

# CDP-X303ES

## SERVICE MANUAL

*US Model  
Canadian Model  
AEP Model  
UK Model*

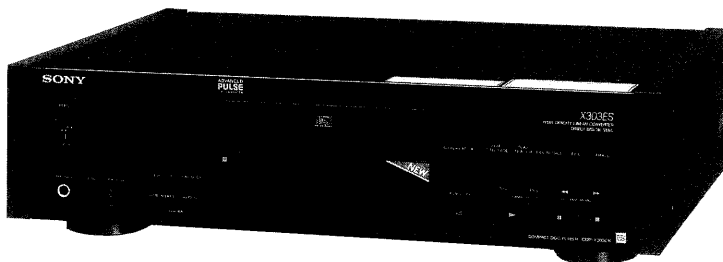


Photo: US, Canadian model



Model Name Using Similar Mechanism	NEW
CD Transport Mechanism Type	CDM19E2-6H50
Optical Pick-up Block Type	BU-6H

### SPECIFICATIONS

#### Compact disc player

Laser	Semiconductor laser
Wavelength	780-790 nm
Frequency response	2 Hz to 20 kHz $\pm 0.3$ dB
Signal-to-noise ratio	More than 117 dB
Dynamic range	More than 100 dB
Harmonic distortion	Less than 0.0018 %
Channel separation	More than 110 dB

#### Outputs

LINE OUT (FIXED)	Output level 2 V (at 50 kilo-ohms) Load impedance over 10 kilo-ohms
LINE OUT (VARIABLE)	Output level max. 2 V (at 50 kilo-ohms) Load impedance over 50 kilo-ohms
DIGITAL OUT (OPTICAL)	Wave length 660 nm Output level -18 dBm
PHONES (stereo phone jack)	Output level max. 28 mW Load impedance 32 ohms

#### General

Power requirements	US, Canadian model: 120V AC, 60Hz AEP, German model: 220-230V AC, 50/60Hz UK model: 240V AC, 50Hz
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Power consumption	24 W
Dimensions (approx., including projections)	470 x 125 x 375 mm (w/h/d) (18 <sup>5</sup> / <sub>8</sub> x 5 x 14 <sup>7</sup> / <sub>8</sub> inches)
Mass (approx.)	11.5 kg (25 lbs 6 oz): US, Canadian model 10.6 kg (23 lbs 6 oz): AEP, German, UK model

#### Remote commander (RM-D991)

Remote control system	Infrared control
Power requirements	3 V DC with two R6 (size AA) batteries
Dimensions (approx., including projections)	62 x 17 x 175 mm (w/h/d) (2 <sup>1</sup> / <sub>2</sub> x 2 <sup>3</sup> / <sub>32</sub> x 7 inches)
Mass (approx.)	135 g (5 oz)

Design and specifications are subject to change without notice.



COMPACT DISC PLAYER  
**SONY**<sup>®</sup>

## SAFETY CHECK-OUT (US Model)

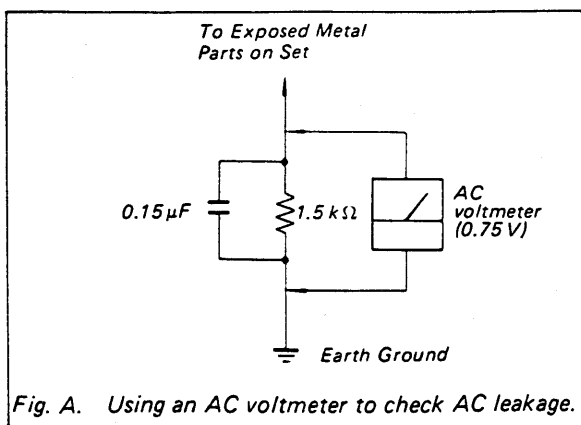
After correcting the original service problem, perform the following safety check before releasing the set to the customer:

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

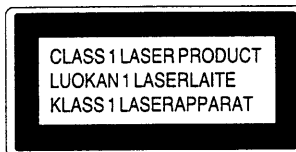
1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means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



### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  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

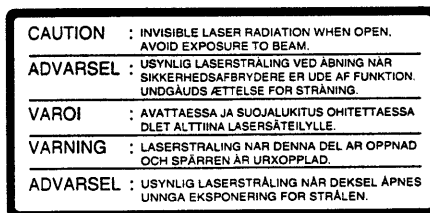


This Compact Disc player is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

### Note

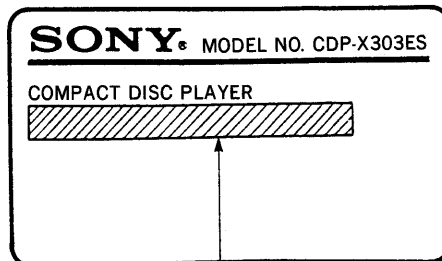
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

The following caution label is located inside of the unit.



## MODEL IDENTIFICATION

—Model Number Label—



US, CND model : AC : 120V 60Hz 24W  
AEP, G model : AC : 220—230V~50/60Hz  
UK model : AC : 240V~50Hz

- Abbreviations:  
CND : Canadian model  
G : German model

## ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHÉMATIQUES 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.

**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.

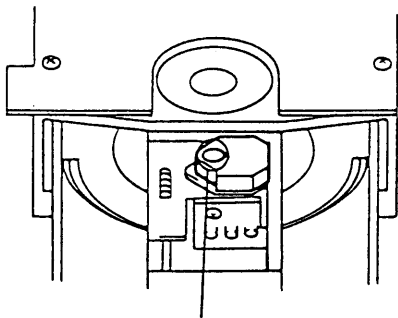
The flexible board is easily damaged and should be handled with care.

**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.

**LASER DIODE AND FOCUS SEARCH OPERATION CHECK**

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



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

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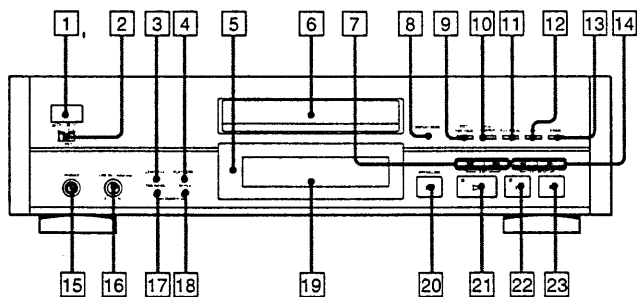
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# SECTION 1 GENERAL

This section is extracted from instruction manual.

## 1-1. IDENTIFYING THE PARTS

Refer to the pages indicated in parentheses for details.

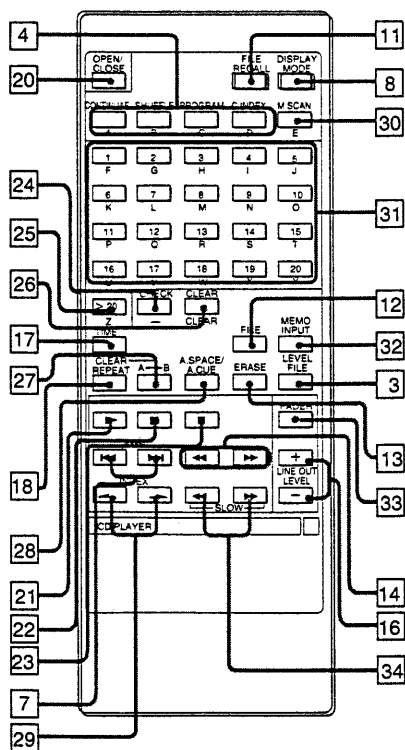


### Front Panel/ Remote Commander

- 1 POWER switch (9)
- 2 TIMER switch (46)
- 3 LEVEL FILE button (45)
- 4 PLAY MODE button  
On the remote commander:  
CONTINUE button (9)  
SHUFFLE button (14)  
PROGRAM button (17, 24)  
C.INDEX button (38)
- 5 Remote sensor
- 6 Disc tray
- 7 ◀▶▶▶ (AMS\*) buttons (11)
- 8 DISPLAY MODE button (10)
- 9 EDIT/TIME FADE button (29, 32)
- 10 PEAK SEARCH button (33)
- 11 FILE RECALL button (42, 44)
- 12 FILE (custom file) button (35, 37, 38, 41, 43)
- 13 ERASE button (40, 42, 44)
- 14 ◀▶▶▶ (manual search) buttons (12)
- 15 PHONES jack (9)
- 16 LINE OUT/PHONE LEVEL control (9, 45)  
(LINE OUT LEVEL +/- buttons on the remote commander)
- 17 TIME/MEMO button (10)
- 18 REPEAT button (20)
- 19 Display
- 20 ▲ OPEN/CLOSE button (9)
- 21 ▶ (play) button and indicator (9)
- 22 || (pause) button and indicator (9)
- 23 ■ (stop) button (9)
- 24 CHECK (program check) button (18)
- 25 >20 button (11)
- 26 CLEAR button (15, 16, 17, 18)
- 27 A↔B button (21)
- 28 A.SPACE/A.CUE button (13)
- 29 ←/→ INDEX buttons (12, 39)
- 30 M.SCAN button (19)
- 31 Numeric buttons (11)
- 32 MEMO INPUT button (36)
- 33 FADER button (22)
- 34 ◀◀▶▶ SLOW buttons (12)

\* AMS is the abbreviation of Automatic Music Sensor.

**Note**  
Orange colored alphabets on the remote commander are for letter entry of disc memo function.

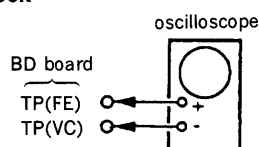


## SECTION 2 ELECTRICAL BLOCK CHECKING

### Note :

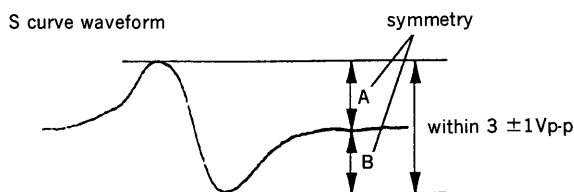
1. CD Block basically constructed to operate without adjustment. Therefore, check each item in order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.
4. Clean an object lens by an applicator with neutral detergent when the signal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

### S Curve Check



### Procedure :

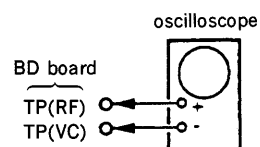
1. Connect oscilloscope to test point TP (FE) on BD board.
2. Connect between test point TP (FEI) and TP (VC) with lead wire.
3. Turned Power switch on and actuate the focus search. (actuate the focus search when disc table is moving in and out.)
4. Check the oscilloscope waveform (S curve) is symmetrical 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

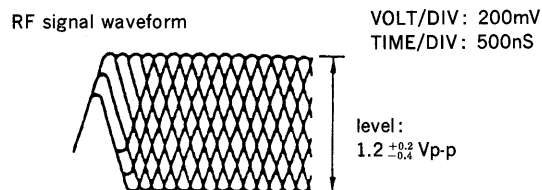


### Procedure :

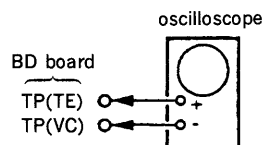
1. Connect oscilloscope to test point TP (RF) on BD board.
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that oscilloscope waveform is clear and check RF signal level is correct or not.

