

CDP-X339ES

SERVICE MANUAL

*US Model
Canadian Model
AEP Model
UK Model*



SPECIFICATIONS

Compact disc player

Laser	Semiconductor laser ($\lambda = 780 \text{ nm}$) Emission duration: continuous
Laser output	Max. $44.6 \mu\text{W}$ This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	2 Hz–20 kHz $\pm 0.3 \text{ dB}$
Signal to noise ratio	More than 116 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0018%
Channel separation	More than 110 dB

Outputs

LINE OUT (FIXED) (phono jacks)	Output level 2V (at 50 kilohms) Load impedance over 10 kilohms
LINE OUT (VARIABLE) (phono jacks)	Output level max. 2V (at 50 kilohms) Load impedance over 50 kilohms
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	AEP model: 220–230 V AC, 50/60 Hz UK model: 240 V AC, 50/60 Hz US, Canadian model: 120 V AC, 60 Hz
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Model Name Using Similar Mechanism	NEW
CD Transport Mechanism Type	CDM19E-6H50
Optical Pick-up Block Type	BU-6H

Power consumption	23 W
Dimension (approx., including projections)	AEP, UK model: Approx. 430×125×375 mm (w/h/d) (17×5×14 7/8 inches) US, Canadian model: Approx. 470×125×375 mm (w/h/d) (18 5/8×5×14 7/8 inches)
Weight	AEP, UK model: Approx. 11 kg (24 lbs 4 oz) US, Canadian model: Approx. 12 kg (26 lbs 7.3 oz)

Remote commander (RM-D991)

Remote control system	Infrared control
Power requirements	3V DC with two batteries size AA (IEC designation R6)
Dimensions	Approx. 62×18×175 mm (w/h/d) (2 1/2×23/32×7 inches)
Weight	Approx. 130 g (4.6 oz) Including batteries

Supplied accessories

Connecting cord	1 (2 phono plugs→2 phono plugs)
Remote commander	1
Sony SUM-3(NS) batteries	2
Screws	8 (US, Canadian model)

Design and specifications are subject to change without notice.



COMPACT DISC PLAYER
SONY®

SAFETY CHECK-OUT (US Model)

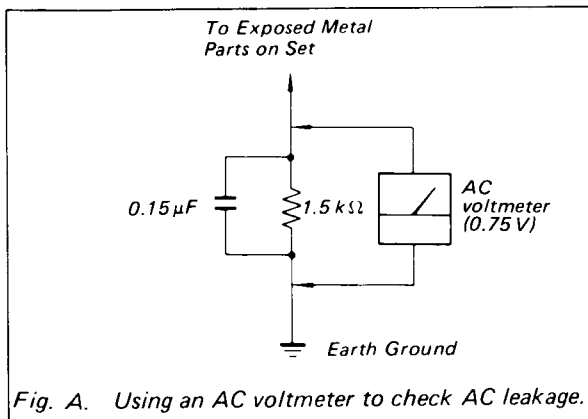
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

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 microamperes). Leakage current can be measured by any one of three methods.

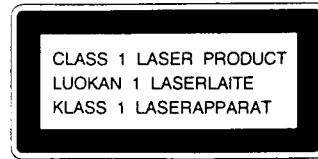
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means 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)



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.

For the United Kingdom and European countries



This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT label is located on the rear exterior.

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

The laser diode in the optical pick-up block may suffer electrostatic breakdown because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic breakdown and also use the procedure in the printed matter which is included in the repair parts.

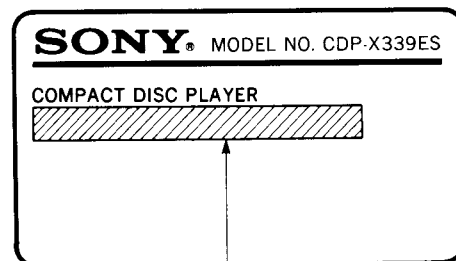
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

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

MODEL IDENTIFICATION

—Model Number Label—



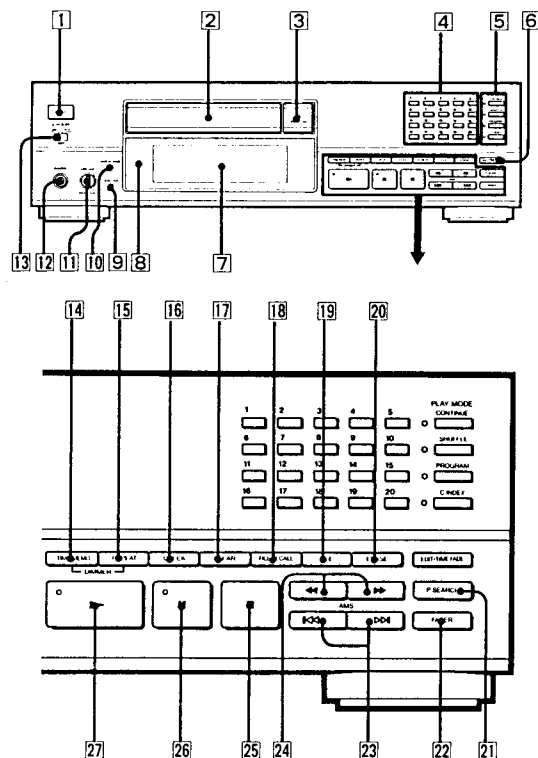
US, CND model: AC: 120V 60Hz 23W
AEP model: AC: 220-230V~50/60Hz
UK model: AC: 240V~50/60Hz

CND : Canadian model

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHEMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

1-1. IDENTIFYING THE PARTS



Front Panel

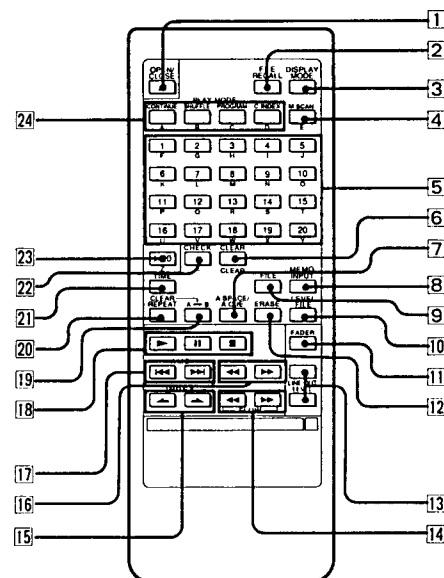
Refer to the pages indicated in () for details.

- 1) POWER switch (22)
- 2) Disc tray (22)
- 3) OPEN/CLOSE button (22)
- 4) Numeric buttons (26)
- 5) PLAY MODE buttons
 - CONTINUE button and indicator (22)
 - SHUFFLE button and indicator (32)
 - PROGRAM button and indicator (46)
 - C. (custom) INDEX button and indicator (92)
- 6) EDIT/TIME FADE button (70)
- 7) Display window (24)
- 8) Remote sensor
- 9) LEVEL FILE button (98)
- 10) DISPLAY MODE button (24)
- 11) LINE OUT/PHONE LEVEL control (22)
- 12) PHONES jack (22)
- 13) TIMER switch (100)
- 14) TIME/MEMO button (24)
- 15) REPEAT button (42)
- 16) CHECK (program check) button (46)
- 17) CLEAR (program clear) button (36, 46)
- 18) FILE RECALL button (78)
- 19) FILE (custom file) button (78)
- 20) ERASE (memory erase) button (78)
- 21) P. (peak) SEARCH button (74)
- 22) FADER (fade in/fade out) button (72)
- 23) AMS* buttons (26)
- 24) AMS* (manual search) buttons (28)
- 25) (stop) button (22)
- 26) (pause) button and indicator (22)
- 27) (play) button and indicator (22)

* AMS is the abbreviation of Automatic Music Sensor.

Remote Commander

Refer to the pages indicated in () for details.



- 1) OPEN/CLOSE button (22)
- 2) FILE RECALL button (78)
- 3) DISPLAY MODE button (24)
- 4) M. SCAN button (38)
- 5) Numeric buttons (26)
- 6) CLEAR button (36, 46)
- 7) A. SPACE (auto space)/A.CUE (auto cue) button (30, 72)
- 8) MEMO INPUT button (80)
- 9) FILE (custom file) button (78)
- 10) LEVEL FILE button (98)
- 11) FADER (fade in/fade out) button (72)
- 12) ERASE button (78)
- 13) LINE OUT LEVEL (line out/headphones level) buttons (22)
- 14) SLOW (low speed manual search) buttons (28)
- 15) INDEX buttons (28)
- 16) (manual search) buttons (28)
- 17) AMS* buttons (26)
- 18) (stop) button (22)
- 19) (pause) button (22)
- 20) (play) button (22)
- 21) A-B repeat button (44)
- 22) REPEAT (repeat/A-B repeat clear) button (42)
- 23) TIME button (24)
- 24) CHECK button (46)
- 25) > 20 (over 20) button (26)
- 26) PLAY MODE buttons
 - CONTINUE button (22)
 - SHUFFLE button (32)
 - PROGRAM button (46)
 - C. INDEX button (92)

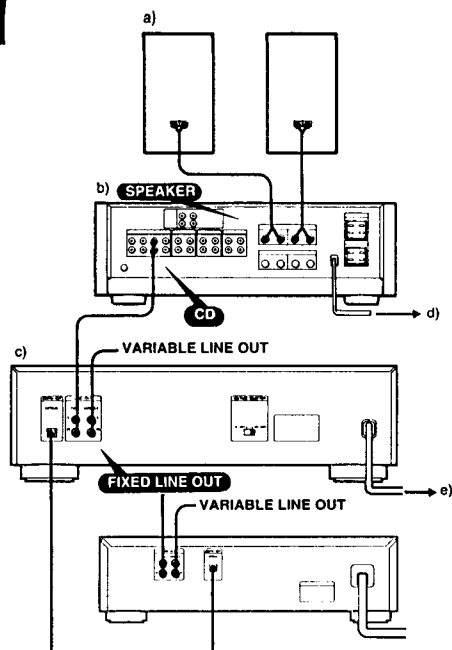
Buttons with orange letters (A, B, - - - -) are for writing a disc memo (page 80).

* AMS is the abbreviation of Automatic Music Sensor.

SECTION 1 GENERAL

This section is extracted from instruction manual.

1-2. HOOKING UP THE SYSTEM

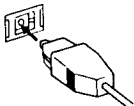
A

DIGITAL OUT (OPTICAL)

1



2



You can connect the player with analog or digital signal depending on your amplifier or D/A converter.

Before hooking up the player:

- Turn off the power of each unit before making connections.
- Connect the AC power cord last. For the model supplied with the plug adaptor, use it if the plug of the power cord does not match your wall outlet.
- Be sure to insert the plugs firmly into the jacks. Loose connection may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.
- Cord plugs and jacks are color coded: Red plugs and jacks are for the right channel (R) and white ones for the left channel (L).

Connecting Directly to an Amplifier

Proceed as shown in Fig. A.

- a) Speaker system
- b) Amplifier
- c) Player
- d) to a wall outlet
- e) to an AC outlet

Note on LINE OUT

FIXED: The output level is fixed.

VARIABLE: The output level can be adjusted with the LINE OUT/PHONE LEVEL control or LINE OUT LEVEL on the remote commander.

- Connect your system to the VARIABLE output when using Level files.
- Note, if the LINE OUT/PHONE LEVEL control or the LINE OUT LEVEL on the remote commander is turned while recording, the recording level will change even when it is preset on the tape deck.

Amplifier or D/A converter

When connecting to an amplifier or D/A converter with OPTICAL IN, use DIGITAL OUT (OPTICAL) instead of LINE OUT. See the figures on the left.

1 Take off the cap.

2 Plug in firmly.

Note on DIGITAL OUT (OPTICAL)

When connecting with DIGITAL OUT (OPTICAL), use the POC-15 audio optical connecting cord (not supplied).

Please note that when the digital out is connected, fade out, fade in, time fade and level file functions cannot be used.

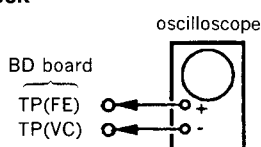
SECTION 2

ELECTRICAL BLOCK CHECKING

Note:

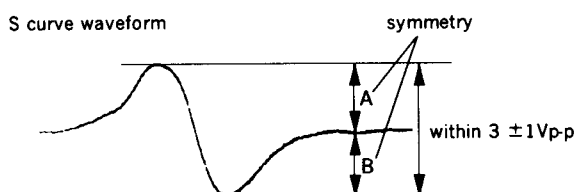
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.

S Curve Check



Procedure:

1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) with lead wire.
3. Turned Power switch on and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical between A and B. And confirm peak to peak level within $3 \pm 1V_{p-p}$.

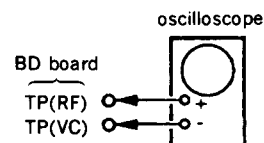


5. After check, remove the lead wire connected in step 2.

Note: • Try to measure several times to make sure that the ratio of A : B or B : A is more than 10 : 7.

- Take sweep time as long as possible and light up the brightness to obtain best waveform.

RF Level Check



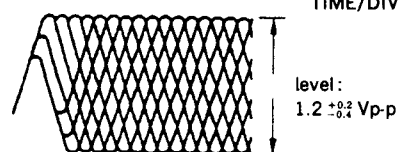
Procedure:

1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

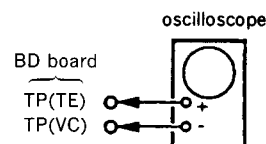
Note:

Clear RF signal waveform means that the shape "◇" can be clearly distinguished at the center of the waveform.

RF signal waveform



E-F Balance Check



Procedure:

1. Connect test point TP (ADJ) to ground and TP (TEI) to TP (VC) with lead wires.
2. Connect oscilloscope to test point TP (TE) on BD board.
3. Turn Power switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V, and check this level.

Traverse oscilloscope

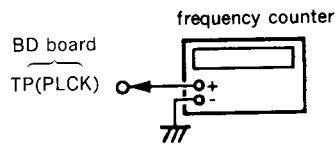


6. Remove the lead wires connected in step 1.

RF PLL Free-run Frequency Check

Procedure :

1. Connect frequency counter to test point TP (PLCK) with lead wire.



2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

Focus/Tracking Gain

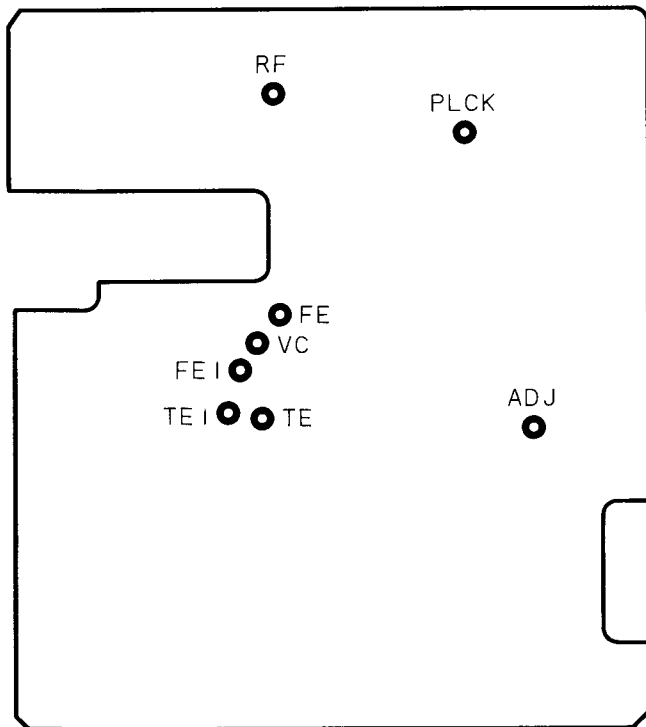
This gain has a margin, so even if it is slightly off.

There is no problem.

Therefore, do not perform, this adjustment.

