CDP-M48/M49/M69

SERVICE MANUAL

AEP Model
CDP-M48

AEP Model
Australian Model
E Model
CDP-M49

AEP Model
E Model
CDP-M69

This photo is CDP-M69.

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 92 dB
Harmonic distortion	Less than 0.008%
Channel separation	More than 95 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
HEADPHONES (stereo phone jack) (CDP-M49/M69)	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	AEP model: 220V AC (or 240V AC adjustable by Sony personnel), 50/60Hz UK model: 240V AC (or 220V AC adjustable by Sony personnel), 50/60Hz Other model: 110V – 120V AC (or 220V – 240V AC adjustable by Sony personnel), 50/60 Hz
Power consumption	11W
Dimensions (approx.,including projections)	355 x 95 x 305 mm (w/h/d) (14 x 3¾ x 12 1/8 inches)
Weight (approx.)	3.0kg (6 lbs 10oz)

Model Name Using Similar Mechanism	CDP-M18
CD Mechanism Name	CDM14-5BD1
Base Unit Name	BU-5BD1

Supplied accessories

	CDP-M69	CDP-M48/M49
Audio cord	1 (2 phono plugs – 2 phono plugs)	
Remote commander	1	–
Sony SUM-3 (NS) batteries	2	–

Remote commander

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 40×20×175 mm (w/h/d) (1 5/8 × 13/16 × 7 inches)
Weight	Approx. 95 g (3.4 oz) Including batteries

Design and specifications subject to change without notice.

使用時は添付資料も参照のこと
Refer to the additional documents

COMPACT DISC PLAYER

SONY

SEE ADDITIONAL INFORMATION

TABLE OF CONTENTS

MODEL IDENTIFICATIONS

—Specition Label—

CDP-M49
CDP-M69

E model:

SONY MODEL NO.
COMPACT DISC PLAYER
AC: 110 – 120 V/220 – 240 V ~ 50/60 Hz
SERIAL No.
MADE IN JAPAN

CDP-M48
CDP-M49
CDP-M69

AEP model:

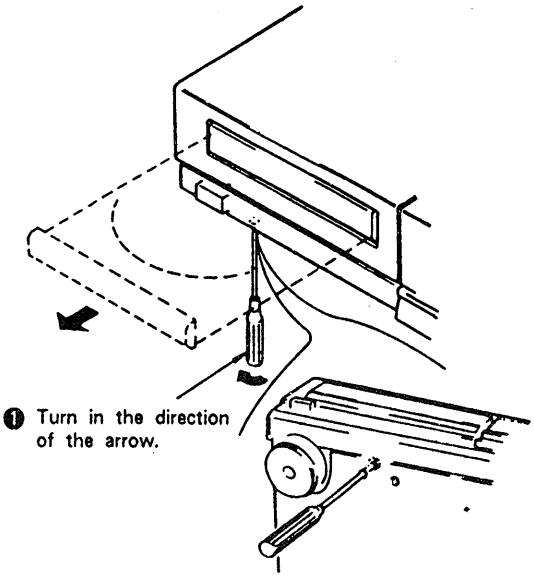
SONY MODEL NO.
COMPACT DISC PLAYER
AC: 220 V ~ 50/60 Hz
S D N SZ51 FI
SERIAL No.
MADE IN JAPAN

CDP-M49

Australian model:

SONY MODEL NO.
COMPACT DISC PLAYER
AC: 240 V ~ 50/60 Hz
SERIAL No.
MADE IN JAPAN

HOW TO OPEN THE DISC TRAY WHEN POWER SWTCH TURNS OFF



Caution : When you work, keep the set horizontal.

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

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

SAFETY-RELATED COMPONENT WARNING!!

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

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

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

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.

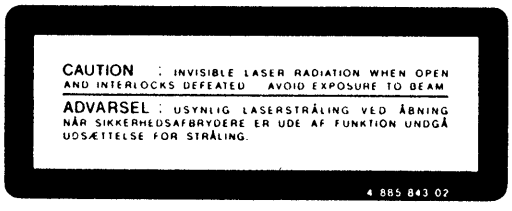
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstraling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*
     * Målt i 1,6 mm afstand fra overfladen af objektivlinsen pa den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.

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:

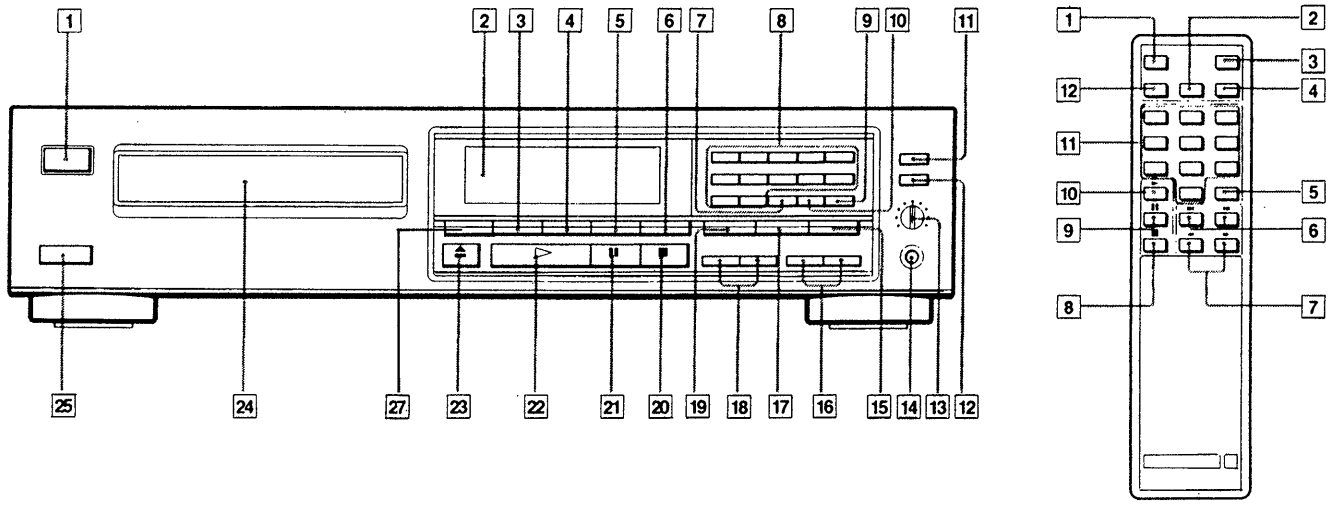
1. Advarsel Mærkning



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

SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS



1 POWER switch
2 Display window
3 TIME button
4 A. SPACE button
5 REPEAT button
6 FADER (FADE IN/FADE OUT) button
7 CHECK (program check) button
8 Numeric buttons
9 ▷12 (over 12) button
10 CLEAR (program clear) button
11 EDIT/TIME FADE button
12 TIME SET button
13 HEADPHONES LEVEL control (for CDP-M69/M49)
14 HEADPHONES jack (for CDP-M69/M49)
15 PROGRAM button
16 ◀◀ ▶▶ (manual search) buttons
17 SHUFFLE button
18 ⏮ ⏭ (AMS*/RMS**) buttons
19 CONTINUE button
20 ■ (stop) button
21 ❚❚ (pause) button
22 ▶ (play) button
23 ⏏ (open/close) button
24 Disc tray
25 Remote sensor
26 ⏮ ⏭ (AMS*/RMS**)/◀◀ ▶▶ (manual search) buttons
27 PEAK SEARCH button (Australian, E Model).

1 REPEAT button
2 SHUFFLE button
3 FADER (FADE IN/FADE OUT) button
4 PGM (program) button
5 ▷10 (over 10) button
6 ⏮ ⏭ AMS buttons
7 ◀◀ ▶▶ (manual search) buttons
8 ■ (stop) button
9 ❚❚ (pause) button
10 ▶ (play) button
11 Numeric buttons
12 CONTINUE button

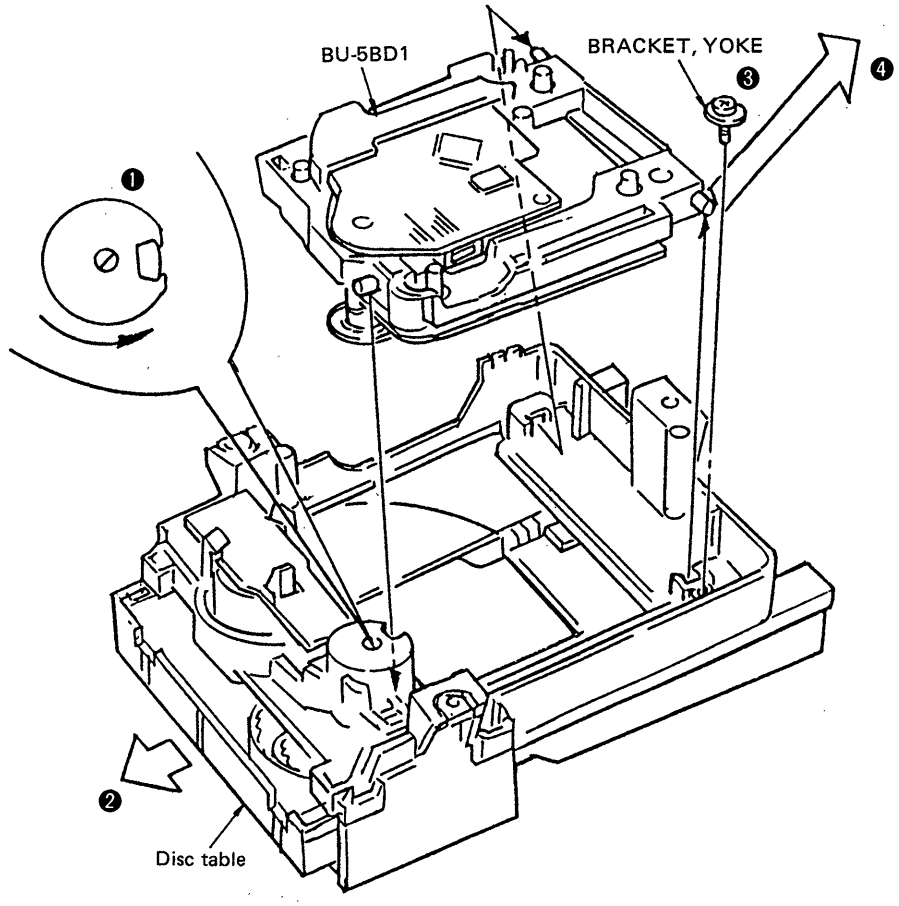
* AMS is an abbreviation of Automatic Music Sensor.
** RMS is the abbreviation of Random Music Sensor.

SECTION 2
DISSASSEMBLY OF BASE UNIT

REMOVE THE MD (BU-5BD)

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

❶. Turn the cam to the direction of arrow (Counter clock wise) by minus screw driver.
❷. Take off the disc table.
❸. Remove the bracket yoke.
❹. Remove the MD (BU-5BD1) to the direction of arrow.



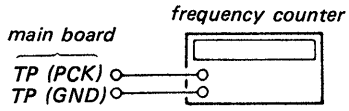
SECTION 3
ELECTRICAL ADJUSTMENTS

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No. 3-702-101-01) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF PLL Free-run Frequency Check

Procedure:

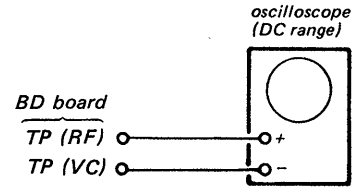


1. Connect the frequency counter to the test points TP (PCK) and TP (GND).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press △ button.
4. Confirm that the reading on the frequency counter is locked at 4.3218MHz.

RF LEVEL Check

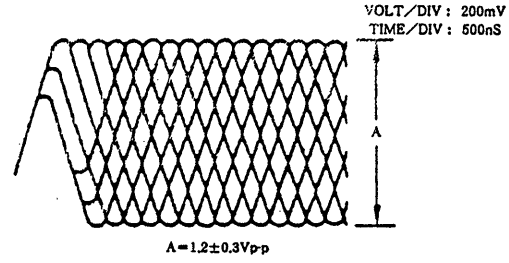
This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. Connect oscilloscope to the test points TP (RF) and TP (VC).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press △ button.
4. Confirm that an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

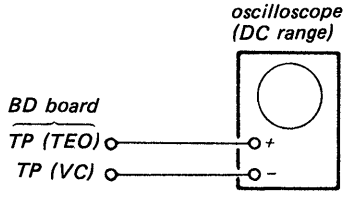
RF LEVEL



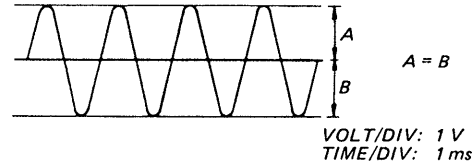
E-F Balance Check

This adjustment should be made after replacing the Optical Pick-up Block.

Procedure:



1. Connect the oscilloscope to the test points TP (TEO) and TP (VC).
2. Ground TP (ADJ), TP (TEST).
3. Turn POWER switch on.
4. Put the disc (YEDS-18) in and press △ button.
5. Confirm that the traverse waveform is symmetrical above and below.
6. After adjustment, remove the TP (ADJ), TP (TEST) in ground.



REFERENCE

Focus/Tracking Gain Adjustment

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

However, this gain has a margine, so even if it is slightly off, there is no problem. Therefore, this adjustment is not recomended generally to be performed.

Focus/tracking gains determine 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, it is more susceptible to mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

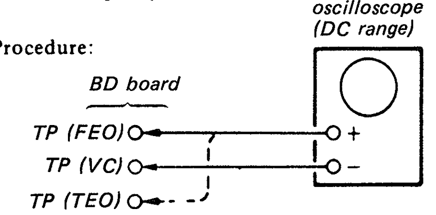
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP → ▷PLAY or automatic selection (⏮, ⏭ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP → ▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)		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.

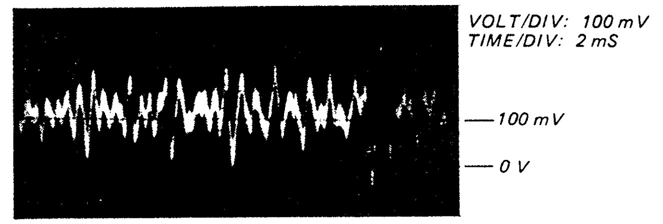
– Simple Adjustment –

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

Procedure:

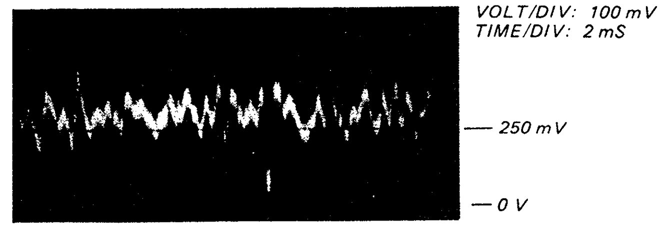


1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV102 so that the waveform is as shown in the picture below. (focus gain adjustment)

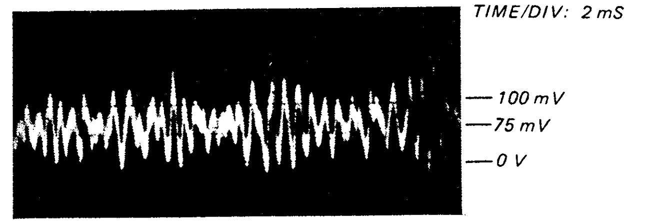


- Incorrent Examples (DC level is quite different from the adjusted waveform) (below)

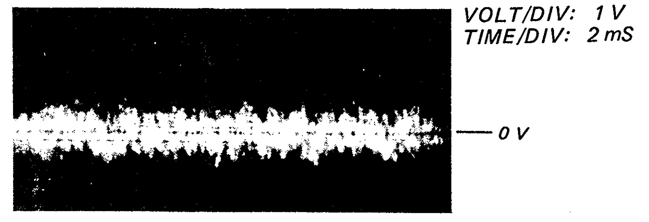
low focus gain



high focus gain

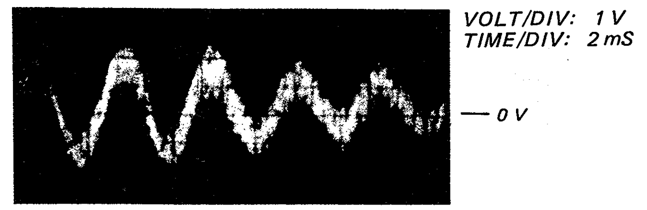


5. Connect the oscilloscpe to BD BOARD TP (TEO).
6. Adjust RV101 so that the waveform is as shown in the picture below. (tracking gain adjustment)

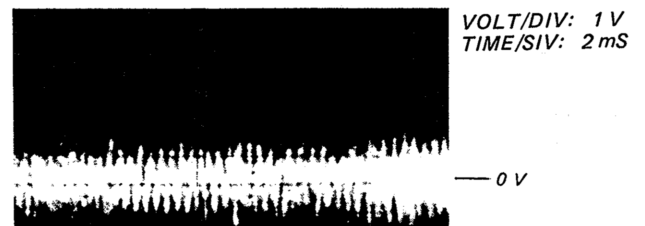


- Incorrect Examples (fundamental wave appears)

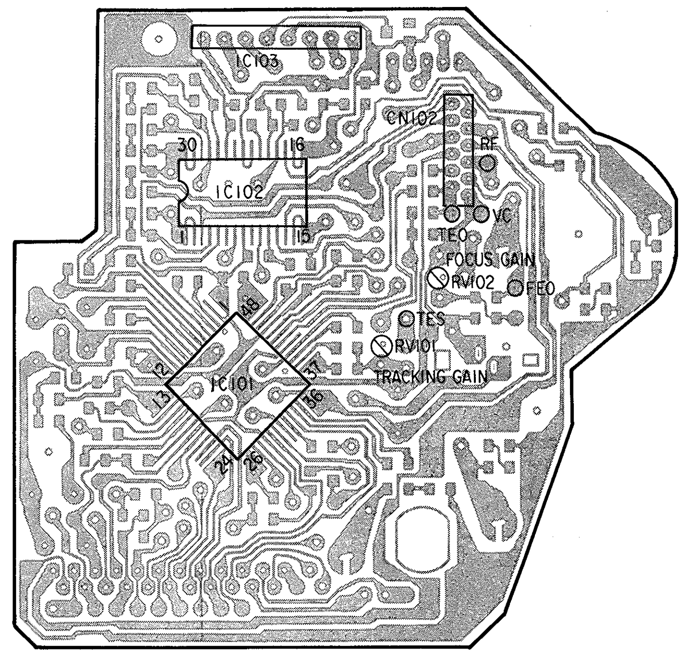
low tracking gain



high tracking gain (higher frequency of the fundamental wave than above)

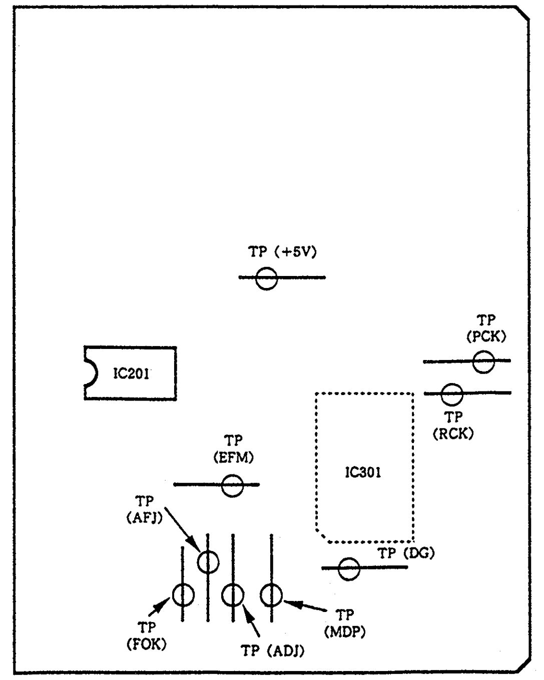


BD BOARD (component side)