### Note :

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

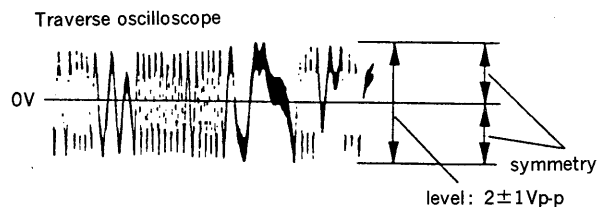


### E-F Balance Check



### 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.

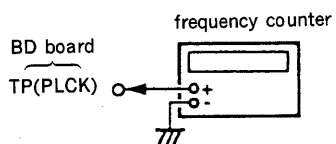


6. Remove the lead wires connected in step 1.

### RF PLL Free-run Frequency Check

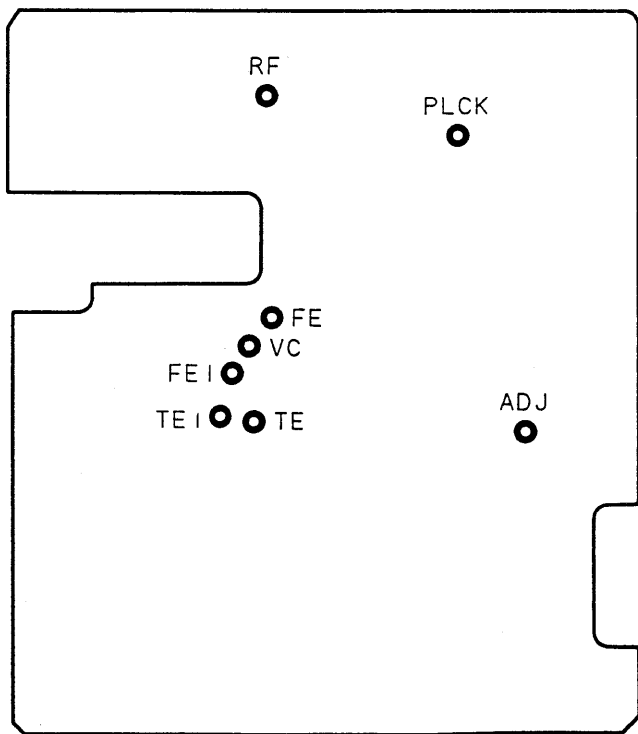
#### Procedure :

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



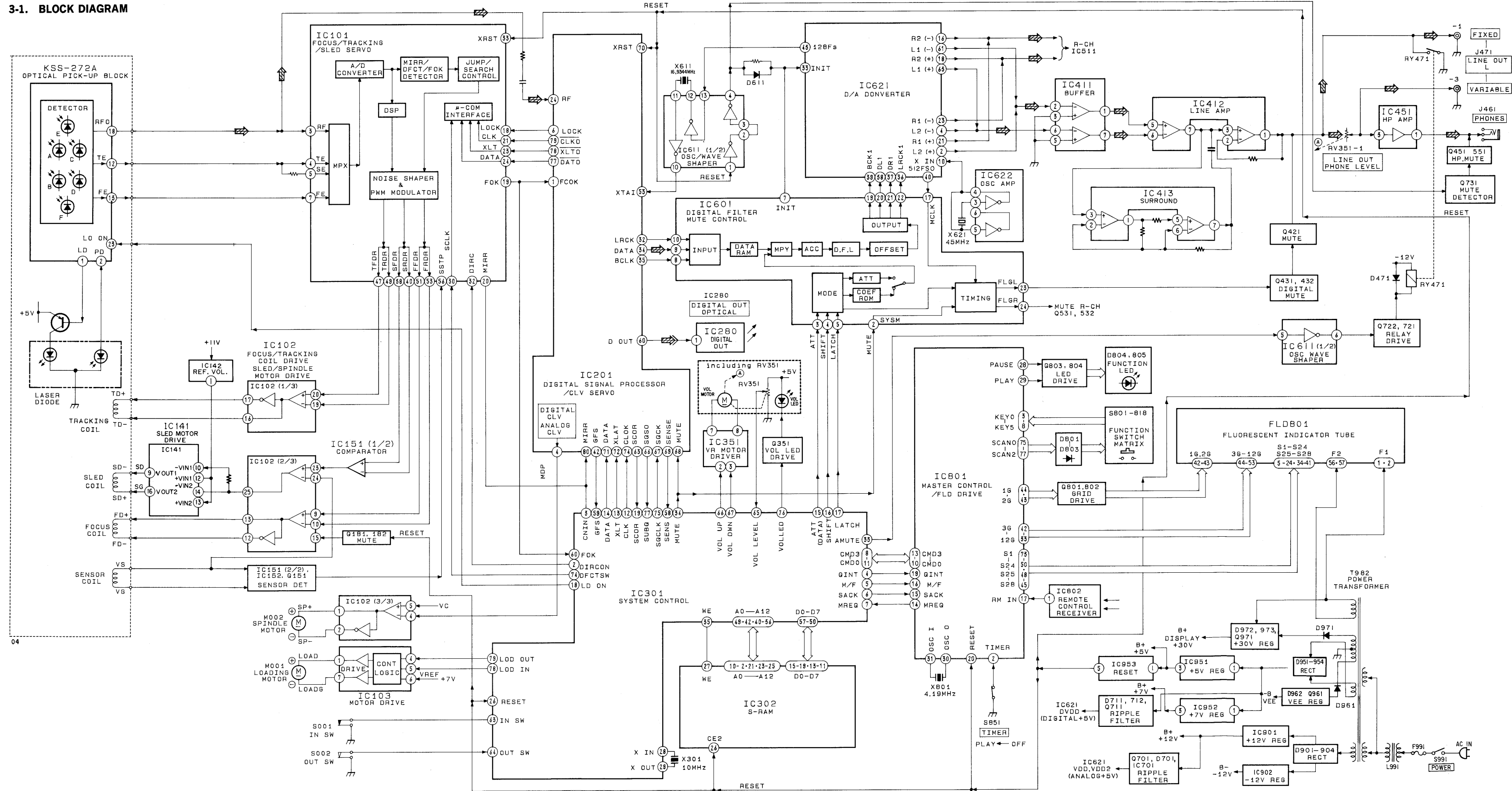
2. Turn Power switch on.
3. Put disc (YEDS-18) in and playback.
4. Confirm that reading on frequency counter is 4.3218MHz.

#### Check Point Location : BD board—side A—

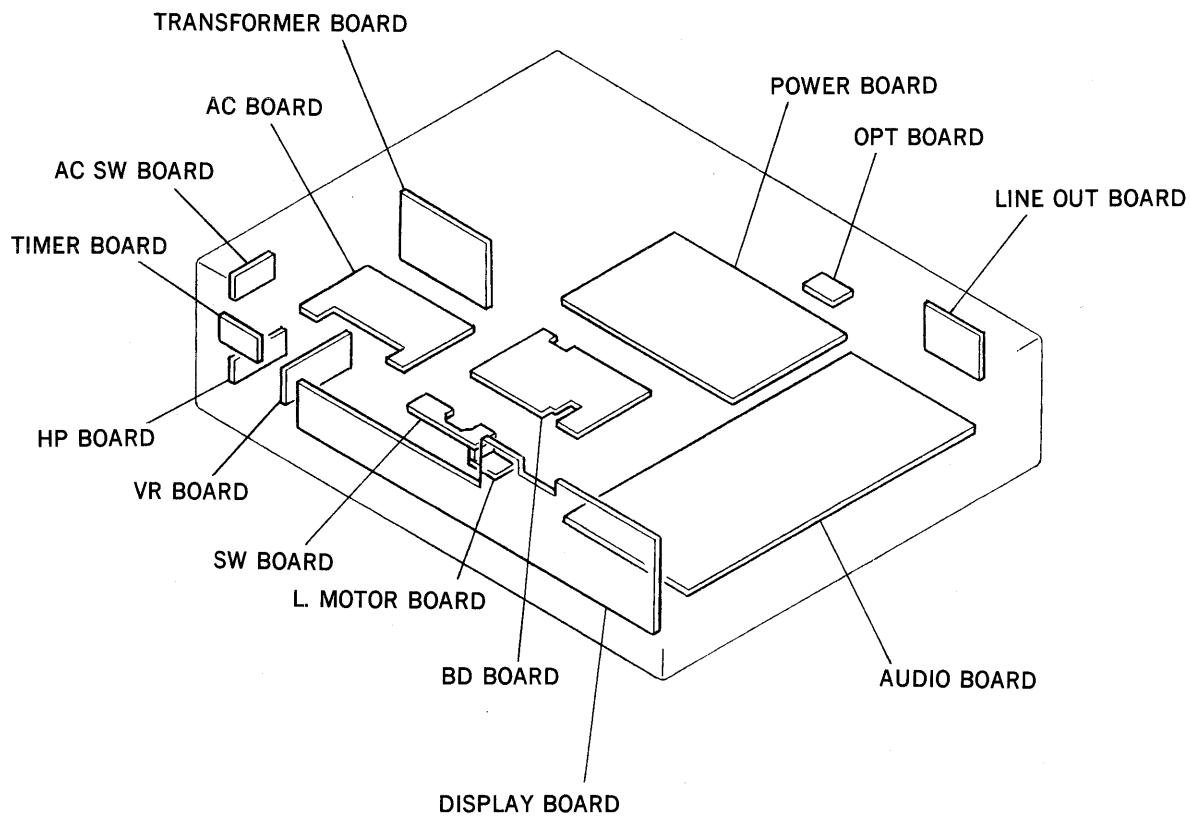


**SECTION 3  
DIAGRAMS**

**3-1. BLOCK DIAGRAM**



3-2. CIRCUIT BOARDS LOCATION

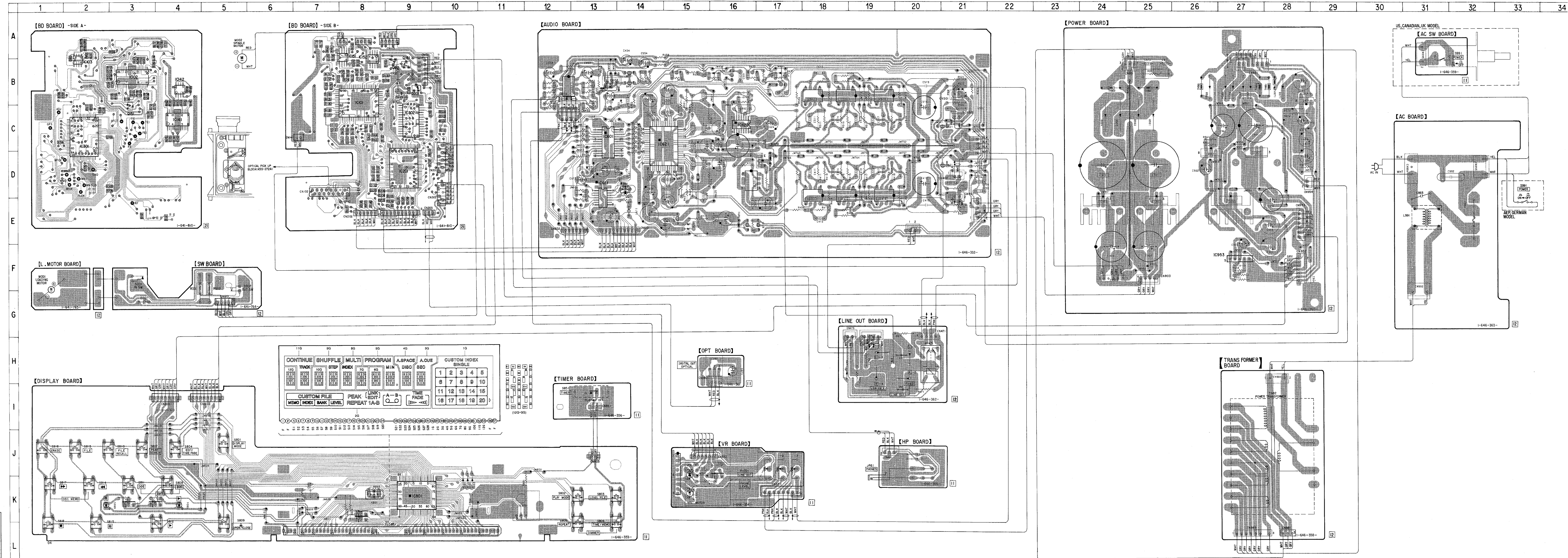




• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D301	B-9	IC411	D-18
D431	B-17	IC412	D-18
D471	H-18	IC413	D-19
D531	B-16	IC451	B-12
D601	D-13	IC511	B-11
D611	D-13	IC512	B-18
D701	E-17	IC513	B-19
D711	E-15	IC601	C-13
D712	E-15	IC611	D-13
D731	B-13	IC621	C-14
D801	K-10	IC622	C-16
D802	K-10	IC701	D-16
D803	K-10	IC801	K-9
D804	K-4	IC802	K-11
D805	K-4	IC901	E-25
D901	C-25	IC902	E-24
D902	C-25	IC951	D-27
D903	C-24	IC952	E-27
D904	C-24	IC953	F-27
D905	F-25	Q151	B-3
D951	B-27	Q181	B-9
D952	B-27	Q182	B-9
D953	B-27	Q351	J-16
D954	B-26	Q421	D-20
D961	B-26	Q431	B-17
D962	D-26	Q432	B-11
D971	B-28	Q451	B-14
D972	C-28	Q521	C-20
D973	C-28	Q531	B-16
		Q532	B-15
IC101	B-8	Q551	B-14
IC102	B-3	Q701	D-11
IC103	A-2	Q711	E-15
IC141	C-4	Q721	E-17
IC142	B-4	Q722	E-16
IC151	A-7	Q731	C-13
IC152	A-8	Q801	K-8
IC201	D-9	Q802	K-8
IC280	H-15	Q803	K-3
IC301	C-2	Q804	K-3
IC302	C-9	Q961	D-26
IC351	J-15	Q971	B-28

3-3. PRINTED WIRING BOARDS • Refer to page 19 for Semiconductor Lead Layouts.