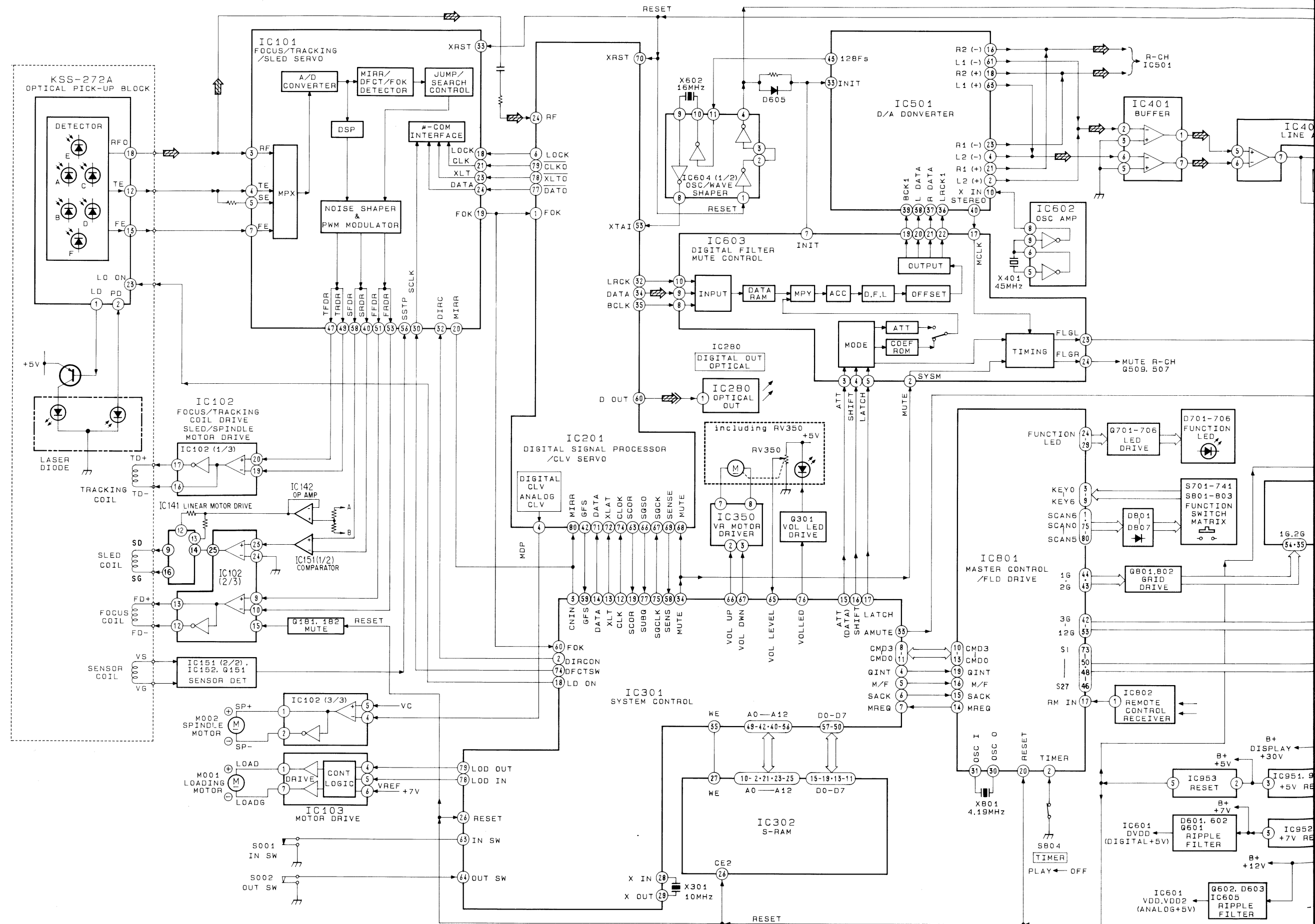
Please note that it should be fixed to mechanical center position when you moved and do not know original position.

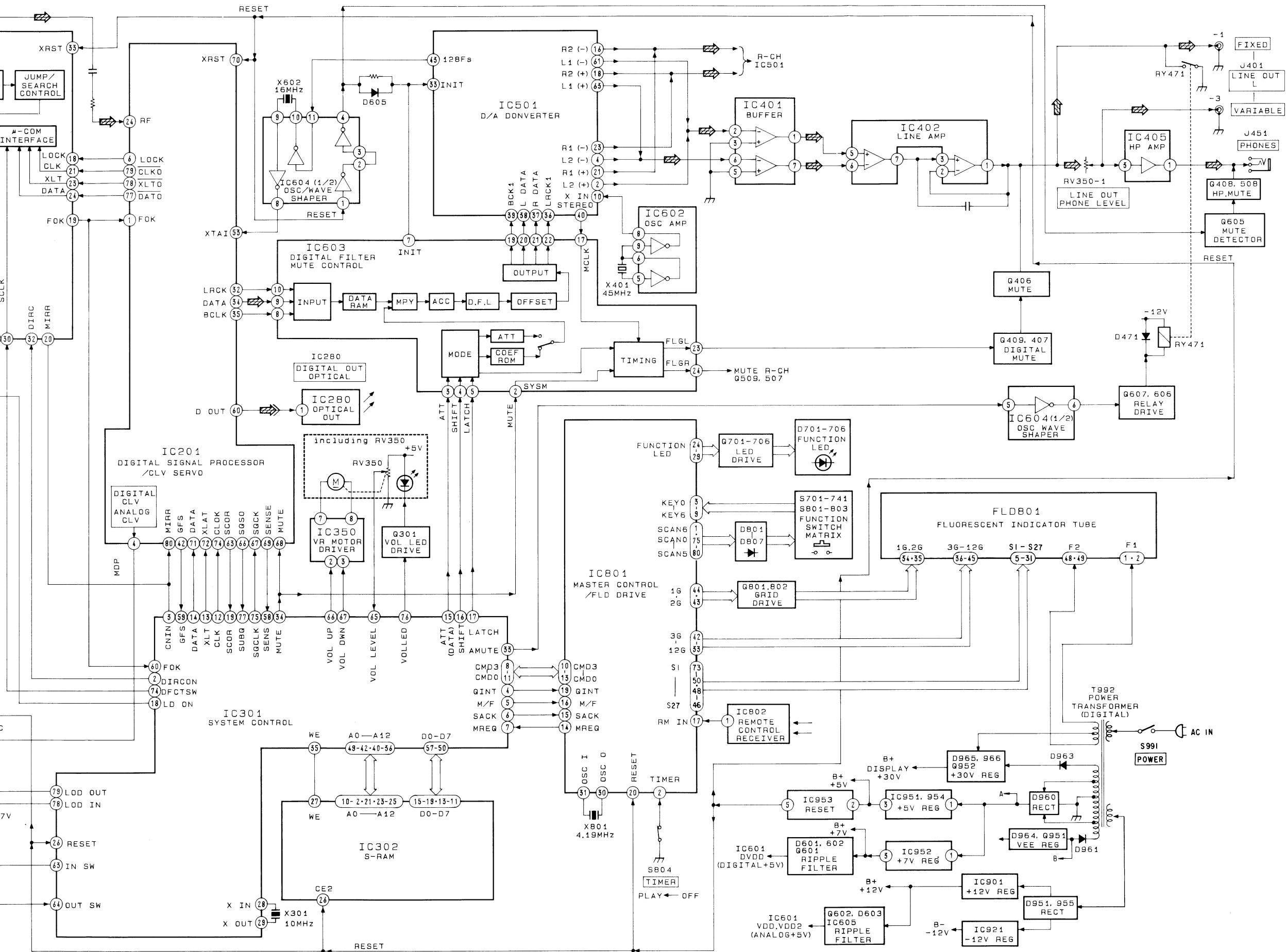
Check Point Location : BD board—side A—

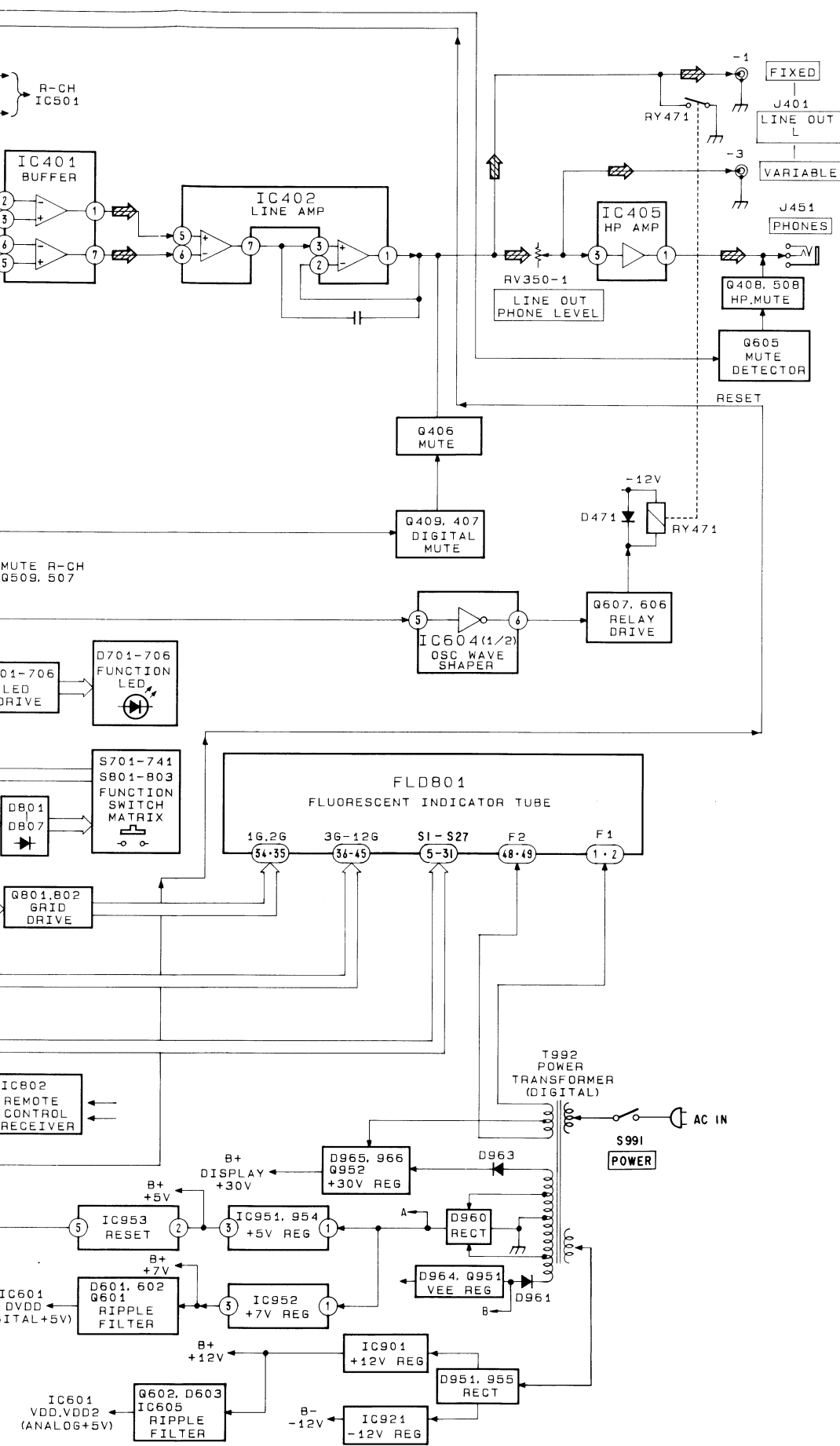


SECTION 3 DIAGRAMS

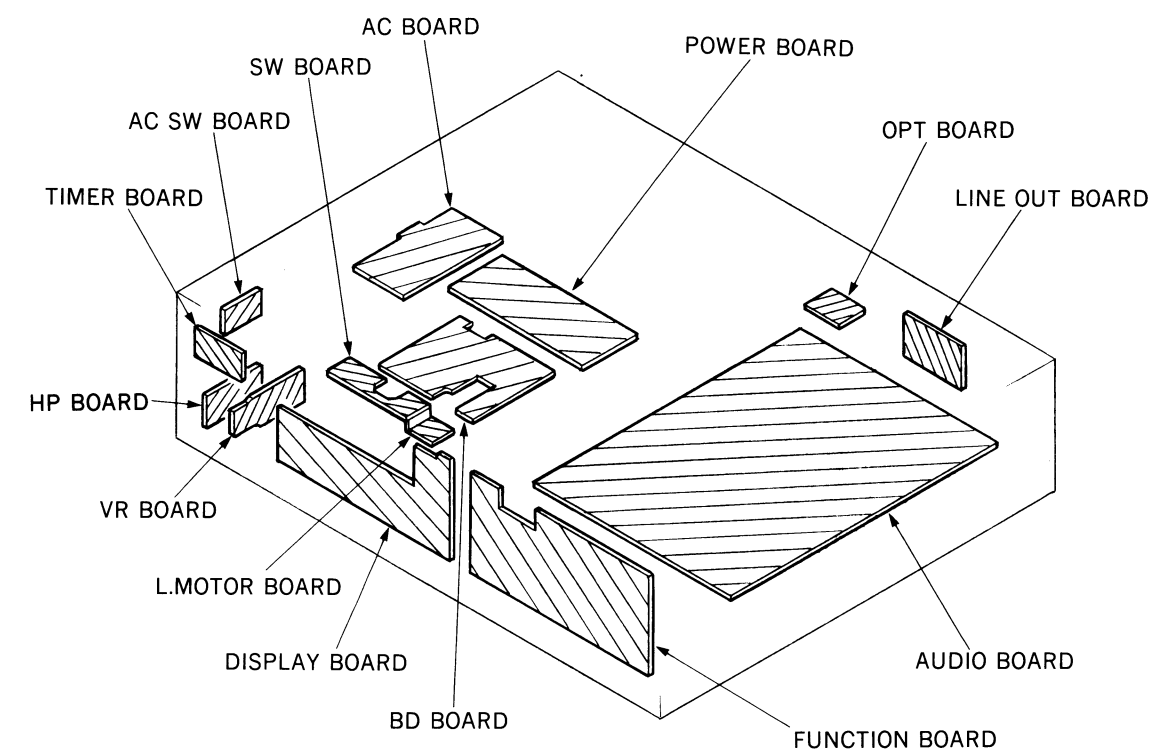
3-1. BLOCK DIAGRAM







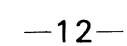
3-2. CIRCUIT BOARDS LOCATION



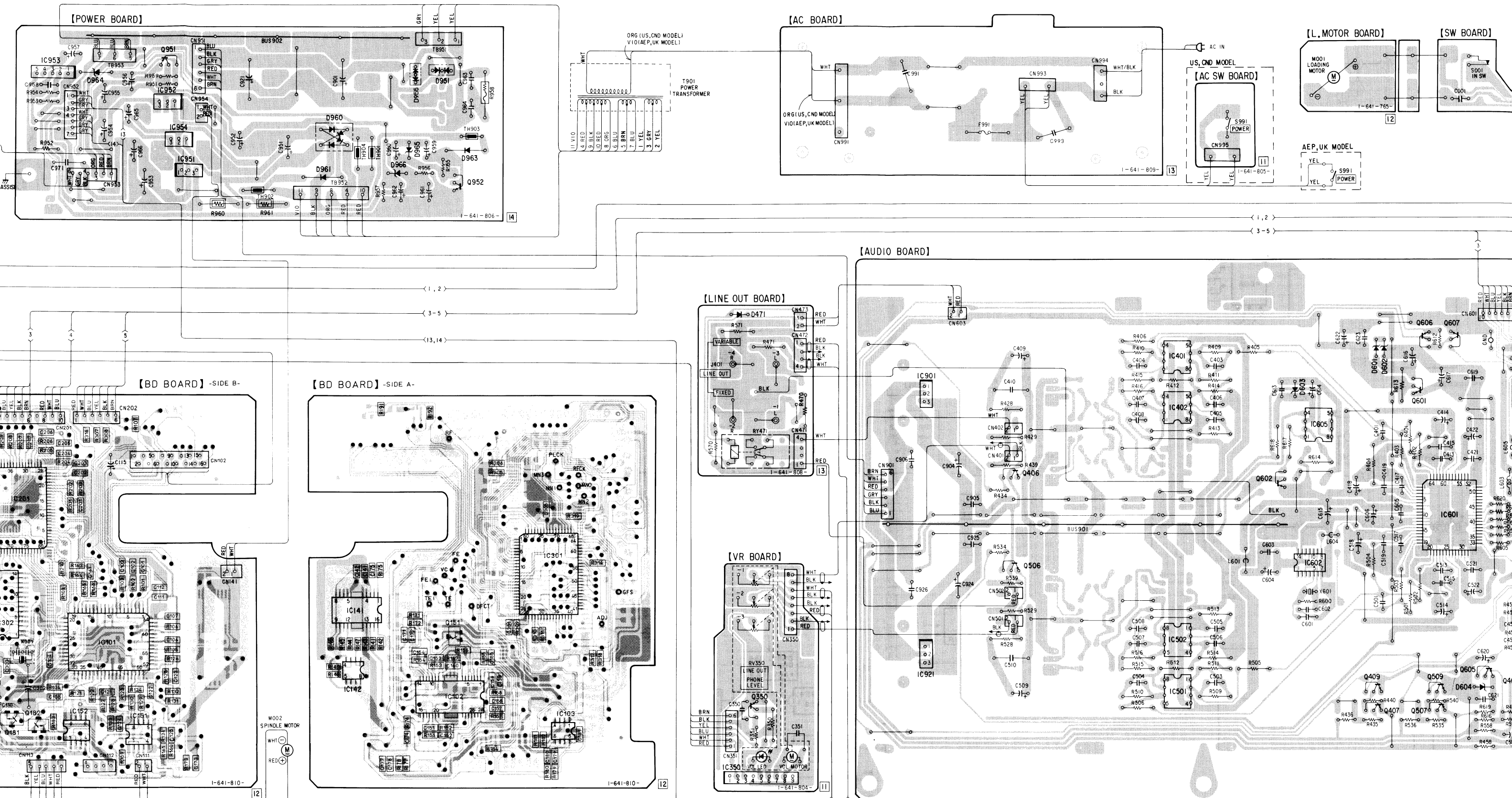
3-3. PRINTED WIRING BOARDS ● Refer to page 21 for Semiconductor Lead Layouts.

