

# D-321

## SERVICE MANUAL

US Model  
 AEP Model  
 UK Model  
 E Model  
 Australian Model  
 Tourist Model



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

### SPECIFICATIONS

**System**  
 Laser diode properties  
 Error correction  
 D-A conversion  
 Frequency response  
 Output (at 4.5 V input level)

Compact disc digital audio system  
 Material: GaAlAs  
 Wavelength:  $\lambda = 780$  nm  
 Emission duration: Continuous  
 Laser output: Less than  $44.6 \mu\text{W}$   
 (This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.)  
 Sony Super Strategy Cross Interleave Reed Solomon Code  
 1-bit quartz time-axis control  
 20 — 20,000 Hz  $\pm 3$  dB  
 (measured by EIAJ CP-307)  
 Line output (stereo minijack)  
 Output level 0.85 V rms at 50 kilohms  
 Load impedance over 10 kilohms  
 Optical digital output (optical output connector)  
 Output level:  $-21$  —  $-15$  dBm  
 Wavelength: 630 — 690 nm at peak level  
 Headphones (stereo minijack)  
 4 mW + 4 mW at 16 ohms

**General**  
 Power requirements

- Supplied:
- Rechargeable battery
  - Battery case for use of two alkaline batteries (not supplied)
  - DC IN 4.5 V jack accepts the Sony AC power adaptor for use on:

Where purchased	Operating voltage
AEP	220 — 230 V AC, 50 Hz
US	120 V AC, 60 Hz
E	110 — 240 V AC, 50/60 Hz
UK, Australian	240 V AC, 50 Hz
Other countries	100 — 240 V AC, 50/60 Hz

- Not supplied:
- DC IN 4.5 V accepts the Sony CPM-300PK mount arm for use on car battery
  - DC 3 V, two size AA (LR6) alkaline batteries

**Dimensions**  
 Mass  
 Supplied accessories

Approx. 132.5 x 25.9 x 155.3 mm (5 $\frac{1}{4}$  x 1 $\frac{1}{16}$  x 6 $\frac{1}{8}$  in.)  
 (w/h/d) incl. projecting parts and controls  
 Approx. 340 g (12.4 oz) incl. rechargeable battery  
 AC power adaptor (1)  
 Rechargeable battery (1)  
 Battery case (1)  
 Connecting cord (phono plug x 2 ↔ stereo miniplug) (1)  
 Stereo headphones with remote commander (1)  
 Carrying case (1)

Design and specifications are subject to change without notice.

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

**Accessories not supplied**  
 Mount arm CPM-300PK  
 Car connecting pack CPA-3, CPA-4, CPA-5RM  
 Car battery cord DCC-E145L  
 Active speaker system SRS-58  
 Rechargeable battery BP-DM10

Your dealer may not handle some of the above listed accessories. Please ask the dealer for detailed information about the accessories in your country.



COMPACT DISC COMPACT PLAYER  
**SONY**®

# D-321

## SERVICE MANUAL

US Model  
AEP Model  
UK Model  
E Model  
Australian Model  
Tourist Model



Model Name Using Barcode Mechanism	NEW
CD Mechanism	SMC-W7000 (J)

### SPECIFICATIONS

**Name** Compact Disc Player

**Model Name** D-321

**Dimensions** 140 (W) x 100 (H) x 140 (D) mm

**Weight** 1.5 kg (3.3 lb)

**Power** AC 100-120 V, 50/60 Hz

**Disc Capacity** 74 min

**Disc Format** CD-DA, CD-TEXT, CD-R, CD-RW

**Disc Speed** 1x, 2x, 4x, 8x

**Disc Error Correction** CIRC, EFM, Cross-Interleave Parity (CIP)

**Disc Compatibility** CD-DA, CD-TEXT, CD-R, CD-RW

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**Notes**

- 1. Always use the original Sony disc.
- 2. Do not use any other disc.
- 3. Do not use any other disc.

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Disc Capacity	74 min
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- 3. Do not use any other disc.



COMPACT DISC COMPACT PLAYER  
**SONY.**



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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.

## 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  pin
- S curve P-to-P value : 1.5Vp-p  
When checking S curve P-to-P value, break the solder jumper to open the JP(FE) and remove the lead wire to disc motor.
- RF signal P-to-P value : 0.7Vp-p
- Traverse signal P-to-P value : 0.5Vp-p
- The grating holder can not repair.

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### UNREPLACED COMPONENT WARNINGS

COMPONENTS IDENTIFIED BY MARK **A** ON BOTTOM LINE WITH MARK **A** ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH GENUINE PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY BENTON.

## SERVICING NOTES

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

The base slide in the optical pick-up block may suffer electrolytic breakdown because of the potential difference generated by the charged electrostatic load, etc. on sliding and the human body.

During repair, pay attention to electrolytic breakdown and also see 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 350 °C during repairing.
- Do not touch the soldering iron on the rear conductor of the through board (paddle 2 circuit).
- Be careful not to apply force on the conductor when soldering or unsoldering.

### Notes on chip component replacement

- Remove a disconnected chip component.
- Notice that the silicon side of a varactor capacitor may be damaged by heat.

### Before Replacing the Optical Block

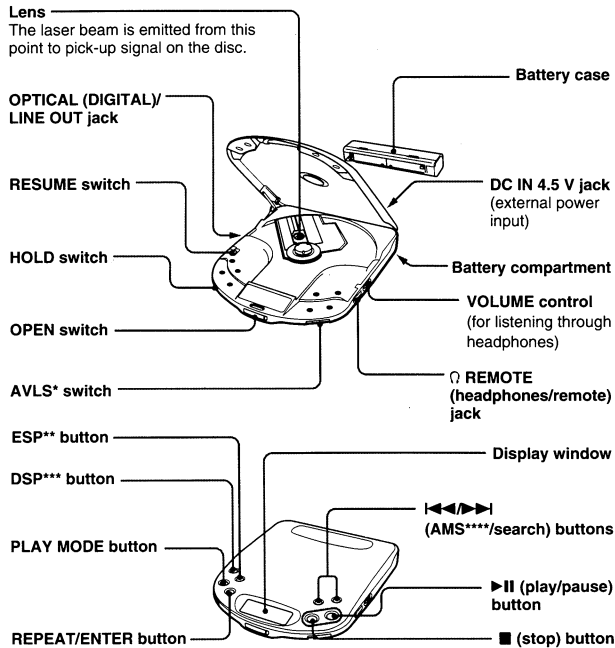
It must be sure to check thoroughly the parameters as per the "Optical Block Checking Procedure" (Part No. 01 800 007-11) listed separately before replacing the optical block. Note and specifications required to check are given below.

- PUL output : 100mV @ 1µs
- R curve P-to-P value : 1.0Vp-p
- When checking R curve P-to-P value, break the solder jumper to open the (R/P) and measure the lead wire in this state.
- R-P signal P-to-P value : 0.7Vp-p
- Inverse signal P-to-P value : 0.1Vp-p
- The printing marker can not repair.

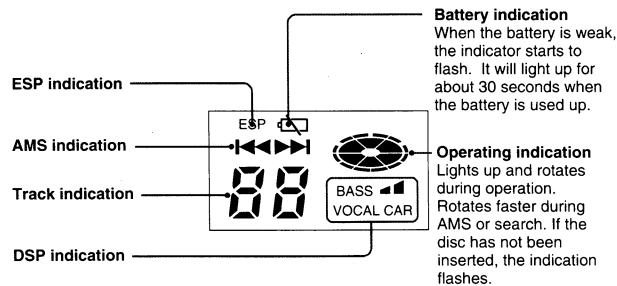
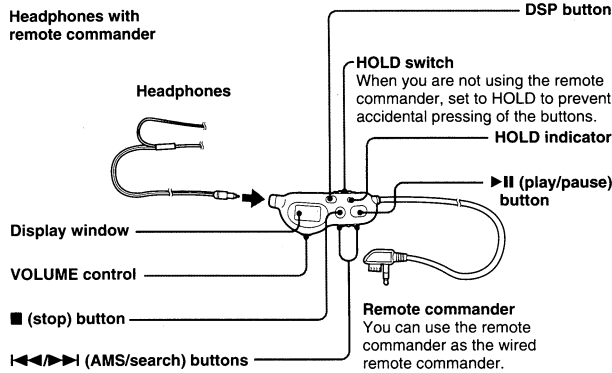
# SECTION 1 GENERAL

This section is extracted from instruction manual.

## Location and Function of Controls



\*AVLS: Automatic Volume Limiter System  
\*\*ESP: Electronic Shock Protection  
\*\*\*DSP: Digital Signal Processing  
\*\*\*\*AMS: Automatic Music Sensor



### Before using

Connect the headphones to the remote commander securely. A loose connection may cause noise during playback.

### When you connect the remote commander to the unit

Make sure that the player is in the stop mode.

### When you do not use the remote commander

Detach the remote commander from the REMOTE jack to avoid battery consumption caused by accidental operation of the commander.

### Is it possible to operate other compact disc compact players with the supplied remote commander?

Basically yes. However, some models are not operative.

### Controlling the volume with the remote commander

Set the VOLUME control of the remote commander to MAX. Using the VOLUME control on the unit, adjust the volume to the level that you want to be the maximum when adjusting with the VOLUME control on the remote commander.

### Headphones with stereo miniplug

You can use the optional headphones with stereo miniplug with this unit.

### Note

The ESP cannot be adjusted with the remote commander.



## SECTION2 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 ►|| 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.

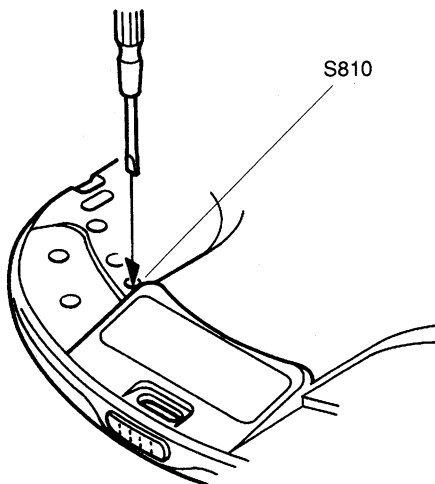


Fig. 1 Turning S810 on

### 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 : 1 Ω)
4. Press the ►|| key.
5. Calculate the current by the VOM reading.  
VOM reading (V) = current (A)  
ex. VOM reading = 0.027V  
 $0.027 = 0.027(A) = 27 (mA)$
6. Confirm that the ammeter reading is within the range given below.  
value on label  $^{+5}_{-11}mA (25^{\circ}C)$   
variation relative to temperature :  $0.4mA/^{\circ}C$   
(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】 (COMPONENT SIDE)

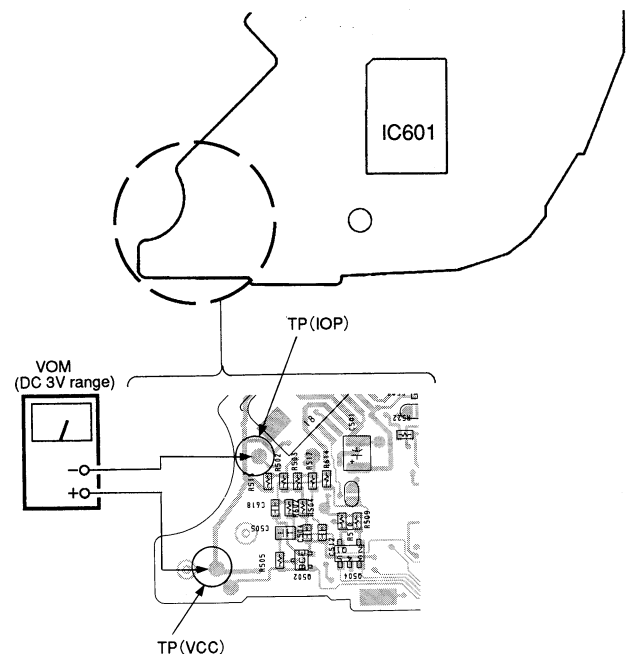


Fig. 2 VOM connecting

## SECTION 2 SERVICE MODE

### NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is constructed so as not to focus on the disc reflective surface by the objective lens in the optical pick-up block.

Therefore, when checking the laser diode voltage, observe care not to aim any laser objective lens.

### Laser Diode Check Procedure

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

The laser diode will always emit even if there is no disc inserted in service mode.

The laser diode is tested using the correct 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. Set SRW as Fig. 1.  
(In service mode, this operation is unnecessary.)
3. Press the PR key.  
(In service mode, this operation is not necessary.)
4. Observe the objective lens and confirm that the laser diode glow on about 1.5 seconds after the focus search. If there was, APC circuit or optical pick-up block is defective.



Fig. 1 Turning SRW on

### Procedure 2 (Service mode or normal operation)

Check by the current-voltage flow to the laser diode.

1. Remove the battery.
2. Put optical pick-up block by hand and look at the rear side of the set for following the label and see the correct value on the label.

Laser on optical pick-up block



Current value This current is 10 mA.  
(The consumption current with the set.)

3. Connect VOM or ohmmeter (Fig. 2).  
(Only side of SRW : 10 $\Omega$ )
4. Press the PR key.
5. Calculate the accuracy of VOM reading.  
VOM reading (V)  $\times$  conversion  
vs. VOM reading = 100V  
100V  $\times$  0.001V = 0.1V (100 $\mu$ V)
6. Confirm that the correct reading is within the range given below.  
value on label  $\pm$  1mA (20%)  
relative change in temperature :  $\pm$  0.5mA (5%)  
(Change 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.

### WAVE OSCAP (COMPONENT SIDE)

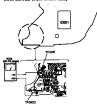


Fig. 2 VOM connecting



### 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.

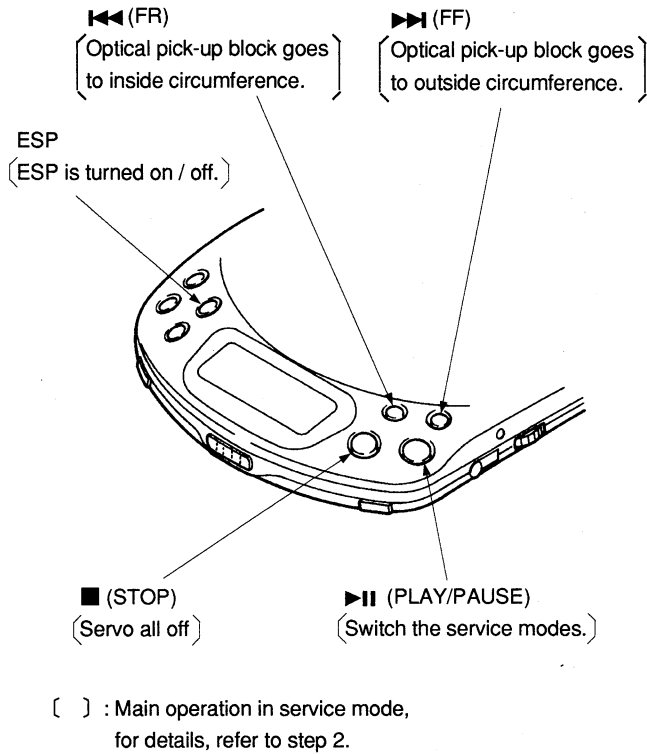
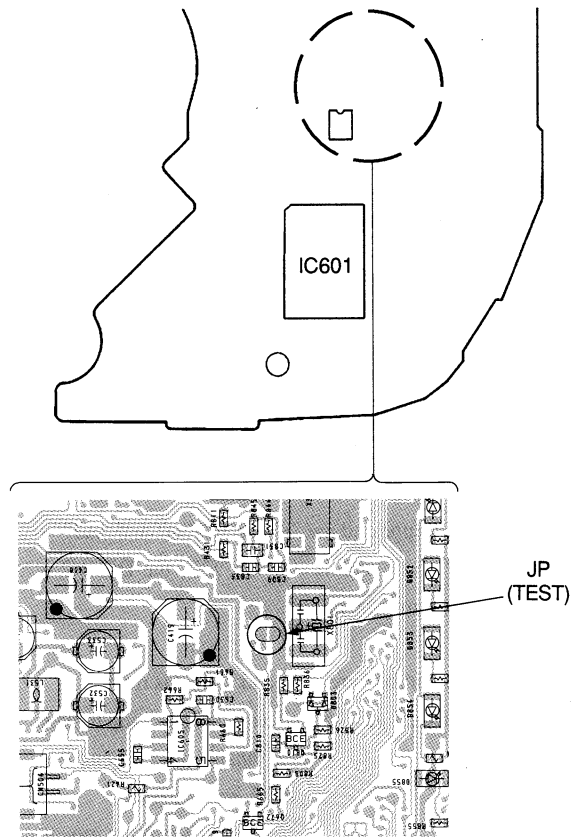


Fig. 3 Key Positions

### Step 1 (Service Mode setting method)

1. Solder jumper the TEST terminal (IC801 pin ⑧ (XTEST) is grounded.).
  2. Plug in the external power supply.
- After performing the above procedure, the set is switched to service mode.

