CDP-250/450

SERVICE MANUAL

AEP Model

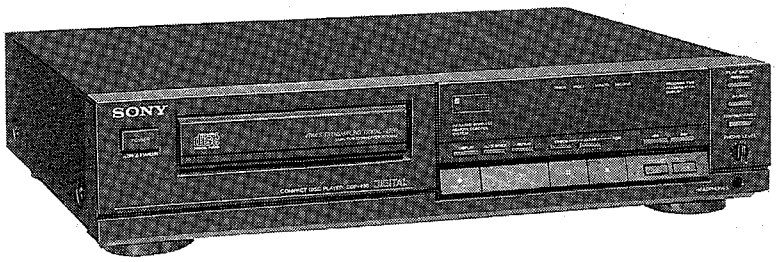


PHOTO: CDP-450

SPECIFICATIONS

Compact disc player

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780nm)
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.
Frequency response	2 Hz – 20 kHz (±0.5 dB)
Signal to noise ratio	More than 100 dB
Dynamic range	More than 88 dB
Harmonic distortion	Less than 0.05% (1kHz)
Wow and flutter	Below measurable limit
Outputs	LINE OUT (phono jacks) Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
Channel separation	More than 95 dB (1kHz)

General

	CDP-250/450
Power requirements	United Kingdom: 240 V AC, 50 Hz European countries: 220 V AC, 50 Hz
Power consumption	10 W
Dimensions (approx.) (w/h/d)	430×100×340 mm (17×4×13½ inches) including projecting parts and controls
Weight (approx., net)	4.5 kg (9 lbs 15 oz)

Supplied accessories

	CDP-250/450
AC power cord	—
Audio signal connecting cord	1 (2 phono plugs – 2 phono plugs)

Remote commander (supplied only for the CDP-450)

Remote control system
Infrared control
Power requirements
3V DC with two R6 (size AA) batteries
Dimensions 61 × 20 × 150 mm (w/h/d)
(2½ × 13/16 × 6 inches)
Weight 110 g (4 oz)
including batteries
Supplied accessory
Sony SUM-3 (NS) batteries (2)

Design and specifications subject to change without notice.

Note

This appliance conforms with EEC Directives 76/889 and 82/499 regarding interference suppression.

SAFETY-RELATED COMPONENT WARNING!!

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

MICROFILM

COMPACT DISC PLAYER

SONY

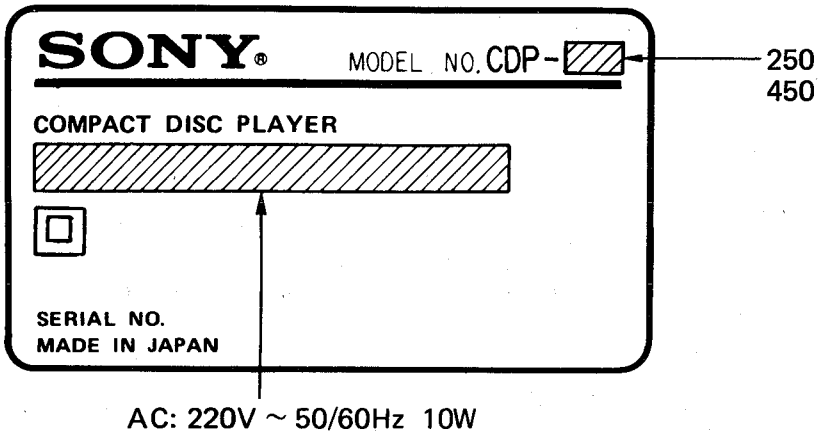
FEATURES

- Digital filter for high performance and high fidelity.
- PROGRAM play for playing the selections in a desired order.
- SHUFFLE play for playing the selections in a random order.
- REPEAT function for a single selection, the whole disc, PROGRAM play, or SHUFFLE play.
- AUTO SPACE function for inserting a blank space of 3 seconds between each selection.
- Easy-to-read display window shows the selection number being played, all the numbers of the selections on the disc the elapsed playing time, and the remaining time.

TABLE OF CONTENTS

MODEL IDENTIFICATION

– Specifications Labels –



PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

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

CAUTION

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

1. Laser Diode Properties
   - Material: GaAlAs
   - Wavelength: 780 nm
   - Emission Duration: continuous
   - Laser Output: max. 44.6 μW*

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

2. During service, do not take the Optical Pick-up Block apart, and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optiocal Pick-up Block (including APC borad).

BESKYTTELSE AF ØJNE MOD LASERSTRÅLING UNDER SERVICE

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

Følg iøvrigt instruktionerne i servicemanualen.

ADVARSEL!!

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

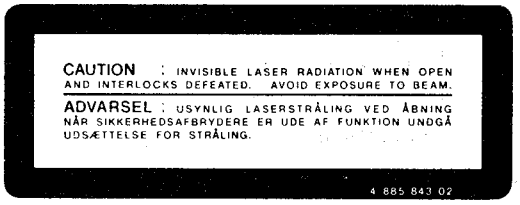
1. Laser-didoe data
   - Materiale: GaAlAs
   - Bølgelængde: 780 nm
   - Udstråling: Kontinuerlig
   - Laseroutput: Max. 0,4 mW*
     * Målt i 1,6 mm afstand fra overfladen af objektiv-linsen på den optiske pick-up enhed.
   - Klassifikation: Klasse IIIb.

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

LASER ADVARSEL MÆRKNING

Følgende mærkning findes indvendig i apparatet:

1. Advarsel Mærkning

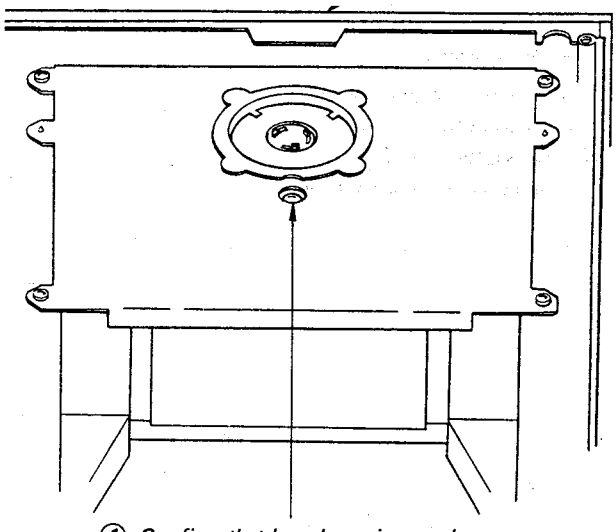


VAROITUS: Laite sisältää, laserdiodin, joka lähettää (näkymätöntä) silmille vaarallista lasersateilyä.

– SERVICING NOTE –

LASER DIODE AND FOCUS SERCH OPERATION CHECK

1. Make POWER switch on with no disc inserted and disc table closed.
2. Confirm that the operation indicated in Fig. C 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)*

Fig. C

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

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

NOTES ON LASER DIODE EMISSION CHECK

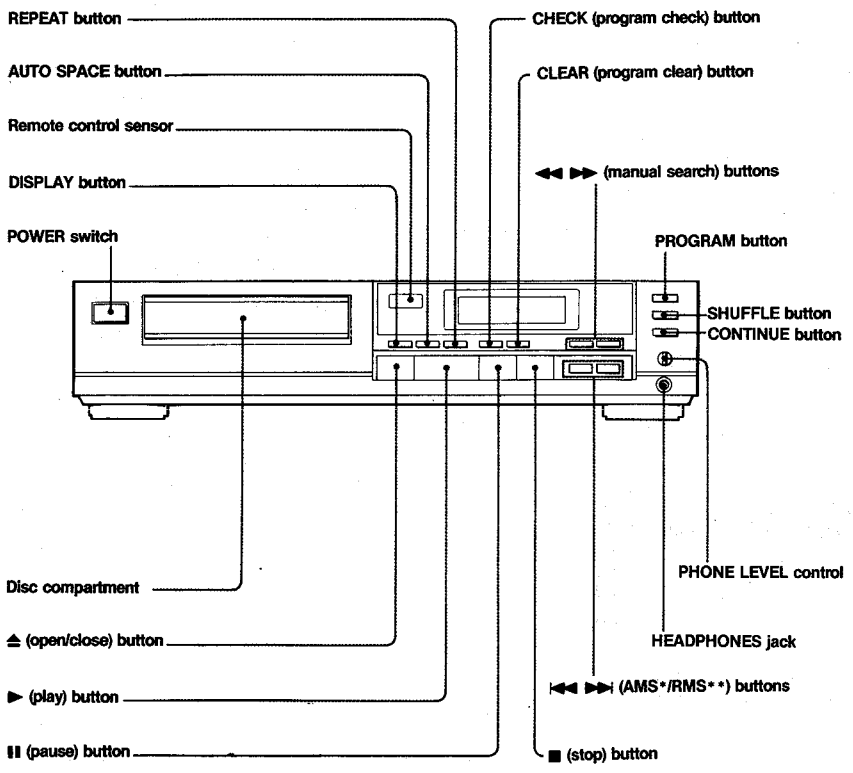
The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe more than 25 cm away from the objective lens.

SECTION 1
OUTLINE

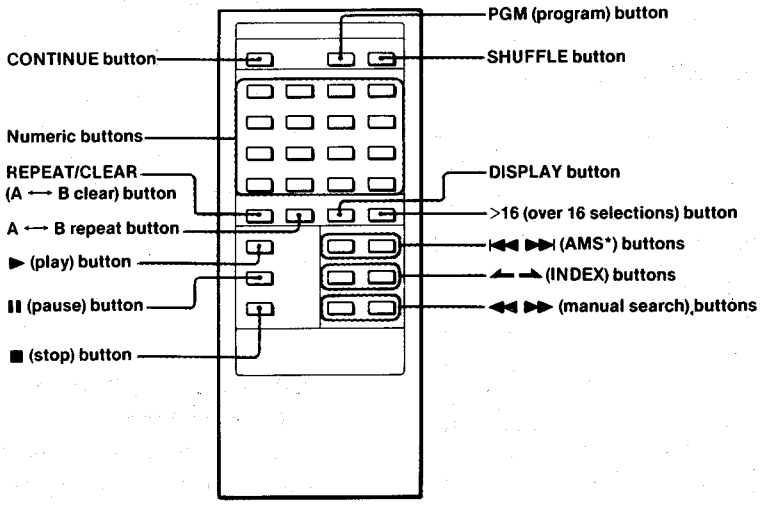
1-1 LOCATION AND FUNCTION OF CONTROLS

Front panel

CDP-250/450



REMOTE COMMANDER (Supplied only for the CDP-450)



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

1-2. CIRCUIT DESCRIPTION

IC101 (MSC6458-20SS) SYSTEM CONTROL MICROCOMPUTER

Table 1 Pin Functions IC101

Description of IC101 (MSC6458)

IC101 has the following functions:

. Digital signal output to operation key
. Sub Q signal loading and processing
. Fluorescent display (FLD) control
. Servo circuit control

Pin Function

Pin No.	Pin name	I/O	Description
1	DIRC	O	Jump pulse inversion instruction during 1 track jump.
2	CLK	O	Command transfer of clock to SSP (IC2) and DSP (IC3).
3	DATA	O	Command transfer of data to SSP (IC2) and DSP (IC3).
4	XLT	O	Command transfer of latch to SSP (IC2) and DSP (IC3).
5	M-SYNC	O	Sync REC ("H" for 300msec during muting).
6	P-SYNC	O	Sync REC ("H" for 300msec when muting is off).
7	SENSE	I	SSP (IC2) and DSP (IC3) sense information.
8	SYNC ON	I	Sync REC ("L" in REC mode).
9	SIRCS	I	Remote control signal input.
10	$\overline{\text{SCOR}}$	I	Q code read timing.
11	VL UP	O	Remote controller. "L" when volume is being increased.
12	ADJ	I	"L" in PLAY mode.
13	AMUTE	O	All muting. Output to DSP (IC3) MUTG.
14	DMUTE	O	Software muting. Output to digital filter (IC4) software.
15	SUBQ	I	Subcode data.
16	SQCLK	O	Subcode data read clock.
17	GFS	I	"H" when CLV is locked.
18	FOK	I	"H" when focus is on.
19	KEY0	I	Key matrix input, "H" active.
20	KEY1	I	Key matric input, "H" active.
21	KEY2	I	Key matrix input, "H" active.
22	KEY3	I	Key matrix input, "H" active.
23	KEY4	I	Key matrix input, "H" active.
24	KEY5	I	Key matrix input, "H" active.
25	$\overline{\text{INSW}}$	I	Loading IN SW.
26	$\overline{\text{LDON}}$	O	Laser on/off.
27	$\overline{\text{EPS}}/\overline{\text{OUTSW}}$	I/O	Emphasis on/off (during loading). Loading OUT SW.
28	LODOUT	O	Loading motor control.

