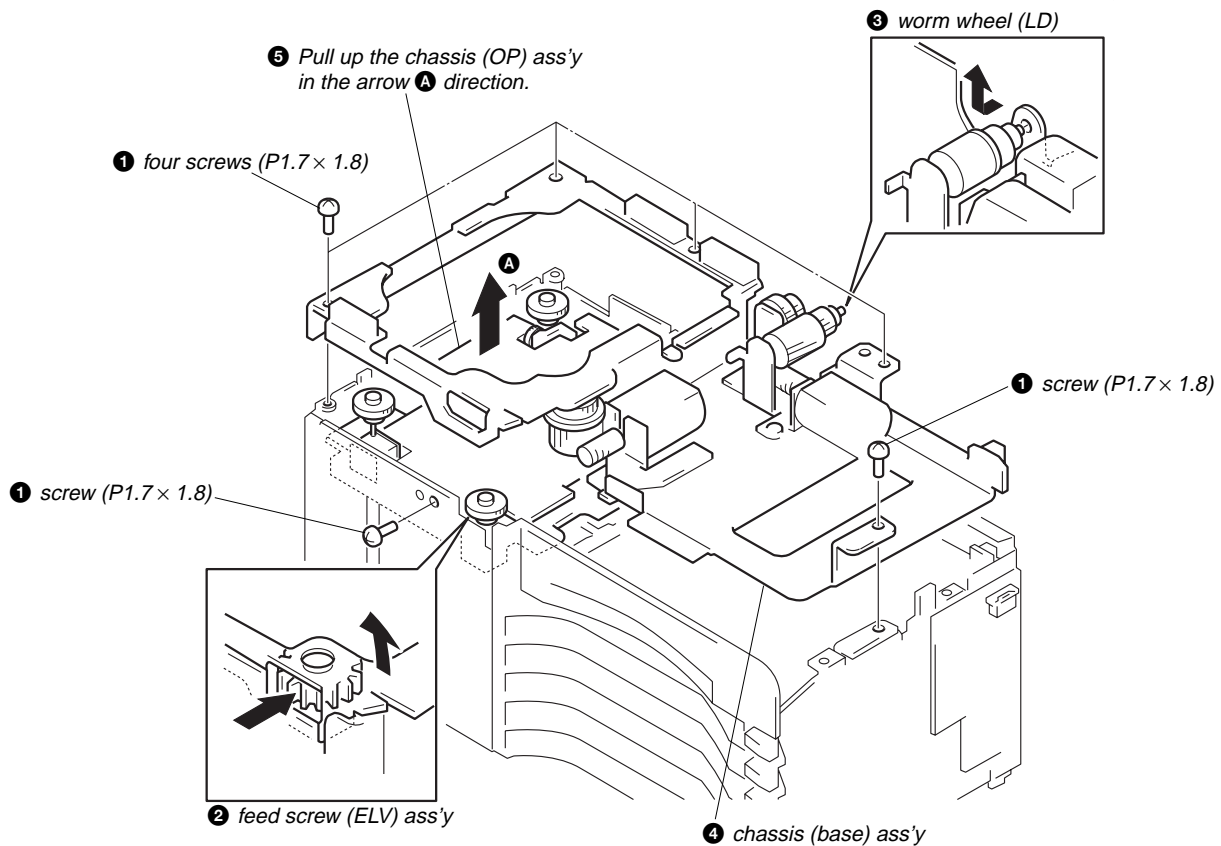
### REAR PANEL ASS'Y, MD SECTION



## CHASSIS (GEAR) ASS'Y, MAIN BOARD

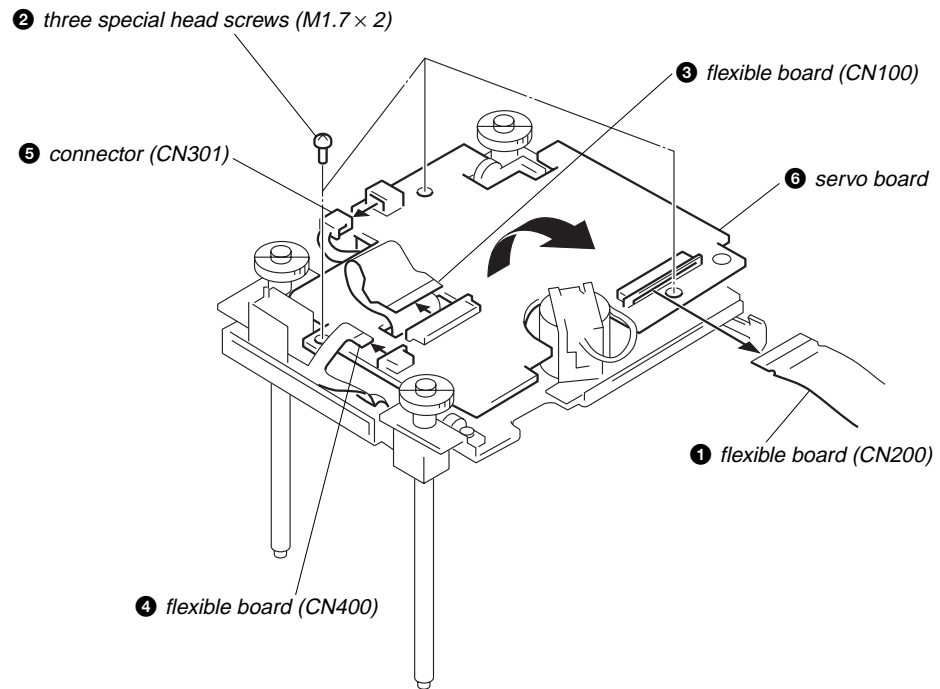


## CHASSIS (BASE) ASS'Y, CHASSIS (OP) ASS'Y

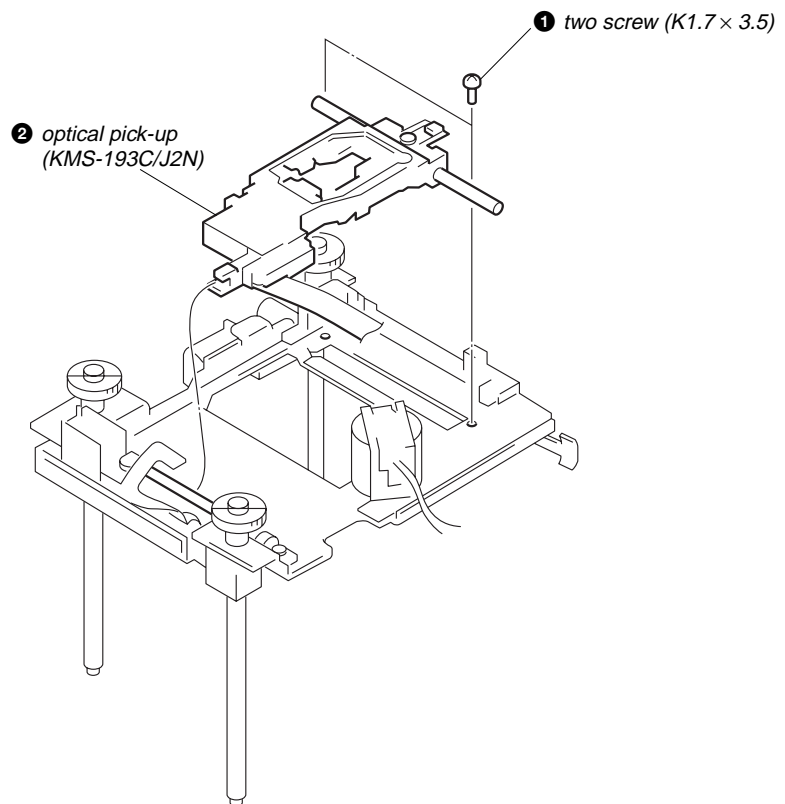




## SERVO BOARD

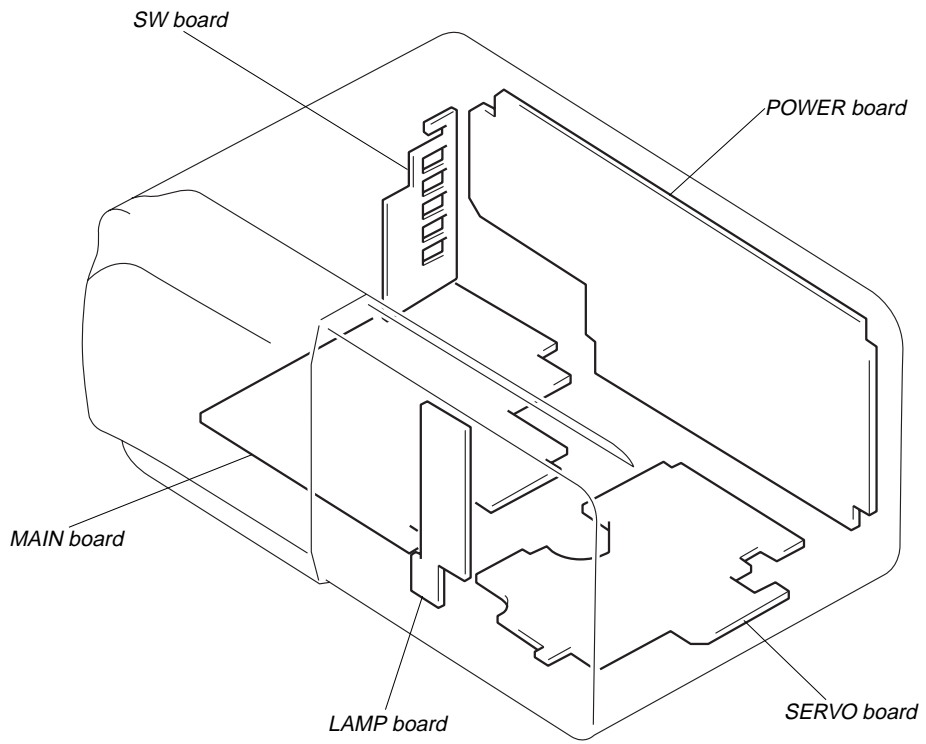


## OPTICAL PICK-UP (KMS-193C/J2N)

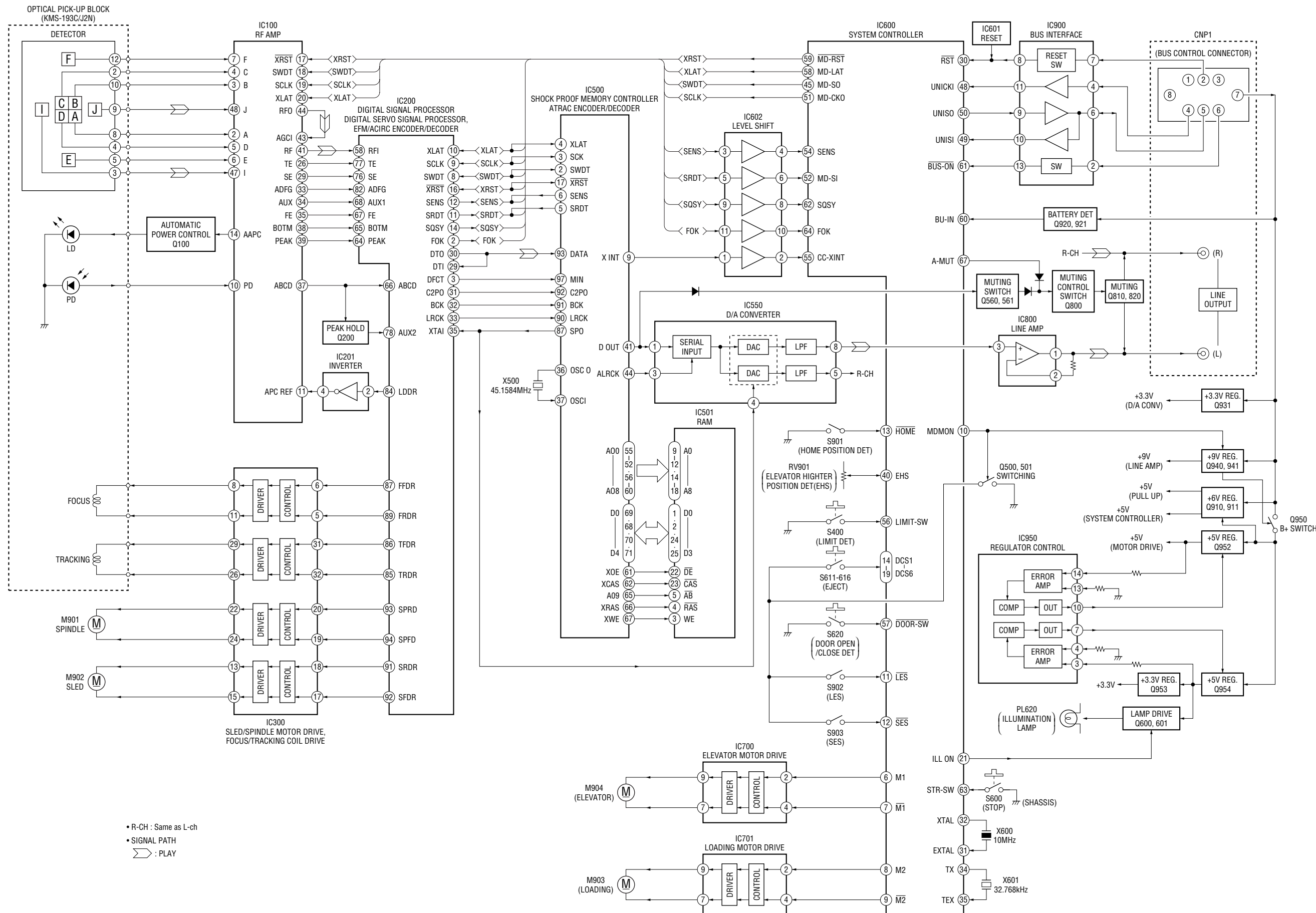


## SECTION 3 DIAGRAMS

### • Circuit Boards Location



3-1. BLOCK DIAGRAM

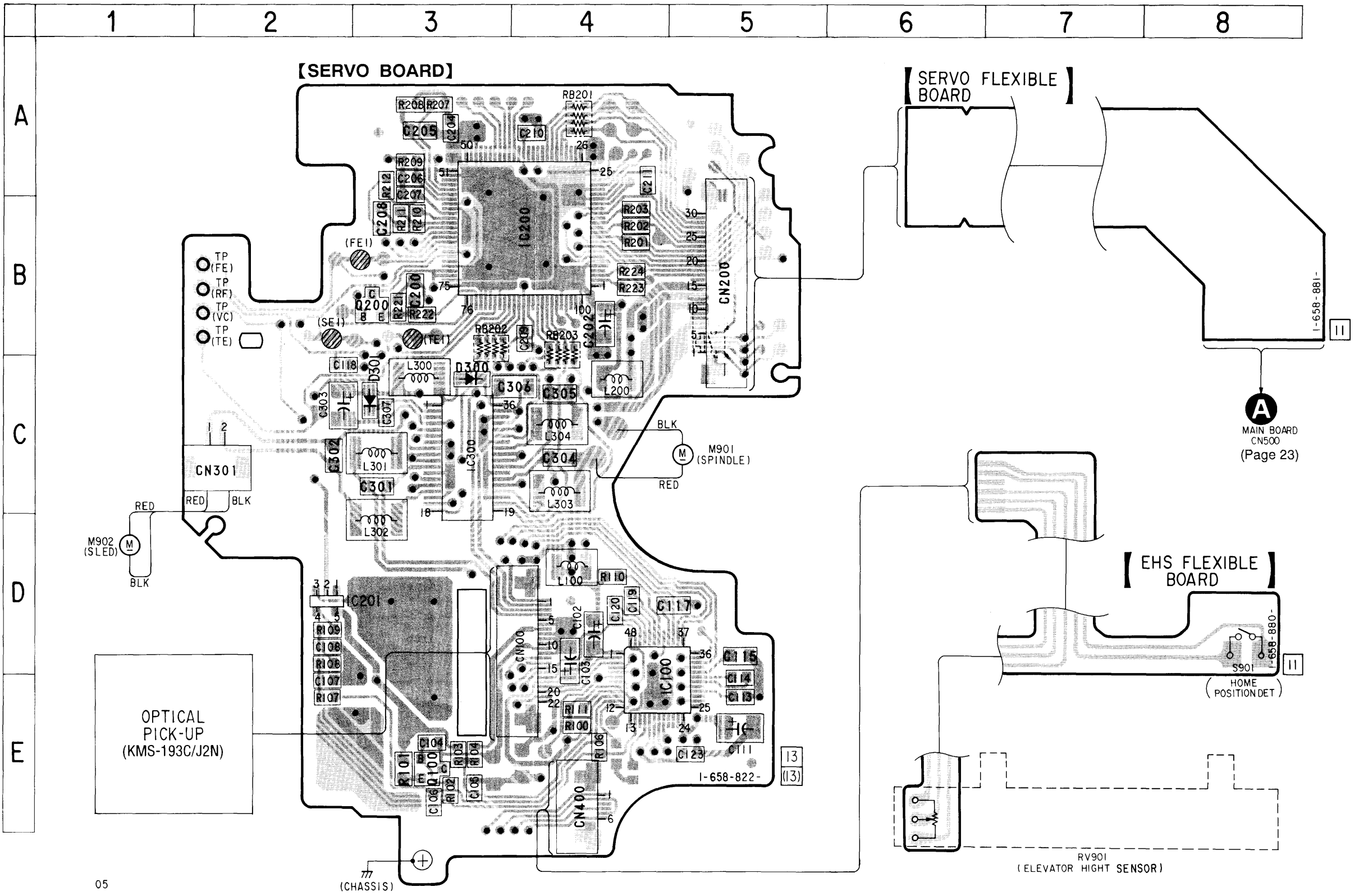


3-2. PRINTED WIRING BOARDS - SERVO Section -

• See page 10 for Circuit Boards Location.

