CDP-103

SERVICE MANUAL

Refer to RM-D302 Service Manual issued separately for information of the remote controller supplied with this set.

AEP Model
UK Model

SPECIFICATIONS

System — Compact disc digital audio system
Disc — Compact disc
Laser diode properties
Material : GaAlAs
Wavelength : 780 nm
Emission duration : Continuous
Laser output : Max. 0.4 mW *

* This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the optical pick-up block.

Spindle speed — 500 r.p.m. to 200 r.p.m. (CLV)
Scan velocity — 1.2 – 1.4 m/sec.
Error correction
Sony Super Strategy Cross Interleave Reed Solomon Code
Number of channels
2
D-A conversion — 16-bit linear
Frequency response
2 – 20,000 Hz ± 0.5 dB
Harmonic distortion
Less than 0.003 % (1 kHz)
Dynamic range
More than 96 dB
Channel separation
More than 95 dB
Wow and flutter
Below measurable limit

Outputs — Line outputs
Output level 2 V rms (at MSB)
Load impedance over 10 kilohms
Headphones
28 mW at 32 ohms
Other jacks — Remote control connectors (4-pin)

General

Power requirements
AEP model: 220 V ac, 50/60 Hz
UK model : 240 V ac, 50 Hz
Power consumption
15 W
AC outlet — AEP model: 1 unswitched, 100 watts max. max.
UK model : 1 switched, 100 watts max.
Dimensions — Approx. 355 × 80 × 335 mm (w/h/d) (14 × 3¼ × 13¼ in.) including projecting parts and controls
Approx. 6 kg (13 lb 4 oz), net

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND 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.

MICROFILM

COMPACT DISC PLAYER

SONY®

AUD

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING !!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.

CAUTION:

The use of optical instrument with this product will increase eye hazard.

CAUTION

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

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 0.4 mW*
     * This output is the value measured at a distance of about 1.6 mm from the objective lens surface on the Optical Pick-up Block.
   - Classification: Class IIIb
2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

I dette apparat anvendes laserlys. Derfor skal nedenstående instruktioner nøje følges under service.

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

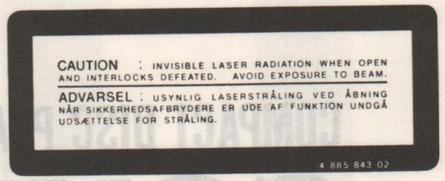
Under service må øjnene ikke komme nær objektiv-linsen på den optiske pick-up enhed. I tilfælde af at det er nødvendigt at kontrollere udsendelsen af laserlys, skal det ske i en afstand af mere end 25 cm fra den optiske pick-up.

1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*
     * Målt i 1,6 mm afstand fra overfladen af objektivlinsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.
2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laserdioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

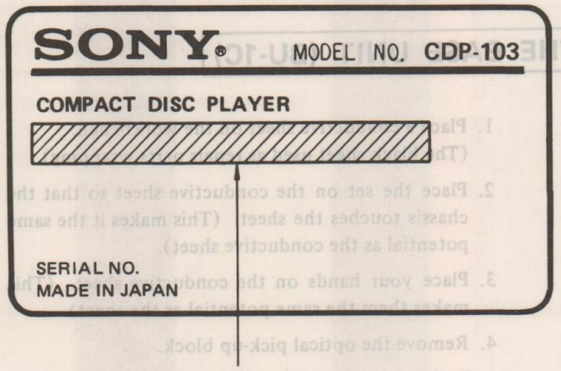
1. Advarsel Mærkning



VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

CDP-103

MODEL IDENTIFICATION
– Specifcations Labels –



AEP model: AC: 220 V ~ 50/60 Hz 15 W
UK model: AC: 240 V ~ 50/60 Hz 15 W

FEATURES

- High performance and high fidelity.
- Feather-touch function buttons for direct mode change.
- AMS (Automatic Music Sensor) for quick location of selections.
- RMS (Random Music Sensor) for listening to the selections in a specified order.
- Index function for quick location of the part you want.
- Full repeat fuctions for one selection, the whole disc and a particular portion.
- Large and easy-to-read digital display for elapsed playing time and remaining playing time.
- Remote commander RM-D302 supplied.

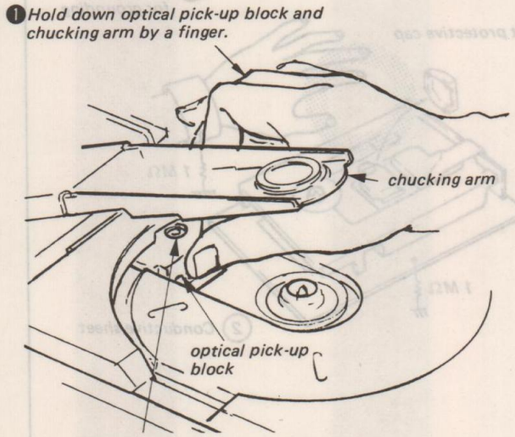
– SERVICING NOTE –

NOTES ON LASER DIODE EMISSION CHECK

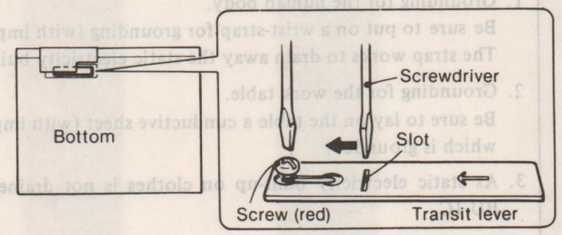
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the following operation at right is performed while observing the objective lens.



A transit lever is provided at the bottom of the unit to protect the optical system against shock during transportation. Before starting repairing, make following procedures.



1 Loosen the screw (red) with the screwdriver.
2 Insert the screwdriver into the slot in the lever and move it in the direction of the arrow until it stops.
3 Tighten the screw.

– CAUTION FOR ELECTROSTATIC BREAKDOWN –

NOTES ON HANDLING THE BASE UNIT (BU-1C)

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.

The printed matter below is included in the repair parts. During repair, use the procedure in the printed matter.

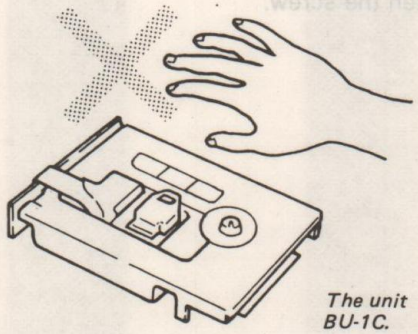
The following method is an example for reference purposes:

1. Place a conductive sheet on the workbench. (The black sheet used as repair parts wrapping).
2. Place the set on the conductive sheet so that the chassis touches the sheet. (This makes it the same potential as the conductive sheet).
3. Place your hands on the conductive sheet. (This makes them the same potential as the sheet).
4. Remove the optical pick-up block.
5. Perfrom work on top of the conductive sheet. Be careful that clothing does not touch the optical pick-up block.

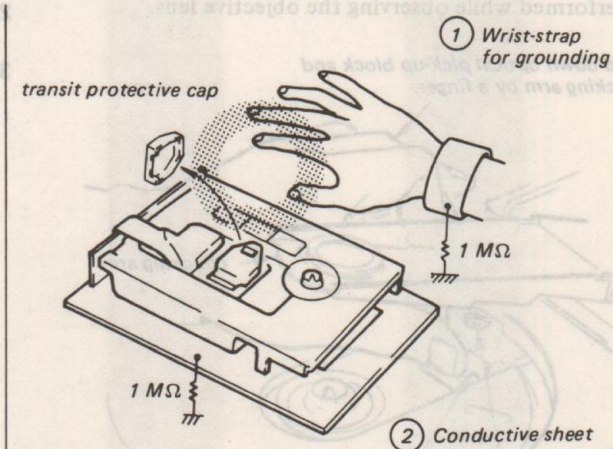
Printed Matter Included in the Repair Parts

When opening or repairing a BU-1C, the procedure for grounding as follows is required to prevent damage caused by static electricity.

1. Grounding for the human body.
   Be sure to put on a wrist-strap for grounding (with impedance lower than $10^8\Omega$) whose other end is grounded
   The strap works to drain away the static electricity built-up on the human body.
2. Grounding for the work table.
   Be sure to lay on the table a cunductive sheet (with impedance lower than $10^9\Omega$) such as sheet of copper which is grounded.
3. As static electricity built-up on clothes is not drained away, be careful not to let your clothes touch the BU-1C.

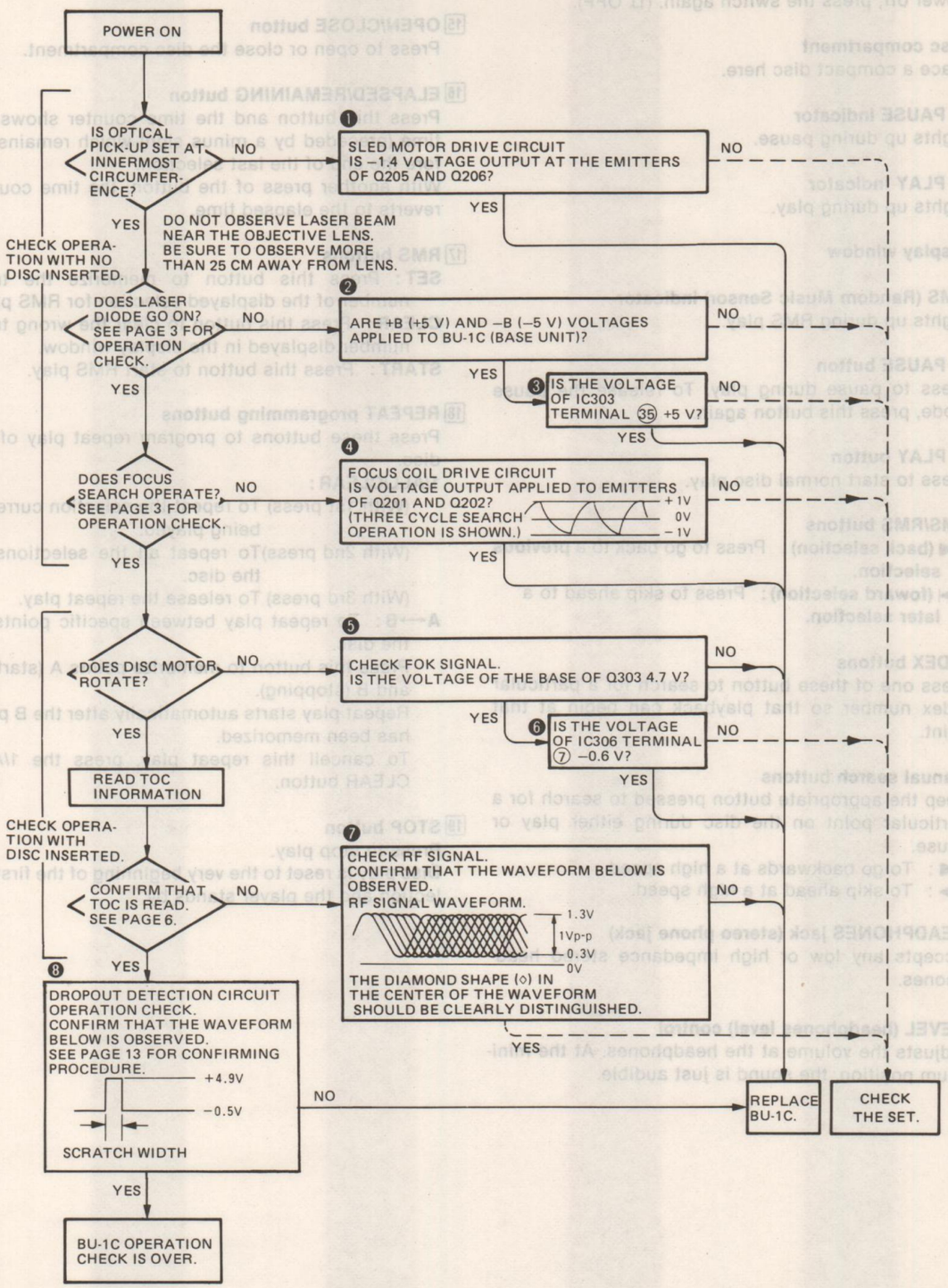


The unit BU-1C.

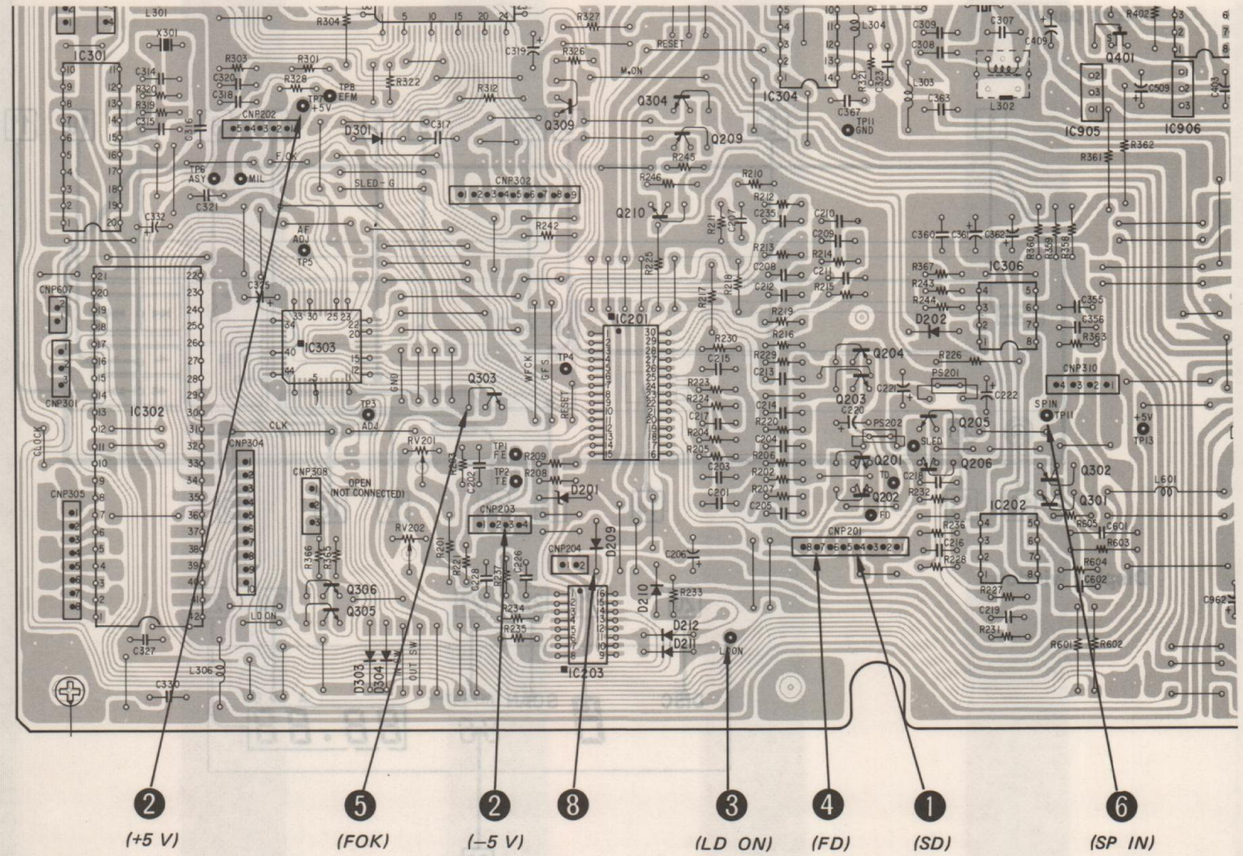


FLOW CHART OF BU-1C (BASE UNIT) TROUBLESHOOTING

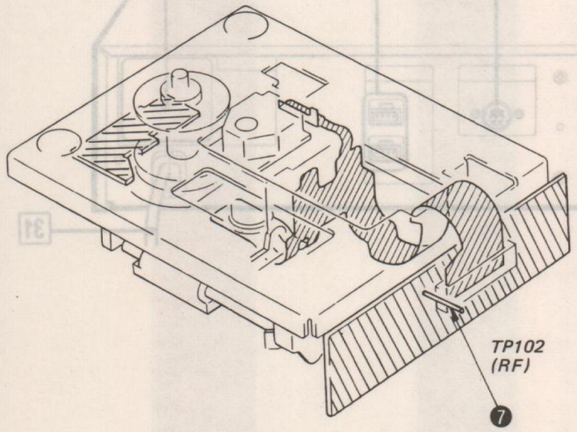
- Confirm all connectors around BU-1C (base unit) are secured before the following check.



[MAIN BOARD]



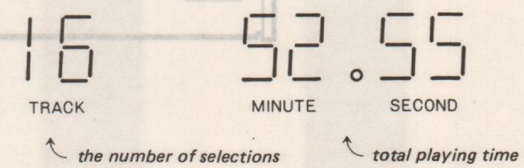
BU-1C (BASE UNIT)



CHECKING TOC INFORMATION READING

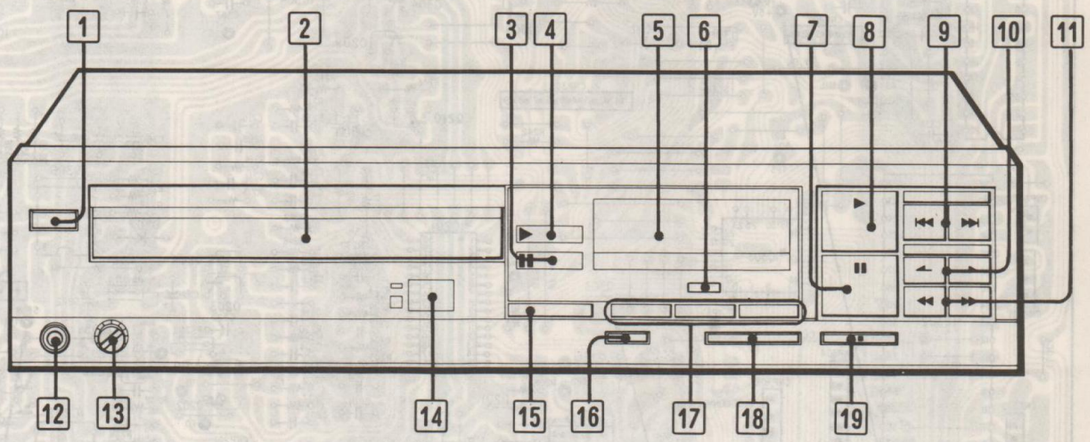
If TOC information is read correctly, the number of selections on the disc and the total playing time will be displayed.

