

CDP-M18/M19/M39

SERVICE MANUAL

Discard CDP-M18 Service Manual
(No. 9-955-526-11) previously issued.
This Service Manual contains it.

AEP Model
UK Model



Photo : CDP-M18

Model Name Using Similar Mechanism	CDP-190/390
CD Mechanism Name	CDM14A-5K
Base Unit Name	BU-5K

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz - 20 kHz $\pm 1\frac{1}{2}$ dB
Signal to noise ratio	More than 93 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05%
Channel separation	More than 90 dB

Outputs

LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
CDP-M19/M39 : PHONES (stereo phone jack)	Output level max. 10 mW Load impedance 32 ohms

General

Power requirements	AEP model : 220 V AC (or 240 V AC adjustable by Sony personnel), 50/60 Hz UK model : 240 V AC (or 220 V AC adjustable by Sony personnel), 50/60 Hz
--------------------	---

Power consumption	10 W
Dimensions (approx. , including projections)	355×95×305 mm (w/h/d) (14×3 $\frac{3}{4}$ ×11 $\frac{7}{8}$ inches)
Weight (approx.)	2.8 kg (6 lbs 3 oz)

Remote commander	RM-D90 (CDP-M39)
------------------	------------------

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 43×20×175 mm (w/h/d) (1 $\frac{3}{4}$ × $\frac{9}{16}$ ×7 inches)
Weight	Approx. 105 g (3.7 oz) Including batteries

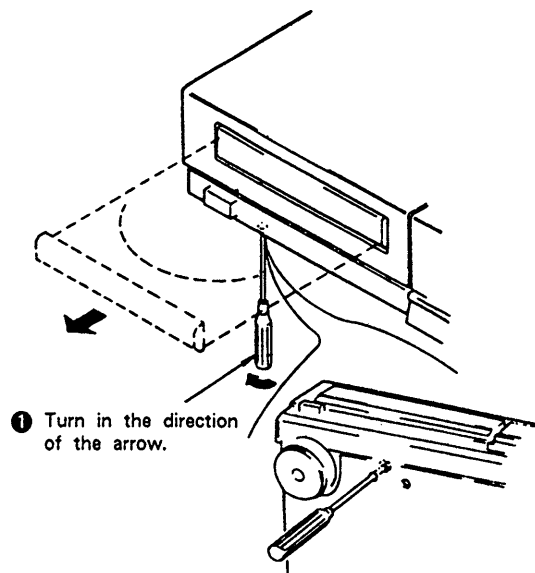
Design and specifications subject to change without notice.

COMPACT DISC PLAYER
SONY®

TABLE OF CONTENTS

Section	Title	Page
SECTION 1. GENERAL		
1-1.	Location and Function of Controls.....	4
SECTION 2. DISASSEMBLY		
5		
SECTION 3. ELECTRICAL ADJUSTMENTS		
6		
SECTION 4. DIAGRAMS		
4-1.	Printed Wiring Boards.....	8
4-2.	Schematic Diagram	11
4-3.	IC Block Diagram	15
SECTION 5. EXPLODED VIEWS		
17		
SECTION 6. ELECTRICAL PARTS LIST		
21		
SUPPLEMENT-1		

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF

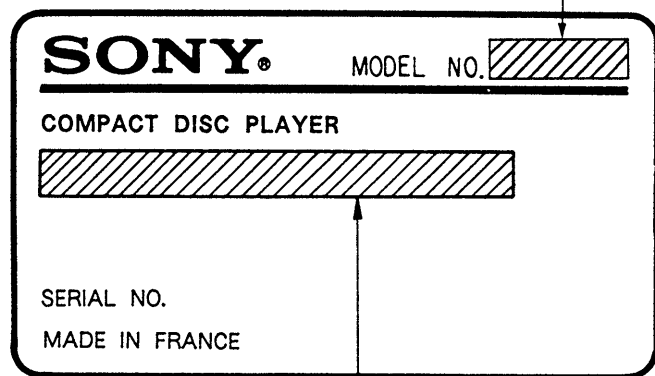


Caution : When you work, keep the set horizontal.

MODEL IDENTIFICATION

—Specification Labels—

CDP-M18
CDP-M19
CDP-M39



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

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 μ W*

* 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 Optical Pick-up Block (including APC board).

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-dioe data

- Materiale: GaAlAs
- Bølgelængde: 780 nm
- Udstråling: Kontinuerlig
- Laseroutput: Max. 0,4 mW*

* Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.

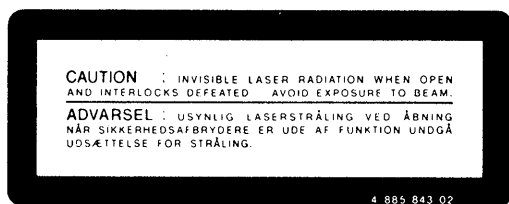
- Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) 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

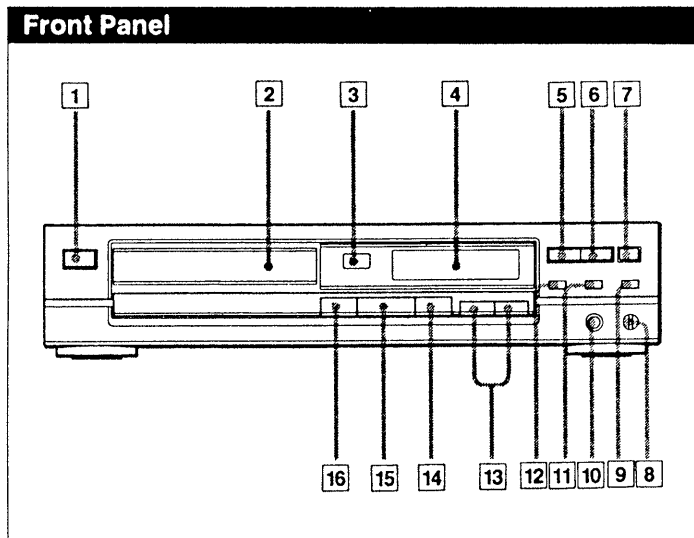


VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkömätöntä) silmille vaarallista lasersäteilyä.

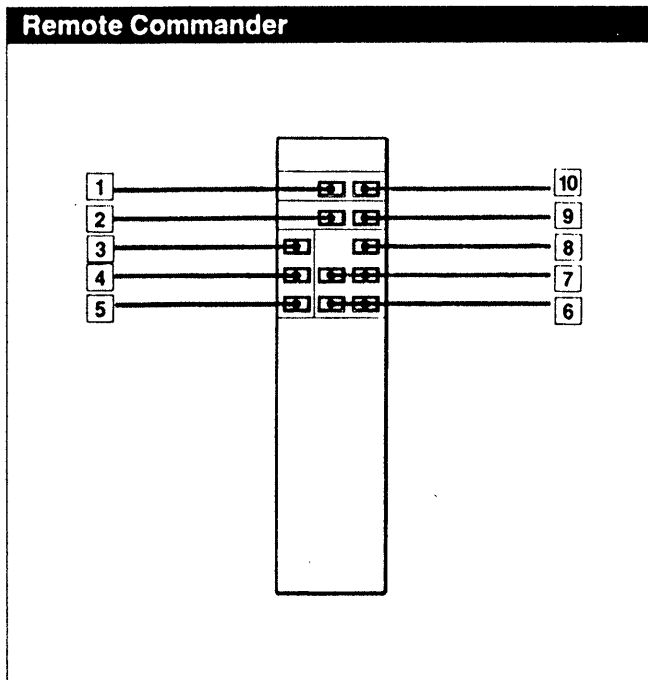
SECTION 1

GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS



- 1 POWER switch
- 2 Disc tray
- 3 Remote sensor
- 4 Display window
- 5 PROGRAM button
- 6 SHUFFLE button
- 7 REPEAT button
- 8 (headphone) LEVEL control (CDP-M19/M39)
- 9 MUSIC SCAN button
- 10 PHONES jack (CDP-M19/M39)
- 11 FADER button
- 12 TIME button
- 13 $\lll \lll \lll \lll$ (AMS*/RMS**) / $\lll \lll \lll \lll$ (manual search) buttons
- 14 $\blacksquare$ (stop)/PGM (program) CLEAR button
- 15 $\blacktriangleright \parallel$ (play/pause) button
- 16 $\blacktriangle$ (open/close) button



- 1 PGM (program) button
- 2 TIME button
- 3 $\blacktriangleright$ (play) button
- 4 $\parallel$ (pause) button
- 5 $\blacksquare$ (stop) button
- 6 $\lll \lll \lll \lll$ (manual search) buttons
- 7 $\lll \lll \lll \lll$ (AMS*) buttons
- 8 FADER button
- 9 REPEAT button
- 10 SHUFFLE button

* AMS is an abbreviation of Automatic Music Sensor.

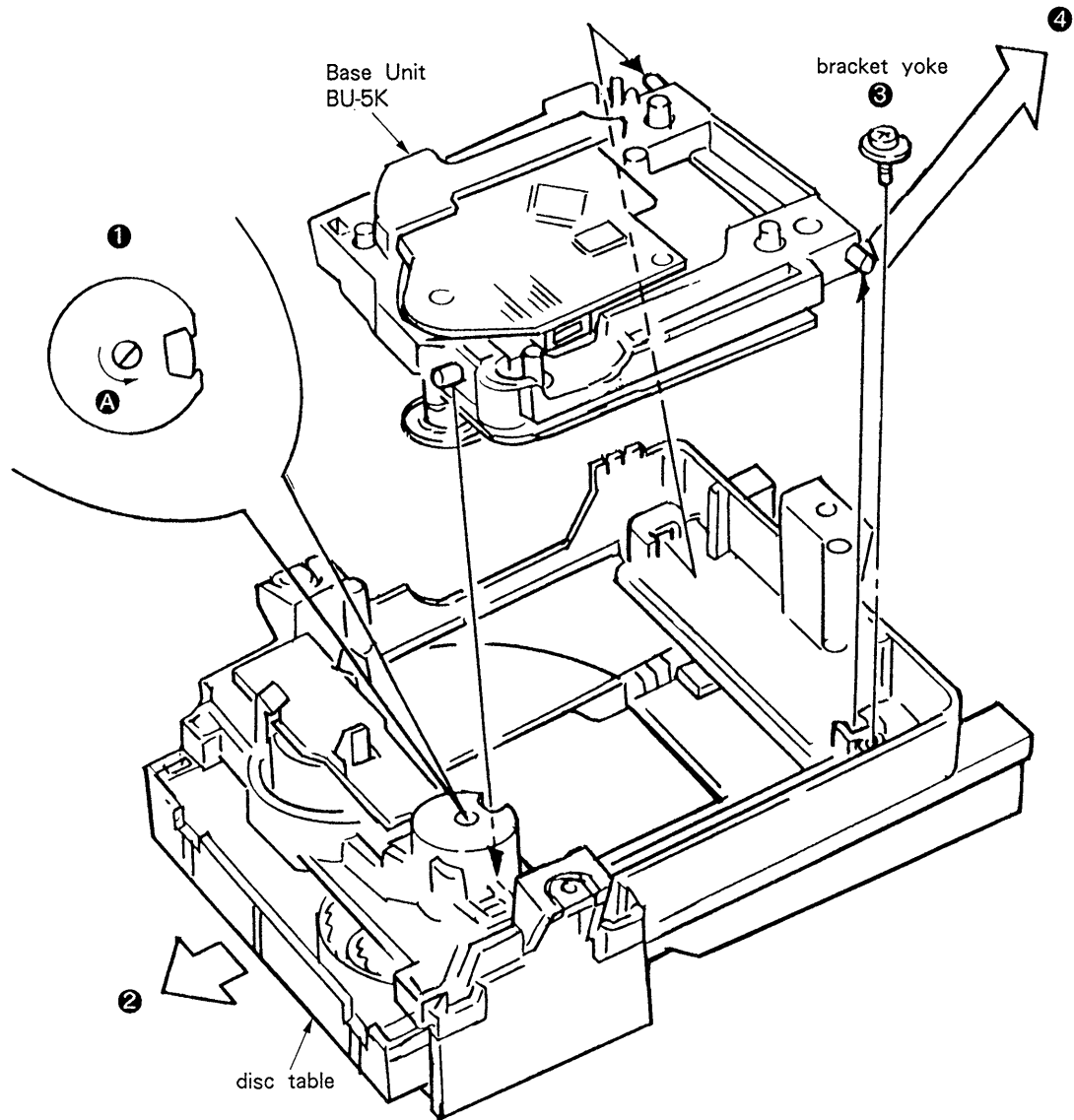
** RMS is the abbreviation of Random Music Sensor.

SECTION 2

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 **A** direction by the  driver.
3. Take out disc table.
4. Remove bracket yoke.
5. Remove BU-5K in the Arrow **4** direction.

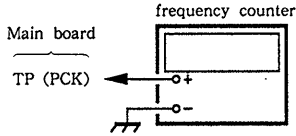


SECTION 3

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 M Ω impedance.

RF PLL Frequency Adjustment/Lock Frequency Check Procedure :

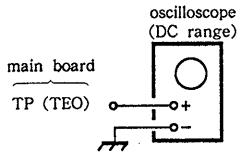


1. Connect test point TP (ASY) to ground with lead wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test point TP (PCK).
4. Adjust RV201 so that the reading on frequency counter is 4,3218 MHz $\pm$ 30 KHz.
.....(RF PLL frequency adjustment)
5. Remove lead wire connecting TP (ASY) to ground.
6. Set disc (YEDS-18) and press $\triangleright$ PLAY button.
7. Confirm that the reading on frequency counter is 4,3218 MHz.
.....(Lock frequency check)
8. Turn POWER switch off.

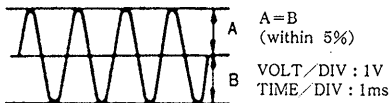
E-F Balance Adjustment

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

Procedure :



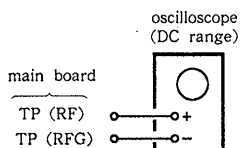
1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TEO).
3. Set disc (YEDS-18) and turn POWER switch on.
4. Adjust RV101 so that the traverse waveform is symmetrical above and below.
5. Turn POWER switch off.
6. After adjustment,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



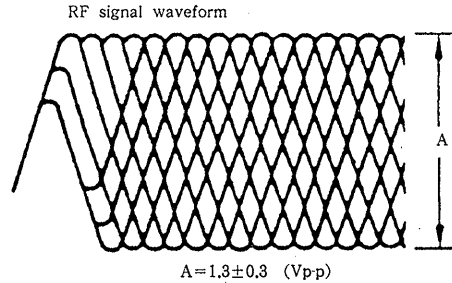
Focus Bias Adjustment

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.



REFERENCE

Focus/Tracking Gain Adjustments

A frequency response 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.

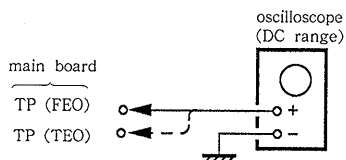
Symptoms	Gain	Focus	Tracking
• The time until music starts becomes longer for ■STOP $\rightarrow$ $\triangleright$ PLAY or automatic selection. ($\ll$, $\gg$ buttons pressed.) (Normally takes about 1 seconds.)		low	low or high
• Music does not start and disc continues to rotate for ■STOP $\rightarrow$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

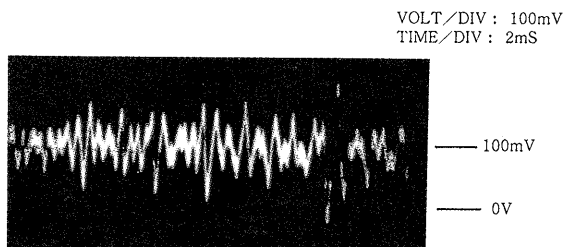
—Primary Adjustment—

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.

