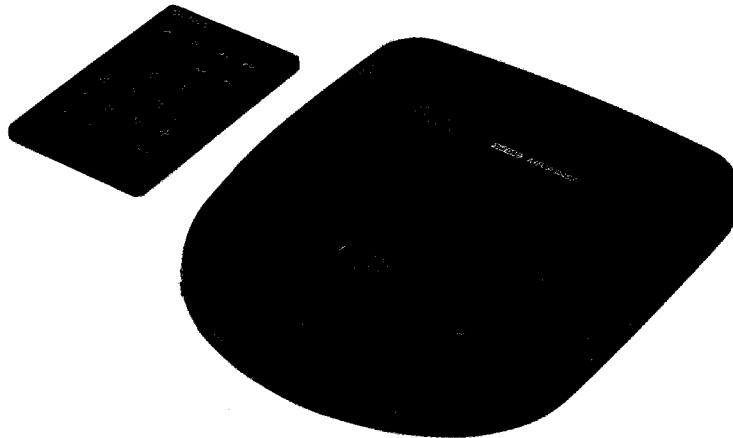


D-225CR

SERVICE MANUAL



*US Model
Canadian Model
AEP Model
E Model
Australian Model*

Model Name Using Similar Mechanism	NEW
CD Mechanism	KSM-331CAN (S)

SPECIFICATIONS

System	Compact disc digital audio system	Dimensions	Approx. 132 x 26.8 x 151 mm (5 1/4 x 1 1/16 x 6 in.) (w/h/d)
Laser diode properties	Material: GaAlAs Wavelength: $\lambda = 780 \text{ nm}$ 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.)	Incl. projecting parts and controls	incl. projecting parts and controls
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code	Mass	Approx. 300 g (11 oz.) incl. rechargeable battery pack
D-A conversion	1-bit quartz time-axis control	Supplied accessories	AC power adaptor (1) Rechargeable battery pack (1) Connecting cord (phono plug x 2 ↔ stereo miniplug) (1)
Frequency response	20 – 20,000 Hz ± 4 dB (measured by EIAJ CP-307)	Card remote commander	Stereo headphones (1) Card remote commander (1) Lithium battery (1)
Output (at 4.5 V input level)	Line output (stereo minijack) Output level 0.8 V rms at 50 kilohms Load impedance over 10 kilohms Headphones (stereo minijack) 4 mW + 4 mW at 16 ohms	Operative distance	Approx. 5 m (16 feet 5 inches)
General	Supplied:	Power source	DC 3 V, 1 Lithium battery CR2025
Power requirements	• DC 2.4 V Rechargeable battery pack • DC IN 4.5 V jack accepts the Sony AC power adaptor for use on:	Dimensions	Approx. 54.1 x 85.5 x 6.15 mm (2 1/4 x 3 3/8 x 1/4 inches) (w/h/d)
		Mass	Approx. 30 g (1.1 oz) including a lithium battery
			Design and specifications are subject to change without notice.

Not supplied:

- DC IN 4.5 V accepts the Sony CPM-300P mount plate and CPM-300PK mount arm for use on car battery.
- DC 3 V, two size AA (LR6) alkaline batteries

COMPACT DISC COMPACT PLAYER
SONY®



MICROFILM

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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.

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.

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.

Before Replacing the Optical Block

Please be sure to check thoroughly the parameters as per the "Optical Block Checking Procedures" (Part No.: 9-960-027-11) issued separately before replacing the optical block. Note and specifications required to check are given below.

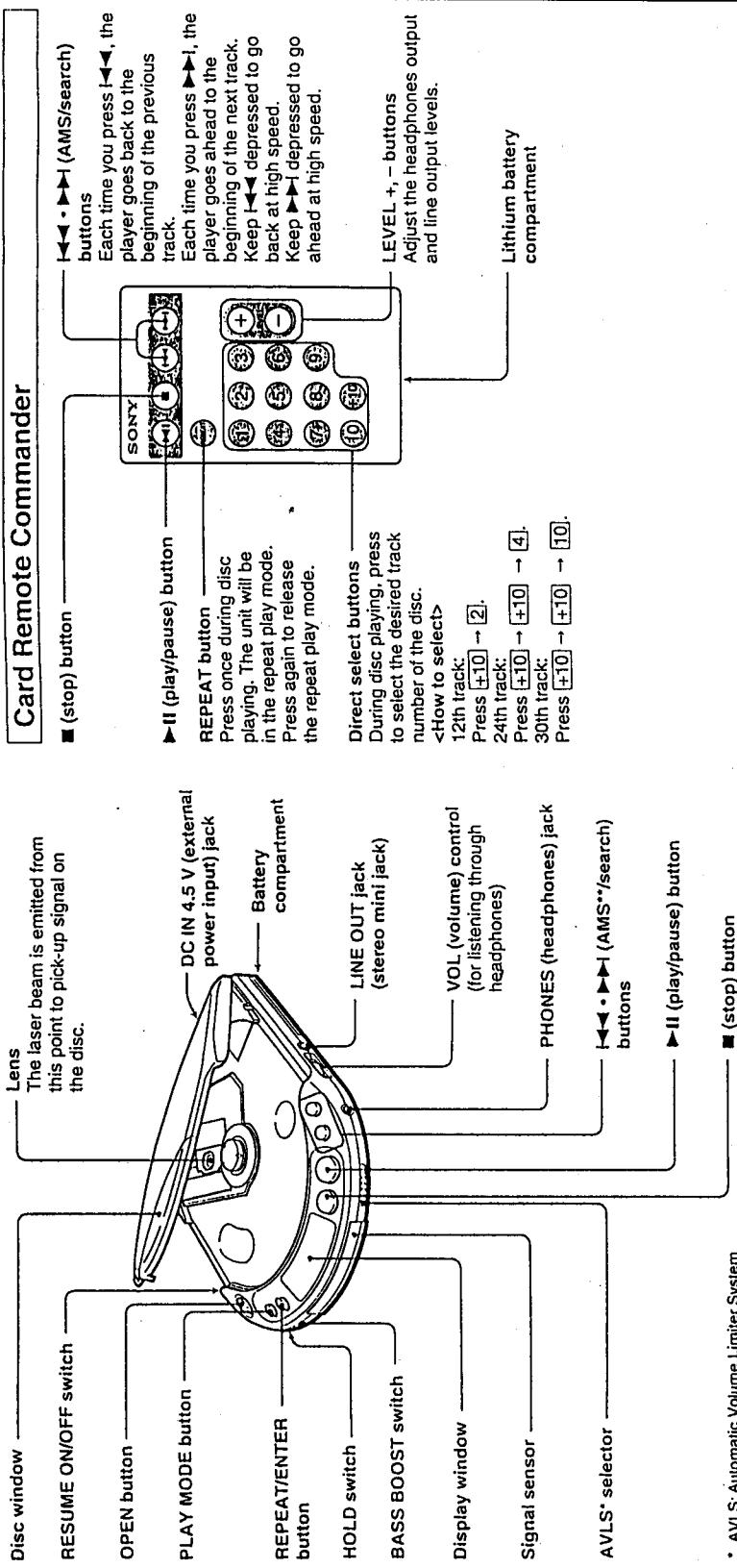
- FOK output : IC601 ⑨ pin
- S curve P-to-P value : 1.5Vp-p
When checking S curve P-to-P value.
Remove the lead wire to disc motor and R641.
- RF signal P-to-P value : 0.7Vp-p
- Traverse signal P-to-P value : 0.5Vp-p
- The grating holder can not repair.

SECTION 1

GENERAL

This section is extracted
from instruction manual.

Location and Function of Controls



SECTION 2

SERVICE MODE

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 more than 30 cm away from the objective lens.

Laser Diode Check Procedure

The laser diode on this set will not emit unless the upper panel is closed and S810 (push switch type) is turned on.

The laser diode will always emit even if focus search is not performed in service mode.

The laser diode is checked using, the current value which flows to the laser diode inside the optical pick-up block.

Procedure 1 (service mode or normal operation)

Check the laser diode emission with the eye.

1. Open upper panel by pushing the OPEN button.
2. S810 on as Fig. 1.
(In service mode, this operation is not necessary.)
3. Press the ▶II key.
(In service mode, this operation is not necessary.)
4. Observe the objective lens and confirm that the laser diode goes on about 2.5 seconds due to focus search. If it does not, APC circuit or optical pick-up block is defective.

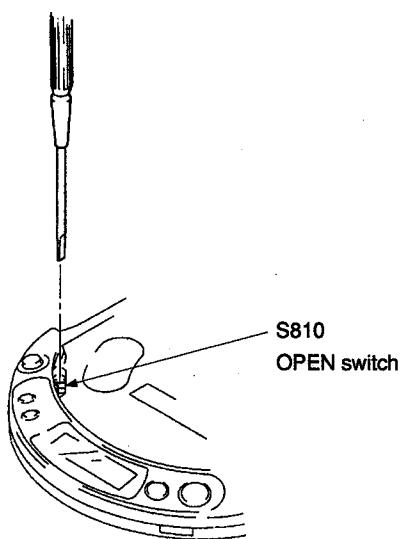


Fig. 1 Turning S810 on

Procedure 2 (service mode or normal operation)

Check by the current with flows in the laser diode.

1. Remove the cabinet.
2. Pick up the optical block by hand and look the rear side of it to see the following the label and rear the current value on the label.

(Label on optical pick-up block)



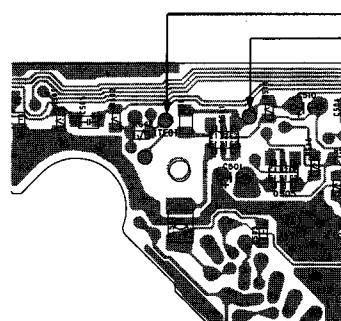
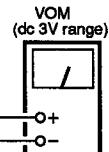
current value. This means 28.7mA.

(The current value varies with the set.)

3. Connect a VOM as shown in fig.2.
(both side of R501 : 1Ω)
4. Press the ▶II key.
5. Calculate the current by the VOM reading.
VOM reading (V) = current (A)
ex. VOM reading = 0.027V
 $0.027 = 0.027(A) = 27 \text{ mA}$
6. Confirm that the ammeter reading is within the range given below.
value on label $\pm 5\text{ mA}$ (25°C)
variation relative to temperature : $0.4\text{ mA}/^\circ\text{C}$
(Current increases when temperature rises and decreases when it drops.)

If the value is more than the range given, APC circuit has been defective or the laser diode has deteriorated.

If it is less, APC circuit of optical pick-up block is defective.



[MAIN BOARD]
(CONDUCTOR SIDE)

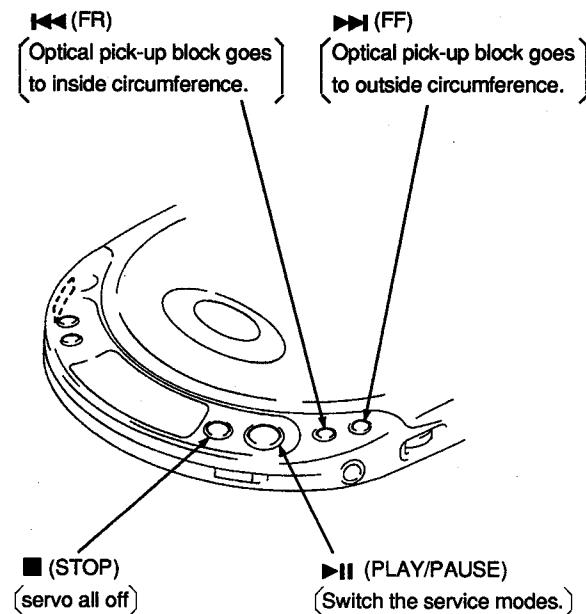


Fig. 2 VOM connecting

SERVICE MODE (service program)

This set has built-in service program in the microcomputer as usual sets.

The operation method of service program is explained below.



[] : Main operation in service mode,
for details, refer to step 2.

Fig. 3 Key Positions

Step 1 (Service Mode setting method)

1. Solder jumper the TEST terminal (IC801 pin ⑩ (XTEST) is grounded.).
2. Plug in the external power supply.

After performing the above procedure, the set is switched to service mode.