Note:

- : parts extracted from the component side.
- : parts mounted on the conductor side.
- : Through hole.
- ▨ : Pattern from the side which enable seeing. (The other layers' patterns are not indicated.)

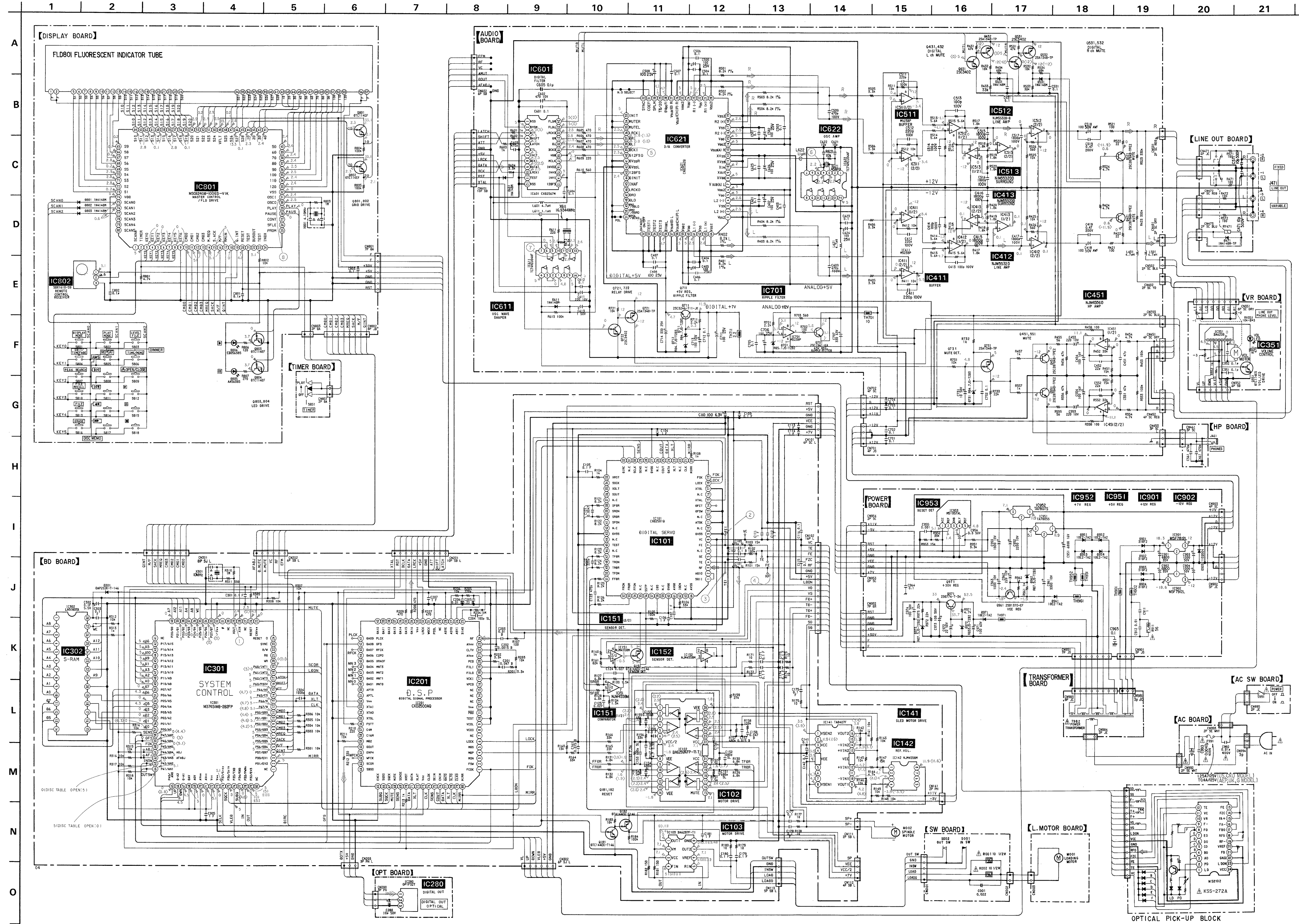
Caution:

Pattern face side : Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.

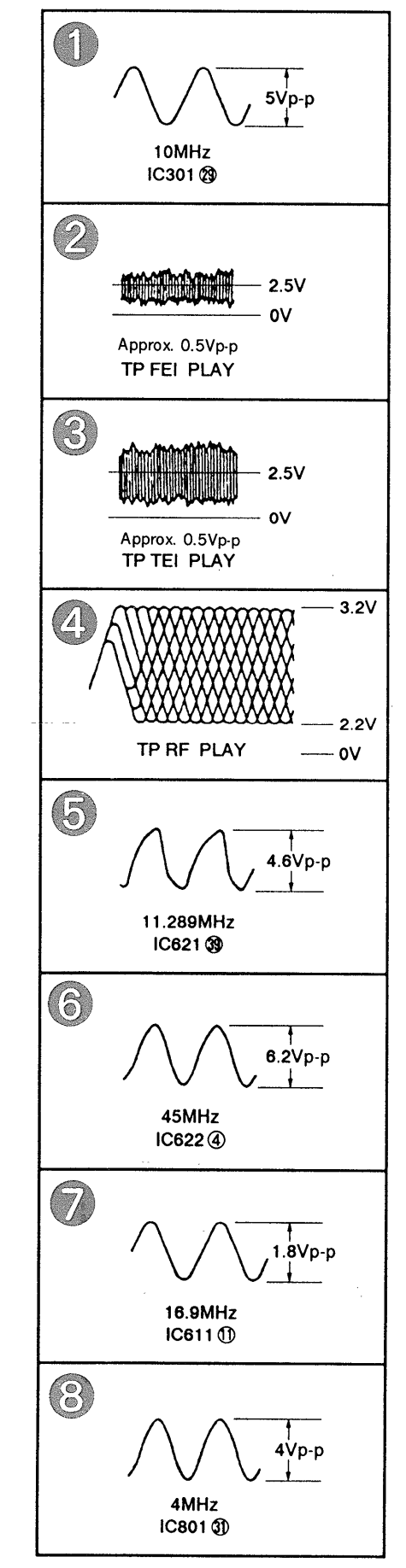
Parts face side : Parts on the parts face side seen from the (Component Side) parts face are indicated.



3-4. SCHEMATIC DIAGRAM • Refer to page 20 for IC Block Diagrams.



• Waveforms



- Note:
- All capacitors are in  $\mu\text{F}$  unless otherwise noted. pF:  $\mu\text{F}$  50WV or less are not indicated except for electrolytics and tantalums.
  - All resistors are in  $\Omega$  and  $1/4\text{W}$  or less unless otherwise specified.
  - $\Delta$ : internal component.
  - $\square$ : nonflammable resistor.
  - $\text{---}$ : fusible resistor.

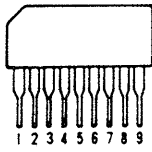
Note: The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

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

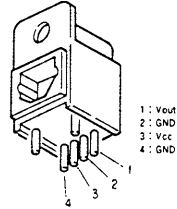
- $\text{---}$ : B+ Line
- $\text{---}$ : B- Line
- Volts and waveforms are dc with respect to ground under no-signal conditions.
- no mark: STOP
- ( ): move on LOAD OUT
- ( ): move on LOAD IN
- < ): PLAY
- Volts are taken with a VOM (input impedance 10M $\Omega$ ). Voltage variations may be noted due 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:
  - $\text{---}$ : CD
  - $\text{---}$ : digital out
- Abbreviations:
  - CND: Canadian model
  - G: German model

### 3-5. SEMICONDUCTOR LEAD LAYOUTS

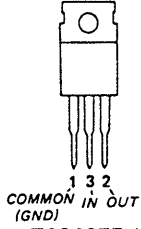
**BA6208**



**GP1F32T**



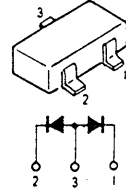
**TA7912S**



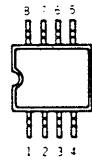
**2SB1370-EF**



**1S2836**

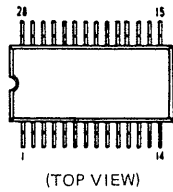


**BA6287F  
NJM4558M-T1**



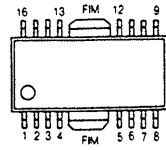
(TOP VIEW)

**LH5160N-10L**



(TOP VIEW)

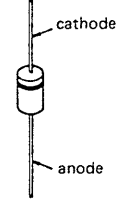
**TA8407F (EL)**



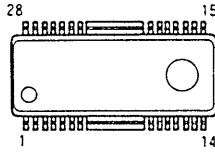
**2SC1941-KA  
2SD774-34**



**31DF2-FA**



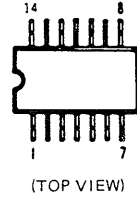
**BA6297AFP**



**M5F78M07L  
TA7805S  
TA7812S**

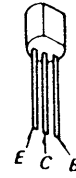


**TC74HCU04AF**

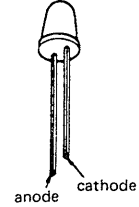


(TOP VIEW)

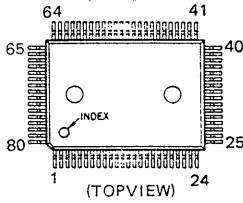
**2SC2878-AB**



**EAA5638S  
EBG5638S**

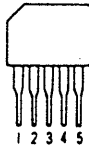


**CXD2500AQ  
MSC62408-  
100GS-V1K  
M37451M8-282FP**

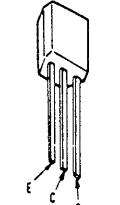


(TOPVIEW)

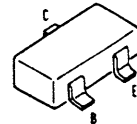
**M51957AL**



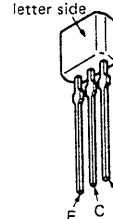
**DTA114ES  
DTC114ES**



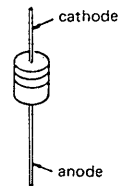
**DTA144EK  
DTC144EK**



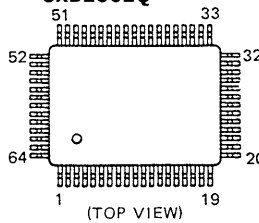
**2SC3246-JK**



**RD33JS-B2  
RD4.7JS-B3  
RD5.1JS-B2  
RD7.5JS-B2  
11EQS04**

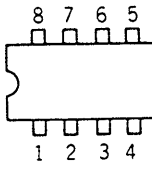


**CXD2501Q  
CXD2562Q**



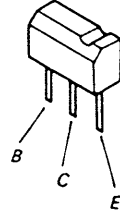
(TOP VIEW)

**M5238P  
RC4556D  
RC5532DD**

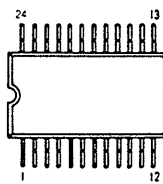


(Top view)

**DTC114EF**

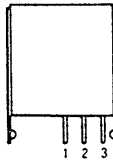


**CXD2567M**



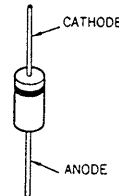
(TOP VIEW)

