SERVICE MANUAL

AEP Model

UK Model

E Model



Model Name Using Similar Mechanism	CDP-M95
CD Mechanism Name	CDM9-5
Base Unit Name	BU-5C

SPECIFICATION

Compact disc player

Frequency response	2 Hz – 20 kHz ± 0.5 dB
Signal to noise ratio	More than 100 dB
Dynamic range	More than 95 dB
Harmonic distortion	Less than 0.003 %
Channel separation	More than 98 dB

Outputs

LINE OUT (FIXED) (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			
HEADPHONES	Output level max. 15 mW			
(stereo phone jack)	Load impedance 32 ohms			

General

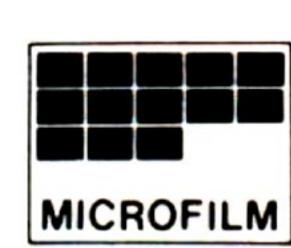
Power requirements	AEP model 220 V AC (or 240 V AC adjustable by Sony personnel), 50/60 Hz UK model 240 V AC (or 220 V AC adjustable by Sony personnel), 50/60 Hz E model 110 – 120 or 220 – 240 V AC adjustable, 50/60 Hz
Power consumption	12 W
Dimensions (approx., including projections)	$355 \times 93 \times 310$ mm (w/h/d) (14 \times 3 3 / $_4 \times$ 12 1 / $_4$ inches)
Weight (approx.)	3.5 kg (7 lbs 11 oz)

Supplied accessories

Audio cord	1 (2 phono plugs – 2 phono plugs)
Remote commander	1
Sony SUM-3 (NS) batteries	2

- Continued on next page -





Remote commander (RM-D270)

Remote control system	Infrared control				
Power requirements	3 V DC with two R6 (size AA) batteries				
Dimensions	Approx. $67 \times 20 \times 175 \text{ mm (w/h/d)}$ (23/4 × 13/16 × 7 inches)				
Weight	Approx. 135 g (4 oz) Including batteries				

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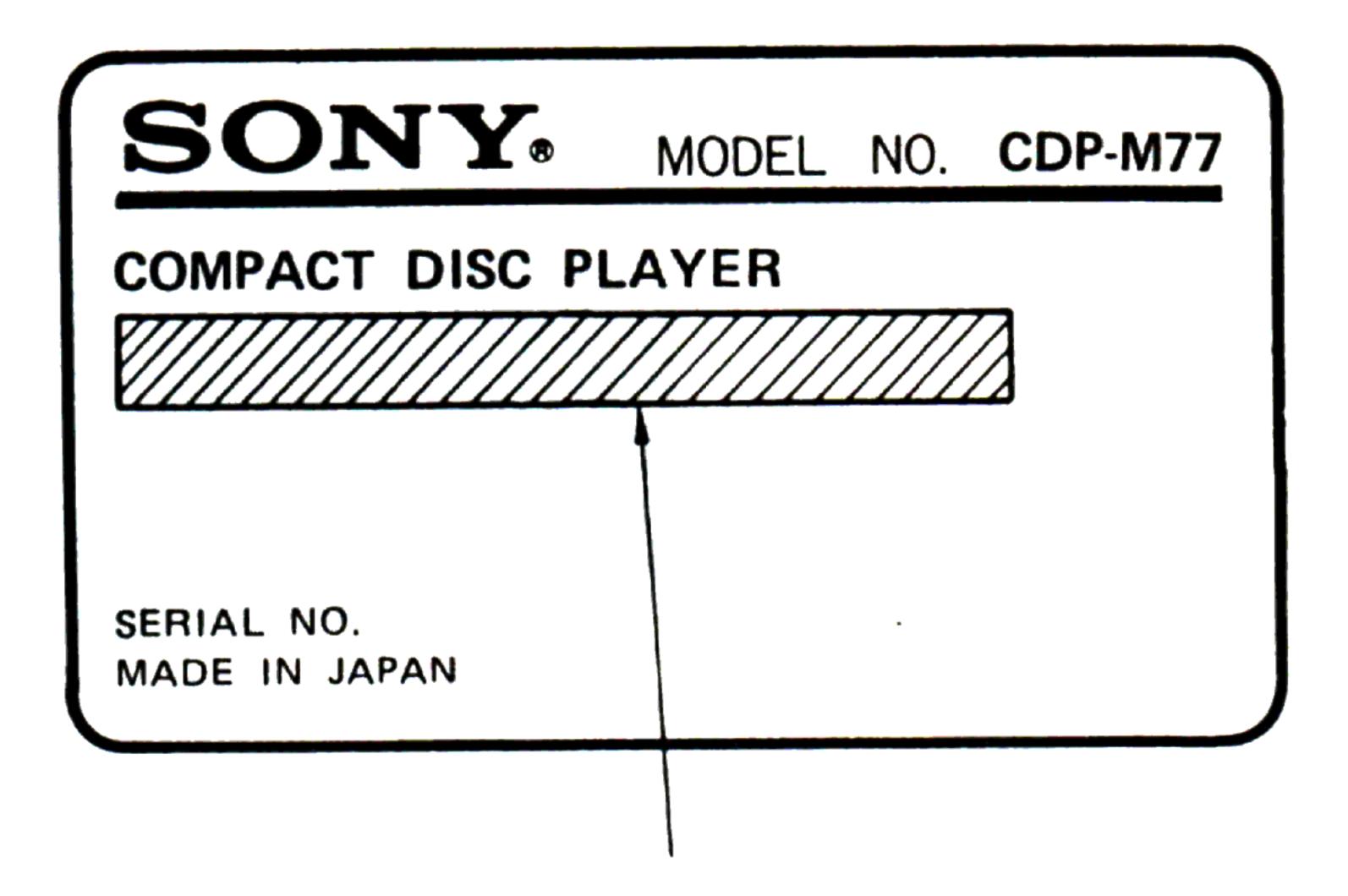
Secti	<u>Title</u>	_P	age
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SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK A 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 Labels —



AEP model: AC: 220 V ~ 50/60 Hz 12 W UK model: AC: 240 V ~ 50/60 Hz 12 W

E model: AC: 110-120, 220-240 V ~ 50/60 Hz 12 W

SECTION 1 SERVICING NOTES

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: GaAlAsWavelength: 780 nm
 - Emission Duration: continuous
 Laser Output: max. 44.6 μW*
 - * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
- 2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

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

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

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

1. Laser-didoe data

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

- * Målt i 1,6 mm afstand fra overfladen af objektivlinsen på den optiske pick-up enhed.
- Klassifikation: Klasse IIIb.
- 2. Adskil aldrig den optiske pick-up enhed under service, og juster ikke APC kredsløbet (Automatic Power Control). Hvis APC kredsløbet (incl. laser-dioden) bryder ned, skal hele den optiske pick-up enhed (incl. APC printkortet) udskiftes.

LASER ADVARSEL MÆRKNING

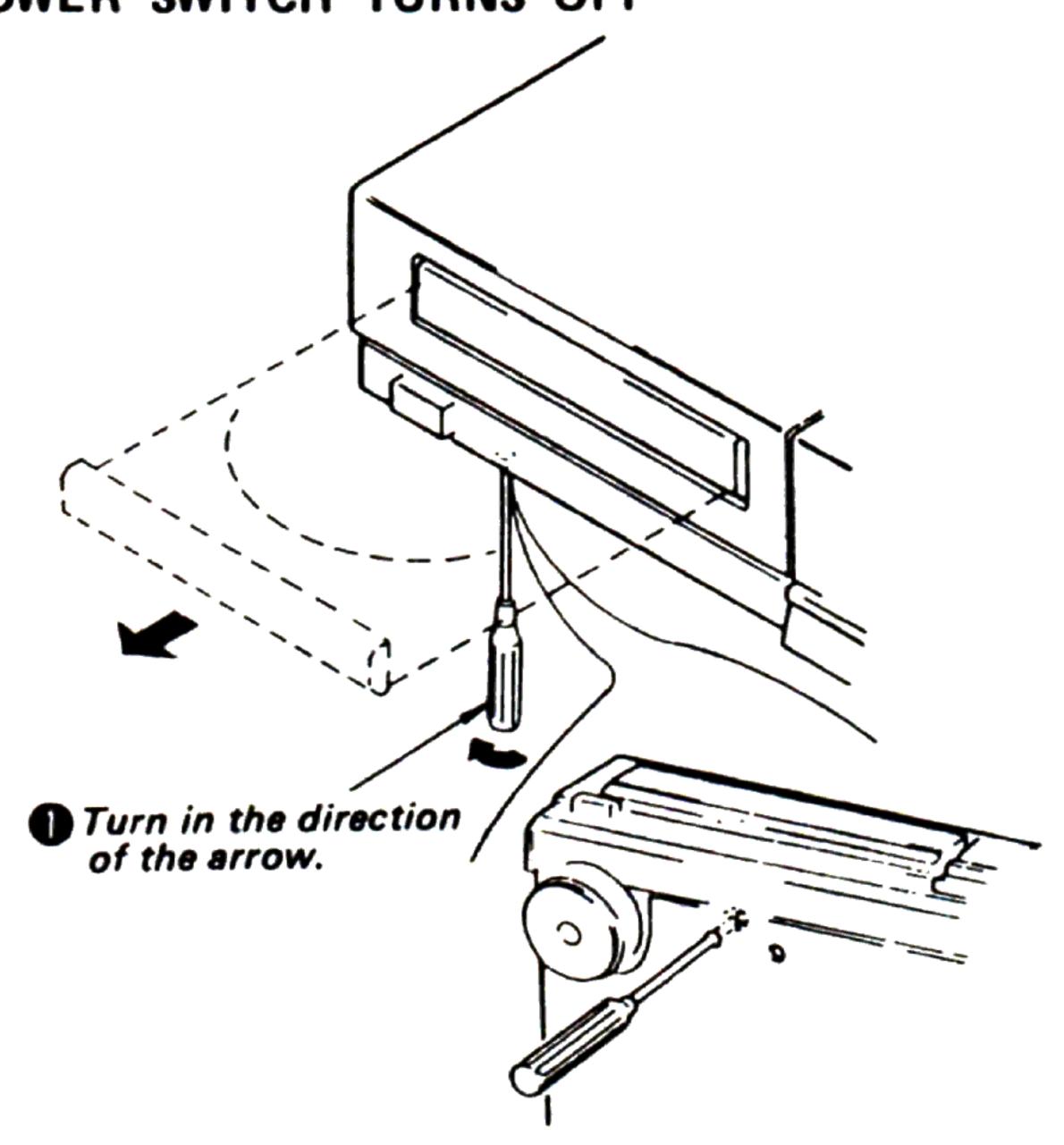
Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning

CAUTION: INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED AVOID EXPOSURE TO BEAM ADVARSEL: USYNLIG LASERSTRÄLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSÆTTELSE FOR STRÄLING

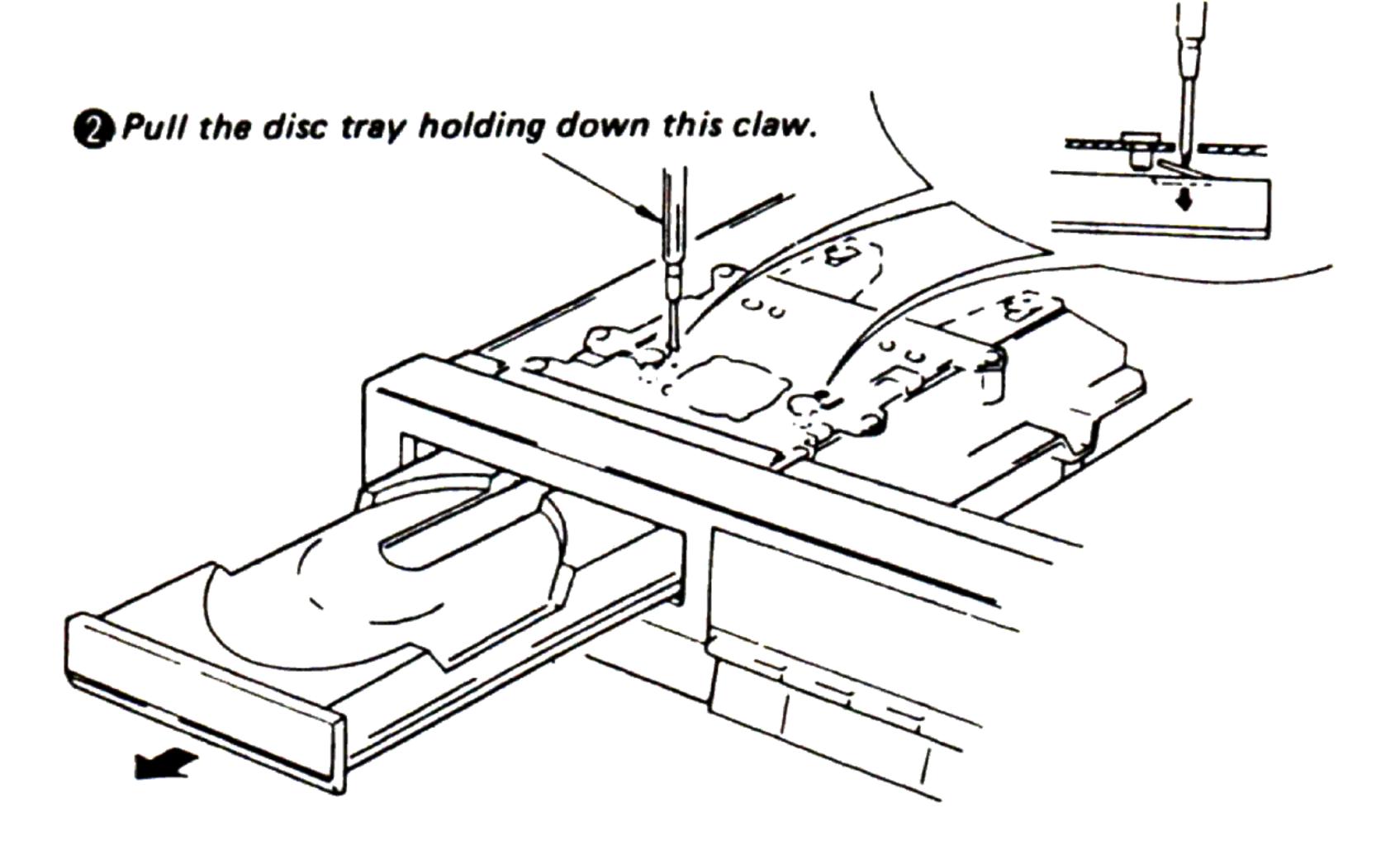
VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

HOW TO OPEN THE DISC TRAY WHEN POWER SWITCH TURNS OFF



Caution: When you work, keep the set horizontal.