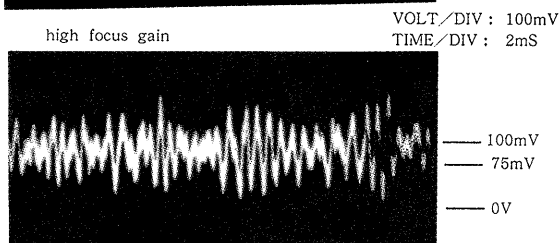
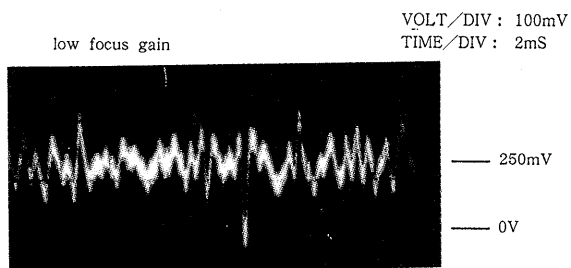
Procedure :



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)



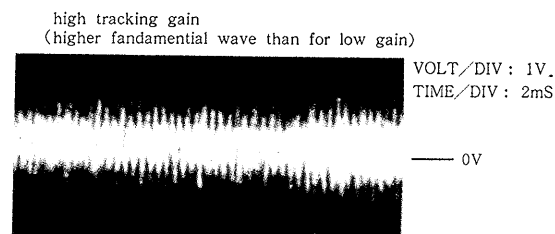
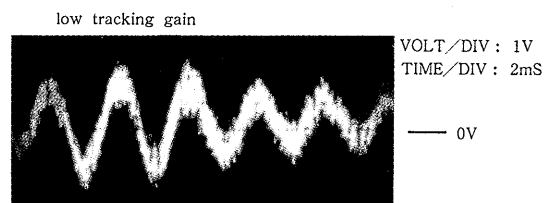
- Incorrect Examples (DC level changes more than on adjusted waveform)



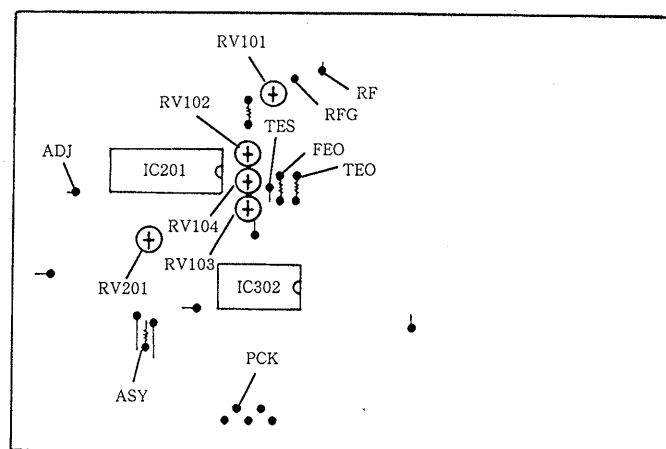
5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)
7. Turn POWER switch off.



- Incorrect Examples (fundamental wave appears)



Adjustment Location : main board —component side—



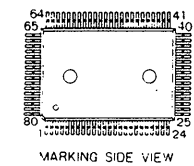
SECTION 4
DIAGRAMS

● SEMICONDUCTOR LOCATION

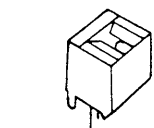
Ref. No	Location	Ref. No.	Location
IC001	E-17	D001	G-17
IC101	F-16	D002	G-17
IC201	E-14	D003	G-17
IC202	F-13	D004	G-17
IC203	F-12	D005	C-18
IC301	B-15	D007	D-17
IC302	C-15	D008	C-18
IC303	B-17	D401	C-17
IC304	B-16	D402	C-17
IC401	B-18	D501	B-6
IC402	A-19	D502	B-6
IC501	B-5	D503	B-6
IC721	B-10	D504	B-6
		D505	B-6
		D506	B-7
Q001	C-17	D507	B-7
Q101	G-15	D508	B-7
Q201	C-13	D509	B-7
Q202	C-13	D510	B-7
Q401	C-19		
Q402	B-17		
Q403	B-20		
Q404	B-20		
Q405	A-19		
Q453	B-19		
Q454	B-20		
Q455	A-19		

● SEMICONDUCTOR LEAD LAYOUTS

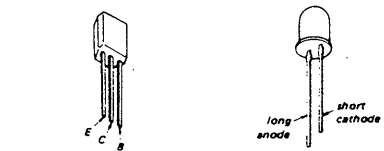
CXD1125Q 2SB1068K
μPD75308GF



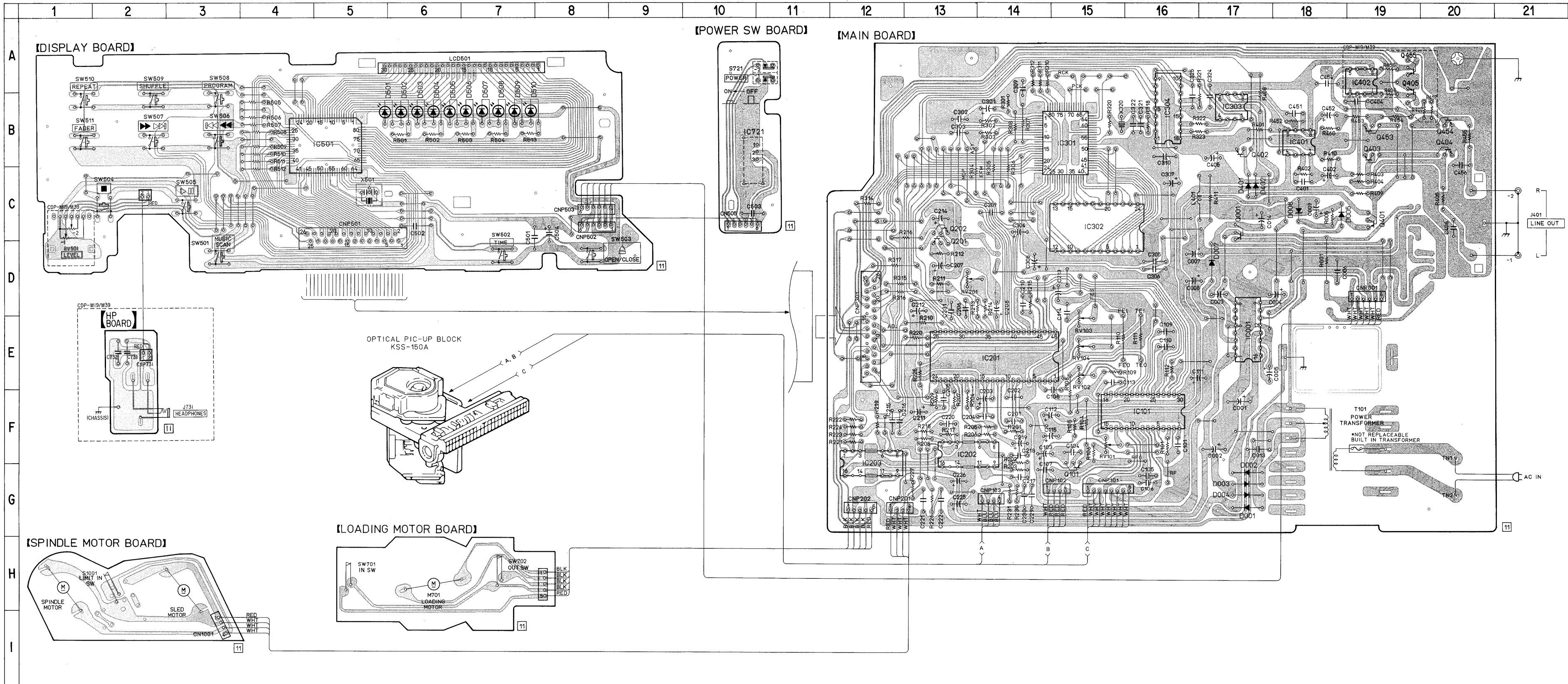
GP1U52XB 2SB1187



DTC114ES SEL3B10D
DTC143ES
DTC144ES
2SA1348



4-1. PRINTED WIRING BOARDS



Note:

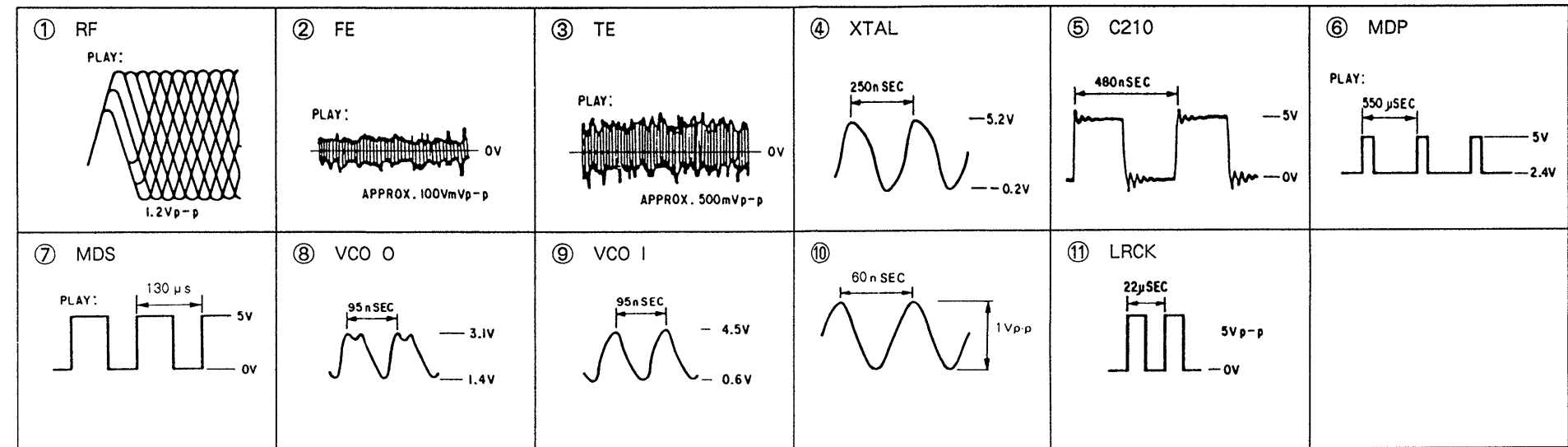
- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- $\triangle$: internal component.

- B+**: B+ Line
- B-**: B- Line
- $\square$: adjustment for repair.

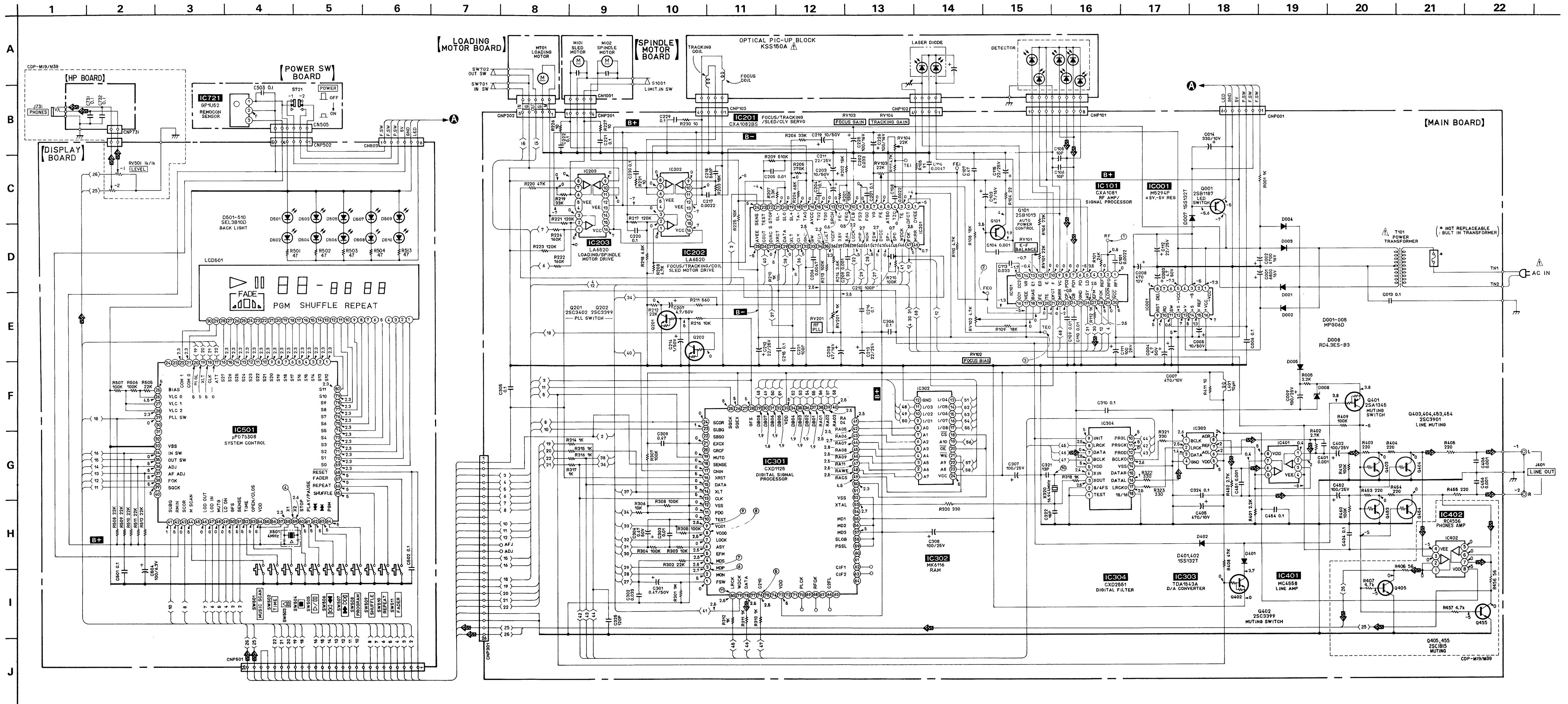
Note: The components identified by mark $\triangle$ or dotted line with mark $\triangle$ are critical for safety. Replace only with part number specified.