The display will be as follows for YEDS-1.

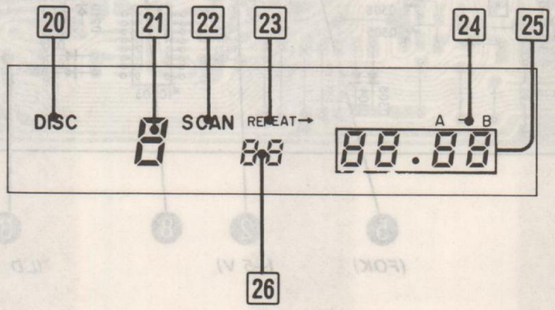


LOCATION AND FUNCTION CONTROLS

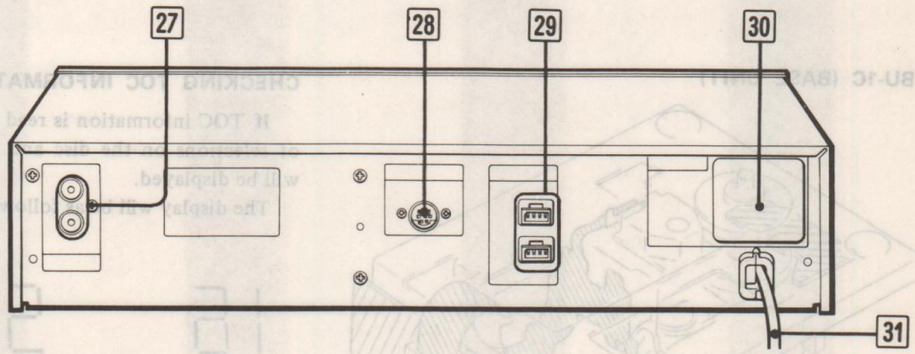
Front panel



Display window



Rear panel



Front panel

1 POWER switch
Depress to turn on the power (⏏ ON). To turn the power off, press the switch again. (⏏ OFF).

2 Disc compartment
Place a compact disc here.

3 ⏸ PAUSE indicator
Lights up during pause.

4 ▶ PLAY indicator
Lights up during play.

5 Display window

6 RMS (Random Music Sensor) indicator
Lights up during RMS play.

7 ⏸ PAUSE button
Press to pause during play. To release the pause mode, press this button again.

8 ▶ PLAY button
Press to start normal disc play.

9 AMS/RMS buttons
⏮ (back selection): Press to go back to a **previous selection.**
⏭ (foward selection): Press to skip ahead to a **later selection.**

10 INDEX buttons
Press one of these button to search for a particular index number so that playback can begin at that point.

11 Manual search buttons
Keep the appropriate button pressed to search for a particular point on the disc during either play or pause.
◀◀ : To go backwards at a high speed.
▶▶ : To skip ahead at a high speed.

12 HEADPHONES jack (stereo phone jack)
Accepts any low or high impedance stereo headphones.

13 LEVEL (headphones level) control
Adjusts the volume at the headphones. At the minimum position, the sound is just audible.

14 Remote sensor and ▣ indicator (for remote control)
Detects the infrared transmitting signal from the supplied remote commander. The indicator blinks when a function button of the commander is pressed.

15 OPEN/CLOSE button
Press to open or close the disc compartment.

16 ELAPSED/REMAINING button
Press this button and the time counter shows the time (preceded by a minus sign) which remains before the end of the last selection.
With another press of the button, the time counter reverts to the elapsed time.

17 RMS buttons
SET: Press this button to memorize the track number of the displayed selection for RMS play.
CLEAR: Press this button to clear the wrong track number displayed in the display window.
START: Press this button to start RMS play.

18 REPEAT programming buttons
Press these buttons to program repeat play of the disc.
1/ALL/CLEAR:
(With 1st press) To repeat the selection currently being played.
(With 2nd press) To repeat all the selections on the disc.
(With 3rd press) To release the repeat play.
A⟷B: To repeat play between specific points on the disc.
Press this button to memorize points A (starting) and B (stopping).
Repeat play starts automatically after the B point has been memorized.
To cancell this repeat play, press the 1/ALL/CLEAR button.

19 STOP button
Press to stop play.
Disc play is reset to the very beginning of the first selection and the player stands by.

Display window

20 DISC indicator
Illuminates to show that a compact disc is firmly placed in the disc compartment.

21 TRACK indicator
Shows the track number of the selection being played.
When the disc compartment is closed with a disc in place, this indicator shows for a few seconds the total selection number of the disc.

22 SCAN indicator
Illuminates while the player is searching for the point on the disc you have programmed.

23 REPEAT indicator
1 : Illuminates during repeat play of a selection.
ALL : Illuminates during repeat play of the whole disc.

24 A ⟷ B indicator
Illuminates during A ⟷ B repeat play.

25 Time counter
Shows the elapsed playing time from the beginning of a selection in minutes and seconds. When the disc compartment is closed with a disc in place, this indicator shows for a few seconds the total playing time of the disc.

26 INDEX/RMS indicator
If index signals are recorded on the disc to allow significant parts of a program to be easily located, the index numbers are shown here.
While memorizing selections, this indicator shows the order of memory.

Rear panel

27 LINE OUT jacks
These jacks can be connected to the CD or auxiliary input jacks of an amplifier using the supplied connecting cord.

28 SUBCODE OUT connector
This connector is provided to extend the utility of this compact disc player by allowing for the connection of optional equipment which will be available in the future.

29 CONTROL S connectors (4-pin)
IN : Connect to the CONTROL S OUT of the optional Sony AVH-910 audio video selector for the remote control of the total audio system.
OUT : Connect to the CONTROL S IN of other Sony audio equipment such as the optional Sony TC-V710WR cassette deck for the remote control of the total audio system.
For details, refer to the instruction manual of the AVH-910.

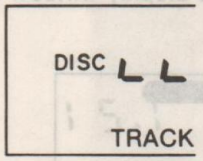
30 AC OUTLET
An audio component having a power consumption under 100 watts can be connected so that ac power is supplied to the component.
For UK model : the SWITCHED outlet is controlled by the POWER switch. AC power is supplied only when the CD player is turned on.
For AEP model: the UNSWITCHED outlet is not controlled by the POWER switch.

Note : Do not connect electrical home appliances such as an electric iron, fan, TV or other high-wattage equipment to this outlet.

31 AC power cord

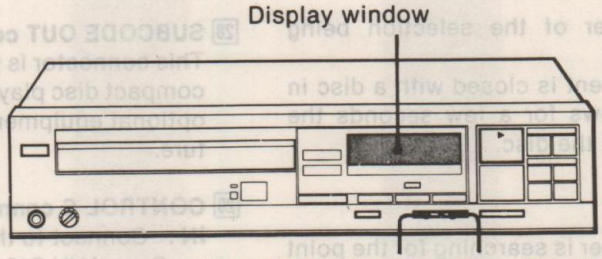
What are these indications?

This appears if you continuously press the ▶▶ button at the end of the disc.
To return to a TRACK indication, press the ◀◀ button.



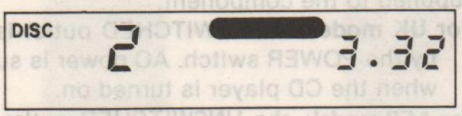
This appears if you continuously press the ◀◀ button at the beginning of the disc.

REPEAT PLAY



TO REPEAT ONLY THE SELECTION BEING PLAYED

Press the 1/ALL/CLEAR button **once** during play.
The **REPEAT→1** indicator in the display window illuminates.

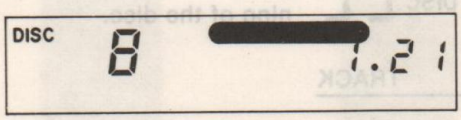


When the disc reaches the end of the selection, it will automatically go back to the beginning of the selection and play will restart.

To release the repeat mode, press the 1/ALL/CLEAR button twice.

TO REPEAT THE WHOLE DISC

Press the 1/ALL/CLEAR button **twice** during play.
The **REPEAT→ALL** indicator in the display window illuminates.



When the disc reaches the end of the last selection, it will automatically go back to the beginning of the first selection, and play will restart.

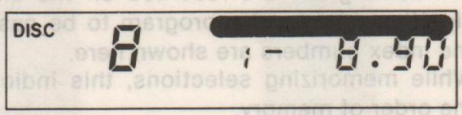
To release the repeat mode, press the 1/ ALL/CLEAR button again.

TO REPEAT BETWEEN PARTICULAR POINTS

1 Press the A ⟷ B button at the starting point of the repeat play (point A).
The indicator in the display window starts flickering showing the point A is memorized.

2 Locate the stopping point of the repeat play (point B).

3 Press the A ⟷ B button again.
The indicator illuminates steadily showing the point B is memorized.



The disc will go back to point A and play will restart.

To release the repeat mode, press the 1/ALL/CLEAR button.

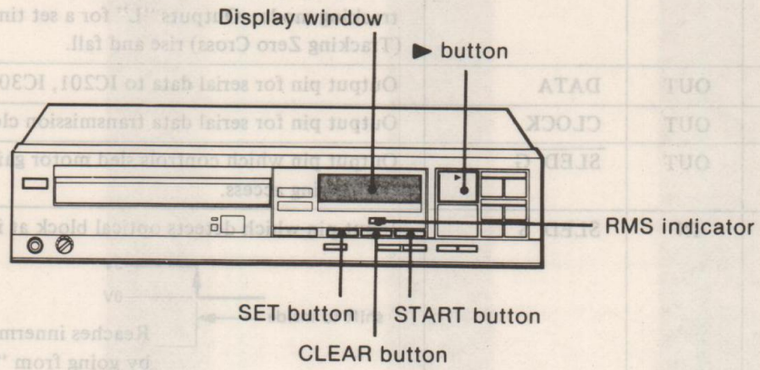
When the ◀◀ or ▶▶ button is kept pressed during repeat play and repeat play end is reached, "−0.03" is displayed in the display window and repeat play resumes after 3 seconds.

Tips on A ⟷ B repeat play

- If only the starting point (A) has been memorized, you can go back to that point immediately by pressing the ▶ button at any point on the disc.
- Repeat play of the whole disc eliminating an unwanted portion (selection) is also possible. Memorize the ending point of the portion to be eliminated as point A and the starting point as point B.

RMS PLAY

Up to 16 selections can be played in your preferred order.



HOW TO MEMORIZE THE SELECTIONS

1 Press the SET button.
The TRACK indicator flickers and the INDEX/RMS indicator shows 0.

2 Select the track number of the selection you want to play first with the AMS/RMS buttons.

3 Press the SET button.
The INDEX/RMS indicator shows 1 and the displayed selection is memorized as the first selection.

Repeat the above procedures to memorize other selections, up to 16. When more than 16 selections are selected, – – flickers in the TRACK indicator to indicate that 16 selections have been memorized.

To clear the track number of the selection which was memorized last, press the CLEAR button during the memorization process.

To clear all the memorized track numbers, press the SET botton during RMS play.

HOW TO START RMS PLAY

Press the START button.

The RMS indicator lights and the selections are played in the memorized order.
During RMS play, the INDEX/RMS indicator shows the index number of the selection being played.

A blank section of about 3 seconds is provided between selections.

To stop RMS play, press the STOP button.

- By pressing the SET button, POWER switch or OPEN/CLOSE button, the RMS memory will be cleared.
- The ELAPSED/REMAINING TIME button does not function during RMS play. The display window shows the playing time of the selection being played.
- When you press the CLEAR button during RMS play, the track number of the next selection is displayed in the display window for a few seconds.
- To go ahead or back to the preceding or previous memorized selection, press the AMS/RMS button..

Repeat play in the RMS mode
During RMS play, proceed the repeat operation following the previous page.

SECTION 1
OUTLINE

1-1. CIRCUIT DESCRIPTION

The circuits on this set are almost the same as those on CDP-102, which is already on the market. Therefore, only the dropout detection circuit and mechanism control IC (IC303), which change base unit BU-1 to BU-1C, will be explained here. Refer to the circuit descriptions in the CDP-102 Service Manual for other portions.

1. Dropout Detection Circuit

This circuit is on the base unit BU-1C RF board. If there are any bubbles or scratches made on the disc when it is produced, these will adversely affect tracking, or focus servo, when the disc is played. This will cause mechanical noise to be generated from the pick-up, sound skipping, or electrical noise. This circuit detects these bubbles and scratches, and the output then lowers tracking gain or focus gain loop gain to prevent these problems.

Next the operation will be explained. Please look at Fig. 1. During PLAY, the RF signal output from IC101 pin ③ is applied to D101 via IC102-1 buffer. This RF signal is envelope wave detected at D101. Therefore, during normal operation (no bubbles or scratches on the disc) D101 cathode side has a DC component. Bias is applied via D103 and R115 so that IC102-2 comparator output is low at this time. D102, R114 and C113 perform the role of adjusting auto bias relative to RF signal level fluctuation and also act as a smoothing circuit so that IC102-2 bias dose not change even if there is dropout.

Then, if there are bubbles or scratches, the RF signal is cut, and IC102-2 pin ② voltage goes lower than that of IC102-2 pin ③ via C111, and during this period, comparator output IC102-2 pin ① is inverted and becomes high. This signal switches IC203 switch, and tracking gain and focus gain loop gain are lowered.

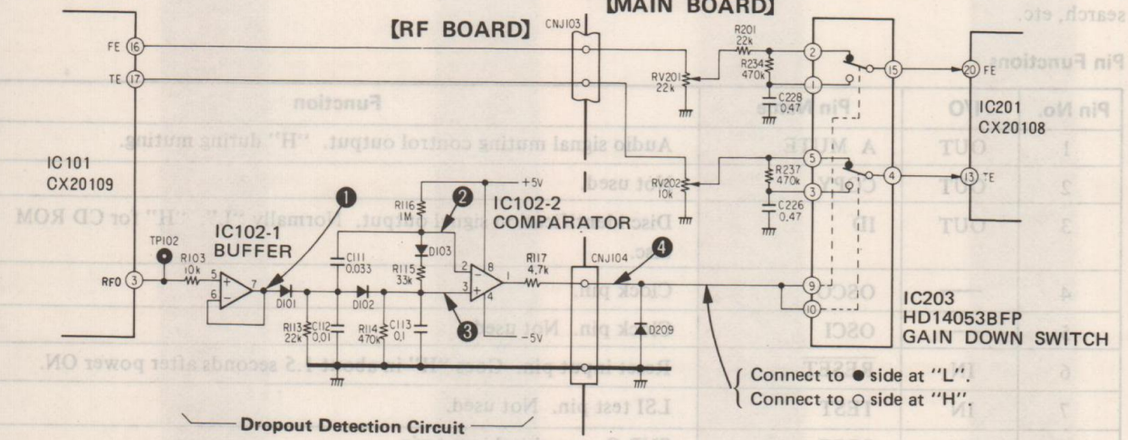


Fig. 1 Dropout Detection Circuit and Gain Down Switch Circuit

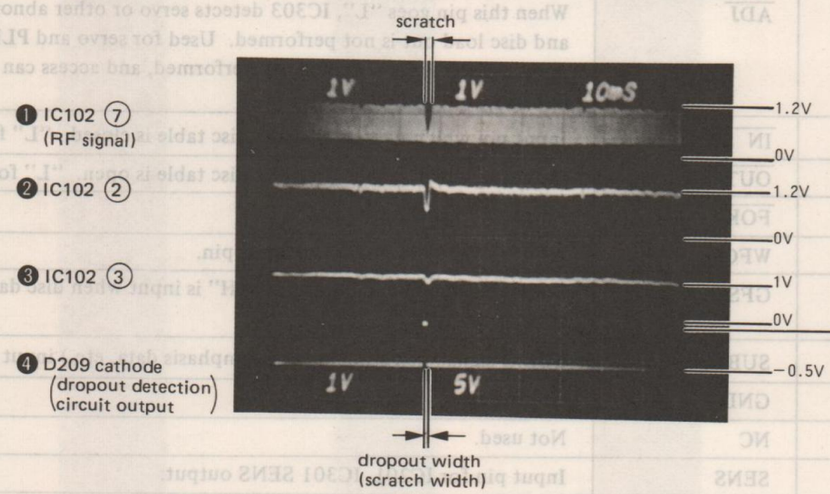


Fig. 2 Waveform when Dropout is Detected
(Measured on YEDS-1 disc with tape of about 1 mm width stuck on as in Fig. 3)

- **Dropout Detection Circuit Operation Check**

1. Stick black or red tape (about 1 mm wide) onto the disc as sown in Fig. 3. (This is to get the drop-out detection circuit output pulse.) Do not stick it on the part where the TOC is recorded, however.
2. Play the disc prepared in step 1.
3. Confirm that a waveform as shown in Fig. 2 ❹ is on main board D209 cathode side. Operation is normal if this pulse appears.