### 【MAIN BOARD】 (COMPONENT SIDE)



### JP(TEST)

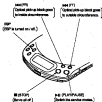
Solder jumper for the service mode.  
 (After checking or adjusting in the service mode, be sure to remove this solder jumper.)

Fig. 4 TEST terminal

### SERVICE MODE (service program)

This service built-in service program is the programmer as usual use.

The operation method of service program is explained below.



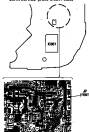
1. Hold operation of service mode. (for details, refer to step 3.)

Fig. 3 Key Positions

### Step 1 (Service Mode setting method)

1. Tester jumper for TEST terminal (SCM) pin-10 (SCM10) is provided.
2. Plug in the external power supply.  
After performing the above procedure, the unit is switched to service mode.

### MAIN BOARD (COMPONENT SIDE)




**TEST**  
Tester jumper for the service mode.  
After checking or adjusting in the service mode, be sure to remove the tester jumper.

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.

When sliding to ON side the ESP switch in this mode, the ESP is on. (LCD  mark lights up continuously.)

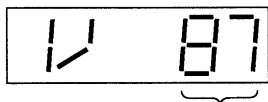
2. Each time the **▶▶** key is pressed, the modes are switched as follows.

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 in hexadecimal notation on the LCD. (00-FF)



The data appeared are "87" in ESP off and "A5" in ESP on. If data is "00" or "FF", the DC/DC converter may be failure.

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.

**[MAIN BOARD] (COMPONENT SIDE)**

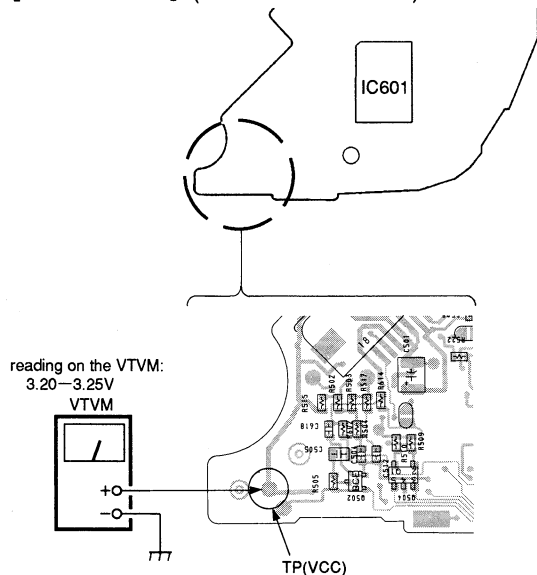
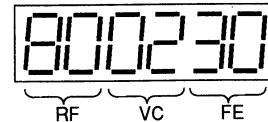


Fig. 5 Vcc check

Press the **▶▶** key.

② Automatic Average Adjustment mode

DC offset value of RF voltage (IC601 pin ⑳ input) against VC voltage (IC601 pin ㉑ input), and FE voltage (IC601 pin ㉒ input) against VC voltage (IC501 pin ⑨) is displayed in hexadecimal notation on the LCD.



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

\* The laser is turned off in this mode.

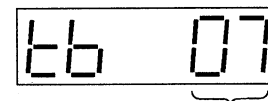
Press the **▶▶** key.

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 in hexadecimal notation 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".

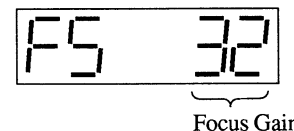
Focus search is repeated many times, if a disc is not loaded on the turn table. In this case, load a disc on the turn table and perform confirmation.

Press the **▶▶** key.

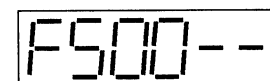
④ Automatic Focus Gain Adjustment mode

The focus gain is displayed in hexadecimal notation on the LCD.

Normal, if approximately "28" is displayed with YEDS-18 disc loaded.



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



Press the **▶▶** key.

**Step 2 (Service Mode operation)**

**1. LCD Display Check mode**

This mode is selected immediately after entering the service mode. In this mode, LCD display indicates the different patterns and these six patterns are repeated.

When returning to ON state the MSP enters in this mode, the MSP is up. LCD  will light-up continuously.

2. Each time the **PH** key is pressed, the mode are switched as follows.

**① LCD Display Check mode**

Press the **PH** key.

**② Automatic Voltage Adjustment mode**

PMW output line (OC0) pin **R** output PMW signal. This mode is control output voltage of DDCDC converter for motor system power supply is displayed in hexadecimal notation on the LCD (00-FF).



The data appeared on "87" in MSP off and "87" in MSP on. If data is "8F" or "9F", the DDCDC converter may be failure.

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

Adjustment of optical pick-up— The optical pick-up sensor is enable mode when the **PH** key is pressed.  
The optical pick-up sensor is disable mode when the **PH** key is pressed.

**[MAIN BOARD] (COMPONENT SIDE)**



Fig. 8. Opt. check.

From the PH key.

**③ Automatic Average Adjustment mode**

DC offset value of SP voltage (OC0) pin **R** input signal VC voltage (OC0) pin **R** input, and FB voltage (OC0) pin **R** input signal VC voltage (OC0) pin **R** is displayed in hexadecimal notation on the LCD.



Finally if the display is "800000" or "800000". If The laser is turned off in this mode.

Press the **PH** key.

**④ Automatic Tracking Balance Adjustment mode**

The laser is turned on from the focus search, then the laser center time and Automatic Tracking Balance Adjustment mode is entered. If a laser is loaded on the same table.

A table reading balance data is displayed in hexadecimal notation on the LCD.

In this time, optical pick-up can be corrected with the **PH** or **PH** key.



Finally if the display data is "00" or "00".

Precautions to repeat every time, if a laser is not loaded on the CDZ table. In this case, load a laser on the same table and perform re-adjustment.

Press the **PH** key.

**⑤ Automatic Focus Gain Adjustment mode**

The focus gain is displayed in hexadecimal notation on the LCD.

Normal, if approximately "3F" is displayed with 100% of laser loaded.



Focus Gain

If focus search is finally "FF" is displayed as shown below.

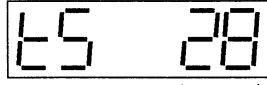


Press the **PH** key.

⑤ Automatic Tracking Adjustment mode

The tracking gain is displayed in hexadecimal notation on the LCD. (00-FF)

Normal, if approximately "19" is displayed with YEDS-18 disc loaded.



tracking gain

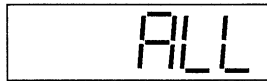
If tracking servo is faulty, "--" is displayed as shown below.



Press the ► 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 operated normally.

② Automatic Tracking Adjustment mode

The tracking gain is displayed in hexadecimal notation on the LCD (20-FF).

Normal, if approximately "FF" is displayed with TEST-11 (see below).



tracking gain

If tracking error is large, "FF" is displayed as shown below.



③ Search (FF) key

④ Audio signal is output

"ALL" is displayed on the LCD.



3. When the **TEST** key is pressed, all servo systems (focus, tracking and still) are turned off and the LCD Display Check mode is entered. However, the film motor will continue to rotate until the next step.

⑤ Step 3 (Service Mode released)

1. After the user is copying the external power supply, then remove the TEST essential solder jumper.
2. The unit 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  $\rightarrow$  switch : OFF  
 VOL  $\blacktriangleleft$  knob : Minimum  
 AVLS switch : OFF  
 RESUME switch : OFF  
 ESP switch : OFF (  $\square$  mark : light-out)

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

#### · Focus Search Check

1. Press the  $\blacktriangleright\blacksquare$  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  $\blacksquare$  key.  
Check that focus search operation stops. If it does not, press the  $\blacksquare$  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.

【MAIN BOARD】 (COMPONENT SIDE)

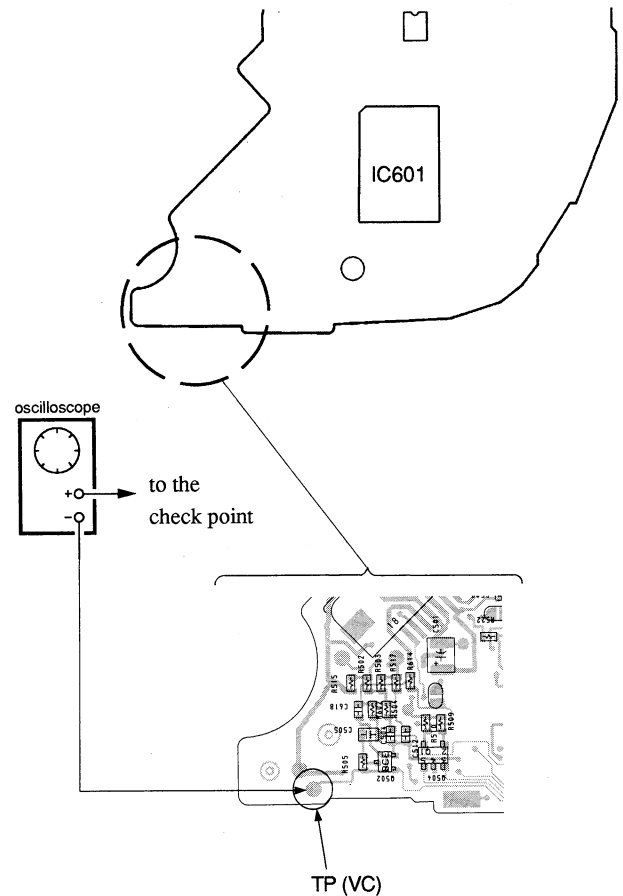


Fig. 6 VC connecting point

## SECTION 3 ELECTRICAL ADJUSTMENTS

### Notes on Check Adjustment

1. Check/adjustment should be performed after entering a service mode. The service mode can be cancelled after confirmation/operation is finished.  
(Refer to "Service Mode (service program)" on page 1.)
2. Confirmation/operation should be performed in the order listed.
3. Use **TRIP** if the page No. : 3-750-001-01 unless otherwise indicated.
4. Power supply voltage : 100V/115V  
**STOP** key : OFF  
**YOL** key : Minimum  
**AVLS** switch : OFF  
**RECALL** switch : OFF  
**OFF** switch : OFF;  mark : Ignored

### PREPARATION

Put the set into **STEP** condition in service mode (See page 5) and perform the following checks. Repair it when an error abnormality.

#### • Head Motor Check

1. Press the **PH** key 3 times, then the **TRIP** and **TRIP** keys to confirm the de optical pick up status in both front → outside track → inside track smoothly from free-rotating status.  
**yes** : optical pick-up block moves outward  
**yes** : optical pick-up block moves inward

#### • Focus Servo Check

1. Press the **PH** key 3 times.  
(Confirmation is performed continuously.)
2. Observe the optical pick-up system objective lens and check the it moves smoothly up and down with no rattling or noise. (It is normal even if it stops for a moment during **STEP** mode.)
3. Press the **OFF** key.  
Check the focus search operation steps. If it does not, press **STOP** key again a little longer time.

### VC Connecting Point

**TRACK BALANCE CHECK**  
**TRACKING BALANCE CHECK**  
**SCUBBY CHECK**

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

### (MAIN BOARD) (COMPONENT BOX)

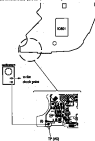
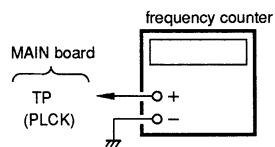


Fig. 4 VC connecting point



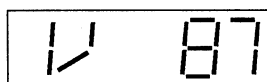
## PLL Free Run Frequency Check and Adjustment

Check/Adjustment Procedure :



1. Solder to jumper the JP(ASY) of IC601 pin ③.
2. Check the ESP is OFF.
3. Connect a frequency counter to the TP (PLCK) of IC601 pin ⑤.
4. Select the Automatic Voltage Adjustment mode of service modes. (see page 6).

LCD Display



5. Confirm that the frequency counter reading is  $4.3218 \pm 0.010\text{MHz}$ . If wrong, adjust RV650 so that reading becomes  $4.3218 \pm 0.010\text{MHz}$ .
6. Cancel the service mode after adjustment is over. (See page 7).
7. Break the solder jumper to open the JP(ASY).

### 【MAIN BOARD】 (COMPONENT SIDE)

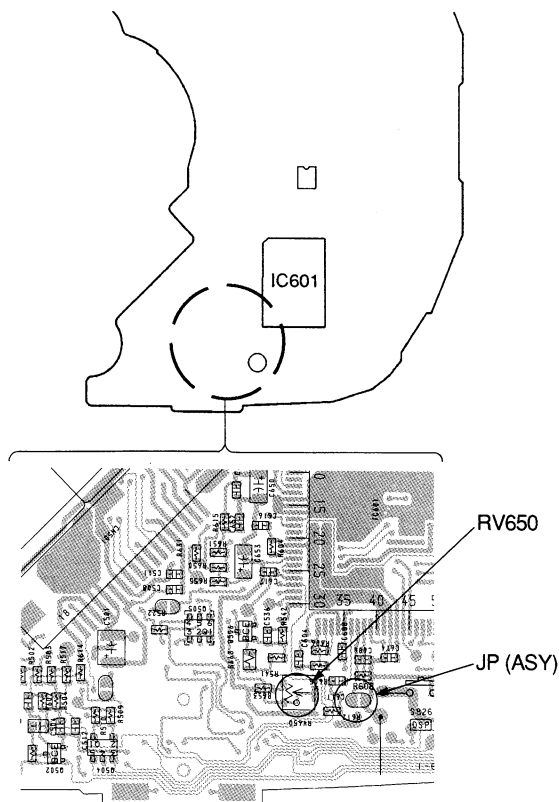


Fig. 7 PLL Free Run Frequency Adjustment Location

### 【MAIN BOARD】 (COMPONENT SIDE)

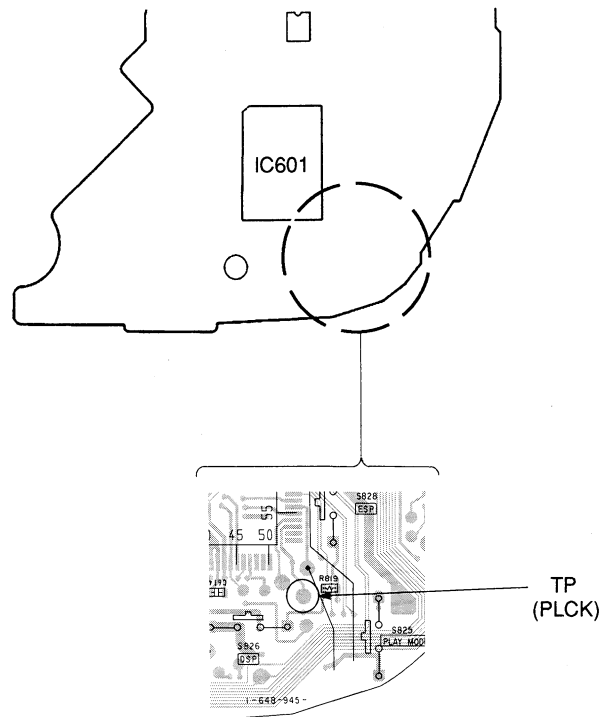


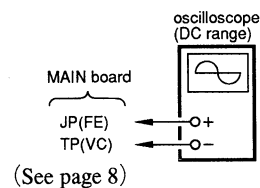
Fig. 8 PLL Free Run Frequency Check Location

### S-Curve Check

Conditions :

The set should be placed either horizontally.

Check Procedure :



1. Break the solder jumper to open the JP (FE).
2. Disconnect the connector (CN502) on the disc motor.
3. Connect a oscilloscope the to CN501 side of JP (FE) on the MAIN board.
4. Set the disc (YEDS-18).
5. Press the ►|| key 3 times to perform focus serch.
6. The A : B or B : A of waveform on oscilloscope must be within 2 : 1, and also the P-P value is  $2.5 \pm 1\text{Vp-p}$ .

**PLL Free Run Frequency Check and Adjustment  
(Check/Adjustment Procedure)**



1. Refer to jumper for IDENTITY of PCB (see #).
2. Check the IDENTITY.
3. Connect a frequency counter to INTC (CPU) OUTPUT (see #).
4. Refer to Automatic Voltage Adjustment mode of service mode (see page 6).

LED display



3. Confirm the frequency counter reading is 4,000,000MHz. If wrong, adjust FVCO to the reading because a 0.01MHz/0.0001Hz.
4. Close the service mode after adjustment is over (See page 7).
5. Check the solder jumper to open the PLLACT.