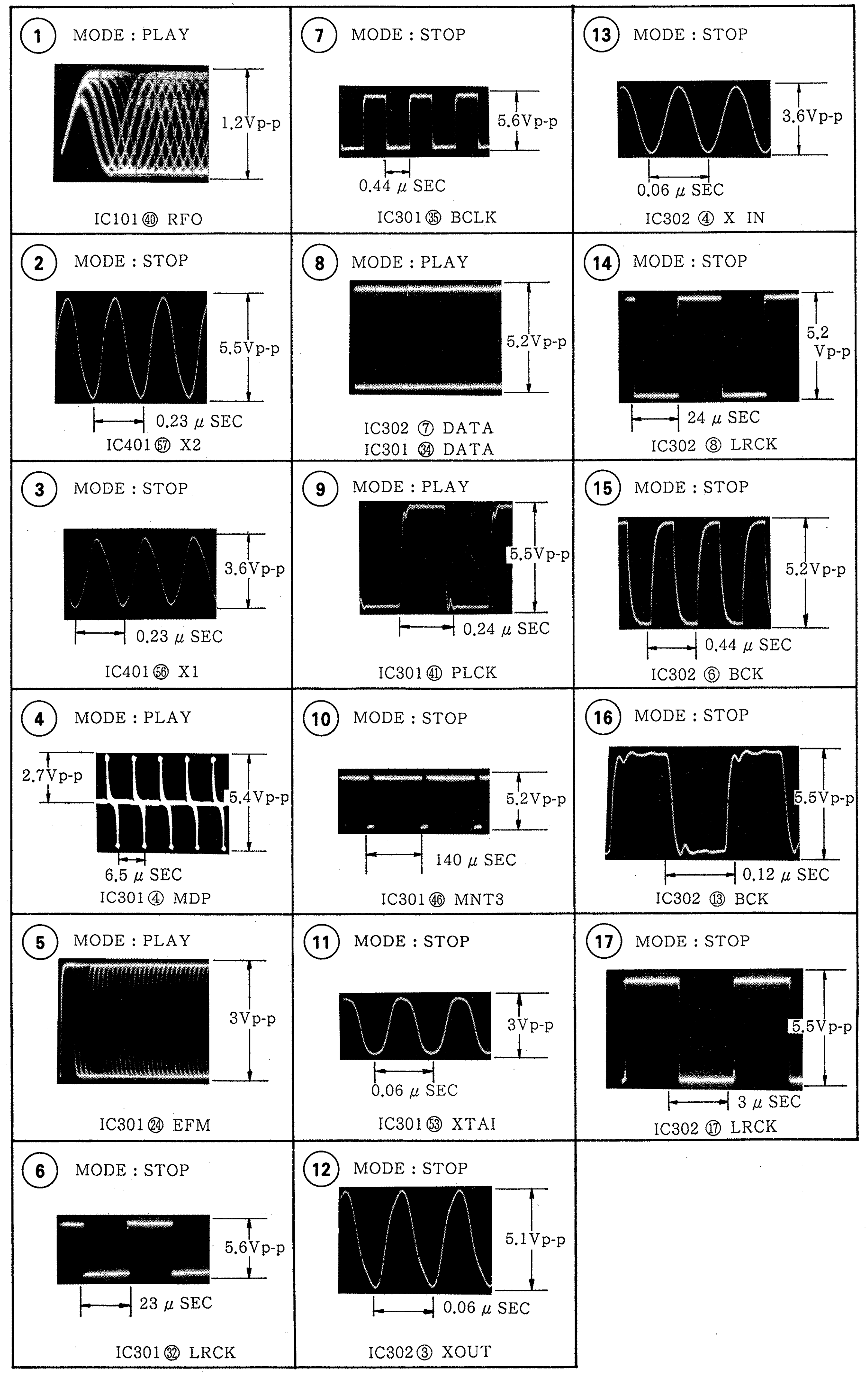
Adjustment Location:

MAIN BOARD (component side)



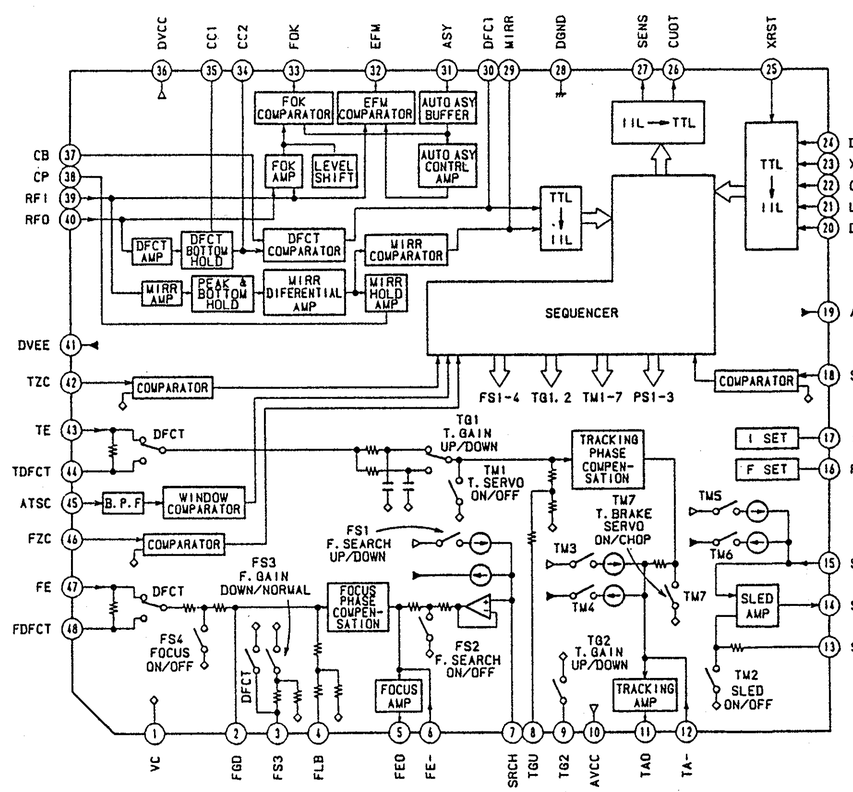
SECTION 4 DIAGRAMS

WAVEFORMS

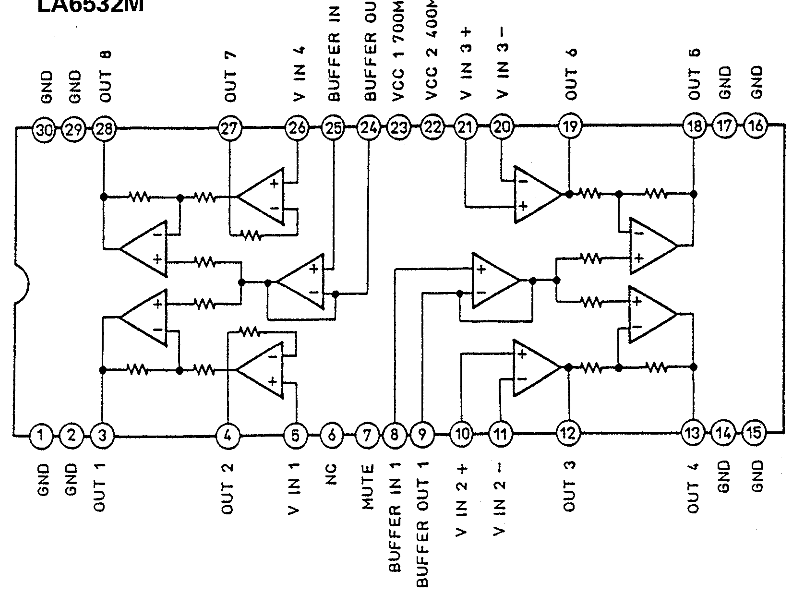


• IC BLOCK DIAGRAM

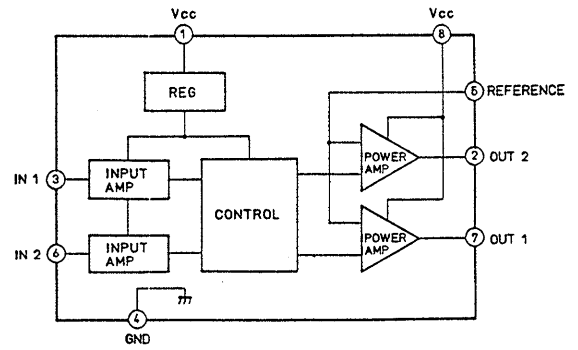
IC101 CXA1372Q



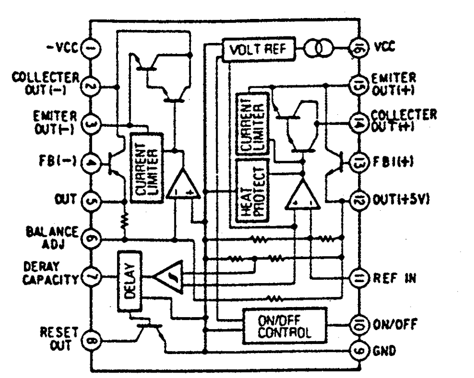
IC102 LA6532M



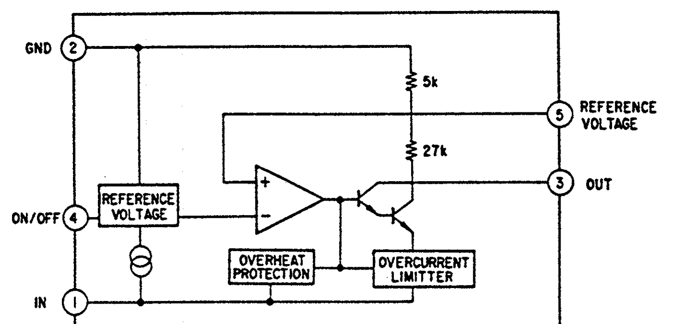
IC103 M54641L



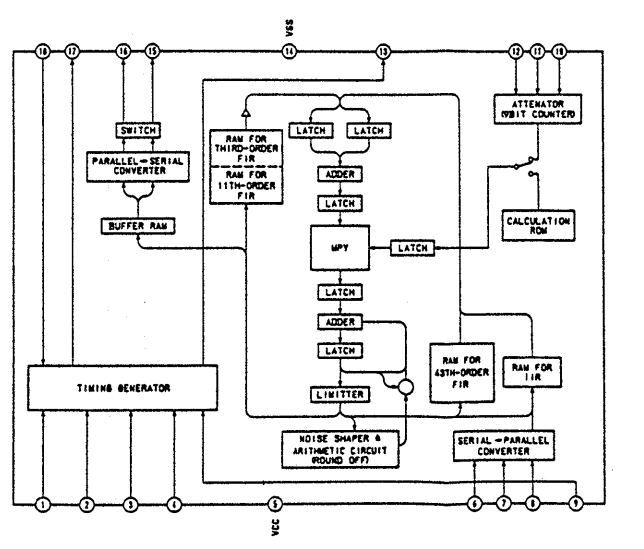
IC201 M5290P-16



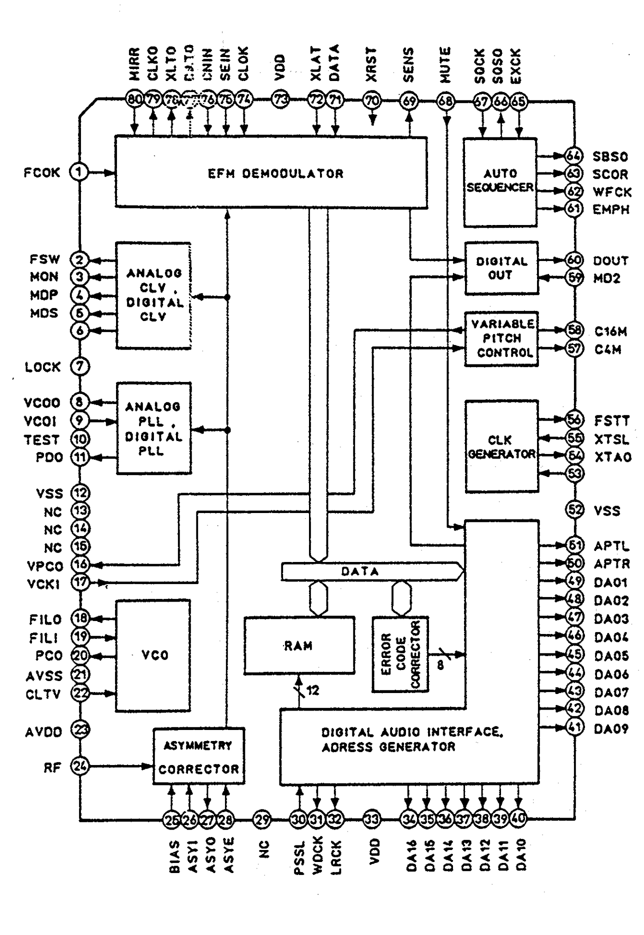
IC202 M5293L



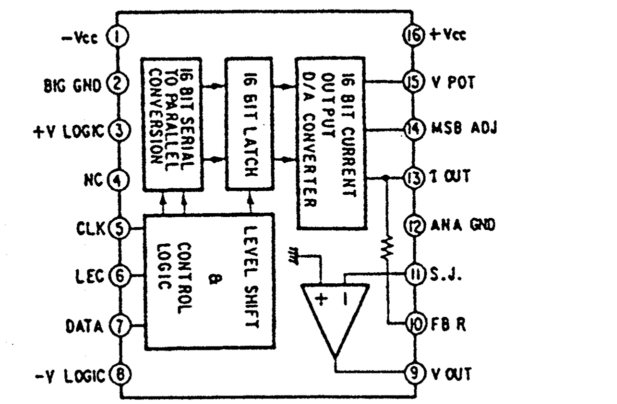
IC302 CXD2551P



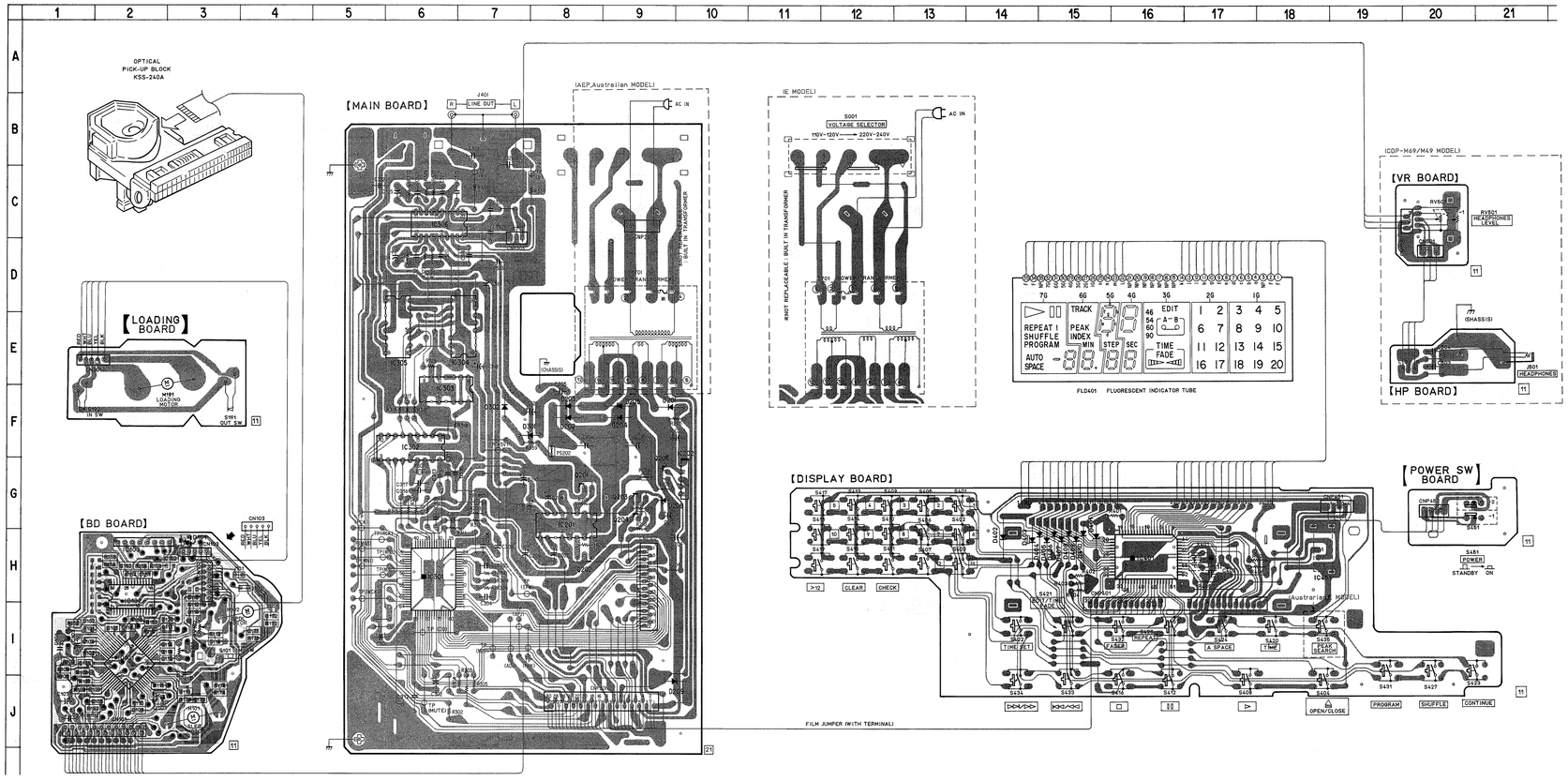
IC301 CXD2500Q



IC304, 305 PCM56P



4-1. PRINTED WIRING BOARDS



● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D101	H-3	IC101	I-2
D201	F-9	IC102	H-2
D202	F-8	IC103	H-2
D203	F-8	IC201	G-8
D204	F-9	IC202	G-10
D205	F-9	IC301	H-6
D206	G-9	IC302	F-6
D209	J-10	IC303	F-6
D301	F-8	IC304	E-7
D302	F-7	IC305	E-6
D401	H-15	IC306	C-6
D402	H-14	IC401	H-16
D403	H-14	IC451	H-18
D404	H-15		
D405	H-15	Q101	J-2
D406	H-15	Q201	G-8
D407	H-15	Q202	H-8
D408	H-15	Q203	G-9
D409	H-15	Q204	G-9
D410	H-15	Q206	G-9

Note:

- ○——○ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▨ : Pattern on the side which is seen.
- ▨ : Pattern of the rear side.

SEE ADDITIONAL INFORMATION

● Semiconductor Lead Layouts

CXA1372Q

M5290P-16 PCM56P

2SB1094-L

CXD2500Q

M5293L

2SC2458-YGR

M54641L

2SD774-34

CXD2551P

SN74HCU04N

HZS9B2L
RD6.2ES-B2
RD6.8ES-L3
RD8.2ES-B2
1SS202-1
11ES2

GP1U52XB

μPD75212AGF-522-3BE

LA6532M

DTC144EK

RD4.3M-B1

M5204P

2SA1175-HFE

Note :

- All capacitors are in μ F unless otherwise noted. pF : μ μ F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▭▭▭ : B+ Line
- ▭▭▭ : B− Line
- ▭ : adjustment for repair.