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

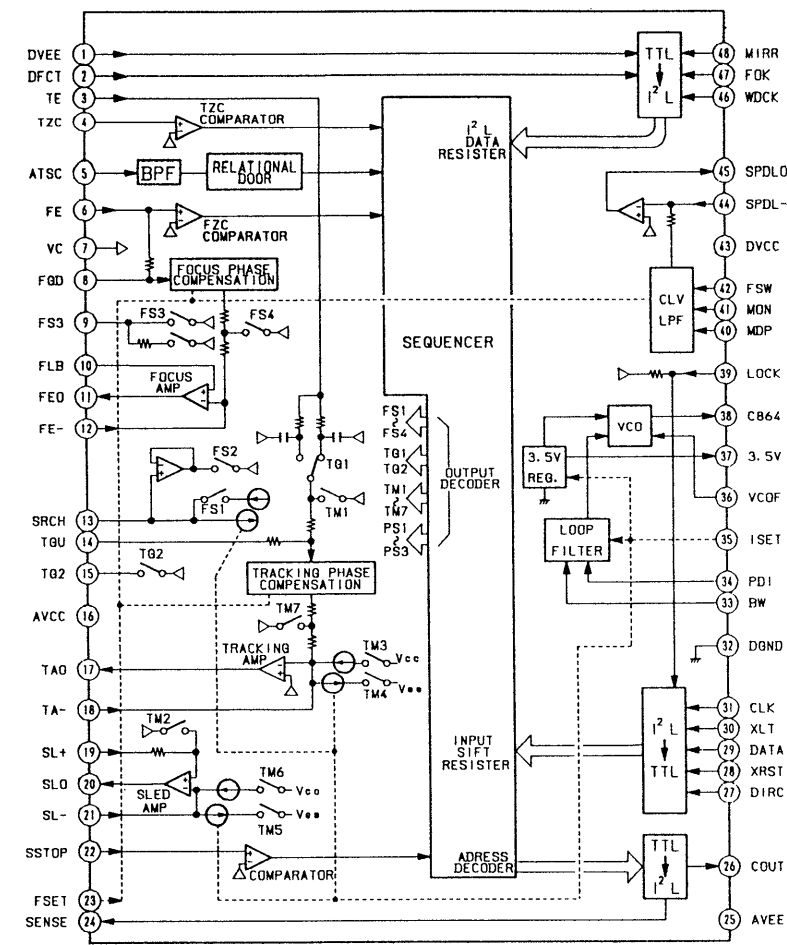
● WAVEFORM



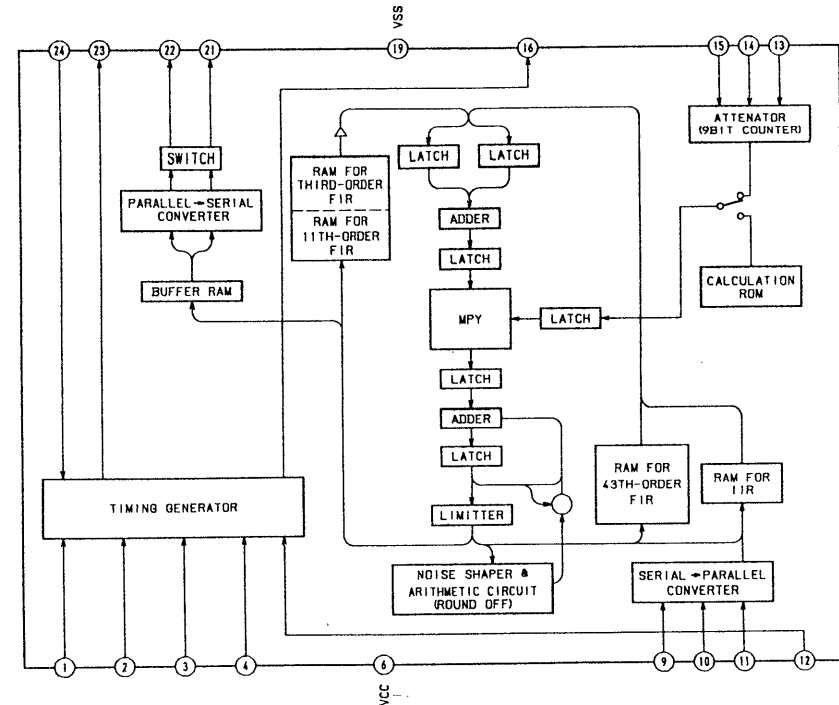
4-2. SCHEMATIC DIAGRAM



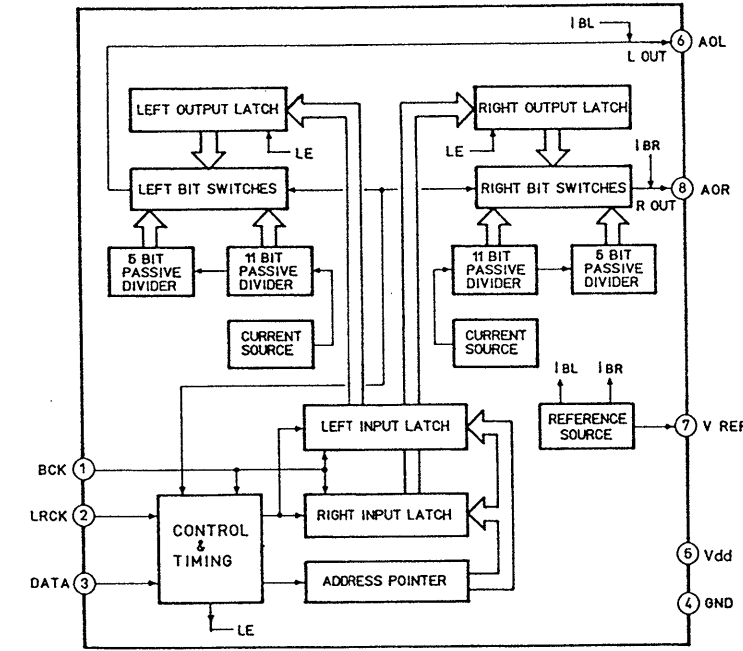
CXA1082BS



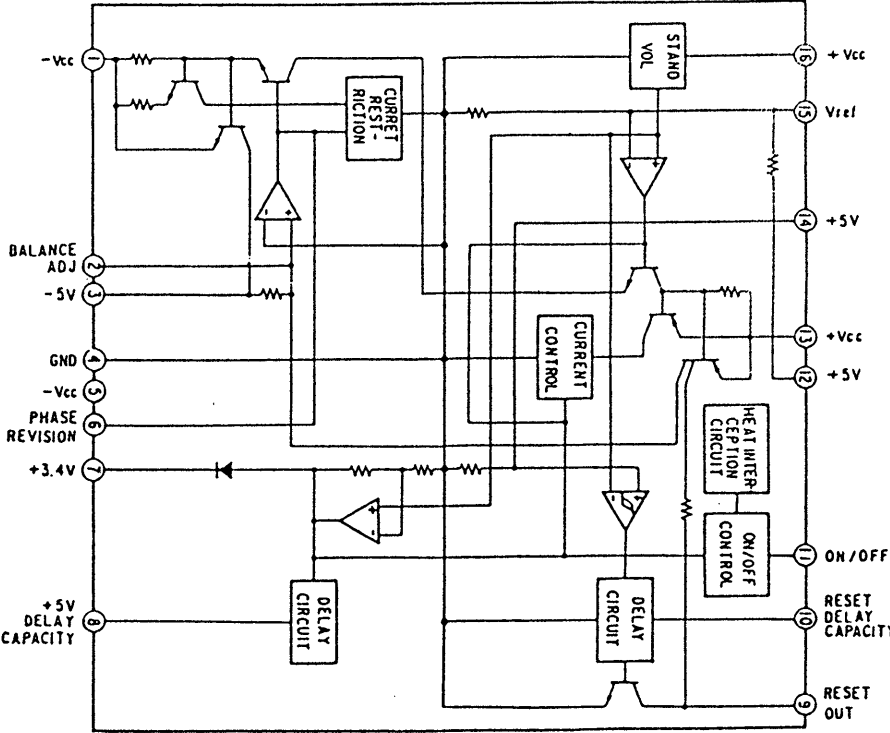
CXD2551P



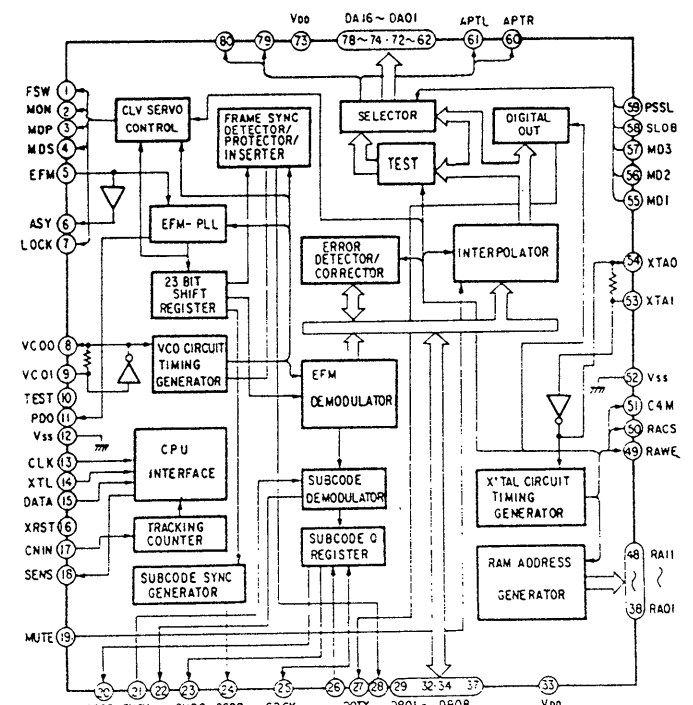
TDA1543



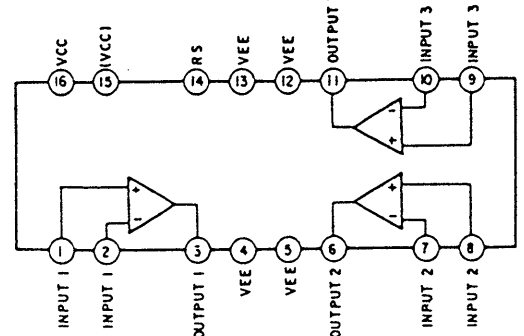
M5294P



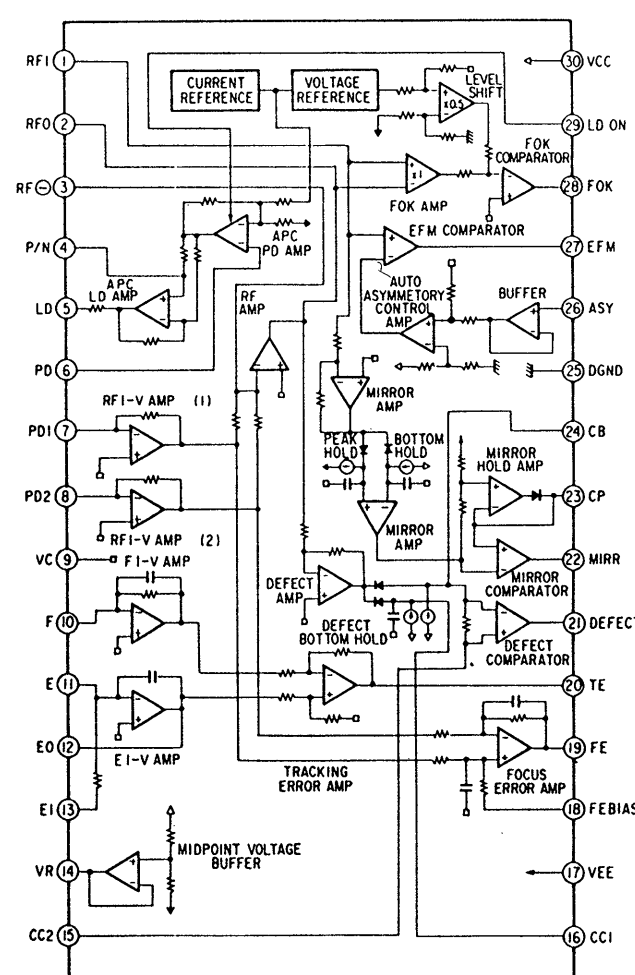
CXD1125Q



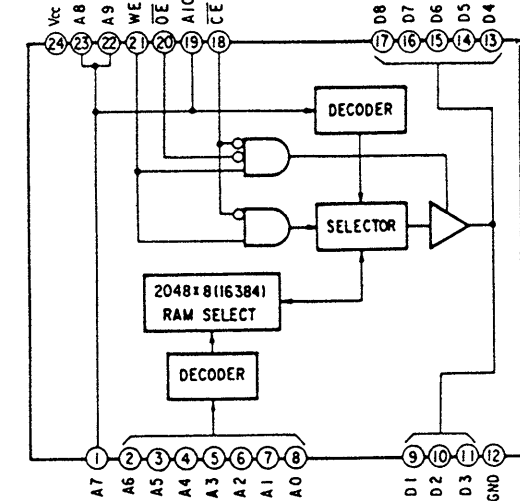
LA6520



CXA1081S



MK6116-15



SECTION 5

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.

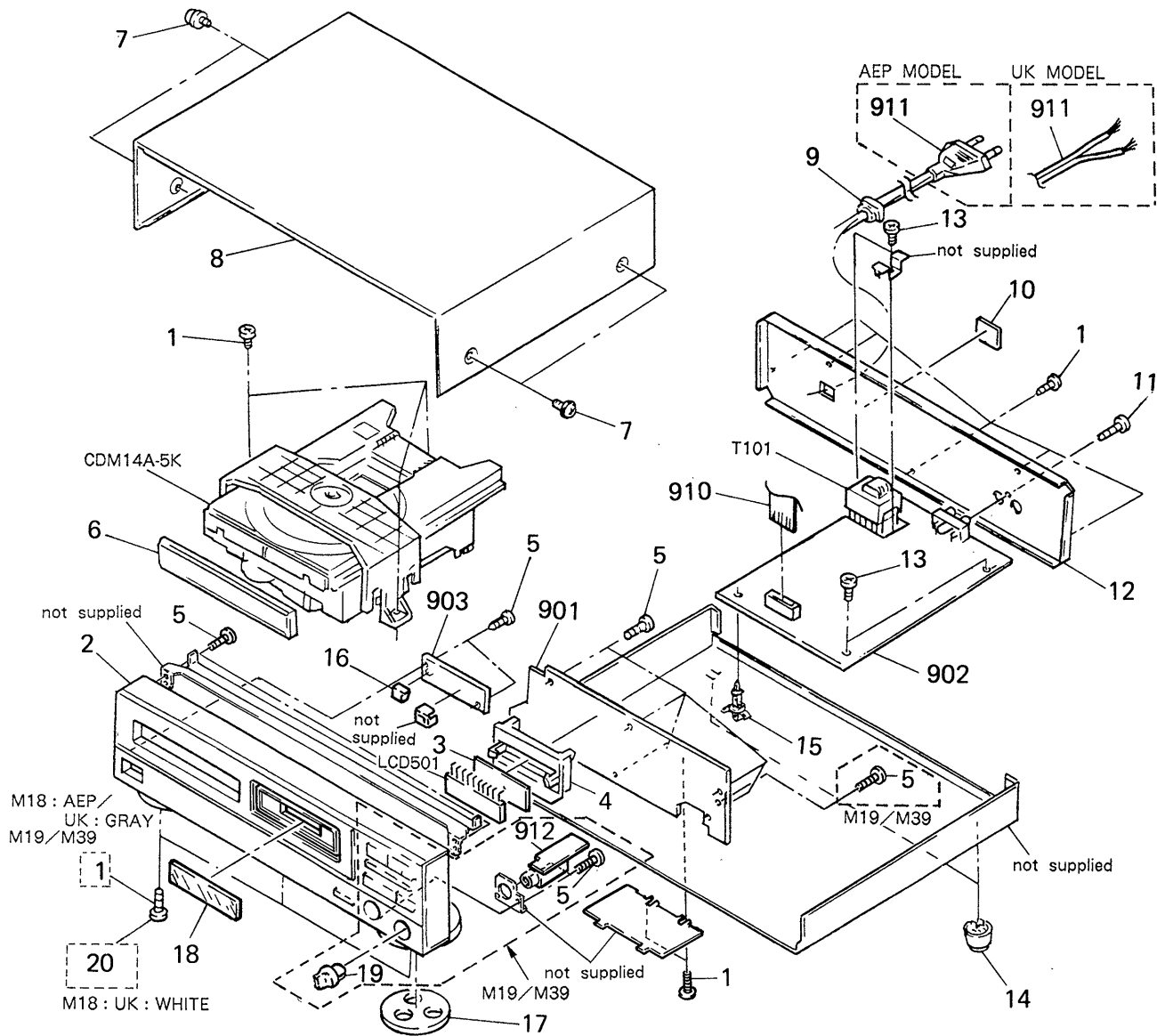
Color Indication of Appearance Parts
Example:
(RED) ...KNOB, BALANCE (WHITE)