Pin No.	Pin name	I/O	Description
29	LODIN	O	Loading motor control.
30	OSC1	I	Oscillator input terminal (4 MHz).
31	OSC0	I	Oscillator input terminal (4 MHz).
32	GND	-	GND terminal.
33	RESET	I	Reset input terminal. Input when power is turned on.
34	TEST	-	No connection (NC).
35	VL DOWN	-	No connection (NC).
36	TIMER	-	No connection (NC).
37	AFADJ	I	"L" in PLAY mode. CLV-S is fixed. "L" in test mode before power is turned on.
38	PLLSW	O	"L" in PLAY mode and "H" in search mode.
39	8G	O	FLD timing output.
40	7G	O	FLD timing output.
41	6G	O	FLD timing output.
42	5G	O	FLD timing output.
43	4G	O	FLD timing output.
44	3G	O	FLD timing input.
45	2G	O	FLD timing input.
46	1G	O	FLD timing input.
47	NC	-	No connection (NC).
48	o	O	FLD segment output.
49	n	O	FLD segment output.
50	m	O	FLD segment output.
51	+30V	-	+30V
52	l	O	FLD segment output.
53	k	O	FLD segment output.
54	j	O	FLD segment output.
55	i	O	FLD segment output.
56	h	O	FLD segment output.
57	g	O	FLD segment output.
58	f	O	FLD segment output.
59	e	O	FLD segment output.
60	d	O	FLD segment output.
61	c	O	FLD segment output.
62	b	O	FLD segment output.
63	a	O	FLD segment output.
64	VDD	-	Positive (+) power supply (5V)

SECTION 2
ADJUSTMENTS

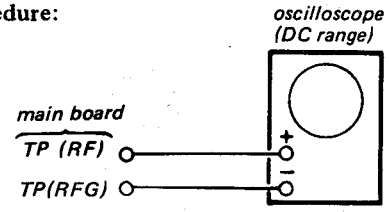
ELECTRICAL ADJUSTMENTS

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

Focus Bias Adjustment

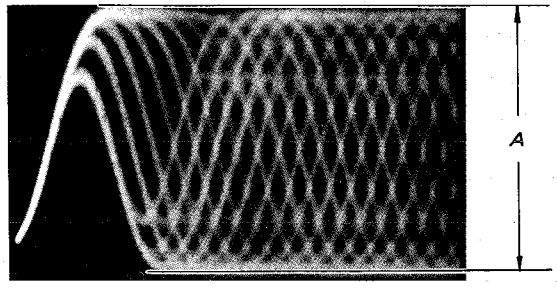
This adjustment should be made when replacing TOP (T-type Optical Pick-up).

Procedure:



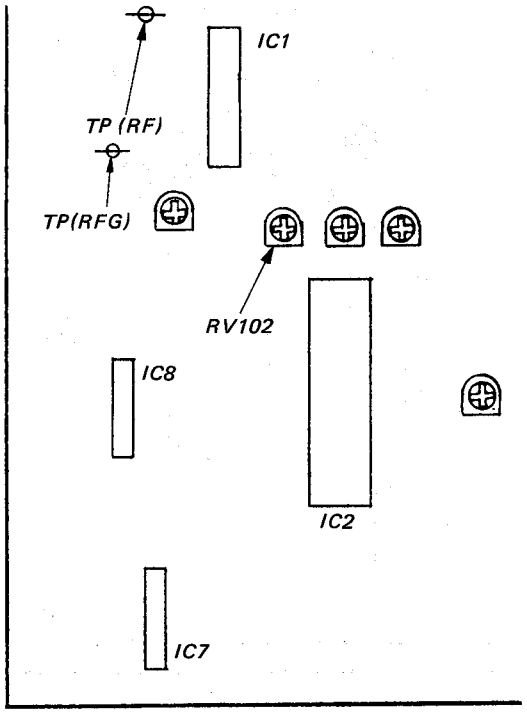
1. Connect oscilloscope to test points TP (RF).
2. Turn POWER switch on.
3. Put disc (YEDS-18) in and press ▷ button.
4. Adjust RV102 for an optimum waveform eye pattern or so that the peak is maximum. Optimum eye pattern means that shape " ◇ " can be clearly distinguished at the center of the waveform.

RF signal waveform



A = 1.2V ± 0.2 (Vp-p)

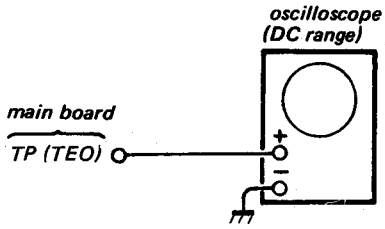
Adjustment Location: main board



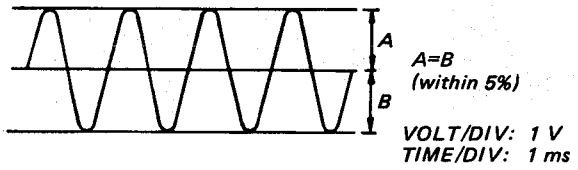
E-F Balance Adjustment

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

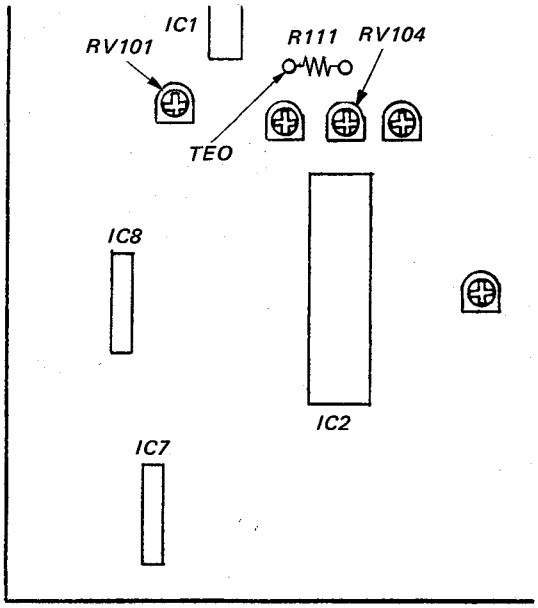
Procedure:



1. Turn RV104 fully counterclockwise (minimum).
2. Connect oscilloscope to test point TP (TEO).
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and press ▷ button.
5. Adjust RV101 so that the traverse waveform is symmetrical above and below.
6. After adjustment, remove the lead wire connected in step 5.

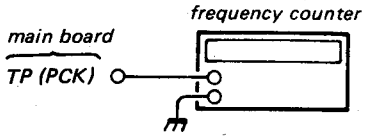


Adjustment Location: main board



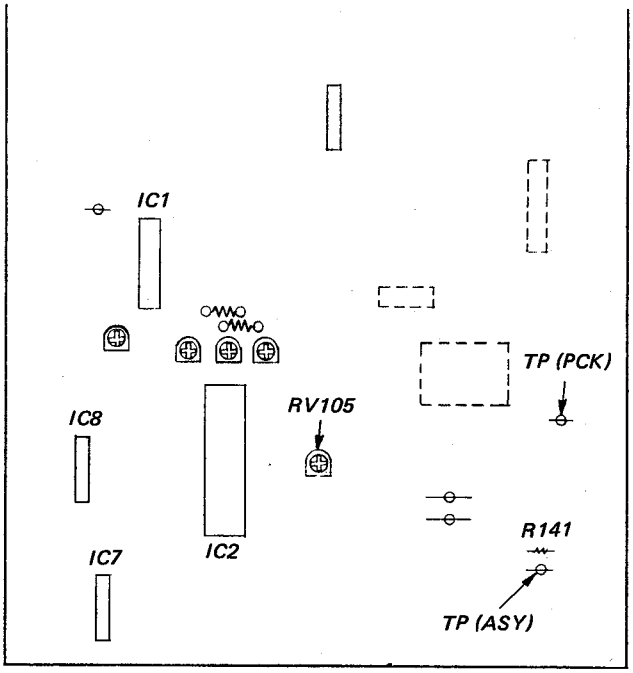
RF PLL Frequency Adjustment/Lock Frequency Check

Procedure:



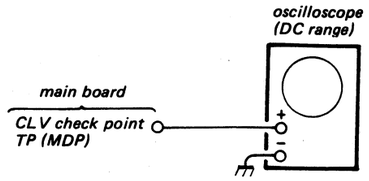
1. Connect test point TP (ASY) to ground with lead wire.
2. Turn POWER switch on.
3. Connect the frequency counter to test points TP (PCK).
4. Adjust RV105 so that the reading on frequency counter is 4.3218 MHz ± 30 kHz.
   . . . . . (RF PLL frequency adjustment)
5. Remove lead wire connecting TP (ASY) to ground.
6. Put disc (YEDS-18) in and press ▷ button.
7. Confirm that the reading on frequency counter is 4.3218 MHz.

Adjustment Location: main board

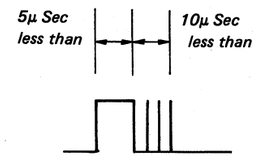


CLV Phase Lock Check

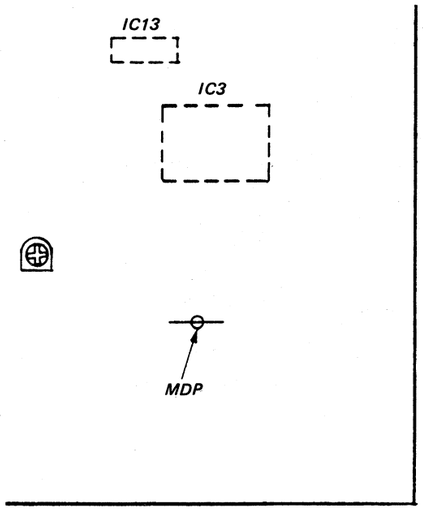
Procedure:



1. Connect oscilloscope to test point TP (MDP).
2. Turn POWER switch on.
3. Put disc (YEDS-18; TRACK No. 5) in and press ▷ button.
4. Check that the waveform is as shown in the figure below.



Adjustment Location: main board



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.

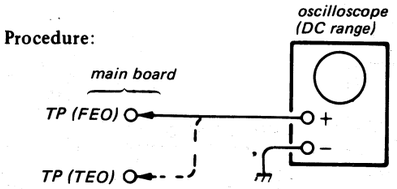
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮, ⏭buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮, ⏭buttons pressed.)	–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

The following is a simple adjustment method.

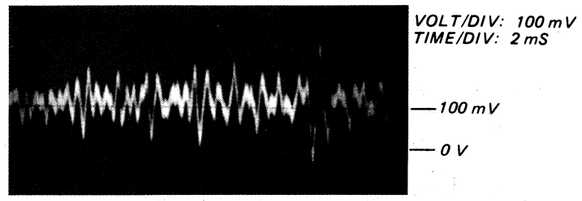
– Simple Adjustment –

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

Procedure:

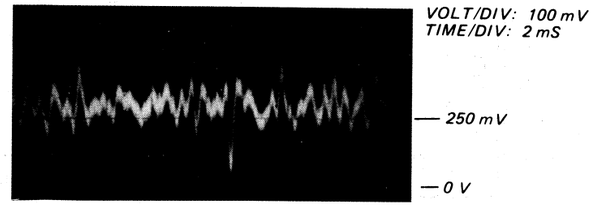


1. Keep the set horizontal.
   (If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.)
2. Insert disc (YEDS-18) and press ▷PLAY button.
3. Connect oscilloscope to main amp board TP (FEO).
4. Adjust RV103 so that the waveform is as shown in the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

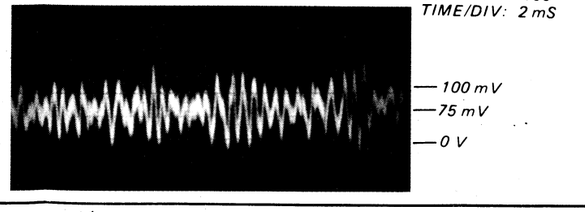


- Incorrent Examples (DC level changes more than on adjusted waveform)

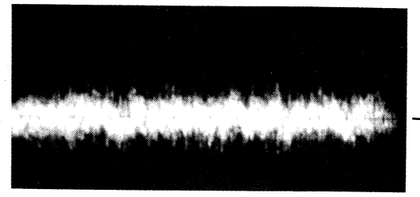
low focus gain



high focus gain

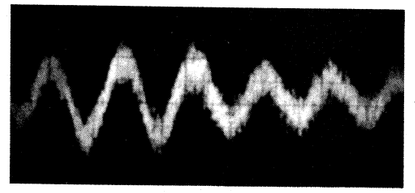


5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)

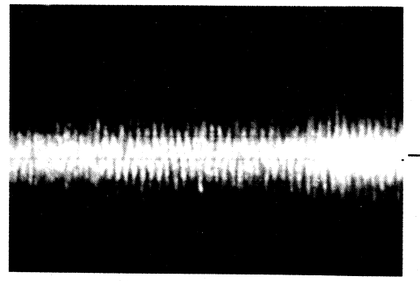


- Incorrect Examples (fundamental wave appears)

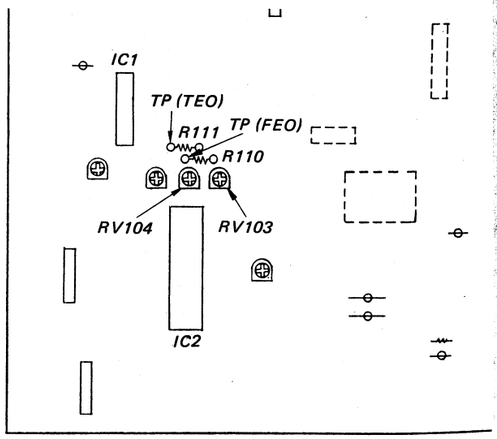
low tracking gain



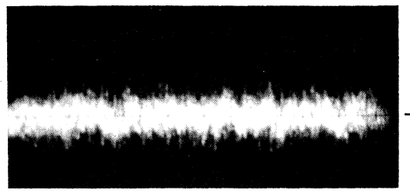
high tracking gain
(higher fundamental wave than for low gain)