DISC TRAY REMOVAL



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.

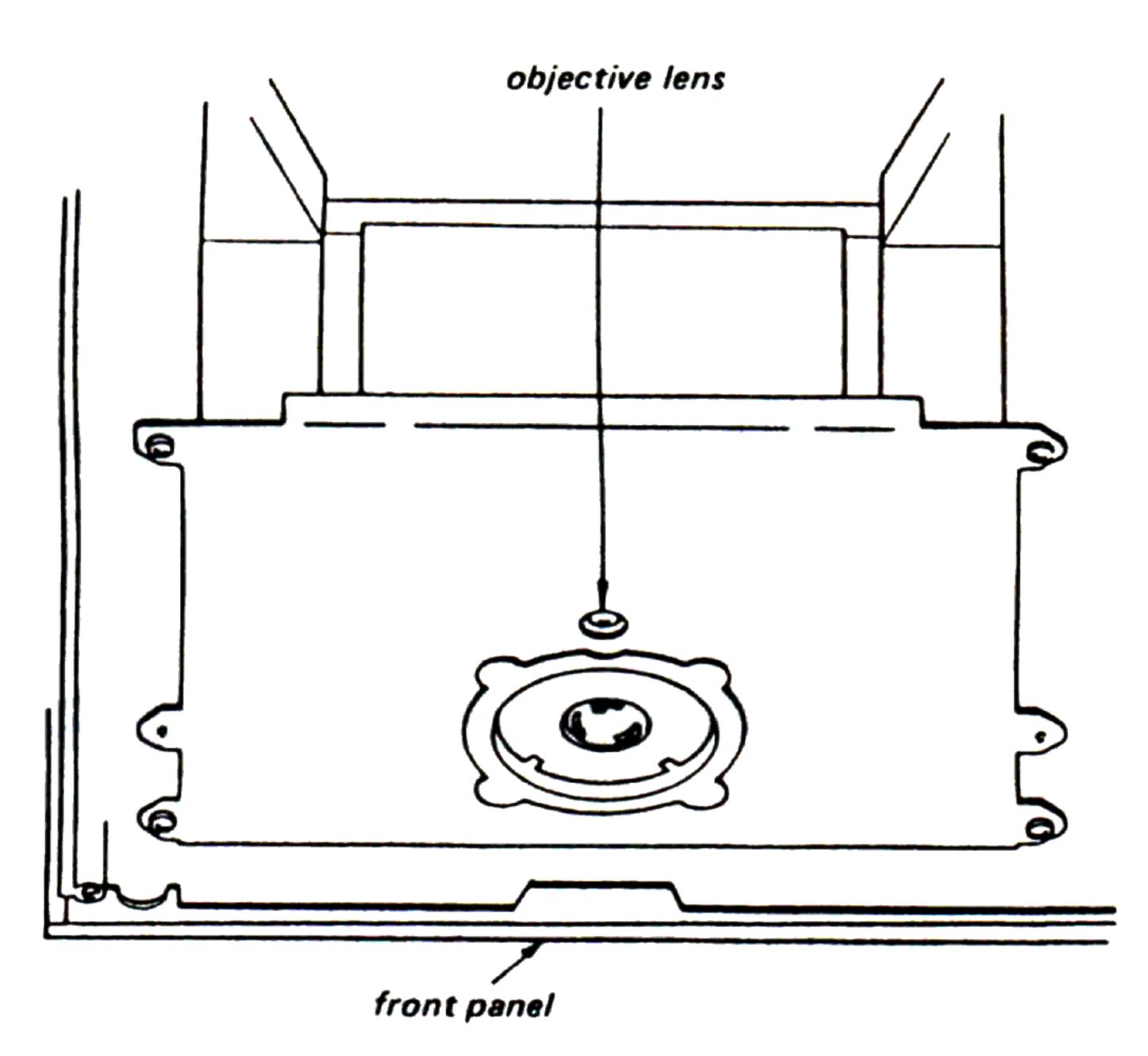
The flexible board is easily damaged and should be handled with care.

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 30 cm away from the objective lens.

LASER DIODE AND FOCUS SERCH OPERATION CHECK

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



- 1) Confirm that laser beam is spread.
- 2) Up and down motion of the objective lens. (3 times)

SECTION 2 GENERAL

4

2

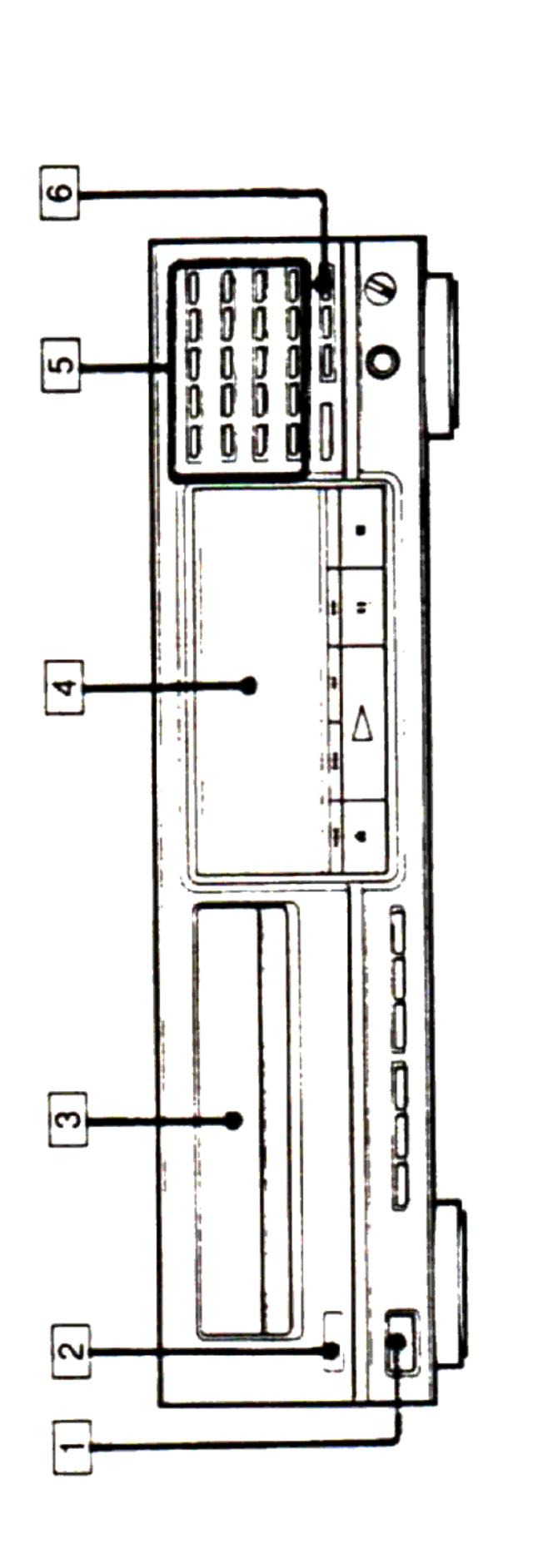
9

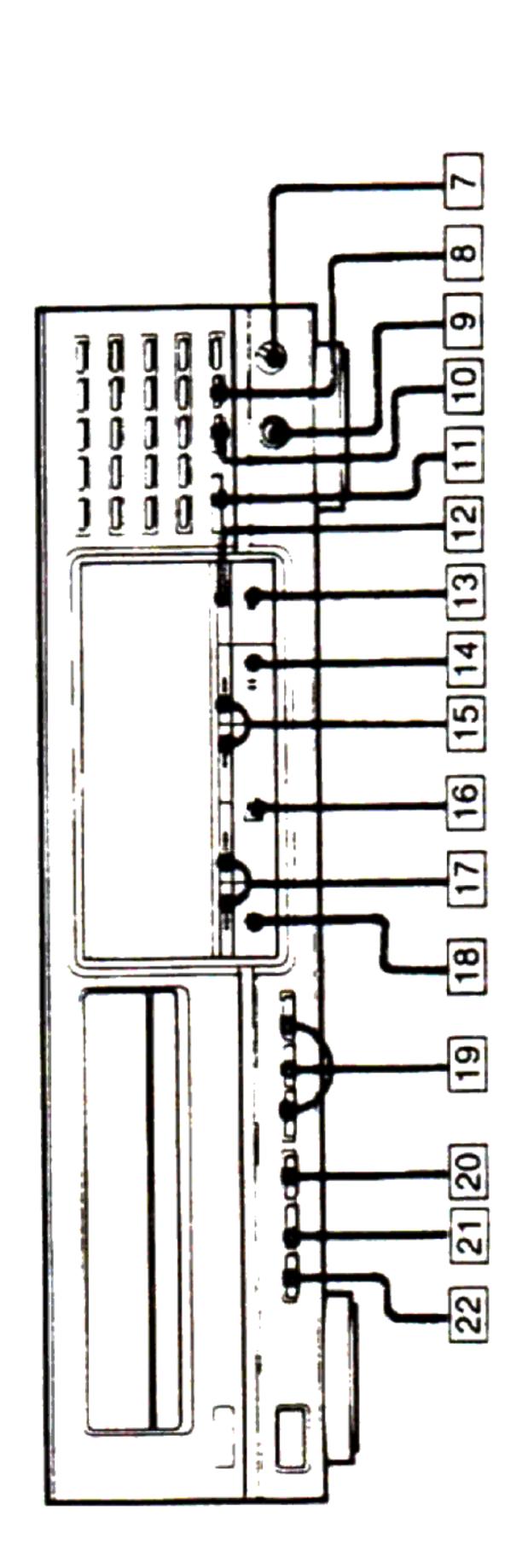
6

8

Remote Commander

RM-D270





POWER switch

II (pause) button

- Remote sensor
 - Display window
- Numeric buttons
- CLEAR (program clear) button HEADPHONE LEVEL control

- CHECK (program check)

 HEADPHONE jack

 20 (over 20) button

 FADER (FADE IN/FADE OUT) button

 EDIT/TIME FADE button
- (stop) button
- ← ►► (manual search) buttons
 ► (play) button
 ► (open/CLOSE) button
 PLAY MODE buttons
 PROGRAM button
 - SHUFFLE button
 CONTINUE/SINGLE button
- REPEAT button
 AUTO SPACE (auto space) button
 TIME button

► (play) button CLEAR/REPEAT (A CHECK button TIME button 2 Ξ 13 9 8 5

12 0 Ē 15 13 16 14

♠ (open/close) button Numeric buttons
★★★★★ AMS buttons

← ►► (manual search) buttons
 ← ►► SLOW (low speed manual search) buttons
 FADER (FADE IN/FADE OUT) button

CLEAR (program clear) button A ←→ B repeat button

II (pause) button (stop) button

> 20 (over 20) button PLAY MODE buttons

B repeat clear/repeat) but

PGM (program) button SHUFFLE button CONTINUE button

SINGLE button

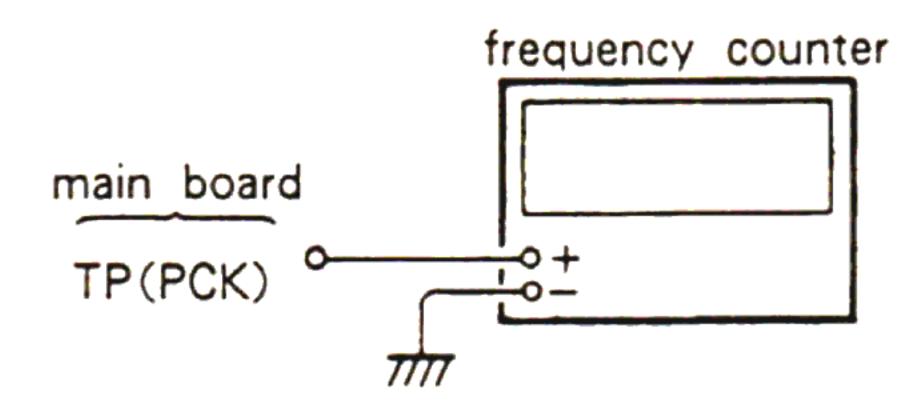
AMS is an abbreviation of Automatic Music Sensor.

SECTION 3 ELECTRICAL ADJUSTMENTS

- 1. Perform adjustments in the order given.
- 2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
- 3. Use the oscilloscope with more than $10M\Omega$ impedance.

