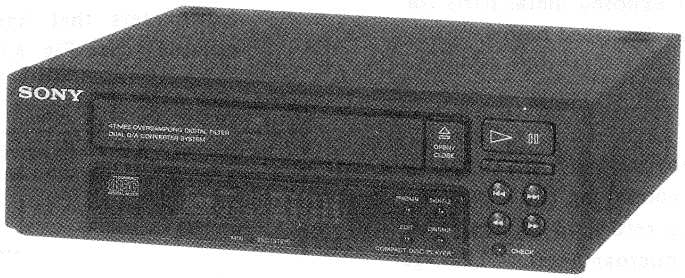
CDP-H300

SERVICE MANUAL

US Model
Canadian Model
AEP Model
UK Model
E Model



This set is the CD player section in MHC-2500/3500/FH-E626CD.

SPECIFICATIONS

System	Compact disc digital audio system
Laser	Semiconductor laser (λ = 780 nm) Emission duration: continuous
Laser output	Max. 44.6 μW* * This output is the value measured at distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Frequency response	5 Hz – 20 kHz (+0.5/–2.0 dB)
Signal to noise ratio	More than 90 dB
Dynamic range	More than 90 dB
Harmonic distortion	Less than 0.05% (at 1 kHz)
Channel separation	More than 90 dB
Output level	2 V (at 50 kilohms)
Load impedance	Over 10 kilohms
Dimensions	Approx. 225 × 65 × 225 mm (w/h/d) ($9 \times 2^5/_8 \times 9$ inches)
Weight	Approx. 2 kg (4 lb 6 oz)
Power requirement	120V 60Hz } Canadian Model
Power consumption	10W } Canadian Model

Model Name Using Similar Mechanism	HCD-H7/H1500
CD Transport Mechanism Type	CDM13A-5BD3
Optical Pick-Up Block Type	BU-5BD3

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.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ 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.

MICROFILM

COMPACT DISC PLAYER

SONY®

SAFETY CHECK-OUT

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

LEAKAGE TEST

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

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

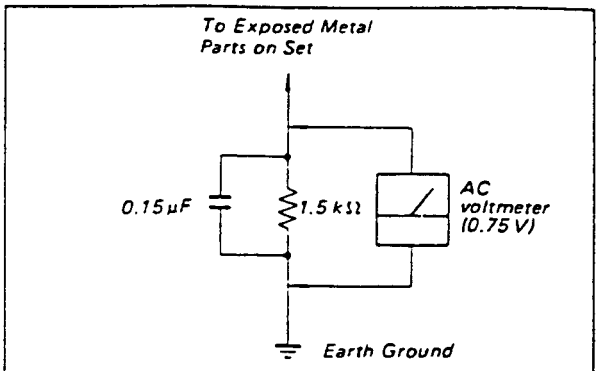


Fig. A. Using an AC voltmeter to check AC leakage.

SERVICING NOTE

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.

CAUTION

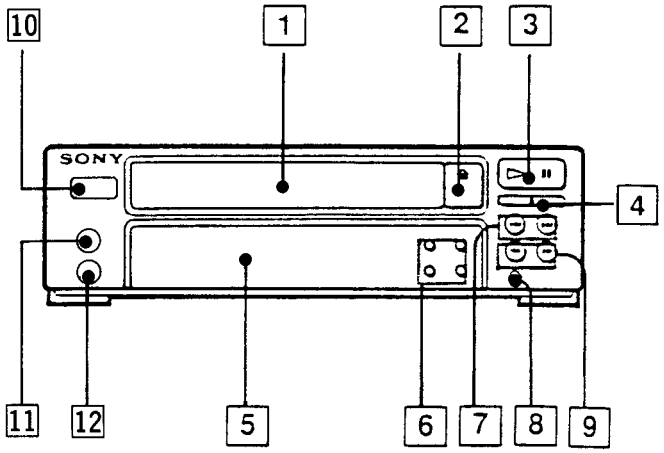
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

NOTES ON LASER DIODE EMISSION CHECK

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

SECTION 1
GENERAL

1-1. LOCATION OF CONTROLS

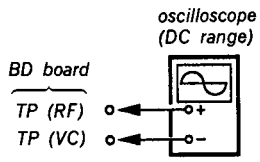


1 Disc compartment
2 ⏏ OPEN/CLOSE button
3 ▷II (play/pause) button
4 ■ (stop) button
5 Display window
6 PLAY mode selectors
PROGRAM button
SHUFFLE button
EDIT button
CONTINUE button
7 ⏮ / ⏭ (Automatic Music Sensor) buttons
8 REPEAT button
9 ◀◀ / ▶▶ (manual search) buttons
10 POWER ON/OFF
11 PHONE LEVEL
12 HEADPHONES
} Canadian model

SECTION 2
ELECTRICAL ADJUSTMENTS

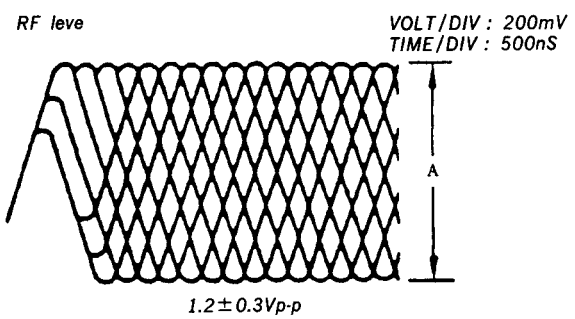
1. Perform adjustments in the order given.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use the oscilloscope with more than 10MΩ impedance.

RF Level Check
Procedure :



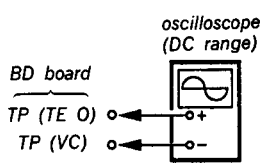
1. Connect oscilloscope to test point TP (RF) and TP (VC) on BD board.
2. Confirm that RF level and eye pattern is optimum.
   Oputimum eye pattern means that shape "◇" can be clearly distinguished at the center of the wave form.

RF signal Reference Waveform (eye pattern)



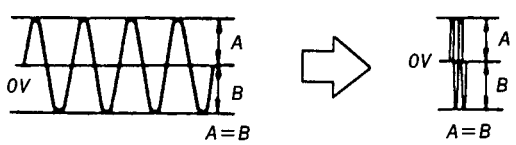
REFERENCE

E-F Balance Check
Procedure :

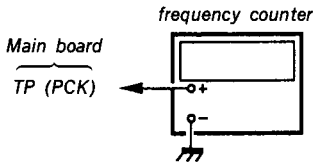


1. Connect test point TP (ADJ) and TP (TES) to ground with lead wire.
2. Connect oscilloscope to test point TP (TE O) and TP (VC) on BD board.
3. Turn POWER switch on.
4. Put disc (YEDS-18) in and playback.
5. Confirm that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0V.
6. After check, remove the lead wire connected in step 1.

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



RF PLL Free-run Frequency Check
Procedure :



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

Focus/Tracking Gain Adjustment

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

However, this gain cas a margin, so even if it is slightly off there is no problem. Therefore, do not perform this adjustment.

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

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

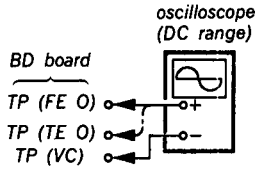
- When gain is raised, the noise when the 2-axis device operates increases.
- When gain is lowered, mechanical shock and skipping occurs more easily.
- When gain adjustment is off, the symptoms below appear

Symptoms \ Gain	Focus	Tracking
• The time until music starts becmes longer for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.) (Normally takes about 1 seconds.)	low	low or high
• Music does not start and disc continues to rotate for STOP →▷ PLAY or automatic selection. (⏮, ⏭ buttons pressed.)	—	low
• Sound is interrupted during PLAY. Or time counter display stops progressing.	—	low
• More noise during 2-axis device operation.	high	high

The following is a simple adjustment method.

