CDP-970

SERVICE MANUAL

US Model
AEP Model
UK Model

SPECIFICATIONS

Compact disc player

Frequency response	2 Hz -20 kHz ± 0.3 dB
Signal to noise ratio	More than 110 dB
Dynamic range	More than 97 dB
Harmonic distortion	Less than 0.003 %
Channel sepration	More than 100 dB

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2 V (at 50 kiloohms) Load impedance over 10 kiloohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2 V (at 50 kiloohms) Load impedance over 10 kiloohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level – 18 dBm
HEADPHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

General

Power requirements	US model: 120V AC 50/60Hz AEP model: 220V AC 50/60Hz UK model: 240V AC 50/60Hz
Power consumption	13 W

Dimensions	Approx. 430 × 110 × 340 mm (w/h/d) (17 X 4 3/5 X 13 3/5 inches) Including projecting parts and controls
Weight	Approx. 5 kg (11 lbs 1 oz), net

Remote commander RM-D570

Remote control system	Infrared control
Power requirements	3 V DC with two batteries size AA (IEC designation R6)
Dimensions	67 × 20 × 175 mm (w/h/d) (2 3/4 × 13/16 × 7 inches)
Weight	135 g (4.7 oz) including batteries

Supplied accessories

Connecting cord (1)
(2 phono plugs ↔ 2 phono plugs)
Remote commander (1)
Size AA batteries (2)

TABLE OF CONTENTS

MICROFILM

COMPACT DISC PLAYER

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

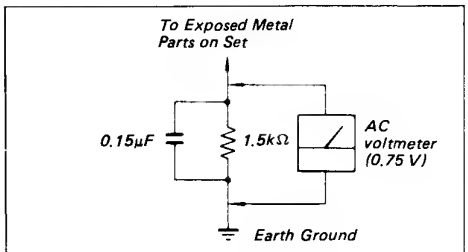


Fig. A. Using an AC voltmeter to check AC leakage.

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.

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.

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).

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

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 et det er nødvendigt at kontrollere udsendelsen af leserlys, skel det ske i en afstend ef mere end 25 cm fre 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 pa den optiske pick-up enhed.

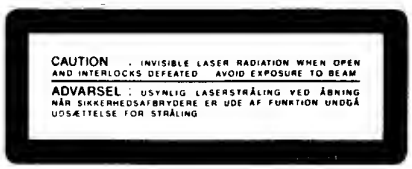
   - Klassifikation: Klasse IIIb.

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



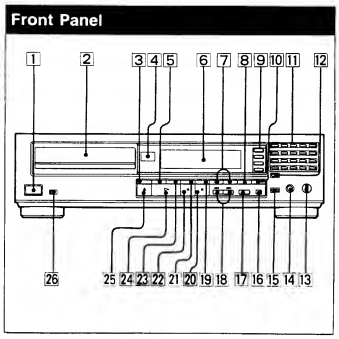
SAFETY-RELATED COMPONENT WARNING!!

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

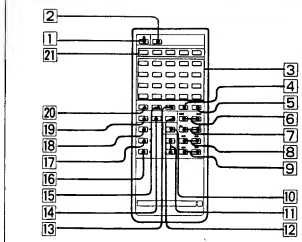
SECTION 1
GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS

Front Panel



Remote Commander



1 POWER switch
2 Disc tray
3 TIME/MEMO button
4 Remote sensor
5 AUTO SPACE (auto space) button
6 Display window
7 ◀◀ ▶▶ (manual search) buttons
8 CHECK (program check) button
9 PLAY MODE buttons
PROGRAM button
SHUFFLE button
CONTINUE/SINGLE button
CUSTOM INDEX button
10 CLEAR (program clear) button
11 Numeric buttons
12 > 20 (over 20) button
13 LINE OUT/HEADPHONE LEVEL control
14 HEADPHONES jack
15 EDIT/TIME FADE button
16 ERASE (memory erase) button
17 FILE (custom file) button
18 ⏮ ⏭ (AMS*) buttons
19 FILE RECALL button
20 ■ (stop) button
21 FADER (FADE IN/FADE OUT) button
22 II (pause) button
23 REPEAT button
24 ▶ (play) button
25 ≙ (open/close) button
26 Timer switch

* AMS is the abbreviation of Automatic Music Sensor.

1 ≙ (open/close) button
2 FILE RECALL button
3 Numeric buttons
4 ERASE button
5 FILE (custom file) button
6 ⏮ ⏭ AMS buttons
7 INDEX buttons
8 ◀◀ ▶▶ (manual search) buttons
9 ◀◀ ▶▶ SLOW (low speed manual search) buttons
10 FADER (FADE IN/FADE OUT) button
11 LINE OUT VOLUME (line out/headphone volume) buttons
12 TIME button
13 CLEAR (program clear) button
14 A↔B repeat button
15 CHECK button
16 ■ (stop) button
17 II (pause) button
18 ▶ (play) button
19 CLEAR/REPEAT (A↔B repeat clear/repeat) button
20 > 20 (over 20) button
21 PLAY MODE buttons
PGM (program button
SHUFFLE button
CONTINUE button
SINGLE button
C.INDEX button

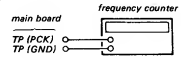
SECTION 2
ADJUSTMENTS

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 10MΩ impedance.

RF PLL Frequency Adjustment/Lock Frequency Check

Procedure:



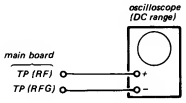
1. Ground test point TP (ASY).
2. Connect the frequency counter to the test points TP (PCK) and TP (GND).
3. Turn POWER switch on.
4. Adjust RV201 so that the reading on the frequency counter is 4.3218 MHz ±30kHz.
... (RF PLL frequency adjustment)
5. Remove the grounding wire from TP (ASY).
6. Put the disc (YEDS-18) in and press ▷ button.
7. Confirm that the reading on the frequency counter is locked at 4.3218 MHz.

Adjustable limits: 4,3218 MHz ±30kHz

Focus Bias Adjustment

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

Procedure:

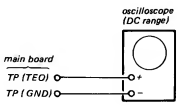


1. Connect oscilloscope to the test points TP (RF) and TP (RFG).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press ▷ button.
4. Adjust RV104 for an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

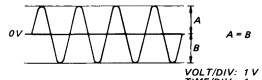
E-F Balance Adjustment

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

Procedure:



1. Connect the oscilloscope to the test points TP (TEO) and TP (GND).
2. Ground TP (ADJ) to set an adjustment mode.
3. Ground TP(TES) and turn POWER switch on.
4. Put the disc (YEDS-18) in and press ▷ button.
5. Adjust RV101 so that positive and negative halves of traverse waveform have the same amplitudes.
6. After adjustment, cancel the adjustment mode.



SECTION 2
ADJUSTMENTS

JSTMENTS

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l.
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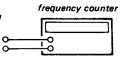
djustment/Lock Frequency



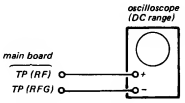
TP (ASY).
uency counter to the test points
(GND).
tch on.
o that the reading on the fre-
4.3218MHz ±30kHz.
ency adjustment)
ding wire from TP (ASY).
S-18) in and press ▷ button.
reading on the frequency counter
8 MHz.

3218MHz ±30kHz

Focus Bias Adjustment

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

Procedure:



1. Connect oscilloscope to the test points TP (RF) and TP (RFG).
2. Turn POWER switch on.
3. Put the disc (YEDS-18) in and press ▷ button.
4. Adjust RV104 for an optimum waveform eye pattern. Optimum eye pattern means that shape "◇" can be clearly distinguished at the center of the waveform.

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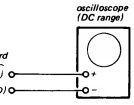
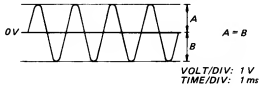
should be made after replacing
Block.



1. Connect the oscilloscope to the test points TP (TEO) and TP (GND).
2. Ground TP (ADJ) to set an adjustment mode.
3. Ground TP(TES) and turn POWER switch on.
4. Put the disc (YEDS-18) in and press ▷ button.
5. Adjust RV101 so that positive and negative halves of traverse waveform have the same amplitudes.
6. After adjustment, cancel the adjustment mode.



Focus/Tracking Gain Adjustment

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

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

Focus/tracking gains determine the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when the 2-axis device operate.

However, as these reciprocate, the adjustment is at the point where both are satisfied.

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

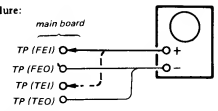
Symptoms \ Gain	Focus	Tracking
• The time until music starts becomes longer for STOP →▷PLAY or automatic selection (⏮ ⏭buttons pressed. (Normally takes about 2 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP→▷PLAY or automatic selection (⏮ ⏭ buttons pressed.)	–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

The following is a simple adjustment method.