↑
Cabinet's Color

Parts Color

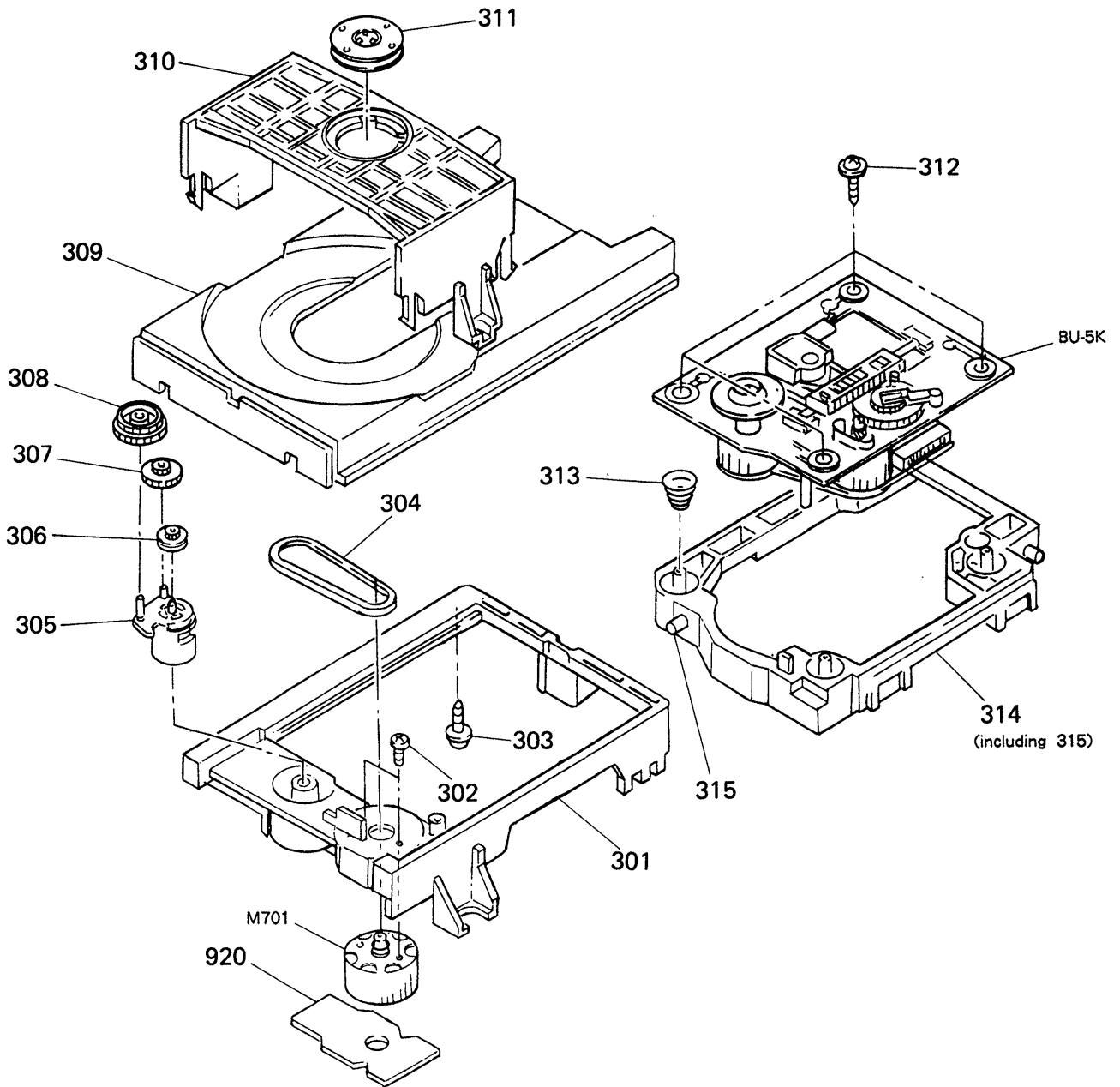
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(1) CHASSIS SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-685-872-09	SCREW +BVTT 3X8 (S)		12	*4-927-346-01	PANEL, BACK	
2	X-4917-582-2	(M18:AEP,UK)...PANEL ASSY, FRONT(GRAY)		14	4-933-601-01	FOOT	
	X-4917-584-1	(M39).....PANEL ASSY, FRONT		15	*4-924-098-31	HOLDER, PC BOARD	
	X-4917-585-1	(M19:AEP,UK)...PANEL ASSY, FRONT(BLACK)		16	4-927-341-01	(M18:AEP,UK/M19/M39)	
	X-4917-586-1	(M19:AEP).....PANEL ASSY, FRONT(GRAY)				...BUTTON (POWER)(GRAY)	
	X-4917-587-1	(M18:UK).....PANEL ASSY, FRONT(WHITE)			4-927-341-11	(M18:UK).....BUTTON (POWER)(WHITE)	
3	*4-933-136-01	ILLUMINATOR		17	4-921-906-01	FELT	
4	*4-933-121-01	HOLDER (LCD)		18	4-927-351-01	(M18:AEP,UK/M19/M39)	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S				...PLATE, INDICATION (GRAY)	
6	4-927-339-02	(M39).....PANEL, LOADING			4-927-351-11	(M18:UK)...PLATE, INDICATION (WHITE)	
	4-927-339-12	(M19:AEP,UK)...PANEL, LOADING(BLACK)		19	4-933-116-11	(M19/M39)...KNOB (C,TYPE), LOV	
	4-927-339-21	(M18:AEP,UK)...PANEL, LOADING(GRAY)		20	7-685-872-01	(M18:UK)...SCREW +BVTT 3X8 (S)(WHITE)	
	4-927-339-31	(M19:AEP).....PANEL, LOADING(GRAY)		901	*1-632-162-11	PC BOARD, DISPLAY	
	4-927-339-41	(M18:UK).....PANEL, LOADING(WHITE)		902	*A-4617-202-A	(M19/M39)...MOUNTED PCB, MAIN	
7	3-704-366-31	(M18:AEP,UK/M19/M39)...SCREW (CASE)			*A-4617-233-A	(M18).....MOUNTED PCB, MAIN	
		(M3X6)(GRAY)		903	*1-632-163-11	PC BOARD, POWER SW	
	3-704-366-41	(M18:UK)...SCREW (CASE)(M3X6)(WHITE)		910	1-575-043-11	WIRE, PARALLEL (26 CORE)	
8	4-919-376-51	(M19:AEP,UK/M39).....CASE (BLACK)		911	A.1-574-127-11	(M18:AEP/M19:AEP/M39)...CORD, POWER	
	4-919-376-61	(M18:AEP,UK/M19:AEP)...CASE (GRAY)			A.1-574-390-11	(M18:UK/M19:UK).....CORD, POWER	
	4-919-376-71	(M18:UK).....CASE (WHITE)		912	*1-632-164-11	(M19/M39)...PC BOARD, HEADPHONE	
9	*3-703-244-00	BUSHING (2104), CORD		LCD501	1-808-794-41	DISPLAY PANEL, LIQUID CRYSTAL	
10	*4-927-352-01	(M18:AEP)...LABEL, MODEL NUMBER(AE,ALSACE)		T101	A.1-449-823-11	TRANSFORMER, POWER	
11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S					

(2) CD MECHANISM SECTION (CDM14A-5K)



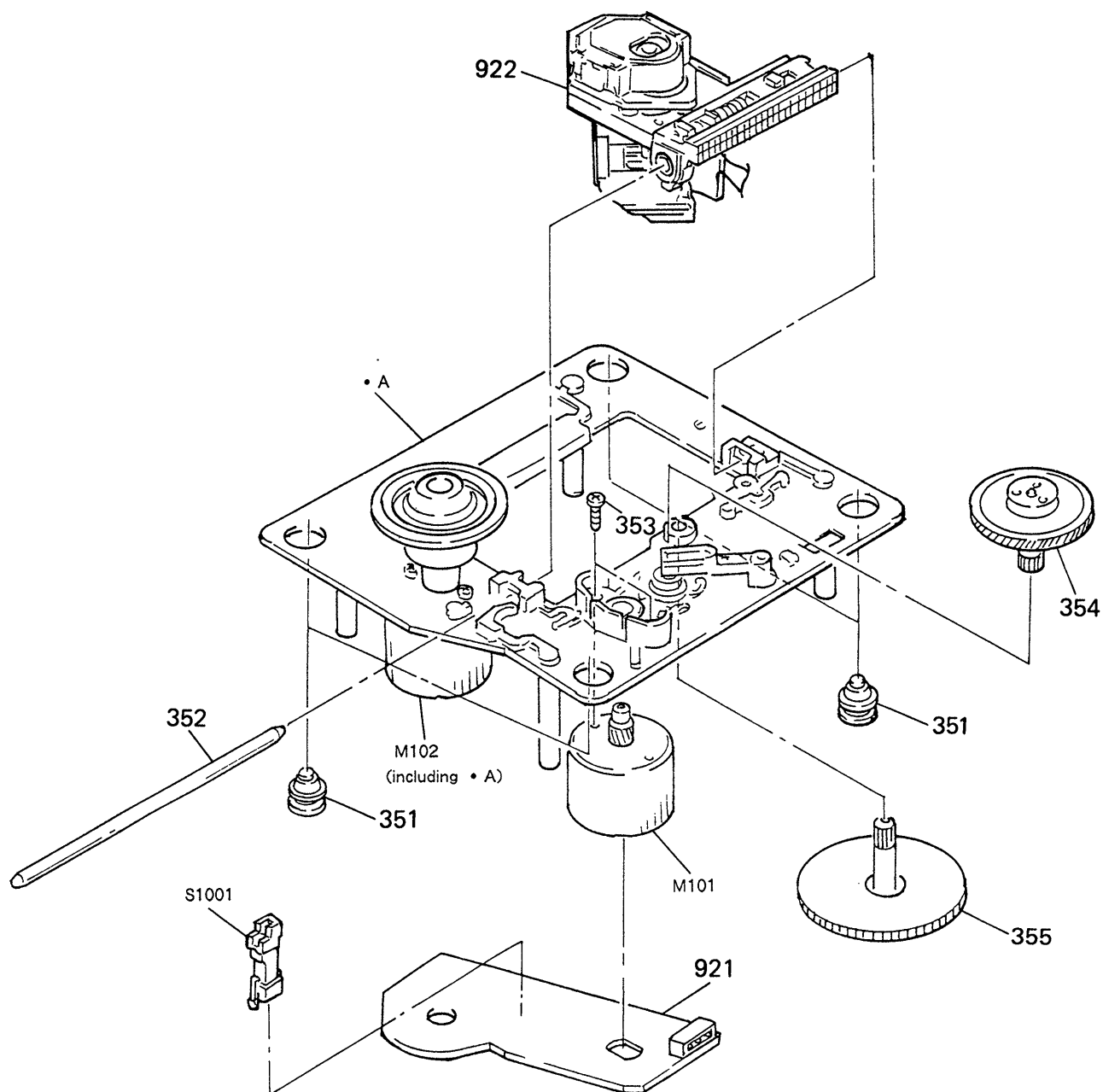
No.	Part No.	Description
301	4-933-111-01	CHASSIS (MD)
302	7-621-775-10	SCREW +B 2.6X4
303	*4-917-583-21	BRACKET, YOKE
304	4-927-649-01	BELT
305	4-933-109-01	CAM
306	4-927-651-01	PULLEY (S)
307	4-927-628-01	GEAR (C)
308	4-933-107-01	GEAR (PL)
309	4-933-112-01	TABLE, DISK

Remarks

No.	Part No.	Description
310	4-933-110-01	HOLDER (MG)
311	A-4675-347-A	MG ASSY
312	4-933-134-01	SCREW (+PTPH 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

Remarks

(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	No.	Part No.	Description	Remarks
351	4-933-126-01	INSULATOR (A)		921	*1-632-460-11	PC BOARD, SL/SP MOTOR	
352	4-917-565-01	SHAFT, SLED		922	 8-848-062-01	DEVICE, OPTICAL KSS-150A (H)	
353	7-621-255-15	SCREW +P 2X3		M101	X-4917-504-1	ASSY, MOTOR (SLED)	
354	4-917-567-01	GEAR (M)		M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
355	4-917-564-01	GEAR (P), FLATNESS		S1001	1-570-822-11	SWITCH, LEAF (LIMIT IN SW)	

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: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

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

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
901	*1-632-162-11	PC BOARD, DISPLAY					C210	1-162-282-31	CERAMIC	100PF	10%	50V	
902	*A-4617-202-A	(M19/M39)...MOUNTED PCB, MAIN					C211	1-126-233-11	ELECT	22MF	20%	25V	
	*A-4617-233-A	(M18).....MOUNTED PCB, MAIN					C212	1-126-233-11	ELECT	22MF	20%	25V	
903	*1-632-163-11	PC BOARD, POWER SW					C213	1-126-233-11	ELECT	22MF	20%	25V	
910	1-575-043-11	WIRE, PARALLEL (26 CORE)					C214	1-124-499-11	ELECT	1MF	20%	50V	
911	Δ 1-574-127-11	(M18:AEP/M19:AEP/M39)...CORD, POWER					C215	1-164-159-11	CERAMIC	0.1MF		50V	
	Δ 1-574-390-11	(M18:UK/M19:UK).....CORD, POWER					C216	1-164-159-11	CERAMIC	0.1MF		50V	
912	*1-632-164-11	(M19/M39)...PC BOARD, HEADPHONE					C217	1-161-375-00	CERAMIC	0.0022MF	20%	16V	
920	*1-632-169-11	PC BOARD, LOADING MOTOR					C218	1-162-291-31	CERAMIC	560PF	10%	50V	
922	Δ 8-848-062-01	DEVICE, OPTICAL KSS-150A (H)					C219	1-123-875-11	ELECT	10MF	20%	50V	
C001	1-126-017-11	ELECT	6800MF	20%	16V		C220	1-136-165-00	FILM	0.1MF	5%	50V	
C002	1-124-898-11	ELECT	4700MF	20%	16V		C221	1-164-159-11	CERAMIC	0.1MF		50V	
C003	1-124-927-11	ELECT	4.7MF	20%	50V		C222	1-164-159-11	CERAMIC	0.1MF		50V	
C004	1-124-927-11	ELECT	4.7MF	20%	50V		C225	1-126-101-11	ELECT	100MF	20%	16V	
C005	1-123-875-11	ELECT	10MF	20%	50V		C226	1-126-101-11	ELECT	100MF	20%	16V	
C006	1-164-159-11	CERAMIC	0.1MF		50V		C229	1-164-159-11	CERAMIC	0.1MF		50V	
C007	1-124-472-11	ELECT	470MF	20%	10V		C230	1-164-159-11	CERAMIC	0.1MF		50V	
C008	1-124-472-11	ELECT	470MF	20%	10V		C231	1-162-282-31	CERAMIC	100PF	10%	50V	
C009	1-124-478-11	ELECT	100MF	20%	25V		C301	1-124-902-00	ELECT	0.47MF	20%	50V	
C013	1-164-159-11	CERAMIC	0.1MF		50V		C302	1-106-379-12	MYLAR	0.033MF	5%	100V	
C014	1-124-604-00	ELECT	330MF	20%	10V		C303	1-161-379-00	CERAMIC	0.01MF	20%	16V	
C101	1-106-351-00	MYLAR	0.0022MF	5%	50V		C304	1-124-902-00	ELECT	0.47MF	20%	50V	
C103	1-124-477-11	ELECT	47MF	20%	16V		C305	1-164-159-11	CERAMIC	0.1MF		50V	
C104	1-162-294-31	CERAMIC	0.001MF	10%	50V		C306	1-164-159-11	CERAMIC	0.1MF		50V	
C105	1-162-199-31	CERAMIC	10PF	5%	50V		C307	1-124-478-11	ELECT	100MF	20%	25V	
C106	1-162-199-31	CERAMIC	10PF	5%	50V		C308	1-124-478-11	ELECT	100MF	20%	25V	
C107	1-136-173-00	FILM	0.47MF	5%	50V		C309	1-136-173-00	FILM	0.47MF	5%	50V	
C108	1-161-375-00	CERAMIC	0.0022MF	20%	16V		C310	1-164-159-11	CERAMIC	0.1MF		50V	
C109	1-106-367-00	MYLAR	0.01MF	5%	100V		C321	1-162-202-31	CERAMIC	13PF	5%	50V	
C110	1-106-367-00	MYLAR	0.01MF	5%	100V		C322	1-162-203-31	CERAMIC	15PF	5%	50V	
C111	1-124-478-11	ELECT	100MF	20%	25V		C324	1-164-159-11	CERAMIC	0.1MF		50V	
C112	1-126-233-11	ELECT	22MF	20%	25V		C325	1-162-283-31	CERAMIC	120PF	10%	50V	
C113	1-106-379-12	MYLAR	0.033MF	5%	100V		C401	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C114	1-161-377-00	CERAMIC	0.0047MF	20%	16V		C402	1-124-478-11	ELECT	100MF	20%	25V	
C115	1-126-233-11	ELECT	22MF	20%	25V		C404	1-164-159-11	CERAMIC	0.1MF		50V	
C201	1-136-165-00	FILM	0.1MF	5%	50V		C405	1-124-472-11	ELECT	470MF	20%	10V	
C202	1-106-379-12	MYLAR	0.033MF	5%	100V		C406	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C203	1-123-875-11	ELECT	10MF	20%	50V		C451	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C204	1-136-165-00	FILM	0.1MF	5%	50V		C452	1-124-478-11	ELECT	100MF	20%	25V	
C205	1-161-379-00	CERAMIC	0.01MF	20%	16V		C454	1-164-159-11	CERAMIC	0.1MF		50V	
C206	1-161-377-00	CERAMIC	0.0047MF	20%	16V		C456	1-162-294-31	CERAMIC	0.001MF	10%	50V	
C207	1-124-927-11	ELECT	4.7MF	20%	50V		C501	1-164-159-11	CERAMIC	0.1MF		50V	
C208	1-124-477-11	ELECT	47MF	20%	16V		C502	1-164-159-11	CERAMIC	0.1MF		50V	
C209	1-162-294-31	CERAMIC	0.001MF	10%	50V		C503	1-164-159-11	CERAMIC	0.1MF		50V	
							C504	1-126-177-11	ELECT	100MF	20%	6.3V	