RF PLL Frequency Adjustment

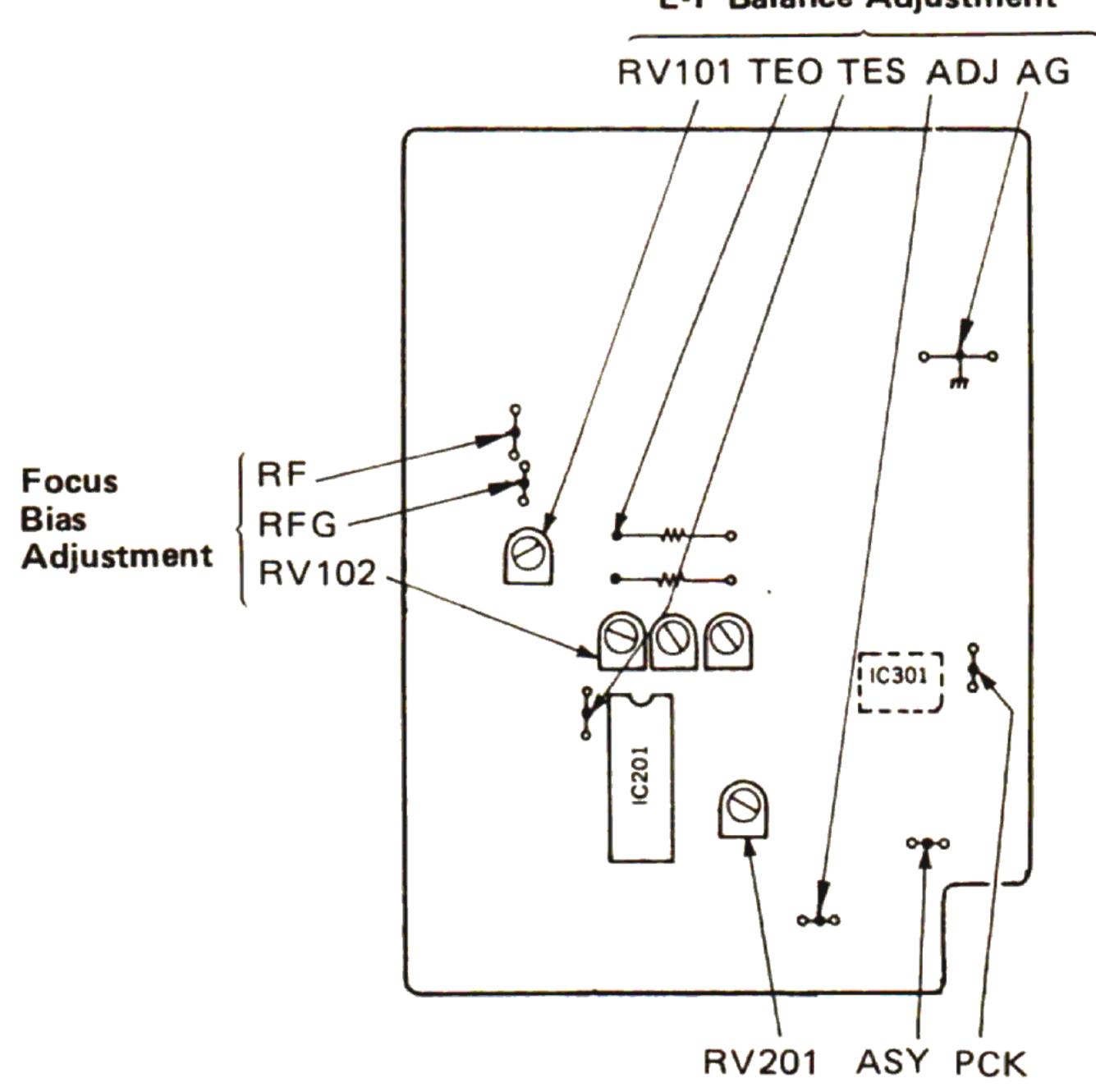
Procedure:



- 1. Connect test point TP (ASY) to ground with jumper 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 4.3218MHz±30kHz.
- 5. Remove lead wire connecting TP (ASY) and ground.
- 6. Put disc (YEDS-18) in and press ▷ button.
- 7. Confirm that the reading on frequency counter is 4.3218MHz.

Adjustment Location: main board

E-F Balance Adjustment



RF PLL Frequency Adjustment

E-F Balance Adjustment

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

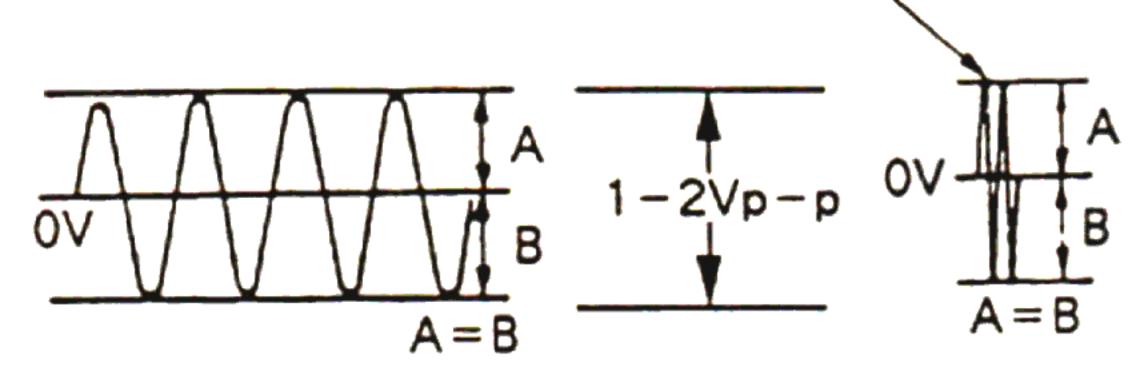
Procedure:

oscilloscope
(DC range)

TP(TEO)
TP (A.G)

- 1. Connect test points TP (ADJ) and TP (TEI) to ground with jumper wires.
- 2. Connect oscilloscope to test points TP (TEO) and TP (A. G).
- 3. Turn POWER switch on.
- 4. Put disc (YEDS-18) in and playback the 6th selection.
- 5. Adjust RV101 so that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V.

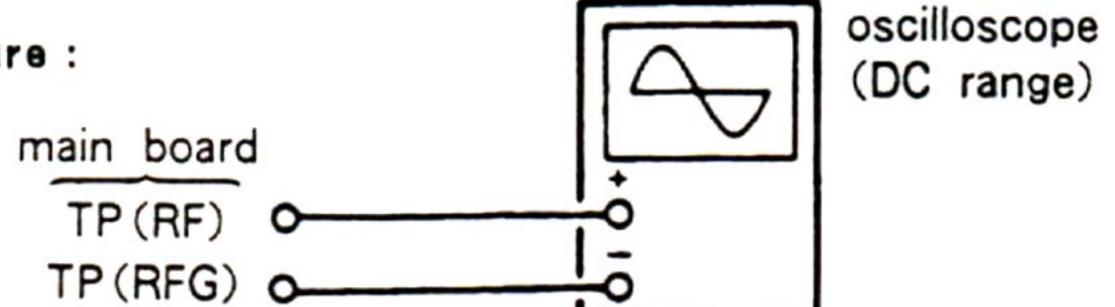
Note: Take sweep time as long as possible to obtain best waveform.



Focus Bias Adjustment

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

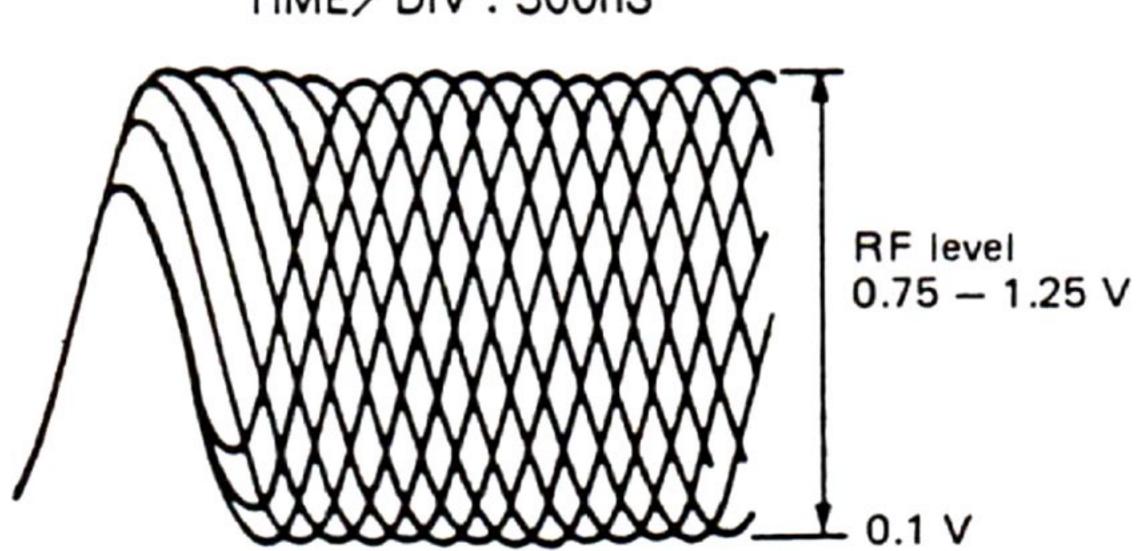
Procedure:



- 1. Connect oscilloscope to test points TP(RF) and TP (RF G).
- 2. Turn POWER switch on.
- 3. Put disc (YEDS-18) in and playback the 6th selection.
- 4. Adjust RV102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape "O" can be clearly distinguished at the center of the waveform.

RF Signal Reference Waveform (eye pattern)





When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

REFERENCE

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

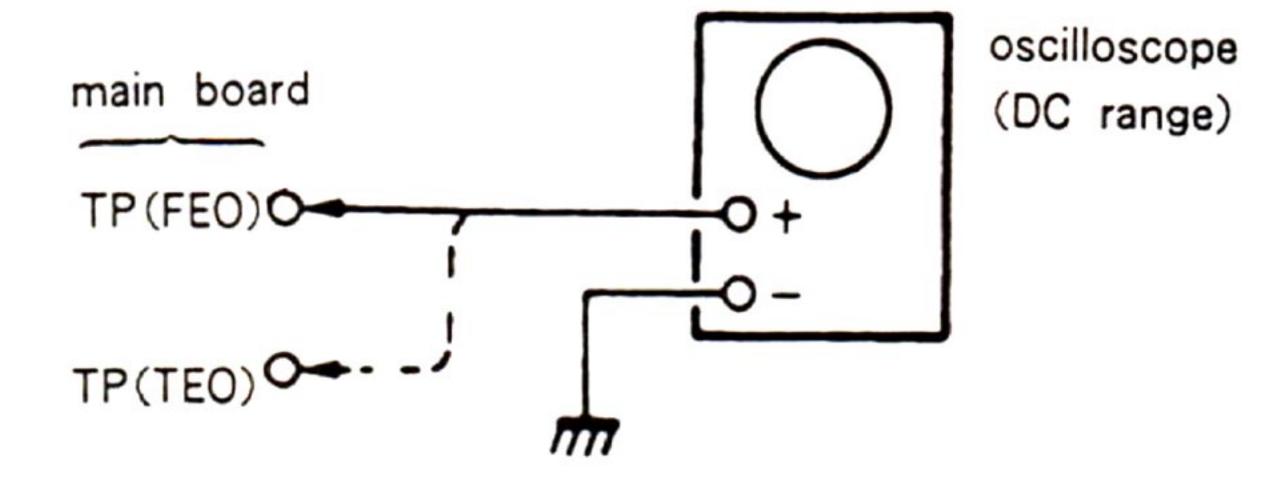
Gain	Focus	Tracking
The time until music starts becomes longer for STOP → DPLAY or automatic selection (₩ ₩ buttons pressed. (Normally takes about 2 seconds.)	low	low or high
Music does not start and disc continues to rotate for STOP→▷PLAY or auto - matic selection (M M buttons pressed.)	-	low
 Disc table opens shortly after STOP→ ▶ PLAY. 	low or high	_
● Sound is interrupted during PLAY. Or time counter display stops progressing.	-	low
 More poise during 2-axis device oper- ation. 	high	high

The following is a simple adjustment method.