Note:

- — : parts extracted from the component side.
- : Through hole.
- ▨ : Pattern on the side which is seen.
- ▩ : Pattern of the rear side.
- CND : Canadian model

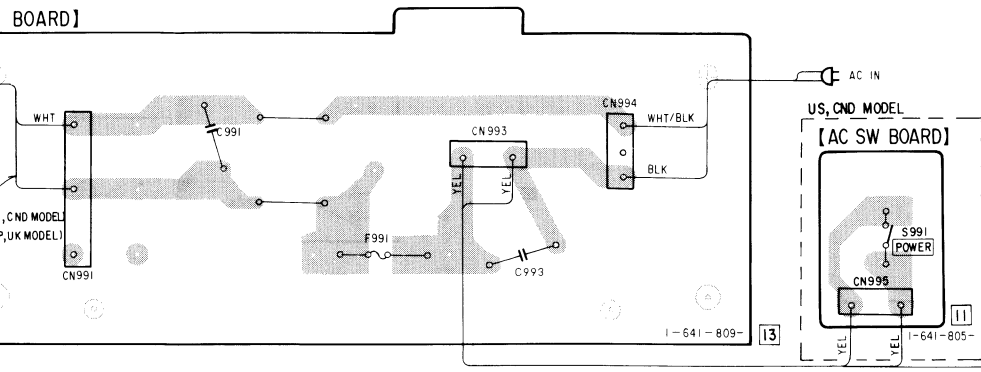


● Refer to page 21 for Semiconductor Lead Layouts.

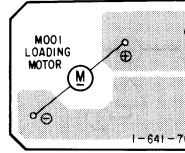


3 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

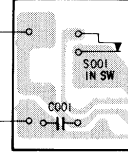
BOARD]



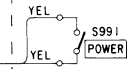
[L. MOTOR BOARD]



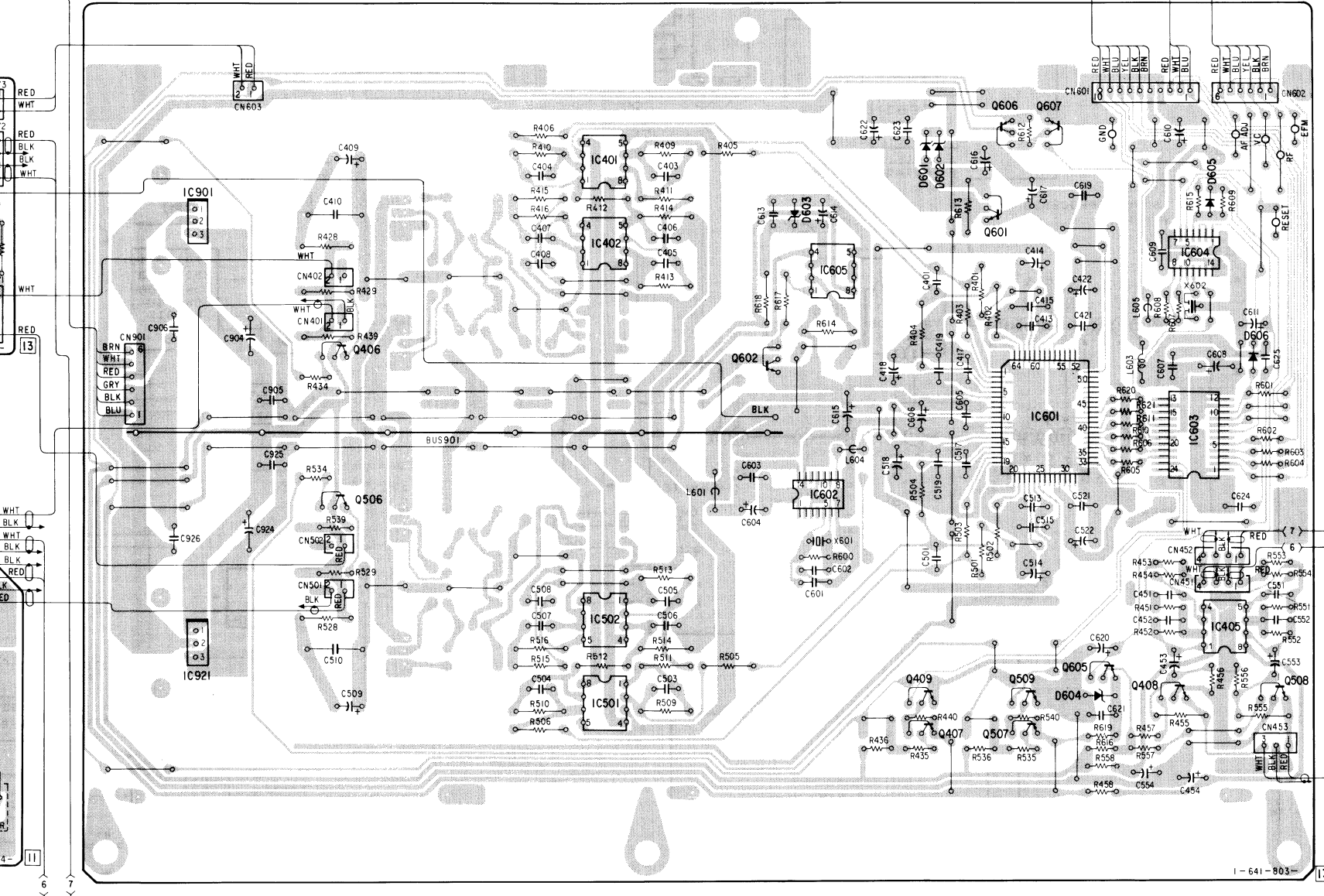
[SW BOARD]



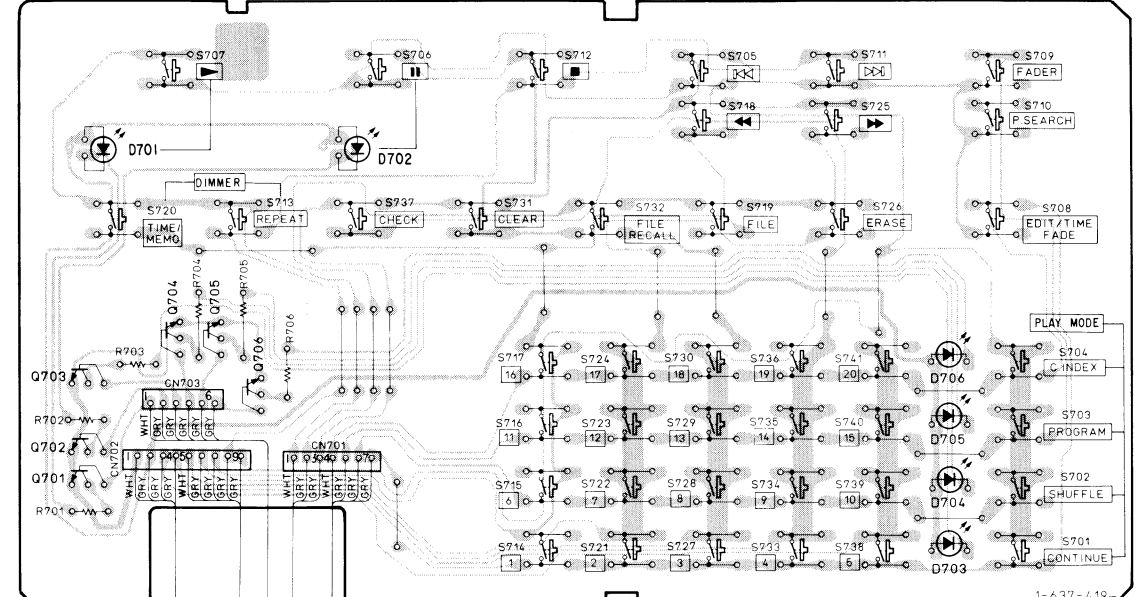
AEP, UK MODEL



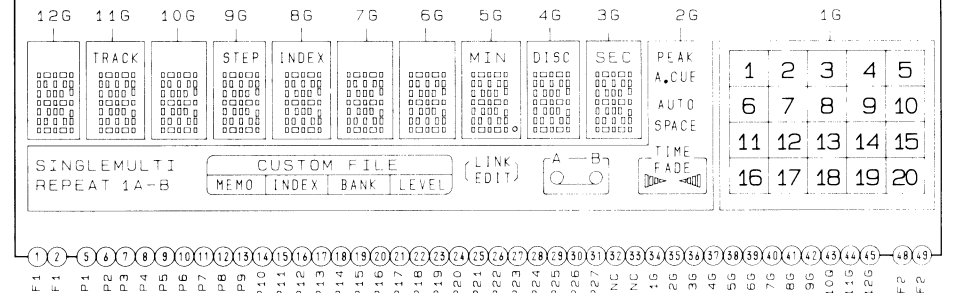
[AUDIO BOARD]



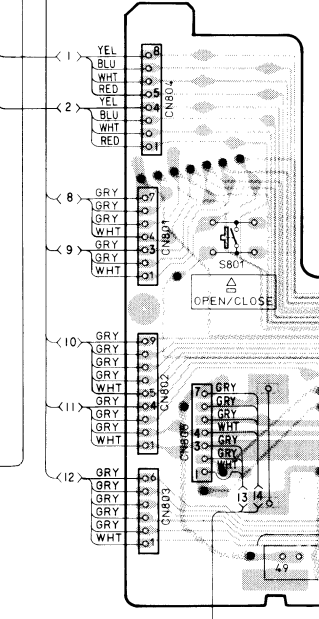
[FUNCTION BOARD]



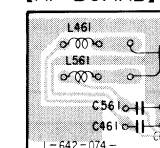
FLD801 FLUORESCENT INDICATOR TUBE



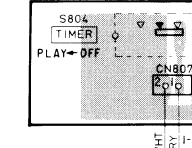
[DISPLAY BOARD]



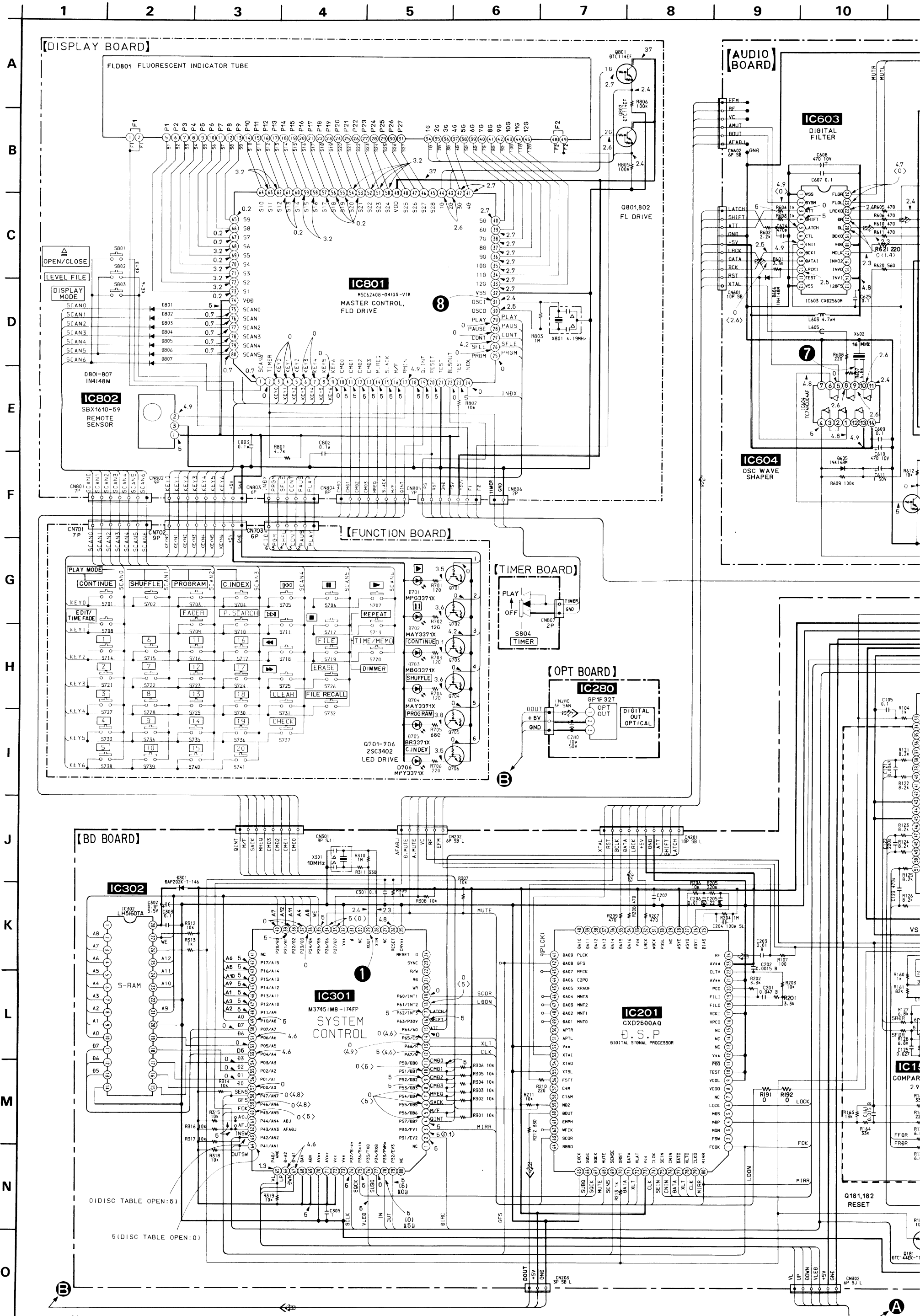
[HP BOARD]



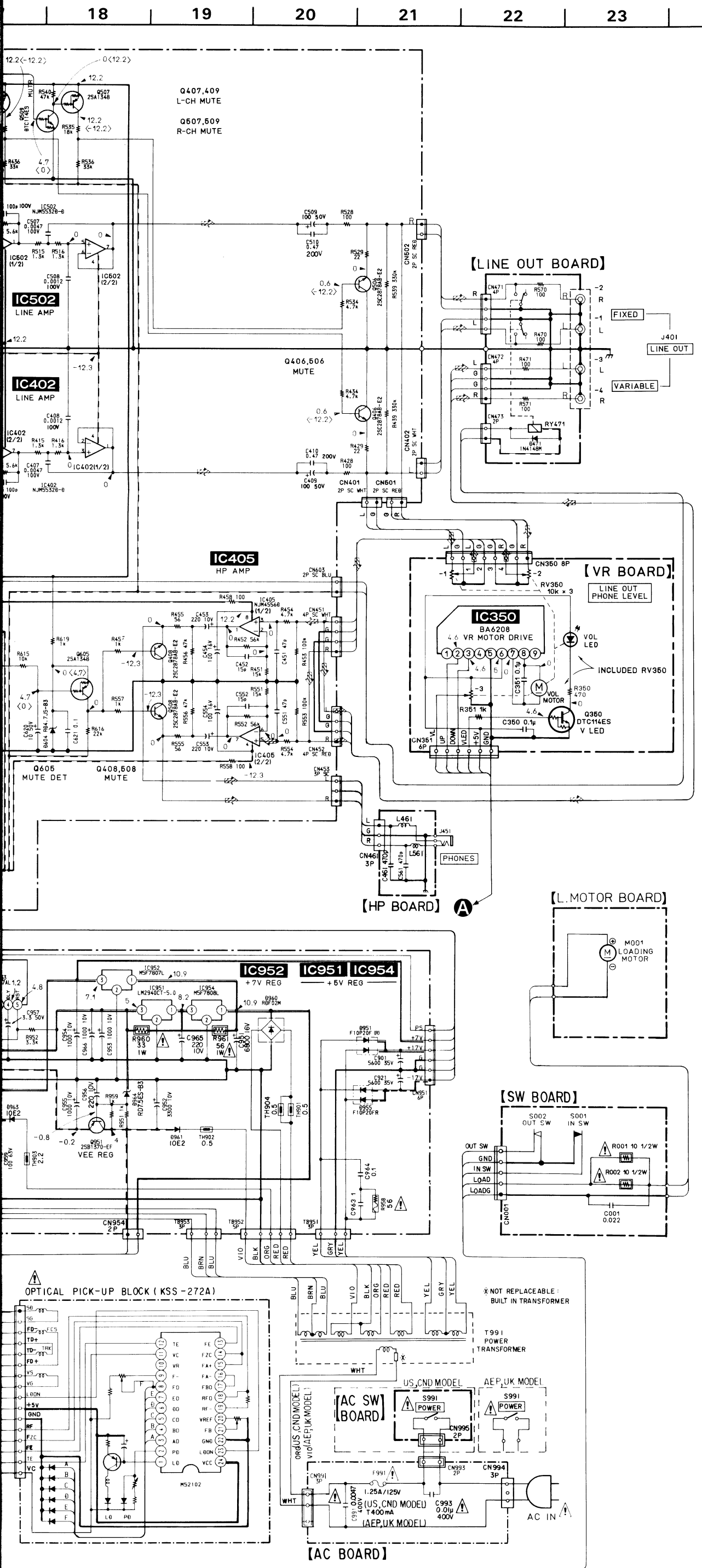
[TIMER BOARD]