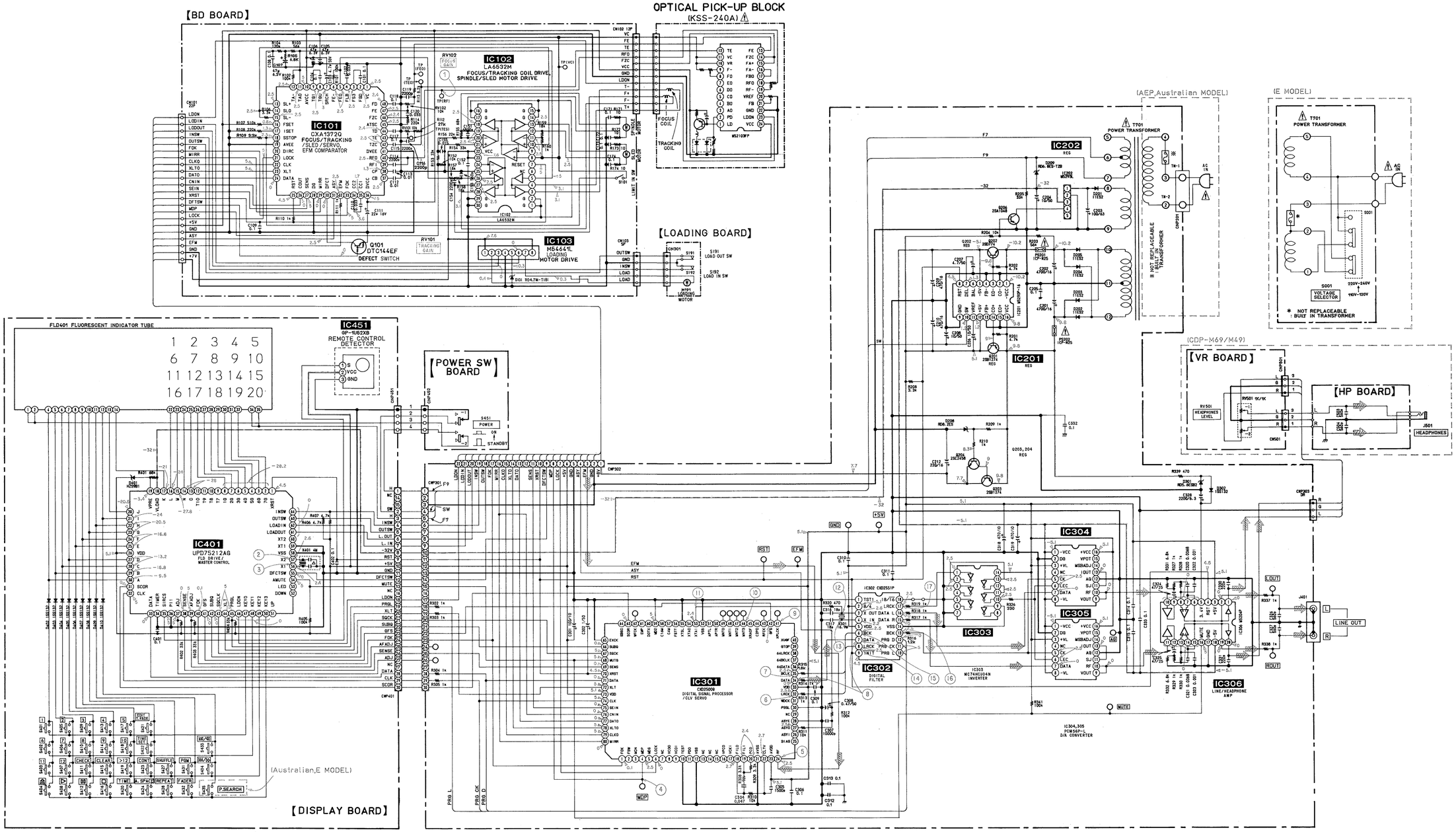
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : stop
- Voltages are taken with a VOM (input impedance 10M Ω). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ▱▱▱ : CD

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

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

A B C D E F G H I J K

4-2. SCHEMATIC DIAGRAM



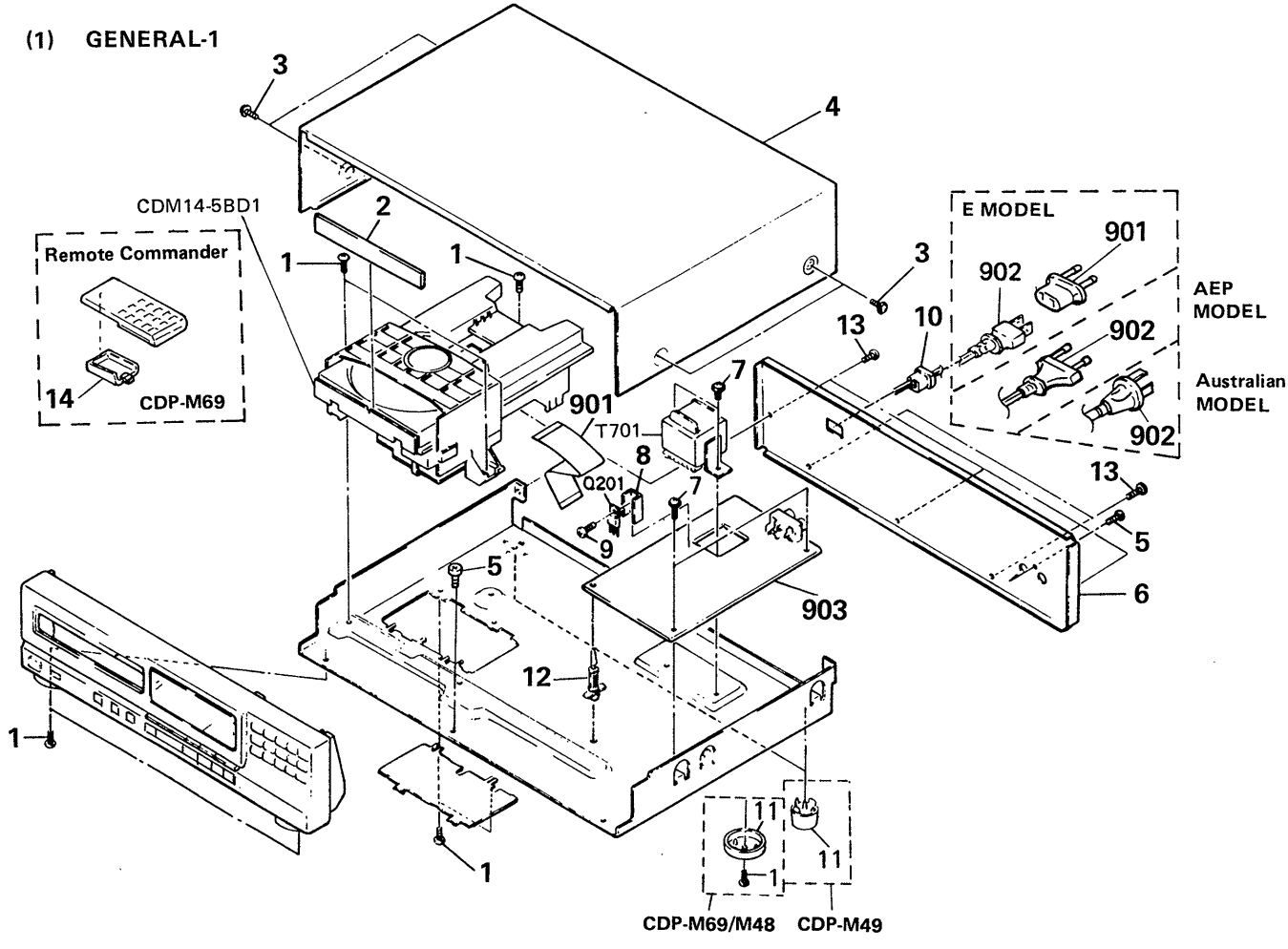
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color

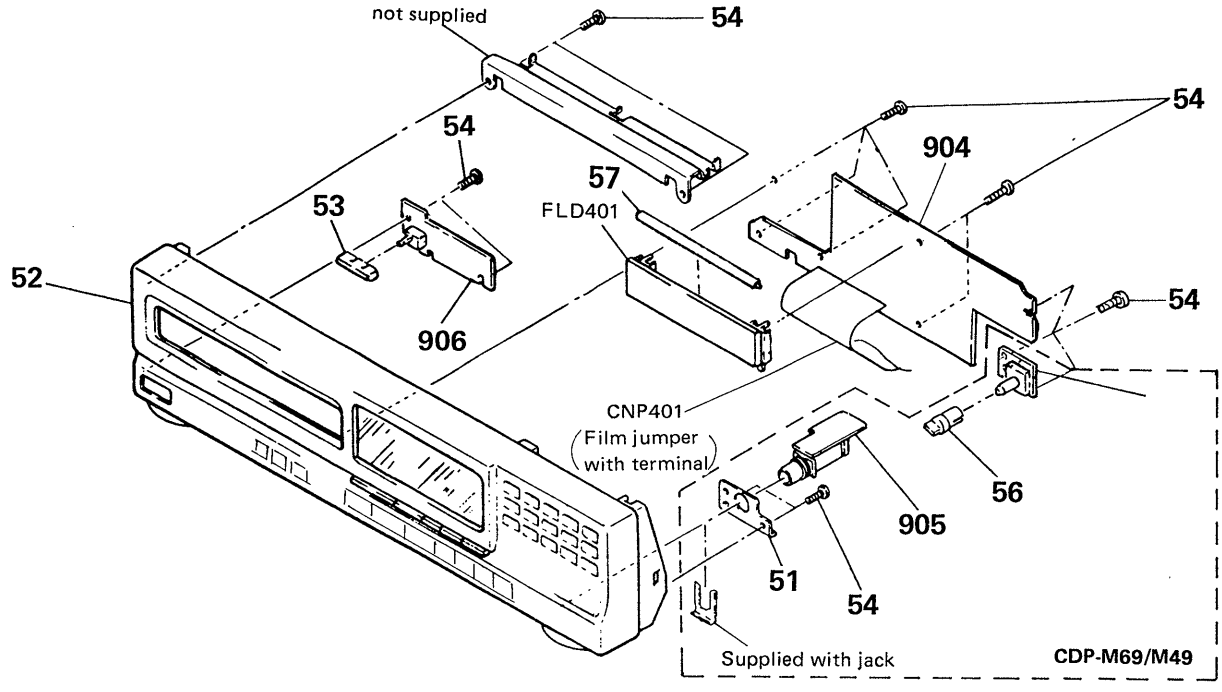
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

(1) GENERAL-1



No.	Part No.	Description	Remarks
1	7-682-548-04	SCREW +BVTT 3X8 (S)	
2	4-929-534-01	PANEL, LOADING	
3	3-704-366-31	SCREW (CASE) (M3X6)	
4	4-919-376-31	CASE	
5	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
6	*4-927-388-11	(M69:AEP)...PANEL, BACK	
	*4-927-388-21	(M69:E).....PANEL, BACK	
	*4-927-388-41	(M49:AEP)...PANEL, BACK	
	*4-927-388-51	(M49:E).....PANEL, BACK	
	*4-927-388-81	(M49:AUS)...PANEL, BACK	
	*4-927-388-71	(M48:AEP)...PANEL, BACK	
7	2-383-566-00	SCREW +PTTWH 3X8	
8	4-902-345-01	HEAT SINK	
9	7-682-547-09	SCREW +B 3X6	
10	*3-703-244-00	(AEP,AUS)...BUSHING (2104), CORD	
	*3-703-571-11	(E).....BUSHING (4516), CORD	
11	4-933-601-01	(M49).....FOOT	
	*4-934-883-01	(M48/M69)...FOOT	
12	*4-924-098-31	HOLDER, PC BOARD	
13	7-682-547-09	SCREW +BVTT 3X6 (S)	
14	4-384-285-01	(M69)...COVER, BATTERY	
901	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
902	⚠.1-575-104-11	(E).....CORD, POWER	
	⚠.1-575-453-11	(AEP)...CORD, POWER	
	⚠.1-575-677-11	(AUS)...CORD, POWER	
903	*A-4617-495-A	(AEP,AUS)...MOUNTED PCB, MAIN	
	*A-4617-496-A	(E).....MOUNTED PCB, MAIN	
910	⚠.1-526-565-12	(AE)...AC PLUG ADAPTOR	

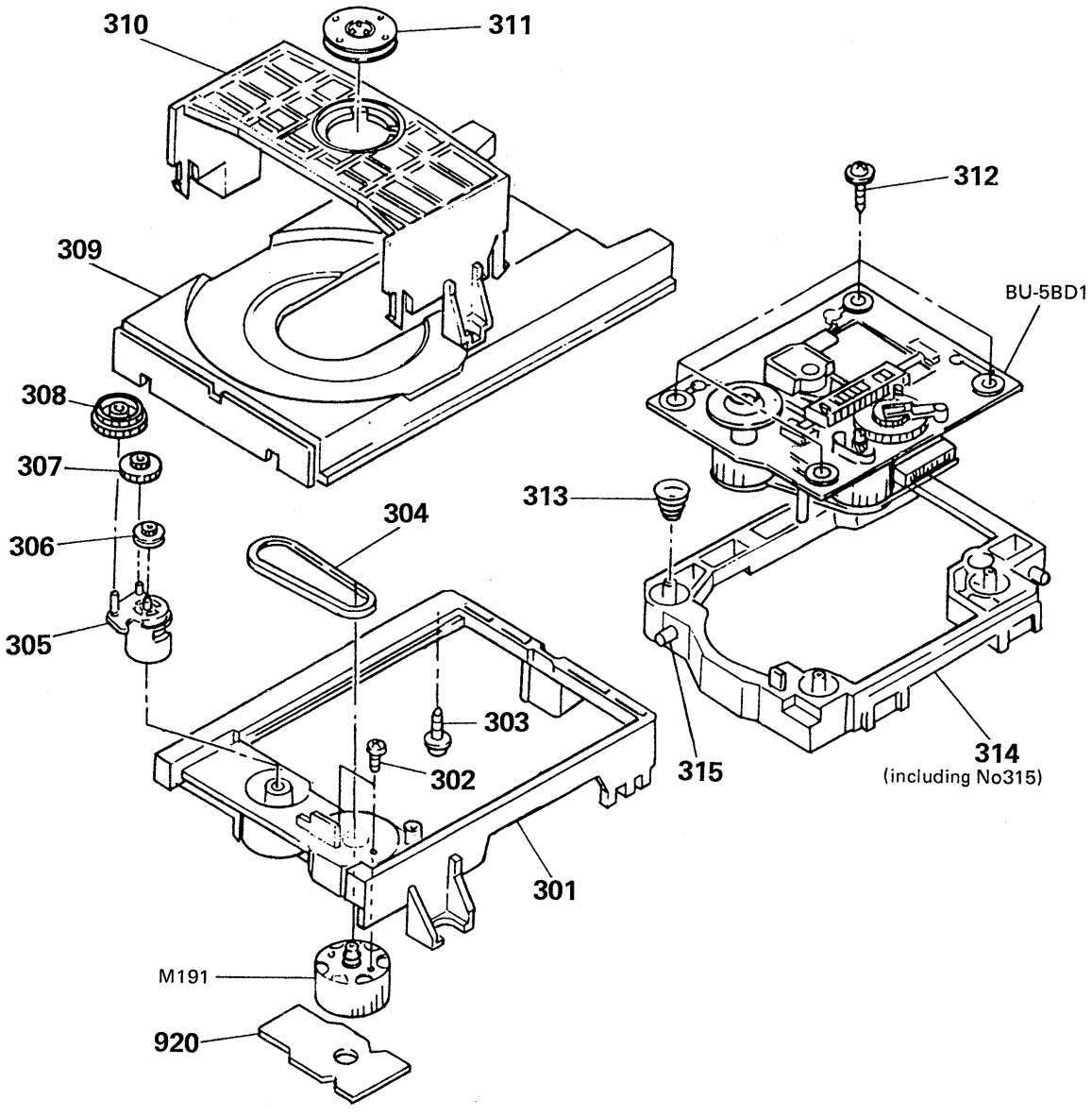
(2) GENERAL-2



No.	Part No.	Description	Remarks
51	4-927-374-01	(M69/M49)...BRACKET (JACK)	
52	X-4917-595-1	(M69:AEP).....PANEL ASSY, FRONT	
	X-4917-602-1	(M69:E).....PANEL ASSY, FRONT	
	X-4917-596-1	(M48:AEP).....PANEL ASSY, FRONT	
	X-4917-597-1	(M49:AEP).....PANEL ASSY, FRONT	
	X-4917-603-1	(M49:E,AUS)...PANEL ASSY, FRONT	
53	4-929-535-01	BUTTON (POWER)	
54	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
56	4-933-116-01	(M69/M49)...KNOB (C, TYPE), VOL	
57	*4-927-353-01	SHEET (FL)	

No.	Part No.	Description	Remarks
904	*1-634-642-11	PC BOARD, DISPLAY	
905	*1-634-643-11	(M49/M69)...PC BOARD, HP	
906	*1-634-641-11	PC BOARD, POWER SW	
908	*1-634-644-11	(M49/M69)...PC BOARD, VR	
CNP401	1-535-825-11	JUMPER, FILM (WITH TERMINAL)	
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT	

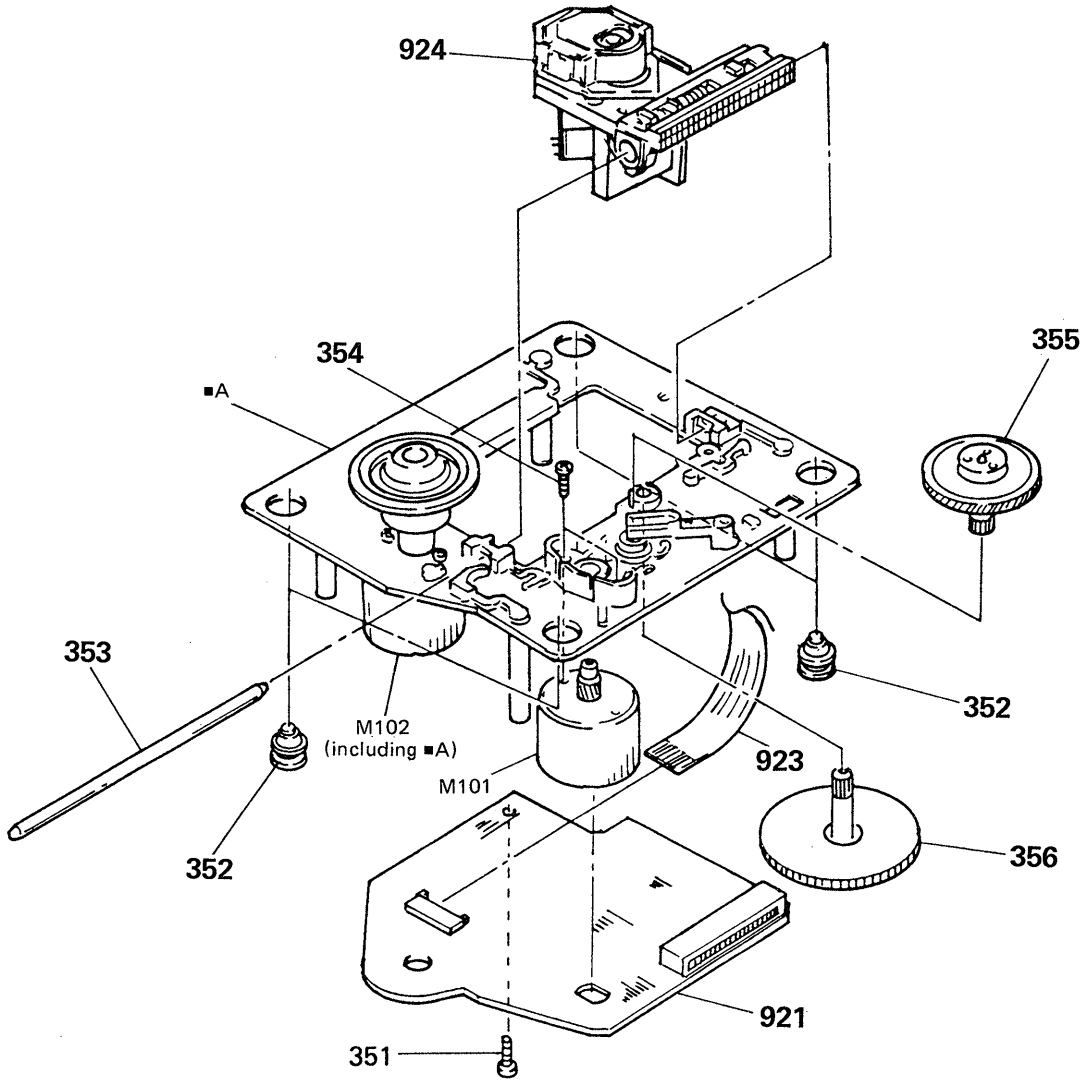
(3) MD SECTION-1 (CDM14-5BD1)