Ref.No.	Part No.	Description
C731	1-164-159-11	(M19/M39)...CERAMIC 0.1MF 50V
C732	1-164-159-11	(M19/M39)...CERAMIC 0.1MF 50V
CN505	*1-568-944-11	PIN, CONNECTOR 6P
CNP001*	1-568-955-11	PIN, CONNECTOR 6P
CNP101*	1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CNP102*	1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CNP103*	1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CNP201*	1-568-953-11	PIN, CONNECTOR 4P
CNP202*	1-568-954-11	PIN, CONNECTOR 5P
CNP301*	1-568-931-11	SOCKET, CONNECTOR 26P
CNP501*	1-568-931-11	SOCKET, CONNECTOR 26P
CNP731*	1-568-940-11	(M19/M39)...PIN, CONNECTOR 2P
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
D007	8-719-107-94	DIODE 1SS202-1
D008	8-719-301-51	DIODE S-15H
D401	8-719-107-94	DIODE 1SS202-1
D402	8-719-107-94	DIODE 1SS202-1
D501	8-719-312-63	LED SEL3B10D
D502	8-719-312-63	LED SEL3B10D
D503	8-719-312-63	LED SEL3B10D
D504	8-719-312-63	LED SEL3B10D
D505	8-719-312-63	LED SEL3B10D
D506	8-719-312-63	LED SEL3B10D
D507	8-719-312-63	LED SEL3B10D
D508	8-719-312-63	LED SEL3B10D
D509	8-719-312-63	LED SEL3B10D
D510	8-719-312-63	LED SEL3B10D
IC001	8-759-631-40	IC M5294P
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	8-759-994-30	IC MK6116-15
IC303	8-759-990-13	IC TDA1543A-S1
IC304	8-752-334-06	IC CXD2551P
IC401	8-759-995-08	IC MC4558
IC402	8-759-981-85	(M19/M39)...IC RC4556D
IC501	8-759-149-81	IC UPD75308GF-536-3B9
IC721	8-749-920-83	IC GP1U52XB
J401	1-566-921-11	JACK, PIN 2P (LINE OUT)
J731	1-568-519-51	(M19/M39)...JACK, LARGE TYPE (PHONE'S)
L401	1-410-509-11	INDUCTOR 10UH
LCD501	1-808-794-41	DISPLAY PANEL, LIQUID CRYSTAL
M101	X-4917-504-1	ASSY, MOTOR (SLED)
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)
M701	A-4608-362-A	MOTOR (L) ASSY
Q001	8-729-920-91	TRANSISTOR 2SB1187-F
Q101	8-729-116-57	TRANSISTOR 2SB1068K
Q201	8-729-900-80	TRANSISTOR DTC114ES

Ref.No.	Part No.	Description
Q202	8-729-900-89	TRANSISTOR DTC144ES
Q401	8-729-806-10	TRANSISTOR 2SA1348
Q402	8-729-900-89	TRANSISTOR DTC144ES
Q403	8-729-900-74	TRANSISTOR DTC143TS
Q404	8-729-900-74	TRANSISTOR DTC143TS
Q405	8-729-281-52	(M19/M39)...TRANSISTOR 2SC1815Y
Q453	8-729-900-74	TRANSISTOR DTC143TS
Q454	8-729-900-74	TRANSISTOR DTC143TS
Q455	8-729-281-52	(M19/M39)...TRANSISTOR 2SC1815Y
R001	1-249-417-11	CARBON 1K 5% 1/4W
R005	1-249-421-11	CARBON 2.2K 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
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

Ref.No.	Part No.	Description				
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	
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	
R323	1-249-411-11	CARBON	330	5%	1/4W	
R401	1-249-421-11	CARBON	2.2K	5%	1/4W	
R402	1-249-422-11	CARBON	2.7K	5%	1/4W	
R403	1-249-109-11	CARBON	220	5%	1/4W	
R404	1-249-409-11	CARBON	220	5%	1/4W	
R405	1-249-409-11	CARBON	220	5%	1/4W	
R406	1-249-402-11	(M19/M39)...CARBON	56	5%	1/4W	
R407	1-249-425-11	(M19/M39)...CARBON	4.7K	5%	1/4W	
R408	1-249-437-11	CARBON	47K	5%	1/4W	
R409	1-249-441-11	CARBON	100K	5%	1/4W	
R410	1-249-441-11	CARBON	100K	5%	1/4W	
R411	1-249-393-11	CARBON	10	5%	1/4W	
R452	1-249-422-11	CARBON	2.7K	5%	1/4W	
R453	1-249-409-11	CARBON	220	5%	1/4W	
R454	1-249-409-11	CARBON	220	5%	1/4W	
R455	1-249-409-11	CARBON	220	5%	1/4W	
R456	1-249-402-11	(M19/M39)...CARBON	56	5%	1/4W	
R457	1-249-425-11	(M19/M39)...CARBON	4.7K	5%	1/4W	
R460	1-249-441-11	CARBON	100K	5%	1/4W	
R501	1-249-401-11	CARBON	47	5%	1/4W	
R502	1-249-401-11	CARBON	47	5%	1/4W	
R503	1-249-401-11	CARBON	47	5%	1/4W	
R504	1-249-401-11	CARBON	47	5%	1/4W	
R505	1-249-433-11	CARBON	22K	5%	1/4W	
R506	1-249-441-11	CARBON	100K	5%	1/4W	
R507	1-249-441-11	CARBON	100K	5%	1/4W	
R508	1-249-433-11	CARBON	22K	5%	1/4W	
R509	1-249-433-11	CARBON	22K	5%	1/4W	
R510	1-249-433-11	CARBON	22K	5%	1/4W	
R511	1-249-433-11	CARBON	22K	5%	1/4W	
R512	1-249-433-11	CARBON	22K	5%	1/4W	
R513	1-249-401-11	CARBON	47	5%	1/4W	

Ref.No.	Part No.	Description
RV101	1-228-995-00	RES, ADJ, METAL GLAZE 22K(E-F BALANCE)
RV102	1-228-993-00	RES, ADJ, METAL GLAZE 4.7K(FOCUS BIAS)
RV103	1-228-995-00	RES, ADJ, METAL GLAZE 22K(FOCUS GAIN)
RV104	1-228-995-00	RES, ADJ, METAL GLAZE 22K (TRACKING GAIN)
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K (RF PLL)
RV501	1-238-748-11	(M19/M39)...RES, VAR, CARBON 1K/1K (LEVEL)
S721	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
SW501	1-554-303-21	SWITCH, KEY BOARD (MUSIC SCAN)
SW502	1-554-303-21	SWITCH, KEY BOARD (TIME)
SW503	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
SW504	1-554-303-21	SWITCH, KEY BOARD (□)
SW505	1-554-303-21	SWITCH, KEY BOARD (▶▶)
SW506	1-554-303-21	SWITCH, KEY BOARD (◀◀ ◀◀)
SW507	1-554-303-21	SWITCH, KEY BOARD (▶▶ ▶▶)
SW508	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)
SW509	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
SW510	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
SW511	1-554-303-21	SWITCH, KEY BOARD (FADER)
SW701	1-572-086-11	SWITCH, LEAF (IN SW)
SW702	1-572-086-11	SWITCH, LEAF (OUT SW)
T101	△.1-449-823-11	TRANSFORMER, POWER
TN1	*1-535-771-11	TERMINAL
TN2	*1-535-771-11	TERMINAL
X320	1-577-328-21	VIBRATOR, CRYSTAL (16.9MHz)
X501	1-567-775-11	VIBRATOR, CERAMIC (4.2MHz)

ACCESSORY & PACKING MATERIAL

1-465-282-11	(M39)...REMOTE COMMANDER (RM-D90)
1-559-533-11	CORD, CONNECTION
3-750-716-52	(M19/M39).....MANUAL, INSTRUCTION
3-750-716-62	(M19:AEP/M39)...MANUAL, INSTRUCTION
*4-927-354-01	(M18)...INDIVIDUAL CARTON
*4-927-354-11	(M19)...INDIVIDUAL CARTON
*4-927-354-21	(M39)...INDIVIDUAL CARTON
*4-927-355-01	CUSHION

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

CDP-M18/M19/M39

SONY SERVICE MANUAL

AEP Model
UK Model

CORRECTION-1

Correct your service manual (SUPPLEMENT-1) as shown below.

 : indicates corrected portion.

Page	INCORRECT	CORRECT
2	E-F Balance Check Procedure : 1. Connect test point TP (ADJ) to ground with lead wire.	E-F Balance Check Procedure : 1. Connect test point TP (ADJ) to ground and <u>TP (TES)</u> to TP (VC) with lead wire. 

CDP-M18/M19/M39

SONY[®] SERVICE MANUAL

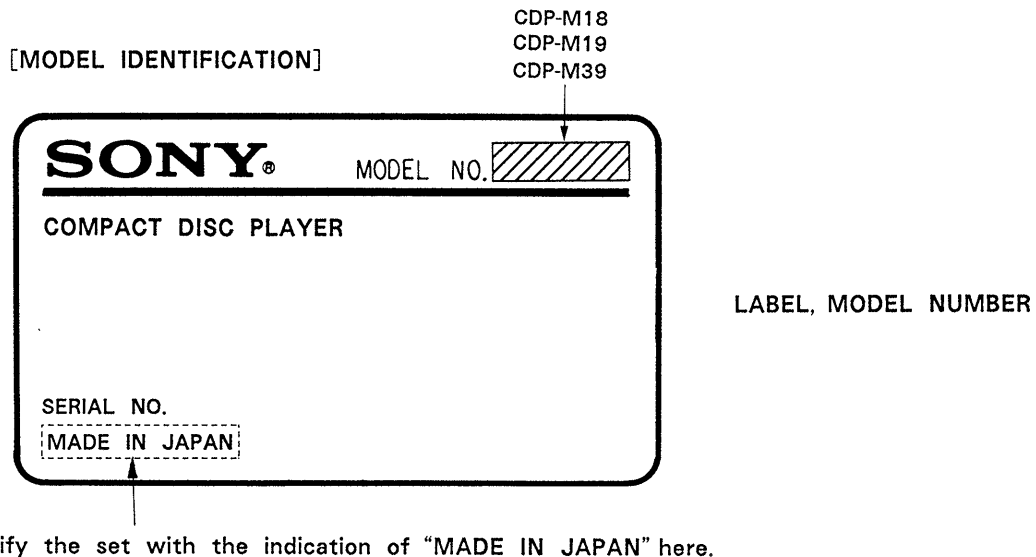
*AEP Model
UK Model*

SUPPLEMENT-1

File this Supplement with the Service Manual.

This SUPPLEMENT-1 is for the model made in JAPAN.

Refer to the CDP-M18/M19/M39 service manual for related information not contained in this SUPPLEMENT-1.



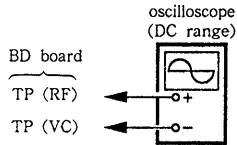
SECTION 1

ELECTRICAL ADJUSTMENTS

1. Perform adjustments in the order given.
2. Use YEDS-18 disc (3-702-101-1) unless otherwise indicated.
3. Use the oscilloscope with more than 10 MΩ impedance.

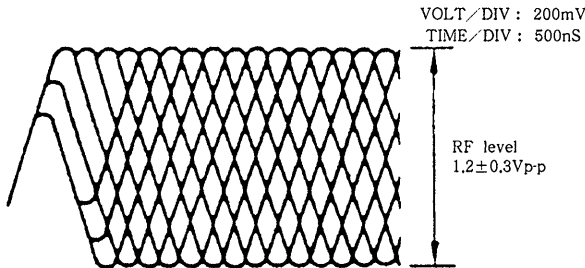
RF Level Check

Procedure :



1. Connect oscilloscope to test point TP (RF) and TP (VC) on BD board.
2. Confirm that RF level and eye pattern is optimum. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the wave form.

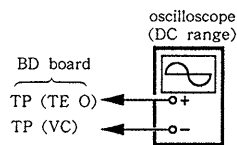
RF Signal Reference Waveform (eye pattern)



REFERENCE

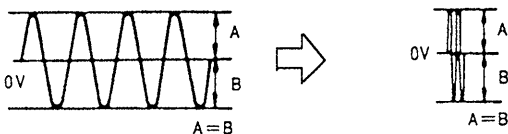
E-F Balance Check

Procedure :



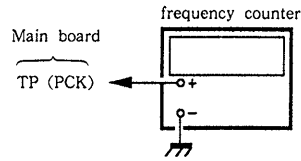
1. Connect test point TP (ADJ) to ground and TP (TES) to TP (VC) with lead wire.
2. Connect oscilloscope to test point TP (TE O) and TP (VC) on BD board.
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V.
6. After check, remove the lead wire connected in step 1.

Note : Take sweep time as long as possible to obtain best waveform.



RF PLL Free-run Frequency Check

Procedure :



1. Turn POWER switch on.
2. Put disc (YEDS-18) in and playback.
3. Confirm that reading on frequency counter is 4,3218MHz.

Focus/Tracking Gain Adjustment

A frequency response 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.

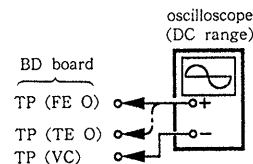
Symptoms	Gain	Focus	Tracking
• The time until music starts becomes longer for STOP → ▷PLAY or automatic selection. (◀▶ buttons pressed.) (Normally takes about 1 seconds.)		low	low or high
• Music does not start and disc continues to rotate for STOP → ▷PLAY or automatic selection. (◀▶ buttons pressed.)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

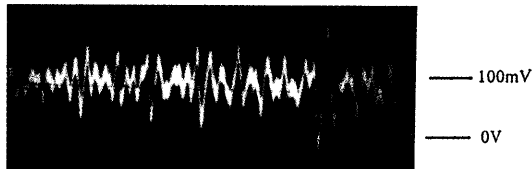
1. Keep the set horizontal.
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert disc (YEDS-18) and press $\triangleright$ PLAY button.
3. Connect oscilloscope to TP (FEO) and TP (VC) on BD board.
4. Adjustment RV102 on digital board so that the waveform is as shown in the figure below. (focus gain adjustment)

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

VOLT/DIV : 1V
TIME/DIV : 2ms



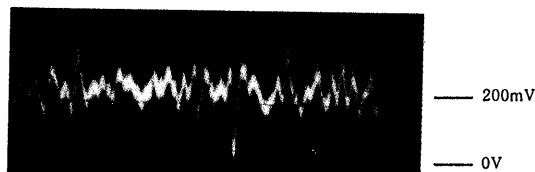
VOLT/DIV : 100mV
TIME/DIV : 2mS



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

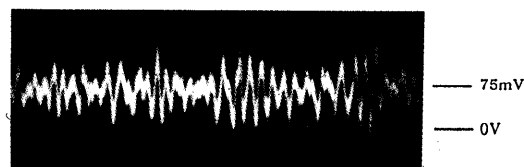
low focus gain

VOLT/DIV : 100mV
TIME/DIV : 2mS



high focus gain

VOLT/DIV : 100mV
TIME/DIV : 2mS



5. Connect oscilloscope to TP (TEO) and TP (VC) on BD board.
6. Adjust RV101 on digital board so that the waveform is as shown the figure below. (tracking gain adjustment)