**DASH BOARD (COMPONENT SIDE)**



Fig. 7 PLL Free Run Frequency Adjustment Location

**DASH BOARD (COMPONENT SIDE)**



Fig. 8 PLL Free Run Frequency Check Location

**IC-Device Check**

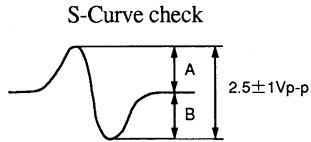
**Condition :**

The unit should be placed under test condition.

**Check Procedure :**



1. Check the solder jumper to open the JP 270.
2. Disconnect the connector IC-PCB on the other board.
3. Connect a multimeter to the GND side of JP 270 to the MAIN board.
4. Set the SW 17700 (10).
5. Press the [PH] key 3 times to perform device check.
6. The A (H or B) : A of waveform on multimeter must be within 0.1, and also the P.F. meter is 0.1 (70%)



7. After confirmation, solder to jumper the JP (FE) and the connector (CN502) to disc motor.

Check Location : MAIN board (COMPONENT SIDE)

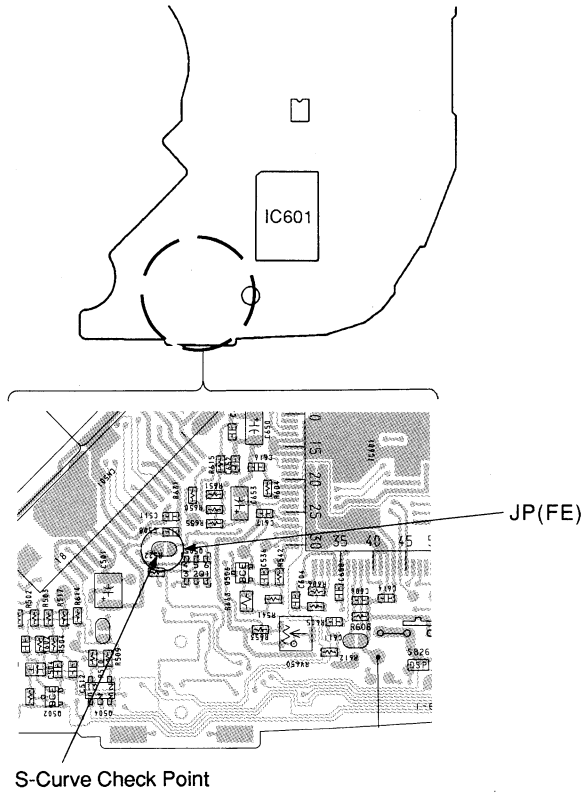


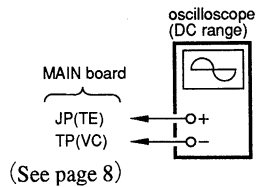
Fig. 9 S-Curve Check Location

### Tracking Balance Check

Conditions :

The set should be placed either horizontally.

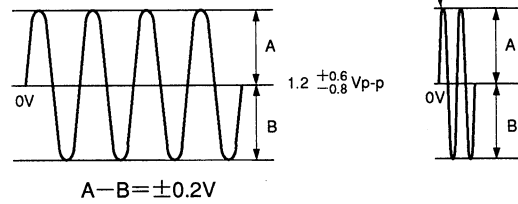
Check Procedure :



1. Connect a oscilloscope to MAIN board JP (TE).
2. Put the set into STOP condition in service mode (See page 5).

3. Press the ►|| 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 ►|| 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 0V.

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).

【MAIN BOARD】 (COMPONENT SIDE)

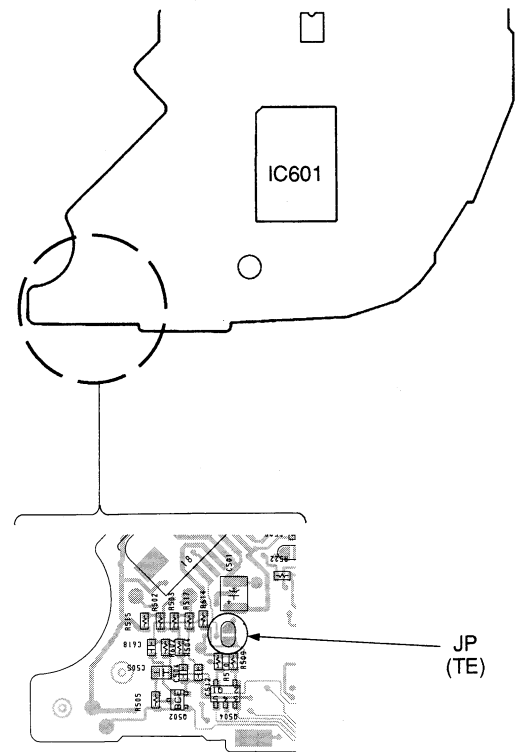


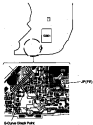
Fig. 10 Tracking Balance Check Location

### B-Curve Check



1. After reconditioning, verify to (paper the IP (2) and the component (2) on the main.

Check Location : MAIN board (COMPONENT SIDE)



B-Curve Check Point

Fig. 8 B-Curve Check Location

### Tracking Balance Check

Condition :

The set should be passed after reconditioning.

Check Procedure :



1. Check a resistance between lead IP(2).
2. Put the set in STP condition to verify each (See page 3).

3. Press the PBT key 1 time.
4. Stop the set and wait 10 sec to come the optical pick-up block to the main.
5. See the set (YHS-16).
6. Press the PBT key 2 times.  
It will go from line output to focus, and CLT path to auto scan. Tracking and still on STP.
7. Check the the waveform on condition is normally symmetric signal STP.

Note : The wave form condition is possible to check test waveform.



8. Press the PBT key.
9. After check, please verify each (See page 3).

Check Location : (MAIN BOARD) (COMPONENT SIDE)



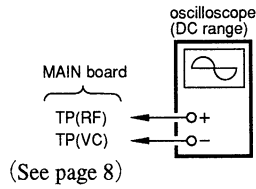
Fig. 10 Tracking Balance Check Location

## Focus Bias Check

Conditions :

The set should be placed either horizontally

Check Procedure :

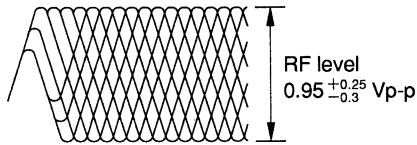


1. Put the set into STOP condition in service mode (See page 5).
2. Connect a oscilloscope to MAIN board TP (RF).
3. Press the ►|| key 1 time.
4. Press the ►► and ◀◀ keys to move the optical pick-up block to the center. (Move the optical pick-up block to the music area on the disc to enable easy visibility of the eye pattern).
5. Set the disc (YEDS-18).
6. Press the ►|| 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 (◊) 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).

Check Location : MAIN board (COMPONENT SIDE)

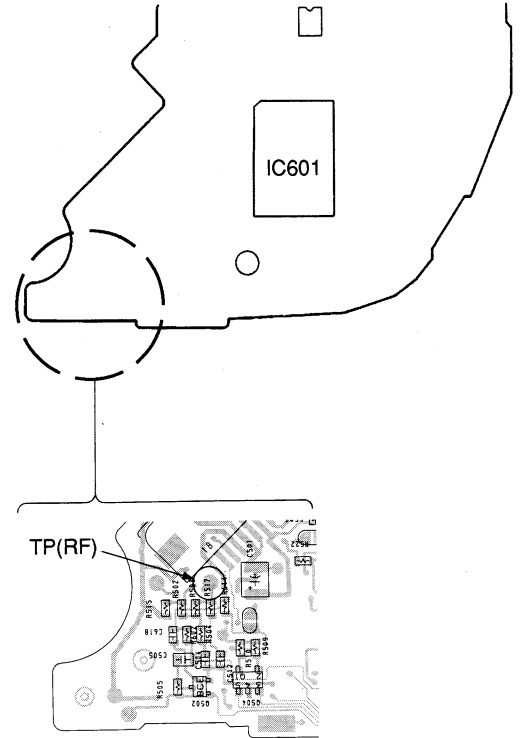


Fig. 11 Focus Bias Check Location

### Focus Star Check

#### Condition 1

The set should be placed either horizontally

#### Check Procedure :



1. Put the set into OFF condition in service mode (See page 5).
2. Connect a surveillance to VIDEO input (TV-OUT).
3. Power the FS by 1 sec.
4. Press the **ENTER** key to move the optical pick-up block to its center. (Move the optical pick-up block to the center area in the order to enable easy visibility of the eye pattern).
5. Set the size (MENU-OK).
6. Power the FS by 2 sec.  
(It will go from focus search to focus on, and I.V. will be made zero. Tracking operation is OFF).
7. Press the **PLAS** (MENU) button (Tracking and stand by OFF).
8. Confirm that the eye pattern of surveillance is presented on the surveillance. A good eye pattern means that the distance (L) is in the center of the surveillance or is clearly distinguished.

#### ④ Signal Reference Waveform (eye pattern)

100.00V - 10000  
100.00V - 10000



When observing the eye pattern, set the surveillance for AC range and take vertical sensitivity.

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

### Check Location : MAIN BOARD (COMPONENT SIDE)

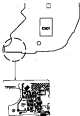


Fig. 11 Focus Star Check Location

## SECTION4 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	Pulse signal output at BEEP sound
6	SENS	I	Input pin of CXD2515Q SENS signal output
7	SCLK	O	Clock signal output for CXD2515Q SENS serial data reading
8	SCKO	O	Serial clock to RF5C241
9	SDTI	I	Serial data input from RF5C241
10	SDTO	O	Serial data to RF5C241
11	SQCK	O	Clock output pin for input of SUB-Q signal from CXD2515Q
12	SUBQ	I	SUB-Q signal input from CXD2515Q
14	X2511LT	O	Latch signal output at serial data transfer to RF5C241
15	XLDON	O	Laser diode control output. “L” : ON, “H” : OFF
16	MIRR	I	Input pin of CXD2515Q MIRR signal output
17	XSOE	O	Serial data output enable signal for RF5C241
18	TEST	I	Test mode selected by input of “L” level at the system reset
19	ESP	O	ESP status signal output. “H: ESP ON, “L” : ESP OFF
20	XRST	O	RESET signal output to CXD2515Q, RF5C241 and SM5853BF. 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 detected, “H” : DC-IN not detected
25	XDM1	I	Battery (BP-DM10) connection detect switch input. “L” : Battery connected, “H” : Battery not connected
26	XORG	I	Control signal input at DSPILM and SRRILM. “L” : AMBER, “H” : GREEN
27	XESP	I	ESP switch input. “L” : ESP ON, “H” : ESP OFF
28	XCHG	O	Battery (BP-DM10) charge control signal output. “L” : Charge
29	RMDTO	O	Serial data output to LCD remote controller
30	AGSL	I	A/D input for CXD2515Q auto gain control setting
31	TCXSL	I	A/D input for model setting
32	VCCSEL	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	BATTMNT	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	XLTI1	—	Connection of clock oscillating circuit
40	XLTO1		4.19MHz

## SECTIONS

### DIAGRAMS

#### 4-3. IC PIN FUNCTION DESCRIPTION

##### IC601 (C846016)-8050 SYSTEM CONTROL IC

Pin No.	Name	I/O	Description
1	RDY	I	System ready status output signal. Ready status is valid at falling edge of input signal.
2	DPDZ	I	Drive enable signal. Drive status is valid at rising edge of input signal. "0" : OFF, "1" : ON
3	RFST	I	Indirect receive control signal
4	VSYS0EN	O	Power output for system power supply adjustment. Approx. 50%.
5	RFSP	O	Pulse signal output to RFSP control
6	SRXD	I	Input pin of C802110 (SRXD) signal output
7	SCLE	O	Clock signal output for C802110 (SRXD) serial data writing
8	SCDS	O	Serial clock to EPICM
9	SDSI	I	Serial data input from EPICM
10	SDSO	O	Serial data to EPICM
11	SDCK	O	Clock output pin for input of SD-D signal from C802110
12	SDREQ	I	SD-D signal input from C802110
13	SRX11-7	O	Launch signal output to serial data transfer to EPICM
14	SRX1EN	O	Launch enable control output. "1" : ON, "0" : OFF
15	SRXS	I	Input pin of C802110 (SRXS) signal output
16	SRXSD	O	Serial data output enable signal for EPICM
17	TRST	I	Test mode selected by input of "1" level in the system reset
18	RFST	O	RFST output signal output. "0" : RFST ON, "1" : RFST OFF
19	SRST	O	SRST signal output to C802110, EPICM and C802110 Each of it is reset by output of "1" level.
21	POWER	O	Power supply control signal. "0" : POWER ON, "1" : POWER OFF
22	RESUM	I	RESUM enable input. "1" : RESUM ON, "0" : RESUM OFF
23	SHLDL	I	SHLDL enable input. "1" : SHLDL ON, "0" : SHLDL OFF (valid)
24	DC-ON	I	DC-ON detection signal input. "1" : DC-ON detected, "0" : DC-ON not detected
25	SDMI	I	Battery (EP-0200) connection detect output input. "1" : Battery connected, "0" : Battery not connected
26	SDMO	I	Control signal input to EPICM and EPICM. "1" : ADDRESS, "0" : COMMAND
27	RFST	I	RFST output input. "1" : RFST ON, "0" : RFST OFF
28	SDREQ	O	Battery (EP-0200) charge control signal output. "1" : Charge
29	SRXSD	O	Serial data output to LED status controller
30	SRXSL	I	A/D input for serial writing
31	VSYS0EN	I	A/D input for system power supply voltage writing
32	CHRGDET	I	A/D input for battery (EP-0200) charge voltage detection
33	BATTERY	I	A/D input for voltage detection of battery (EP-0200/AM-D) and external power supply
34	VCHRGV	I	A/D input for system power supply voltage detection
35	SRXSD	I	A/D input of SR, RF, FLASH/PAGE, GSP and RFSP voltages on lampless status controller
37	RFST	I	A/D input of FLASH/PAGE, EPIC, SR, SR, REPEAT/ENTER, PLAY MODE, RF, RF and SRXSD voltages
38	EMERST	I	System reset signal. System is reset by input of "1" level.
39	SRXSL	-	Connection of clock writing circuit
40	SRXSL	-	A/D input



Pin No.	Name	I/O	Description
41	VSS	—	Ground
43	XLT12	—	Not used (ground)
44	AVREF	—	Reference voltage input for A/D converter
45	AVSS	—	Ground of A/D converter
46	VL	O	Control signal to cut off the current flowing into external LCD bias resistor at standby
47   49	VLC3   VLC1	—	LCD bias power supply voltages
50   53	COM0   COM3	O	LCD remote control signals
54   73	S00   S19	O	LCD segment signals
74	LIGHT	O	Backlight control signal. "H" : ON
82	AMUT	O	Mute control signal. "H" : Mute
83	DMUT	O	SM5853BF mute control signal. "H" : Mute
85	XAULT	O	Latch signal output at serial data transfer to SM5853BF
86	CLKO	O	Serial clock to CXD2515Q and SM5853BF
87	DATO	O	Serial data to CXD2515Q and SM5853BF
88	X2515LT	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 98	TRV0 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.

Pin No.	Name	I/O	Description
41	VSS	—	Ground
42	AVT3	—	Not used (General)
43	VREFP	—	Reference voltage input for A/D converter
44	AVT4	—	Ground of A/D converter
45	HL	O	Control signal to cut off the current flowing into external LCD bias voltage at standby
47	VLCD		
48	VLCD	—	LCD bias power supply voltage
49	VLCD		
50	COM0	O	LCD remote control signal
51	COM1		
52	COM2		
54	SD	O	LCD segment signal
55	SD		
56	SD		
76	LIGHT	O	Backlight control signal. "H" : ON
81	SLM1	O	Main control signal. "H" : Main
82	SLM2	O	EMERGENCY main control signal. "H" : Main
83	SLM3	O	Lock signal output at serial data transfer to EMERGENCY
84	DATA	O	Serial data to CMOCD00 and EMERGENCY
85	DATA	O	Serial data to CMOCD00 and EMERGENCY
86	DATA	O	Lock signal output at serial data transfer to (SLM1/2/3)
88	VDD	—	Power supply
89	VCC	—	Not used (Common to VDD)
91	VSS	—	Ground
92	VSS	—	Not used (General)
94	TRIPDET	O	LIFT switch for working balance adjustment. "H" : LIFT ON
95	TRIP	O	Balance indicator output for working balance adjustment. "H" : Release
96	TRIP		
97	SD00	I	Input pin of CMOCD00[0] SD00 signal output
100	SD00	I	Input of clock signal for data output from LCD remote controller. Data is updated by detection of falling edge.