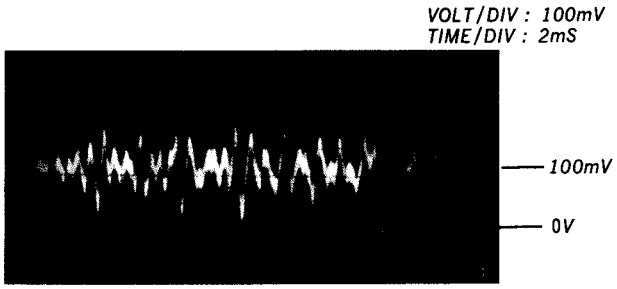
—Primary Adjustment—

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

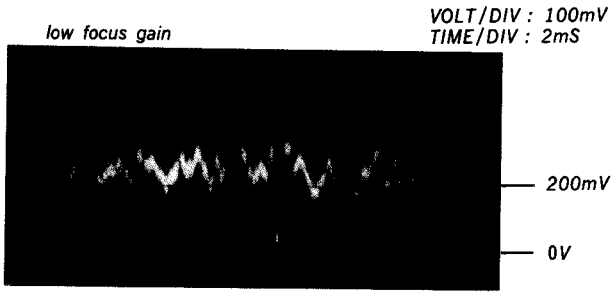


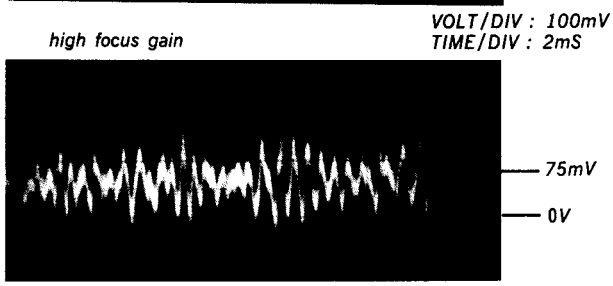
Procedure :

1. Keep the set horizontal.
   If the set is not horizontal, this adjustment cannot be performed due to the gravity against the 2-axis device.
2. Insert disc (YEDS-18) and press ▷ PLAY button.
3. Connect oscilloscope to TP (FEO) and TP (VC) on BD board.
4. Adjustment RV101 on digital board so that the waveform is as shown in the figure below. (focus gain adjustment)

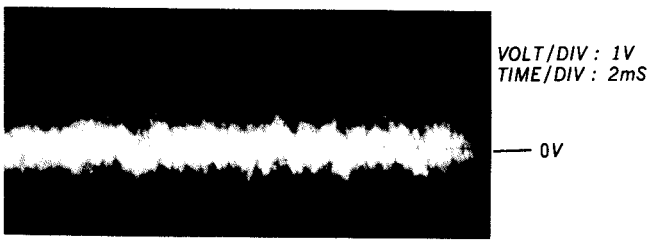


• Incorrent Examples (DC level changes more than on adjusted waveform)

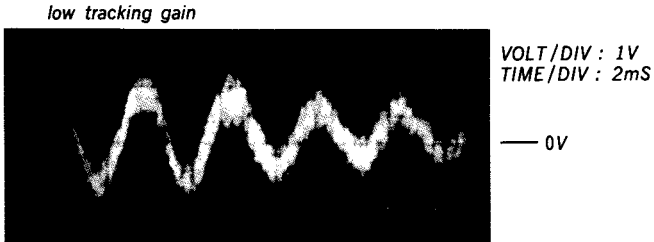


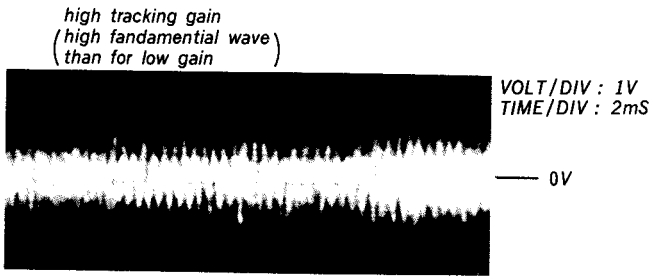


5. Connect oscilloscope to TP (TEO) and TP (VC) on BD board.
6. Adjusted MV102 on digital board so that the waveform is as shown the flgure below. (tracking gain adjustment)



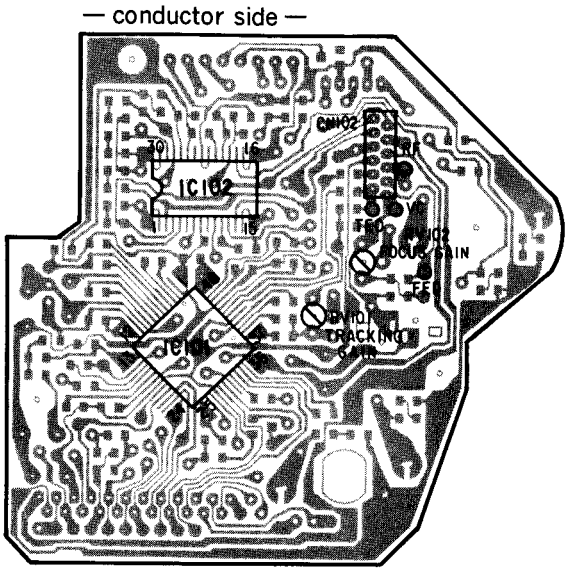
• Incorrect Examples (fundamentia wave appears)



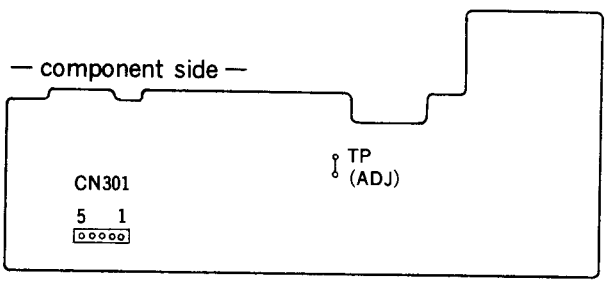


Adjustment Locations :

[BD board]



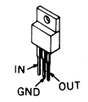
[Main board]