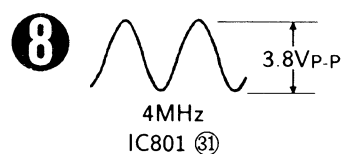
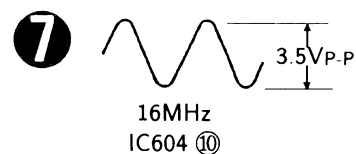
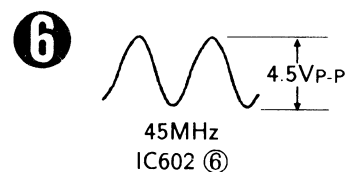
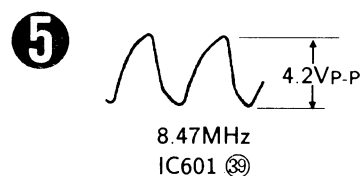
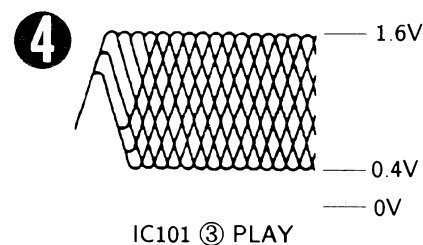
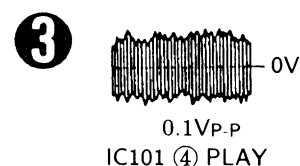
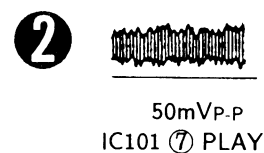
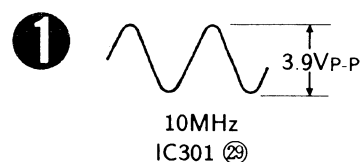
3-4. SCHEMATIC DIAGRAM • Refer to page 19 for IC Block Diagrams.







Waveforms



Note:

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

Note:

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

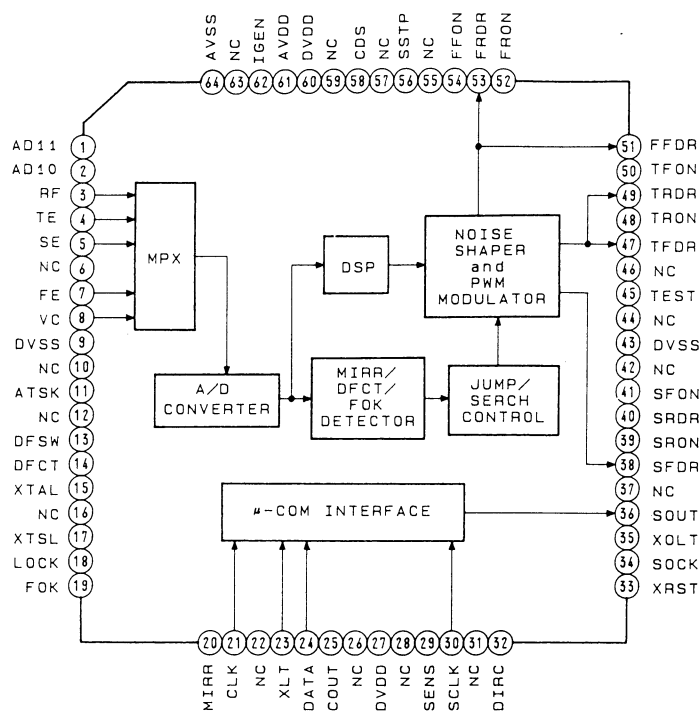
Note:

Les composants identifiés par une marque $\triangle$ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

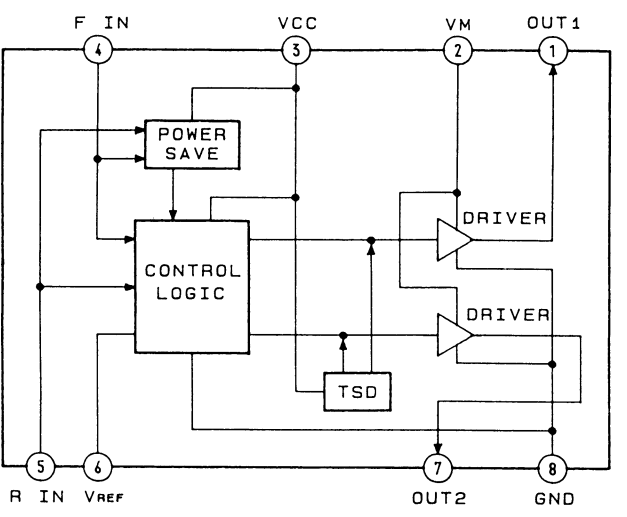
- --- : B+ Line
- --- : B- Line
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
- () : LOAD OUT MOVING
- (()) : LOAD IN MOVING
- < > : PLAY
- Voltages are taken with a VOM (Input Impedance $10\text{M}\Omega$). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with an oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
- $\square$: CD
- $\square$: digital out
- CND : Canadian model

● IC Block Diagrams

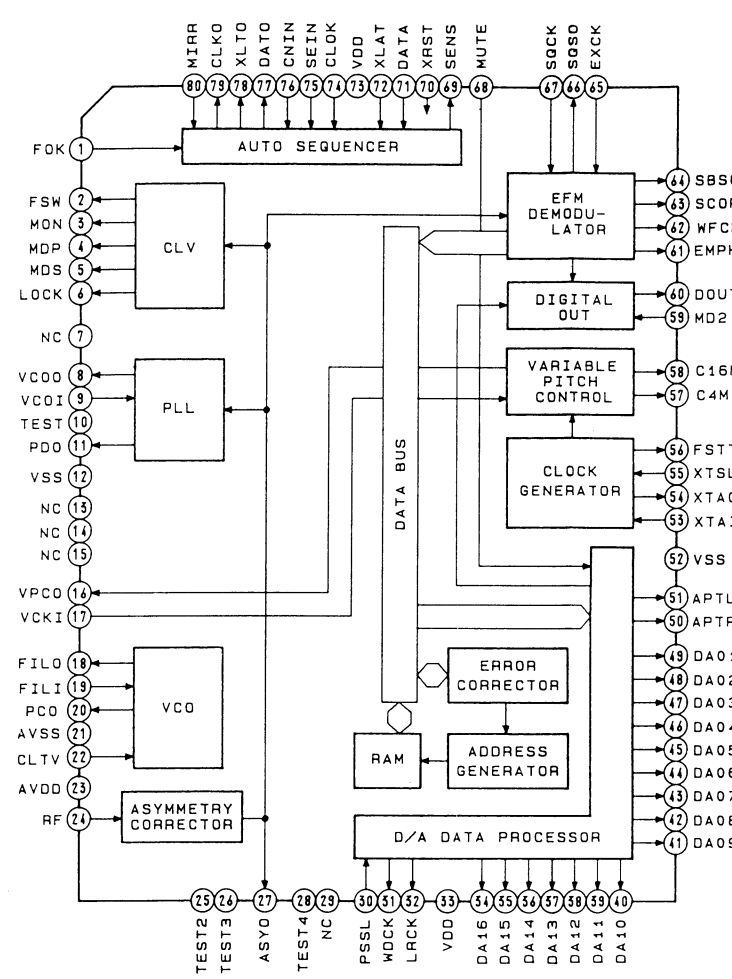
IC101 CXD2501Q



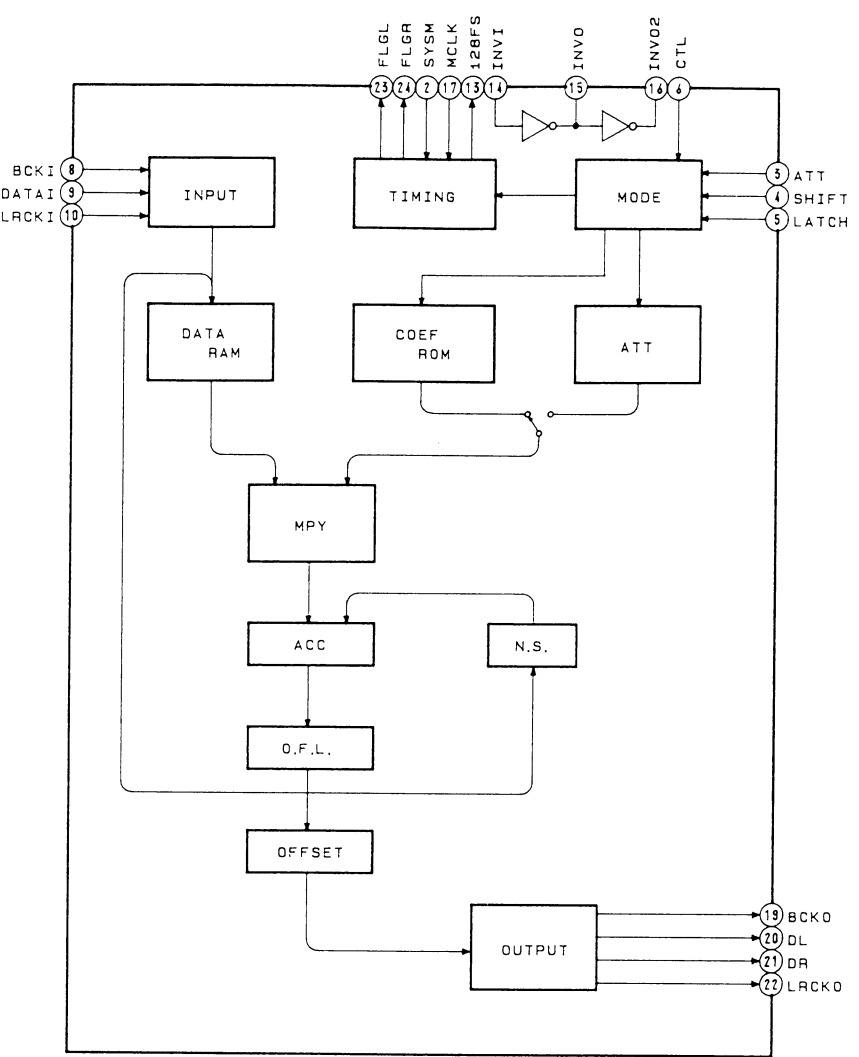
IC102 BA6297FP



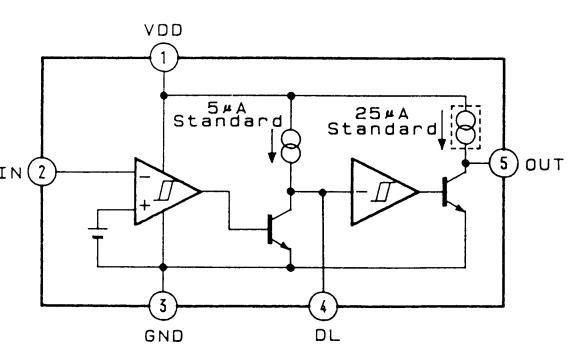
IC201 CXD2500AQ



IC603 CXD2560M



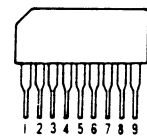
IC953 M51957AL



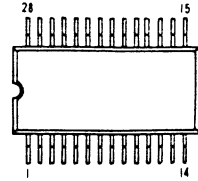
SECTION 4 EXPLODED VIEWS

3-5. SEMICONDUCTOR LEAD LAYOUTS

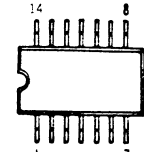
BA6208



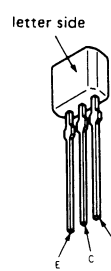
LH5160N-10L



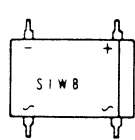
TC74HCU04AF



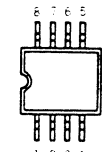
2SC3246-JK



RDF02M

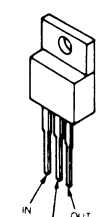


BA6287F
RC4558M

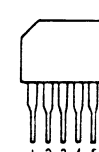


(TOP VIEW)

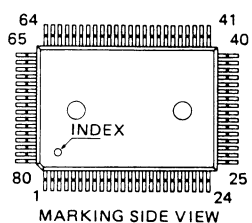
LM2940CT-5.0
M5F7807
M5F7808
TA7812S



M51957AL

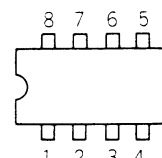


CXD2500AQ
MSC62408-041GS-V1K
M37451M8-174FP



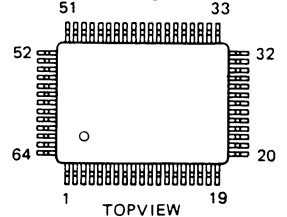
MARKING SIDE VIEW

M5238P
RC4556D
RC5532D-D



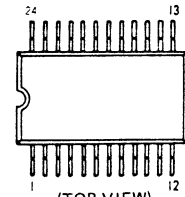
(Top view)

CXD2501Q
CXD2562Q

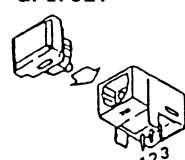


TOPVIEW

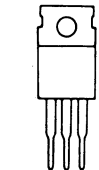
CXD2560M



GP1F32T

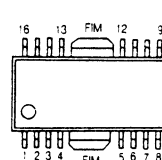


TA7912S

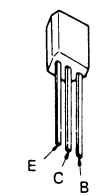


COMMON (GND) IN OUT

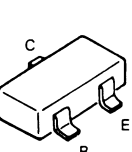
TA8407F



DTA114ES
DTC114ES



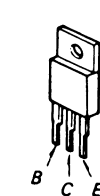
DTA144EK
DTC144EK



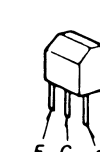
DTC114EF



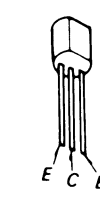
2SB1370-EF



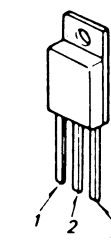
2SC1941-KA
2SD774-34



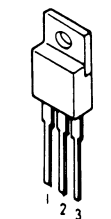
2SC2878-AB



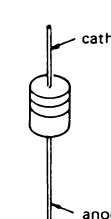
F10P20F (R)



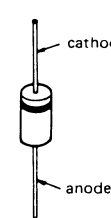
F10P20FR



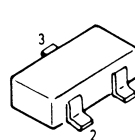
HZS7B3L
RD4.7JS-B3
RD5.1JS-B2
RD7.5ES-B3



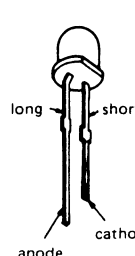
HZ36-2L
1N4148M
10E2



1S2836



BR3371X
MAY3371X-M-177
MBG3371X
MPG3371X-150
MPY3371X-177



NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- XX, -X mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts

Example:
KNOB, BALANCE (WHITE)...(RED)