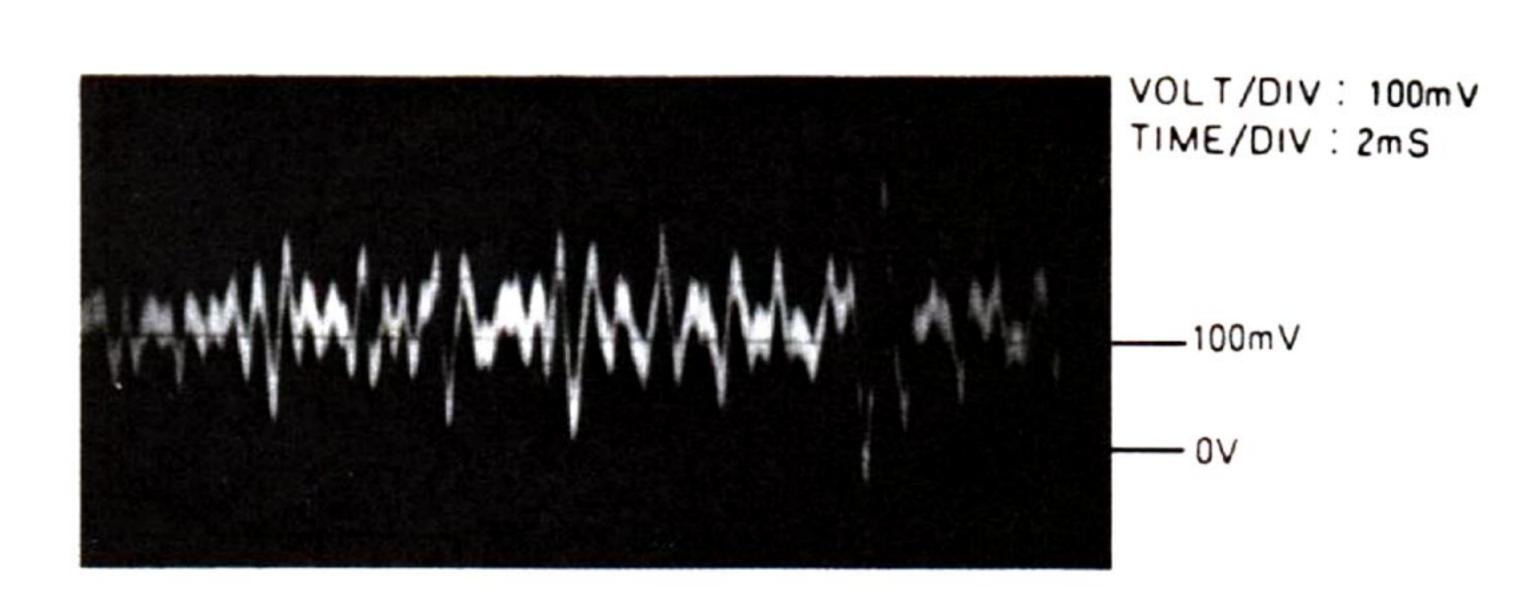
-Simple Adjustment -

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

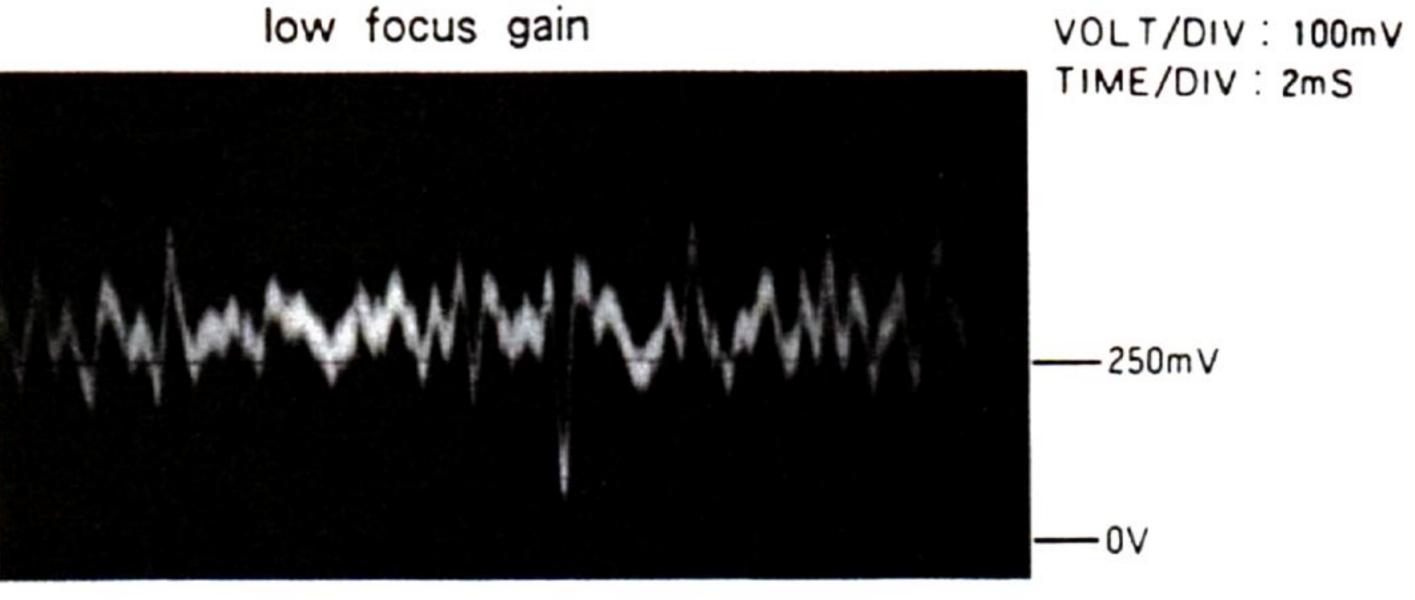
Procedure :

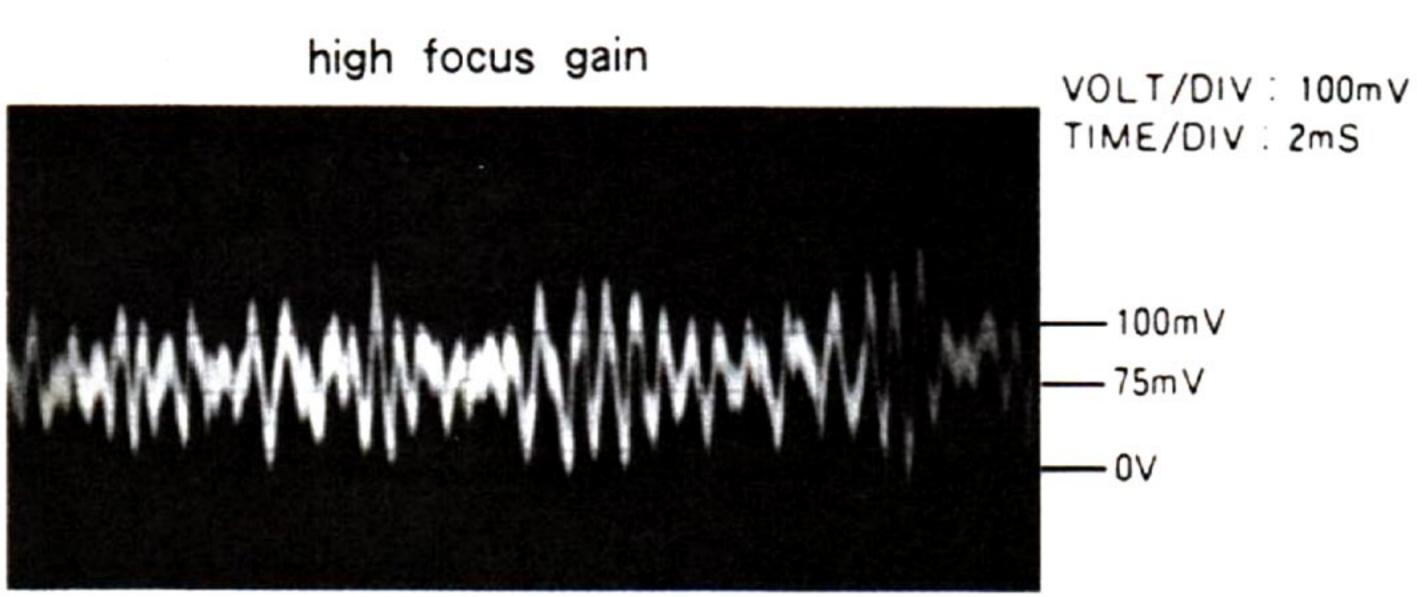


- 1. Keep the set horizontal. If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
- 2. Insert disc (YEDS-18) playback the 6th selection.
- 3. Connect oscilloscope to main board TP(FEO).
- 4. Adjust RV103 so that the waveform is as shown in the figure below. (focus gain adjustment)

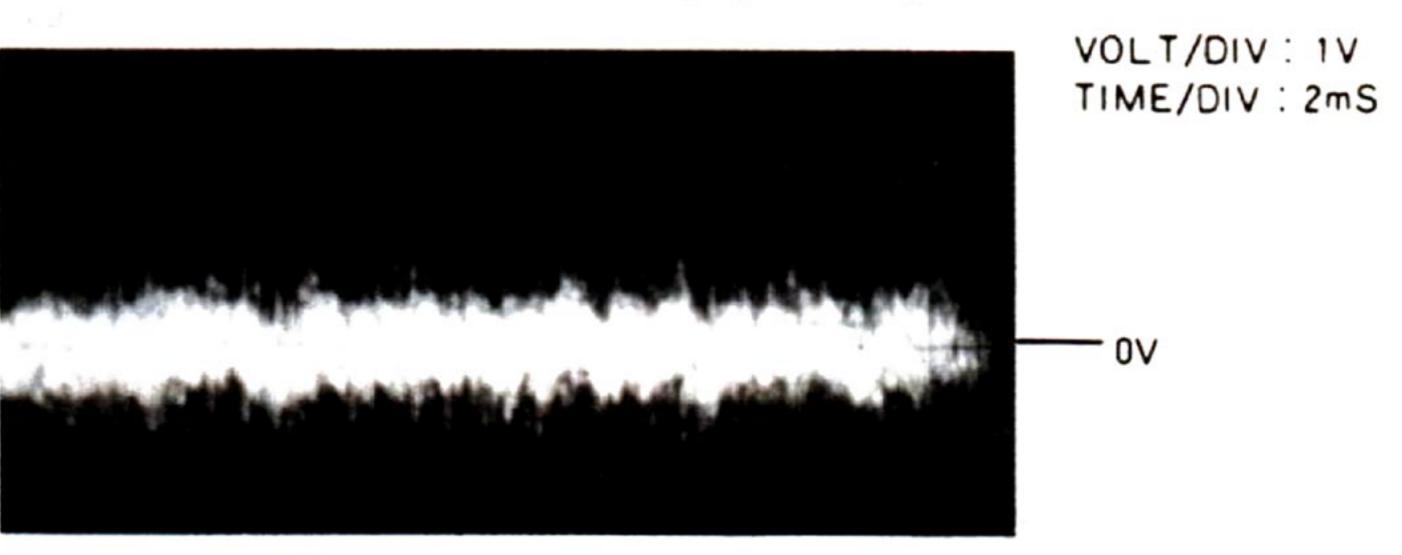


 Incorrent Examples (DC level changes more than on adjusted waveform)



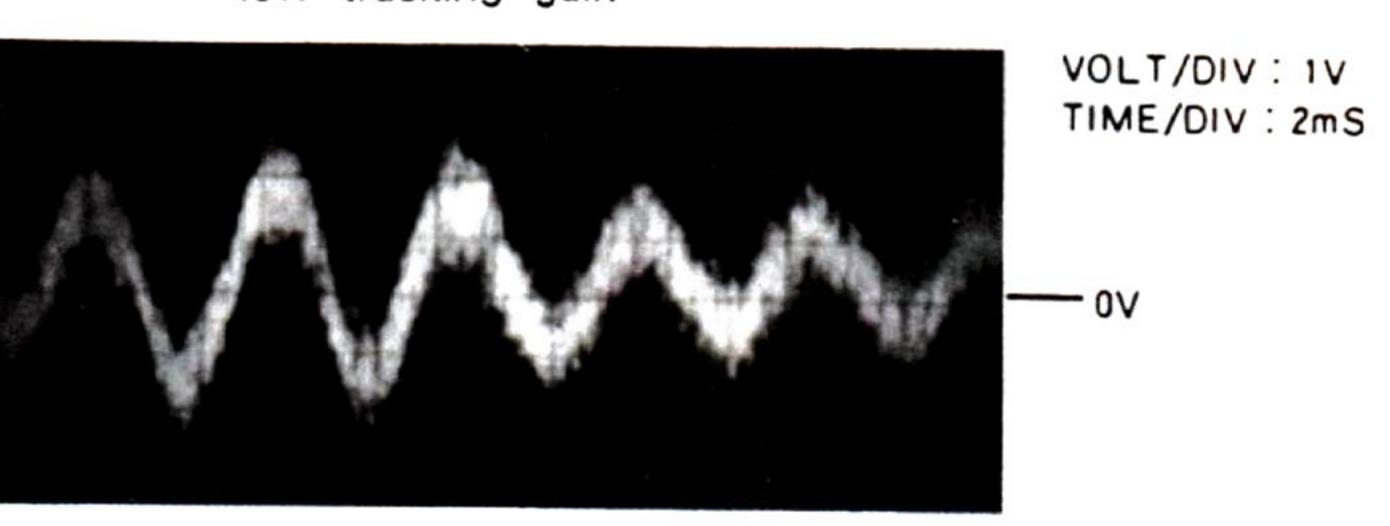


- 5. Connect oscilloscope to main board TP(TEO).
- 6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)

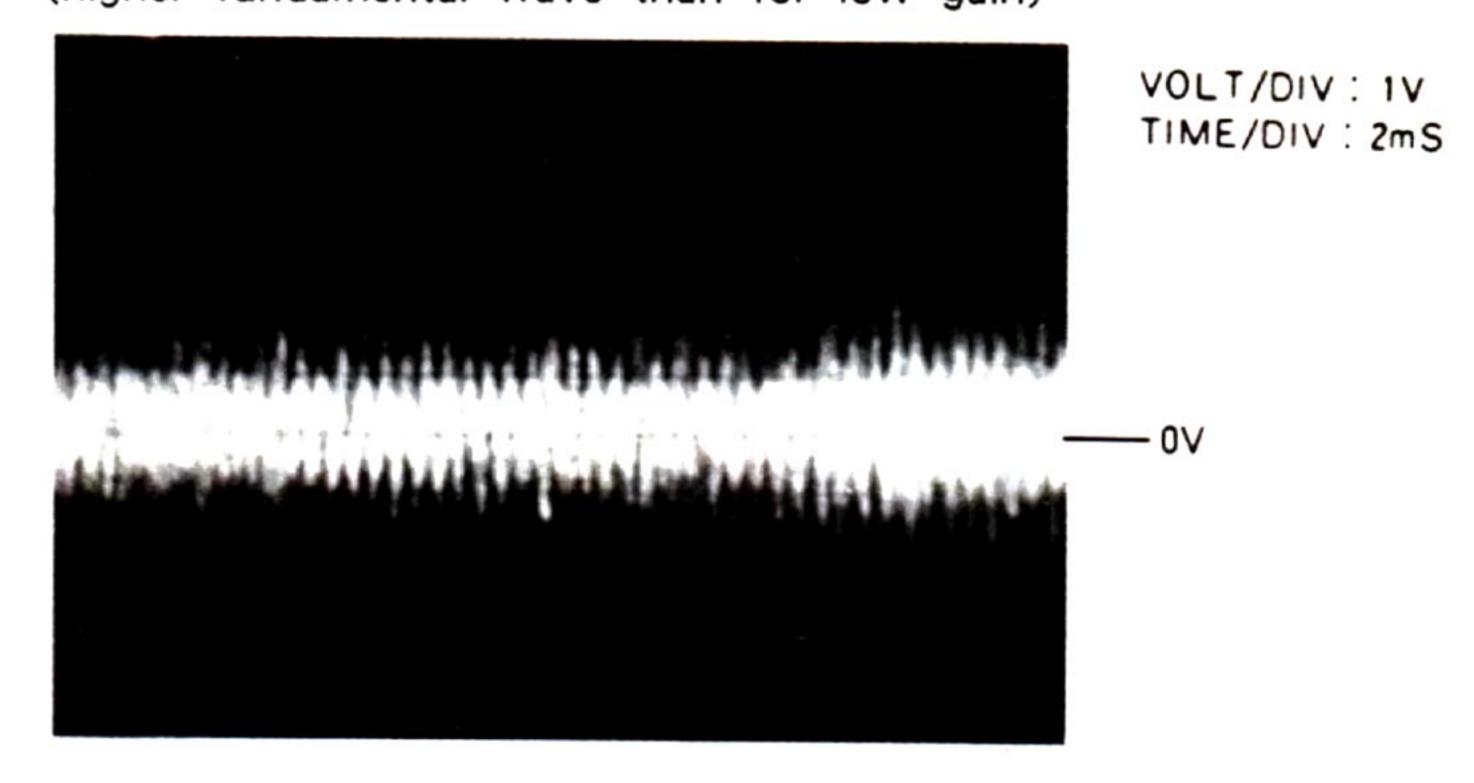


Incorrect Examples (fundamental wave appears)