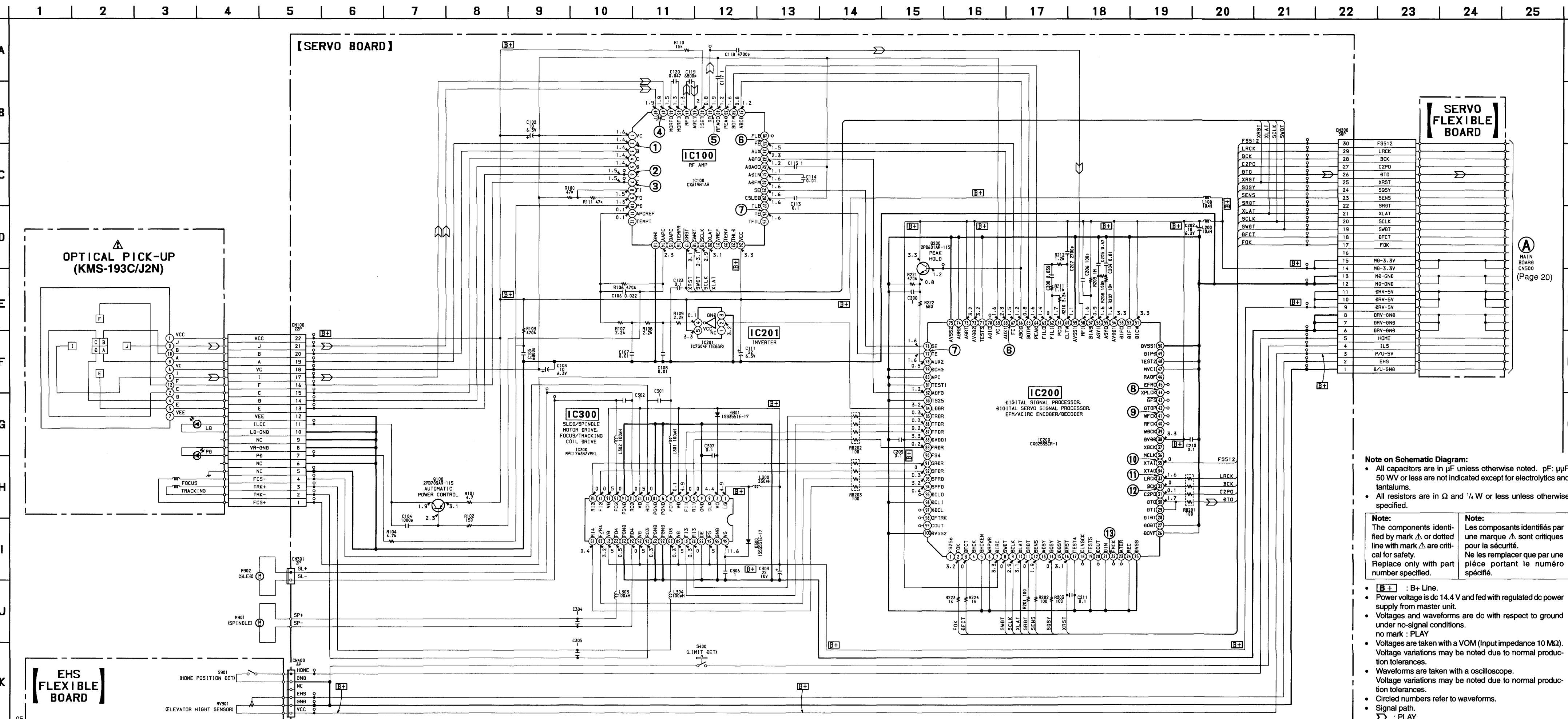
• Semiconductor Location

Ref. No.	Location
D300	C-3
D301	C-3
IC100	E-4
IC200	B-4
IC201	D-2
IC300	C-3
Q100	E-3
Q200	B-3

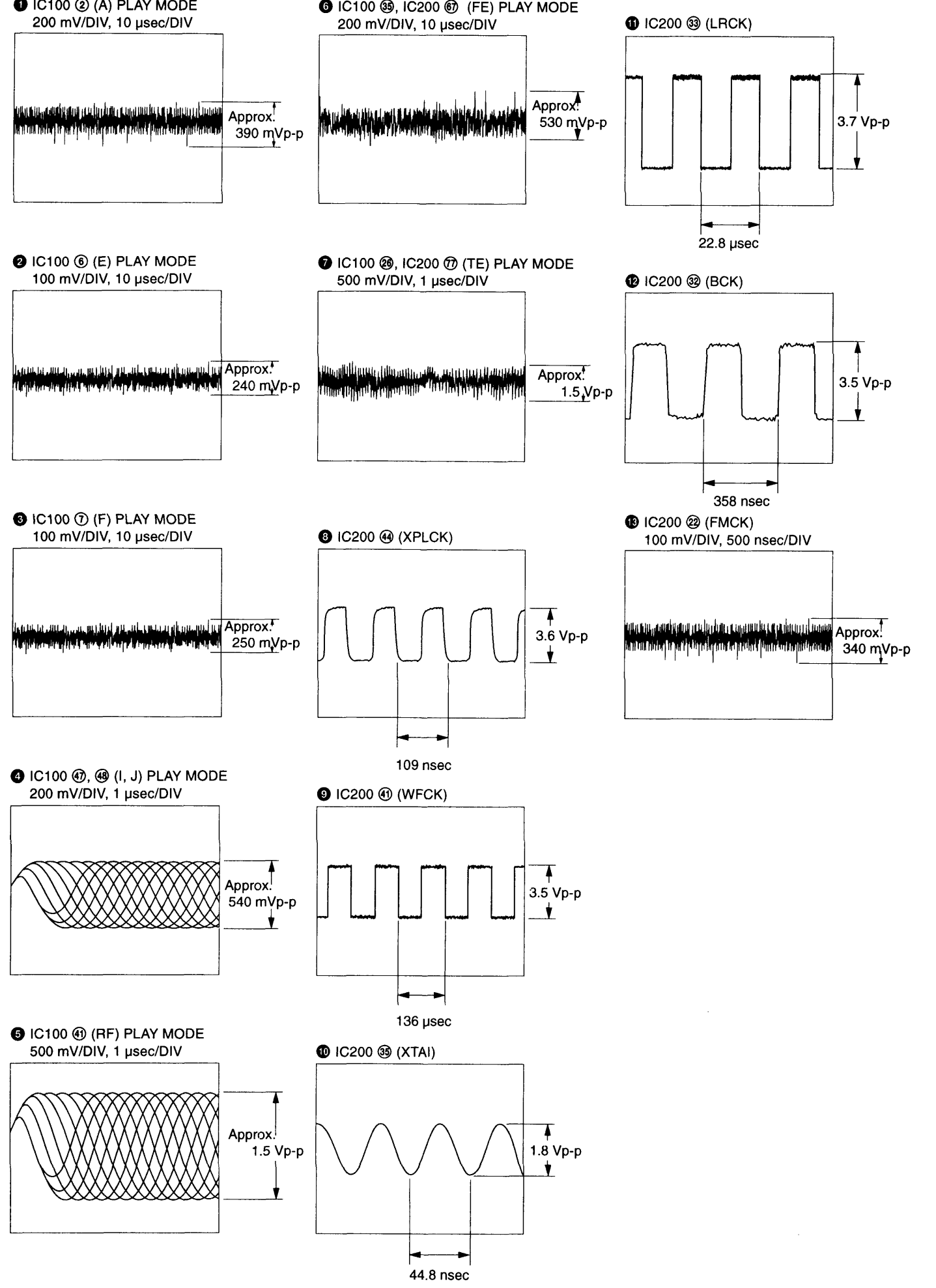


**Note on Printed Wiring Board:**

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



• Waveforms (SERVO Section)



**Note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4$  W or less unless otherwise specified.

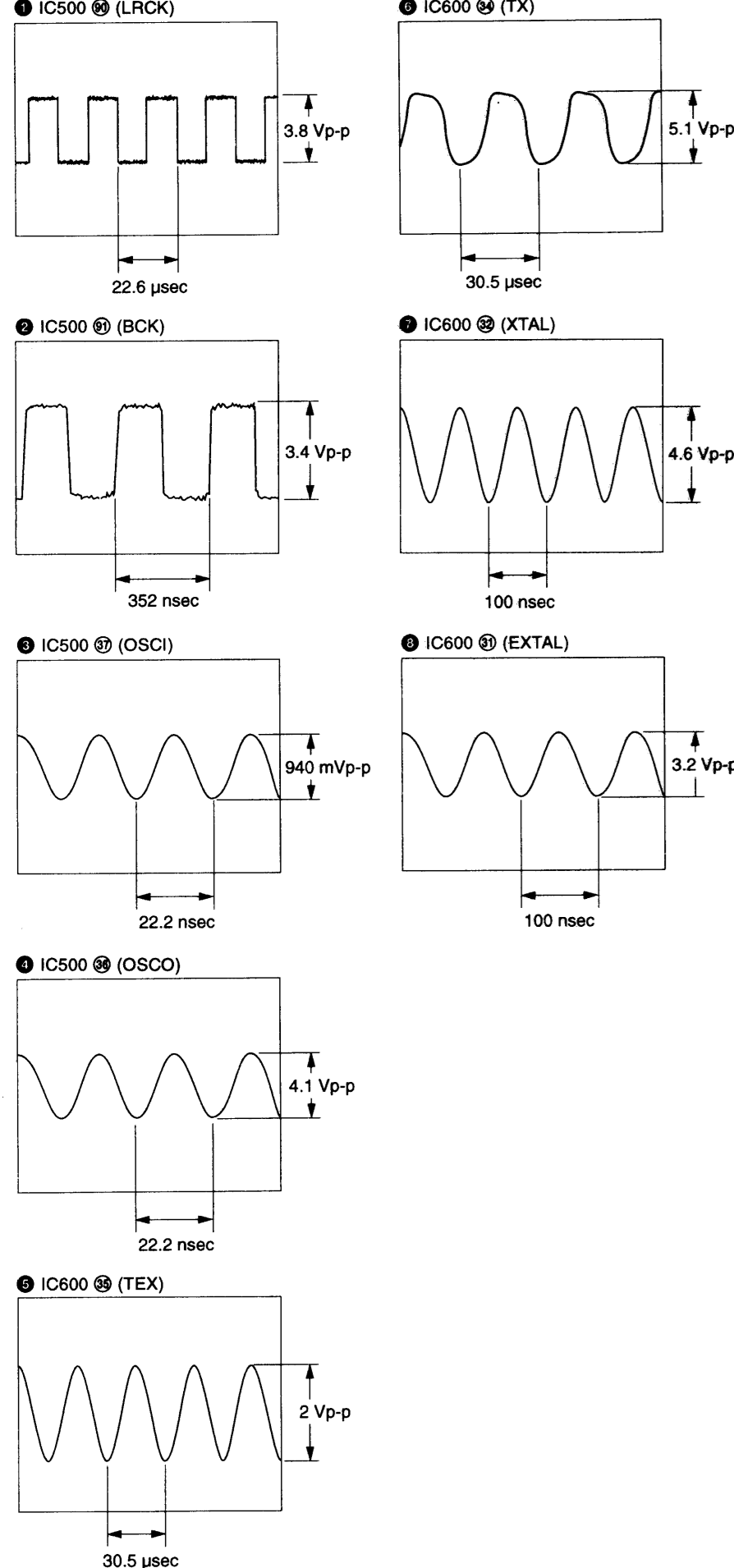
**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

**Note:** Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- [B+]** : B+ Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from master unit.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark : PLAY
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- $\curvearrowright$  : PLAY

(Page 20)

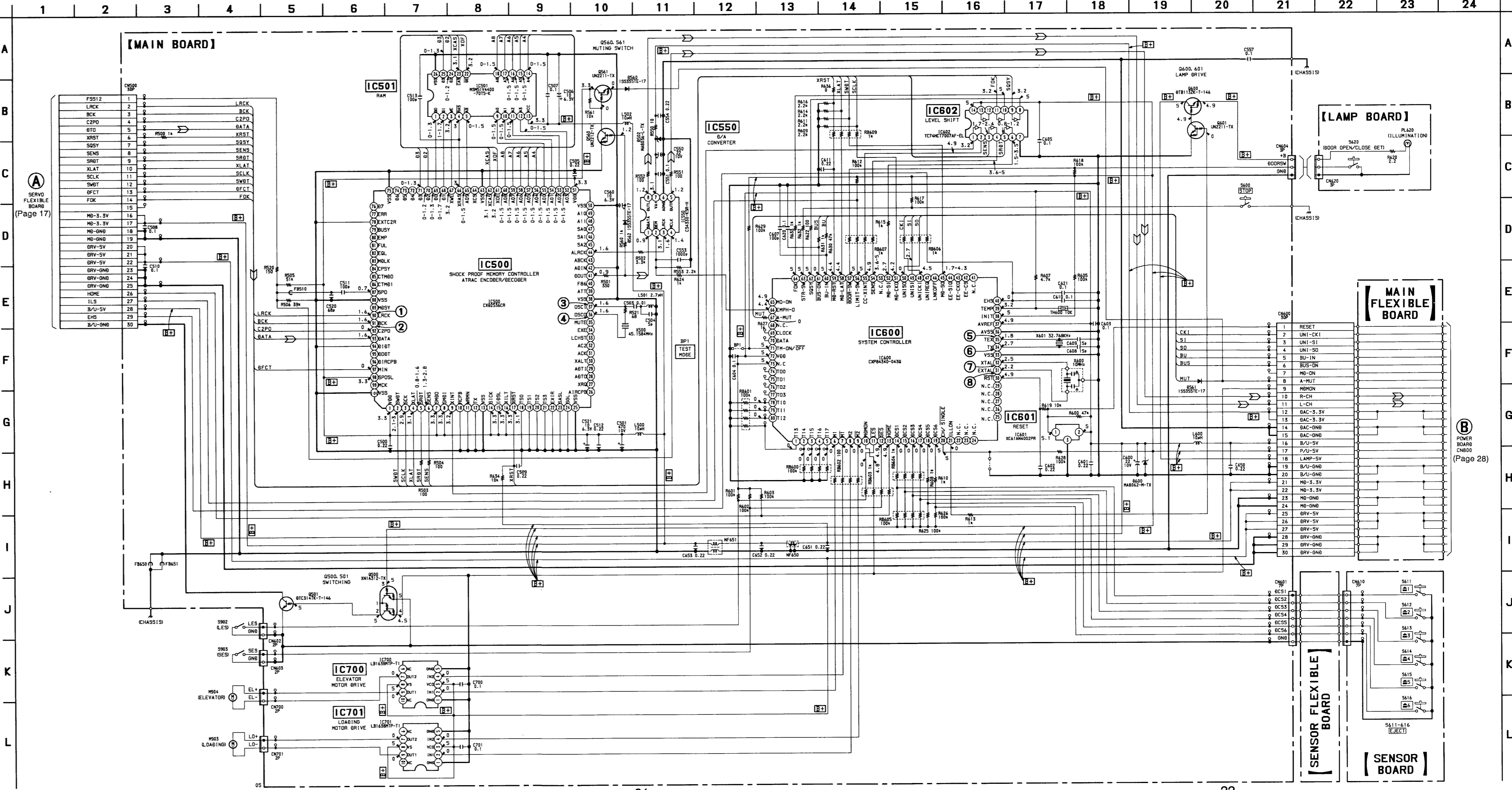
• Waveforms (MAIN Section)