**SBX1610-59**



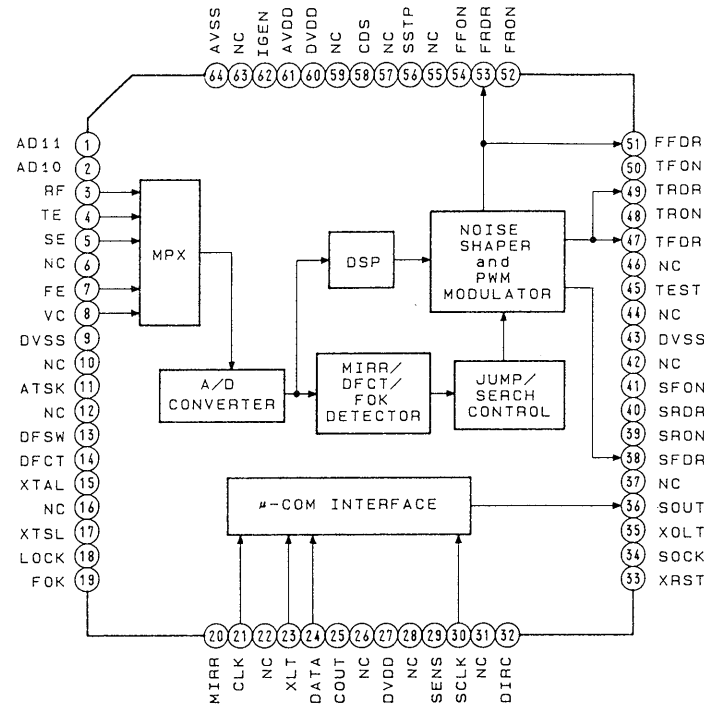
1 Vout  
2 Vcc  
3 GND

**1N4148M  
10E2**

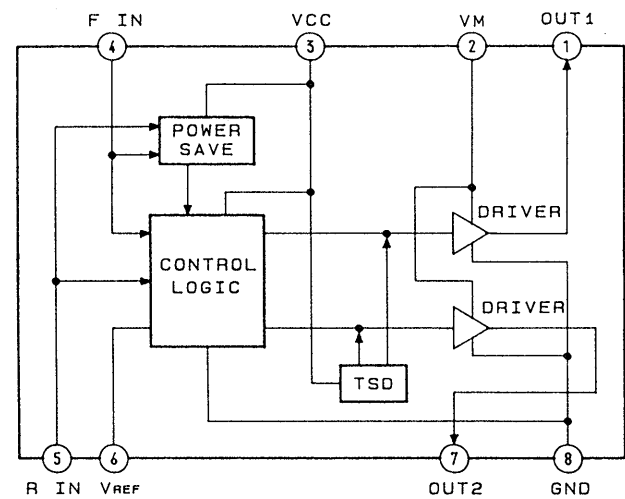


• IC Block Diagrams

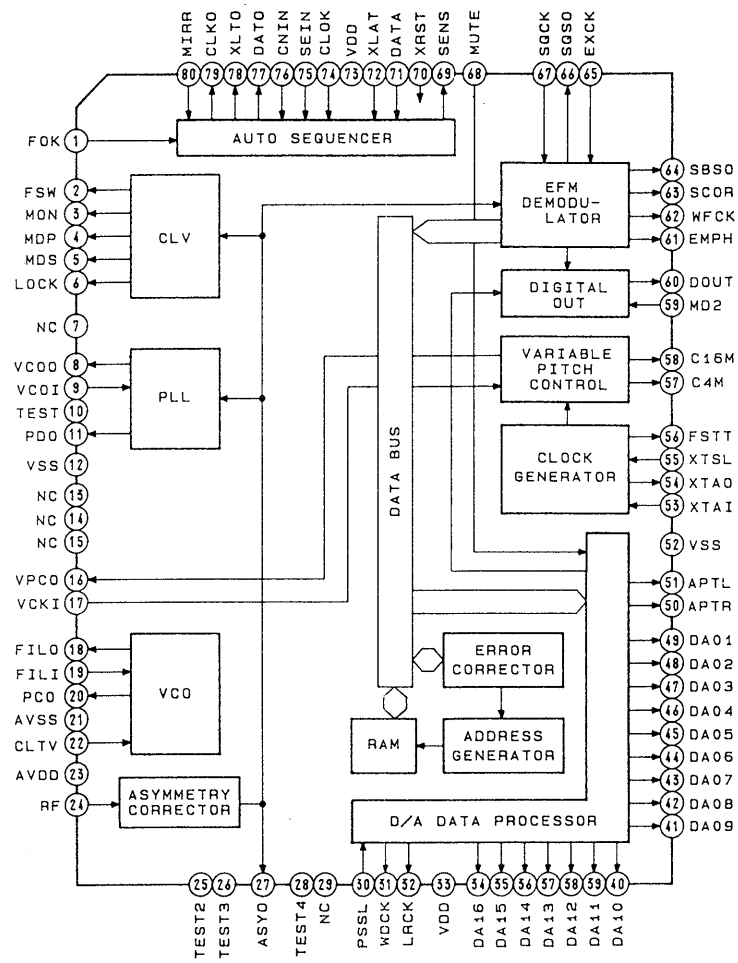
IC101 CXD2501Q



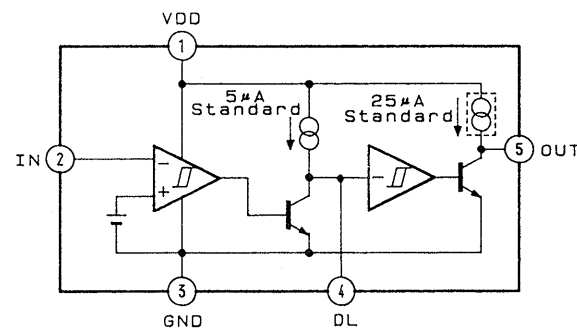
IC102 BA6297AFP



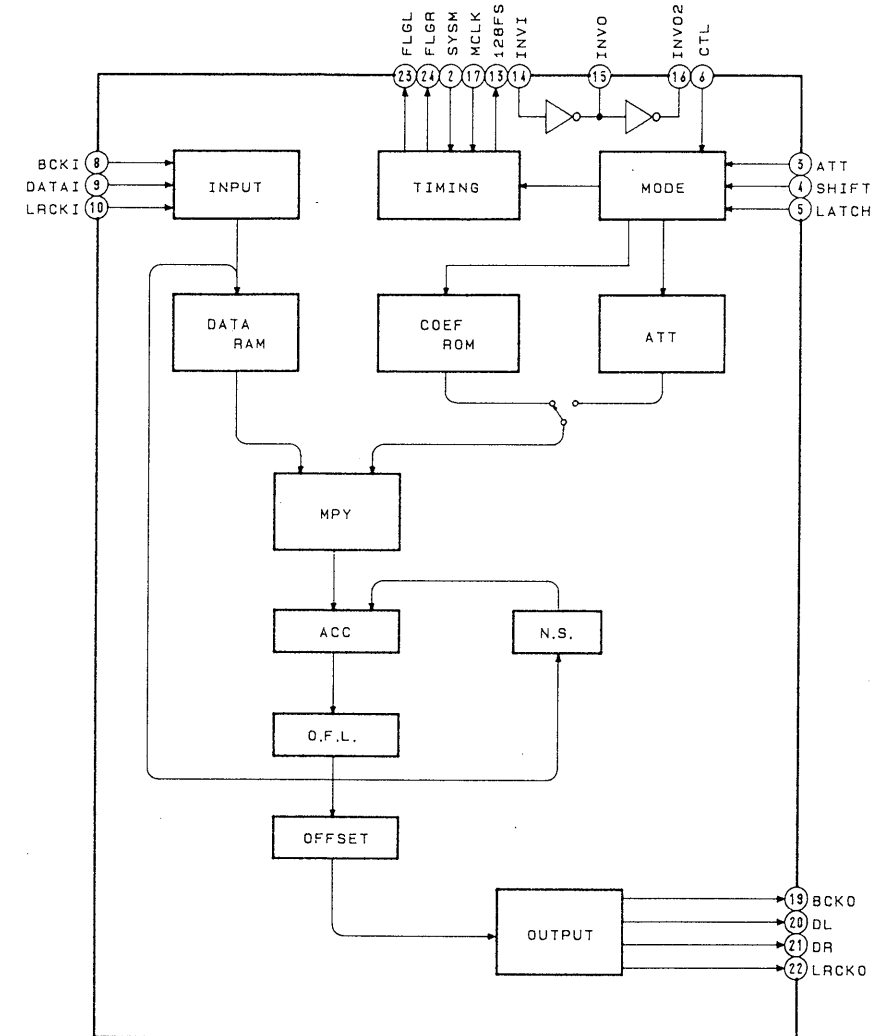
IC201 CXD2500AQ



IC953 M51957AL



IC601 CXD2567M



## SECTION 4 EXPLODED VIEWS

**NOTE:**

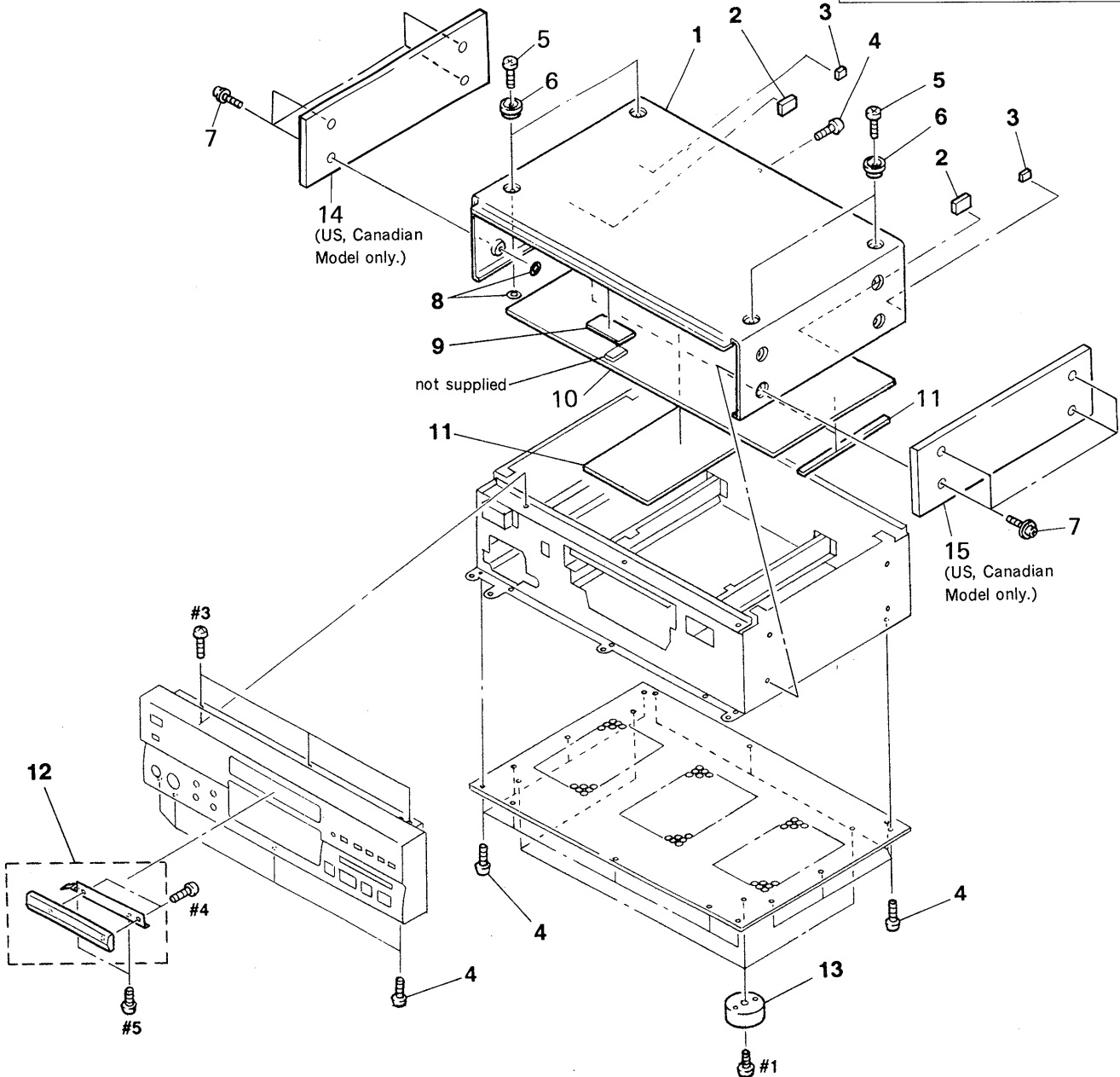
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts  
Example :  
KNOB, BALANCE (WHITE)... (RED)  
                  ↑                  ↑  
                  Parts Color Cabinet's Color
- Hardware (# mark) list is given in the last of this parts list.

