D-180AN/180ANC/181/181C/181V/182CK/183

SERVICE MANUAL

Photo : D-181

Canadian Model
D-181/182CK/183

AEP Model
D-180AN/180ANC/181/
181C/181V/182CK/183

UK Model
D-181/183

E Model
D-180AN/181/181C/182CK/183

Australian Model
D-181/182CK/183

Chinese Model
D-180AN/181/182CK/183

Model Name Using Similar Mechanism	NEW
CD Mechanism Type	CDM-2811AAA
Optical Pick-up Type	DAX-01A

SPECIFICATIONS

CD player

System
Compact disc digital audio system
Laser diode properties
Material: GaAIAs
Wavelength : λ= 780 nm
Emission duration: Continuous
Laser output : Less than 44.6 µW (This output is the value measured at a distance of 200 mm from the objective lens surface on the optical pick-up block with 7 mm aperture.)
Error correction
Sony Super Strategy Cross Interleave Reed Solomon Code
D-A conversion
1-bit quartz time-axis control
Frequency response
20 - 20,000 Hz $^{+1}_{-2}$ dB (measured by EIAJ CP-307)
Output (at 4.5 V input level)
Headphones (stereo minijack)
15 mW + 15 mW at 16 ohms
Line output (stereo minijack)
Output level 0.7 V rms at 47 kilohms
Recommended load impedance over 10 kilohms

General

Power requirements
For the area code of the model you purchased, check the upper left side of the bar code on the package.
- Sony BP-DM10 Rechargeable battery: 2.4 V DC, Ni-Cd. 650 mAh
  Sony BP-DM20 Rechargeable battery: 2.4 V DC, Ni-Mh, 1,200 mAh
- Two LR6 (size AA) batteries: 3 V DC
- AC power adaptor (DC IN 4.5 V jack):
  US, Canadian, Central and South America model: 120 V, 60 Hz
  AEP, Italian, French, E13, EE model: 220 - 230 V, 50/60 Hz
  UK model: 230 - 240 V, 50 Hz
  EA model: 110 - 240 V, 50/60 Hz
  AUS model: 240 V, 50 Hz
  Tourist, E33 model: 100 - 240 V, 50/60 Hz
  Hong Kong model: 220 V, 50/60 Hz
  Chinese model: 220 V, 50 Hz
- Sony CPM-300P mount plate for use on car battery : 4.5V DC

Dimensions (w/h/d) (without projecting parts and controls)
Approx. 129 x 28.1 x 146 mm
($5^1/_8$ x $1^1/_8$ x $5^3/_4$ in.)
Mass (without rechargeable battery)
Approx. 220 g (7.8 oz)
Operating temperature
5°C - 35°C (41°F - 95°F)

Supplied accessories

For the area code of the model you purchased, check the upper left side of the bar code on the package.
D- 180AN/180ANC
Earphones (1)
D-181/181C
AC power adaptor (1)
Earphones (1)
Connecting cord (Phono plug x 2⟷ stereo miniplug) (1)
AC plug adaptor (1)*
*Supplied with E33, E13 and EA models
D-181V
AC power adaptor (1)
Earphones with volume control (1)
Connecting cord (Phono plug x 2⟷ stereo miniplug) (1)
D-183
AC power adaptor (1)
Earphones (1)
Rechargeable battery (1)
Connecting cord (Phono plug x 2 ⟷ stereo miniplug) (1)
AC plug adaptor (1)*
*Supplied with E33, E13 and EA models
D-182CK
AC power adaptor (1)
Earphones (1)
Connecting cord (Phono plug x 2 ⟷ stereo miniplug) (1)*1
Car battery cord (1)
Car connecting pack (1)
Mount plate (1)
Velcro tape (2)
Spare fuse (1)
Spiral tube (1)
AC plug adaptor (1)*2
*1 Not supplied with AEP model
*2 Supplied with E33, E13 and EA models

Design and specifications are subject to change without notice.

COMPACT DISC COMPACT PLAYER

MICROFILM

SONY®

TABLE OF CONTENTS

DANGER
Invisible laser radiation when open and interlock failed or defeated. Avoid direct exposure to beam.

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

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

Flexible Circuit Board Repairing
- Keep the temperature of the soldering iron around 270°C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

Notes on chip component replacement
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

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.

SECTION 1
SERVICING NOTES

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.

Before Replacing the Optical pick-up Block
Please be sure to check thoroughly the parameters as per the “Optical pick-up Block Checking Procedure” (Part No. : 9-960-027-11) issued separately before replacing the optical Pick-up block.
Note and specifications required to check are given below.

- FOK output : IC501 ⑫ pin
  When checking FOK, remove the lead wire to disc motor.
- S curve P-to-P value : 1.2±0.3Vp-p IC501 ㉛ pin. (Connect pin ⑫ of IC501 (TP880) and ③ of IC501 (GND) with a jumper wire).
  When checking S curve P-to-P value, remove the lead wire to disc motor.
- Adjusted part for focus gain adjustment : RV503
- RF signal P-to-P value : 0.8 – 1.2Vp-p
- Traverse signal P-to-P value : 1.0 – 2.4Vp-p
- The repairing grating holder is impossible.
- Adjusted part for tracking gain adjustment : RV502

Precautions for Checking Emission of Laser Diode

Laser light of the equipment is focused by the object lens in the optical pick-up so that the light focuses on the reflection surface of the disc. Therefore, be sure to keep your eyes more then 30cm apart from the object lens when you check the emission of laser diode.

Laser Diode Checking Methods

During normal operation of the equipment, emission of the laser diode is prohibited unless the upper panel is closed while turning ON the S801 (push switch type).
The following two checking methods for the laser diode are operable.

Method-1 (In the service mode or normal operation) : Emission of the laser diode is visually checked.

1. Open the upper lid.
2. Push the S801 as shown in Fig. 1 .
3. Check the object lens for confirming normal emission of the laser diode. If not emitting, there is a trouble in the automatic power control circuit or the optical pick-up. During normal operation, the laser diode is turned ON about 2.5 seconds for focus searching.

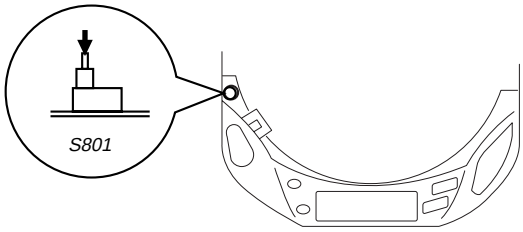
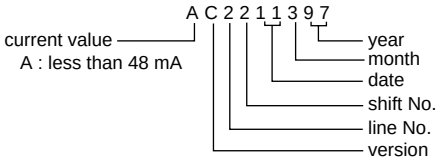


Fig.1 Method to push S801

Method-2 (In the service mode or normal operation) : Check the value of current flowing in the laser diode.

1. Remove the upper panel.
2. Read the current printed on the rear side of the optical pick-up. (Print on the rear side of the optical pick-up)



3. Connect a level meter as shown in Fig. 2
4. Press the ▶II key.
5. Calculate the current value by the reading of the digital voltmeter
   Reading of the tester (V) ÷ 4.7 (Ω) = current value (A)
   (Example) Reading of the digital voltmeter of 0.2256 V :
   0.2256 V ÷ 4.7 Ω = 0.048 (A) = 48 mA
6. Check that the current value is within the following range.
   - Current value of the label $^{+5}_{-11}$ mA(25°C)
     Variation by temperature : 0.4mA / °C
     Current increases with temperature increased.
     Current decreases with temperature decreased.

   If the current is more than the range above, there is a trouble in the automatic power control circuit or the laser diode is in deterioration. If less than the range, a trouble exists in the automatic power control circuit or the optical pick-up.

[MAIN BOARD] (Conductor side)

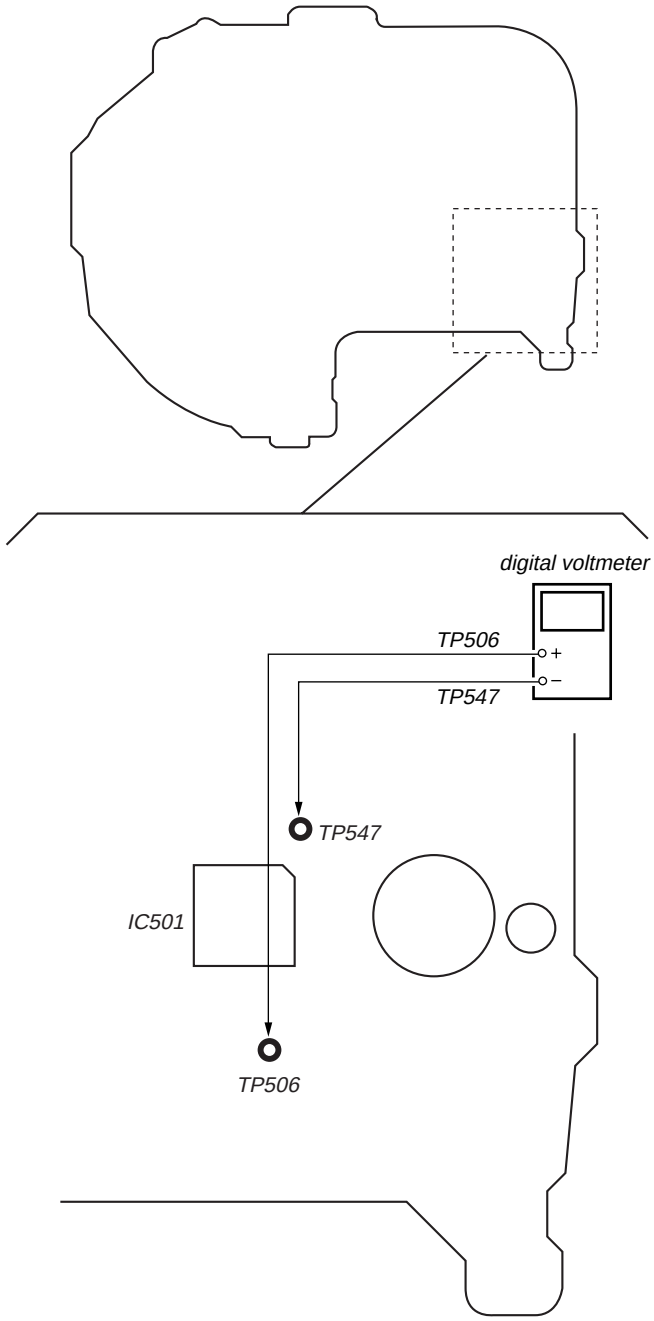
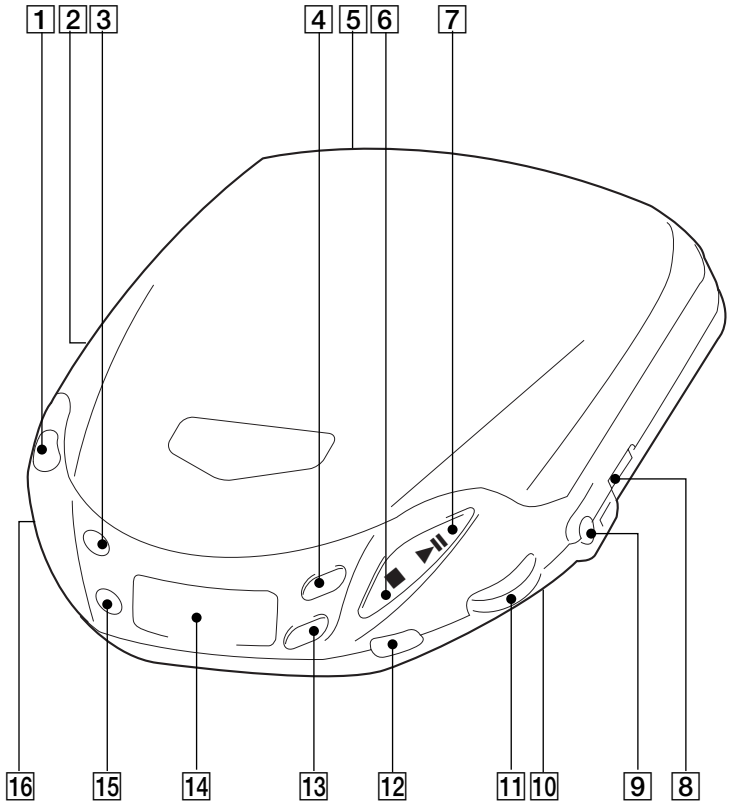


Fig. 2 Digital Voltmeter Connecting Location

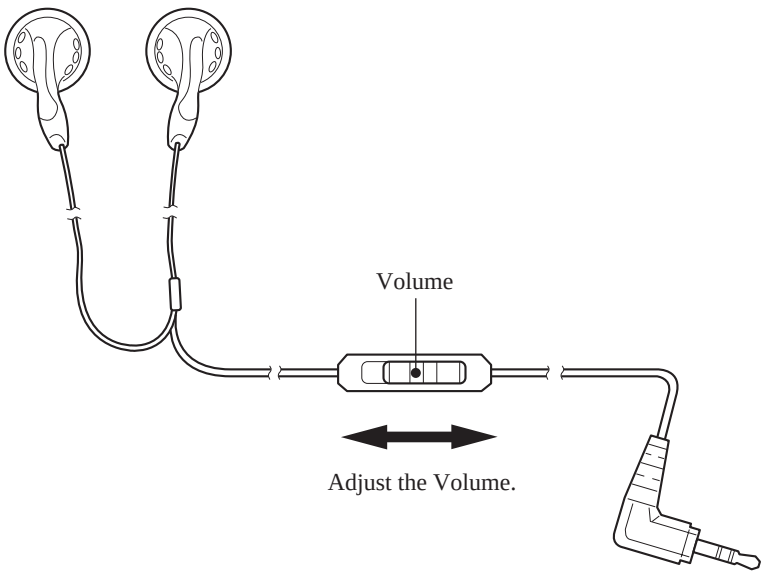
SECTION 2
GENERAL

LOCATION AND FUNCTION OF CONTROLS



1	OPEN button	9	∩ headphone jack
2	DC IN 4.5V jack	10	AVLS switch
3	PLAY MODE button	11	VOLUME control
4	►►I FF button	12	Sound switch
5	LINE OUT jack	13	I◄◄ FR button
6	■ STOP button	14	Information display panel
7	►II Play/pause button	15	REPEAT/ENTER button
8	RESUME switch	16	HOLD switch

Volume control MDR-ED136V (D-181V)



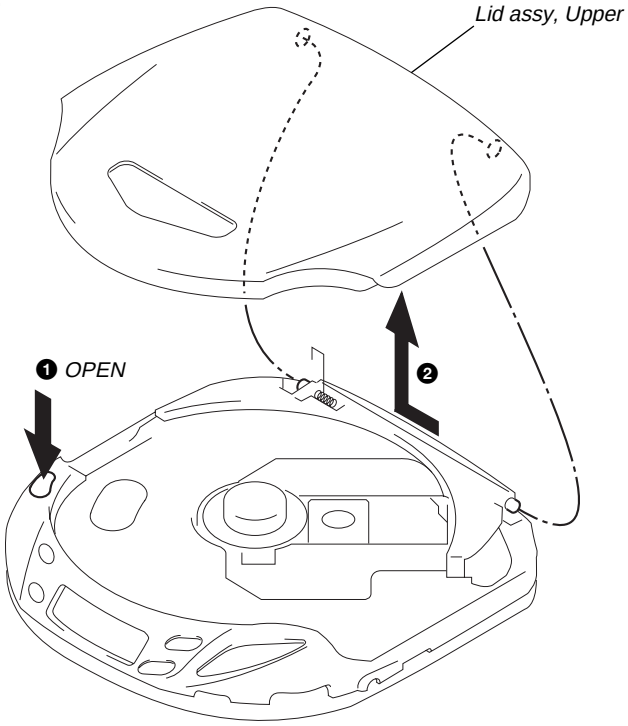
SECTION 3
DISASSEMBLY

● The equipment can be removed using the following procedure.