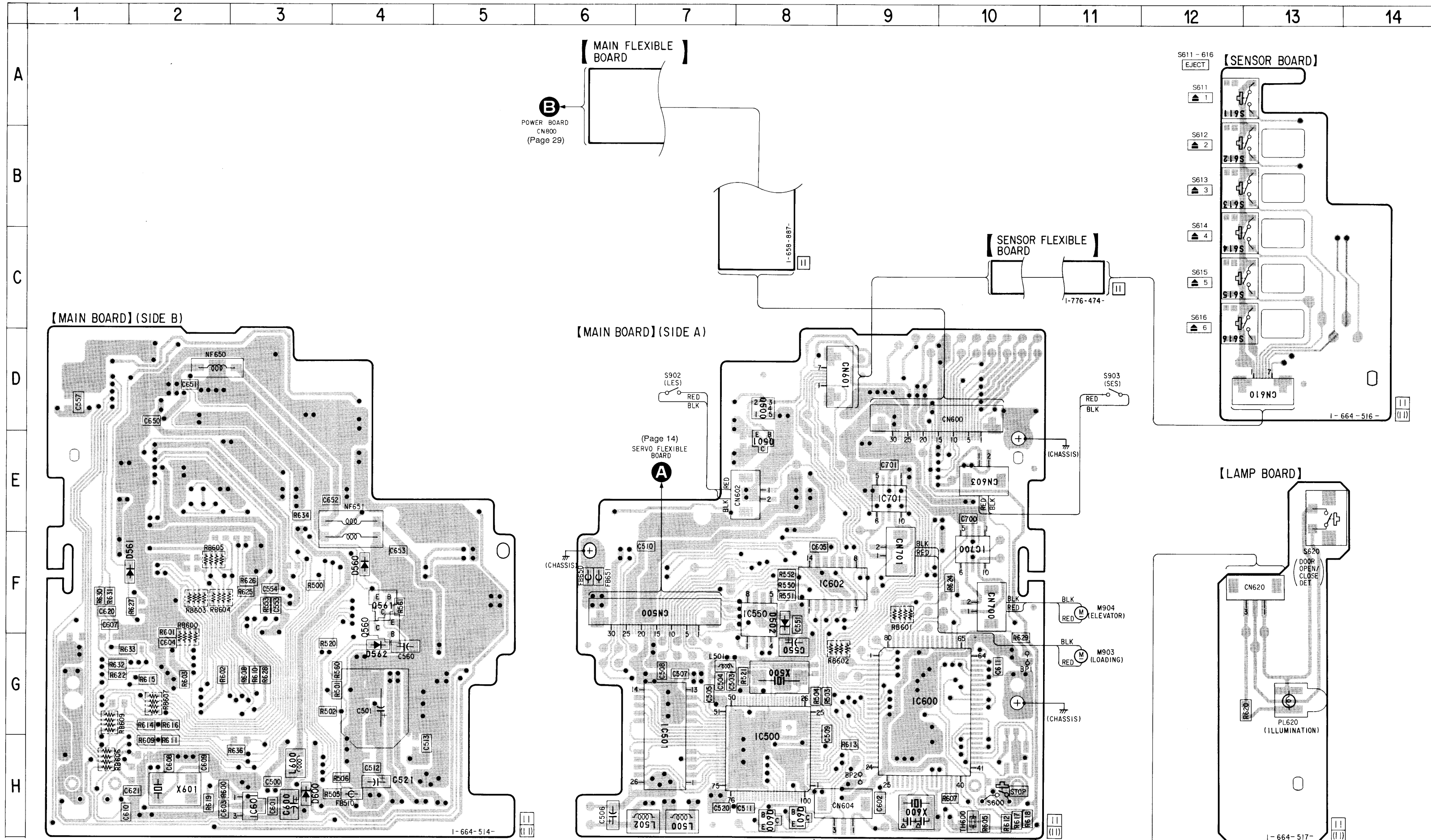
3-4. SCHEMATIC DIAGRAM - MAIN Section -

• See page 32 for IC Block Diagrams.

- 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.
  - Δ : internal component.
  - : panel designation.
  - B+ : B+ Line.
  - Power voltage is dc 14.4 V and fed with regulated dc power supply from master unit.
  - Volages and waveforms are dc with respect to ground under no-signal conditions.
  - no mark : PLAY
  - Volages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
  - Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
  - Circled numbers refer to waveforms.
  - Signal path.
  - ▷ : PLAY



• See page 10 for circuit Boards Location.



• Semiconductor Location

Ref. No.	Location
D502	F-8
D560	F-4
D561	F-2
D562	G-4
D600	H-3
IC500	H-8
IC501	H-7
IC550	F-8
IC600	G-9
IC601	H-3
IC602	F-8
IC700	F-10
IC701	E-9
Q500	D-8
Q501	E-8
Q560	F-4
Q561	F-4
Q600	H-8
Q601	H-8

Note on Printed Wiring Board:

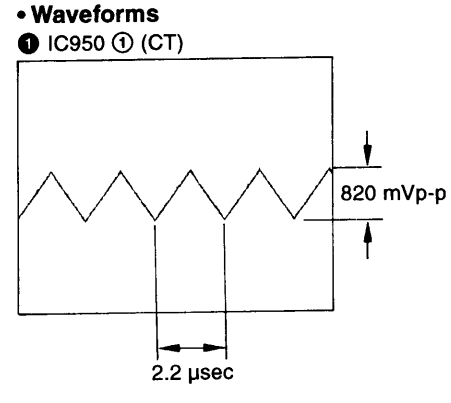
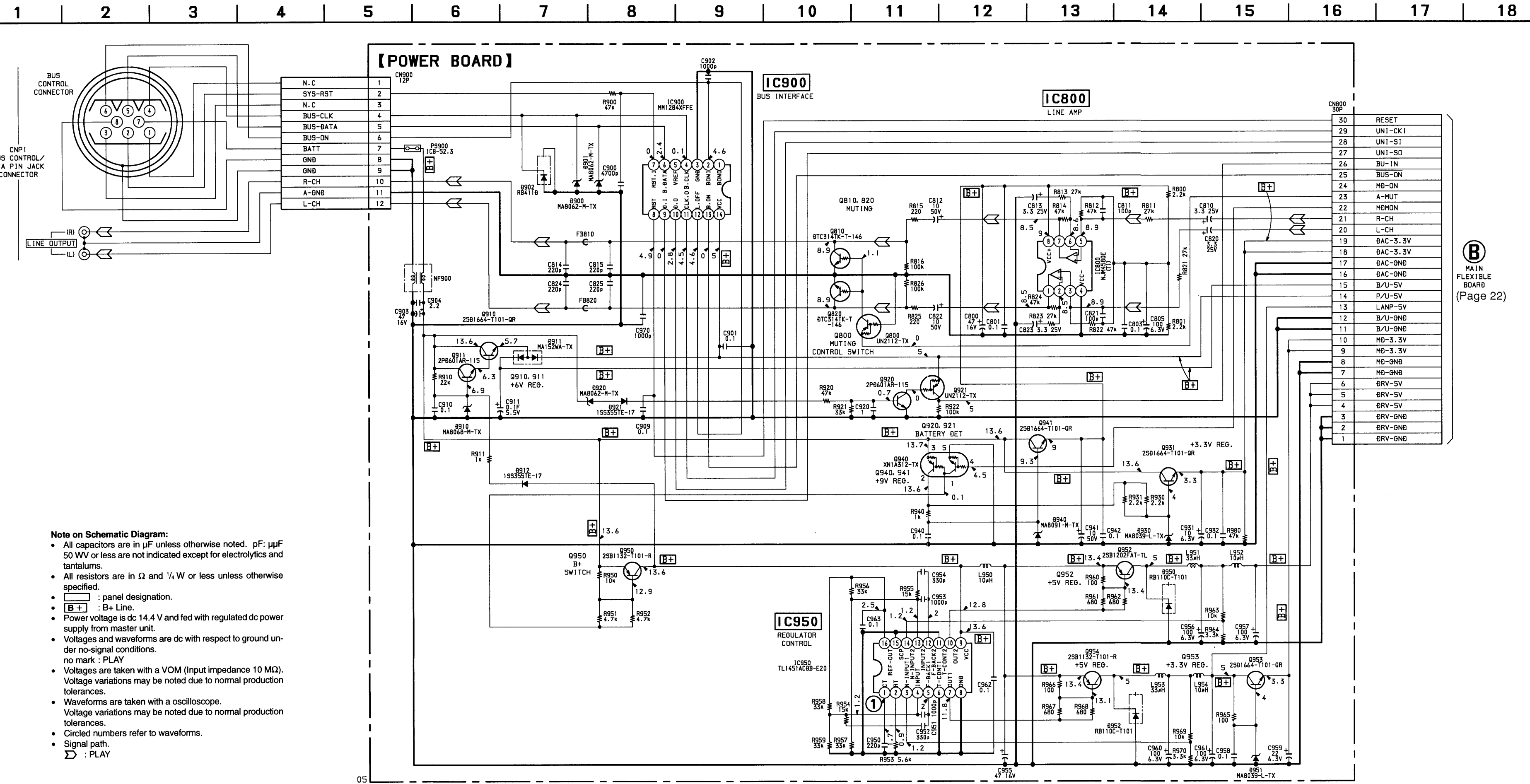
- — : parts extracted from the component side.
- - - - : parts extracted from the conductor side.
- ● : Through hole.
- ▲ : internal component.

• [Pattern] : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

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

3-6. SCHEMATIC DIAGRAM - POWER Section -

• See page 32 for IC Block Diagrams.

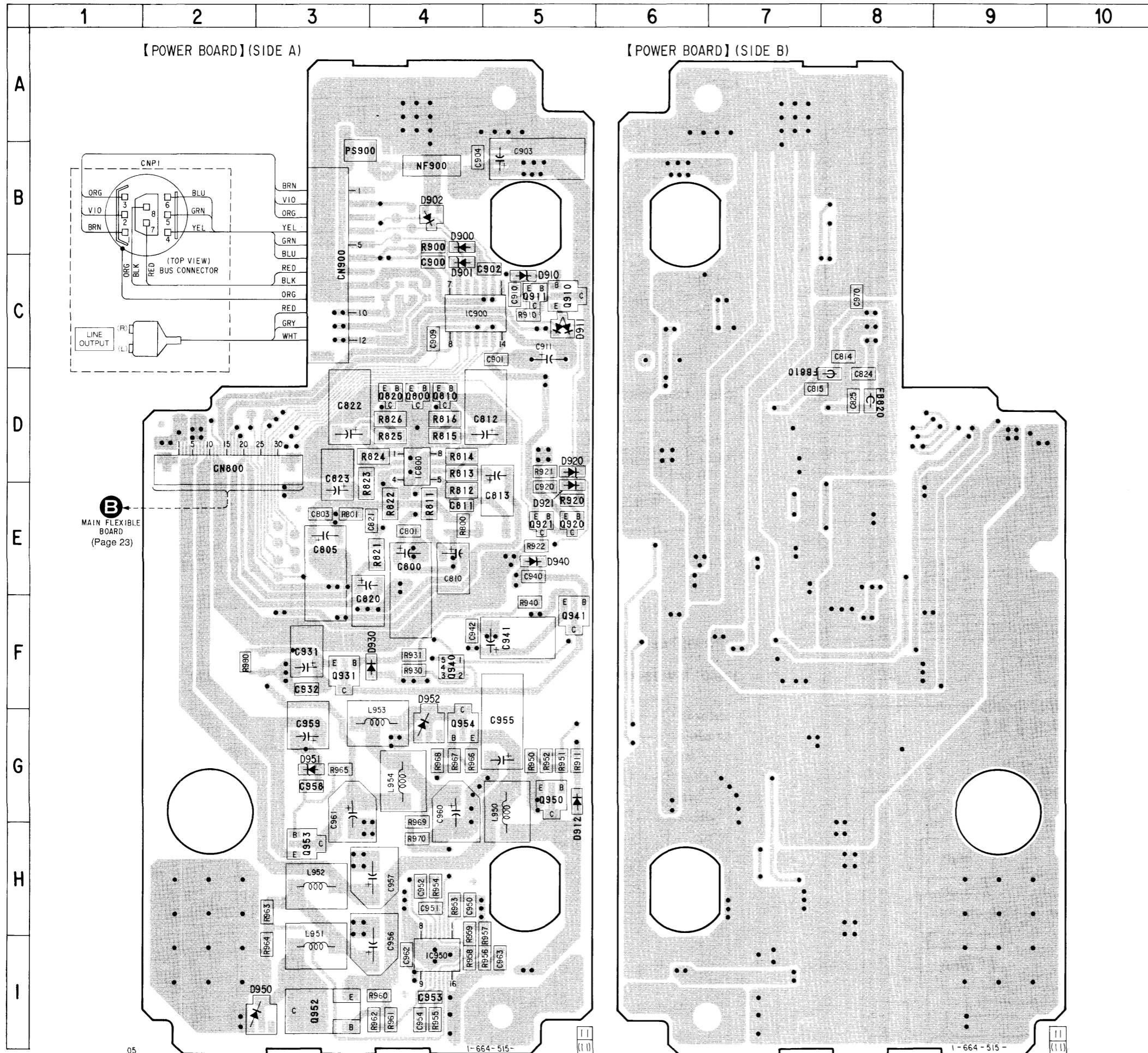


**Note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{pF}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $1/4\text{ W}$  or less unless otherwise specified.
- [Panel designation]
- [B+] : B+ Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from master unit.
- Voltages and waveforms are dc with respect to ground under no-signal conditions. no mark : PLAY
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- [Symbol] : PLAY

(B) MAIN FLEXIBLE BOARD (Page 22)





• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D900	B-4	IC950	I-4
D901	C-4	Q800	D-4
D902	B-4	Q810	D-4
D910	C-5	Q820	D-4
D911	C-5	Q910	C-5
D912	G-5	Q911	C-5
D920	D-5	Q920	E-5
D921	E-5	Q921	E-5
D930	F-4	Q931	F-3
D940	E-5	Q940	F-4
D950	I-3	Q941	F-5
D951	G-3	Q950	G-5
D952	G-4	Q952	I-3
IC800	D-4	Q953	H-3
IC900	C-4	Q954	G-4

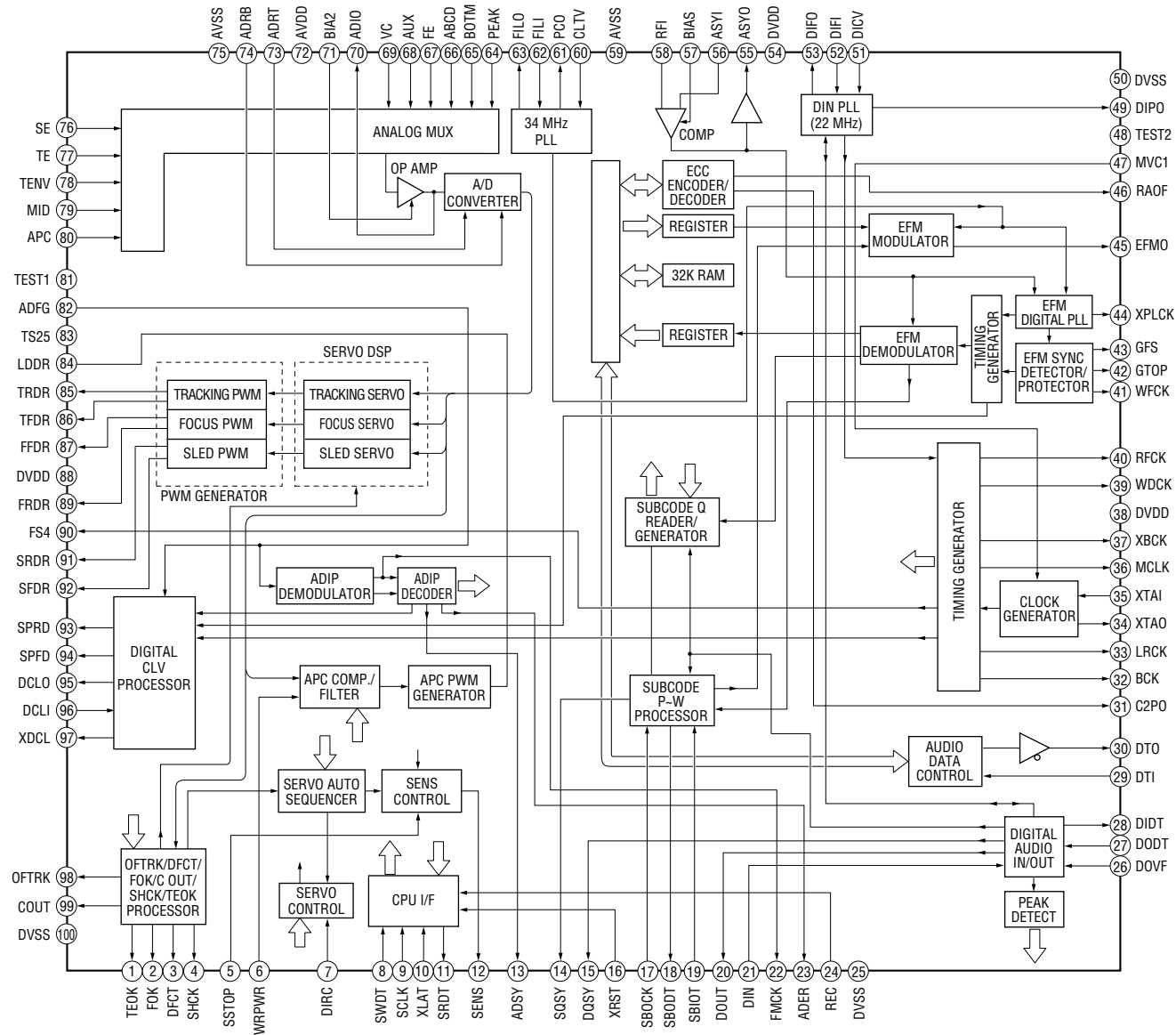
Note on Printed Wiring Board:

- — : parts extracted from the component side.
- — : parts extracted from the conductor side.
- ● : Through hole.
- [Pattern] : Pattern from the side which enables seeing. (The other layers' patterns are not indicated.)