VOLT/DIV : 1V
TIME/DIV : 2mS



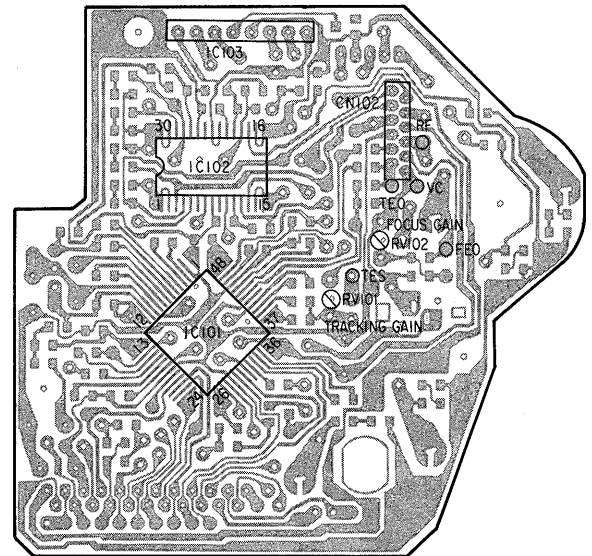
- Incorrect Examples (fundamental wave appears)

low tracking gain

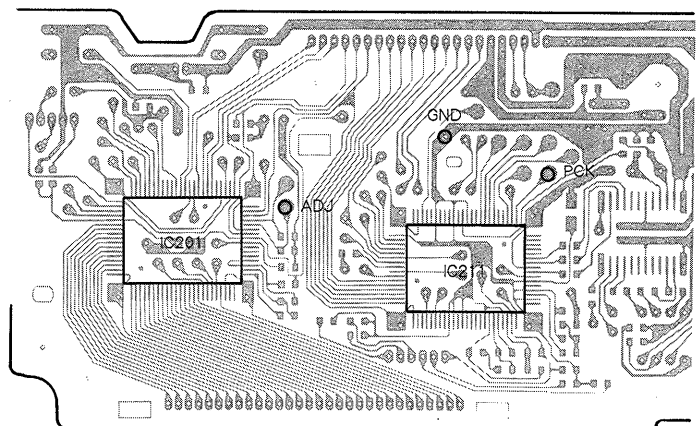
VOLT/DIV : 1V
TIME/DIV : 2mS



Adjustment Location :
[BD board]



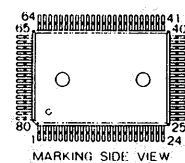
【Main board】



CXA1372Q

(TOP VIEW)

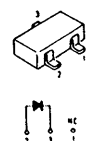
CXD2500Q
μPD75308GF-545-3B9



DTC144EK
FN1L4M-M31
2SD596DV345



RD4.7M-B1



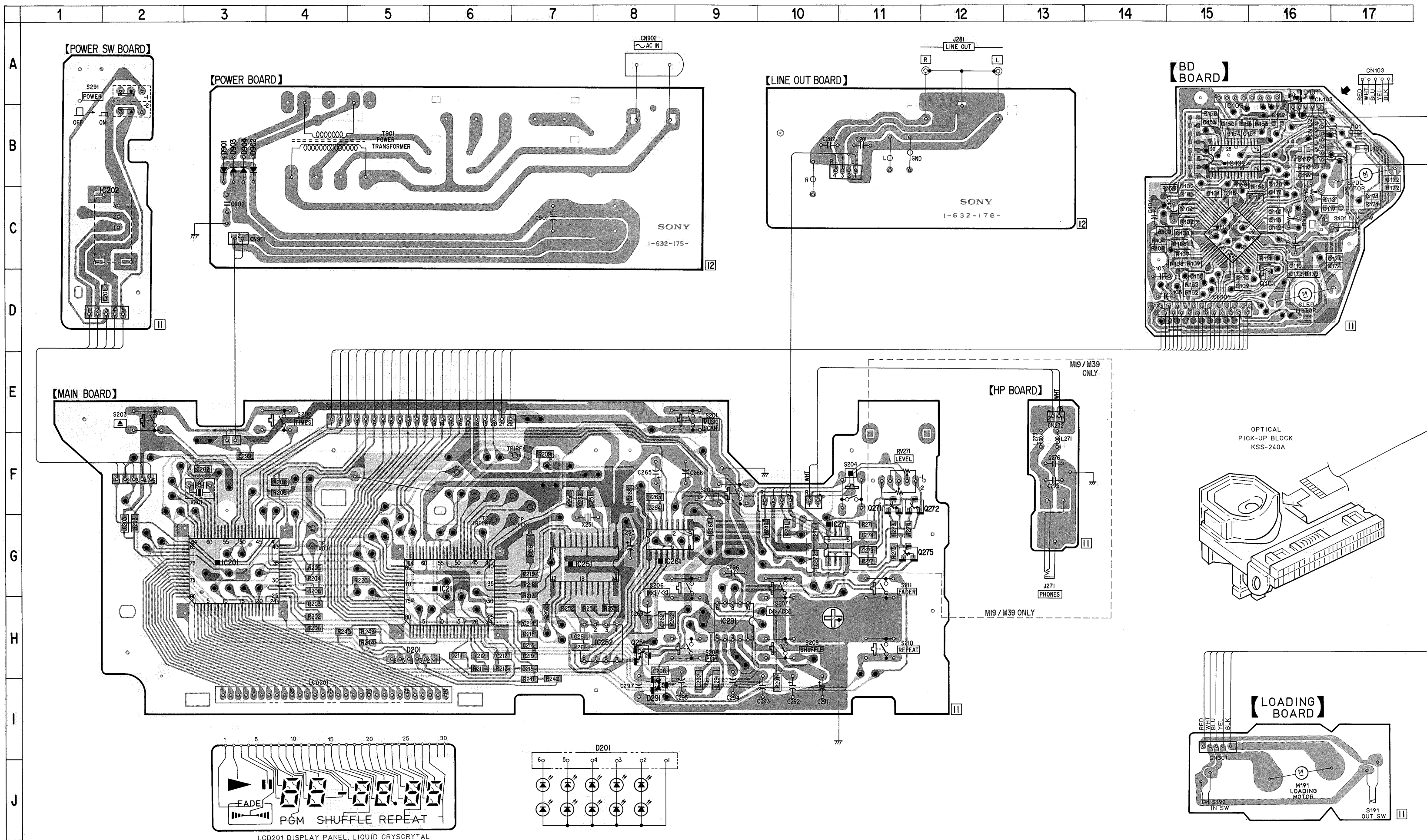
● SEMICONDUCTOR
LOCATION

Ref. No.	Location
IC101	C-15
IC102	B-15
IC103	A-15
IC201	G-3
IC202	C-2
IC211	G-6
IC251	C-7
IC252	H-8
IC261	G-8
IC271	G-10
IC291	H-9
Q101	D-16
Q251	H-8
Q271	F-11
Q272	F-11
Q275	G-11
D101	A-16
D201	H-5
D291	H-9
D901	B-3
D902	B-3
D903	B-3
D904	B-3

Note :

- ■ : parts mounted on the conductor side.
- ● : Through hole.
-  : Pattern on the side which is seen.
-  : Pattern of the rear side.

2-1. PRINTED WIRING BOARDS



Note :

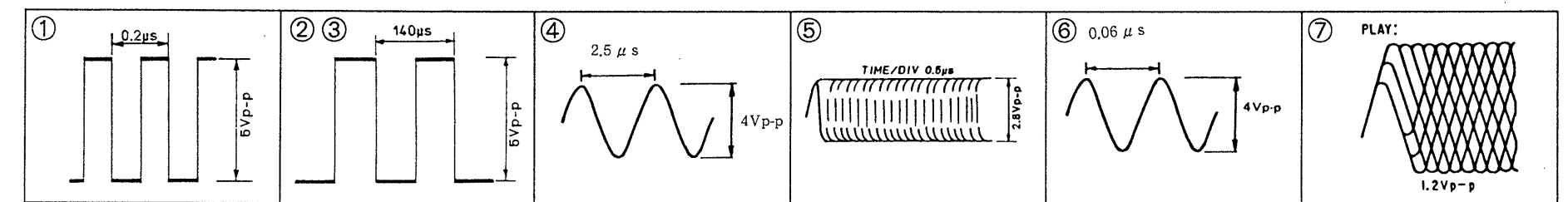
- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}W$ or less unless otherwise specified.
- Δ : internal component.

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

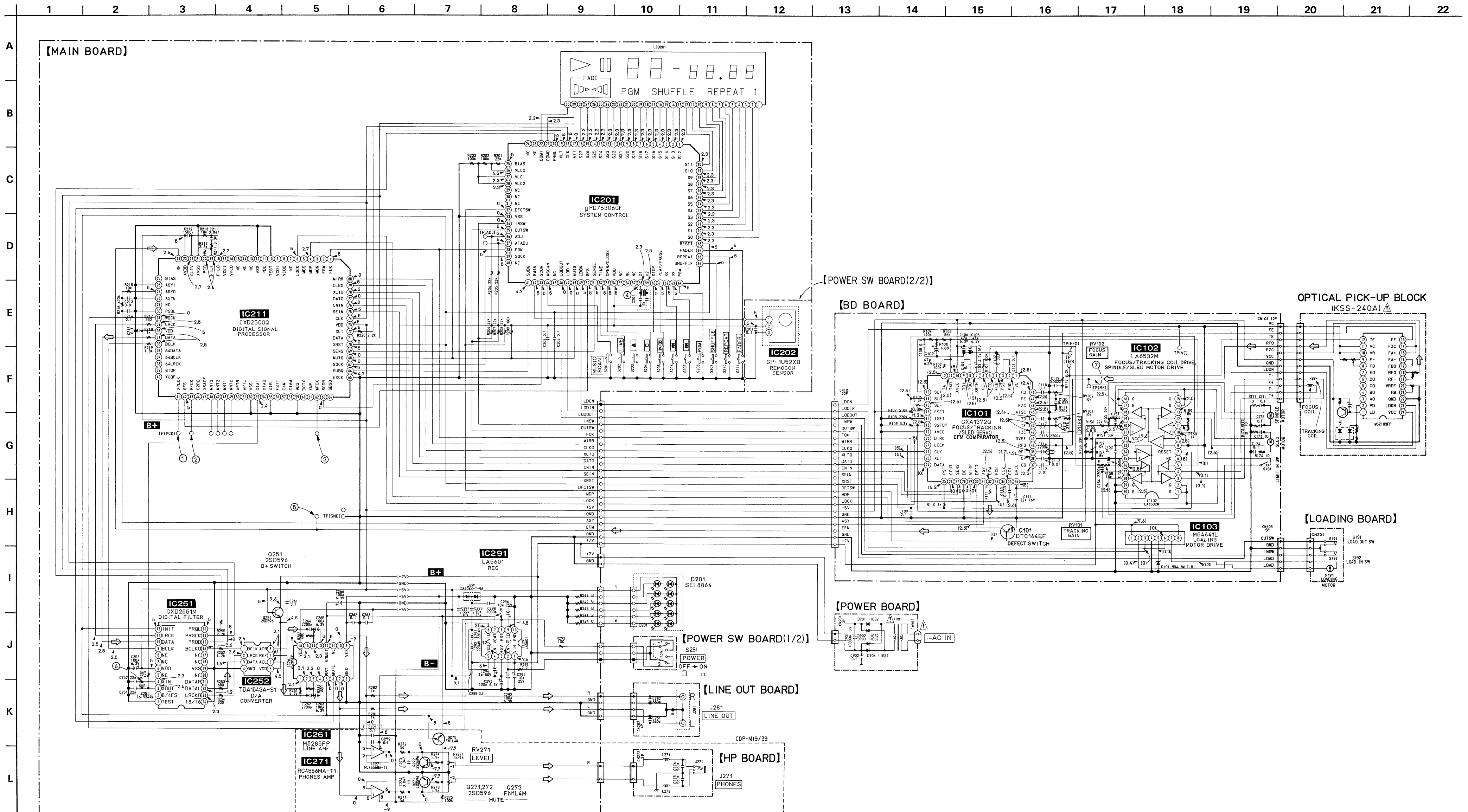
- **B+** : B+ Line
- **B-** : B- Line
- $\square$: adjustment for repair.