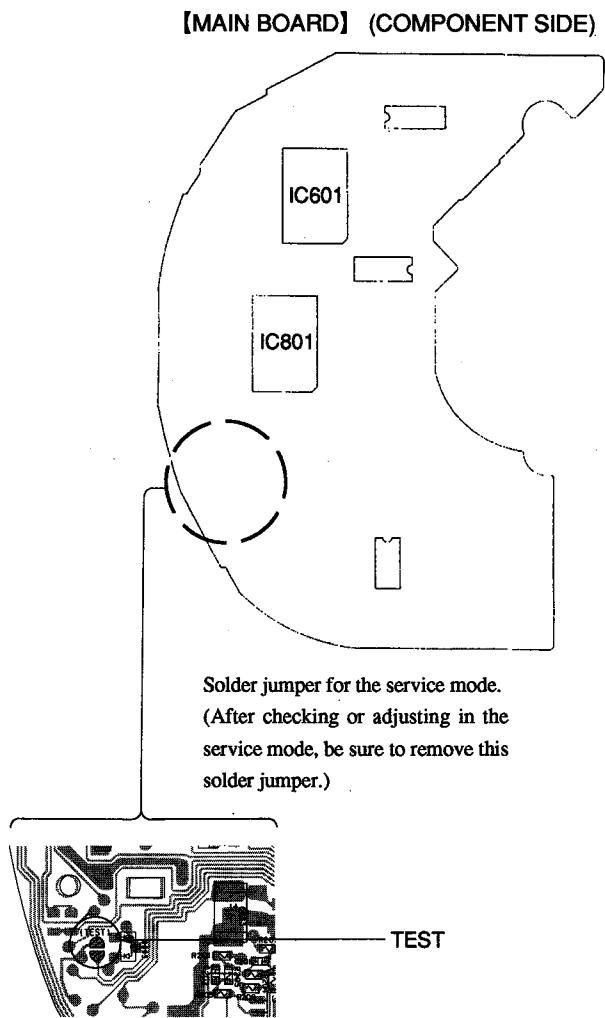


Fig. 4 TEST terminal

Step 2 (Service Mode operation)

1. LCD Display Check mode

This mode is selected immediately after selecting the service modes. In this mode, LCD display varies into six different patterns and these six patterns are repeated.

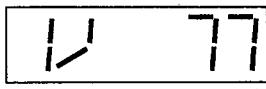
- Each time the **►||** key is pressed, the modes are switched as follows.

① LCD Display Check mode

↓ Press the **►||** key.

① Automatic Voltage Adjustment mode

PWM output data (IC801 pin ④ output, PWM signal duty ratio) to control output voltage of DC/DC converter for servo system power supply is displayed on the LCD.



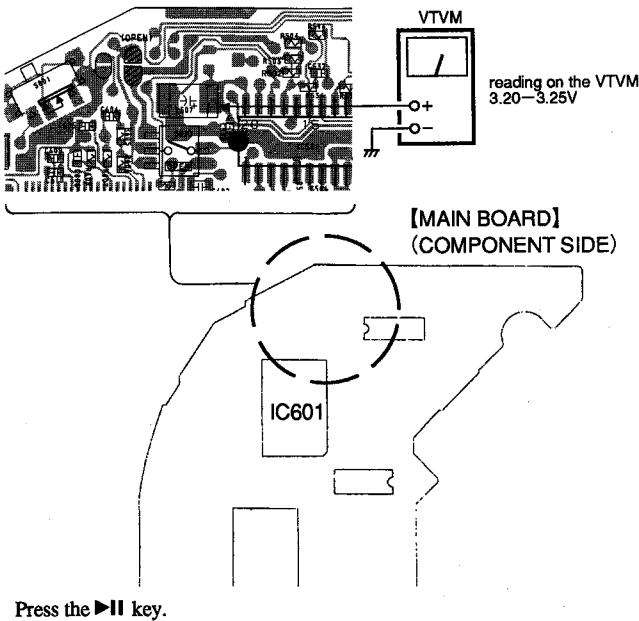
The DC/DC converter will be faulty if the display data is "00" or "FF".

Optical pick-up can be moved on and after this mode.

Movement of optical pick-up... The optical pick-up moves to outside track when the **►||** key is passed.

The optical pick-up moves to inside track when the **◀||** key is passed.

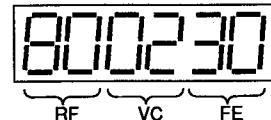
Check Location : C507 \oplus terminal



↓ Press the **►||** key.

② Automatic Average Adjustment mode

DC offset value of RF voltage (IC601 pin ⑧ input) against VC voltage (IC601 pin ⑩ input), and FE voltage (IC601 pin ⑨ input) against VC voltage (IC501 pin ④) is displayed on the LCD.



Faulty if the display is "00 00 00" or "FF FF FF".

Also, faulty if lower 2 digits (FE voltage) are "20" or less.

* The laser is turned off in this mode.

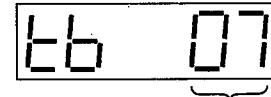
↓ Press the **►||** key.

③ Automatic Tracking Balance Adjustment mode

The focus is turned on from the focus search, then the disc motor runs and Automatic Tracking Balance Adjustment mode is activated, if a disc is loaded on the turn table.

A 4-bit tracking balance data is displayed on the LCD.

At this time, optical pick-up can be moved with the **►||** or **◀||** key.



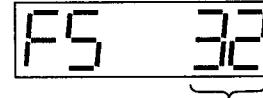
Faulty if the display data is "00" or "FF".

Focus search is repeated many times, if a disc is not loaded on the turn table. In this case, load a disc on the turn table and perform confirmation.

↓ Press the **►||** key.

④ Automatic Focus Gain Adjustment mode

The focus gain is displayed on the LCD.

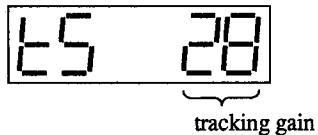


Focus Gain

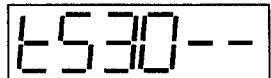
↓ Press the **►||** key.

↓
⑤ Automatic Tracking Adjustment mode

The tracking gain is displayed on the LCD.



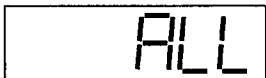
If tracking servo is faulty, "--" is displayed as shown below.



↓ Press the ▶II key.

⑥ Audio signal is output.

"All" is displayed on the LCD.



3. When the ■ key is pressed, all servo systems (focus, tracking and sled) are turned off and the LCD Display Check mode is restored. However, the disc motor will run for a while due to inertia.

· **Step 3 (Service Mode release)**

1. First be sure to unplug the external power supply, then remove the TEST terminal solder jumper.
2. The set will now operate normally.

SECTION 3

ELECTRICAL ADJUSTMENTS

Notes on Check / Adjustment

1. Confirmation/adjustment should be performed after selecting a service mode. The service mode must be cancelled after confirmation/adjustment is finished.
(Refer to "Service Mode (service program)" on page 5.)
2. Confirmation/adjustment should be performed in the order listed.
3. Use YEDS-18 disc (part No. : 3-702-101-01) unless otherwise indicated.
4. Power supply voltage : DC4.5V
HOLD \blacktriangleleft switch : OFF
VOL \blacktriangleleft knob : Minimum
BASS BOOST switch : NORM
RESUME switch : OFF

PREPARATION

Put the set into STOP condition in service mode (See page 5) and perform the following checks. Repair if there are any abnormalities.

• Sled Motor Check

1. Press the $\blacktriangleright\text{II}$ key once, then the $\blacktriangleright\text{II}$ and $\blacktriangleleft\text{II}$ keys to confirm that the optical pick-up moves to inside track \rightarrow outside track \rightarrow inside track smoothly free from sticking or noise.
 - $\blacktriangleright\text{II}$: optical pick-up block moves outward
 - $\blacktriangleleft\text{II}$: optical pick-up block moves inward

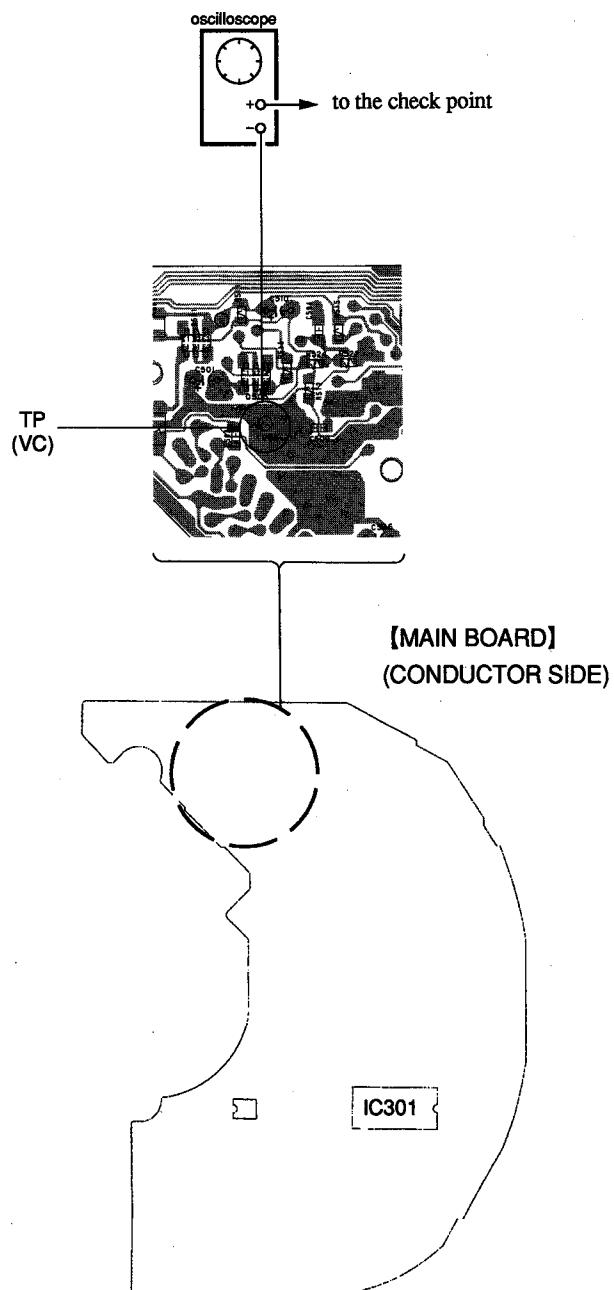
• Focus Search Check

1. Press the $\blacktriangleright\text{II}$ key 3 times.
(Focus search is performed continuously.)
2. Observe the optical pick-up block objective lens and check that it moves smoothly up and down with no catching or noises. (It is normal even if it stops for a moment during UP motion.)
3. Press the ■ key.
Check that focus search operation stops. If it does not, press the ■ key again a little longer time.

VC Connecting Point

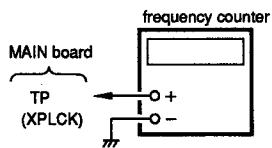
- FOCUS BIAS CHECK
- TRACKING BALANCE CHECK
- S-CURVE CHECK

When performing the above confirmation, connect a negative terminal of oscilloscope to the TP (VC) as shown below.



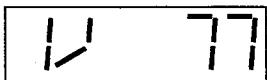
PLL Free Run Frequency Check and Adjustment

Check/Adjustment Procedure :



1. Solder to jumper the ASY pin of IC601 pin ⑩.
2. Connect a frequency counter to the TP (XPLCK) of IC601 pin ⑩.
3. Select the Automatic Voltage Adjustment mode of service modes. (See page 6).

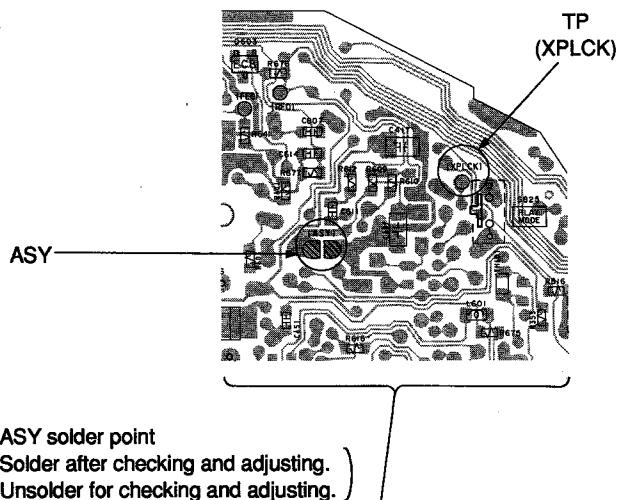
LCD Display



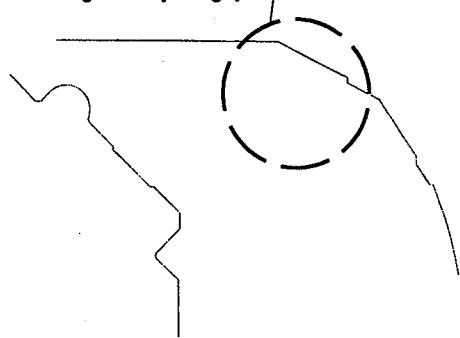
4. Confirm that the frequency counter reading is $4.3218 \pm 0.015\text{MHz}$. If wrong, adjust RV650 so that reading becomes $4.3218 \pm 0.015\text{MHz}$.
5. Cancel the service mode after adjustment is over.(See page 7).
6. Break the solder jumper to open the ASY pin.

