

CDP-M78/M79

SERVICE MANUAL

AEP Model
UK Model
E Model

CDP-M78

AEP Model
UK Model
E Model
Australian Model

CDP-M79

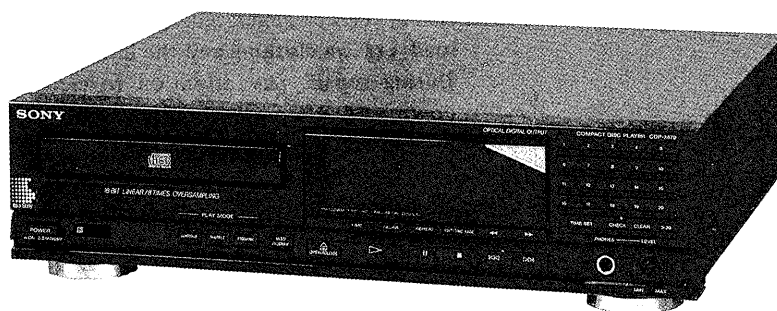


Photo : CDP-M79

SPECIFICATIONS

Compact disc player

	CDP-M79	CDP-M78
Frequency response	2 Hz – 20 kHz $\pm$ 0.5 dB	
Signal to noise ratio	More than 104 dB	
Dynamic range	More than 97 dB	
Harmonic distortion	Less than 0.003%	
Channel separation	More than 98 dB	

Outputs

	CDP-M79	CDP-M78
LINE OUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms	
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level – 18 dBm	
PHONES (stereo phone jack)	Output level max. 15 mW Load impedance 32 ohms	

General

Power requirements	AEP model: 220 V AC, 50/60 Hz UK, Australian model 240 V AC, 50/60 Hz E, Saudi Arabia model: 110-120, 220-240V AC, 50/60Hz
Power consumption	14 W
Dimensions (approx., including projections)	355×95×310 mm (w/h/d) (14×3 ⁷ / ₁₆ ×12 ¹ / ₄ inches)
Weight (approx.)	3.5 kg (7 lbs 12 oz)

MADE IN JAPAN :

Model Name Using Similar Mechanism	CDP-190/390
CD Transport Mechanism Type	CDM14-5BD1
Optical Pick-up Block Type	BU-5BD1

MADE IN FRANCE :

Model Name Using Similar Mechanism	CDP-190/390
CD Transport Mechanism Type	CDM14A-5K
Optical Pick-up Block Type	BU-5K

Supplied accessories (for CDP-M79 only)

Audio cord	1 (2 phono plugs – 2 phono plugs)
Remote commander	1
R6 (size AA) batteries	2

Remote commander (for CDP-M79 only)

Model name	RM-D290
Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions	Approx. 67×20×175 mm (w/h/d) (2 ⁷ / ₁₆ × ¹³ / ₁₆ ×7 inches)
Weight	Approx. 150 g (5 oz) Including batteries

Design and specifications subject to change without notice.

COMPACT DISC PLAYER
SONY



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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

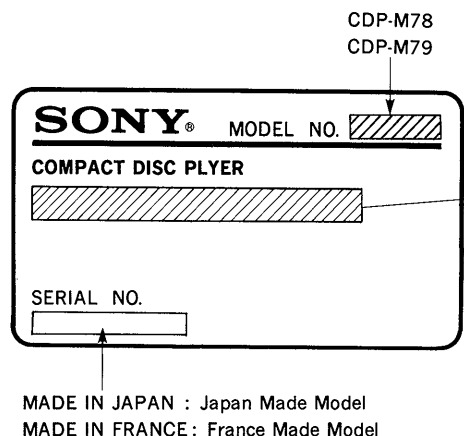
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30cm away from the objective lens.

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.

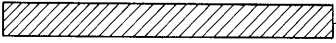
MODEL IDENTIFICATION

—Specification Label—



CDP-M78
CDP-M79

SONY MODEL NO. 

COMPACT DISC PLAYER 

SERIAL NO. 

MADE IN JAPAN : Japan Made Model
MADE IN FRANCE : France Made Model

{ AEP model : AC 220V~50/60Hz
 UK, Australian (AUS) model : AC 240V~50/60Hz
 E, Saudi Arabia model : AC 110-120, 220-240V~50/60Hz 14W

	CDP-M78	CDP-M79
Japan Made Model	AEP, E, Saudi Arabia	AEP, E, AUS
France Made Model	AEP, UK	AEP, UK

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 Power: less than 44.6 μ W*
- * This output is the value measured at a distance of 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 iverigt 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

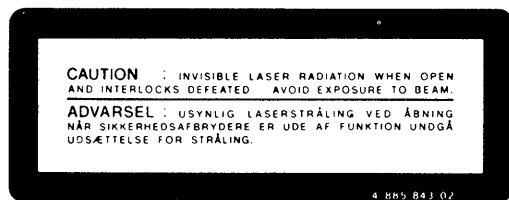
- Materiale: GaAlAs
 - Bølgelængde: 780 nm
 - Udstråling: Kontinuerlig
 - Laseroutput: Max. 0,4 mW*
- * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
- Klassifikation: Klasse IIIb.

2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laserdioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

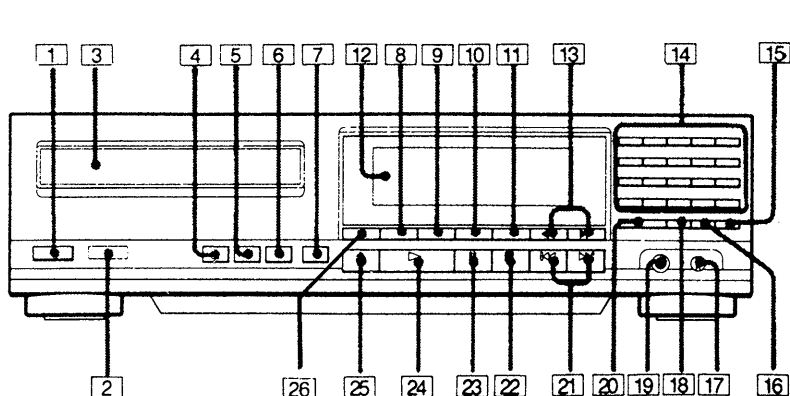
1. Advarsel Mærkning



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

SECTION 1 GENERAL

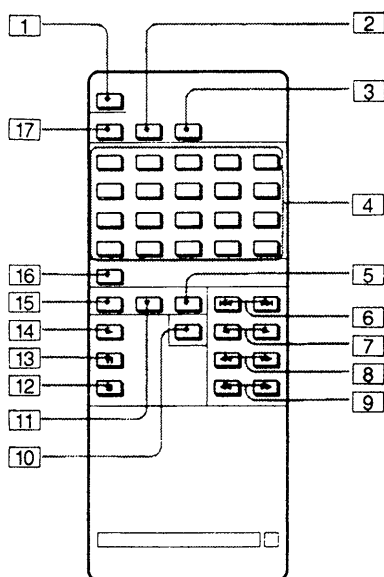
Front Panel



- 1 POWER switch
- 2 Remote sensor (for CDP-M79)
- 3 Disc tray
- 4 CONTINUE button
- 5 SHUFFLE button
- 6 PROGRAM button
- 7 MULTI PGM (multi-disc program) button
- 8 TIME button
- 9 FADER button (for CDP-M79) A-SPACE button (for CDP-M78)
- 10 REPEAT button
- 11 EDIT/TIME FADE button (for CDP-M79)
EDIT button (for CDP-M78)
- 12 Display window
- 13 ◀▶▶▶ (manual search) buttons
- 14 Numeric buttons
- 15 > 20 (over 20) button
- 16 CLEAR (program clear) button
- 17 PHONES LEVEL control (for CDP-M79)
- 18 CHECK (program check) button
- 19 PHONES jack (for CDP-M79)
- 20 TIME SET button (for CDP-M79)
- 21 ◀◀▶▶ (AMS*) buttons
- 22 ■ (stop) button
- 23 || (pause) button
- 24 ▶ (play) button
- 25 ▲ (open/close) button
- 26 PEAK SEARCH button (for E, Saudi Arabia, AUS model)

* AMS is an abbreviation of Automatic Music Sensor.

Remote Commander (for CDP-M79)

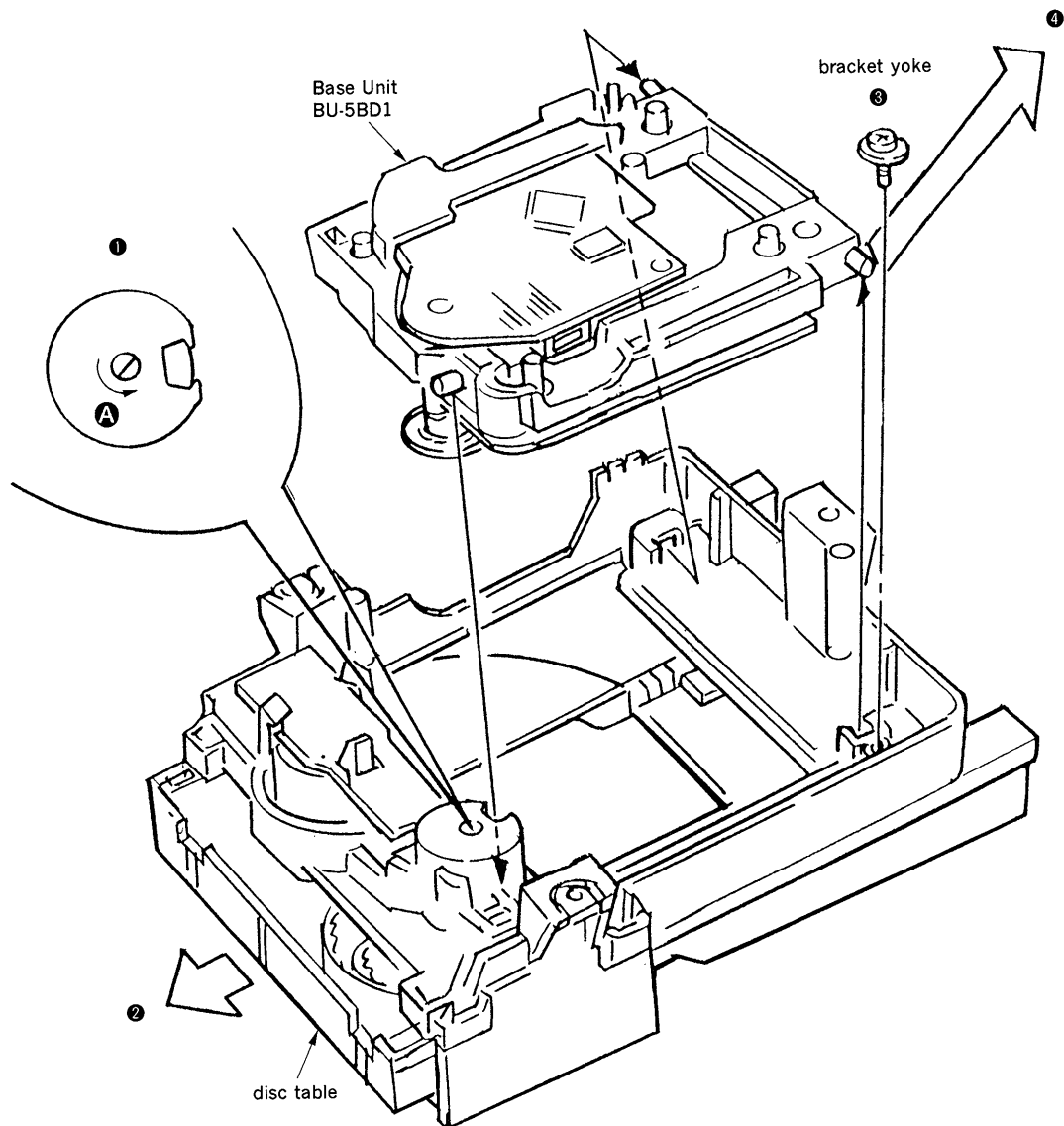


- 1 ▲ (open/close) button
- 2 SHUFFLE button
- 3 PGM (program) button
- 4 Numeric buttons
- 5 AUTO SPACE (auto space) button
- 6 ◀◀▶▶ AMS buttons
- 7 ◀ ▶ INDEX buttons
- 8 ◀◀▶▶ (manual search) buttons
- 9 ◀◀▶▶ SLOW (low speed manual search) buttons
- 10 FADER button
- 11 A ↔ B repeat button
- 12 ■ (stop) button
- 13 || (pause) button
- 14 ▶ (play) button
- 15 CLEAR/REPEAT (A ↔ B repeat clear/repeat) button
- 16 > 20 (over 20) button
- 17 CONTINUE button

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-5BD1 in the Arrow **4** direction.

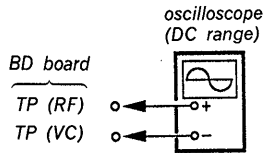


SECTION 3 ELECTRICAL ADJUSTMENTS

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 10MΩ impedance.

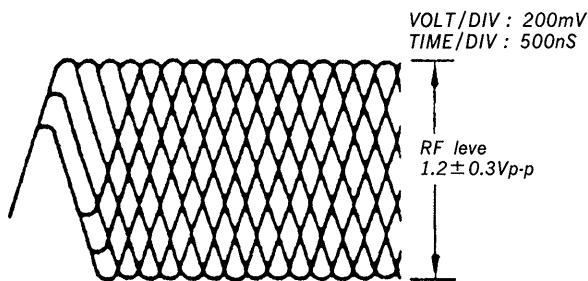
RF Level Check

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.

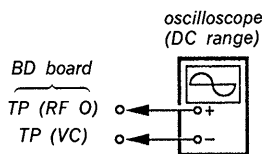
RF signal Reference Waveform (eye pattern)



REFERENCE

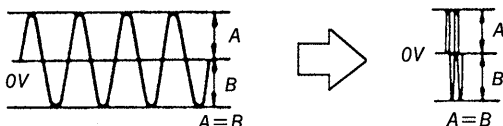
E-F Balance Check

Procedure :



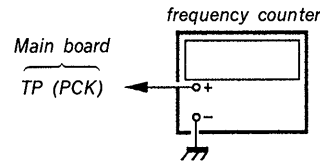
1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.
2. Connect oscilloscope to test point TP (TE O) and TP (VC) on BD board.
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and play back.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 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 play back.
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 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.

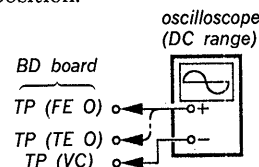
Gain	Focus	Tracking
Symptoms		
• The time until music starts becomes longer for STOP →▷ PLAY or automatic selection. (◀◀, ▶▶ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP →▷ PLAY or automatic selection. (◀◀, ▶▶ buttons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

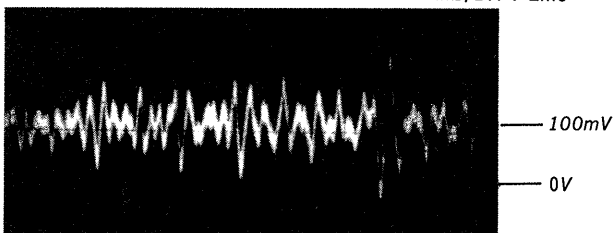
If the positions after the primary adjustment are only a little different, return the controls to the original position.