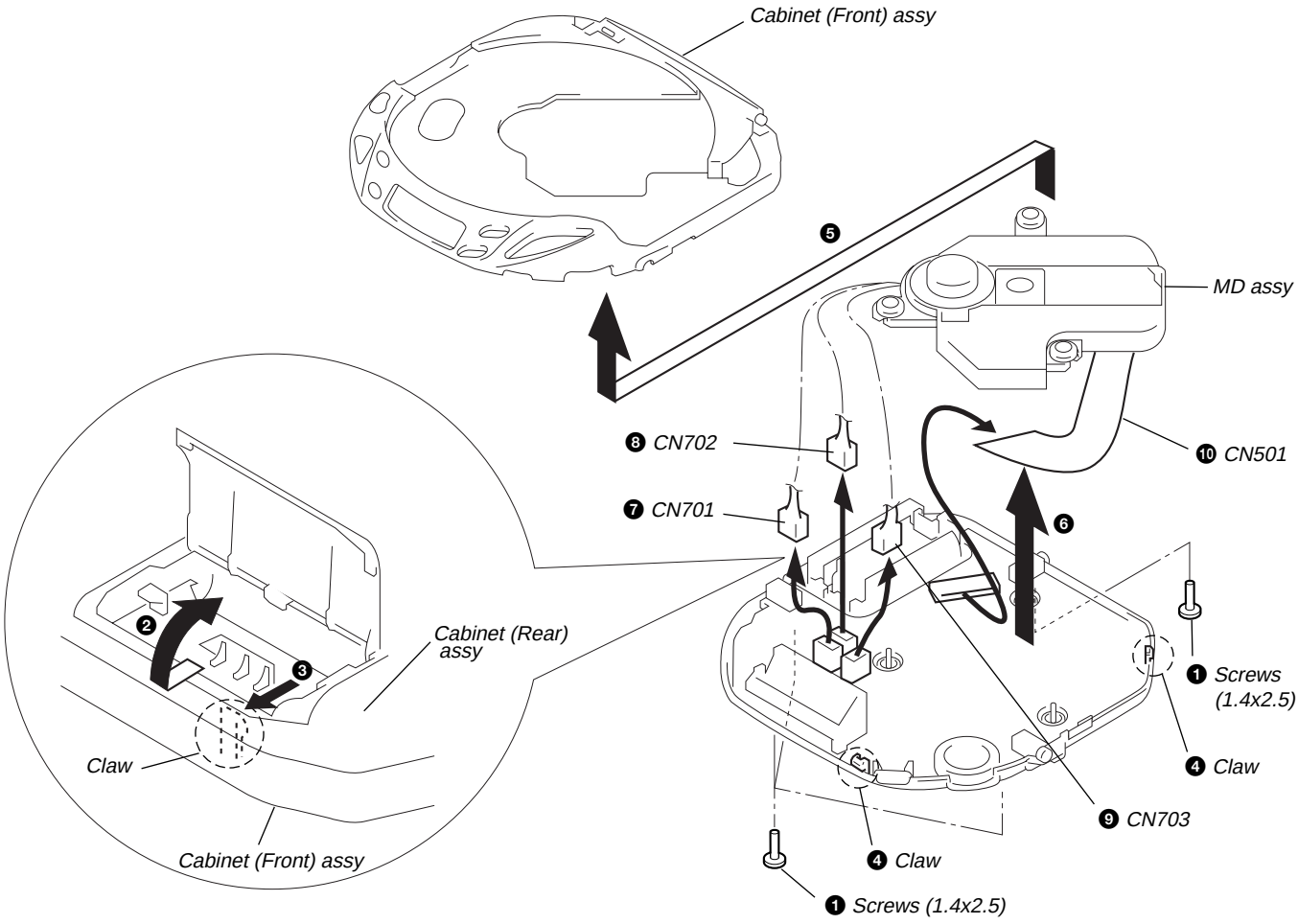
Set → Lid assy, Upper
Set → Cabinet (Front) assy → MD assy → Main board

Note : Follow the disassembly procedure in the numerical order given.

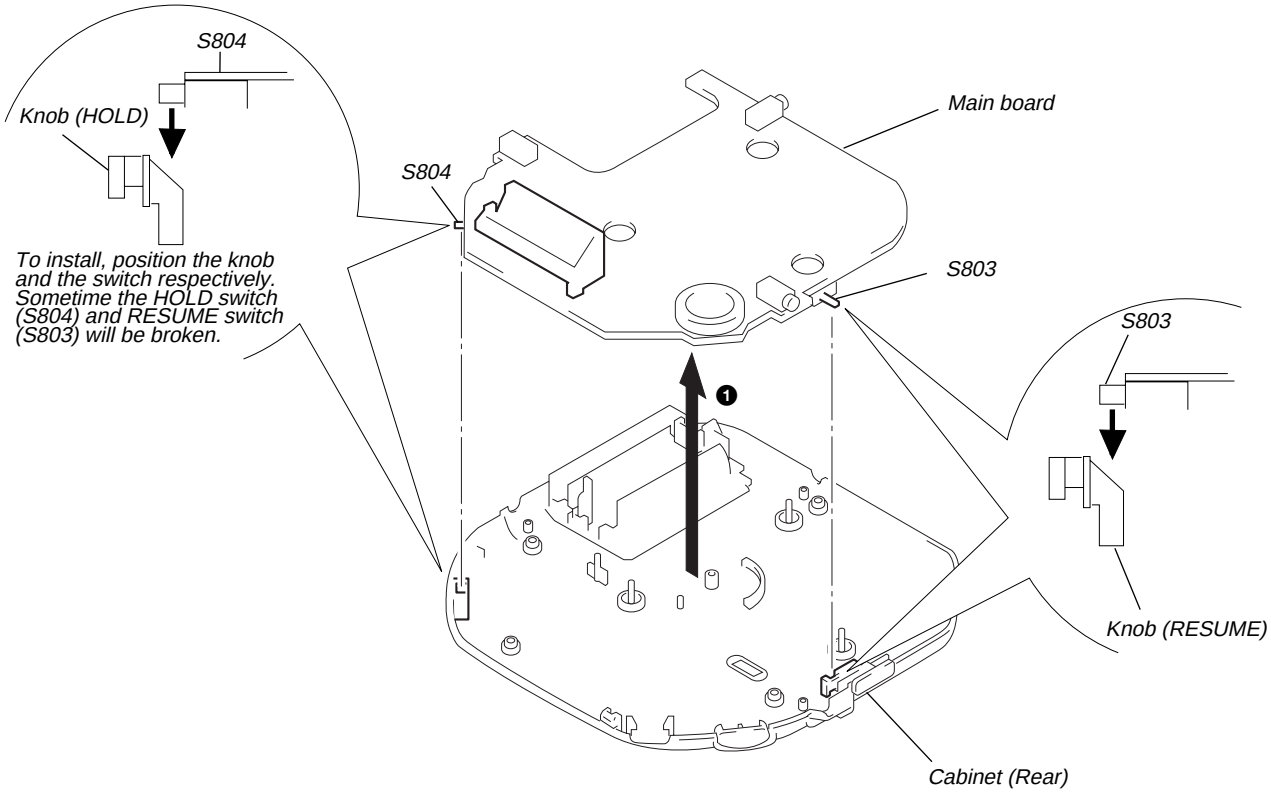
3-1. LID ASSY, UPPER REMOVAL



3-2. CABINET (FRONT) ASSY, MD ASSY REMOVAL



3-3. MAIN BOARD REMOVAL



SECTION 4
SERVICE MODE

Service Mode (service program)

The equipment is provided with a service program built in the microcomputer, like conventional models.
Service program operation methods are described in the following.

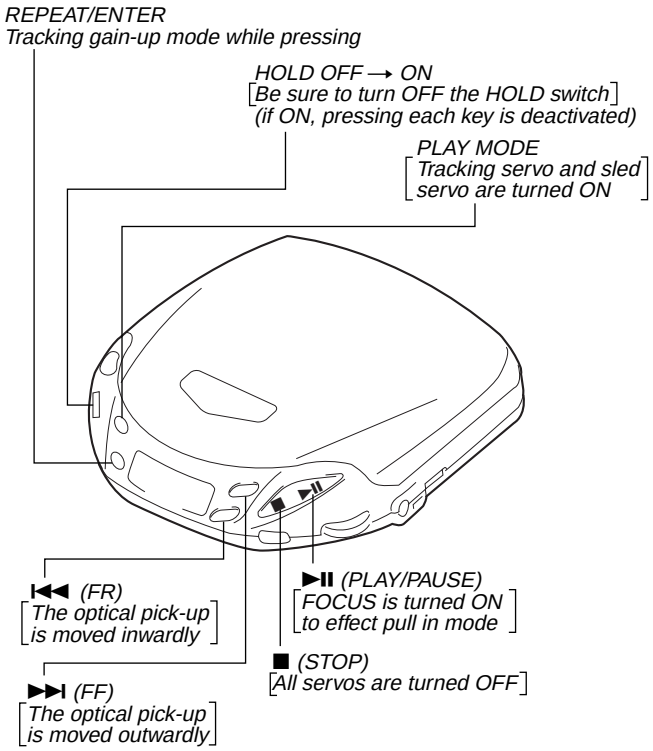


Fig. 3 Layout of each key

• Step 1 (Service mode setting method)

1. Turn OFF the HOLD switch the external power supply disconnected (power is not applied to the set).
2. Solder across the T802 (TEST) terminals (pin ㊿, IC801 (TEST) is grounded).
3. Connect an external power supply.
   Thus, the set is switched to the service mode.

• Step 2 (Operation in the service mode)

1. Once the service mode is effected, the LCD displays 5 indications each of which is repeatedly displayed.
   However, the following operations can be activated even if LCD indication is effected.
2. By pressing the ▶▶I or I◀◀ key, the optical pick-up movable inwardly or outwardly. However, if this is activated, tracking servo and sled servo are turned OFF, so it can be turned ON by pressing the PLAY MODE key, if required.
3. By pressing the REPEAT/ENTER key, the tracking gain-up mode becomes active.
4. By pressing the ▶II key, focus is turned ON from focus searching while entering CLV-S (pull-in mode).
   Without disc, focus searching is repeated continuously.
5. By pressing the PLAY MODE key, tracking servo, sled servo and CLV-A (servo in PLAY) are turned ON.
6. When 4. and 5. are performed, playing begins. No muting is ON in the service mode.
7. By pressing the ■ key, all servos (focus tracking and sled) are turned OFF. However, the disc motor revolves for a while by inertia.

• Step 3 (Resetting service mode)

1. Be sure to disconnect the external power supply and remove the solder bridge at the TEST terminals connected in setting.
2. The set thus becomes available for normal operation.

– MAIN BOARD – (Side A)

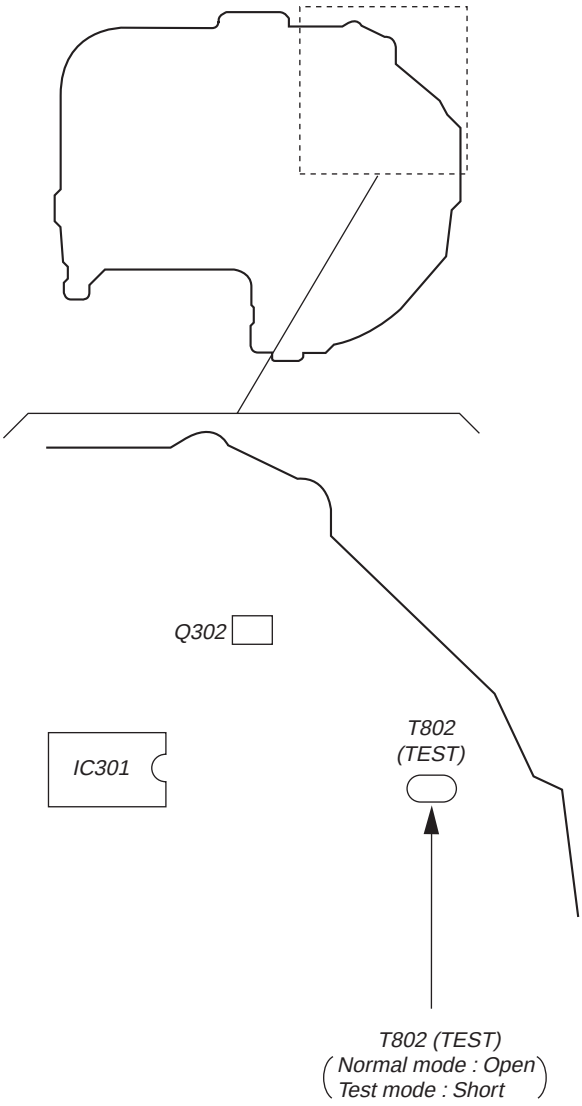


Fig. 4 Location of test terminal

SECTION 5
ADJUSTMENTS

CD SECTION

Precautions for Adjustment

1. Before beginning adjustment, set the equipment to service mode. After the completion of adjustment, be sure to reset the service mode.
   For more information, see "Service Mode (service program)" on page 7.
2. Perform adjustments in the order given.
3. Use the disc (YEDS-18. Part No. 3-702-101-01) unless otherwise indicated.
4. Power supply voltage requirement : DC 4.5 V
   HOLD switch : OFF
   VOLUME : Minimum
   BASS BOOST switch : NORM
   AVLS switch : OFF

Before Beginning Adjustment

Set the equipment to service mode (See page 7) and check the following.
If there in an error, repair the equipment.