**-IC602 RF5C241 ESP CONTROL IC**

Pin No.	Name	I/O	Description
1	CHDT	O	Data compare mode monitor signal. "H" : data compare
2	AM19	—	Not used
3	AM18	—	Not used
4	AM17	—	Not used
5	AM16	—	Not used
6	AM15	—	Not used
7	TEST	I	Not used (ground)
8	Vss	—	Grund. "L" : Parallel "H" : Serial
9	SPSL	I	Serial/Parallel select signal of CPU input data. "L" : Parallel
10	XRST	I	Reset signal. "L" : Reset
11	XHLT	I	Not used (ground)
12	DTSL	I	DA data output select signal. "L" : Data through
13	CHM0	I	Data compare mode 0
14	CHM1	I	Data compare mode 1
15	WDSL	I	Data compare area designate signal
16	XWRE	I	DRAM write enable signal
17	XRDE	I	DRAM read enable signal
18	XQOK	I	Subcode QOK input
19	XSOE	I	CPU serial data output enable signal
20	SDTO	I	CPU serial data output
21	SDTI	I	CPU serial data input
22	SCK	I	CPU serial interface clock
23	XLT	I	CPU serial data input latch signal."L" : Latch
24	VDD	—	Power supply (+5V)
25	DATO	O	DA data output
26	BCKO	O	BCK output
27	LRCKO	O	LRCK output
28	WDCKO	O	WDCK output
29	WDCI	I	WDCK input
30	LRCKI	I	LRCK input
31	DATI	I	DA data input
32	BCKI	I	BCK input
33	RFCK	I	RFCK input
34	XROI	I	RAM overflow input signal at DSP
35	MCK	—	Not used
36	—	—	Not used
37	OSCE	I	X' tal vibrator enable signal. "H" or Open : Enable
38	XTLO	—	Not used
39	XTLI	I	X' tal vibrator input (16.9344MHz)
40	Vss	—	Ground
41	C176	O	176.4kHz output
42	MCSL	I	Internal clock select signal. "L" : 8.4672MHz "H" or Open : 16.9344MHz
43	D0	I/O	DRAM data bus 0
44	D1	I/O	DRAM data bus 1
45	D2	I/O	DRAM data bus 2
46	D3	I/O	DRAM data bus 3

IC802 RPAC241 ESP CONTROL (3)

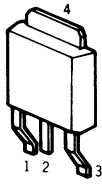
Pin No.	Name	I/O	Description
1	CEBT	0	Bus compare enable control signal, "0" : data compare
2	AM00	--	Not used
3	AM01	--	Not used
4	AM11	--	Not used
5	AM10	--	Not used
6	AM17	--	Not used
7	TRST	1	Trst used (ground)
8	RA	--	Control "L" / Resistor "R" / Serial
9	SPBL	1	Serial/Parallel select signal of CPU input bus, "L" : Parallel
10	TRST	1	Reset signal, "L" : Reset
11	NBLT	1	Not used (ground)
12	STN	1	Out data output select signal, "L" : Data through
13	DM00	1	Data compare mode 0
14	DM01	1	Data compare mode 1
15	DM02	1	Data compare mode 2/compare signal
16	DM03	1	DM03 with enable signal
17	DM04	1	DM04 with enable signal
18	DM05	1	DM05 with enable signal
19	DM06	1	DM06 with enable signal
20	DM07	1	DM07 with enable signal
21	DM08	1	DM08 with enable signal
22	DM09	1	DM09 with enable signal
23	DM10	1	DM10 with enable signal
24	DM11	1	DM11 with enable signal
25	DM12	1	DM12 with enable signal
26	DM13	1	DM13 with enable signal
27	DM14	1	DM14 with enable signal
28	DM15	1	DM15 with enable signal
29	DM16	1	DM16 with enable signal
30	DM17	1	DM17 with enable signal
31	DM18	1	DM18 with enable signal
32	DM19	1	DM19 with enable signal
33	DM20	1	DM20 with enable signal
34	Yes	--	Power supply (+V)
35	DA00	0	DA data output
36	BC00	0	BC00 output
37	LA00	0	LA00 output
38	WD00	0	WD00 output
39	WD01	1	WD00 input
40	LA01	1	LA00 input
41	DA01	1	DA data input
42	BC01	1	BC00 input
43	BP01	1	BP00 input
44	BP02	1	BP01 output input signal on ESP
45	MCS	--	Not used
46	-----	--	Not used
47	CM00	1	CM output enable signal, "0" or Open : Enable
48	AM16	--	Not used
49	DM21	1	DM21 with enable signal (DM0+DM20)
50	Yes	--	Ground
51	CEPE	0	EM-EEPROM output
52	BP03	1	BP02 output enable signal, "L" : Enable, "0" or Open : Disable
53	DM	00	DM00 data bus 0
54	DM	01	DM01 data bus 1
55	DM	02	DM02 data bus 2
56	DM	03	DM03 data bus 3

Pin No.	Name	I/O	Description
47	XCAS	O	DRAM column address strobe signal
48	XOE	O	DRAM data output enable signal
49	XWE	O	DRAM data input enable signal
50	XRAS	O	DRAM row address strobe signal
51	A9	O	DRAM address bus 9
52	A0	O	DRAM address bus 0
53	A1	O	DRAM address bus 1
54	A2	O	DRAM address bus 2
55	A3	O	DRAM address bus 3
56	V <sub>DD</sub>	—	Power supply (5V)
57	A8	O	DRAM address bus 8
58	A7	O	DRAM address bus 7
59	A6	O	DRAM address bus 6
60	A5	O	DRAM address bus 5
61	A4	O	DRAM address bus 4
62	—	—	Not used
63	XWIH	O	DRAM write inhibit signal
64	XEMP	O	DRAM read inhibit signal

Pin No.	Name	I/O	Description
17	XXAS	I	DRAM column address strobe signal
18	XXD	I	DRAM data output enable signal
19	XXS	I	DRAM data input enable signal
20	XXAD	I	DRAM row address strobe signal
21	A0	O	DRAM address bus 0
23	A0	O	DRAM address bus 0
25	A1	O	DRAM address bus 1
54	A4	O	DRAM address bus 4
55	A4	O	DRAM address bus 4
56	Vcc	--	Power supply (1.7V)
57	A5	O	DRAM address bus 5
58	A7	O	DRAM address bus 7
59	A8	O	DRAM address bus 8
60	A7	O	DRAM address bus 8
61	A4	O	DRAM address bus 4
62	---	--	Not used
63	XXWE	O	DRAM write enable signal
64	XXBP	O	DRAM read burst signal

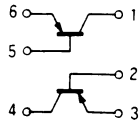
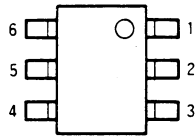
4-3. SEMICONDUCTOR LEAD LAYOUTS

2SD1758F5-QR

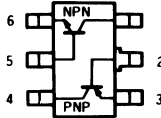


- 1. BASE
- 2. COLLECTOR
- 3. EMITTER
- 4. COLLECTOR

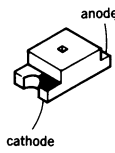
XN4404



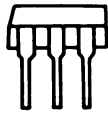
IMD2  
XN4601



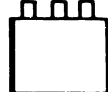
CL-150Y-CD



XN4112

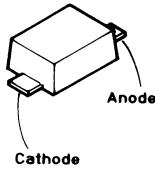


GD N.C GS



D SUB S

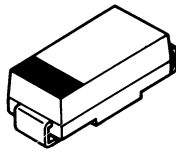
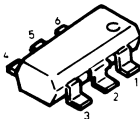
MA8068