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

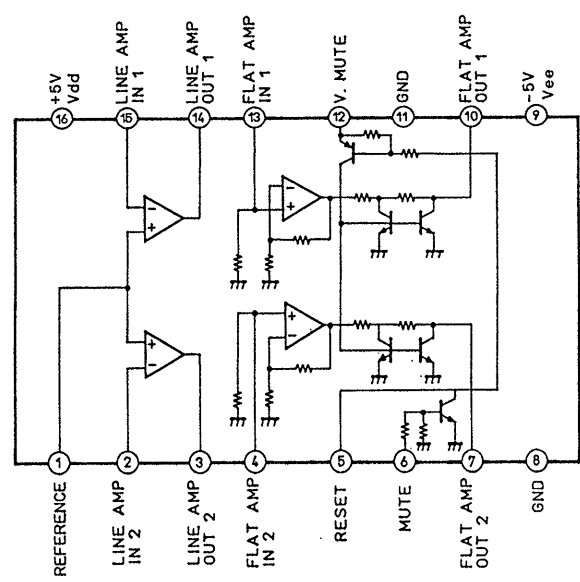
● WAVEFORM



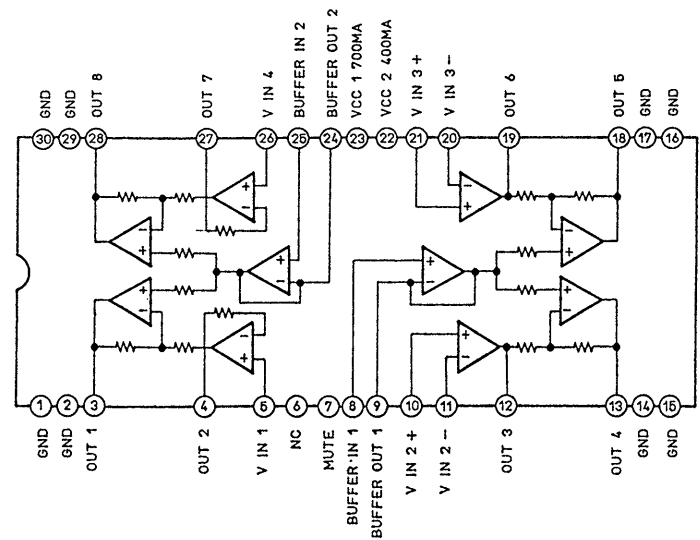
2-2. SCHEMATIC DIAGRAM



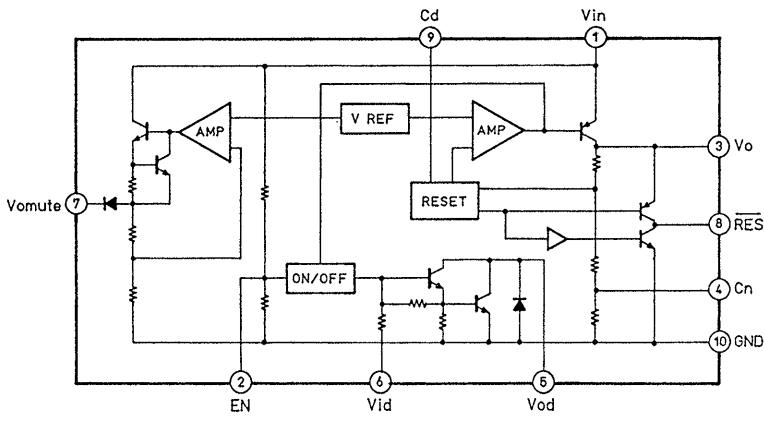
2-4. IC BLOCK DIAGRAM
M5285FP



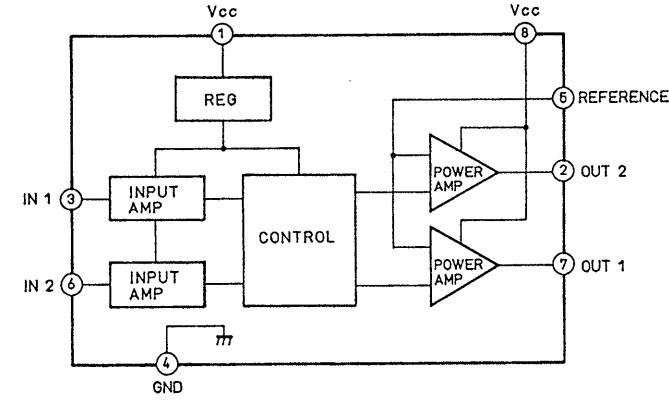
LA6532



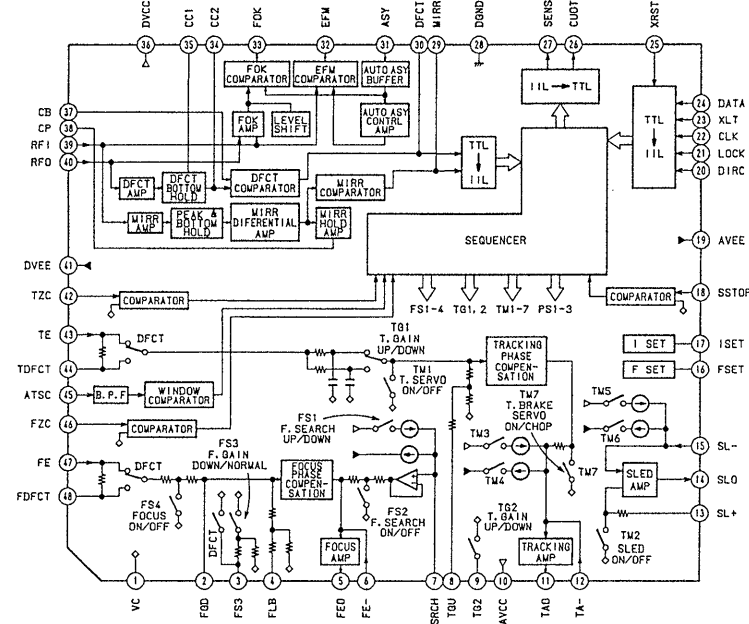
LA5601



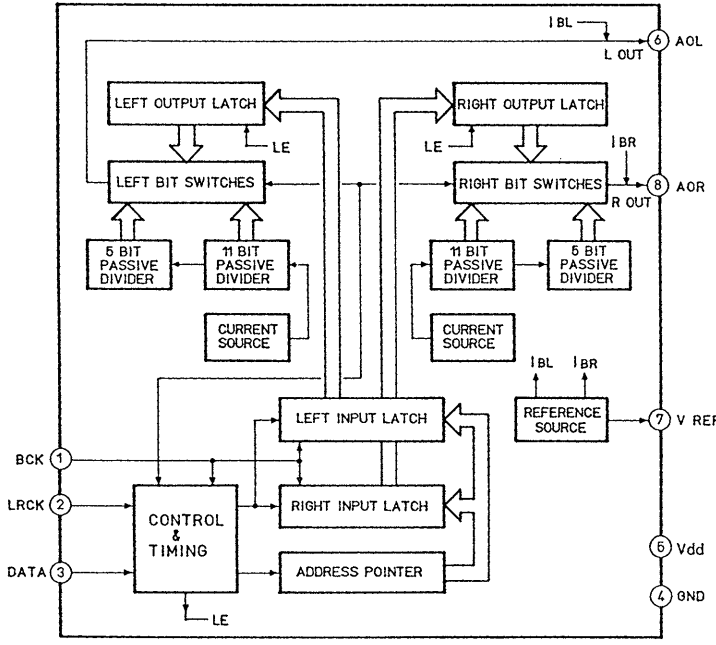
M54641L



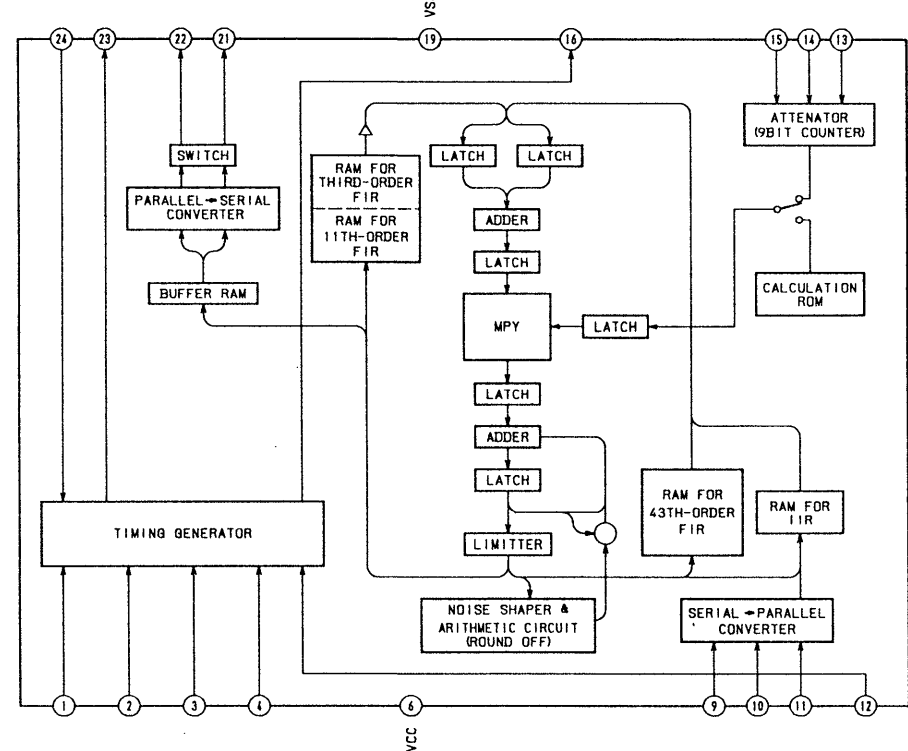
CXA1372Q



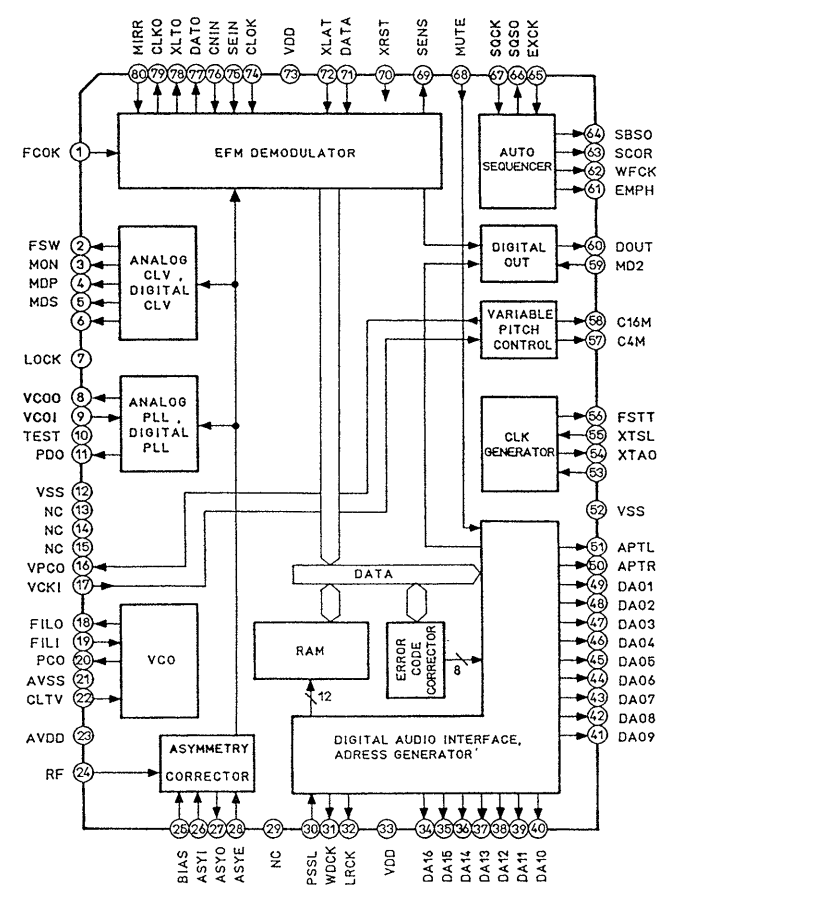
TDA1543



CXD2551M



CXD2500



SECTION 3

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.

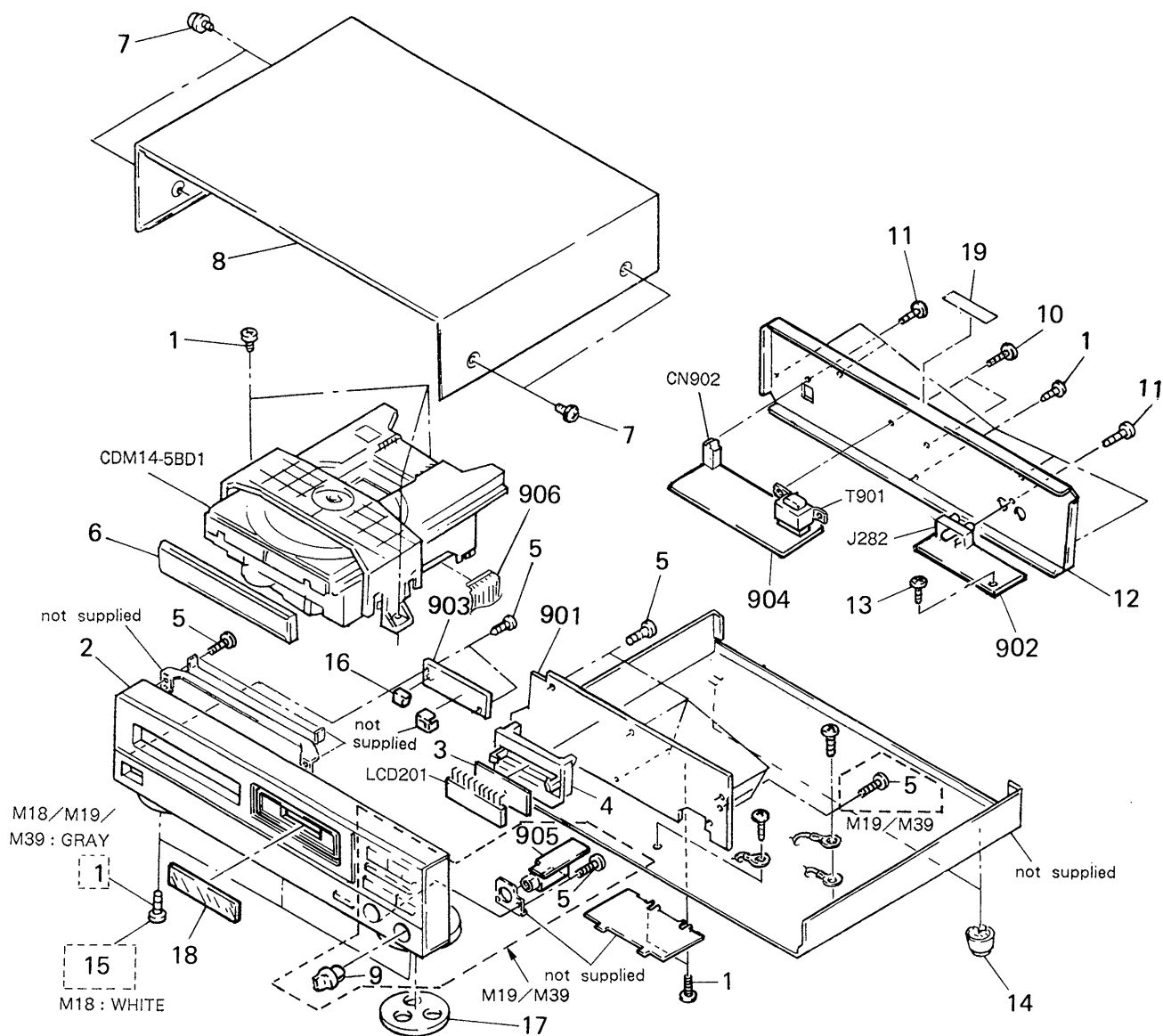
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)

↑
Cabinet's Color

↑
Parts Color

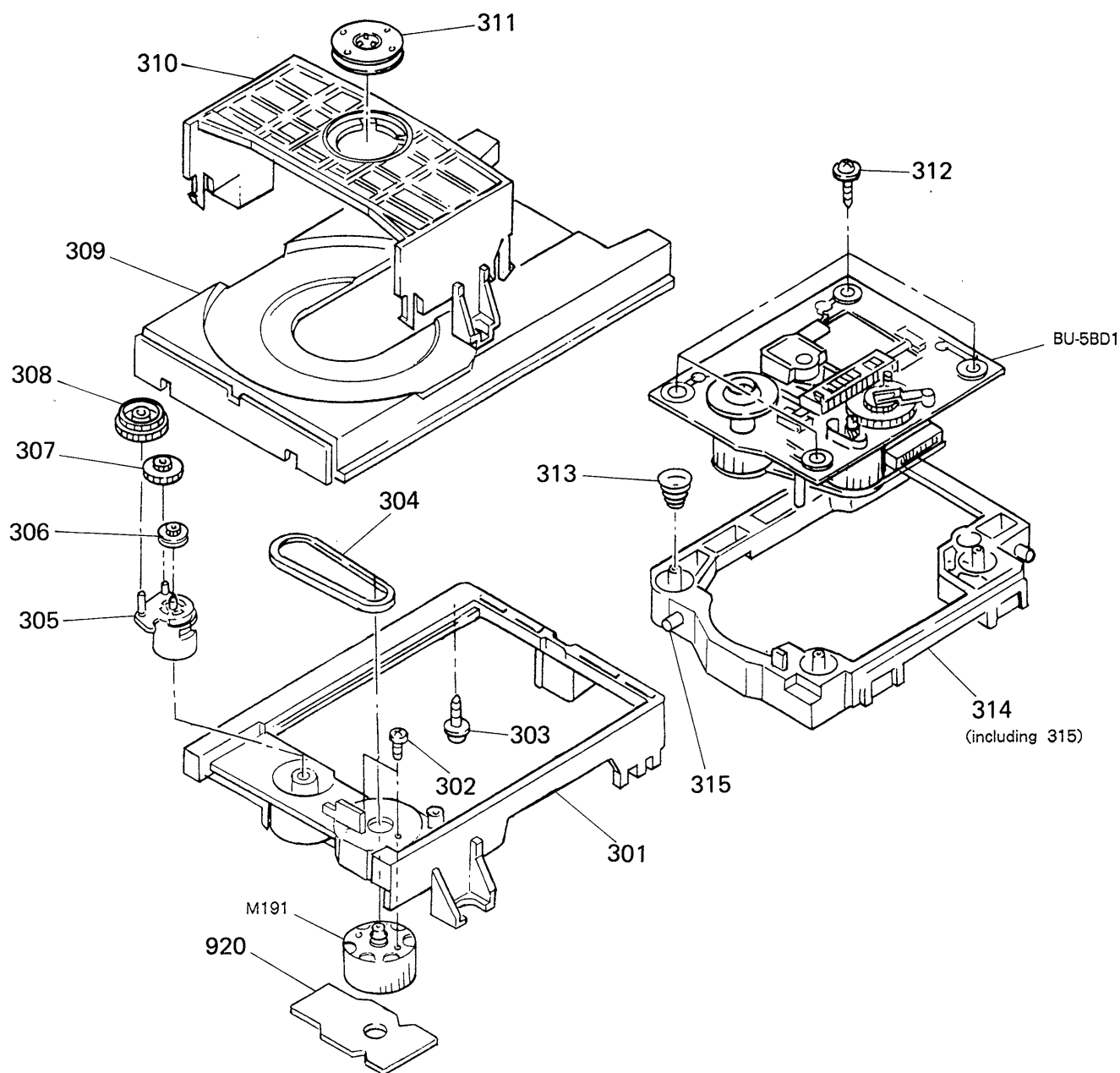
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(1) CHASSIS SECTION