– Simple Adjustment –

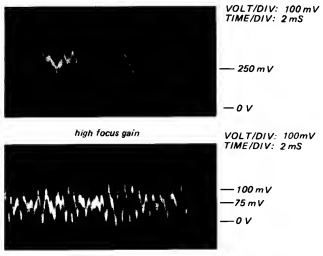
Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



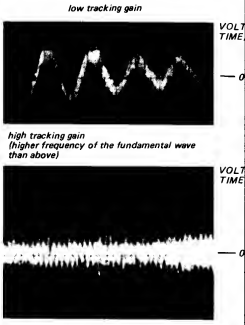
1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV103 so that the waveform is as shown in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

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

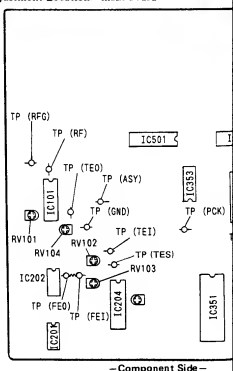


5. Connect the oscilloscope to TP (TEI), TP (TEO).
6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)



Adjustment Location: main board



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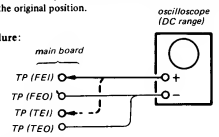
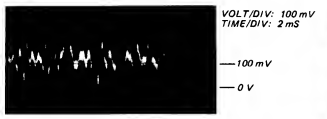
Note: Since exact adjustment cannot be performed, remember the positions of the controls before performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



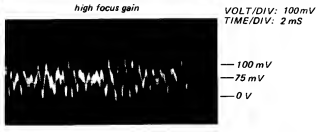
1. Keep the set flat.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2 axis device.
2. Insert the disc (YEDS-18) and press ▷ PLAY button.
3. Connect the oscilloscope to TP (FEI) and TP (FEO).
4. Adjustment RV103 so that the waveform is as shown in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



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

low focus gain

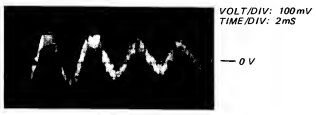
high focus gain



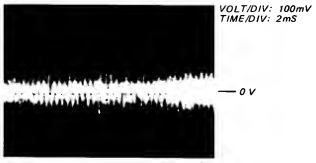
5. Connect the oscilloscope to TP (TEI), TP (TEO).
6. Adjust RV102 so that the waveform is as shown in the picture below. (tracking gain adjustment)

- Incorrect Examples (fundamental wave appears)