Adjustment Location: main board

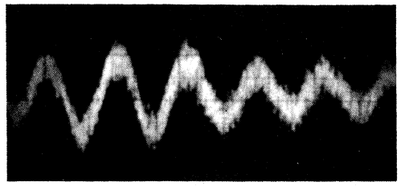


5. Connect oscilloscope to main board TP (TEO).
6. Adjust RV104 so that the waveform is as shown in the figure below. (tracking gain adjustment)

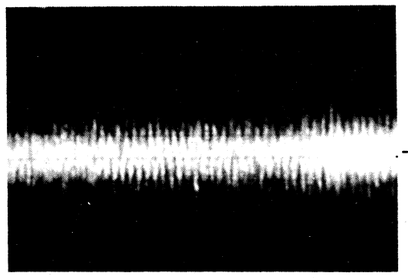


- Incorrect Examples (fundamental wave appears)

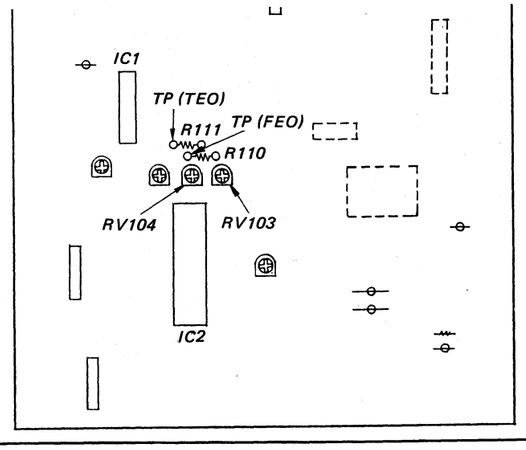
low tracking gain



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



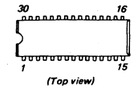
Adjustment Location: main board



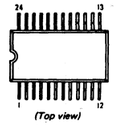
SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUT

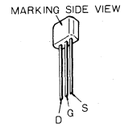
CXA1081S



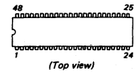
LC9600P-144



2SA1345



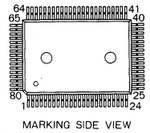
CXA1182S



M5218L

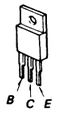
2SB1013
2SC3622A-K

CXD1125Q

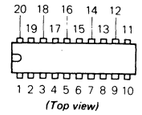


M5231TL

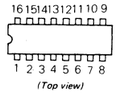
2SB1133SA
2SD1666SA



CXD1161P-2

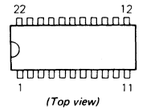


M5290P-16
TA8406P

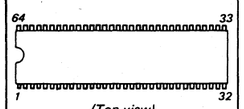


2SC3399
2SC3402

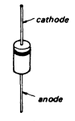
CXD1162P



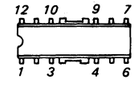
MSC6458-20SS



ISS132
10E2

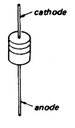


LA6520



μPC4570HA

RD5.1ES-B
RD6.8ES-B
HZS6C3L



● SEMICONDUCTOR LOCATION

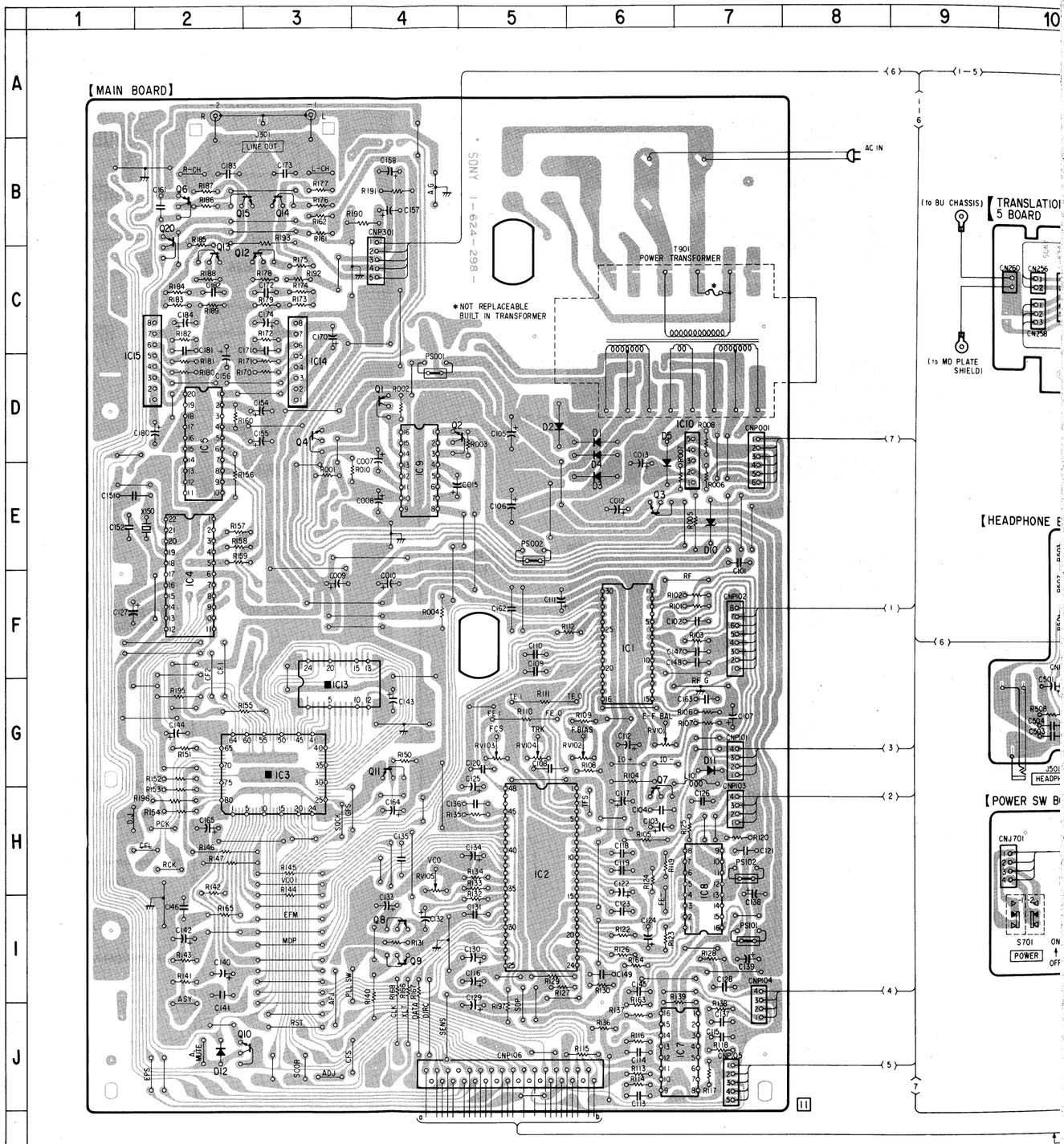
Ref.No.	Location	Ref.No.	Location
IC1	F-6	Q10	J-3
IC2	H-5	Q11	G-4
IC3	G-3	Q12	C-3
IC4	F-2	Q13	C-2
IC5	D-2	Q14	B-3
IC7	J-7	Q15	B-3
IC8	I-7	Q20	B-2
IC9	E-4	Q101	I-14
IC10	D-7		
IC13	G-3	D1	D-6
		D2	D-5
IC14	D-3	D3	E-6
IC15	D-2	D4	D-6
IC101	J-15	D5	E-6
IC102	I-13		
IC201	F-10	D10	E-7
		D11	G-7
Q1	D-4	D12	J-2
Q2	D-5	D101	J-18
Q3	E-6	D102	J-18
Q4	D-3		
Q6	B-2	D103	J-18
		D104	H-12
Q7	H-6		
Q8	I-4		
Q9	I-4		

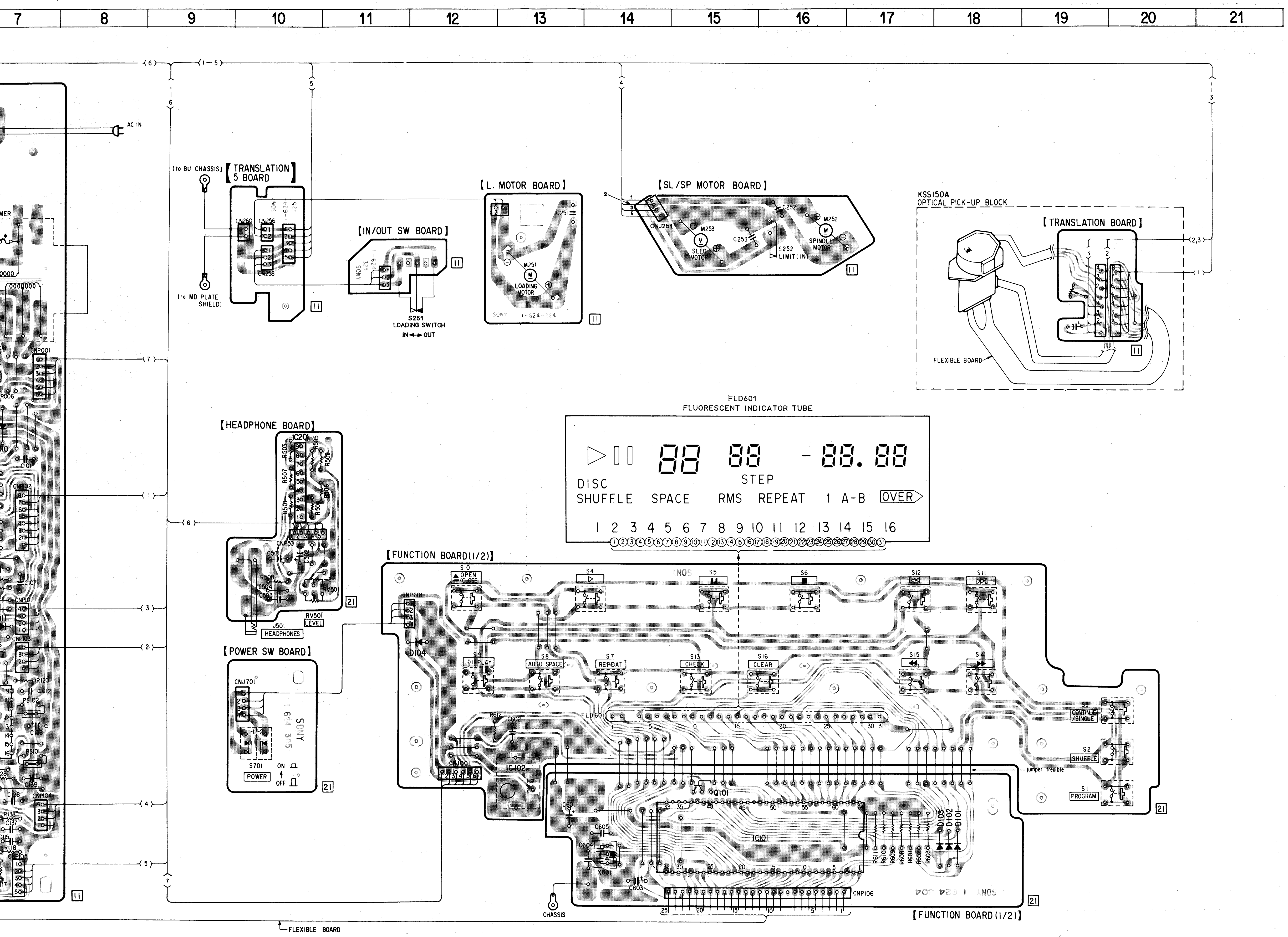
Note on Mounting Diagram:

- ○——○ : parts extracted from the component side.
- ■ : parts mounted on the conductor side.
- [ ] indicates side identified with part number.
- ○—●—○ : Jumper wire connected to the ground pattern on the component side.