Check/Adjustment Location : MAIN board

(CONDUCTOR SIDE)



ASY solder point
(Solder after checking and adjusting.)
(Unsolder for checking and adjusting.)

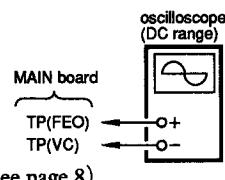


S-Curve Check

Conditions :

The set should be placed either horizontally.

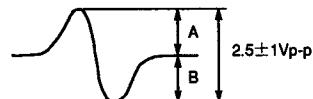
Check Procedure :



(See page 8)

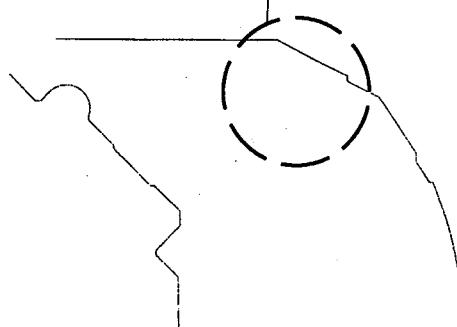
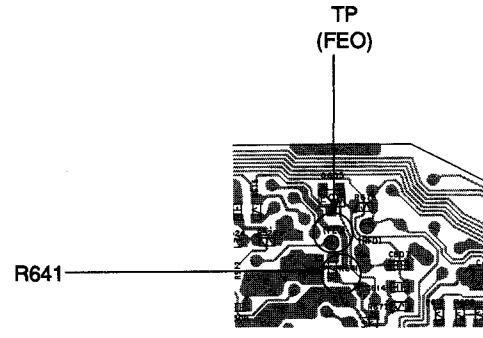
1. Remove R641 on the FE line.
2. Disconnect the connector (CN502) on the disc motor.
3. Connect a oscilloscope to the MAIN board TP (FEO).
4. Set the disc (YEDS-18).
5. Press the **▶II** key 3 times to perform focus serch.
6. Confirm that the A to B rate or B to A rate of oscilloscope waveforms is over 2 : 1, and also the P-P value is $2.5 \pm 1\text{Vp-p}$.

S-Curve check



7. After confirmation, reconnect the R641 to FE line and the connector (CN502) to disc motor.

Check Location : MAIN board (CONDUCTOR SIDE)

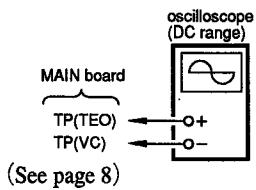


Tracking Balance Check

Conditions :

The set should be placed either horizontally.

Check Procedure :



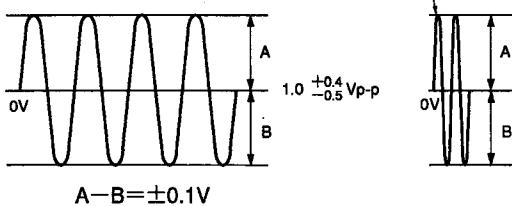
Check Location : MAIN board (CONDUCTOR SIDE)

1. Connect a oscilloscope to the MAIN board TP (TEO)..
2. Put the set into STOP condition in service mode (See page 5).
3. Press the **►II** key 1 time.
4. Press the **►►** and **◀◀** keys to move the optical pick-up block to the center.
5. Set the disc (YEDS-18).
6. Press the **►II** key 2 times.

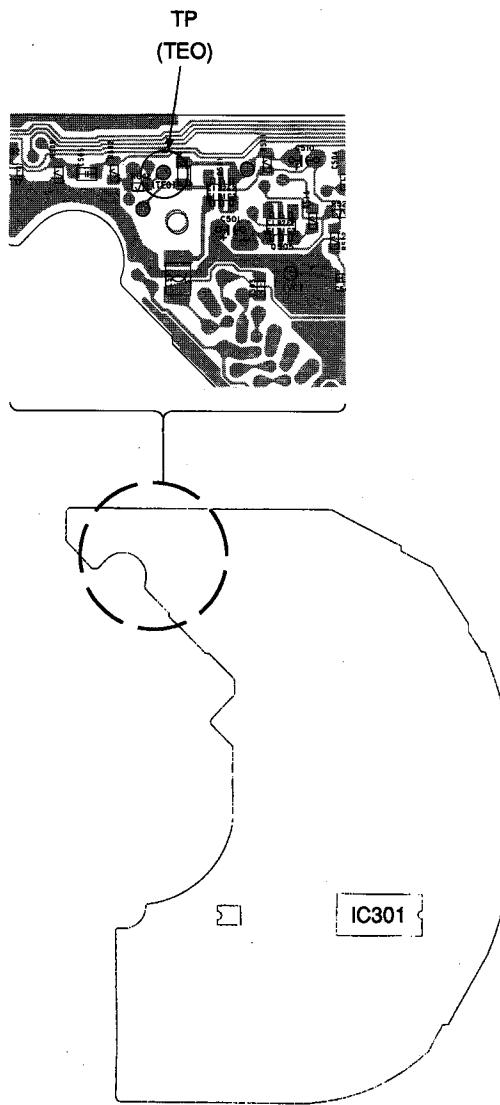
It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF.

7. Confirm that the waveform on oscilloscope is vertically symmetric against OV.

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



8. Press the **■** key.
9. After check, release service mode (See page 7).

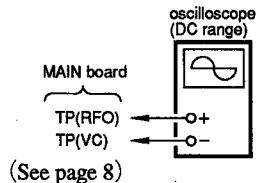


Focus Bias Check

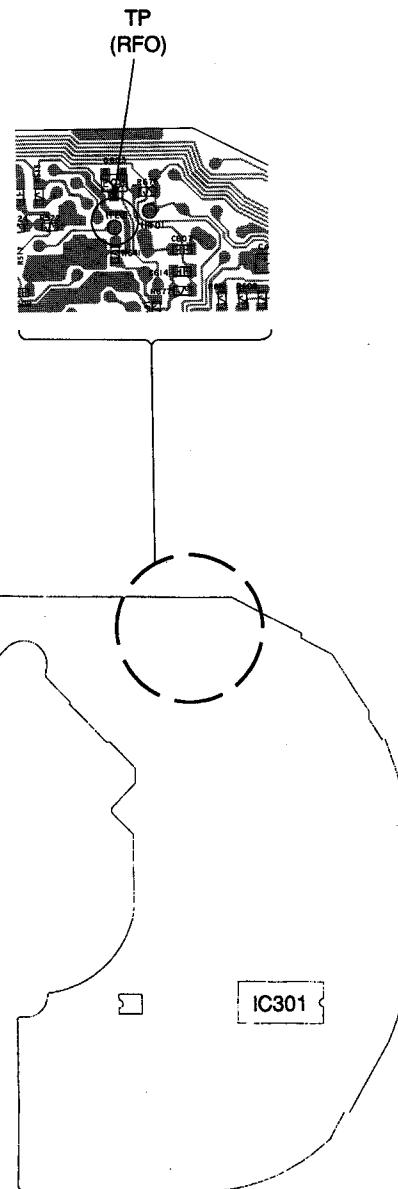
Conditions :

The set should be placed either horizontally

Check Procedure :



Check Location : MAIN board (CONDUCTOR SIDE)

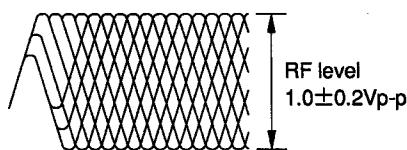


1. Put the set into STOP condition in service mode (See page 5).
 2. Connect a oscilloscope to the MAIN board TP (RFO).
 3. Press the **►II** key 1 time.
 4. Press the **►►I** and **I◀I** keys to move the optical pick-up block to the center. (Move the optical pick-up block to the music area on the disc to enable easy visibility of the eye pattern).
 5. Put and push the disc (YEDS-18).
 6. Press the **►II** key 2 times.
- (It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF.)
7. Press the PLAY MODE button (Tracking and sled go ON.)
 8. Confirm that clear eye patterns of waveform are generated on the oscilloscope. A good eye pattern means that the diamond shape (\diamond) in the center of the waveform can be clearly distinguished.

· RF Signal Reference Waveform (eye pattern)