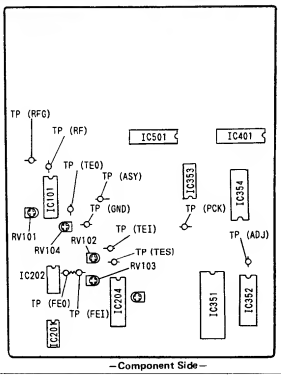
low tracking gain



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



Adjustment Location: main board



–Component Side–

SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

BA6208

GP1U52

2SB1274-RS

2SC3622K

1SS132
10E2N

CXA1291P

DTC114EF
2SC2021

2SB734-34
2SD774-3

BR4361F

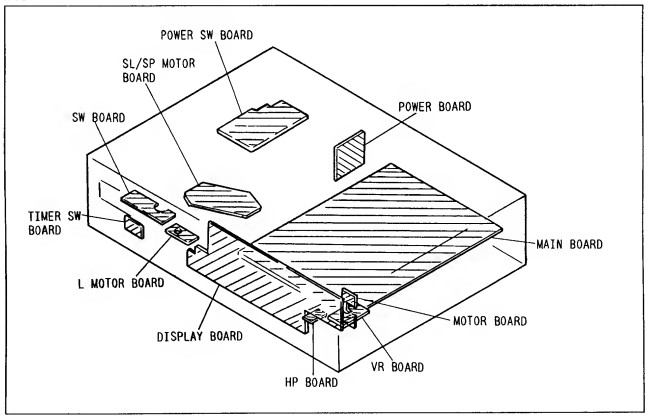
GP1F31T

DTC114ES
2SA1348
2SC3402

2SC2785-HFE

HZS9B-2L
HZS33-2L
RD4.3ES-B2

3-2. CIRCUIT BOARDS LOCATION

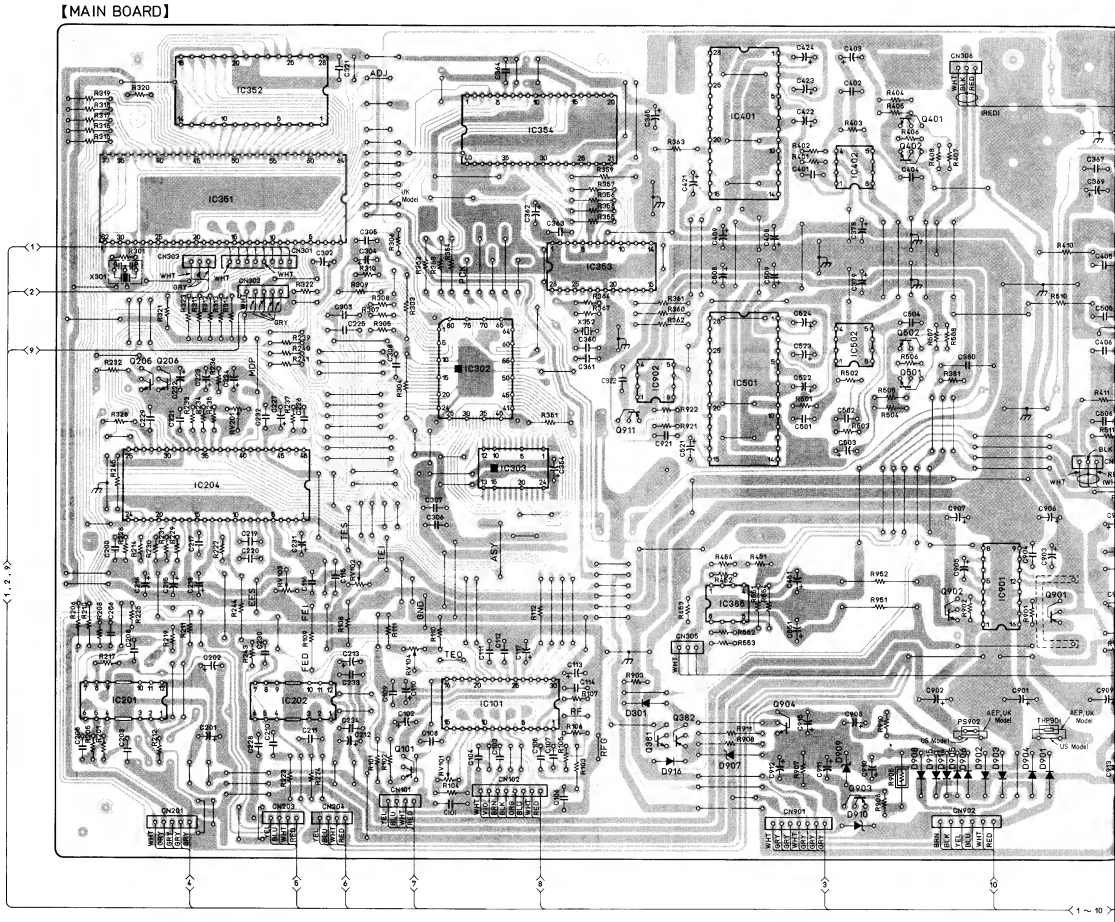


3-3. PRINTED WIRING BOARDS

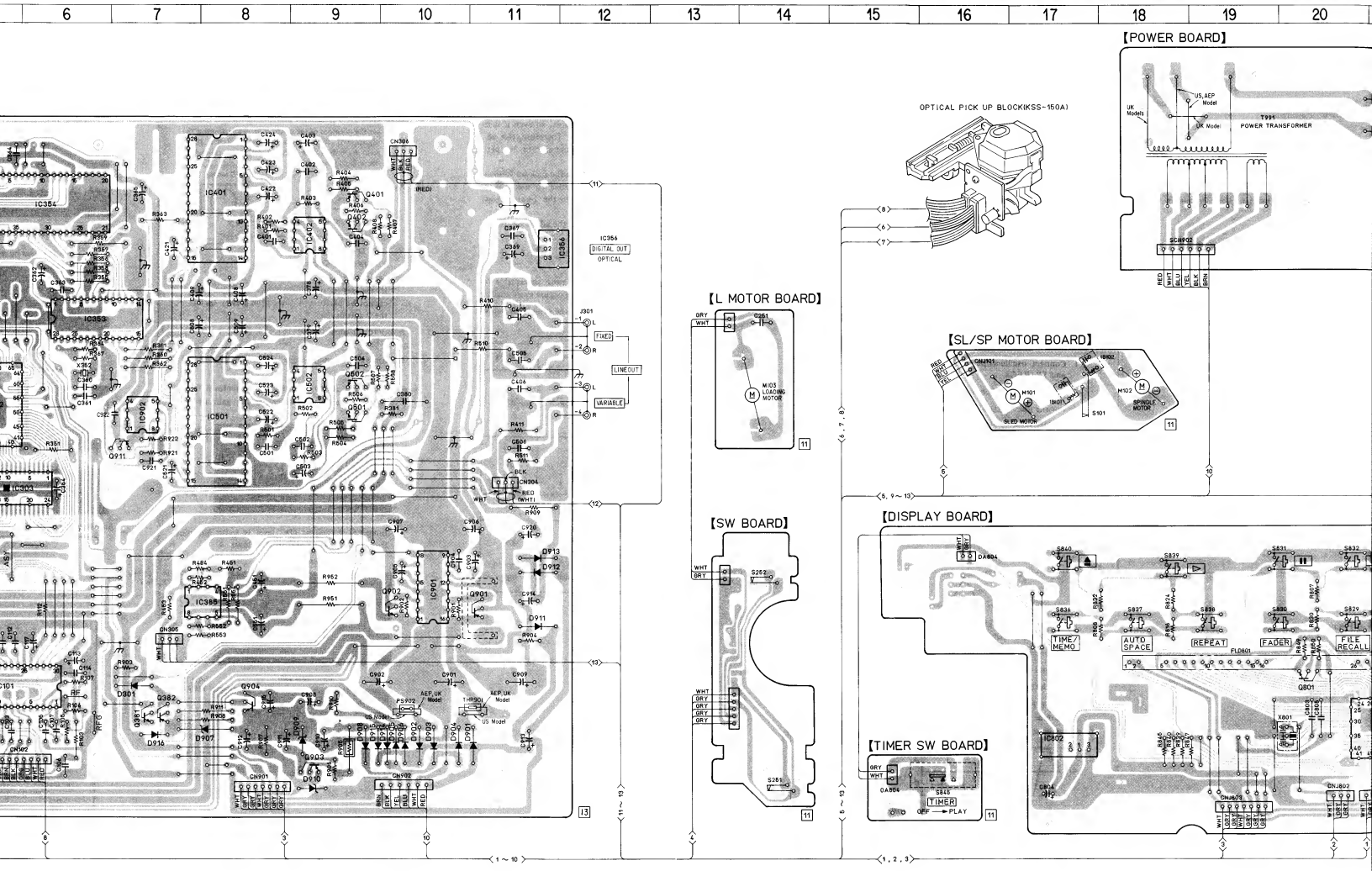
• **SEMICONDUCTOR LOCATION**

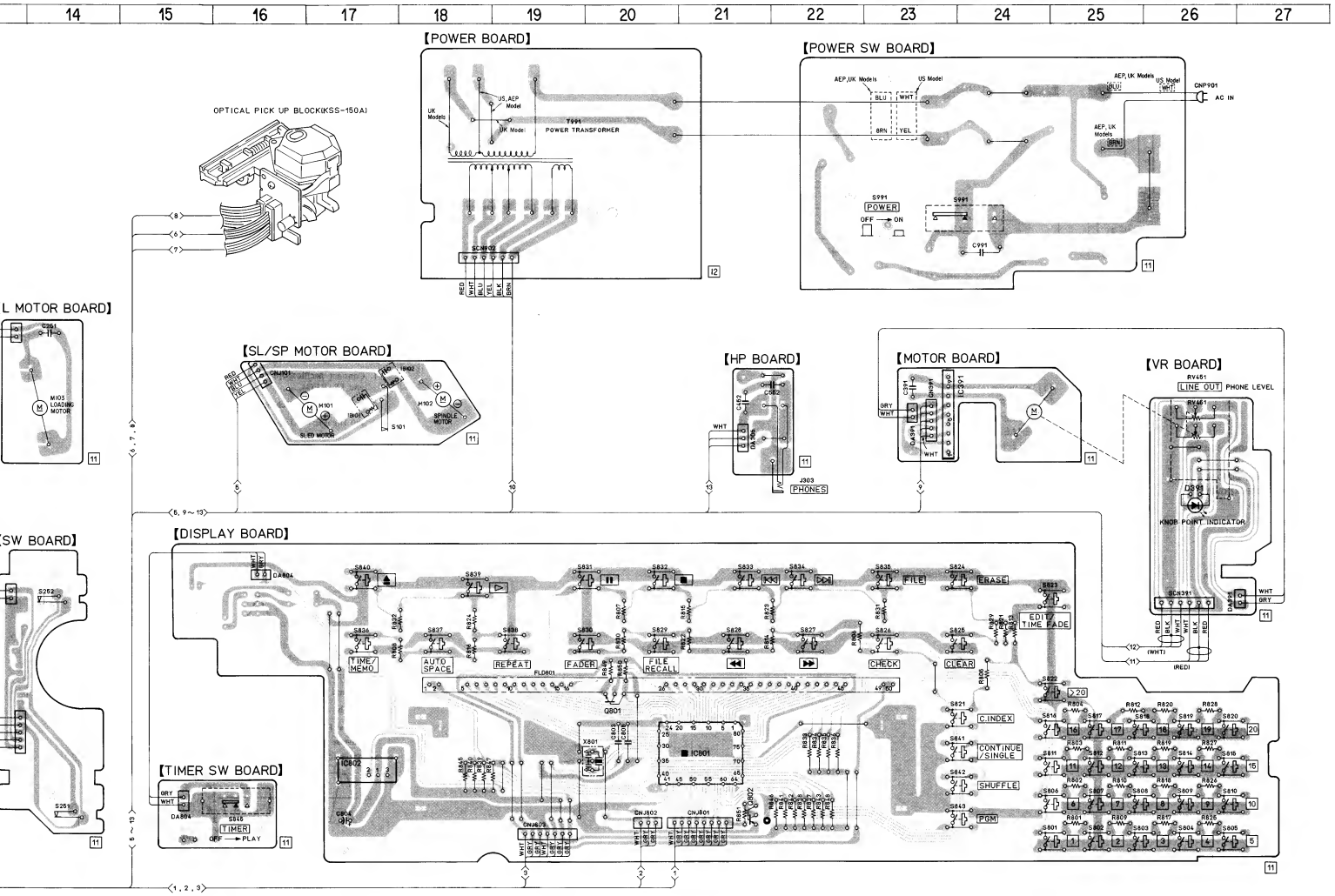
Ref. No.	Location	Ref. No.	Location
D301	H-7	IC356	C-11
D391	F-26	IC385	G-8
D901	I-11	IC391	E-23
D902	I-10	IC401	B-8
D903	I-10	IC402	C-9
D904	I-10	IC501	E-8
D905	I-10	IC502	E-9
D906	I-10	IC801	H-21
D907	H-8	IC802	I-17
D908	H-9	IC901	G-10
D909	H-9	IC902	E-7
D910	I-9		
D911	G-11	Q101	I-5
D912	G-11	Q205	E-2
D913	F-11	Q206	E-2
D914	I-10	Q381	H-7
D915	I-9	Q382	H-7
D916	H-7	Q401	B-9
		Q402	C-9
IC101	H-5	Q501	E-9
IC201	H-2	Q502	D-9
IC202	F-3	Q801	H-20
IC204	F-3	Q802	I-21
IC302	E-5	Q901	G-11
IC303	F-5	Q902	G-10
IC351	C-3	Q903	I-9
IC352	B-3	Q904	H-8
IC353	D-6	Q911	E-7
IC354	C-6		

【MAIN BOARD】

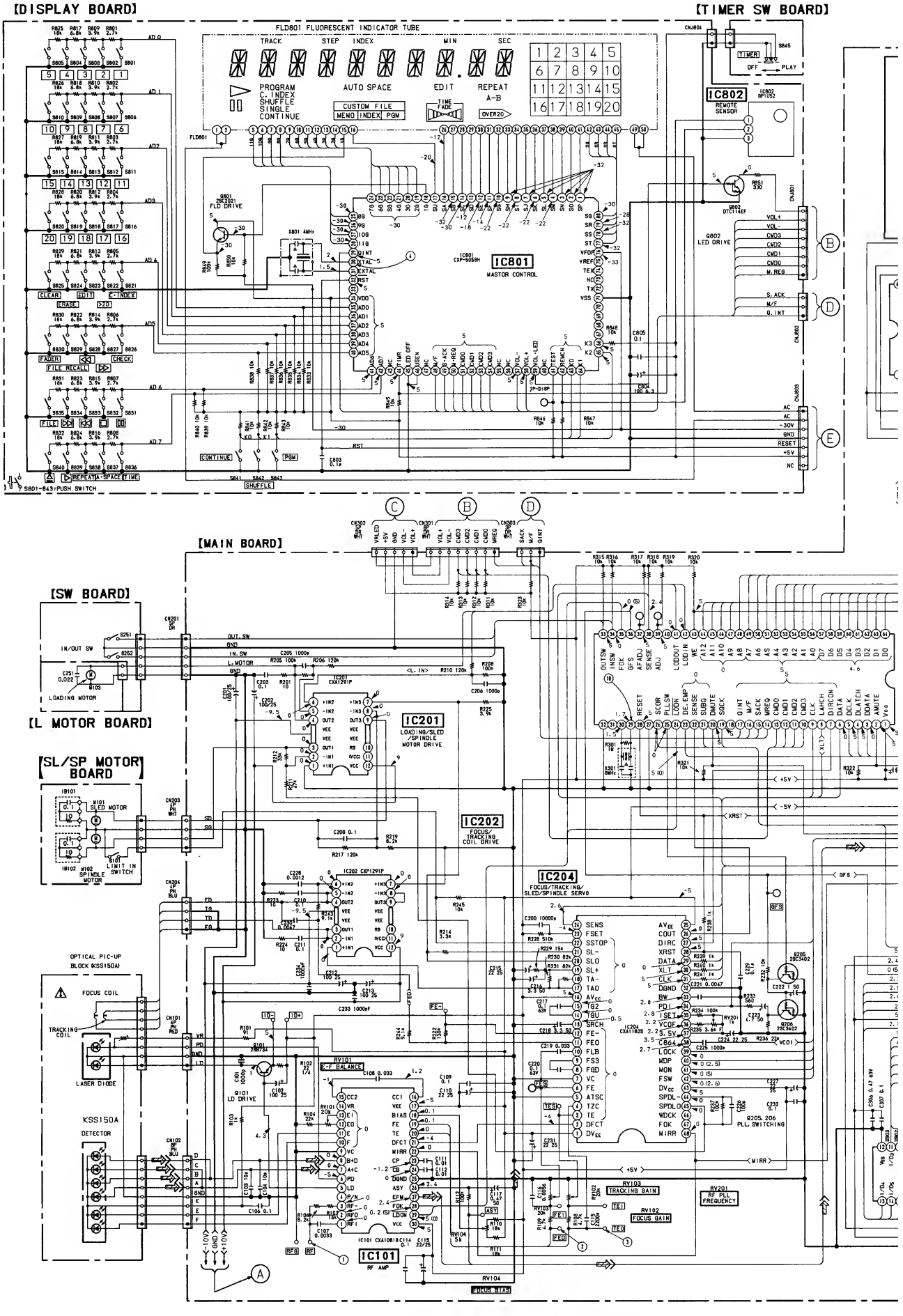


· ○—— : Parts extracted from the component side.
· ■ : Parts mounted on the conductor side.
· ○—⏚—○ : Jumper wire connected to the ground pattern on the component side.