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 ▷ PLAY button.
3. Connect oscilloscope to TP (FEO) and TP (VC) on BD board.
4. Adjustment RV101 on BD board so that the waveform is as shown in the figure below. (focus gain adjustment)

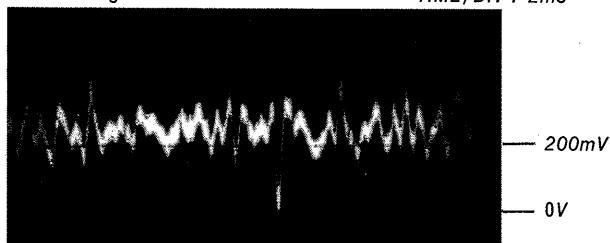
VOLT/DIV : 100mV
TIME/DIV : 2mS



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

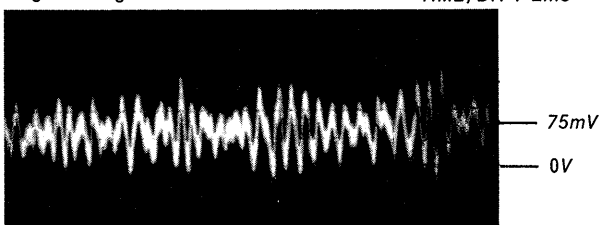
low focus gain

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



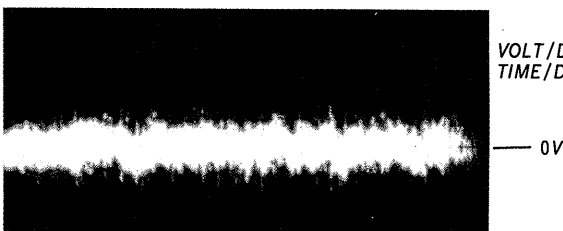
high focus gain

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



5. Connect oscilloscope to TP (TEO) and TP (VC) on BD board.
6. Adjust RV102 on BD board so that the waveform is as shown the figure below. (tracking gain adjustment)

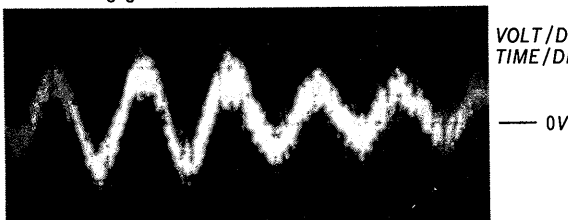
VOLT/DIV : 1V
TIME/DIV : 2mS



- Incorrect Examples (fundamentia wave appears)

low tracking gain

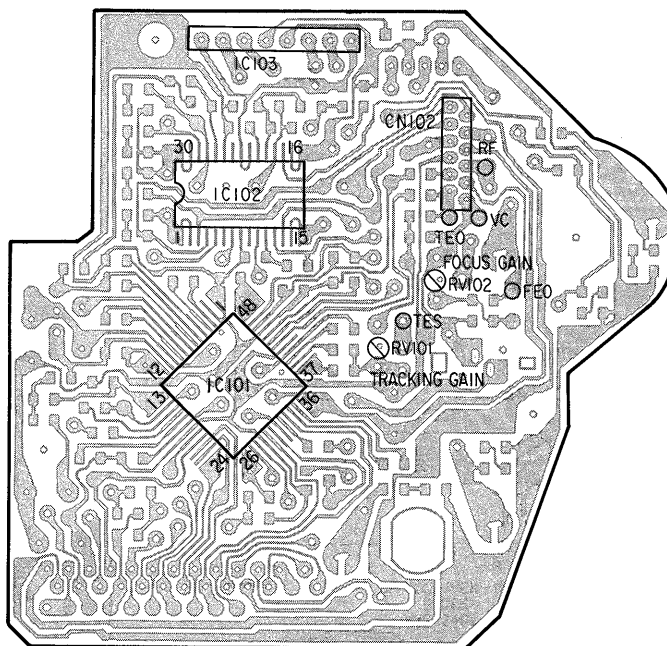
VOLT/DIV : 1V
TIME/DIV : 2mS



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

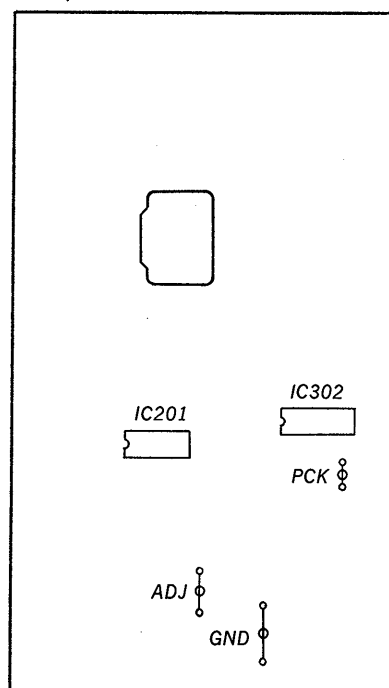


Adjustment Location :
[BD board]



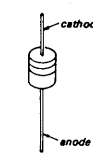
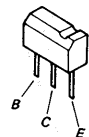
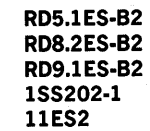
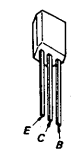
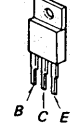
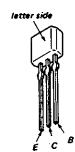
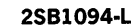
[Main board]

Component side



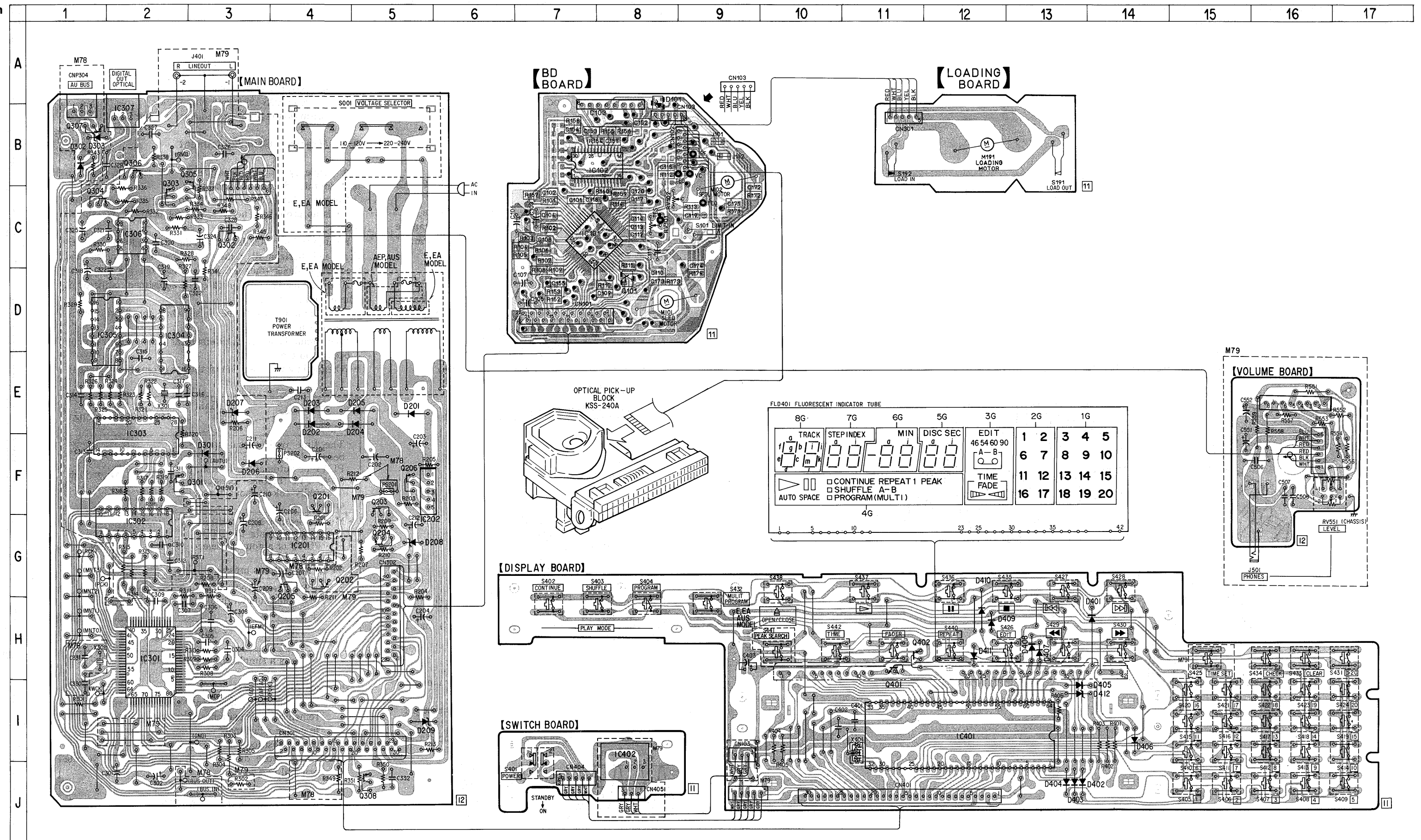
4-2. PRINTED WIRING BOARDS (Japan Made Model)

- **Semiconductor Location**

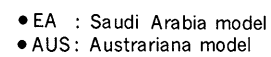


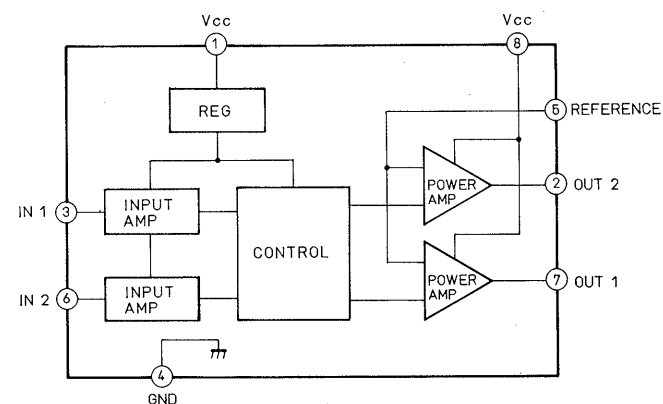
Ref. No.	Location
D101	B-8
D201	E-5
D202	E-4
D203	E-4
D204	E-5
D205	E-5
D206	F-3
D207	E-3
D208	G-5
D209	I-5
D301	F-3
D302	B-1
D303	B-1
D401	H-14
D402	J-13
D403	J-13
D404	J-13
D405	I-13
D406	I-14
D407	H-13
D408	H-13
D409	H-12
D410	H-12
D411	H-12
D412	I-13
IC101	C-7
IC102	B-8
IC103	B-8
IC201	G-4
IC202	F-5
IC301	H-2
IC302	G-2
IC303	E-2
IC304	D-2
IC305	D-2
IC306	C-2
IC307	B-2
IC401	I-12
IC402	I-8
IC551	E-16
Q101	D-8
Q201	F-4
Q202	G-4
Q203	F-5
Q204	G-5
Q205	G-4
Q206	F-5
Q301	F-2
Q302	C-3
Q303	C-2
Q304	C-1
Q305	C-3
Q306	B-2
Q307	B-1
Q308	J-5
Q401	H-11
Q402	H-11

- ○ — : parts extracted from the component side.
-  : Pattern on the side which is seen.
-  : Pattern of the rear side.
- EA : Saudi Arabia model
- AUS : Austrarian model

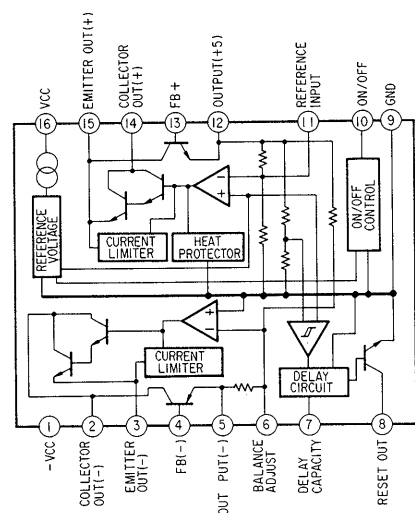


• Refer to page 15 for IC Block Diagram

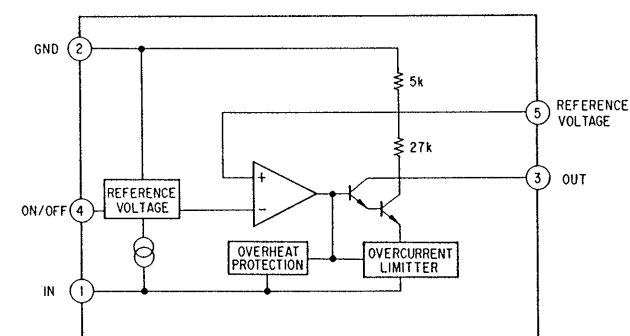




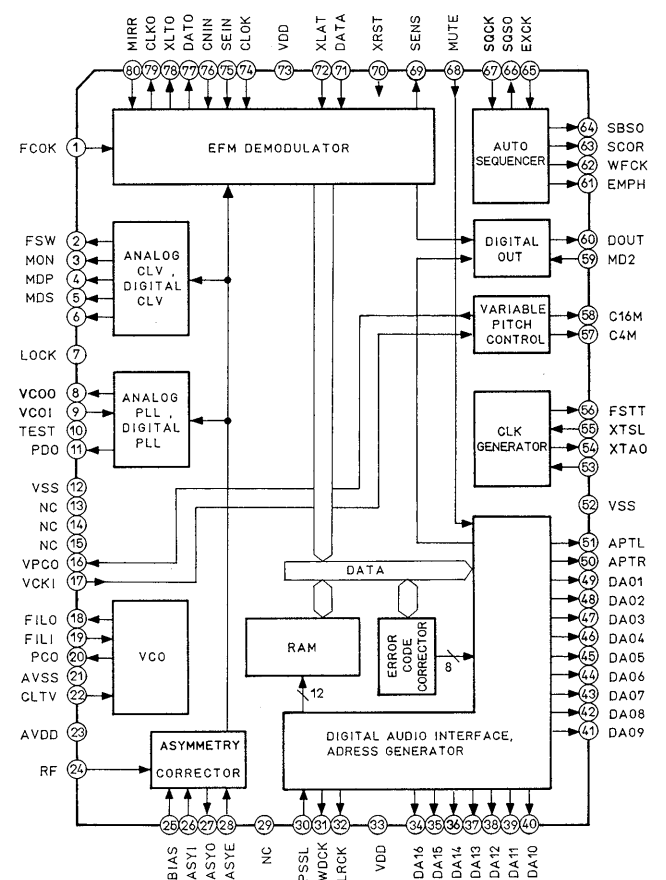
IC201 M5290P-16



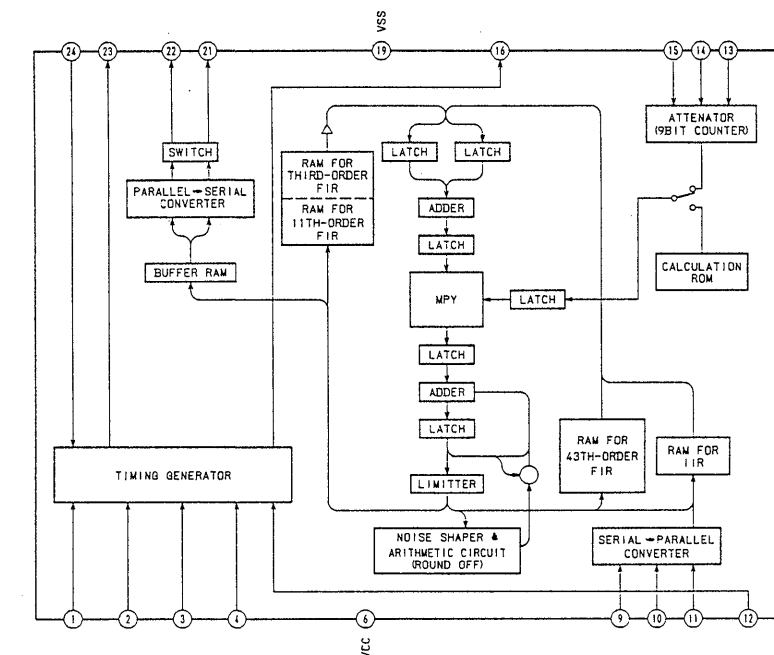
IC202 M5293L



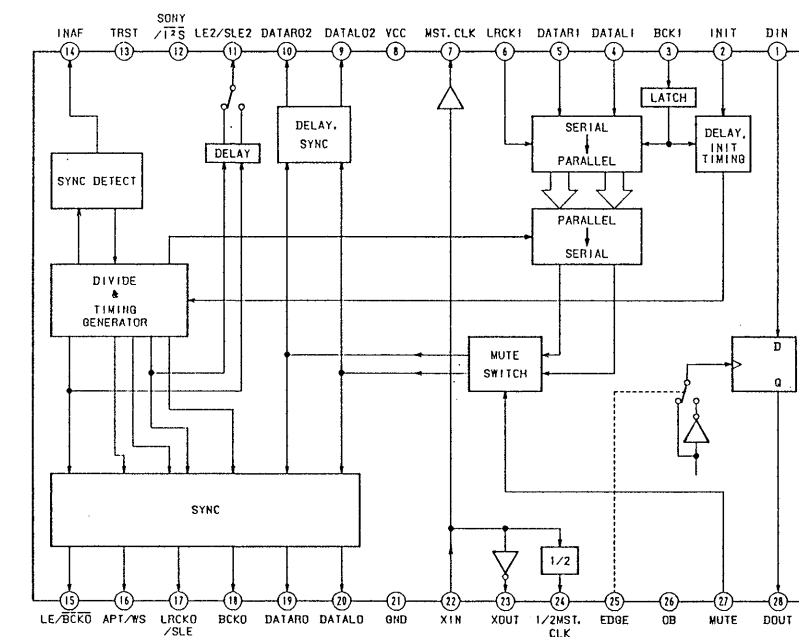
IC301 CXD2500Q



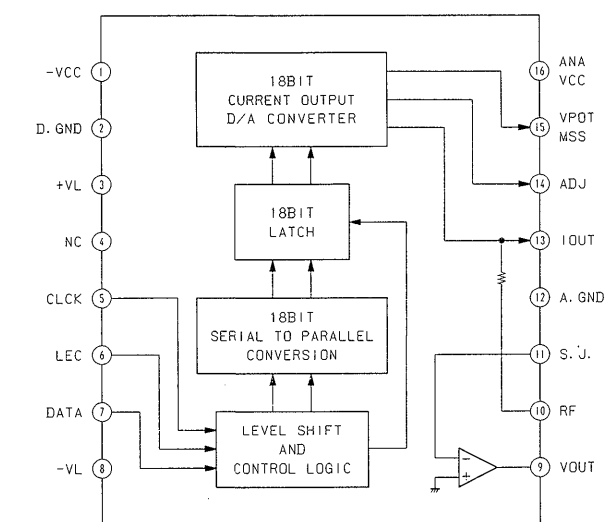
IC302 CXD2551P



IC303 CXD8097S



IC304, 305 AD1860N



SECTION 5 EXPLODED VIEWS

NOTE:

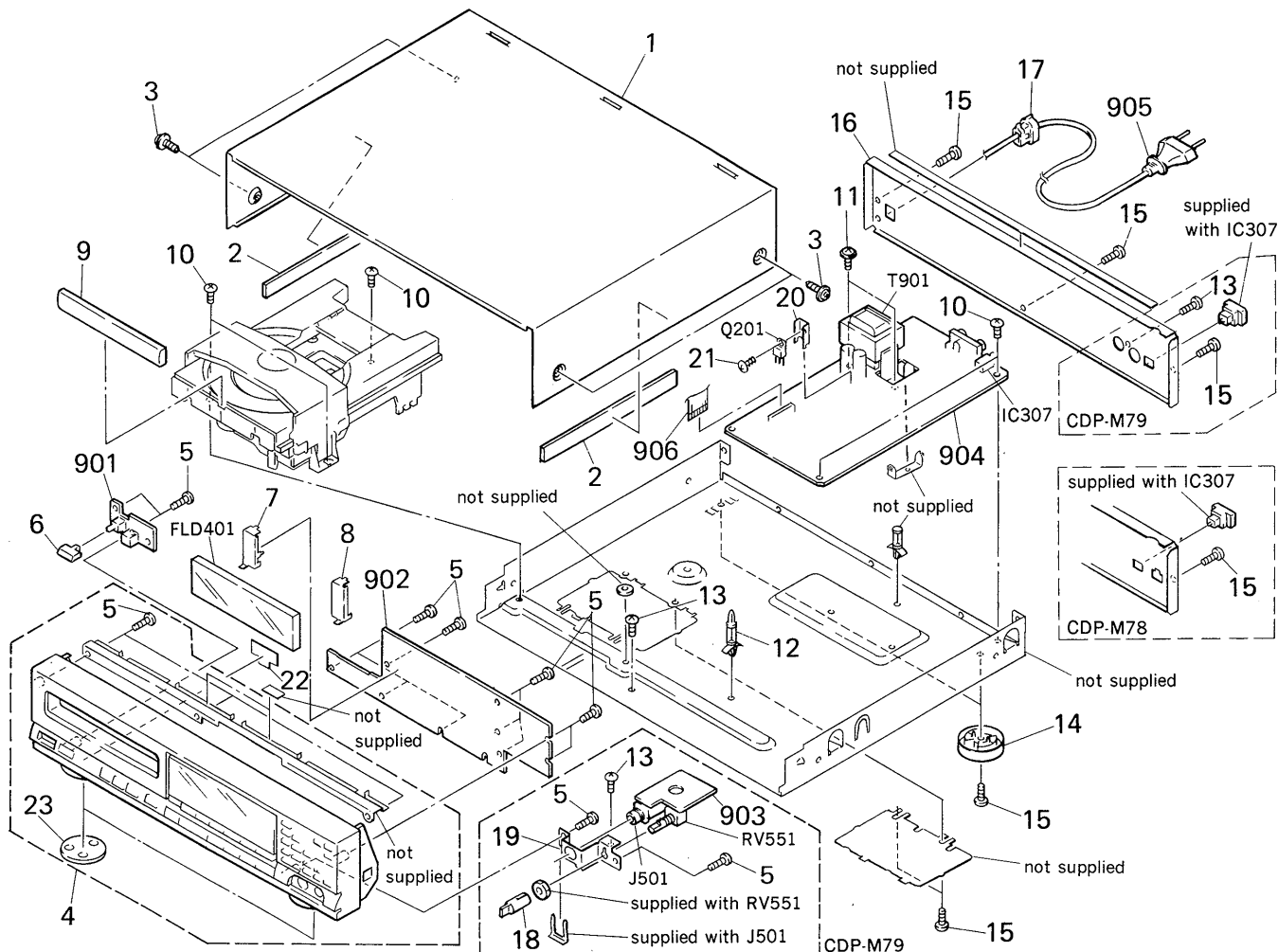
- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

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

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

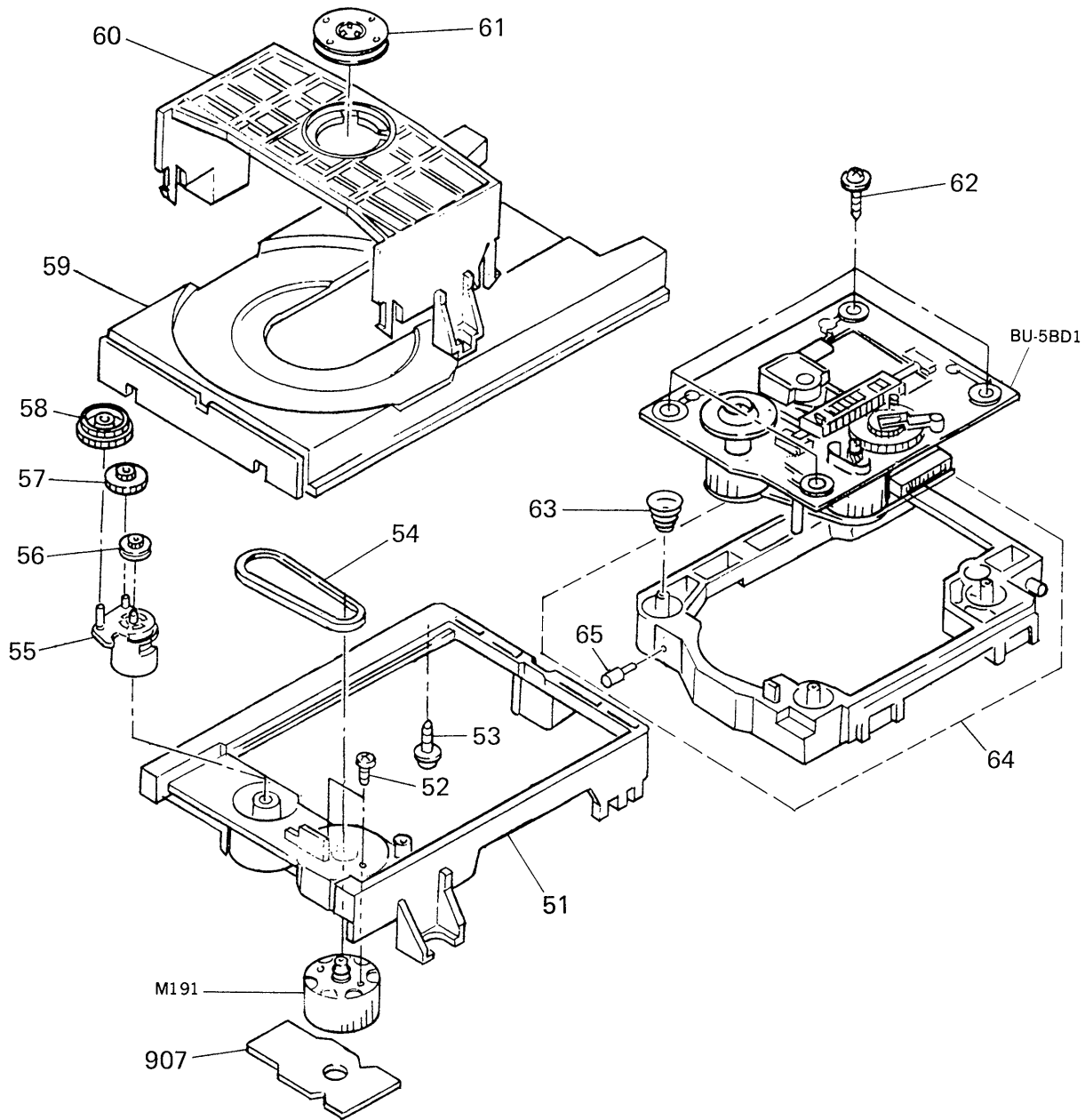
• AUS: Austrarian model

5-1. CHASSIS BLOCK



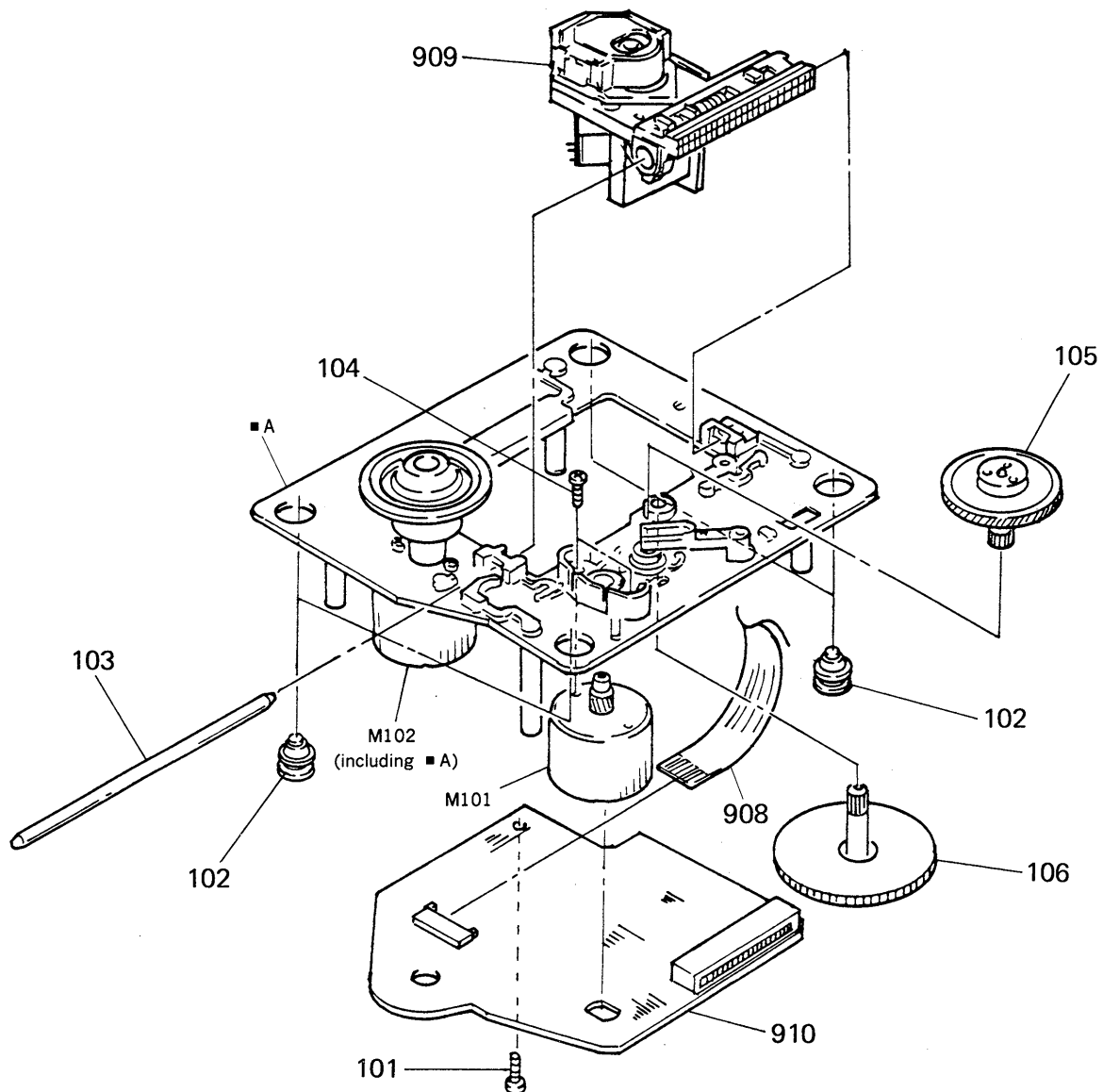
Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
1	4-919-376-31	CASE		20	4-902-345-01	HEAT SINK	
2	*4-929-561-01	(M79)....CUSHION (CASE)		21	7-682-547-09	SCREW B 3X6	
3	3-704-366-01	SCREW (CASE) (M3X8)		22	*4-937-501-01	(M79)....SHEET (RM)	
4	X-4917-598-1	(M79 : E, AUS)....PANEL ASSY, FRONT	5	23	4-921-906-01	FELT	
4	X-4917-599-1	(M79 : AEP)....PANEL ASSY, FRONT	5	901	1-632-642-11	PC BOARD, SWITCH	
4	X-4918-601-1	(M78 : AEP)....PANEL ASSY, FRONT	5	902	*A-4617-209-A	(M78 : E, Saudi Arabia)....MOUNTED PCB, DISP	
4	X-4918-605-1	(M78 : E, Saudi Arabia)....PANEL ASSY, FRONT	5	902	*A-4617-361-A	(M79 : AEP)....MOUNTED PCB, DISP	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		902	*A-4617-362-A	(M79 : E, AUS)....MOUNTED PCB, DISP	
6	4-929-535-01	BUTTON (POWER)		902	*A-4617-357-A	(M78 : AEP)....MOUNTED PCB, DISP	
7	*4-922-524-01	HOLDER (LEFT)		903	*1-632-643-12	(M79)....PC BOARD, VOLUME	
8	*4-922-523-01	HOLDER (RIGHT)		904	*A-4617-211-A	(M78 : AEP)....MOUNTED PCB, MAIN	
9	4-929-534-01	PANEL, LOADING		904	*A-4617-359-A	(M79 : AEP, AUS)....MOUNTED PCB, MAIN	
10	7-682-548-04	SCREW +BVTT 3X8 (S)		904	*A-4617-363-A	(M79 : E)....MOUNTED PCB, MAIN	
11	4-886-821-11	SCREW, S TIGHT, +PTTWH 3X6		904	*A-4617-498-A	(M79 : E, Saudi Arabia)....MOUNTED PCB, MAIN	
12	*4-924-098-31	HOLDER, PC BOARD		905	△1-575-104-11	(M79 : E)....CORD, POWER	
13	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		905	△1-575-174-11	(M78 : E)....CORD, POWER	
14	*4-933-701-01	(M79 : AUS, M78 : E, Saudi Arabia)....FOOT		905	△1-575-453-11	(M79 : AEP)....CORD, POWER	
15	*4-934-883-01	(M79 : AEP, E, M78 : AEP)....FOOT		905	△1-575-583-11	(M78 : AEP, Saudi Arabia)....CORD, POWER	
16	7-682-548-09	SCREW +BVTT 3X8 (S)		905	△1-575-677-11	(M79 : AUS)....CORD, POWER	
16	*4-927-399-01	(M78 : E, Saudi Arabia)....PANEL, BACK		906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)	
16	*4-927-399-11	(M79 : AUS)....PANEL, BACK		FLD401	1-519-555-11	INDICATOR TUBE, FLUORESCENT	
16	*4-929-514-21	(M79 : AEP)....PANEL, BACK		IC307	8-759-977-71	IC GP1F31T	
16	*4-929-514-41	(M79 : E)....PANEL, BACK		J501	1-568-498-31	(M79)....JACK, LARGE TYPE (PHONES)	
16	*4-929-514-81	(M79 : AEP)....PANEL, BACK		Q201	8-729-111-67	TRANSISTOR 2SB1094-L	
17	*3-703-571-11	(E)....BUSHING (S) (4516), CORD		RV551	1-238-883-11	(M79)....RES, VAR, CARBON 20K/20K (PHONES LEVEL)	
17	*3-703-244-00	(AEP, AUS : Saudi Arabia)....BUSHING (2104), CORD		T901	△1-449-922-11	(AEP, AUS)....TRANSFORMER, POWER	
18	4-921-921-01	(M79)....KNOB (M)		T901	△1-449-923-11	(E, Saudi Arabia)....TRANSFORMER, POWER	
19	*4-927-381-01	(M79)....BRACKET (VOL)					

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



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
51	4-933-111-01	CHASSIS (MD)		60	4-933-110-01	HOLDER (MG)	
52	7-621-775-10	SCREW +B 2.6X4		61	A-4675-347-A	MG ASSY	
53	*4-917-583-21	BRACKET, YOKE		62	4-933-134-01	SCREW (+PTPWH M2.6X6)	
54	4-927-649-01	BELT		63	4-917-541-01	SPRING (B)	
55	4-933-109-01	CAM		64	4-933-129-01	HOLDER (BU)	
56	4-927-651-01	PULLEY (S)		65	4-933-108-01	SHAFT (CAM)	
57	4-927-628-01	GEAR (C)		907	*1-632-202-11	PC BOARD, LOADING	
58	4-933-107-01	GEAR (PL)		M191	A-4604-363-A	MOTOR (L) ASSY	
59	4-933-112-01	TABLE, DISK					

5-3. 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.