VOLT/DIV : 200mV

TIME/DIV : 500nS



When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

9. After check, release service mode (See page 7).

SECTION 4 DIAGRAMS

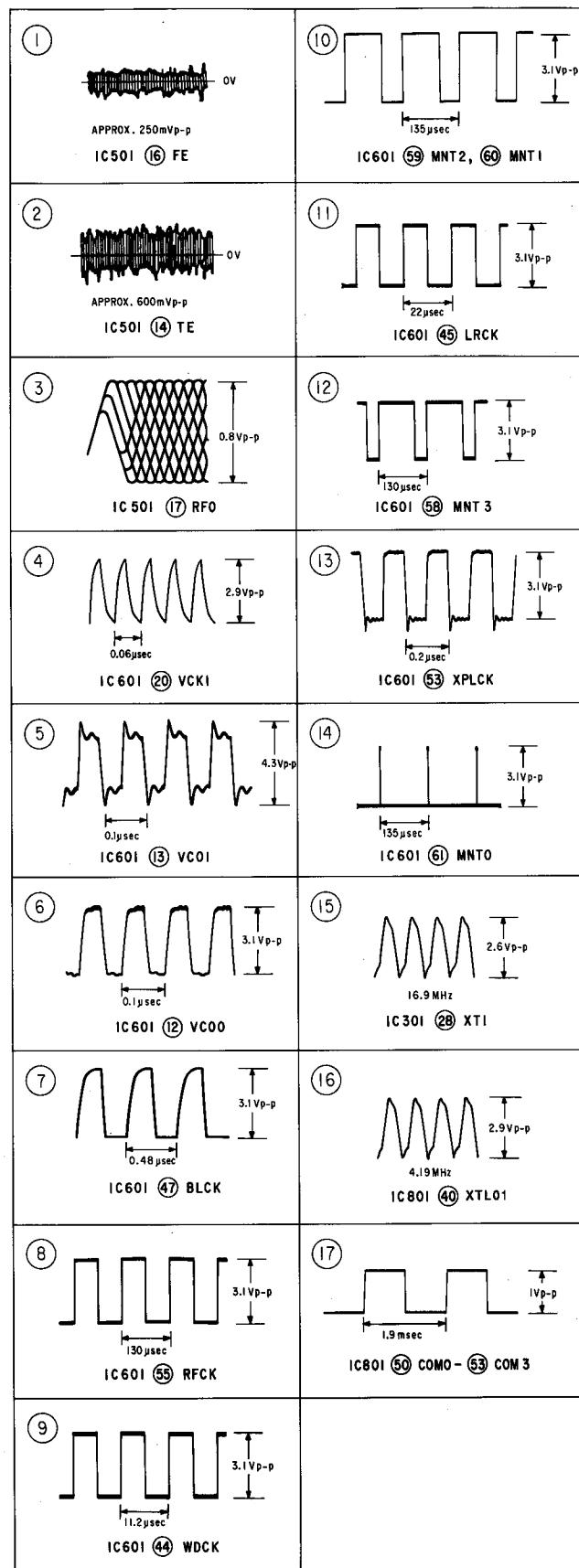
4-1. IC PIN FUNCTION DESCRIPTION

•IC801 CXP83916-603Q SYSTEM CONTROL IC

Pin No.	Name	I/O	Description
1	WP	I	System stop status reset signal. Stop status is reset at falling edge of input signal.
2	OPEN	I	Door switch signal. Stop status is reset at rising edge of input signal. “H” : OPEN, “L” : CLOSE
3	RMC	I	Infrared remote control signal
4	VCCADJ	O	PWM output for servo power supply adjustment. Approx. 2kHz
5	BEEP	O	Beep sound pulse output
6	SENS	I	Input pin of CXD2515Q SENS signal output
7	SCLK	O	Clock signal output for CXD2515Q SENS serial data reading
11	SQCK	O	Clock output pin for input of SUB-Q signal from CXD2515Q
12	SUBQ	I	SUB-Q signal input from CXD2515Q
15	XLDON	O	Laser diode control output. “L” : ON, “H” : OFF
16	MIRR	I	Input pin of CXD2515Q MIRR signal output
18	TEST	I	Test mode selected by input of “L” level at the system reset
20	XRST	O	RESET signal output to CXD2515Q and SM5872BS. Each IC is reset by output of “L” level.
21	PCON	O	Power supply control signal. “L” : POWER ON, “H” : POWER OFF
22	XRSM	I	RESUME switch input. “L” : RESUME ON, “H” : RESUME OFF
23	XHOLD	I	HOLD switch input. “L” : HOLD ON, “H” : HOLD OFF(reset)
24	XDCIN	I	DC-IN detection signal input. “L” : DC-IN detectd, “H” : DC-IN not detected
25	XDM1	I	Battery(BP-DM10) connection detect switch input. “L” : Battery connected, “H” : Battery not connected
28	XCHG	O	Battery(BP-DM10) charge control signal output. “L” : Charge
30	SAFE	I	A/D input for CXD2515Q auto gain control setting
31	TCXSL	I	A/D input for model setting
32	VSEL	I	A/D input for servo system power supply voltage setting
33	CHGMNT	I	A/D input for battery(BP-DM10)charge voltage detection
34	BATMNT	I	A/D input for voltage detection of battery(BP-DM10/AM-3)and external power supply
35	VCCMNT	I	A/D input for servo system power supply voltage detection
36	RMKEY	I	A/D input of FR, FF, PLAY/PAUSE, DSP and STOP switches on headphone remote controller
37	KEY	I	A/D input of PLAY/PAUSE, STOP, FF, FR, REPEAT/ENTER, PLAY MODE, DSP, ESP and SURROUND switches
38	XMCRST	I	System reset signal. System is reset by input of “L” level.
39	XLT11	—	Connection of clock oscillating circuit
40	XLTO1	—	4.19MHz
41	VSS	—	Ground
43	XLT12	—	Not used(ground)
44	AVREF	—	Reference voltage input for A/D converter
45	AVSS	—	Ground of A/D converter

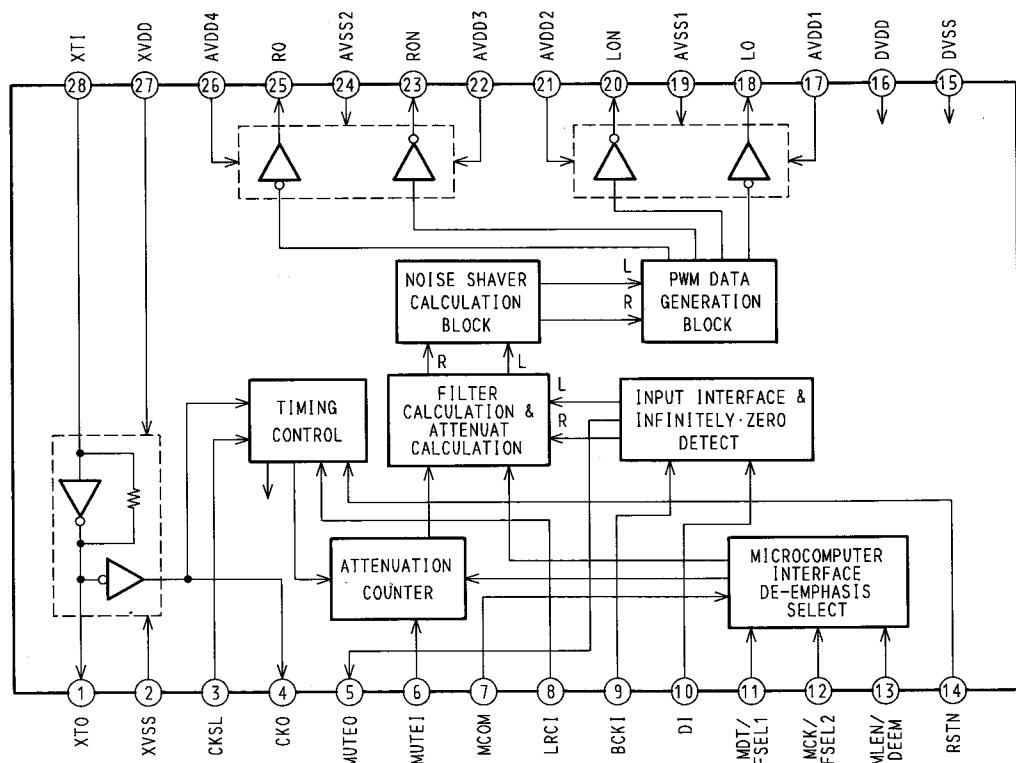
Pin No.	Name	I/O	Description
46	VL	O	Control signal to cut off the current flowing into external LCD bias resistor at standby
47	VLC3	—	LCD bias power supply voltages
49	VLC1	—	
50	COM0	—	
53	COM3	O	LCD remote control signals
54	S00	—	
73	S19	O	LCD segment signals
74	LIGHT	O	Backlight control signal. "H" : ON
82	AMUT	O	Mute control signal. "H" : Mute
83	DMUT	O	SM5872BS mute control signal. "H" : Mute
85	LATAU	O	Latch signal output at serial data transfer to SM5872BS
86	CLKO	O	Serial clock to CXD2515Q and SM5872BS
87	DATO	O	Serial data to CXD2515Q and SM5872BS
88	LAT15	O	Latch signal output at serial data transfer to CXD2515Q
89	VDD	—	Power supply
90	NC	—	Not used(connect to VDD)
91	VSS	—	Ground
93	TEX	—	Not used(ground)
94	TRVCNT	O	LPF switch for tracking balance adjustment. "H" : LPF ON
95	TRV0	—	
98	TRV3	O	Resistor selection switch for tracking balance adjustment. "H" : Select
99	SCOR	I	Input pin of CXD2515Q SCOR signal output
100	RMCKI	I	Input of clock signal(for data output) from LCD remote controller. Data is updated by detection of falling edge.