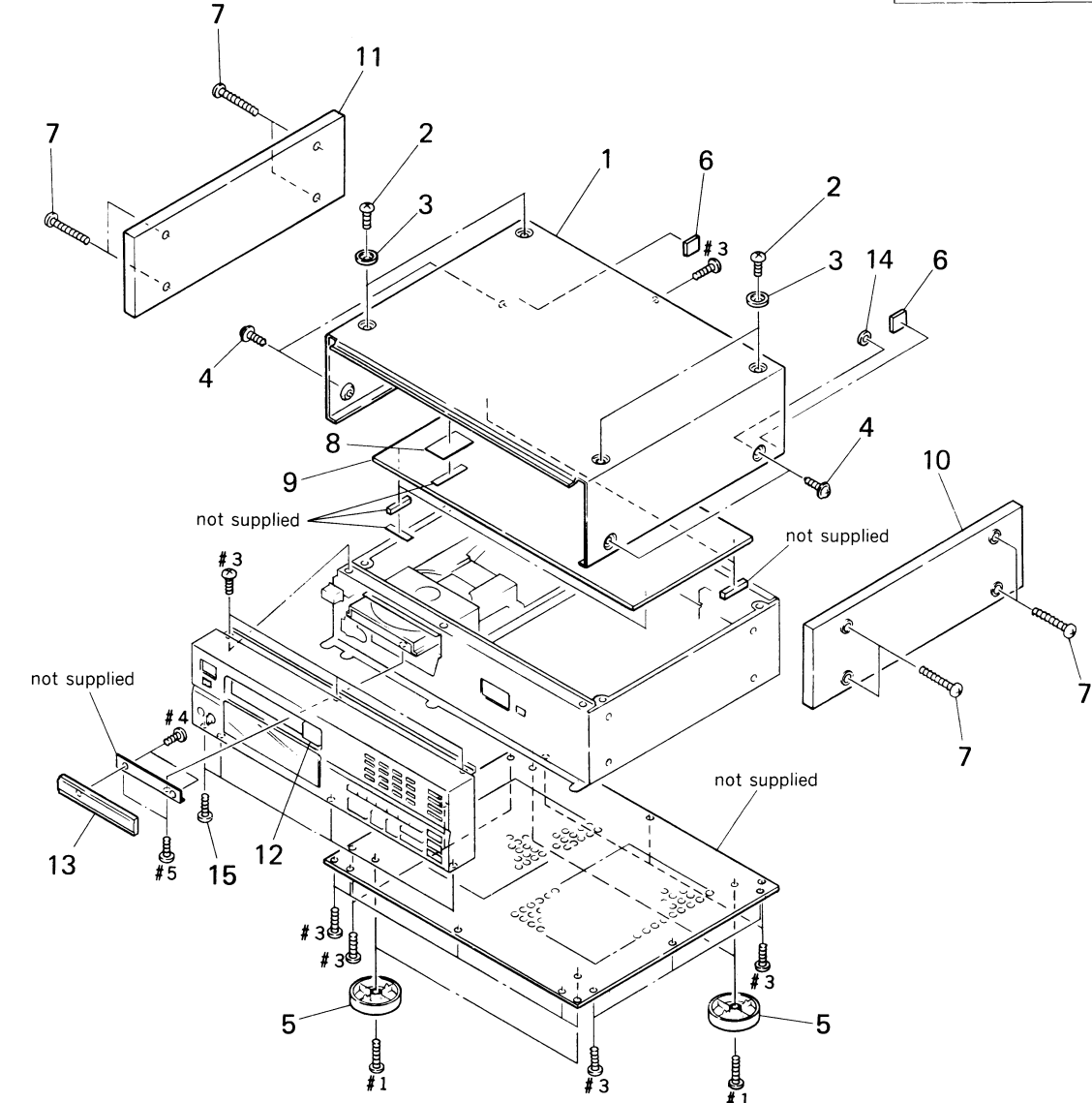
Parts Color Cabinet's Color

- Hardware (# mark) list is given the last of this parts list.

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

Les composants identifiés par un marque sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

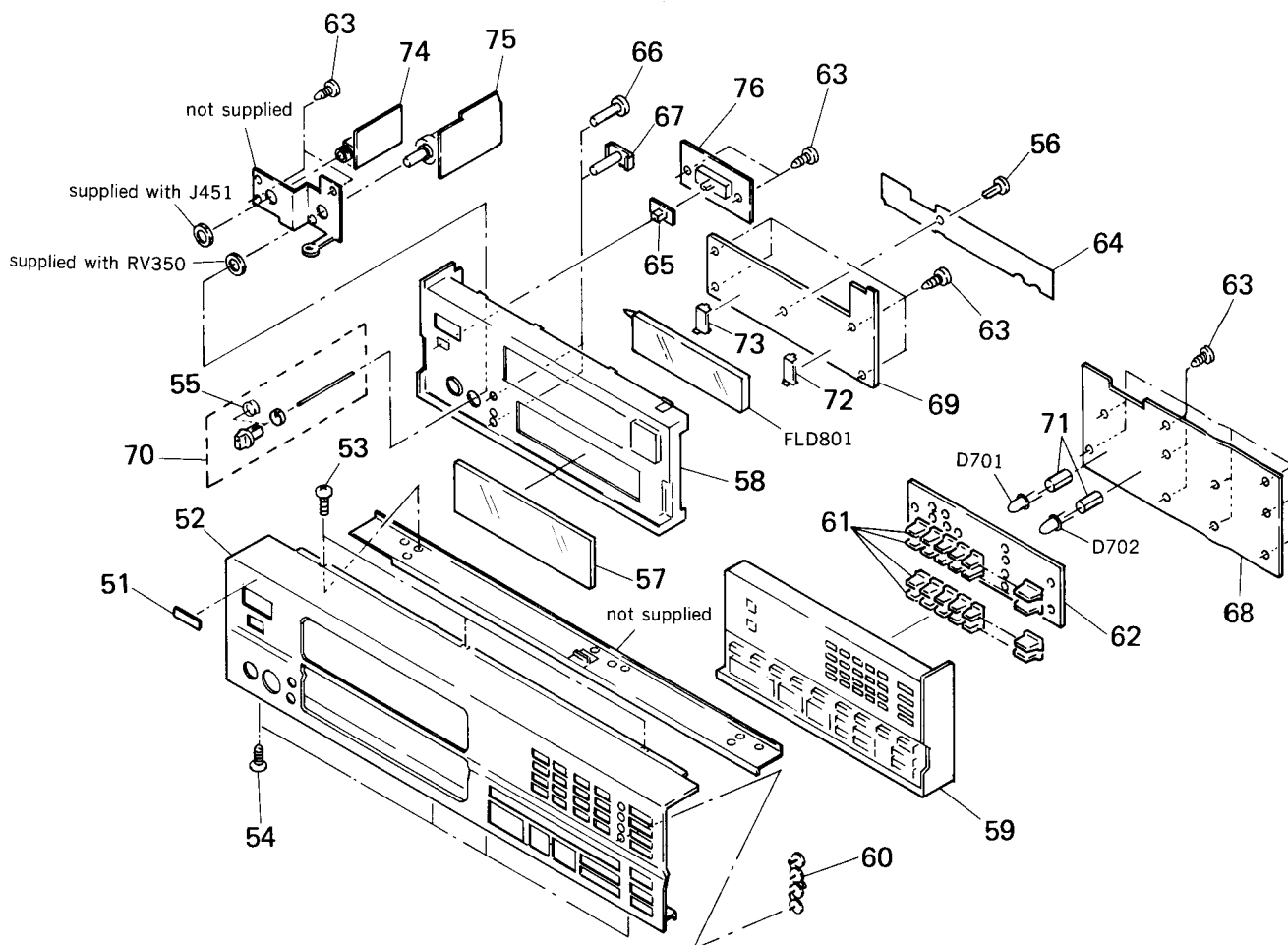
4-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	4-934-043-01	CASE (UK)	
* 1	4-934-043-41	CASE (US, Canadian, AEP)	
2	4-924-242-11	SCREW (M3X6), FLAT HEAD	
3	4-928-025-11	ESCUTCHEON (TOP PLATE)	
4	4-847-802-00	SCREW (AEP, UK)	
5	X-4941-014-1	FOOT ASSY (AEP, UK)	
5	X-4941-550-1	FOOT ASSY (US, Canadian)	
* 6	4-929-007-01	CUSHION (CASE)	
7	4-885-979-11	SCREW (4X25) (US, Canadian)	

Ref. No.	Part No.	Description	Remark
* 8	4-923-563-11	CUSHION	
9	A-4675-309-A	REINFORCEMENT (TOP PLATE) ASSY	
10	X-4928-002-1	PLATE (RIGHT) ASSY, SIDE (US, Canadian)	
11	X-4928-001-1	PLATE (LEFT) ASSY, SIDE (US, Canadian)	
12	X-4941-988-1	BUTTON (OPEN/CLOSE) ASSY	
13	X-4941-991-1	PANEL ASSY, LOADING	
14	4-935-917-01	WASHER (CASE)	
15	4-929-074-01	SCREW (3X8)	

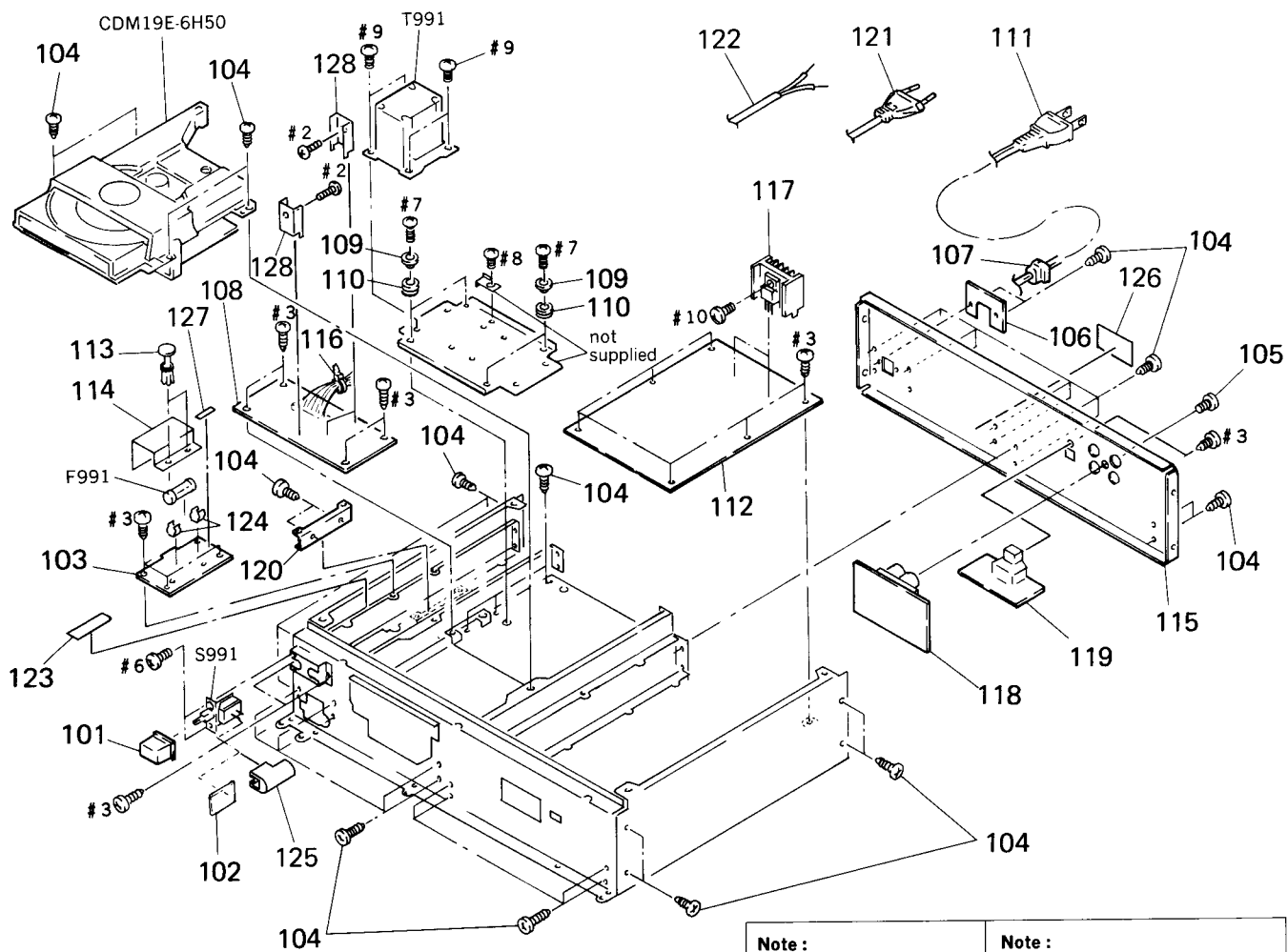
4-2. FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	4-908-848-01	EMBLEM, SONY	
52	4-948-008-01	PANEL (FRONT)	
53	3-703-685-21	SCREW (+BV 3X8)	
54	4-929-074-01	SCREW (3X8)	
55	4-948-469-01	SPRING, RING	
56	3-531-576-11	RIVET	
57	4-941-087-01	PLATE, INDICATION	
58	X-4941-990-1	PANEL (L) ASSY	
59	X-4941-013-1	PANEL (R) ASSY	
60	4-941-093-01	INDICATOR	
61	4-941-079-01	BUTTON (20 KEY)	
* 62	4-941-092-01	ABSORBENT (20 KEY), VIBRATION	
63	4-951-620-01	SCREW (2. 6X8), +BVT	
* 64	4-941-220-01	COVER (CABLE)	
65	4-922-518-11	KNOB (TIMER)	

Ref. No.	Part No.	Description	Remark
66	4-941-084-01	BUTTON (DISPLAY MODE)	
67	4-941-085-01	BUTTON (LEVEL FILE)	
* 68	1-637-419-11	FUNCTION BOARD	
* 69	1-637-410-11	DISPLAY BOARD	
70	A-4604-901-A	KNOB (LINE OUT/PHONE LEVEL)	ASy
* 71	4-923-532-21	SPACER, LED	
* 72	4-928-052-01	HOLDER (RIGHT)	
* 73	4-928-053-01	HOLDER (LEFT)	
* 74	1-642-074-11	HP BOARD	
* 75	1-641-804-11	VR BOARD	
* 76	1-637-411-11	TIMER BOARD	
D701	8-719-970-07	LED MPG3371X-150 (▶)	
D702	8-719-971-52	LED MAY3371X-M-177 (■)	
FLD801	1-519-622-11	INDICATOR TUBE, FLUORESCENT	

4-3. CHASSIS SECTION



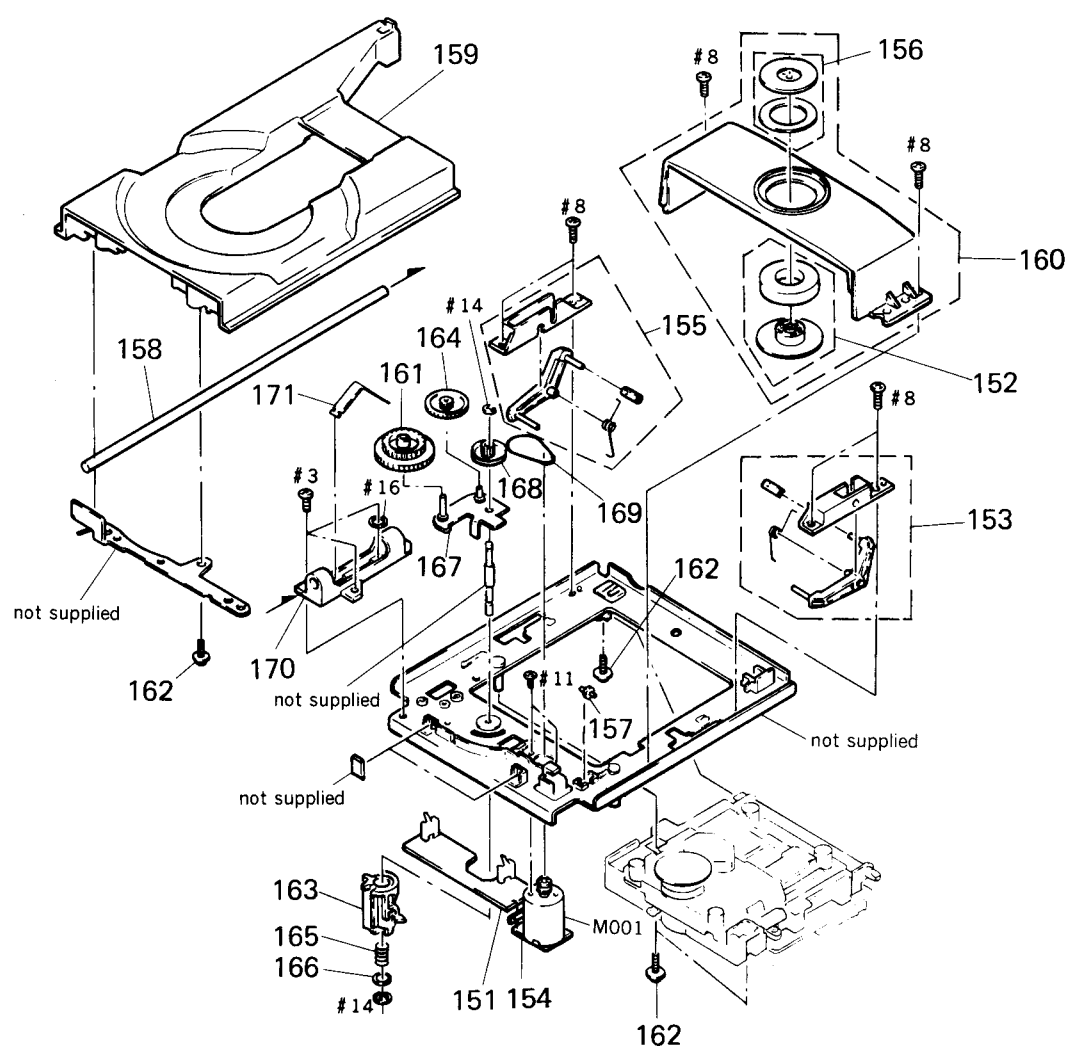
Note :
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Note :
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
	101	4-923-520-51 KNOB (POWER)	
*	102	1-641-805-11 AC SW BOARD (US, Canadian)	
*	103	1-641-809-11 AC BOARD	
	104	4-929-074-01 SCREW (3X8)	
	105	3-703-685-21 SCREW (+BV 3X8)	
*	106	4-923-873-01 BRACKET, CORD STOPPER	
*	107	3-703-244-00 BUSHING (2104), CORD	
*	108	A-4649-346-A POWER BOARD, COMPLETE	
	109	4-928-032-01 COLLAR (A)	
*	110	4-888-798-00 BUSHING, RUBBER	
	111	1-559-583-21 CORD, POWER (US, Canadian)	
*	112	A-4649-345-A AUDIO BOARD, COMPLETE	
	113	3-531-576-11 RIVET	
*	114	4-949-240-01 COVER (POWER PCB)	
*	115	4-948-005-01 PANEL, BACK (AEP, UK)	
*	115	4-948-005-32 PANEL, BACK (US)	
*	115	4-948-005-41 PANEL, BACK (Canadian)	
	116	3-655-653-21 BAND (TAITON), BINDING	
*	117	4-363-146-00 HEAT SINK, V. OUT	