• Checking of the sled motor

1. Open the upper panel.
2. Press the ▶▶I and I◀◀ keys and check that the optical pick-up can move smoothly without sluggishness or abnormal noise in innermost periphery n outermost periphery n innermost periphery
   ▶▶I : The optical pick-up moves outwardly
   I◀◀ : The optical pick-up moves inwardly

• Checking of focus searching

1. Open the upper panel.
2. Press the ▶II key. (Focus searching operation is activated continuously).
3. Check the object lens of the optical pick-up for smooth up/down motion without sluggishness or abnormal noise.
4. Press the ■ key.
   Check that focus searching operation is deactivated. If not, again press the ■ key slightly longer.

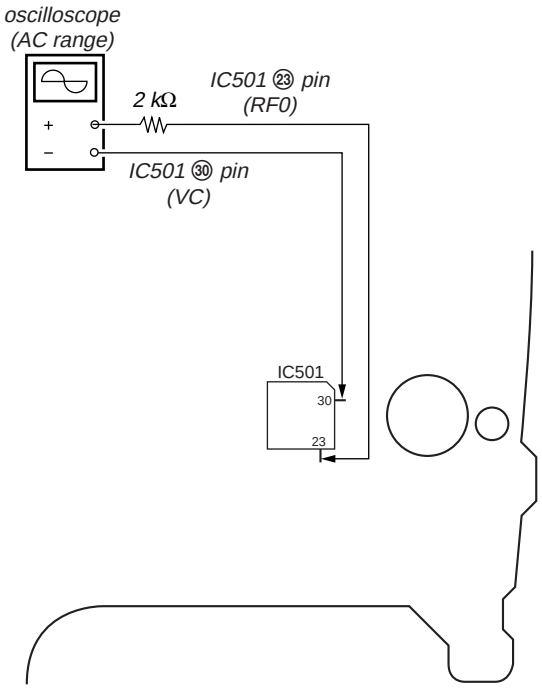
Focus Bias Check

Condition :

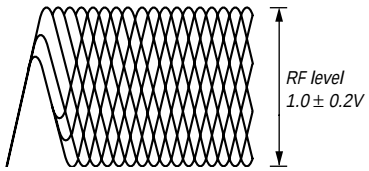
• Hold the set in horizontal state.

Procedure :

[MAIN BOARD] (Side B)



1. Set the equipment to service mode stop state (See page 7).
2. Connect the oscilloscope between IC501 ㉓ pin (RF0) and ㉚ pin (VC) on the MAIN board.
3. Move the optical pick-up by Pressing the ▶▶I and I◀◀ keys.
4. Put the disc (YEDS-18).
5. Press the ▶II key.
   (From focus searching, focus is turned ON while entering CLV drawing-in mode. Tracking and sled are turned OFF.)
6. Press the PLAY MODE key. (Both tracking and sled are turned ON).
7. Check the oscilloscope waveform is as shown below.
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.



• RF Signal Reference Waveform (eye pattern)
  To watch the eye pattern, set the oscilloscope to AC range and increase the vertical sensitivity of the oscilloscope for easy watching.

8. Stop removing of the motor by pressing the ■ key.
9. After the completion of adjustment, reset service mode. (See page 7)

Focus/Tracking Gain Adjustment

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

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

Focus/tracking gain determines the pick-up follow-up relative to mechanical noise and mechanical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

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

This adjustment has to be performed upon replacing any of the following parts :

- Optical pick-up
- RV503 (Focus gain)
- RV502 (Tracking gain)

Normally, be sure not to move RV503 (focus gain) and RV502 (tracking gain).

– Focus Gain Adjustment –

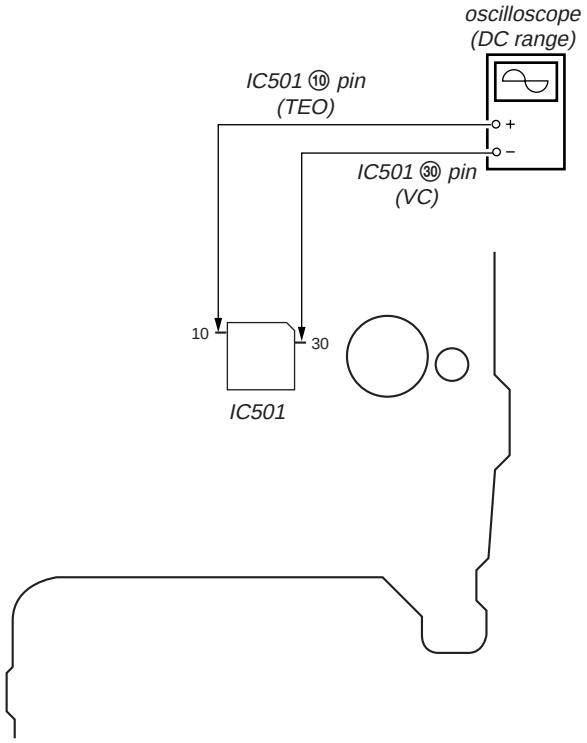
Procedure :

This adjustment is not performed. If focus gain RV503 is turned, set to mechanical center

– Tracking Gain Adjustment –

(perform at normal operation)

[MAIN BOARD] (Side B)



1. Place the optical pick-up level, horizontally. (If the optical pick-up is not level, the 2-axis device will be weighted and adjustment cannot be done.)
2. Connect the oscilloscope between IC501 ⑩ pin (TEO) and ㉚ pin (VC) on the MAIN board.
3. Set the disc (YEDS-18) and Press the ▶II (▶▶I) key.
4. Turn RV502 slightly clockwise (tracking gain drops) and obtain a waveform with a fundamental wave (waveform has large waves) as in Figure 1 .
5. Turn RV502 slowly counterclockwise (tracking gain rises) until the fundamental wave disappears (no large waves) as in Figure 2.
6. Set RV502 to the position about 30 °counterclockwise from the position obtained in step 5. If RV502 contact point is more than 90 ° counterclockwise from mechanical center, tracking gain is too high. In this case, readjust from step 4.
7. Press ▶II (▶▶I) or I◀◀ keys and observe the 100 track jump waveform. Check that no traverse waveform appears for both ▶II (▶▶I) or I◀◀ directions. (See Figures 3 and 4.) It is acceptable if the traverse waveform appears only now and then, but if it appears constantly raise tracking gain slightly and check step 7 again.
8. Check that there is no abnormal amount of operation noise (white noise) from the 2-axis device. If there is, tracking gain is too high, readjust starting with step 4.

The waveforms are those measured with the oscilloscope set as shown below.

- VOLT/DIV : 50mV
- TIME/DIV : 5mS
- Waveform when tracking gain lowered.
  Fundamental wave appears (large waves).

Fig. 1

- Waveform when fundamental wave disappears (no large waves).

Fig. 2

- Waveform when no traverse waveform during 100 track jump. (Brake application is smooth because of adjustment.)

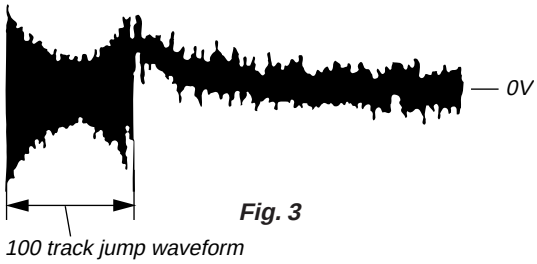


Fig. 3

- Waveform when no traverse waveform during 100 track jump. (Brake application is poor because of adjustment.)

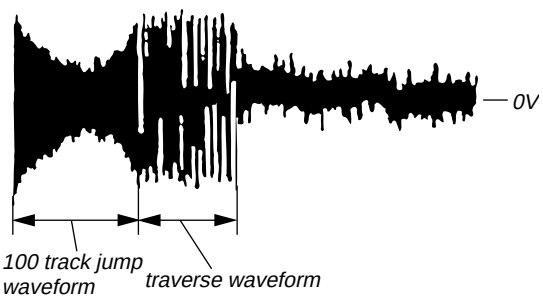
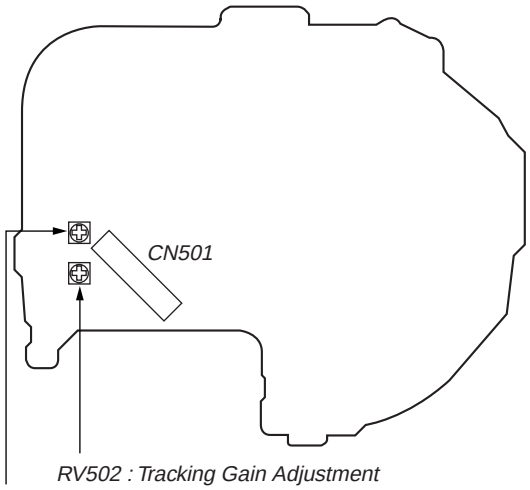


Fig. 4

Adjustment Location :

MAIN BOARD] (Side A)



RV502 : Tracking Gain Adjustment

RV503 : Focus Gain Adjustment

SECTION 6
DIAGRAMS

6-1. EXPLANATION OF IC TERMINALS

IC801 MC68HC05L15SC442712CPB (SYSTEM CONTROL)

Pin No.	Pin name	I/O	Description
1 – 3	SEG 12–14	O	LCD segment signal output terminal.
4	FP26	–	Not used (Open).
5	XRST– DSP	O	Reset output terminal.
6	AMUTE – HP	O	Audio mute output terminal.
7	DRV – MUTE – DRV	O	Mute drive output.
8	ESPON–PWR	–	Not used (Open).
9	DACLT–DAC	I/O	CPU serial data input, latch signal output (For DAC only).
10	C2POEN	–	Not used (Open).
11	TEOADJ – TEO	O	Tracking ADJ switch control output.
12	RMDAT–WRMT	–	Not used (Open).
13	VLCD (GND)	–	Connect to ground.
14	VSS (GND)	–	Connect to ground.
15	NDLY (GND)	–	Connect to ground.
16	CHGON – PWR	O	Charge ON/OFF control output.
17	PCON–PWR	O	Power ON/OFF control output. “ L ” : ON “ H ” : OFF
18	XMCRST–PWR	I	System reset input terminal.
19	OSC 1	I	System clock oscillator input terminal (4.1943 MHz).
20	OSC 2	O	System clock oscillator output terminal (4.1943 MHz).
21	SDT–ESP	–	Not used (Open).
22	SDT–ESP	–	Not used (Open).
23	SCK–ESP	–	Not used (Open).
24	XBBSW – DBB	O	DBB switch control output.
25	XLT–ESP	O	Latch signal output to ESP control (IC601).
26	HOLD–SW	I	Hold switch input terminal. “ L ” : HOLD ON “ H ” : HOLD OFF
27	XLMT–MD	I	Limit switch input terminal. “ L ” : Inside Track
28	XRSM–SW	I	RESUME switch input terminal. “ L ” : ON “ H ” : OFF
29	WP XDC–DT PWR	I	DC in voltage detection terminal.
30	WP XOPEN–SW	I	Door open switch input terminal. “ L ” : Close “ H ” : Open
31	WP XPLAY–SW	I	Play/pause key input terminal.
32	WP RMKEY WRMT	–	Not used (Open).
33	XL/O DCT	I	LINE OUT jack detection terminal. “ L ” : Present “ H ” : No
34	XRCHG–SW	I	Rechargeable battery detection terminal. “ L ” : Present “ H ” : No
35	XAVLS–SW	I	AVLS switch input terminal.
36	R/W DSP	O	Read/Write switching signal output terminal. “ L ” : Read “ H ” : Write
37	SDT–DSP	I	SUB–Q signal input terminal.
38	SDT–DSP	O	Serial data output to DSP (IC502) and D/A converter (IC301).
39	SCK–DSP	O	Clock signal to enter SUB–Q signal to DSP (IC502) and D/A converter (IC301).
40	FOK–RF	I	FOK signal input terminal.

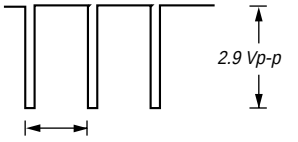
Pin No.	Pin name	I/O	Description
41	BUSY–DSP	I	BUSY signal input terminal from DSP (IC502).
42	BEEP–HP	O	Beep sound output terminal.
43	INT SCOR–DSP	I	Sub code sync SO+SI input terminal.
44	INT RMC–WLRMT	I	Wireless remote control signal input.
45	VDD (VCPU)	–	Power supply terminal.
46 – 49	COM 3–0	O	LCD common signal output terminal.
50	VREFH	I	Reference voltage input terminal (connect to VDD).
51	VREFL	–	Connect to ground.
52	AD ESPSL/TEST	I	Test mode terminal. “ L ” : Test mode “ H ” : Nomal mode
53	AD–KEY	I	A/D input terminal for main unit key.
54	AD–WRMT	–	Connect to ground.
55	AD–HI DC	I	A/D input terminal for DC IN voltage detection.
56	AD – BAT	I	Rechargeable battery/dry cell detection input.
57	AD – CHG	I	A/D input terminal for charging voltage monitor.
58	AD – VCC	I	A/D input terminal for VCC voltage monitor.
59	AD – DSP OFFSET	I	A/D input terminal for DSP off-set monitor.
60	FP10	–	Not used (Open).
61 – 72	SEG 0 – 11	O	LCD segment signal output terminal.