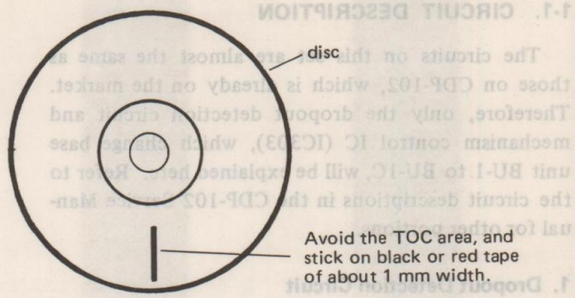


Fig. 3 Tape Location

2. Mechanism Control IC (IC303)

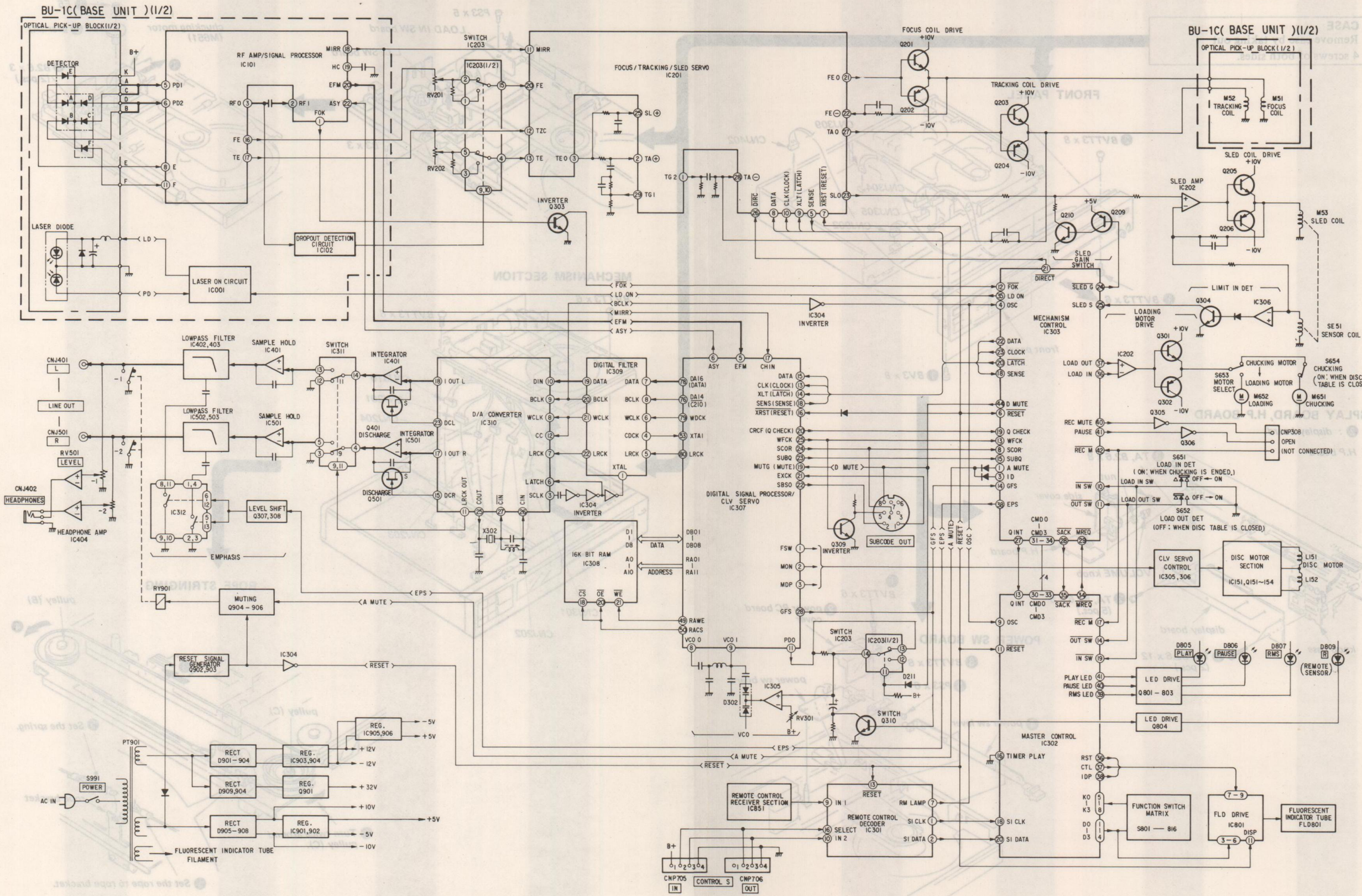
The mechanism control IC (IC303) uses the DATA pin, CLOCK pin and LATCH pin to instruct IC201 (servo IC CX20108) and IC307 (digital processing/CLV servo IC CX23035), and also has TOC data and Q data memorized, which it uses in performing direct search, etc.

Pin Functions

Pin No.	I/O	Pin Name	Function
1	OUT	A MUTE	Audio signal muting control output. "H" during muting.
2	OUT	COPY	Not used.
3	OUT	ID	Disc identification signal output. Normally "L". "H" for CD ROM disc.
4	——	OSCO	Clock pin.
5	——	OSCI	Clock pin. Not used.
6	IN	$\overline{\text{RESET}}$	Reset input pin. Goes "H" in about 1.5 seconds after power ON.
7	IN	TEST	LSI test pin. Not used.
8	IN	SCOR	SUB Q sync signal input pin.
9	IN	$\overline{\text{ADJ}}$	When this pin goes "L", IC303 detects servo or other abnormalities and disc load out is not performed. Used for servo and PLL adjustment. Also, direct search is not performed, and access can only be done by conventional track jump.
10	IN	$\overline{\text{IN SW}}$	Input pin which detects that the disc table is closed. "L" for CLOSE.
11	IN	$\overline{\text{OUT SW}}$	Input pin which detects that the disc table is open. "L" for OPEN.
12	IN	$\overline{\text{FOK}}$	Focus OK signal input pin.
13	IN	WFCK	WFCK (Write Frame Clock) input pin.
14	IN	GFS	Guarded Frame Sync input pin. "H" is input when disc data can be read normally.
15	IN	SUB Q	SUB Q signal (selection address, emphasis data, etc.) input pin.
16	——	GND	Ground pin.
17	——	NC	Not used.
18	IN	SENS	Input pin for IC201, IC301 SENS output.
19	IN	Q CHECK	Inputs CRC results of SUB Q output from IC307.

Pin No.	I/O	Pin Name	Function
20	OUT	LATCH	Latch output pin for serial data to IC201, IC307.
21	OUT	$\overline{\text{DIRECT}}$	Output pin to IC201 during 1 track jump. Normally "H". Reverses track jump pulse direction at "L". When "H" again, set to normal tracking mode. Outputs "L" for a set time by detection of TZC (Tracking Zero Cross) rise and fall.
22	OUT	DATA	Output pin for serial data to IC201, IC307.
23	OUT	CLOCK	Output pin for serial data transmission clock to IC201, IC307.
24	OUT	$\overline{\text{SLED G}}$	Output pin which controls sled motor gain. Normally "H". "L" during access.
25	IN	SLED S	Input pin which detects optical block at innermost circumference. 5V / 0V; shift to inside → Reaches innermost circumference. Detected by going from "L" to "H".
26	IN	AF ADJ	Not used. Normally "H".
27	OUT	Q INT	Trigger output pin for data sent to IC302.
28	OUT	S ACK	IC302 M REQ signal acknowledge signal output pin.
29	IN	M REQ	IC302 M REQ signal input pin.
30	——	NC	Not used.
31 – 34	IN/OUT	CMD0 – CMD3	Data input/output with IC302.
35	OUT	LD ON	Output pin which controls laser diode ON/OFF.
36	OUT	LOAD IN	Output pin which drives loading motor to close side.
37	OUT	LOAD OUT	Output pin which drives loading motor to open side.
38	OUT	EPS	Output pin which detects disc emphasis and switches emphasis ON/OFF.
39	——	V_{DD}	Power supply pin (5 V)
40	OUT	REC MUTE	Synchro REC MUTE signal output pin.
41	OUT	PAUSE	Synchro PAUSE release signal output pin.
42	IN	$\overline{\text{REC M}}$	Synchro REC signal input pin.
43	——	NC	Not used.
44	OUT	D MUTE	Digital signal muting control output pin. "H" for muting.

1-2. BLOCK DIAGRAM



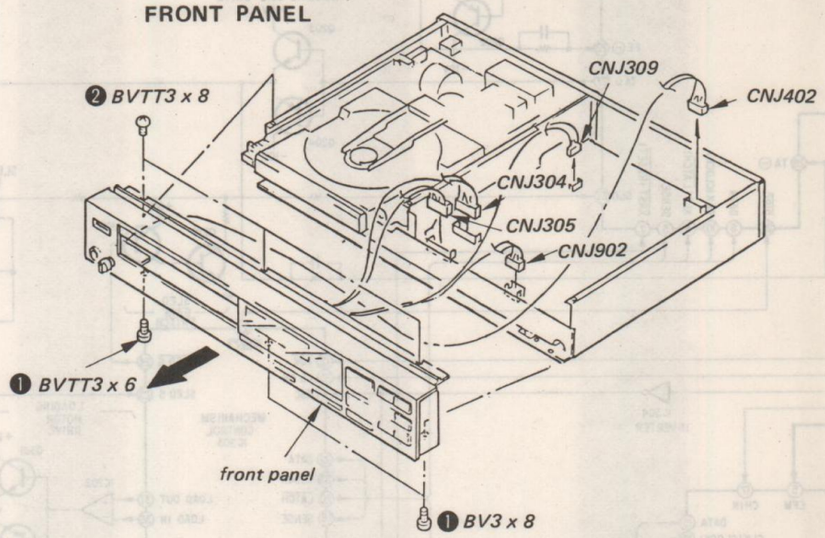
SECTION 2
DISASSEMBLY

2-1. REMOVAL

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

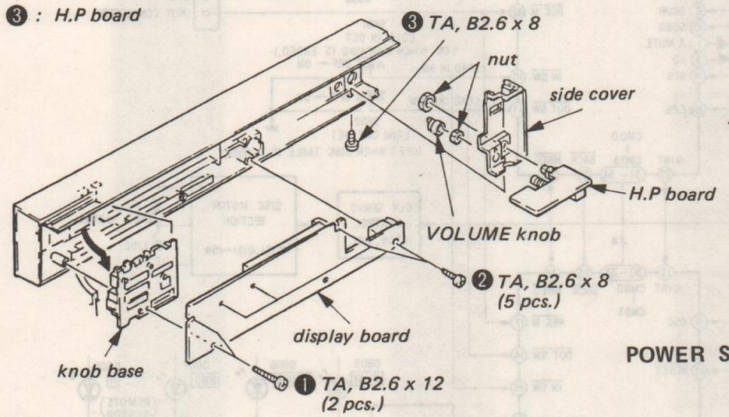
CASE
Remove case by taking out
4 screws of both sides.

FRONT PANEL

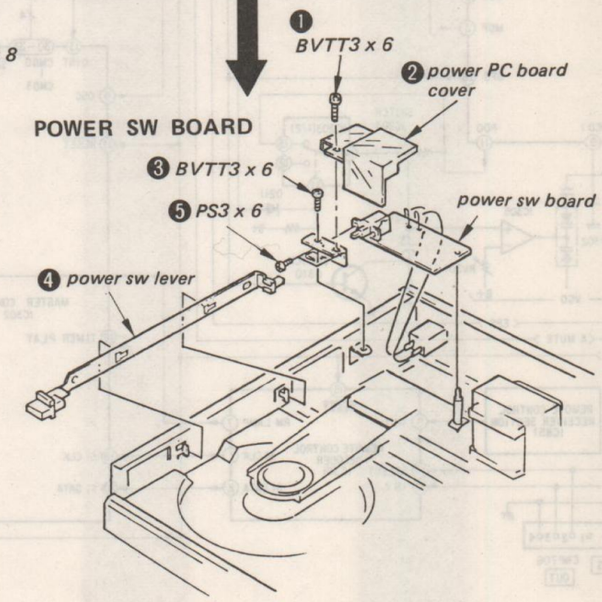


DISPLAY BOARD, H.P BOARD

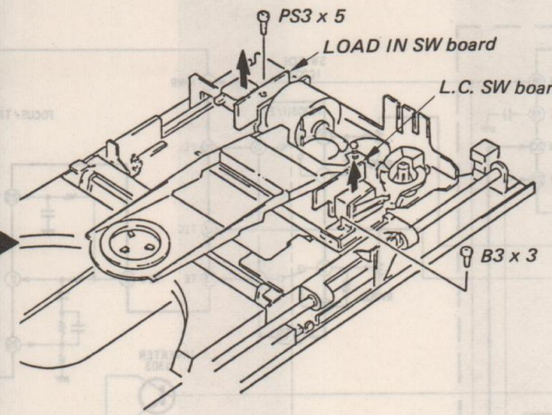
❶, ❷ : *display board*
❸ : *H.P board*



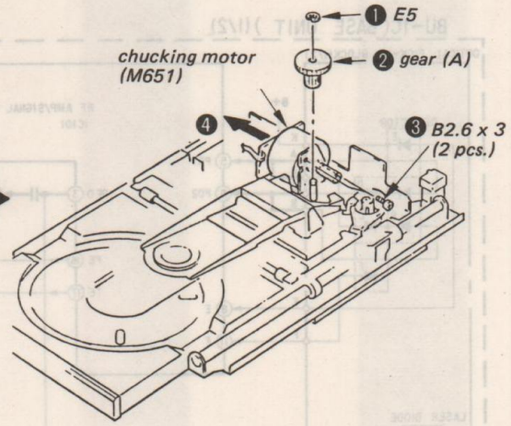
POWER SW BOARD



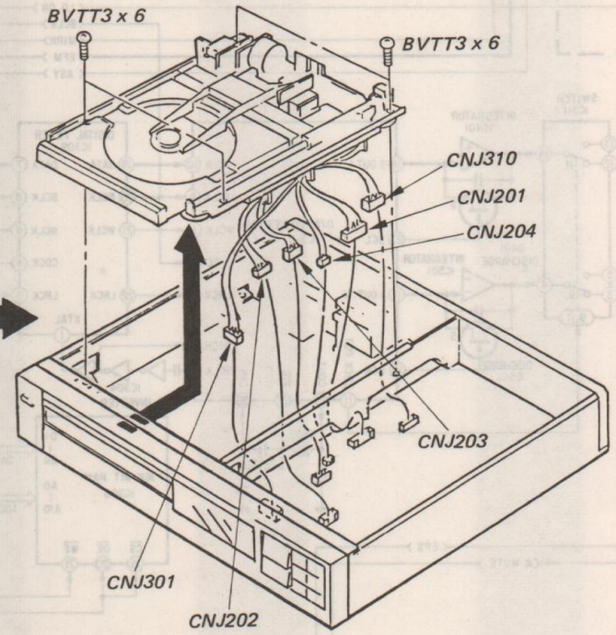
LOAD IN SW/L.C. SW BOARD



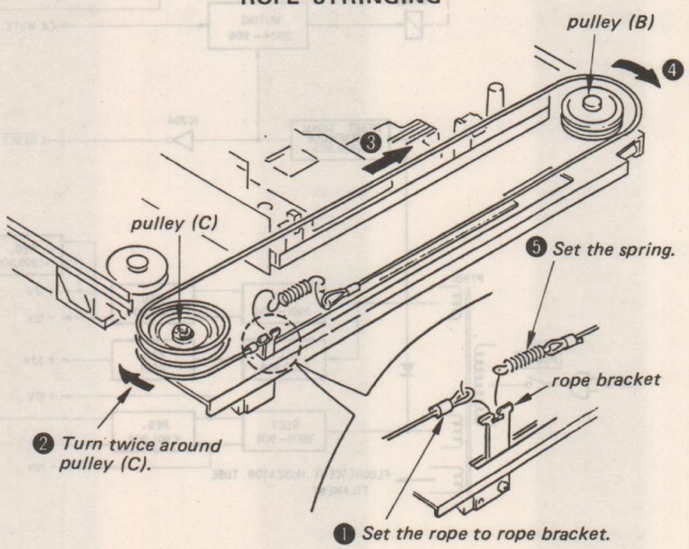
CHUCKING MOTOR (M651)



MECHANISM SECTION



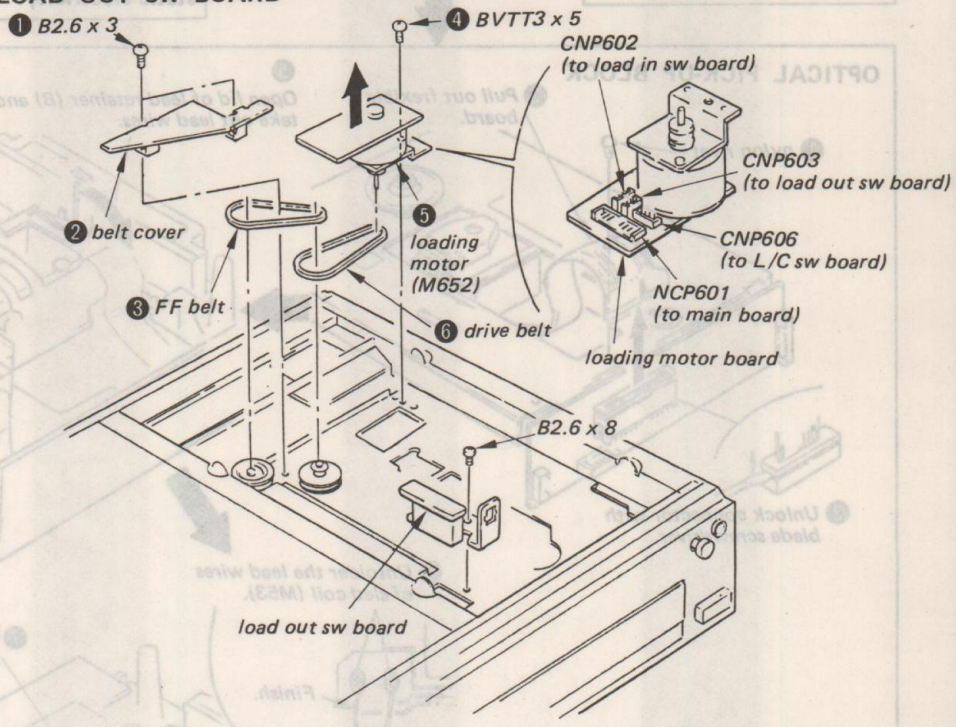
ROPE STRINGING



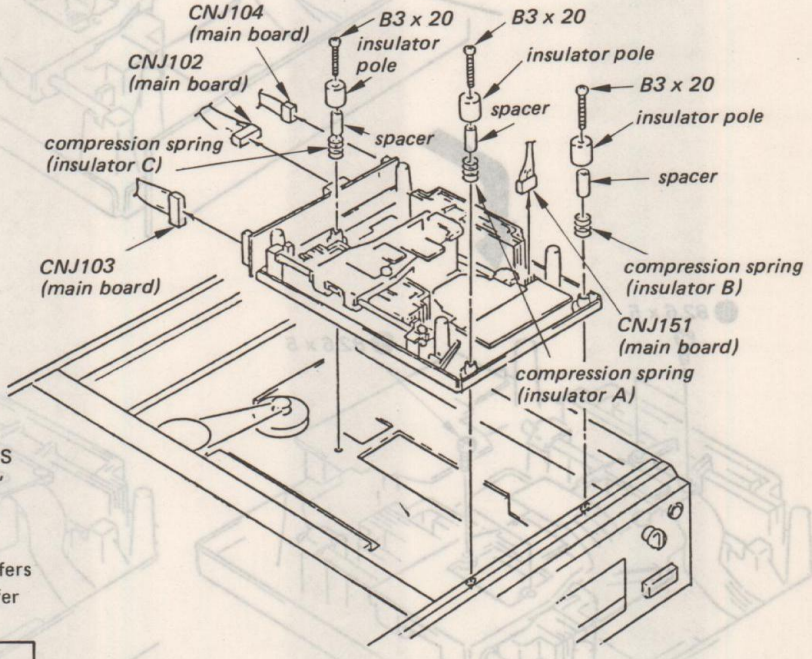
BOTTOM PLATE

Remove bottom plate by taking out 7 screws (BV3 x 8).
(It is possible to check main board from conductor side.)