Ref.No	Part No.	Description	Remarks
101	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
102	4-933-126-01	INSULATOR (A)	
103	4-917-565-01	SHAFT, SLED	
104	7-621-255-15	SCREW +P 2X3	
105	4-917-567-01	GEAR (M)	
106	4-917-564-01	GEAR (P), FLATNESS	

Ref.No	Part No.	Description	Remarks
908	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
909	 8-848-144-11	DEVICE, OPTICAL KSS-240A	
910	*A-4617-161-A	MOUNTED PCB, BD	
M101	X-4917-504-1	ASSY, MOTOR (SLED)	
M102	X-4917-523-3	ASSY, MOTOR (SPINDLE)	

SECTION 6

ELECTICAL 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 or dotted line with mark are critical for safety. Replace only with part number specified.

- AUS: Austrarian model

Ref.No	Part No.	Description
901	1-632-642-11	PC BOARD, SWITCH
902	*A-4617-209-A	(M78 : E, Saudi Arabia)....MOUNTED PCB, DISP
902	*A-4617-361-A	(M79 : AEP)....MOUNTED PCB, DISP
902	*A-4617-362-A	(M79 : E, AUS)....MOUNTED PCB, DISP
902	*A-4617-357-A	(M78 : AEP)....MOUNTED PCB, DISP
903	*1-632-643-12	(M79)....PC BOARD, VOLUME
904	*A-4617-211-A	(M78 : AEP)....MOUNTED PCB, MAIN
904	*A-4617-359-A	(M79 : AEP, AUS)....MOUNTED PCB, MAIN
904	*A-4617-363-A	(M79 : E)....MOUNTED PCB, MAIN
904	*A-4617-498-A	(M79 : E, Saudi Arabia)....MOUNTED PCB, MAIN
905	1-575-104-11	(M79 : E)....CORD, POWER
905	1-575-174-11	(M78 : E)....CORD, POWER
905	1-575-453-11	(M79 : AEP)....CORD, POWER
905	1-575-583-11	(M78 : AEP, Saudi Arabia)....CORD, POWER
905	1-575-677-11	(M79 : AUS)....CORD, POWER
906	1-575-002-11	WIRE, FLAT TYPE (22 CORE)
907	*1-632-202-11	PC BOARD, LOADING
908	1-575-001-11	WIRE, FLAT TYPE (12 CORE)
909	8-848-144-11	DEVICE, OPTICAL KSS-240A
910	*A-4617-161-A	MOUNTED PCB, BD

CAPACITOR

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	1-126-842-11	ELECT	4700MF	20%	16V
C202	1-126-016-11	(M78)....ELECT	470MF	20%	16V
C202	1-126-842-11	(M79)....ELECT	4700MF	20%	16V
C203	1-126-880-11	ELECT	100MF	20%	63V

C204	1-126-059-11	ELECT	10MF	20%	50V
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	(M79)....ELECT	470MF	20%	16V
C210	1-126-012-11	ELECT	470MF	20%	16V
C211	1-126-024-11	(M79)....ELECT	220MF	20%	16V
C212	1-126-024-11	ELECT	220MF	20%	16V
C213	1-164-159-11	CERAMIC	0.1MF		50V
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	(M79)....CERAMIC	0.1MF		50V
C311	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C312	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C313	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C314	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C315	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C316	1-162-202-31	(M79)....CERAMIC	13PF	5%	50V
C317	1-162-201-31	(M79)....CERAMIC	12PF	5%	50V
C318	1-126-103-11	(M79)....ELECT	470MF	20%	16V
C319	1-126-103-11	(M79)....ELECT	470MF	20%	16V
C320	1-130-481-00	(M79)....MYLAR	0.0068MF	5%	50V
C321	1-130-481-00	(M79)....MYLAR	0.0068MF	5%	50V
C322	1-130-475-00	(M79)....MYLAR	0.0022MF	5%	50V
C323	1-130-475-00	(M79)....MYLAR	0.0022MF	5%	50V
C324	1-123-332-00	(M79)....ELECT	47MF	20%	25V
C325	1-123-332-00	(M79)....ELECT	47MF	20%	25V
C326	1-130-473-00	(M79)....MYLAR	0.0015MF	5%	50V
C327	1-130-473-00	(M79)....MYLAR	0.0015MF	5%	50V
C328	1-162-294-31	(M79)....CERAMIC	0.001MF	10%	50V
C329	1-164-159-11	CERAMIC	0.1MF		50V
C330	1-162-207-31	(M78)....CERAMIC	22PF	5%	50V
C331	1-162-206-31	(M78)....CERAMIC	20PF	5%	50V
C333	1-162-294-31	CERAMIC	0.001MF	10%	50V
C401	1-164-159-11	CERAMIC	0.1MF		50V
C402	1-164-159-11	CERAMIC	0.1MF		50V
C403	1-126-154-11	ELECT	47MF	20%	6.3V
C506	1-162-294-31	(M79)....CERAMIC	0.001MF	10%	50V
C507	1-162-294-31	(M79)....CERAMIC	0.001MF	10%	50V
C508	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C551	1-126-023-11	(M79)....ELECT	100MF	20%	16V
C552	1-126-023-11	(M79)....ELECT	100MF	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			
CN301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CN401	1-535-800-11	JUMPER, FILM (WITH TERMINAL)			
CNP201	*1-564-321-00	PIN, CONNECTOR 2P			

Ref.No	Part No.	Description
CNP301	* 1-568-933-11	SOCKET, CONNECTOR 30P
CNP302	* 1-568-822-11	SOCKET, CONNECTOR 22P
CNP303	* 1-564-708-11	(M79)....PIN, CONNECTOR (SMALL TYPE) 6P
CNP304	* 1-565-561-11	(M78)....PIN, CONNECTOR 3P (AU BUS)
CNP551	* 1-564-708-11	(M79)....PIN, CONNECTOR (SMALL TYPE) 6P
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
D206	8-719-107-94	(M79)....DIODE 1SS202-1
D207	8-719-109-85	(M79)....DIODE RD5.1ES-B2
D208	8-719-110-08	DIODE RD8.2ES-B2
D209	8-719-110-13	DIODE RD9.1ES-B2
D301	8-719-107-94	(M79)....DIODE 1SS202-1
D302	8-719-107-94	(M78)....DIODE 1SS202-1
D303	8-719-120-90	(M78)....DIODE RD6.8ES-LS
D401	8-719-107-94	DIODE 1SS202-1
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
D411	8-719-107-94	DIODE 1SS202-1
D412	8-719-110-13	DIODE RD9.1ES-B2
FLD401	1-519-555-11	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	(M79)....IC CXD2551P
IC303	8-759-990-80	(M79)....IC CXD8097S
IC304	8-759-990-58	(M79)....IC AD1860N-T
IC305	8-759-990-58	(M79)....IC AD1860N-T
IC306	8-759-945-58	(M79)....IC RC4558P
IC307	8-759-977-71	IC GP1F31T
IC401	8-759-148-24	(M78)....IC UPD75212ACW-170
IC401	8-759-150-28	(M79)....IC UPD75212ACW-206
IC402	8-749-920-83	(M79)....IC GP1U52XB
IC551	8-759-981-89	(M79)....IC RC4556S
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W
J401	1-566-150-11	(M79)....JACK, PIN 2P (LINE OUT)
J501	1-568-498-31	(M79)....JACK, LARGE TYPE (PHONES)
M101	X-4917-504-1	ASSY, MOTOR (SLED)
M102	X-4917-523-3	ASSY, MOTOR (SPINDLE)
M191	A-4604-363-A	MOTOR (L) ASSY
PS201	A.1-532-685-00	(M79)....LINK, IC
PS202	A.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	(M79)....TRANSISTOR 2SD774-34
Q203	8-729-111-67	TRANSISTOR 2SB1094-L
Q204	8-729-230-45	TRANSISTOR 2SC2458-YGR
Q205	8-729-900-80	TRANSISTOR DTC114ES
Q206	8-729-119-76	TRANSISTOR 2SA1175-HFE

Ref.No	Part No.	Description
Q301	8-729-115-77	(M79)....TRANSISTOR DTC144ES
Q302	8-729-900-65	(M79)....TRANSISTOR DTA144ES
Q303	8-729-115-88	(M79)....TRANSISTOR BA1L3Z-K
Q304	8-729-115-88	(M79)....TRANSISTOR BA1L3Z-K
Q305	8-729-115-88	(M79)....TRANSISTOR BA1L3Z-K

Q306	8-729-115-88	(M79)....TRANSISTOR BA1L3Z-K
Q307	8-729-900-80	(M78)....TRANSISTOR DTC114ES
Q308	8-729-115-77	TRANSISTOR DTC144ES
Q401	8-729-900-45	TRANSISTOR DTC114EF
Q402	8-729-900-45	TRANSISTOR DTC114EF

RESISTOR

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	(M79)....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
R206	1-249-413-11	(M79)....CARBON	470	5%	1/4W
R207	1-249-429-11	CARBON	10K	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
R211	1-249-411-11	CARBON	330	5%	1/4W
R212	1-249-417-11	(M78)....CARBON	1K	5%	1/4W
R213	1-249-381-11	CARBON	1	5%	1/4W
R301	1-249-411-11	CARBON	330	5%	1/4W
R302	1-249-417-11	(M79)....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

Note: 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			
R313	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R314	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R315	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R316	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R317	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R318	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R319	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R320	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R321	1-247-903-00	(M79).... CARBON	1M	5%	1/4W
R322	1-249-407-11	(M79).... CARBON	150	5%	1/4W
R323	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R324	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R325	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R326	1-249-413-11	(M79).... CARBON	470	5%	1/4W
R327	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R328	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R329	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R330	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R331	1-247-891-00	(M79).... CARBON	330K	5%	1/4W
R332	1-247-891-00	(M79).... CARBON	330K	5%	1/4W
R333	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R334	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R335	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R336	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R337	1-249-414-11	(M79).... CARBON	560	5%	1/4W
R338	1-249-414-11	(M79).... CARBON	560	5%	1/4W
R341	1-249-441-11	(M79).... CARBON	100K	5%	1/4W
R343	1-249-429-11	(M78).... CARBON	10K	5%	1/4W
R345	1-249-405-11	(M79).... CARBON	100	5%	1/4W
R346	1-249-405-11	(M79).... CARBON	100	5%	1/4W
R347	1-249-433-11	(M79).... CARBON	22K	5%	1/4W
R348	1-249-433-11	(M79).... CARBON	22K	5%	1/4W
R349	1-249-417-11	(M78).... CARBON	1K	5%	1/4W
R350	1-249-441-11	CARBON	100K	5%	1/4W
R351	1-249-429-11	CARBON	10K	5%	1/4W
R401	1-249-435-11	CARBON	33K	5%	1/4W
R402	1-249-435-11	CARBON	33K	5%	1/4W
R403	1-249-435-11	CARBON	33K	5%	1/4W

Ref.No	Part No.	Description			
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-425-11	CARBON	4.7K	5%	1/4W
R406	1-249-439-11	CARBON	68K	5%	1/4W
R551	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R552	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R553	1-249-423-11	(M79).... CARBON	3.3K	5%	1/4W
R554	1-249-423-11	(M79).... CARBON	3.3K	5%	1/4W
R556	1-249-429-11	(M79).... CARBON	10K	5%	1/4W
R557	1-249-429-11	(M79).... CARBON	10K	5%	1/4W
R558	1-249-402-11	(M79).... CARBON	56	5%	1/4W
R559	1-249-402-11	(M79).... CARBON	56	5%	1/4W
RV101	1-238-016-11	RES, ADJ, CARBON 10K			
RV102	1-238-016-11	RES, ADJ, CARBON 10K			
RV551	1-238-883-11	(M79).... RES, VAR, CARBON 20K/20K (PHONES LEVEL)			
S001	△ 1-571-772-11	(E, Saudi Arabia).... 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	1-571-305-11	SWITCH, PUSH (1 KEY) (POWER)			
S402	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)			
S403	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)			
S404	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)			
S405	1-554-303-21	SWITCH, KEY BOARD (1)			
S406	1-554-303-21	SWITCH, KEY BOARD (2)			
S407	1-554-303-21	SWITCH, KEY BOARD (3)			
S408	1-554-303-21	SWITCH, KEY BOARD (4)			
S409	1-554-303-21	SWITCH, KEY BOARD (5)			
S410	1-554-303-21	SWITCH, KEY BOARD (6)			
S411	1-554-303-21	SWITCH, KEY BOARD (7)			
S412	1-554-303-21	SWITCH, KEY BOARD (8)			
S413	1-554-303-21	SWITCH, KEY BOARD (9)			
S414	1-554-303-21	SWITCH, KEY BOARD (10)			
S415	1-554-303-21	SWITCH, KEY BOARD (11)			
S416	1-554-303-21	SWITCH, KEY BOARD (12)			
S417	1-554-303-21	SWITCH, KEY BOARD (13)			
S418	1-554-303-21	SWITCH, KEY BOARD (14)			
S419	1-554-303-21	SWITCH, KEY BOARD (15)			
S420	1-554-303-21	SWITCH, KEY BOARD (16)			
S421	1-554-303-21	SWITCH, KEY BOARD (17)			
S422	1-554-303-21	SWITCH, KEY BOARD (18)			
S423	1-554-303-21	SWITCH, KEY BOARD (19)			
S424	1-554-303-21	SWITCH, KEY BOARD (20)			
S425	1-554-303-21	(M79).... SWITCH, KEY BOARD (TIME SET)			
S426	1-554-303-21	SWITCH, KEY BOARD (EDET)			
S427	1-554-303-21	SWITCH, KEY BOARD (K<I>)			
S428	1-554-303-21	SWITCH, KEY BOARD (D<I>)			
S429	1-554-303-21	SWITCH, KEY BOARD (L<I>)			
S430	1-554-303-21	SWITCH, KEY BOARD (R<I>)			
S431	1-554-303-21	SWITCH, KEY BOARD (D<I>20)			
S432	1-554-303-21	SWITCH, KEY BOARD (MULTI PROGRAM)			
S433	1-554-303-21	SWITCH, KEY BOARD (CLEAR)			
S434	1-554-303-21	SWITCH, KEY BOARD (CHECK)			
S435	1-554-303-21	SWITCH, KEY BOARD (■)			
S436	1-554-303-21	SWITCH, KEY BOARD (II)			
S437	1-554-303-21	SWITCH, KEY BOARD (D>)			
S438	1-554-303-21	SWITCH, KEY BOARD (△OPEN/CLOSE)			
S439	1-554-303-21	SWITCH, KEY BOARD (FEDER)			

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
S440	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S441	1-554-303-21	(E, AUS, Saudi Arabia)....SWITCH, KEY BOARD (PEAK SEARCH)
S442	1-554-303-21	SWITCH, KEY BOARD (TIME)
T901	Δ 1-449-922-11	(AEP, AUS)....TRANSFORMER, POWER
T901	Δ 1-449-923-11	(E, Saudi Arabia)....TRANSFORMER, POWER
X301	1-567-926-11	(M79)....VIBRATOR, CRYSTAL (16.9344MHz)
X302	1-567-926-11	(M78)....VIBRATOR, CRYSTAL (16.9344MHz)
X401	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORIES & PACKING MATERIALS

(EXCEPT CDP-M78 : E, Saud Arabia model)

1-465-280-11	(M79)....REMOTE COMMANDER (RM-D209)
Δ 1-526-565-00	(M79 : E)....AC PLUG ADAPTOR
1-559-533-11	(M79)....CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-751-653-11	(AEP)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-751-653-41	(AEP)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
3-751-653-51	(M79 : E, AUS)....MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
* 3-795-629-11	(AEP)....INSTRUCTION
* 4-922-998-01	CUSHION
4-925-788-01	(M79)....COVER, BATTERY (for RM-D209)
* 4-927-392-31	(M79)....INDIVIDUAL CARTON
* 4-927-392-21	(M78)....INDIVIDUAL CARTON

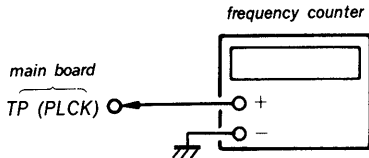
Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

SECTION 7
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 10 MΩ impedance.