• WAVEFORMS

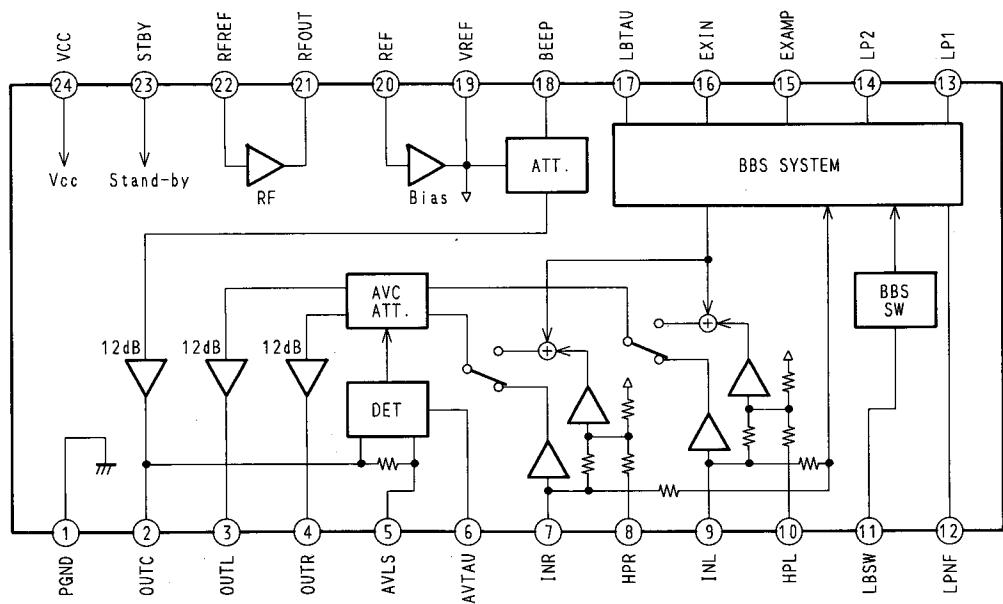


4-5. IC BLOCK DIAGRAMS

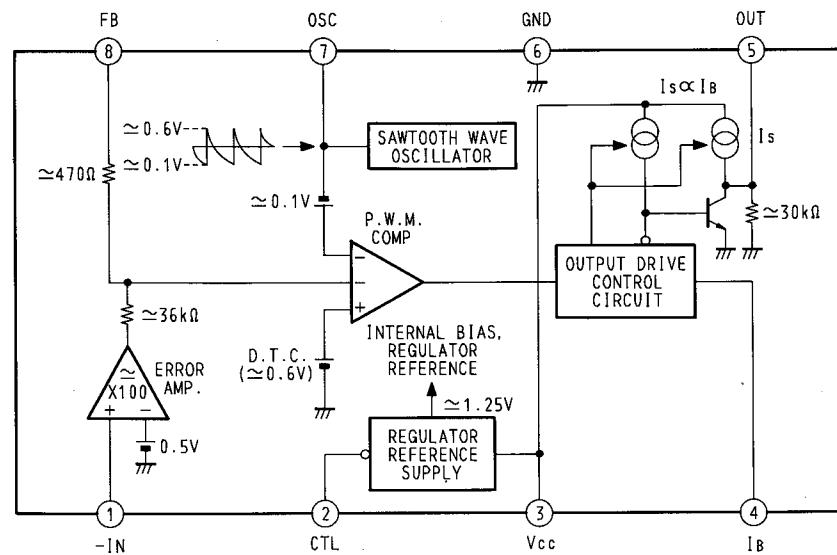
IC301 SM5872BS-ET



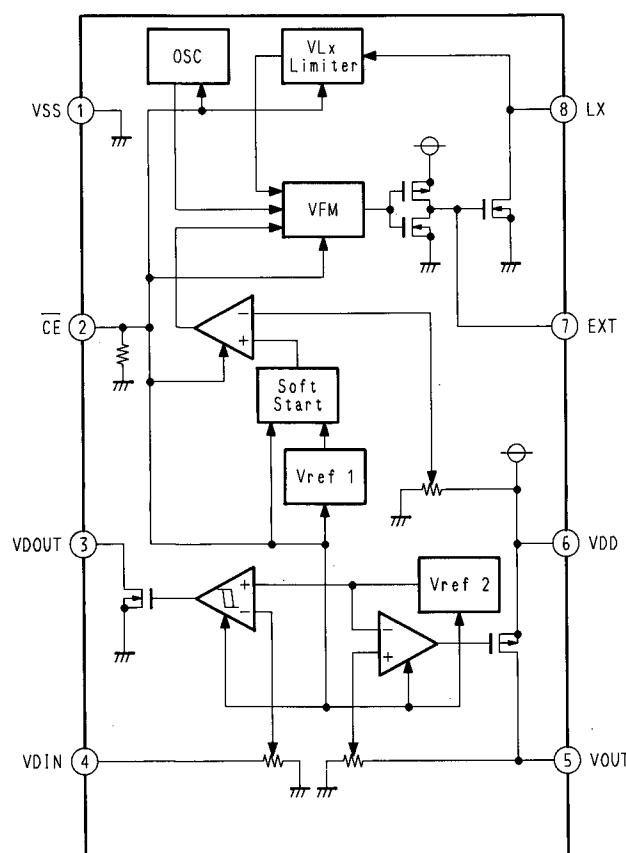
IC303 BA3572FS



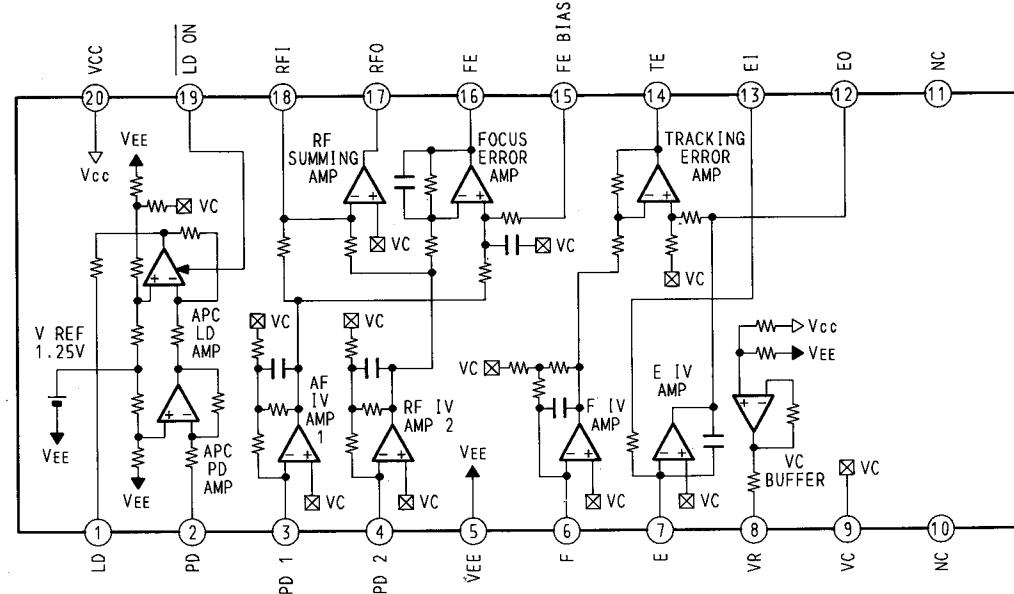
IC401 MB3776APNF-G-SNY-ER



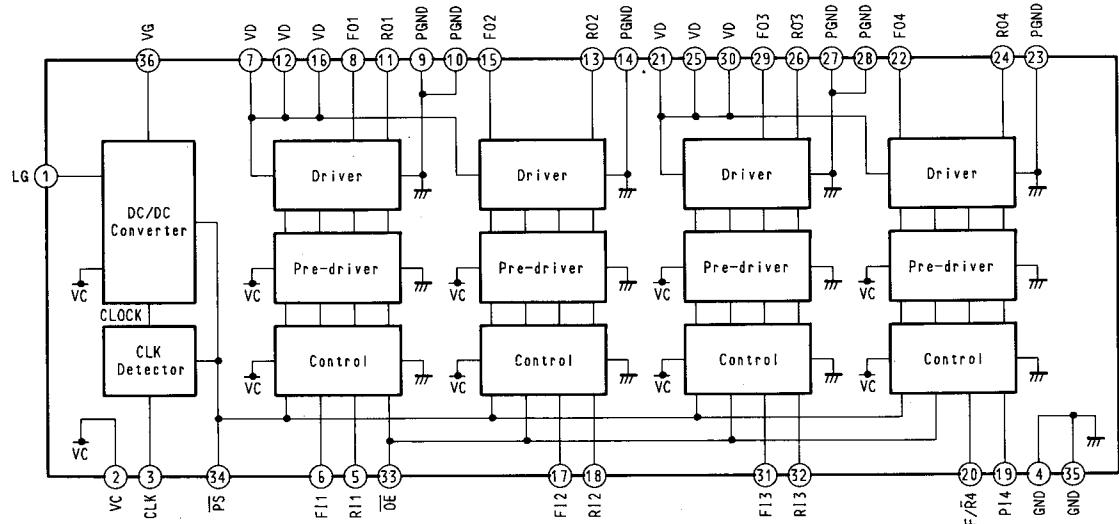
IC402 RS5RJ32271-T1



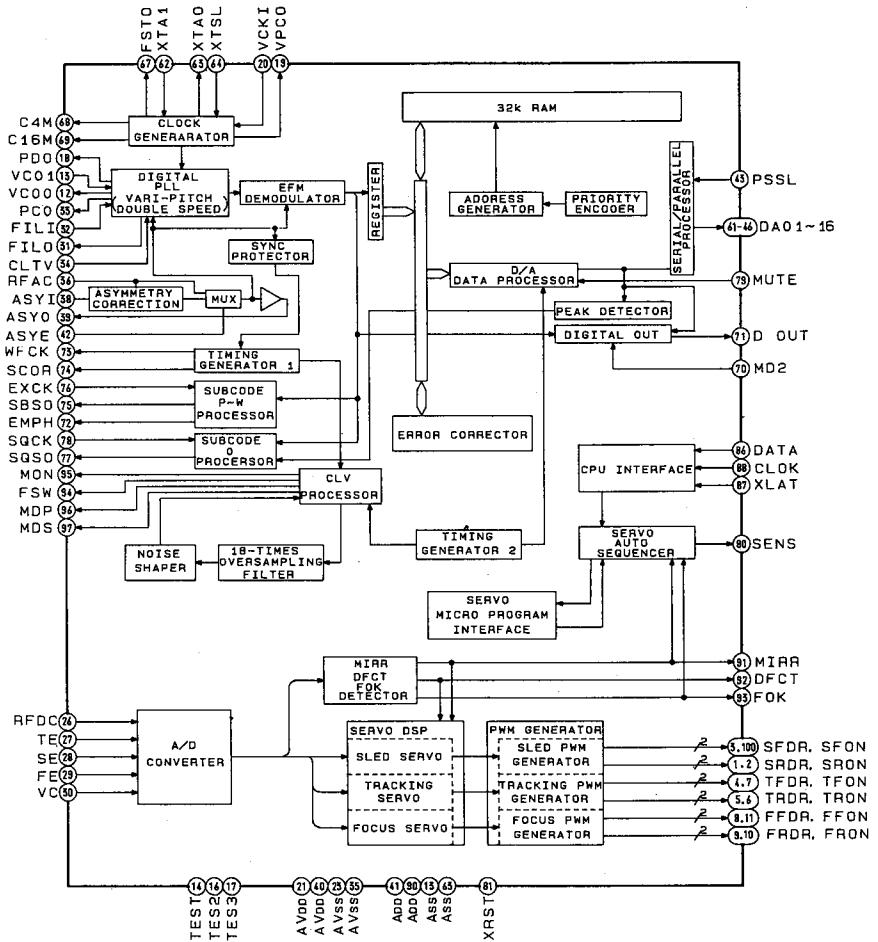
IC501 CXA1571M



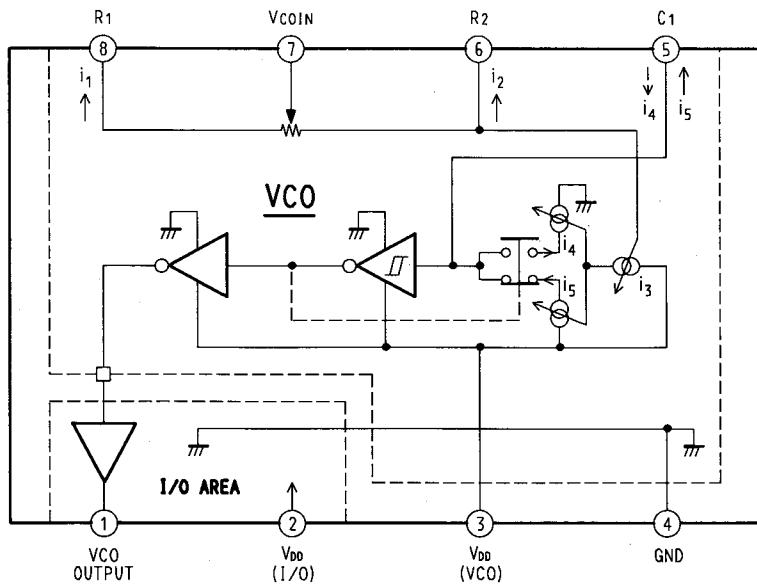
IC504 MPC17A38VMEL



IC601 CXD2515Q



IC606 TLC2931IDB-ELL1000



SECTION 5

EXPLODED VIEWS

NOTE:

- -xx,-x mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
Example:
KNOB, BALANCE (WHITE)...(RED)
 ↑ ↑
 Parts color Cabinet's color

5-1. CABINET SECTION

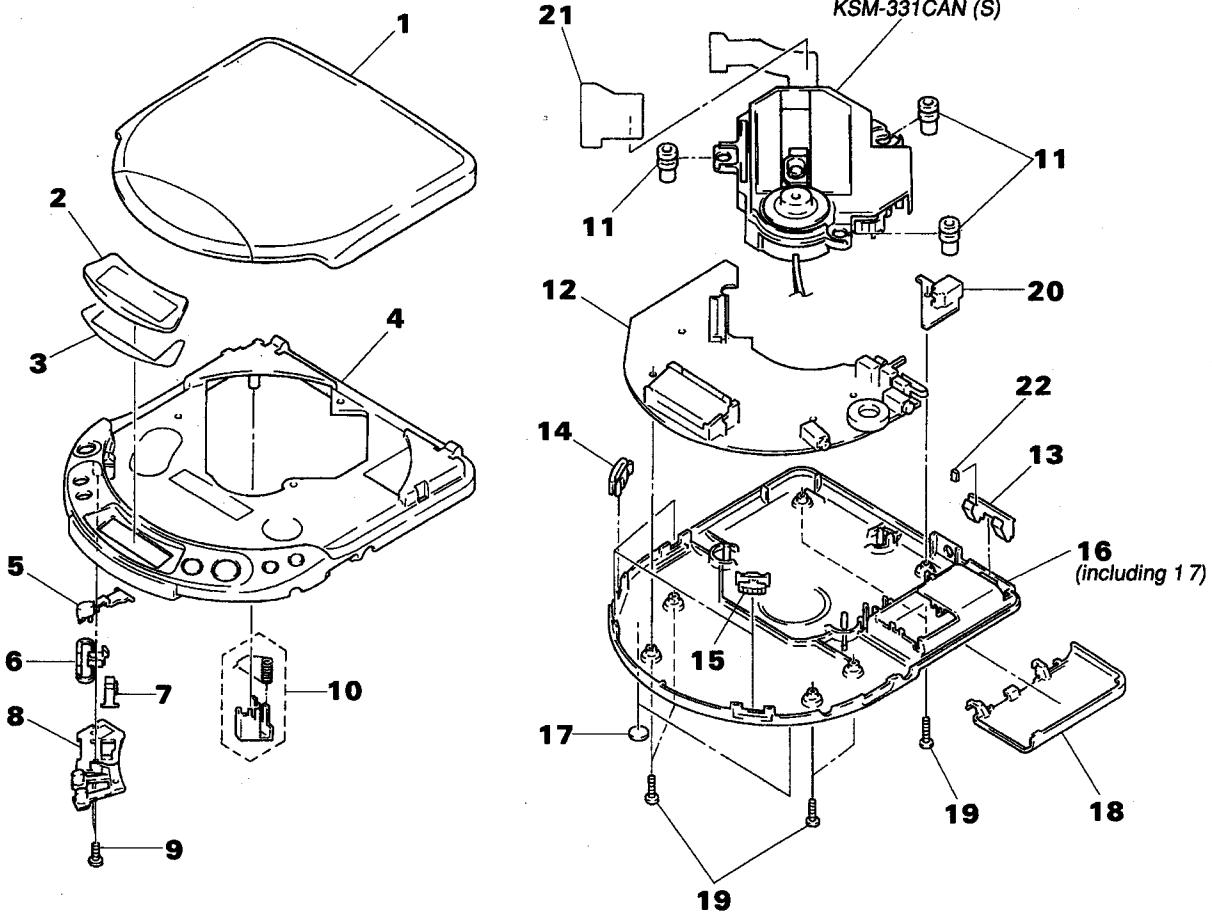
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.
- Abbreviations

AEL : French, Austrian, East European,
Swiss, Italian, German
AEC : Netherlands, North European,
Spanish, Belgium, Poland