LOADING MOTOR (M652), FF BELT, DRIVE BELT, LOAD OUT SW BOARD



BASE UNIT (BU-1C)



Note (1): When replacing BU-1C, refer to "NOTES ON HANDLING BASE UNIT (BU-1C)" on page 4 to prevent damage caused by static electricity.

Note (2): Each compression spring (insulator) differs in size and turns. When installing it, refer to the following list.

compression spring (insulator)	turn number	color
A	6	silver
B	4.5	gold
C	3.5	black

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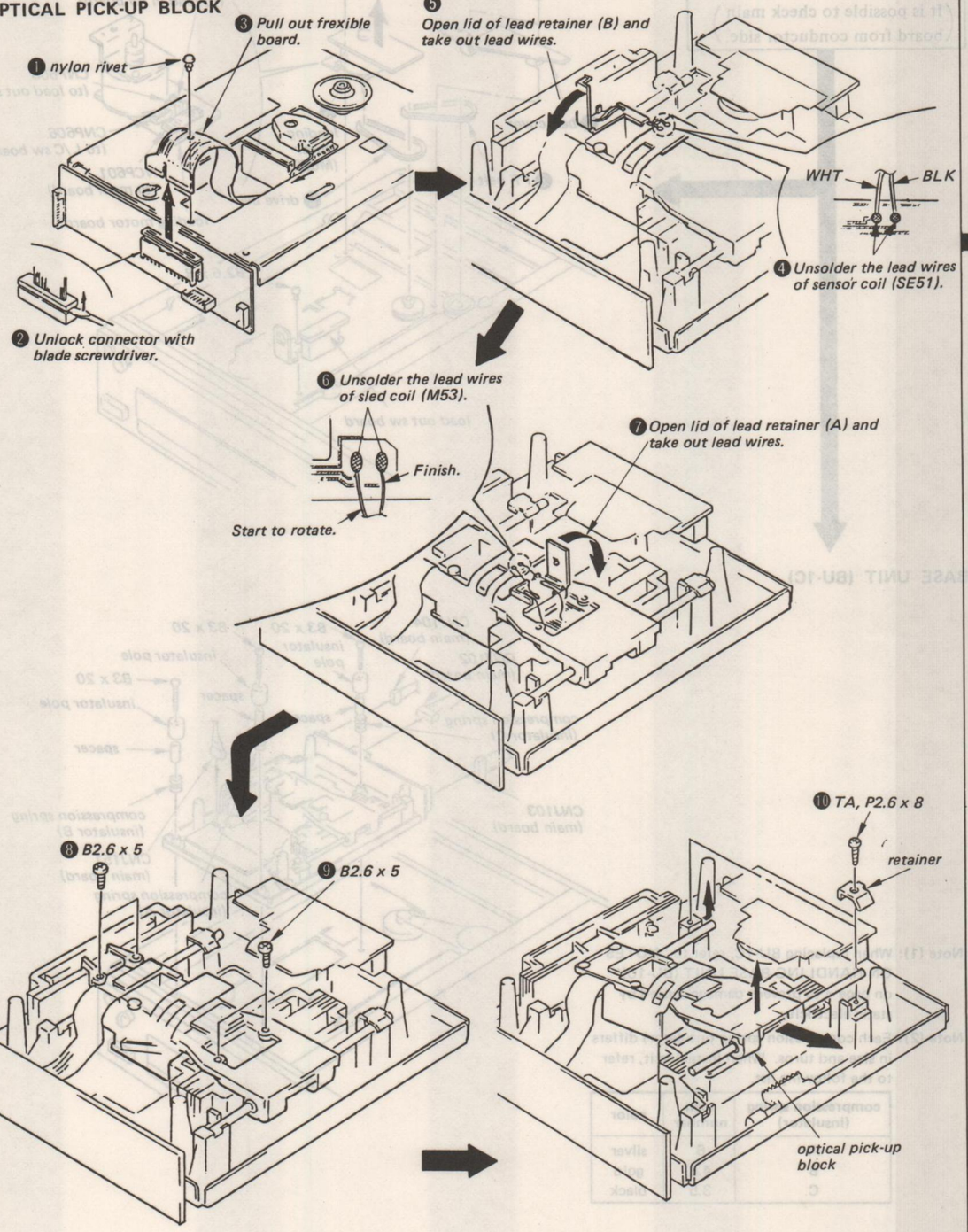
BASE UNIT (BU-1C)

(See page 19.)

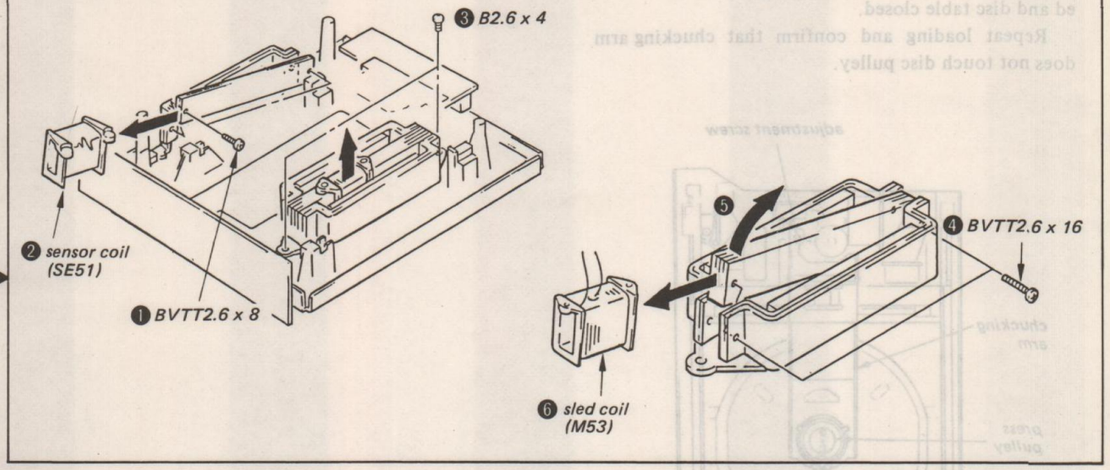
Refer to "NOTES ON HANDLING BASE UNIT (BU-1C)" on page 4 to prevent damage caused by static electricity.

OPTICAL PICK-UP BLOCK

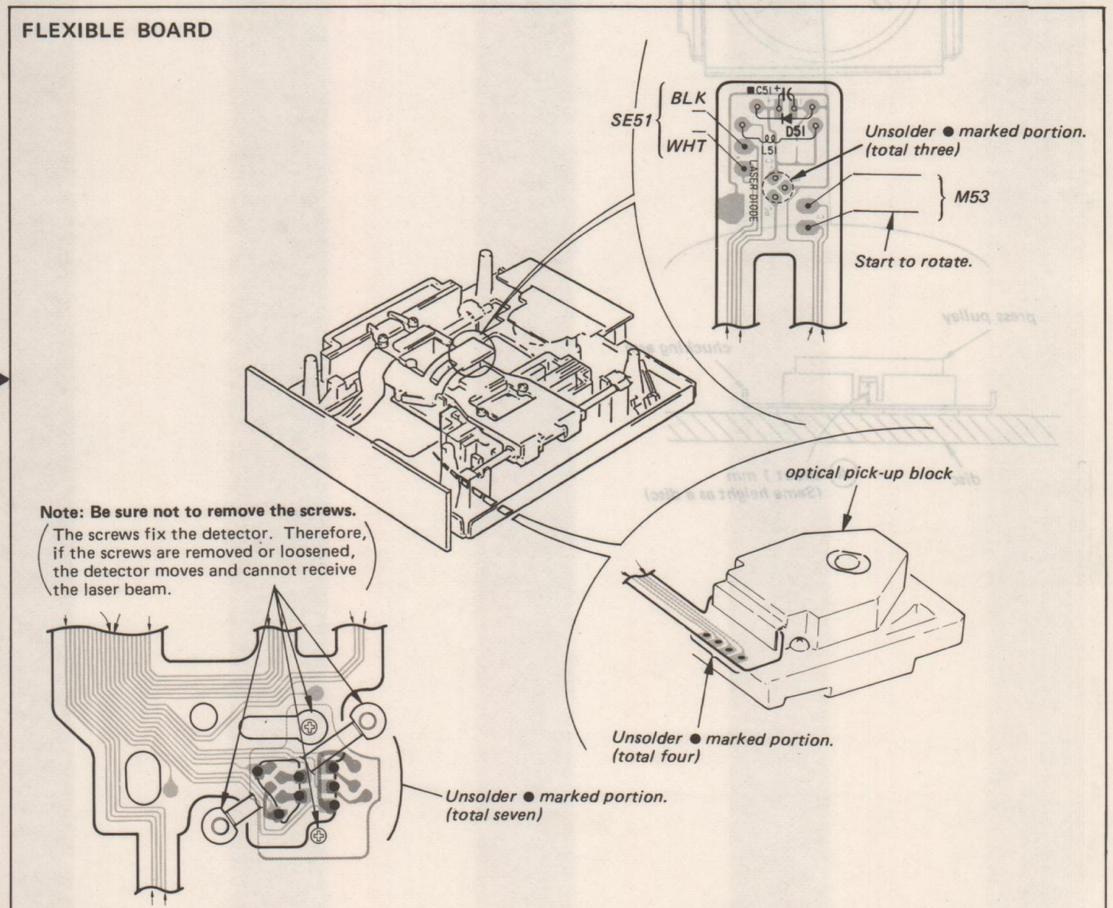


SLED COIL (M53), SENSOR COIL (SE51)

❶, ❷ : sensor coil (SE51)
❸~❻ : sled coil (M53)



FLEXIBLE BOARD



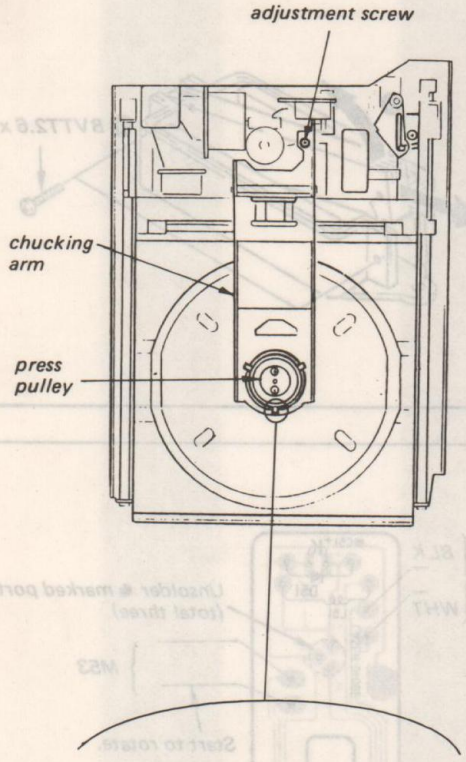
Note: Be sure not to remove the screws.
The screws fix the detector. Therefore, if the screws are removed or loosened, the detector moves and cannot receive the laser beam.

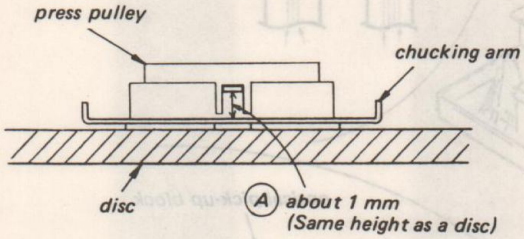
SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENT
CHUCKING ARM HEIGHT ADJUSTMENT

Adjust the height of portion (A) with disc inserted and disc table closed.

Repeat loading and confirm that chucking arm does not touch disc pulley.





3-2. ELECTRICAL ADJUSTMENTS

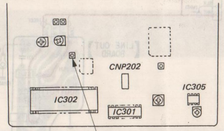
1. Perform adjustments in the order given.
2. Use YEDS-1 disc (3-703-696-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

Adjustment Mode

1. Connect main board test point ADJ and ground.
   (This is to prevent the disc table from opening even though pits are not read, by making microcomputer IC303 pin ⑨ low.)
2. Turn POWER switch on.
   (To reset microcomputer.)

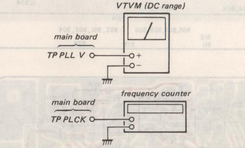
After adjustment, remove the lead wire connecting test points ADJ and ground.

Adjustment Location: main board



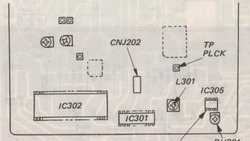
RF PLL Adjustment

Procedure:



1. Turn POWER switch ON (stop mode).
2. Remove connector CNJ202.
3. Put set into adjustment mode. (See page 23.)
4. Connect VTVM to main board test point TP PLL V.
5. Adjust main board RV301 so that reading on VTVM is 0 V ±50 mV.
6. Connect the frequency counter to main board test point TP PLCK.
7. Adjust main board L301 so that the reading on frequency counter is 4.3218 MHz ±10 kHz.
8. Reconnect lead wires connected in adjustment mode and connect the connector CNJ202.
9. Put disc (YEDS-1) in and press ▷PLAY button.
10. Confirm that reading on frequency counter is 4.3218 MHz.

Adjustment Location: main board



REFERENCE

Focus/Tracking Gain Adjustment

A frequency responce analyzer is necessary in order to perform this adjustment exactly.

However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perform this adjustment.

Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

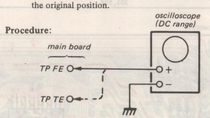
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	–	low
• Disc table opens shortly after STOP→▷PLAY.	low or high	–
• Sound is interrupted during PLAY. Or time counter display stops progressing.	–	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

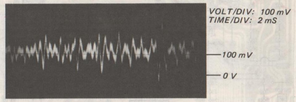
– Primary Adjustment –

Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the primary adjustment are only a little different, return the controls to the original position.

Procedure:

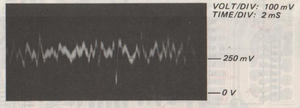


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Put set in adjustment mode. (See page 23.)
3. Insert disc (YEDS-1) and press ▷PLAY button.
4. Connect oscilloscope to main amp board TP FE.
5. Adjustment RV201 so that the waveform is as shown in the figure below. (focus gain adjustment)

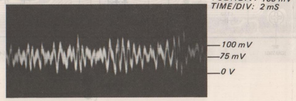


- Incorrent Examples (DC level changes more than on adjusted waveform)

low focus gain



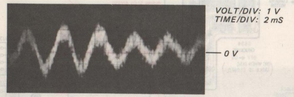
high focus gain



6. Connect oscilloscope to main board TP TE.
7. Adjust RV202 so that the waveform is as shown in the figure below. (tracking gain adjustment)

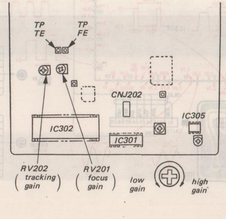
- Incorrect Examples (fundamental wave appears)

low tracking gain

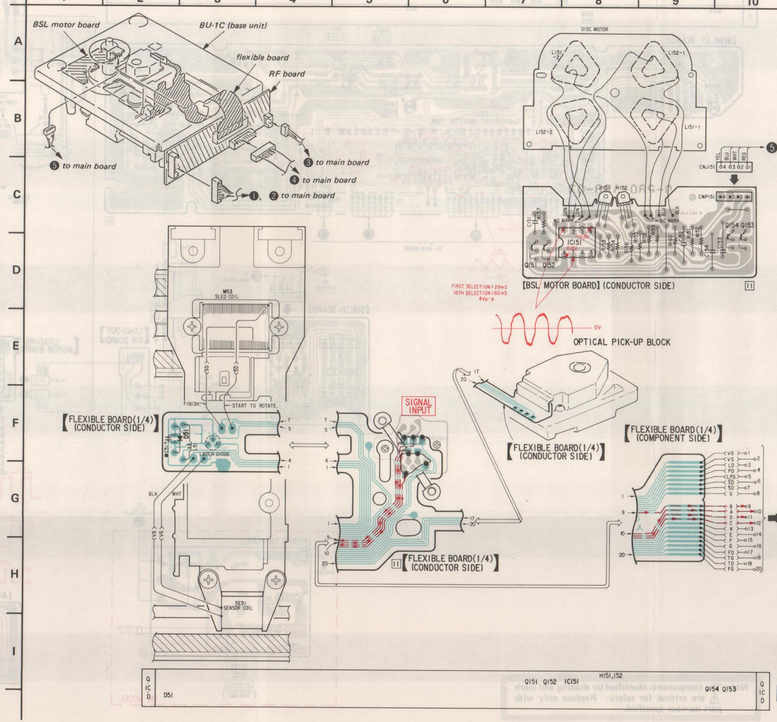


high tracking gain
(higher fundamental wave than for low gain)

Adjustment Location: main board



4-1. MOUNTING DIAGRAM — BU-1C (BASE UNIT) SECTION —



Note:
- Color code or sleeving over the end of the jacket.