No.	Part No.	Description	Remarks
301	4-933-111-01	CHASSIS (MD)	
302	7-621-775-10	SCREW +B 2.6X4	
303	*4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	

No.	Part No.	Description	Remarks
310	4-933-110-01	HOLDER (MG)	
311	A-4675-347-A	MG ASSY	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)(INCLUDET SHAFT CAM)	
315	4-933-108-01	SHAFT (CAM)	
920	*1-632-202-11	PC BOARD, LOADING	
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)	

(4) MD SECTION-2 (BU-5BD1)



No.	Part No.	Description	Remarks
351	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
352	4-933-126-01	INSULATOR (A)	
353	4-917-565-01	SHAFT, SLED	
354	7-621-255-15	SCREW +P 2X3	
355	4-917-567-01	GEAR (M)	
356	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
921	*A-4617-161-A	MOUNTED PCB, BD	
923	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
924	⚠.8-848-144-11	DEVICE, OPTICAL KSS-240A (RP)	
M101	⚠.X-4917-504-1	ASSY, MOTOR (SLED)	
M102	⚠.X-4917-523-3	ASSY, MOTOR (SPINDLE)	

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

SECTION 6
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.
- 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 circuits in 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 mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description		
901	1-575-002-11	WIRE, FLAT TYPE (22 CORE)		
902	⚠1-575-104-11	(E).....CORD, POWER		
	⚠1-575-453-11	(AEP)...CORD, POWER		
	⚠1-575-677-11	(AUS)...CORD, POWER		
903	*A-4617-495-A	(AEP,AUS)...MOUNTED PCB, MAIN		
	*A-4617-496-A	(E).....MOUNTED PCB, MAIN		
904	*1-634-642-11	PC BOARD, DISPLAY		
905	*1-634-643-11	(M49/M69)...PC BOARD, HP		
906	*1-634-641-11	PC BOARD, POWER SW		
908	*1-634-644-11	(M49/M69)...PC BOARD, VR		
910	⚠1-526-565-12	(AE)...AC PLUG ADAPTOR		
920	*1-632-202-11	PC BOARD, LOADING		
921	*A-4617-161-A	MOUNTED PCB, BD		
923	1-575-001-11	WIRE, FLAT TYPE (12 CORE)		
924	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A (RP)		
C101	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C102	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C103	1-126-094-11	ELECT 4.7MF	20%	16V
C104	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C105	1-126-154-11	ELECT 47MF	20%	6.3V
C106	1-126-154-11	ELECT 47MF	20%	6.3V
C107	1-126-154-11	ELECT 47MF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C109	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C110	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C111	1-131-367-00	TANTALUM 22MF	20%	16V
C112	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C113	1-164-232-11	CERAMIC CHIP 0.01MF	10%	50V
C114	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C115	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C116	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C117	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C118	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C119	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C120	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C151	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C152	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C153	1-163-006-11	CERAMIC CHIP 560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C155	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C171	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C172	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C173	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C174	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C201	1-126-842-11	ELECT 4700MF	20%	16V

Ref.No.	Part No.	Description			
C202	1-126-842-11	ELECT	4700MF	20%	16V
C203	1-126-880-11	ELECT	100MF	20%	63V
C204	1-126-059-11	ELECT	10MF	20%	50V
C205	1-162-851-11	CERAMIC	0.1MF	20%	16V
C206	1-126-059-11	ELECT	10MF	20%	50V
C207	1-124-045-00	ELECT	4.7MF	20%	50V
C208	1-126-059-11	ELECT	10MF	20%	50V
C209	1-126-012-11	ELECT	470MF	20%	16V
C210	1-126-012-11	ELECT	470MF	20%	16V
C212	1-126-024-11	ELECT	220MF	20%	16V
C301	1-124-994-11	ELECT	100MF	20%	10V
C302	1-126-301-11	ELECT	1MF	20%	50V
C304	1-136-161-00	FILM	0.047MF	5%	50V
C305	1-161-374-11	CERAMIC	0.0015MF	30%	16V
C306	1-164-159-11	CERAMIC	0.1MF		50V
C307	1-162-306-11	CERAMIC	0.01MF	20%	16V
C308	1-126-300-11	ELECT	0.47MF	20%	50V
C309	1-164-159-11	CERAMIC	0.1MF		50V
C310	1-164-159-11	CERAMIC	0.1MF		50V
C311	1-164-159-11	CERAMIC	0.1MF		50V
C312	1-164-159-11	CERAMIC	0.1MF		50V
C313	1-164-159-11	CERAMIC	0.1MF		50V
C314	1-164-159-11	CERAMIC	0.1MF		50V
C315	1-164-159-11	CERAMIC	0.1MF		50V
C316	1-162-205-31	CERAMIC	18PF	5%	50V
C317	1-162-205-31	CERAMIC	18PF	5%	50V
C318	1-124-997-11	ELECT	470MF	20%	10V
C319	1-124-997-11	ELECT	470MF	20%	10V
C320	1-130-481-00	MYLAR	0.0068MF	5%	50V
C321	1-130-481-00	MYLAR	0.0068MF	5%	50V
C322	1-130-471-00	MYLAR	0.001MF	5%	50V
C323	1-130-471-00	MYLAR	0.001MF	5%	50V
C324	1-123-332-00	ELECT	47MF	20%	25V
C325	1-123-332-00	ELECT	47MF	20%	25V
C326	1-162-291-31	CERAMIC	560PF	10%	50V
C327	1-162-291-31	CERAMIC	560PF	10%	50V
C328	1-124-893-11	ELECT	2200MF	20%	6.3V
C330	1-162-286-31	CERAMIC	220PF	10%	50V
C331	1-162-286-31	CERAMIC	220PF	10%	50V
C332	1-164-159-11	CERAMIC	0.1MF		50V
C333	1-164-159-11	CERAMIC	0.1MF		50V
C401	1-164-159-11	CERAMIC	0.1MF		50V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C503	1-162-291-31	(M49/M69)...CERAMIC	560PF	10%	50V
C504	1-162-291-31	(M49/M69)...CERAMIC	560PF	10%	50V

Ref.No.	Part No.	Description
CN101	1-568-796-11	SOCKET, CONNECTOR 22P
CN102	1-568-795-11	SOCKET, CONNECTOR 12P
CN103	*1-564-721-11	PIN, CONNECTOR (SMALL TYPE) 5P
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP201	*1-564-321-00	PIN, CONNECTOR 2P
CNP301	*1-568-933-11	SOCKET, CONNECTOR 30P
CNP302	*1-568-822-11	SOCKET, CONNECTOR 22P
CNP303	*1-564-337-61	PIN, CONNECTOR 3P
CNP401	1-535-825-11	JUMPER, FILM (WITH TERMINAL)
D101	8-719-105-72	DIODE RD4.7M-B1
D201	8-719-200-82	DIODE 11ES2
D202	8-719-200-82	DIODE 11ES2
D203	8-719-200-82	DIODE 11ES2
D204	8-719-200-82	DIODE 11ES2
D205	8-719-200-82	DIODE 11ES2
D208	8-719-110-08	DIODE RD8.2ES-B2
D209	8-719-120-90	DIODE RD6.8ES-L3
D301	8-719-123-54	DIODE RD6.2ES-B2
D302	8-719-107-94	DIODE 1SS202-1
D401	8-719-933-57	DIODE HZS9B2L
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT
IC101	8-752-037-33	IC CXA1372Q
IC102	8-759-821-94	IC LA6532M
IC103	8-759-633-65	IC M54641L
IC201	8-759-630-21	IC M5290P-16
IC202	8-759-633-42	IC M5293L
IC301	8-752-333-31	IC CXD2500Q
IC302	8-752-334-06	IC CXD2551P
IC303	8-759-917-18	IC SN74HCU04N
IC304	8-759-998-22	IC PCM56P
IC305	8-759-998-22	IC PCM56P
IC306	8-759-631-39	IC M5204P
IC401	8-759-148-63	IC UPD75212AGF-522-3BE
IC451	8-749-920-83	IC GP1U52XB
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W
J401	1-566-921-11	JACK, PIN 2P (LINE OUT)
J501	1-568-519-21	(M69/M49)...JACK, LARGE TYPE (HEADPHONES)
M101	⚠.X-4917-504-1	ASSY, MOTOR (SLED)
M102	⚠.X-4917-523-3	ASSY, MOTOR (SPINDLE)
M191	A-4604-363-A	MOTOR (L) ASSY (LOADING)
PS201	⚠.1-532-685-00	LINK, IC
PS202	⚠.1-532-637-00	LINK, IC
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q201	8-729-111-67	TRANSISTOR 2SB1094-L
Q202	8-729-140-96	TRANSISTOR 2SD774-34

Ref.No.	Part No.	Description
Q203	8-729-111-67	TRANSISTOR 2SB1094-L
Q204	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE
R101	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R102	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R103	1-216-091-00	METAL GLAZE 56K 5% 1/10W
R104	1-216-099-00	METAL GLAZE 120K 5% 1/10W
R105	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W
R106	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R107	1-216-114-00	METAL GLAZE 510K 5% 1/10W
R108	1-216-105-00	METAL GLAZE 220K 5% 1/10W
R109	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R110	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R111	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R112	1-216-083-00	METAL GLAZE 27K 5% 1/10W
R113	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R114	1-216-105-00	METAL GLAZE 220K 5% 1/10W
R152	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R153	1-216-085-00	METAL GLAZE 33K 5% 1/10W
R154	1-216-085-00	METAL GLAZE 33K 5% 1/10W
R155	1-216-093-00	METAL GLAZE 68K 5% 1/10W
R156	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R157	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R158	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R159	1-216-079-00	METAL GLAZE 18K 5% 1/10W
R160	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R171	1-216-001-00	METAL GLAZE 10 5% 1/10W
R172	1-216-001-00	METAL GLAZE 10 5% 1/10W
R173	1-216-001-00	METAL GLAZE 10 5% 1/10W
R174	1-216-001-00	METAL GLAZE 10 5% 1/10W
R201	1-249-425-11	CARBON 4.7K 5% 1/4W
R202	1-249-425-11	CARBON 4.7K 5% 1/4W
R203	1-249-438-11	CARBON 56K 5% 1/4W
R204	1-249-429-11	CARBON 10K 5% 1/4W
R205	1-249-435-11	CARBON 33K 5% 1/4W
R208	1-249-423-11	CARBON 3.3K 5% 1/4W
R209	1-249-417-11	CARBON 1K 5% 1/4W
R210	1-249-417-11	CARBON 1K 5% 1/4W
R302	1-249-417-11	CARBON 1K 5% 1/4W
R303	1-249-417-11	CARBON 1K 5% 1/4W
R304	1-249-417-11	CARBON 1K 5% 1/4W
R305	1-249-417-11	CARBON 1K 5% 1/4W
R308	1-249-423-11	CARBON 3.3K 5% 1/4W
R309	1-249-423-11	CARBON 3.3K 5% 1/4W
R310	1-249-429-11	CARBON 10K 5% 1/4W
R311	1-249-429-11	CARBON 10K 5% 1/4W
R312	1-249-441-11	CARBON 100K 5% 1/4W
R313	1-249-417-11	CARBON 1K 5% 1/4W
R314	1-249-417-11	CARBON 1K 5% 1/4W
R315	1-249-420-11	CARBON 1.8K 5% 1/4W
R316	1-249-418-11	CARBON 1.2K 5% 1/4W
R317	1-249-417-11	CARBON 1K 5% 1/4W
R318	1-249-417-11	CARBON 1K 5% 1/4W
R319	1-249-417-11	CARBON 1K 5% 1/4W
R320	1-249-413-11	CARBON 470 5% 1/4W
R326	1-249-411-11	CARBON 330 5% 1/4W
R327	1-249-417-11	CARBON 1K 5% 1/4W

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

Ref.No.	Part No.	Description			
R328	1-249-417-11	CARBON	1K	5%	1/4W
R329	1-249-417-11	CARBON	1K	5%	1/4W
R330	1-249-417-11	CARBON	1K	5%	1/4W
R331	1-249-427-11	CARBON	6.8K	5%	1/4W
R332	1-249-427-11	CARBON	6.8K	5%	1/4W
R337	1-249-417-11	CARBON	1K	5%	1/4W
R338	1-249-417-11	CARBON	1K	5%	1/4W
R339	1-249-413-11	CARBON	470	5%	1/4W
R341	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-249-439-11	CARBON	68K	5%	1/4W
R402	1-249-435-11	CARBON	33K	5%	1/4W
R403	1-249-435-11	CARBON	33K	5%	1/4W
R404	1-249-435-11	CARBON	33K	5%	1/4W
R405	1-249-441-11	CARBON	100K	5%	1/4W
R406	1-249-425-11	CARBON	4.7K	5%	1/4W
R407	1-249-425-11	CARBON	4.7K	5%	1/4W
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)			
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)			
RV501	1-238-884-11	(M69/M49)...RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)			
S001 ⚠	1-571-722-11	(E)...SWITCH, VOLTAGE SELECTION			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)			
S191	1-572-086-11	SWITCH, LEAF (LOAD OUT)			
S192	1-572-086-11	SWITCH, LEAF (LOAD IN)			
S401	1-554-596-21	SWITCH, KEY BOARD (1)			
S402	1-554-596-21	SWITCH, KEY BOARD (6)			
S403	1-554-596-21	SWITCH, KEY BOARD (11)			
S404	1-554-596-21	SWITCH, KEY BOARD (OPEN/CLOSE ⏏)			
S405	1-554-596-21	SWITCH, KEY BOARD (2)			
S406	1-554-596-21	SWITCH, KEY BOARD (7)			
S407	1-554-596-21	SWITCH, KEY BOARD (12)			
S408	1-554-596-21	SWITCH, KEY BOARD (▶)			
S409	1-554-596-21	SWITCH, KEY BOARD (3)			
S410	1-554-596-21	SWITCH, KEY BOARD (8)			
S411	1-554-596-21	SWITCH, KEY BOARD (CHECK)			
S412	1-554-303-21	SWITCH, KEY BOARD (⏸)			
S413	1-554-596-21	SWITCH, KEY BOARD (4)			
S414	1-554-596-21	SWITCH, KEY BOARD (9)			
S415	1-554-596-21	SWITCH, KEY BOARD (CLEAR)			
S416	1-554-596-21	SWITCH, KEY BOARD (■)			
S417	1-554-596-21	SWITCH, KEY BOARD (5)			
S418	1-554-303-21	SWITCH, KEY BOARD (10)			
S419	1-554-596-21	SWITCH, KEY BOARD (>12)			
S420	1-554-596-21	SWITCH, KEY BOARD (TIME)			
S421	1-554-596-21	SWITCH, KEY BOARD (EDIT/TIME FADE)			
S422	1-554-596-21	SWITCH, KEY BOARD (TIME SET)			
S423	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)			

Ref.No.	Part No.	Description
S424	1-554-596-21	SWITCH, KEY BOARD (A SPACE)
S427	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S428	1-554-596-21	SWITCH, KEY BOARD (REPEAT)
S431	1-554-596-21	SWITCH, KEY BOARD (PROGRAM)
S432	1-554-596-21	SWITCH, KEY BOARD (FADER)
S433	1-554-303-21	SWITCH, KEY BOARD (⏮/◀◀)
S434	1-554-596-21	SWITCH, KEY BOARD (▶▶⏭/▶▶)
S435	1-554-596-21	(E,AUS)...SWITCH, KEY BOARD (PEAK SEARCH)
S451	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
T701 ⚠	1-449-922-11	(AEP,AUS)...TRANSFORMER, POWER
T701 ⚠	1-449-923-11	(E).....TRANSFORMER, POWER
X301	1-567-926-11	VIBRATOR, CRYSTAL (16.9MHz)
X401	1-567-819-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

	1-465-281-11	(M69)...REMOTE COMMANDER
	1-559-533-11	CORD, CONNECTION
	3-701-630-00	BAG, POLYETHYLENE
	3-750-792-11	(M49:E,AUS/M69:E)...MANUAL, INSTRUCTION
	3-750-792-41	(M49:AEP/M69).....MANUAL, INSTRUCTION
	3-750-792-51	(M49:AEP/M69).....MANUAL, INSTRUCTION
*	3-795-629-11	(AEP)...INSTRUCTION
*	4-922-998-01	CUSHION
*	4-927-392-41	(M69)...INDIVIDUAL CARTON
*	4-927-392-51	(M49)...INDIVIDUAL CARTON
*	4-927-392-61	(M48)...INDIVIDUAL CARTON

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

9-955-776-11

Sony Corporation
Audio Group

English
90C0670-1
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Published by Customer Relations and Service Group

CDP-M48/M49/M69

SONY®

SERVICE MANUAL

AEP Model
CDP-M48
AEP Model
Australian Model
E Model
CDP-M49
AEP Model
E Model
CDP-M69

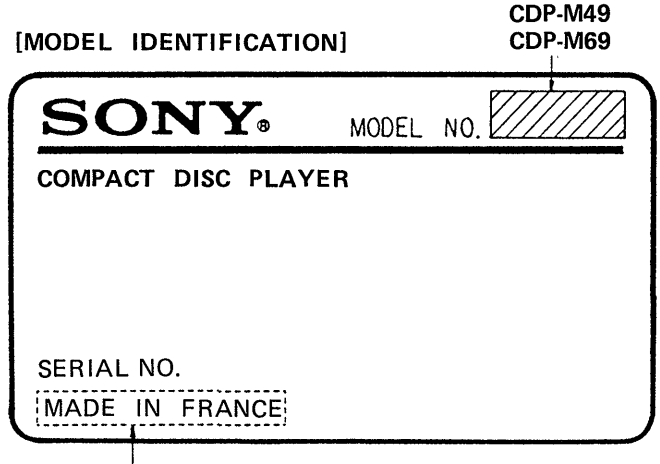
SUPPLEMENT-1

File this supplement with the service manual.

This SUPPLEMENT-1 is for CDP-M49/M69 made in France.

Refer to the CDP-M48/M49/M69 service manual for related information not contained in this SUPPLEMENT-1.

[MODEL IDENTIFICATION]

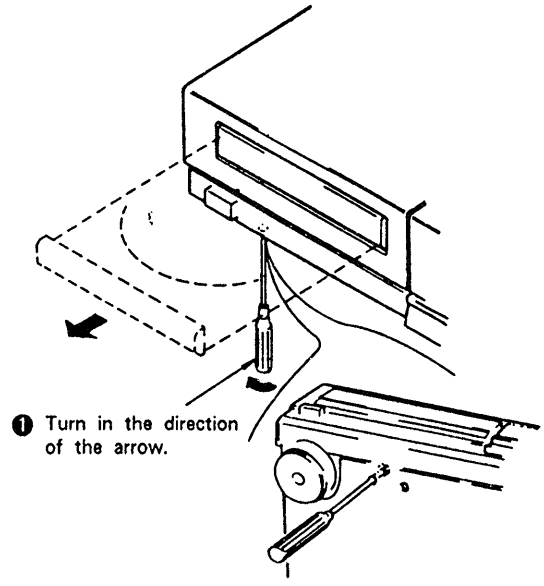


LABEL MODEL NUMBER

Identify the set with the indication of "MADE IN FRANCE" here.