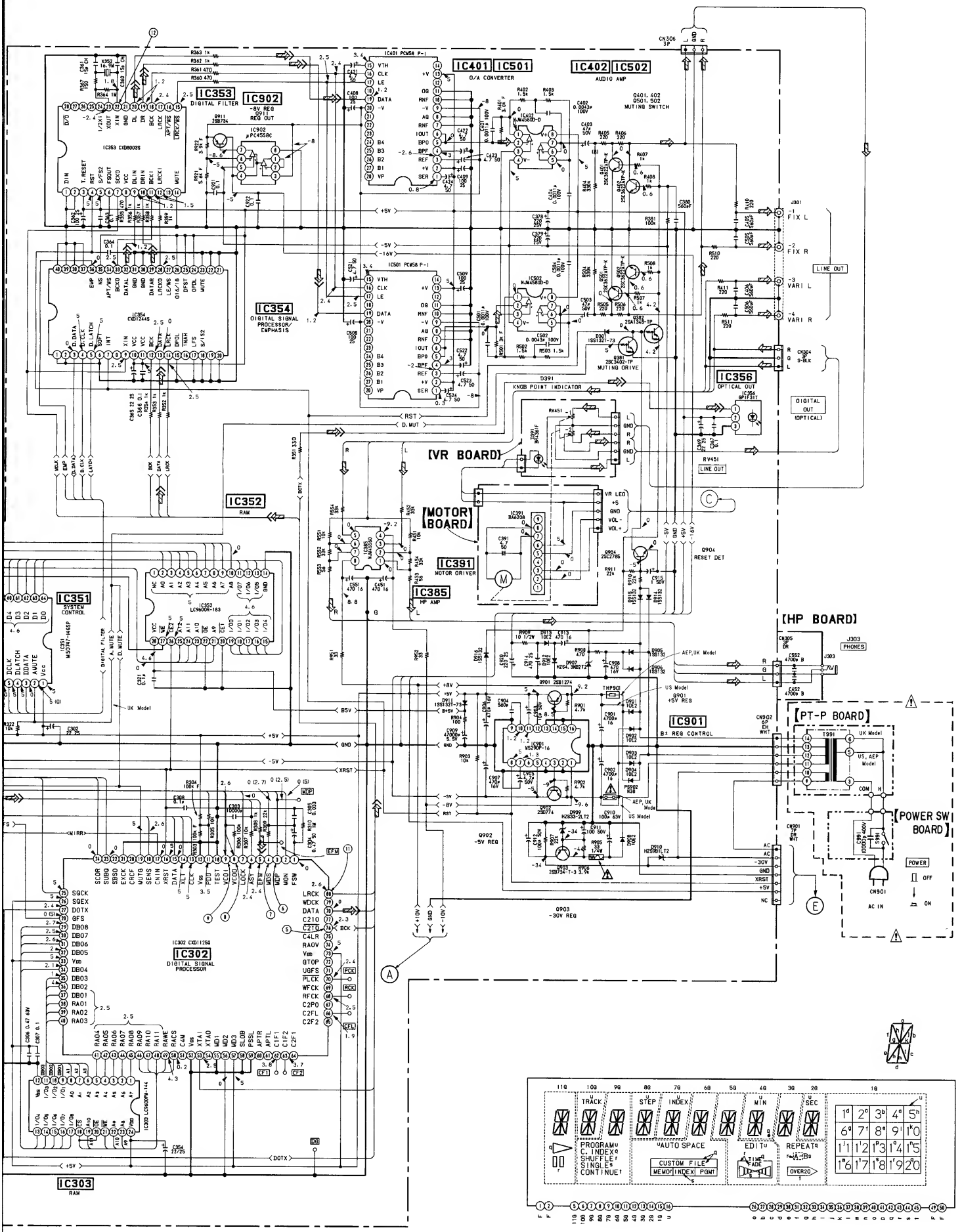




3-4. SCHEMATIC DIAGRAM



- 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 ¼ W or less unless otherwise specified.
- Δ : internal component.
- : fusibla resistor.

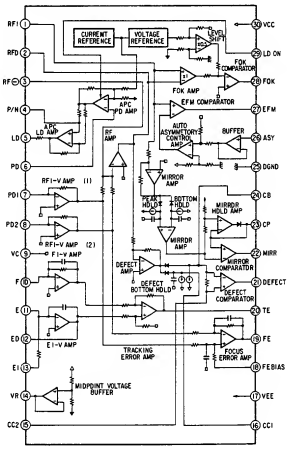


- ▬▬ : B +line.
- ▬ ▬ : B −line.
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no signal conditions.
  no mark: stop mode
  ( ): adjustment mode.
- Voltages are taken with a VOM. (Input inpedance 10MΩ)
  Voltage variations may be noted due to normal production torerances.
- Waveforms are taken with a oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
  signal path.

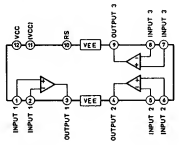
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

3-5. IC BLOCK DIAGRAM

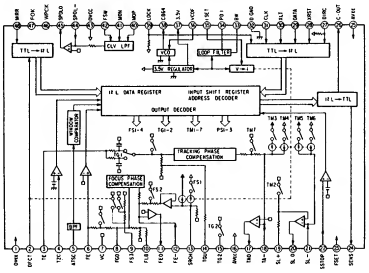
IC101 CXA1081S



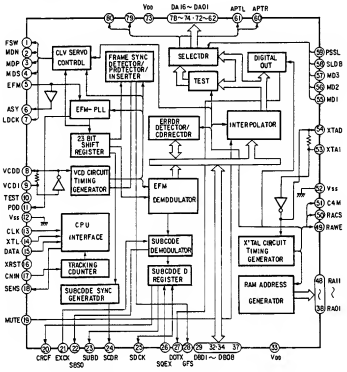
IC201, 202 CXA1291P



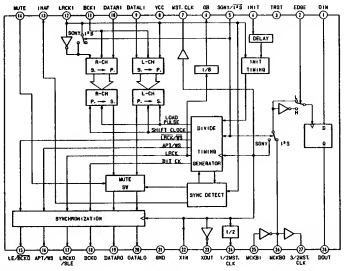
IC204 CXA1182S



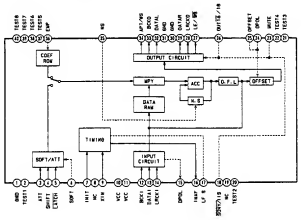
IC302 CXD1125Q



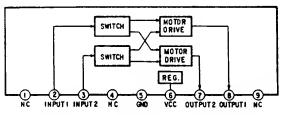
IC353 CXD1244S



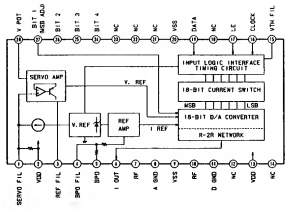
IC354 CXD1244S



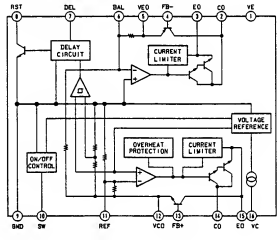
IC391 BA6208



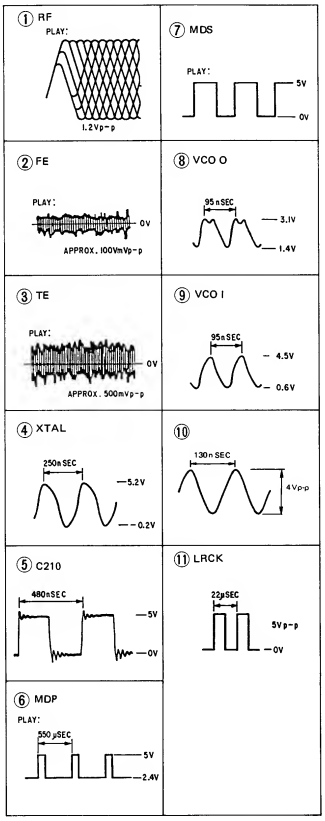
IC401, 501 PCM58P-1



IC901 M5290P



3-6. WAVEFORMS



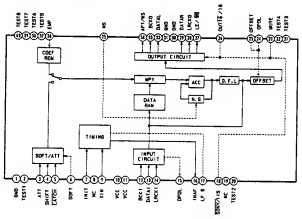
NOTE:

- The mechanical number in the supplied.
- The construction part are indicate ber in the remark
- Items marked "* they are seldon service. Some pated when orde

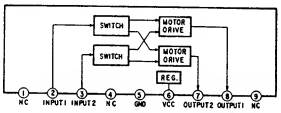
1. GENERAL

No.	Part No.
1	*4-922-980-01
2	4-922-978-01
3	4-922-979-01
4	4-922-977-01
5	4-927-608-01
6	X-4927-607-1
7	4-927-604-01
8	4-927-605-01
9	4-922-518-11
10	4-923-520-01
11	*4-927-610-01
12	*4-927-602-01
13	7-685-134-19
14	4-922-594-01
15	7-685-647-79
16	7-685-646-79
17	4-886-821-01
18	*4-922-943-01
19	4-927-611-11
20	7-682-547-04
21	*4-922-524-01
22	*4-922-523-01
23	*3-309-144-01
24	7-682-547-09
25	*3-703-244-00
26	4-909-982-01

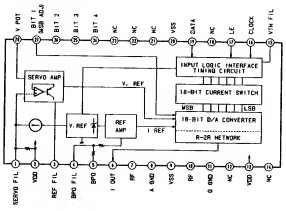
IC354 CXD1244S



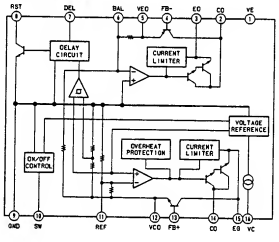
IC391 BA6208



IC401, 501 PCM58P-1



IC901 M5290P



3-6. WAVEFORMS

① RF
PLAY:
1.2Vp-p

② FE
PLAY:
0V
APPROX. 100mVp-p

③ TE
PLAY:
0V
APPROX. 500mVp-p

④ XTAL
250nSEC
5.2V
0.2V

⑤ C210
480nSEC
5V
0V

⑥ MDP
PLAY:
550μSEC
5V
2.4V

⑦ MDS
PLAY:
5V
0V

⑧ VCO O
95nSEC
3.1V
1.4V

⑨ VCO I
95nSEC
4.5V
0.6V

⑩
130nSEC
4Vp-p

⑪ LRCK
22μSEC
5Vp-p
0V

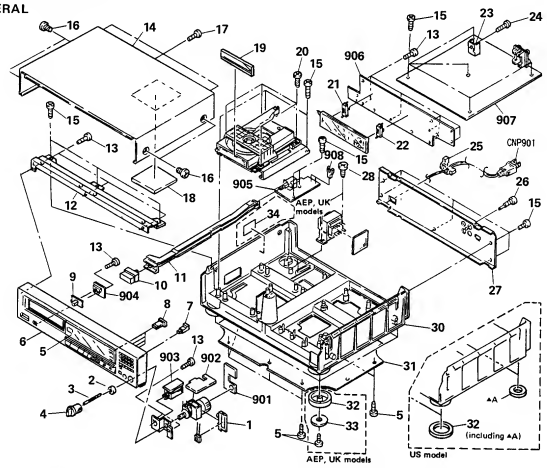
SECTION 4
EXPLODED VIEWS

NOTE:

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

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

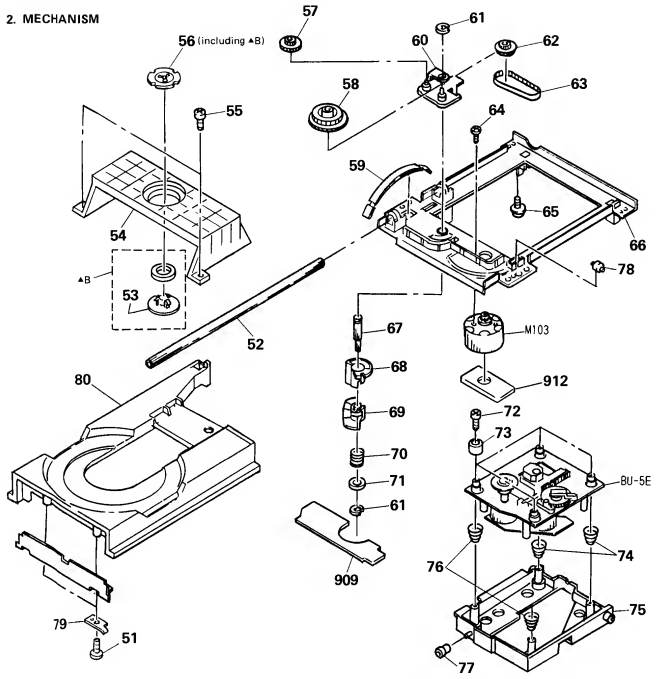
1. GENERAL



No.	Part No.	Description	Remarks
1	*4-922-980-01	HOLDER (LEO)	
2	4-922-978-01	HOLDER (FIBER)	
3	4-922-979-01	INDICATOR	
4	4-922-977-01	KNOB (HP)	
5	4-927-608-01	PLATE, INDICATION	
6	X-4927-607-1	PANEL ASSY, FRONT	
7	4-927-604-01	BUTTON (MC)	
8	4-927-605-01	BUTTON (MODE)	
9	4-922-518-11	KNOB (TIMER)	
10	4-923-520-01	KNOB, POWER	
11	*4-927-610-01	LEVER (POWER)	
12	*4-927-602-01	BRACKET (PANEL)	
13	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
14	4-922-594-01	CASE	
15	7-685-647-79	SCREW +BVTP 3X10 TYPE2 N-S	
16	7-685-646-79	SCREW, TAPPING	
17	4-886-821-01	SCREW, M3 CASE	
18	*4-922-943-01	OUMPER	
19	4-927-611-11	PANEL, LOADING	
20	7-682-547-04	SCREW +BVTT 3X6 (S)	
21	*4-922-524-01	HOLDER (LEFT)	
22	*4-922-523-01	HOLDER (RIGHT)	
23	*3-309-144-01	HEAT SINK	
24	7-682-547-09	SCREW +B 3X6	
25	*3-703-244-00	BUSHING (2104), CORD	
26	4-909-982-01	SCREW, TAPPING	

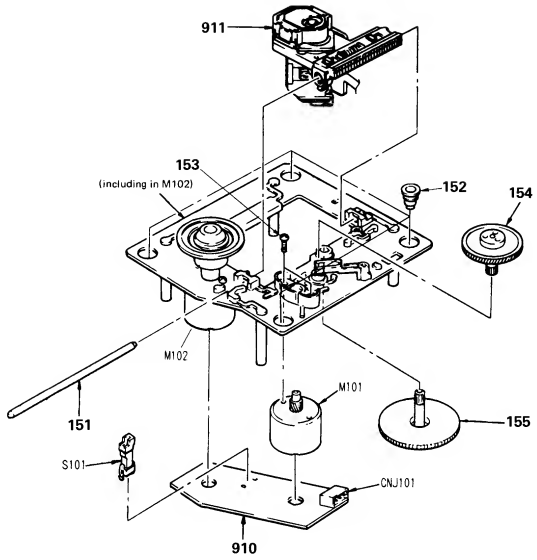
No.	Part No.	Description	Remarks
27	*4-927-601-11	(US)....PANEL, BACK	
	*4-927-601-51	(AEP)...PANEL, BACK	
	*4-927-601-61	(UK)....PANEL, BACK	
28	7-685-660-11	SCREW +BVTP 4X10 TYPE2 N-S	
30	*4-922-928-01	CHASSIS	
31	*4-922-927-62	PLATE, BOTTOM	
32	4-922-942-01	(US).....FOOT (FELT)	
	X-4922-544-1	(AEP,UK)...FOOT ASSY	
33	4-922-915-01	(AEP,UK)···FOOT (FELT)	
34	*4-885-838-01	(AEP,UK)...LABEL CLASS 1	
901	*1-628-408-11	PC BOARD, MOTOR	
902	*1-628-407-11	PC BOARD, VR	
903	*1-628-409-11	PC BOARD, H.P	
904	*1-628-410-11	PC BOARD, TIMER SW	
905	*1-628-412-11	PC BOARD, POWER SW	
906	*1-628-406-11	PC BOARD, OISPLAY	
907	*A-4617-060-A	(US).....MOUNTED PCB, MAIN	
	*A-4651-221-A	(AEP,UK)...MOUNTED PCB, MAIN	
908	*1-535-688-11	TERMINAL	
⚠CNP901	1-555-795-00	(AEP)...CORD, POWER	
⚠CNP901	1-556-035-00	(UK)....CORD, POWER	
⚠CNP901	1-557-577-11	(US)....CORD, POWER	

2. MECHANISM



No.	Part No.	Description	Remarks
51	7-685-647-79	SCREW +P 3X10 TYPE2 SLIT	
52	4-927-617-01	BAR, GUIDE	
53	*4-918-679-04	PULLEY, PRESS	
54	*4-927-638-03	HOLDER (A,P)	
55	7-621-770-67	SCREW +BVTT 2.6X6 (S)	
56	A-4665-024-A	MAGNET ASSY	
57	4-927-628-01	GEAR (C)	
58	4-927-620-01	GEAR (P)	
59	*4-927-648-01	SLIDER (GROUND)	
60	X-4927-604-1	ARM ASSY, SWING	
61	7-624-105-04	STOP RING 2.3, TYPE -E	
62	4-927-651-01	PULLEY (S)	
63	4-927-649-01	BELT	
64	7-621-775-08	SCREW +P 2.6X3	
65	*4-917-583-21	BRACKET, YOKE	
66	*4-927-641-01	CHASSIS (OUTSERT), MECAHNICAL	
67	4-927-622-01	SHAFT (S)	
68	4-927-624-01	CAM (L,A)	
69	4-927-635-01	CAM (L,B)	
70	3-659-338-00	SPRING, COMPRESSION	
71	4-927-654-01	WASHER (LIMITER)	
72	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
73	4-927-634-01	HOLDER (SP)	
74	4-917-541-01	SPRING (B)	
75	*4-927-640-03	HOLDER (BU-5)	
76	4-917-572-01	SPRING (B)	
77	4-927-631-01	ROLLER (L)	
78	4-927-627-01	ROLLER (S,G)	
79	*4-927-652-01	REINFORCEMENT	
80	*4-927-642-01	TABLE (EXL), DISK	
909	*1-629-360-11	PC BOARD, SWITCH	
912	*1-629-359-11	PC BOARD, L.MDTOR	
M103	A-4608-362-A	MOTOR (L) ASSY	

3. PICK UP BLOCK (BU-5E)



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

No.	Part No.	Description	Remarks
151	4-917-565-01	SHAFT, SLED	
152	4-917-584-01	INSULATOR	
153	7-621-255-15	SCREW +P 2X3	
154	4-917-567-01	GEAR (M)	
155	4-917-564-01	GEAR (P), FLATNESS	
910	*1-626-304-11	PC BOARD, SL/SP MDTOR	
911	⚠ 8-848-062-01	DEVICE, OPTICAL (KSS-150A)	
CNJ101	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P	
M101	X-4917-504-1	ASSY, MOTOR (SLED)	
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)	
S101	1-571-274-11	SWITCH, LEAF	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

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

CAPACITORS:
MF: μF, PF: μμF.