- ○—: parts extracted from the component side.
- ●—: parts extracted from the conductor side.
- ■: part mounted on the conductor side.
- ⊡: indicates side identified with part number.
- : signal path.
- : L-CH signal path.
- : R-CH signal path.

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4-2. MOUNTING DIAGRAM

- See page 38 for Semiconductor Lead Layouts.
- See page 38 for Circuit Boards Location.

Note on Mounting Diagram:

Note:

- Color code or sleeving over the end of the jacket.

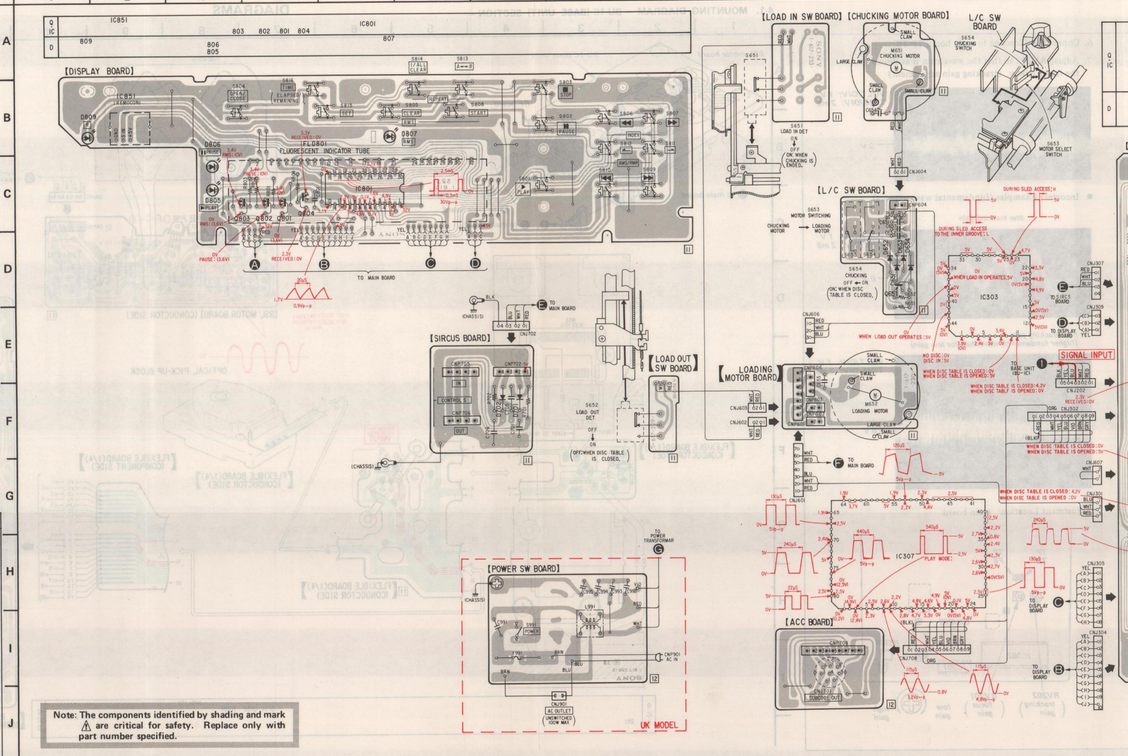
- ○—○ : parts extracted from the component side.
- ●—● : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ⊡ : indicates side identified with part number.
- ●——● : signal path.
- ●═══● : L-CH signal path.
- ●═══● : R-CH signal path.

Note on Schematic Diagram:

Note:

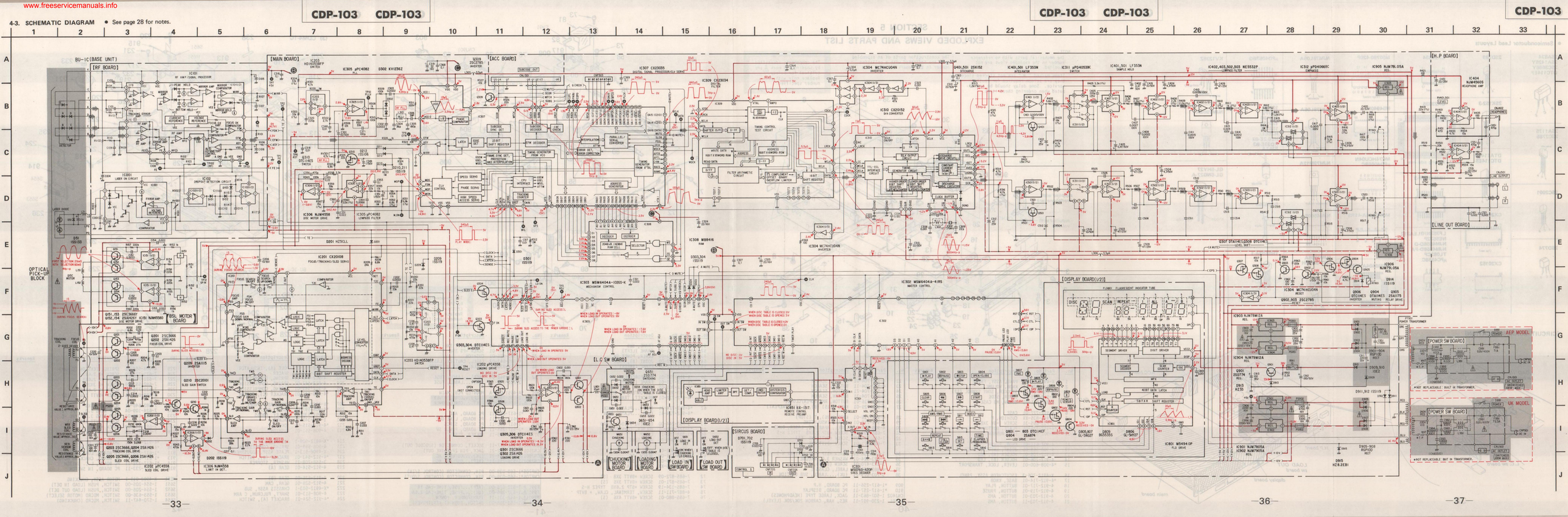
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- ▷ : signal path.
- Components for right channel have same values as for left channel.
- ▭ : fusible resistor.
- ●——● : B+ bus.
- ●═══● : B− bus.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no-signal conditions with a VOM (50 kΩ/V).
  no mark : STOP mode
  ( ) : PLAY mode
- Waveforms are taken to ground in STOP mode by usnig oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S651	LOAD IN DET	ON
S652	LOAD OUT DET	OFF
S653	MOTOR SWITCHING	CHUCKING SIDE
S654	CHUCKING	ON
S801	▶ PLAY	OFF
S802	■■ PAUSE	OFF
S803	■ STOP	OFF
S804	OPEN/CLOSE	OFF
S805	CLEAR	OFF
S806	◀◀	OFF
S807	▶▶	OFF
S808	RMS/START	OFF
S809	▶▶|	OFF
S810	|◀◀	OFF
S811	—	OFF
S812	—	OFF
S813	A⇔B	OFF
S814	I/ALL CLEAR	OFF
S815	RMS/SET	OFF
S816	TIME	OFF
S991	POWER	OFF



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

4-3. SCHEMATIC DIAGRAM • See page 28 for notes.



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SECTION 5
EXPLODED VIEWS AND PARTS LIST

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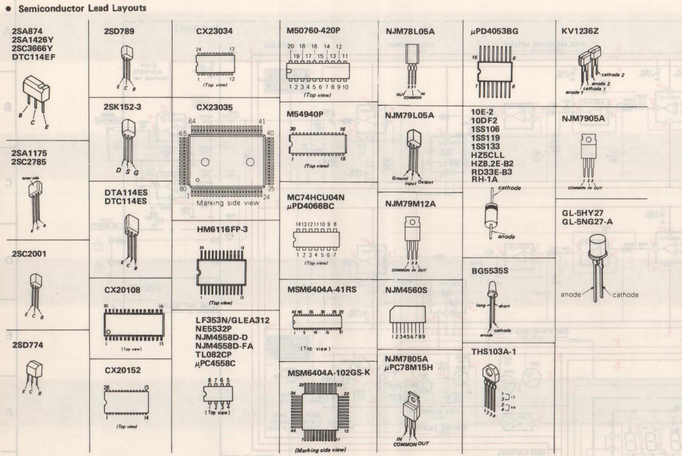
• Semiconductor Lead Layouts

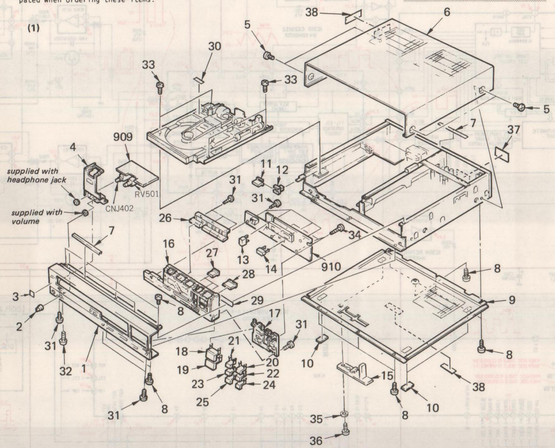


NOTE:
The mechanical parts with no reference number in the exploded views are not supplied.

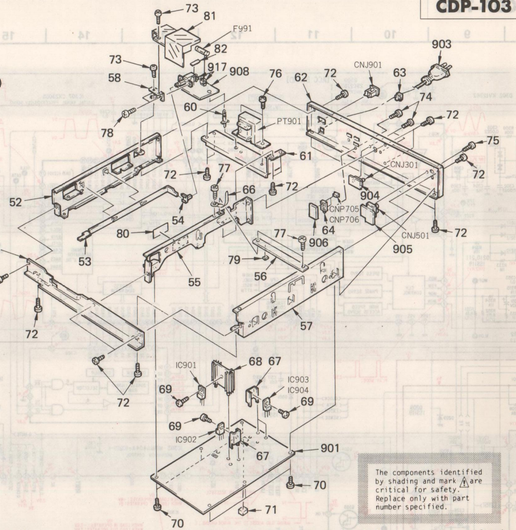
· Items marked " ✱ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

· The construction parts of an assembled part are indicated with a collation number in the remark column.

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.



No.	Part No.	Description	Remarks
1	X-4912-707-2	PANEL ASSY, FRONT	
2	4-911-628-11	KNOB, VOLUME	
3	3-703-710-41	STICKER, SONY SYMBOL (12)	
4	4-912-715-01	COVER, SIDE	
5	4-886-821-01	SCREW, M3 CASE	
6	4-912-727-01	CASE	
7	9-911-835-XX	CUSHION, F	
8	3-703-685-31	SCREW (+BV 3X8)	
9	✱4-912-726-01	PLATE, BOTTOM	
10	✱4-902-017-11	LEG, RUBBER	
11	4-907-611-01	KNOB, POWER	
12	4-908-569-01	JOINT, SWITCH, POWER	
13	4-912-705-01	HOLDER (A), LED	
14	4-912-706-01	HOLDER (B), LED	
15	✱4-908-600-01	LEVER, LOCK, TRANSPORT	
16	X-4912-706-3	ESCUTCHEON ASSY, PANEL	
17	✱4-912-714-01	BASE, KNOB	
18	4-912-717-01	BUTTON, PLAY	
19	4-912-719-01	BUTTON, PAUSE	
20	4-912-703-01	BUTTON, AMS	
21	4-912-703-11	BUTTON, AMS	
22	4-912-704-01	BUTTON, SEARCH	
23	4-912-704-11	BUTTON, SEARCH	
24	4-912-704-21	BUTTON, SEARCH	
25	4-912-704-31	BUTTON, SEARCH	
26	4-912-716-01	BUTTON, RMS (OPEN/CLOSE)	
27	4-912-729-01	KNOB (L15) (B), T (TIME/REPEAT)	
28	4-912-718-01	KNOB (L26), T (STOP)	
29	4-912-710-01	SHEET, INSULATING	
30	4-908-404-01	LABEL, APARTURE, LASER, DHKS	
31	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
32	7-685-751-09	SCREW +BVTT 3X6 (S)	
33	7-685-871-01	SCREW +BVTT 3X6 (S)	
34	7-685-536-14	SCREW +BTP 2.6X12 TYPE2 N-S	
35	7-623-924-01	WASHER 3.0, NYLONE	
36	3-323-470-01	SCREW (B3X6), (+ -)	
37	✱4-885-838-00	LABEL, CLASS 1	
38	3-703-079-21	(UK)....LABEL, SUB CAUTION	
909	*1-617-256-11	PC BOARD, H.P	
910	*1-617-257-11	PC BOARD, DISPLAY	
CNJ402	1-507-863-11	JACK, LARGE TYPE (HEADPHONES)	
RV501	1-230-997-11	RES, VAR, CARBON 20K/20K (LEVEL)	

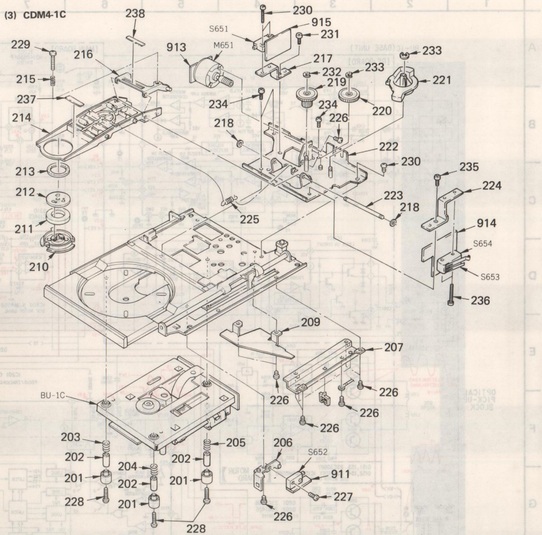


The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remarks
51	*4-912-723-01	FRAME, SUB	
52	*4-912-721-01	FRAME (LEFT)	
53	*4-912-713-01	LEVER, POWER SW	
54	*4-866-342-00	JOINT (B), KNOB	
55	*4-912-722-01	FRAME (INNER)	
56	*4-912-730-01	REINFORCEMENT	
57	*4-912-720-01	FRAME (RIGHT)	
58	*4-912-701-01	BRACKET, POWER SW	
60	*3-703-353-08	SUPPORTER, PC BOARD	
61	*4-912-712-01	BRACKET, TRANSFORMER	
62	*4-912-724-31	(AEP)...PLATE, JACK	
	*4-912-724-41	(UK)....PLATE, JACK	
63	3-703-244-00	BUSHING (2104), CORD	
64	*3-322-818-01	HOLDER, CONNECTOR	
66	*3-703-150-11	CLAMP	
67	*4-902-345-01	HEAT SINK	
68	*4-908-502-01	HEAT SINK	
69	2-259-121-00	SCREW, TR	
70	4-911-049-01	+ BVTT 3X8 (CU.BKBR)	
71	9-911-835-XX	CUSHION (A)	
72	7-685-872-09	SCREW +BVTT 3X8 (S)	
73	7-685-871-01	SCREW +BVTT 3X6 (S)	
74	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
75	4-887-711-11	SCREW, TERMINAL, CLAW, + BVTP	
76	7-685-880-01	SCREW +BVTT 4X6 (S)	