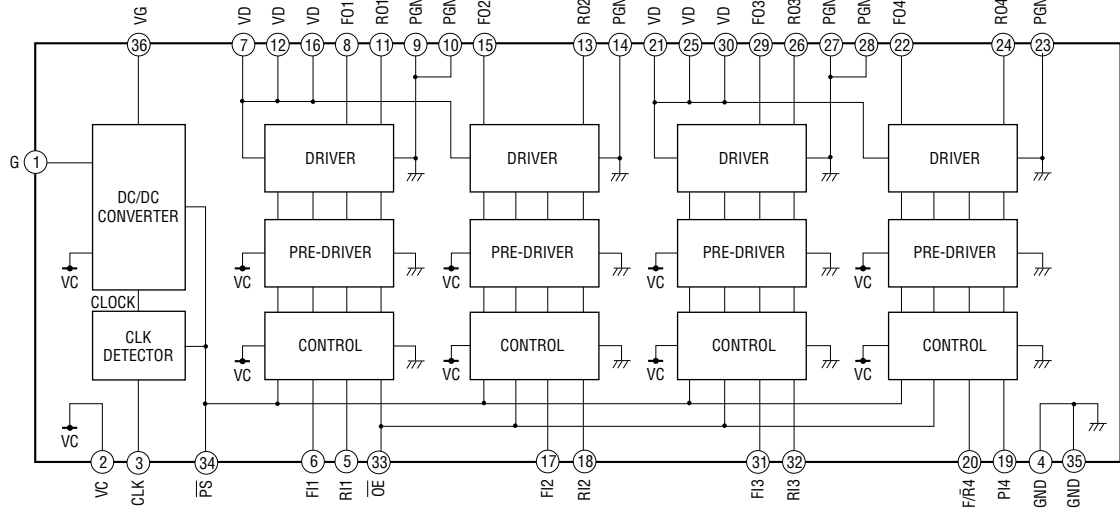
Caution:  
 Pattern face side: Parts on the pattern face side seen from the pattern face are indicated.  
 Parts face side: Parts on the parts face side seen from the parts face are indicated.

• IC Block Diagrams  
– SERVO section –

IC200 CXD2535CR-1

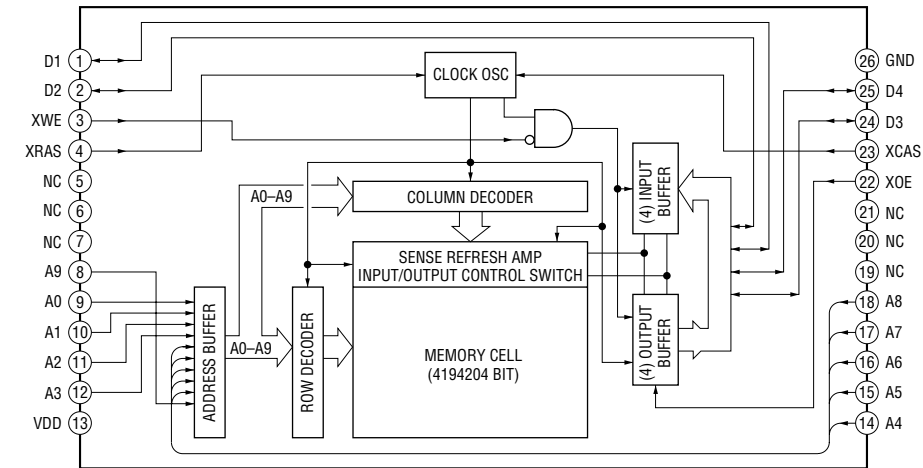


IC300 MPC17A38ZVMEL

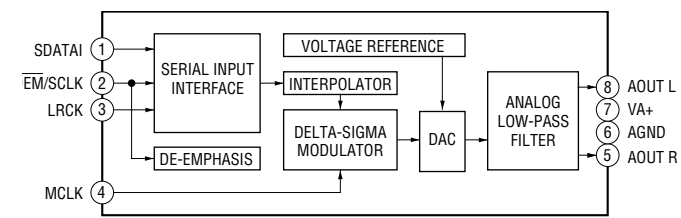


– MAIN section –

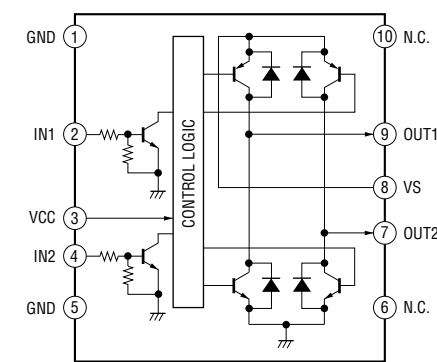
IC501 HM51W4400TT6-8



IC550 CS4330-KSR-H

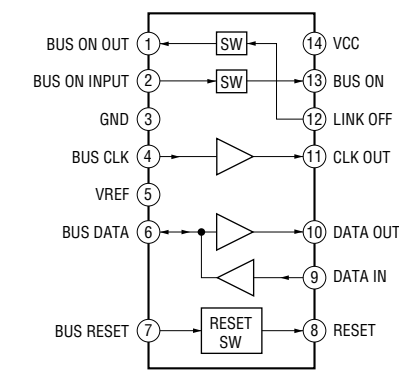


IC700, 701 LB1638M

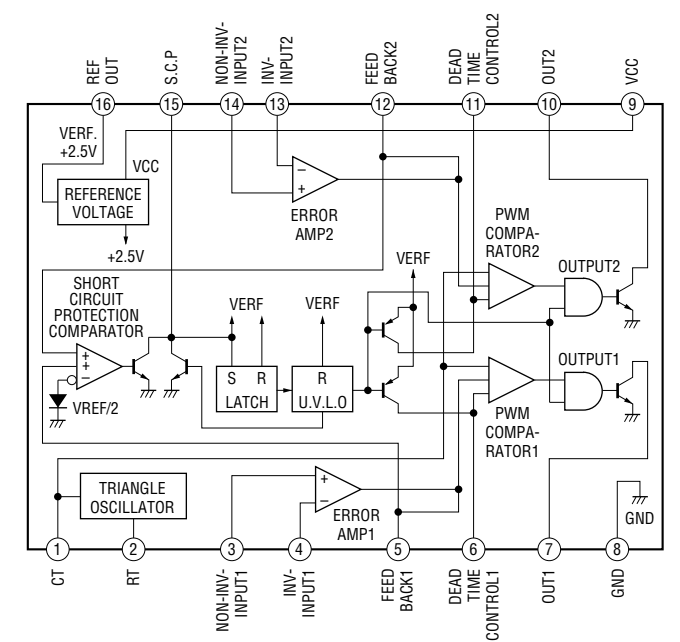


– POWER section –

IC900 MM1284XFFE



IC950 TL1451ACDB-E20



**3-8. IC PIN FUNCTION DESCRIPTION**  
**SERVO BOARD IC100 CXA1981AR (RF AMP)**

Pin No.	Pin Name	I/O	Function
1	VC	O	Output terminal for the center point voltage (1/2 VCC) generated
2-7	A-F	I	Signal input from detector circuit in the optical pick-up block
8	FI	I	Signal input of the operational amplifier for F signal
9	FO	O	Signal output of the operational amplifier for F signal
10	PD	I	Front monitor Connected to the photo diode
11	APCREF	I	Input terminal for the setting of laser power
12	TEMPI	I	Terminal for the connection to temperature sensor Not used this set (OPEN)
13	GND	-	Ground terminal
14	AAPC	O	LD amplifier output terminal of APC circuit
15	DAPC	O	Not used (OPEN)
16	TEMPR	O	Output terminal of the reference voltage for temperature sensor Not used this set (OPEN)
17	XRST	I	Reset signal input from the system controller (IC600) When reset : "L"
18	SWDT	I	Write data signal input from the system controller (IC600)
19	SCLK	I	Clock signal input from the system controller (IC600)
20	XLAT	I	Latch signal input from the system controller (IC600)
21	VREF	O	Reference voltage output Not used this set (OPEN)
22	TENV	O	Not used (OPEN)
23	THLD	I	Not used (OPEN)
24	VCC	-	Power supply terminal (+3.3V)
25	TFIL	I	Not used (OPEN)
26	TE	O	Tracking error signal output to CXD2535CR (IC200)
27	TLB	I	Input terminal of the adder signal to tracking error Not used this set (OPEN)
28	CSLED	I	Terminal for the sled error lowpass filter
29	SE	O	Sled error signal output to CXD2535CR (IC200)
30	ADFM	O	FM signal output terminal of the ADIP
31	ADIN	I	Input terminal by AC coupling is FM signal of the ADIP
32	ADAGC	I	External capacitor connect terminal for AGC of the ADIP
33	ADFG	O	ADIP double turned FM signal output to CXD2535CR (IC200) (22.05kHz ± 1kHz)
34	AUX	O	Sub signal output to CXD2535CR (IC200)
35	FE	O	Focus error signal output to CXD2535CR (IC200)
36	FLB	I	Input terminal of the adder signal to focus error Not used this set (OPEN)
37	ABCD	O	Light amount signal output to CXD2535CR (IC200)
38	BOTM	O	Light amount bottom hold signal output to CXD2535CR (IC200)
39	PEAK	O	Light amount peak hold signal output to CXD2535CR (IC200)
40	PFAGC	I	External capacitor connect terminal of AGC circuit for the RF
41	RF	O	Playback EFM RF signal output to CXD2535CR (IC200)
42	ISET	I	Setting terminal for the internal circuit constant 22kHz, BPF center frequency
43	AGCI	I	Input terminal by AC coupling is RF signal
44	RFO	O	RF signal output terminal
45	MORFI	I	Input terminal by AC coupling is RF signal of the MO
46	MORFO	O	RF signal output terminal of the MO
47, 48	I, J	I	Signal input from detector circuit in the optical pick-up block

**SERVO BOARD IC200 CDX2535CR-1 (DIGITAL SIGNAL PROCESSOR, DIGITAL SERVO SIGNAL PROCESSOR, EFM/ACIRC ENCODER/DECODER)**

Pin No.	Pin Name	I/O	Function
1	FS256	O	11.2896MHz clock signal output (MCLK system) Not used this set (OPEN)
2	FOK	O	Focus OK signal output to the system controller (IC600) "H" is output when the focus is applied
3	DFCT	O	Defect ON/OFF selection signal output to CXD2536CR (IC500)
4	SHCK	O	Track jump detection signal output to the system controller Not used this set (OPEN)
5	SHCKEN	I	Track jump detection enable input Not used this set (Fixed at "L")
6	WRPWR	I	Laser power selection signal input from the system controller Not used this set (Fixed at "L")
7	DIRC	I	Not used this set (Fixed at "H")
8	SWDT	I	Write data signal input from the system controller (IC600)
9	SCLK	I	Serial clock signal input from the system controller (IC600)
10	XLAT	I	Serial latch signal input from the system controller (IC600)
11	SRDT	O	Read data signal output to the system controller (IC600)
12	SENS	O (3)	Internal status (SENS) output to the system controller (IC600)
13	ADSY	O	ADIP sync signal output Not used this set (OPEN)
14	SQSY	O	Sub-code Q sync (SCOR) output to the system controller (IC600) "L" every 13.3msec, Almost "H"
15	DQSY	O	Digital in U-bit CD format sub-code Q sync (SCOR) output to the system controller (IC600) "L" every 13.3msec, Almost "H"
16	$\overline{\text{XRST}}$	I	Reset signal input from the system controller (IC600) When reset "L"
17	TEST4	I	Test input terminal (Fixed at "L")
18	CLVSCK	O	Not used this set (OPEN)
19	TEST5	I	Test input terminal (Fixed at "L")
20	DOUT	O	Output terminal of the digital audio signal (for optical out) Not used this set (OPEN)
21	DIN	I	Input terminal of the digital audio signal (for optical out) Not used this set (Fixed at "L")
22	FMCK	O	FM modulation clock signal output of the ADIP Not used this set (OPEN)
23	$\overline{\text{ATER}}$	O	ADIP CRC flag output When error "H" Not used this set (OPEN)
24	REC	I	Record/playback selection signal input When recording : "H", when playback : "L" (Fixed at "L")
25	DVSS	-	Ground terminal (Digital system)
26	DOVF	I	Validity flag input terminal for the digital audio out Not used this set (Fixed at "L")
27	DODT	I	Input terminal of 16-bit data signal for the digital audio out Not used this set (Fixed at "L")
28	DIDT	O	Output terminal of 16-bit data signal for the digital audio in Not used this set (OPEN)
29	DTI	I	Record audio data signal input from CXD2536CR (IC500)
30	DTO	O (3)	Plyback audio data signal output to CXD2536CR (IC500)
31	C2PO	O	C2PO (indicate the error state of the data) signal output to CXD2536AR (IC500) Playback : C2PO ("H"), Digital recording : D. In-Vflag, Analog recording : "L"
32	BCK	O	Bit clock (2.8224MHz) signal output to CXD2536CR (IC500) (MCLK system)
33	LRCK	O	L/R clock (44.1kHz) signal output to CXD2536CR (IC500) (MCLK system)
34	XTAO	O	System clock (512Fs=22.5792MHz) signal output Not used this set (OPEN)
35	XTAI	I	System clock (512Fs=22.5792MHz) signal input from CXD2536CR (IC500)
36	MCLK	O	MCLK clock (22.5792MHz) signal output Not used this set (OPEN)
37	XBCK	O	BCK (pin ②) inverted output Not used this set (OPEN)
38	DVDDO	-	Power supply terminal (+3.3V) (Digital system)
39	WDCK	O	WDCK clock (88.2kHz) signal output (MCLK system) Not used this set (OPEN)
40	RFCK	O	RFCK clock (7.35kHz) signal output (MCLK system) Not used this set (OPEN)