3-2. MOUNTING DIAGRAM

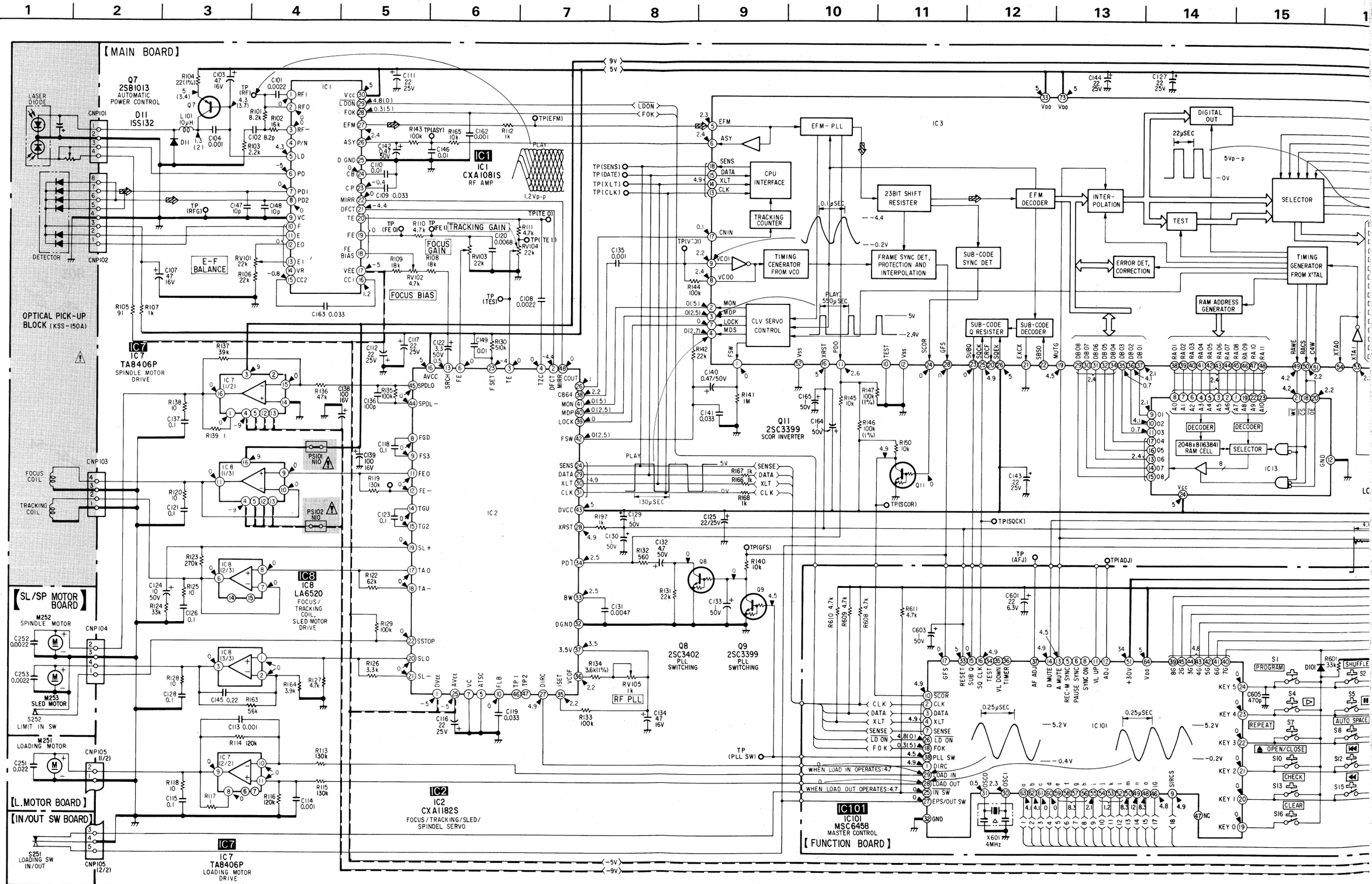
● See page 11 for semiconductor lead layouts.

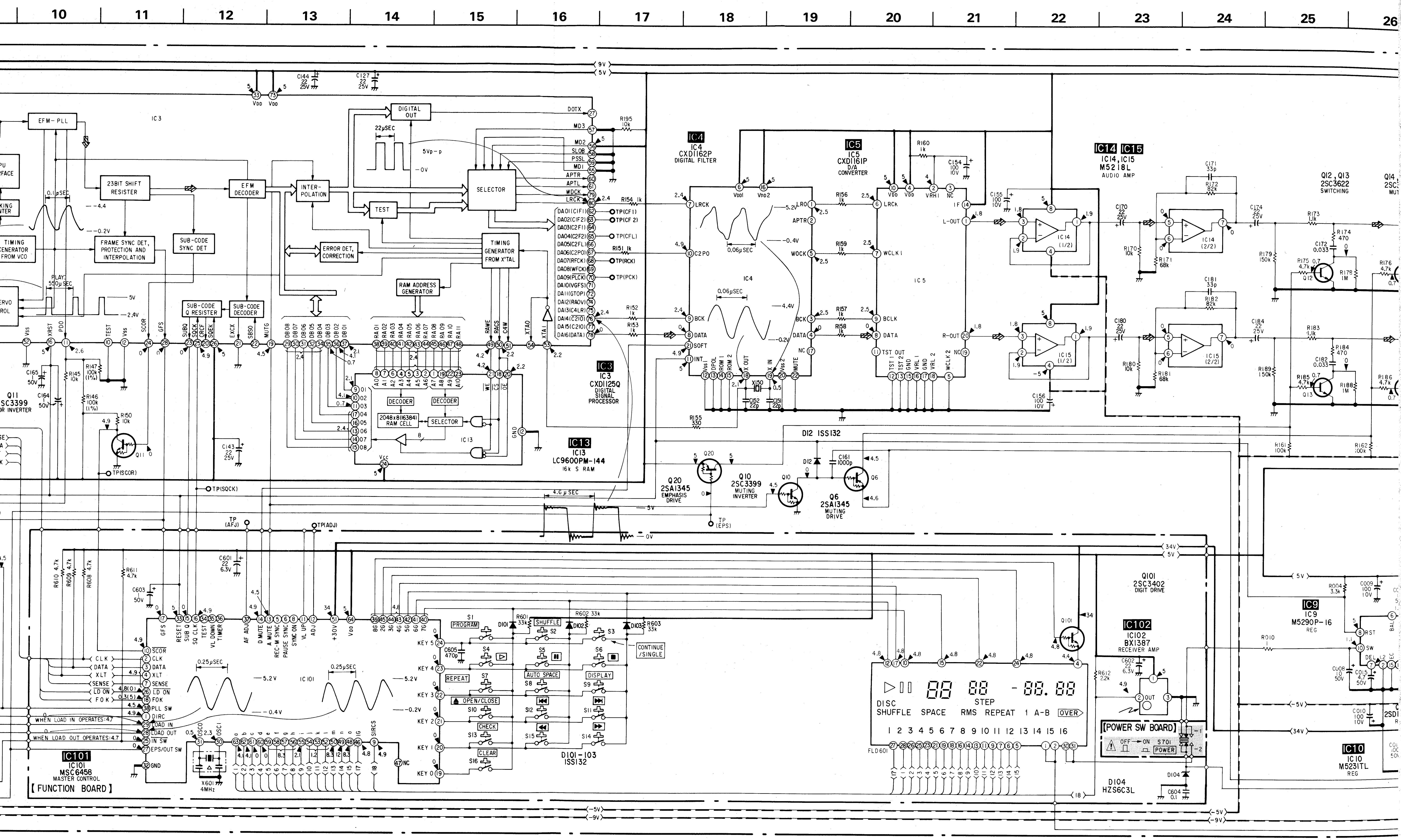




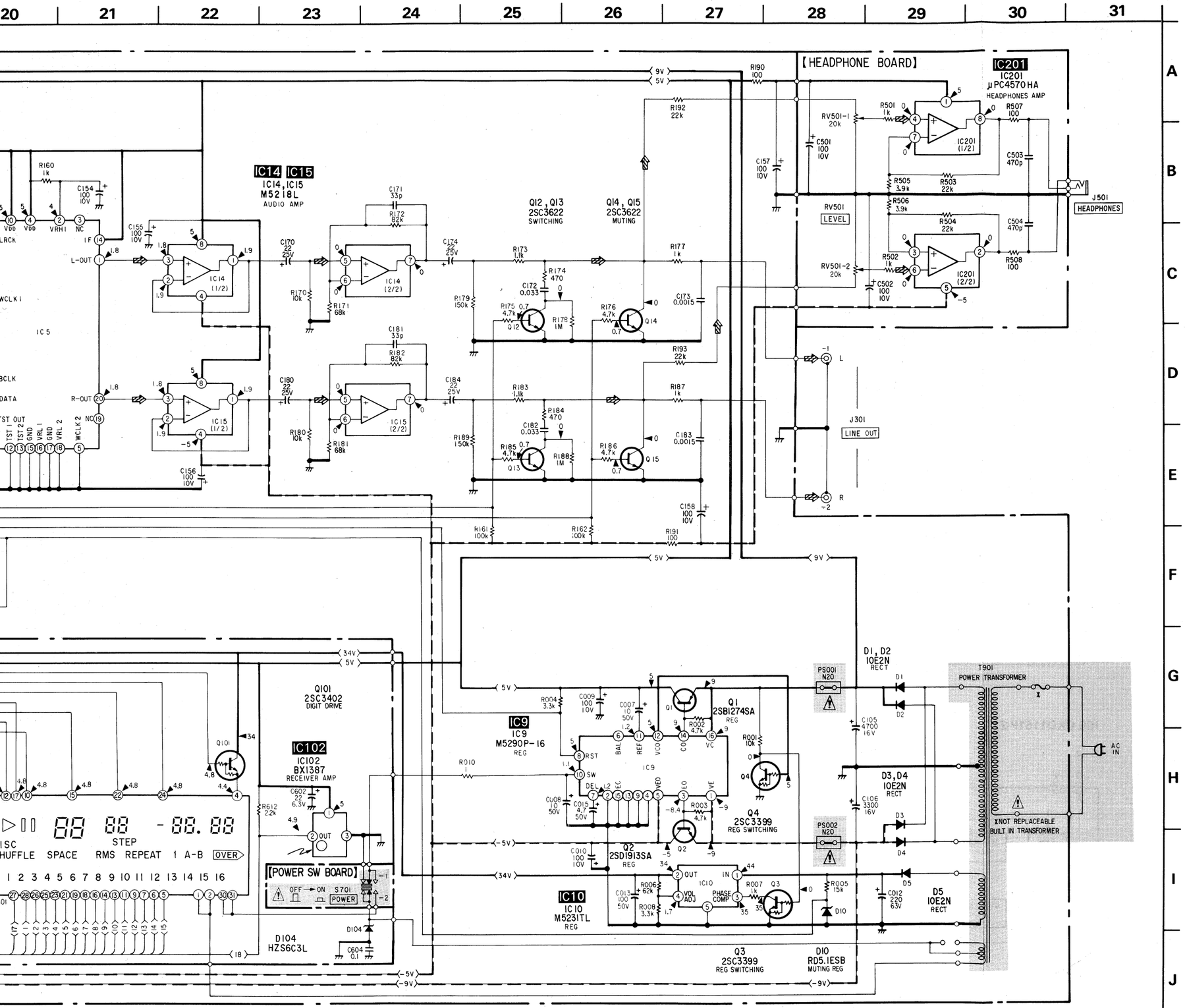
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21
AC IN
(to BU CHASSIS)
【TRANSLATION 5 BOARD】
(to MD PLATE SHIELD)
【IN/OUT SW BOARD】
S261 LOADING SWITCH
IN ◄► OUT
【L. MOTOR BOARD】
M251 LOADING MOTOR
【SL/SP MOTOR BOARD】
M253 SLED MOTOR
M252 SPINDLE MOTOR
S252 LIMIT(IN)
KSS150A OPTICAL PICK-UP BLOCK
【TRANSLATION BOARD】
FLEXIBLE BOARD
FLD601 FLUORESCENT INDICATOR TUBE
DISC
STEP
SHUFFLE SPACE RMS REPEAT 1 A-B OVER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
【HEADPHONE BOARD】
J501 HEADPHONES
RV501 LEVEL
【POWER SW BOARD】
S701 POWER
ON OFF
【FUNCTION BOARD(1/2)】
S10 OPEN/CLOSE
S4
S5
S6
S12
S11
S9 DISPLAY
S8 AUTO SPACE
S7 REPEAT
S13 CHECK
S16 CLEAR
S15
S14
S3 CONTINUE/SINGLE
S2 SHUFFLE
S1 PROGRAM
IC101
IC102
CHASSIS
CNP106
SONY 1 624 304
FLEXIBLE BOARD

● See page 20 for IC Block Diagrams.





IC4 CXD1162P DIGITAL FILTER
IC5 CXD1161P D/A CONVERTER
IC14, IC15 M5218L AUDIO AMP
Q12, Q13 2SC3622 SWITCHING
IC3 CXD1125Q DIGITAL SIGNAL PROCESSOR
IC13 LC9600PM-144 16k S RAM
Q20 2SA1345 EMPHASIS DRIVE
Q10 2SC3399 MUTING INVERTER
Q6 2SA1345 MUTING DRIVE
Q11 2SC3399
Q101 2SC3402 DIGIT DRIVE
IC102 BX1387 RECEIVER AMP
IC9 M5290P-16 REG
IC10 M5231TL REG
IC101 MSC6458 MASTER CONTROL
[FUNCTION BOARD]
[POWER SW BOARD]
D101-103 1SS132
D104 HZS6C3L
D12 1SS132
X601 4MHz
FLD601



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.