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

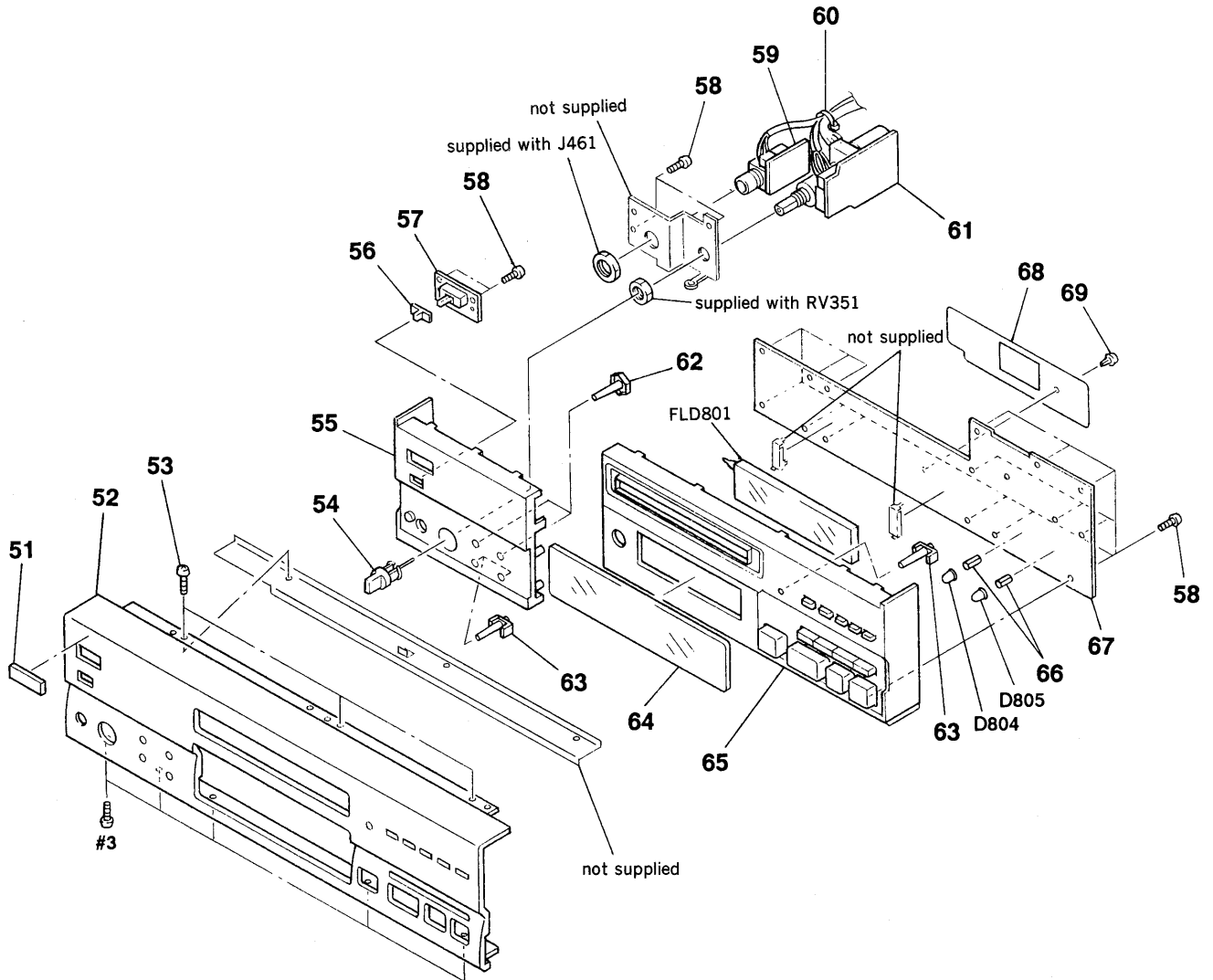
Les composants identifiés par une marque  $\triangle$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

### 4-1. CABINET



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	4-934-043-01	CASE (UK)		8	4-935-917-01	WASHER (CASE)	
* 1	4-934-043-41	CASE (US, Canadian, AEP, German)		* 9	4-923-563-11	CUSHION	
2	9-911-845-XX	CUSHION (TOP CASE)		10	A-4675-309-A	REINFORCEMENT (TOP PLATE) ASSY	
* 3	4-929-007-01	CUSHION (CASE)		11	3-831-441-11	SPACER	
4	4-929-074-01	SCREW (3X8)		12	X-4943-009-1	PANEL ASSY, LOADING	
5	4-924-242-11	SCREW (M3X6), FLAT HEAD		13	X-4941-014-1	FOOT ASSY	
6	4-928-025-11	ESCUTCHEON (TOP PLATE)		14	X-4928-001-1	PLATE (LEFT) ASSY, SIDE (US, Canadian)	
7	4-847-802-00	SCREW (AEP, UK, German)		15	X-4928-002-1	PLATE (RIGHT) ASSY, SIDE (US, Canadian)	
7	4-885-979-11	SCREW (4X25) (US, Canadian)					

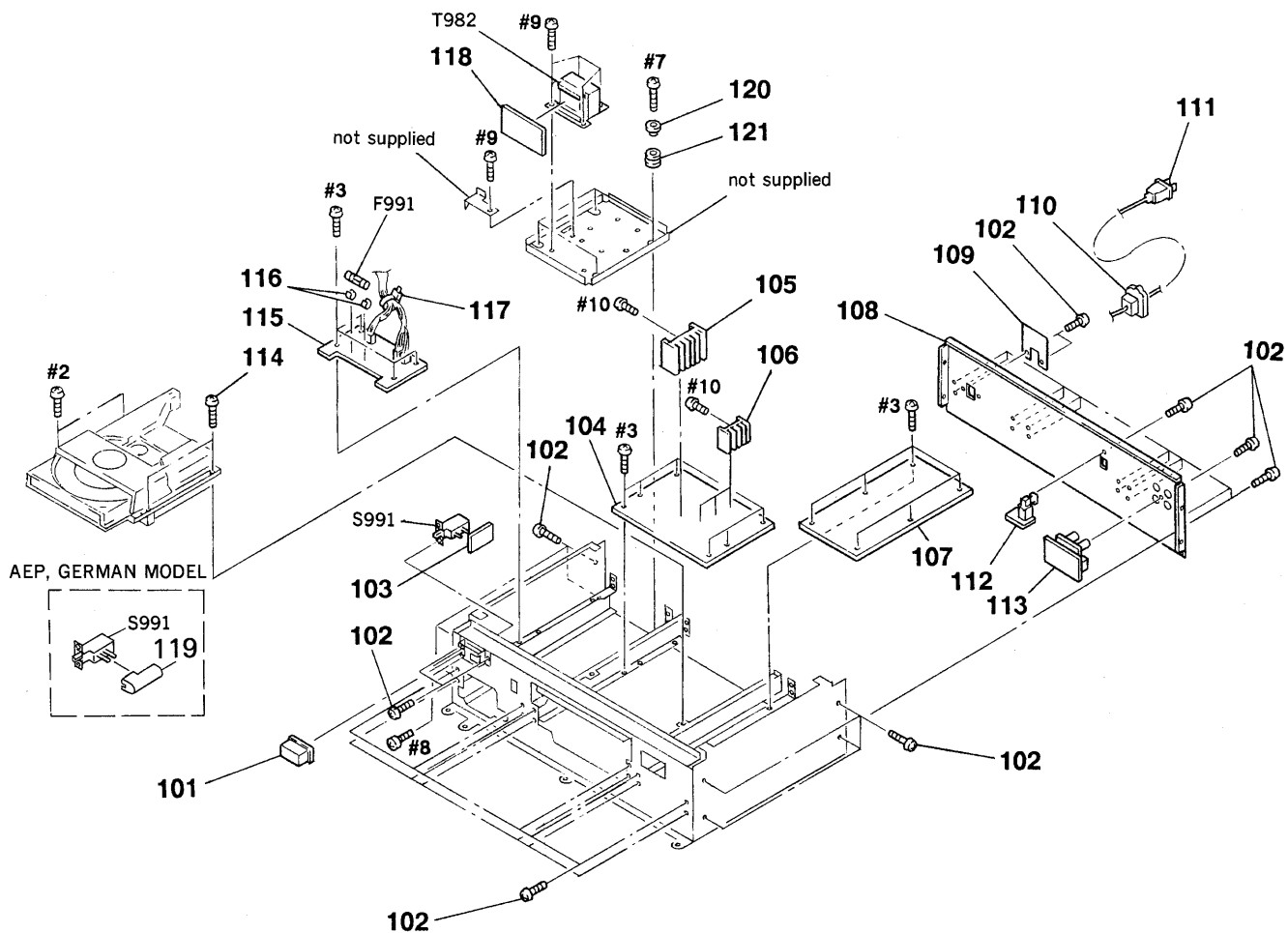
## 4-2. FRONT PANEL



Ref. No.	Part No.	Description	Remark
51	4-942-568-01	EMBLEM (NO. 5), SONY	
52	4-955-070-11	PANEL, FRONT (US, Canadian, UK)	
52	4-955-070-21	PANEL, FRONT (AEP, German)	
53	3-703-685-21	SCREW (+BV 3X8)	
54	A-4604-901-A	KNOB (LINE OUT) ASSY	
55	4-955-058-01	PANEL (BASE L)	
56	4-922-518-11	KNOB (TIMER)	
* 57	1-646-356-11	TIMER BOARD	
58	4-951-620-01	SCREW (2. 6X8), +BVTP	
* 59	1-646-355-11	HP BOARD	
60	3-655-653-21	BAND (TAITON), BINDING	
* 61	1-646-354-11	VR BOARD	

Ref. No.	Part No.	Description	Remark
62	4-955-078-01	BUTTON (LEVEL FILE, PLAY MODE)	
63	4-941-085-01	BUTTON (TIME/MEMO, REPEAT, DISPLAY MODE)	
64	4-955-059-01	PLATE, INDICATION	
65	X-4943-006-1	BASE (R) ASSY, PANEL	
* 66	4-923-532-01	SPACER, LED	
* 67	A-4649-423-A	DISPLAY BOARD, COMPLETE	
* 68	4-955-888-01	COVER (CABLE)	
69	3-531-576-11	RIVET	
D804	8-719-913-49	LED EBG5638S (▶)	
D805	8-719-913-47	LED EAA5638S (▬)	
FLD801	1-517-128-11	INDICATOR TUBE, FLUORESCENT	