RF PLL Frequency Adjustment/Lock Frequency Check

Procedure :

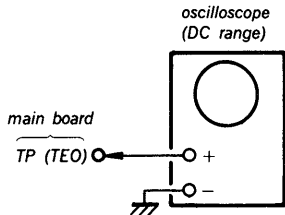


- 1. Connect test point TP (ASY) to ground with lead wire.
- 2. Turn POWER switch on.
- 3. Connect the frequency counter to test point TP (PLCK).
- 4. Adjust RV205 so that the reading on the frequency counter is 4.3218MHz±30kHz.... (RF PLL frequency adjustment).
- 5. Remove lead wire connecting TP (ASY) to ground.
- 6. Put disc (YEDS-18) in and press ▷ button.
- 7. Confirm that the reading on frequency counter is 4.3218MHz.... (Lock frequency check).

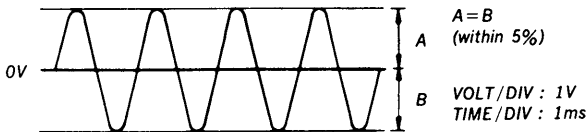
E-F Balance Adjustment

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

Procedure :



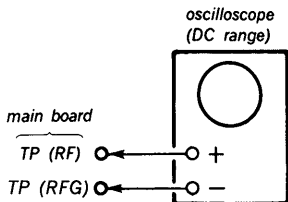
- 1. Connect test point TP (ADJ) and test point TP (TES) to ground with lead wire.
- 2. Connect oscilloscope to test point TP (TEO).
- 3. Turn POWER switch on.
- 4. Put disc (YEDS-18) in and press ▷ button.
- 5. Adjust RV201 so that the traverse waveform is symmetrical above and below.
- 6. After adjustment, remove the lead wire connected in step 5.



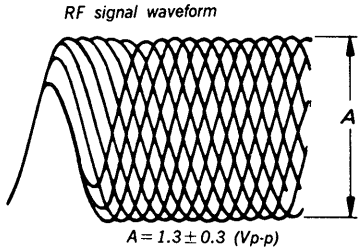
Focus Bias Adjustment

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

Procedure :



- 1. Connect oscilloscope to test point TP (RF) and TP (RFG).
- 2. Turn POWER switch on.
- 3. Put disc (YEDS-18) in and press ▷ button.
- 4. Adjust RV202 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.



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.

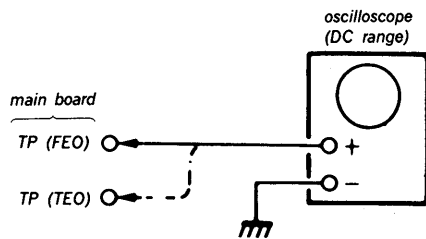
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear.

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

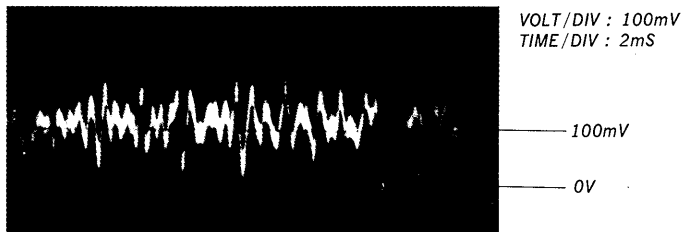
The following is a simple adjustment method.

— Primary Adjustment —

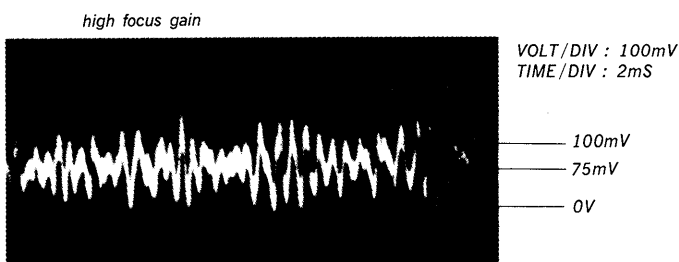
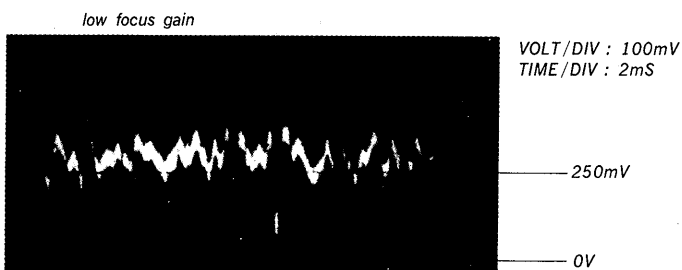
Note : Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the position after the primary adjustment are only a little different, return the controls to the original position.

Procedure :

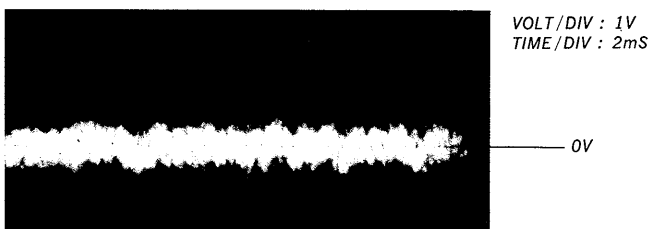
1. Keep the set horizontal.
(If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2. Insert disc (YEDS-18: Fifth Selection) and press ▷ button.
3. Connect oscilloscope to main board TP (FEO).
4. Adjust RV203 so that the waveform is as shown in the figure below. (focus gain adjustment)



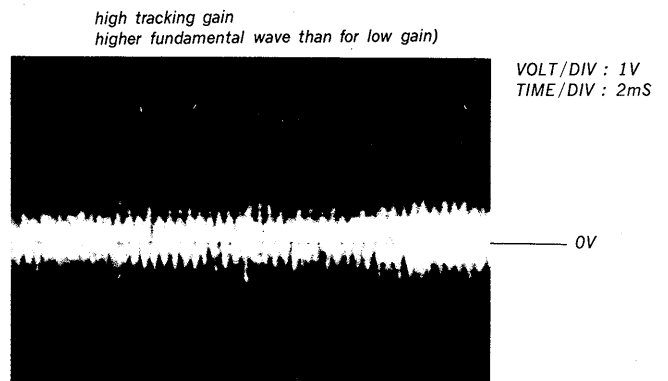
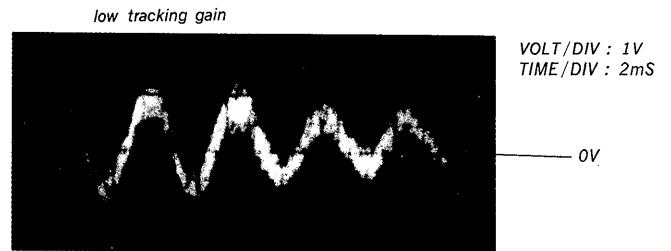
- Incorrect Examples (DC level changes more than on adjusted waveform)



5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV204 so that the waveform is as shown in the figure below. (tracking gain adjustment)

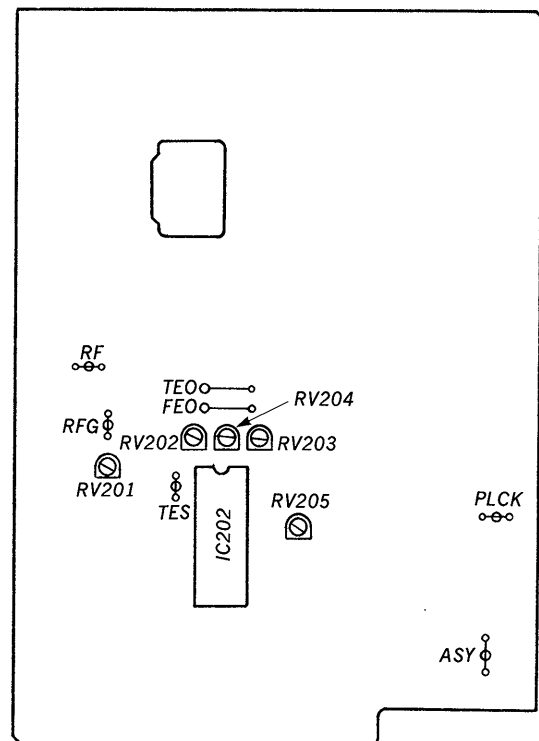


- Incorrect Examples (fundamental wave appears)



Adjustment Location : main board

Component side



SECTION 8
DIAGRAMS

8-1. SEMICONDUCTOR LEAD LAYOUT

DTA114ES
DTC114ES
DTC143TS
DTC144ES



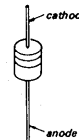
2SB1094-L
2SD1913SA-R



2SA1175-HFE



MPG06D-6052
RD5.1ES-B1
RD9.1ES-L
1SS202-1



2SB1068-K



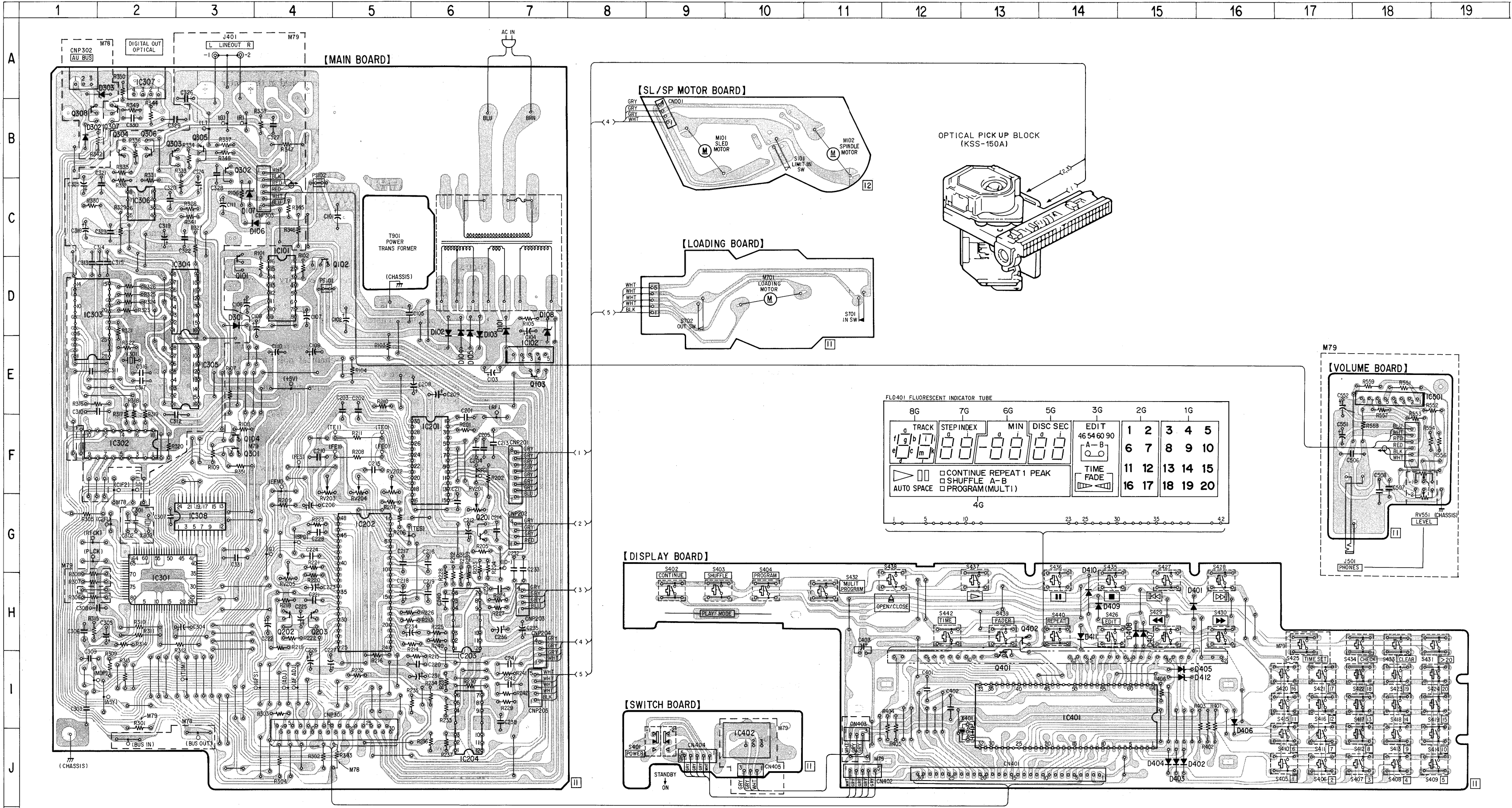
• Semiconductor Location

Ref. No.	Location
D101	D-7
D102	D-6
D103	D-6
D104	E-6
D105	E-6
D106	C-4
D107	C-3
D108	D-7
D301	D-3
D302	B-1
D303	A-2
D401	H-15
D402	J-15
D403	J-15
D404	J-15
D405	I-15
D406	I-16
D407	H-15
D408	H-15
D409	H-14
D410	H-14
D411	H-14
D412	I-15
IC101	D-4
IC102	E-7
IC201	F-6
IC202	G-5
IC203	H-6
IC204	I-6
IC301	H-2
IC302	F-2
IC303	D-1
IC304	D-3
IC305	E-3
IC306	C-2
IC307	A-2
IC308	G-3
IC401	I-14
IC402	J-10
IC501	E-18
Q101	D-3
Q102	D-4
Q103	E-7
Q104	F-3
Q201	G-6
Q202	H-4
Q203	H-4
Q301	F-3
Q302	B-3
Q303	B-2
Q304	B-2
Q305	B-3
Q306	B-2
Q307	B-2
Q308	B-1
Q401	I-13
Q402	H-13

Note:

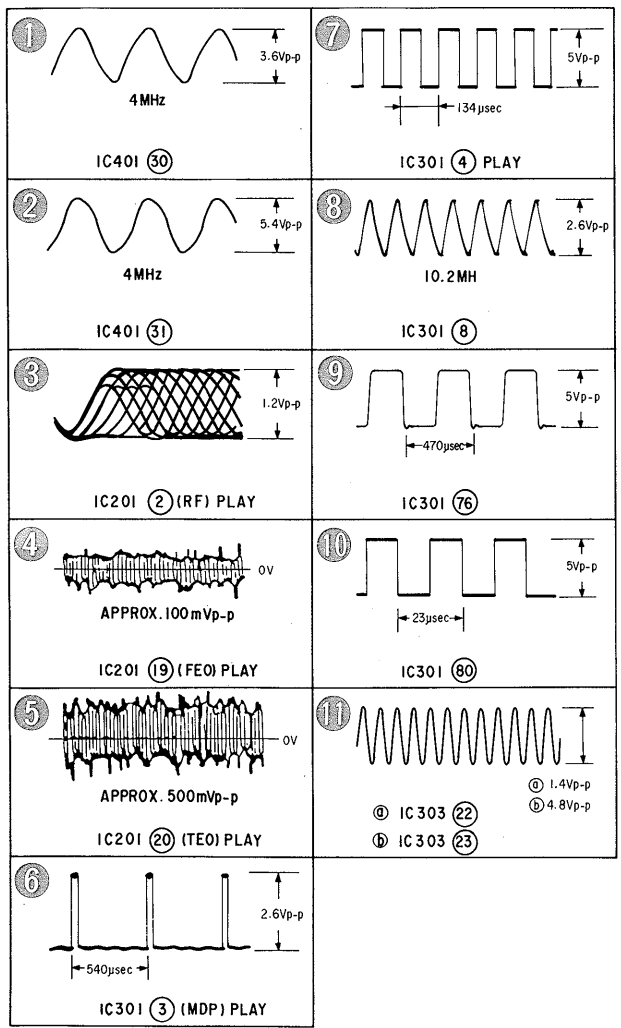
• —○— : parts extracted from the component side.