TABLE OF CONTENTS

HOW TO OPEN THE DISC TRAY WHEN POWER SWTCH TURNS OFF

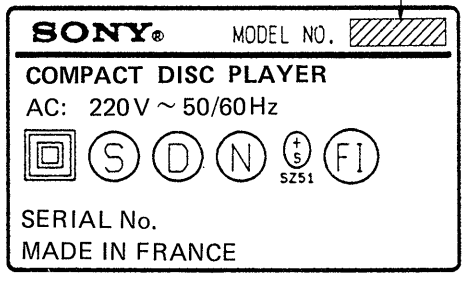


Caution : When you work, keep the set horizontal.

MODEL IDENTIFICATIONS
—Specition Label—

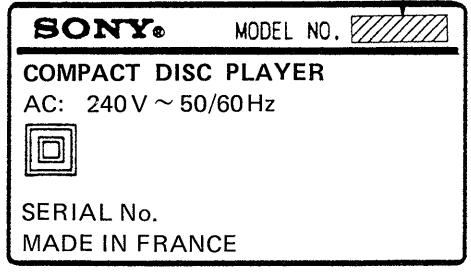
CDP-M49
CDP-M69

AEP model:



CDP-M49
CDP-M69

UK model:



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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

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

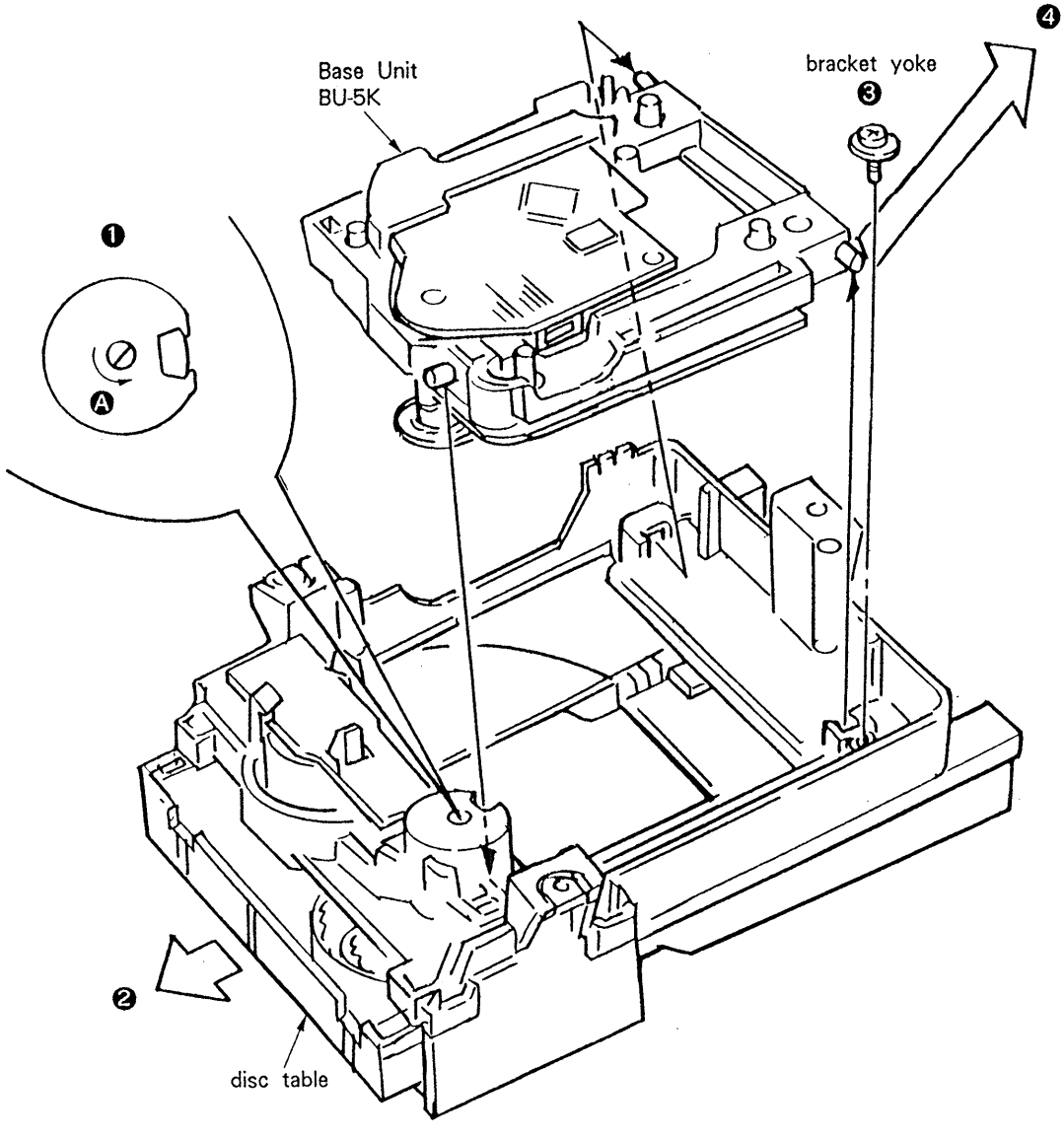
SAFETY-RELATED COMPONENT WARNING!!

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

SECTION 1
DISSASSEMBLY OF BASE UNIT

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

1. Remove CD mechanism from the set and turn over.
2. Turn the cam in the Arrow Ⓐ direction by the ⊖ driver.
3. Take out disc table.
4. Remove bracket yoke.
5. Remove BU-5K in the Arrow ❹ direction.

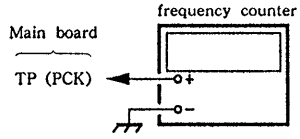


SECTION 2
ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 (Part No : 3-702-101-1) disc unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

RF PLL Frequency Adjustment/Lock Frequency Check

Procedure :

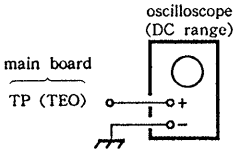


1. Connect test point TP (ASY) to ground with lead wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test point TP (PCK).
4. Adjust RV201 so that the reading on frequency counter is 4.3218 MHz±30 KHz.
   .....(RF PLL frequency adjustment)
5. Remove lead wire connecting TP (ASY) to ground.
6. Set disc (YEDS-18) and press ▷ PLAY button.
7. Confirm that the reading on frequency counter is 4.3218 MHz.
   .....(Lock frequency check)
8. Turn POWER switch off.

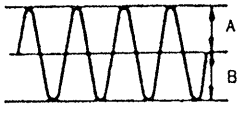
E-F Balance Adjustment

This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure :



1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Set disc (YEDS-18) and turn POWER switch on.
4. Adjust RV101 so that the traverse waveform is symmetrical above and below.
5. Turn POWER switch off.
6. After adjustment, remove the lead wire connected in step 1.

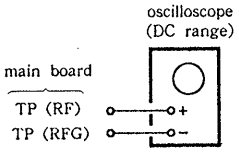


A=B
(within 5%)
VOLT/DIV : 1V
TIME/DIV : 1ms

Focus Bias Adjustment

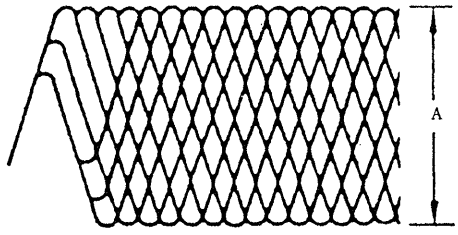
This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure :



1. Connect oscilloscope to test point TP (RF) and test point TP (RFG).
2. Set disc (YEDS-18) and turn POWER switch on.
3. Adjust RV102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "◇"can be clearly distinguished at the center of the waveform.
4. Turn POWER switch off.

RF signal waveform



A=1.3±0.3 (Vp-p)

REFERENCE

Focus/Tracking Gain Adjustments

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 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.

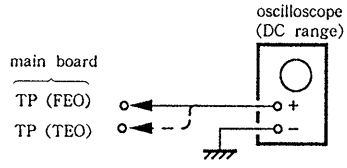
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for ■STOP→ ▷PLAY or automatic selection. (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for ■STOP →▷PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	–	low
• 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.

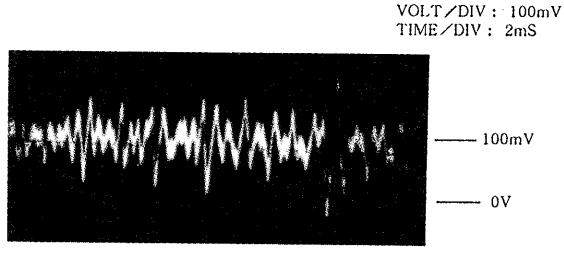
–Primary Adjustment–

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

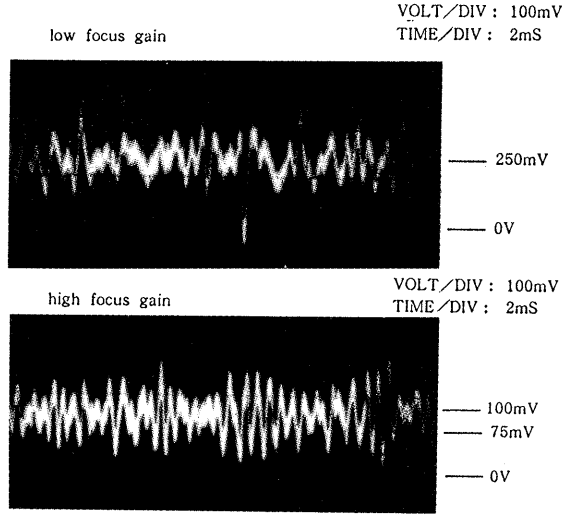
Procedure :



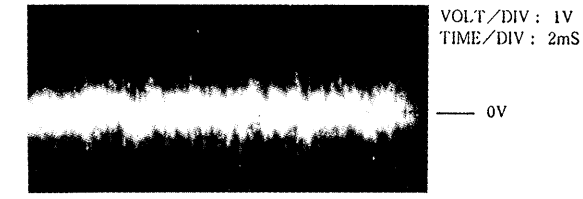
1. Keep the set horizontal.
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Set disc (YEDS-18) and turn POWER switch on.
3. Connect oscilloscope to main amp board TP (FEO).
4. Adjust RV103 so that the waveform is as shown in the figure below. (focus gain adjustment)



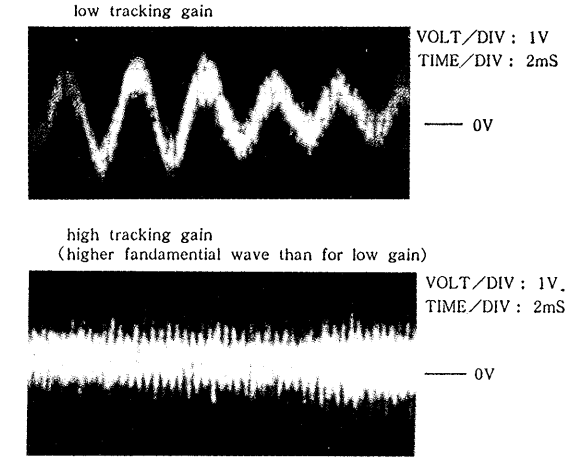
• Incorrent Examples (DC level changes more than on adjusted waveform)



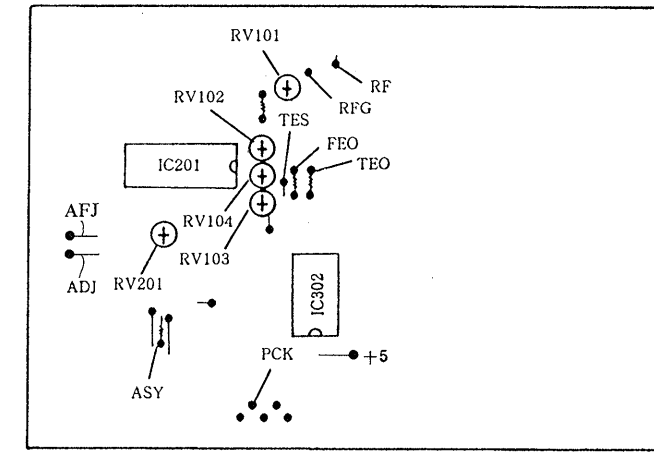
5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)
7. Turn POWER switch off.



• Incorrect Examples (fundamential wave appears)



Adjustment Location : main board –component side–

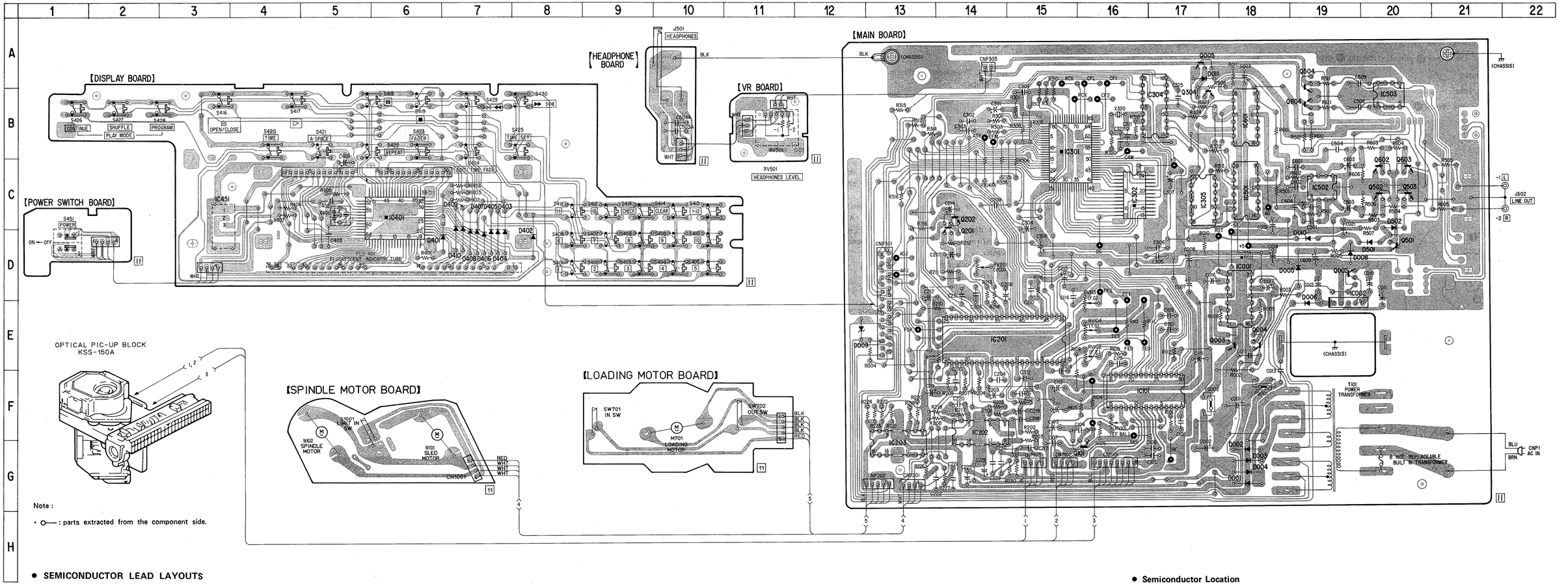


SECTION 3
DIAGRAMS

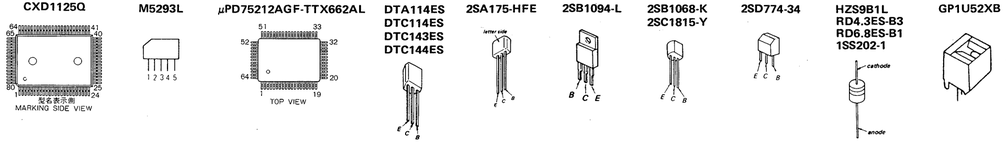
SEE ADDITIONAL INFORMATION

SEE ADDITIONAL INFORMATION

4-1. PRINTED WIRING BOARDS



• SEMICONDUCTOR LEAD LAYOUTS



• Semiconductor Location

Ref.No.	Location	Ref.No.	Location	Ref.No.	Location	Ref.No.	Location	Ref.No.	Location
D001	G-18	D403	C-7	IC001	D-18	IC451	C-3	Q202	C-14
D002	G-18	D404	D-7	IC002	E-19	IC501	C-18	Q304	B-17
D003	G-18	D405	C-7	IC101	F-16	IC502	C-19	Q502	C-20
D004	G-18	D406	D-7	IC201	E-14	IC503	B-20	Q503	C-20
D005	D-19	D407	C-7	IC202	F-14			Q504	A-19
D006	E-19	D408	D-19	IC203	G-13	Q002	D-19	Q602	C-20
D008	D-19	D409	C-7	IC301	B-15	Q003	E-18	Q603	C-20
D009	E-12	D410	D-7	IC302	C-16	Q004	E-18	Q604	B-19
D010	D-19	D410	D-7	IC304	B-17	Q005	A-17		
D011	A-17	D501	D-20	IC305	C-17	Q101	G-16		
D402	D-7	D502	C-20	IC401	C-6	Q201	D-14		

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 ¼W or less unless otherwise specified.
- △ : internal component.
- **B+** : B+ Line
- **B−** : B− Line
- ▭ : adjustment for repair.