● **WAVEFORMS**

① SERVICE MODE
during TRK servo OFF

IC502 ⑦⑨ VOLT/DIV : 1 V AC
TIME/DIV : 0.1msec

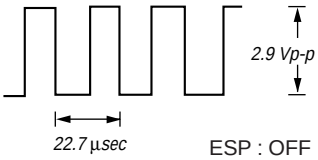
②



ESP : OFF

IC502 ㊱ VOLT/DIV : 1 V AC
TIME/DIV : 50µsec

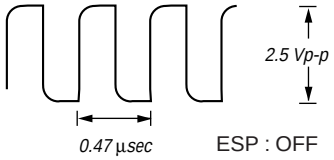
③



ESP : OFF

IC502 ㊽ VOLT/DIV : 1 V AC
TIME/DIV : 10msec

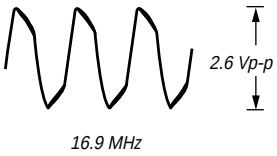
④



ESP : OFF

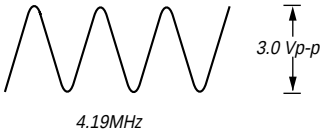
IC502 ⑦⓪ VOLT/DIV : 1 V AC
TIME/DIV : 0.2msec

⑤



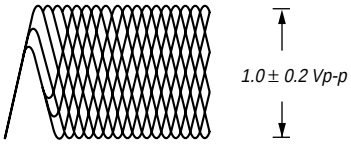
IC301 ⑯ VOLT/DIV : 1 V AC
TIME/DIV : 50nsec

⑥



IC801 ⑳ VOLT/DIV : 1 V AC
TIME/DIV : 0.2msec

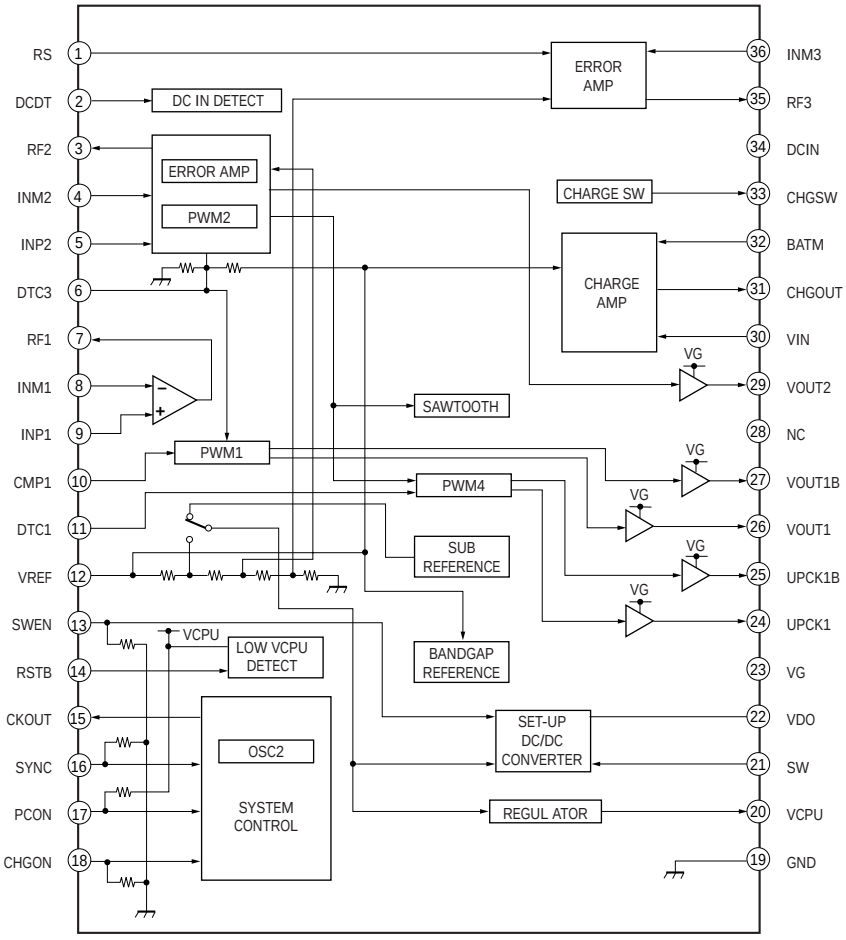
⑦ PLAY MODE



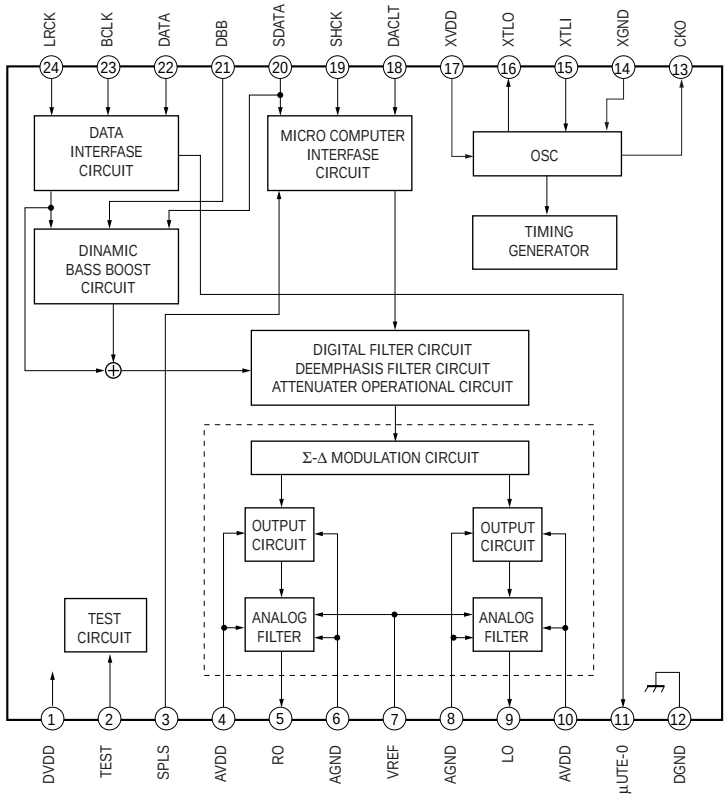
IC501 ㉓ VOLT/DIV : 0.2 V AC
TIME/DIV : 0.5msec