Pin No.	Pin Name	I/O	Function
41	WFCK	O	WFCK clock (7.35kHz) signal output (When playback : EFM decoder PLL system, When recoding : EFM encoder PLL system) Not used this set (OPEN)
42	GTOP	O	Opens the playback EFM frame sync protection window when "H" Not used this set (OPEN)
43	$\overline{\text{GFS}}$	O	The playback EFM frame sync and interpolation protection timing match when "H" Not used this set (OPEN)
44	XPLCK	O	EFM decoder PLL clock (98Fs=4.3218MHz) signal output Falling edge of the EFM PLL clock and the EFM signal match Not used this set (OPEN)
45	EFMO	O	FM signal output (When recoding) Not used this set (OPEN)
46	RAOF	O	Overflow detection signal output of the internal RAM (Decoder monitor out) RAOF is signal generated when the 32k RAM exceeds the $\pm 4\text{F}$ jitter margin Not used this set (OPEN)
47	MVCI	I	Oscillation input for PLL of the digital in Not used this set (Fixed at "L")
48	TEST2	I	Test terminal input (Fixed at "L")
49	DIPD	O (3)	Phase comparator output for PLL of the digital in When the internal VCO : Frequency ; Low $\rightarrow$ "H" When the external VCO : Frequency ; Low $\rightarrow$ "L" Not used this set (OPEN)
50	DVSS1	-	Ground terminal (Digital system)
51	DICV	I (A)	Control voltage input terminal of the internal VCO for digital in PLL
52	DIFI	I (A)	Filter input terminal of the internal VCO for digital in PLL Not used this set (Fixed at "L")
53	DIFO	O (A)	Filter output terminal of the internal VCO for digital in PLL Not used this set (OPEN)
54	AVDD1	-	Power supply terminal (+3.3V) (Analog system)
55	ASYO	O	Playback EFM full-swing output (L=VSS, H=VDD)
56	ASYI	I (A)	Playback EFM asymmetry compare voltage input terminal
57	BIAS	I (A)	Playback EFM asymmetry circuit constant current input terminal
58	RFI	I (A)	Playback EFM RF signal input from CXA1981AR (IC100)
59	AVSS1	-	Ground terminal (Analog system)
60	CLTV	I (A)	VCO control voltage input terminal of the PLL for decoder PLL master clock
61	PCO	O (3)	Phase comparator output terminal of the PLL for decoder PLL master clock
62	FILI	I (A)	Filter input terminal of the PLL for decoder PLL master clock
63	FILO	O (3)	Filter output terminal of the PLL for decoder PLL master clock
64	PEAK	I (A)	Light amount peak hold signal input from CXA1981AR (IC100)
65	BOTM	I (A)	Light amount bottom hold signal input from CXA1981AR (IC100)
66	ABCD	I (A)	Light amount signal input from CXA1981AR (IC100)
67	FE	I (A)	Focus error signal input from CXA1981AR (IC100)
68	AUX1	I (A)	Sub signal input from CXA1981AR (IC100)
69	VC	I (A)	Center point voltage (1/2 VCC) input from CXA1981AR (IC100)
70	ADIO	O (A)	Monitor output of the A/D converter input signal Not used this set (OPEN)
71	TEST3	I (A)	Test input terminal (Fixed at "L")
72	AVDD2	-	Power supply terminal (+3.3V) (Analog system)
73	ADRT	I (A)	A/D converter action limits (upper side) voltage input (Fixed at "H")
74	ADRB	I (A)	A/D converter action limits (lower side) voltage input (Fixed at "L")
75	AVSS2	-	Ground terminal (Analog system)
76	SE	I (A)	Sled error signal input from CXA1981AR (IC100)
77	TE	I (A)	Tracking error signal input from CXA1981AR (IC100)
78	AUX2	I (A)	Sub signal input terminal from CXA1981AR (IC100)

Pin No.	Pin Name	I/O	Function
79	DCHG	I (A)	Connected to the Ground
80	APC	I (A)	Input terminal for the laser APC Not used this set (Fixed at "L")
81	TEST1	I	Test input terminal (Fixed at "L")
82	ADFG	I	ADIP double turned FM signal input from CXA1981AR (IC100) (22.05kHz ± 1kHz) (TTL schmitt input)
83	TS25	I	Test input terminal (Fixed at "L")
84	LDDR	O	Laser APC signal output to CXA1981AR (IC100)
85	TRDR	O	Tracking servo drive signal output (-)
86	TFDR	O	Tracking servo drive signal output (+)
87	FFDR	O	Focus servo drive signal output (+)
88	DVDD1	-	Power supply terminal (+3.3V) (Digital system)
89	FRDR	O	Focus servo drive signal output (-)
90	FS4	O	176.4kHz clock signal output (MCLK system) Not used this set (OPEN)
91	SRDR	O	Sled servo drive signal output (+)
92	SFDR	O	Sled servo drive signal output (-)
93	SPRD	O	Spindle servo drive signal output (+)
94	SPFD	O	Spindle servo drive signal output (-)
95	DCLO	O	Not used (OPEN)
96	DCLI	I	Not used (Fixed at "H")
97	XDCL	O	Not used (OPEN)
98	OFTRK	O	Offtrack signal output Not used this set (OPEN)
99	COUT	O	Traverse count signal output Not used this set (OPEN)
100	DVSS2	-	Ground terminal (Digital system)

\*: On I/O section

(3): 3 state output (A): Analog output

**MAIN BOARD IC500 CXD2536R (SHOCK PROOF MEMORY CONTROLLER, ATRAC ENCODER/DECODER)**

Pin No.	Pin Name	I/O	Function
1	VDD	–	Power supply terminal (+3.3V)
2	SWDT	I	Write data signal input from the system controller (IC600)
3	SCK	I	Serial clock signal input from the system controller (IC600)
4	XLAT	I	Serial latch signal input from the system controller (IC600)
5	SRDT	O/Z	Read data signal output to the system controller (IC600)
6	SENSE	O/Z	Internal status (SENSE) output to the system controller (IC600)
7	SMDO	I	Serial command control mode input from the system controller (Fixed at “H”)
8	SMDI	I	Serial command control mode input from the system controller (Fixed at “H”)
9	XINT	O	Interruption status output to the system controller (IC600)
10	RCPB	I	Record/playback selection signal input (Fixed at “L”)
11	WRMN	I	Write/monitor mode selection signal input from the system controller (Fixed at “L”)
12	TX	I	Writing data transmission timing input from the system controller Used together with the magnetic field head ON/OFF output (Fixed at “L”)
13	VSS	–	Ground terminal
14	SICK	I	Chip reserve terminal (Fixed at “H”)
15	IDSL	I	Chip reserve terminal (Fixed at “H”)
16	XILT	I	Chip reserve terminal (Fixed at “H”)
17	$\overline{\text{XRST}}$	I	Reset signal input from the system controller (IC600) When reset : “L”
18-21	TS0-TS3	I	Test input terminal (Fixed at “L”)
22	EXIR	I	Chip reserve terminal (Fixed at “L”)
23	SASL	I	Single use the block selection “L” : ATRAC, “H” : RAM controller (Fixed at “L”)
24	SGL	I	Normally fixed at “L”, Fixed at “H” when the ATRAC or RAM controller is single used (Fixed at “L”)
25	VSS	–	Ground terminal
26	AIRCPB	O	Record/playback mode signal output terminal of the ATRAC or external audio block Not used this set (OPEN)
27	XRQ	I/O	XRQ signal input/output terminal of the ATRAC interface Not used this set (OPEN)
28	ADTO	I/O	Decoder data signal input/output terminal of the ATRAC Not used this set (OPEN)
29	ADTI	I/O	Encoder data signal input/output terminal of the ATRAC Not used this set (OPEN)
30	XALT	I/O	Data ready and XALT signal input/output terminal of the ATRAC interface Not used this set (OPEN)
31	ACK	I/O	ACK signal input/output terminal of the ATRAC interface Not used this set (OPEN)
32	AC2	I/O	Error data signal input/output terminal of the ATRAC interface Not used this set (OPEN)
33	LCHST	I/O	Lch Start data signal input/output terminal of the ATRAC interface Not used this set (OPEN)
34	EXE	I/O	EXE signal input/output terminal of the ATRAC interface Not used this set (OPEN)
35	MUTE	I/O	MUTE signal input/output terminal of the ATRAC interface Not used this set (OPEN)
36	OSCO	O	45.1584MHz clock oscillation output
37	OSCI	I	45.1584MHz clock oscillation input
38	VSS	–	Ground terminal
39	ATT	I/O	ATT signal input/output terminal of the ATRAC interface Not used this set (OPEN)
40	F86	O	11.6msec timing signal output terminal of the ATRAC block Not used this set (OPEN)
41	DOUT	O	Monitor/audio decode data signal output to the D/A converter (IC550)
42	ADIN	I	Recording data signal input Not used this set (Fixed at “L”)
43	ABCK	O	Bit clock signal output Not used this set (OPEN)
44	ALRCK	O	L/R clock signal output to the D/A converter (IC550)
45-47	SA2-SA0	O	Address signal output Not used this set (OPEN)
48, 49	A11,A10	O	Address signal output Not used this set (OPEN)

Pin No.	Pin Name	I/O	Function
50	VSS	–	Ground terminal
51	VDD	–	Power supply terminal (+3.3V)
52-55	A03-A00	O	Address signal output to the RAM (IC501)
56-60	A04-A08	O	Address signal output to the RAM (IC501)
61	XOE	O	Output enable control signal output to the RAM (IC501)
62	XCAS	O	Column address strobe signal output to the RAM (IC501)
63	VSS	–	Ground terminal
64	XCS	O	Chip select signal output Not used this set (OPEN)
65	A09	O	Address signal output to the RAM (IC501)
66	XRAS	O	Row address strobe signal output to the RAM (IC501)
67	XWE	O	Reading/Writing control signal output to the RAM (IC501)
68,69	D1,D0	I/O	RAM (IC501) data bus
70,71	D2,D3	I/O	RAM (IC501) data bus
72-74	D4-D6	I/O	Data bus Not used this set (OPEN)
75	VSS	–	Ground terminal
76	D7	I/O	Data bus Not used this set (OPEN)
77	ERR	I/O	Input /output terminal of the error (C2PO) data signal to the external RAM Not used this set (OPEN)
78	EXTC2R	I	External RAM selection signal input for the error data writing (When “H” : External RAM) (Fixed at “L”)
79	BUSY	O	BUSY signal output of the RAM access Not used this set (OPEN)
80	EMP	O	Empty or before the full of the ATRAC data (When DSC=ASC+1 : “H”) Not used this set (OPEN)
81	FUL	O	Full or before the empty of the ATRAC data (When ASC=DSC+1 : “H”) Not used this set (OPEN)
82	EQL	O	Empty of the ATRAC data (When DSC=ASC : “H”)
83	MDLK	O	Indicate the main/sub of the recording or playback data (When sub and linking : “H”, When the main : “L”) Not used this set (OPEN)
84	CPSY	O	Interpolation sync signal output Not used this set (OPEN)
85	CTMD0	O	DSC (Difference Signal Control) counter mode output Not used this set (OPEN)
86	CTMD1	O	DSC (Difference Signal Control) counter mode output Not used this set (OPEN)
87	SPO	O	System clock (512Fs=22.5792MHz) signal output to CXD2535CR (IC200) and D/A converter (IC550)
88	VSS	–	Ground terminal
89	MDSY	O	Sync detection signal output of the main data Not used this set (OPEN)
90	LRCK	I	L/R clock (44.1kHz) signal input from CXD2535CR (IC200)
91	BCK	I	Bit clock (2.8224MHz) signal input from CXD2535CR (IC200)
92	C2PO	I	C2PO (indicate the error mode of the data) signal input from CXD2535BR (IC200) When playback : C2PO (“H”), When digital recording : D. IN-Vflag, When analog recording : “L”
93	DATA	I/O	When recording : Record audio data signal output (Not used this set) When playback : Playback audio data signal input from CXD2535CR (IC200)
94	DIDT	I	16-bit data input terminal for the digital audio in Not used this set (Fixed at “L”)
95	DODT	O	16-bit data output terminal for the digital audio out Not used this set (OPEN)
96	DIRCPB	O	Disc drive, Record or playback mode output of the EFM encoder/decoder Not used this set (OPEN)
97	MIN	I	Defect ON/OFF selection signal input from CXD2535CR (IC200)
98	SPOSL	I	IN/OUT selection input terminal of the pin ⑧ (“L” : IN, “H” : OUT) (Fixed at “H”)
99	MCK	O	Internal master clock signal output terminal of the RAM controller
100	VSS	–	Ground terminal



**MAIN BOARD IC600 CXP84340-043Q (SYSTEM CONTROLLER)**

Pin No.	Pin Name	I/O	Function
1-5	T13-T17	I	Test key (4 × 8 matrix) signal output terminal (Fixed at "L")
6	M1	O	Elevator motor (M904) drive signal output (UP) *1
7	$\overline{M1}$	O	Elevator motor (M904) drive signal output (DOWN) *1
8	M2	O	Loading motor (M903) drive signal output *2
9	$\overline{M2}$	O	Loading motor (M903) drive signal output *2
10	MDMON	O	Power control output (Mechanism deck system) Power ON : "H"
11	$\overline{LES}$	I	Detection signal input from the loading end sensor switch (S902)
12	$\overline{SES}$	I	Detection signal input from the store end sensor switch (S903)
13	$\overline{HOME}$	I	Detection signal input from the home position switch (S901) Home position : "L"
14	DCS1	I	Detection signal input from the disc1 switch (S611) No disc "L"
15	DCS2	I	Detection signal input from the disc2 switch (S612) No disc "L"
16	DCS3	I	Detection signal input from the disc3 switch (S613) No disc "L"
17	DCS4	I	Detection signal input from the disc4 switch (S614) No disc "L"
18	DCS5	I	Detection signal input from the disc5 switch (S615) No disc "L"
19	DCS6	I	Detection signal input from the disc6 switch (S616) No disc "L"
20	CH/SINGLE	I	Changer/single setting up terminal When used the changer : "H" (Fixed at "H")
21	ILLON	O	Lamp (PL620) drive signal output for illumination When lamp is ON : "H"
22-29	N.C.	O	Not used (OPEN)
30	$\overline{RST}$	I	System reset signal input When reset : "L"
31	EXTAL	I	10MHz system clock signal input
32	XTAL	O	10MHz system clock signal output
33	VSS	–	Ground terminal
34	TX	O	32.768kHz clock signal output for a clock
35	TEX	I	32.768kHz clock signal input for a clock
36	AVSS	–	Ground terminal (Analog system)
37	AVREF	–	Reference voltage (+5V) input for the A/D converter
38	INIT	I	Initial reset signal input (Normally : "H")
39	TEMP	I	Temperature detection signal input
40	EHS	I	Disc high position detection signal input
41	N.C.	O	Not used (OPEN)
42	EE-CS	O	Chip select signal output for a EEPROM Not used this set (OPEN)
43	EE-CKO	O	Serial clock signal output for a EEPROM Not used this set (OPEN)
44	EE-SIO	I/O	Data signal input/output for a EEPROM Not used this set (OPEN)
45	MD-SO	O	Write data signal output to RF AMP (IC100), CXD2535CR (IC200) and CXD2536CR (IC500)
46	LNKOFF	O	LINK OFF signal output for serial communications Not used this set (OPEN)
47	UNIREQ	O	Request signal output for serial communications Not used this set (OPEN)
48	UNICKI	I	Clock signal (serial communications) input
49	UNISI	I	Data signal (serial communications) input
50	UNISO	O	Data signal (serial communications) output
51	MD-CKO	O	Serial clock signal output to RF AMP (IC100), CXD2535CR (IC200) and CXD2536CR (IC500)
52	MD-SI	I	Read data signal input from CXD2535CR (IC200) and CXD2536CR (IC500)
53	N.C.	O	Not used
54	SENS	I	Internal status (SENS) input from CXD2535CR (IC200) and CXD2536CR (IC500)
55	CC-XINT	I	Interruption status input from CXD2536CR (IC500)

Pin No.	Pin Name	I/O	Function
56	LIMIT-SW	I	Detection signal input from the limit switch (S400) When sled limit in : "L"
57	DOOR-SW	I	Detection signal input from the door open/close switch (S620) When open : "L"
58	MD-LAT	O	Serial latch signal output to RF AMP (IC100), CXD2535CR (IC200) and CXD2536CR (IC500)
59	$\overline{\text{MD-RST}}$	O	Reset signal output to RF AMP (IC100), CXD2535CR (IC200) and CXD2536CR (IC500) When reset "L"
60	BU-IN	I	Battery detection signal input
61	$\overline{\text{BUS-ON}}$	I	BUS-ON detection signal (serial communications) input BUS ON : "L"
62	SQSY	I	Sub-code Q sync (SCOR) input from CXD2535CR (IC200) "L" every 13.3msec, Almost "H"
63	STR-SW	I	Detection signal input from the STOP switch (S600)
64	FOK	I	Focus OK signal input from CXD2435CR (IC200) "H" is input when the focus is applied
65	MD-ON	O	Power control signal output (Servo system) Power ON : "H"
66	EMPH-O	O	Deemphasis control signal output to the D/A converter (IC550) Deemphasis ON "L"
67	A-MUT	O	Audio mute signal output When mute : "H"
68	N.C.	O	Not used (OPEN)
69	CLOCK	O	Clock signal output for test mode indication Not used this set (OPEN)
70	DATA	O	Data signal output for test mode indication Not used this set (OPEN)
71	TM-ON/ $\overline{\text{OFF}}$	I	Test mode set up terminal Normolly : "H" When test mode : "L"
72	VDD	-	Power supply terminal (+5V)
73	N.C.	-	Not used (Fixed at "H")
74	TO0	O	Test key (4x8 matrix) signal output terminal (OPEN)
75	TO1	O	Test key (4x8 matrix) signal output terminal (OPEN)
76	TO2	O	Test key (4x8 matrix) signal output terminal (OPEN)
77	TO3	O	Test key (4x8 matrix) signal output terminal (OPEN)
78	TI0	I	Test key (4x8 matrix) signal input terminal (Fixed at "L")
79	TI1	I	Test key (4x8 matrix) signal input terminal (Fixed at "L")
80	TI2	I	Test key (4x8 matrix) signal input terminal (Fixed at "L")