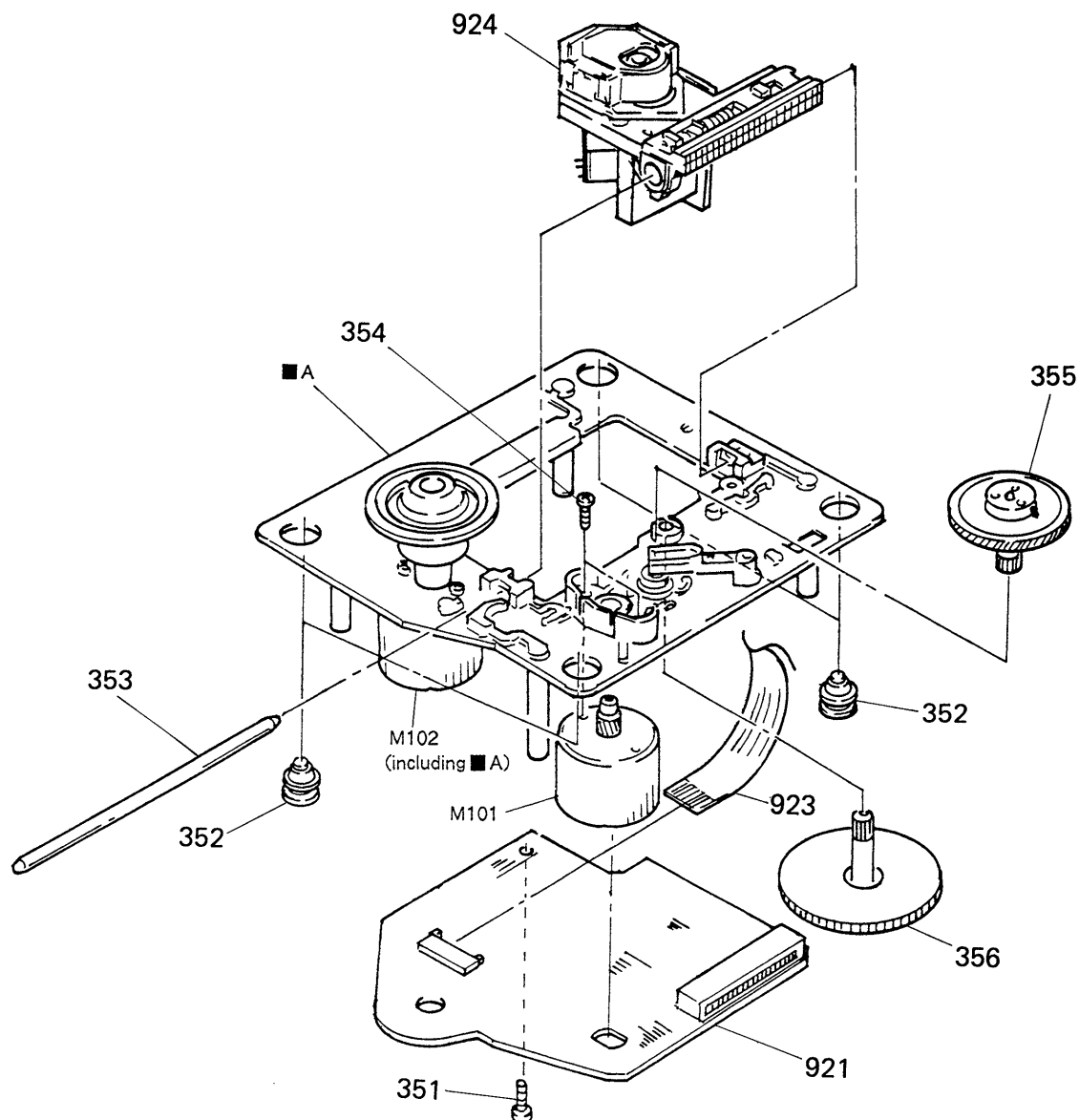
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-682-548-09	SCREW +BVTT 3X8 (S)(GRAY)		12	*4-927-326-01	(M39)...PANEL, BACK	
2	X-4917-582-1	(M18)...PANEL ASSY, FRONT (GRAY)			*4-927-327-01	(M19)...PANEL, BACK	
	X-4917-584-1	(M39)...PANEL ASSY, FRONT			*4-927-327-41	(M18)...PANEL, BACK	
	X-4917-585-1	(M19)...PANEL ASSY, FRONT (BLACK)		13	7-682-547-04	SCREW +BVTT 3X6 (S)	
	X-4917-586-1	(M19)...PANEL ASSY, FRONT (GRAY)		14	4-933-601-01	FOOT	
	X-4917-587-1	(M18)...PANEL ASSY, FRONT (WHITE)		15	7-685-872-01	(M18)...SCREW +BVTT 3X8 (S)(WHITE)	
3	*4-933-114-01	ILLUMINATOR		16	4-927-341-01	(M18/M19/M39)...BUTTON (POWER)(GRAY)	
4	*4-933-121-01	HOLDER (LCD)			4-927-341-11	(M18).....BUTTON (POWER)(WHITE)	
5	4-928-635-01	SCREW, +BV (2.6X8) TAPPING		17	*4-921-906-01	FELT	
6	4-927-339-01	(M39)...PANEL, LOADING		18	4-927-351-03	(M18/M19/M39)...PLATE, INDICATION (GRAY)	
	4-927-339-12	(M19)...PANEL, LOADING (BLACK)			4-927-351-11	(M18).....PLATE, INDICATION (WHITE)	
	4-927-339-21	(M18)...PANEL, LOADING (GRAY)		19	4-860-518-00	CUSHION	
	4-927-339-31	(M19)...PANEL, LOADING (GRAY)		901	*A-4617-196-A	(M19/M39)...MOUNTED PCB, MAIN	
	4-927-339-41	(M18)...PANEL, LOADING (WHITE)			*A-4617-394-A	(M18).....MOUNTED PCB, MAIN	
7	3-704-366-01	(M18/M19/M39)...SCREW (CASE)(M3X8)(GRAY)		902	*1-632-176-11	PC BOARD, LINE OUT	
	3-704-366-41	(M18).....SCREW (CASE)(M3X6)(WHITE)		903	*1-634-305-11	PC BOARD, POWER SW	
8	4-919-376-31	(M19/M39)...CASE (BLACK)		904	*1-632-175-11	PC BOARD, POWER	
	4-919-376-71	(M18).....CASE (WHITE)		905	*1-634-306-11	(M19/M39)...PC BOARD, HP	
	4-919-376-81	(M18/M19)...CASE (GRAY)		906	1-535-798-11	JUMPER, FILM (WITH TERMINAL)	
9	4-933-116-11	KNOB (C, TYPE), LOV		CN902	1-526-931-11	INLET, AC	
10	4-820-330-31	SCREW		J281	1-566-921-11	JACK, PIN 2P (LINE OUT)	
11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		LCD201	1-808-794-31	DISPLAY PANEL, LIQUID CRYSTAL	

(2) CD MECHANISM SECTION (CDM14-5BD1)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
301	4-933-111-01	CHASSIS (MD)		310	4-933-110-01	HOLDER (MG)	
302	7-621-775-10	SCREW +B 2.6X4		311	A-4675-347-A	MG ASSY	
303	*4-917-583-21	BRACKET, YOKE		312	4-933-134-01	SCREW (+PTPH M2.6X6)	
304	4-927-649-01	BELT		313	4-917-541-01	SPRING (B)	
305	4-933-109-01	CAM		314	4-933-129-01	HOLDER (BU)	
306	4-927-651-01	PULLEY (S)		315	4-933-108-01	SHAFT (CAM)	
307	4-927-628-01	GEAR (C)		920	*1-632-202-11	PC BOARD, LOADING	
308	4-933-107-01	GEAR (PL)		M191	A-4604-363-A	MOTOR (L) ASSY	
309	4-933-112-01	TABLE, DISK					

(3) OPTICAL PICK-UP BLOCK (BU-5BD1)



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	No.	Part No.	Description	Remarks
351	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		921	*A-4617-161-A	MOUNTED PCB, BD	
352	4-933-126-01	INSULATOR (A)		923	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
353	4-917-565-01	SHAFT, SLED		924	▲8-848-144-11	DEVICE, OPTICAL KSS-240A	
354	7-621-255-15	SCREW +P 2X3		M101	X-4917-504-1	ASSY, MOTOR (SLED)	
355	4-917-567-01	GEAR (M)		M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
356	4-917-564-01	GEAR (P), FLATNESS					

SECTION 4

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: μ F, PF: μ PF.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA...: μ A..., UPA...: μ PA...,UPC...: μ PC, UPD...: μ PD...

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

Ref.No.	Part No.	Description	
901	*A-4617-196-A	(M19/M39)...MOUNTED PCB, MAIN	
	*A-4617-394-A	(M18).....MOUNTED PCB, MAIN	
902	*1-632-176-11	PC BOARD, LINE OUT	
903	*1-634-305-11	PC BOARD, POWER SW	
904	*1-632-175-11	PC BOARD, POWER	
905	*1-634-306-11	(M19/M39)...PC BOARD, HP	
906	1-535-798-11	JUMPER, FILM (WITH TERMINAL)	
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	Δ 8-848-144-11	DEVICE, OPTICAL KSS-240A	
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
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	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C202	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C203	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C211	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C212	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V

Ref.No.	Part No.	Description	
C213	1-164-232-11	CERAMIC CHIP 0.01MF	50V
C214	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C215	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C216	1-135-091-00	TANTAL. CHIP 1MF	20% 16V
C251	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C252	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C253	1-124-225-00	ELECT 100MF	20% 6.3V
C261	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C262	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C263	1-124-225-00	ELECT 100MF	20% 6.3V
C264	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V
C265	1-124-225-00	ELECT 100MF	20% 6.3V
C266	1-124-225-00	ELECT 100MF	20% 6.3V
C267	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C268	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C271	1-163-038-00	(M19/M39)...CERAMIC CHIP 0.1MF	25V
C272	1-163-038-00	(M19/M39)...CERAMIC CHIP 0.1MF	25V
C273	1-163-035-00	(M19/M39)...CERAMIC CHIP 0.047MF	50V
C274	1-163-035-00	(M19/M39)...CERAMIC CHIP 0.047MF	50V
C275	1-130-468-00	(M19/M39)...MYLAR 560PF	5% 50V
C276	1-130-468-00	(M19/M39)...MYLAR 560PF	5% 50V
C281	1-130-469-00	MYLAR 680PF	5% 50V
C282	1-130-469-00	MYLAR 680PF	5% 50V
C291	1-126-096-11	ELECT 10MF	20% 25V
C292	1-124-225-00	ELECT 100MF	20% 6.3V
C293	1-124-225-00	ELECT 100MF	20% 6.3V
C294	1-126-160-11	ELECT 1MF	20% 50V
C295	1-126-096-11	ELECT 10MF	20% 25V
C296	1-126-096-11	ELECT 10MF	20% 25V
C297	1-124-584-00	ELECT 100MF	20% 10V
C298	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V
C299	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C901	1-126-939-11	ELECT 10000MF	20% 16V
C902	1-162-851-11	CERAMIC 0.1MF	20% 16V
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	
CN272	*1-564-495-11	(M19/M39)...PIN, CONNECTOR 2P	
CN282	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P	
CN901	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	
CN902	1-526-931-11	INLET, AC	
D101	8-719-105-72	DIODE RD4.7M-B1	
D201	1-808-805-11	DIODE SEL8864	
D291	8-719-800-76	DIODE 1SS226	

Ref.No.	Part No.	Description
D901	8-719-200-82	DIODE 11ES2
D902	8-719-200-82	DIODE 11ES2
D903	8-719-200-82	DIODE 11ES2
D904	8-719-200-82	DIODE 11ES2
IC101	8-752-037-33	IC CXA1372Q
IC102	8-759-821-94	IC LA6532M
IC103	8-759-633-65	IC M54641L
IC201	8-759-149-91	IC UPD75308GF-545-3B9
IC202	8-749-920-83	IC GP1U52XB
IC211	8-752-333-31	IC CXD2500Q
IC251	8-752-334-07	IC CXD2551M
IC252	8-759-990-13	IC TDA1543A-S1
IC261	8-759-633-66	IC M5285FP
IC271	8-759-981-86	(M19/M39)...IC RC4556MA
IC291	8-759-821-93	IC LA5601
J271	1-568-519-21	(M19/M39)...JACK, LARGE TYPE (PHONES)
J281	1-566-921-11	JACK, PIN 2P (LINE OUT)
L271	1-424-090-11	(M19/M39)...COIL, LINE FILTER
L273	1-424-090-11	(M19/M39)...COIL, LINE FILTER
L291	1-410-658-31	INDUCTOR CHIP 220UH
L292	1-410-658-31	INDUCTOR CHIP 220UH
LCD201	1-808-794-31	DISPLAY PANEL, LIQUID CRYSTAL
M101	X-4917-504-1	ASSY, MOTOR (SLED)
M102	X-4917-523-3	ASSY, BASE (SPINDLE)
M191	A-4604-363-A	MOTOR (L) ASSY
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q251	8-729-141-75	TRANSISTOR 2SD596-DV345
Q271	8-729-141-75	(M19/M39)...TRANSISTOR 2SD596-DV345
Q272	8-729-141-75	(M19/M39)...TRANSISTOR 2SD596-DV345
Q275	8-729-113-66	(M19/M39)...TRANSISTOR FN1L4M-M31
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

Ref.No.	Part No.	Description
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	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R202	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R203	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R204	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R205	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R206	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R207	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R208	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R209	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R211	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R212	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W
R213	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R215	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R216	1-216-113-00	METAL GLAZE 470K 5% 1/10W
R217	1-216-037-00	METAL GLAZE 330 5% 1/10W
R218	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R219	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W
R220	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R241	1-216-018-00	METAL GLAZE 51 5% 1/10W
R242	1-216-018-00	METAL GLAZE 51 5% 1/10W
R243	1-216-018-00	METAL GLAZE 51 5% 1/10W
R244	1-216-018-00	METAL GLAZE 51 5% 1/10W
R245	1-216-018-00	METAL GLAZE 51 5% 1/10W
R251	1-216-041-00	METAL GLAZE 470 5% 1/10W
R252	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W
R253	1-216-045-00	METAL GLAZE 680 5% 1/10W
R254	1-216-037-00	METAL GLAZE 330 5% 1/10W
R255	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R261	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W
R262	1-216-045-00	METAL GLAZE 680 5% 1/10W
R263	1-216-045-00	METAL GLAZE 680 5% 1/10W
R271	1-216-019-00	(M19/M39)...METAL GLAZE 56 5% 1/10W
R272	1-216-019-00	(M19/M39)...METAL GLAZE 56 5% 1/10W

Ref.No.	Part No.	Description
R273	1-216-053-00	(M19/M39)...METAL GLAZE 1.5K 5% 1/10W
R274	1-216-053-00	(M19/M39)...METAL GLAZE 1.5K 5% 1/10W
R275	1-216-097-00	(M19/M39)...METAL GLAZE 100K 5% 1/10W
R281	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R282	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R291	1-216-298-00	METAL GLAZE 2.2 5% 1/10W
R293	1-216-025-00	METAL GLAZE 100 5% 1/10W
RV101	1-238-016-11	RES, ADJ, CARBON 10K (TRACKING GAIN)
RV102	1-238-016-11	RES, ADJ, CARBON 10K (FOCUS GAIN)
RV271	1-238-748-11	(M19/M39)...RES, VAR, CARBON 1K/1K (LEVEL)
S101	1-572-085-11	SWITCH, LEAF (LIMIT SW)
S191	1-572-086-11	SWITCH, LEAF (OUT SW)
S192	1-572-086-11	SWITCH, LEAF (IN SW)
S201	1-554-303-21	SWITCH, KEY BOARD (MUSIC SCAN)
S202	1-554-303-21	SWITCH, KEY BOARD (TIMES)
S203	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)
S204	1-554-303-21	SWITCH, KEY BOARD (■)
S205	1-554-303-21	SWITCH, KEY BOARD (▷/□□)
S206	1-554-303-21	SWITCH, KEY BOARD (◁◁/◁◁)
S207	1-554-303-21	SWITCH, KEY BOARD (▷▷/▷▷)
S208	1-554-303-21	SWITCH, KEY BOARD (PGM)
S209	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)
S210	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S211	1-554-303-21	SWITCH, KEY BOARD (FADER)
S291	1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)
T901	△ 1-449-825-11	TRANSFORMER, POWER
X201	1-567-775-11	VIBRATOR, CERAMIC
X251	1-567-908-11	VIBRATOR, CRYSTAL

ACCESSORY & PACKING MATERIAL

1-465-282-11	(M39)...REMOTE COMMANDER
4-384-285-01	(M39)...COVER, BATTERY
△ 1-558-835-11	CORD, POWER
1-559-533-11	CORD, CONNECTION
3-750-716-11	(M19/M39)...MANUAL, INSTRUCTION
3-750-716-41	(M19/M39)...MANUAL, INSTRUCTION
*3-795-629-11	INSTRUCTION
*4-922-998-01	CUSHION
*4-927-393-01	(M39)...INDIVIDUAL CARTON
*4-927-393-11	(M19)...INDIVIDUAL CARTON
*4-927-393-21	(M18)...INDIVIDUAL CARTON

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

9-955-636-12
（ Including 9-955-526-11
9-955-636-91
With 9-955-636-81 ）

Sony Corporation
Audio Group

English
92F0515-1 (2)
Printed in Japan
© 1990. 2