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

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

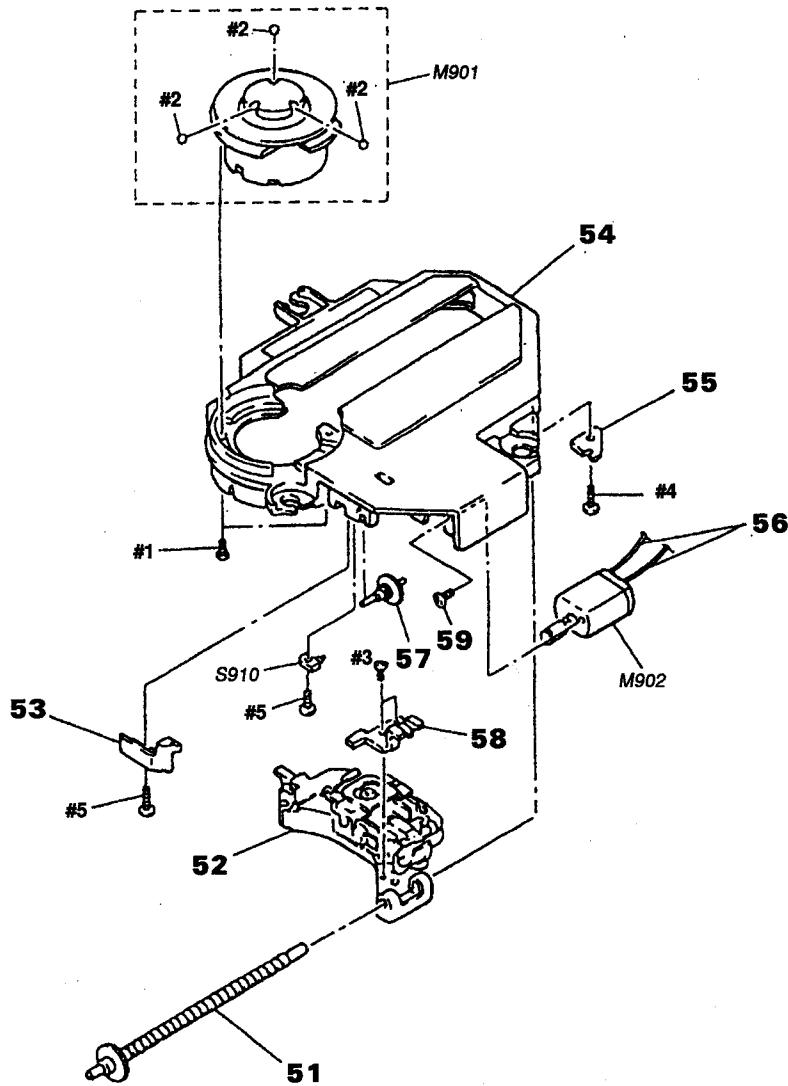
AUS : Australian
EA : Saudi Arabia



Ref. No.	Part No.	Description	Remark
1	4-958-398-11	PANEL, UPPER	
2	4-958-394-01	WINDOW (LCD)	
*3	4-958-416-01	SHEET (LCD), ADHESIVE	
4	X-4943-672-1	CABINET ASSY	
5	4-958-393-01	BUTTON (OPEN)	
6	4-958-391-01	CLAW, LOCK	
7	4-958-406-01	BUTTON (SW)	
8	4-958-392-01	BUTTON (PE)	
9	4-947-203-01	SCREW (M2X6)	
10	X-4943-671-1	BRACKET ASSY	
11	4-947-759-01	INSULATOR (I)	
12	A-3275-981-A	MAIN BOARD, COMPLETE (US, Canadian, AEC, AEL, AUS)	

Ref. No.	Part No.	Description	Remark
12	A-3276-158-A	MAIN BOARD, COMPLETE (E, EA)	
13	4-958-415-01	TERMINAL BOARD (RELAY), BATTERY	
14	4-958-397-01	KNOB (HOLD)	
15	4-958-396-01	KNOB (S)	
16	X-4943-673-1	PANEL ASSY, BOTTOM	
17	4-912-641-01	FOOT, RUBBER	
18	4-958-395-01	LID, BATTERY CASE	
19	3-336-395-01	SCREW (B2X10) (G), TAPPING	
*20	1-649-080-11	JACK BOARD	
*21	4-956-818-01	RETAINER, FLEXIBLE	
22	9-911-841-XX	CUSHION, CASSETTE LID	

**5-2. OPTICAL PICK-UP MECHANISM SECTION
(KSM-331CAN (S))**



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

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

Ref. No.	Part No.	Description	Remark
51	X-2625-483-1	SCREW ASSY, SLED	
Δ 52	8-848-295-21	DEVICE, OPTICAL KSS-331C	
53	2-625-412-02	SPRING, SLED	
54	2-625-415-02	CHASSIS, MD	
55	2-625-411-01	RETAINER, SHAFT	
56	1-948-418-21	HARNESS	

Ref. No.	Part No.	Description	Remark
57	2-625-410-01	GEAR (B)	
58	2-625-414-02	RACK	
59	3-732-988-01	SCREW (M2X2.5)	
M901	X-2625-485-1	MOTOR ASSY, T.T.	
M902	X-2625-171-2	MOTOR ASSY, SLED	
S910	1-570-771-11	SWITCH (LIMIT SW)	

SECTION 6

ELECTRICAL PARTS LIST

JACK **MAIN**

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**
All resistors are in ohms.
METAL: Metal-film resistor.
METAL OXIDE: Metal oxide-film resistor.
F: nonflammable

● Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

● **SEMICONDUCTORS**

In each case, u : μ , for example:

uA... : μ A..., uPA... : μ PA...,
uPB... : μ PB..., uPC... : μ PC..., uPD... : μ PD...

● **CAPACITORS**

uF : μ F

● **COILS**

uH : μ H

● **Abbreviations**

AEL : French, Austrian, East European,
Swiss, Italian, German

AEC : Netherlands, North European,
Spanish, Belgium, Poland

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

Les composants identifiés par une marque Δ sont critiques pour la sécurité.

Ne les remplacer que par une pièce portant le numéro spécifié.

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

AUS : Australian
EA : Saudi Arabia

Ref. No.	Part No.	Description	Remark
*	1-649-080-11	JACK BOARD *****	
< CAPACITOR >			
C450	1-164-360-11	CERAMIC CHIP	0.1uF
C451	1-164-360-11	CERAMIC CHIP	0.1uF
< CONNECTOR >			
CN902	1-691-550-11	PIN, CONNECTOR (1.5MM) (SMD)	3P
< JACK >			
Δ CNJ901 1-568-907-31 JACK, DC(POLARITY UNIFED TYPE) (DC IN 4.5V)			

A-3275-981-A MAIN BOARD, COMPLETE (EXCEPT E, EA)			
A-3276-158-A MAIN BOARD, COMPLETE (E, EA) *****			
4-958-407-01 HOLDER (LCD)			
4-958-408-01 SHEET, DIFFUSION			
4-958-412-01 TERMINAL BOARD (+), BATTERY			
X-4943-734-1 TERMINAL BOARD (-)ASSY, BATTERY			
< CAPACITOR >			
C101	1-162-957-11	CERAMIC CHIP	220PF
C102	1-162-928-11	CERAMIC CHIP	120PF
C103	1-162-928-11	CERAMIC CHIP	120PF
C104	1-162-924-11	CERAMIC CHIP	56PF
C105	1-162-924-11	CERAMIC CHIP	56PF
C106	1-135-151-21	TANTALUM CHIP	4.7uF
C107	1-162-977-11	CERAMIC CHIP	0.0018uF
C108	1-162-960-11	CERAMIC CHIP	220PF
C111	1-135-151-21	TANTALUM CHIP	4.7uF
C112	1-162-950-11	CERAMIC CHIP	56PF
C113	1-162-968-11	CERAMIC CHIP	0.0047uF
C122	1-124-434-00	ELECT	220uF
C201	1-162-957-11	CERAMIC CHIP	220PF
C202	1-162-928-11	CERAMIC CHIP	120PF
C203	1-162-928-11	CERAMIC CHIP	120PF

Ref. No.	Part No.	Description	Remark
C204	1-162-924-11	CERAMIC CHIP	56PF
C205	1-162-924-11	CERAMIC CHIP	56PF
C206	1-135-151-21	TANTALUM CHIP	4.7uF
C207	1-162-977-11	CERAMIC CHIP	0.0018uF
C208	1-162-960-11	CERAMIC CHIP	220PF
C211	1-135-151-21	TANTALUM CHIP	4.7uF
C212	1-162-950-11	CERAMIC CHIP	56PF
C213	1-162-968-11	CERAMIC CHIP	0.0047uF
C222	1-124-434-00	ELECT	220uF
C301	1-126-153-11	ELECT	22uF
C302	1-124-431-00	ELECT	33uF
C303	1-164-346-11	CERAMIC CHIP	1uF
C308	1-163-038-00	CERAMIC CHIP	0.1uF
C309	1-104-848-91	TANTAL. CHIP	100uF
C310	1-162-919-11	CERAMIC CHIP	22PF
C311	1-162-921-11	CERAMIC CHIP	33PF
C312	1-104-847-91	TANTAL. CHIP	22uF
C314	1-135-210-11	TANTALUM CHIP	4.7uF
C315	1-164-005-11	CERAMIC CHIP	0.47uF
C316	1-164-005-11	CERAMIC CHIP	0.47uF
C318	1-128-057-11	ELECT	330uF
C330	1-164-346-11	CERAMIC CHIP	1uF
C331	1-164-346-11	CERAMIC CHIP	1uF
C332	1-164-346-11	CERAMIC CHIP	1uF
C340	1-164-346-11	CERAMIC CHIP	1uF
C341	1-135-091-91	TANTAL. CHIP	1uF
C342	1-126-157-11	ELECT	10uF
C343	1-135-221-11	TANTAL. CHIP	3.3uF
C344	1-126-153-11	ELECT	22uF
C345	1-135-091-91	TANTAL. CHIP	1uF
C346	1-162-955-11	CERAMIC CHIP	150PF
C347	1-135-091-91	TANTAL. CHIP	1uF
C348	1-126-162-11	ELECT	3.3uF
C349	1-164-360-11	CERAMIC CHIP	0.1uF
C350	1-135-221-11	TANTAL. CHIP	3.3uF
C351	1-164-360-11	CERAMIC CHIP	0.1uF
C354	1-164-360-11	CERAMIC CHIP	0.1uF
C363	1-135-163-21	TANTAL. CHIP	47uF
C401	1-135-091-91	TANTAL. CHIP	1uF
C402	1-162-964-11	CERAMIC CHIP	0.001uF

Ref.No.	Part No.	Description	Remark		Ref.No.	Part No.	Description	Remark		
C403	1-162-949-11	CERAMIC CHIP	47PF	5%	50V	C616	1-162-965-11	CERAMIC CHIP	0.0015uF	10% 50V
C404	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C651	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V
C405	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	C652	1-164-217-11	CERAMIC CHIP	150PF	5% 50V
C406	1-135-202-21	TANTAL. CHIP	22uF	20%	4V	C653	1-135-149-21	TANTALUM CHIP	2.2uF	20% 10V
C407	1-135-216-11	TANTALUM CHIP	10uF	20%	10V	C654	1-162-927-11	CERAMIC CHIP	100PF	5% 50V
C408	1-127-561-11	ELECT(SOLID)	33uF	20%	10V	C655	1-162-953-11	CERAMIC CHIP	100PF	5% 50V
C409	1-124-229-00	ELECT	33uF	20%	10V	C660	1-164-361-11	CERAMIC CHIP	0.047uF	16V
C410	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C805	1-135-145-11	TANTALUM CHIP	0.47uF	10% 35V
C411	1-127-561-11	ELECT(SOLID)	33uF	20%	10V	C806	1-164-346-11	CERAMIC CHIP	1uF	16V
C412	1-135-163-21	TANTAL. CHIP	47uF	20%	4V	C807	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C413	1-164-360-11	CERAMIC CHIP	0.1uF		16V	C810	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V
C414	1-162-974-11	CERAMIC CHIP	0.01uF		50V	C811	1-104-753-11	TANTAL. CHIP	47uF	20% 6.3V
C415	1-162-974-11	CERAMIC CHIP	0.01uF		50V	C831	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C416	1-135-202-21	TANTAL. CHIP	22uF	20%	4V	C832	1-164-360-11	CERAMIC CHIP	0.1uF	16V
C417	1-135-202-21	TANTAL. CHIP	22uF	20%	4V	C833	1-162-966-11	CERAMIC CHIP	0.0022uF	10% 50V
C421	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V	C835	1-164-877-11	CERAMIC CHIP	0.033uF	10% 16V
C422	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	C836	1-162-967-11	CERAMIC CHIP	0.0033uF	10% 50V
C423	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V	C837	1-164-346-11	CERAMIC CHIP	1uF	16V
C424	1-162-974-11	CERAMIC CHIP	0.01uF		50V	C838	1-164-456-11	CERAMIC CHIP	24PF	5% 50V
C425	1-104-848-91	TANTAL. CHIP	100uF	20%	4V	< CONNECTOR >				
C501	1-124-584-00	ELECT	100uF	20%	10V	CN501	1-566-534-11	CONNECTOR, FPC (ZIF) 18P		
C503	1-164-360-11	CERAMIC CHIP	0.1uF		16V	*CN502	1-695-320-11	PIN, CONNECTOR (1.5MM) (SMD) 2P		
C504	1-162-946-11	CERAMIC CHIP	27PF	5%	50V	*CN503	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD) 2P		
C505	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V	*CN504	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD) 2P		
C506	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V	CN903	1-691-550-11	PIN, CONNECTOR (1.5MM) (SMD) 3P		
C507	1-135-162-21	TANTALUM CHIP	33uF	20%	6.3V	< DIODE >				
C508	1-164-360-11	CERAMIC CHIP	0.1uF		16V	D302	8-719-988-78	DIODE	SB007W03Q	
C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V	D303	8-719-422-46	DIODE	MA8056	
C510	1-124-431-00	ELECT	33uF	20%	4V	D304	8-719-422-46	DIODE	MA8056	
C520	1-164-360-11	CERAMIC CHIP	0.1uF		16V	D402	8-719-938-75	DIODE	SB05-05CP	
C528	1-128-241-11	ELECT	220uF	20%	10V	D403	8-719-938-72	DIODE	SB01-05CP	
C529	1-164-346-11	CERAMIC CHIP	1uF		16V	D404	8-719-975-33	DIODE	RB110C	
C530	1-126-530-11	ELECT	22uF	20%	10V	D405	8-719-938-72	DIODE	SB01-05CP	
C531	1-126-530-11	ELECT	22uF	20%	10V	D406	8-719-938-75	DIODE	SB05-05CP	
C536	1-124-584-00	ELECT	100uF	20%	10V	D501	8-719-938-72	DIODE	SB01-05CP	
C537	1-162-974-11	CERAMIC CHIP	0.01uF		50V	D601	8-719-017-79	DIODE	MA8033	
C601	1-162-962-11	CERAMIC CHIP	470PF	10%	50V	D602	8-719-422-46	DIODE	MA8056	
C602	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	D802	8-719-400-18	DIODE	MA152WK	
C603	1-164-360-11	CERAMIC CHIP	0.1uF		16V	D803	8-719-400-20	DIODE	MA152WA	
C604	1-164-361-11	CERAMIC CHIP	0.047uF		16V	D804	8-719-105-91	DIODE	RD5.6M-B2	
C605	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V	D806	8-719-800-76	DIODE	ISS226	
C606	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	D807	8-719-975-33	DIODE	RB110C	
C607	1-163-075-00	CERAMIC CHIP	0.047uF	10%	25V	D809	8-719-400-20	DIODE	MA152WA	
C609	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	D810	8-719-422-46	DIODE	MA8056	
C610	1-162-953-11	CERAMIC CHIP	100PF	5%	50V	D811	8-719-987-41	LED	CL-150Y-CD (LCD LIGHT)	
C611	1-162-974-11	CERAMIC CHIP	0.01uF		50V	D812	8-719-987-41	LED	CL-150Y-CD (LCD LIGHT)	
C612	1-164-360-11	CERAMIC CHIP	0.1uF		16V	D813	8-719-987-41	LED	CL-150Y-CD (LCD LIGHT)	
C614	1-164-373-11	CERAMIC CHIP	0.033uF		25V					
C615	1-164-346-11	CERAMIC CHIP	1uF		16V					