### 4-3. CHASSIS

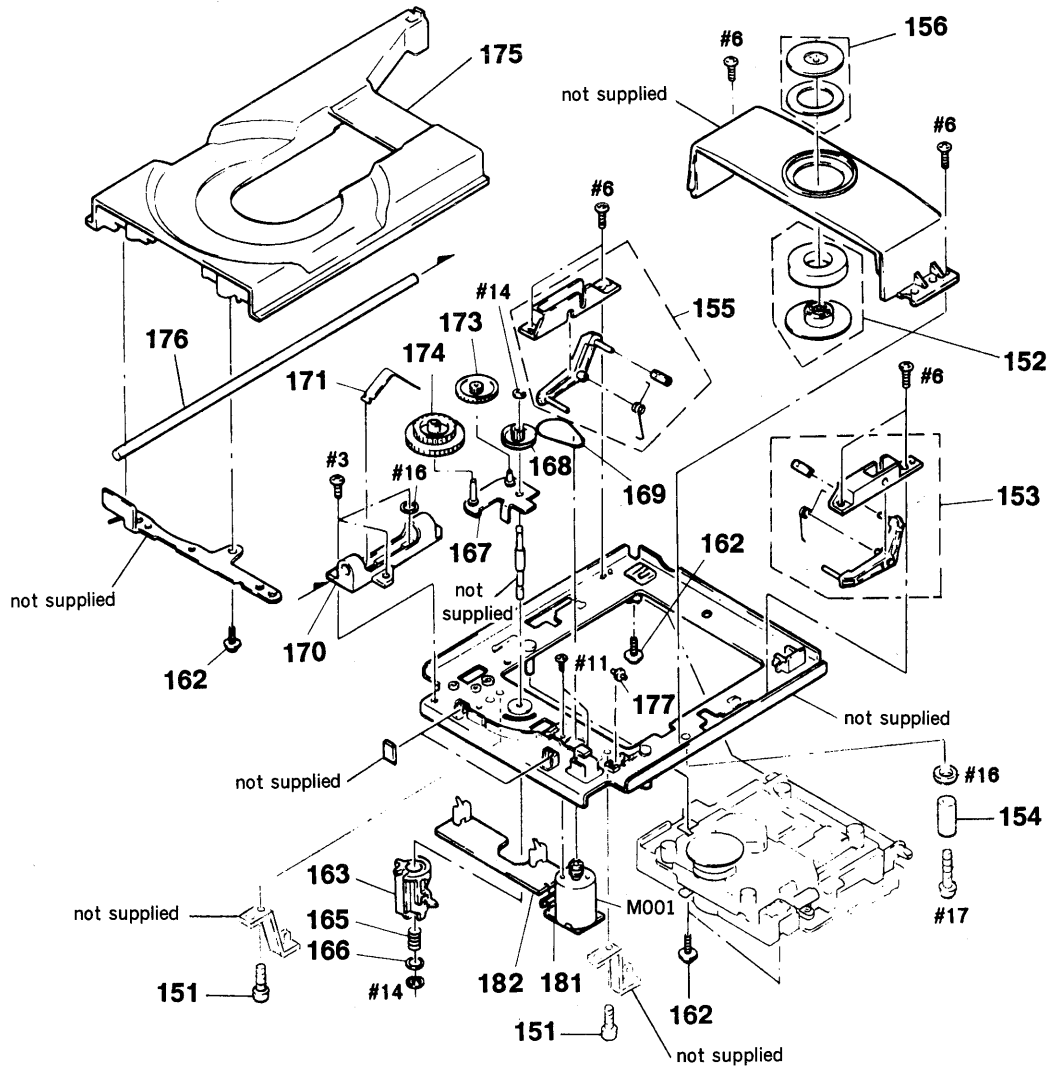


<p>The components identified by mark <math>\triangle</math> or dotted line with mark <math>\triangle</math> are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque <math>\triangle</math> sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remark
101	4-923-520-51	KNOB, POWER	
102	4-929-074-01	SCREW (3X8)	
* 103	1-646-359-11	AC SW BOARD (US, Canadian, UK)	
* 104	A-4649-680-A	POWER BOARD, COMPLETE	
* 105	4-921-402-01	HEAT SINK	
* 106	4-363-146-00	HEAT SINK, V. OUT	
* 107	A-4649-547-A	AUDIO BOARD, COMPLETE	
* 108	4-955-063-12	PANEL, BACK (AEP, German)	
* 108	4-955-063-23	PANEL, BACK (UK)	
* 108	4-955-063-31	PANEL, BACK (Canadian)	
* 108	4-955-063-41	PANEL, BACK (US)	
* 109	4-923-873-01	BRACKET, CORD STOPPER	
* 110	3-703-244-00	BUSHING (2104), CORD	
$\triangle$ 111	1-558-568-21	CORD, POWER (AEP, German)	
$\triangle$ 111	1-559-583-21	CORD, POWER (US, Canadian)	
$\triangle$ 111	1-696-934-11	CORD, POWER (UK)	

Ref. No.	Part No.	Description	Remark
* 112	1-646-361-11	OPT BOARD	
* 113	1-646-362-11	LINE OUT BOARD	
114	3-703-685-21	SCREW (+BV 3X8)	
* 115	1-646-363-11	AC BOARD	
116	1-533-183-11	HOLDER, FUSE	
117	3-655-653-21	BAND (TAITON), BINDING	
* 118	1-646-358-11	TRANSFORMER BOARD	
119	3-575-524-00	COVER, POWER SWITCH (AEP, German)	
120	4-928-032-01	COLLAR (A)	
* 121	4-888-798-00	BUSHING, RUBBER	
$\triangle$ F991	1-532-066-00	FUSE, TIME-LAG (T0. 4A) (AEP, UK, German)	
$\triangle$ F991	1-532-741-11	FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)	
$\triangle$ S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER)	
$\triangle$ T982	1-423-453-11	TRANSFORMER, POWER (US, Canadian)	
$\triangle$ T982	1-423-454-11	TRANSFORMER, POWER (AEP, UK, German)	

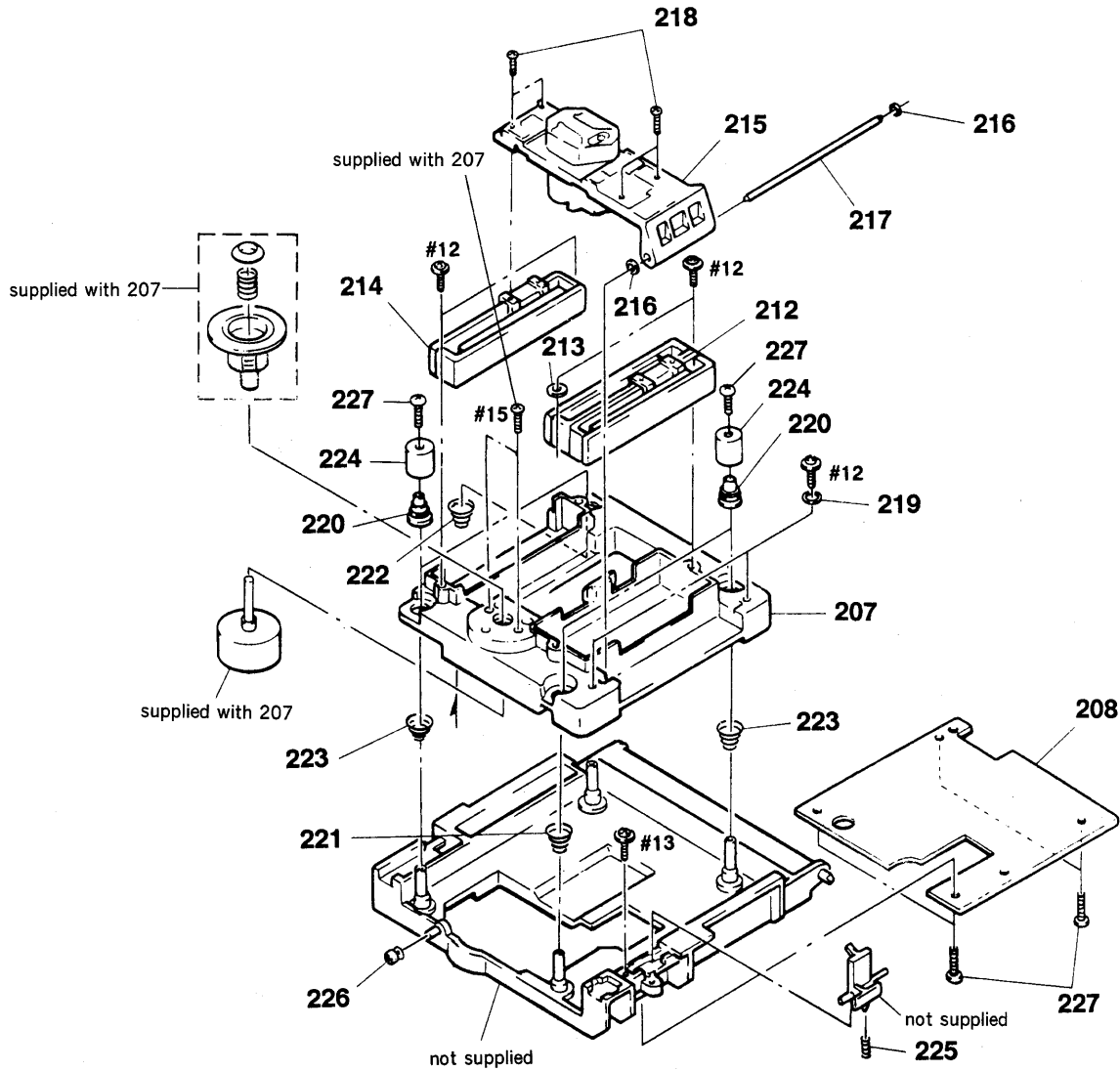
**4-4. CD MECHANISM BLOCK  
(CDM19E2-6H50)**



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
151	3-703-685-21	SCREW (+BV 3X8)		169	4-927-649-01	BELT	
* 152	4-918-679-04	PULLEY, PRESS		* 170	4-948-360-01	BEARING, LOADING	
153	A-4604-914-A	LOCK (R) ASSY, STABLE		* 171	4-927-648-01	SLIDER (GROUND)	
154	3-654-603-00	SPACER		173	4-927-628-01	GEAR (C)	
155	A-4604-913-A	LOCK (L) ASSY, STABLE		174	4-927-620-01	GEAR (P)	
156	A-4665-024-A	MAGNET ASSY		175	4-948-353-01	TABLE, DISC	
* 162	4-917-583-21	BRACKET, YOKE		* 176	4-948-368-01	BAR (MAIN), GUIDE	
* 163	4-948-371-01	CAM (BU)		177	4-927-627-01	ROLLER (S, G)	
165	3-659-338-00	SPRING, COMPRESSION		* 181	1-641-765-11	L. MOTOR BOARD	
166	4-927-654-01	WASHER (LIMITER)		* 182	1-641-764-11	SW BOARD	
167	X-4927-608-1	ARM ASSY, SWING		M001	A-4604-347-A	MOTOR (LOADING) ASSY	
168	4-929-724-01	PULLEY (B)					



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



<p>The components identified by mark ▲ or dotted line with mark. ▲ are critical for safety. Replace only with part number specified.</p>	<p>Les composants identifiés par une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.</p>
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Ref. No.	Part No.	Description	Remark
	207	X-4942-963-1 BASE ASSY, MECHANICAL	
*	208	A-4649-489-A BD BOARD, COMPLETE	
	212	A-4608-335-A MOTOR ASSY, LINEAR	
	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	
	218	3-318-203-61 SCREW (B1.7X4), TAPPING	

Ref. No.	Part No.	Description	Remark
	219	4-927-318-01 WASHER	
*	220	4-917-584-11 INSULATOR	
	221	4-917-573-01 SPRING (E)	
	222	4-917-571-01 SPRING (A)	
	223	4-917-572-01 SPRING (B)	
	224	4-927-634-01 HOLDER (SP)	
	225	3-305-423-00 SPRING, COMPRESSION	
	226	4-927-631-01 ROLLER (L)	
	227	4-951-620-01 SCREW (2.6X8), +BVTP	

## SECTION 5 ELECTRICAL PARTS LIST

AC	AC SW	AUDIO
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**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:  $\mu$ , for example:  
uA . . :  $\mu$ A. .    uPA . . :  $\mu$ PA. .  
uPB . . :  $\mu$ PB. .    uPC . . :  $\mu$ PC. .    uPD . . :  $\mu$ PD. .
- CAPACITORS  
uF:  $\mu$ F
- COILS  
uH:  $\mu$ H

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

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

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

Ref. No.	Part No.	Description	Remark
*	1-646-363-11	AC BOARD *****	
	1-533-183-11	HOLDER, FUSE  < CAPACITOR >	
$\Delta$ C992	1-161-744-00	CERAMIC      0.01uF	400V
$\Delta$ C993	1-162-599-12	CERAMIC      0.0047uF	20% 400V
		< CONNECTOR >	
CN992	1-564-321-00	PIN, CONNECTOR 2P	
CN993	1-564-321-00	PIN, CONNECTOR 2P	
* CN994	1-580-230-11	PIN, CONNECTOR (PC BOARD) 3P  < COIL >	
$\Delta$ L991	1-421-915-11	COIL, LINE FILTER *****	
*	1-646-359-11	AC SW BOARD (US, Canadian, UK) *****	
		< SWITCH >	
$\Delta$ S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (US, Canadian, UK) *****	
*	A-4649-547-A	AUDIO BOARD, COMPLETE *****	
		< BUS BAR >	
BUS701	1-569-136-11	BAR, BUS 5P  < CAPACITOR >	
C401	1-130-495-00	MYLAR      0.1uF	5% 50V
C402	1-124-122-11	ELECT      100uF	20% 50V
C403	1-130-495-00	MYLAR      0.1uF	5% 50V
C404	1-130-495-00	MYLAR      0.1uF	5% 50V
C405	1-124-122-11	ELECT      100uF	20% 50V
C406	1-130-495-00	MYLAR      0.1uF	5% 50V
C407	1-136-165-00	FILM      0.1uF	5% 50V