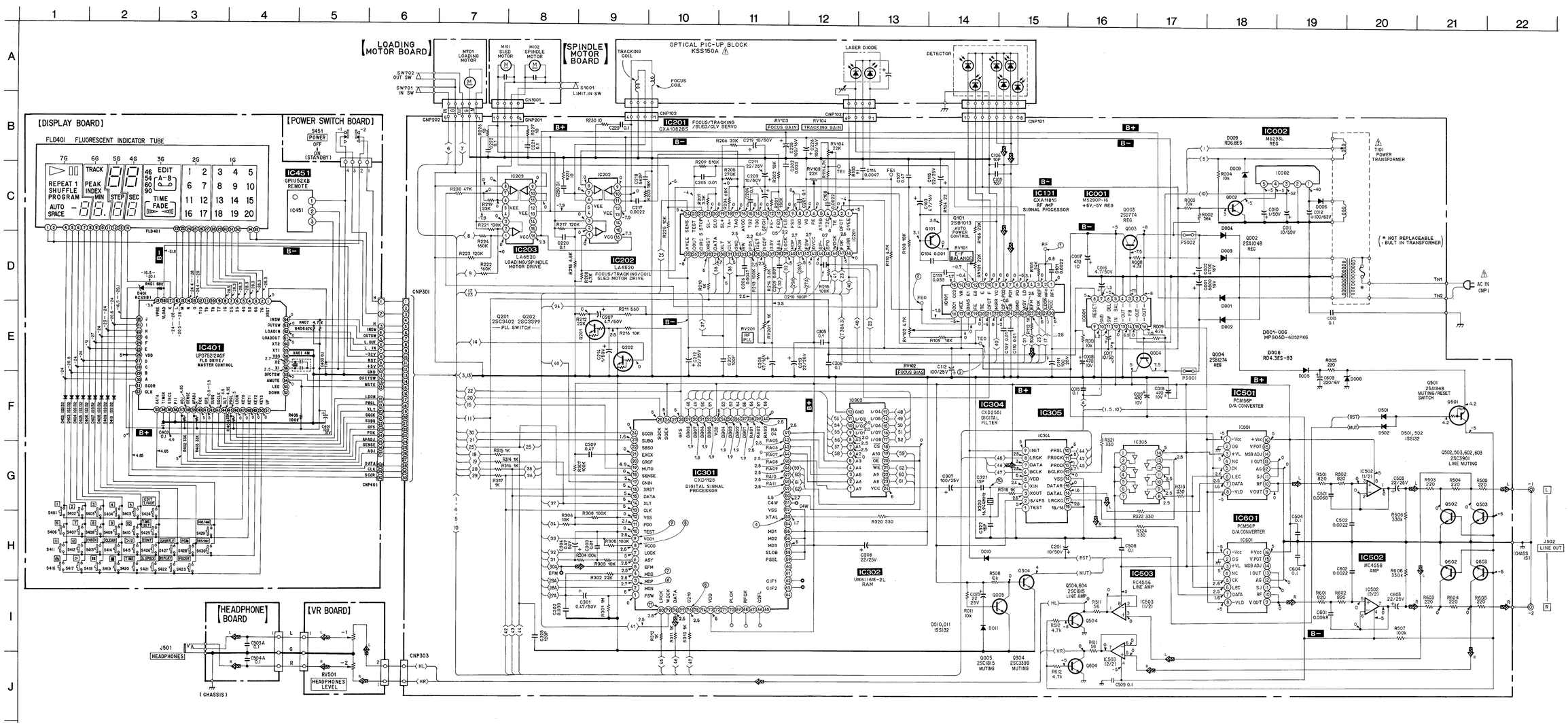
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark : PLAY
- Voltages are taken with a VOM (input impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

• WAVEFORM

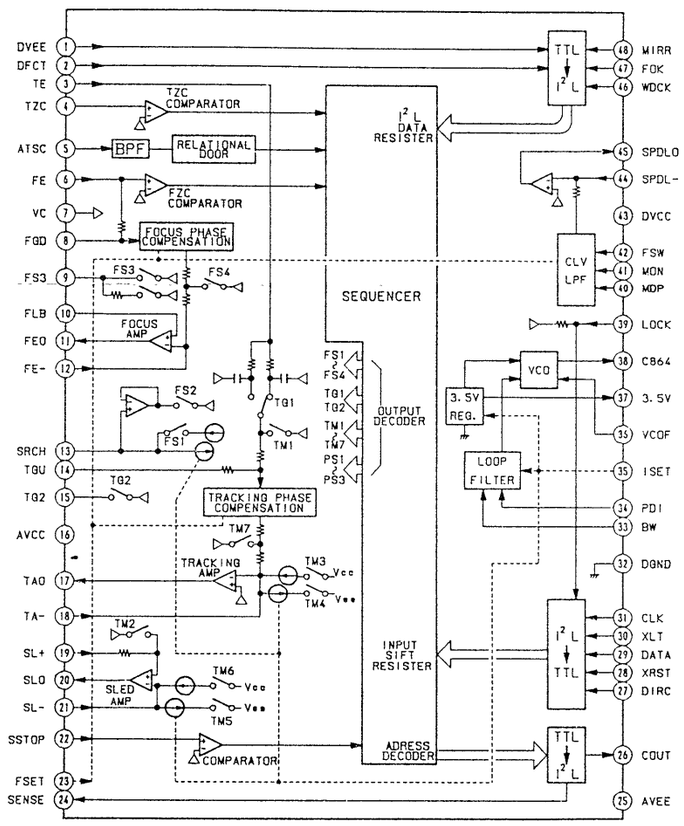
① RF PLAY: 1.2Vp-p	② FE PLAY: 0V APPROX. 100VmVp-p	③ TE PLAY: 0V APPROX. 500mVp-p	④ XTAL 250n SEC 5.2V -0.2V	⑤ C210 480n SEC 5V 0V	⑥ MDP PLAY: 550 μSEC 5V 2.4V
⑦ MDS PLAY: 130 μs 5V 0V	⑧ VCO O 95n SEC 3.1f 1.4f	⑨ VCO I 95n SEC 4.5V 0.6V	⑩ XIN 60n SEC 1Vp-p	⑪ LRCK 22μSEC 5Vp-p 0V	

4-2. SCHEMATIC DIAGRAM

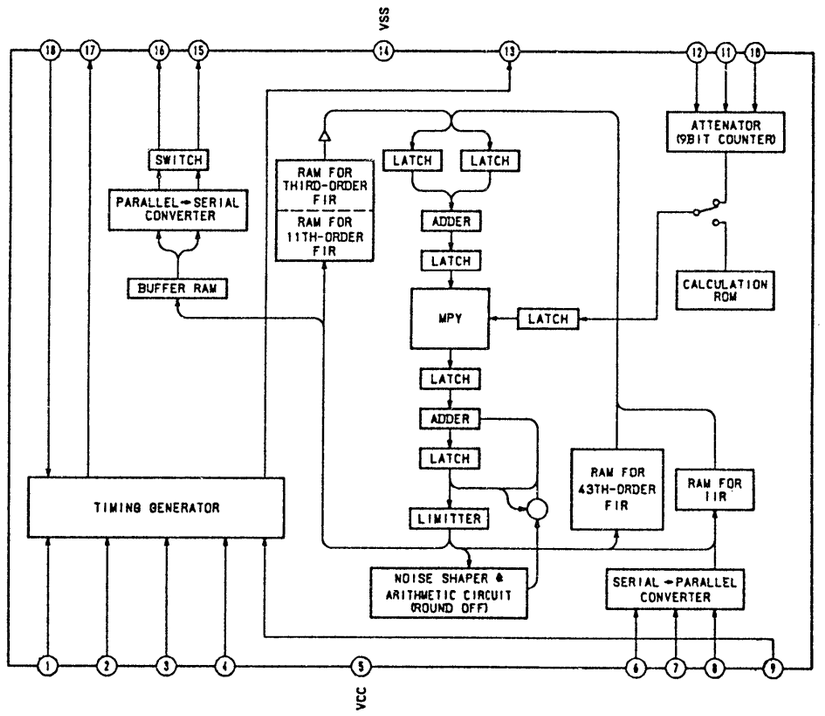


4-3. IC BLOCK DIAGRAM

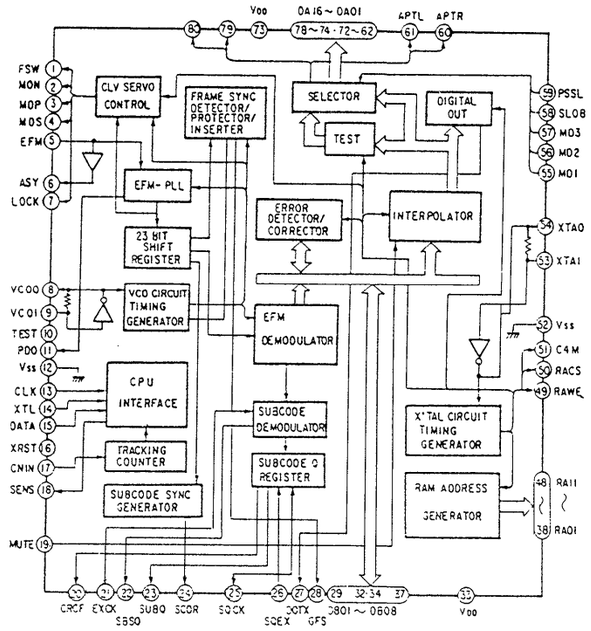
IC201 CXA1082BS



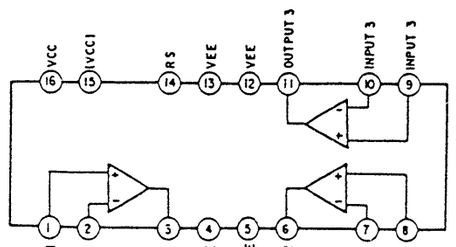
IC304 CXD2551P



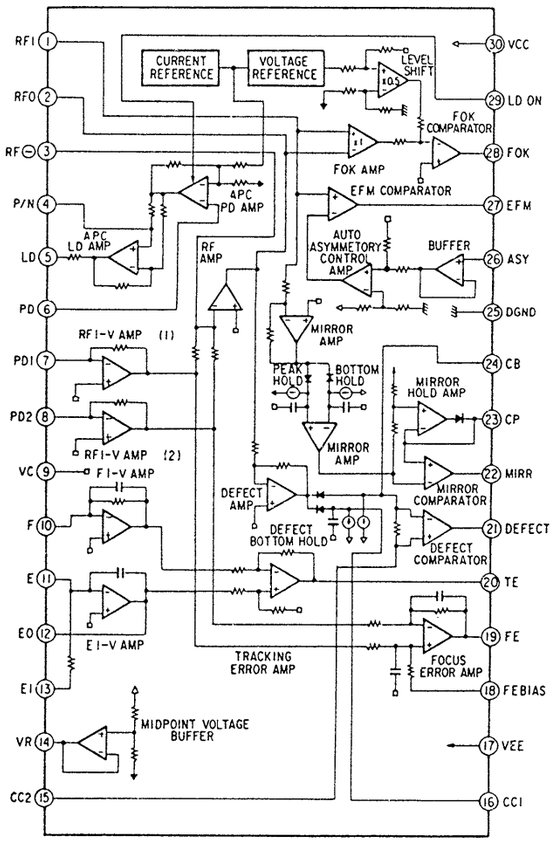
IC301 CXD1125Q



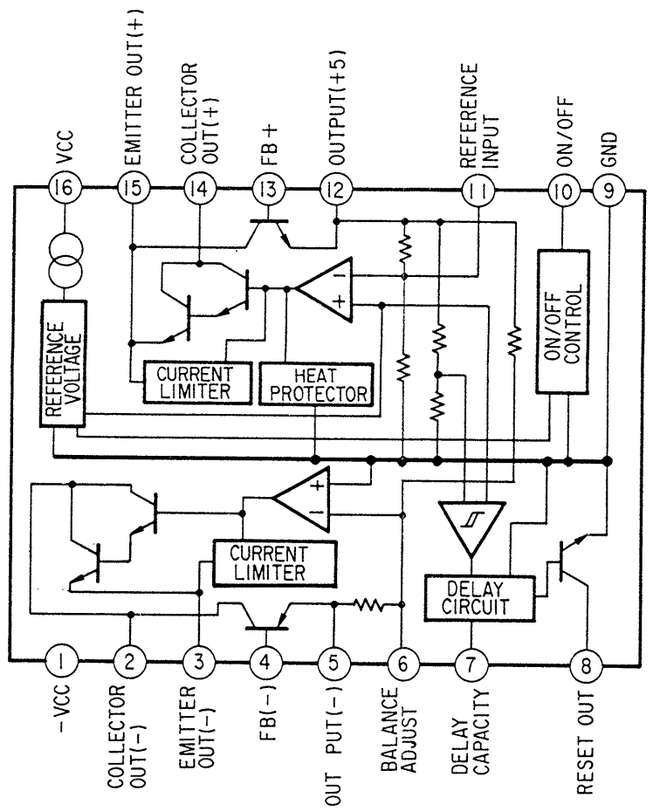
IC202, 203 LA6520



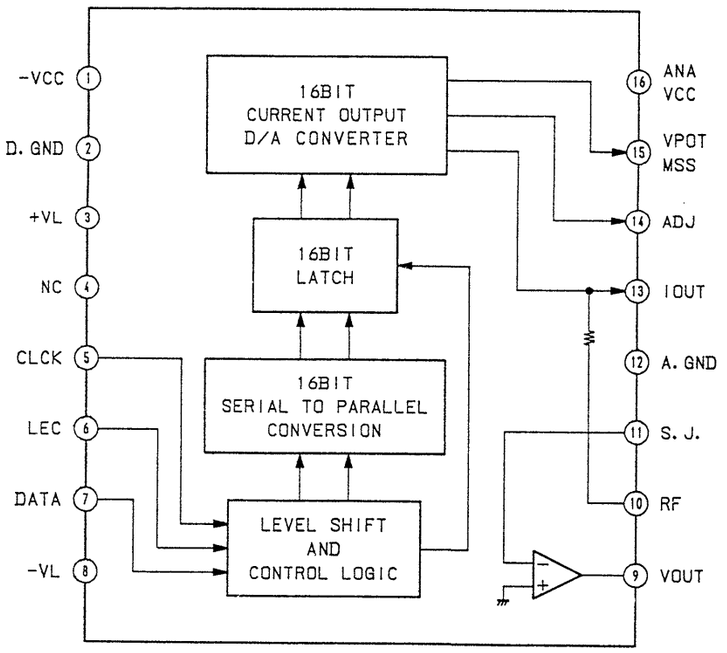
IC101 CXA1081S



IC001 M5290P



IC501, 601 PCM56P



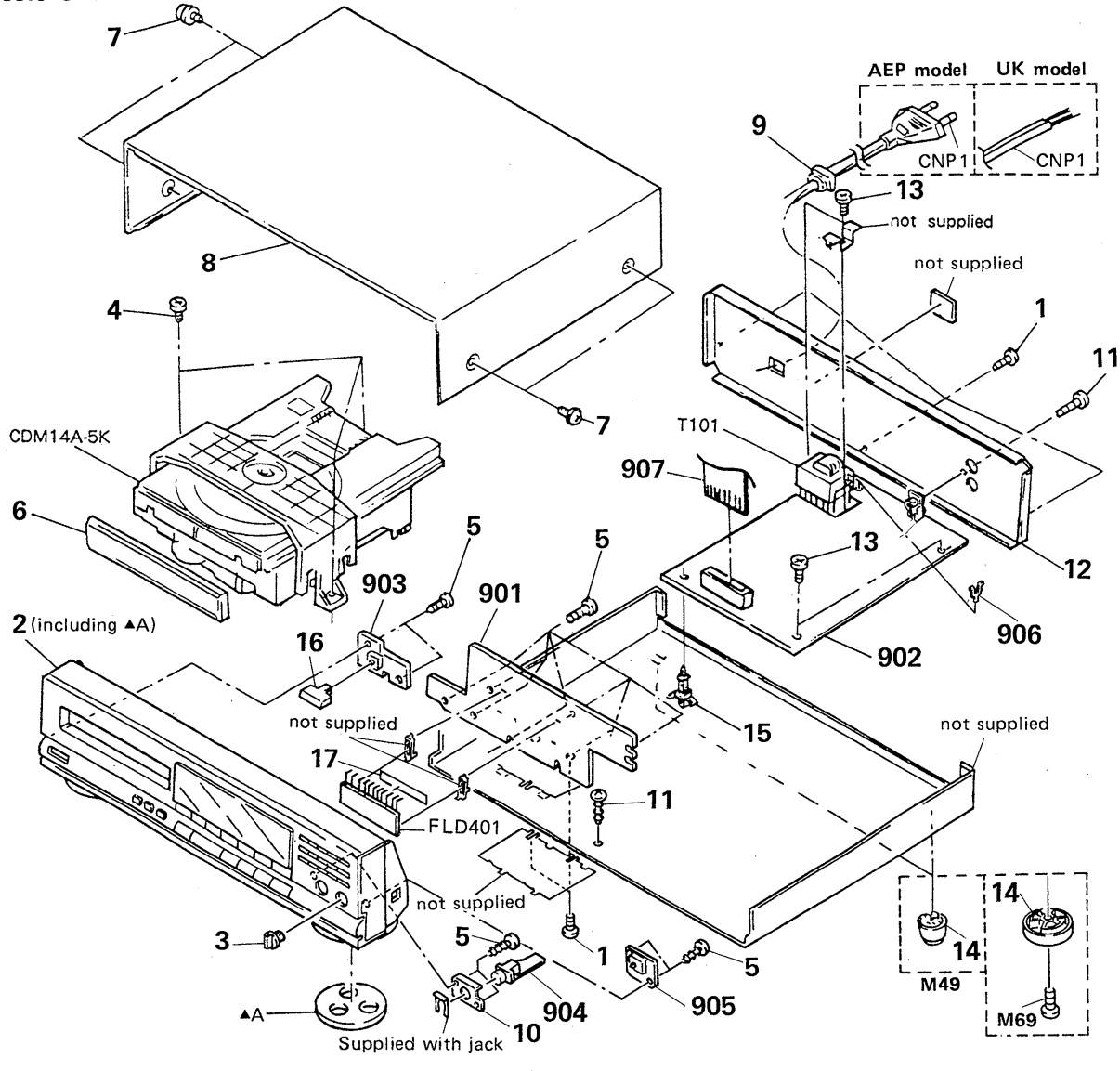
SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

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

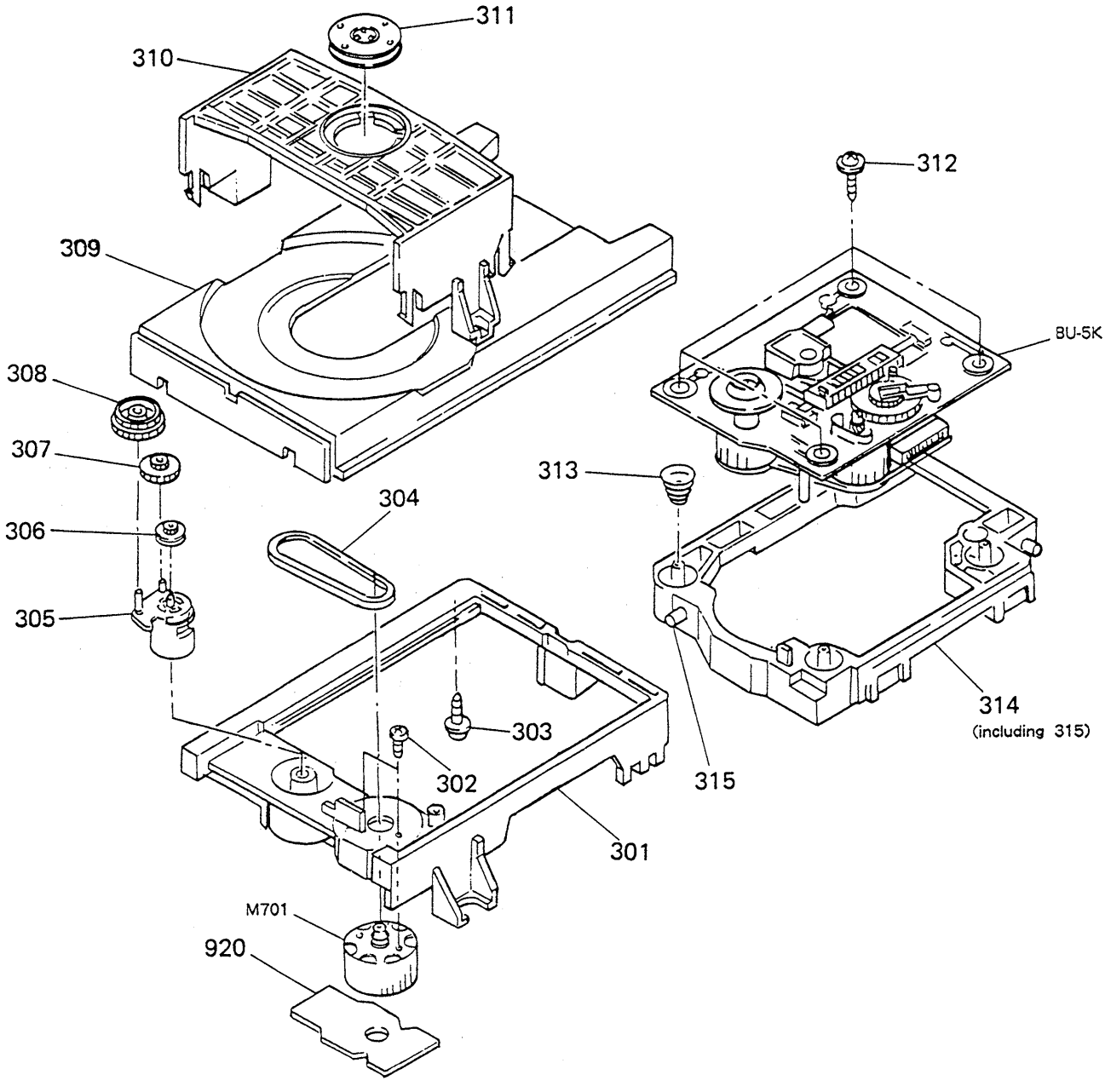
1. CHASSIS SECTION



No.	Part No.	Description	Remarks
1	7-682-548-09	SCREW +BVTT 3X8 (S)	
2	X-4917-595-1	(M69)...PANEL ASSY, FRONT	
	X-4917-597-1	(M49)...PANEL ASSY, FRONT	
3	4-933-116-01	KNOB (C, TYPE), LOV	
4	7-682-548-04	SCREW +BVTT 3X8 (S)	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
6	4-929-534-01	PANEL, LOADING	
7	3-704-366-31	SCREW (CASE) (M3X6)	
8	4-919-376-31	CASE	
9	*3-703-244-00	BUSHING (2104), CORD	
10	4-927-374-01	BRACKET (JACK)	
11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
12	*4-927-378-01	PANEL (ALSACE), BACK	
13	2-383-566-00	SCREW	
14	4-933-601-01	(M49)...FOOT	
	4-933-701-01	(M69)...FOOT	