MAIN

Ref. No.	Part No.	Description	Remark
D814	8-719-987-41	LED CL-150Y-CD (LCD LIGHT)	
D815	8-719-987-41	LED CL-150Y-CD (LCD LIGHT)	

< IC >

IC301	8-759-090-80	IC SM5872BS-ET
IC302	8-759-710-55	IC NJM2100M
IC303	8-759-179-62	IC BA3572FS
IC401	8-759-097-95	IC MB3776APNF-G-SNY-ER
IC402	8-759-176-73	IC RS5RJ32271-T1
IC403	8-759-710-55	IC NJM2100M
IC501	8-752-059-38	IC CXA1571M
IC504	8-759-179-60	IC MPC17A38VMEL
IC601	8-752-351-94	IC CXD2515Q
IC605	8-759-710-82	IC NJM2406F
IC606	8-759-177-71	IC TLC2931IDB-ELL1000
IC801	8-752-845-09	IC CXP83916-603Q
IC802	8-759-177-23	IC RS-50-T

< JACK >

J301	1-565-287-41	JACK (LINE OUT)
J302	1-565-287-11	JACK (PHONES)

< COIL >

L101	1-410-997-31	INDUCTOR CHIP	2.2uH
L201	1-410-997-31	INDUCTOR CHIP	2.2uH
L301	1-410-997-31	INDUCTOR CHIP	2.2uH
L302	1-410-997-31	INDUCTOR CHIP	2.2uH
L303	1-410-997-31	INDUCTOR CHIP	2.2uH (EXCEPT E, EA)
L304	1-410-997-31	INDUCTOR CHIP	2.2uH
L305	1-412-002-31	INDUCTOR CHIP	4.7uH
L402	1-412-622-51	INDUCTOR	10uH
L403	1-412-630-51	INDUCTOR	47uH
L404	1-412-029-11	INDUCTOR CHIP	10uH

L405	1-412-031-11	INDUCTOR CHIP	47uH
L501	1-412-029-11	INDUCTOR CHIP	10uH
L521	1-410-980-51	INDUCTOR CHIP	1mH
L530	1-412-039-51	INDUCTOR CHIP	100uH
L531	1-412-630-51	INDUCTOR	47uH
L532	1-412-039-51	INDUCTOR CHIP	100uH
L601	1-410-997-31	INDUCTOR CHIP	2.2uH

< LIQUID CRYSTAL DISPLAY >

LCD801 1-810-123-11 DISPLAY PANEL, LIQUID CRYSTAL

< TRANSISTOR >

Q301	8-729-425-18	TRANSISTOR	XN4504
Q302	8-729-425-18	TRANSISTOR	XN4504
Q304	8-729-403-45	TRANSISTOR	XN1115

Ref. No.	Part No.	Description	Remark
Q307	8-729-402-13	TRANSISTOR	XN1501
Q308	8-729-904-86	TRANSISTOR	2SB1197K-Q
Q310	8-729-921-71	TRANSISTOR	2SD1781K-Q
Q311	8-729-420-20	TRANSISTOR	XN4312
Q312	8-729-424-12	TRANSISTOR	UN2112

Q401	8-729-424-59	TRANSISTOR	UN2212
Q402	8-729-424-12	TRANSISTOR	UN2112
Q403	8-729-920-56	TRANSISTOR	FMG1
Q404	8-729-923-36	TRANSISTOR	2SD1963-Q, R
Q405	8-729-022-67	TRANSISTOR	2SC3650-TD

Q406	8-729-420-20	TRANSISTOR	XN4312
Q408	8-729-922-34	TRANSISTOR	2SD1758F5-QR
Q409	8-729-230-63	TRANSISTOR	2SC4116-YG
Q410	8-729-424-12	TRANSISTOR	UN2112
Q411	8-729-424-59	TRANSISTOR	UN2212

Q412	8-729-424-59	TRANSISTOR	UN2212
Q421	8-729-230-60	TRANSISTOR	2SA1586-YG
Q501	8-729-402-90	TRANSISTOR	XN4609
Q502	8-729-424-67	TRANSISTOR	UN2216
Q503	8-729-924-79	TRANSISTOR	FMG8

Q504	8-729-924-79	TRANSISTOR	FMG8
Q505	8-729-420-20	TRANSISTOR	XN4312
Q603	8-729-230-63	TRANSISTOR	2SC4116-YG
Q604	8-729-424-90	TRANSISTOR	UN221L
Q605	8-729-403-42	TRANSISTOR	XN1401

Q606	8-729-402-13	TRANSISTOR	XN1501
Q607	8-729-420-20	TRANSISTOR	XN4312
Q811	8-729-924-04	TRANSISTOR	DTA143TU
Q821	8-729-904-86	TRANSISTOR	2SB1197K-Q
Q822	8-729-424-76	TRANSISTOR	UN2210
Q823	8-729-424-59	TRANSISTOR	UN2212

< RESISTOR >

R101	1-216-834-11	METAL CHIP	12K	5%	1/16W
R102	1-216-834-11	METAL CHIP	12K	5%	1/16W
R103	1-218-724-11	METAL CHIP	22K	0.5%	1/16W
R104	1-218-724-11	METAL CHIP	22K	0.5%	1/16W
R105	1-218-883-11	METAL CHIP	33K	0.5%	1/16W

R106	1-218-883-11	METAL CHIP	33K	0.5%	1/16W
R110	1-218-736-11	METAL CHIP	68K	0.5%	1/16W
R112	1-218-736-11	METAL CHIP	68K	0.5%	1/16W
R113	1-218-270-11	METAL GLAZE	1.1K	5%	1/16W
R114	1-216-845-11	METAL CHIP	100K	5%	1/16W

R115	1-216-295-00	METAL CHIP	0	5%	1/10W
R117	1-216-846-11	METAL CHIP	120K	5%	1/16W
R118	1-216-813-11	METAL CHIP	220	5%	1/16W
R121	1-216-836-11	METAL CHIP	18K	5%	1/16W
R122	1-216-795-11	METAL GLAZE	6.8	5%	1/16W

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark
R124	1-216-833-11	METAL CHIP	10K 5% 1/16W	R405	1-218-344-11	METAL GLAZE	7.5K 5% 1/16W
R125	1-216-789-11	METAL CHIP	2.2 5% 1/16W	R409	1-218-720-11	METAL CHIP	15K 0.5% 1/16W
R126	1-216-815-11	METAL CHIP	330 5% 1/16W	R410	1-218-724-11	METAL CHIP	22K 0.5% 1/16W
R127	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R411	1-216-821-11	METAL CHIP	1K 5% 1/16W
R131	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R412	1-218-330-11	METAL CHIP	11K 0.5% 1/16W
R132	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R414	1-217-671-11	METAL CHIP	1 5% 1/10W
R201	1-216-834-11	METAL CHIP	12K 5% 1/16W	R415	1-217-671-11	METAL CHIP	1 5% 1/10W
R202	1-216-834-11	METAL CHIP	12K 5% 1/16W	R417	1-216-019-00	METAL CHIP	56 5% 1/10W
R203	1-218-724-11	METAL CHIP	22K 0.5% 1/16W	R418	1-216-835-11	METAL CHIP	15K 5% 1/16W
R204	1-218-724-11	METAL CHIP	22K 0.5% 1/16W	R419	1-216-829-11	METAL CHIP	4.7K 5% 1/16W
R205	1-218-883-11	METAL CHIP	33K 0.5% 1/16W	R421	1-216-833-11	METAL CHIP	10K 5% 1/16W
R206	1-218-883-11	METAL CHIP	33K 0.5% 1/16W	R422	1-216-839-11	METAL CHIP	33K 5% 1/16W
R210	1-218-736-11	METAL CHIP	68K 0.5% 1/16W	R423	1-216-846-11	METAL CHIP	120K 5% 1/16W
R212	1-218-736-11	METAL CHIP	68K 0.5% 1/16W	R424	1-218-734-11	METAL CHIP	56K 0.5% 1/16W
R213	1-218-270-11	METAL GLAZE	1.1K 5% 1/16W	R425	1-218-724-11	METAL CHIP	22K 0.5% 1/16W
R214	1-216-845-11	METAL CHIP	100K 5% 1/16W	R427	1-216-857-11	METAL CHIP	1M 5% 1/16W
R215	1-216-295-00	METAL CHIP	0 5% 1/10W	R428	1-216-857-11	METAL CHIP	1M 5% 1/16W
R217	1-216-846-11	METAL CHIP	120K 5% 1/16W	R429	1-216-857-11	METAL CHIP	1M 5% 1/16W
R218	1-216-813-11	METAL CHIP	220 5% 1/16W	R430	1-216-857-11	METAL CHIP	1M 5% 1/16W
R221	1-216-836-11	METAL CHIP	18K 5% 1/16W	R431	1-216-845-11	METAL CHIP	100K 5% 1/16W
R222	1-216-795-11	METAL GLAZE	6.8 5% 1/16W	R432	1-216-115-00	METAL CHIP	560K 5% 1/10W
R224	1-216-833-11	METAL CHIP	10K 5% 1/16W	R436	1-216-833-11	METAL CHIP	10K 5% 1/16W
R225	1-216-789-11	METAL CHIP	2.2 5% 1/16W	R501	1-217-671-11	METAL CHIP	1 5% 1/10W
R226	1-216-815-11	METAL CHIP	330 5% 1/16W	R502	1-216-994-11	METAL CHIP	13K 0.5% 1/16W
R227	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R503	1-218-290-11	METAL CHIP	6.2K 0.5% 1/16W
R231	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R504	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R232	1-216-823-11	METAL CHIP	1.5K 5% 1/16W	R505	1-216-857-11	METAL CHIP	1M 5% 1/16W
R301	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R506	1-216-841-11	METAL CHIP	47K 5% 1/16W
R302	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R507	1-216-839-11	METAL CHIP	33K 5% 1/16W
R304	1-216-797-11	METAL CHIP	10 5% 1/16W	R508	1-216-843-11	METAL CHIP	68K 5% 1/16W
R314	1-216-833-11	METAL CHIP	10K 5% 1/16W	R509	1-218-332-11	METAL GLAZE	130K 5% 1/16W
R315	1-216-821-11	METAL CHIP	1K 5% 1/16W	R510	1-216-850-11	METAL CHIP	270K 5% 1/16W
R316	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R511	1-216-845-11	METAL CHIP	100K 5% 1/16W
R317	1-216-845-11	METAL CHIP	100K 5% 1/16W	R512	1-216-833-11	METAL CHIP	10K 5% 1/16W
R318	1-216-821-11	METAL CHIP	1K 5% 1/16W	R513	1-216-833-11	METAL CHIP	10K 5% 1/16W
R321	1-216-295-00	METAL CHIP	0 5% 1/10W	R514	1-216-833-11	METAL CHIP	10K 5% 1/16W
R322	1-216-833-11	METAL CHIP	10K 5% 1/16W	R515	1-218-739-11	METAL CHIP	91K 0.5% 1/16W
R333	1-216-295-00	METAL CHIP	0 5% 1/10W (E,EA)	R516	1-216-843-11	METAL CHIP	68K 5% 1/16W
R342	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R517	1-216-841-11	METAL CHIP	47K 5% 1/16W
R343	1-216-821-11	METAL CHIP	1K 5% 1/16W	R521	1-218-286-11	METAL GLAZE	91 5% 1/16W
R344	1-218-294-11	METAL GLAZE	30K 5% 1/16W	R522	1-216-864-11	METAL CHIP	0 5% 1/16W
R345	1-216-852-11	METAL CHIP	390K 5% 1/16W	R524	1-216-864-11	METAL CHIP	0 5% 1/16W
R346	1-216-841-11	METAL CHIP	47K 5% 1/16W	R528	1-218-735-11	METAL CHIP	62K 0.5% 1/16W
R352	1-216-864-11	METAL CHIP	0 5% 1/16W	R529	1-218-735-11	METAL CHIP	62K 0.5% 1/16W
R353	1-216-809-11	METAL CHIP	100 5% 1/16W	R530	1-218-735-11	METAL CHIP	62K 0.5% 1/16W
R401	1-216-864-11	METAL CHIP	0 5% 1/16W	R531	1-218-735-11	METAL CHIP	62K 0.5% 1/16W
R402	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R532	1-218-744-11	METAL CHIP	150K 0.5% 1/16W
R403	1-216-824-11	METAL CHIP	1.8K 5% 1/16W	R533	1-218-744-11	METAL CHIP	150K 0.5% 1/16W
R404	1-216-801-11	METAL CHIP	22 5% 1/16W	R534	1-216-821-11	METAL CHIP	1K 5% 1/16W