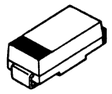
SECTION 3
DIAGRAMS

3-1. SEMICONDUCTOR LEAD LAYOUTS

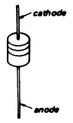
M5F7807



EC10DS2



UZ-4.7BSC
1SS120



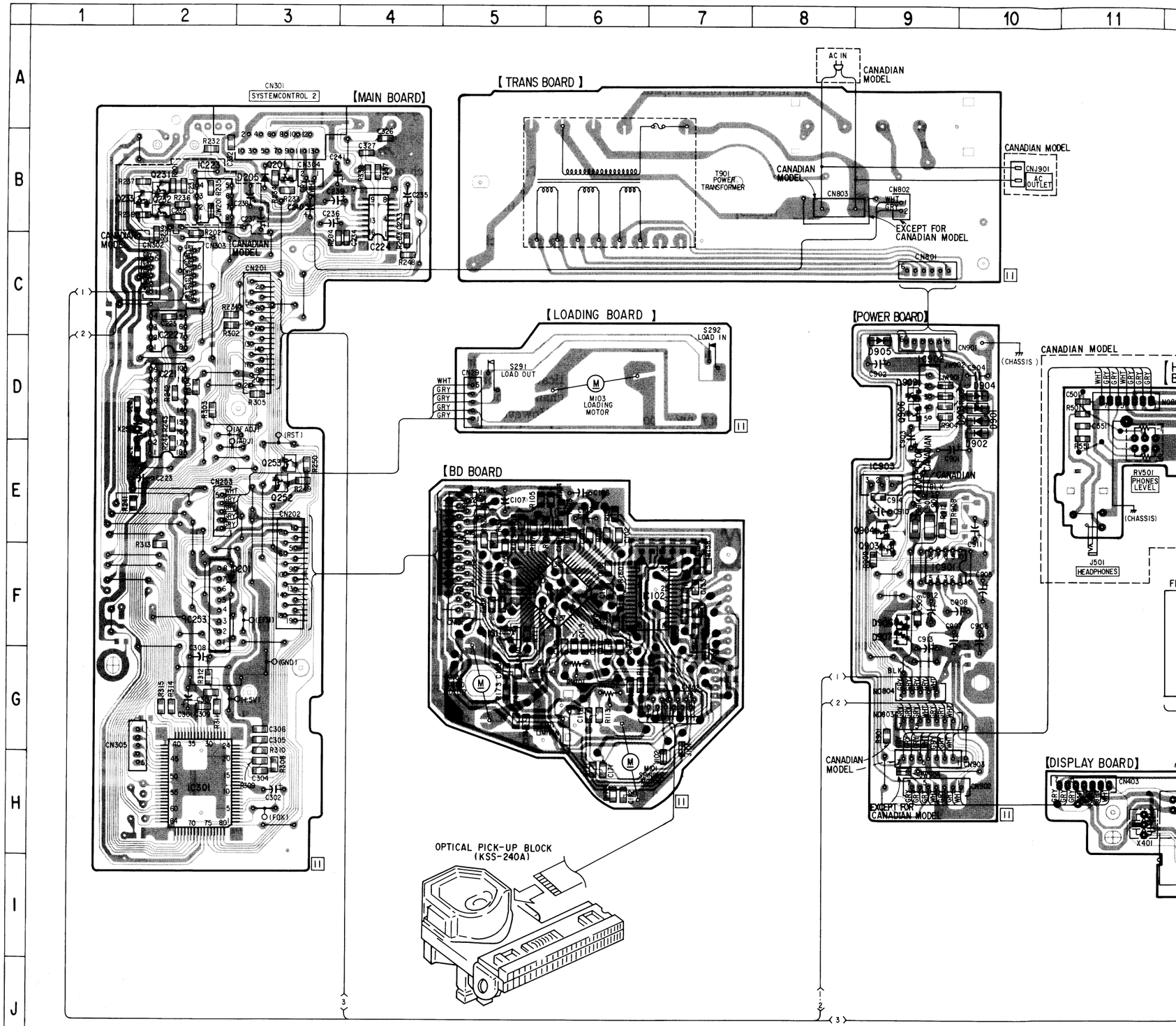
• Semiconductor Location

Ref. No.	Location
D201	F-2
D205	B-3
D401	H-15
D402	H-14
D403	H-16
D404	H-17
D412	H-13
D901	D-10
D902	D-10
D903	D-10
D904	D-10
D905	D-9
D906	F-9
D907	F-9
D909	D-9
IC101	F-6
IC102	F-7
IC221	D-2
IC222	C-2
IC223	B-2
IC224	B-4
IC253	F-2
IC301	H-2
IC401	H-13
IC901	F-9
IC902	D-9
IC903	E-9
Q101	F-5
Q201	B-3
Q231	B-2
Q232	B-2
Q233	B-2
Q252	E-3
Q253	E-3
Q903	E-9
Q904	E-9
Q906	D-9

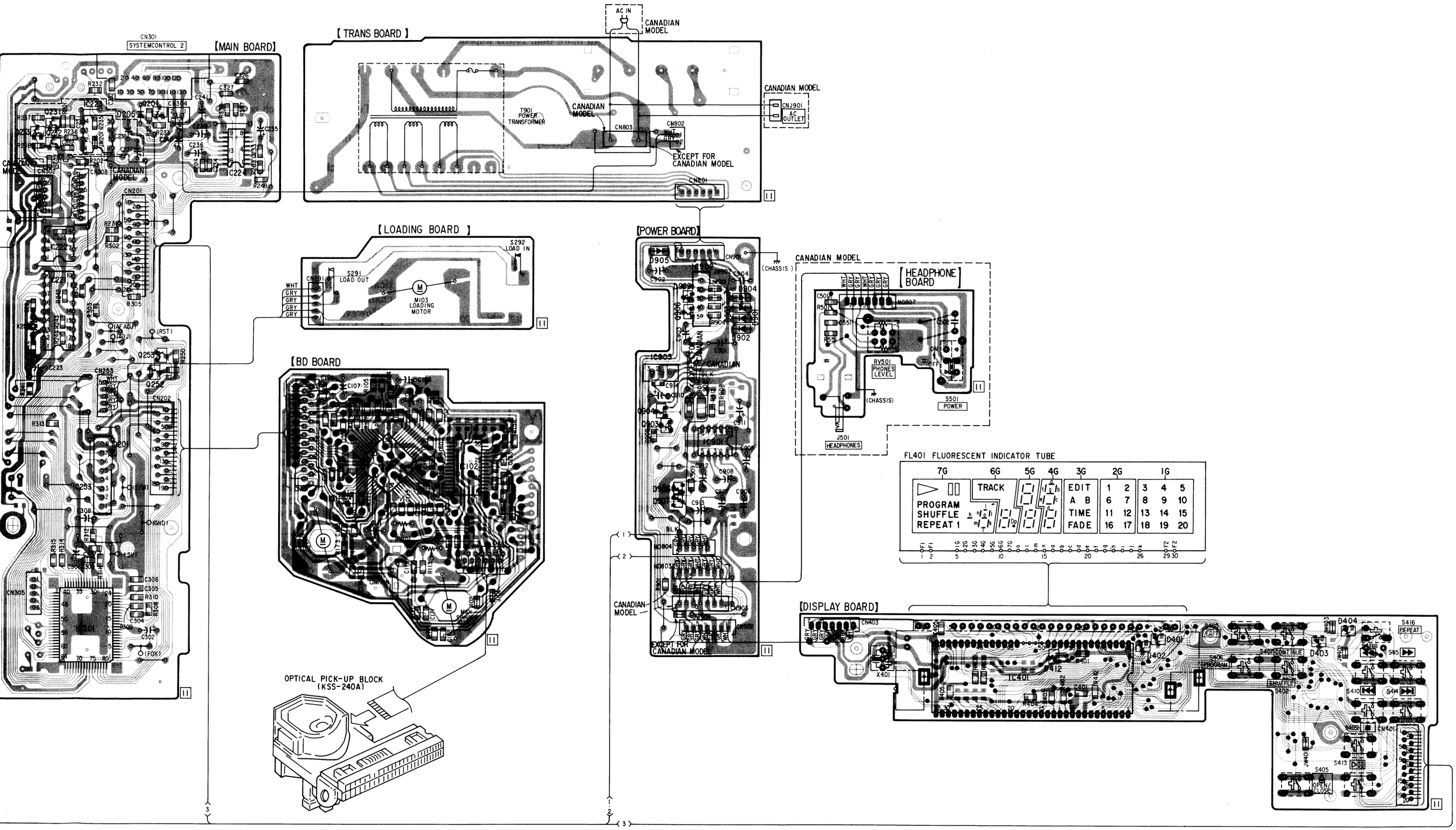
Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.

3-2. PRINTED WIRING BOARDS



ED WIRING BOARDS



3-3. SCHEMATIC DIAGRAM

【BD BOARD】

OPTICAL PICK-UP BLOCK
⚠(KSS240A)