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

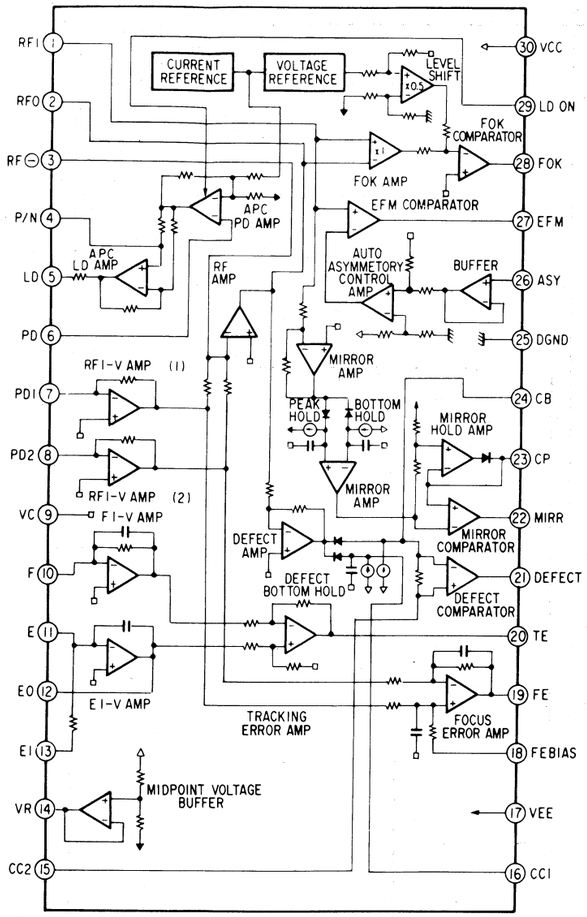
- Switch

Ref. No.	Switch	Position
S1	PROGRAM	OFF
S2	SHUFFLE	OFF
S3	CONTINUE/SINGLE	OFF
S4	▷	OFF
S5	II	OFF
S6	■	OFF
S7	REPEAT	OFF
S8	AUTO SPACE	OFF
S9	DISPLAY	OFF
S10	OPEN/CLOSE	OFF
S11	▷▷|	OFF
S12	|◁◁	OFF
S13	CHECK	OFF
S14	▶▶	OFF
S15	◀◀	OFF
S16	CLEAR	OFF
S251	LOADING	IN
S252	LIMIT (IN)	OFF
S701	POWER	OFF

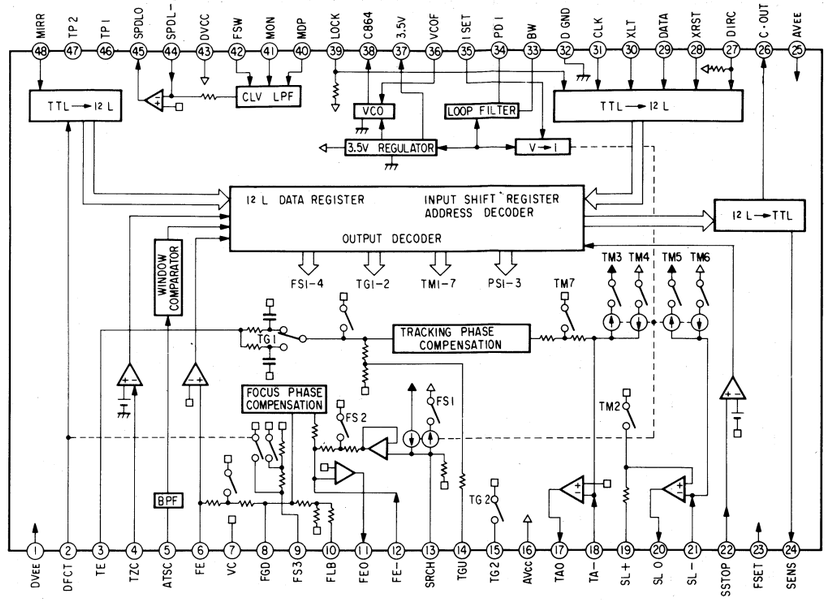
- ▬▬ : B+ bus.
- ▬ ▬ : B− bus.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark: Stop mode
  ( ) : Playing mode
- Voltages are taken with a VOM (50 kΩ/V).
  Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇛ : CD

3-4. IC BLOCK DIAGRAM

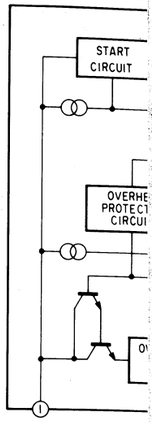
IC1 CXA1081S



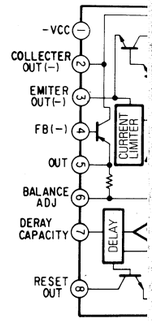
IC2 CXA1182S



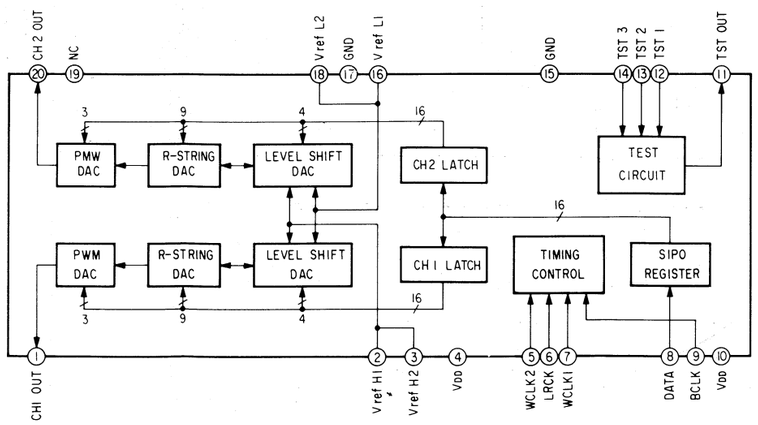
IC10 M5231TL



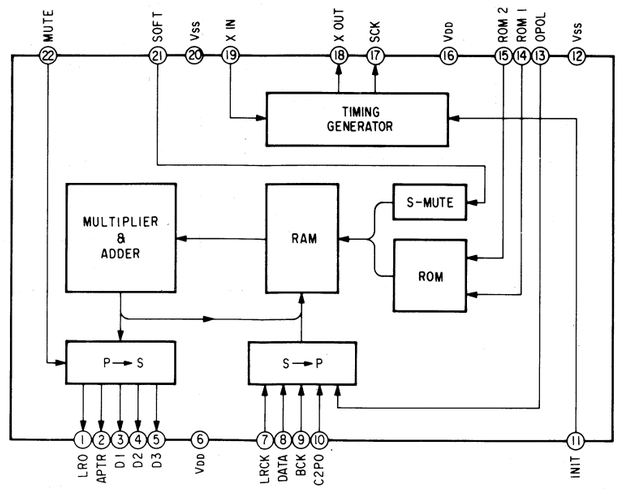
IC9 M5290-16



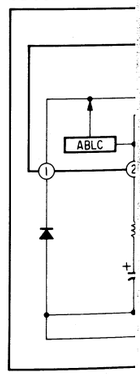
IC5 CXD1161P-2

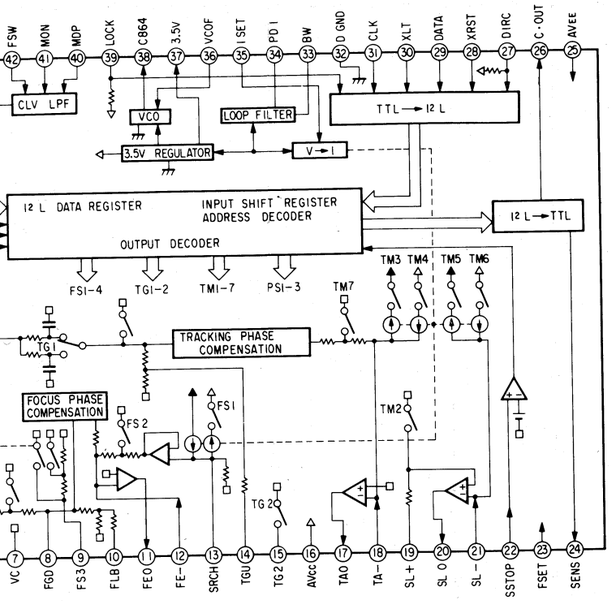


IC4 CXD1162P

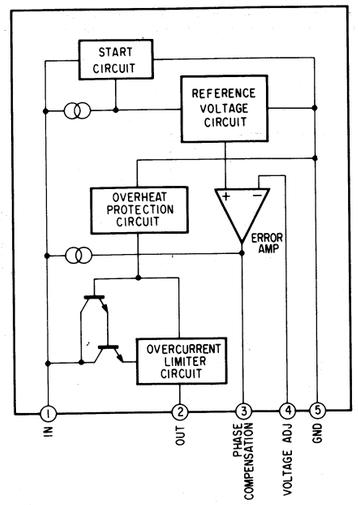


IC102 BX1387

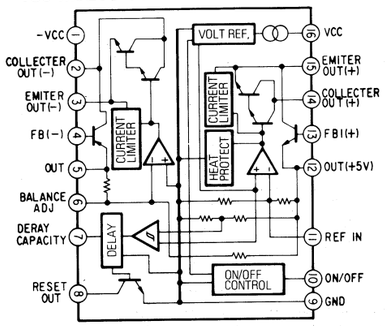




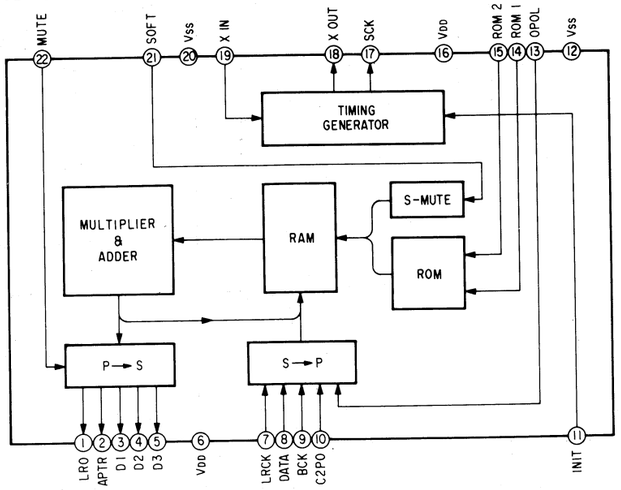
IC10 M5231TL



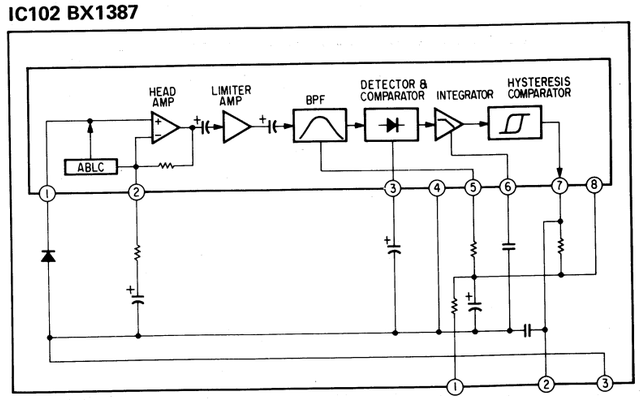
IC9 M5290-16



IC4 CXD1162P



IC102 BX1387



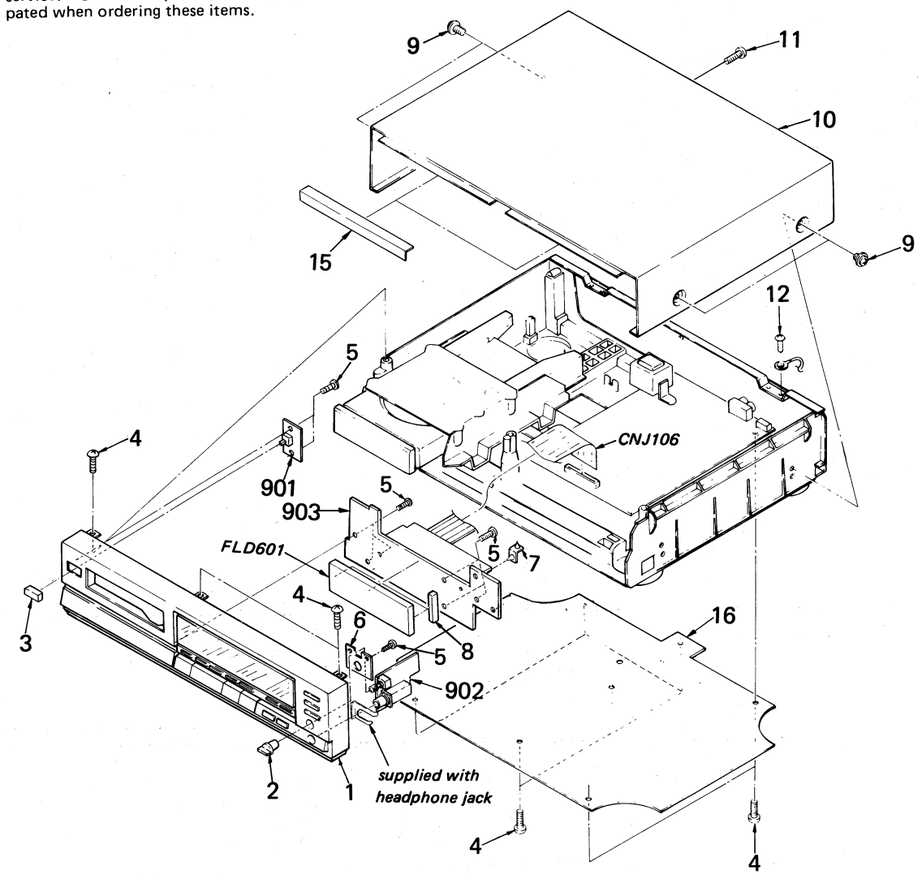
SECTION 4
EXPLODED VIEWS AND PARTS LIST

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.

The components identifie
by shading and mark ⚠ ar
critical for safety.
Replace only with part num
ber specified.