SFPB-52V



XN4212  
XN4504



## 4-2. SEMICONDUCTOR LEAD LAYOUTS

180020P1-02



180020P1-02



180020P1-02



180020P1-02

180020P1-02



180020P1-02



180020P1-02

180020P1-02



180020P1-02

230020



CL-1007-02



180020P1-02



180020P1-02



180020P1-02



180020P1-02

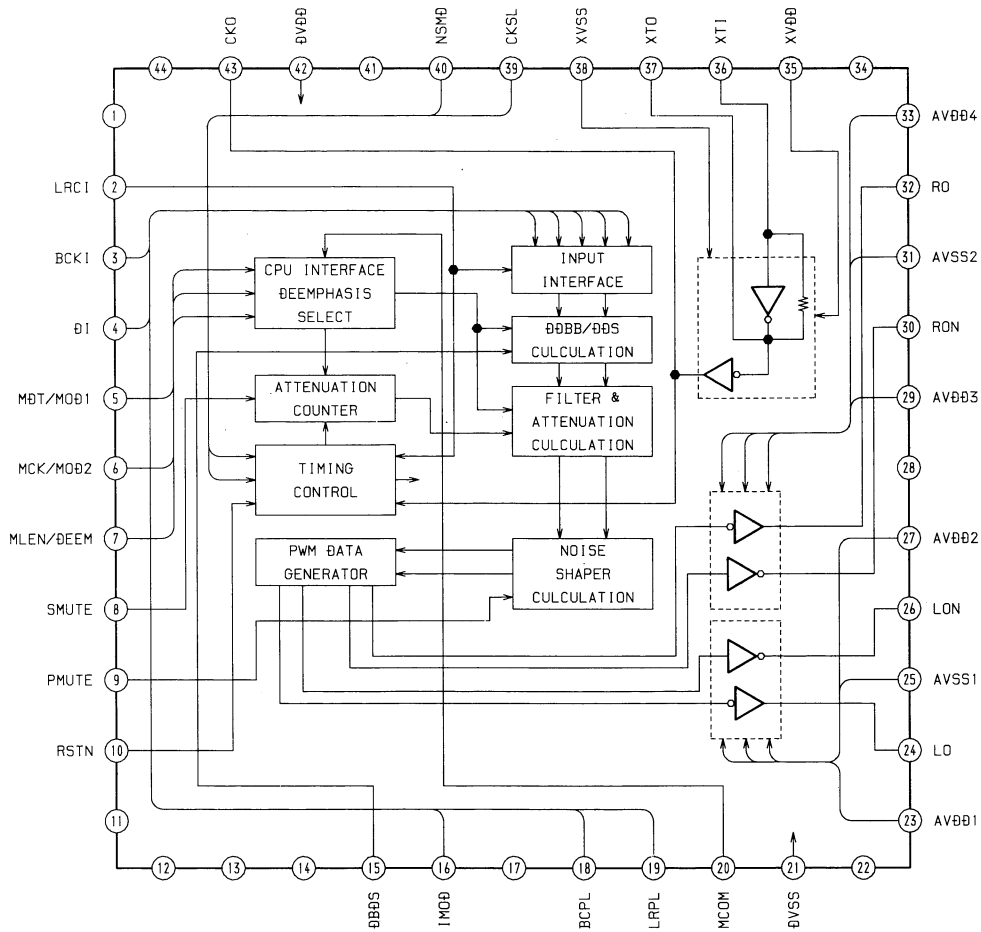


180020P1-02

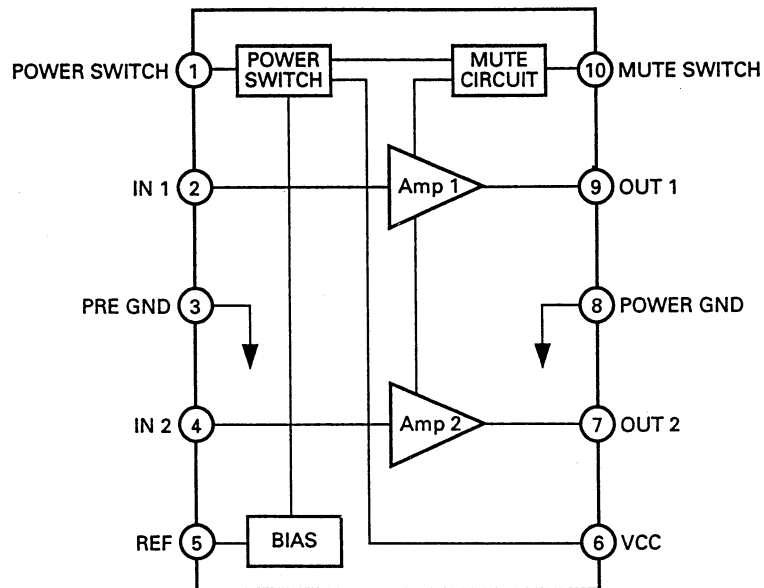


## 4-8. IC BLOCK DIAGRAMS

### IC301 SM5853BF

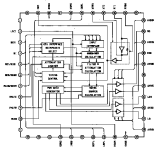


### IC302 LA4533M

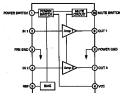


4-8. IC BLOCK DIAGRAMS

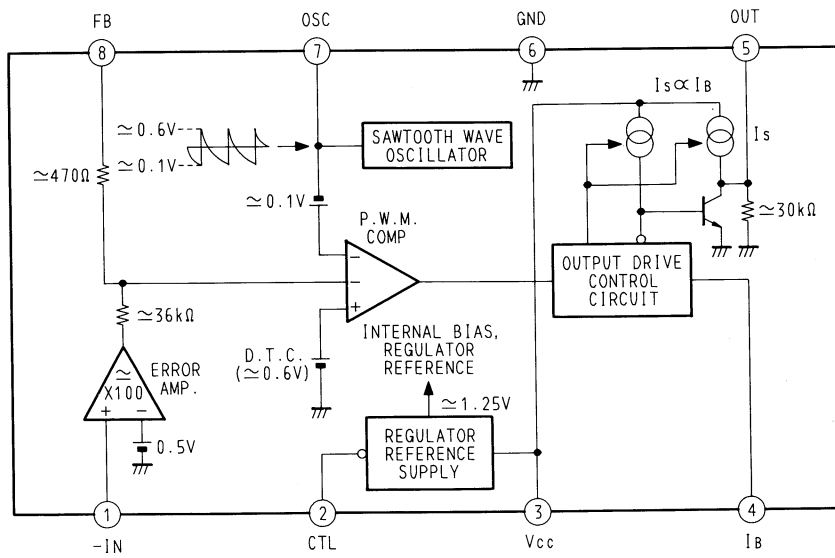
IC001 546628F



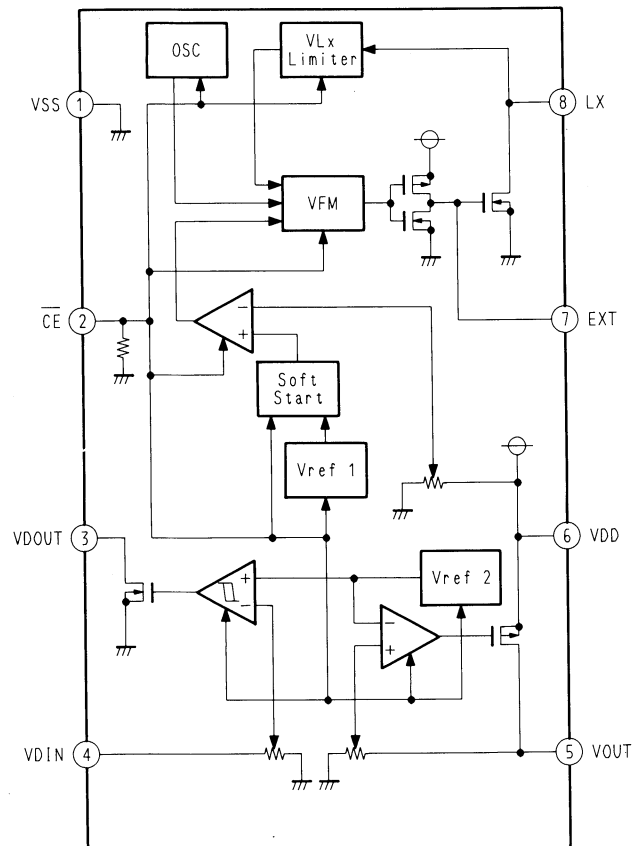
IC002 LA4020M



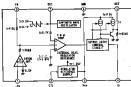
**IC401 MB3776APNF-G-SNY-ER**



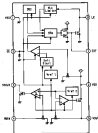
**IC402 RS5RJ32271-T1**



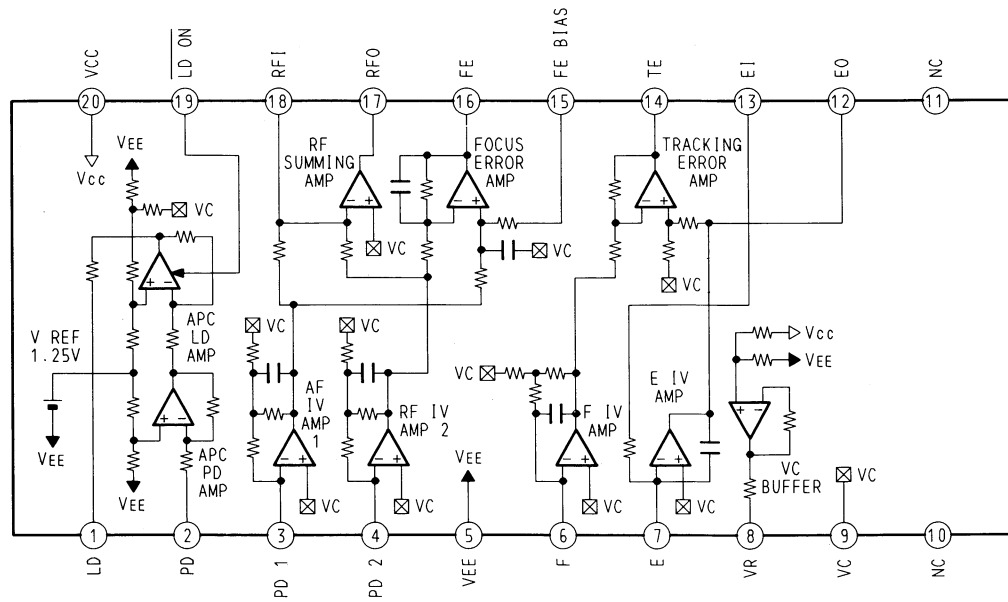
IC001 M82796PFP-G-8MY-88



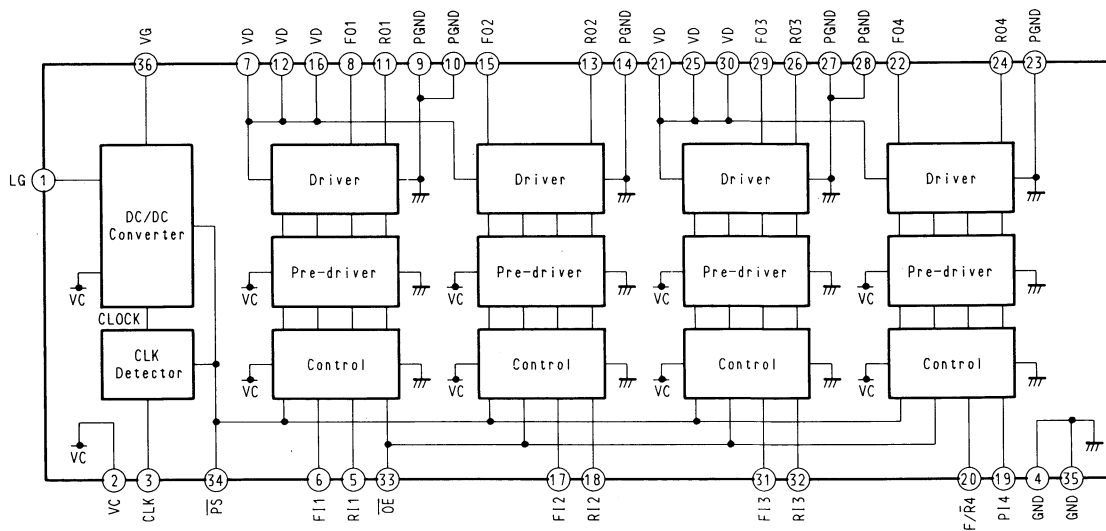
IC002 8288LJ0271-11



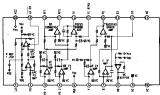
**IC501 CXA1571N**



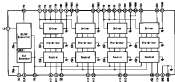
**IC504 MPC17A38VMEL**



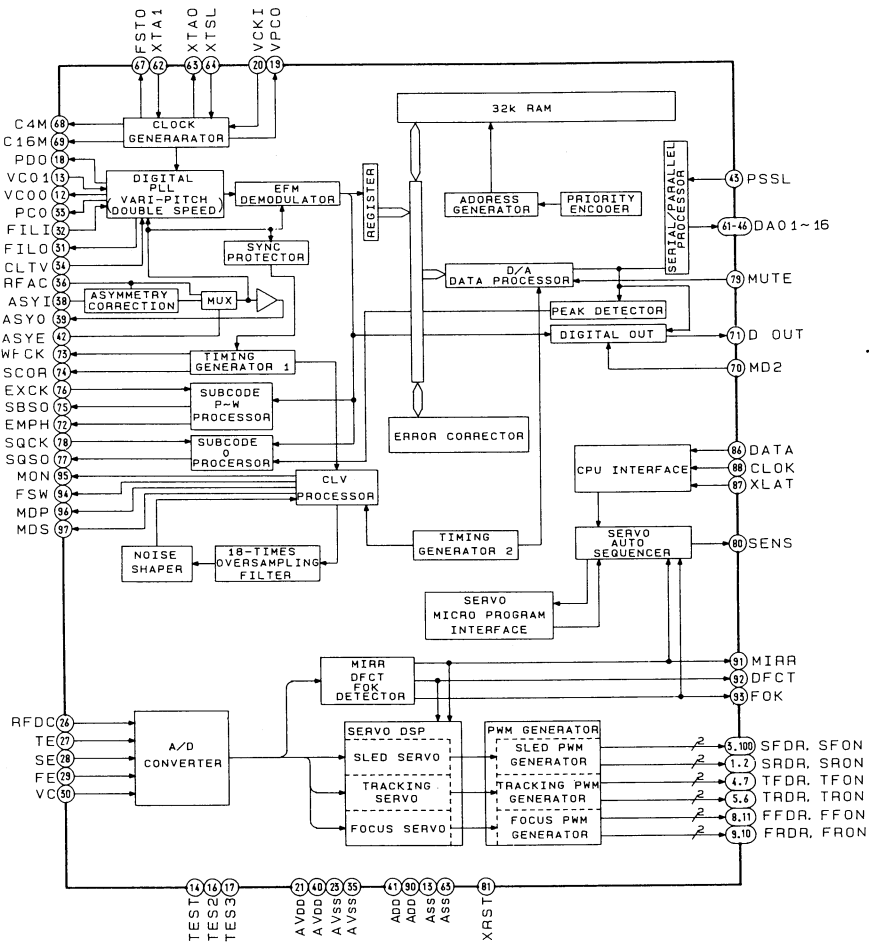
IC801 ERA1571N



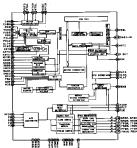
IC804 MPC17A39VME1



# IC601 CXD2515Q

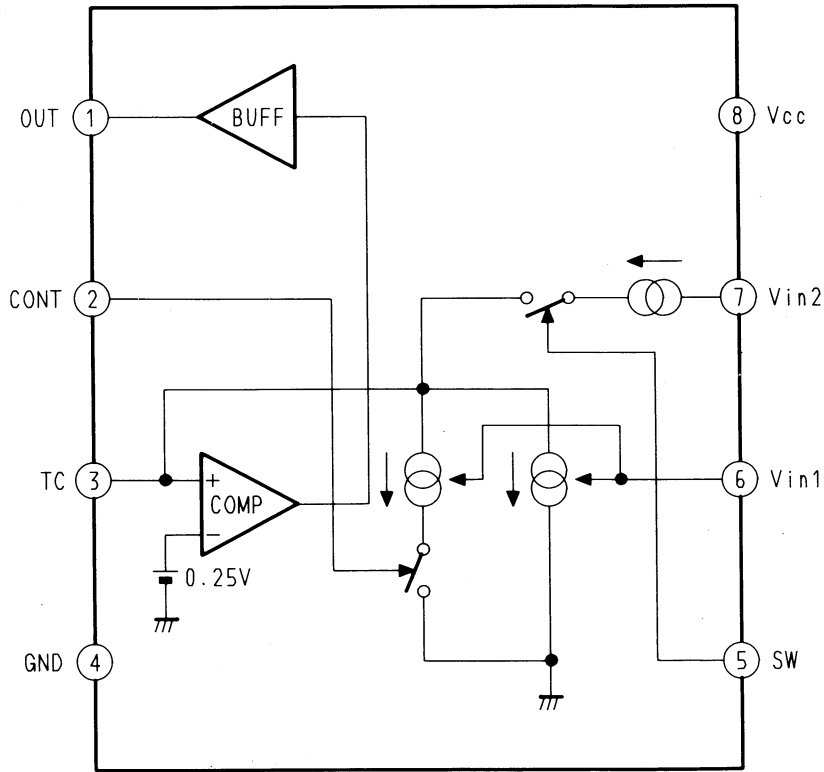


IC801 04020140

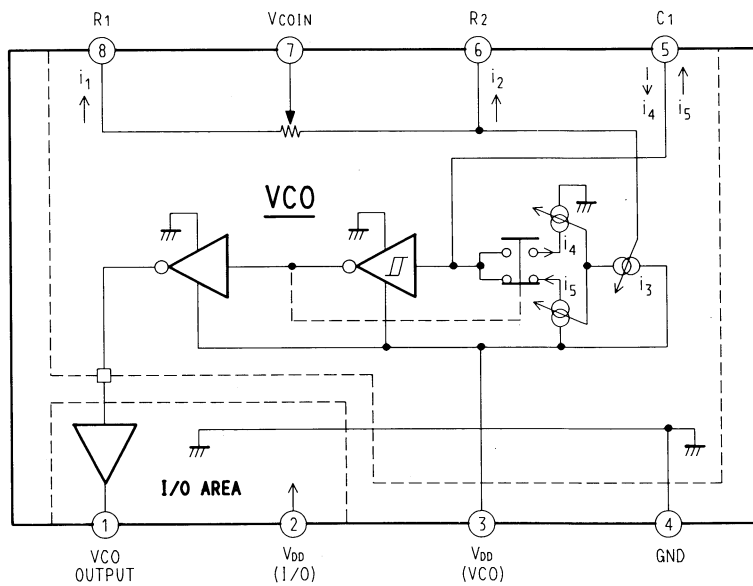




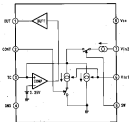
**IC605 BA3890F**



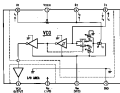
**IC606 TLC2931IDB-ELL1000**



**IC008 8A3880F**



**IC009 TL082CDB-EL1800**



# SECTION 5 EXPLODED VIEWS

5-2.

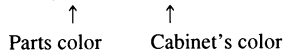
**NOTE:**

- -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)

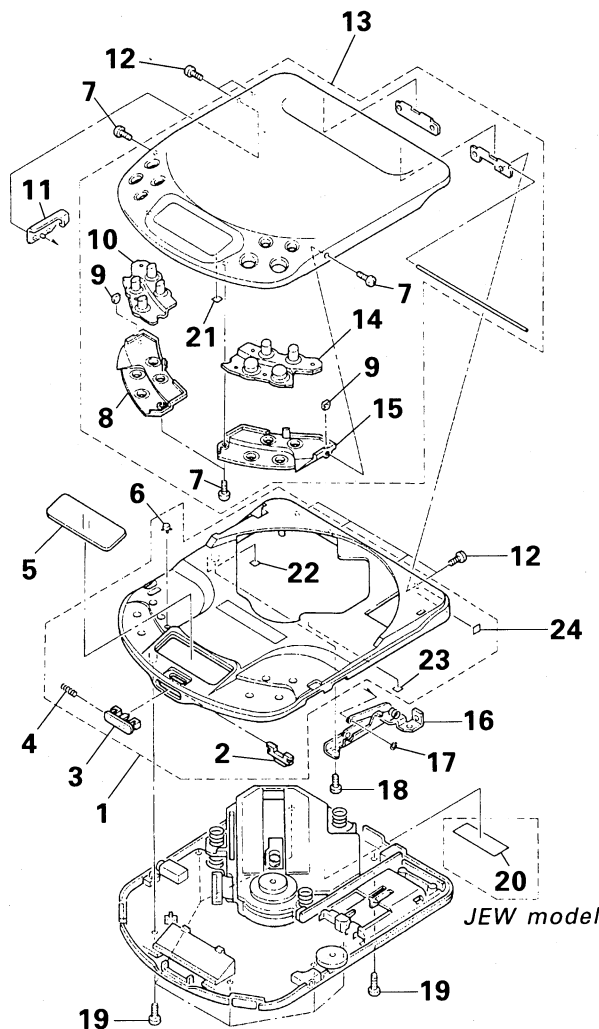


- Items marked "\*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (#mark) list is given in the last of this parts list.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

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

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

**5-1. CABINET SECTION-1**



Ref.No.	Part No.	Description	Remark
1	X-4943-871-2	CABINET (UPPER) ASSY	
2	4-959-916-01	LEVER, LOCK	
3	4-959-917-01	KNOB (OPEN)	
4	4-959-918-01	SPRING, COMPRESSION	
5	4-959-923-02	WINDOW (CABINET)	
6	4-959-924-01	BUTTON (RELAY)	
7	3-704-197-23	SCREW (M1.4X2.5), LOCKING	
8	4-959-926-01	COVER (L)	
9	4-916-684-01	HOLDER, LOCK CLAW	
10	4-959-929-01	BUTTON (L), UPPER CONTROL	
11	X-4943-880-2	BRACKET ASSY, P	
12	3-704-197-13	SCREW (M1.4X2.0), LOCKING	

Ref.No.	Part No.	Description	Remark
13	X-4943-873-1	PANEL ASSY, UPPER	
14	4-959-930-01	BUTTON (R), UPPER CONTROL	* 55
15	4-959-925-01	COVER (R)	* 56
16	X-4943-872-1	SWITCHING ASSY	* 57
17	3-318-236-01	WASHER, POLY, SLIT	* 58
18	4-945-318-01	SCREW	59
19	4-951-291-01	SCREW	
* 20	3-703-034-01	LABEL, CAUTION (JEW)	* 60
* 21	3-693-915-01	SPACER (SW)	* 61
* 22	4-961-837-01	SPACER	
* 23	4-961-837-11	SPACER	
* 24	4-961-916-01	SPACER	

Ref.No  
51  
52  
53  
54  
54

## SECTION 2 EXPLODED VIEWS

2-2

### NOTE:

1. All colors identified herein, or they may have some differences from the original one.

2. Color Indication of Appearance Part (Example)

BLACK, BROWN, GREEN, GREY, RED

Here color Cabinet's color

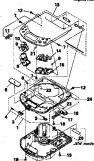
- 3. Non-marked "R" on an isolated area they are addition required for maintenance. These items should be substituted when ordering from stock.
- 4. The non-marked parts will be reference number for the exploded view are not applied.
- 5. Hardware shown for a given color has the same color as the part.
- 6. Abbreviation  
 AUSA American  
 JPN Japan

AUSA: Brazil, Canada, New Zealand, India, Italy, Korea

AUSA: Argentina, Chile, Colombia, Spain, Mexico, Poland

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

### 2-1. CABINET SECTION-1



Part No.	Part No.	Description	Q'ty
1	1-00-001-001	FRONT PANEL	1
2	1-00-001-002	FRONT PANEL	1
3	1-00-001-003	FRONT PANEL	1
4	1-00-001-004	FRONT PANEL	1
5	1-00-001-005	FRONT PANEL	1
6	1-00-001-006	FRONT PANEL	1
7	1-00-001-007	FRONT PANEL	1
8	1-00-001-008	FRONT PANEL	1
9	1-00-001-009	FRONT PANEL	1
10	1-00-001-010	FRONT PANEL	1
11	1-00-001-011	FRONT PANEL	1