IC102
FOCUS/TRACKING COIL DRIVE
SPINDLE/SLED MOTOR DRIVE

IC
DETECTOR, RF AMP

【HEADPHONE BOARD】

CANADIAN MODEL

EXCEPT FOR CANADIAN MODEL

Q903,904 SWITCH EXCEPT FOR CANADIAN

CANADIAN

IC901
REG

【MAIN BOARD】

IC301
CX02500Q
DEGITAL SIGNAL PROCESSOR, CLV SERVO

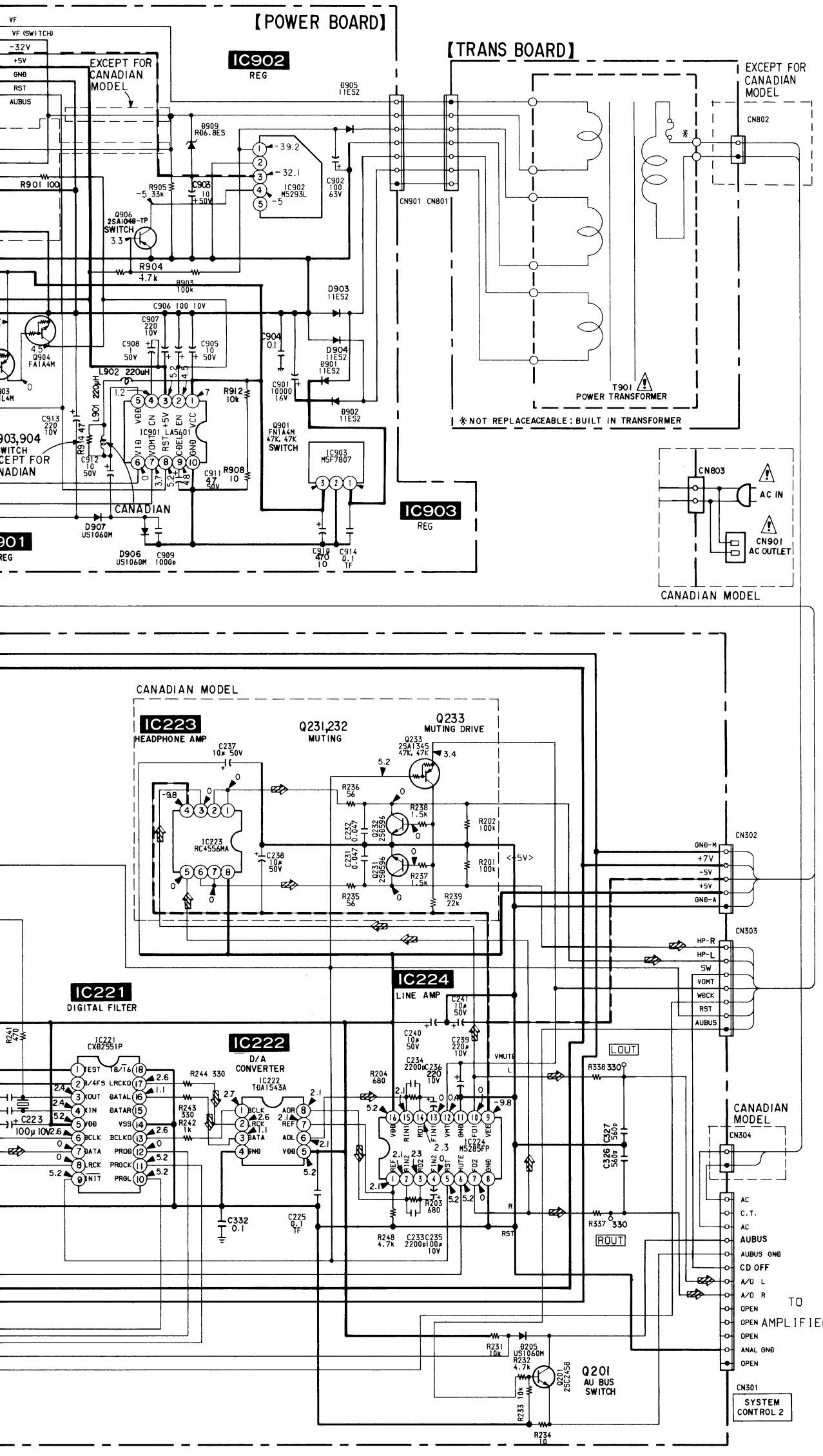
IC221
DIGITAL FILTER

IC223
HEADPHONE AMP

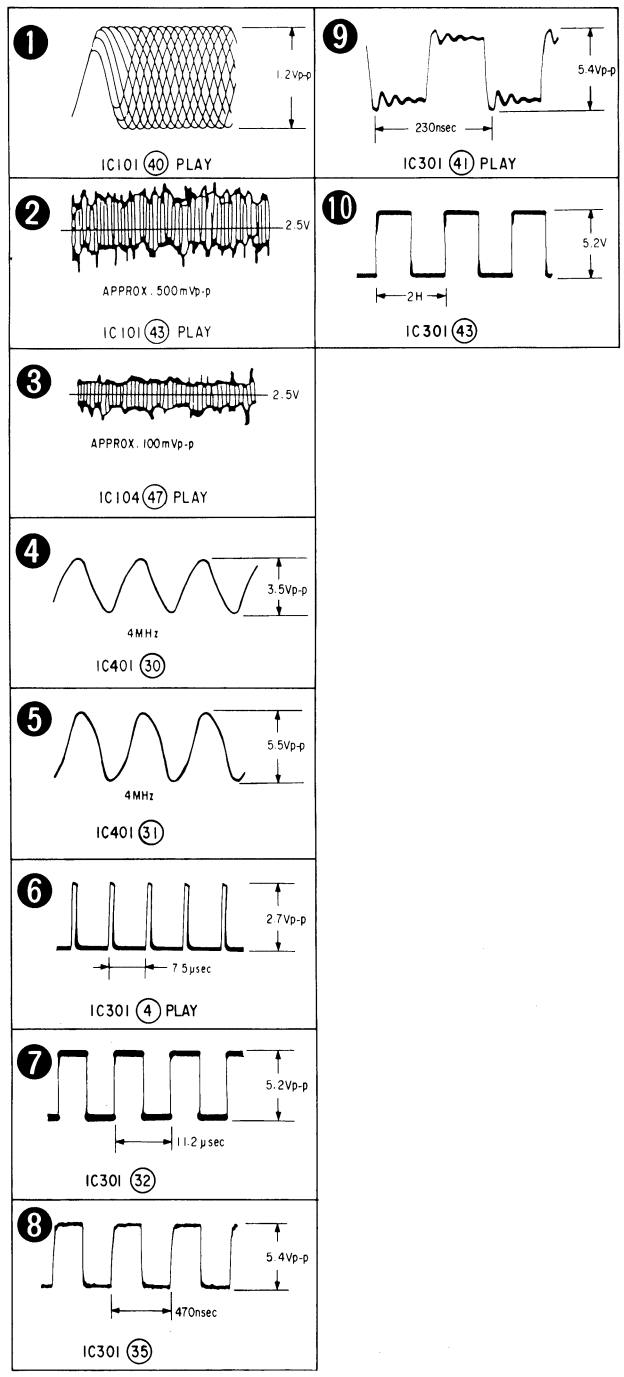
Q252,253 SWITCH

IC253
LOADING MOTOR DRIVE

【LOADING BOARD】



- **Waveforms**



Note:

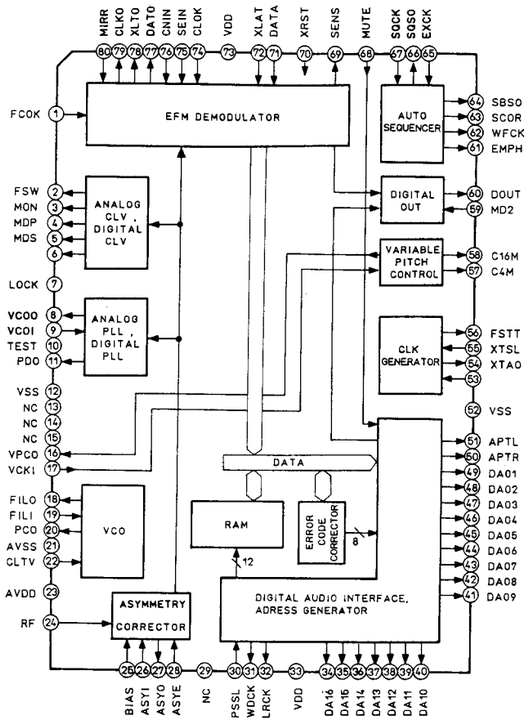
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4W or less unless otherwise specified.
- △ : internal component.

Note:	**Note:**
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.

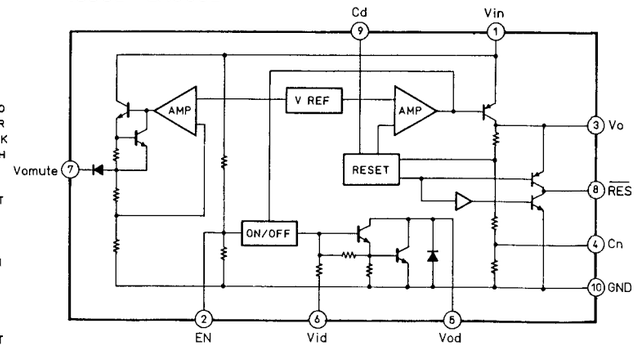
- ▬▬ : B+ Line
- ▬ ▬ ▬ : B− Line
- ▭ : adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : STOP
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are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