8-2. PRINTED WIRING BOARDS (France Made Model)



• Refer to page 33 for IC Block Diagram

• Refer to page 33 for IC Block Diagram



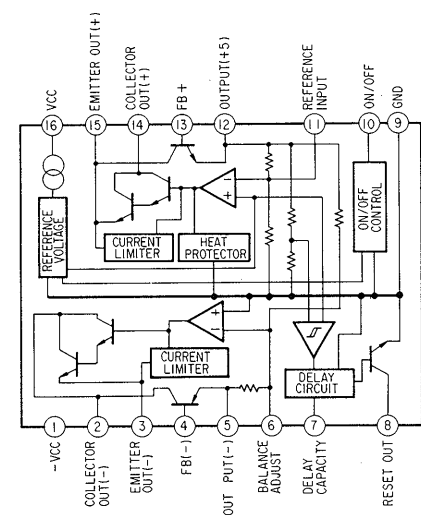
Note:

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

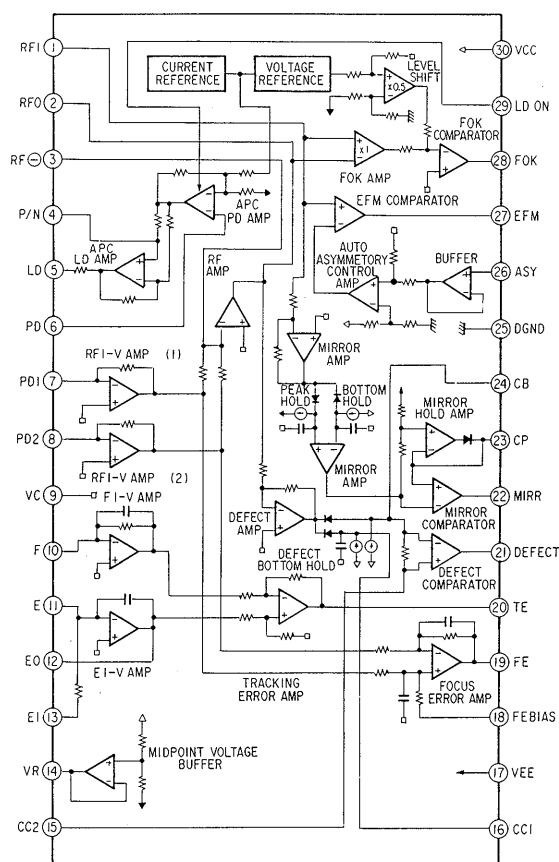
Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

- o  : B+ Line
- o  : B- Line
- o  : adjustment for repair.
- o Voltage and waveforms are dc with respect to ground under no-signal conditions.
- o no mark: STOP
- o Voltages are taken with a VOM (Input Impedance 10M Ω).
- o Voltage variations may be noted due to normal production tolerances.
- o Waveforms are taken with an oscilloscope.
- o Voltage variations may be noted due to normal production tolerances.
- o Circled numbers refer to waveforms.
- o Signal path.

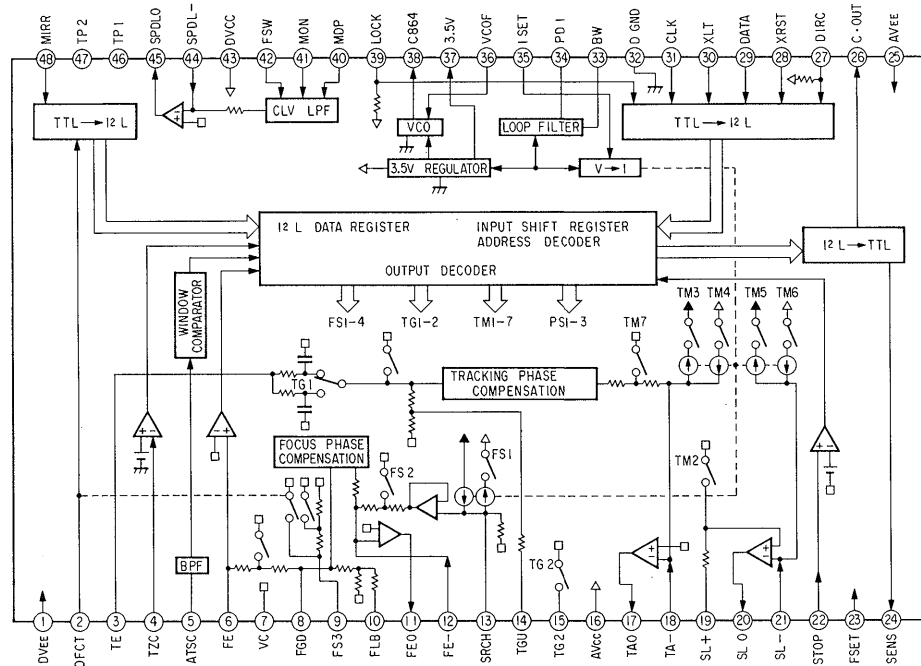
IC101 M5290P-16



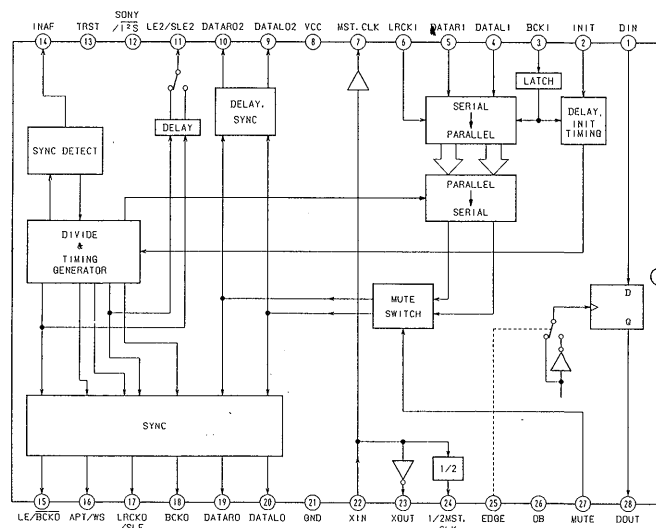
IC201 CXA1081S



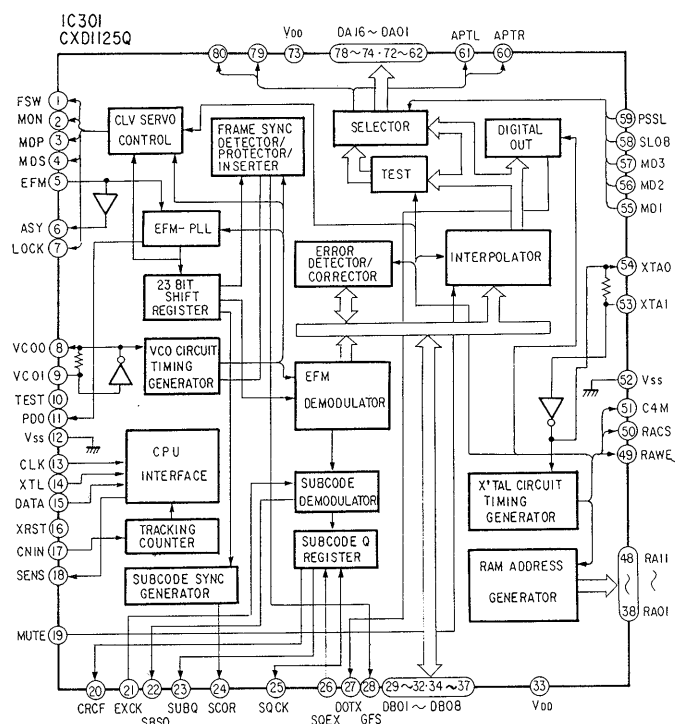
IC202 CXA1082BS



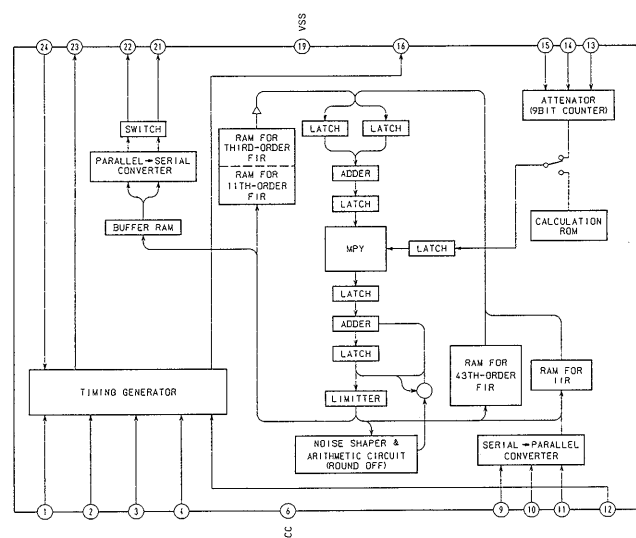
IC303 CXD8097S



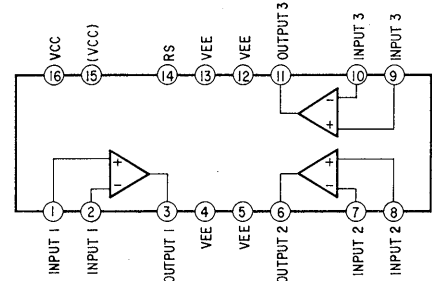
IC301 CXD11250X



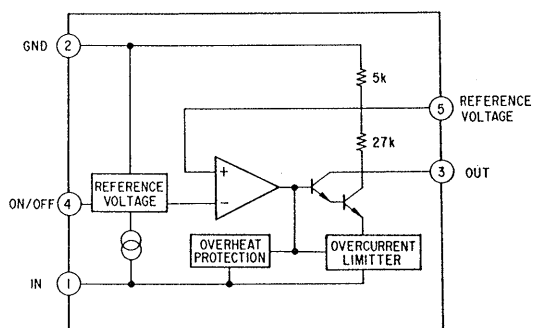
IC302 CXD2551P



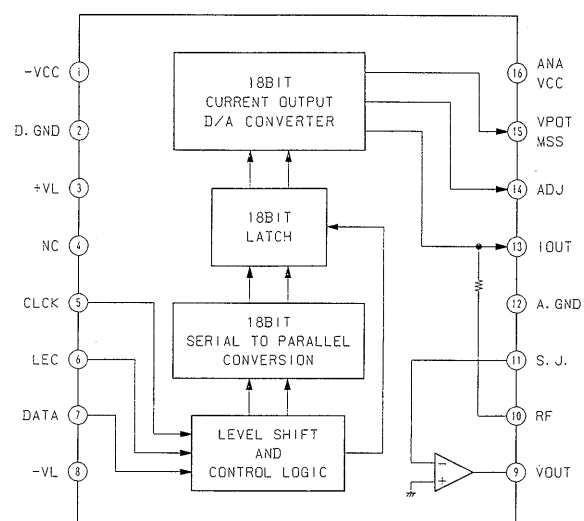
IC203, 204 LA6520



IC102 M5293L



IC304, 305 AD1860N



SECTION 9 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.

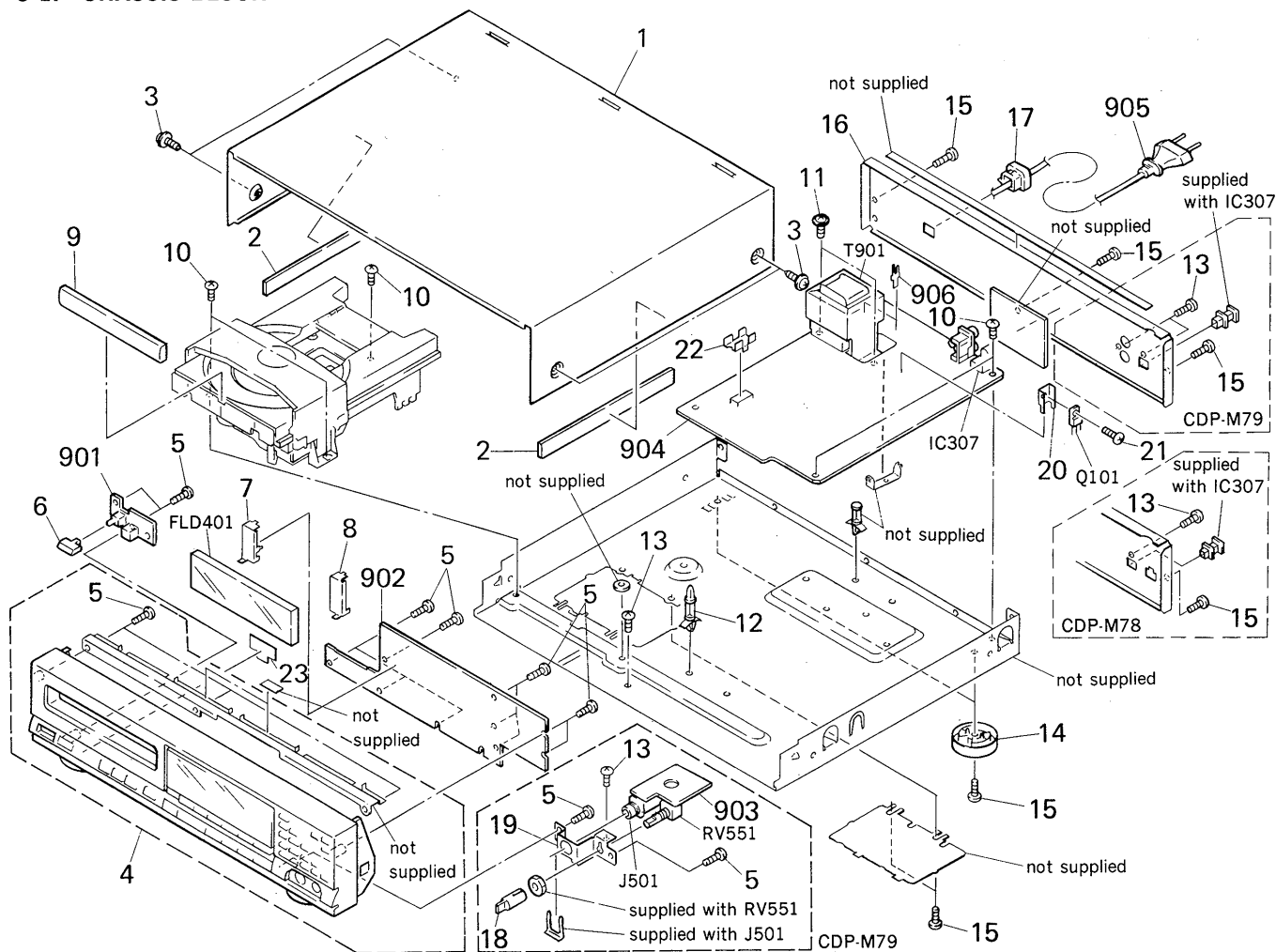
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)

↑
Cabinet's Color

↑
Parts' Color

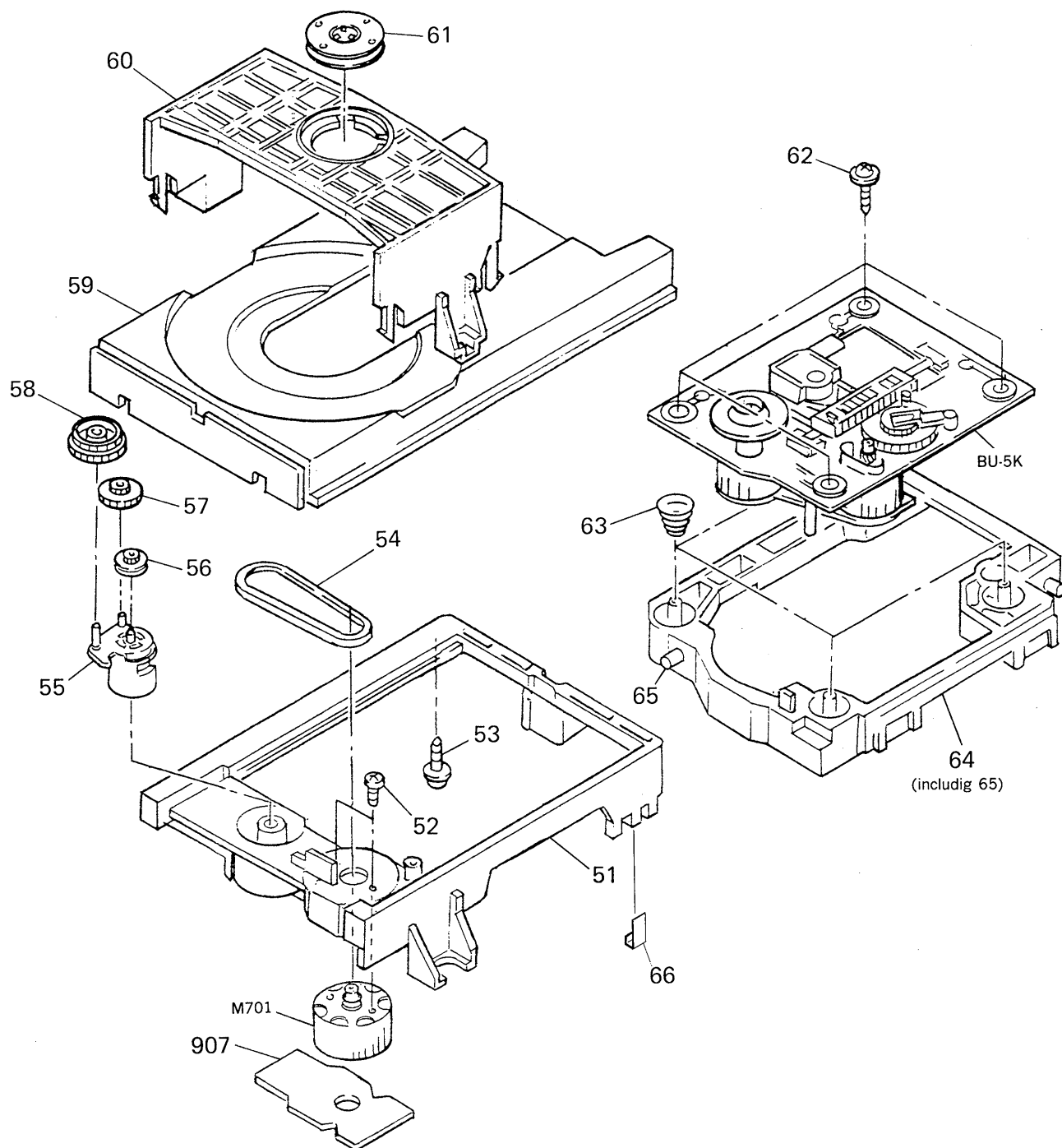
The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.