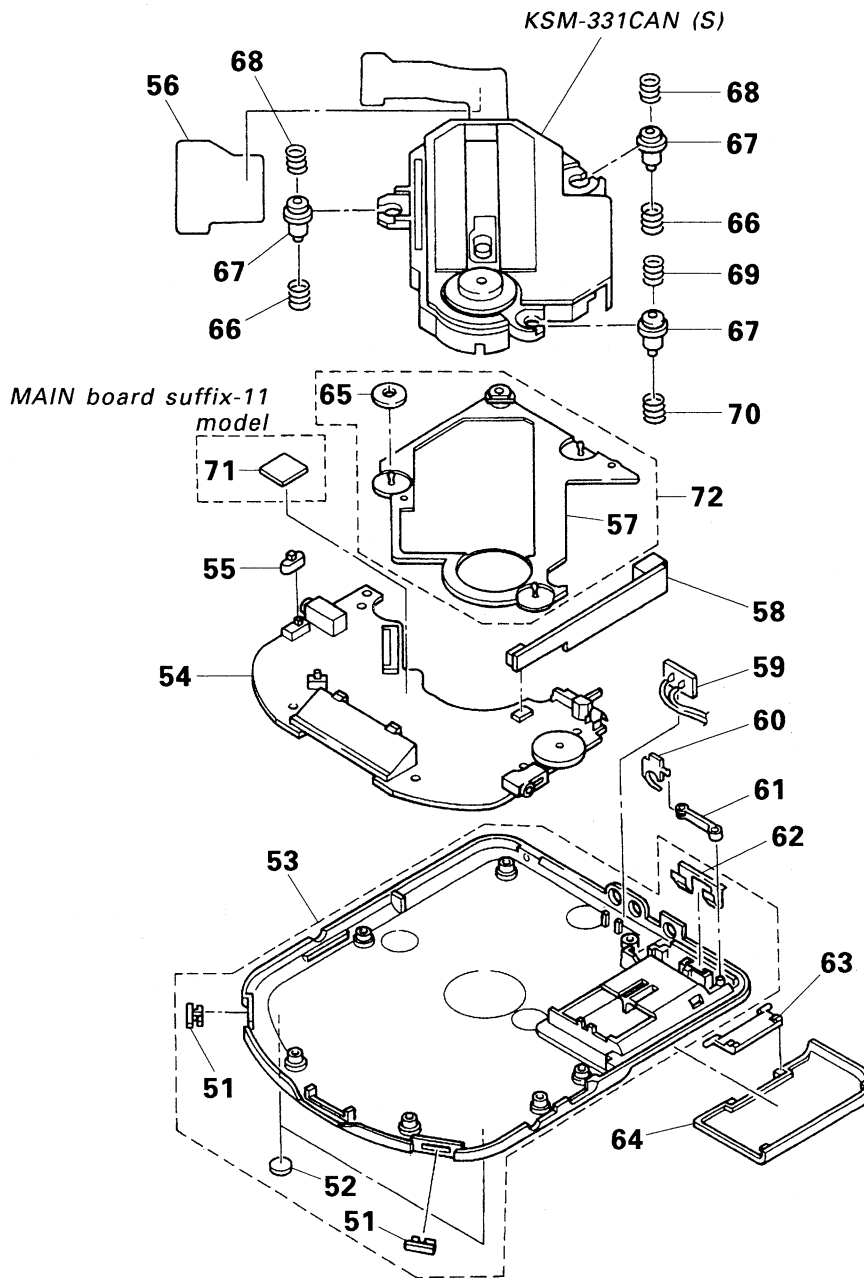
Q'ty

Part No.	Part No.	Description	Q'ty
12	1-00-001-012	FRONT PANEL	1
13	1-00-001-013	FRONT PANEL	1
14	1-00-001-014	FRONT PANEL	1
15	1-00-001-015	FRONT PANEL	1
16	1-00-001-016	FRONT PANEL	1
17	1-00-001-017	FRONT PANEL	1
18	1-00-001-018	FRONT PANEL	1
19	1-00-001-019	FRONT PANEL	1
20	1-00-001-020	FRONT PANEL	1
21	1-00-001-021	FRONT PANEL	1
22	1-00-001-022	FRONT PANEL	1
23	1-00-001-023	FRONT PANEL	1
24	1-00-001-024	FRONT PANEL	1

Q'ty

Part No. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

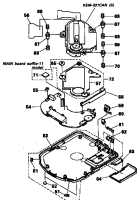
## 5-2. CABINET SECTION-2



Ref.No.	Part No.	Description	Remark
51	4-959-905-01	KNOB (H. AV)	
52	4-912-641-01	FOOT, RUBBER	
53	X-4943-869-1	CABINET (LOWER) ASSY	
54	A-3264-637-A	MOUNTED PCB (LEAD), MAIN (EXCEPT UK)	
54	A-3264-787-A	MOUNTED PCB (LEAD), MAIN (UK)	
*55	4-961-553-01	KNOB (RESUME)	
*56	4-956-818-01	RETAINER, FLEXIBLE	
*57	4-959-931-01	BRACKET	
*58	1-648-946-11	JACK BOARD	
59	1-537-572-11	TERMINAL, BATTERY	
*60	4-961-288-01	PLATE, PREVENTION	
*61	4-961-287-01	ARM	

Ref.No.	Part No.	Description	Remark
62	4-959-932-01	TERMINAL BOARD (RELAY), BATTERY	
63	4-959-907-01	HINGE (BATTERY CASE LID)	
64	4-959-906-01	LID, BATTERY CASE	
65	4-961-827-01	WASHER	
66	4-961-116-02	SPRING (B) (LOWER), COIL	
67	4-959-412-01	INSULATOR, OIL	
68	4-961-120-11	SPRING (C) (UPPER), COIL	
69	4-961-118-02	SPRING (A) (UPPER), COIL	
70	4-961-115-02	SPRING (A) (LOWER), COIL	
*71	1-649-681-11	TS BOARD	
72	X-4944-095-1	BRACKET ASSY	

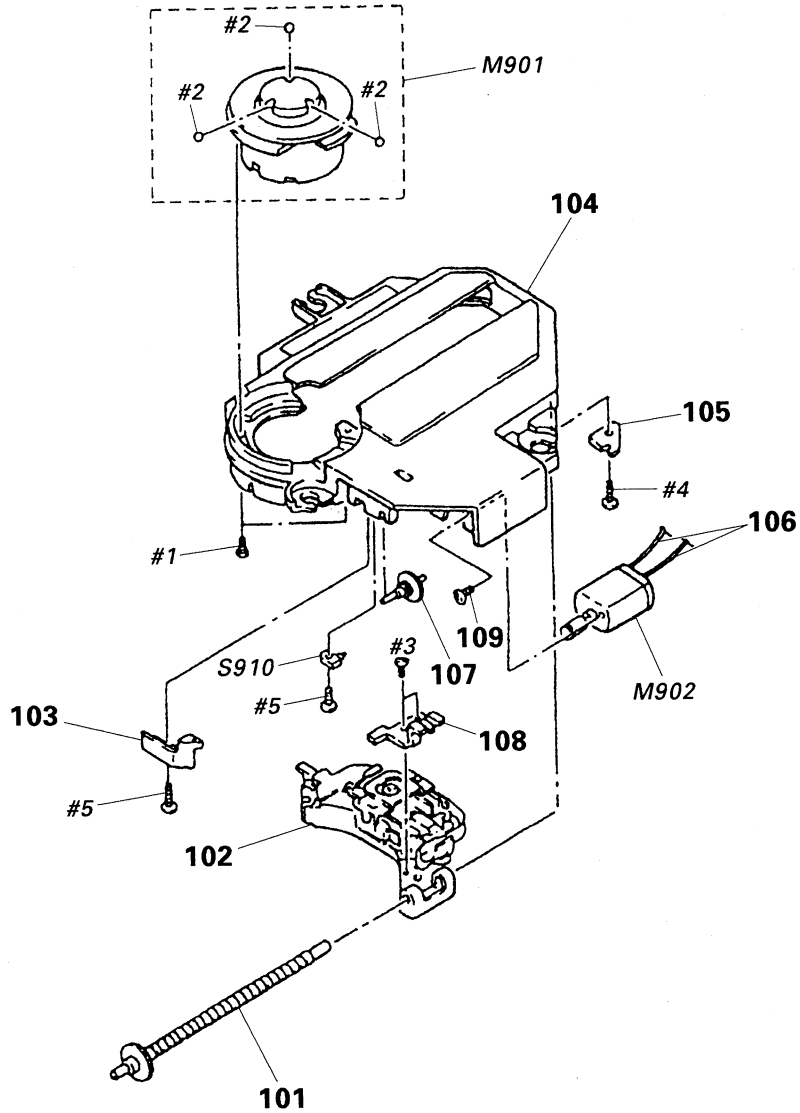
#### 4-2. CABINET SECTION-B



Ref. No.	Part No.	Description	Q'ty
1	1-000-001-01	MAIN BOARD	1
2	1-000-001-02	TOP PANEL	1
3	1-000-001-03	CORNER PLATE (L&R)	2
4	1-000-001-04	FRONT PANEL (L&R)	2
5	1-000-001-05	FRONT PANEL (TOP)	1
6	1-000-001-06	FRONT PANEL (BOTTOM)	1
7	1-000-001-07	FRONT PANEL (MIDDLE)	1
8	1-000-001-08	FRONT PANEL (RIGHT)	1
9	1-000-001-09	FRONT PANEL (LEFT)	1
10	1-000-001-10	FRONT PANEL (BOTTOM MIDDLE)	1
11	1-000-001-11	FRONT PANEL (TOP MIDDLE)	1
12	1-000-001-12	FRONT PANEL (MIDDLE MIDDLE)	1
13	1-000-001-13	FRONT PANEL (MIDDLE LEFT)	1
14	1-000-001-14	FRONT PANEL (MIDDLE RIGHT)	1
15	1-000-001-15	FRONT PANEL (MIDDLE BOTTOM)	1
16	1-000-001-16	FRONT PANEL (MIDDLE TOP)	1
17	1-000-001-17	FRONT PANEL (MIDDLE CENTER)	1
18	1-000-001-18	FRONT PANEL (MIDDLE BOTTOM MIDDLE)	1
19	1-000-001-19	FRONT PANEL (MIDDLE TOP MIDDLE)	1
20	1-000-001-20	FRONT PANEL (MIDDLE CENTER MIDDLE)	1

Ref. No.	Part No.	Description	Q'ty
21	1-000-001-21	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
22	1-000-001-22	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
23	1-000-001-23	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
24	1-000-001-24	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
25	1-000-001-25	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
26	1-000-001-26	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
27	1-000-001-27	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
28	1-000-001-28	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
29	1-000-001-29	FRONT PANEL (MIDDLE CENTER MIDDLE)	1
30	1-000-001-30	FRONT PANEL (MIDDLE CENTER MIDDLE)	1

**5-3. OPTICAL PICK-UP BLOCK SECTION  
(KSM-331CAN (S))**

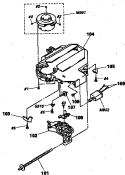


The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
101	X-2625-483-1	SCREW ASSY, SLED	
▲102	8-848-295-21	PICK-UP, OPTICAL KSS-331C	
103	2-625-412-02	SPRING, SLED	
104	2-625-415-02	CHASSIS, MD	
105	2-625-411-01	RETAINER, SHAFT	
106	1-948-418-21	HARNES	

Ref.No.	Part No.	Description	Remark
107	2-625-410-01	GEAR (B)	
108	2-625-414-02	RACK	
109	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)	

8-2. OPTICAL PICK-UP BLOCK SECTION  
(REM-501CAM (B))



The components identified by  
dash 10, is fitted into with dash  
10, as illustrated in assembly.  
Replace only with part number  
specified.

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
100	1-000-001-01	LENS ASSY, 1000	1	101	1-000-010-01	LENS FR	1
101	1-000-001-01	LENS ASSY, 1000	1	102	1-000-010-02	LENS BK	1
102	1-000-010-01	LENS FR, 1000	1	103	1-000-001-01	LENS BK, 1000	1
103	1-000-010-02	LENS BK, 1000	1	104	1-000-010-01	LENS FR, 1000	1
104	1-000-010-01	LENS FR, 1000	1	105	1-000-010-02	LENS BK, 1000	1
105	1-000-010-02	LENS BK, 1000	1				



## 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 :  $\mu$ , for example:  
uA... :  $\mu$ A..., uPA... :  $\mu$ PA..., uPB... :  $\mu$ PB...,  
uPC... :  $\mu$ PC..., uPD... :  $\mu$ PD...
- **CAPACITORS**  
uF :  $\mu$ F
- **COILS**  
uH :  $\mu$ H
- **Abbreviations**  
AUS: Australian      AEC: French, Austrian, East European, Swiss,  
JEW: Tourist        Italian, German  
AEL: Netherlands, North European, Spanish,  
Belgium, Poland

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

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

Ref.No.	Part No.	Description	Remark
*	1-648-946-11	JACK BOARD (BOARD SUFFIX-11)	
*	1-648-946-13	JACK BOARD (BOARD SUFFIX-13)	
*****			
< CAPACITOR >			
C450	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C451	1-164-360-11	CERAMIC CHIP 0.1uF	16V
< JACK >			
$\Delta$ CNJ401	1-580-681-21	JACK, DC (POLARITY UNIFIED TYPE)	(DC IN 4.5V)
*****			
*	A-3264-637-A	MAIN BOARD, COMPLETE (EXCEPT UK)	
*	A-3264-787-A	MAIN BOARD, COMPLETE (UK)	
*****			
	3-831-441-XX	SPACER, KNOB	
	3-831-441-11	CUSHION (B)	
	4-944-347-01	TERMINAL BOARD (+), BATTERY	
	4-944-348-01	TERMINAL BOARD (-), BATTERY	
	4-944-363-11	SEPARATOR	
	4-959-359-01	SHEET (PTOC CHASSIS), ADHESIVE	
	4-959-908-01	HOLDER (LCD)	
*	4-959-915-01	SHEET, DIFFUSION	
< CAPACITOR >			
C101	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V
C103	1-164-357-11	CERAMIC CHIP 1000PF	5% 50V
C104	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V
C105	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C106	1-126-608-11	ELECT 330uF	20% 2V
C107	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C108	1-162-928-11	CERAMIC CHIP 120PF	5% 50V
C109	1-162-928-11	CERAMIC CHIP 120PF	5% 50V
C110	1-162-924-11	CERAMIC CHIP 56PF	5% 50V
C111	1-162-924-11	CERAMIC CHIP 56PF	5% 50V
C112	1-164-357-11	CERAMIC CHIP 1000PF	5% 50V (BOARD SUFFIX-13)
C201	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V
C203	1-164-357-11	CERAMIC CHIP 1000PF	5% 50V

Ref.No.	Part No.	Description	Remark
C204	1-135-181-21	TANTALUM CHIP 4.7uF	20% 6.3V
C205	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C206	1-126-608-11	ELECT 330uF	20% 2V
C207	1-162-957-11	CERAMIC CHIP 220PF	5% 50V
C208	1-162-928-11	CERAMIC CHIP 120PF	5% 50V
C209	1-162-928-11	CERAMIC CHIP 120PF	5% 50V
C210	1-162-924-11	CERAMIC CHIP 56PF	5% 50V
C211	1-162-924-11	CERAMIC CHIP 56PF	5% 50V
C212	1-164-357-11	CERAMIC CHIP 1000PF	5% 50V (BOARD SUFFIX-13)
C301	1-135-317-11	TANTAL. CHIP 33uF	20% 2.5V
C302	1-162-916-11	CERAMIC CHIP 12PF	5% 50V
C303	1-164-234-11	CERAMIC CHIP 1uF	10V
C304	1-135-202-21	TANTAL. CHIP 22uF	20% 4V
C305	1-164-360-11	CERAMIC CHIP 0.1uF	16V
C306	1-164-234-11	CERAMIC CHIP 1uF	10V (BOARD SUFFIX-11)
C307	1-135-202-21	TANTAL. CHIP 22uF	20% 4V
C308	1-164-234-11	CERAMIC CHIP 1uF	10V
C309	1-135-316-11	TANTAL. CHIP 22uF	20% 2.5V
C310	1-164-234-11	CERAMIC CHIP 1uF	10V
C311	1-135-317-11	TANTAL. CHIP 33uF	20% 2.5V
C312	1-135-316-11	TANTAL. CHIP 22uF	20% 2.5V
C314	1-135-210-11	TANTALUM CHIP 4.7uF	20% 10V
C315	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C316	1-164-005-11	CERAMIC CHIP 0.47uF	25V
C318	1-135-316-11	TANTAL. CHIP 22uF	20% 2.5V
C319	1-126-209-11	ELECT 100uF	20% 4V
C322	1-162-916-11	CERAMIC CHIP 12PF	5% 50V
C323	1-135-317-11	TANTAL. CHIP 33uF	20% 2.5V
C324	1-126-209-11	ELECT 100uF	20% 4V
C401	1-135-091-91	TANTAL. CHIP 1uF	20% 16V
C402	1-164-357-11	CERAMIC CHIP 1000PF	5% 50V
C403	1-162-949-11	CERAMIC CHIP 47PF	5% 50V
C404	1-164-004-11	CERAMIC CHIP 0.1uF	10% 25V
C405	1-164-677-11	CERAMIC CHIP 0.033uF	10% 16V (BOARD SUFFIX-11)
C405	1-164-360-11	CERAMIC CHIP 0.1uF	16V (BOARD SUFFIX-13)
C406	1-135-201-11	TANTALUM CHIP 10uF	20% 4V