low tracking gain



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

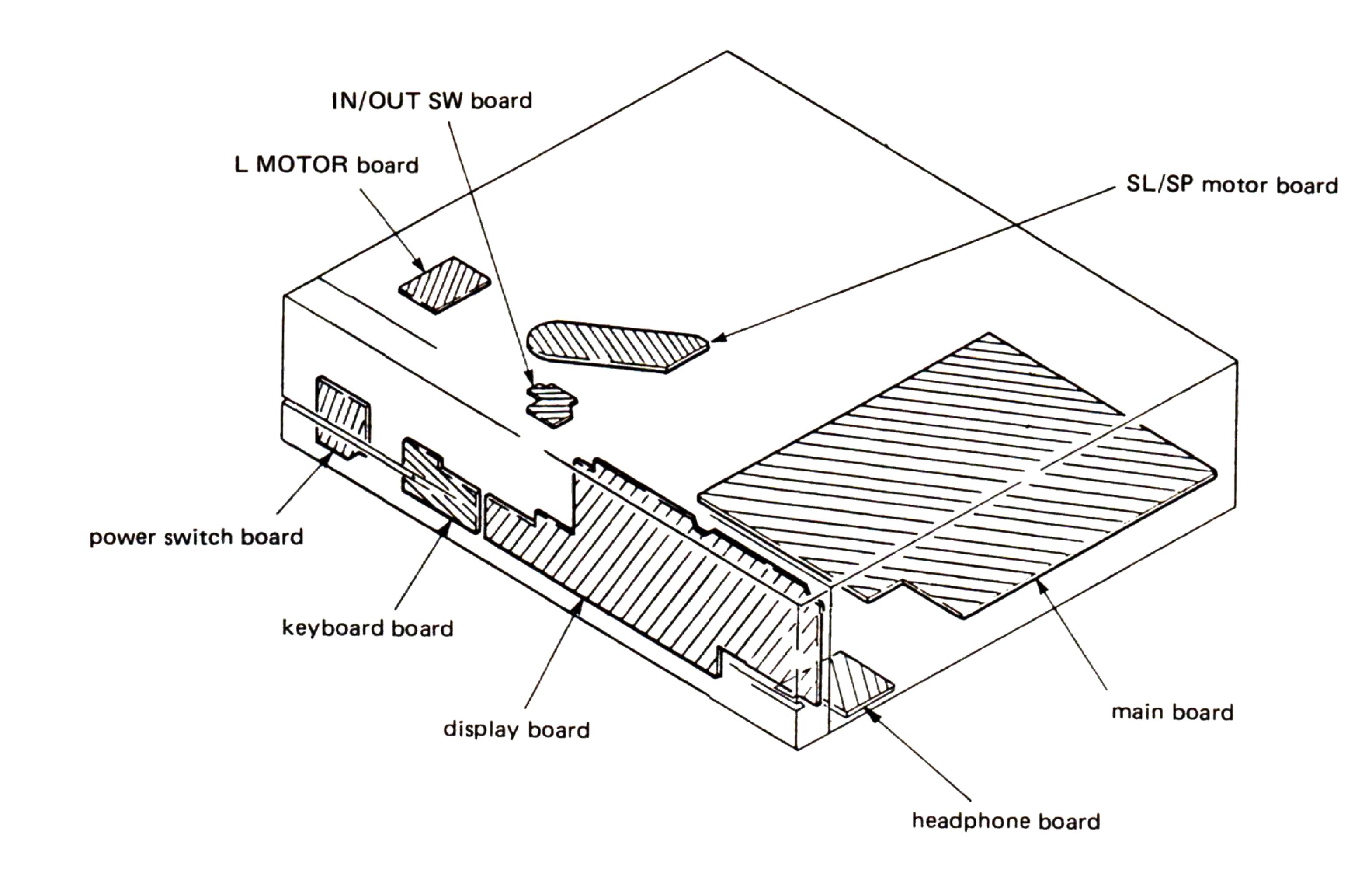


Adjustment Location: main board

Focus Gain Adjustment FEO RV103 0 Tracking TEO Gain Adjustment RV104 IC301

SECTION 4 DIAGRAMS

4-1. CIRCUIT BOARDS LOCATION



4-2. PRINTED WIRING BOARDS

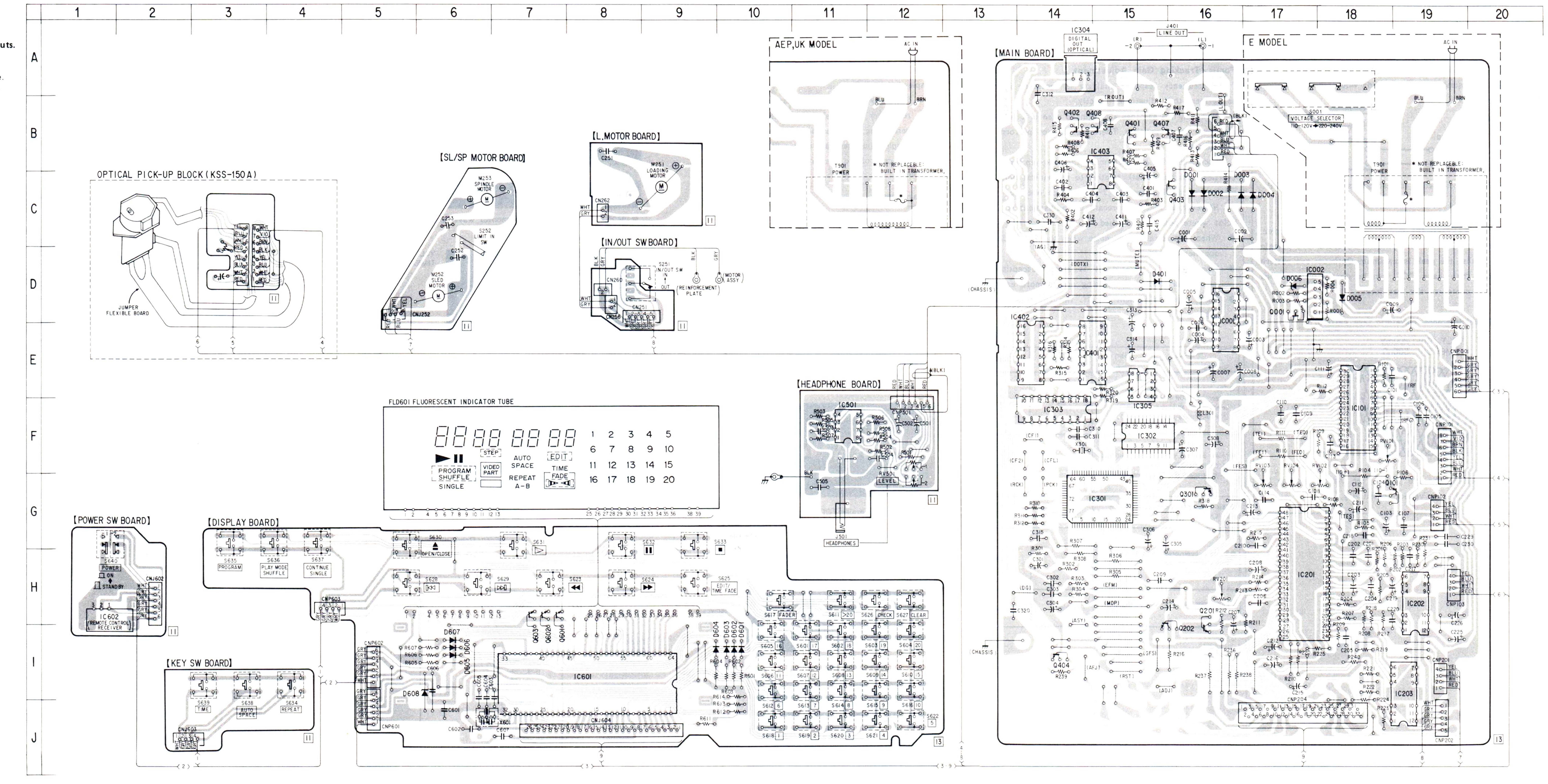
See page 22 for Semiconductor Lead Layouts.

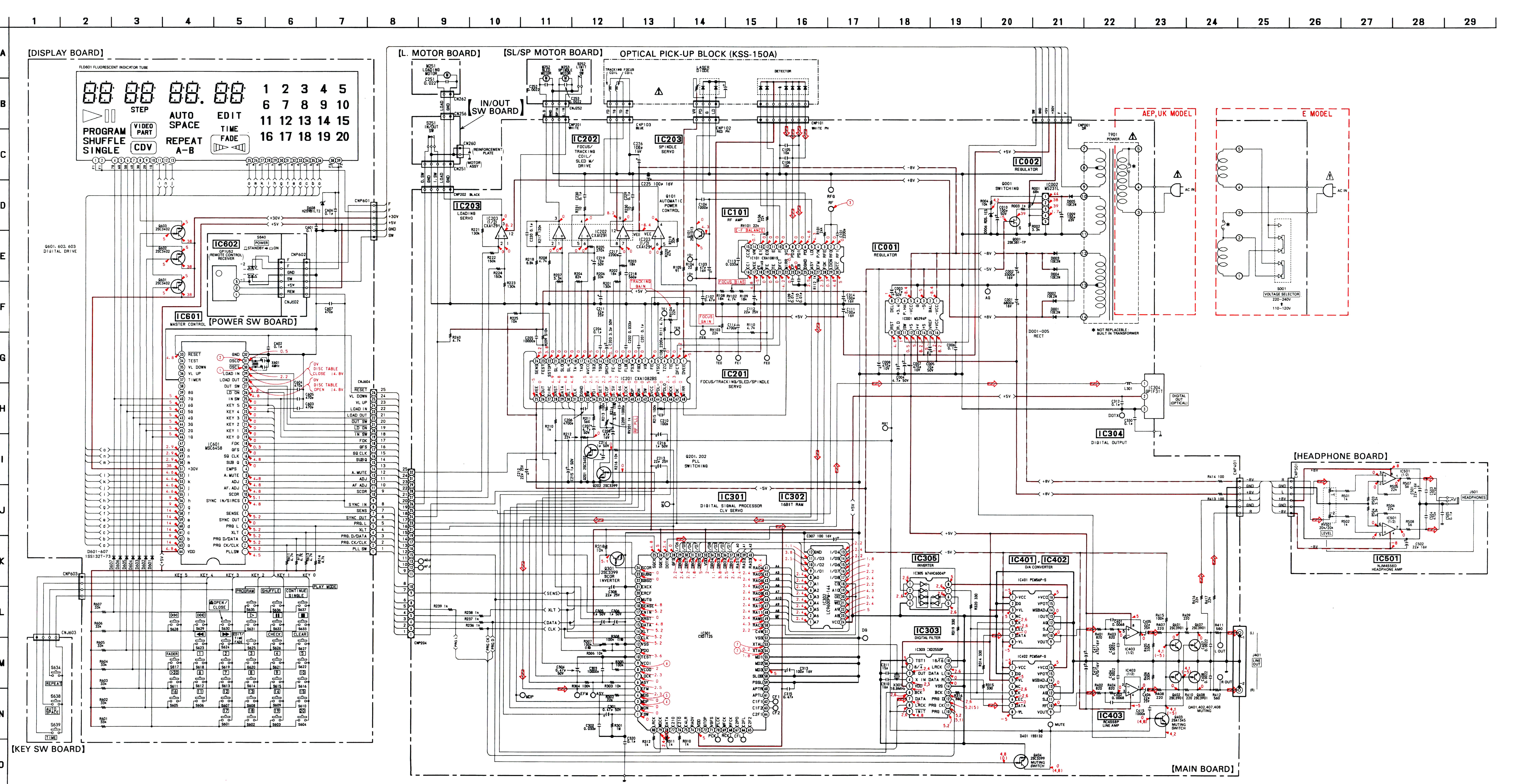
Note:

- : parts extracted from the component side.
- parts extracted from the conductor side.
- parts mounted on the conductor side.