Ref. No.	Part No.	Description	Remark
C408	1-124-122-11	ELECT      100uF	20% 50V
C409	1-136-812-11	FILM      470PF	5% 100V
C411	1-136-810-11	FILM      220PF	5% 100V
C412	1-136-810-11	FILM      220PF	5% 100V
C413	1-136-808-11	FILM      100PF	5% 100V
C414	1-136-808-11	FILM      100PF	5% 100V
C415-417			
	1-136-192-11	FILM      0.0018uF	2% 100V
C418	1-124-572-11	ELECT      100uF	20% 63V
C419	1-136-580-11	FILM      0.47uF	10% 200V
C431	1-130-495-00	MYLAR      0.1uF	5% 50V
C451	1-162-215-31	CERAMIC      47PF	5% 50V
C452	1-162-207-31	CERAMIC      22PF	5% 50V
C453	1-124-995-11	ELECT      220uF	20% 10V
C454	1-126-023-11	ELECT      100uF	20% 16V
C501	1-130-495-00	MYLAR      0.1uF	5% 50V
C502	1-124-122-11	ELECT      100uF	20% 50V
C503	1-130-495-00	MYLAR      0.1uF	5% 50V
C504	1-130-495-00	MYLAR      0.1uF	5% 50V
C505	1-124-122-11	ELECT      100uF	20% 50V
C506	1-130-495-00	MYLAR      0.1uF	5% 50V
C507	1-136-165-00	FILM      0.1uF	5% 50V
C508	1-124-122-11	ELECT      100uF	20% 50V
C509	1-136-812-11	FILM      470PF	5% 100V
C511	1-136-810-11	FILM      220PF	5% 100V
C512	1-136-810-11	FILM      220PF	5% 100V
C513	1-136-808-11	FILM      100PF	5% 100V
C514	1-136-808-11	FILM      100PF	5% 100V
C515-517			
	1-136-192-11	FILM      0.0018uF	2% 100V
C518	1-124-572-11	ELECT      100uF	20% 63V
C519	1-136-580-11	FILM      0.47uF	10% 200V
C531	1-130-495-00	MYLAR      0.1uF	5% 50V
C551	1-162-215-31	CERAMIC      47PF	5% 50V
C552	1-162-207-31	CERAMIC      22PF	5% 50V
C553	1-124-995-11	ELECT      220uF	20% 10V
C554	1-126-023-11	ELECT      100uF	20% 16V
C601	1-136-165-00	FILM      0.1uF	5% 50V
C602	1-124-997-11	ELECT      470uF	20% 10V
C603	1-162-290-31	CERAMIC      470PF	10% 50V

# AUDIO

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
C604	1-164-159-11	CERAMIC	0.1uF 50V			< IC >	
C605	1-164-159-11	CERAMIC	0.1uF 50V				
C611	1-124-995-11	ELECT	220uF 20% 10V	IC411	8-759-602-83	IC M5238P	
C612	1-136-165-00	FILM	0.1uF 5% 50V	IC412	8-759-982-03	IC RC5532DD	
C613	1-126-301-11	ELECT	1uF 20% 50V	IC413	8-759-982-03	IC RC5532DD	
				IC451	8-759-981-85	IC RC4556D	
C621	1-162-199-31	CERAMIC	10PF 5% 50V	IC511	8-759-602-83	IC M5238P	
C622	1-162-199-31	CERAMIC	10PF 5% 50V				
C623	1-130-495-00	MYLAR	0.1uF 5% 50V	IC512	8-759-982-03	IC RC5532DD	
C624	1-124-122-11	ELECT	100uF 20% 50V	IC513	8-759-982-03	IC RC5532DD	
C625	1-162-806-11	CERAMIC	0.1uF 10% 50V	IC601	8-752-356-03	IC CXD2567M	
				IC611	8-759-233-64	IC TC74HCU04AF	
C626	1-124-122-11	ELECT	100uF 20% 50V	IC621	8-759-044-10	IC CXD2562Q	
C701	1-162-806-11	CERAMIC	0.1uF 10% 50V				
C702	1-162-806-11	CERAMIC	0.1uF 10% 50V	IC622	8-759-233-64	IC TC74HCU04AF	
C703	1-130-495-00	MYLAR	0.1uF 5% 50V	IC701	8-759-602-83	IC M5238P	
C704	1-130-495-00	MYLAR	0.1uF 5% 50V				
						< INDUCTOR >	
C705	1-162-806-11	CERAMIC	0.1uF 10% 50V	L401	1-410-969-11	INDUCTOR 4.7uH	
C706	1-124-122-11	ELECT	100uF 20% 50V	L501	1-410-969-11	INDUCTOR 4.7uH	
C707	1-124-920-11	ELECT	330uF 20% 63V	L601	1-410-969-11	INDUCTOR 4.7uH	
C711	1-124-122-11	ELECT	100uF 20% 50V	L611	1-410-397-21	FERRITE BEAD INDUCTOR 1.1uH	
C712	1-130-495-00	MYLAR	0.1uF 5% 50V	L621	1-410-969-11	INDUCTOR 4.7uH	
C713	1-126-101-11	ELECT	100uF 20% 16V	L622	1-410-397-21	FERRITE BEAD INDUCTOR 1.1uH	
C714	1-126-025-11	ELECT	330uF 20% 25V				
C731	1-126-059-11	ELECT	10uF 20% 50V				
C732	1-136-165-00	FILM	0.1uF 5% 50V				
						< TRANSISTOR >	
				Q421	8-729-231-55	TRANSISTOR 2SC2878-AB	
				Q431	8-729-900-80	TRANSISTOR DTC114ES	
				Q432	8-729-900-61	TRANSISTOR DTA114ES	
				Q451	8-729-231-55	TRANSISTOR 2SC2878-AB	
				Q521	8-729-231-55	TRANSISTOR 2SC2878-AB	
				Q531	8-729-900-80	TRANSISTOR DTC114ES	
				Q532	8-729-900-61	TRANSISTOR DTA114ES	
				Q551	8-729-231-55	TRANSISTOR 2SC2878-AB	
				Q701	8-729-194-13	TRANSISTOR 2SC1941-KA	
				Q711	8-729-620-23	TRANSISTOR 2SC3246-JK	
				Q721	8-729-900-61	TRANSISTOR DTA114ES	
				Q722	8-729-900-80	TRANSISTOR DTC114ES	
				Q731	8-729-900-61	TRANSISTOR DTA114ES	
						< RESISTOR >	
				R401-404			
					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	
				R411	1-247-725-11	CARBON 10K 5% 1/4W	
				R412	1-247-725-11	CARBON 10K 5% 1/4W	
				R413-416			
					1-247-722-11	CARBON 5.6K 5% 1/4W	
				R417-420			
					1-247-716-11	CARBON 1.8K 5% 1/4W	

Ref. No.	Part No.	Description			Remark
R421	1-247-700-11	CARBON	100	5%	1/4W
R422	1-249-512-11	CARBON	22	5%	1/4W
R423	1-247-891-00	CARBON	330K	5%	1/4W
R424	1-259-444-11	CARBON	4.7K	5%	1/6W
R425	1-247-725-11	CARBON	10K	5%	1/4W
R426	1-247-710-11	CARBON	560	5%	1/4W
R431	1-259-468-11	CARBON	47K	5%	1/6W
R432	1-259-458-11	CARBON	18K	5%	1/6W
R433	1-259-464-11	CARBON	33K	5%	1/6W
R434	1-259-472-11	CARBON	68K	5%	1/6W
R451	1-259-456-11	CARBON	15K	5%	1/6W
R452	1-259-464-11	CARBON	33K	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
R501-504					
	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
R511	1-247-725-11	CARBON	10K	5%	1/4W
R512	1-247-725-11	CARBON	10K	5%	1/4W
R513-516					
	1-247-722-11	CARBON	5.6K	5%	1/4W
R517-520					
	1-247-716-11	CARBON	1.8K	5%	1/4W
R521	1-247-700-11	CARBON	100	5%	1/4W
R522	1-249-512-11	CARBON	22	5%	1/4W
R523	1-247-891-00	CARBON	330K	5%	1/4W
R524	1-259-444-11	CARBON	4.7K	5%	1/6W
R525	1-247-725-11	CARBON	10K	5%	1/4W
R526	1-247-710-11	CARBON	560	5%	1/4W
R531	1-259-468-11	CARBON	47K	5%	1/6W
R532	1-259-458-11	CARBON	18K	5%	1/6W
R533	1-259-464-11	CARBON	33K	5%	1/6W
R534	1-259-472-11	CARBON	68K	5%	1/6W
R551	1-259-456-11	CARBON	15K	5%	1/6W
R552	1-259-464-11	CARBON	33K	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
R601-603					
	1-249-417-11	CARBON	1K	5%	1/4W
R604	1-249-423-11	CARBON	3.3K	5%	1/4W

Ref. No.	Part No.	Description			Remark
R605-608					
	1-259-420-11	CARBON	470	5%	1/6W
R609	1-259-412-11	CARBON	220	5%	1/6W
R610	1-259-422-11	CARBON	560	5%	1/6W
R611	1-249-409-11	CARBON	220	5%	1/4W
R612	1-249-427-11	CARBON	6.8K	5%	1/4W
R613	1-249-441-11	CARBON	100K	5%	1/4W
R621	1-259-452-11	CARBON	10K	5%	1/6W
R701	1-247-717-11	CARBON	2.2K	5%	1/4W
R702	1-247-700-11	CARBON	100	5%	1/4W
R703	1-247-710-11	CARBON	560	5%	1/4W
R711	1-247-717-11	CARBON	2.2K	5%	1/4W
R721	1-249-429-11	CARBON	10K	5%	1/4W
R731	1-249-429-11	CARBON	10K	5%	1/4W
R732	1-259-428-11	CARBON	1K	5%	1/6W
R733	1-259-460-11	CARBON	22K	5%	1/6W
< THERMISTOR >					
TH701	1-202-854-00	THERMISTOR, POSITIVE 10			
TH711	1-806-882-11	THERMISTOR, POSITIVE 2.2			
< VIBRATOR >					
X611	1-577-685-11	VIBRATOR, CERAMIC (16.9344MHz)			
X621	1-579-161-11	VIBRATOR, CRYSTAL (45MHz)			
*****					
*	A-4649-489-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
C111-114					
	1-164-346-11	CERAMIC CHIP	1uF		16V
C115	1-162-806-11	CERAMIC	0.1uF	10%	50V
C116	1-162-806-11	CERAMIC	0.1uF	10%	50V
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

Ref. No.	Part No.	Description	Remark
C151-154	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
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
C171-175	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C177-180	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
C304	1-163-009-11	CERAMIC CHIP 0.001uF	10% 50V
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	8-759-071-79	IC BA6297AFP	
IC103	8-759-040-83	IC BA6287F	
IC141	8-759-055-78	IC TA8407F (EL)	
IC142	8-759-700-91	IC NJM4558M-T1	

Ref. No.	Part No.	Description	Remark
IC151	8-759-700-91	IC NJM4558M-T1	
IC152	8-759-700-91	IC NJM4558M-T1	
IC201	8-752-352-93	IC CXD2500AQ	
IC301	8-759-165-54	IC M37451M8-282FP	
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	1-216-049-00	METAL CHIP 1K 5%	1/10W
R121-126	1-216-071-00	METAL CHIP 8.2K 5%	1/10W
R127-132	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	1-216-077-00	METAL CHIP 15K 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
R151-154	1-216-070-00	METAL CHIP 7.5K 5%	1/10W
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

Ref. No.	Part No.	Description	Remark		
R171-175					
	1-216-001-00	METAL CHIP	10	5%	1/10W
R177-180					
	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
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
R207-209					
	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
R303-308					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
R309	1-216-049-00	METAL CHIP	1K	5%	1/10W
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
R314-318					
	1-216-073-00	METAL CHIP	10K	5%	1/10W
< VIBRATOR >					
X301	1-577-377-11	VIBRATOR, CERAMIC (10MHz)			
*****					
*	A-4649-423-A	DISPLAY BOARD, COMPLETE			
*****					
*	4-923-532-01	SPACER, LED			
< CAPACITOR >					
C801-803					
	1-164-159-11	CERAMIC	0.1uF		50V
< DIODE >					
D801-803					
	8-719-987-63	DIODE	1N4148M		
D804	8-719-913-49	LED	EBG5638S (▶)		
D805	8-719-913-47	LED	EAA5638S (■)		