(1)



No.	Part No.	Description	Remarks
1	X-4922-414-1	(CDP-250).....PANEL ASSY, FRONT	
	X-4922-413-1	(CDP-450).....PANEL ASSY, FRONT	
2	4-917-454-01	KNOB, LEVEL	
3	4-922-921-01	BUTTON (POWER)	
4	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
5	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
6	*4-922-412-01	BRACKET (HP)	
7	*4-922-413-01	HOLDER, PC BOARD	
8	9-911-842-XX	CUSHION (S)	
9	7-685-646-79	SCREW, TAPPING	
10	4-912-939-01	CASE	
11	7-682-547-09	SCREW +BV 3X6, S TIGHT	
12	7-682-147-01	SCREW +BVTT 3X6 (S)	
15	*4-922-422-01	CUSHION (C)	
16	*4-922-927-41	PLATE, BOTTOM	
901	*1-624-305-11	PC BOARD, POWER SW	
902	*1-624-306-11	PC BOARD, HEADPHONE	
903	*1-624-304-11	PC BOARD, FUNCTION	
CNJ106	1-535-684-11	JUNPER, FILM (WITH TERMINAL)	
FLD601	1-519-433-11	INDICATOR TUBE, FLUORESCENT	

SECTION 4
EXPLODED VIEWS AND PARTS LIST

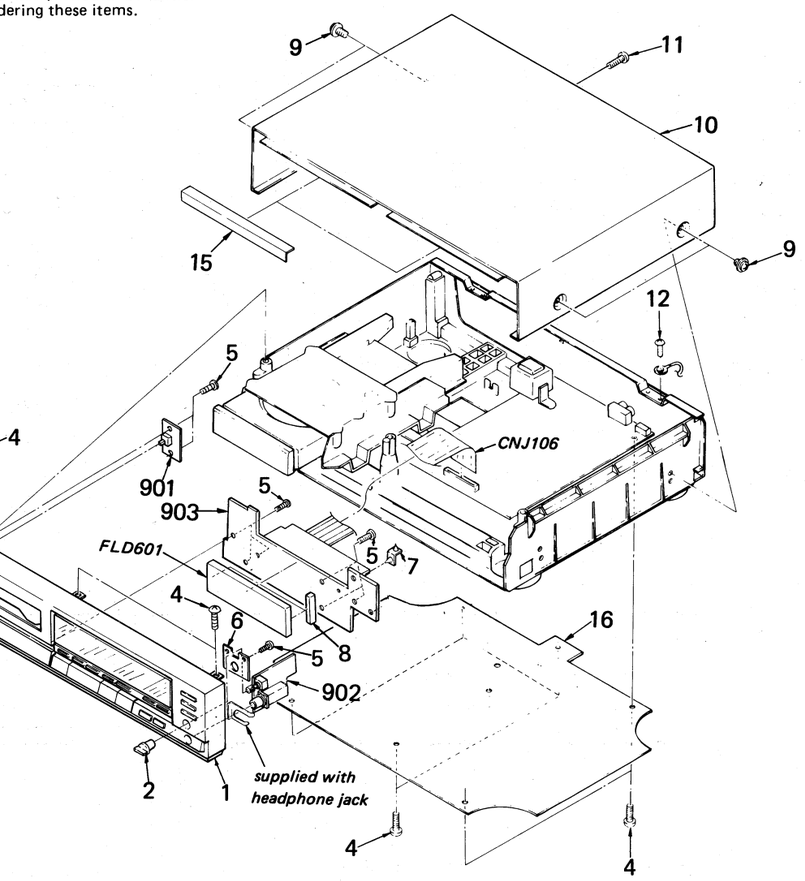
al parts with no reference
e exploded views are not

on parts of an assembled
ated with a collation num-
ark column.

"★" are not stocked since
om required for routine
e delay should be antici-
dering 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.

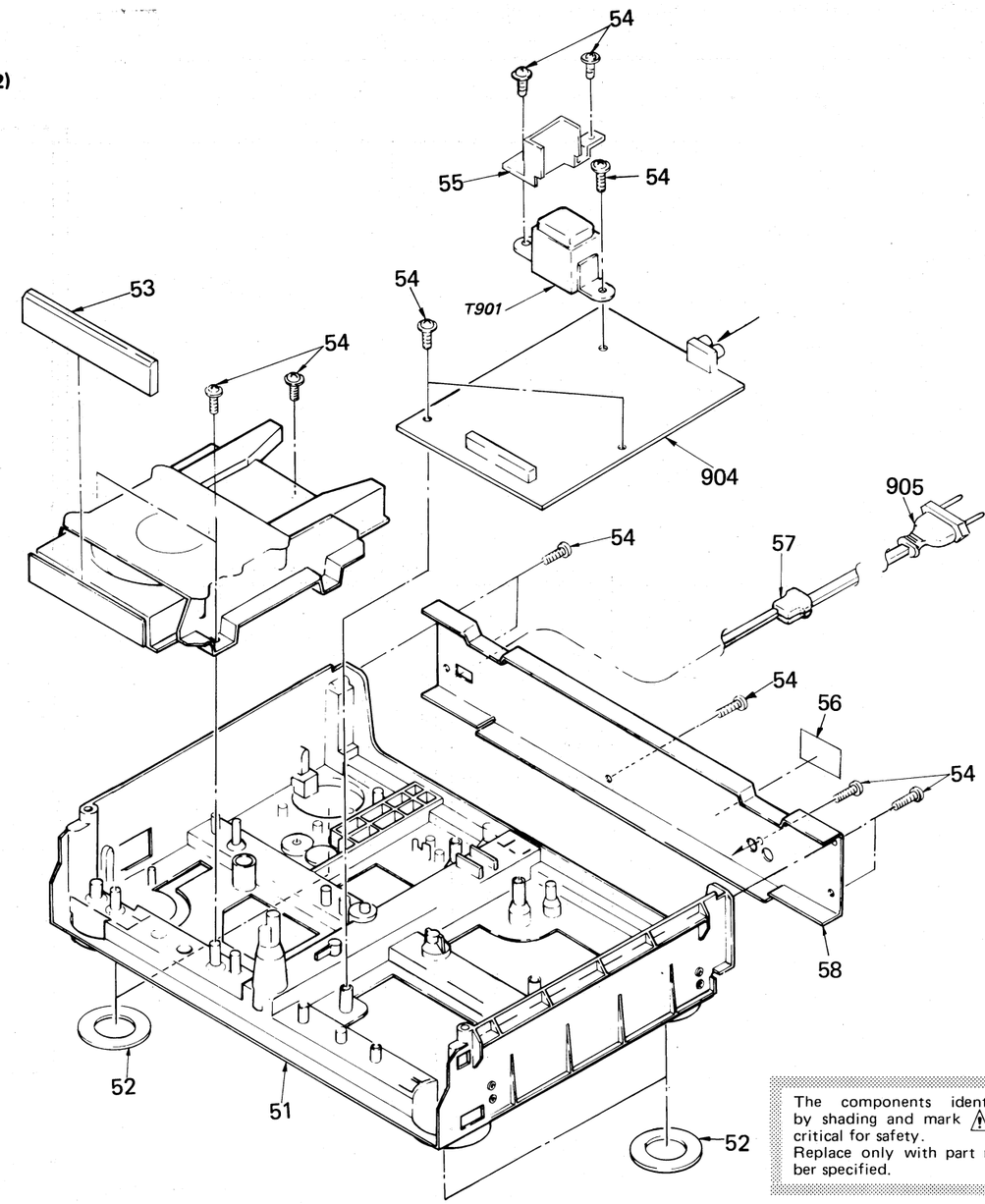
The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.



Description	Remarks
(CDP-250).....PANEL ASSY, FRONT	
(CDP-450).....PANEL ASSY, FRONT	
KNOB, LEVEL	
BUTTON (POWER)	
SCREW +BVTP 3X10 TYPE2 N-S	
SCREW +BTP 2.6X8 TYPE2 N-S	
BRACKET (HP)	
HOLDER, PC BOARD	
CUSHION (S)	
SCREW, TAPPING	

No.	Part No.	Description	Remarks
10	4-912-939-01	CASE	
11	7-682-547-09	SCREW +BV 3X6, S TIGHT	
12	7-682-147-01	SCREW +BVTT 3X6 (S)	
15	*4-922-422-01	CUSHION (C)	
16	*4-922-927-41	PLATE, BOTTOM	
901	*1-624-305-11	PC BOARD, POWER SW	
902	*1-624-306-11	PC BOARD, HEADPHONE	
903	*1-624-304-11	PC BOARD, FUNCTION	
CNJ106	1-535-684-11	JUNPER, FILM (WITH TERMINAL)	
FLD601	1-519-433-11	INDICATOR TUBE, FLUORESCENT	

(2)

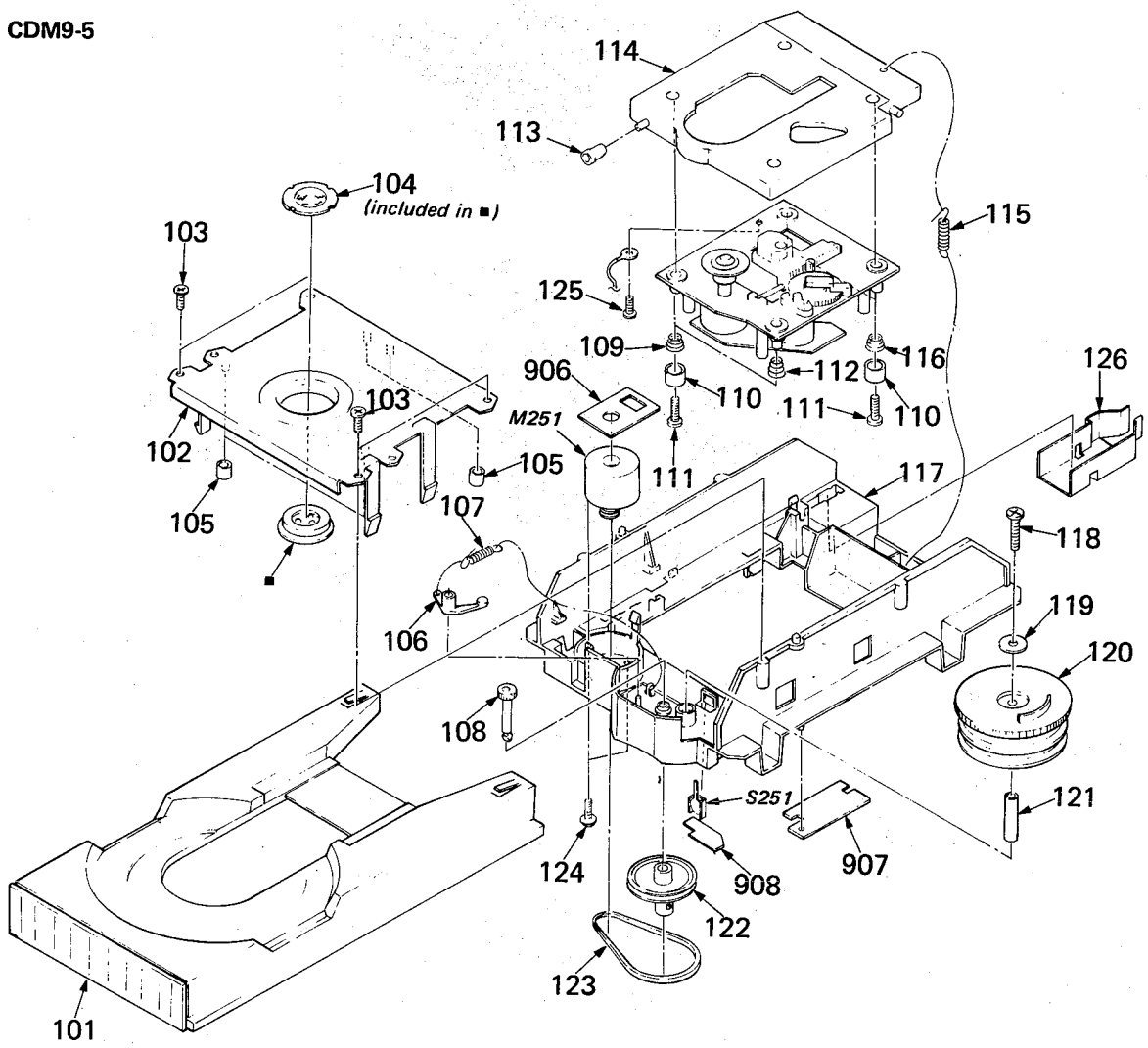


The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remarks
51	*4-922-928-01	CHASSIS	
52	4-922-915-01	FOOT (FELT)	
53	4-922-410-81	(CDP-250).....PANEL, LOADING	
	4-922-410-71	(CDP-450).....PANEL, LOADING	
54	7-685-647-79	SCREW, TAPPING	
55	*4-922-423-01	REINFORCEMENT (TRANSFORMER)	
56	*4-885-838-00	LABEL, CLASS 1	

No.	Part No.	Description	Remarks
57	*3-703-244-00	BUSHING (2104), CORD	
58	*4-922-403-61	(CDP-250).....PANEL, BACK	
	*4-922-401-61	(CDP-450).....PANEL, BACK	
904	*A-4651-173-A	MOUNTED PCB, MAIN	
905	⚠1-555-795-00	CORD, POWER, EULO PLUG	
T901	⚠1-449-025-11	TRANSFORMER, POWER	