Ref. No.	Part No.	Description	Remark
*	118	1-641-808-11 LINE OUT BOARD	
*	119	1-641-807-11 OPT BOARD	
*	120	4-941-636-11 BRACKET (PCB-R2)	
	121	1-558-568-21 CORD, POWER (AEP)	
	122	1-559-555-21 CORD, POWER (UK)	
	123	3-831-441-XX CUSHION	
*	124	1-533-183-11 HOLDER, FUSE	
	125	3-575-524-00 COVER, POWER SWITCH (AEP, UK)	
*	126	4-941-548-01 LABEL, CLASS 1 (AEP, UK)	
*	127	3-701-948-10 LABEL (T400MA), FUSE (AEP, UK)	
*	127	3-703-044-26 LABEL, CAUTION (US, Canadian)	
*	128	4-941-237-01 HEAT SINK	
	F991	1-532-066-00 FUSE, TIME-LAG (T400mA) (AEP, UK)	
	F991	1-532-741-11 FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)	
	S991	1-570-156-11 SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
	T991	1-450-891-11 TRANSFORMER, POWER (US, Canadian)	
	T991	1-450-892-11 TRANSFORMER, POWER (AEP, UK)	

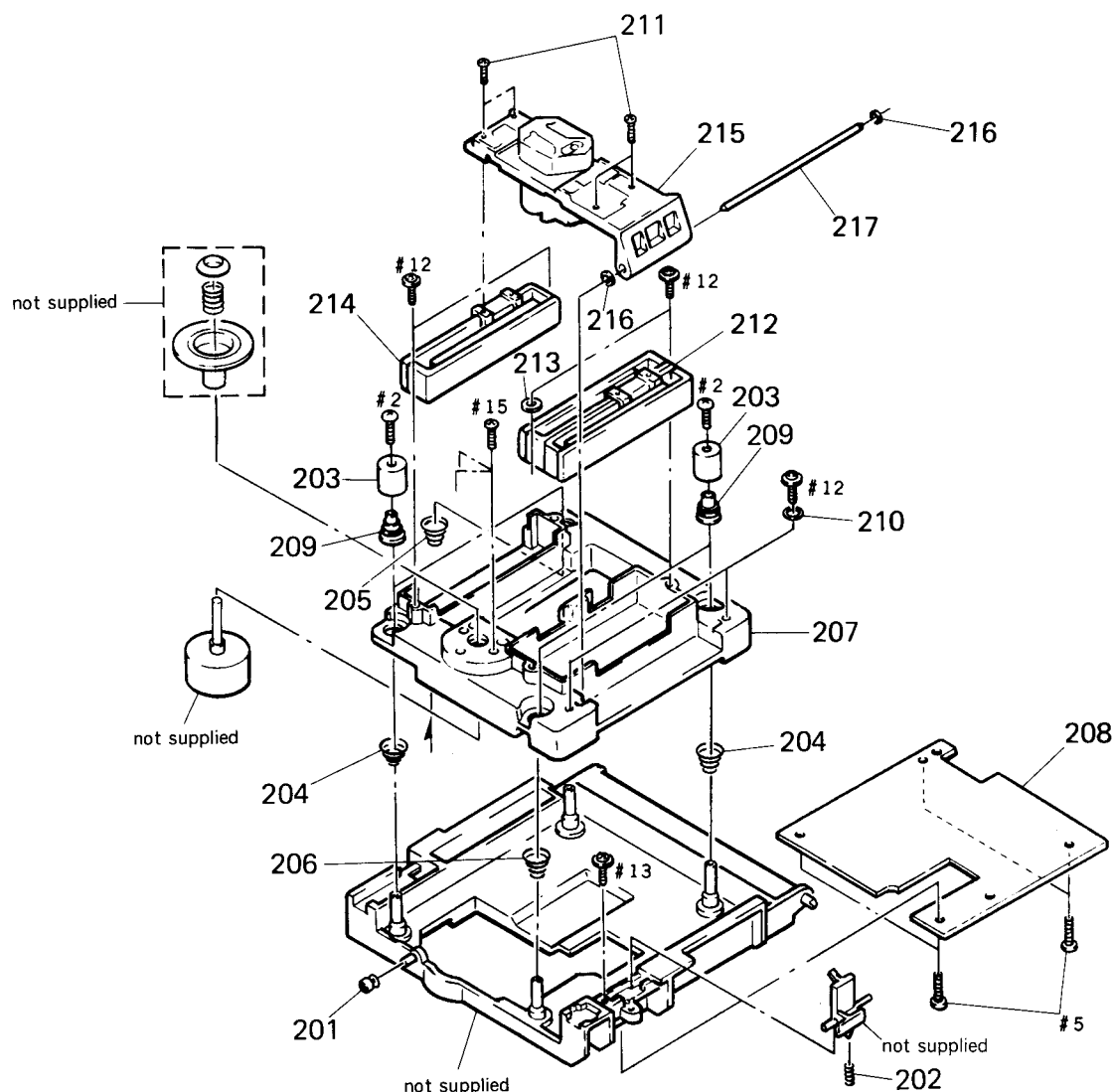
4-4. CD MECHANISM BLOCK SECTION (CDM19E-6H50)



Ref. No.	Part No.	Description	Remark
* 151	1-641-764-11	SW BOARD	
* 152	4-918-679-04	PULLEY, PRESS	
153	A-4604-914-A	LOCK (R) ASSY, STABLE	
* 154	1-641-765-11	L. MOTOR BOARD	
155	A-4604-913-A	LOCK (L) ASSY, STABLE	
156	A-4665-024-A	MAGNET ASSY	
157	4-927-627-01	ROLLER (S, G)	
* 158	4-948-368-01	BAR (MAIN), GUIDE	
159	4-948-353-01	TABLE, DISK	
160	A-4604-911-A	HOLDER (A. P.) ASSY	
161	4-927-620-01	GEAR (P)	

Ref. No.	Part No.	Description	Remark
* 162	4-917-583-21	BRACKET, YOKE	
* 163	4-948-371-01	CAM (BU)	
164	4-927-628-01	GEAR (C)	
165	3-659-338-00	SPRING, COMPRESSION	
166	4-927-654-01	WASHER (LIMITER)	
167	X-4927-608-1	ARM ASSY, SWING	
168	4-929-724-01	PULLEY (B)	
169	4-927-649-01	BELT	
* 170	4-948-360-01	BEARING, LOADING	
* 171	4-927-648-01	SLIDER (GROUND)	
M001	A-4604-347-A	MOTOR (L) ASSY	

4-5. BASE UNIT SECTION
(BU-6H)



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

Note:
Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
201	4-927-631-01	ROLLER (L)	
202	3-305-423-00	SPRING, COMPRESSION	
203	4-927-634-01	HOLDER (SP)	
204	4-917-572-01	SPRING (B)	
205	4-917-571-01	SPRING (A)	
206	4-917-573-01	SPRING (E)	
207	4-922-671-02	MECHANISM BASE (M. 6)	
* 208	A-4649-007-A	BD BOARD, COMPLETE	
* 209	4-917-584-11	INSULATOR	

Ref. No.	Part No.	Description	Remark
210	4-927-318-01	WASHER	
211	3-318-203-61	SCREW (B1.7X4), TAPPING	
212	A-4608-335-A	MOTOR ASSY, LINEAR (INCLUDING MD02)	
213	4-927-669-01	WASHER (BU)	
214	A-4638-084-A	SENSOR ASSY, SPEED	
 215	8-848-244-11	DEVICE, OPTICAL KSS-272A	
* 216	4-917-582-01	CUSHION, SLIDE	
* 217	4-910-431-01	SHAFT, SLIDE	

SECTION 5 ELECTRICAL PARTS LIST

AC

AC SW

AUDIO

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.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
In each case, u: μ , for example:
uA...: μ A... uPA...: μ PA...
uPB...: μ PB... uPC...: μ PC... uPD...: μ PD...
- CAPACITORS
uF: μ F
- COILS
uH: μ H

When indicating parts by reference number, please include the board.

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

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
*	1-641-809-11	AC BOARD *****		C415	1-130-495-00	MYLAR	0.1uF 5% 50V
	1-533-183-11	HOLDER, FUSE		C417	1-130-495-00	MYLAR	0.1uF 5% 50V
		< CAPACITOR >		C418	1-124-122-11	ELECT	100uF 20% 50V
Δ C991	1-162-599-12	CERAMIC	0.0047uF 400V	C419	1-130-495-00	MYLAR	0.1uF 5% 50V
Δ C993	1-161-744-00	CERAMIC	0.01uF 400V	C421	1-136-165-00	FILM	0.1uF 5% 50V
		< CONNECTOR >		C422	1-124-122-11	ELECT	100uF 20% 50V
* CN991	1-535-140-00	BASE POST 22MM (10MM PITCH) 3P		C451	1-162-215-31	CERAMIC	47PF 5% 50V
CN993	1-564-321-00	PIN, CONNECTOR 2P		C452	1-162-203-31	CERAMIC	15PF 5% 50V
* CN994	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P		C453	1-124-995-11	ELECT	220uF 20% 10V
*****				C454	1-126-023-11	ELECT	100uF 20% 16V
*	1-641-805-11	AC SW BOARD (US, Canadian) *****		C501	1-136-812-11	FILM	470PF 5% 100V
		< SWITCH >		C503	1-136-810-11	FILM	220PF 5% 100V
Δ S991	1-570-156-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)		C504	1-136-810-11	FILM	220PF 5% 100V
*****				C505	1-136-808-11	FILM	100PF 5% 100V
*	A-4649-345-A	AUDIO BOARD, COMPLETE *****		C506	1-136-808-11	FILM	100PF 5% 100V
	7-682-147-15	SCREW, TR		C507	1-136-233-11	FILM	0.0047uF 2% 100V
* 4-363-146-00	HEAT SINK, V. OUT			C508	1-136-228-11	FILM	0.0012uF 2% 100V
		< CAPACITOR >		C509	1-124-572-11	ELECT	100uF 20% 63V
C401	1-136-812-11	FILM	470PF 5% 100V	C510	1-136-580-11	FILM	0.47uF 10% 200V
C403	1-136-810-11	FILM	220PF 5% 100V	C513	1-130-495-00	MYLAR	0.1uF 5% 50V
C404	1-136-810-11	FILM	220PF 5% 100V	C514	1-124-122-11	ELECT	100uF 20% 50V
C405	1-136-808-11	FILM	100PF 5% 100V	C515	1-130-495-00	MYLAR	0.1uF 5% 50V
C406	1-136-808-11	FILM	100PF 5% 100V	C517	1-130-495-00	MYLAR	0.1uF 5% 50V
C407	1-136-233-11	FILM	0.0047uF 2% 100V	C518	1-124-122-11	ELECT	100uF 20% 50V
C408	1-136-228-11	FILM	0.0012uF 2% 100V	C519	1-130-495-00	MYLAR	0.1uF 5% 50V
C409	1-124-572-11	ELECT	100uF 20% 63V	C521	1-136-165-00	FILM	0.1uF 5% 50V
C410	1-136-580-11	FILM	0.47uF 10% 200V	C522	1-124-122-11	ELECT	100uF 20% 50V
C413	1-130-495-00	MYLAR	0.1uF 5% 50V	C551	1-162-215-31	CERAMIC	47PF 5% 50V
C414	1-124-122-11	ELECT	100uF 20% 50V	C552	1-162-203-31	CERAMIC	15PF 5% 50V
				C553	1-124-995-11	ELECT	220uF 20% 10V
				C554	1-126-023-11	ELECT	100uF 20% 16V
				C601	1-162-199-31	CERAMIC	10PF 5% 50V
				C602	1-162-199-31	CERAMIC	10PF 5% 50V
				C603	1-162-806-11	CERAMIC	0.1uF 10% 50V
				C604	1-124-122-11	ELECT	100uF 20% 50V
				C605	1-162-806-11	CERAMIC	0.1uF 10% 50V
				C606	1-124-122-11	ELECT	100uF 20% 50V
				C607	1-136-165-00	FILM	0.1uF 5% 50V
				C608	1-124-997-11	ELECT	470uF 20% 10V
				C609	1-164-159-11	CERAMIC	0.1uF 50V

AUDIO

Ref. No.	Part No.	Description	Remark
C610	1-124-997-11	ELECT 470uF	20% 10V
C611	1-126-301-11	ELECT 1uF	20% 50V
C613	1-130-495-00	MYLAR 0. 1uF	5% 50V
C614	1-124-122-11	ELECT 100uF	20% 50V
C615	1-126-025-11	ELECT 330uF	20% 25V
C616	1-126-101-11	ELECT 100uF	20% 16V
C617	1-126-025-11	ELECT 330uF	20% 25V
C619	1-136-165-00	FILM 0. 1uF	5% 50V
C620	1-126-059-11	ELECT 10uF	20% 50V
C621	1-136-165-00	FILM 0. 1uF	5% 50V
C622	1-126-335-11	ELECT 220uF	20% 10V
C623	1-136-165-00	FILM 0. 1uF	5% 50V
C624	1-162-290-31	CERAMIC 470PF	10% 50V
C625	1-164-159-11	CERAMIC 0. 1uF	50V
C904	1-126-170-11	ELECT 1000uF	20% 50V
C905	1-162-806-11	CERAMIC 0. 1uF	10% 50V
C906	1-162-806-11	CERAMIC 0. 1uF	10% 50V
C924	1-126-170-11	ELECT 1000uF	20% 50V
C925	1-162-806-11	CERAMIC 0. 1uF	10% 50V
C926	1-162-806-11	CERAMIC 0. 1uF	10% 50V
< CONNECTOR >			
* CN401	1-573-261-11	PIN, CONNECTOR 2P	
* CN402	1-573-261-11	PIN, CONNECTOR 2P	
* CN451	1-573-263-11	PIN, CONNECTOR 4P	
* CN452	1-573-263-21	PIN, CONNECTOR 4P	
* CN453	1-573-262-11	PIN, CONNECTOR 3P	
* CN501	1-573-261-21	PIN, CONNECTOR 2P	
* CN502	1-573-261-21	PIN, CONNECTOR 2P	
* CN601	1-569-997-11	PIN, CONNECTOR (PC BOARD) 10P	
* CN602	1-569-993-11	PIN, CONNECTOR (PC BOARD) 6P	
* CN603	1-573-261-31	PIN, CONNECTOR 2P	
* CN901	1-573-865-21	PIN, CONNECTOR (PC BOARD) 6P	
< DIODE >			
D601	8-719-114-27	DIODE RD4. 7JS-B3	
D602	8-719-114-27	DIODE RD4. 7JS-B3	
D603	8-719-114-30	DIODE RD5. 1JS-B2	
D604	8-719-114-27	DIODE RD4. 7JS-B3	
D605	8-719-987-63	DIODE 1N4148M	
D606	8-719-987-63	DIODE 1N4148M	
< IC >			
IC401	8-759-602-83	IC M5238P	
IC402	8-759-982-03	IC RC5532D-D	
IC405	8-759-981-85	IC RC4556D	
IC501	8-759-602-83	IC M5238P	
IC502	8-759-982-03	IC RC5532D-D	