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

COILS
- MMH: mH, UH: μH

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

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

Ref.No.	Part No.	Description		
901	*1-628-408-11	PC BOARD, MOTOR		
902	*1-628-407-11	PC BOARD, VR		
903	*1-628-409-11	PC BOARD, H.P		
904	*1-628-410-11	PC BOARD, TIMER SW		
905	*1-628-412-11	PC BOARD, POWER SW		
906	*1-628-406-11	PC BOARD, OISPLAY		
907	*A-4617-060-A	(US).....MOUNTED PCB, MAIN		
	*A-4651-221-A	(AEP,UK)...MOUNTED PCB, MAIN		
908	*1-535-688-11	TERMINAL		
909	*1-629-360-11	PC BOARD, SWITCH		
910	*1-626-304-11	PC BOARD, SL/SP MOTOR		
911	⚠8-848-062-01	OEVICE, OPTICAL (KSS-150A)		
912	*1-629-359-11	PC BOARD, L.MOTOR		
C101	1-162-294-31	CERAMIC	0.001MF	10% 50V
C102	1-124-478-11	ELECT	100MF	20% 25V
C103	1-162-199-31	CERAMIC	10PF	5% 50V
C104	1-162-199-31	CERAMIC	10PF	5% 50V
C106	1-164-159-11	CERAMIC	0.1MF	50V
C107	1-130-477-00	MYLAR	0.0033MF	5% 50V
C108	1-136-159-00	FILM	0.033MF	5% 50V
C109	1-164-159-11	CERAMIC	0.1MF	50V
C110	1-126-233-11	ELECT	22MF	20% 25V
C111	1-136-153-00	FILM	0.01MF	5% 50V
C112	1-136-153-00	FILM	0.01MF	5% 50V
C113	1-126-233-11	ELECT	22MF	20% 25V
C114	1-164-159-11	CERAMIC	0.1MF	50V
C115	1-161-375-00	CERAMIC	0.0022MF	30% 16V
C116	1-130-480-00	MYLAR	0.0056MF	5% 50V
C117	1-124-902-00	ELECT	0.47MF	20% 50V
C200	1-161-379-00	CERAMIC	0.01MF	20% 16V
C201	1-124-478-11	ELECT	100MF	20% 25V
C202	1-124-478-11	ELECT	100MF	20% 25V
C203	1-164-159-11	CERAMIC	0.1MF	50V
C205	1-162-294-31	CERAMIC	0.001MF	10% 50V
C206	1-162-294-31	CERAMIC	0.001MF	10% 50V
C208	1-130-768-00	FILM	0.1MF	5% 63V
C210	1-164-159-11	CERAMIC	0.1MF	50V
C211	1-164-159-11	CERAMIC	0.1MF	50V
C212	1-124-478-11	ELECT	100MF	20% 25V
C213	1-124-478-11	ELECT	100MF	20% 25V
C215	1-126-233-11	ELECT	22MF	20% 25V
C216	1-123-382-00	ELECT	3.3MF	20% 50V
C217	1-130-768-00	FILM	0.1MF	5% 63V
C218	1-123-382-00	ELECT	3.3MF	20% 50V
C219	1-136-159-00	FILM	0.033MF	5% 50V
C220	1-130-768-00	FILM	0.1MF	5% 63V
C221	1-130-479-00	MYLAR	0.0047MF	5% 50V
C222	1-124-499-11	ELECT	1MF	20% 50V
C223	1-124-927-11	ELECT	4.7MF	20% 50V
C224	1-126-233-11	ELECT	22MF	20% 25V
C225	1-162-294-31	CERAMIC	0.001MF	10% 50V
C226	1-162-282-31	CERAMIC	100PF	10% 50V
C227	1-126-233-11	ELECT	22MF	20% 25V
C228	1-130-472-00	MYLAR	0.0012MF	5% 50V
C229	1-164-159-11	CERAMIC	0.1MF	50V
C230	1-130-479-00	MYLAR	0.0047MF	5% 50V
C231	1-126-233-11	ELECT	22MF	20% 25V
C232	1-164-159-11	CERAMIC	0.1MF	50V
C233	1-162-294-31	CERAMIC	0.001MF	10% 50V
C234	1-162-294-31	CERAMIC	0.001MF	10% 50V
C251	1-136-157-00	FILM	0.022MF	5% 50V
C302	1-126-233-11	ELECT	22MF	20% 25V
C303	1-161-379-00	CERAMIC	0.01MF	20% 16V
C304	1-124-902-00	ELECT	0.47MF	20% 50V
C305	1-136-159-00	FILM	0.033MF	5% 50V
C306	1-130-776-00	FILM	0.47MF	5% 63V
C307	1-164-159-11	CERAMIC	0.1MF	50V
C308	1-164-159-11	CERAMIC	0.1MF	50V
C321	1-164-159-11	CERAMIC	0.1MF	50V
C354	1-126-233-11	ELECT	22MF	20% 25V
C360	1-162-203-31	CERAMIC	15PF	5% 50V
C361	1-162-203-31	CERAMIC	15PF	5% 50V
C362	1-124-478-11	ELECT	100MF	20% 25V
C363	1-164-159-11	CERAMIC	0.1MF	50V
C364	1-164-159-11	CERAMIC	0.1MF	50V
C365	1-126-233-11	ELECT	22MF	20% 25V
C366	1-164-159-11	CERAMIC	0.1MF	50V
C367	1-164-159-11	CERAMIC	0.1MF	50V
C369	1-126-233-11	ELECT	22MF	20% 25V
C378	1-126-024-11	ELECT	220MF	20% 25V
C379	1-126-024-11	ELECT	220MF	20% 25V
C380	1-162-291-31	CERAMIC	560PF	10% 50V
C391	1-124-185-51	ELECT(NON POLAR)	4.7MF	20% 50V
C401	1-136-227-11	FILM	0.0011MF	5% 100V
C402	1-136-232-11	FILM	0.0043MF	5% 100V
C403	1-124-910-11	ELECT	47MF	20% 50V
C404	1-136-227-11	FILM	0.0011MF	5% 100V
C405	1-162-291-31	CERAMIC	560PF	10% 50V
C406	1-162-291-31	CERAMIC	560PF	10% 50V
C408	1-124-478-11	ELECT	100MF	20% 25V
C409	1-124-478-11	ELECT	100MF	20% 25V
C421	1-124-927-11	ELECT	4.7MF	20% 50V
C422	1-124-927-11	ELECT	4.7MF	20% 50V
C423	1-124-927-11	ELECT	4.7MF	20% 50V
C424	1-124-927-11	ELECT	4.7MF	20% 50V
C451	1-126-103-11	ELECT	470MF	20% 16V
C452	1-161-377-00	CERAMIC	0.0047MF	20% 16V
C501	1-136-227-11	FILM	0.0011MF	5% 100V
C502	1-136-232-11	FILM	0.0043MF	5% 100V
C503	1-124-910-11	ELECT	47MF	20% 50V
C504	1-136-227-11	FILM	0.0011MF	5% 100V
C505	1-162-291-31	CERAMIC	560PF	10% 50V
C506	1-162-291-31	CERAMIC	560PF	10% 50V
C508	1-124-478-11	ELECT	100MF	20% 25V
C509	1-124-478-11	ELECT	100MF	20% 25V
C521	1-124-927-11	ELECT	4.7MF	20% 50V
C522	1-124-927-11	ELECT	4.7MF	20% 50V
C523	1-124-927-11	ELECT	4.7MF	20% 50V
C524	1-124-927-11	ELECT	4.7MF	20% 50V
C551	1-126-103-11	ELECT	470MF	20% 16V
C552	1-161-377-00	CERAMIC	0.0047MF	20% 16V
C803	1-164-159-11	CERAMIC	0.1MF	50V
C804	1-126-177-11	ELECT	100MF	20% 6.3V
C805	1-164-159-11	CERAMIC	0.1MF	50V
C901	1-124-898-11	ELECT	4700MF	20% 16V
C902	1-124-898-11	ELECT	4700MF	20% 16V
C903	1-123-875-11	ELECT	10MF	20% 50V
C904	1-162-291-31	CERAMIC	560PF	10% 50V
C905	1-124-927-11	ELECT	4.7MF	20% 50V
C906	1-126-103-11	ELECT	470MF	20% 16V
C907	1-126-103-11	ELECT	470MF	20% 16V
C908	1-126-103-11	ELECT	470MF	20% 16V
C909	1-126-534-11	ELECT	47000MF	5.5V
C910	1-124-572-11	ELECT	100MF	20% 63V
C911	1-124-122-11	ELECT	100MF	20% 50V
C912	1-124-122-11	ELECT	100MF	20% 50V
C913	1-126-103-11	ELECT	470MF	20% 16V
C914	1-124-480-11	ELECT	470MF	20% 25V
C915	1-124-499-11	ELECT	1MF	20% 50V
C920	1-126-024-11	ELECT	220MF	20% 25V
C921	1-164-159-11	CERAMIC	0.1MF	50V
C922	1-164-159-11	CERAMIC	0.1MF	50V
C991	1-161-744-00	CERAMIC	0.01MF	400V
CN101	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P		
CN102	*1-564-710-11	PIN, CONNECTOR (SMALL TYPE) 8P		
CN201	*1-564-339-61	PIN, CONNECTOR 5P		
CN203	*1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P		
CN204	*1-564-706-31	PIN, CONNECTOR (SMALL TYPE) 4P		
CN301	*1-564-342-11	PIN, CONNECTOR 8P		
CN302	*1-564-339-00	PIN, CONNECTOR 5P		
CN303	*1-564-337-00	PIN, CONNECTOR 3P		
CN304	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
CN305	*1-564-337-00	PIN, CONNECTOR 3P		
CN306	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P		
CN901	*1-564-341-11	PIN, CONNECTOR 7P		
CN902	*1-564-509-11	PLUG, CONNECTOR 6P		
CNJ101	*1-564-720-21	PIN, CONNECTOR (SMALL TYPE) 4P		