• IC Block Diagrams

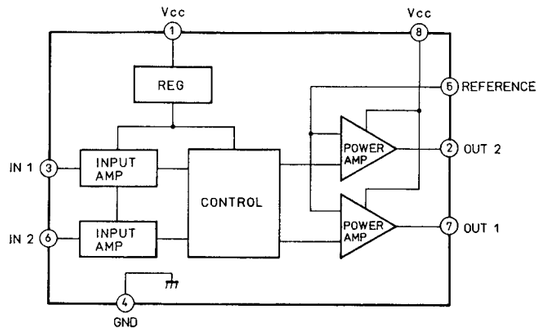
IC301 CXD2500Q



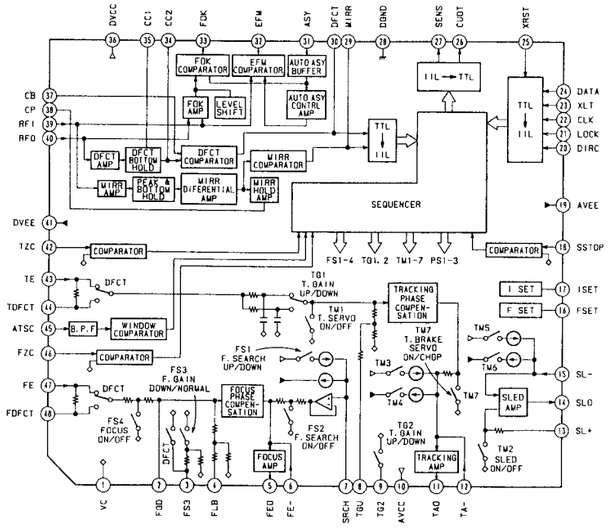
IC901 LA5601



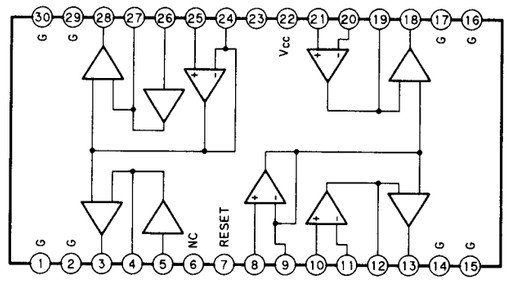
IC253 M54641L



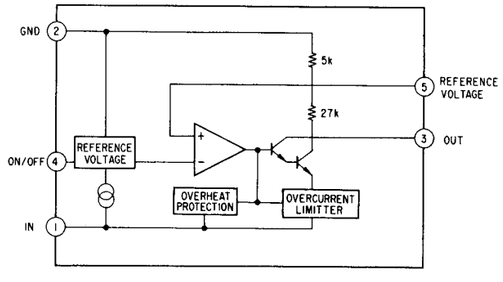
IC101 CXA1372Q



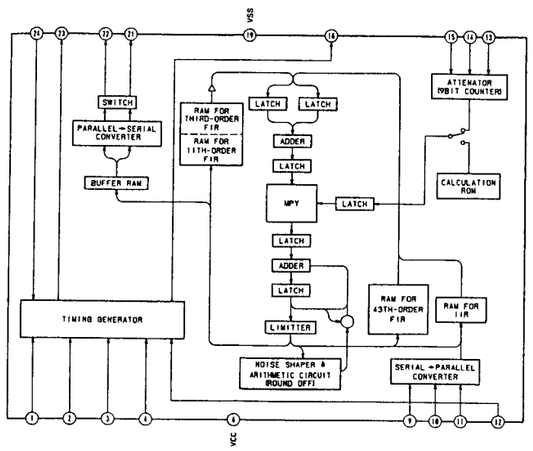
IC102 LA6532M



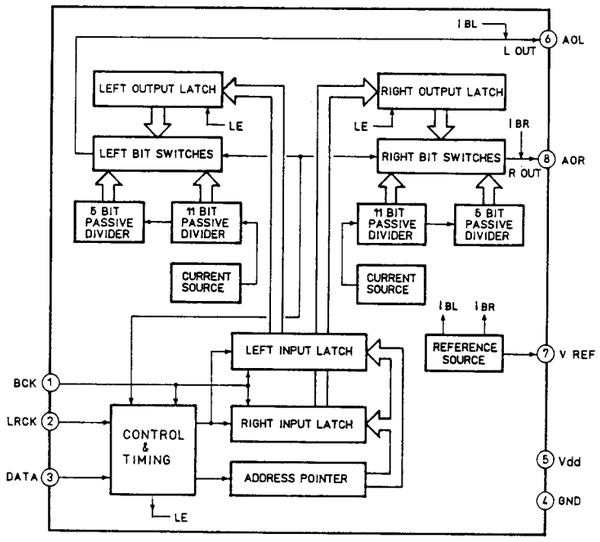
IC902 M5293L



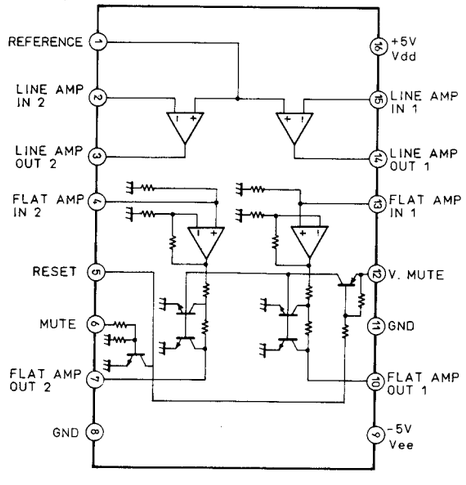
IC221 CXD2551P



IC222 TDA1543A



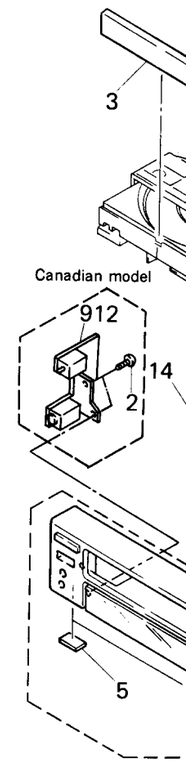
IC224 M5285FP



NOTE:

- The mechanical p number in the e supplied.
- The construction part are indicated ber in the remark
- Items marked "★ they are seldom service. Some d pated when orderi

4-1. CHASSIS S



Ref.No	Part No.	De
1	X-4929-711-1	(Excep
1	X-4929-712-1	(Cana
2	7-685-134-19	SCRE
3	4-929-753-01	PANE
4	7-682-547-04	SCRE
5	4-930-336-01	FOOT
6	*4-929-757-01	CHAS
7	*4-929-750-31	(Excep
7	*4-929-750-41	(Cana
8	4-929-742-01	SCRE
9	4-932-844-31	(Excep
9	4-932-844-41	(E)..
10	3-704-366-01	SCRE
11	7-685-646-79	SCRE
12	7-682-547-09	SCRE
13	3-831-441-XX	CUSH
14	*4-929-752-01	(Cana

SECTION 4
EXPLODED VIEWS

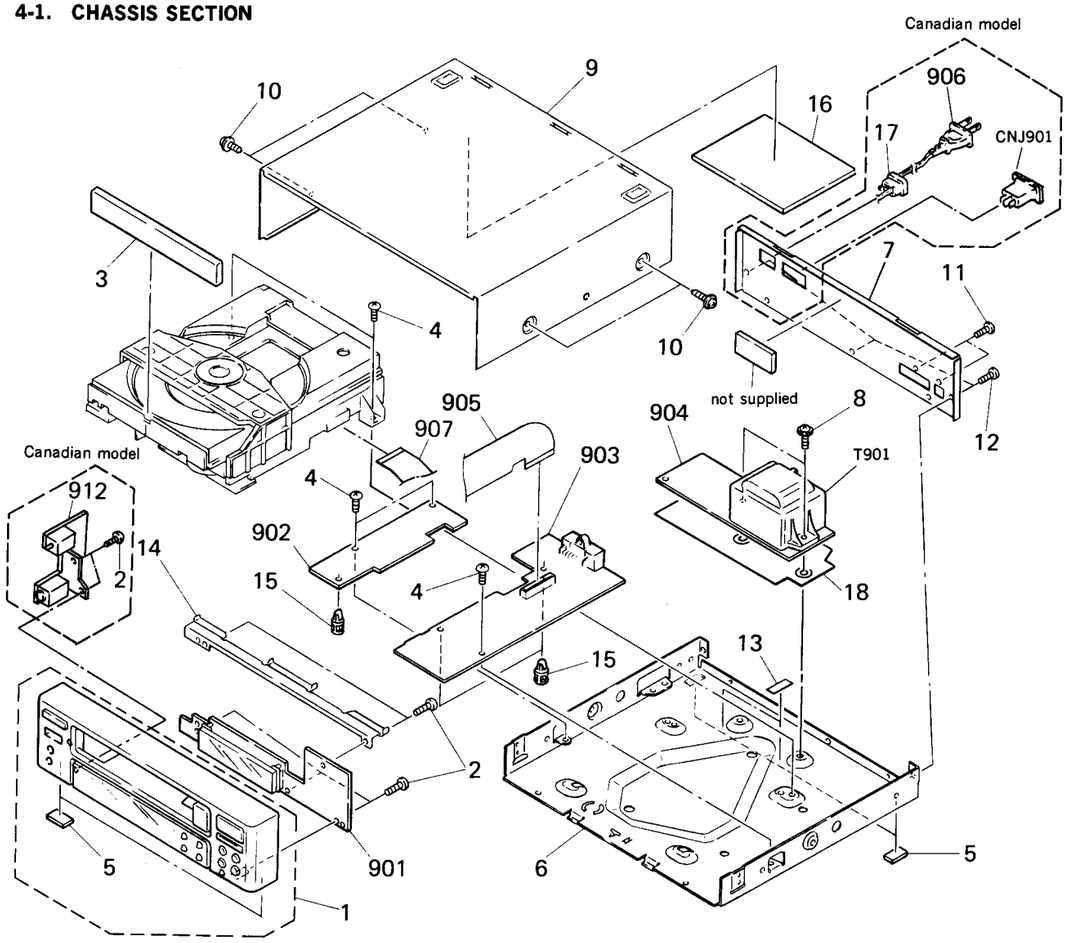
NOTE:

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

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

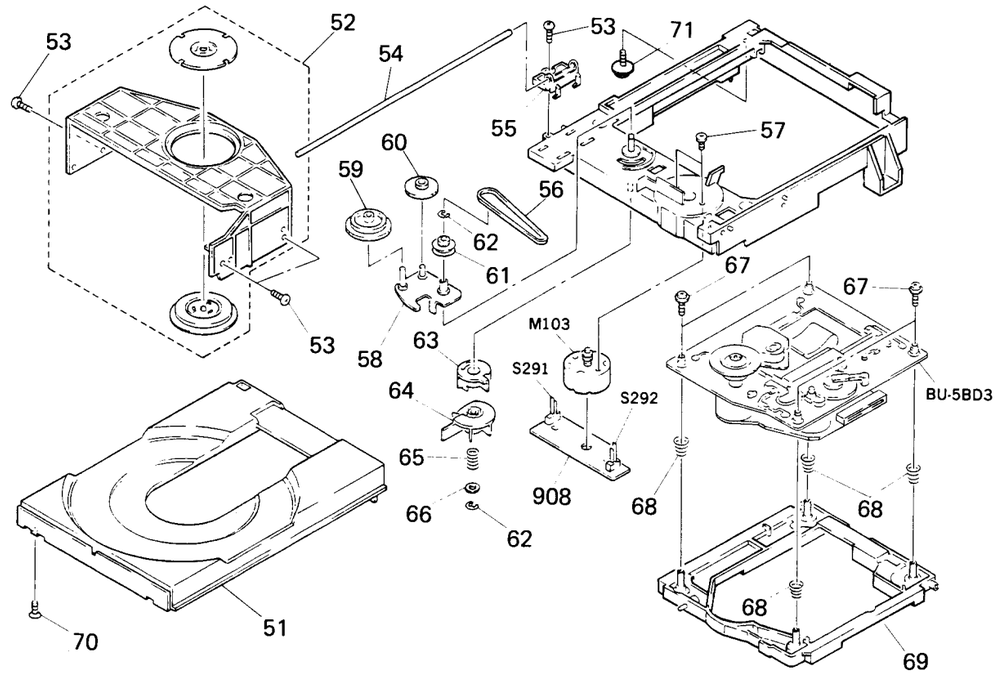
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifé.

4-1. CHASSIS SECTION



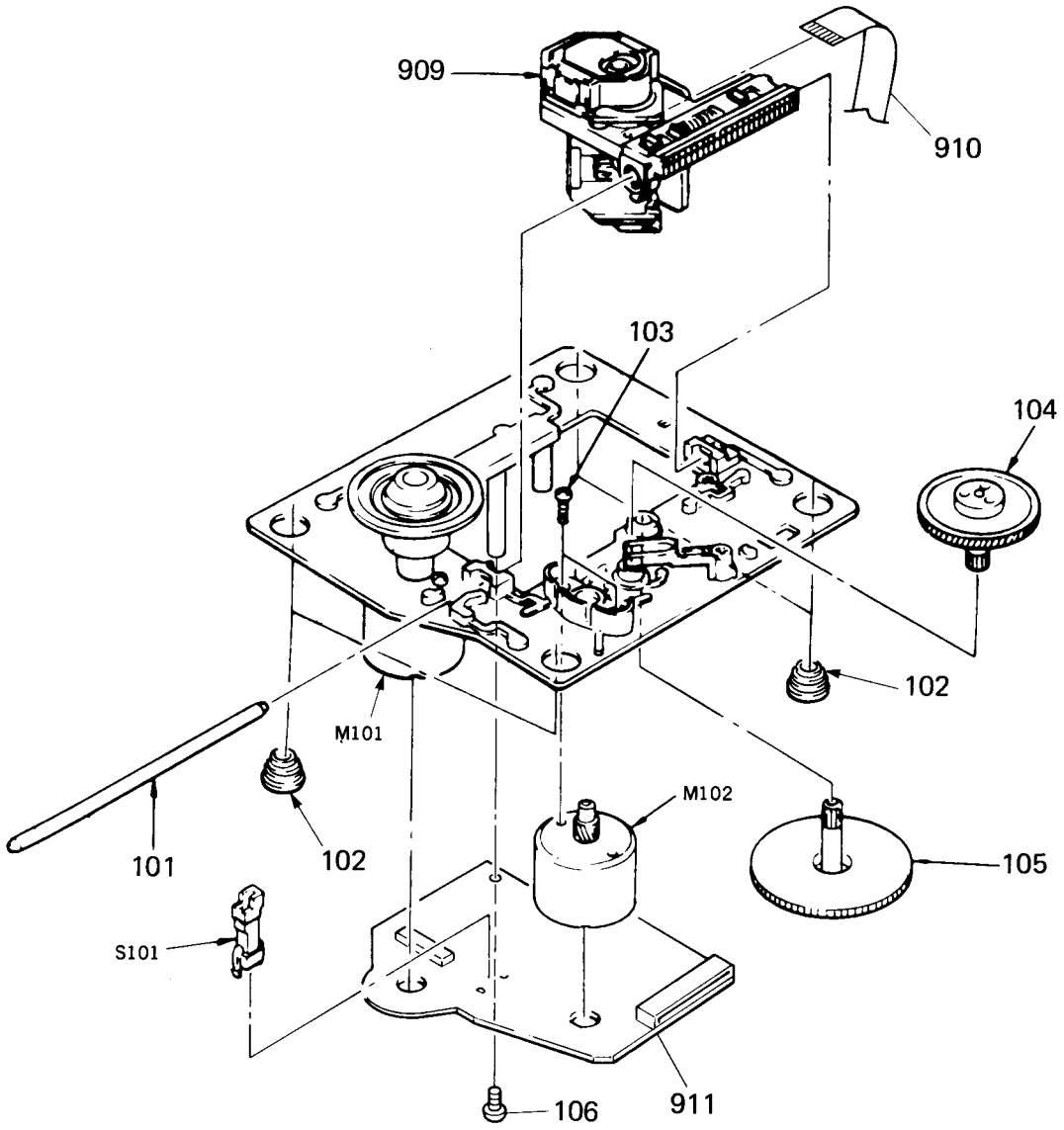
Ref.No	Part No.	Description	Remarks
1	X-4929-711-1	(Except for Canadian)....PANEL ASSY, FRONT	
1	X-4929-712-1	(Canadian)....PANEL ASSY, FRONT	
2	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	
3	4-929-753-01	PANEL, LOADING	
4	7-682-547-04	SCREW +BVTT 3X6 (S)	
5	4-930-336-01	FOOT (FELT)	
6	*4-929-757-01	CHASSIS	
7	*4-929-750-31	(Except for Canadian)....PANEL, BACK	
7	*4-929-750-41	(Canadian)....PANEL, BACK	
8	4-929-742-01	SCREW (3X10), +PTTWH	
9	4-932-844-31	(Except for E)....CASE	
9	4-932-844-41	(E)....CASE	
10	3-704-366-01	SCREW (CASE) (M3X8)	
11	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
12	7-682-547-09	SCREW +BVTT 3X6 (S)	
13	3-831-441-XX	CUSHION (B), CABINET	
14	*4-929-752-01	(Canadian)....REINFORCEMENT	
15	3-682-057-11	SPACER (SMALL)	
16	*4-922-943-01	DUMPER	
17	*3-703-571-11	(Canadian)....BUSHING (S)(4516) CORD	
18	*4-929-711-01	(Canadian)....COVER (A), POWER	
19	*3-846-311-00	SPACER (D)	
901	*A-4617-397-A	MOUNTED PCB, DISPLAY	
902	*A-4617-507-A	(Canadian)....MOUNTED PCB, POWER	
902	*A-4617-400-A	(Except for Canadian)....MOUNTED PCB, POWER	
903	*A-4617-399-A	(Except for Canadian)....MOUNTED PCB, MAIN	
903	*A-4617-506-A	(Canadian)....MOUNTED PCB, MAIN	
904	*1-634-469-11	PC BOARD, TRANS	
906	⚠1-558-945-11	(Canadian)....CORD, POWER	
907	1-535-845-11	JUMPER, FILM (WITH TERMINAL)	
912	1-634-472-11	(Canadian)....PC BOARD HEADPHONES	
CNJ901	⚠1-526-882-11	(Canadian)....OUTLET, AC	
T901	⚠1-449-977-11	(Except for Canadian)....TRANSFORMER, POWER	
T901	⚠1-450-032-11	(Canadian)....TRANSFORMER, POWER	