Ref. No.	Part No.	Description	Remark
IC601	8-759-044-10	IC CXD2562Q	
IC602	8-759-233-64	IC TC74HCU04AF	
IC603	8-752-342-65	IC CXD2560M	
IC604	8-759-233-64	IC TC74HCU04AF	
IC605	8-759-602-83	IC M5238P	
IC901	8-759-231-58	IC TA7812S	
IC921	8-759-245-86	IC TA7912S	
< COIL >			
L601	1-410-397-21	FERRITE BEAD INDUCTOR	
L603	1-410-969-11	INDUCTOR 4. 7uH	
L604	1-410-397-21	FERRITE BEAD INDUCTOR	
L605	1-410-397-21	FERRITE BEAD INDUCTOR	
< TRANSISTOR >			
Q406	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q407	8-729-900-61	TRANSISTOR DTA114ES	
Q408	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q409	8-729-900-80	TRANSISTOR DTC114ES	
Q506	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q507	8-729-900-61	TRANSISTOR DTA114ES	
Q508	8-729-231-55	TRANSISTOR 2SC2878-AB	
Q509	8-729-900-80	TRANSISTOR DTC114ES	
Q601	8-729-620-23	TRANSISTOR 2SC3246-JK	
Q602	8-729-194-13	TRANSISTOR 2SC1941-KA	
Q605	8-729-900-61	TRANSISTOR DTA114ES	
Q606	8-729-900-61	TRANSISTOR DTA114ES	
Q607	8-729-900-80	TRANSISTOR DTC114ES	
< RESISTOR >			
R401	1-249-945-11	CARBON 8. 2K 1%	1/4W
R402	1-249-945-11	CARBON 8. 2K 1%	1/4W
R403	1-249-945-11	CARBON 8. 2K 1%	1/4W
R404	1-249-945-11	CARBON 8. 2K 1%	1/4W
R405	1-247-719-11	CARBON 3. 3K 5%	1/4W
R406	1-247-719-11	CARBON 3. 3K 5%	1/4W
R409	1-247-725-11	CARBON 10K 5%	1/4W
R410	1-247-725-11	CARBON 10K 5%	1/4W
R411	1-247-722-11	CARBON 5. 6K 5%	1/4W
R412	1-247-722-11	CARBON 5. 6K 5%	1/4W
R413	1-247-722-11	CARBON 5. 6K 5%	1/4W
R414	1-247-722-11	CARBON 5. 6K 5%	1/4W
R415	1-249-926-11	CARBON 1. 3K 5%	1/4W
R416	1-249-926-11	CARBON 1. 3K 5%	1/4W
R428	1-247-700-11	CARBON 100 5%	1/4W
R429	1-249-512-11	CARBON 22 5%	1/4W
R434	1-259-444-11	CARBON 4. 7K 5%	1/6W
R435	1-259-458-11	CARBON 18K 5%	1/6W
R436	1-259-464-11	CARBON 33K 5%	1/6W

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BD

Ref. No.	Part No.	Description	Remark		
R439	1-247-891-00	CARBON	330K	5%	1/4W
R440	1-259-468-11	CARBON	47K	5%	1/6W
R451	1-259-456-11	CARBON	15K	5%	1/6W
R452	1-259-470-11	CARBON	56K	5%	1/6W
R453	1-259-476-11	CARBON	100K	5%	1/6W
R454	1-259-444-11	CARBON	4.7K	5%	1/6W
R455	1-259-398-11	CARBON	56	5%	1/6W
R456	1-259-468-11	CARBON	47K	5%	1/6W
R457	1-259-428-11	CARBON	1K	5%	1/6W
R458	1-259-404-11	CARBON	100	5%	1/6W
R501	1-249-945-11	CARBON	8.2K	1%	1/4W
R502	1-249-945-11	CARBON	8.2K	1%	1/4W
R503	1-249-945-11	CARBON	8.2K	1%	1/4W
R504	1-249-945-11	CARBON	8.2K	1%	1/4W
R505	1-247-719-11	CARBON	3.3K	5%	1/4W
R506	1-247-719-11	CARBON	3.3K	5%	1/4W
R509	1-247-725-11	CARBON	10K	5%	1/4W
R510	1-247-725-11	CARBON	10K	5%	1/4W
R511	1-247-722-11	CARBON	5.6K	5%	1/4W
R512	1-247-722-11	CARBON	5.6K	5%	1/4W
R513	1-247-722-11	CARBON	5.6K	5%	1/4W
R514	1-247-722-11	CARBON	5.6K	5%	1/4W
R515	1-249-926-11	CARBON	1.3K	5%	1/4W
R516	1-249-926-11	CARBON	1.3K	5%	1/4W
R528	1-247-700-11	CARBON	100	5%	1/4W
R529	1-249-512-11	CARBON	22	5%	1/4W
R534	1-259-444-11	CARBON	4.7K	5%	1/6W
R535	1-259-458-11	CARBON	18K	5%	1/6W
R536	1-259-464-11	CARBON	33K	5%	1/6W
R539	1-247-891-00	CARBON	330K	5%	1/4W
R540	1-259-468-11	CARBON	47K	5%	1/6W
R551	1-259-456-11	CARBON	15K	5%	1/6W
R552	1-259-470-11	CARBON	56K	5%	1/6W
R553	1-259-476-11	CARBON	100K	5%	1/6W
R554	1-259-444-11	CARBON	4.7K	5%	1/6W
R555	1-259-398-11	CARBON	56	5%	1/6W
R556	1-259-468-11	CARBON	47K	5%	1/6W
R557	1-259-428-11	CARBON	1K	5%	1/6W
R558	1-259-404-11	CARBON	100	5%	1/6W
R600	1-259-452-11	CARBON	10K	5%	1/6W
R601	1-249-423-11	CARBON	3.3K	5%	1/4W
R602	1-249-421-11	CARBON	2.2K	5%	1/4W
R603	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-249-417-11	CARBON	1K	5%	1/4W
R605	1-259-420-11	CARBON	470	5%	1/6W
R606	1-259-420-11	CARBON	470	5%	1/6W
R607	1-249-427-11	CARBON	6.8K	5%	1/4W
R608	1-249-409-11	CARBON	220	5%	1/4W
R609	1-249-441-11	CARBON	100K	5%	1/4W

Ref. No.	Part No.	Description	Remark		
R610	1-259-420-11	CARBON	470	5%	1/6W
R611	1-259-420-11	CARBON	470	5%	1/6W
R612	1-249-429-11	CARBON	10K	5%	1/4W
R613	1-247-717-11	CARBON	2.2K	5%	1/4W
R614	1-247-710-11	CARBON	560	5%	1/4W
R615	1-259-452-11	CARBON	10K	5%	1/6W
R616	1-259-460-11	CARBON	22K	5%	1/6W
R617	1-247-700-11	CARBON	100	5%	1/4W
R618	1-247-717-11	CARBON	2.2K	5%	1/4W
R619	1-259-428-11	CARBON	1K	5%	1/6W
R620	1-259-422-11	CARBON	560	5%	1/6W
R621	1-259-412-11	CARBON	220	5%	1/6W

< VIBRATOR >

X601 1-577-686-11 VIBRATOR, CRYSTAL (45MHz)

X602 1-577-685-11 FILTER, CERAMIC (16MHz)

* A-4649-007-A BD BOARD, COMPLETE

< CAPACITOR >

C101	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C102	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C103	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C104	1-164-346-11	CERAMIC CHIP	1uF		16V
C105	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C106	1-164-346-11	CERAMIC CHIP	1uF		16V
C107	1-164-346-11	CERAMIC CHIP	1uF		16V
C109	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C110	1-124-584-00	ELECT	100uF	20%	10V
C111	1-164-346-11	CERAMIC CHIP	1uF		16V
C112	1-164-346-11	CERAMIC CHIP	1uF		16V
C113	1-164-346-11	CERAMIC CHIP	1uF		16V
C114	1-164-346-11	CERAMIC CHIP	1uF		16V
C115	1-131-374-00	TANTALUM	33uF	10%	16V
C121	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C122	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C123	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C124	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C125	1-163-986-00	CERAMIC CHIP	0.027uF	10%	25V
C141	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C142	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C151	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C152	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C153	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C154	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C155	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C156	1-164-346-11	CERAMIC CHIP	1uF		16V

BD

Ref. No.	Part No.	Description	Remark		
C157	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C158	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C159	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C160	1-164-336-11	CERAMIC CHIP	0.33uF		25V
C161	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C175	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C177	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C178	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C179	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C180	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C181	1-164-346-11	CERAMIC CHIP	1uF		16V
C201	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C202	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C203	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C204	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C205	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C206	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C207	1-164-346-11	CERAMIC CHIP	1uF		16V
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C302	1-125-622-11	CAP, DOUBLE LAYERS	0.1F		5.5V
C303	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C305	1-164-346-11	CERAMIC CHIP	1uF		16V
< CONNECTOR >					
* CN101	1-573-276-11	PIN, CONNECTOR	6P		
CN102	1-568-799-11	SOCKET, CONNECTOR	16P		
* CN111	1-569-998-11	PIN, CONNECTOR (PC BOARD)	2P		
* CN112	1-580-001-11	PIN, CONNECTOR (PC BOARD)	4P		
* CN113	1-580-002-11	PIN, CONNECTOR (PC BOARD)	5P		
* CN141	1-564-704-11	PIN, CONNECTOR (SMALL TYPE)	2P		
* CN201	1-580-007-11	PIN, CONNECTOR (PC BOARD)	10P		
* CN202	1-580-003-11	PIN, CONNECTOR (PC BOARD)	6P		
* CN203	1-564-719-11	PIN, CONNECTOR (SMALL TYPE)	3P		
* CN301	1-691-464-11	PIN, CONNECTOR	8P		
* CN302	1-691-462-11	PIN, CONNECTOR	6P		
< DIODE >					
D301	8-719-104-34	DIODE	1S2836		
< IC >					
IC101	8-752-344-48	IC	CXD2501Q		
IC102	8-759-040-80	IC	BA6297FP		
IC103	8-759-040-83	IC	BA6287F		
IC141	8-759-055-78	IC	TA8407F		

Ref. No.	Part No.	Description	Remark		
IC142	8-759-981-92	IC	RC4558M		
IC151	8-759-981-92	IC	RC4558M		
IC152	8-759-981-92	IC	RC4558M		
IC201	8-752-337-26	IC	CXD2500AQ		
IC301	8-759-069-47	IC	M37451M8-174FP		
IC302	8-759-512-81	IC	LH5160N-10L		
< TRANSISTOR >					
Q151	8-729-901-06	TRANSISTOR	DTA144EK		
Q181	8-729-901-01	TRANSISTOR	DTC144EK		
Q182	8-729-901-06	TRANSISTOR	DTA144EK		
< RESISTOR >					
R101	1-216-077-00	METAL CHIP	15K	5%	1/10W
R102	1-216-097-00	METAL CHIP	100K	5%	1/10W
R103	1-216-077-00	METAL CHIP	15K	5%	1/10W
R104	1-216-049-00	METAL CHIP	1K	5%	1/10W
R105	1-216-097-00	METAL CHIP	100K	5%	1/10W
R106	1-216-085-00	METAL CHIP	33K	5%	1/10W
R107	1-216-025-00	METAL CHIP	100	5%	1/10W
R108	1-216-295-00	METAL CHIP	0	5%	1/10W
R121	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R122	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R123	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R124	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R125	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R126	1-216-071-00	METAL CHIP	8.2K	5%	1/10W
R127	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R128	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R129	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R130	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R131	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R132	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R133	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R134	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R141	1-216-073-00	METAL CHIP	10K	5%	1/10W
R142	1-216-079-00	METAL CHIP	18K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R145	1-216-073-00	METAL CHIP	10K	5%	1/10W
R146	1-216-073-00	METAL CHIP	10K	5%	1/10W
R147	1-216-079-00	METAL CHIP	18K	5%	1/10W
R148	1-216-073-00	METAL CHIP	10K	5%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R152	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R153	1-216-070-00	METAL CHIP	7.5K	5%	1/10W
R154	1-216-070-00	METAL CHIP	7.5K	5%	1/10W

BD

DISPLAY

FUNCTION

TIMER

Ref. No.	Part No.	Description	Remark		
R155	1-216-093-00	METAL CHIP	68K	5%	1/10W
R156	1-216-085-00	METAL CHIP	33K	5%	1/10W
R157	1-216-117-00	METAL CHIP	680K	5%	1/10W
R158	1-216-097-00	METAL CHIP	100K	5%	1/10W
R159	1-216-083-00	METAL CHIP	27K	5%	1/10W
R160	1-216-049-00	METAL CHIP	1K	5%	1/10W
R161	1-216-095-00	METAL CHIP	82K	5%	1/10W
R163	1-216-076-00	METAL CHIP	13K	5%	1/10W
R164	1-216-085-00	METAL CHIP	33K	5%	1/10W
R165	1-216-081-00	METAL CHIP	22K	5%	1/10W
R166	1-216-085-00	METAL CHIP	33K	5%	1/10W
R167	1-216-308-00	METAL CHIP	4.7	5%	1/10W
R171	1-216-001-00	METAL CHIP	10	5%	1/10W
R172	1-216-001-00	METAL CHIP	10	5%	1/10W
R173	1-216-001-00	METAL CHIP	10	5%	1/10W
R174	1-216-001-00	METAL CHIP	10	5%	1/10W
R175	1-216-001-00	METAL CHIP	10	5%	1/10W
R177	1-216-001-00	METAL CHIP	10	5%	1/10W
R178	1-216-001-00	METAL CHIP	10	5%	1/10W
R179	1-216-001-00	METAL CHIP	10	5%	1/10W
R180	1-216-001-00	METAL CHIP	10	5%	1/10W
R181	1-216-029-00	METAL CHIP	150	5%	1/10W
R182	1-216-029-00	METAL CHIP	150	5%	1/10W
R183	1-216-073-00	METAL CHIP	10K	5%	1/10W
R184	1-216-097-00	METAL CHIP	100K	5%	1/10W
R191	1-216-295-00	METAL CHIP	0	5%	1/10W
R192	1-216-295-00	METAL CHIP	0	5%	1/10W
R201	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R202	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R203	1-216-073-00	METAL CHIP	10K	5%	1/10W
R204	1-216-121-00	METAL CHIP	1M	5%	1/10W
R205	1-216-105-00	METAL CHIP	220K	5%	1/10W
R206	1-216-073-00	METAL CHIP	10K	5%	1/10W
R207	1-216-041-00	METAL CHIP	470	5%	1/10W
R208	1-216-041-00	METAL CHIP	470	5%	1/10W
R209	1-216-041-00	METAL CHIP	470	5%	1/10W
R210	1-216-033-00	METAL CHIP	220	5%	1/10W
R211	1-216-073-00	METAL CHIP	10K	5%	1/10W
R212	1-216-037-00	METAL CHIP	330	5%	1/10W
R213	1-216-049-00	METAL CHIP	1K	5%	1/10W
R301	1-216-073-00	METAL CHIP	10K	5%	1/10W
R302	1-216-073-00	METAL CHIP	10K	5%	1/10W
R303	1-216-073-00	METAL CHIP	10K	5%	1/10W
R304	1-216-073-00	METAL CHIP	10K	5%	1/10W
R305	1-216-073-00	METAL CHIP	10K	5%	1/10W
R306	1-216-073-00	METAL CHIP	10K	5%	1/10W
R307	1-216-073-00	METAL CHIP	10K	5%	1/10W
R308	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-049-00	METAL CHIP	1K	5%	1/10W

Ref. No.	Part No.	Description	Remark		
R310	1-216-121-00	METAL CHIP	1M	5%	1/10W
R311	1-216-037-00	METAL CHIP	330	5%	1/10W
R312	1-216-073-00	METAL CHIP	10K	5%	1/10W
R313	1-216-049-00	METAL CHIP	1K	5%	1/10W
R314	1-216-073-00	METAL CHIP	10K	5%	1/10W
R315	1-216-073-00	METAL CHIP	10K	5%	1/10W
R316	1-216-073-00	METAL CHIP	10K	5%	1/10W
R317	1-216-073-00	METAL CHIP	10K	5%	1/10W
R318	1-216-073-00	METAL CHIP	10K	5%	1/10W
R319	1-216-073-00	METAL CHIP	10K	5%	1/10W