Ref.No.	Part No.	Description	Remark
C407	1-128-393-11	ELECT	100uF 20% 10V
C408	1-135-216-11	TANTALUM CHIP	10uF 20% 10V
C411	1-127-561-11	ELECT(SOLID)	33uF 20% 10V
C412	1-135-201-11	TANTALUM CHIP	10uF 20% 4V
C413	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C415	1-126-176-11	ELECT	220uF 20% 10V
C416	1-126-246-11	ELECT CHIP	220uF 20% 4V
C417	1-164-234-11	CERAMIC CHIP	1uF 10V
C418	1-164-234-11	CERAMIC CHIP	1uF 10V
C419	1-135-168-21	TANTAL. CHIP	100uF 20% 4V
C421	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C422	1-164-677-11	CERAMIC CHIP	0.033uF 10% 16V
C423	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V
C424	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C501	1-135-317-11	TANTAL. CHIP	33uF 20% 2.5V
C503	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C504	1-162-944-11	CERAMIC CHIP	18PF 5% 50V
C505	1-164-344-11	CERAMIC CHIP	0.068uF 10% 25V
C506	1-162-941-11	CERAMIC CHIP	10PF 0.5PF 50V
C507	1-135-318-11	TANTAL. CHIP	33uF 20% 4V
C509	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C510	1-107-493-91	TANTAL. CHIP	47uF 20% 2.5V
C512	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C520	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C528	1-128-393-11	ELECT	100uF 20% 10V
C529	1-164-234-11	CERAMIC CHIP	1uF 10V (BOARD SUFFIX-11)
C529	1-135-179-11	TANTAL. CHIP	2.2uF 20% 16V (BOARD SUFFIX-13)
C530	1-126-607-11	ELECT CHIP	47uF 20% 4V
C531	1-126-607-11	ELECT CHIP	47uF 20% 4V
C532	1-126-607-11	ELECT CHIP	47uF 20% 4V
C533	1-126-607-11	ELECT CHIP	47uF 20% 4V
C536	1-164-677-11	CERAMIC CHIP	0.033uF 10% 16V
C601	1-164-473-11	CERAMIC CHIP	820PF 5% 50V (BOARD SUFFIX-11)
C601	1-164-362-11	CERAMIC CHIP	470PF 5% 50V (BOARD SUFFIX-13)
C602	1-164-357-11	CERAMIC CHIP	1000PF 5% 50V
C603	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C604	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C605	1-162-965-11	CERAMIC CHIP	0.0015uF 10% 50V
C606	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
C607	1-135-145-11	TANTALUM CHIP	0.47uF 10% 35V
C609	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
C610	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
C611	1-162-974-11	CERAMIC CHIP	0.01uF 50V
C612	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C613	1-135-201-11	TANTALUM CHIP	10uF 20% 4V (BOARD SUFFIX-11)

Ref.No.	Part No.	Description	Remark
C614	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C615	1-164-361-11	CERAMIC CHIP	0.047uF 16V
C616	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C618	1-164-173-11	CERAMIC CHIP	0.0039uF 10% 50V (BOARD SUFFIX-11)
C618	1-162-965-11	CERAMIC CHIP	0.0015uF 10% 50V (BOARD SUFFIX-13)
C619	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C620	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (BOARD SUFFIX-13)
C621	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V (BOARD SUFFIX-13)
C622	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C623	1-162-953-11	CERAMIC CHIP	100PF 5% 50V (BOARD SUFFIX-13)
C624	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C625	1-164-156-11	CERAMIC CHIP	0.1uF 25V
C626	1-164-234-11	CERAMIC CHIP	1uF 10V
C630	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C650	1-135-201-11	TANTALUM CHIP	10uF 20% 4V
C651	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C652	1-164-217-11	CERAMIC CHIP	150PF 5% 50V
C653	1-135-149-21	TANTALUM CHIP	2.2uF 20% 10V
C654	1-162-927-11	CERAMIC CHIP	100PF 5% 50V
C655	1-162-953-11	CERAMIC CHIP	100PF 5% 50V
C672	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C801	1-135-151-21	TANTALUM CHIP	4.7uF 20% 4V
C802	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C803	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C804	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C805	1-104-847-91	TANTAL. CHIP	22uF 20% 4V
C807	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C809	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C810	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C831	1-164-234-11	CERAMIC CHIP	1uF 10V
C832	1-135-201-11	TANTALUM CHIP	10uF 20% 4V
C833	1-164-360-11	CERAMIC CHIP	0.1uF 16V
< CONNECTOR >			
*CN401	1-580-712-21	CONNECTOR, BOARD TO BOARD	5P
CN403	1-695-320-81	PIN, CONNECTOR (1.5MM) (SMD)	2P
CN501	1-566-534-11	CONNECTOR, FPC (ZIF)	18P
*CN502	1-695-320-11	PIN, CONNECTOR (1.5MM) (SMD)	2P
*CN503	1-695-320-31	PIN, CONNECTOR (1.5MM) (SMD)	2P
*CN504	1-695-320-51	PIN, CONNECTOR (1.5MM) (SMD)	2P
< DIODE >			
D301	8-719-941-23	DIODE	DA204U
D302	8-719-044-74	DIODE	MA792WK



# MAIN

Ref.No.	Part No.	Description	Remark
D303	8-719-941-09	DIODE DAP202U	
D304	8-719-941-86	DIODE DAN202U	
D305	8-719-941-86	DIODE DAN202U	
D401	8-719-941-86	DIODE DAN202U	
D402	8-719-938-72	DIODE SB01-05CP	
D403	8-719-938-72	DIODE SB01-05CP	
D404	8-719-313-73	DIODE SFPB-52V	
D405	8-719-938-72	DIODE SB01-05CP	
D406	8-719-938-72	DIODE SB01-05CP	
D501	8-719-938-72	DIODE SB01-05CP	
D802	8-719-941-86	DIODE DAN202U	
D803	8-719-941-09	DIODE DAP202U	
D805	8-719-017-58	DIODE MA8068	
D807	8-719-313-73	DIODE SFPB-52V	
D809	8-719-941-09	DIODE DAP202U	
D851	8-719-987-41	LED CL-150Y-CD (BACK LIGHT)	
D852	8-719-987-41	LED CL-150Y-CD (BACK LIGHT)	
D853	8-719-987-41	LED CL-150Y-CD (BACK LIGHT)	
D854	8-719-987-41	LED CL-150Y-CD (BACK LIGHT)	
D855	8-719-987-41	LED CL-150Y-CD (BACK LIGHT)	
< FERRITE BEAD >			
FB101	1-414-135-11	INDUCTOR CHIP 0uH (BOARD SUFFIX-13)	
FB102	1-414-234-21	INDUCTOR, FERRITE BEAD (BOARD SUFFIX-13)	
FB201	1-414-135-11	INDUCTOR CHIP 0uH (BOARD SUFFIX-13)	
FB202	1-414-234-21	INDUCTOR, FERRITE BEAD (BOARD SUFFIX-13)	
FB301	1-414-135-11	INDUCTOR CHIP 0uH (BOARD SUFFIX-13)	
FB302	1-414-234-21	INDUCTOR, FERRITE BEAD (BOARD SUFFIX-13)	
FB303	1-414-234-21	INDUCTOR, FERRITE BEAD (BOARD SUFFIX-13)	
FB601	1-414-135-11	INDUCTOR CHIP 0uH	
FB602	1-414-135-11	INDUCTOR CHIP 0uH	
< IC >			
IC301	8-759-177-67	IC SM5853BF	
IC302	8-759-802-75	IC LA4533M	
IC303	8-759-177-70	IC TLV2362ID-ELL2500	
IC401	8-759-097-95	IC MB3776APNF-G-SNY-ER	
IC402	8-759-176-73	IC RS5RJ32271-T1	
IC403	8-759-177-70	IC TLV2362ID-ELL2500	
IC501	8-752-059-39	IC CXA1571N	
IC504	8-759-179-60	IC MPC17A38VMEL	
IC601	8-752-351-94	IC CXD2515Q	
IC602	8-759-179-71	IC RF5C241	
IC603	8-752-361-17	IC CXK414400TM-12V	
IC605	8-759-179-64	IC BA3890F	
IC606	8-759-177-71	IC TLC2931IDB-ELL1000	
IC801	8-752-845-09	IC CXP83916-603Q	
< JACK >			
J302	1-568-758-11	JACK (Ω REMOTE)	
J303	8-759-188-89	IC GP1F363T (OPTICAL(DIGITAL)/LINE OUT)	

Ref.No.	Part No.	Description	Remark
< COIL >			
L301	1-412-029-11	INDUCTOR CHIP 10uH	
L302	1-410-997-31	INDUCTOR CHIP 2.2uH	
L304	1-410-997-31	INDUCTOR CHIP 2.2uH	
L305	1-412-029-11	INDUCTOR CHIP 10uH	
L307	1-406-890-21	FILTER, COMMON MODE (BOARD SUFFIX-13)	
L402	1-412-622-51	INDUCTOR 10uH	
L403	1-412-630-51	INDUCTOR 47uH	
L404	1-412-029-11	INDUCTOR CHIP 10uH	
L405	1-412-029-11	INDUCTOR CHIP 10uH	
L501	1-412-029-11	INDUCTOR CHIP 10uH	
L503	1-412-039-51	INDUCTOR CHIP 100uH	
L521	1-410-980-51	INDUCTOR CHIP 1mH	
L530	1-412-039-51	INDUCTOR CHIP 100uH	
L531	1-412-039-51	INDUCTOR CHIP 100uH	
L601	1-410-997-31	INDUCTOR CHIP 2.2uH	
< LIQUID CRYSTAL DISPLAY >			
LCD801	1-810-161-11	DISPLAY PANEL, LIQUID CRYSTAL	
< TRANSISTOR >			
Q301	8-729-425-18	TRANSISTOR XN4504	
Q302	8-729-422-39	TRANSISTOR XN4404	
Q303	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q304	8-729-231-76	TRANSISTOR 2SC4116GL-TE85R	
Q305	8-729-425-18	TRANSISTOR XN4504	
Q306	8-729-902-90	TRANSISTOR FMA4	
Q307	8-729-903-10	TRANSISTOR FMW1	
Q308	8-729-904-86	TRANSISTOR 2SB1197K-Q	
Q309	8-729-903-10	TRANSISTOR FMW1	
Q310	8-729-904-86	TRANSISTOR 2SB1197K-Q	
Q311	8-729-907-39	TRANSISTOR IMD2	
Q312	8-729-402-XX	TRANSISTOR XN4112	
Q313	8-729-907-39	TRANSISTOR IMD2	
Q314	8-729-905-18	TRANSISTOR DTC144EU	
Q401	8-729-403-02	TRANSISTOR XN4212	
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	8-729-905-57	TRANSISTOR DTA124EU	
Q408	8-729-922-34	TRANSISTOR 2SD1758F5-QR	
Q409	8-729-231-76	TRANSISTOR 2SC4116GL-TE85R	
Q410	8-729-905-57	TRANSISTOR DTA124EU	
Q421	8-729-230-60	TRANSISTOR 2SA1586-YG	
Q501	8-729-904-87	TRANSISTOR 2SB1197K-R	
Q502	8-729-922-94	TRANSISTOR DTC143TU	
Q503	8-729-924-79	TRANSISTOR FMG8	
Q504	8-729-924-79	TRANSISTOR FMG8	



Ref.No.	Part No.	Description	Remark
Q505	8-729-907-39	TRANSISTOR	IMD2
Q506	8-729-231-76	TRANSISTOR	2SC4116GL-TE85R
Q602	8-729-905-61	TRANSISTOR	DTC124EU (BOARD SUFFIX-11)
Q610	8-729-905-61	TRANSISTOR	DTC124EU (BOARD SUFFIX-13)
Q671	8-729-402-84	TRANSISTOR	XN4601
Q672	8-729-905-57	TRANSISTOR	DTA124EU
Q801	8-729-905-18	TRANSISTOR	DTC144EU
Q810	8-729-231-76	TRANSISTOR	2SC4116GL-TE85R
Q851	8-729-921-73	TRANSISTOR	2SD1781K-QR
Q852	8-729-905-57	TRANSISTOR	DTA124EU
< RESISTOR >			
R101	1-216-813-11	METAL CHIP	220 5% 1/16W
R102	1-216-845-11	METAL CHIP	100K 5% 1/16W
R103	1-216-864-11	METAL CHIP	0 5% 1/16W (BOARD SUFFIX-11)
R104	1-216-793-11	METAL GLAZE	4.7 5% 1/16W
R105	1-216-796-11	METAL GLAZE	8.2 5% 1/16W
R106	1-216-821-11	METAL CHIP	1K 5% 1/16W
R107	1-216-815-11	METAL CHIP	330 5% 1/16W
R108	1-216-789-11	METAL CHIP	2.2 5% 1/16W
R109	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R110	1-216-845-11	METAL CHIP	100K 5% 1/16W
R111	1-216-295-00	METAL CHIP	0 5% 1/10W (BOARD SUFFIX-11)
R112	1-216-834-11	METAL CHIP	12K 5% 1/16W
R113	1-216-834-11	METAL CHIP	12K 5% 1/16W
R114	1-216-837-11	METAL CHIP	22K 5% 1/16W
R115	1-216-837-11	METAL CHIP	22K 5% 1/16W
R116	1-216-839-11	METAL CHIP	33K 5% 1/16W
R117	1-216-839-11	METAL CHIP	33K 5% 1/16W
R118	1-216-843-11	METAL CHIP	68K 5% 1/16W
R119	1-216-843-11	METAL CHIP	68K 5% 1/16W
R120	1-216-846-11	METAL CHIP	120K 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	1-216-864-11	METAL CHIP	0 5% 1/16W (BOARD SUFFIX-11)
R204	1-216-793-11	METAL GLAZE	4.7 5% 1/16W
R205	1-216-796-11	METAL GLAZE	8.2 5% 1/16W
R206	1-216-821-11	METAL CHIP	1K 5% 1/16W
R207	1-216-815-11	METAL CHIP	330 5% 1/16W
R208	1-216-789-11	METAL CHIP	2.2 5% 1/16W
R209	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R210	1-216-845-11	METAL CHIP	100K 5% 1/16W
R211	1-216-295-00	METAL CHIP	0 5% 1/10W (BOARD SUFFIX-11)
R212	1-216-834-11	METAL CHIP	12K 5% 1/16W
R213	1-216-834-11	METAL CHIP	12K 5% 1/16W
R214	1-216-837-11	METAL CHIP	22K 5% 1/16W
R215	1-216-837-11	METAL CHIP	22K 5% 1/16W
R216	1-216-839-11	METAL CHIP	33K 5% 1/16W

Ref.No.	Part No.	Description	Remark
R217	1-216-839-11	METAL CHIP	33K 5% 1/16W
R218	1-216-843-11	METAL CHIP	68K 5% 1/16W
R219	1-216-843-11	METAL CHIP	68K 5% 1/16W
R220	1-216-846-11	METAL CHIP	120K 5% 1/16W
R301	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R302	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R303	1-216-809-11	METAL CHIP	100 5% 1/16W
R304	1-216-809-11	METAL CHIP	100 5% 1/16W
R305	1-216-817-11	METAL CHIP	470 5% 1/16W
R306	1-216-295-00	METAL CHIP	0 5% 1/10W (BOARD SUFFIX-11)
R307	1-216-813-11	METAL CHIP	220 5% 1/16W
R308	1-216-849-11	METAL CHIP	220K 5% 1/16W
R309	1-216-833-11	METAL CHIP	10K 5% 1/16W
R310	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R311	1-216-823-11	METAL CHIP	1.5K 5% 1/16W
R312	1-216-812-11	METAL CHIP	180 5% 1/16W
R313	1-216-833-11	METAL CHIP	10K 5% 1/16W
R314	1-216-839-11	METAL CHIP	33K 5% 1/16W
R315	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R316	1-216-818-11	METAL CHIP	560 5% 1/16W
R317	1-218-718-11	METAL CHIP	12K 0.50% 1/16W
R318	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R319	1-216-821-11	METAL CHIP	1K 5% 1/16W
R320	1-218-718-11	METAL CHIP	12K 0.50% 1/16W
R321	1-216-817-11	METAL CHIP	470 5% 1/16W
R322	1-218-716-11	METAL CHIP	10K 0.50% 1/16W
R323	1-216-840-11	METAL CHIP	39K 5% 1/16W
R351	1-216-857-11	METAL CHIP	1M 5% 1/16W
R360	1-216-833-11	METAL CHIP	10K 5% 1/16W
R361	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R362	1-216-825-11	METAL CHIP	2.2K 5% 1/16W
R363	1-216-833-11	METAL CHIP	10K 5% 1/16W
R364	1-216-295-00	METAL CHIP	0 5% 1/10W (BOARD SUFFIX-11)
R401	1-216-854-11	METAL CHIP	560K 5% 1/16W
R402	1-216-827-11	METAL CHIP	3.3K 5% 1/16W
R403	1-216-824-11	METAL CHIP	1.8K 5% 1/16W
R404	1-216-805-11	METAL CHIP	47 5% 1/16W
R405	1-216-833-11	METAL CHIP	10K 5% 1/16W
R409	1-218-720-11	METAL CHIP	15K 0.50% 1/16W
R410	1-218-724-11	METAL CHIP	22K 0.50% 1/16W
R411	1-216-821-11	METAL CHIP	1K 5% 1/16W
R412	1-218-330-11	METAL CHIP	11K 0.50% 1/16W
R414	1-217-671-11	METAL CHIP	1 5% 1/10W
R415	1-217-671-11	METAL CHIP	1 5% 1/10W
R417	1-216-806-11	METAL GLAZE	56 5% 1/16W
R418	1-216-835-11	METAL CHIP	15K 5% 1/16W
R419	1-216-832-11	METAL CHIP	8.2K 5% 1/16W
R421	1-216-833-11	METAL CHIP	10K 5% 1/16W