Semiconductor Location

Locatio	JII
Ref. No.	Location
D001 D002 D003 D004 D005 D006 D401 D602 D603 D604 D605 D606 D607 D608	C-16 C-17 C-17 D-18 D-17 D-15 I-10 I-10 I-9 I-6 I-6 I-6 I-6
IC001 IC002 IC101 IC201 IC202 IC303 IC304 IC305 IC401 IC402 IC403 IC501 IC601 IC601 IC602	D-16 D-17 F-18 H-19 G-15 F-14 F-14 E-14 B-15 F-11 I-8 H-1
Q001 Q101 Q201 Q202 Q301 Q401 Q402 Q403 Q404 Q407 Q408 Q601 Q602 Q603	D-17 G-19 I-16 G-16 C-15 B-14 C-16 I-14 B-15 H-7 H-7

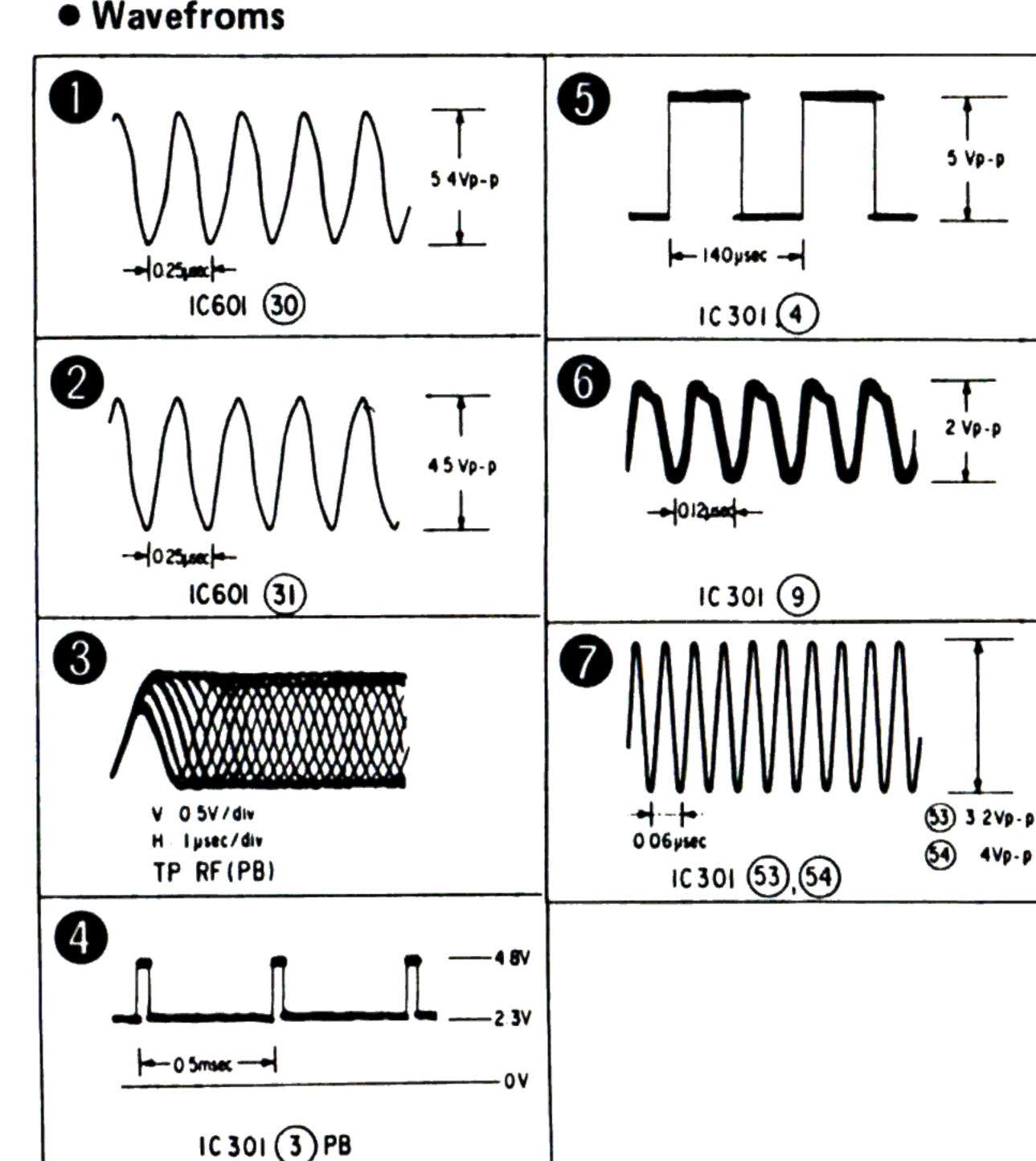


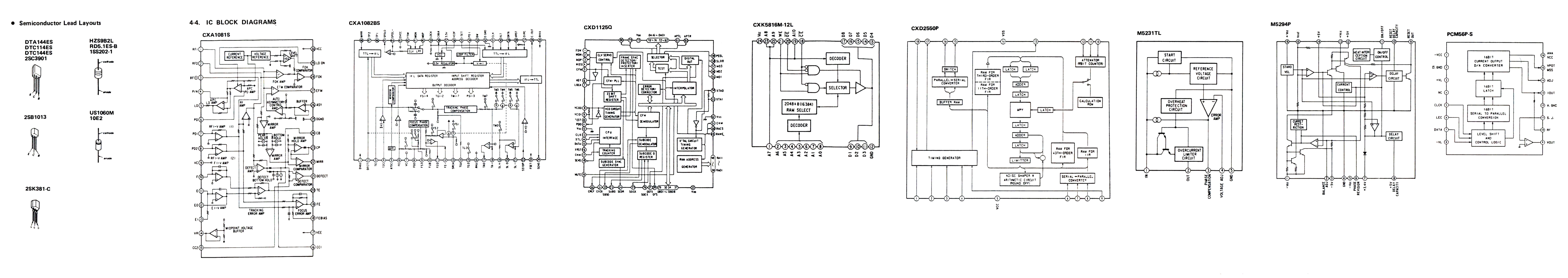


- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- \bullet All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : indicates tolerance.
- : B+ Line
- ---- : B-- Line
- adjustment for repair.
- under no-signal conditions.
- no mark: STOP): PLAY
- Voltages are taken with a VOM (50 $k\Omega/V$).
- Voltage variations may be noted due to normal produc-
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal produc-

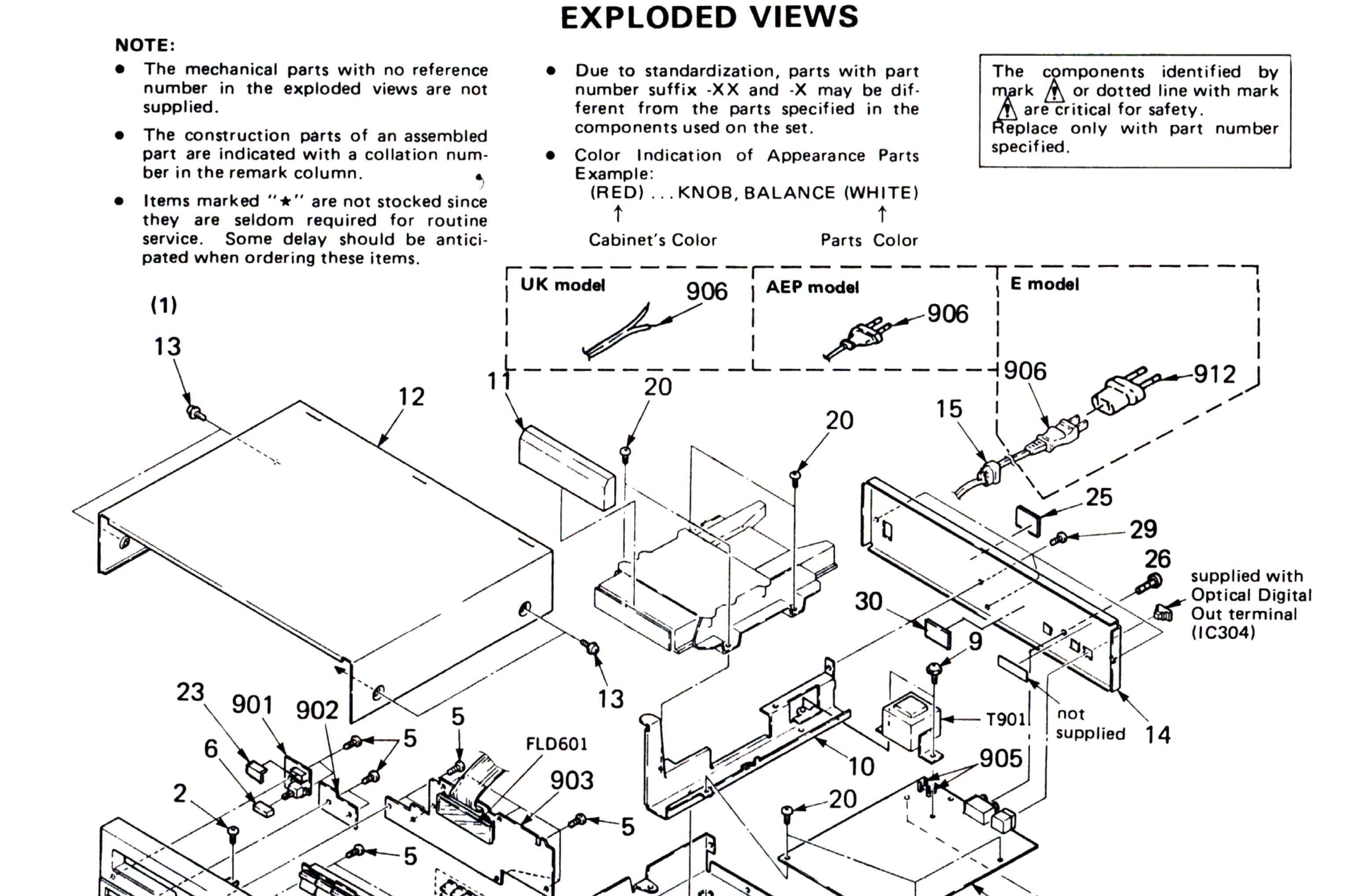
Ref. No	Switch	Position
S001	VOLTAGE SELECTOR(E)	110 - 120V
S251	IN/OUT	OUT
S252	LIMIT IN	OFF
S601	17	OFF
S602	18	OFF
S603	19	OFF
S604	20	OFF
S605	16	OFF
S606	11	OFF
S607	12	OFF
S608	13	OFF
S609 [°]	14	OFF
S610	15	OFF
S611	>20	OFF
S612	6	OFF
S613	7	OFF
S614	8	OFF
S615	9	OFF
S616	10	OFF
S617	FADER	OFF
S618	1	OFF
S6 19	2	OFF
S620	3	OFF
S621	4	OFF
S622	5	OFF
S623	*	OFF
S624	>>	OFF
S625	EDIT/TIME FADE	OFF
S626	CHECK	OFF
S627	CLEAR	OFF
S628	M	OFF
S629	DDI	OFF
S630	▲ OPEN/CLOSE	OFF
S631	D	OFF
S632	11	OFF
S633		OFF
S634	REPEAT	OFF
S635	PROGRAM	OFF
S636	SHUFFLE	OFF
S637	CONTINUE SINGLE	OFF
S638	AUTO SPACE	OFF
S639	TIME	OFF
S640	POWER	OFF

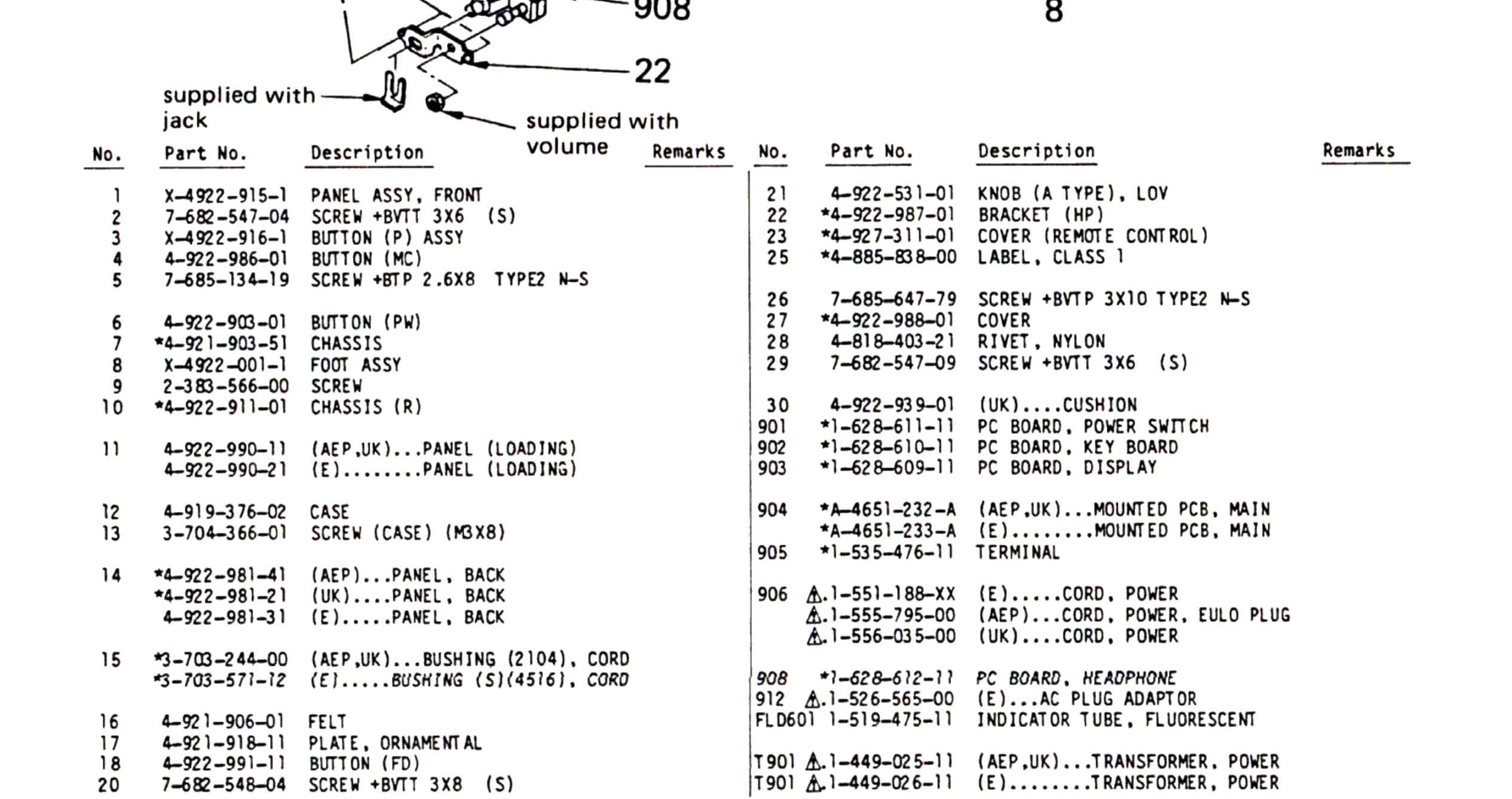
Note: The components identified by mark / or dotted line with mark / are critical for safety.