< VIBRATOR >

X301 1-577-377-11 VIBRATOR, CERAMIC (10MHz)

*	1-637-410-11	DISPLAY BOARD	*****
*	1-637-419-11	FUNCTION BOARD	*****
*	1-637-411-11	TIMER BOARD	*****

*	4-923-532-21	SPACER, LED
*	4-928-052-01	HOLDER (RIGHT)
*	4-928-053-01	HOLDER (LEFT)

< CAPACITOR >

C802	1-164-159-11	CERAMIC	0.1uF	50V
C803	1-164-159-11	CERAMIC	0.1uF	50V

< CONNECTOR >

* CN801	1-564-341-11	PIN, CONNECTOR 7P
* CN802	1-506-503-11	PIN, CONNECTOR 9P
* CN803	1-564-340-00	PIN, CONNECTOR 6P

< DIODE >

D701	8-719-970-07	LED	MPG3371X-150 (▶)
D702	8-719-971-52	LED	MAY3371X-M-177 (■)
D703	8-719-971-50	LED	MBG3371X (CONTINUE)
D704	8-719-971-52	LED	MAY3371X-M-177 (SHUFFLE)
D705	8-719-987-97	LED	BR3371X (PROGRAM)
D706	8-719-970-98	LED	MPY3371X-177 (C. INDEX)
D801	8-719-987-63	DIODE	1N4148M
D802	8-719-987-63	DIODE	1N4148M
D803	8-719-987-63	DIODE	1N4148M
D804	8-719-987-63	DIODE	1N4148M
D805	8-719-987-63	DIODE	1N4148M
D806	8-719-987-63	DIODE	1N4148M
D807	8-719-987-63	DIODE	1N4148M

DISPLAY

FUNCTION

TIMER

HP

Ref. No.	Part No.	Description	Remark
< FLUORESCENT INDICATOR >			
FLD801	1-519-622-11	INDICATOR TUBE, FLUORESCENT	
< IC >			
IC801	8-759-074-98	IC MSC62408-041GS-V1K	
IC802	8-741-100-48	IC SBX1610-59	
< TRANSISTOR >			
Q701	8-729-900-80	TRANSISTOR DTC114ES	
Q702	8-729-900-80	TRANSISTOR DTC114ES	
Q703	8-729-900-80	TRANSISTOR DTC114ES	
Q704	8-729-900-80	TRANSISTOR DTC114ES	
Q705	8-729-900-80	TRANSISTOR DTC114ES	
Q706	8-729-900-80	TRANSISTOR DTC114ES	
Q801	8-729-900-45	TRANSISTOR DTC114EF	
Q802	8-729-900-45	TRANSISTOR DTC114EF	
< RESISTOR >			
R701	1-249-406-11	CARBON 120 5% 1/4W	
R702	1-249-406-11	CARBON 120 5% 1/4W	
R703	1-249-406-11	CARBON 120 5% 1/4W	
R704	1-249-406-11	CARBON 120 5% 1/4W	
R705	1-249-415-11	CARBON 680 5% 1/4W	
R706	1-249-409-11	CARBON 220 5% 1/4W	
R801	1-249-425-11	CARBON 4.7K 5% 1/4W	
R802	1-249-429-11	CARBON 10K 5% 1/4W	
R803	1-247-903-00	CARBON 1M 5% 1/4W	
R806	1-249-441-11	CARBON 100K 5% 1/4W	
R809	1-249-441-11	CARBON 100K 5% 1/4W	
< SWITCH >			
S701	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE CONTINUE)	
S702	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE SHUFFLE)	
S703	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE PROGRAM)	
S704	1-554-937-11	SWITCH, KEY BOARD (PLAY MODE C. INDEX)	
S705	1-554-937-11	SWITCH, KEY BOARD (K4)	
S706	1-554-937-11	SWITCH, KEY BOARD (II)	
S707	1-554-937-11	SWITCH, KEY BOARD (▶)	
S708	1-554-937-11	SWITCH, KEY BOARD (EDIT/TIME FADE)	
S709	1-554-937-11	SWITCH, KEY BOARD (FADER)	
S710	1-554-937-11	SWITCH, KEY BOARD (P. SEARCH)	
S711	1-554-937-11	SWITCH, KEY BOARD (▶▶)	
S712	1-554-937-11	SWITCH, KEY BOARD (■)	
S713	1-554-937-11	SWITCH, KEY BOARD (DIMMER REPERT)	
S714	1-554-937-11	SWITCH, KEY BOARD (1)	
S715	1-554-937-11	SWITCH, KEY BOARD (6)	
S716	1-554-937-11	SWITCH, KEY BOARD (11)	

Ref. No.	Part No.	Description	Remark
S717	1-554-937-11	SWITCH, KEY BOARD (16)	
S718	1-554-937-11	SWITCH, KEY BOARD (◀◀)	
S719	1-554-937-11	SWITCH, KEY BOARD (FILE)	
S720	1-554-937-11	SWITCH, KEY BOARD (DIMMER TIME/MEMO)	
S721	1-554-937-11	SWITCH, KEY BOARD (2)	
S722	1-554-937-11	SWITCH, KEY BOARD (7)	
S723	1-554-937-11	SWITCH, KEY BOARD (12)	
S724	1-554-937-11	SWITCH, KEY BOARD (17)	
S725	1-554-937-11	SWITCH, KEY BOARD (▶▶)	
S726	1-554-937-11	SWITCH, KEY BOARD (ERASE)	
S727	1-554-937-11	SWITCH, KEY BOARD (3)	
S728	1-554-937-11	SWITCH, KEY BOARD (8)	
S729	1-554-937-11	SWITCH, KEY BOARD (13)	
S730	1-554-937-11	SWITCH, KEY BOARD (18)	
S731	1-554-937-11	SWITCH, KEY BOARD (CLEAR)	
S732	1-554-937-11	SWITCH, KEY BOARD (FILE RECALL)	
S733	1-554-937-11	SWITCH, KEY BOARD (4)	
S734	1-554-937-11	SWITCH, KEY BOARD (9)	
S735	1-554-937-11	SWITCH, KEY BOARD (14)	
S736	1-554-937-11	SWITCH, KEY BOARD (19)	
S737	1-554-937-11	SWITCH, KEY BOARD (CHECK)	
S738	1-554-937-11	SWITCH, KEY BOARD (5)	
S739	1-554-937-11	SWITCH, KEY BOARD (10)	
S740	1-554-937-11	SWITCH, KEY BOARD (15)	
S741	1-554-937-11	SWITCH, KEY BOARD (20)	
S801	1-554-937-11	SWITCH, KEY BOARD (△ OPEN/CLOSE)	
S802	1-554-937-11	SWITCH, KEY BOARD (LEVEL FILE)	
S803	1-554-937-11	SWITCH, KEY BOARD (DISPLAY MODE)	
S804	1-570-157-51	SWITCH, SLIDE (TIMER)	
< VIBRATOR >			
X801	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)	

*	1-642-074-11	HP BOARD	

< CAPACITOR >			
C461	1-162-290-31	CERAMIC 470PF 10% 50V	
C561	1-162-290-31	CERAMIC 470PF 10% 50V	
< JACK >			
J451	1-568-519-31	JACK, LARGE TYPE (PHONES)	
< COIL >			
L461	1-424-090-11	COIL, LINE FILTER	
L561	1-424-090-11	COIL, LINE FILTER	

L.MOTOR

LINE OUT

OPT

POWER

Ref.No.	Part No.	Description	Remark
*	1-641-765-11	L. MOTOR BOARD *****	

*	1-641-808-11	LINE OUT BOARD *****	
		< DIODE >	
D471	8-719-987-63	DIODE 1N4148M	
		< JACK >	
J401	1-568-101-11	JACK, PIN 4P (LINE OUT)	
		< RESISTOR >	
R470	1-247-700-11	CARBON 100 5% 1/4W	
R471	1-247-700-11	CARBON 100 5% 1/4W	
R570	1-247-700-11	CARBON 100 5% 1/4W	
R571	1-247-700-11	CARBON 100 5% 1/4W	
		< RELAY >	
RY471	1-515-727-11	RELAY	

*	1-641-807-11	OPT BOARD *****	
		< CAPACITOR >	
C280	1-126-059-11	ELECT 10uF 20% 50V	
		< CONNECTOR >	
* CN280	1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	
		< IC >	
IC280	8-749-921-12	IC GP1F32T (DIGITAL OUT OPTICAL)	

*	A-4649-346-A	POWER BOARD, COMPLETE *****	
	7-682-147-15	SCREW, TR	
*	4-941-237-01	HEAT SINK	
	7-682-545-09	SCREW +B 3X4	
		< BUS BAR >	
* BUS902	1-566-940-11	BUS BAR 6P	
		< CAPACITOR >	
C901	1-126-982-11	ELECT 5600uF 20% 35V	

Ref.No.	Part No.	Description	Remark
C921	1-126-982-11	ELECT 5600uF 20% 35V	
C951	1-126-017-11	ELECT 6800uF 20% 16V	
C952	1-126-832-51	ELECT 3300uF 20% 10V	
C953	1-126-797-51	ELECT 1000uF 20% 10V	
C954	1-126-797-51	ELECT 1000uF 20% 10V	
C955	1-126-797-51	ELECT 1000uF 20% 10V	
C956	1-126-335-11	ELECT 220uF 20% 10V	
C957	1-126-162-11	ELECT 3.3uF 20% 50V	
C958	1-162-294-31	CERAMIC 0.001uF 10% 50V	
C959	1-124-572-11	ELECT 100uF 20% 63V	
C960	1-126-233-11	ELECT 22uF 20% 50V	
C961	1-124-122-11	ELECT 100uF 20% 50V	
C962	1-124-122-11	ELECT 100uF 20% 50V	
C963	1-136-177-00	FILM 1uF 5% 50V	
C964	1-136-165-00	FILM 0.1uF 5% 50V	
C965	1-126-335-11	ELECT 220uF 20% 10V	
C966	1-126-797-51	ELECT 1000uF 20% 10V	
C971	1-164-159-11	CERAMIC 0.1uF 50V	
		< CONNECTOR >	
* CN952	1-564-341-11	PIN, CONNECTOR 7P	
* CN953	1-573-265-11	PIN, CONNECTOR 6P	
		< DIODE >	
D951	8-719-210-30	DIODE F10P20F (R)	
D955	8-719-210-38	DIODE F10P20FR	
D960	8-719-937-49	DIODE RDF02M	
D961	8-719-200-02	DIODE 10E2	
D963	8-719-200-02	DIODE 10E2	
D964	8-719-110-04	DIODE RD7.5ES-B3	
D965	8-719-913-62	DIODE HZ36-2L	
D966	8-719-933-48	DIODE HZS7B3L	
		< IC >	
IC951	8-759-925-54	IC LM2940CT-5.0	
IC952	8-759-604-86	IC M5F7807	
IC953	8-759-636-16	IC M51957AL	
IC954	8-759-604-30	IC M5F7808	
		< TRANSISTOR >	
Q951	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q952	8-729-140-96	TRANSISTOR 2SD774-34	
		< RESISTOR >	
R951	1-249-417-11	CARBON 1K 5% 1/4W	
R952	1-249-423-11	CARBON 3.3K 5% 1/4W	
R953	1-249-436-11	CARBON 39K 5% 1/4W	
R954	1-249-431-11	CARBON 15K 5% 1/4W	
R955	1-249-425-11	CARBON 4.7K 5% 1/4W	

POWER

SW

VR

Ref.No.	Part No.	Description	Remark		
R956	1-249-433-11	CARBON	22K	5%	1/4W
R957	1-249-433-11	CARBON	22K	5%	1/4W
△R958	1-212-875-00	FUSIBLE	56	5%	1/4W F
R959	1-249-417-11	CARBON	1K	5%	1/4W
△R960	1-215-860-11	METAL OXIDE	33	5%	1W F
△R961	1-216-425-11	METAL OXIDE	56	5%	1W F
< TERMINAL >					
* TB951	1-535-116-00	TERMINAL 3P			
* TB952	1-535-118-00	TERMINAL 5P			
* TB953	1-535-116-00	TERMINAL 3P			
< THERMISTOR >					
TH901	1-808-065-11	THERMISTOR, POSITIVE 0.5			
TH902	1-808-065-11	THERMISTOR, POSITIVE 0.5			
TH903	1-806-882-11	THERMISTOR, POSITIVE 2.2			
TH904	1-808-065-11	THERMISTOR, POSITIVE 0.5			

*	1-641-764-11	SW BOARD			

< CAPACITOR >					
C001	1-161-494-00	CERAMIC	0.022uF		25V
< RESISTOR >					
△R001	1-247-727-11	CARBON	10	5%	1/2W F
△R002	1-247-727-11	CARBON	10	5%	1/2W F
< SWITCH >					
S001	1-571-300-21	SWITCH, ROTARY (IN SW)			
S002	1-571-300-21	SWITCH, ROTARY (OUT SW)			

*	1-641-804-11	VR BOARD			

< CAPACITOR >					
C350	1-164-159-11	CERAMIC	0.1uF		50
C351	1-164-159-11	CERAMIC	0.1uF		50
< IC >					
IC350	8-759-962-08	IC BA6208			
< TRANSISTOR >					
Q350	8-729-900-80	TRANSISTOR	DTC114ES		

Ref. No.	Part No.	Description	Remark		
< RESISTOR >					
R350	1-249-413-11	CARBON	470	5%	1/4W
R351	1-249-417-11	CARBON	1K	5%	1/4W
< VARIABLE RESISTOR >					
RV350	1-241-321-11	RES, VAR, CARBON 10KX3 (LINE OUT/PHONE LEVEL) (INCLUDING VOL MOTOR AND VOL LED)			

MISCELLANEOUS					

△111	1-559-583-21	CORD, POWER (US, Canadian)			
△121	1-558-568-21	CORD, POWER (AEP)			
△122	1-559-555-21	CORD, POWER (UK)			
△215	8-848-244-11	DEVICE, OPTICAL KSS-272A			
△F991	1-532-066-00	FUSE, TIME-LAG (T400mA) (AEP, UK)			
△F991	1-532-741-11	FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)			
M001	A-4604-347-A	MOTOR (L) ASSY			
△S991	1-570-156-11	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (AEP, UK)			
△T991	1-450-891-11	TRANSFORMER, POWER (US, Canadian)			
△T991	1-450-892-11	TRANSFORMER, POWER (AEP, UK)			

ACCESSORIES & PACKING MATERIALS					

1-465-593-11 COMMANDER, REMOTE (RM-D991) (INCLUDING※1)					
1-558-271-11 CORD, CONNECTION					
1-590-925-31 CORD, CONNECTION					
3-707-584-01 COVER, BATTERY (※1)					
3-754-118-11 MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, PORTUGUESE) (Canadian, AEP, UK)					
3-754-118-21 MANUAL, INSTRUCTION (ENGLISH) (US)					
3-754-118-41 MANUAL, INSTRUCTION (GERMAN, DUTCH, SWEDISH, ITALIAN) (AEP)					
4-847-802-00 SCREW (US, Canadian)					
*	4-942-314-01 CUSHION (UPPER)				
*	4-942-315-01 CUSHION (LOWER)				
*	4-951-266-01 INDIVIDUAL CARTON (AEP, UK)				
*	4-951-876-01 INDIVIDUAL CARTON (US, Canadian)				

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

Les composants identifiés par une marque △ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
***** HARDWARE LIST *****			
#1	7-682-561-09	SCREW +B 4X8	
#2	7-682-545-09	SCREW +B 3X4	
#3	7-682-548-09	SCREW +BVTT 3X8 (S)	
#4	7-685-544-19	SCREW, TAPPING +B 3X5	
#5	7-685-647-79	SCREW +P 3X10 TYPE2 SLIT	
#6	7-682-547-09	SCREW +BVTT 3X6 (S)	
#7	7-682-549-09	SCREW +BVTT 3X10 (S)	
#8	7-682-547-04	SCREW +BVTT 3X6 (S)	
#9	7-682-560-04	SCREW +BVTT 4X6 (S)	
#10	7-682-147-15	SCREW, TR	
#11	7-682-544-04	SCREW +P 3X3	
#12	7-685-646-79	SCREW, TAPPING	
#13	7-685-132-19	+ PTPWH (2.6X5)	
#14	7-624-105-04	STOP RING 2.3, TYPE -E	
#15	7-621-255-25	SCREW +P 2X4	
#16	7-688-003-12	W 3, MIDDLE	