4-2. CD MECHANISM SECTION (CDM13A-5BD3)



Ref.No	Part No.	Description	Remarks
51	4-929-732-01	TABLE, DISK	
52	A-4604-219-A	HOLDER (MG) ASSY	
53	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
54	4-929-721-01	SHAFT	
55	4-929-723-01	GUIDE (T)	
56	4-927-649-01	BELT	
57	7-621-775-10	SCREW +B 2.6X4	
58	X-4929-703-1	ARM ASSY, SWING	
59	4-927-620-01	GEAR (P)	
60	4-927-628-01	GEAR (C)	
61	4-929-724-01	PULLEY (B)	
62	7-624-105-04	STOP RING 2.3, TYPE -E	
63	4-929-727-01	CAM (A)	
64	4-929-729-01	CAM (B)	
65	3-659-338-00	SPRING, COMPRESSION	
66	4-927-654-01	WASHER (LIMITER)	
67	4-933-134-01	SCREW (+PTPWH M2.6X6)	
68	4-917-541-01	SPRING (B)	
69	4-929-747-01	HOLDER (BU)	
70	7-685-234-19	SCREW +KTP 2.6X8 TYPE2NON-SLIT	
71	*4-917-583-21	BRACKET, YOKE	
908	*1-634-461-11	PC BOARD LOADING	
M103	A-4608-362-A	MOTOR (L) ASSY	
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)	
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)	

4-3. OPTICAL PICK-UP BLOCK (BU-5BD3)



Note:	Note:
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	Remarks
101	4-917-565-01	SHAFT, SLED	
102	4-933-126-01	INSULATOR (A)	
103	7-621-255-15	SCREW +P 2X3	
104	4-917-567-01	GEAR (M)	
105	4-917-564-01	GEAR (P), FLATNESS	
106	7-685-134-19	SCREW +BTP 2.6X8 TYPE2 N-S	

Ref.No	Part No.	Description	Remarks
909	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A	
910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)	
911	*A-4617-371-A	MOUNTED PCB, BD	
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)	
M102	X-4917-504-1	MOTOR ASSY (SLED)	
S101	1-572-085-11	SWITCH,LEAF(LIMIT IN)	

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

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

CAPACITORS:
MF: μF, PF: μμF.

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

COILS
- MMH: mH, UH: μH

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

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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
901	*A-4617-397-A	MOUNTED PCB, DISPLAY
902	*A-4617-507-A	(Canadian)....MOUNTED PCB, POWER
902	*A-4617-400-A	(Except for Canadian)....MOUNTED PCB, POWER
903	*A-4617-399-A	(Except for Canadian)....MOUNTED PCB, MAIN
903	*A-4617-506-A	(Canadian)....MOUNTED PCB, MAIN
904	*1-634-469-11	PC BOARD, TRANS
906	⚠1-558-945-11	(Canadian)....CORD, POWER
907	1-535-845-11	JUMPER, FILM (WITH TERMINAL)
908	*1-634-461-11	PC BOARD LOADING
909	⚠8-848-144-11	DEVICE, OPTICAL KSS-240A
910	1-575-001-11	WIRE, FLAT TYPE (12 CORE)
911	*A-4617-371-A	MOUNTED PCB, BD
912	1-634-472-11	PC BOARD HEADPHONES

CAPACITOR

C101	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C102	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C103	1-126-094-11	ELECT	4.7MF	20%	16V
C104	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C105	1-126-154-11	ELECT	47MF	20%	6.3V
C106	1-126-154-11	ELECT	47MF	20%	6.3V
C107	1-126-154-11	ELECT	47MF	20%	6.3V
C108	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C109	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C110	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C111	1-131-367-00	TANTALUM	22MF	20%	16V
C112	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C113	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C114	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C115	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C116	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C117	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C118	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C119	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C120	1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C151	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C152	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C153	1-163-006-11	CERAMIC CHIP	560PF	10%	50V
C154	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C155	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C171	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C172	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C173	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C174	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C221	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C222	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C223	1-124-443-00	ELECT	100MF	20%	10V
C225	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C231	1-163-035-00	(Canadian).... CERAMIC CHIP	0.047MF		50V
C232	1-163-035-00	(Canadian).... CERAMIC CHIP	0.047MF		50V
C233	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C234	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C235	1-124-443-00	ELECT	100MF	20%	10V
C236	1-126-176-11	ELECT	220MF	20%	10V
C237	1-123-875-11	(Canadian)....ELECT	10MF	20%	50V
C238	1-123-875-11	(Canadian)....ELECT	10MF	20%	50V
C239	1-126-176-11	ELECT	220MF	20%	10V
C240	1-123-875-11	ELECT	10MF	20%	50V
C241	1-123-875-11	ELECT	10MF	20%	50V
C301	1-124-443-00	ELECT	100MF	20%	10V
C302	1-124-791-11	ELECT	1MF	20%	50V
C304	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C305	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C306	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C307	1-164-232-11	CERAMIC CHIP	0.01MF		50V
C308	1-124-902-00	ELECT	0.47MF	20%	50V
C309	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C312	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C326	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C327	1-163-011-11	CERAMIC CHIP	0.0015MF	10%	50V
C332	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C401	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C405	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C501	1-163-035-00	(Canadian).... CERAMIC CHIP	0.047MF		50V
C502	1-136-165-00	(Canadian)....FILM	0.1MF	5%	50V
C551	1-163-035-00	(Canadian).... CERAMIC CHIP	0.047MF		50V
C901	1-126-939-11	ELECT	10000MF	20%	16V
C902	1-124-572-11	ELECT	100MF	20%	63V
C903	1-123-875-11	ELECT	10MF	20%	50V
C904	1-136-165-00	FILM	0.1MF	5%	50V
C905	1-123-875-11	ELECT	10MF	20%	50V
C906	1-124-443-00	ELECT	100MF	20%	10V
C907	1-126-923-11	ELECT	220MF	20%	10V
C908	1-124-791-11	ELECT	1MF	20%	50V
C909	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C910	1-124-472-11	ELECT	470MF	20%	10V
C911	1-124-927-11	ELECT	4.7MF	20%	50V
C912	1-123-875-11	ELECT	10MF	20%	50V
C913	1-126-923-11	ELECT	220MF	20%	10V
C914	1-136-165-00	FILM	0.1MF	5%	50V

CN101	1-568-796-11	SOCKET, CONNECTOR 22P
CN102	1-568-795-11	SOCKET, CONNECTOR 12P
CN201	1-568-838-11	SOCKET, CONNECTOR 21P
CN202	1-568-802-11	SOCKET, CONNECTOR 19P
CN253	*1-564-339-00	PIN, CONNECTOR 5P
CN291	*1-564-498-11	PIN, CONNECTOR 5P
CN301	*1-565-291-11	SOCKET, CONNECTOR 13P (SYSTEM CONTROL2)
CN302	*1-564-339-00	PIN, CONNECTOR 5P
CN303	*1-564-341-11	PIN, CONNECTOR 7P
CN305	*1-564-339-00	PIN, CONNECTOR 5P
CN401	1-569-566-11	SOCKET, CONNECTOR 20P
CN801	1-568-668-11	CONNECTOR, BOARD TO BOARD 6P
CN802	*1-564-336-00	(Except for Canadian)....PIN, CONNECTOR 2P
CN803	*1-564-321-11	(Canadian)....PIN, CONNECTOR 2P
CN901	1-568-662-11	CONNECTOR, BOARD TO BOARD 6P