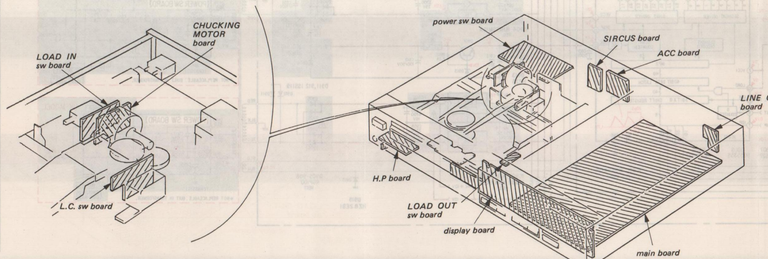
No.	Part No.	Description	Remarks
77	7-685-751-09	SCREW +BVTT 3X6 (S)	
78	7-682-647-01	SCREW +PS 3X6	
79	*2-353-825-01	CUSHION	
80	4-885-843-02	LABEL, CAUTION, LASER	
81	*4-912-830-01	COVER, POWER PC BOARD	
82	3-701-948-14	(AEP)...LABEL, FUSE	
	3-701-948-18	(UK)....LABEL, FUSE	
901	*A-4651-053-A	MOUNTED PCB, MAIN	
903	⚠1-555-795-00	(AEP)...CORD, POWER	
	⚠1-556-035-00	(UK)....CORD, POWER	
904	*1-617-250-11	PC BOARD, ACC	
905	*1-617-251-11	PC BOARD, LINE OUT	
906	*1-617-252-11	PC BOARD, SIRCS	
908	*1-617-255-11	PC BOARD, POWER SW	
917	1-533-183-11	HOLDER, FUSE	
CNJ301	1-562-677-11	SOCKET, CONNECTOR (SUBCODE OUT)	
CNJ501	1-507-912-21	JACK, PIN 2P (LINE OUT)	
⚠CNJ901	1-556-751-11	(UK)....OUTLET, AC	
⚠CNJ901	1-526-794-11	(AEP)...OUTLET, AC	
CNP705	*1-560-039-00	PIN, CONNECTOR (CONTROL S/IN)	
CNP706	*1-560-039-00	PIN, CONNECTOR (CONTROL S/OUT)	
F991	⚠1-532-078-00	(AEP)...FUSE, TIME-LAG 1A	
F991	⚠1-532-286-00	(UK)....FUSE, TIME-LAG 2.5A	
PT901	⚠1-446-331-11	TRANSFORMER, POWER	
S991	⚠1-553-318-00	SWITCH, PUSH (1 KEY)(POWER)	

(3) CDM4-1C

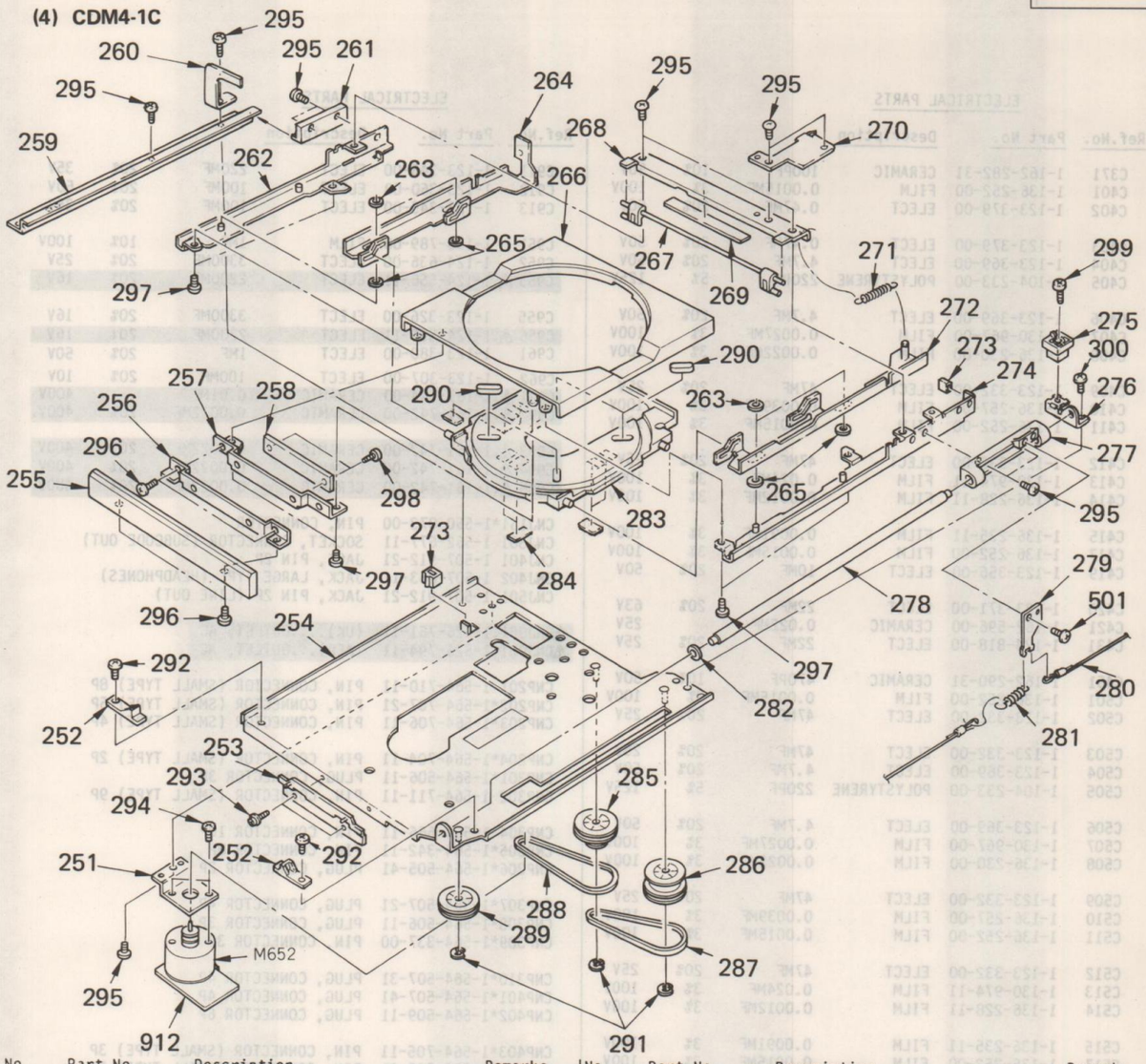


No.	Part No.	Description	Remarks
201	4-908-592-01	POLE (A), INSULATOR	
202	*4-908-636-01	SPACER	
203	4-912-548-01	SPRING, COMPRESSION	
204	4-912-547-01	SPRING, COMPRESSION	
205	4-912-549-01	SPRING, COMPRESSION	
206	*4-908-541-01	BRACKET (C), SWITCH	
207	*X-4908-517-1	COVER ASSY, ROPE	
209	*4-908-597-01	COVER, BELT	
210	4-912-530-01	PULLEY, PRESS	
211	1-452-340-11	MAGNET	
212	*4-912-515-01	YOKE	
213	*4-908-551-01	CUSHION	
214	*X-4912-509-1	ARM ASSY, C	
215	4-908-559-01	SPRING, COMPRESSION	
216	X-4908-513-1	PLATE ASSY, ADJUSTMENT, ARM	
217	*4-912-543-01	BRACKET (D), SWITCH	
218	3-558-708-21	WASHER, STOPPER	
219	4-912-514-01	GEAR (A)	
220	4-912-525-01	GEAR (B)	
221	4-912-526-01	GEAR, CAM	
222	*X-4912-503-1	CHASSIS ASSY, SUB	
223	4-908-513-01	SHAFT, FULCRUM, C ARM	
224	*4-912-524-01	BRACKET (A), SWITCH	
225	4-908-555-01	SPRING, TENSION (C ARM)	
226	7-621-775-00	SCREW +B 2.6X3	
227	7-621-770-XX	SCREW +P 2.6X8	
228	7-682-553-09	SCREW +B 3X20	
229	7-682-775-80	SCREW +B 2.6X16	
230	*7-685-864-01	SCREW +BVTT 2.6X10 (S)	
231	7-682-646-01	SCREW +PS 3X5	
232	7-624-109-04	STOP RING 5.0, TYPE -E	
233	7-624-106-04	STOP RING 3.0, TYPE -E	
234	7-682-546-04	SCREW +BVTT 3X5 (S)	
235	7-682-544-09	SCREW +B 3X3	
236	7-621-257-85	SCREW +P 2.3X14	
237	*4-912-561-01	SHEET (C), DT PS	
238	*4-912-559-01	SHEET (B), DT PS	
911	*1-617-229-11	PC BOARD, LOAD OUT SW	
913	*1-617-231-11	PC BOARD, CHACKING MOTOR	
914	*1-617-232-11	PC BOARD, L.C. SWITCH	
915	*1-617-233-11	PC BOARD, IN SWITCH	
M651	X-4902-019-1	MOTOR ASSY, CHUCKING	
S651	1-554-205-00	SWITCH, PUSH (LOAD IN DET)	
S652	1-554-205-00	SWITCH, PUSH (LOAD OUT DET)	
S653	1-553-636-00	SWITCH, MICRO (MOTOR SELECT)	
S654	1-570-447-11	SWITCH, MICRO (CHUCKING)	

[CIRCUIT BOARDS LOCATION]



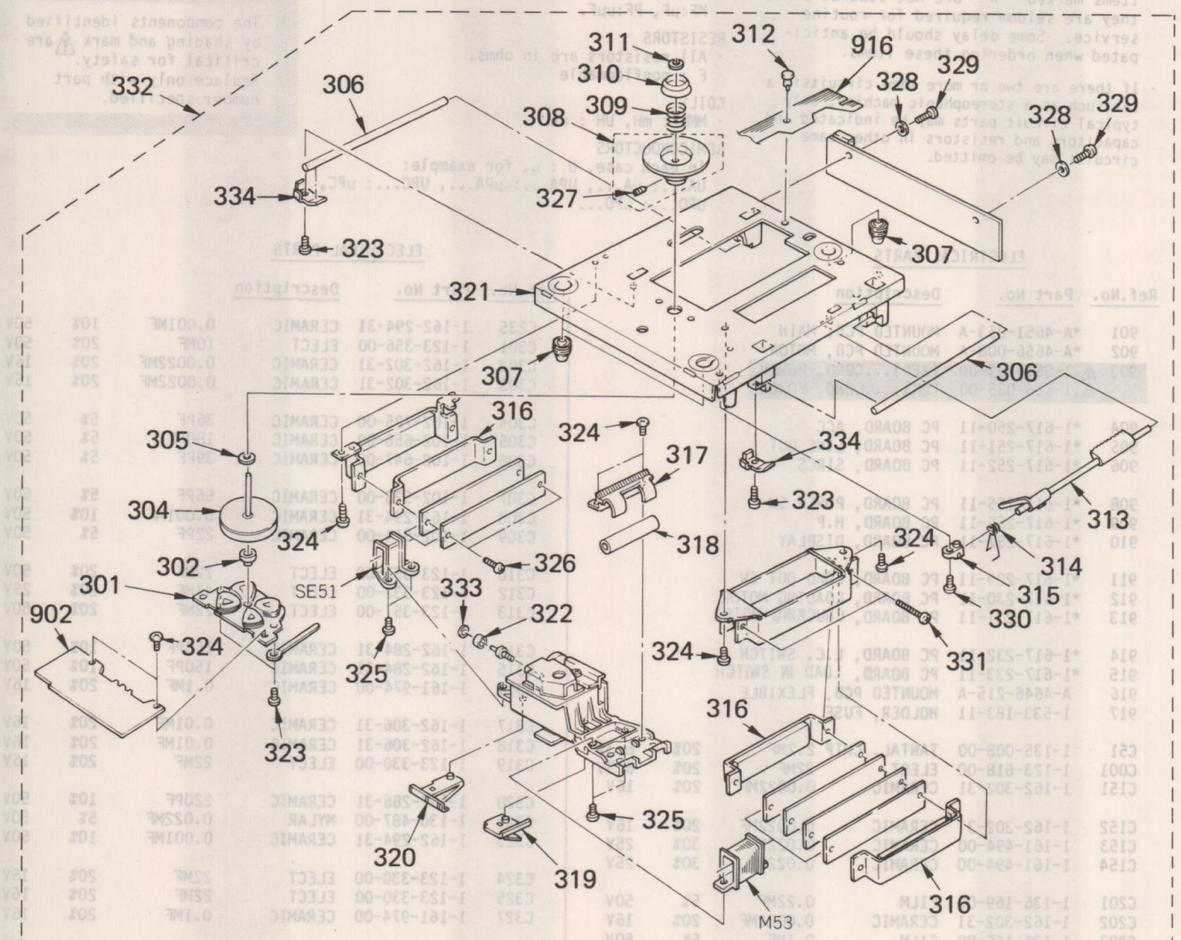
(4) CDM4-1C



No.	Part No.	Description	Remarks
251	*4-908-523-01	BRACKET, MOTOR	
252	4-908-540-01	GUIDE, ASSIST	
253	*X-4912-508-1	BRACKET ASSY, TABLE	
254	*X-4912-507-1	CHASSIS ASSY, MECHANICAL	
255	X-4912-704-1	PANEL ASSY, LOADING	
256	*4-912-545-01	BRACKET (B), L PANEL	
257	*4-912-540-01	BRACKET (A), L PANEL	
258	*4-912-544-01	PLATE, FIXED	
259	*4-912-529-01	GUIDE, LOADING	
260	*4-912-527-01	RETAINER, TABLE	
261	*4-912-534-01	GUIDE, SUB	
262	*X-4912-504-1	BRACKET (LEFT) ASSY, TABLE	
263	3-558-708-21	WASHER, STOPPER	
264	*4-912-531-01	PLATE (LEFT), CAM, DISK	
265	3-701-439-11	WASHER	
266	4-908-584-01	TABLE, DISK	
267	4-908-534-01	LEVER, FUNCTION	
268	*4-912-532-01	REINFORCEMENT, TABLE	
269	*4-912-526-01	SHEET	
270	*4-912-522-01	PLATE, SW	
271	4-912-516-01	SPRING (DISK CAM), TENSION	
272	*X-4912-506-1	PLATE (RIGHT) ASSY, CAM, DISK	
273	4-887-175-00	RUBBER, STOPPER	
274	*X-4912-505-1	BRACKET (RIGHT) ASSY, TABLE	
275	*4-912-513-01	STOPPER, TABLE	
276	*4-912-519-01	RETAINER (RIGHT), SHAFT	
277	4-912-538-01	BEARING (RIGHT), GUIDE	

No.	Part No.	Description	Remarks
278	4-912-521-01	SHAFT (RIGHT), GUIDE	
279	*4-912-520-01	BRACKET, ROPE	
280	4-912-517-01	ROPE	
281	4-908-553-01	SPRING, COMPRESSION (ROPE)	
282	4-912-512-01	CUSHION (A)	
283	X-4908-506-1	PLATE ASSY, DISK	
284	*4-908-964-01	SHEET, PS, DT	
285	4-908-519-01	PULLEY (A)	
286	4-908-525-01	PULLEY (C)	
287	3-671-077-00	BELT, FF	
288	4-908-591-01	BELT, DRIVING	
289	4-908-524-01	PULLEY (B)	
290	4-908-543-01	RETAINER, DISK	
291	7-624-106-04	STOP RING 3.0, TYPE -E	
292	7-621-775-80	SCREW +B 2.6X16	
293	7-621-759-60	+PSW, 2.6X8	
294	7-621-775-00	SCREW +B 2.6X3	
295	7-682-546-04	SCREW +BVTT 3X5 (S)	
296	7-621-775-10	SCREW +B 2.6X4	
297	7-685-646-71	SCREW +BVTP 3X8 TYPE2 SLIT	
298	7-685-791-04	SCREW +BVTT 2.6X5 (S)	
299	7-685-876-01	SCREW +BVTT 3X16 (S)	
300	7-682-646-01	SCREW +PS 3X5	
501	7-685-132-19	SCREW +BTP 2.6X5 TYPE2 N-S	
912	*1-617-230-11	PC BOARD, LOADING MOTOR	
M652	A-4608-303-A	MOTOR ASSY, LOADING	

(5) BU-1C



No.	Part No.	Description	Remarks
301	A-4675-068-A	BRACKET ASSY, MOTOR	
302	2-622-105-01	RETAINER, THRUST	
304	A-4675-069-A	ROTOR ASSY	
305	3-701-439-21	WASHER	
306	4-908-201-01	SHAFT, SLIDE	
307	4-908-593-01	INSULATOR	
308	X-4908-202-1	PULLEY ASSY, DISK	
309	4-908-213-01	SPRING, COMPRESSION	
310	4-908-212-01	CAP, CENTERING	
311	3-558-708-21	WASHER, STOPPER	
312	3-531-576-01	RIVET	
313	4-908-227-01	LEVER, LOCK	
314	4-908-230-01	SPRING	
315	4-908-220-01	HOLDER, ROD	
316	*A-4675-110-A	MAGNET ASSY, LINEAR	
317	4-908-224-01	HOLDER, BEARING	
318	4-908-221-01	BEARING	
319	4-908-225-01	RETAINER (A), LEAD	
320	4-908-219-01	RETAINER (B), LEAD	

No.	Part No.	Description	Remarks
321	*A-4675-112-A	BASE ASSY	
322	4-908-208-01	BEARING (NO-FLANGE), BALL	
323	7-685-134-19	SCREW +P 2.6X8 TYPE2 SLIT	
324	7-621-775-10	SCREW +B 2.6X4	
325	7-621-775-20	SCREW +B 2.6X5	
326	7-685-793-04	SCREW +BVTT 2.6X8 (S)	
327	7-621-734-09	SET-SCT, HEX. 2.6X3	
328	7-688-002-01	W 2.6, SMALL	
329	7-685-864-01	SCREW +BVTT 2.6X10 (S)	
330	7-621-773-95	+B 2.6X6	
331	7-685-867-01	SCREW +BVTT 2.6X16 (S)	
332	⚠ X-4908-207-1	BU-1C	301-334
333	7-624-105-04	STOP RING 2.3, TYPE -E	
334	4-908-245-01	RETAINER (C), SHAFT, SLIDE	
902	*A-4656-008-A	MOUNTED PCB, MOTOR	
916	A-4646-215-A	MOUNTED PCB, FLEXIBLE	
M153	1-422-197-13	COIL (DRIVE)	
SE51	1-422-198-11	COIL (SENSOR)	

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

SECTION 6
ELECTRICAL PARTS LIST

NOTE:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:µF, PF:µµF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : µH

SEMICONDUCTORS
In each case, U : µ, for example:
UA...: µA..., UPA...: µPA..., UPC...: µPC, UPD...: µPD...