● IC BLOCK DIAGRAMS

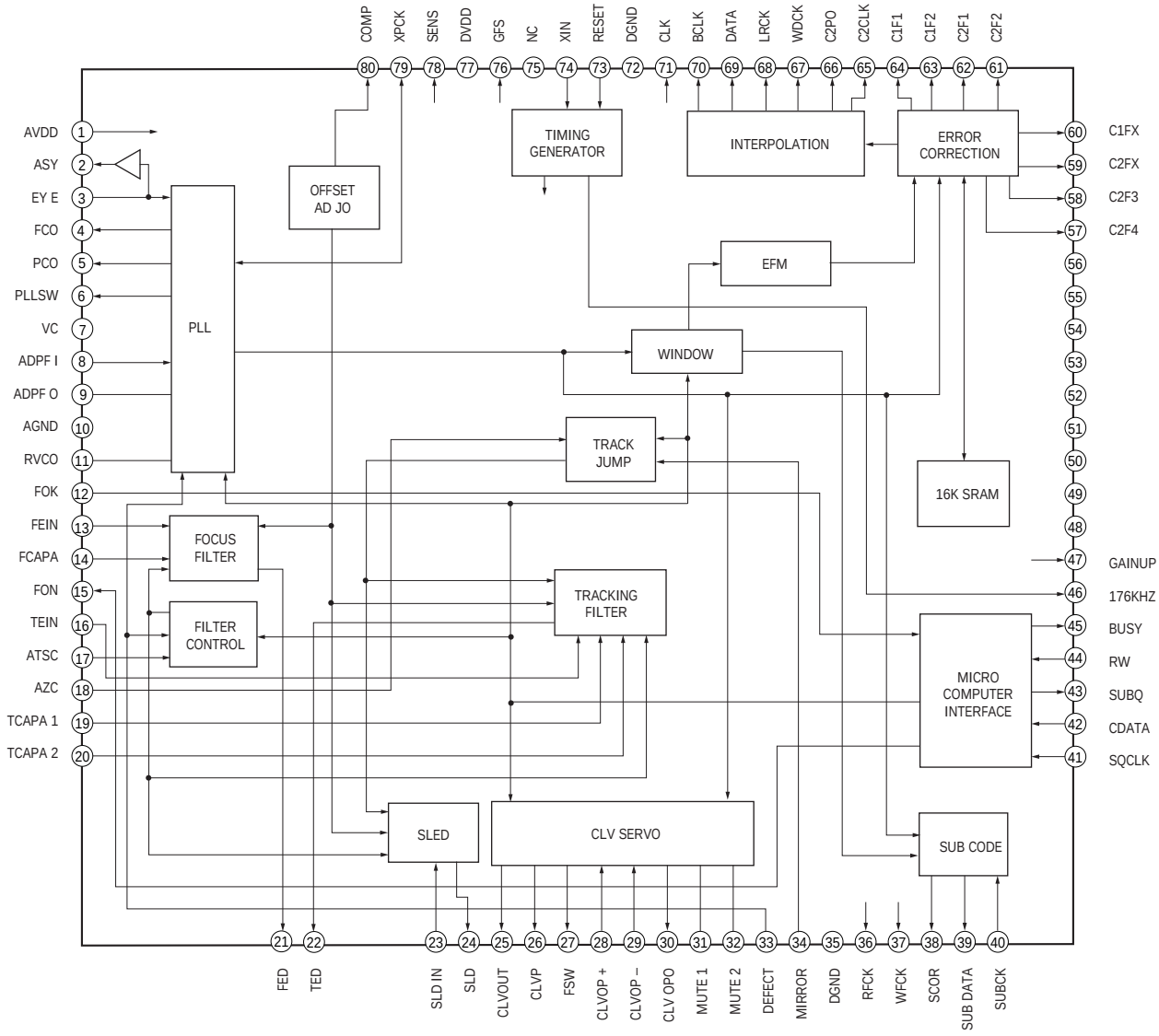
IC401 MPC18A26VMEL



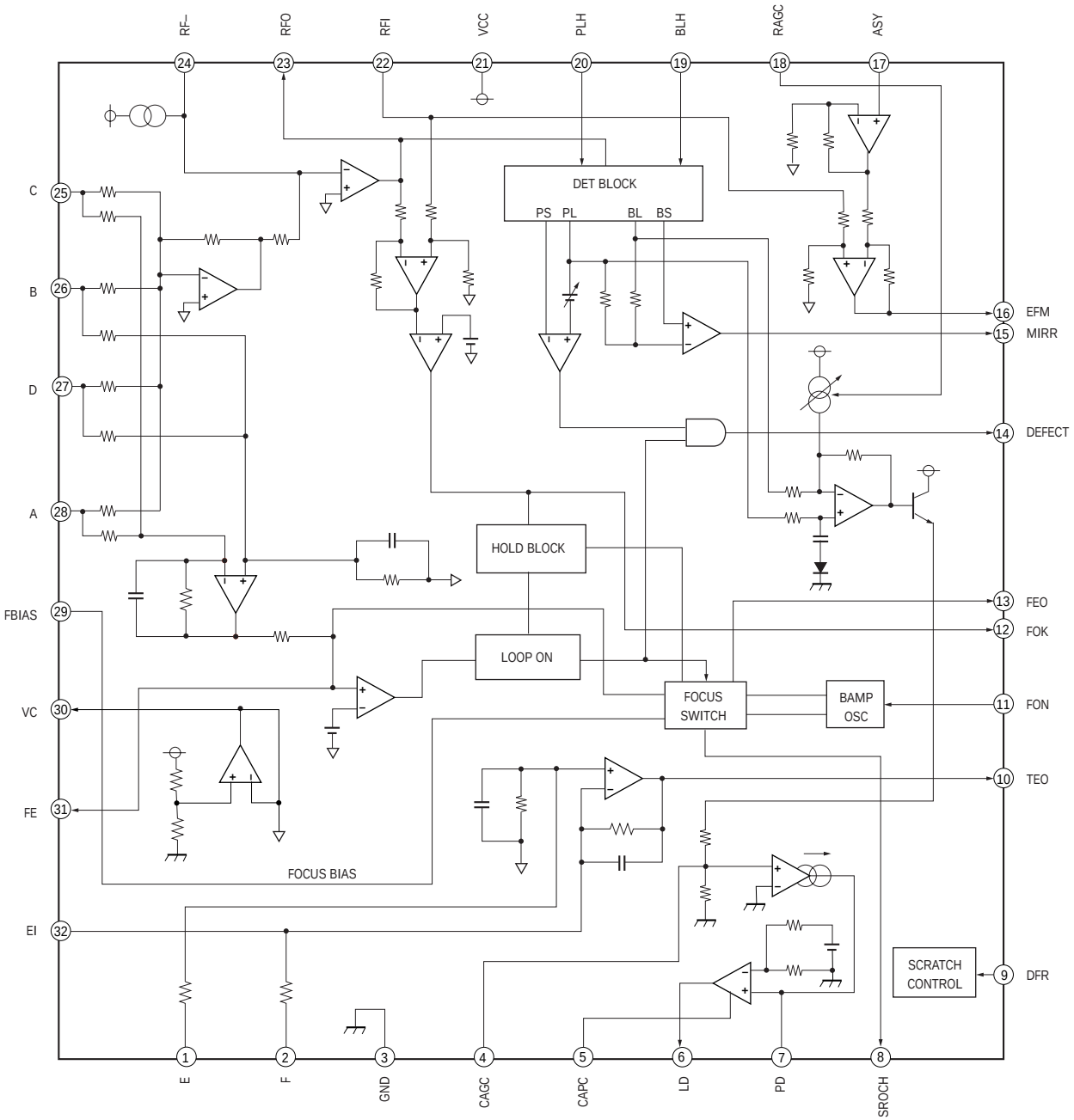
IC301 TC9438FNEL



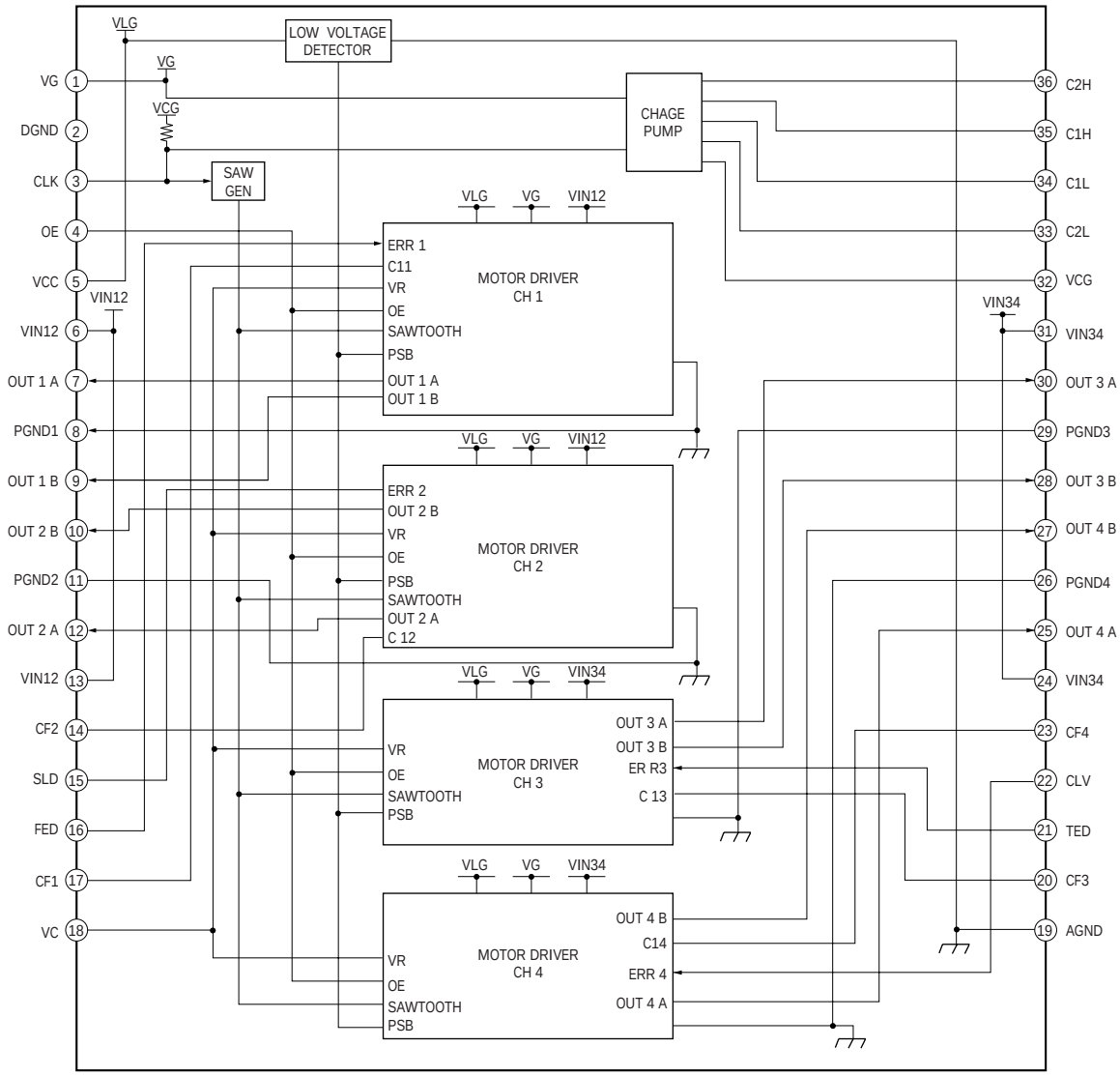
IC502 BU9325KS



IC501 BA6386K



IC701 MPC17A51VMEL



SECTION 7
EXPLODED VIEWS

NOTE :

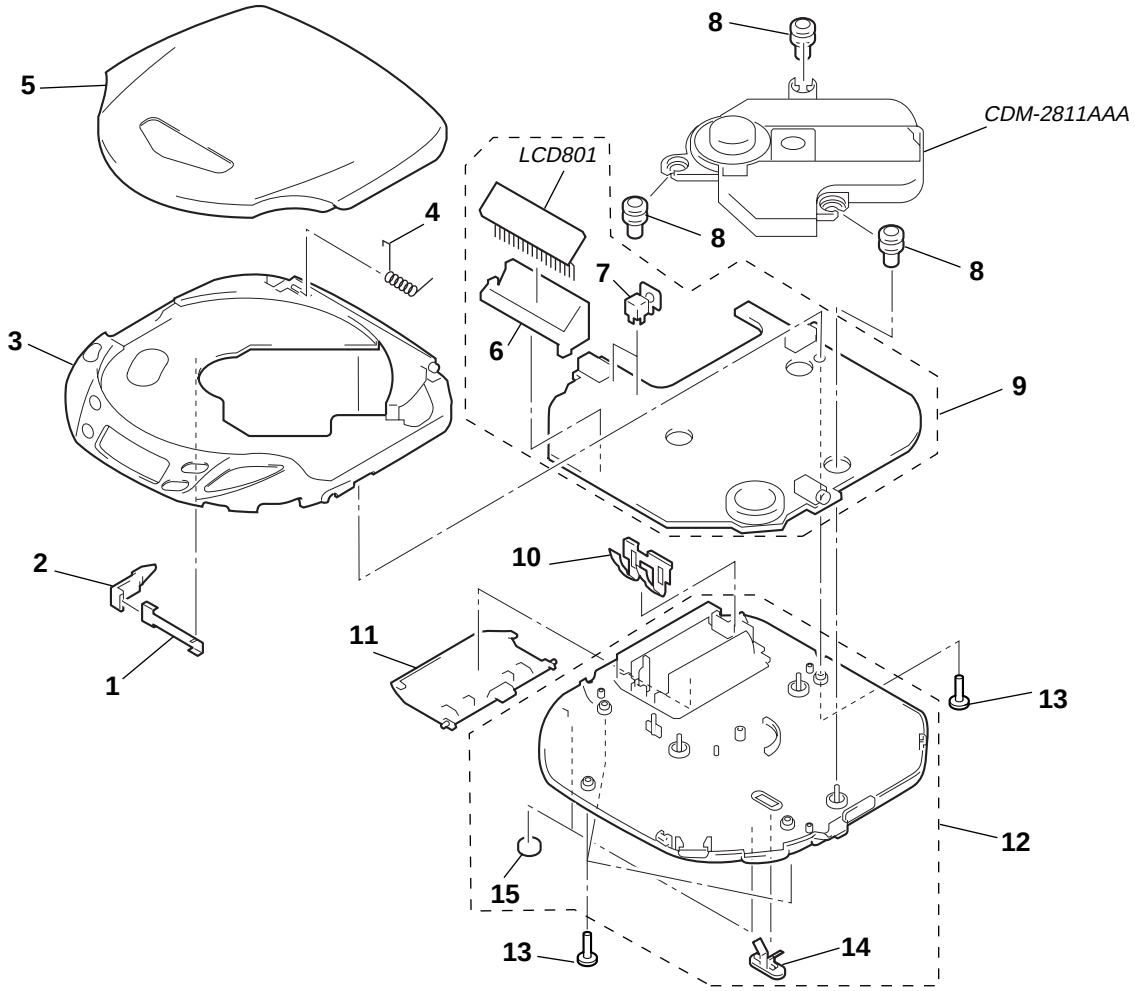
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ••• (RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation

CND	: Canadian	FR	: French
AUS	: Australian	KR	: Korean
EA	: Saudi Arabia	CH	: Chinese
EE	: East European		

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.

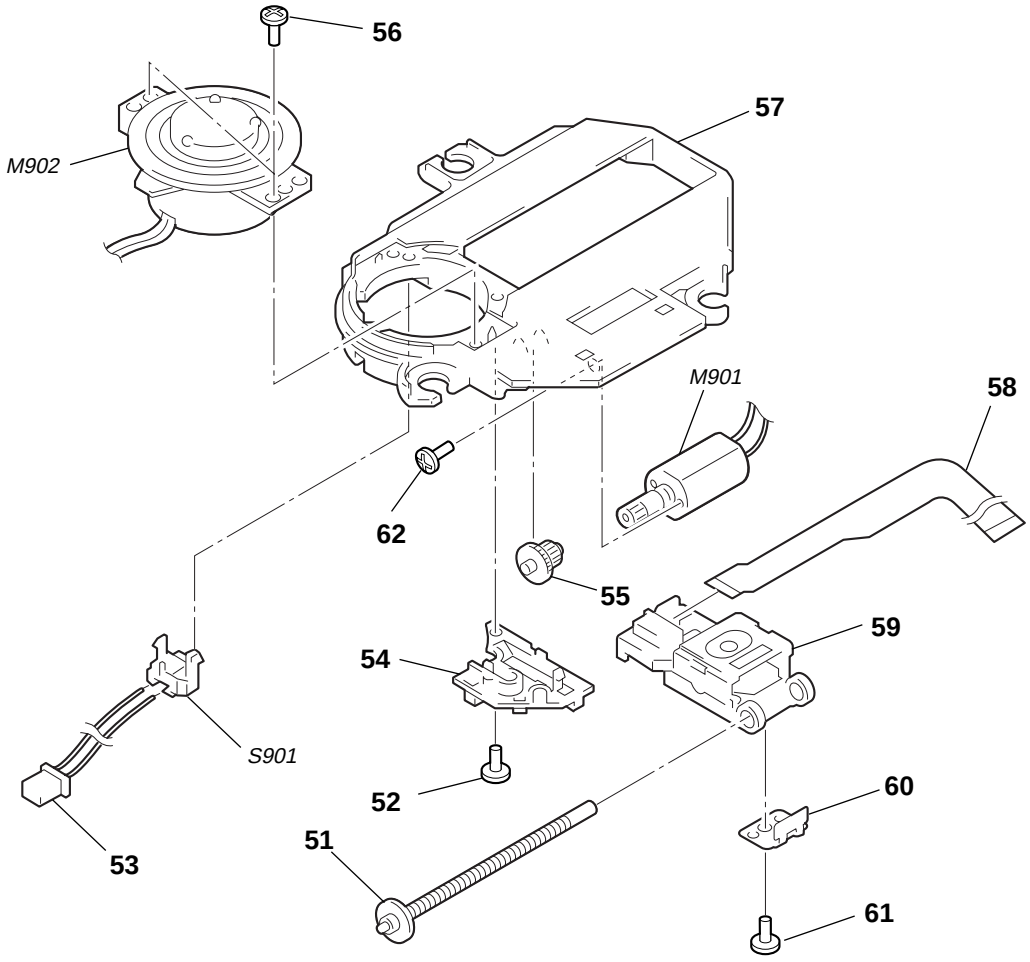
7-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	4-972-866-01	SPRING (DETECTOR)	
2	4-972-780-01	DETECTOR	
3	X-4949-492-1	CABINET (FRONT) SUB ASSY	
4	4-994-981-01	SPRING, TORSION	
5	X-4949-459-1	LID ASSY, UPPER (GRAY) (180AN/180ANC)	
5	X-4949-460-1	LID ASSY, UPPER (BLUE) (180AN:AEP)	
5	X-4949-462-1	LID ASSY, UPPER (GRAY) (181V)	
5	X-4949-463-1	LID ASSY, UPPER (BLUE) (181V)	
5	X-4949-464-1	LID ASSY, UPPER (GRAY) (181/181C)	
5	X-4949-465-1	LID ASSY, UPPER (BLUE) (181 : EXCEPT EE,E33,EA,CH,KR)	
5	X-4949-466-1	LID ASSY, UPPER (GREEN) (181 : CND,AEP,UK,FR,AUS)	
5	X-4949-467-1	LID ASSY, UPPER (ORANGE) (181 : CND,AEP,UK,FR,AUS)	

Ref. No.	Part No.	Description	Remark
5	X-4949-470-1	LID ASSY, UPPER (GRAY) (182CK)	
5	X-4949-472-1	LID ASSY, UPPER (GRAY) (183)	
6	4-994-975-01	HOLDER (LCD)	
7	4-978-695-01	PLATE, TERMINAL, BATTERY	
8	4-990-219-01	INSULATOR	
9	A-3293-811-A	MAIN BOARD, COMPLETE (EXCEPT FR)	
9	A-3293-887-A	MAIN BOARD, COMPLETE (FR)	
10	4-997-109-01	PLATE (BATTERY TERMINAL), LINK	
11	4-994-972-01	LID, BATTERY CASE	
12	X-4949-498-1	CABINET (REAR) SUB ASSY	
13	3-336-395-01	SCREW (B2X10) (G), TAPPING	
14	4-984-751-01	KNOB (AVLS)	
15	4-966-278-01	FOOT, RUBBER	
LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL	

7-2. OPTICAL PICK-UP SECTION



The components identified by mark ! or dotted line with mark ! are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ! sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
51	A-3303-970-A	SCREW ASSY, FEED	
52	3-318-203-11	SCREW (B1.7X6), TAPPING	
53	1-690-530-81	LEAD (WITH CONNECTOR)	
54	4-972-163-04	SPRING, SLED	
55	4-974-003-01	GEAR (B)	
56	3-719-401-11	SCREW (B1.7), TAPPING	
* 57	4-984-320-01	CHASSIS	
58	1-660-965-11	SLIDE FLEXIBLE BOARD	

Ref. No.	Part No.	Description	Remark
! 59	X-4946-311-1	OPTICAL PICK-UP (DAX-01A)	
60	4-972-165-01	RACK	
61	4-973-631-01	SCREW	
62	7-627-850-17	SCREW,PRECISION +P 1.4X2.5	
M901	A-3303-403-A	MOTOR ASSY, SLED	
M902	A-3303-971-A	MOTOR ASSY, TURNTABLE (SPINDLE)	
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)	

MAIN

SECTION 8
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.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE :Metal oxide-film resistor
  F : nonflammable
- Items marked " * "are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ , for example :
  uA.... : μ A.... , uPA.... : μ PA....
  uPB.... : μ PB.... , uPC.... : μ PC....
  uPD.... : μ PD....
- CAPACITORS
  uF : μ F
- COILS
  uH : μ H
- Abbreviation

CND	: Canadian	FR	: French
AUS	: Australian	MX	: Mexican
EA	: Saudi Arabia	CH	: Chinese
EE	: East European	KR	: Korean

C&SA : Central and South America
E13 : AC 220-230V area model
E33 : AC 100-240V area model

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.