MAIN

Ref.No.	Part No.	Description	Remark	Ref.No.	Part No.	Description	Remark				
R601	1-216-833-11	METAL CHIP	10K 5% 1/16W	R814	1-216-823-11	METAL CHIP	1.5K 5% 1/16W				
R602	1-216-835-11	METAL CHIP	15K 5% 1/16W	R815	1-216-825-11	METAL CHIP	2.2K 5% 1/16W				
R603	1-216-845-11	METAL CHIP	100K 5% 1/16W	R816	1-216-827-11	METAL CHIP	3.3K 5% 1/16W				
R604	1-216-839-11	METAL CHIP	33K 5% 1/16W	R817	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R605	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R818	1-216-845-11	METAL CHIP	100K 5% 1/16W				
R606	1-216-831-11	METAL CHIP	6.8K 5% 1/16W	R819	1-216-851-11	METAL CHIP	330K 5% 1/16W				
R607	1-216-827-11	METAL CHIP	3.3K 5% 1/16W	R820	1-216-864-11	METAL CHIP	0 5% 1/16W				
R608	1-216-857-11	METAL CHIP	1M 5% 1/16W	R821	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R609	1-216-837-11	METAL CHIP	22K 5% 1/16W	R822	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R610	1-216-864-11	METAL CHIP	0 5% 1/16W	R823	1-216-837-11	METAL CHIP	22K 5% 1/16W				
R612	1-216-809-11	METAL CHIP	100 5% 1/16W	R824	1-216-829-11	METAL CHIP	4.7K 5% 1/16W				
R614	1-216-864-11	METAL CHIP	0 5% 1/16W	R825	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R615	1-218-740-11	METAL CHIP	100K 0.5% 1/16W	R826	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R616	1-216-864-11	METAL CHIP	0 5% 1/16W	R827	1-216-864-11	METAL CHIP	0 5% 1/16W				
R621	1-216-841-11	METAL CHIP	47K 5% 1/16W	R829	1-218-716-11	METAL CHIP	10K 0.5% 1/16W				
R631	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R832	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R641	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	R835	1-216-864-11	METAL CHIP	0 5% 1/16W				
R642	1-216-830-11	METAL CHIP	5.6K 5% 1/16W	R836	1-216-854-11	METAL CHIP	560K 5% 1/16W				
R650	1-216-825-11	METAL CHIP	2.2K 5% 1/16W	R837	1-216-857-11	METAL CHIP	1M 5% 1/16W				
R651	1-216-864-11	METAL CHIP	0 5% 1/16W	R838	1-216-850-11	METAL CHIP	270K 5% 1/16W				
R652	1-218-740-11	METAL CHIP	100K 0.5% 1/16W	R841	1-218-720-11	METAL CHIP	15K 0.5% 1/16W				
R653	1-216-864-11	METAL CHIP	0 5% 1/16W	R842	1-218-735-11	METAL CHIP	62K 0.5% 1/16W				
R654	1-218-716-11	METAL CHIP	10K 0.5% 1/16W	R851	1-216-809-11	METAL CHIP	100 5% 1/16W				
R655	1-216-822-11	METAL CHIP	1.2K 5% 1/16W	R852	1-216-809-11	METAL CHIP	100 5% 1/16W				
R656	1-216-845-11	METAL CHIP	100K 5% 1/16W	R853	1-216-809-11	METAL CHIP	100 5% 1/16W				
R657	1-216-821-11	METAL CHIP	1K 5% 1/16W	R854	1-216-809-11	METAL CHIP	100 5% 1/16W				
R658	1-216-845-11	METAL CHIP	100K 5% 1/16W	R855	1-216-809-11	METAL CHIP	100 5% 1/16W				
R659	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	< VARIABLE RESISTOR >							
R660	1-218-716-11	METAL CHIP	10K 0.5% 1/16W	RV650	1-241-393-21	RES, ADJ, METAL GLAZE 2.2K					
R661	1-216-845-11	METAL CHIP	100K 5% 1/16W	< SWITCH >							
R662	1-218-704-11	METAL CHIP	3.3K 0.5% 1/16W	S301	1-571-506-41	SWITCH, SLIDE (BASS BOOST)					
R663	1-218-720-11	METAL CHIP	15K 0.5% 1/16W	S302	1-571-506-41	SWITCH, SLIDE (AVLS)					
R665	1-216-829-11	METAL CHIP	4.7K 5% 1/16W	S401	1-692-532-21	SWITCH, PUSH (1 KEY) (BATTERY DETECT)					
R667	1-218-447-11	METAL GLAZE	62K 5% 1/16W	S801	1-571-275-31	SWITCH, SLIDE (HOLD)					
R669	1-216-864-11	METAL CHIP	0 5% 1/16W	S802	1-571-275-31	SWITCH, SLIDE (RESUME)					
R670	1-216-821-11	METAL CHIP	1K 5% 1/16W	S810	1-572-572-11	SWITCH, MECH DRIVING DETECTION (OPEN)					
R674	1-216-864-11	METAL CHIP	0 5% 1/16W	S820	1-572-596-11	SWITCH, KEY BOARD (▶■)					
R675	1-216-864-11	METAL CHIP	0 5% 1/16W	S821	1-572-596-11	SWITCH, KEY BOARD (■)					
R676	1-216-845-11	METAL CHIP	100K 5% 1/16W	S822	1-572-596-11	SWITCH, KEY BOARD (■■)					
R677	1-216-861-11	METAL CHIP	2.2M 5% 1/16W	S823	1-572-596-11	SWITCH, KEY BOARD (■■■)					
R801	1-216-833-11	METAL CHIP	10K 5% 1/16W	S824	1-572-596-11	SWITCH, KEY BOARD (REPEAT/ENTER)					
R806	1-216-845-11	METAL CHIP	100K 5% 1/16W	S825	1-572-596-11	SWITCH, KEY BOARD (PLAY MODE)					
R807	1-216-025-00	METAL CHIP	100 5% 1/10W	< TRANSFORMER >							
R808	1-216-025-00	METAL CHIP	100 5% 1/10W	T401	1-423-636-11	TRANSFORMER, DC-DC CONVERTER					
R809	1-216-864-11	METAL CHIP	0 5% 1/16W								
R810	1-216-824-11	METAL CHIP	1.8K 5% 1/16W								
R811	1-218-716-11	METAL CHIP	10K 0.5% 1/16W								
R812	1-216-820-11	METAL CHIP	820 5% 1/16W								
R813	1-216-822-11	METAL CHIP	1.2K 5% 1/16W								

Ref. No.	Part No.	Description	Remark
		< THERMISTOR >	

TH601 1-810-236-11 THERMISTOR, POSITIVE 1.5K

< VARIABLE RESISTOR >

VR301 1-223-444-21 RES, VAR, CARBON 10K/10K (VOL ▲)

< VIBRATOR >

X301 1-567-908-11 VIBRATOR, CRYSTAL (16.9MHz)

X801 1-579-063-21 VIBRATOR, CERAMIC (4.19MHz)

MISCELLANEOUS

△52 8-848-295-21 DEVICE, OPTICAL KSS-331C

M901 X-2625-485-1 MOTOR ASSY, T.T.

M902 X-2625-171-2 MOTOR ASSY, SLED

S910 1-570-771-11 SWITCH (LIMIT SW)

ACCESSORIES & PACKING MATERIALS

△ 1-467-007-21 ADAPTOR, AC (AC-E455) (AUS)

△ 1-467-008-11 ADAPTOR, AC (AC-E455) (AEC, AEL)

△ 1-467-009-11 ADAPTOR, AC (AC-E455) (US, Canadian)

△ 1-467-011-11 ADAPTOR, AC (AC-E455) (E)

△ 1-467-012-11 ADAPTOR, AC (AC-E455) (EA)

1-528-444-11 BATTERY PACK (BP-DM10) (Canadian, E, EA, AUS)

1-528-444-21 BATTERY PACK (BP-DM10) (AEC, AEL)

1-528-444-31 BATTERY PACK (BP-DM10) (US)

1-555-658-21 CORD, CONNECTION

△ 1-569-007-11 ADAPTER, CONVERSION 2P (E)

△ 1-569-008-11 ADAPTER, CONVERSION 2P (EA)

3-752-086-01 INSTRUCTION

3-757-161-11 MANUAL, INSTRUCTION (SPANISH) (AEC, AEL, E, EA)

3-757-161-21 MANUAL, INSTRUCTION (ENGLISH)

3-757-161-31 MANUAL, INSTRUCTION (FRENCH)

(Canadian, AEC, AEL, E, EA)

3-757-161-41 MANUAL, INSTRUCTION (DUTCH) (AEC)

3-757-161-51 MANUAL, INSTRUCTION (SWEDISH) (AEC)

3-757-161-61 MANUAL, INSTRUCTION (PORTUGUESE) (AEC)

3-757-161-71 MANUAL, INSTRUCTION (GERMAN) (AEL)

3-757-161-81 MANUAL, INSTRUCTION (ITALIAN) (AEL)

* 4-957-230-01 CUSHION (UPPER)

* 4-959-791-01 CUSHION (LOWER) (US, Canadian)

* 4-959-794-01 CUSHION (LOWER) (AEC, AEL, E, EA)

* 4-959-815-01 INDIVIDUAL CARTON (US, Canadian)

* 4-959-817-01 INDIVIDUAL CARTON (AEC, AEL)

* 4-959-823-01 INDIVIDUAL CARTON (E, AUS)

Ref. No.	Part No.	Description	Remark
*	4-959-824-01	CUSHION (LOWER) (AUS)	
	4-960-143-01	CASE, CARRYING (E, EA, AUS)	
	8-951-802-90	REMOTE CONTROL, WIRELESS RM-DM9	
	8-953-487-92	HEADPHONE MDR-14B/2 SET (US)	
	8-953-538-91	HEADPHONE MDR-E741//K1 SET (Canadian, AEC, AEL, E, EA, AUS)	

HARDWARE LIST

#1	7-627-852-18 SCREW, PRECISION +P 1.7X4 TYPE3
#2	7-671-155-01 STEEL BALL 3.0
#3	7-627-852-17 +P 1.7X4
#4	7-685-104-19 SCREW (2X6), TAPPING (B)
#5	7-685-105-19 SCREW (2X8), TAPPING (B)

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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D-225CR

9-957-961-11

**Sony Corporation
General Audio Group**

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