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
901	*A-4651-053-A	MOUNTED PCB, MAIN			
902	*A-4656-008-A	MOUNTED PCB, MOTOR			
903	⚠.1-555-795-00	(AEP)...CORD, POWER			
	⚠.1-556-035-00	(UK)....CORD, POWER			
904	*1-617-250-11	PC BOARD, ACC			
905	*1-617-251-11	PC BOARD, LINE OUT			
906	*1-617-252-11	PC BOARD, SIRCS			
908	*1-617-255-11	PC BOARD, POWER SW			
909	*1-617-256-11	PC BOARD, H.P			
910	*1-617-257-11	PC BOARD, DISPLAY			
911	*1-617-229-11	PC BOARD, LOAD OUT SW			
912	*1-617-230-11	PC BOARD, LOADING MOTOR			
913	*1-617-231-11	PC BOARD, CHUCKING MOTOR			
914	*1-617-232-11	PC BOARD, L.C. SWITCH			
915	*1-617-233-11	PC BOARD, LOAD IN SWITCH			
916	A-4646-215-A	MOUNTED PCB, FLEXIBLE			
917	1-533-183-11	HOLDER, FUSE			
C51	1-135-008-00	TANTAL. CHIP	2.2MF	20%	6.3V
C001	1-123-618-00	ELECT	22MF	20%	6.3V
C151	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C152	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C153	1-161-494-00	CERAMIC	0.022MF	30%	25V
C154	1-161-494-00	CERAMIC	0.022MF	30%	25V
C201	1-136-169-00	FILM	0.22MF	5%	50V
C202	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C203	1-136-165-00	FILM	0.1MF	5%	50V
C204	1-162-290-31	CERAMIC	470PF	10%	50V
C205	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C206	1-131-371-00	TANTALUM	10MF	10%	16V
C207	1-136-159-00	FILM	0.033MF	5%	50V
C208	1-136-169-00	FILM	0.22MF	5%	50V
C209	1-136-161-00	FILM	0.047MF	5%	50V
C210	1-162-294-31	CERAMIC	0.001MF	10%	50V
C211	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C212	1-130-487-00	MYLAR	0.022MF	5%	50V
C213	1-162-291-31	CERAMIC	560PF	10%	50V
C214	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C215	1-136-165-00	FILM	0.1MF	5%	50V
C216	1-130-487-00	MYLAR	0.022MF	5%	50V
C217	1-136-165-00	FILM	0.1MF	5%	50V
C218	1-162-304-31	CERAMIC	0.0047MF	20%	16V
C219	1-136-163-00	FILM	0.068MF	5%	50V
C220	1-123-356-00	ELECT	10MF	20%	50V
C221	1-124-445-00	ELECT	100MF	20%	16V
C222	1-124-445-00	ELECT	100MF	20%	16V
C226	1-136-173-00	FILM	0.47MF	5%	50V
C228	1-136-173-00	FILM	0.47MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C235	1-162-294-31	CERAMIC	0.001MF	10%	50V
C301	1-123-356-00	ELECT	10MF	20%	50V
C302	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C303	1-162-302-31	CERAMIC	0.0022MF	20%	16V
C304	1-102-725-00	CERAMIC	36PF	5%	50V
C305	1-102-658-00	CERAMIC	180PF	5%	50V
C306	1-102-647-00	CERAMIC	39PF	5%	50V
C307	1-102-523-00	CERAMIC	56PF	5%	50V
C308	1-162-294-31	CERAMIC	0.001MF	10%	50V
C309	1-102-514-00	CERAMIC	22PF	5%	50V
C310	1-123-357-00	ELECT	22MF	20%	50V
C312	1-123-332-00	ELECT	47MF	20%	25V
C313	1-123-357-00	ELECT	22MF	20%	50V
C314	1-162-284-31	CERAMIC	150PF	10%	50V
C315	1-162-284-31	CERAMIC	150PF	10%	50V
C316	1-161-974-00	CERAMIC	0.1MF	20%	16V
C317	1-162-306-31	CERAMIC	0.01MF	20%	16V
C318	1-162-306-31	CERAMIC	0.01MF	20%	16V
C319	1-123-330-00	ELECT	22MF	20%	16V
C320	1-162-286-31	CERAMIC	220PF	10%	50V
C321	1-130-487-00	MYLAR	0.022MF	5%	50V
C323	1-162-294-31	CERAMIC	0.001MF	10%	50V
C324	1-123-330-00	ELECT	22MF	20%	16V
C325	1-123-330-00	ELECT	22MF	20%	16V
C327	1-161-974-00	CERAMIC	0.1MF	20%	16V
C330	1-162-596-00	CERAMIC	0.022MF		25V
C331	1-162-596-00	CERAMIC	0.022MF		25V
C332	1-131-380-00	TANTALUM	33MF	10%	10V
C333	1-162-596-00	CERAMIC	0.022MF		25V
C334	1-162-596-00	CERAMIC	0.022MF		25V
C348	1-162-306-31	CERAMIC	0.01MF	20%	16V
C349	1-123-380-00	ELECT	1MF	20%	50V
C351	1-123-380-00	ELECT	1MF	20%	50V
C353	1-136-165-00	FILM	0.1MF	5%	50V
C354	1-162-305-31	CERAMIC	0.0068MF	20%	16V
C355	1-136-169-00	FILM	0.22MF	5%	50V
C356	1-162-290-31	CERAMIC	470PF	10%	50V
C360	1-136-165-00	FILM	0.1MF	5%	50V
C361	1-123-330-00	ELECT	22MF	20%	25V
C362	1-123-330-00	ELECT	22MF	20%	25V
C363	1-161-974-00	CERAMIC	0.1MF	20%	16V
C364	1-161-974-00	CERAMIC	0.1MF	20%	16V
C366	1-161-974-00	CERAMIC	0.1MF	20%	16V
C367	1-161-974-00	CERAMIC	0.1MF	20%	16V
C368	1-161-974-00	CERAMIC	0.1MF	20%	16V
C369	1-161-974-00	CERAMIC	0.1MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C371	1-162-282-31	CERAMIC	100PF	10%	50V
C401	1-136-252-00	FILM	0.0015MF	3%	100V
C402	1-123-379-00	ELECT	0.47MF	20%	50V
C403	1-123-379-00	ELECT	0.47MF	20%	50V
C404	1-123-369-00	ELECT	4.7MF	20%	50V
C405	1-104-233-00	POLYSTYRENE	220PF	5%	125V
C406	1-123-369-00	ELECT	4.7MF	20%	50V
C407	1-130-967-00	FILM	0.0027MF	3%	100V
C408	1-136-230-00	FILM	0.0022MF	3%	100V
C409	1-123-332-00	ELECT	47MF	20%	25V
C410	1-136-257-00	FILM	0.0039MF	3%	100V
C411	1-136-252-00	FILM	0.0015MF	3%	100V
C412	1-123-332-00	ELECT	47MF	20%	25V
C413	1-130-974-11	FILM	0.024MF	3%	100V
C414	1-136-228-11	FILM	0.0012MF	3%	100V
C415	1-136-235-11	FILM	0.0091MF	3%	100V
C417	1-136-252-00	FILM	0.0015MF	3%	100V
C419	1-123-356-00	ELECT	10MF	20%	50V
C420	1-123-371-00	ELECT	22MF	20%	63V
C421	1-162-596-00	CERAMIC	0.022MF		25V
C431	1-123-818-00	ELECT	22MF	20%	25V
C451	1-162-290-31	CERAMIC	470PF	10%	50V
C501	1-136-252-00	FILM	0.0015MF	3%	100V
C502	1-123-332-00	ELECT	47MF	20%	25V
C503	1-123-332-00	ELECT	47MF	20%	25V
C504	1-123-369-00	ELECT	4.7MF	20%	50V
C505	1-104-233-00	POLYSTYRENE	220PF	5%	125V
C506	1-123-369-00	ELECT	4.7MF	20%	50V
C507	1-130-967-00	FILM	0.0027MF	3%	100V
C508	1-136-230-00	FILM	0.0022MF	3%	100V
C509	1-123-332-00	ELECT	47MF	20%	25V
C510	1-136-257-00	FILM	0.0039MF	3%	100V
C511	1-136-252-00	FILM	0.0015MF	3%	100V
C512	1-123-332-00	ELECT	47MF	20%	25V
C513	1-130-974-11	FILM	0.024MF	3%	100V
C514	1-136-228-11	FILM	0.0012MF	3%	100V
C515	1-136-235-11	FILM	0.0091MF	3%	100V
C517	1-136-252-00	FILM	0.0015MF	3%	100V
C519	1-123-356-00	ELECT	10MF	20%	50V
C520	1-123-371-00	ELECT	22MF	20%	63V
C521	1-162-596-00	CERAMIC	0.022MF		25V
C531	1-123-818-00	ELECT	22MF	20%	25V
C551	1-162-290-31	CERAMIC	470PF	10%	50V
C601	1-162-294-31	CERAMIC	0.001MF	10%	50V
C602	1-162-294-31	CERAMIC	0.001MF	10%	50V
C651	1-136-157-00	FILM	0.022MF	5%	50V
C652	1-136-157-00	FILM	0.022MF	5%	50V
C653	1-136-157-00	FILM	0.022MF	5%	50V
C654	1-130-479-00	MYLAR	0.0047MF	5%	50V
C655	1-130-479-00	MYLAR	0.0047MF	5%	50V
C701	1-162-306-31	CERAMIC	0.01MF	20%	16V
C705	1-162-596-00	CERAMIC	0.022MF		25V
C706	1-162-596-00	CERAMIC	0.022MF		25V
C801	1-162-294-31	CERAMIC	0.001MF	10%	50V
C902	1-124-636-00	ELECT	3300MF	20%	25V
C903	⚠.1-124-556-11	ELECT	2200MF	20%	16V
C905	1-123-327-00	ELECT	4700MF	20%	16V
C906	⚠.1-124-556-11	ELECT	2200MF	20%	16V

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C911	1-123-346-00	ELECT	220MF	20%	35V
C912	1-123-360-00	ELECT	100MF	20%	50V
C913	1-123-345-00	ELECT	100MF	20%	35V
C951	1-130-789-00	FILM	1MF	10%	100V
C952	1-124-636-00	ELECT	3300MF	20%	25V
C953	⚠.1-124-556-11	ELECT	2200MF	20%	16V
C955	1-123-326-00	ELECT	3300MF	20%	16V
C956	⚠.1-124-556-11	ELECT	2200MF	20%	16V
C961	1-123-380-00	ELECT	1MF	20%	50V
C962	1-123-307-00	ELECT	100MF	20%	10V
C991	⚠.1-161-744-00	CERAMIC	0.01MF		400V
C992	⚠.1-161-742-00	CERAMIC	0.0022MF	20%	400V
C993	⚠.1-161-742-00	CERAMIC	0.0022MF	20%	400V
C994	⚠.1-161-742-00	CERAMIC	0.0022MF	20%	400V
C995	⚠.1-161-742-00	CERAMIC	0.0022MF	20%	400V
CNJ151	*1-560-073-00	PIN, CONNECTOR			
CNJ301	1-562-677-11	SOCKET, CONNECTOR (SUBCODE OUT)			
CNJ401	1-507-912-21	JACK, PIN 2P			
CNJ402	1-507-863-11	JACK, LARGE TYPE (HEADPHONES)			
CNJ501	1-507-912-21	JACK, PIN 2P (LINE OUT)			
⚠CNJ901	.1-526-751-11	(UK)....OUTLET, AC			
⚠CNJ901	.1-526-794-11	(AEP)...OUTLET, AC			
CNP201	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNP202	*1-564-707-21	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP203	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP204	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP301	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP302	1-564-711-11	PIN, CONNECTOR (SMALL TYPE) 9P			
CNP304	*1-564-666-11	PIN, CONNECTOR 10P			
CNP305	*1-564-342-11	PIN, CONNECTOR 8P			
CNP306	*1-564-505-41	PLUG, CONNECTOR 2P			
CNP307	*1-564-507-21	PLUG, CONNECTOR 4P			
CNP308	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP309	*1-564-337-00	PIN, CONNECTOR 3P			
CNP310	*1-564-507-31	PLUG, CONNECTOR 4P			
CNP401	*1-564-507-41	PLUG, CONNECTOR 4P			
CNP402	*1-564-509-11	PLUG, CONNECTOR 6P			
CNP403	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP404	*1-564-705-21	PIN, CONNECTOR (SMALL TYPE) 3P			
CNP602	*1-564-505-11	PLUG, CONNECTOR 2P			
CNP603	*1-564-505-21	PLUG, CONNECTOR 2P			
CNP604	*1-564-505-11	PLUG, CONNECTOR 2P			
CNP606	*1-564-506-11	PLUG, CONNECTOR 3P			
CNP607	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP702	*1-564-519-11	PLUG, CONNECTOR 4P			
CNP705	*1-560-039-00	PIN, CONNECTOR (CONTROL S/IN)			
CNP706	*1-560-039-00	PIN, CONNECTOR (CONTROL S/OUT)			
CNP708	*1-564-725-11	PIN, CONNECTOR (SMALL TYPE) 9P			
CNP902	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
D51	8-719-901-33	DIODE 1SS133			
D201	8-719-951-13	DIODE HZ5CLL			
D202	8-719-911-19	DIODE 1SS119			
D209	8-719-911-19	DIODE 1SS119			
D210	8-719-911-19	DIODE 1SS119			
D211	8-719-911-19	DIODE 1SS119			
D212	8-719-911-06	DIODE 1SS106			
D301	8-719-911-19	DIODE 1SS119			
D302	8-719-902-79	DIODE KV1236-Z			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D303	8-719-911-19	DIODE 1SS119
D304	8-719-911-19	DIODE 1SS119
D651	8-719-200-02	DIODE 10E-2
D652	8-719-200-02	DIODE 10E-2
D653	8-719-200-02	DIODE 10E-2
D654	8-719-200-02	DIODE 10E-2
D701	8-719-911-19	DIODE 1SS119
D702	8-719-911-19	DIODE 1SS119
D805	8-719-918-57	DIODE GL-5NG27
D806	8-719-914-39	DIODE GL-5HY27
D807	8-719-918-57	DIODE GL-5NG27
D809	8-719-907-81	DIODE BG5535S
D901 ⚠	8-719-300-76	DIODE RH-1A
D902 ⚠	8-719-300-76	DIODE RH-1A
D903 ⚠	8-719-300-76	DIODE RH-1A
D904 ⚠	8-719-300-76	DIODE RH-1A
D905 ⚠	8-719-300-76	DIODE RH-1A
D906 ⚠	8-719-300-76	DIODE RH-1A
D907 ⚠	8-719-300-76	DIODE RH-1A
D908 ⚠	8-719-300-76	DIODE RH-1A
D909 ⚠	8-719-200-02	DIODE 10E-2
D910 ⚠	8-719-200-02	DIODE 10E-2
D911	8-719-911-19	DIODE 1SS119
D912	8-719-911-19	DIODE 1SS119
D913	8-719-101-07	DIODE RD33E-B3
D914	8-719-911-19	DIODE 1SS119
D915	8-719-100-48	DIODE HZ8.2EB2
F991 ⚠	1-532-078-00	(AEP)...FUSE, TIME-LAG 1A
F991 ⚠	1-532-286-00	(UK)....FUSE, TIME-LAG 2.5A
FLD801	1-519-304-00	INDICATOR TUBE, FLUORESCENT
H151	8-719-800-31	DIODE THS103A-1
H152	8-719-800-31	DIODE THS103A-1
IC151	8-759-705-58	IC NJM4558-D
IC201	8-752-010-80	IC CX20108
IC202	8-759-700-58	IC NJM4558D-FA
IC203	8-759-103-25	IC UPD4053BG
IC301	8-759-602-87	IC M50761-420P
IC302	8-759-913-84	IC MSM6404A-41RS
IC303	8-759-923-73	IC MSM6404A-102GS-K
IC304	8-759-001-05	IC MC74HCU04N
IC305	8-759-990-82	IC TL082CP
IC306	8-759-145-58	IC UPC4558C
IC307	8-759-912-52	IC CX23035
IC308	8-759-302-69	IC HM6116FP-3
IC309	8-759-912-53	IC CX23034
IC310	8-752-015-20	IC CX20152
IC311	8-759-140-53	IC UPD4053BC
IC312	8-759-140-66	IC UPD4066BC
IC401	8-759-910-77	IC LF353N/GLEA312
IC402	8-759-900-72	IC NE5532P
IC403	8-759-900-72	IC NE5532P
IC404	8-759-700-40	IC NJM4560S
IC501	8-759-910-77	IC LF353N/GLEA312
IC502	8-759-900-72	IC NE5532P
IC503	8-759-900-72	IC NE5532P
IC801	8-759-600-35	IC M54940P