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

Ref. No.	Part No.	Description			Remark
	A-3293-811-A	MAIN BOARD, COMPLETE (EXCEPT FR)			
	A-3293-887-A	MAIN BOARD, COMPLETE (FR)			
		**********			
	4-994-975-01	HOLDER (LCD)			
	4-978-695-01	PLATE, TERMINAL, BATTERY			
		< CAPACITOR >			
C101	1-126-794-11	ELECT	4.7uF	20%	50V
C102	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C103	1-115-156-11	CERAMIC CHIP	1uF		10V
C104	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C105	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C108	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C201	1-126-794-11	ELECT	4.7uF	20%	50V
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C203	1-115-156-11	CERAMIC CHIP	1uF		10V
C204	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C205	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C208	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C302	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C303	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C304	1-124-635-00	ELECT	220uF	20%	6.3V
C305	1-124-584-00	ELECT	100uF	20%	4V
C306	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C307	1-126-795-11	ELECT	10uF	20%	25V
C308	1-126-795-11	ELECT	10uF	20%	25V
C309	1-164-346-11	CERAMIC CHIP	1uF		16V
C310	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C312	1-128-057-11	ELECT CHIP	330uF	20%	6.3V
C313	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C314	1-115-156-11	CERAMIC CHIP	1uF		10V
C315	1-126-514-11	ELECT	22uF	20%	10V
C316	1-115-156-11	CERAMIC CHIP	1uF		10V
C317	1-115-156-11	CERAMIC CHIP	1uF		10V
C323	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C324	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C326	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C335	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C401	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C402	1-126-785-11	ELECT	47uF	20%	10V
C403	1-127-485-00	ELECT	33uF	20%	6.3V
C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

Ref. No.	Part No.	Description			Remark
C405	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C407	1-115-156-11	CERAMIC CHIP	1uF		10V
C408	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C410	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C411	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C414	1-115-156-11	CERAMIC CHIP	1uF		10V
C415	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C417	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C420	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C421	1-124-635-00	ELECT	220uF	20%	6.3V
C424	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C425	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C426	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C427	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C428	1-115-156-11	CERAMIC CHIP	1uF		10V
C432	1-115-156-11	CERAMIC CHIP	1uF		10V
C437	1-115-156-11	CERAMIC CHIP	1uF		10V
C439	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C501	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C503	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C504	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C505	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C506	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C511	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C512	1-115-156-11	CERAMIC CHIP	1uF		10V
C513	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C514	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C515	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C516	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C517	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C518	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C519	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C520	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C521	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C523	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C525	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C526	1-164-360-11	CERAMIC CHIP	0.1uF		16V

Ref. No.	Part No.	Description			Remark
C528	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C529	1-126-513-11	ELECT	47uF	20%	4V
C531	1-115-565-11	CERAMIC CHIP	2.2uF	10%	10V
C532	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C534	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C535	1-115-156-11	CERAMIC CHIP	1uF		10V
C538	1-165-128-11	CERAMIC CHIP	0.22uF		16V
C539	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C540	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C550	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C555	1-104-908-11	TANTAL. CHIP	47uF	20%	4V
C557	1-115-156-11	CERAMIC CHIP	1uF		10V
C561	1-126-513-11	ELECT	47uF	20%	4V
C562	1-162-995-11	CERAMIC CHIP	22000PF		50V
C563	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C571	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C572	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C575	1-113-619-11	CERAMIC CHIP	0.47uF		10V
C587	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C588	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C599	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C611	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C615	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C702	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C703	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C704	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C705	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C706	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C707	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C708	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C712	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C716	1-164-346-11	CERAMIC CHIP	1uF		16V
C806	1-115-156-11	CERAMIC CHIP	1uF		10V
C807	1-115-156-11	CERAMIC CHIP	1uF		10V
C808	1-115-156-11	CERAMIC CHIP	1uF		10V
C809	1-115-156-11	CERAMIC CHIP	1uF		10V
C814	1-216-864-11	METAL CHIP	0	5%	1/16W
C879	1-115-156-11	CERAMIC CHIP	1uF		10V
C907	1-164-360-11	CERAMIC CHIP	0.1uF		16V
		< CONNECTOR >			
CN501	1-566-530-11	CONNECTOR, FPC (ZIF) 14P			
* CN701	1-695-320-51	PIN, CONNECTOR (1.5mm)(SMD) 2P			
* CN702	1-695-320-31	PIN, CONNECTOR (1.5mm)(SMD) 2P			
* CN703	1-695-320-21	PIN, CONNECTOR (1.5mm)(SMD) 2P			
		< DIODE >			
D101	8-719-976-99	DIODE DTZ5.1B			
D105	8-719-039-99	DIODE UMZ8.2T			
D201	8-719-976-99	DIODE DTZ5.1B			
D205	8-719-039-99	DIODE UMZ8.2T			
D302	8-719-976-99	DIODE DTZ5.1B			
D401	8-719-048-98	DIODE RB160L-40TE25			
D402	8-719-049-09	DIODE 1SS367-T3SONY			
D403	8-719-049-10	DIODE 1SS374-TE85L			

Ref. No.	Part No.	Description			Remark
D407	8-719-058-24	DIODE RB501V-40TE-17			
D415	8-719-048-98	DIODE RB160L-40TE25			
D804	8-719-039-99	DIODE UMZ8.2T			
		< FERRITE BEAD >			
FB101	1-414-595-11	INDUCTOR	0UH		
FB201	1-414-595-11	INDUCTOR	0UH		
FB301	1-414-595-11	INDUCTOR	0UH		
FB302	1-414-595-11	INDUCTOR	0UH		
FB303	1-500-445-21	INDUCTOR	0UH		
FB304	1-216-864-11	METAL CHIP	0	5%	1/16W
FB401	1-412-026-11	INDUCTOR CHIP	1UH		
FB402	1-412-026-11	INDUCTOR CHIP	1UH		
FB501	1-414-595-11	INDUCTOR	0UH		
FB502	1-414-595-11	INDUCTOR	0UH		
		< IC >			
IC301	8-759-483-60	IC TC9438FNEL			
IC302	8-759-522-87	IC TA2120FN(EL)			
IC401	8-759-483-61	IC MPC18A26VMEL			
IC501	8-759-432-83	IC BA6386K			
IC502	8-759-484-38	IC BU9325KS			
IC503	8-759-387-31	IC TC75S55F(TE85R)			
IC505	8-759-082-60	IC TC7S66FU			
IC701	8-759-483-62	IC MPC17A51VMEL			
IC801	8-759-536-39	IC MC68HC05L15SC442712CPB			
		< JACK >			
J301	1-778-696-11	JACK (LINE OUT)			
J302	1-774-804-11	JACK (2)			
J401	1-778-153-21	JACK,DC(POLARITY UNIFIED TYPE)			(DC IN 4.5V)
		< JUMPER RESISTOR >			
JW401	1-216-296-00	METAL CHIP 0 5% 1/8W			
JW501	1-216-295-00	METAL CHIP 0 5% 1/10W			
JW502	1-216-295-00	METAL CHIP 0 5% 1/10W			
		< COIL >			
L102	1-414-916-11	INDUCTOR			
L202	1-414-916-11	INDUCTOR			
L301	1-469-034-21	INDUCTOR CHIP	4.7uH		
L302	1-414-821-11	INDUCTOR CHIP	4.7uH		
L303	1-414-821-11	INDUCTOR CHIP	4.7uH		
L304	1-414-821-11	INDUCTOR CHIP	4.7uH		
L306	1-414-916-11	INDUCTOR			
L401	1-414-410-21	INDUCTOR	10uH		
L402	1-414-404-11	INDUCTOR	100uH		
L502	1-414-410-21	INDUCTOR	10uH		
L504	1-414-410-21	INDUCTOR	10uH		
L506	1-414-410-21	INDUCTOR	10uH		
L507	1-414-410-21	INDUCTOR	10uH		
L701	1-414-402-11	INDUCTOR	47uH		
L702	1-414-402-11	INDUCTOR	47uH		

MAIN

Ref. No.	Part No.	Description			Remark
		< LIQUID CRYSTAL DISPLAY >			
LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL			
		< TRANSISTOR >			
Q101	8-729-209-06	TRANSISTOR 2SC4213-A			
Q201	8-729-209-06	TRANSISTOR 2SC4213-A			
Q301	8-729-029-06	TRANSISTOR DTC124EUA-T106			
Q302	8-729-907-39	TRANSISTOR IMD2			
Q311	8-729-028-92	TRANSISTOR DTA144TUA-T106			
Q401	8-729-044-09	TRANSISTOR 2SD2153T100V			
Q402	8-729-044-10	TRANSISTOR MMBF0201NLT1			
Q404	8-729-921-93	TRANSISTOR 2SB1182F5-QR			
Q405	8-729-920-85	TRANSISTOR 2SD1664-QR			
Q501	8-729-216-22	TRANSISTOR 2SA1162-G			
Q507	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q508	8-729-028-74	TRANSISTOR DTA114TUA-T106			
Q509	8-729-231-74	TRANSISTOR 2SC4116-GL			
Q809	8-729-231-74	TRANSISTOR 2SC4116-GL			
		< RESISTOR >			
R101	1-216-813-11	METAL CHIP	220	5%	1/16W
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W
R103	1-216-841-11	METAL CHIP	47K	5%	1/16W (EXCEPT FR)
R103	1-216-847-11	METAL CHIP	150K	5%	1/16W (FR)
R105	1-216-821-11	METAL CHIP	1K	5%	1/16W
R107	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R201	1-216-813-11	METAL CHIP	220	5%	1/16W
R202	1-216-845-11	METAL CHIP	100K	5%	1/16W
R203	1-216-841-11	METAL CHIP	47K	5%	1/16W (EXCEPT FR)
R203	1-216-847-11	METAL CHIP	150K	5%	1/16W (FR)
R205	1-216-821-11	METAL CHIP	1K	5%	1/16W
R207	1-216-793-11	RES,CHIP	4.7	5%	1/16W
R304	1-216-803-11	METAL CHIP	33	5%	1/16W
R306	1-216-864-11	METAL CHIP	0	5%	1/16W
R307	1-216-821-11	METAL CHIP	1K	5%	1/16W
R308	1-216-864-11	METAL CHIP	0	5%	1/16W
R310	1-216-142-00	RES,CHIP	4.7	5%	1/8W
R311	1-216-845-11	METAL CHIP	100K	5%	1/16W
R312	1-216-815-11	METAL CHIP	330	5%	1/16W
R316	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R401	1-218-911-11	RES,CHIP	470K	0.50%	1/16W
R402	1-218-899-11	RES,CHIP	150K	0.50%	1/16W
R403	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R404	1-216-799-11	METAL CHIP	15	5%	1/16W
R406	1-216-304-11	METAL CHIP	3.3	5%	1/10W
R408	1-216-809-11	METAL CHIP	100	5%	1/16W
R409	1-216-837-11	METAL CHIP	22K	5%	1/16W
R413	1-216-845-11	METAL CHIP	100K	5%	1/16W
R414	1-216-845-11	METAL CHIP	100K	5%	1/16W
R415	1-216-815-11	METAL CHIP	330	5%	1/16W
R416	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R417	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R418	1-216-864-11	METAL CHIP	0	5%	1/16W
R419	1-216-849-11	METAL CHIP	220K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R421	1-216-833-11	METAL CHIP	10K	5%	1/16W
R429	1-218-895-11	RES,CHIP	100K	0.50%	1/16W
R430	1-218-883-11	RES,CHIP	33K	0.50%	1/16W
R431	1-216-864-11	METAL CHIP	0	5%	1/16W
R440	1-216-864-11	METAL CHIP	0	5%	1/16W
R502	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R503	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R504	1-216-839-11	METAL CHIP	33K	5%	1/16W
R505	1-216-142-00	RES,CHIP	4.7	5%	1/8W
R506	1-216-833-11	METAL CHIP	10K	5%	1/16W
R507	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R508	1-216-833-11	METAL CHIP	10K	5%	1/16W
R509	1-216-835-11	METAL CHIP	15K	5%	1/16W
R510	1-216-821-11	METAL CHIP	1K	5%	1/16W
R511	1-216-833-11	METAL CHIP	10K	5%	1/16W
R512	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R513	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R517	1-216-835-11	METAL CHIP	15K	5%	1/16W
R518	1-216-864-11	METAL CHIP	0	5%	1/16W
R519	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R521	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R522	1-216-854-11	METAL CHIP	560K	5%	1/16W
R523	1-216-848-11	METAL CHIP	180K	5%	1/16W
R525	1-216-821-11	METAL CHIP	1K	5%	1/16W
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R529	1-216-864-11	METAL CHIP	0	5%	1/16W
R531	1-216-833-11	METAL CHIP	10K	5%	1/16W
R532	1-218-722-11	METAL CHIP	18K	0.50%	1/16W
R533	1-216-841-11	METAL CHIP	47K	5%	1/16W
R535	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R544	1-216-864-11	METAL CHIP	0	5%	1/16W
R545	1-216-849-11	METAL CHIP	220K	5%	1/16W
R546	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R547	1-216-843-11	METAL CHIP	68K	5%	1/16W
R549	1-216-833-11	METAL CHIP	10K	5%	1/16W
R550	1-216-864-11	METAL CHIP	0	5%	1/16W
R551	1-216-864-11	METAL CHIP	0	5%	1/16W
R552	1-216-864-11	METAL CHIP	0	5%	1/16W
R553	1-216-864-11	METAL CHIP	0	5%	1/16W
R555	1-216-845-11	METAL CHIP	100K	5%	1/16W
R563	1-216-845-11	METAL CHIP	100K	5%	1/16W
R569	1-216-841-11	METAL CHIP	47K	5%	1/16W
R570	1-216-841-11	METAL CHIP	47K	5%	1/16W
R599	1-216-853-11	METAL CHIP	470K	5%	1/16W
R701	1-216-864-11	METAL CHIP	0	5%	1/16W
R702	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R806	1-216-821-11	METAL CHIP	1K	5%	1/16W
R807	1-216-821-11	METAL CHIP	1K	5%	1/16W
R808	1-216-851-11	METAL CHIP	330K	5%	1/16W
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W
R817	1-216-821-11	METAL CHIP	1K	5%	1/16W
R818	1-216-857-11	METAL CHIP	1M	5%	1/16W
R819	1-216-821-11	METAL CHIP	1K	5%	1/16W
R820	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R821	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R822	1-216-827-11	METAL CHIP	3.3K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R823	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R824	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R825	1-216-821-11	METAL CHIP	1K	5%	1/16W
R826	1-216-821-11	METAL CHIP	1K	5%	1/16W
R829	1-216-864-11	METAL CHIP	0	5%	1/16W
R830	1-216-864-11	METAL CHIP	0	5%	1/16W
R879	1-216-857-11	METAL CHIP	1M	5%	1/16W
		< VARIABLE RESISTOR >			
RV301	1-223-609-21	RES, VAR, CARBON 10K/10K (• VOLUME)			
RV502	1-223-587-11	RES, ADJ, CARBON 22K (TRACKING GAIN)			
RV503	1-223-587-11	RES, ADJ, CARBON 22K (FOCUS GAIN)			
		< SWITCH >			
S301	1-762-078-11	SWITCH, SLIDE (AVLS)			
S801	1-762-822-11	SWITCH, PUSH (1 KEY) (OPEN SW)			
S802	1-571-754-31	SWITCH, PUSH (1 KEY) (RECHG BAT DET)			
S803	1-768-078-11	SWITCH, SLIDE (RESUME)			
S804	1-762-078-11	SWITCH, SLIDE (C HOLD)			
S805	1-692-014-11	SWITCH, KEY BOARD (PLAY MODE)			
S808	1-692-014-11	SWITCH, KEY BOARD (p)			
S809	1-692-014-11	SWITCH, KEY BOARD (REPEAT/ENTER)			
S810	1-692-014-11	SWITCH, KEY BOARD (=)			
S811	1-692-014-11	SWITCH, KEY BOARD (+)			
S812	1-692-014-11	SWITCH, KEY BOARD (^)			
S813	1-554-088-00	SWITCH, KEY BOARD (SOUND)			
		< TRANSFORMER >			
T401	1-475-573-11	TRANSFORMER, DC-DC CONVERTER			
		< VIBRATOR >			
X301	1-760-307-11	VIBRATOR, CERAMIC (16.9MHz)			
X801	1-577-101-11	VIBRATOR, CERAMIC (4.1943MHz)			
**********					
		MISCELLANEOUS			
		**********			
53	1-690-530-81	LEAD (WITH CONNECTOR)			
58	1-660-965-11	SLIDE FLEXIBLE BOARD			
! 59	X-4946-311-1	OPTICAL PICK-UP (DAX-01A)			
LCD801	1-803-017-11	DISPLAY PANEL, LIQUID CRYSTAL			
M901	A-3303-403-A	MOTOR ASSY, SLED			
M902	A-3303-971-A	MOTOR ASSY, TURNTABLE (SPINDLE)			
S901	1-571-099-21	SWITCH (1 KEY) (LIMIT)			
**********					
		ACCESSORIES & PACKING MATERIALS			
		**********			
	1-251-696-11	CONNECTING PACK, CAR (182CK)			
!	1-467-007-21	ADAPTOR, AC (AC-E455) (181:AUS)			
!	1-467-012-11	ADAPTOR, AC (AC-E455) (181:EA)			
!	1-467-195-11	ADAPTOR, AC (AC-E455A) (CND,C&SA,MX)			
!	1-467-550-11	ADAPTOR, AC (AC-E455A) (181:E33/ 182CK:E33/ 183:E33)			
!	1-473-115-11	ADAPTOR, AC (AC-E455D) (UK)			