**\*1 Elevator motor (M904) control**

Terminal \ Mode	UP	DOWN
M1 pin ⑥	"H"	"L"
$\overline{\text{M1}}$ pin ⑦	"L"	"H"

**\*2 Loading motor (M903) control**

Terminal \ Mode	IN	OUT	Brake
M2 pin ⑧	"L"	"H"	"H"
$\overline{\text{M2}}$ pin ⑨	"H"	"L"	"H"

## SECTION 4 EXPLODED VIEWS

**NOTE:**

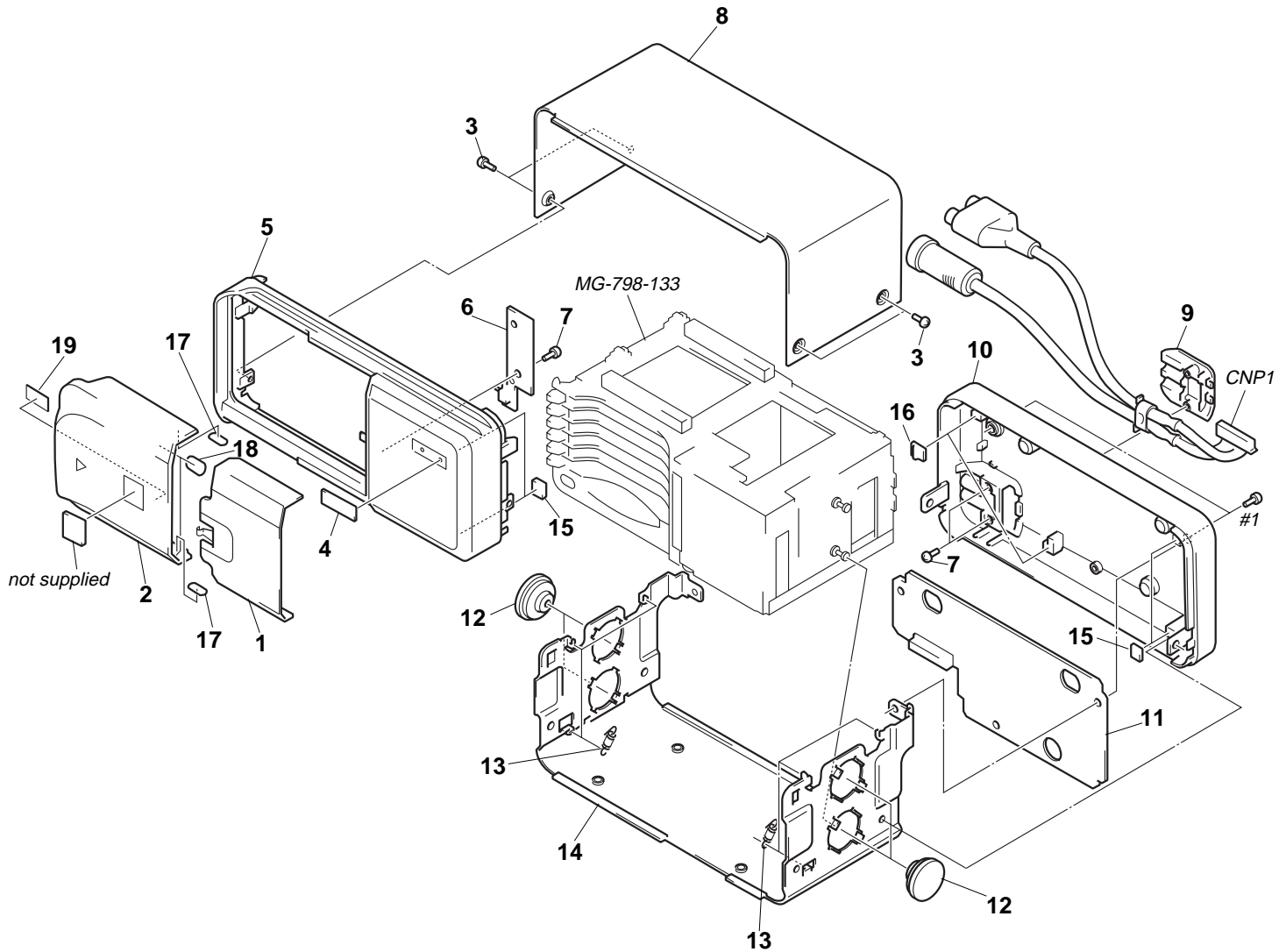
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) . . . (RED)  
  ↑  ↑  
  Parts Color    Cabinet's Color

- 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 and accessories and packing materials are given in the last of the electrical parts list.

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

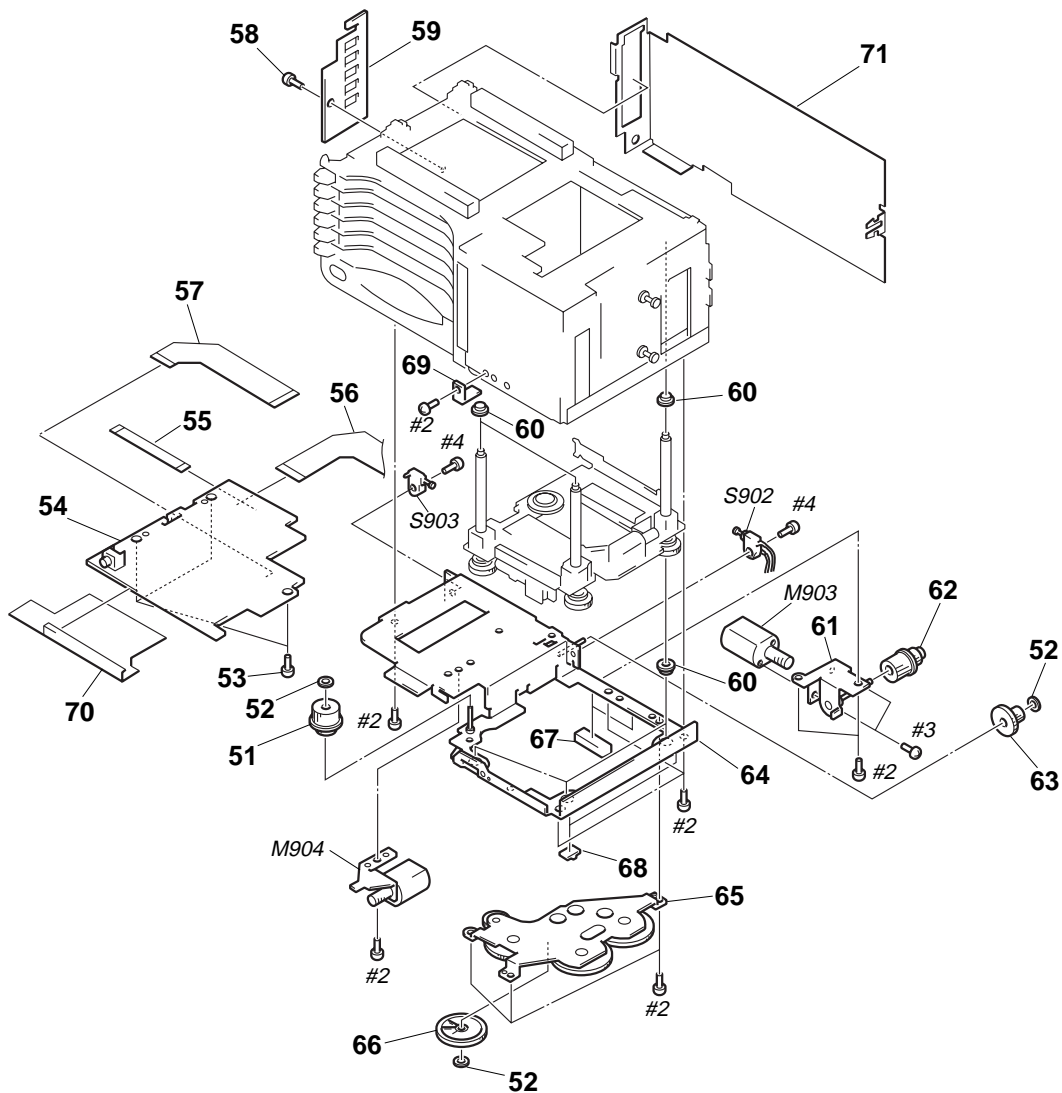
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 4-1. CASE SECTION



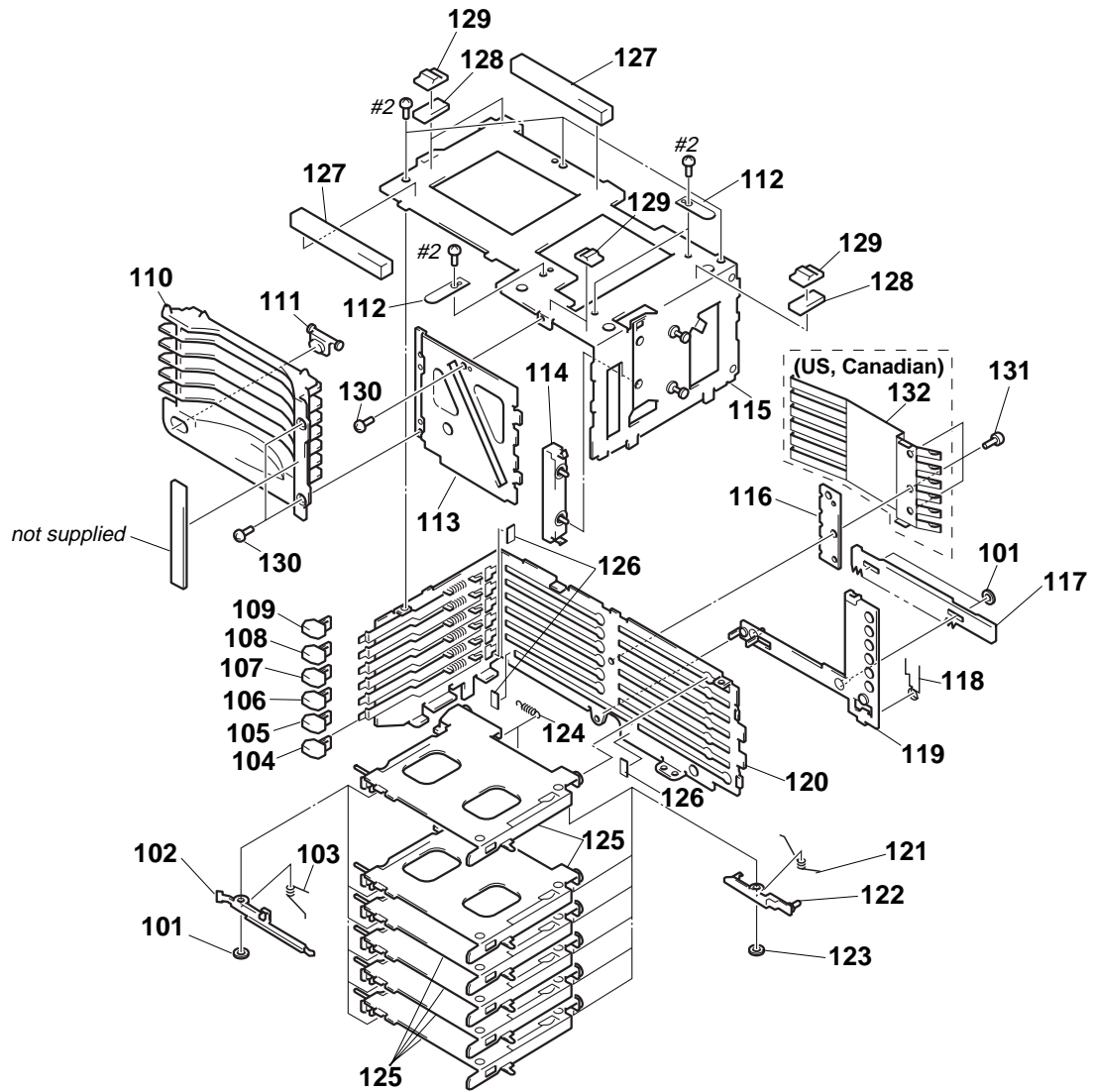
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3371-273-1	DOOR (S) ASSY(/EXP)		* 11	A-3294-228-A	POWER BOARD, COMPLETE	
2	3-930-168-11	DOOR (P)		12	3-930-176-01	DAMPER (798)	
3	3-912-956-11	SCREW (2.6X6) (CU), +BVTT		13	3-930-177-01	SPRING (FL), TENSION	
4	4-969-961-01	EMBLEM (NO.4), SONY		* 14	3-930-173-31	CASE (LOWER)	
5	X-3373-364-1	PANEL (FRONT) ASSY (/EXP)		15	3-931-697-01	CUSHION (STOPPER)	
* 6	1-664-517-11	LAMP BOARD		16	3-348-750-01	CUSHION (DAMPER)	
7	3-909-607-01	SCREW		17	3-930-744-01	SPACER (DOOR)	
* 8	3-930-172-31	CASE (UPPER)		18	3-933-740-01	SHEET (SLIDE)	
9	3-930-175-11	COVER (CORD)		19	3-831-441-11	CUSHION, RATTLE ABSORBER	
10	X-3371-225-1	PANEL (REAR) ASSY (/EXP)		CNP1	1-776-105-11	CORD (WITH CONNECTOR) (BUS CONTROL/ RCA PIN JACK)	

4-2. MECHANISM SECTION-1  
(MG-798-133)