Ref.No.	Part No.	Description
⚠CNP901	1-555-795-00	(AEP)...CORD, POWER
⚠CNP901	1-556-035-00	(UK).....CORD, POWER
⚠CNP901	1-557-577-11	(US).....CORD, POWER
D301	8-719-107-94	DIODE 1SS132
D391	8-719-970-49	DIODE BAA361F
D901	8-719-200-77	DIODE 10E2N
D902	8-719-200-77	DIODE 10E2N
D903	8-719-200-77	DIODE 10E2N
D904	8-719-200-77	DIODE 10E2N
D905	8-719-107-94	DIODE 1SS132
D906	8-719-107-94	DIODE 1SS132
D907	8-719-109-75	DIODE RO4.3ES-82
D908	8-719-200-77	DIODE 10E2N
D909	8-719-934-26	DIODE HZS33-2L
D910	8-719-934-60	DIODE HZS9B1L
D911	8-719-107-94	DIODE 1SS132
D912	8-719-200-77	DIODE 10E2N
D913	8-719-200-77	DIODE 10E2N
D914	8-719-107-94	DIODE 1SS132
D915	8-719-107-94	DIODE 1SS132
D916	8-719-107-94	DIODE 1SS132
FL0801	1-519-476-11	INDICATOR TU8E, FLUORESCENT
IC101	8-752-031-80	IC CXA1081S
IC201	8-752-035-28	IC CXA-1291P
IC202	8-752-035-28	IC CXA-1291P
IC204	8-752-032-33	IC CXA1182S
IC302	8-752-328-62	IC CXD1125Q
IC303	8-752-323-64	IC CXK5816M-12L
IC351	8-759-631-48	IC M50747-146SP
IC352	8-759-820-64	IC LC9600R-183
IC353	8-759-978-53	IC CXD-8003S
IC354	8-752-328-61	IC CXO1244S
IC356	8-759-977-71	IC GP1F31T
IC385	8-759-981-85	IC RC4556D
IC391	8-759-962-08	IC 8A6208
IC401	8-759-984-98	IC PCM58P-1
IC402	8-759-710-59	IC NJM4580D-0
IC501	8-759-984-98	IC PCM58P-1
IC502	8-759-710-59	IC NJM4580D-0
IC801	8-752-808-95	IC CXP5058M-603Q
IC802	8-749-920-03	IC GP1U52
IC901	8-759-630-21	IC M5290P-16
IC902	8-759-145-58	IC UPC4558C
I8101	1-233-171-11	COMPOSITION CIRCUIT BLOCK
I8102	1-233-171-11	COMPOSITION CIRCUIT BLOCK
J301	1-566-817-11	JACK, PIN 4P (LINE OUT)
J303	1-563-727-11	(US).....JACK, LARGE TYPE (PHONES)
J303	1-563-727-41	(AEP,UK)...JACK, LARGE TYPE (PHONES)
M101	X-4917-504-1	ASSY, MOTOR (SLED)
M102	X-4917-523-1	ASSY, MOTOR (SPINDLE)
M103	A-4608-362-A	MOTOR (L) ASSY
PS902	⚠1-532-675-00	(AEP,UK)...IN LINK
Q101	8-729-140-97	TRANSISTOR 2SB734-34
Q205	8-729-900-80	TRANSISTOR 2SC3402
Q206	8-729-900-80	TRANSISTOR 2SC3402

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.	Oescription			
Q381	8-729-900-80	TRANSISTOR 2SC3402			
Q382	8-729-900-61	TRANSISTOR 2SA1348			
Q401	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q402	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q501	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q502	8-729-107-99	TRANSISTOR 2SC3622A-K			
Q801	8-729-902-11	TRANSISTOR 2SC2021			
Q802	8-729-900-45	TRANSISTOR OTC114EF			
Q901	8-729-820-15	TRANSISTOR 2SB1274-RS			
Q902	8-729-177-42	TRANSISTOR 2SO774-3			
Q903	8-729-140-97	TRANSISTOR 2SB734-34			
Q904	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q911	8-729-140-97	TRANSISTOR 2SB734-34			
R101	1-247-806-11	CARBON	91	5%	1/4W
R102	1-249-512-11	CARBON	22	5%	1/4W
R103	1-249-417-11	CARBON	1K	5%	1/4W
R104	1-249-433-11	CARBON	22K	5%	1/4W
R106	1-249-428-11	CARBON	8.2K	5%	1/4W
R107	1-247-860-11	CARBON	16K	5%	1/4W
R108	1-249-425-11	CARBON	4.7K	5%	1/4W
R109	1-249-425-11	CARBON	4.7K	5%	1/4W
R110	1-249-432-11	CARBON	18K	5%	1/4W
R111	1-249-432-11	CARBON	18K	5%	1/4W
R112	1-249-441-11	CARBON	100K	5%	1/4W
R201	1-249-393-11	CARBON	10	5%	1/4W
R205	1-249-441-11	CARBON	100K	5%	1/4W
R206	1-247-881-00	CARBON	120K	5%	1/4W
R208	1-249-441-11	CARBON	100K	5%	1/4W
R210	1-247-881-00	CARBON	120K	5%	1/4W
R211	1-249-437-11	CARBON	47K	5%	1/4W
R212	1-249-435-11	CARBON	33K	5%	1/4W
R214	1-249-423-11	CARBON	3.3K	5%	1/4W
R217	1-247-881-00	CARBON	120K	5%	1/4W
R219	1-249-428-11	CARBON	8.2K	5%	1/4W
R222	1-247-882-11	CARBON	130K	5%	1/4W
R223	1-249-393-11	CARBON	10	5%	1/4W
R224	1-249-393-11	CARBON	10	5%	1/4W
R225	1-249-424-11	CARBON	3.9K	5%	1/4W
R228	1-247-896-11	CARBON	510K	5%	1/4W
R229	1-249-431-11	CARBON	15K	5%	1/4W
R230	1-249-440-11	CARBON	82K	5%	1/4W
R231	1-249-440-11	CARBON	82K	5%	1/4W
R232	1-249-429-11	CARBON	10K	5%	1/4W
R233	1-249-414-11	CARBON	560	5%	1/4W
R234	1-249-441-11	CARBON	100K	5%	1/4W
R235	1-215-434-00	METAL	3.6K	1%	1/6W
R236	1-249-433-11	CARBON	22K	5%	1/4W
R237	1-249-441-11	CARBON	100K	5%	1/4W
R238	1-249-417-11	CARBON	1K	5%	1/4W
R239	1-249-417-11	CARBON	1K	5%	1/4W
R240	1-249-417-11	CARBON	1K	5%	1/4W
R241	1-249-417-11	CARBON	1K	5%	1/4W
R243	1-247-854-11	CARBON	9.1K	5%	1/4W
R244	1-247-854-11	CARBON	9.1K	5%	1/4W
R245	1-249-429-11	CARBON	10K	5%	1/4W
R301	1-247-903-00	CARBON	1M	5%	1/4W
R303	1-215-469-00	METAL	100K	1%	1/6W
R304	1-215-469-00	METAL	100K	1%	1/6W

Ref.No.	Part No.	Oescription			
R305	1-249-429-11	CARBON	10K	5%	1/4W
R306	1-249-441-11	CARBON	100K	5%	1/4W
R307	1-249-429-11	CARBON	10K	5%	1/4W
R308	1-249-417-11	CARBON	1K	5%	1/4W
R309	1-249-433-11	CARBON	22K	5%	1/4W
R310	1-247-903-00	CARBON	1M	5%	1/4W
R311	1-249-429-11	CARBON	10K	5%	1/4W
R312	1-249-429-11	CARBON	10K	5%	1/4W
R313	1-249-429-11	CARBON	10K	5%	1/4W
R314	1-249-429-11	CARBON	10K	5%	1/4W
R315	1-249-429-11	CARBON	10K	5%	1/4W
R316	1-249-429-11	CARBON	10K	5%	1/4W
R317	1-249-429-11	CARBON	10K	5%	1/4W
R318	1-249-429-11	CARBON	10K	5%	1/4W
R319	1-249-429-11	CARBON	10K	5%	1/4W
R320	1-249-429-11	CARBON	10K	5%	1/4W
R321	1-249-429-11	CARBON	10K	5%	1/4W
R322	1-249-429-11	CARBON	10K	5%	1/4W
R323	1-249-429-11	CARBON	10K	5%	1/4W
R351	1-249-411-11	CARBON	330	5%	1/4W
R352	1-249-417-11	CARBON	1K	5%	1/4W
R353	1-249-417-11	CARBON	1K	5%	1/4W
R354	1-249-417-11	CARBON	1K	5%	1/4W
R355	1-249-413-11	CARBON	470	5%	1/4W
R356	1-249-417-11	CARBON	1K	5%	1/4W
R357	1-249-417-11	CARBON	1K	5%	1/4W
R358	1-249-417-11	CARBON	1K	5%	1/4W
R359	1-249-417-11	CARBON	1K	5%	1/4W
R360	1-249-413-11	CARBON	470	5%	1/4W
R361	1-249-413-11	CARBON	470	5%	1/4W
R362	1-249-417-11	CARBON	1K	5%	1/4W
R363	1-249-417-11	CARBON	1K	5%	1/4W
R364	1-247-903-00	CARBON	1M	5%	1/4W
R367	1-249-407-11	CARBON	150	5%	1/4W
R381	1-249-441-11	CARBON	100K	5%	1/4W
R401	1-215-432-00	METAL	3K	1%	1/6W
R402	1-249-419-11	CARBON	1.5K	5%	1/4W
R403	1-249-419-11	CARBON	1.5K	5%	1/4W
R404	1-247-891-00	CARBON	330K	5%	1/4W
R405	1-249-409-11	CARBON	220	5%	1/4W
R406	1-249-409-11	CARBON	220	5%	1/4W
R407	1-249-417-11	CARBON	1K	5%	1/4W
R408	1-249-417-11	CARBON	1K	5%	1/4W
R410	1-249-409-11	CARBON	220	5%	1/4W
R411	1-249-409-11	CARBON	220	5%	1/4W
R451	1-249-429-11	CARBON	10K	5%	1/4W
R452	1-249-435-11	CARBON	33K	5%	1/4W
R453	1-249-402-11	CARBON	56	5%	1/4W
R454	1-249-435-11	CARBON	33K	5%	1/4W
R501	1-215-432-00	METAL	3K	1%	1/6W
R502	1-249-419-11	CARBON	1.5K	5%	1/4W
R503	1-249-419-11	CARBON	1.5K	5%	1/4W
R504	1-247-891-00	CARBON	330K	5%	1/4W
R505	1-249-409-11	CARBON	220	5%	1/4W
R506	1-249-409-11	CARBON	220	5%	1/4W
R507	1-249-417-11	CARBON	1K	5%	1/4W
R508	1-249-417-11	CARBON	1K	5%	1/4W