Ref. No.	Part No.	Description	Remark
!	1-473-116-31	ADAPTOR, AC (AC-E455D) (181:AEP,FR,EE,E13/181C:AEP/181V/ 182CK:AEP,E13/183:AEP,FR,EE,E13)	
!	1-475-622-11	ADAPTOR, AC (AC-E455) (181:CH/182CK:CH/183:CH)	
	1-528-444-11	BATTERY PACK (BP-DM10) (183:CND,E13,E33,C&SA,CH,AUS)	
	1-528-444-81	BATTERY PACK (BP-DM10) (183:AEP,FR,EE,UK,EA)	
	1-532-433-11	FUSE, GLASS TUBE (1A) (182CK)	
	1-533-689-11	FUSE, GLASS CYLINDRICAL(DIA.5) (1A) (182CK)	
	1-559-906-32	CORD, CONNECTION (181/181C/181V/182CK:EXCEPT AEP)	
!	1-569-007-11	ADAPTOR, CONVERSION 2P (181:E33/182CK:E33/183:E33)	
!	1-569-008-11	ADAPTOR, CONVERSION 2P (181:E13,EA/182CK:E13,EA/183:E13)	
	1-784-619-11	PLUG, CIGARETTE LIGHTER (182CK)	
	2-201-810-00	TAPE, MAGIC (182CK:FR)	
	3-810-764-21	MANUAL, INSTRUCTION (ENGLISH) (182CK:EXCEPT E13)	
	3-810-764-91	MANUAL, INSTRUCTION (FINISH) (182CK:AEP)	
	3-861-765-11	MANUAL, INSTRUCTION (SPANISH) (C&SA,AEP,E33,MX)	
	3-861-765-21	MANUAL, INSTRUCTION (ENGLISH) (EXCEPT E13,CH,KR)	
	3-861-765-31	MANUAL, INSTRUCTION (FRENCH) (CND,AEP,FR)	
	3-861-765-41	MANUAL, INSTRUCTION (DUTCH) (AEP,EE)	
	3-861-765-51	MANUAL, INSTRUCTION (SWEDISH) (AEP)	
	3-861-765-61	MANUAL, INSTRUCTION (PORTUGUESE) (AEP)	
	3-861-765-71	MANUAL, INSTRUCTION (GERMAN) (AEP)	
	3-861-765-81	MANUAL, INSTRUCTION (ITALIAN) (AEP)	
	3-861-765-91	MANUAL, INSTRUCTION (FINNISH) (AEP)	
	3-861-766-11	MANUAL, INSTRUCTION (CHINESE) (E13,CH)	
	3-861-766-21	MANUAL, INSTRUCTION (ENGLISH) (E13,CH)	
	3-862-314-11	MANUAL, INSTRUCTION (KOREAN) (KR)	
	3-862-314-21	MANUAL, INSTRUCTION (RUSSIAN,CZECH) (EE)	
	3-862-314-31	MANUAL, INSTRUCTION (POLISH, HUNGALIAN) (EE)	
	8-951-814-90	PLATE, MOUNT CPM-401P SET (182CK)	
	8-953-187-90	HEADPHONE MDR-ED136 (EXCEPT 181V)	
	8-953-271-90	HEADPHONE MDR-ED136V (181V)	

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.

9-923-326-11

Sony Corporation
Personal A&V Products Company

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D-180AN/180ANC/181/181C/181V/182CK/183

SONY

SERVICE MANUAL

Ver 1.0 1998. 07

Canadian Model
D-181/182CK/183

AEP Model
D-180AN/180ANC/181/
181C/181V/182CK/183

UK Model
D-181/183

E Model
D-180AN/181/181C/182CK/183

Australian Model
D-181/182CK/183

Chinese Model
D-180AN/181/182CK/183

SUPPLEMENT - 2

File this Supplement with the Service Manual.

Subject :
1. ARGENTINA MODEL HAS BEEN ADDED FOR D-181
2. CHANGE OF PARTS
3. CHANGE OF MAIN BOARD
4. CORRECTION

(ECN-CD850405/CD850463)

The D-181 (Argentina model) is approximately the same as the D-181 (AEP model).
Only difference between D-181 (AEP model) and D-181 (Argentina model) are listed.
For other informations, please refer to the previously issued service manual (9-923-326-11) and Supplement -1 (9-923-326-81).

1. MODEL ADDITION

● DIFFERENCE PARTS LIST

ACCESSORIES & PACKING MATERIALS

- Abbreviation
  FR : French MX : Mexican CH : Chinese
  KR : Korean EE : East European AR : Argentina
  C&SA : Central and South America
  E13 : AC 220-230V area model
  E33 : AC 100-240V area model

Page	D-181 (AEP model)		D-181 (Argentina model)	
	Part No.	Description	Part No.	Description
33	⚠1-473-116-31	ADAPTOR, AC (AC-E455D)(181:AEP,FR,EE,E13/ 181C:AEP/181V/182CK:AEP,E13/183:AEP,FR,EE,E13)	————————	
	3-861-765-11	MANUAL INSTRUCTION (SPANISH) (C&SA,AEP,E33,MX)	3-861-765-11	MANUAL INSTRUCTION (SPANISH) (C&SA,AEP,E33,MX,AR)
	3-861-765-21	MANUAL INSTRUCTION (ENGLISH) (EXCEPT E13,CH,KR)	3-861-765-21	MANUAL INSTRUCTION (ENGLISH) (EXCEPT E13,CH,KR,AR)
	3-861-765-31	MANUAL INSTRUCTION (FRENCH) (CND,AEP,FR)	3-861-765-61	MANUAL INSTRUCTION(PORTUGUSE) (AEP,AR)
	3-861-765-41	MANUAL INSTRUCTION(DUTCH) (AEP,EE)		
	3-861-765-51	MANUAL INSTRUCTION(SWEDISH) (AEP)		
	3-861-765-61	MANUAL INSTRUCTION(PORTUGUSE) (AEP)		
	3-861-765-71	MANUAL INSTRUCTION(GERMAN) (AEP)		
	3-861-765-81	MANUAL INSTRUCTION(ITALIAN) (AEP)		
	3-861-765-91	MANUAL INSTRUCTION(FINNISH) (AEP)		

2. CHANGE OF PARTS

ELECTRICAL PARTS LIST

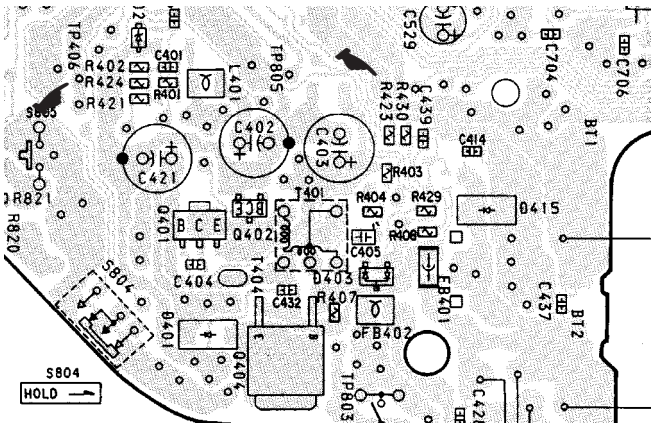
MAIN (Service Manual See page 30 – 32)

Ref. No.	Before Change					After Change					Remark
	Part No.	Description				Part No.	Description				
C501	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	1-162-919-11	CERAMIC CHIP	22PF	5%	50V	Changed
FB304	1-216-864-11	METAL CHIP	0	5%	1/16W	1-414-595-11	INDUCTOR, FERRITE BEAD				Changed
IC801	8-759-536-39	IC MC68HC05L15SC442712CPB				8-759-545-47	IC MC68HC05L15SC442716CPB				Changed
R103	1-216-847-11	METAL CHIP	150K	5%	1/16W (FR)	1-218-901-11	METAL CHIP	180K	0.5%	1/16W (FR)	Changed
R203	1-216-847-11	METAL CHIP	150K	5%	1/16W (FR)	1-218-901-11	METAL CHIP	180K	0.5%	1/16W (FR)	Changed
R423		————————				1-216-857-11	METAL CHIP	1M	5%	1/16W	Added
R424		————————				1-216-863-11	METAL CHIP	3.3M	5%	1/16W	Added

PRINTED WIRING BOARDS

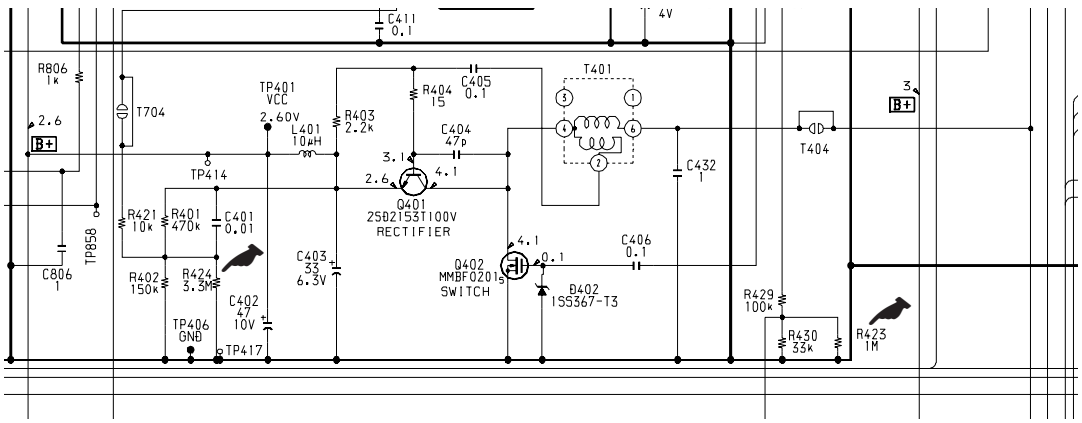
☛ : Added portion

Page 16 (Location F – H, 2 – 5)