No.	Part No.	Description	Remarks
15	*4-924-098-31	HOLDER, PC BOARD	
16	4-929-535-01	BUTTON (POWER)	
17	*4-927-395-01	PLATE, LIGHT INTERCEPTION	
901	*A-4617-297-A	MOUNTED PCB, DISPLAY	
902	*A-4617-298-A	MOUNTED PCB, MAIN	
903	*1-633-957-11	PC BOARD, POWER SWITCH	
904	*1-633-958-11	PC BOARD, HEADPHONE	
905	*1-633-959-11	PC BOARD, VR	
906	*1-535-771-11	TERMINAL	
907	1-535-825-11	JUMPER, FILM (WITH TERMINAL)	
CNP1	⚠.1-574-390-11	(UK)....CORD, POWER	
CNP1	⚠.1-574-127-11	(AEP)...CORD, POWER	
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT	
T101	⚠.1-449-967-11	TRANSFORMER, POWER	

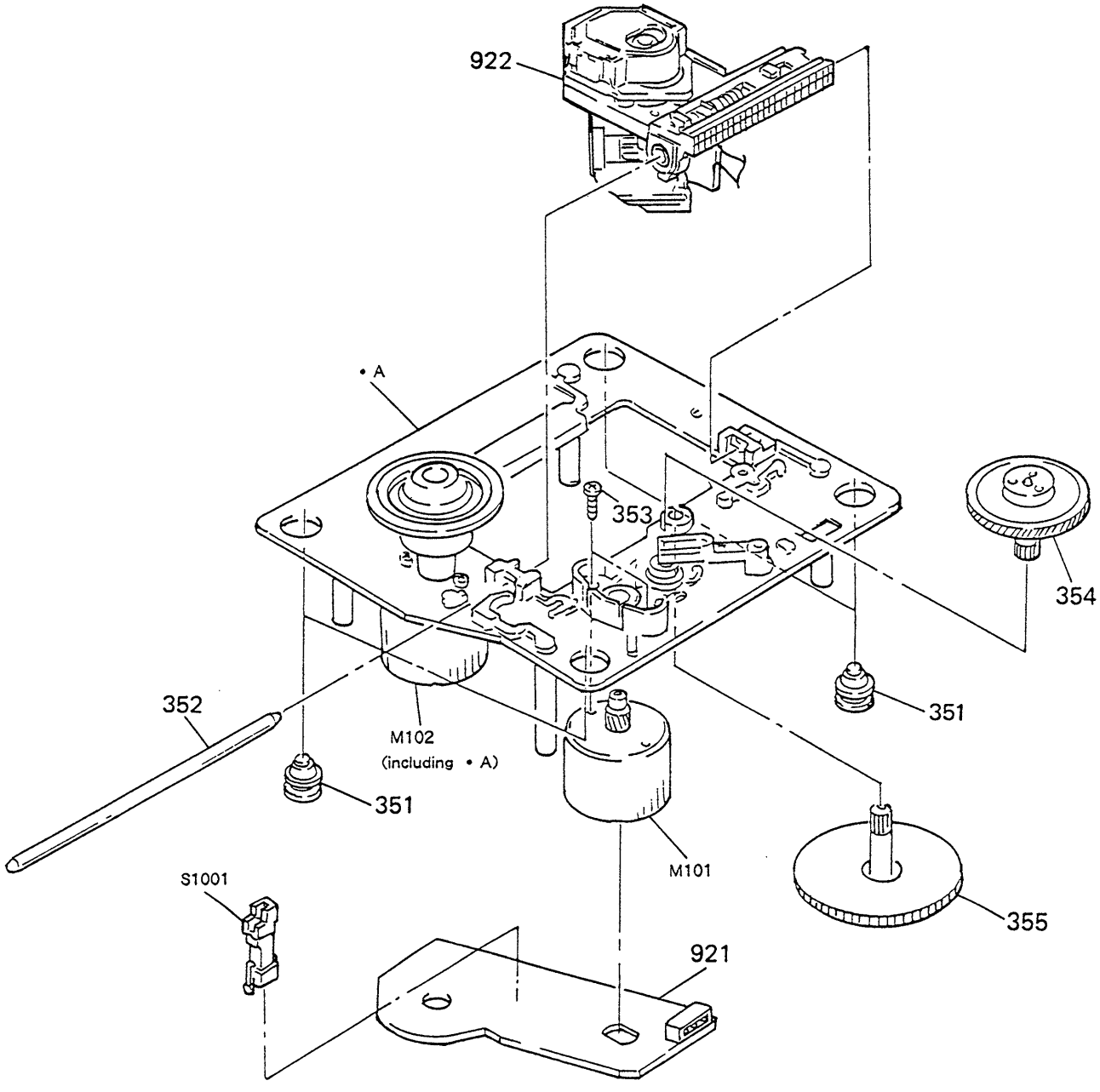
2. CD MECHANISM SECTION
(CDM14A-5K)



No.	Part No.	Description	Remarks
301	4-933-111-01	CHASSIS (MD)	
302	7-621-775-10	SCREW +B 2.6X4	
303	*4-917-583-21	BRACKET, YOKE	
304	4-927-649-01	BELT	
305	4-933-109-01	CAM	
306	4-927-651-01	PULLEY (S)	
307	4-927-628-01	GEAR (C)	
308	4-933-107-01	GEAR (PL)	
309	4-933-112-01	TABLE, DISK	

No.	Part No.	Description	Remarks
310	4-933-110-01	HOLDER (MG)	
311	A-4675-347-A	MG ASSY	
312	4-933-134-01	SCREW (+PTPWH M2.6X6)	
313	4-917-541-01	SPRING (B)	
314	4-933-129-01	HOLDER (BU)	
315	4-933-108-01	SHAFT (CAM)	
920	*1-632-169-11	PC BOARD, LOADING MOTOR	
M701	A-4608-362-A	MOTOR (L) ASSY	

3. OPTICAL PICK-UP BLOCK (BU-5K)



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

No.	Part No.	Description	Remarks
351	4-933-126-01	INSULATOR (A)	
352	4-917-565-01	SHAFT, SLED	
353	7-621-255-15	SCREW +P 2X3	
354	4-917-567-01	GEAR (M)	
355	4-917-564-01	GEAR (P), FLATNESS	

No.	Part No.	Description	Remarks
921	*1-632-460-11	PC BOARD, SL/SP MOTOR	
922	⚠8-848-062-01	DEVICE, OPTICAL KSS-150A (H)	
M101	X-4917-504-1	ASSY, MOTOR (SLED)	
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
S1001	1-570-822-11	SWITCH, LEAF (LIMIT IN SW)	

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.
- 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 circuits in 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 mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No.	Part No.	Description			
901	*A-4617-297-A	MOUNTED PCB, DISPLAY			
902	*A-4617-298-A	MOUNTED PCB, MAIN			
903	*1-633-957-11	PC BOARD, POWER SWITCH			
904	*1-633-958-11	PC BOARD, HEADPHONE			
905	*1-633-959-11	PC BOARD, VR			
906	*1-535-771-11	TERMINAL			
907	1-535-825-11	JUMPER, FILM (WITH TERMINAL)			
920	*1-632-169-11	PC BOARD, LOADING MOTOR			
921	*1-632-460-11	PC BOARD, SL/SP MOTOR			
922	⚠.8-848-062-01	DEVICE, OPTICAL KSS-150A (RP)			
C001	1-126-017-11	ELECT	6800MF	20%	16V
C002	1-124-898-11	ELECT	4700MF	20%	16V
C007	1-124-472-11	ELECT	470MF	20%	10V
C008	1-124-472-11	ELECT	470MF	20%	10V
C010	1-124-791-11	ELECT	1MF	20%	50V
C011	1-123-875-11	ELECT	10MF	20%	50V
C012	1-124-572-11	ELECT	100MF	20%	63V
C013	1-164-159-11	CERAMIC	0.1MF		50V
C015	1-164-159-11	CERAMIC	0.1MF		50V
C016	1-124-927-11	ELECT	4.7MF	20%	50V
C017	1-123-875-11	ELECT	10MF	20%	50V
C018	1-124-472-11	ELECT	470MF	20%	10V
C019	1-124-472-11	ELECT	470MF	20%	10V
C021	1-123-875-11	ELECT	10MF	20%	50V
C023	1-126-233-11	ELECT	22MF	20%	25V
C101	1-106-351-00	MYLAR	0.0022MF	5%	50V
C103	1-124-477-11	ELECT	47MF	20%	16V
C104	1-162-294-31	CERAMIC	0.001MF	10%	50V
C105	1-162-199-31	CERAMIC	10PF	5%	50V
C106	1-162-199-31	CERAMIC	10PF	5%	50V
C107	1-136-173-00	FILM	0.47MF	5%	50V
C108	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C109	1-106-367-00	MYLAR	0.01MF	5%	100V
C110	1-106-367-00	MYLAR	0.01MF	5%	100V
C111	1-124-478-11	ELECT	100MF	20%	25V
C112	1-124-478-11	ELECT	100MF	20%	25V
C113	1-106-379-12	MYLAR	0.033MF	5%	100V
C114	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C115	1-126-233-11	ELECT	22MF	20%	25V
C201	1-136-165-00	FILM	0.1MF	5%	50V
C202	1-106-379-12	MYLAR	0.033MF	5%	100V
C203	1-124-927-11	ELECT	4.7MF	20%	50V
C204	1-136-165-00	FILM	0.1MF	5%	50V
C205	1-162-306-11	CERAMIC	0.01MF	20%	16V
C206	1-161-377-00	CERAMIC	0.0047MF	20%	16V
C207	1-124-927-11	ELECT	4.7MF	20%	50V

Ref.No.	Part No.	Description			
C208	1-124-477-11	ELECT	47MF	20%	16V
C209	1-162-294-31	CERAMIC	0.001MF	10%	50V
C210	1-162-282-31	CERAMIC	100PF	10%	50V
C211	1-126-233-11	ELECT	22MF	20%	25V
C212	1-126-233-11	ELECT	22MF	20%	25V
C213	1-126-233-11	ELECT	22MF	20%	25V
C214	1-124-791-11	ELECT	1MF	20%	50V
C217	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C218	1-162-291-31	CERAMIC	560PF	10%	50V
C219	1-123-875-11	ELECT	10MF	20%	50V
C220	1-136-165-00	FILM	0.1MF	5%	50V
C221	1-164-159-11	CERAMIC	0.1MF		50V
C222	1-164-159-11	CERAMIC	0.1MF		50V
C225	1-126-101-11	ELECT	100MF	20%	16V
C226	1-126-101-11	ELECT	100MF	20%	16V
C229	1-164-159-11	CERAMIC	0.1MF		50V
C230	1-164-159-11	CERAMIC	0.1MF		50V
C231	1-162-282-31	CERAMIC	100PF	10%	50V
C301	1-124-902-00	ELECT	0.47MF	20%	50V
C302	1-106-379-12	MYLAR	0.033MF	5%	100V
C303	1-162-306-11	CERAMIC	0.01MF	20%	16V
C304	1-124-902-00	ELECT	0.47MF	20%	50V
C305	1-164-159-11	CERAMIC	0.1MF		50V
C306	1-164-159-11	CERAMIC	0.1MF		50V
C307	1-124-478-11	ELECT	100MF	20%	25V
C308	1-126-233-11	ELECT	22MF	20%	25V
C309	1-136-173-00	FILM	0.47MF	5%	50V
C321	1-162-202-31	CERAMIC	13PF	5%	50V
C322	1-162-203-31	CERAMIC	15PF	5%	50V
C325	1-162-283-31	CERAMIC	120PF	10%	50V
C401	1-124-443-00	ELECT	100MF	20%	10V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C403	1-164-159-11	CERAMIC	0.1MF		50V
C501	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C502	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C503	1-126-233-11	ELECT	22MF	20%	25V
C503A	1-164-159-11	CERAMIC	0.1MF		50V
C504	1-164-159-11	CERAMIC	0.1MF		50V
C504A	1-164-159-11	CERAMIC	0.1MF		50V
C508	1-164-159-11	CERAMIC	0.1MF		50V
C509	1-164-159-11	CERAMIC	0.1MF		50V
C601	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C602	1-161-375-00	CERAMIC	0.0022MF	20%	16V
C603	1-126-233-11	ELECT	22MF	20%	25V
C604	1-164-159-11	CERAMIC	0.1MF		50V
C609	1-124-120-11	ELECT	220MF	20%	16V

Ref.No.	Part No.	Description
CN101	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CN102	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CN103	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CN201	*1-568-953-11	PIN, CONNECTOR 4P
CN202	*1-568-954-11	PIN, CONNECTOR 5P
CN301	*1-568-933-11	SOCKET, CONNECTOR 30P
CN303	*1-568-951-11	PIN, CONNECTOR 2P
CN1001	*1-568-942-11	PIN, CONNECTOR 4P
CNP1	⚠.1-574-390-11	(UK)....CORD, POWER
CNP1	⚠.1-574-127-11	(AEP)...CORD, POWER
D001	8-719-950-59	DIODE MPG06D-6052
D002	8-719-950-59	DIODE MPG06D-6052
D003	8-719-950-59	DIODE MPG06D-6052
D004	8-719-950-59	DIODE MPG06D-6052
D005	8-719-950-59	DIODE MPG06D-6052
D006	8-719-950-59	DIODE MPG06D-6052
D008	8-719-109-76	DIODE RD4.3ES-B3
D009	8-719-109-96	DIODE RD6.8ES-B1
D010	8-719-107-94	DIODE 1SS202-1
D011	8-719-107-94	DIODE 1SS202-1
D401	8-719-933-56	DIODE HZS9B1L
D402	8-719-107-94	DIODE 1SS202-1
D403	8-719-107-94	DIODE 1SS202-1
D404	8-719-107-94	DIODE 1SS202-1
D405	8-719-107-94	DIODE 1SS202-1
D406	8-719-107-94	DIODE 1SS202-1
D407	8-719-107-94	DIODE 1SS202-1
D408	8-719-107-94	DIODE 1SS202-1
D409	8-719-107-94	DIODE 1SS202-1
D410	8-719-107-94	DIODE 1SS202-1
D501	8-719-107-94	DIODE 1SS202-1
D502	8-719-107-94	DIODE 1SS202-1
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT
IC001	8-759-630-21	IC M5290P-16
IC002	8-759-633-42	IC M5293L
IC101	8-752-034-00	IC CXA1081S
IC201	8-752-032-30	IC CXA1082BS
IC202	8-759-805-18	IC LA6520
IC203	8-759-805-18	IC LA6520
IC301	8-752-334-00	IC CXD1125Q
IC302	8-759-994-18	IC UM6116M-2L
IC304	8-752-334-06	IC CXD2551P
IC305	8-759-917-18	IC MC74HCU04N
IC401	8-759-148-72	IC UPD75212AGF-TTX662AL
IC451	8-749-920-83	IC GP1U52XB
IC501	8-759-998-22	IC PCM56P
IC502	8-759-995-08	IC MC4558
IC503	8-759-981-85	IC RC4556D
IC601	8-759-998-22	IC PCM56P
J501	1-568-519-51	JACK, LARGE TYPE (HEADPHONES)
J502	1-569-442-11	JACK, PIN 2P (LINE OUT)
M101	X-4917-504-1	MOTOR ASSY (SLED)
M102	X-4917-523-3	MOTOR ASSY (SPINDLE)
M701	A-4608-362-A	MOTOR (L) ASSY
PS001	1-532-637-00	LINK, IC
PS002	1-532-637-00	LINK, IC

Ref.No.	Part No.	Description
Q002	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q003	8-729-140-96	TRANSISTOR 2SD774-34
Q004	8-729-111-67	TRANSISTOR 2SB1094-L
Q005	8-729-281-52	TRANSISTOR 2SC1815-Y
Q101	8-729-116-57	TRANSISTOR 2SB1068-K
Q201	8-729-900-80	TRANSISTOR DTC114ES
Q202	8-729-900-89	TRANSISTOR DTC144ES
Q304	8-729-900-80	TRANSISTOR DTC114ES
Q501	8-729-900-61	TRANSISTOR DTA114ES
Q502	8-729-900-74	TRANSISTOR DTC143TS
Q503	8-729-900-74	TRANSISTOR DTC143TS
Q504	8-729-281-52	TRANSISTOR 2SC1815-Y
Q602	8-729-900-74	TRANSISTOR DTC143TS
Q603	8-729-900-74	TRANSISTOR DTC143TS
Q604	8-729-281-52	TRANSISTOR 2SC1815-Y
R002	1-249-438-11	CARBON 56K 5% 1/4W
R003	1-249-429-11	CARBON 10K 5% 1/4W
R004	1-249-429-11	CARBON 10K 5% 1/4W
R005	1-249-409-11	CARBON 220 5% 1/4W
R008	1-249-425-11	CARBON 4.7K 5% 1/4W
R009	1-249-425-11	CARBON 4.7K 5% 1/4W
R010	1-249-429-11	CARBON 10K 5% 1/4W
R011	1-249-429-11	CARBON 10K 5% 1/4W
R101	1-247-864-11	CARBON 24K 5% 1/4W
R104	1-249-397-11	CARBON 22 5% 1/4W
R105	1-247-806-11	CARBON 91 5% 1/4W
R106	1-249-433-11	CARBON 22K 5% 1/4W
R108	1-249-432-11	CARBON 18K 5% 1/4W
R109	1-249-432-11	CARBON 18K 5% 1/4W
R110	1-249-425-11	CARBON 4.7K 5% 1/4W
R111	1-249-425-11	CARBON 4.7K 5% 1/4W
R112	1-249-417-11	CARBON 1K 5% 1/4W
R201	1-247-882-11	CARBON 130K 5% 1/4W
R202	1-249-432-11	CARBON 18K 5% 1/4W
R203	1-249-432-11	CARBON 18K 5% 1/4W
R204	1-249-439-11	CARBON 68K 5% 1/4W
R205	1-247-889-00	CARBON 270K 5% 1/4W
R206	1-249-435-11	CARBON 33K 5% 1/4W
R207	1-249-423-11	CARBON 3.3K 5% 1/4W
R208	1-249-425-11	CARBON 4.7K 5% 1/4W
R209	1-247-896-11	CARBON 510K 5% 1/4W
R210	1-249-417-11	CARBON 1K 5% 1/4W
R211	1-249-414-11	CARBON 560 5% 1/4W
R212	1-249-433-11	CARBON 22K 5% 1/4W
R213	1-249-441-11	CARBON 100K 5% 1/4W
R214	1-247-844-11	METAL 3.6K 5% 1/4W
R215	1-249-441-11	CARBON 100K 5% 1/4W
R216	1-249-429-11	CARBON 10K 5% 1/4W
R217	1-247-881-00	CARBON 120K 5% 1/4W
R218	1-249-427-11	CARBON 6.8K 5% 1/4W
R219	1-249-435-11	CARBON 33K 5% 1/4W
R220	1-249-437-11	CARBON 47K 5% 1/4W
R221	1-247-881-00	CARBON 120K 5% 1/4W
R222	1-247-884-11	CARBON 160K 5% 1/4W
R223	1-247-881-00	CARBON 120K 5% 1/4W
R224	1-247-884-11	CARBON 160K 5% 1/4W
R225	1-249-429-11	CARBON 10K 5% 1/4W