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC851	8-741-131-70	IC BX-1317
IC901 ⚠	8-759-700-51	IC NJM7805A
IC902 ⚠	8-759-700-28	IC NJM7905A
IC903 ⚠	8-759-170-15	IC NJM78M15A
IC904 ⚠	8-759-700-24	IC NJM79M12A
IC905 ⚠	8-759-708-05	IC NJM78L05A
IC906 ⚠	8-759-700-65	IC NJM79L05A
L51	1-408-563-00	MICRO INDUCTOR 10UH
L301	1-426-212-11	COIL (RF)
L302	1-406-123-11	COIL (OSC)
L303	1-408-557-00	MICRO INDUCTOR 3.3UH
L304	1-408-557-00	MICRO INDUCTOR 3.3UH
L305	1-408-557-00	MICRO INDUCTOR 3.3UH
L306	1-408-557-00	MICRO INDUCTOR 3.3UH
L601	1-408-117-00	MICRO INDUCTOR 10UH
L991 ⚠	1-421-340-00	LINE FILTER
PS201 ⚠	1-532-679-00	LINK, IC
PS202 ⚠	1-532-679-00	LINK, IC
PS301 ⚠	1-532-685-00	LINK, IC
PS901 ⚠	1-532-675-00	LINK, IC
PS902 ⚠	1-532-675-00	LINK, IC
PS951 ⚠	1-532-675-00	LINK, IC
PS952 ⚠	1-532-675-00	LINK, IC
M153	1-422-197-13	COIL (DRIVE)
M651	X-4902-019-1	MOTOR ASSY, CHUCKING
M652	A-4608-303-A	MOTOR ASSY, LOADING
PT901 ⚠	1-448-331-11	TRANSFORMER, POWER
Q151	8-729-206-49	TRANSISTOR 2SC3666Y
Q152	8-729-206-43	TRANSISTOR 2SA1426Y
Q153	8-729-206-49	TRANSISTOR 2SC3666Y
Q154	8-729-206-43	TRANSISTOR 2SA1426Y
Q201	8-729-206-49	TRANSISTOR 2SC3666Y
Q202	8-729-206-43	TRANSISTOR 2SA1426Y
Q203	8-729-206-49	TRANSISTOR 2SC3666Y
Q204	8-729-206-43	TRANSISTOR 2SA1426Y
Q205	8-729-206-49	TRANSISTOR 2SC3666Y
Q206	8-729-206-43	TRANSISTOR 2SA1426Y
Q209	8-729-117-54	TRANSISTOR 2SA1175
Q210	8-729-100-13	TRANSISTOR 2SC2001
Q301	8-729-206-49	TRANSISTOR 2SC3666Y
Q302	8-729-206-43	TRANSISTOR 2SA1426Y
Q303	8-729-900-80	TRANSISTOR DTC114ES
Q304	8-729-900-80	TRANSISTOR DTC114ES
Q305	8-729-900-80	TRANSISTOR DTC114ES
Q306	8-729-900-80	TRANSISTOR DTC114ES
Q307	8-729-900-61	TRANSISTOR DTA114ES
Q308	8-729-900-80	TRANSISTOR DTC114ES
Q309	8-729-178-54	TRANSISTOR 2SC2785
Q310	8-729-900-80	TRANSISTOR DTC114ES
Q401	8-769-800-43	TRANSISTOR 2SK152-3
Q501	8-769-800-43	TRANSISTOR 2SK152-3
Q651	8-729-177-43	TRANSISTOR 2SD774-3
Q801	8-729-900-45	TRANSISTOR DTC114EF
Q802	8-729-900-45	TRANSISTOR DTC114EF
Q803	8-729-900-45	TRANSISTOR DTC114EF
Q804	8-729-987-42	TRANSISTOR 2SA874-P
Q901	8-729-177-43	TRANSISTOR 2SD774-3

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ELECTRICAL PARTS

Ref.No.	Part No.	Description			
Q902	8-729-178-54	TRANSISTOR 2SC2785			
Q903	8-729-178-54	TRANSISTOR 2SC2785			
Q904	8-729-900-61	TRANSISTOR DTA114ES			
Q905	8-729-117-54	TRANSISTOR 2SA1175			
Q906	8-729-900-80	TRANSISTOR DTC114ES			
R151	1-247-831-00	CARBON	1K	5%	1/6W
R152	1-247-831-00	CARBON	1K	5%	1/6W
R153	1-247-831-00	CARBON	1K	5%	1/6W
R154	1-247-831-00	CARBON	1K	5%	1/6W
R155	1-247-831-00	CARBON	1K	5%	1/6W
R156	1-247-831-00	CARBON	1K	5%	1/6W
R157	1-247-887-00	CARBON	220K	5%	1/6W
R158	1-247-887-00	CARBON	220K	5%	1/6W
R159	1-247-887-00	CARBON	220K	5%	1/6W
R160	1-247-887-00	CARBON	220K	5%	1/6W
R201	1-249-433-11	CARBON	22K	5%	1/6W
R202	1-247-851-00	CARBON	6.8K	5%	1/6W
R203	1-247-867-00	CARBON	33K	5%	1/6W
R204	1-249-425-11	CARBON	4.7K	5%	1/6W
R205	1-247-819-00	CARBON	330	5%	1/6W
R206	1-249-434-11	CARBON	27K	5%	1/6W
R207	1-247-807-00	CARBON	100	5%	1/6W
R208	1-247-851-00	CARBON	6.8K	5%	1/6W
R209	1-247-864-00	CARBON	24K	5%	1/6W
R210	1-247-851-00	CARBON	6.8K	5%	1/6W
R211	1-247-831-00	CARBON	1K	5%	1/6W
R212	1-247-859-00	CARBON	15K	5%	1/6W
R213	1-249-429-11	CARBON	10K	5%	1/6W
R214	1-247-837-00	CARBON	1.8K	5%	1/6W
R215	1-247-879-00	CARBON	100K	5%	1/6W
R216	1-247-869-00	CARBON	39K	5%	1/6W
R217	1-249-433-11	CARBON	22K	5%	1/6W
R218	1-247-903-00	CARBON	1M	5%	1/6W
R219	1-247-831-00	CARBON	1K	5%	1/6W
R220	1-247-807-00	CARBON	100	5%	1/6W
R221	1-249-433-11	CARBON	22K	5%	1/6W
R223	1-247-841-00	CARBON	2.7K	5%	1/6W
R224	1-247-869-00	CARBON	39K	5%	1/6W
R225	1-247-843-00	CARBON	3.3K	5%	1/6W
R226	1-247-859-00	CARBON	15K	5%	1/6W
R227	1-247-845-00	CARBON	3.9K	5%	1/6W
R228	1-247-815-00	CARBON	220	5%	1/6W
R229	1-249-434-11	CARBON	27K	5%	1/6W
R230	1-247-867-00	CARBON	33K	5%	1/6W
R231	1-247-883-00	CARBON	150K	5%	1/6W
R232	1-247-899-00	CARBON	680K	5%	1/6W
R233	1-247-903-00	CARBON	1M	5%	1/6W
R234	1-247-895-00	CARBON	470K	5%	1/6W
R235	1-247-903-00	CARBON	1M	5%	1/6W
R236	1-249-429-11	CARBON	10K	5%	1/6W
R237	1-247-895-00	CARBON	470K	5%	1/6W
R242	1-249-429-11	CARBON	10K	5%	1/6W
R243	1-247-895-00	CARBON	470K	5%	1/6W
R244	1-247-859-00	CARBON	15K	5%	1/6W
R245	1-249-429-11	CARBON	10K	5%	1/6W
R246	1-247-831-00	CARBON	1K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R301	1-249-425-11	CARBON	4.7K	5%	1/6W
R302	1-247-841-00	CARBON	2.7K	5%	1/6W
R303	1-215-457-00	METAL	33K	1%	1/6W
R304	1-215-457-00	METAL	33K	1%	1/6W
R305	1-247-851-00	CARBON	6.8K	5%	1/6W
R306	1-247-857-00	CARBON	12K	5%	1/6W
R307	1-247-867-00	CARBON	33K	5%	1/6W
R308	1-247-831-00	CARBON	1K	5%	1/6W
R309	1-247-879-00	CARBON	100K	5%	1/6W
R310	1-247-879-00	CARBON	100K	5%	1/6W
R311	1-247-879-00	CARBON	100K	5%	1/6W
R312	1-247-903-00	CARBON	1M	5%	1/6W
R313	1-247-133-00	CARBON	1.2K	1%	1/4W
R314	1-247-721-11	CARBON	4.7K	1%	1/4W
R315	1-247-171-00	CARBON	47K	1%	1/4W
R316	1-247-721-11	CARBON	4.7K	1%	1/4W
R317	1-249-429-11	CARBON	10K	5%	1/6W
R318	1-249-429-11	CARBON	10K	5%	1/6W
R319	1-247-903-00	CARBON	1M	5%	1/6W
R320	1-247-843-00	CARBON	3.3K	5%	1/6W
R321	1-249-437-11	CARBON	47K	5%	1/6W
R322	1-249-429-11	CARBON	10K	5%	1/6W
R323	1-249-429-11	CARBON	10K	5%	1/6W
R324	1-249-429-11	CARBON	10K	5%	1/6W
R325	1-249-433-11	CARBON	22K	5%	1/6W
R326	1-249-433-11	CARBON	22K	5%	1/6W
R327	1-249-429-11	CARBON	10K	5%	1/6W
R328	1-247-831-00	CARBON	1K	5%	1/6W
R351	1-215-441-00	METAL	6.8K	1%	1/6W
R352	1-215-441-00	METAL	6.8K	1%	1/6W
R353	1-247-903-00	CARBON	1M	5%	1/6W
R354	1-247-856-00	CARBON	11K	5%	1/6W
R355	1-247-856-00	CARBON	11K	5%	1/6W
R357	1-249-433-11	CARBON	22K	5%	1/6W
R358	1-247-843-00	CARBON	3.3K	5%	1/6W
R359	1-247-869-00	CARBON	39K	5%	1/6W
R360	1-215-453-00	METAL	22K	1%	1/6W
R361	1-247-815-00	CARBON	220	5%	1/6W
R362	1-247-815-00	CARBON	220	5%	1/6W
R363	1-247-887-00	CARBON	220K	5%	1/6W
R365	1-247-807-00	CARBON	100	5%	1/6W
R366	1-247-807-00	CARBON	100	5%	1/6W
R367	1-215-449-00	METAL	15K	1%	1/6W
R368	1-247-807-00	CARBON	100	5%	1/6W
R401	1-247-135-00	CARBON	1.5K	1%	1/4W
R402	1-247-144-00	CARBON	3.6K	1%	1/4W
R403	1-247-161-00	CARBON	18K	1%	1/4W
R404	1-247-721-11	CARBON	4.7K	1%	1/4W
R405	1-247-143-00	CARBON	3.3K	1%	1/4W
R406	1-247-717-11	CARBON	2.2K	1%	1/4W
R407	1-247-717-11	CARBON	2.2K	1%	1/4W
R408	1-247-717-11	CARBON	2.2K	1%	1/4W
R409	1-247-717-11	CARBON	2.2K	1%	1/4W
R410	1-247-713-11	CARBON	1K	1%	1/4W
R411	1-247-713-11	CARBON	1K	1%	1/4W
R412	1-247-144-00	CARBON	3.6K	1%	1/4W
R413	1-247-133-00	CARBON	1.2K	1%	1/4W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R414	1-246-545-00	CARBON	1M	1%	1/4W
R415	1-247-143-00	CARBON	3.3K	1%	1/4W
R416	1-247-145-00	CARBON	3.9K	1%	1/4W
R417	1-249-469-11	CARBON	100K	1%	1/4W
R418	1-247-700-11	CARBON	100	1%	1/4W
R419	1-247-193-00	CARBON	22K	1%	1/4W
R420	1-247-706-11	CARBON	330	1%	1/4W
R421	1-247-807-00	CARBON	100	5%	1/6W
R431	1-247-823-00	CARBON	470	5%	1/6W
R432	1-247-831-00	CARBON	1K	5%	1/6W
R433	1-249-425-11	CARBON	4.7K	5%	1/6W
R434	1-247-859-00	CARBON	15K	5%	1/6W
R435	1-247-807-00	CARBON	100	5%	1/6W
R501	1-247-135-00	CARBON	1.5K	1%	1/4W
R502	1-247-144-00	CARBON	3.6K	1%	1/4W
R503	1-247-161-00	CARBON	18K	1%	1/4W
R504	1-247-721-11	CARBON	4.7K	1%	1/4W
R505	1-247-143-00	CARBON	3.3K	1%	1/4W
R506	1-247-717-11	CARBON	2.2K	1%	1/4W
R507	1-247-717-11	CARBON	2.2K	1%	1/4W
R508	1-247-717-11	CARBON	2.2K	1%	1/4W
R509	1-247-717-11	CARBON	2.2K	1%	1/4W
R510	1-247-713-11	CARBON	1K	1%	1/4W
R511	1-247-713-11	CARBON	1K	1%	1/4W
R512	1-247-144-00	CARBON	3.6K	1%	1/4W
R513	1-247-133-00	CARBON	1.2K	1%	1/4W
R514	1-246-545-00	CARBON	1M	1%	1/4W
R515	1-247-143-00	CARBON	3.3K	1%	1/4W
R516	1-247-145-00	CARBON	3.9K	1%	1/4W
R517	1-249-469-11	CARBON	100K	1%	1/4W
R518	1-247-700-11	CARBON	100	1%	1/4W
R519	1-247-193-00	CARBON	22K	1%	1/4W
R520	1-247-706-11	CARBON	330	1%	1/4W
R521	1-247-807-00	CARBON	100	5%	1/6W
R531	1-247-823-00	CARBON	470	5%	1/6W
R532	1-247-831-00	CARBON	1K	5%	1/6W
R533	1-249-425-11	CARBON	4.7K	5%	1/6W
R534	1-247-859-00	CARBON	15K	5%	1/6W
R535	1-247-807-00	CARBON	100	5%	1/6W
R601	1-247-881-00	CARBON	120K	5%	1/6W
R602	1-247-881-00	CARBON	120K	5%	1/6W
R603	1-247-885-00	CARBON	180K	5%	1/6W
R604	1-247-885-00	CARBON	180K	5%	1/6W
R605	1-247-815-00	CARBON	220	5%	1/6W
R651	1-247-831-00	CARBON	1K	5%	1/6W
R652	1-247-831-00	CARBON	1K	5%	1/6W
R701	1-247-807-00	CARBON	100	5%	1/6W
R702	1-247-783-00	CARBON	10	5%	1/6W
R801	1-247-815-00	CARBON	220	5%	1/6W
R802	1-247-819-00	CARBON	330	5%	1/6W
R803	1-247-815-00	CARBON	220	5%	1/6W
R804	1-247-815-00	CARBON	220	5%	1/6W
R901	⚠1-217-391-00	FUSIBLE	22	5%	1/4W F
R911	⚠1-217-387-00	FUSIBLE	10	5%	1/4W F
R912	1-249-421-11	CARBON	2.2K	5%	1/6W
R961	1-249-429-11	CARBON	10K	5%	1/6W
R962	1-249-434-11	CARBON	27K	5%	1/6W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R963	1-247-881-00	CARBON	120K	5%	1/6W
R964	1-249-429-11	CARBON	10K	5%	1/6W
R965	1-249-425-11	CARBON	4.7K	5%	1/6W
R966	1-249-429-11	CARBON	10K	5%	1/6W
RV201	1-228-995-00	RES, ADJ, CARBON 22K			
RV202	1-228-994-00	RES, ADJ, CARBON 10K			
RV301	1-228-993-00	RES, ADJ, CARBON 4.7K			
RV401	1-230-997-11	RES, VAR, CARBON 20K/20K			
RV501	1-230-997-11	RES, VAR, CARBON 20K/20K (LEVEL)			
RY901	1-515-529-11	RELAY			
S651	1-554-205-00	SWITCH, PUSH (LOAD IN DET)			
S652	1-554-205-00	SWITCH, PUSH (LOAD OUT DET)			
S653	1-553-636-00	SWITCH, MICRO (MOTOR SELECT)			
S654	1-570-447-11	SWITCH, MICRO (CHUCKING)			
S801	1-570-472-11	SWITCH, KEY BOARD (PLAY)			
S802	1-570-472-11	SWITCH, KEY BOARD (PAUSE)			
S803	1-570-472-11	SWITCH, KEY BOARD (STOP)			
S804	1-570-472-11	SWITCH, KEY BOARD (OPEN/CLOSE)			
S805	1-570-472-11	SWITCH, KEY BOARD (CLEAR)			
S806	1-570-472-11	SWITCH, KEY BOARD (◀◀)			
S807	1-570-472-11	SWITCH, KEY BOARD (▶▶)			
S808	1-570-472-11	SWITCH, KEY BOARD (START)			
S809	1-570-472-11	SWITCH, KEY BOARD (AMS/▶▶|)			
S810	1-570-472-11	SWITCH, KEY BOARD (AMS/|◀◀)			
S811	1-570-472-11	SWITCH, KEY BOARD (INDEX/→)			
S812	1-570-472-11	SWITCH, KEY BOARD (INDEX/←)			
S813	1-570-472-11	SWITCH, KEY BOARD (A↔B)			
S814	1-570-472-11	SWITCH, KEY BOARD (1/ALL CLEAR)			
S815	1-570-472-11	SWITCH, KEY BOARD (SET)			
S816	1-570-472-11	SWITCH, KEY BOARD (TIME)			
S991	⚠.1-553-318-00	SWITCH, PUSH (1 KEY)(POWER)			
SE51	1-422-198-11	COIL (SENSOR)			
TB901	*1-535-121-00	TERMINAL			
X301	1-527-532-00	OSCILLATOR, CERAMIC			
X302	1-567-336-11	VIBRATOR, CRYSTAL			

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-463-680-11	REMOTE COMMANDER (RM-D302)
1-551-734-71	CORD, CONNECTION (RK-C74)
1-558-233-11	CORD (WITH CONNECTOR)
⚠1-564-085-00	(UK)....PLUG, AC
3-701-630-00	BAG, POLYETHYLENE
3-760-852-11	MANUAL, INSTRUCTION
3-760-852-41	(AEP)...MANUAL, INSTRUCTION
*3-795-629-11	(AEP)...INSTRUCTION
4-859-064-00	SHEET, PROTECTION
4-907-610-01	JOINT
4-908-602-01	HOLDER, COMMANDER
4-908-604-01	CUSHION (RIGHT), UPPER
4-908-605-01	CUSHION (LEFT), UPPER
4-908-606-01	CUSHION, LOWER
4-912-731-01	INDIVIDUAL, CARTON

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

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Sony Corporation