Ref.No	Part No.	Description
CN902	* 1-564-341-11	PIN, CONNECTOR 7P
CN903	* 1-564-341-11	PIN, CONNECTOR 7P
CNJ901 ⚠	1-526-882-11	(Canadian)....OUTLET, AC
D201	8-719-010-34	DIODE UZ-4.7BSC
D205	8-719-912-20	DIODE 1SS120
D401	8-719-400-18	DIODE MA152WK
D402	8-719-400-18	DIODE MA152WK
D403	8-719-400-18	DIODE MA152WK
D404	8-719-400-18	DIODE MA152WK
D412	8-719-106-36	DIODE RD8.2M-B3
D901	8-719-210-33	DIODE EC10DS2
D902	8-719-210-33	DIODE EC10DS2
D903	8-719-210-33	DIODE EC10DS2
D904	8-719-210-33	DIODE EC10DS2
D905	8-719-210-33	DIODE EC10DS2
D906	8-719-104-34	DIODE 1S2836
D907	8-719-104-34	DIODE 1S2836
D909	8-719-106-17	DIODE RD6.8M-B2
FLD401	1-519-600-11	INDICATOR TUBE, FLUORESCENT
IC101	8-752-037-33	IC CXA1372Q
IC102	8-759-821-94	IC LA6532M
IC221	8-752-334-06	IC CXD2551P
IC222	8-759-990-13	IC TDA1543A
IC223	8-759-945-58	(Canadian)....IC RC4558P
IC224	8-759-633-66	IC M5285FP
IC253	8-759-633-65	IC M54641L
IC301	8-752-333-31	IC CXD2500Q
IC401	8-759-149-38	IC UPD75212ACW-190
IC901	8-759-821-93	IC LA5601
IC902	8-759-633-42	IC M5293L
IC903	8-759-604-86	IC M5F7807
J101	1-216-295-00	METAL GLAZE 0 5% 1/10W
J102	1-216-295-00	METAL GLAZE 0 5% 1/10W
J501	1-507-967-31	(Canadian)....JACK (HEADPHONES)
JW201	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW401	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW402	1-216-295-00	METAL GLAZE 0 5% 1/10W
JW403	1-216-295-00	METAL GLAZE 0 5% 1/10W
L901	1-410-658-31	INDUCTOR CHIP 220UH
M101	X-4917-523-3	MOTOR ASSY (SPINDLE)
M102	X-4917-504-1	MOTOR ASSY (SLED)
M103	A-4608-362-A	MOTOR (L) ASSY
Q101	8-729-901-01	TRANSISTOR DTC144EK
Q201	8-729-100-66	TRANSISTOR 2SC1623
Q231	8-729-141-75	(Canadian)....TRANSISTOR 2SD596DV345
Q232	8-729-141-75	(Canadian)....TRANSISTOR 2SD596DV345
Q233	8-729-113-66	(Canadian)....TRANSISTOR FN1L4M-M31
Q252	8-729-112-97	TRANSISTOR FA1L4M-L31
Q253	8-729-112-97	TRANSISTOR FA1L4M-L31
Q903	8-729-113-66	TRANSISTOR FN1L4M-M31
Q904	8-729-113-13	TRANSISTOR FA1A4M-L33
Q906	8-729-216-22	TRANSISTOR 2SA1162

RESISTOR

R101	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R102	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R103	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R104	1-216-099-00	METAL GLAZE	120K	5%	1/10W
R105	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R106	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R107	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R108	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R109	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R110	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R111	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R112	1-216-083-00	METAL GLAZE	27K	5%	1/10W
R113	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R114	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R152	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R153	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R154	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R155	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R156	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R157	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R158	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R159	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R160	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R171	1-216-001-00	METAL GLAZE	10	5%	1/10W
R172	1-216-001-00	METAL GLAZE	10	5%	1/10W
R173	1-216-001-00	METAL GLAZE	10	5%	1/10W
R174	1-216-001-00	METAL GLAZE	10	5%	1/10W
R201	1-216-097-00	(Canadian).... METAL GLAZE	100K	5%	1/10W
R202	1-216-097-00	(Canadian).... METAL GLAZE	100K	5%	1/10W
R203	1-216-045-00	METAL GLAZE	680	5%	1/10W
R204	1-216-045-00	METAL GLAZE	680	5%	1/10W
R231	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R232	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R233	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R234	1-216-001-00	METAL GLAZE	10	5%	1/10W
R235	1-216-019-00	(Canadian).... METAL GLAZE	56	5%	1/10W
R236	1-216-019-00	(Canadian).... METAL GLAZE	56	5%	1/10W
R237	1-216-053-00	(Canadian).... METAL GLAZE	1.5K	5%	1/10W
R238	1-216-053-00	(Canadian).... METAL GLAZE	1.5K	5%	1/10W
R241	1-216-041-00	METAL GLAZE	470	5%	1/10W
R242	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R243	1-216-037-00	METAL GLAZE	330	5%	1/10W
R244	1-216-037-00	METAL GLAZE	330	5%	1/10W
R248	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R249	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R250	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R302	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R303	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R304	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R305	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R308	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R309	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R310	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R311	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R312	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R313	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R314	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R315	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R337	1-216-037-00	METAL GLAZE	330	5%	1/10W
R338	1-216-037-00	METAL GLAZE	330	5%	1/10W
R401	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R402	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R403	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R404	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R405	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R406	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R407	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W

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			
R412	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R501	1-216-019-00	(Canadian).... METAL GLAZE	56	5%	1/10W
R551	1-216-019-00	(Canadian).... METAL GLAZE	56	5%	1/10W
R901	1-216-025-00	METAL GLAZE	100	5%	1/10W
R903	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R904	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R905	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R906	1-216-017-00	METAL GLAZE	47	5%	1/10W
R908	1-216-001-00	METAL GLAZE	10	5%	1/10W
R909	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R912	1-216-073-00	METAL GLAZE	10K	5%	1/10W
RV101	1-238-016-11	RES, ADJ, CARBON 10K			
RV102	1-238-016-11	RES, ADJ, CARBON 10K			
RV501	1-238-302-11	(Canadian)....RES,VER,CARBON 1K/1K (PHONES LEVEL)			
S101	1-572-085-11	SWITCH, LEAF (LIMIT IN)			
S291	1-571-924-11	SWITCH, LEAF (LOAD OUT)			
S292	1-571-924-11	SWITCH, LEAF (LOAD IN)			
S402	1-554-596-21	SWITCH, KEY BOARD (SHUFFLE)			
S403	1-554-596-21	SWITCH, KEY BOARD (EDIT)			
S405	1-554-596-21	SWITCH, KEY BOARD (⏏OPEN/CLOSE)			
S406	1-554-596-21	SWITCH, KEY BOARD (PROGRAM)			
S407	1-554-596-21	SWITCH, KEY BOARD (CONTINUE)			
S409	1-554-596-21	SWITCH, KEY BOARD (■)			
S410	1-554-596-21	SWITCH, KEY BOARD (⏮)			
S411	1-554-596-21	SWITCH, KEY BOARD (◀◀)			
S413	1-554-596-21	SWITCH, KEY BOARD (▷II)			
S414	1-554-596-21	SWITCH, KEY BOARD (▶▶I)			
S415	1-554-596-21	SWITCH, KEY BOARD (▶▶)			
S416	1-572-184-11	SWITCH, KEY BOARD (REPEAT)			
S501	⚠1-552-98-00	(Canadian)....SWITCH (POWER)			
T901	⚠1-449-977-11	(Except for Canadian)....TRANSFORMER, POWER			
T901	⚠1-450-032-11	(Canadian)....TRANSFORMER, POWER			
X251	1-567-908-11	VIBRATOR, CRYSTAL (16.9344MHz)			
X401	1-577-358-21	VIBRATOR, CERAMIC (4.0MHz)			

Note:
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Replace only with part number specified.

Note:
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