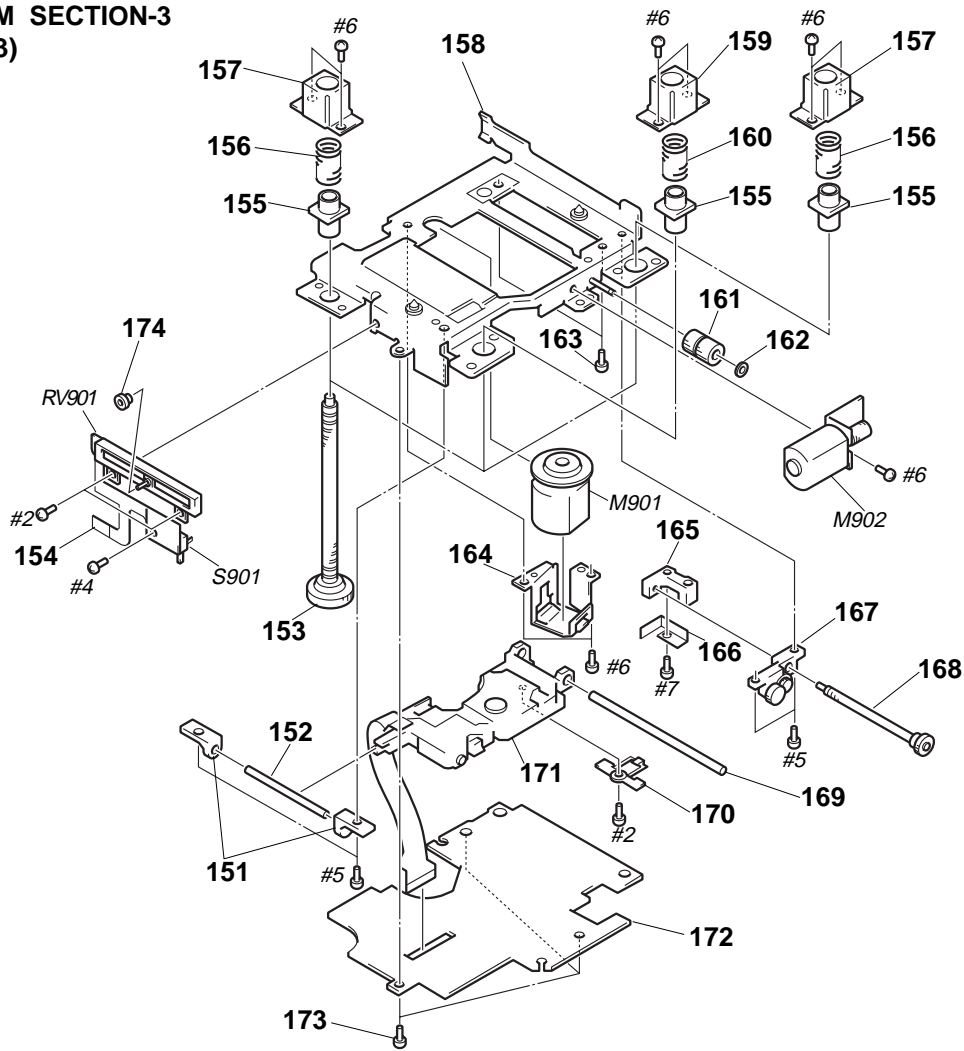
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	3-930-351-01	WHEEL (ELV), WORM		* 64	X-3371-218-1	CHASSIS (BASE) ASSY	
52	3-377-719-11	WASHER, POLYETHYLENE		65	X-3371-211-1	CHASSIS (GEAR) ASSY	
53	3-880-990-00	SCREW (1.7X3),FLAT,(+) SPECIAL		66	3-930-313-01	GEAR (ELVC)	
* 54	A-3294-229-A	MAIN BOARD, COMPLETE		67	3-931-698-01	CUSHION (ROLL L)	
55	1-776-474-11	CABLE, FLAT 7P		68	3-348-750-01	CUSHION (DAMPER)	
56	1-658-887-11	MAIN FLEXIBLE BOARD		69	3-931-366-01	STOPPER, LEAD	
57	1-658-881-11	SERVO FLEXIBLE BOARD		* 70	3-931-149-02	SHEET (MAIN PC BOARD)	
58	3-909-412-01	SCREW (+P) (1.7X2) (TYPE 3)		* 71	3-931-025-01	SHEET (MECHANICAL DECK)	
59	A-3309-891-A	SENSOR BOARD, COMPLETE		M903	X-3371-508-1	MOTOR ASSY (LOADING)	
60	3-930-312-01	BEARING (ELV)		M904	A-3291-505-A	ELV MOTOR BLOCK ASSY (ELEVATOR)	
61	X-3371-220-1	BRACKET (LD) ASSY		S902	1-570-771-11	SWITCH (LES)	
62	3-930-365-01	WHEEL (LD), WORM		S903	1-570-771-21	SWITCH (SES)	
63	3-930-317-01	GEAR (LD)					

**4-3. MECHANISM SECTION-2  
(MG-798-133)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	3-377-719-11	WASHER, POLYETHYLENE		117	3-930-366-01	RACK (LOADING)	
102	3-930-354-01	LEVER, DISK EJECT		118	3-930-360-01	SPRING (LIMITER), TORSION	
103	3-930-350-01	SPRING (EJ), TORSION		* 119	X-3371-221-1	SLIDER ASSY, LOADING	
104	3-930-318-51	BUTTON (EJECT)		120	X-3371-210-3	CHASSIS (REAR) ASSY	
105	3-930-318-41	BUTTON (EJECT)		121	3-930-349-01	SPRING (LOCK), TORSION	
106	3-930-318-31	BUTTON (EJECT)		122	X-3371-219-1	PLATE (HOLDER) ASSY, LOCK	
107	3-930-318-21	BUTTON (EJECT)		123	3-331-007-21	WASHER	
108	3-930-318-11	BUTTON (EJECT)		124	3-930-352-01	SPRING (D LOCK), TENSION	
109	3-930-318-01	BUTTON (EJECT)		125	X-3371-216-1	HOLDER (CADDIE) ASSY	
110	3-930-314-01	ESCUTCHEON		* 126	3-317-054-01	SPACER, E	
111	3-930-319-01	BUTTON (STOP)		127	3-931-699-01	CUSHION (ROLL H)	
112	3-930-311-01	RETAINER (ELV)		128	9-911-840-XX	CUSHION	
* 113	3-930-320-01	CHASSIS (FRONT)		129	3-348-750-01	CUSHION (DAMPER)	
* 114	3-930-316-01	GUIDE (HOLDER)		130	3-317-552-71	SCREW (M1.7)	
* 115	X-3371-209-1	CHASSIS (TOP) ASSY		131	3-891-132-00	SCREW (M1.7x2.0), SPECIAL HEAD	
* 116	3-930-321-01	PLATE, HOLDER STOP		132	3-935-293-01	SHEET (COPY MD) (US, Canadian)	

**4-4. MECHANISM SECTION-3  
(MG-798-133)**



<p>The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-930-338-01	HOLDER (OP GUIDE B)		165	3-930-336-01	HOLDER (SLB)	
152	3-930-332-01	GUIDE (OPB)		166	3-930-335-01	DETENT, SL	
153	X-3371-212-1	SCREW (ELV) ASSY, FEED		167	X-3371-213-1	HOLDER (SLA) ASSY	
154	1-658-880-11	EHS FLEXIBLE BOARD		168	X-3371-214-1	SCREW (SL) ASSY, FEED	
155	3-930-333-01	SLEEVE (ELV)		169	3-930-331-01	GUIDE (OPA)	
156	3-930-334-01	SPRING (ELV), COMPRESSION		170	3-930-337-01	SPRING (SL OUTSERT), FEED	
157	3-930-345-01	PLATE (B), ELV LIMITER		$\triangle$ 171	8-583-035-01	OPTICAL PICK UP KMS-193C/J2N	
* 158	X-3371-215-1	CHASSIS (OP) ASSY		* 172	A-3222-980-A	SERVO BOARD, COMPLETE	
159	3-930-344-01	PLATE (A), ELV LIMITER		173	3-932-755-01	SCREW (M1.7X2.2)	
160	3-930-711-01	SPRING (ELV2), COMPRESSION		174	3-930-310-01	COLLAR (EHS)	
161	3-930-339-01	WHEEL (SL), WORM		M901	A-3291-507-A	SP MOTOR BLOCK ASSY (SPINDLE)	
162	3-338-645-31	WASHER (0.8-2.5)		M902	A-3291-508-A	SL MOTOR BLOCK ASSY (SLED)	
163	3-930-343-01	SCREW (K1.7X3.5)		RV901	1-223-817-11	RES, VAR, SLIDE 10K	
164	3-930-342-01	RETAINER (SP)		S901	1-570-771-21	SWITCH (HOME POSITION DETECT)	(ELEVATOR HIGHT SENSOR)

**SECTION 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,  $\mu$ : for example:  
uA. . :  $\mu$ A. .    uPA. . :  $\mu$ PA. .  
uPB. . :  $\mu$ PB. .    uPC. . :  $\mu$ PC. .  
uPD. . :  $\mu$ PD. .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

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

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité.  
Ne les remplacer que par une pièce portant le numéro spécifié.

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

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
	1-658-880-11	EHS FLEXIBLE BOARD *****		C509	1-165-128-11	CERAMIC CHIP 0.22uF	16V
		< VARIABLE RESISTOR >		C510	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
RV901	1-223-817-11	RES, VAR, SLIDE 10K (ELEVATOR HIGHT SENSOR) < SWITCH >		C511	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
				C512	1-165-128-11	CERAMIC CHIP 0.22uF	16V
S901	1-570-771-21	SWITCH (HOME POSITION DETECT) *****		C513	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
*	1-664-517-11	LAMP BOARD *****		C520	1-162-925-11	CERAMIC CHIP 68PF 5%	50V
		< CONNECTOR >		C521	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
* CN620	1-580-056-21	PIN, CONNECTOR 3P < PILOT LAMP >		C550	1-104-852-11	TANTAL. CHIP 22uF 20%	10V
				C551	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
PL620	1-517-492-11	LAMP, PILOT (ILLUMINATION) < RESISTOR >		C553	1-164-357-11	CERAMIC CHIP 1000PF 5%	50V
R620	1-216-298-00	METAL CHIP 2.2 5% 1/10W < SWITCH >		C554	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C557	1-164-004-11	CERAMIC CHIP 0.1uF 10%	25V
S620	1-692-532-21	SWITCH, PUSH (1 KEY) (DOOR OPEN/CLOSE DET) *****		C560	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V
*	A-3294-229-A	MAIN BOARD, COMPLETE *****		C600	1-104-852-11	TANTAL. CHIP 22uF 20%	10V
		< CAPACITOR >		C601	1-165-128-11	CERAMIC CHIP 0.22uF	16V
C500	1-165-128-11	CERAMIC CHIP 0.22uF	16V	C602	1-164-489-11	CERAMIC CHIP 0.22uF 10%	16V
C501	1-128-361-11	ELECT CHIP 470uF 20%	10V	C603	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C503	1-162-970-11	CERAMIC CHIP 0.01uF 10%	25V	C604	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C504	1-162-910-11	CERAMIC CHIP 5PF 0.25PF	50V	C605	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
C505	1-165-128-11	CERAMIC CHIP 0.22uF	16V	C607	1-162-927-11	CERAMIC CHIP 100PF 5%	50V
C506	1-135-259-11	TANTAL. CHIP 10uF 20%	6.3V	C608	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C507	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C609	1-162-917-11	CERAMIC CHIP 15PF 5%	50V
C508	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V	C610	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C611	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C620	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C621	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C650	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C651	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C652	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C653	1-165-128-11	CERAMIC CHIP 0.22uF	16V
				C700	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
				C701	1-107-826-11	CERAMIC CHIP 0.1uF 10%	16V
						< CONNECTOR >	
				CN500	1-573-370-21	CONNECTOR, FFC/FPC 30P	
				* CN600	1-573-939-11	CONNECTOR, FFC/FPC (ZIF) 30P	
				CN601	1-573-916-11	CONNECTOR, FFC/FPC (ZIF) 7P	
				CN602	1-580-055-21	PIN, CONNECTOR 2P	
				CN603	1-580-055-21	PIN, CONNECTOR 2P	

**MAIN**

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* CN604	1-580-056-21	PIN, CONNECTOR 3P		R504	1-216-809-11	METAL CHIP	100 5% 1/16W
CN700	1-580-055-21	PIN, CONNECTOR 2P		R505	1-218-733-11	METAL CHIP	51K 0.50% 1/16W
CN701	1-580-055-21	PIN, CONNECTOR 2P		R506	1-218-730-11	METAL CHIP	39K 0.50% 1/16W
		< DIODE >		R520	1-216-811-11	METAL CHIP	150 5% 1/16W
D502	8-719-421-36	DIODE MA8036-L		R521	1-218-664-11	METAL CHIP	68 0.50% 1/16W
D560	8-719-988-62	DIODE 1SS355		R550	1-216-797-11	METAL CHIP	10 5% 1/16W
D561	8-719-988-62	DIODE 1SS355		R551	1-216-809-11	METAL CHIP	100 5% 1/16W
D562	8-719-988-62	DIODE 1SS355		R552	1-216-809-11	METAL CHIP	100 5% 1/16W
D600	8-719-422-64	DIODE MA8062-M		R553	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
		< FERRITE BEAD >		R560	1-218-692-11	METAL CHIP	1K 0.50% 1/16W
FB510	1-414-235-11	INDUCTOR, FERRITE BEAD		R561	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
FB650	1-500-235-21	BEAD, FERRITE (CHIP)		R600	1-216-841-11	METAL CHIP	47K 5% 1/16W
FB651	1-500-235-21	BEAD, FERRITE (CHIP)		R601	1-216-845-11	METAL CHIP	100K 5% 1/16W
		< IC >		R602	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC500	8-752-371-17	IC CXD2536R		R603	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC501	8-759-341-28	IC HM51W4400TT6-8		R605	1-216-845-11	METAL CHIP	100K 5% 1/16W
IC550	8-759-425-18	IC CS4330-KSR-H		R607	1-218-708-11	METAL CHIP	4.7K 0.50% 1/16W
IC600	8-752-882-94	IC CXP84340-043Q		R608	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC601	8-759-363-81	IC XC61AN4002PR		R609	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
IC602	8-759-238-47	IC TC74HCT7007AF(EL)		R610	1-216-821-11	METAL CHIP	1K 5% 1/16W
IC700	8-759-823-87	IC LB1638M		R611	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
IC701	8-759-823-87	IC LB1638M		R612	1-216-845-11	METAL CHIP	100K 5% 1/16W
		< COIL >		R613	1-216-821-11	METAL CHIP	1K 5% 1/16W
L500	1-412-058-11	INDUCTOR CHIP 10uH		R614	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
L501	1-410-998-31	INDUCTOR CHIP 2.7uH		R615	1-216-821-11	METAL CHIP	1K 5% 1/16W
L502	1-412-058-11	INDUCTOR CHIP 10uH		R616	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
L600	1-412-058-11	INDUCTOR CHIP 10uH		R617	1-216-845-11	METAL CHIP	100K 5% 1/16W
		< FILTER >		R618	1-216-845-11	METAL CHIP	100K 5% 1/16W
NF650	1-239-466-21	FILTER, EMI		R619	1-216-833-11	METAL CHIP	10K 5% 1/16W
NF651	1-239-581-21	FILTER, EMI		R622	1-216-809-11	METAL CHIP	100 5% 1/16W
		< TRANSISTOR >		R624	1-216-821-11	METAL CHIP	1K 5% 1/16W
Q500	8-729-020-67	TRANSISTOR XN1A312-TX		R625	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q501	8-729-920-21	TRANSISTOR DTC314TKH04		R626	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q560	8-729-424-59	TRANSISTOR UN2212		R627	1-216-821-11	METAL CHIP	1K 5% 1/16W
Q561	8-729-421-22	TRANSISTOR UN2211		R628	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q600	8-729-904-60	TRANSISTOR DTB113ZK		R629	1-216-845-11	METAL CHIP	100K 5% 1/16W
Q601	8-729-421-22	TRANSISTOR UN2211		R630	1-216-841-11	METAL CHIP	47K 5% 1/16W
		< RESISTOR >		R631	1-216-821-11	METAL CHIP	1K 5% 1/16W
R500	1-216-821-11	METAL CHIP	1K 5% 1/16W	R632	1-216-821-11	METAL CHIP	1K 5% 1/16W
R501	1-216-815-11	METAL CHIP	330 5% 1/16W	R633	1-216-821-11	METAL CHIP	1K 5% 1/16W
R502	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R634	1-216-833-11	METAL CHIP	10K 5% 1/16W
R503	1-216-809-11	METAL CHIP	100 5% 1/16W	R636	1-216-864-11	METAL CHIP	0 5% 1/16W
						< COMPOSITION CIRCUIT BLOCK >	
				RB600	1-239-517-11	RESISTOR, NETWORK (1608) 100Kx4	
				RB601	1-239-517-11	RESISTOR, NETWORK (1608) 100Kx4	
				RB602	1-239-514-11	RESISTOR, NETWORK (1608) 100Kx4	
				RB603	1-239-516-11	RESISTOR, NETWORK (1608) 1Kx4	