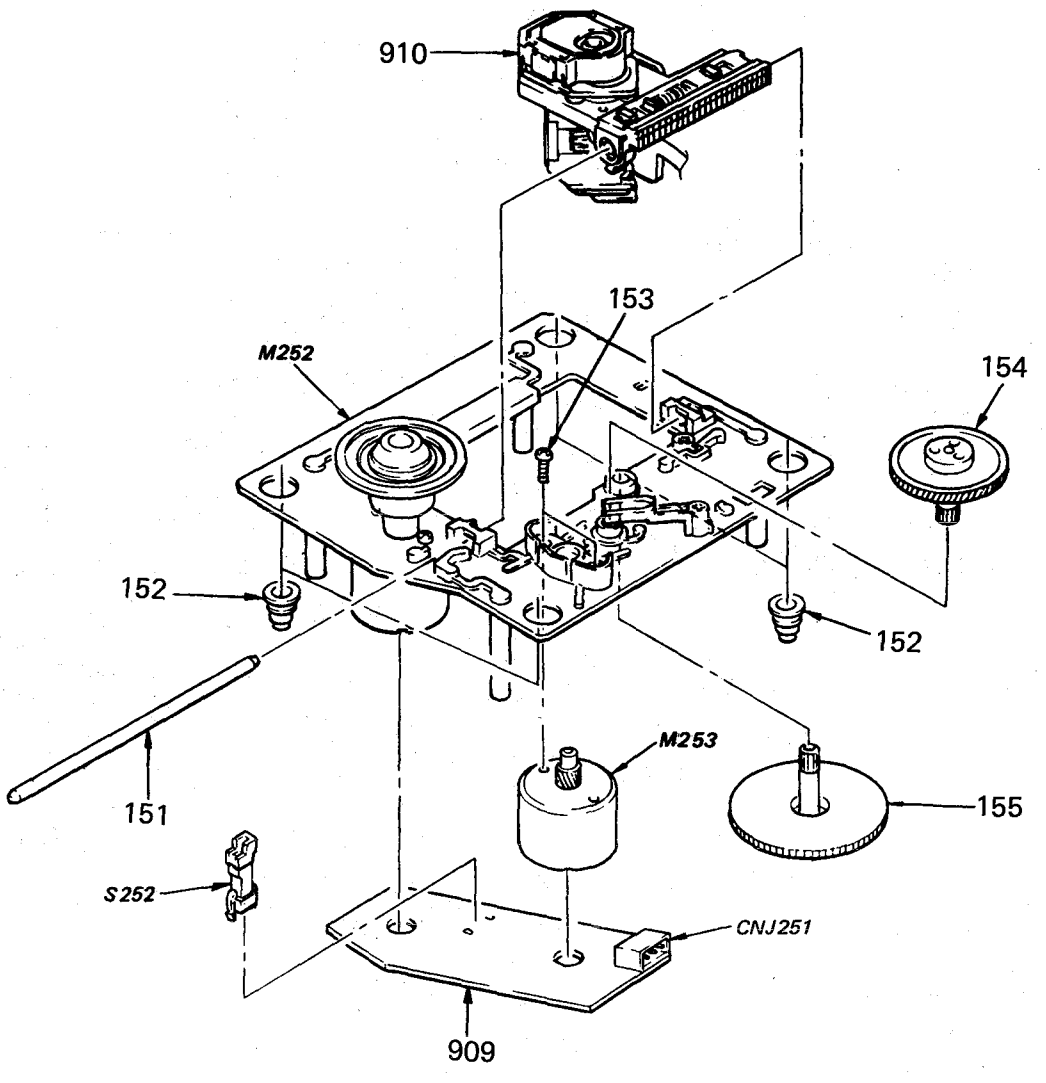
(3) CDM9-5



No.	Part No.	Description	Remarks
101	*4-922-515-01	TABLE, DISK	
102	*4-922-510-01	REINFORCEMENT	
103	7-685-646-79	SCREW +BTP 3X8 TYPE2 N-S	
104	A-4665-012-C	MAGNET ASSY	
105	*3-576-990-01	CUSHION	
106	4-917-519-01	LEVER, SET	
107	4-917-514-01	SPRING, TENSION	
108	4-922-508-01	GEAR (DRIVING)	
109	4-917-541-01	SPRING (B)	
110	4-917-508-01	HOLDER, SP	
111	7-685-535-19	SCREW +BTP 2.6X10 TYPE2 N-S	
112	4-918-669-01	SPRING (W)	
113	4-917-515-01	ROLLER	
114	*4-922-514-01	BRACKET (BU-5)	
115	4-917-526-01	SPRING, TENSION	

No.	Part No.	Description	Remarks
116	4-917-507-01	SPRING (H)	
117	*4-922-516-01	CHASSIS (MD)	
118	7-685-552-19	SCREW +BTP 3X25 TYPE2 N-S	
119	0-056-028-00	WASHER, PLAIN, 14 DIA.	
120	4-922-511-01	GEAR (LOADING)	
121	*4-917-523-01	COLLAR, CAM	
122	4-922-512-01	PULLEY	
123	4-917-522-01	BELT	
124	7-621-759-40	+PSW, 2.6X6	
125	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
126	4-923-541-11	SPRING	
906	*1-624-324-11	PC BOARD, L.MOTOR	
907	*1-624-325-11	PC BOARD, TRANSLATION 5	
908	*1-624-323-11	PC BOARD, IN/OUT SW	
M251	A-4608-346-A	MOTOR ASSY, L	
S251	1-571-300-11	SWITCH, ROTARY (IN/OUT)	

(4) BU-5C



No.	Part No.	Description	Remarks
151	4-917-565-01	SHAFT, SLED	
152	4-917-562-01	INSULATOR	
153	7-621-255-15	SCREW +P 2X3	
154	4-917-567-01	GEAR (M)	
155	4-917-564-01	GEAR (P)	

No.	Part No.	Description	Remarks
909	*1-624-322-11	PC BOARD, SL/SP MOTOR	
910	⚠8-848-062-01	DEVICE, OPTICS (KSS-150A)	
CNJ251	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P	
M252	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
M253	X-4917-504-1	ASSY, MOTOR (SLED)	
S252	1-571-274-11	SWITCH, LEAF (LIMIT IN)	

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

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

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

COILS
- MMH: mH, UH: μH

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

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

Ref.No.	Part No.	Description
901	*1-624-305-11	PC BOARD, POWER SW
902	*1-624-306-11	PC BOARD, HEADPHONE
903	*1-624-304-11	PC BOARD, FUNCTION
904	*A-4651-173-A	MOUNTED PCB, MAIN
905	⚠1-555-795-00	CORD, POWER, EULO PLUG
906	*1-624-324-11	PC BOARD, L.MOTOR
907	*1-624-325-11	PC BOARD, TRANSLATION 5
908	*1-624-323-11	PC BOARD, IN/OUT SW
909	*1-624-322-11	PC BOARD, SL/SP MOTOR
910	⚠8-848-062-01	DEVICE, OPTICS (KSS-150A)

Ref.No.	Part No.	Description			
C007	1-123-875-11	ELECT	10MF	20%	50V
C008	1-123-875-11	ELECT	10MF	20%	50V
C009	1-124-443-00	ELECT	100MF	20%	10V
C010	1-124-443-00	ELECT	100MF	20%	10V
C012	1-124-919-11	ELECT	220MF	20%	63V
C013	1-124-122-11	ELECT	100MF	20%	50V
C015	1-124-927-11	ELECT	4.7MF	20%	50V
C101	1-106-351-00	MYLAR	0.0022MF	5%	50V
C102	1-162-198-31	CERAMIC	8.2PF	10%	50V
C103	1-124-477-11	ELECT	47MF	20%	16V
C104	1-162-294-31	CERAMIC	0.001MF	10%	50V
C105	1-124-898-11	ELECT	4700MF	20%	16V
C106	1-124-887-00	ELECT	3300MF	20%	16V
C107	1-124-477-11	ELECT	47MF	20%	16V
C108	1-161-375-00	CERAMIC	0.0022MF	30%	16V
C109	1-130-489-00	MYLAR	0.033MF	5%	50V
C110	1-130-483-00	MYLAR	0.01MF	5%	50V
C111	1-124-908-11	ELECT	22MF	20%	25V
C112	1-124-908-11	ELECT	22MF	20%	25V
C113	1-162-294-31	CERAMIC	0.001MF	10%	50V
C114	1-162-294-31	CERAMIC	0.001MF	10%	50V
C115	1-162-851-11	CERAMIC	0.1MF	20%	16V
C116	1-124-908-11	ELECT	22MF	20%	25V
C117	1-124-908-11	ELECT	22MF	20%	25V
C118	1-130-768-00	FILM	0.1MF	5%	63V
C119	1-130-489-00	MYLAR	0.033MF	5%	50V
C120	1-161-329-00	CERAMIC	0.0068MF	20%	16V
C121	1-162-851-11	CERAMIC	0.1MF	20%	16V
C122	1-123-382-00	ELECT	3.3MF	20%	50V
C123	1-130-768-00	FILM	0.1MF	5%	63V
C124	1-123-875-11	ELECT	10MF	20%	50V
C125	1-124-908-11	ELECT	22MF	20%	25V
C126	1-162-851-11	CERAMIC	0.1MF	20%	16V

Ref.No.	Part No.	Description			
C127	1-124-908-11	ELECT	22MF	20%	25V
C128	1-162-851-11	CERAMIC	0.1MF	20%	16V
C129	1-124-499-11	ELECT	1MF	20%	50V
C130	1-124-499-11	ELECT	1MF	20%	50V
C131	1-161-377-00	CERAMIC	0.0047MF	30%	16V
C132	1-124-927-11	ELECT	4.7MF	20%	50V
C133	1-124-499-11	ELECT	1MF	20%	50V
C134	1-124-477-11	ELECT	47MF	20%	16V
C135	1-162-294-31	CERAMIC	0.001MF	10%	50V
C136	1-162-282-31	CERAMIC	100PF	10%	50V
C137	1-162-851-11	CERAMIC	0.1MF	20%	16V
C138	1-126-101-11	ELECT	100MF	20%	16V
C139	1-126-101-11	ELECT	100MF	20%	16V
C140	1-124-902-00	ELECT	0.47MF	20%	50V
C141	1-130-489-00	MYLAR	0.033MF	5%	50V
C142	1-124-902-00	ELECT	0.47MF	20%	50V
C143	1-124-908-11	ELECT	22MF	20%	25V
C144	1-124-908-11	ELECT	22MF	20%	25V
C145	1-130-772-00	FILM	0.22MF	5%	63V
C146	1-130-483-00	MYLAR	0.01MF	5%	50V
C147	1-162-199-31	CERAMIC	10PF	5%	50V
C148	1-162-199-31	CERAMIC	10PF	5%	50V
C149	1-161-379-00	CERAMIC	0.01MF	20%	16V
C151	1-162-207-31	CERAMIC	22PF	5%	50V
C152	1-162-207-31	CERAMIC	22PF	5%	50V
C154	1-126-101-11	ELECT	100MF	20%	10V
C155	1-126-101-11	ELECT	100MF	20%	10V
C156	1-126-101-11	ELECT	100MF	20%	10V
C157	1-124-443-00	ELECT	100MF	20%	10V
C158	1-124-443-00	ELECT	100MF	20%	10V
C161	1-161-379-00	CERAMIC	0.01MF	20%	16V
C162	1-162-294-31	CERAMIC	0.001MF	10%	50V
C163	1-130-489-00	MYLAR	0.033MF	5%	50V
C164	1-124-499-11	ELECT	1MF	20%	50V
C165	1-124-499-11	ELECT	1MF	20%	50V
C170	1-123-330-00	ELECT	22MF	20%	25V
C171	1-162-211-31	CERAMIC	33PF	5%	50V
C172	1-130-489-00	MYLAR	0.033MF	5%	50V
C173	1-106-347-00	MYLAR	0.0015MF	5%	50V
C174	1-123-330-00	ELECT	22MF	20%	25V
C180	1-123-330-00	ELECT	22MF	20%	25V
C181	1-162-211-31	CERAMIC	33PF	5%	50V
C182	1-130-489-00	MYLAR	0.033MF	5%	50V
C183	1-106-347-00	MYLAR	0.0015MF	5%	50V
C184	1-123-330-00	ELECT	22MF	20%	25V

Ref.No.	Part No.	Description			
C251	1-136-157-00	FILM	0.022MF	5%	50V
C252	1-106-351-00	MYLAR	0.0022MF	5%	50V
C253	1-106-351-00	MYLAR	0.0022MF	5%	50V
C501	1-124-443-00	ELECT	100MF	20%	10V
C502	1-124-443-00	ELECT	100MF	20%	10V
C503	1-162-290-31	CERAMIC	470PF	10%	50V
C504	1-162-290-31	CERAMIC	470PF	10%	50V
C601	1-124-638-11	ELECT	22MF	20%	6.3V
C602	1-124-638-11	ELECT	22MF	20%	6.3V
C603	1-123-611-00	ELECT	1MF	20%	50V
C604	1-162-851-11	CERAMIC	0.1MF	20%	16V
C605	1-162-290-31	CERAMIC	470PF	10%	50V
CN256	*1-564-336-51	PIN, CONNECTOR 2P			
CN258	*1-564-337-51	PIN, CONNECTOR 3P			
CN260	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNJ106	1-535-684-11	JUMPER, FILM (WITH TERMINAL)			
CNJ251	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP001	*1-564-340-00	PIN, CONNECTOR 6P			
CNP101	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP102	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P			
CNP103	*1-564-706-41	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP104	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP105	*1-564-339-61	PIN, CONNECTOR 5P			
CNP106	1-566-908-11	SOCKET, CONNECTOR 32P			
CNP301	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP501	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP601	*1-564-497-11	PIN, CONNECTOR 4P			
D1	8-719-200-02	DIODE 10E2			
D2	8-719-200-02	DIODE 10E2			
D3	8-719-200-02	DIODE 10E2			
D4	8-719-200-02	DIODE 10E2			
D5	8-719-200-02	DIODE 10E2			
D10	8-719-109-83	DIODE RD5.1ES-B			
D11	8-719-940-76	DIODE 1SS132			
D12	8-719-940-76	DIODE 1SS132			
D101	8-719-940-76	DIODE 1SS132			
D102	8-719-940-76	DIODE 1SS132			
D103	8-719-940-76	DIODE 1SS132			
D104	8-719-109-95	DIODE RD6.8ESB			
FLD601	1-519-433-11	INDICATOR TUBE, FLUORESCENT			
IC1	8-752-031-80	IC CXA1081S			
IC2	8-752-032-33	IC CXA1182S			
IC3	8-752-322-04	IC CXD1125Q			
IC4	8-759-946-62	IC CXD1162P			
IC5	8-759-805-35	IC CXD1161P-2			
IC7	8-759-208-96	IC TA8406P			