Ref.No.	Part No.	Description			
R510	1-249-409-11	CARBON	220	5%	1/4W
R511	1-249-409-11	CARBON	220	5%	1/4W
R551	1-249-429-11	CARBON	10K	5%	1/4W
R552	1-249-435-11	CARBON	33K	5%	1/4W
R553	1-249-402-11	CARBON	56	5%	1/4W
R554	1-249-435-11	CARBON	33K	5%	1/4W
RB01	1-249-422-11	CARBON	2.7K	5%	1/4W
RB02	1-249-422-11	CARBON	2.7K	5%	1/4W
R803	1-249-422-11	CARBON	2.7K	5%	1/4W
R804	1-249-422-11	CARBON	2.7K	5%	1/4W
R805	1-249-422-11	CARBON	2.7K	5%	1/4W
R806	1-249-422-11	CARBON	2.7K	5%	1/4W
R807	1-249-422-11	CARBON	2.7K	5%	1/4W
RB08	1-249-422-11	CARBON	2.7K	5%	1/4W
R809	1-249-424-11	CARBON	3.9K	5%	1/4W
R810	1-249-424-11	CARBON	3.9K	5%	1/4W
R811	1-249-424-11	CARBON	3.9K	5%	1/4W
R812	1-249-424-11	CARBON	3.9K	5%	1/4W
R813	1-249-424-11	CARBON	3.9K	5%	1/4W
R814	1-249-424-11	CARBON	3.9K	5%	1/4W
R815	1-249-424-11	CARBON	3.9K	5%	1/4W
R816	1-249-424-11	CARBON	3.9K	5%	1/4W
R817	1-249-427-11	CARBON	6.8K	5%	1/4W
R818	1-249-427-11	CARBON	6.8K	5%	1/4W
R819	1-249-427-11	CARBON	6.8K	5%	1/4W
R820	1-249-427-11	CARBON	6.8K	5%	1/4W
R821	1-249-427-11	CARBON	6.8K	5%	1/4W
R822	1-249-427-11	CARBON	6.8K	5%	1/4W
RB23	1-249-427-11	CARBON	6.8K	5%	1/4W
R824	1-249-427-11	CARBON	6.8K	5%	1/4W
R825	1-249-432-11	CARBON	18K	5%	1/4W
R826	1-249-432-11	CARBON	18K	5%	1/4W
R827	1-249-432-11	CARBON	18K	5%	1/4W
RB28	1-249-432-11	CARBON	18K	5%	1/4W
R829	1-249-432-11	CARBON	18K	5%	1/4W
R830	1-249-432-11	CARBON	18K	5%	1/4W
R831	1-249-432-11	CARBON	18K	5%	1/4W
R832	1-249-432-11	CARBON	18K	5%	1/4W
R833	1-249-429-11	CARBON	10K	5%	1/4W
R834	1-249-429-11	CARBON	10K	5%	1/4W
R835	1-249-429-11	CARBON	10K	5%	1/4W
R836	1-249-429-11	CARBON	10K	5%	1/4W
R837	1-249-429-11	CARBON	10K	5%	1/4W
R838	1-249-429-11	CARBON	10K	5%	1/4W
R839	1-249-429-11	CARBON	10K	5%	1/4W

Ref.No.	Part No.	Description			
R840	1-249-429-11	CARBON	10K	5%	1/4W
R841	1-249-429-11	CARBON	10K	5%	1/4W
R842	1-249-429-11	CARBON	10K	5%	1/4W
R843	1-249-429-11	CARBON	10K	5%	1/4W
R845	1-249-429-11	CARBON	10K	5%	1/4W
R846	1-249-429-11	CARBON	10K	5%	1/4W
RB47	1-249-429-11	CARBON	10K	5%	1/4W
R848	1-249-429-11	CARBON	10K	5%	1/4W
R849	1-249-441-11	CARBON	100K	5%	1/4W
R850	1-249-429-11	CARBON	10K	5%	1/4W
R851	1-249-411-11	CARBON	330	5%	1/4W
R901	1-249-425-11	CARBON	4.7K	5%	1/4W
R902	1-249-425-11	CARBON	4.7K	5%	1/4W
R903	1-249-429-11	CARBON	10K	5%	1/4W
R904	1-249-405-11	CARBON	100	5%	1/4W
R905 ⚠	1-212-869-00	FUSIBLE	33	5%	1/4W F
R906	1-249-424-11	CARBON	3.9K	5%	1/4W
R907	1-249-433-11	CARBON	22K	5%	1/4W
R908	1-249-413-11	CARBON	470	5%	1/4W
R909	1-247-727-11	CARBON	10	5%	1/2W
R910	1-249-433-11	CARBON	22K	5%	1/4W
R911	1-249-433-11	CARBON	22K	5%	1/4W
R921	1-215-439-00	METAL	5.6K	1%	1/6W
R922	1-215-435-00	METAL	3.9K	1%	1/6W
R951	1-247-733-11	CARBON	33	5%	1/2W
R952	1-247-733-11	CARBON	33	5%	1/2W

RV101	1-238-398-11	RES, ADJ, METAL GLAZE 20K
RV102	1-228-995-00	RES, ADJ, CARBON 20K
RV103	1-228-995-00	RES, ADJ, CARBON 20K
RV104	1-238-396-11	RES, ADJ, METAL GLAZE 5K
RV201	1-228-990-00	RES, ADJ, METAL GLAZE 1K
RV451	1-238-315-21	RES, VAR, CARBON 10K/10K (LINE OUT)
S101	1-571-274-11	SWITCH, LEAF
S251	1-571-736-11	SWITCH, LEAF
S252	1-571-736-11	SWITCH, LEAF
S801	1-554-596-21	SWITCH, KEY BOARD (1)
S802	1-554-596-21	SWITCH, KEY BOARD (2)
S803	1-554-596-21	SWITCH, KEY BOARD (3)
S804	1-554-596-21	SWITCH, KEY BOARD (4)
S805	1-554-596-21	SWITCH, KEY BOARD (5)
S806	1-554-596-21	SWITCH, KEY BOARD (6)
S807	1-554-596-21	SWITCH, KEY BOARD (7)
SB08	1-554-596-21	SWITCH, KEY BOARD (8)
S809	1-554-596-21	SWITCH, KEY BOARD (9)

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
S810	1-554-596-21	SWITCH, KEY BOARD (10)
S811	1-554-596-21	SWITCH, KEY BOARD (11)
S812	1-554-596-21	SWITCH, KEY BOARD (12)
S813	1-554-596-21	SWITCH, KEY BOARD (13)
S814	1-554-596-21	SWITCH, KEY BOARD (14)
S815	1-554-596-21	SWITCH, KEY BOARD (15)
S816	1-554-596-21	SWITCH, KEY BOARD (16)
S817	1-554-596-21	SWITCH, KEY BOARD (17)
S818	1-554-596-21	SWITCH, KEY BOARD (18)
S819	1-554-596-21	SWITCH, KEY BOARD (19)
S820	1-554-596-21	SWITCH, KEY BOARD (20)
S821	1-554-596-21	SWITCH, KEY BDARD (C.INDEX)
S822	1-554-596-21	SWITCH, KEY BOARD (>20)
S823	1-554-596-21	SWITCH, KEY BOARD (EDIT)
S824	1-554-596-21	SWITCH, KEY BOARD (ERASE)
S825	1-554-596-21	SWITCH, KEY BOARD (CLEAR)
S826	1-554-596-21	SWITCH, KEY BOARD (CHECK)
S827	1-554-596-21	SWITCH, KEY BOARD (▶▶)
S828	1-554-596-21	SWITCH, KEY BOARD (◀◀)
S829	1-554-596-21	SWITCH, KEY BOARD (FILE RECALL)
S830	1-554-596-21	SWITCH, KEY BOARD (FADER)
S831	1-554-596-21	SWITCH, KEY BOARD (▮▮)
S832	1-554-596-21	SWITCH, KEY BOARD (■)
S833	1-554-596-21	SWITCH, KEY BDARD (I◀◀)
S834	1-554-596-21	SWITCH, KEY BOARD (▶▶I)
S835	1-554-596-21	SWITCH, KEY BOARD (FILE)
S836	1-554-596-21	SWITCH, KEY BOARD (TIME)
S837	1-554-596-21	SWITCH, KEY BOARD (AUTO SPACE)
S838	1-554-596-21	SWITCH, KEY BOARD (REPEAT)
S839	1-554-596-21	SWITCH, KEY BOARD (▶)
S840	1-554-596-21	SWITCH, KEY BOARD (▲)
S841	1-554-596-21	SWITCH, KEY BOARD (CONTINUE)
S842	1-554-596-21	SWITCH, KEY BOARD (SHUFFLE)
S843	1-554-596-21	SWITCH, KEY BOARD (PGM)
S845	1-554-481-00	SWITCH, SLIDE (TIMER)
S991	1-570-156-11	SWITCH, PUSH (AC POWER)(1 KEY)(POWER)
T991 ⚠	1-449-578-11	(US).....TRANSFORMER, POWER
T991 ⚠	1-449-579-11	(AEP,UK)...TRANSFORMER, POWER
THP901	1-808-065-11	(AEP,UK)...THERMISTOR, POSITIVE
X301	1-577-157-11	VIBRATOR, CERAMIC (8MHz)
X352	1-567-926-11	VIBRATOR, CRYSTAL (16.9MHz)
X801	1-577-082-11	VIBRATOR, CERAMIC (4MHz)

ACCESSORY & PACKING MATERIAL

1-465-048-11	REMOTE COMMANDER (RM-D570)
1-558-543-11	CORD, CONNECTION
1-559-533-11	CORD, CONNECTION
3-786-457-11	(AEP,UK)...MANUAL, INSTRUCTION
3-786-457-21	(US).....MANUAL, INSTRUCTION
3-786-457-41	(AEP).....MANUAL, INSTRUCTION
*3-704-343-01	SHEET (STANDARD), PROTECTION
4-923-540-01	CUSHION
*4-927-645-11	INDIVIDUAL CARTON
4-928-079-01	COVER, BATTERY
*4-929-016-01	STOPPER, DISK TABLE

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