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
RB604	1-239-516-11	RESISTOR, NETWORK (1608) 1Kx4		C932	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
RB605	1-239-517-11	RESISTOR, NETWORK (1608) 100Kx4		C940	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
RB606	1-239-516-11	RESISTOR, NETWORK (1608) 1Kx4		C941	1-110-474-11	SOLID CHIP 10uF 20% 50V	
RB607	1-239-516-11	RESISTOR, NETWORK (1608) 1Kx4		C942	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
RB609	1-239-516-11	RESISTOR, NETWORK (1608) 1Kx4		C950	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
		< SWITCH >		C951	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
S600	1-571-914-21	SWITCH, KEY BOARD (STOP)		C952	1-163-263-11	CERAMIC CHIP 330PF 5% 50V	
		< THERMISTOR >		C953	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
TH600	1-810-421-11	THERMISTOR NTH5G36B103K01TE 10K		C954	1-163-263-11	CERAMIC CHIP 330PF 5% 50V	
		< VIBRATOR >		C955	1-110-456-11	SOLID CHIP 47uF 20% 16V	
X500	1-760-168-11	VIBRATOR, CRYSTAL (45.1584MHZ)		C956	1-128-590-11	ELECT CHIP 100uF 20% 6.3V	
X600	1-760-365-11	VIBRATOR, CERAMIC (10MHZ)		C957	1-128-590-11	ELECT CHIP 100uF 20% 6.3V	
X601	1-579-886-21	VIBRATOR, CRYSTAL (32.768KHZ)		C958	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
*****				C959	1-110-447-11	SOLID CHIP 22uF 20% 6.3V	
*	A-3294-228-A	POWER BOARD, COMPLETE		C960	1-128-590-11	ELECT CHIP 100uF 20% 6.3V	
		*****		C961	1-128-590-11	ELECT CHIP 100uF 20% 6.3V	
		< CAPACITOR >		C962	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C800	1-110-456-11	SOLID CHIP 47uF 20% 16V		C963	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C801	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		C970	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C803	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< CONNECTOR >	
C805	1-110-450-11	SOLID CHIP 100uF 20% 6.3V		* CN800	1-573-939-11	CONNECTOR, FFC/FPC (ZIF) 30P	
C810	1-110-457-11	SOLID CHIP 3.3uF 20% 25V		CN900	1-764-585-11	PIN, CONNECTOR (PC BOARD) 12P	
C811	1-163-251-11	CERAMIC CHIP 100PF 5% 50V				< DIODE >	
C812	1-110-474-11	SOLID CHIP 10uF 20% 50V		D900	8-719-422-64	DIODE MA8062-M	
C813	1-110-457-11	SOLID CHIP 3.3uF 20% 25V		D901	8-719-422-64	DIODE MA8062-M	
C814	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		D902	8-719-975-40	DIODE RB411D	
C815	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		D910	8-719-977-12	DIODE DTZ6.8B	
C820	1-110-457-11	SOLID CHIP 3.3uF 20% 25V		D911	8-719-400-20	DIODE MA152WA	
C821	1-163-251-11	CERAMIC CHIP 100PF 5% 50V		D912	8-719-988-62	DIODE 1SS355	
C822	1-110-474-11	SOLID CHIP 10uF 20% 50V		D920	8-719-422-64	DIODE MA8062-M	
C823	1-110-457-11	SOLID CHIP 3.3uF 20% 25V		D921	8-719-988-62	DIODE 1SS355	
C824	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		D930	8-719-422-16	DIODE MA8039-L-TX	
C825	1-163-125-00	CERAMIC CHIP 220PF 5% 50V		D940	8-719-422-97	DIODE MA8091-M	
C900	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V		D950	8-719-975-33	DIODE RB110C	
C901	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		D951	8-719-422-16	DIODE MA8039-L-TX	
C902	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V		D952	8-719-975-33	DIODE RB110C	
C903	1-110-456-11	SOLID CHIP 47uF 20% 16V				< FERRITE BEAD >	
C904	1-164-505-11	CERAMIC CHIP 2.2uF 16V		FB810	1-414-598-11	INDUCTOR, FERRITE BEAD	
C909	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V		FB820	1-414-598-11	INDUCTOR, FERRITE BEAD	
C910	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V				< IC >	
C911	1-125-710-11	CAPACITOR 0.1F 5.5V		IC800	8-759-711-82	IC NJM4580E	
C920	1-164-346-11	CERAMIC CHIP 1uF 16V		IC900	8-759-284-87	IC MM1284XFFE	
C931	1-110-446-11	SOLID CHIP 10uF 20% 6.3V		IC950	8-759-370-13	IC TL1451ACDB-E20	

**POWER**

**SENSOR**

Ref. No.	Part No.	Description	Remark
< COIL >			
L950	1-409-640-21	COIL, CHIP CHOKE	10uH
L951	1-403-584-11	COIL, CHIP CHOKE	33uH
L952	1-409-640-21	COIL, CHIP CHOKE	10uH
L953	1-403-584-11	COIL, CHIP CHOKE	33uH
L954	1-409-640-21	COIL, CHIP CHOKE	10uH
< FILTER >			
NF900	1-239-466-21	FILTER, EMI	
< IC LINK >			
PS900	1-533-397-11	LINK, CHIP IC (ICB-S2.3)	
< TRANSISTOR >			
Q800	8-729-424-12	TRANSISTOR UN2112	
Q810	8-729-920-21	TRANSISTOR DTC314TKH04	
Q820	8-729-920-21	TRANSISTOR DTC314TKH04	
Q910	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q911	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q920	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q921	8-729-424-12	TRANSISTOR UN2112	
Q931	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q940	8-729-020-67	TRANSISTOR XN1A312-TX	
Q941	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q950	8-729-106-60	TRANSISTOR 2SB1115A	
Q952	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q953	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q954	8-729-106-60	TRANSISTOR 2SB1115A	
< RESISTOR >			
R800	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R801	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R811	1-208-561-11	METAL GLAZE	27K 2% 1/8W
R812	1-216-238-00	METAL GLAZE	47K 2% 1/8W
R813	1-208-561-11	METAL GLAZE	27K 2% 1/8W
R814	1-216-238-00	METAL GLAZE	47K 2% 1/8W
R815	1-216-182-00	METAL GLAZE	220 2% 1/8W
R816	1-216-246-00	METAL GLAZE	100K 2% 1/8W
R821	1-208-561-11	METAL GLAZE	27K 2% 1/8W
R822	1-216-238-00	METAL GLAZE	47K 2% 1/8W
R823	1-208-561-11	METAL GLAZE	27K 2% 1/8W
R824	1-216-238-00	METAL GLAZE	47K 2% 1/8W
R825	1-216-182-00	METAL GLAZE	220 2% 1/8W
R826	1-216-246-00	METAL GLAZE	100K 2% 1/8W
R900	1-216-089-00	METAL GLAZE	47K 5% 1/10W
R910	1-216-081-00	METAL CHIP	22K 5% 1/10W
R911	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R920	1-216-089-00	METAL GLAZE	47K 5% 1/10W

Ref. No.	Part No.	Description	Remark
R921	1-216-085-00	METAL CHIP	33K 5% 1/10W
R922	1-216-097-00	METAL GLAZE	100K 5% 1/10W
R930	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R931	1-216-057-00	METAL CHIP	2.2K 5% 1/10W
R940	1-216-049-00	METAL GLAZE	1K 5% 1/10W
R950	1-216-073-00	METAL CHIP	10K 5% 1/10W
R951	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R952	1-216-065-00	METAL CHIP	4.7K 5% 1/10W
R953	1-216-067-00	METAL CHIP	5.6K 5% 1/10W
R954	1-216-077-00	METAL CHIP	15K 5% 1/10W
R955	1-216-077-00	METAL CHIP	15K 5% 1/10W
R956	1-216-085-00	METAL CHIP	33K 5% 1/10W
R957	1-216-085-00	METAL CHIP	33K 5% 1/10W
R958	1-216-085-00	METAL CHIP	33K 5% 1/10W
R959	1-216-085-00	METAL CHIP	33K 5% 1/10W
R960	1-216-025-00	METAL GLAZE	100 5% 1/10W
R961	1-216-045-00	METAL CHIP	680 5% 1/10W
R962	1-216-045-00	METAL CHIP	680 5% 1/10W
R963	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R964	1-216-663-11	METAL CHIP	3.3K 0.5% 1/10W
R965	1-216-025-00	METAL GLAZE	100 5% 1/10W
R966	1-216-025-00	METAL GLAZE	100 5% 1/10W
R967	1-216-045-00	METAL CHIP	680 5% 1/10W
R968	1-216-045-00	METAL CHIP	680 5% 1/10W
R969	1-216-675-11	METAL CHIP	10K 0.5% 1/10W
R970	1-216-663-11	METAL CHIP	3.3K 0.5% 1/10W
R980	1-216-841-11	METAL CHIP	47K 5% 1/16W

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A-3309-891-A SENSOR BOARD, COMPLETE

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For the parts on the SENSOR board, replace the entire mounted board.

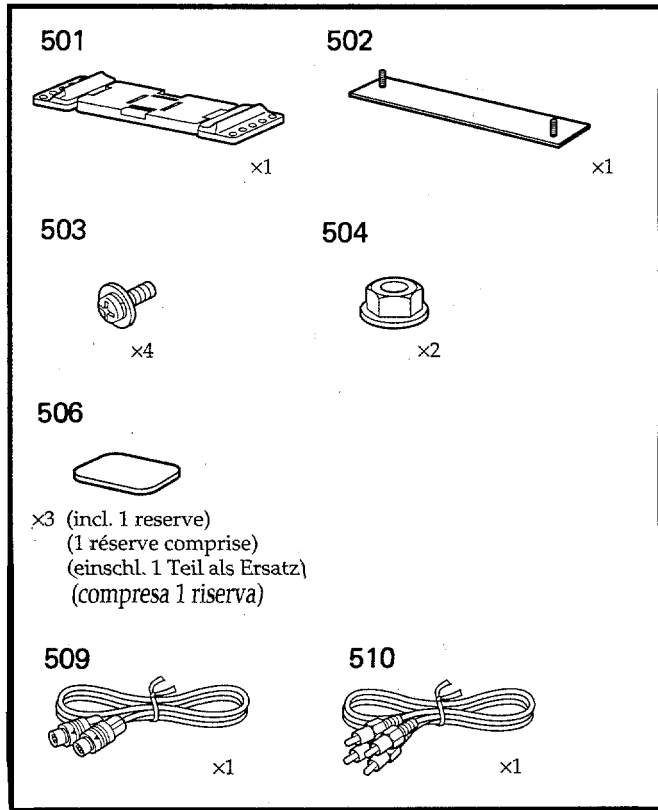
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Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	A-3222-980-A	SERVO BOARD, COMPLETE *****				< IC >	
		< CAPACITOR >		IC100	8-752-072-68	IC CXA1981AR	
C102	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V		IC200	8-752-382-23	IC CXD2535CR-1	
C103	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V		IC201	8-759-031-84	IC SC7S04F	
C104	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V		IC300	8-759-442-80	IC MPC17A38ZVMEL	
C105	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V				< COIL >	
C106	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V		L100	1-412-058-11	INDUCTOR CHIP 10uH	
				L200	1-412-058-11	INDUCTOR CHIP 10uH	
C107	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		L300	1-412-637-51	INDUCTOR 330uH	
C108	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		L301	1-412-039-51	INDUCTOR CHIP 100uH	
C111	1-104-852-11	TANTAL. CHIP 22uF 20% 6.3V		L302	1-412-039-51	INDUCTOR CHIP 100uH	
C113	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V					
C114	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		L303	1-412-039-51	INDUCTOR CHIP 100uH	
				L304	1-412-039-51	INDUCTOR CHIP 100uH	
C115	1-109-982-11	CERAMIC CHIP 1uF 10% 10V				< TRANSISTOR >	
C117	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		Q100	8-729-216-22	TRANSISTOR 2SA1162-G	
C118	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V		Q200	8-729-422-27	TRANSISTOR 2SD601A-Q	
C119	1-162-969-11	CERAMIC CHIP 0.0068uF 10% 25V				< RESISTOR >	
C120	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V					
				R100	1-216-841-11	METAL CHIP 47K 5% 1/16W	
C123	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R101	1-216-308-00	METAL CHIP 4.7 5% 1/10W	
C200	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		R102	1-216-811-11	METAL CHIP 150 5% 1/16W	
C202	1-135-259-11	TANTAL. CHIP 10uF 20% 6.3V		R103	1-216-853-11	METAL CHIP 470K 5% 1/16W	
C204	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V		R104	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
C205	1-107-823-11	CERAMIC CHIP 0.47uF 10% 16V					
				R106	1-216-853-11	METAL CHIP 470K 5% 1/16W	
C206	1-162-927-11	CERAMIC CHIP 100PF 5% 50V		R107	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
C207	1-162-979-11	CERAMIC CHIP 0.0027uF 10% 50V		R108	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
C208	1-162-587-11	CERAMIC CHIP 0.039uF 10% 25V		R109	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
C209	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R110	1-216-835-11	METAL CHIP 15K 5% 1/16W	
C210	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V					
				R111	1-216-841-11	METAL CHIP 47K 5% 1/16W	
C211	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R201	1-216-809-11	METAL CHIP 100 5% 1/16W	
C301	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		R202	1-216-809-11	METAL CHIP 100 5% 1/16W	
C302	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		R203	1-216-809-11	METAL CHIP 100 5% 1/16W	
C303	1-104-852-11	TANTAL. CHIP 22uF 20% 10V		R207	1-216-833-11	METAL CHIP 10K 5% 1/16W	
C304	1-109-982-11	CERAMIC CHIP 1uF 10% 10V					
				R208	1-216-845-11	METAL CHIP 100K 5% 1/16W	
C305	1-109-982-11	CERAMIC CHIP 1uF 10% 10V		R209	1-216-857-11	METAL CHIP 1M 5% 1/16W	
C306	1-107-682-11	CERAMIC CHIP 1uF 10% 16V		R210	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
C307	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V		R211	1-218-270-11	METAL GLAZE 1.1K 5% 1/16W	
				R212	1-216-822-11	METAL CHIP 1.2K 5% 1/16W	
		< CONNECTOR >					
CN100	1-573-931-11	CONNECTOR, FFC/FPC (ZIF) 22P		R221	1-216-853-11	METAL CHIP 470K 5% 1/16W	
CN200	1-573-370-21	CONNECTOR, FFC/FPC 30P		R222	1-216-819-11	METAL CHIP 680 5% 1/16W	
CN301	1-580-055-21	PIN, CONNECTOR 2P		R223	1-216-821-11	METAL CHIP 1K 5% 1/16W	
CN400	1-573-346-21	CONNECTOR, FFC/FPC 6P		R224	1-216-821-11	METAL CHIP 1K 5% 1/16W	
		< DIODE >				< COMPOSITION CIRCUIT BLOCK >	
D300	8-719-988-62	DIODE 1SS355		RB201	1-233-576-11	RES, CHIP NETWORK 100x4	
D301	8-719-988-62	DIODE 1SS355		RB202	1-233-576-11	RES, CHIP NETWORK 100x4	

**SERVO**

Ref. No.	Part No.	Description	Remark
RB203	1-233-576-11	RES, CHIP NETWORK 100x4  < SWITCH >	
S400	1-692-532-21	SWITCH, PUSH (1 KEY) (LIMIT DET)	
*****			
MISCELLANEOUS *****			
55	1-776-474-11	CABLE, FLAT 7P	
56	1-658-887-11	MAIN FLEXIBLE BOARD	
57	1-658-881-11	SERVO FLEXIBLE BOARD	
154	1-658-880-11	EHS FLEXIBLE BOARD	
△171	8-583-035-01	OPTICAL PICK UP KMS-193C/J2N	
CNP1	1-776-105-11	CORD (WITH CONNECTOR) (BUS CONTROL/RCA PIN JACK)	
M901	A-3291-507-A	SP MOTOR BLOCK ASSY (SPINDLE)	
M902	A-3291-508-A	SL MOTOR BLOCK ASSY (SLED)	
M903	X-3371-508-1	MOTOR ASSY (LOADING)	
M904	A-3291-505-A	ELV MOTOR BLOCK ASSY (ELEVATOR)	
RV901	1-223-817-11	RES, VAR, SLIDE 10K (ELEVATOR HIGHT SENSOR)	
S901	1-570-771-21	SWITCH (HOME POSITION DETECT)	
S902	1-570-771-11	SWITCH (LES)	
S903	1-570-771-21	SWITCH (SES)	
*****			
***** HARDWARE LIST *****			
#1	7-685-793-09	SCREW +PTT 2.6X8 (S)	
#2	7-627-852-37	PRECISION SCREW +P 1.7X1.8 TYPE3	
#3	7-627-554-07	SCREW,PRECISION +P 2X2.2	
#4	7-627-855-07	SCREW,PRECISION +P 2X5.5 TYPE3	
#5	7-627-852-27	+P 1.7X3	
#6	7-627-552-18	SCREW,PRECISION +P 1.7X1.6	
#7	7-627-852-58	SCREW,PRECISION +P 1.7X5 TYPE3	
*****			
ACCESSORIES & PACKING MATERIALS *****			
3-859-134-11	MANUAL, INSTRUCTION (ENGLISH,FRENCH, GERMAN,ITALIAN) (AEP,UK,German)		
3-859-134-21	MANUAL, INSTRUCTION (DUTCH,SWEDISH, PORTUGUESE,SPANISH) (AEP,UK)		
3-859-134-31	MANUAL, INSTRUCTION (ENGLISH,FRENCH, SPANISH,CHINESE) (US,Canadian,E)		
*****			

Ref. No.	Part No.	Description	Remark
MOUNTING HARDWARE *****			
501	3-930-163-01	BASE (FITTING)	
502	X-3371-178-1	BRACKET ASSY	
503	7-682-961-01	SCREW +PSW 4X8	
504	4-304-511-00	NUT (M5), FLANGE	
506	3-930-166-01	CUSHION (FITTING)	
509	1-590-519-21	CORD (WITH CONNECTOR) (BUS CABLE 5.5m)	
510	1-777-284-11	CORD, CONNECTION (RCA PIN CORD 5.5m)	



The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
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MEMO