Ref.No.	Part No.	Description			
R226	1-249-393-11	CARBON	10	5%	1/4W
R227	1-249-393-11	CARBON	10	5%	1/4W
R230	1-249-393-11	CARBON	10	5%	1/4W
R231	1-249-393-11	CARBON	10	5%	1/4W
R301	1-247-903-00	CARBON	1M	5%	1/4W
R302	1-249-433-11	CARBON	22K	5%	1/4W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-249-441-11	CARBON	100K	5%	1/4W
R305	1-249-441-11	CARBON	100K	5%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/4W
R307	1-249-441-11	METAL	100K	5%	1/4W
R308	1-249-441-11	METAL	100K	5%	1/4W
R310	1-249-417-11	CARBON	1K	5%	1/4W
R311	1-249-417-11	CARBON	1K	5%	1/4W
R312	1-249-417-11	CARBON	1K	5%	1/4W
R313	1-249-411-11	CARBON	330	5%	1/4W
R314	1-249-417-11	CARBON	1K	5%	1/4W
R315	1-249-417-11	CARBON	1K	5%	1/4W
R316	1-249-417-11	CARBON	1K	5%	1/4W
R317	1-249-417-11	CARBON	1K	5%	1/4W
R318	1-249-417-11	CARBON	1K	5%	1/4W
R320	1-249-411-11	CARBON	330	5%	1/4W
R321	1-249-411-11	CARBON	330	5%	1/4W
R322	1-249-411-11	CARBON	330	5%	1/4W
R324	1-249-411-11	CARBON	330	5%	1/4W
R401	1-249-439-11	CARBON	68K	5%	1/4W
R402	1-249-435-11	CARBON	33K	5%	1/4W
R403	1-249-435-11	CARBON	33K	5%	1/4W
R404	1-249-435-11	CARBON	33K	5%	1/4W
R405	1-249-441-11	CARBON	100K	5%	1/4W
R406	1-249-425-11	CARBON	4.7K	5%	1/4W
R407	1-249-425-11	CARBON	4.7K	5%	1/4W
R501	1-249-416-11	CARBON	820	5%	1/4W
R502	1-249-416-11	CARBON	820	5%	1/4W
R503	1-249-409-11	CARBON	220	5%	1/4W
R504	1-249-409-11	CARBON	220	5%	1/4W
R505	1-249-409-11	CARBON	220	5%	1/4W
R506	1-247-891-00	CARBON	330K	5%	1/4W
R507	1-249-441-11	CARBON	100K	5%	1/4W
R508	1-249-429-11	CARBON	10K	5%	1/4W
R511	1-249-402-11	CARBON	56	5%	1/4W
R512	1-249-425-11	CARBON	4.7K	5%	1/4W
R601	1-249-416-11	CARBON	820	5%	1/4W
R602	1-249-416-11	CARBON	820	5%	1/4W
R603	1-249-409-11	CARBON	220	5%	1/4W
R604	1-249-409-11	CARBON	220	5%	1/4W
R605	1-249-409-11	CARBON	220	5%	1/4W
R606	1-247-891-00	CARBON	330K	5%	1/4W
R611	1-249-402-11	CARBON	56	5%	1/4W
R612	1-249-425-11	CARBON	4.7K	5%	1/4W
RV101	1-228-995-00	RES, ADJ, CARBON 22K (E-F BALANCE)			
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K (FOCUS BIAS)			
RV103	1-228-995-00	RES, ADJ, CARBON 22K (FOCUS GAIN)			
RV104	1-228-995-00	RES, ADJ, CARBON 22K (TRACKING GAIN)			
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K (RF PLL)			
RV501	1-238-884-11	RES, VAR, CARBON 1K/1K (HEADPHONES LEVEL)			

Ref.No.	Part No.	Description
S401	1-554-303-21	SWITCH, KEY BOARD (1)
S402	1-554-303-21	SWITCH, KEY BOARD (2)
S403	1-554-303-21	SWITCH, KEY BOARD (3)
S404	1-554-303-21	SWITCH, KEY BOARD (4)
S405	1-554-303-21	SWITCH, KEY BOARD (5)
S406	1-554-303-21	SWITCH, KEY BOARD (6)
S407	1-554-303-21	SWITCH, KEY BOARD (7)
S408	1-554-303-21	SWITCH, KEY BOARD (8)
S409	1-554-303-21	SWITCH, KEY BOARD (9)
S410	1-554-303-21	SWITCH, KEY BOARD (10)
S411	1-554-303-21	SWITCH, KEY BOARD (11)
S412	1-554-303-21	SWITCH, KEY BOARD (12)
S413	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S414	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S415	1-554-303-21	SWITCH, KEY BOARD (>12)
S416	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S417	1-554-303-21	SWITCH, KEY BOARD (▷)
S418	1-554-303-21	SWITCH, KEY BOARD (▮▮)
S419	1-554-303-21	SWITCH, KEY BOARD (■)
S420	1-554-303-21	SWITCH, KEY BOARD (TIME)
S421	1-554-303-21	SWITCH, KEY BOARD (A.SPACE)
S422	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S423	1-554-303-21	SWITCH, KEY BOARD (FADER)
S424	1-554-303-21	SWITCH, KEY BOARD (EDIT/TIME FADE)
S425	1-554-303-21	SWITCH, KEY BOARD (TIME SET)
S426	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)
S427	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S428	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
S429	1-554-303-21	SWITCH, KEY BOARD (⏮ ◀◀)
S430	1-554-303-21	SWITCH, KEY BOARD (▶▶ ⏭)
S451	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
S1001	1-570-822-11	SWITCH, LEAF (LIMIT IN)
SW701	1-572-086-11	SWITCH, LEAF (IN)
SW702	1-572-086-11	SWITCH, LEAF (OUT)
T101	⚠1-449-967-11	TRANSFORMER, POWER
X320	1-577-328-21	VIBRATOR, CRYSTAL (16.944MHz)
X401	1-567-819-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

1-465-291-11	(M69)...REMOTE COMMANDER
1-559-533-11	CORD, CONNECTION
3-750-792-61	MANUAL, INSTRUCTION
3-750-792-71	(AEP)...MANUAL, INSTRUCTION
*4-927-355-01	CUSHION
*4-927-394-01	(M69)...INDIVIDUAL CARTON
*4-927-394-11	(M49)...INDIVIDUAL CARTON

9-955-776-81

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CDP-M48/M49/M69

SONY®

SERVICE MANUAL

AEP Model
CDP-M48
AEP Model
Australian Model
E Model
CDP-M49
AEP Model
E Model
CDP-M69

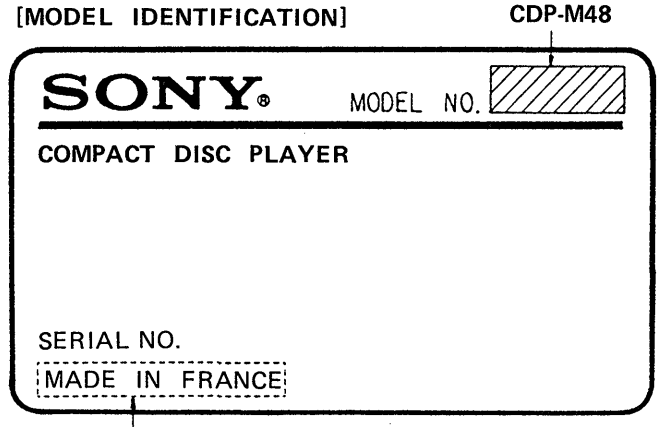
SUPPLEMENT-2

File this supplement with the service manual.

This SUPPLEMENT-1 is for CDP-M48 made in France.

Refer to the CDP-M48/M49/M69 service manual and SUPPLEMENT-1 for related information not contained in this SUPPLEMENT-2.

[MODEL IDENTIFICATION]



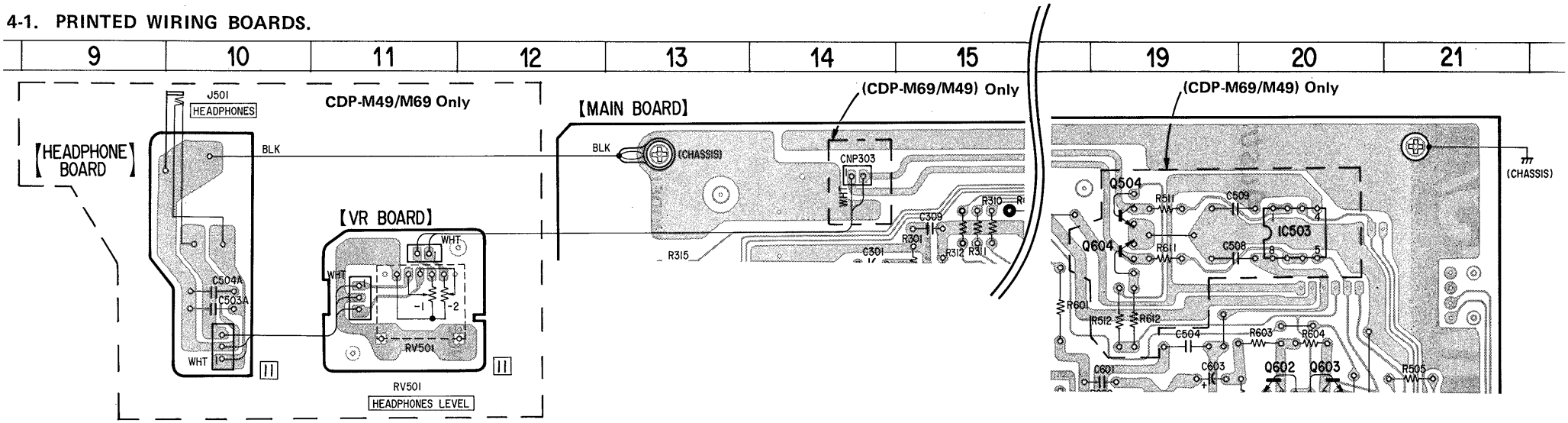
LABEL MODEL NUMBER

Identify the set with the indication of "MADE IN FRANCE" here.

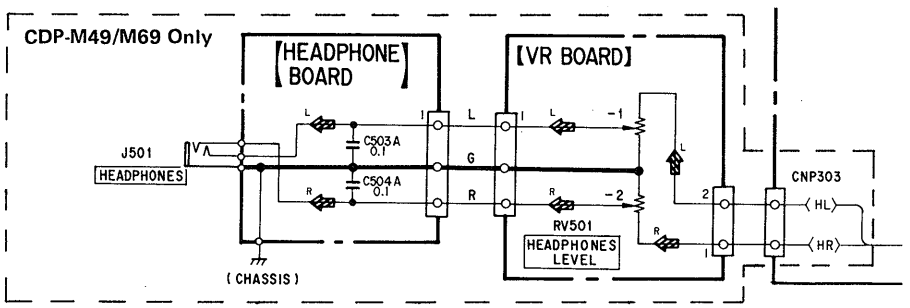
ACCESSORY & PACKING MATERIAL

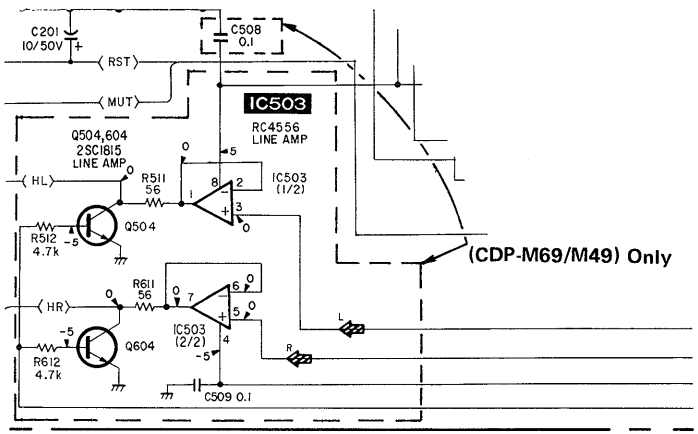
*4-927-394-21 (M48)・・・INDIVIDUAL CARTON

4-1. PRINTED WIRING BOARDS.



4-2. SCHEMATIC DIAGRAM





[MAIN BOARD]

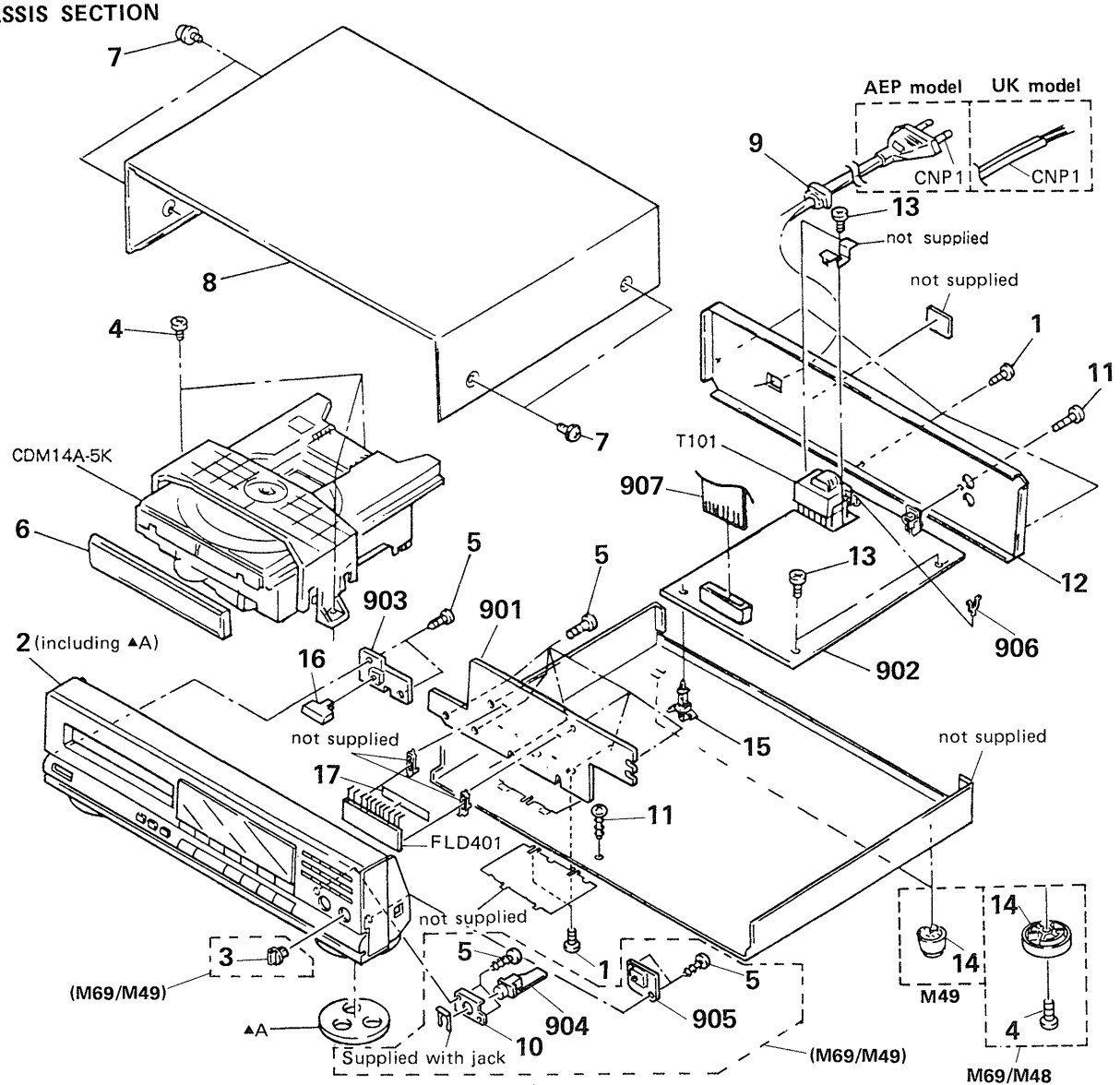
SECTION 4
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ ↑
  Cabinet's Color Parts Color

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

1. CHASSIS SECTION



No.	Part No.	Description	Remarks
1	7-682-548-09	SCREW +BVTT 3X8 (S)	
2	X-4917-595-1	(M69)...PANEL ASSY, FRONT	
2	X-4917-597-1	(M49)...PANEL ASSY, FRONT	
2	X-4917-596-1	(M48)···PANEL ASSY, FRONT	
3	4-933-116-01	(M69/M49)···KNOB (C, TYPE), LOV	
4	7-682-548-04	SCREW +BVTT 3X8 (S)	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
6	4-929-534-01	PANEL, LOADING	
7	3-704-366-31	SCREW (CASE) (M3X6)	
8	4-919-376-31	CASE	
9	*3-703-244-00	BUSHING (2104), CORD	
10	4-927-374-01	(M69/M49)···BRACKET (JACK)	
11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
12	*4-927-378-01	PANEL (ALSACE), BACK	
13	2-383-566-00	SCREW	
14	4-933-601-01	(M49)·····FOOT	
14	4-934-883-01	(M69/M48)···FOOT	

No.	Part No.	Description	Remarks
15	*4-924-098-31	HOLDER, PC BOARD	
16	4-929-535-01	BUTTON (POWER)	
17	*4-927-395-01	PLATE, LIGHT INTERCEPTION	
901	*A-4617-297-A	(M69/M49)···MOUNTED PCB, DISPLAY	
901	*A-4617-447-A	(M48)·····MOUNTED PCB, DISPLAY	
902	*A-4617-298-A	(M69/M49)···MOUNTED PCB, MAIN	
902	*A-4617-448-A	(M48)·····MOUNTED PCB, MAIN	
903	*1-633-957-11	PC BOARD, POWER SWITCH	
904	*1-633-958-11	(M69/M49)···PC BOARD, HEADPHONE	
905	*1-633-959-11	(M69/M49)···PC BOARD, VR	
906	*1-535-771-11	TERMINAL	
907	1-535-825-11	JUMPER, FILM (WITH TERMINAL)	
CNP1	⚠.1-556-562-11	(UK)....CORD, POWER	
CNP1	⚠.1-574-127-11	(AEP)...CORD, POWER	
FLD401	1-519-556-11	INDICATOR TUBE, FLUORESCENT	
T101	⚠.1-449-967-11	TRANSFORMER, POWER	

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AEP Model
E Model
CDP-M69

CORRECTION-1

Correct your service manual as shown below.

☛ : indicates corrected portion.

Page	INCORRECT	CORRECT
6	**E-F Balance Check** **Procedure :** 2. Ground TP (ADJ), TP (TEST).	**E-F Balance Check** **Procedure :** 2. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.

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AEP Model
Australian Model
E Model
CDP-M49

AEP Model
E Model
CDP-M69

CORRECTION-2

Correct your service manual as shown below.

☛: indicates corrected portion.

Page	INCORRECT	CORRECT
	No. Part No. Description	No. Part No. Description
19	52 X-4917-602-1 (M69:E)... PANEL ASSY, FRONT X-4917-603-1 (M49:E, AUS)... PANEL ASSY, FRONT	52 X-4918-602-1 (M69:E)... PANEL ASSY, FRONT X-4918-603-1 (M49:E, AUS)... PANEL ASSY, FRONT

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