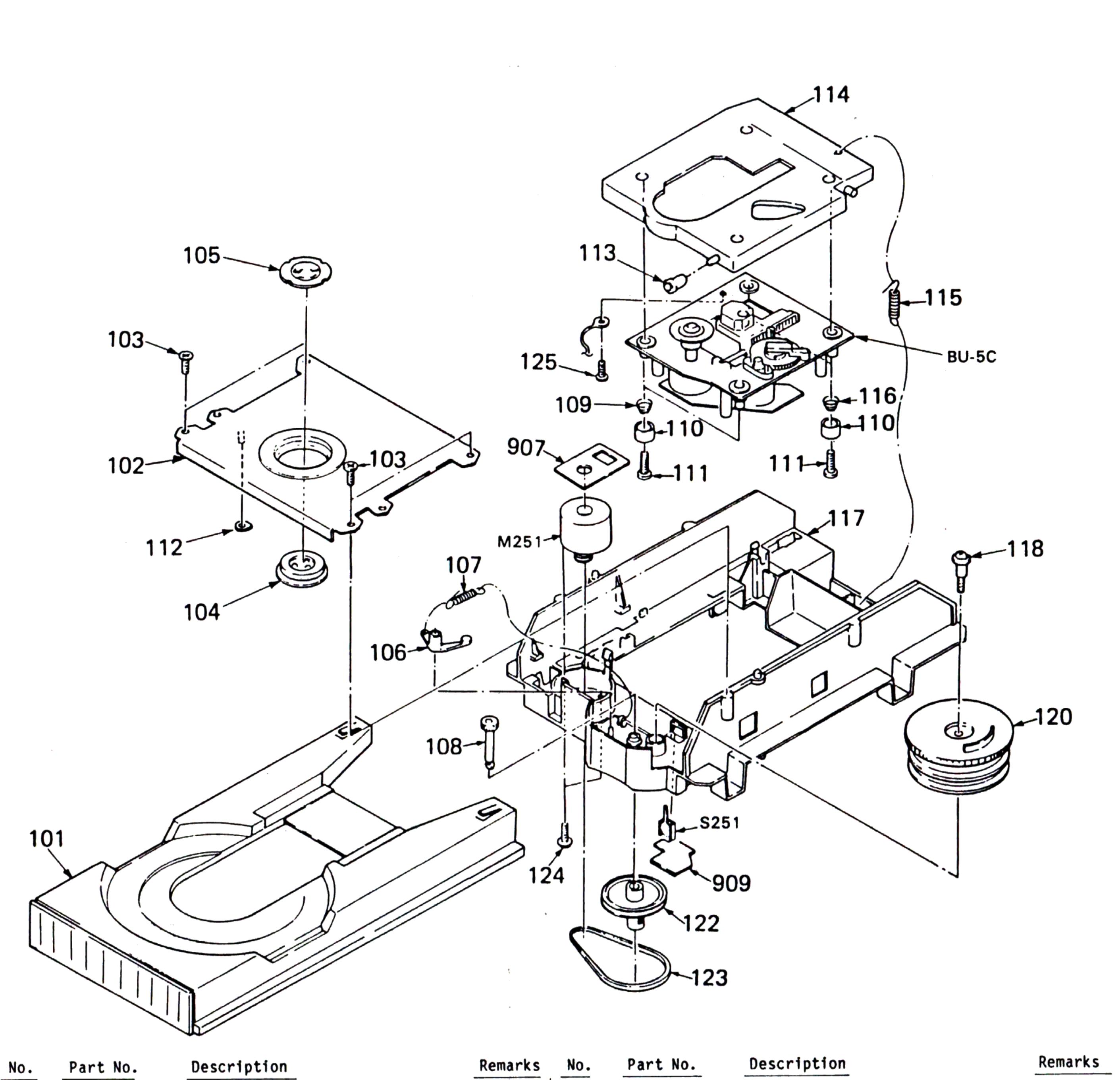


SECTION 5

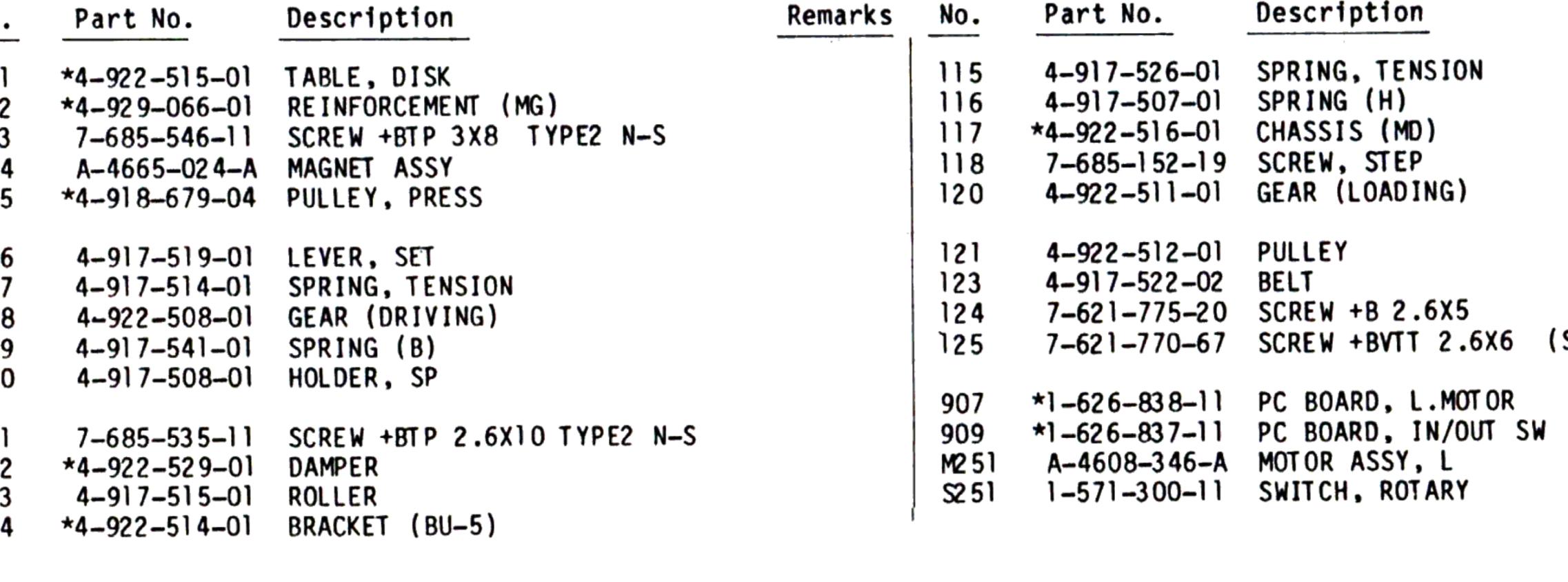




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(2) MD Section (CDM9-5)



(3) OPTICAL PICK-UP BLOCK (BU-SC) 911 (including in M253) 153 152 152 M253 M253 M252 M252

Part No.	Description	Remarks	No.	Part No.	Description
4-917-565-01	SHAFT, SLED		910	*1-624-322-11	PC BOARD, SL/SP MOTOR
4-917-562-01	INSULATOR		911	A.8-848-062-01	DEVICE, OPTICS (KSS-150A)
7-621-255-15	SCREW +P 2X3			51*1-564-720-21	PIN, CONNECTOR (SMALL TYPE
4-917-567-01	GEAR (M)		M252	X-4917-504-1	ASSY, MOTOR (SLED)
4-917-564-01	GEAR (P), FLATNESS		M253	x-4917-523-1	ASSY, MOTOR (SPINDLE)
			S252		SWITCH, LEAF (LIMIT IN)

Note: The components identified by mark \(\frac{\hat{\lambda}}{\text{.}}\) or dotted line with mark \(\frac{\hat{\lambda}}{\text{.}}\) are critical for safety. Replace only with part number specified.

Remarks

SECTION 6 ELECTRICAL PARTS LIST

MF: μF, PF: μμF.

list may be different from the parts specified in

the diagrams or the components used on the set.

mark nor dotted line with mark are critical for safety.

•	 Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these 						S tors are in o Iammable	hms.	Replace only with part no specified.			
	delay items		pated when or	dering these		OILS MMH r	nH, UH: μH					
	such circu	ere are two or mas a stereophorit parts may be interested for same	nic machine, o ndicated and ca	only typical pacitors and		In each UA:	OUCTORS	or example: : μPA,				
	Ref.No	. Part No.	Description				Ref.No.	Part No.	Des	scription		
	901 902 903	*1-628-611-11 *1-628-610-11 *1-628-609-11	PC BOARD, KE	Y BOARD			C208 C209 C210 C211	1-124-477-11 1-162-294-31 1-162-282-31 1-126-233-11	CER	RAMIC	47MF 0.001MF 100PF 22MF	20% 10% 10% 20%
	904	*A-4651-232-A *A-4651-233-A	(E)				C2 12 C2 13	1-126-233-11 1-126-233-11	ELE	CT	22MF	20%
	905	*1-535-476-11		DOUED			C214	1-124-499-11			1MF	20%
	906	1. 1-551-188-XX 1. 1-555-795-00 1. 1-556-035-00	(AEP)CORD	, POWER, EUL	O PLUG	i	C215 C216 C217	1-124-499-11 1-124-499-11 1-161-375-00	ELE		1MF 1MF 0.0022MF	20% 20% 30%
	907 908 909	*1-626-838-11 *1-628-612-11 *1-626-837-11		ADPHONE			C218 C219 C220	1-162-291-31 1-123-875-11 1-136-165-00	ELE		560PF 10MF 0.1MF	10% 20% 5%
	911	⚠.1-624-322-11 ⚠.8-848-062-01 ⚠.1-526-565-00	DEVICE, OPTI	CS (KSS-150A)		C225 C226 C229	1-126-101-11 1-126-101-11 1-164-159-11	ELE	• • •	100MF 100MF 0.1MF	20% 20%
	C001 C002 C003	1-124-887-00	ELECT	6800MF 3300MF 4.7MF	20% 20% 20%	16V 16V 50V	C230 C251 C252	1-164-159-11 1-136-157-00 1-130-475-00	FIL	•	0.1MF 0.022MF 0.0022MF	5% 5%
	C004 C005 C006	1-123-875-11		4.7MF 10MF 0.1MF	20% 20%	50V 50V 50V	C2 53 C3 01 C3 02	1-130-475-00 1-124-902-00 1-136-159-00	ELE	CT	0.0022MF 0.47MF 0.033MF	5% 20% 5%
	C007 C008 C009		ELECT ELECT	470MF 470MF 100MF	20% 20% 20%	10V 10V 63V	C3 03 C3 04 C3 05	1-161-379-00 1-124-902-00 1-124-499-11			0.01MF 0.47MF 1MF	20% 20% 20%
	C010 C101 C103	1-124-122-11 1-161-375-00 1-124-477-11	ELECT CERAMIC ELECT	100MF 0.0022MF 47MF	20% 30% 20%	50V 16V 16V	C3 06 C3 07 C3 08	1-124-499-11 1-126-101-11 1-126-233-11	ELE ELE	CT	1MF 100MF 22MF	20% 20% 20%
	C104 C105 C106	1-162-199-31	CERAMIC CERAMIC CERAMIC	0.001MF 10PF 10PF	10% 5% 5%	50V 50V 50V	C311 C312	1-162-204-31 1-162-203-31 1-164-159-11	CER	RAMIC RAMIC RAMIC	16PF 15PF 0.1MF	5% 5%
	C107 C108 C109		CERAMIC	0.47MF 0.0022MF 0.01MF	5% 30% 5%	50V 16V 50V	C3 13 C3 14 C3 15	1-126-101-11 1-126-101-11 1-136-173-00	ELE ELE FIL	CT	100MF 100MF 0.47MF	20% 20% 5%
	C110 C111 C112	1-136-153-00 1-126-101-11 1-126-233-11	FILM ELECT ELECT	0.01MF 100MF 22MF	5% 20% 20%	50V 16V 25V	C320 C330 C401	1-164-159-11 1-164-159-11 1-130-481-00	_	RAMIC RAMIC .AR	0.1MF 0.1MF 0.0068MF	5%
	C113 C114 C201	1-136-159-00 1-161-377-00 1-136-165-00	FILM CERAMIC FILM	0.033MF 0.0047MF 0.1MF	5% 30% 5%	50V 16V 50V	C402 C403 C404	1-130-481-00 1-130-475-00 1-130-475-00	MYL MYL MYL	AR	0.0068MF 0.0022MF 0.0022MF	5% 5% 5%
	C2 02 C2 03 C2 04	1-136-159-00 1-123-382-00 1-136-165-00		0.033MF 3.3MF 0.1MF	5% 20% 5%	50V 50V 50V	C405 C406 C407	1-126-233-11 1-126-233-11 1-130-475-00	ELE ELE MYL	CT	22MF 22MF 0.0022MF	20% 20% 5%
	C2 05 C2 06	1-161-379-00 1-161-377-00	CERAMIC	0.01MF 0.0047MF	20%	16V 16V	C408 C411	1-130-475-00 1-126-103-11	MYL ELE		0.0022MF 470MF	5% 20%