Ref. No.	Part No.	Description	Remark		
< FLUORESCENT INDICATOR >					
FLD801	1-517-128-11	INDICATOR TUBE, FLUORESCENT			
< IC >					
IC801	8-759-167-73	IC	MSC62408-100GS-V1K		
IC802	8-741-100-48	IC	SBX1610-59		
< TRANSISTOR >					
Q801-804					
	8-729-900-45	TRANSISTOR	DTC114EF		
< RESISTOR >					
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
R804	1-249-441-11	CARBON	100K	5%	1/4W
R805	1-249-441-11	CARBON	100K	5%	1/4W
R806	1-249-406-11	CARBON	120	5%	1/4W
R807	1-249-410-11	CARBON	270	5%	1/4W
< SWITCH >					
S801	1-554-303-21	SWITCH, TACTILE (DISPLAY MODE)			
S802	1-554-303-21	SWITCH, TACTILE (PLAY MODE)			
S803	1-554-303-21	SWITCH, TACTILE (LEVEL FILE)			
S804	1-554-303-21	SWITCH, TACTILE (EDIT/TIME FADE)			
S805	1-554-303-21	SWITCH, TACTILE (DIMMER REPEAT)			
S806	1-554-303-21	SWITCH, TACTILE (DIMMER TIME/MEMO)			
S807	1-554-303-21	SWITCH, TACTILE (PEAK SEARCH)			
S808	1-554-303-21	SWITCH, TACTILE (AMS ◀)			
S809	1-554-303-21	SWITCH, TACTILE (⏏ OPEN/CLOSE)			
S810	1-554-303-21	SWITCH, TACTILE (FILE RECALL)			
S811	1-554-303-21	SWITCH, TACTILE (AMS ▶▶)			
S812	1-554-303-21	SWITCH, TACTILE (▶)			
S813	1-554-303-21	SWITCH, TACTILE (FILE)			
S814	1-554-303-21	SWITCH, TACTILE (DISC MEMO ◀◀)			
S815	1-554-303-21	SWITCH, TACTILE (■)			
S816	1-554-303-21	SWITCH, TACTILE (ERASE)			
S817	1-554-303-21	SWITCH, TACTILE (DISC MEMO ▶▶)			
S818	1-554-303-21	SWITCH, TACTILE (■)			
< VIBRATOR >					
X801	1-577-359-21	VIBRATOR, CERAMIC (4.19MHz)			
*****					

**HP**   **L. MOTOR**   **LINE OUT**   **OPT**   **POWER**

Ref. No.	Part No.	Description	Remark		
*	1-646-355-11	HP BOARD *****			
		< CAPACITOR >			
C461	1-162-290-31	CERAMIC	470PF	10%	50V
C561	1-162-290-31	CERAMIC	470PF	10%	50V
		< CONNECTOR >			
* CN461	1-573-262-11	PIN, CONNECTOR 3P			
		< JACK >			
J461	1-568-519-31	JACK, LARGE TYPE (PHONES)			
*****					
*	1-641-765-11	L. MOTOR BOARD *****			
*****					
*	1-646-362-11	LINE OUT BOARD *****			
		< CAPACITOR >			
C471	1-107-202-00	MICA	10PF	5%	500V
C571	1-107-202-00	MICA	10PF	5%	500V
		< CONNECTOR >			
* CN472	1-573-263-21	PIN, CONNECTOR 4P			
* CN473	1-573-261-31	PIN, CONNECTOR 2P			
		< DIODE >			
D471	8-719-987-63	DIODE 1N4148M			
		< JACK >			
J471	1-568-101-11	JACK, PIN 4P (LINE OUT)			
		< RESISTOR >			
R471	1-247-700-11	CARBON	100	5%	1/4W
R472	1-247-700-11	CARBON	100	5%	1/4W
R571	1-247-700-11	CARBON	100	5%	1/4W
R572	1-247-700-11	CARBON	100	5%	1/4W
		< RELAY >			
RY471	1-515-804-11	RELAY			
*****					

Ref. No.	Part No.	Description	Remark		
*	1-646-361-11	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 GPIF32T (DIGITAL OUT OPTICAL)			
*****					
*	A-4649-680-A	POWER BOARD, COMPLETE *****			
		7-682-147-15	SCREW, TR		
*	4-363-146-00	HEAT SINK, V. OUT			
*	4-921-402-01	HEAT SINK			
		< BUS BAR >			
BUS901	1-569-136-11	BAR, BUS 5P			
		< CAPACITOR >			
C901	1-104-642-11	ELECT	6800uF	20%	35V
C902	1-104-642-11	ELECT	6800uF	20%	35V
C903	1-126-170-11	ELECT	1000uF	20%	50V
C904	1-126-170-11	ELECT	1000uF	20%	50V
C911	1-136-177-00	FILM	1uF	5%	50V
C912	1-130-483-00	MYLAR	0.01uF	5%	50V
C951	1-126-017-11	ELECT	6800uF	20%	16V
C952	1-124-999-11	ELECT	2200uF	20%	10V
C953	1-124-473-11	ELECT	1000uF	20%	10V
C954	1-126-303-11	ELECT	3.3uF	20%	50V
C955	1-162-294-31	CERAMIC	0.001uF	10%	50V
C961	1-126-001-11	ELECT	3300uF	20%	10V
C962	1-124-995-11	ELECT	220uF	20%	10V
C963	1-124-473-11	ELECT	1000uF	20%	10V
C964	1-164-159-11	CERAMIC	0.1uF		50V
C965	1-164-159-11	CERAMIC	0.1uF		50V
C971	1-126-063-11	ELECT	100uF	20%	63V
C972	1-126-049-11	ELECT	22uF	20%	50V
C973	1-126-052-11	ELECT	100uF	20%	50V
C974	1-126-052-11	ELECT	100uF	20%	50V
		< CONNECTOR >			
* CN901	1-573-862-21	PIN, CONNECTOR (PC BOARD) 3P			
* CN903	1-573-263-11	PIN, CONNECTOR 4P			
* CN951	1-573-866-21	PIN, CONNECTOR (PC BOARD) 7P			

## POWER

## SW

## TIMER

## TRANSFORMER

## VR

Ref. No.	Part No.	Description	Remark
* CN952	1-564-341-11	PIN, CONNECTOR 7P	
* CN953	1-573-265-11	PIN, CONNECTOR 6P	
* CN954	1-573-261-11	PIN, CONNECTOR 2P	
< DIODE >			
D901-904			
	8-719-200-89	DIODE 31DF2-FA	
D905	8-719-210-21	DIODE 11EQS04	
D951-954			
	8-719-200-02	DIODE 10E2	
D961	8-719-200-02	DIODE 10E2	
D962	8-719-114-49	DIODE RD7. 5JS-B2	
D971	8-719-200-02	DIODE 10E2	
D972	8-719-115-15	DIODE RD33JS-B2	
D973	8-719-114-49	DIODE RD7. 5JS-B2	
< IC >			
IC901	8-759-231-58	IC TA7812S	
IC902	8-759-245-86	IC TA7912S	
IC951	8-759-231-53	IC TA7805S	
IC952	8-759-605-00	IC M5F78M07L	
IC953	8-759-636-16	IC M51957AL	
< TRANSISTOR >			
Q961	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q971	8-729-140-96	TRANSISTOR 2SD774-34	
< RESISTOR >			
△R911	1-212-875-00	FUSIBLE 56 5% 1/4W F	
R951	1-249-423-11	CARBON 3. 3K 5% 1/4W	
R952	1-249-436-11	CARBON 39K 5% 1/4W	
R953	1-249-431-11	CARBON 15K 5% 1/4W	
R961	1-249-417-11	CARBON 1K 5% 1/4W	
R962	1-249-417-11	CARBON 1K 5% 1/4W	
R971	1-249-425-11	CARBON 4. 7K 5% 1/4W	
R972	1-249-433-11	CARBON 22K 5% 1/4W	
R973	1-249-433-11	CARBON 22K 5% 1/4W	
< THERMISTOR >			
TH901	1-808-065-11	THERMISTOR, POSITIVE	
TH902	1-808-065-11	THERMISTOR, POSITIVE	
TH951	1-808-065-11	THERMISTOR, POSITIVE	
TH952	1-808-065-11	THERMISTOR, POSITIVE	
TH961	1-808-065-11	THERMISTOR, POSITIVE	
TH971	1-806-882-11	THERMISTOR, POSITIVE	

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Ref. No.	Part No.	Description	Remark
*	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)	
*****			
*	1-646-356-11	TIMER BOARD *****	
< SWITCH >			
S851	1-570-157-51	SWITCH, SLIDE (TIMER)	
*****			
*	1-646-358-11	TRANSFORMER BOARD *****	
< CONNECTOR >			
* CN984	1-696-874-21	LEAD (WITH CONNECTOR) 2P *****	
*****			
*	1-646-354-11	VR BOARD *****	
< CAPACITOR >			
C351	1-164-159-11	CERAMIC 0. 1uF	50V
C352	1-164-159-11	CERAMIC 0. 1uF	50V
< CONNECTOR >			
* CN351	1-573-267-11	PIN, CONNECTOR 8P	
* CN352	1-569-993-11	PIN, CONNECTOR (PC BOARD) 6P	
< IC >			
IC351	8-759-962-08	IC BA6208	
< TRANSISTOR >			
Q351	8-729-900-45	TRANSISTOR DTC114EF	
< RESISTOR >			
R351	1-249-413-11	CARBON 470 5% 1/4W	

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.



**VR**

Ref. No.	Part No.	Description	Remark
R352	1-249-417-11	CARBON 1K 5% 1/4W	
< VARIABLE RESISTOR >			
RV351	1-241-321-11	RES, VAR, CARBON 10KX3 (LINE OUT PHONE LEVEL)	
*****			
MISCELLANEOUS *****			
△111	1-558-568-21	CORD, POWER (AEP, German)	
△111	1-559-583-21	CORD, POWER (US, Canadian)	
△111	1-696-934-11	CORD, POWER (UK)	
△215	8-848-244-11	DEVICE, OPTICAL KSS-272A	
△F991	1-532-066-00	FUSE, TIME-LAG (TO. 4A) (AEP, UK, German)	
△F991	1-532-741-11	FUSE, GLASS TUBE (1.25A/125V) (US, Canadian)	
M001	A-4604-347-A	MOTOR (LOADING) ASSY	
△S991	1-572-267-21	SWITCH, PUSH (AC POWER) (1 KEY) (POWER) (AEP, German)	
△T982	1-423-453-11	TRANSFORMER, POWER (US, Canadian)	
△T982	1-423-454-11	TRANSFORMER, POWER (AEP, UK, German)	
*****			
ACCESSORIES & PACKING MATERIALS *****			
	1-465-593-11	REMOTE COMMANDER (RM-D991)	
	1-558-271-11	CORD, CONNECTION	
	1-590-925-31	CORD, CONNECTION	
	3-707-584-01	COVER, BATTERY	
	3-755-832-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH, CHINESE) (Canadian, AEP, UK)	
	3-755-832-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-755-832-41	MANUAL, INSTRUCTION (GERMAN, DUTCH, ITALIAN, PORTUGUESE) (AEP)	
	3-755-832-71	MANUAL, INSTRUCTION (GERMAN) (German)	
	4-847-802-00	SCREW (US, Canadian)	
*	4-955-666-02	CUSHION (AEP, UK, German)	
*	4-955-669-02	CUSHION (US, Canadian)	
*	4-956-944-01	INDIVIDUAL CARTON (AEP, UK, German)	
*	4-956-952-01	INDIVIDUAL CARTON (US, Canadian)	
*****			

Ref. No.	Part No.	Description	Remark
***** HARDWARE LIST *****			
#1	7-682-561-09	SCREW +B 4X8	
#2	7-682-548-04	SCREW +BVTT 3X8 (S)	
#3	7-682-548-09	SCREW +BVTT 3X8 (S)	
#4	7-685-544-19	SCREW +BTP 3X5 TYPE2 N-S	
#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	7-685-871-01	SCREW +BVTT 3X6 (S)	
#9	7-682-560-04	SCREW +BVTT 4X6 (S)	
#10	7-682-147-15	SCREW, TR	
#11	7-682-144-01	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	
#17	7-682-551-09	SCREW +BVTT 3X14 (S)	

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.
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# CDP-X303ES

## SONY SERVICE MANUAL

*US Model  
Canadian Model  
AEP Model  
UK Model*

### SUPPLEMENT-1

File this supplement with the service manual.

Subject : US model disuse the side panel.

• Difference Parts

Page	Ref.No.	Part No.	Description
22	7	4-874-802-00	SCREW, CASE STOPPER