Ref.No.	Part No.	Description			
IC8	8-759-805-18	IC LA6520			
IC9	8-759-630-21	IC M5290P-16			
IC10	8-759-605-43	IC M5231TL			
IC13	8-752-320-44	IC LC9600P-144			
IC14	8-759-600-02	IC M5218L			
IC15	8-759-600-02	IC M5218L			
IC101	8-759-971-52	IC MSC6458-20SS			
IC102	8-741-138-70	IC BX-1387			
IC201	8-759-106-61	IC UPC4570HA			
J301	1-566-921-11	JACK, PIN 2P (LINE OUT)			
J501	1-563-485-21	JACK, LARGE TYPE (HEADPHONES)			
L101	1-408-563-00	INDUCTOR	10UH		
M251	A-4608-346-A	MOTOR ASSY, L			
M252	X-4917-523-1	ASSY, MOTOR (SPINDLE)			
M253	X-4917-504-1	ASSY, MOTOR (SLED)			
PS001	⚠1-532-685-00	LINK, IC (N 20)			
PS002	⚠1-532-685-00	LINK, IC (N 20)			
PS101	⚠1-532-605-00	LINK, IC (N 10)			
PS102	⚠1-532-605-00	LINK, IC (N 10)			
Q1	8-729-807-03	TRANSISTOR 2SB1133SA			
Q2	8-729-800-07	TRANSISTOR 2SD1666SA			
Q3	8-729-806-38	TRANSISTOR 2SC3399			
Q4	8-729-806-38	TRANSISTOR 2SC3399			
Q6	8-729-806-20	TRANSISTOR 2SA1345			
Q7	8-729-801-83	TRANSISTOR 2SB1013			
Q8	8-729-806-28	TRANSISTOR 2SC3402			
Q9	8-729-806-38	TRANSISTOR 2SC3399			
Q10	8-729-806-38	TRANSISTOR 2SC3399			
Q11	8-729-806-38	TRANSISTOR 2SC3399			
Q12	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q13	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q14	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q15	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q20	8-729-806-20	TRANSISTOR 2SA1345			
Q101	8-729-806-28	TRANSISTOR 2SC3402			
R001	1-249-429-11	CARBON	10K	5%	1/4W
R002	1-249-425-11	CARBON	4.7K	5%	1/4W
R003	1-249-425-11	CARBON	4.7K	5%	1/4W
R004	1-249-423-11	CARBON	3.3K	5%	1/4W
R005	1-249-431-11	CARBON	15K	5%	1/4W
R006	1-215-464-00	CARBON	62K	5%	1/4W
R007	1-249-417-11	CARBON	1K	5%	1/4W
R008	1-249-423-11	CARBON	3.3K	5%	1/4W
R010	1-249-381-11	CARBON	1	5%	1/4W

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

Ref.No.	Part No.	Description			
R101	1-249-428-11	CARBON	8.2K	5%	1/4W
R102	1-215-450-00	CARBON	16K	5%	1/4W
R103	1-249-421-11	CARBON	2.2K	5%	1/4W
R104	1-214-092-00	METAL	22	1%	1/4W
R105	1-215-396-00	CARBON	91	5%	1/4W
R106	1-249-433-11	CARBON	22K	5%	1/4W
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-432-11	CARBON	18K	5%	1/4W
R109	1-249-432-11	CARBON	18K	5%	1/4W
R110	1-249-425-11	CARBON	4.7K	5%	1/4W
R111	1-249-425-11	CARBON	4.7K	5%	1/4W
R112	1-249-417-11	CARBON	1K	5%	1/4W
R113	1-215-472-00	CARBON	130K	5%	1/4W
R114	1-247-881-00	CARBON	120K	5%	1/4W
R115	1-215-472-00	CARBON	130K	5%	1/4W
R116	1-247-881-00	CARBON	120K	5%	1/4W
R117	1-249-381-11	CARBON	1	5%	1/4W
R118	1-249-393-11	CARBON	10	5%	1/4W
R119	1-215-472-00	CARBON	130K	5%	1/4W
R120	1-249-393-11	CARBON	10	5%	1/4W
R122	1-215-464-00	CARBON	62K	5%	1/4W
R123	1-215-479-00	CARBON	270K	5%	1/4W
R124	1-249-435-11	CARBON	33K	5%	1/4W
R125	1-249-393-11	CARBON	10	5%	1/4W
R126	1-249-423-11	CARBON	3.3K	5%	1/4W
R127	1-249-425-11	CARBON	4.7K	5%	1/4W
R128	1-249-393-11	CARBON	10	5%	1/4W
R129	1-249-429-11	CARBON	10K	5%	1/4W
R130	1-215-486-00	CARBON	510K	5%	1/4W
R131	1-249-433-11	CARBON	22K	5%	1/4W
R132	1-249-414-11	CARBON	560	5%	1/4W
R133	1-249-441-11	CARBON	100K	5%	1/4W
R134	1-215-434-00	METAL	3.6K	1%	1/6W
R135	1-249-441-11	CARBON	100K	5%	1/4W
R136	1-249-437-11	CARBON	47K	5%	1/4W
R137	1-249-436-11	CARBON	39K	5%	1/4W
R138	1-249-393-11	CARBON	10	5%	1/4W
R139	1-249-381-11	CARBON	1	5%	1/4W
R140	1-249-429-11	CARBON	10K	5%	1/4W
R141	1-215-493-00	CARBON	1M	5%	1/4W
R142	1-249-433-11	CARBON	22K	5%	1/4W
R143	1-249-441-11	CARBON	100K	5%	1/4W
R144	1-249-441-11	CARBON	100K	5%	1/4W
R145	1-249-429-11	CARBON	10K	5%	1/4W
R146	1-215-469-00	METAL	100K	1%	1/6W

Ref.No.	Part No.	Description			
R147	1-215-469-00	METAL	100K	1%	1/6W
R150	1-249-429-11	CARBON	10K	5%	1/4W
R151	1-249-417-11	CARBON	1K	5%	1/4W
R152	1-249-417-11	CARBON	1K	5%	1/4W
R153	1-249-417-11	CARBON	1K	5%	1/4W
R154	1-249-417-11	CARBON	1K	5%	1/4W
R155	1-249-411-11	CARBON	330	5%	1/4W
R156	1-249-417-11	CARBON	1K	5%	1/4W
R157	1-249-417-11	CARBON	1K	5%	1/4W
R158	1-249-417-11	CARBON	1K	5%	1/4W
R159	1-249-417-11	CARBON	1K	5%	1/4W
R160	1-259-428-11	CARBON	1K	5%	1/6W
R161	1-249-441-11	CARBON	100K	5%	1/4W
R162	1-249-441-11	CARBON	100K	5%	1/4W
R163	1-249-438-11	CARBON	56K	5%	1/4W
R164	1-249-424-11	CARBON	3.9K	5%	1/4W
R165	1-249-429-11	CARBON	10K	5%	1/4W
R166	1-249-417-11	CARBON	1K	5%	1/4W
R167	1-249-417-11	CARBON	1K	5%	1/4W
R168	1-249-417-11	CARBON	1K	5%	1/4W
R170	1-259-452-11	CARBON	10K	5%	1/6W
R171	1-259-472-11	CARBON	68K	5%	1/6W
R172	1-259-474-11	CARBON	82K	5%	1/6W
R173	1-259-429-11	CARBON	1.1K	5%	1/6W
R174	1-259-420-11	CARBON	470	5%	1/6W
R175	1-249-425-11	CARBON	4.7K	5%	1/4W
R176	1-249-425-11	CARBON	4.7K	5%	1/4W
R177	1-259-428-11	CARBON	1K	5%	1/6W
R178	1-259-500-11	CARBON	1M	5%	1/6W
R179	1-259-480-11	CARBON	150K	5%	1/6W
R180	1-259-452-11	CARBON	10K	5%	1/6W
R181	1-259-472-11	CARBON	68K	5%	1/6W
R182	1-259-474-11	CARBON	82K	5%	1/6W
R183	1-259-429-11	CARBON	1.1K	5%	1/6W
R184	1-259-420-11	CARBON	470	5%	1/6W
R185	1-249-425-11	CARBON	4.7K	5%	1/4W
R186	1-249-425-11	CARBON	4.7K	5%	1/4W
R187	1-259-428-11	CARBON	1K	5%	1/6W
R188	1-259-500-11	CARBON	1M	5%	1/6W
R189	1-259-480-11	CARBON	150K	5%	1/6W
R190	1-259-404-11	CARBON	100	5%	1/6W
R191	1-259-404-11	CARBON	100	5%	1/6W
R192	1-259-460-11	CARBON	22K	5%	1/6W
R193	1-259-460-11	CARBON	22K	5%	1/6W
R195	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No.	Part No.	Description			
R197	1-249-417-11	CARBON	1K	5%	1/4W
R501	1-259-428-11	CARBON	1K	5%	1/6W
R502	1-259-428-11	CARBON	1K	5%	1/6W
R503	1-259-452-11	CARBON	10K	5%	1/6W
R504	1-259-452-11	CARBON	10K	5%	1/6W
R505	1-249-424-11	CARBON	3.9K	5%	1/6W
R506	1-249-424-11	CARBON	3.9K	5%	1/6W
R507	1-259-404-11	CARBON	100	5%	1/6W
R508	1-259-404-11	CARBON	100	5%	1/6W
R601	1-249-435-11	CARBON	33K	5%	1/4W
R602	1-249-435-11	CARBON	33K	5%	1/4W
R603	1-249-435-11	CARBON	33K	5%	1/4W
R608	1-249-425-11	CARBON	4.7K	5%	1/4W
R609	1-249-425-11	CARBON	4.7K	5%	1/4W
R610	1-249-425-11	CARBON	4.7K	5%	1/4W
R611	1-249-425-11	CARBON	4.7K	5%	1/4W
R612	1-249-421-11	CARBON	2.2K	5%	1/4W
RV101	1-228-995-00	RES, ADJ, CARBON 22K (E-F BAL)			
RV102	1-228-993-00	RES, ADJ, CARBON 4.7K (F.BIAS)			
RV103	1-228-995-00	RES, ADJ, CARBON 22K (FCS)			
RV104	1-228-995-00	RES, ADJ, CARBON 22K (TRK)			
RV105	1-228-990-00	RES, ADJ, METAL GLAZE 1K (VCO)			
RV501	1-237-789-11	RES, VAR, CARBON 20K/20K (LEVEL)			
S1	1-554-303-21	SWITCH, KEY BOARD (PROGRAM)			
S2	1-554-303-21	SWITCH, KEY BOARD (SHUFFLE)			
S3	1-554-303-21	SWITCH, KEY BOARD (CONTINUE/SINGLE)			
S4	1-554-303-21	SWITCH, KEY BOARD (▶)			
S5	1-554-303-21	SWITCH, KEY BOARD (❚❚)			
S6	1-554-303-21	SWITCH, KEY BOARD (■)			
S7	1-554-303-21	SWITCH, KEY BOARD (REPEAT)			
S8	1-554-303-21	SWITCH, KEY BOARD (AUTO SPACE)			
S9	1-554-303-21	SWITCH, KEY BOARD (DISPLAY)			
S10	1-554-303-21	SWITCH, KEY BOARD (OPEN/CLOSE)			
S11	1-554-303-21	SWITCH, KEY BOARD (▶▶❙)			
S12	1-554-303-21	SWITCH, KEY BOARD (❙◀◀)			
S13	1-554-303-21	SWITCH, KEY BOARD (CHECK)			
S14	1-554-303-21	SWITCH, KEY BOARD (▶▶)			
S15	1-554-303-21	SWITCH, KEY BOARD (◀◀)			
S16	1-554-303-21	SWITCH, KEY BOARD (CLEAR)			
S251	1-571-300-11	SWITCH, ROTARY (LOADING IN/OUT)			
S252	1-571-274-11	SWITCH, LEAF (LIMIT IN)			
S701	⚠1-571-305-11	SWITCH, PUSH (1 KEY)(POWER)			
T901	⚠1-449-025-11	TRANSFORMER, POWER			
X150	1-567-908-11	VIBRATOR, CRYSTAL			
X601	1-567-686-11	OSCILLATOR, CERAMIC			

ACCESSORY & PACKING MATERIAL

1-463-924-11	(CDP-450)...REMOTO COMMANDER (RM-D250)
1-558-543-11	CORD, CONNECTION
3-704-346-01	SHEET (STANDARD), PROTECTION
3-786-235-11	MANUAL, INSTRUCTION
3-786-235-41	MANUAL, INSTRUCTION
4-922-418-01	CUSHION
4-922-430-11	(CDP-250)...INDIVIDUAL CARTON
4-922-430-01	(CDP-450)...INDIVIDUAL CARTON

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

9-953-380-11

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