Ref.No.	Part No.	Description			1	Ref.No.	Part No.	Description	_		
C415 C501 C502	1-162-294-31 1-124-234-00 1-124-234-00		0.001MF 22MF 22MF	10% 20% 20%	50V 16V 16V	IC202 IC203 IC301	8-752-035-28 8-752-035-28 8-752-328-62 8-752-323-64	IC CXD1125Q			
C503 C504 C505	1-162-290-31 1-162-290-31 1-164-159-11	CERAMIC CERAMIC CERAMIC	470PF 470PF 0.1MF	10%	50V 50V 50V	I C3 03 I C3 04	8-752-328-72 8-759-977-71	IC CXD2550P IC GP1F31T IC M74HC6004	OPT ICAL	DIGIT	AL OUT)
C601 C602 C603	1-164-159-11 1-164-159-11 1-162-290-31	CERAMIC CERAMIC CERAMIC	0.1MF 0.1MF 470PF	10%	50V 50V 50V	IC401 IC402	8-759-937-95 8-759-937-95 8-759-945-58	IC PCM56P-S			
C604 C605 C606 C607	1-162-290-31 1-162-290-31 1-164-159-11 1-162-290-31	CERAMIC CERAMIC CERAMIC CERAMIC	470PF 470PF 0.1MF 470PF	10%	50V 50V 50V 50V	IC501 IC601	8-759-745-56 8-759-980-34 8-749-920-03	IC NJM4556D IC MSC6458-3			
_	*1-564-495-11 *1-564-718-11			TYPE) 2P		J401 J501	1-566-921-11 1-507-796-71	•	*		•
CNJ604	1-535-743-11	JUMPER, FILM	(WITH TER	RMINAL)		L301	*1-410-858-11	INDUCTOR	OUH		
CNP101	*1-564-340-00 *1-564-710-11 *1-564-706-31	PIN, CONNECT	OR (SMALL	_		M2 51 M2 52 M2 53	A-4608-346-A X-4917-504-1 X-4917-523-1	MOTOR ASSY	(SLED)		
CNP201	*1-564-706-31 *1-564-706-11 *1-564-339-61	PIN, CONNECT	OR (SMALL			•	8-729-600-94 8-729-801-43 8-729-900-80	TRANSISTOR 2	2SB1013		
CNP401	1-566-908-11 *1-564-708-11 1-564-722-11	PIN, CONNECT	OR (SMALL	TYPE) 6P		1	8-729-900-89 8-729-900-89 8-729-806-26	TRANSISTOR	DTC144ES		
D001 D002 D003	8-719-200-02 8-719-200-02 8-719-200-02					Q402 Q403 Q404	8-729-806-26 8-729-900-65 8-729-900-89	TRANSISTOR	DT A144ES		
D004 D005 D006	8-719-200-02 8-719-200-02 8-719-109-89	DIODE 10E2	S-B2			Q407 Q408 Q601	8-729-806-27 8-729-806-26 8-729-900-80	TRANSISTOR	2 SC3 901		
D401 D601 D602	8-719-107-94 8-719-000-26 8-719-000-26	DIODE US1060	M			Q602 Q603	8-729-900-80 8-729-900-80				
D603 D604 D605	8-719-000-26 8-719-000-26 8-719-000-26	DIODE US1060	M			R001 R002 R003	1-249-439-11 1-249-423-11 1-249-417-11	CARBON CARBON CARBON	68K 3.3K 1K	5% 5% 5%	1/4W 1/4W 1/4W
D606 D607 D608	8-719-000-26 8-719-000-26 8-719-933-57	DIODE US1060	M			R004 R101 R104	1-249-429-11 1-247-864-11 1-249-397-11	CARBON CARBON CARBON	10K 24K 22	5% 5% 5%	1/4W 1/4W 1/4W
	1-519-475-11	INDICATOR TU		SCENT		R105 R106 R108	1-247-806-11 1-249-433-11 1-249-432-11	CARBON CARBON CARBON	91 22K 18K	5% 5% 5%	1/4W 1/4W 1/4W
IC001 IC002 IC101 IC201	8-759-631-40 8-759-605-43 8-752-034-00 8-752-032-30	IC M523 1TL IC CXA1081S				R100 R100 R110 R111	1-249-432-11 1-249-425-11 1-249-425-11	CARBON CARBON CARBON	18K 4.7K	5% 5%	1/4W 1/4W 1/4W 1/4W

Ref.No.	Part No.	Description				Ref.No.	Part No.	Description			
R112	1-249-417-11	CARBON	1 K	5%	1/4W	R3 1 5	1-249-411-11	CARBON	330	5%	1/4W
R201	1-247-882-11	CARBON	130K	5%	1/4W	R3 1 6	1-249-411-11	CARBON	330	5%	1/4W
R202	1-249-432-11	CARBON	18K	5%	1/4W	R3 1 8	1-249-429-11	CARBON	10K	5%	1/4W
R2 03	1-249-432-11	CARBON	18K	5%	1/4W	R319	1-249-411-11	CARBON	330	5%	1/4W
R2 04	1-249-440-11	CARBON	82 K	5%	1/4W	R320	1-249-411-11	CARBON	330	5%	1/4W
R2 05	1-247-889-00	CARBON	270K	5%	1/4W	R401	1-249-416-11	CARBON	820	5%	1/4W
R2 0 6	1-249-435-11	CARBON	33K		1/4W	R402	1-249-416-11	CARBON	82 0	5%	1/4W
R2 0 7	1-249-423-11	CARBON	3.3K		1/4W	R403	1-249-416-11	CARBON	82 0	5%	1/4W
R2 0 8	1-249-425-11	CARBON	4.7K		1/4W	R404	1-249-416-11	CARBON	82 0	5%	1/4W
R2 09	1-247-896-11	CARBON	510K	5%	1/4W	R405	1-247-891-00	CARBON	330K	5%	1/4W
R2 10	1-249-417-11	CARBON	1K	5%	1/4W	R406	1-247-891-00	CARBON	330K	5%	1/4W
R2 11	1-249-414-11	CARBON	560	5%	1/4W	R407	1-249-409-11	CARBON	220	5%	1/4W
R2 12	1-249-433-11	CARBON	22K	5%	1/4W	R408	1-249-409-11	CARBON	220	5%	1/4W
R2 13	1-249-441-11	CARBON	100K	5%	1/4W	R409	1-249-409-11	CARBON	220	5%	1/4W
R2 14	1-215-434-00	MET AL	3.6K	1%	1/6W	R410	1-249-409-11	CARBON	220	5%	1/4W
R2 1 5	1-249-441-11	CARBON	100K	5%	1/4W	R411	1-249-414-11	CARBON	560	5%	1/4W
R2 1 6	1-249-429-11	CARBON	10K	5%	1/4W	R412	1-249-414-11	CARBON	560	5%	1/4W
R2 1 7	1-247-881-00	CARBON	120K	5%	1/4W	R413	1-249-405-11	CARBON	100	5%	1/4W
R218	1-249-427-11	CARBON	6.8K	5%	1/4W	R414	1-249-405-11	CARBON	100	5%	1/4W
R219	1-249-435-11	CARBON	33K	5%	1/4W	R415	1-249-441-11	CARBON	100K	5%	1/4W
R220	1-249-437-11	CARBON	47K	5%	1/4W	R416	1-249-433-11	CARBON	22K	5%	1/4W
R221	1-247-882-11	CARBON	130K		1/4W	R417	1-249-433-11	CARBON	22K	5%	1/4W
R222	1-247-883-00	CARBON	150K		1/4W	R501	1-249-417-11	CARBON	1K	5%	1/4W
R223	1-247-882-11	CARBON	130K		1/4W	R502	1-249-417-11	CARBON	1K	5%	1/4W
R224	1-247-883-00	CARBON	150K	5%	1/4W	R503	1-249-423-11	CARBON	3.3K	5%	1/4W
R225	1-249-429-11	CARBON	10K	5%	1/4W	R504	1-249-423-11	CARBON	3.3K	5%	1/4W
R230	1-249-393-11	CARBON	10	5%	1/4W	R505	1-249-433-11	CARBON	22K	5%	1/4W
R231 R236 R237	1-249-393-11 1-249-417-11 1-249-417-11	CARBON CARBON CARBON	10 1K 1K	5% 5% 5%	1/4W 1/4W 1/4W	R506 R507 R508	1-249-433-11 1-249-402-11 1-249-402-11	CARBON CARBON CARBON	22 K 56 56	5% 5%	1/4W 1/4W 1/4W
R238	1-249-417-11	CARBON	1K	5%	1/4W	R601	1-249-435-11	CARBON	33K	5%	1/4W
R239	1-249-417-11	CARBON	1K	5%	1/4W	R602	1-249-435-11	CARBON	33K	5%	1/4W
R240	1-249-425-11	CARBON	4.7K	5%	1/4W	R603	1-249-435-11	CARBON	33K	5%	1/4W
R3 01	1-247-903-00	CARBON	1 M	5%	1/4W	R604	1-249-435-11	CARBON	33 K	5%	1/4W
R3 02	1-249-433-11	CARBON	22 K	5%	1/4W	R605	1-249-435-11	CARBON	33 K	5%	1/4W
R3 03	1-249-429-11	CARBON	1 O K	5%	1/4W	R606	1-249-435-11	CARBON	33 K	5%	1/4W
R3 04	1-249-441-11	CARBON	100K	5%	1/4W	R607	1-249-435-11	CARBON	33K	5%	1/4W
R3 05	1-249-441-11	CARBON	100K	5%	1/4W	R611	1-249-425-11	CARBON	4.7K	5%	1/4W
R3 06	1-249-429-11	CARBON	10K	5%	1/4W	R612	1-249-425-11	CARBON	4.7K	5%	1/4W
R3 07 R3 08 R3 10	1-215-469-00 1-215-469-00 1-249-417-11	MET AL MET AL CARBON	100K 100K 1K	1% 1% 5%	1/6W 1/6W 1/4W	R613 R614 RV101	1-249-425-11 1-249-425-11 1-228-995-00	CARBON CARBON RES, ADJ, CAR	4.7K 4.7K RBON 22		1/4W 1/4W
R3 1 1 R3 1 2 R3 1 4	1-249-417-11 1-249-417-11 1-249-411-11	CARBON CARBON CARBON	1K 1K 330	5% 5% 5%	1/4W 1/4W 1/4W	RV102 RV103 RV104		RES, ADJ, CAR	RBON 4. RBON 22	7K K	

lef.No.	Part No.	Description
RV201	1-228-990-00 1-238-394-11 1-238-403-21	RES, ADJ, METAL GLAZE 1K RES, ADJ, METAL GLAZE 1K RES, VAR, CARBON 20K/20K (LEVEL)
S001 <u>A</u>	.1-571-722-11	(E)SWITCH, VOLTAGE SELECTOR (VOLTAGE SELECTOR)
S2 5 1 S2 5 2	1-571-300-11 1-571-274-11	SWITCH, ROTARY LEAF SWITCH (LIMIT IN)
S601 S602 S603	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (17) SWITCH, KEY BOARD (18) SWITCH, KEY BOARD (19)
S604 S605 S606	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (20) SWITCH, KEY BOARD (16) SWITCH, KEY BOARD (11)
S607 S608 S609	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (12) SWITCH, KEY BOARD (13) SWITCH, KEY BOARD (14)
S610 S611 S612	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (15) SWITCH, KEY BOARD (>20) SWITCH, KEY BOARD (6)
S613 S614 S615	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (7) SWITCH, KEY BOARD (8) SWITCH, KEY BOARD (9)
S616 S617 S618	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (10) SWITCH, KEY BOARD (FADER) SWITCH, KEY BOARD (1)
S619 S620 S621	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (2) SWITCH, KEY BOARD (3) SWITCH, KEY BOARD (4)
S622 S623 S624	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (5) SWITCH, KEY BOARD (◄◄) SWITCH, KEY BOARD (▶▶)
S625 S626 S627	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (EDIT/TIME FADE) SWITCH, KEY BOARD (CHECK) SWITCH, KEY BOARD (CLEAR)
S628 S629 S630	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (►□) SWITCH, KEY BOARD (►□) SWITCH, KEY BOARD (▲OPEN/CLOSE)
\$631 \$632 \$633	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (►) SWITCH, KEY BOARD (■)
S63 4 S63 5 S63 6	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (REPEAT) SWITCH, KEY BOARD (PROGRAM) SWITCH, KEY BOARD (SHUFFLE)
S637 S638 S639 S640	1-554-596-21 1-554-596-21 1-554-596-21	SWITCH, KEY BOARD (CONTINUE/SINGLE) SWITCH, KEY BOARD (AUTO SPACE) SWITCH, KEY BOARD (TIME)

Note: The components identified by mark A or dotted line with mark A are critical for safety.

Replace only with part number specified.

1-571-305-11 SWITCH, PUSH (1 KEY) (POWER)

\$640

Ret.No.	Part No.	Description
	.1-449-025-11	(AEP,UK)TRANSFORMER, POWER (E)TRANSFORMER, POWER
X301 X601	1-567-926-11 1-577-082-11	VIBRATOR, CRYSTAL (16.9344MHz) VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

1-465-051-11 1-558-543-11	REMOTE COMMANDER (RM-D270) CORD, CONNECTION
3-786-618-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE)
3-786-618-41	(AEP)MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN)
*3-795-629-11	(AEP)INSTRUCTION
*4-922-998-01	CUSHION
*4-927-316-11	INDIVIDUAL CARTON
4-928-079-01	COVER, BATTERY (FOR REMOTE COMMANDER)
7-632-650-75	SHEET, PROTECTION (500MM)

Troubleshooting Guide

Symptom	Cause	Remedy		
The disc tray does not close.	The disc is not placed correctly.	Place the disc correctly on the disc tray.		
Play does not start.	Dirty disc.	Clean the disc.		
	The disc is inserted upside down.	Insert the disc with the printed side up.		
	II is engaged.	Press II again to release it.		
	Moisture condensation.	Leave the player turned on for approximately one hour.		
Sound is not heard.	Loose connection.	Insert the plug firmly.		
	Connection is incorrect.	Check the connection.		
Play does not begin from the first selection.	The player is in the PROGRAM or SHUFFLE mode.	Press CONTINUE.		
Play begins only by turning on the power.	A disc is in the tray.			
The remote commander does not operate	The batteries are run down.	Replace both batteries.		
the unit.	The remote commander is not pointed at the remote sensor.	Point the remote commander at the sensor.		
	There is an obstacle between the remote commander and the unit.	Remove the obstacle.		
	The remote commander is too far from the unit.	Move closer.		
Any operation is not possible.	The internal control program may not run.	Turn off the power and turn it on again.		