9-1. CHASSIS BLOCK



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
1	4-919-376-31	CASE		21	7-682-547-09	SCREW B 3X6	
2	*4-929-561-01	(M79)... CUSHION (CASE)		22	4-922-525-01	HEAT SINK	
3	3-704-366-01	SCREW (CASE) (M3X8)		23	*4-937-501-01	(M79)... SHEET (RM)	
4	X-4917-599-1	(M79)... PANEL ASSY, FRONT	5	901	*1-634-208-11	PC BOARD, SWITCH	
4	X-4918-601-1	(M78)... PANEL ASSY, FRONT		902	*A-4617-364-A	(M78)... MOUNTED PCB, DISP	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S		902	*A-4617-367-A	(M79)... MOUNTED PCB, DISP	
6	4-929-535-01	BUTTON (POWER)		903	*1-634-207-11	(M79)... PC BOARD, VOLUME	
7	*4-922-524-01	HOLDER (LEFT)		904	*A-4617-366-A	(M78)... MOUNTED PCB, MAIN	
8	*4-922-523-01	HOLDER (RIGHT)		904	*A-4617-369-A	(M79)... MOUNTED PCB, MAIN	
9	4-929-534-01	PANEL, LOADING		905	△1-556-562-00	(M78 : UK)... CORD, POWER	
10	7-682-548-04	SCREW +BVTT 3X8 (S)		905	△1-574-127-11	(M79 : AEP)... CORD, POWER	
11	2-383-566-00	SCREW		905	△1-574-127-21	(M78 : AEP)... CORD, POWER	
12	*4-924-098-31	HOLDER, PC BOARD		905	△1-574-390-11	(M79 : UK)... CORD, POWER	
13	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S		906	*1-535-771-11	TERMINAL	
14	*4-934-883-01	FOOT		FLD401	1-519-555-11	INDICATOR TUBE, FLUORESCENT	
15	7-682-548-09	SCREW +BVTT 3X8 (S)		IC307	8-749-921-00	IC T-1550	
16	*4-927-378-11	(M79)... PANEL (ALSACE), BACK		J501	1-568-498-61	(M79)... JACK, LARGE TYPE (PHONES)	
16	*4-927-378-21	(M78)... PANEL (ALSACE), BACK		T901	△1-449-925-11	TRANSFORMER, POWER	
17	*3-703-244-00	BUSHING (2104), CORD		Q101	8-729-111-67	TRANSISTOR 2SB1094-L	
18	4-921-921-01	(M79)... KNOB (M)		RV551	1-238-883-11	(M79)... RES, VAR, CARBON 20K/20K (PHONES LEVEL)	
19	*4-927-381-01	(M79)... BRACKET (VOL)					
20	4-902-345-01	HEAT SINK					

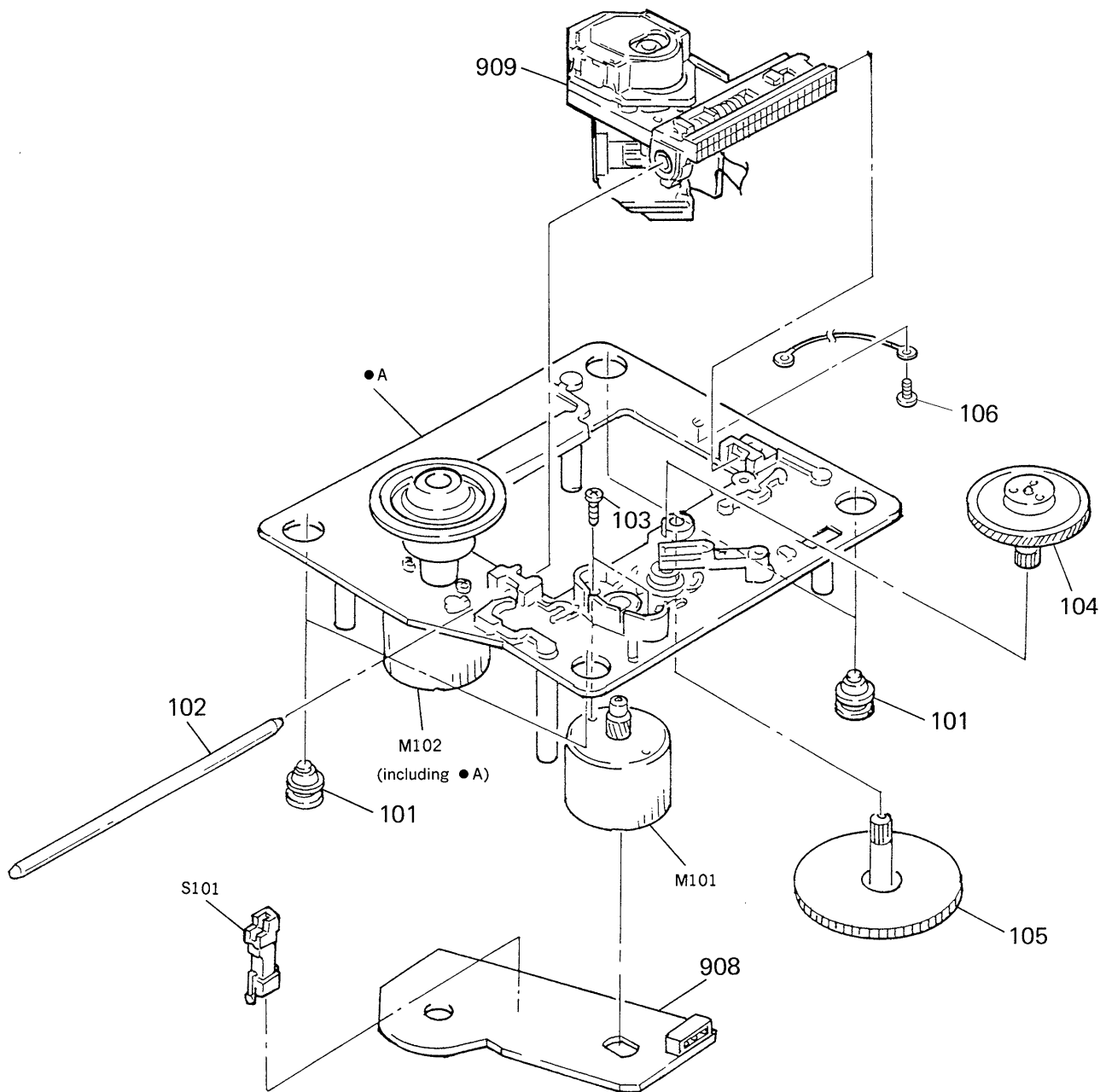
9-2. CD MECHANISM SECTION (CDM14-5K)



Ref.No	Part No.	Description	Remarks
51	4-933-111-01	CHASSIS (MD)	
52	7-621-775-10	SCREW +B 2.6X4	
53	*4-917-583-21	BRACKET, YOKE	
54	4-927-649-01	BELT	
55	4-933-109-01	CAM	
56	4-927-651-01	PULLEY (S)	
57	4-927-628-01	GEAR (C)	
58	4-933-107-01	GEAR (PL)	
59	4-933-112-01	TABLE, DISK	

Ref.No	Part No.	Description	Remarks
60	4-933-110-01	HOLDER (MG)	
61	A-4675-347-A	MG ASSY	
62	4-933-134-01	SCREW (+PTPWH M2.6X6)	
63	4-917-541-01	SPRING (B)	
64	4-933-129-01	HOLDER (BU)	
65	4-933-108-01	SHAFT (CAM)	
66	3-831-441-XX	CUSHION (B), CABINET	
907	1-632-169-11	PC BOARD, LOADING MOTOR	
M701	A-4608-362-A	MOTOR (L) ASSY	

9-3. 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.

Ref.No	Part No.	Description	Remarks
101	4-933-126-01	INSULATOR (A)	
102	4-917-565-01	SHAFT, SLED	
103	7-621-255-15	SCREW +P 2X3	
104	4-917-567-01	GEAR (M)	
105	4-917-564-01	GEAR (P), FLATNESS	
106	7-621-773-86	SCREW +BVTT 2.6X4 (S)	

Ref.No	Part No.	Description	Remarks
908	1-632-460-12	PC BOARD, SL/SP MOTOR	
909	 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)	
S101	1-570-822-11	SWITCH, LEAF (LIMIT IN)	

SECTION 10 ELECTICAL 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	*1-634-208-11	PC BOARD, SWITCH				C232	1-164-159-11	CERAMIC	0.1MF		50V
902	*A-4617-364-A	(M78)....MOUNTED PCB, DISP				C233	1-164-159-11	CERAMIC	0.1MF		50V
902	*A-4617-367-A	(M79)....MOUNTED PCB, DISP				C234	1-123-875-11	ELECT	10MF	20%	50V
903	*1-634-207-11	(M79)....PC BOARD, VOLUME				C235	1-124-477-11	ELECT	47MF	20%	16V
904	*A-4617-366-A	(M78)....MOUNTED PCB, MAIN				C236	1-124-477-11	ELECT	47MF	20%	16V
904	*A-4617-369-A	(M79)....MOUNTED PCB, MAIN				C238	1-136-165-00	FILM	0.1MF	5%	50V
905	Δ 1-556-562-00	(M78 : UK)....CORD, POWER				C239	1-161-375-00	CERAMIC	0.0022MF	30%	16V
905	Δ 1-574-127-11	(M79 : AEP)....CORD, POWER				C240	1-162-291-31	CERAMIC	560PF	10%	50V
905	Δ 1-574-127-21	(M78 : AEP)....CORD, POWER				C241	1-164-159-11	CERAMIC	0.1MF		50V
905	Δ 1-574-390-11	(M79 : UK)....CORD, POWER				C242	1-164-159-11	CERAMIC	0.1MF		50V
906	*1-535-771-11	TERMINAL				C301	1-162-205-31	(M78)....CERAMIC	18PF	5%	50V
907	1-632-169-11	PC BOARD, LOADING MOTOR				C302	1-162-206-31	(M78)....CERAMIC	20PF	5%	50V
908	1-632-460-12	PC BOARD, SL/SP MOTOR				C303	1-164-159-11	CERAMIC	0.1MF		50V
909	Δ 8-848-062-01	DEVICE, OPTICAL KSS-150A(H)				C304	1-124-791-11	ELECT	1MF	20%	50V
						C305	1-124-902-00	ELECT	0.47MF	20%	50V
		CAPACITOR				C306	1-106-379-12	MYLAR	0.033MF	5%	100V
C101	1-124-898-11	ELECT	4700MF	20%	16V	C307	1-136-173-00	FILM	0.47MF	5%	50V
C102	1-124-898-11	ELECT	4700MF	20%	16V	C308	1-136-173-00	FILM	0.47MF	5%	50V
C103	1-124-572-11	ELECT	100MF	20%	63V	C309	1-162-306-11	CERAMIC	0.01MF	20%	16V
C104	1-123-875-11	ELECT	10MF	20%	50V	C310	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C105	1-136-173-00	FILM	0.47MF	5%	50V						
C106	1-123-875-11	ELECT	10MF	20%	50V	C311	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C107	1-124-927-11	ELECT	4.7MF	20%	50V	C312	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C108	1-123-875-11	ELECT	10MF	20%	50V	C313	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C109	1-126-103-11	ELECT	470MF	20%	16V	C314	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C110	1-126-103-11	ELECT	470MF	20%	16V	C315	1-164-159-11	(M79)....CERAMIC	0.1MF		50V
C111	1-124-120-11	(M79)....ELECT	220MF	20%	16V						
C201	1-161-375-00	CERAMIC	0.0022MF	30%	16V	C316	1-162-201-31	(M79)....CERAMIC	12PF	5%	50V
C202	1-106-367-00	MYLAR	0.01MF	5%	100V	C317	1-162-199-31	(M79)....CERAMIC	10PF	5%	50V
C203	1-106-367-00	MYLAR	0.01MF	5%	100V	C318	1-126-103-11	(M79)....ELECT	470MF	20%	16V
C204	1-162-199-31	CERAMIC	10PF	5%	50V	C319	1-126-103-11	(M79)....ELECT	470MF	20%	16V
C205	1-162-199-31	CERAMIC	10PF	5%	50V	C320	1-106-363-00	(M79)....MYLAR	0.0068MF	5%	50V
C206	1-124-902-00	ELECT	0.47MF	20%	50V						
C208	1-124-443-00	ELECT	100MF	20%	10V	C321	1-106-363-00	(M79)....MYLAR	0.0068MF	5%	50V
C209	1-124-443-00	ELECT	100MF	20%	10V	C322	1-106-351-00	(M79)....MYLAR	0.0022MF	5%	50V
C210	1-161-377-00	CERAMIC	0.0047MF	30%	16V	C323	1-106-351-00	(M79)....MYLAR	0.0022MF	5%	50V
C211	1-106-379-12	MYLAR	0.033MF	5%	100V	C324	1-124-477-11	(M79)....ELECT	47MF	20%	16V
C212	1-124-477-11	ELECT	47MF	20%	16V	C325	1-124-477-11	(M79)....ELECT	47MF	20%	16V
C213	1-164-159-11	CERAMIC	0.1MF		50V						
C214	1-162-294-31	CERAMIC	0.001MF	10%	50V	C326	1-106-347-00	(M79)....MYLAR	0.0015MF	5%	50V
C215	1-161-375-00	CERAMIC	0.0022MF	30%	16V	C327	1-106-347-00	(M79)....MYLAR	0.0015MF	5%	50V
C216	1-136-165-00	FILM	0.1MF	5%	50V	C328	1-162-294-31	(M79)....CERAMIC	0.001MF	10%	50V
C217	1-106-379-12	MYLAR	0.033MF	5%	100V	C329	1-164-159-11	CERAMIC	0.1MF		50V
C218	1-124-927-11	ELECT	4.7MF	20%	50V						
C219	1-136-165-00	FILM	0.1MF	5%	50V						
C220	1-162-306-11	CERAMIC	0.01MF	20%	16V						
C221	1-161-377-00	CERAMIC	0.0047MF	30%	16V						
C222	1-124-927-11	ELECT	4.7MF	20%	50V						
C223	1-124-477-11	ELECT	47MF	20%	16V						
C224	1-162-294-31	CERAMIC	0.001MF	10%	50V						
C225	1-124-791-11	ELECT	1MF	20%	50V						
C226	1-124-791-11	ELECT	1MF	20%	50V						
C227	1-124-443-00	ELECT	100MF	20%	10V						
C228	1-162-282-31	CERAMIC	100PF	10%	50V						
C231	1-124-443-00	ELECT	100MF	20%	10V						