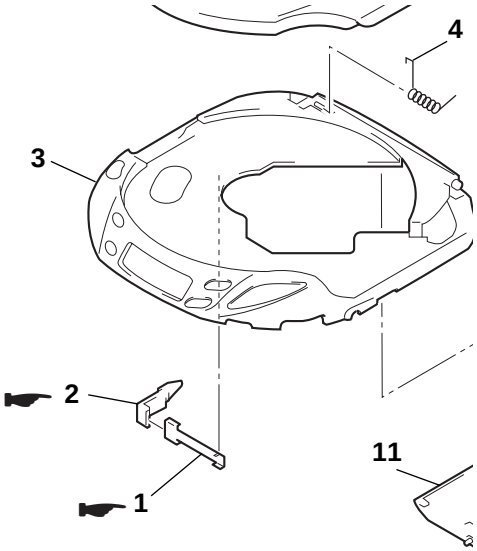
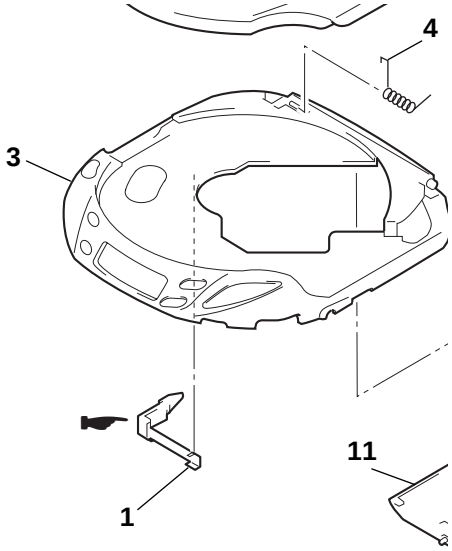


SCHEMATIC DIAGRAM

Page 20, 21 (Location J – L, 18 – 25)



EXPLODED VEWS

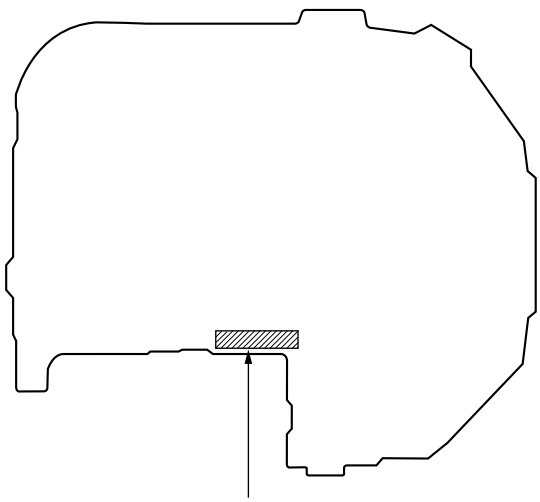
Page	Before Change				After Change		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
28	1	4-972-866-01	SPRING (DETECTOR)		X-4950-224-1	DETECTOR ASSY	
	2	4-972-780-01	DETECTOR			————————	
							
29	⚠ 59	X-4946-311-1	OPTICAL PICK-UP (DAX-01A)		X-4950-060-1	OPTICAL PICK-UP (DAX-01A2)	

3. CHANGE OF MAIN BOARD

The main board have been changed.
Main section printed wiring board and schematic diagram of new type, and changed parts list are described in this Supplement-2.
Refer to original service manual previously issued for the other information.

NEW TYPE IDENTIFICATION

– MAIN BOARD (Component Side) **–**



1-668-199-**11** (Former Type)
1-668-199-**13** (New Type)

ELECTRICAL PARTS LIST

MAIN (Service Manual See page 31)

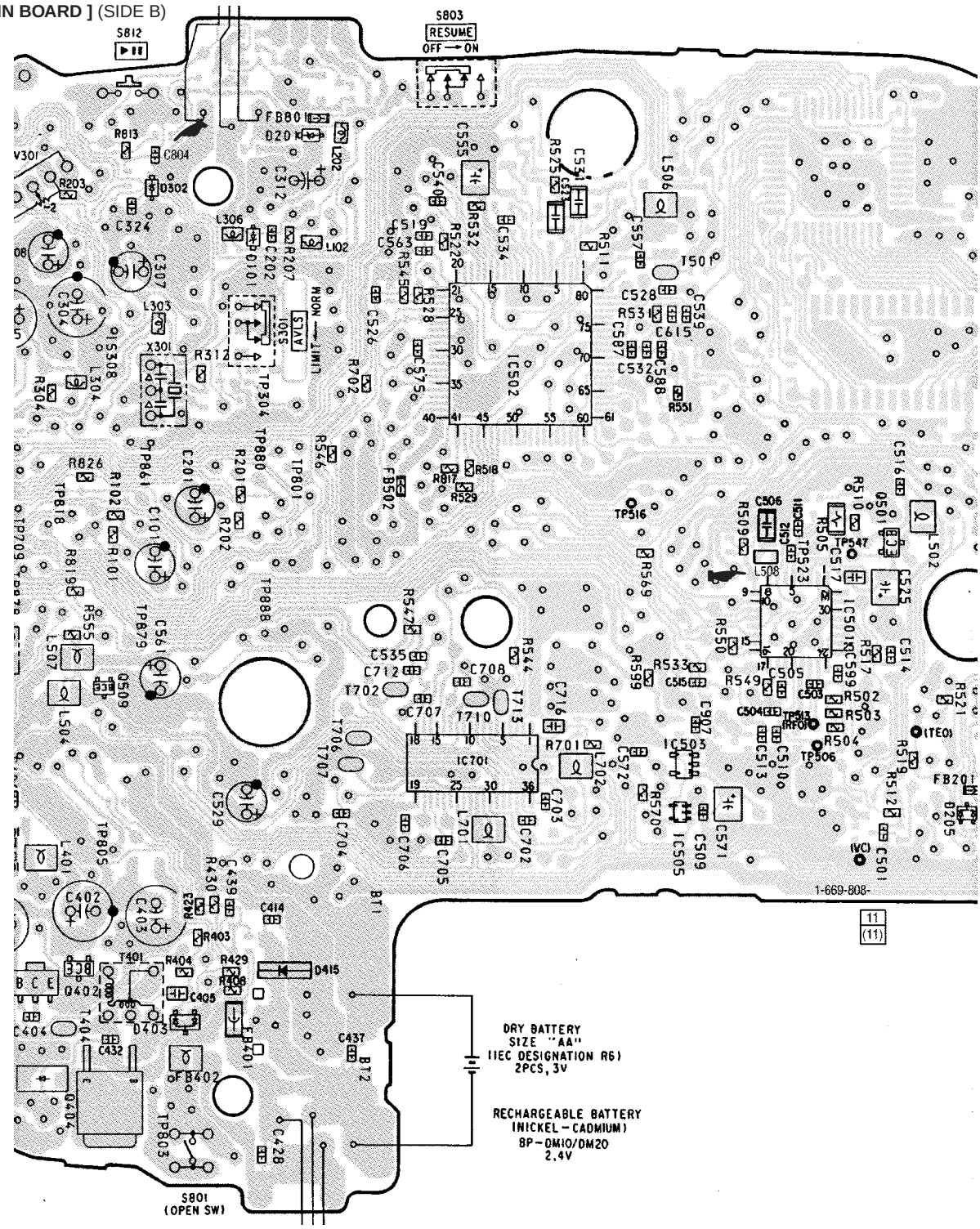
Ref. No.	Former Type Part No.	Former Type Description	New Type Part No.	New Type Description	Remark
C804		————————	1-162-927-11	CERAMIC CHIP 100PF 5% 50V	Added
L508		————————	1-414-916-11	INDUCTOR, FERRITE BEAD	Added
L801		————————	1-216-295-00	METAL CHIP 0 5% 1/10W	Added

PRINTED WIRING BOARDS

: Added portion

See page 16, 17 (Location A – I, 3 –8)

[MAIN BOARD] (SIDE B)



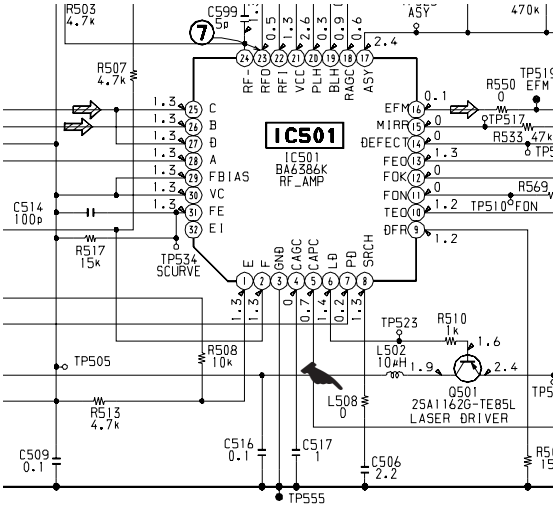
See page 18 (Location A – I, 14 – 19)

[MAIN BOARD] (SIDE A)

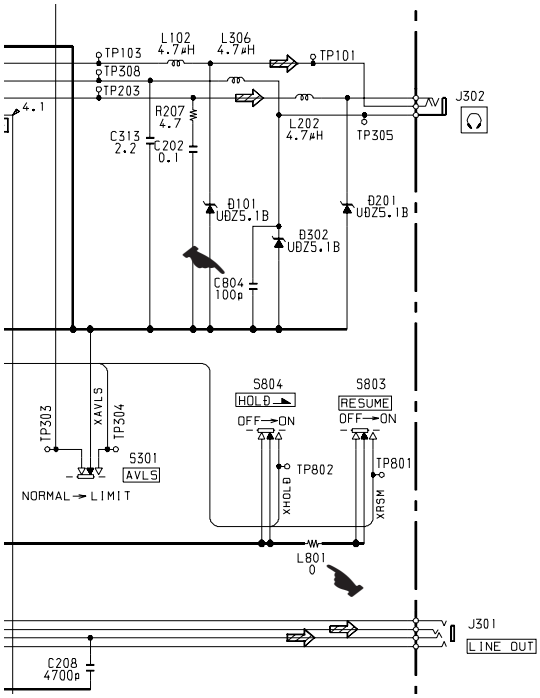
SCHEMATIC DIAGRAM

☛ : Added portion

Page 19 (Location K – N, 6 – 9)



Page 23 (Location J – N, 39 – 41)



4. CORRECTION

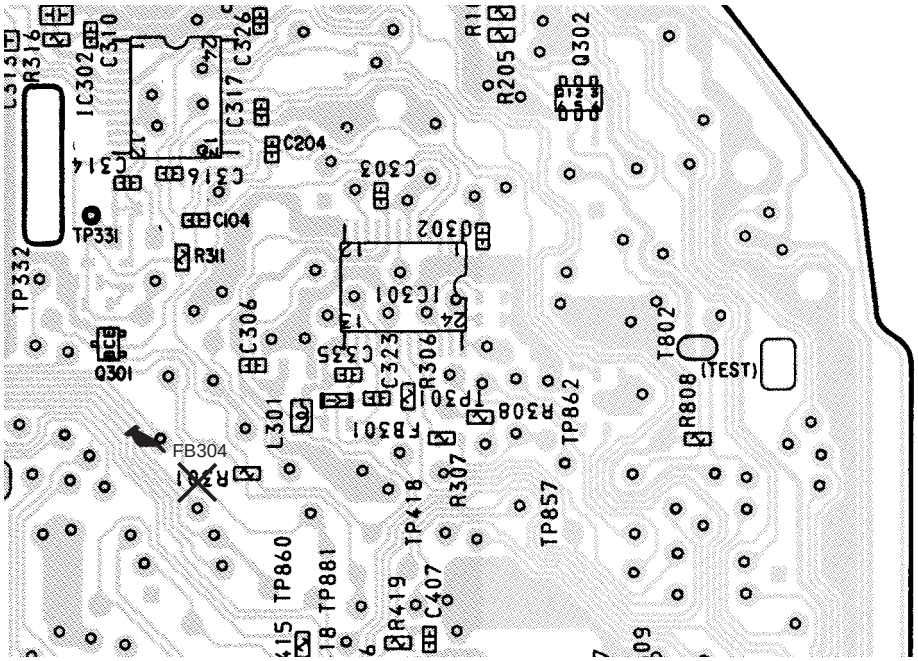
ELECTRICAL PARTS LIST (Service Manual See page 33)

Page	INCORRECT				CORRECT		
	Ref. No.	Part No.	Description	Remark	Part No.	Description	Remark
33		1-532-433-11	FUSE, GLASS TUBE (1A) (182CK)		1-532-577-00	FUSE, GLASS TUBE (1A) (FOR DCC CORD) (182CK)	

PRINTED WIRING BOARDS

☛ **: Corrected portion** (Correction of Printed Wiring Boards only)

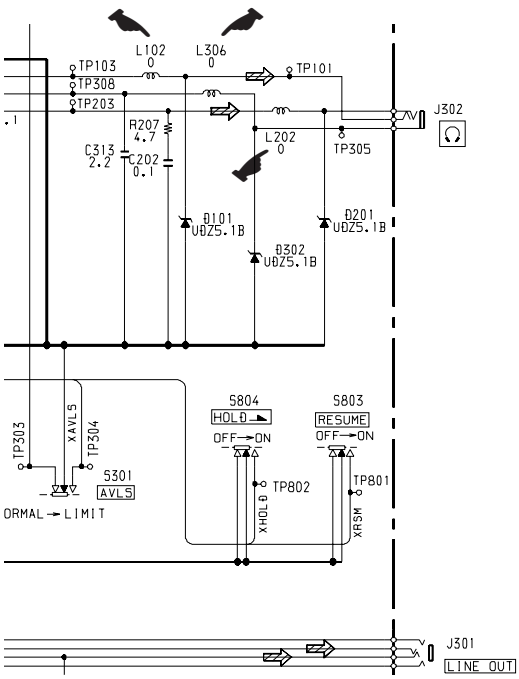
Page 18 (Location C –E, 16 – 19)



SCHEMATIC DIAGRAM

☛ **: Corrected portion** (Correction of Schematic Diagram only)

Page 23 (Location J – N, 39 – 41)



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