Ref.No	Part No.	Description
C330	1-162-286-31	CERAMIC 220PF 10% 50V
C331	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
C403	1-126-154-11	ELECT 47MF 20% 6.3V
C506	1-162-294-31	(M79).... CERAMIC 0.001MF 10% 50V
C507	1-162-294-31	(M79).... CERAMIC 0.001MF 10% 50V
C508	1-164-159-11	(M79).... CERAMIC 0.1MF 50V
C551	1-126-101-11	(M79)....ELECT 100MF 20% 16V
C552	1-126-101-11	(M79)....ELECT 100MF 20% 16V
CN101	*1-568-942-11	PIN, CONNECTOR 4P
CN401	1-535-800-11	JUMPER, FILM (WITH TERMINAL)
CNP201	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P
CNP202	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CNP203	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P
CNP204	*1-568-953-11	PIN, CONNECTOR 4P
CNP205	*1-568-954-11	PIN, CONNECTOR 5P
CNP301	*1-568-933-11	SOCKET, CONNECTOR 30P
CNP302	*1-565-561-11	(M78)....PIN, CONNECTOR 3P
CNP303	*1-564-708-11	(M79)....PIN, CONNECTOR (SMALL TYPE) 6P
CNP551	*1-564-708-11	(M79)....PIN, CONNECTOR (SMALL TYPE) 6P
D101	8-719-950-59	DIODE MPG06D-6052
D102	8-719-950-59	DIODE MPG06D-6052
D103	8-719-950-59	DIODE MPG06D-6052
D104	8-719-950-59	DIODE MPG06D-6052
D105	8-719-950-59	DIODE MPG06D-6052
D106	8-719-107-94	(M79)....DIODE 1SS202-1
D107	8-719-109-84	(M79)....DIODE RD5.1ES-B1
D108	8-719-121-24	DIODE RD9.1ESL
D301	8-719-107-94	(M79)....DIODE 1SS202-1
D302	8-719-107-94	(M78)....DIODE 1SS202-1
D303	8-719-109-96	(M79)....DIODE RD6.8ES-B1
D401	8-719-107-94	DIODE 1SS202-1
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
D411	8-719-107-94	DIODE 1SS202-1
D412	8-719-121-24	DIODE RD9.1ESL
FLD401	1-519-555-11	INDICATOR TUBE, FLUORESCENT
IC101	8-759-630-21	IC M5290P-16
IC102	8-759-633-42	IC M5293L
IC201	8-752-034-00	IC CXA1081S
IC202	8-752-032-30	IC CXA1082BS
IC203	8-759-805-18	IC LA6520
IC204	8-759-805-18	IC LA6520
IC301	8-752-334-00	IC CXD1125Q
IC302	8-752-334-06	(M79)....IC CXD2551P
IC303	8-759-990-80	(M79)....IC CXD8097S
IC304	8-759-990-58	(M79)....IC AD1860N-T
IC305	8-759-990-58	(M79)....IC AD1860N-T
IC306	8-759-995-08	IC MC4558CN
IC307	8-749-921-20	IC T-1550
IC308	8-759-994-18	IC UM6116M-2L
IC401	8-759-148-73	(M79)....IC UPD75212ACW-192
IC401	8-759-148-74	(M78)....IC UPD75212ACW-193

Ref.No	Part No.	Description
IC402	8-749-920-83	(M79)....IC GP1U52XB
IC501	8-759-981-89	(M79)....IC RC4556S
J401	1-569-442-11	(M79)....JACK, PIN 2P (LINE OUT)
J501	1-568-498-61	(M79)....JACK, LARGE TYPE (PHONES)
M101	X-4917-504-1	ASSY, MOTOR (SLED)
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)
M701	A-4608-362-A	MOTOR (L) ASSY
PS101	△1-532-637-00	LINK, IC
PS102	△1-532-637-00	LINK, IC
Q101	8-729-111-67	TRANSISTOR 2SB1094-L
Q102	8-729-808-77	TRANSISTOR 2SD1913SA-R
Q103	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q104	8-729-900-80	TRANSISTOR DTC114ES
Q201	8-729-116-57	TRANSISTOR 2SB1068-K
Q202	8-729-900-80	TRANSISTOR DTC114ES
Q203	8-729-900-89	TRANSISTOR DTC144ES
Q301	8-729-900-89	(M79)....TRANSISTOR DTC144ES
Q302	8-729-900-61	(M79)....TRANSISTOR DTA114ES
Q303	8-729-900-74	(M79)....TRANSISTOR DTC143TS
Q304	8-729-900-74	(M79)....TRANSISTOR DTC143TS
Q305	8-729-900-74	(M79)....TRANSISTOR DTC143TS
Q306	8-729-900-74	(M79)....TRANSISTOR DTC143TS
Q307	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q308	8-729-900-80	(M78)....TRANSISTOR DTC114ES
Q401	8-729-900-80	TRANSISTOR DTC114ES
Q402	8-729-900-80	TRANSISTOR DTC114ES

RESISTOR

R101	1-249-425-11	CARBON	4.7K	5%	1/4W
R102	1-249-425-11	CARBON	4.7K	5%	1/4W
R103	1-249-438-11	CARBON	56K	5%	1/4W
R104	1-249-429-11	CARBON	10K	5%	1/4W
R105	1-249-435-11	CARBON	33K	5%	1/4W
R106	1-249-413-11	(M79).... CARBON	470	5%	1/4W
R107	1-249-429-11	CARBON	10K	5%	1/4W
R108	1-249-423-11	CARBON	3.3K	5%	1/4W
R109	1-249-411-11	CARBON	330	5%	1/4W
R201	1-247-864-11	CARBON	24K	5%	1/4W
R202	1-249-433-11	CARBON	22K	5%	1/4W
R203	1-249-417-11	CARBON	1K	5%	1/4W
R204	1-249-397-11	CARBON	22	5%	1/4W
R205	1-247-806-11	CARBON	91	5%	1/4W
R206	1-249-432-11	CARBON	18K	5%	1/4W
R207	1-249-432-11	CARBON	18K	5%	1/4W
R208	1-249-425-11	CARBON	4.7K	5%	1/4W
R209	1-249-441-11	CARBON	100K	5%	1/4W
R210	1-249-417-11	CARBON	1K	5%	1/4W
R211	1-249-425-11	CARBON	4.7K	5%	1/4W
R212	1-247-882-11	CARBON	130K	5%	1/4W
R213	1-249-440-11	CARBON	82K	5%	1/4W
R214	1-249-423-11	CARBON	3.3K	5%	1/4W
R215	1-247-896-11	CARBON	510K	5%	1/4W
R216	1-249-429-11	CARBON	10K	5%	1/4W
R218	1-249-433-11	CARBON	22K	5%	1/4W
R219	1-249-414-11	CARBON	560	5%	1/4W
R220	1-249-441-11	CARBON	100K	5%	1/4W
R221	1-247-844-11	METAL	3.6K	5%	1/4W
R222	1-249-429-11	CARBON	10K	5%	1/4W
R223	1-249-441-11	CARBON	100K	5%	1/4W
R224	1-249-393-11	CARBON	10	5%	1/4W
R225	1-249-435-11	CARBON	33K	5%	1/4W
R226	1-247-889-00	CARBON	270K	5%	1/4W
R227	1-249-393-11	CARBON	10	5%	1/4W

Note: 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			
R228	1-249-425-11	CARBON	4.7K	5%	1/4W
R229	1-247-881-00	CARBON	120K	5%	1/4W
R230	1-249-427-11	CARBON	6.8K	5%	1/4W
R231	1-249-425-11	CARBON	4.7K	5%	1/4W
R232	1-249-437-11	CARBON	47K	5%	1/4W
R233	1-249-435-11	CARBON	33K	5%	1/4W
R234	1-247-881-00	CARBON	120K	5%	1/4W
R235	1-247-884-11	CARBON	160K	5%	1/4W
R236	1-247-884-11	CARBON	160K	5%	1/4W
R237	1-247-881-00	CARBON	120K	5%	1/4W
R238	1-249-432-11	CARBON	18K	5%	1/4W
R239	1-249-432-11	CARBON	18K	5%	1/4W
R240	1-249-425-11	CARBON	4.7K	5%	1/4W
R241	1-249-393-11	CARBON	10	5%	1/4W
R242	1-249-393-11	CARBON	10	5%	1/4W
R301	1-249-417-11	(M79).... 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	1-249-411-11	CARBON	330	5%	1/4W
R306	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R307	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R308	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R309	1-249-429-11	CARBON	10K	5%	1/4W
R310	1-249-441-11	METAL	100K	5%	1/4W
R311	1-249-441-11	METAL	100K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-441-11	CARBON	100K	5%	1/4W
R314	1-249-433-11	CARBON	22K	5%	1/4W
R315	1-247-903-00	CARBON	1M	5%	1/4W
R316	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R317	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R318	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R319	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R320	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R321	1-247-903-00	(M79).... CARBON	1M	5%	1/4W
R322	1-249-407-11	(M79).... CARBON	150	5%	1/4W
R323	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R324	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R325	1-249-411-11	(M79).... CARBON	330	5%	1/4W
R326	1-249-413-11	(M79).... CARBON	470	5%	1/4W
R327	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R328	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R329	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R330	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R331	1-247-891-00	(M79).... CARBON	330K	5%	1/4W
R332	1-247-891-00	(M79).... CARBON	330K	5%	1/4W

Ref.No	Part No.	Description			
R333	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R334	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R335	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R336	1-249-409-11	(M79).... CARBON	220	5%	1/4W
R337	1-249-414-11	(M79).... CARBON	560	5%	1/4W
R338	1-249-414-11	(M79).... CARBON	560	5%	1/4W
R341	1-249-441-11	(M79).... CARBON	100K	5%	1/4W
R342	1-249-429-11	(M78).... CARBON	10K	5%	1/4W
R343	1-249-417-11	(M78).... CARBON	1k	5%	1/4W
R344	1-249-405-11	CARBON	100	5%	1/4W
R345	1-249-405-11	(M79).... CARBON	100	5%	1/4W
R346	1-249-405-11	(M79).... CARBON	100	5%	1/4W
R347	1-249-433-11	(M79).... CARBON	22K	5%	1/4W
R348	1-249-433-11	(M79).... CARBON	22K	5%	1/4W
R349	1-249-406-11	CARBON	120	5%	1/4W
R350	1-249-435-11	CARBON	33K	5%	1/4W
R351	1-249-429-11	CARBON	10K	5%	1/4W
R401	1-249-435-11	CARBON	33K	5%	1/4W
R402	1-249-435-11	CARBON	33K	5%	1/4W
R403	1-249-435-11	CARBON	33K	5%	1/4W
R404	1-249-425-11	CARBON	4.7K	5%	1/4W
R405	1-249-425-11	CARBON	4.7K	5%	1/4W
R406	1-249-439-11	CARBON	68K	5%	1/4W
R551	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R552	1-249-417-11	(M79).... CARBON	1K	5%	1/4W
R553	1-249-423-11	(M79).... CARBON	3.3K	5%	1/4W
R554	1-249-423-11	(M79).... CARBON	3.3K	5%	1/4W
R556	1-249-429-11	(M79).... CARBON	10K	5%	1/4W
R557	1-249-429-11	(M79).... CARBON	10K	5%	1/4W
R558	1-249-402-11	(M79).... CARBON	56	5%	1/4W
R559	1-249-402-11	(M79).... CARBON	56	5%	1/4W
RV201	1-228-995-00	RES, ADJ, METAL GLAZE	22K		
RV202	1-228-993-00	RES, ADJ, METAL GLAZE	4.7K		
RV203	1-228-995-00	RES, ADJ, METAL GLAZE	22K		
RV204	1-228-995-00	RES, ADJ, METAL GLAZE	22K		
RV205	1-228-990-00	RES, ADJ, METAL GLAZE	1K		
RV551	1-238-883-11	(M79)....RES, VAR, CARBON	20K/20K		(PHONES LEVEL)
S101	1-570-822-11	SWITCH, LEAF (LIMIT IN)			
S401	1-571-305-11	SWITCH, PUSH (1 KEY) (POWER)			
S402	1-554-303-21	SWITCH, KEY BOARD (CONTINUE)			
S403	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)			
S404	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)			
S405	1-554-303-21	SWITCH, KEY BOARD (1)			
S406	1-554-303-21	SWITCH, KEY BOARD (2)			
S407	1-554-303-21	SWITCH, KEY BOARD (3)			
S408	1-554-303-21	SWITCH, KEY BOARD (4)			

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
S409	1-554-303-21	SWITCH, KEY BOARD (5)
S410	1-554-303-21	SWITCH, KEY BOARD (6)
S411	1-554-303-21	SWITCH, KEY BOARD (7)
S412	1-554-303-21	SWITCH, KEY BOARD (8)
S413	1-554-303-21	SWITCH, KEY BOARD (9)
S414	1-554-303-21	SWITCH, KEY BOARD (10)
S415	1-554-303-21	SWITCH, KEY BOARD (11)
S416	1-554-303-21	SWITCH, KEY BOARD (12)
S417	1-554-303-21	SWITCH, KEY BOARD (13)
S418	1-554-303-21	SWITCH, KEY BOARD (14)
S419	1-554-303-21	SWITCH, KEY BOARD (15)
S420	1-554-303-21	SWITCH, KEY BOARD (16)
S421	1-554-303-21	SWITCH, KEY BOARD (17)
S422	1-554-303-21	SWITCH, KEY BOARD (18)
S423	1-554-303-21	SWITCH, KEY BOARD (19)
S424	1-554-303-21	SWITCH, KEY BOARD (20)
S425	1-554-303-21	(M79)....SWITCH, KEY BOARD (TIME SET)
S426	1-554-303-21	SWITCH, KEY BOARD (EDIT)
S427	1-554-303-21	SWITCH, KEY BOARD (K<K)
S428	1-554-303-21	SWITCH, KEY BOARD (D>D)
S429	1-554-303-21	SWITCH, KEY BOARD (◀◀)
S430	1-554-303-21	SWITCH, KEY BOARD (▶▶)
S431	1-554-303-21	SWITCH, KEY BOARD (>20)
S432	1-554-303-21	SWITCH, KEY BOARD (MULTI PROGRAM)
S433	1-554-303-21	SWITCH, KEY BOARD (CLEAR)
S434	1-554-303-21	SWITCH, KEY BOARD (CHECK)
S435	1-554-303-21	SWITCH, KEY BOARD (■)
S436	1-554-303-21	SWITCH, KEY BOARD (II)
S437	1-554-303-21	SWITCH, KEY BOARD (▷)
S438	1-554-303-21	SWITCH, KEY BOARD (▲)
S439	1-554-303-21	SWITCH, KEY BOARD (FADER)
S440	1-554-303-21	SWITCH, KEY BOARD (REPEAT)
S442	1-554-303-21	SWITCH, KEY BOARD (TIME)
S701	1-572-086-11	SWITCH, LEAF (IN)
S702	1-572-086-11	SWITCH, LEAF (OUT)
S701	1-572-086-11	SWITCH, LEAF (IN)
S702	1-572-086-11	SWITCH, LEAF (OUT)
T901	△.1-449-925-11	TRANSFORMER, POWER
X301	1-577-328-21	(M79)....VIBRATOR, CRYSTAL (16.9344MHz)
X302	1-577-328-21	(M78)....VIBRATOR, CRYSTAL (16.9344MHz)
X401	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORIES & PACKING MATERIALS

1-465-280-11	(M79)....REMOTE COMMANDER(RM-D209)
1-559-533-11	(M79)....CORD, CONNECTION
3-701-630-00	BAG, POLYETHYLENE
3-751-653-61	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-751-653-71	(AEP)....MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
4-925-788-01	(M79)....COVER, BATTERY(for RM-D209)
* 4-927-355-01	CUSHION
4-927-394-31	(M79)....INDIVIDUAL CARTON
4-927-394-41	(M78)....INDIVIDUAL CARTON

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

CDP-M78/M79

SONY SERVICE MANUAL

AEP Model
UK Model
E Model
CDP-M78

AEP Model
UK Model
E Model
Australian Model
CDP-M79

CORRECTION- 1

Correct your service manual as shown below.

 : indicates corrected portion.

Page	INCORRECT	CORRECT
6	E-F Balance Check Procedure : 1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.	E-F Balance Check Procedure : 1. Connect test point <u>TP (ADJ)</u> to <u>ground</u> and <u>TP (TES)</u> to <u>TP (VC)</u> with lead wire.
7	Focus/Tracking Adjustment 4. Adjustment RV101 on BD board so that the waveform is as shown in the figure below. (focus gain adjustment) 6. Adjust RV102 on BD board so that the waveform is as shown the figure below. (tracking gain adjustment)	Focus/Tracking Adjustment 4. <u>Adjust RV102</u> on BD board so that the waveform is as shown in the figure below. (focus gain adjustment) 6. Adjust <u>RV101</u> on BD board so that the waveform is as shown <u>in</u> the figure below. (tracking gain adjustment)