# MAIN

Ref.No.	Part No.	Description	Remark		
R422	1-216-839-11	METAL CHIP	33K	5%	1/16W
R423	1-216-846-11	METAL CHIP	120K	5%	1/16W
R424	1-218-734-11	METAL CHIP	56K	0.50%	1/16W
R425	1-218-724-11	METAL CHIP	22K	0.50%	1/16W
R427	1-216-857-11	METAL CHIP	1M	5%	1/16W
R428	1-216-857-11	METAL CHIP	1M	5%	1/16W
R429	1-216-857-11	METAL CHIP	1M	5%	1/16W
R430	1-216-857-11	METAL CHIP	1M	5%	1/16W
R431	1-216-845-11	METAL CHIP	100K	5%	1/16W
R436	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R491	1-216-864-11	METAL CHIP	0	5%	1/16W (BOARD SUFFIX-11)
R491	1-216-295-00	METAL CHIP	0	5%	1/10W (BOARD SUFFIX-13)
R492	1-216-864-11	METAL CHIP	0	5%	1/16W (BOARD SUFFIX-11)
R492	1-216-295-00	METAL CHIP	0	5%	1/10W (BOARD SUFFIX-13)
R493	1-216-864-11	METAL CHIP	0	5%	1/16W (BOARD SUFFIX-11)
R493	1-216-295-00	METAL CHIP	0	5%	1/10W (BOARD SUFFIX-13)
R501	1-217-671-11	METAL CHIP	1	5%	1/10W
R502	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R503	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R504	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R505	1-216-857-11	METAL CHIP	1M	5%	1/16W
R506	1-216-841-11	METAL CHIP	47K	5%	1/16W
R507	1-216-839-11	METAL CHIP	33K	5%	1/16W
R508	1-216-843-11	METAL CHIP	68K	5%	1/16W
R509	1-218-332-11	METAL GLAZE	130K	5%	1/16W
R510	1-216-850-11	METAL CHIP	270K	5%	1/16W
R511	1-216-845-11	METAL CHIP	100K	5%	1/16W
R512	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W
R514	1-216-833-11	METAL CHIP	10K	5%	1/16W
R515	1-218-739-11	METAL CHIP	91K	0.50%	1/16W
R516	1-216-843-11	METAL CHIP	68K	5%	1/16W
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W
R518	1-216-841-11	METAL CHIP	47K	5%	1/16W
R519	1-216-864-11	METAL CHIP	0	5%	1/16W
R521	1-218-286-11	METAL GLAZE	91	5%	1/16W
R522	1-216-864-11	METAL CHIP	0	5%	1/16W
R528	1-218-735-11	METAL CHIP	62K	0.50%	1/16W
R529	1-218-735-11	METAL CHIP	62K	0.50%	1/16W
R530	1-218-735-11	METAL CHIP	62K	0.50%	1/16W
R531	1-218-735-11	METAL CHIP	62K	0.50%	1/16W
R532	1-218-744-11	METAL CHIP	150K	0.50%	1/16W
R533	1-218-744-11	METAL CHIP	150K	0.50%	1/16W
R541	1-216-845-11	METAL CHIP	100K	5%	1/16W
R542	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R571	1-216-864-11	METAL CHIP	0	5%	1/16W (BOARD SUFFIX-11)

Ref.No.	Part No.	Description	Remark		
R571	1-216-295-00	METAL CHIP	0	5%	1/10W (BOARD SUFFIX-13)
R601	1-216-835-11	METAL CHIP	15K	5%	1/16W
R602	1-216-835-11	METAL CHIP	15K	5%	1/16W
R603	1-216-845-11	METAL CHIP	100K	5%	1/16W
R604	1-216-839-11	METAL CHIP	33K	5%	1/16W
R605	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R606	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R607	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R608	1-216-857-11	METAL CHIP	1M	5%	1/16W
R609	1-216-833-11	METAL CHIP	10K	5%	1/16W
R610	1-216-864-11	METAL CHIP	0	5%	1/16W
R611	1-218-735-11	METAL CHIP	62K	0.50%	1/16W
R612	1-216-809-11	METAL CHIP	100	5%	1/16W
R613	1-216-857-11	METAL CHIP	1M	5%	1/16W (BOARD SUFFIX-11)
R614	1-216-865-11	METAL CHIP	3K	5%	1/16W (BOARD SUFFIX-11)
R614	1-216-830-11	METAL CHIP	5.6K	5%	1/16W (BOARD SUFFIX-13)
R615	1-218-740-11	METAL CHIP	100K	0.50%	1/16W
R616	1-216-833-11	METAL CHIP	10K	5%	1/16W (BOARD SUFFIX-13)
R617	1-216-833-11	METAL CHIP	10K	5%	1/16W (BOARD SUFFIX-13)
R621	1-216-841-11	METAL CHIP	47K	5%	1/16W
R631	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R650	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R651	1-216-835-11	METAL CHIP	15K	5%	1/16W (BOARD SUFFIX-11)
R651	1-216-832-11	METAL CHIP	8.2K	5%	1/16W (BOARD SUFFIX-13)
R652	1-218-740-11	METAL CHIP	100K	0.50%	1/16W
R653	1-216-864-11	METAL CHIP	0	5%	1/16W
R654	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R655	1-216-822-11	METAL CHIP	1.2K	5%	1/16W
R656	1-216-845-11	METAL CHIP	100K	5%	1/16W
R660	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R661	1-218-740-11	METAL CHIP	100K	0.50%	1/16W
R663	1-216-065-00	METAL CHIP	4.7K	5%	1/10W
R665	1-216-833-11	METAL CHIP	10K	5%	1/16W
R671	1-216-809-11	METAL CHIP	100	5%	1/16W
R672	1-216-841-11	METAL CHIP	47K	5%	1/16W
R673	1-216-845-11	METAL CHIP	100K	5%	1/16W
R674	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R675	1-216-849-11	METAL CHIP	220K	5%	1/16W
R676	1-216-841-11	METAL CHIP	47K	5%	1/16W
R677	1-216-837-11	METAL CHIP	22K	5%	1/16W
R801	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-218-345-11	METAL CHIP	9.1K	0.50%	1/16W
R803	1-216-821-11	METAL CHIP	1K	5%	1/16W
R804	1-216-821-11	METAL CHIP	1K	5%	1/16W



Ref.No.	Part No.	Description	Remark		
R805	1-216-821-11	METAL CHIP	1K	5%	1/16W
R806	1-216-845-11	METAL CHIP	100K	5%	1/16W
R808	1-216-857-11	METAL CHIP	1M	5%	1/16W
R811	1-218-716-11	METAL CHIP	10K	0.50%	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
R814	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R815	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R816	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R817	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R819	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R821	1-216-837-11	METAL CHIP	22K	5%	1/16W
R822	1-216-837-11	METAL CHIP	22K	5%	1/16W
R823	1-216-837-11	METAL CHIP	22K	5%	1/16W
R824	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R825	1-216-857-11	METAL CHIP	1M	5%	1/16W
R826	1-216-857-11	METAL CHIP	1M	5%	1/16W
R827	1-216-864-11	METAL CHIP	0	5%	1/16W
R829	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R832	1-216-857-11	METAL CHIP	1M	5%	1/16W
R835	1-216-861-11	METAL CHIP	2.2M	5%	1/16W
R836	1-216-854-11	METAL CHIP	560K	5%	1/16W
R841	1-218-716-11	METAL CHIP	10K	0.50%	1/16W
R842	1-218-738-11	METAL CHIP	82K	0.50%	1/16W
R843	1-216-295-00	METAL CHIP	0	5%	1/10W
R844	1-216-857-11	METAL CHIP	1M	5%	1/16W
R845	1-216-857-11	METAL CHIP	1M	5%	1/16W
R846	1-216-821-11	METAL CHIP	1K	5%	1/16W
R851	1-216-804-11	METAL CHIP	39	5%	1/16W
R852	1-216-804-11	METAL CHIP	39	5%	1/16W
R853	1-216-804-11	METAL CHIP	39	5%	1/16W
R854	1-216-804-11	METAL CHIP	39	5%	1/16W
R855	1-216-804-11	METAL CHIP	39	5%	1/16W
< VARIABLE RESISTOR >					
RV301	1-223-469-11	RES, VAR, CARBON 10K/10K (VOLUME)			
RV650	1-238-088-11	RES, ADJ, CERMET	2.2K		
< SWITCH >					
S301	1-571-506-41	SWITCH, SLIDE (AVLS)			
S401	1-692-532-21	SWITCH, PUSH (1 KEY) (BATTERY DETECT)			
S802	1-692-688-11	SWITCH, SLIDE (RESUME)			
S810	1-692-373-21	SWITCH, PUSH (1 KEY) (DOOR SWITCH)			
S811	1-571-275-31	SWITCH, SLIDE (HOLD)			
S820	1-572-438-11	SWITCH, TACTIL (▶  )			
S821	1-572-438-11	SWITCH, TACTIL (■)			
S822	1-572-438-11	SWITCH, TACTIL (▶▶)			
S823	1-572-438-11	SWITCH, TACTIL (◀◀)			
S824	1-572-438-11	SWITCH, TACTIL (REPEAT/ENTER)			

Ref.No.	Part No.	Description	Remark		
S825	1-572-438-11	SWITCH, TACTIL (PLAY MODE)			
S826	1-572-438-11	SWITCH, TACTIL (DSP)			
S828	1-572-438-11	SWITCH, TACTIL (ESP)			
< TRANSFORMER >					
T401	1-423-636-11	TRANSFORMER, DC-DC CONVERTER			
< THERMISTOR >					
TH601	1-810-235-11	THERMISTOR, POSITIVE (BOARD SUFFIX-11)			
TH601	1-810-236-11	THERMISTOR, POSITIVE (BOARD SUFFIX-13)			
< VIBRATOR >					
X301	1-760-023-21	VIBRATOR, CRYSTAL (16.9MHz)			
X801	1-579-063-21	VIBRATOR, CERAMIC (4.19MHz)			
*****					
*	1-649-681-11	TS BOARD (MAIN BOARD SUFFIX-11)			
*****					
< CAPACITOR >					
C2	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
< TRANSISTOR >					
Q1	8-729-905-61	TRANSISTOR	DTC124EU		
< RESISTOR >					
R1	1-216-833-11	METAL CHIP	10K	5%	1/16W
R2	1-216-833-11	METAL CHIP	10K	5%	1/16W
*****					
MISCELLANEOUS					
*****					
59	1-537-572-11	TERMINAL, BATTERY			
△102	8-848-295-21	PICK-UP, OPTICAL KSS-331C			
106	1-948-418-21	HARNESS			
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)			
△	1-467-011-11	ADAPTOR, AC (AC-E455) (E, JEW)			
△	1-467-013-11	ADAPTOR, AC (AC-E455) (UK)			

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



Ref.No.	Part No.	Description	Remark
	1-467-196-11	REMOTE CONTROL UNIT (RM-DM14L) (EXCEPT US)	
	1-528-444-11	BATTERY PACK (BP-DM10) (UK, E, AUS, JEW)	
	1-528-444-21	BATTERY PACK (BP-DM10) (AEC, AEL)	
	1-528-444-31	BATTERY PACK (BP-DM10) (US)	
	1-550-920-11	BATTERY CASE	
	1-555-658-21	CORD, CONNECTION (EXCEPT JEW)	
△	1-569-007-11	ADAPTER, CONVERSION 2P (E, JEW)	
	3-757-179-01	MANUAL, INSTRUCTION (JAPANESE) (JEW)	
	3-757-179-11	MANUAL, INSTRUCTION (SPANISH) (AEC, AEL, E, JEW)	
	3-757-179-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-757-179-31	MANUAL, INSTRUCTION (FRENCH) (AEC, AEL, E, JEW)	
	3-757-179-41	MANUAL, INSTRUCTION (DUTCH) (AEC)	
	3-757-179-51	MANUAL, INSTRUCTION (SWEDISH) (AEC)	
	3-757-179-61	MANUAL, INSTRUCTION (PORTUGUESE) (AEC)	
	3-757-179-71	MANUAL, INSTRUCTION (GERMAN) (AEL)	
	3-757-179-81	MANUAL, INSTRUCTION (ITALIAN) (AEL)	
	3-757-179-91	MANUAL, INSTRUCTION (ENGLISH) (AEC, AEL, UK, E, AUS, JEW)	
	3-757-214-41	MANUAL, INSTRUCTION (JEW)	
*	4-957-230-01	CUSHION (UPPER)	
	4-959-686-01	CASE, CARRYING	
	4-959-777-01	INDIVIDUAL CARTON (US)	
	4-959-780-01	CUSHION (LOWER) (US)	
	4-959-782-01	INDIVIDUAL CARTON (AEC, AEL, UK, E, JEW)	
	4-959-784-01	CUSHION (LOWER) (AEC, AEL, UK, E, JEW )	
	4-959-785-01	CUSHION (LOWER) (AUS)	
	4-959-786-01	INDIVIDUAL CARTON (AUS)	
	8-953-487-92	HEADPHONE MDR-14B/2 SET (US)	
	8-953-537-91	HEADPHONE MDR-E741MP//K1 SET (EXCEPT US)	

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**HARDWARE LIST**  
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- #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.

Part No.	Part No.	Description	Notes
	1-60-04-0	WHEEL COVER, INT (24-0004)	
		(REPT 02)	
	1-60-04-1	WHEEL HUB (24-0005)	U.S.L. 02, 03, 04
	1-60-04-2	WHEEL HUB (24-0005)	U.S.L. 05
	1-60-04-3	WHEEL HUB (24-0005)	00
	1-60-04-4	WHEEL HUB	
	1-60-04-5	WHEEL COVER (REPT 02)	
	1-60-04-6	WHEEL COVER (24-0006)	U.S.L. 02, 03, 04
	1-60-04-7	WHEEL COVER (24-0006)	U.S.L. 05
	1-60-04-8	WHEEL COVER (24-0006)	00
	1-60-04-9	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04
	1-60-04-10	WHEEL COVER (24-0006)	U.S.L. 05
	1-60-04-11	WHEEL COVER (24-0006)	00
	1-60-04-12	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-13	WHEEL COVER (24-0006)	00
	1-60-04-14	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-15	WHEEL COVER (24-0006)	00
	1-60-04-16	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-17	WHEEL COVER (24-0006)	00
	1-60-04-18	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-19	WHEEL COVER (24-0006)	00
	1-60-04-20	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-21	WHEEL COVER (24-0006)	00
	1-60-04-22	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-23	WHEEL COVER (24-0006)	00
	1-60-04-24	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-25	WHEEL COVER (24-0006)	00
	1-60-04-26	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-27	WHEEL COVER (24-0006)	00
	1-60-04-28	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-29	WHEEL COVER (24-0006)	00
	1-60-04-30	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-31	WHEEL COVER (24-0006)	00
	1-60-04-32	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-33	WHEEL COVER (24-0006)	00
	1-60-04-34	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-35	WHEEL COVER (24-0006)	00
	1-60-04-36	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-37	WHEEL COVER (24-0006)	00
	1-60-04-38	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-39	WHEEL COVER (24-0006)	00
	1-60-04-40	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-41	WHEEL COVER (24-0006)	00
	1-60-04-42	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-43	WHEEL COVER (24-0006)	00
	1-60-04-44	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-45	WHEEL COVER (24-0006)	00
	1-60-04-46	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-47	WHEEL COVER (24-0006)	00
	1-60-04-48	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-49	WHEEL COVER (24-0006)	00
	1-60-04-50	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-51	WHEEL COVER (24-0006)	00
	1-60-04-52	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-53	WHEEL COVER (24-0006)	00
	1-60-04-54	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-55	WHEEL COVER (24-0006)	00
	1-60-04-56	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-57	WHEEL COVER (24-0006)	00
	1-60-04-58	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-59	WHEEL COVER (24-0006)	00
	1-60-04-60	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-61	WHEEL COVER (24-0006)	00
	1-60-04-62	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-63	WHEEL COVER (24-0006)	00
	1-60-04-64	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-65	WHEEL COVER (24-0006)	00
	1-60-04-66	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-67	WHEEL COVER (24-0006)	00
	1-60-04-68	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-69	WHEEL COVER (24-0006)	00
	1-60-04-70	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-71	WHEEL COVER (24-0006)	00
	1-60-04-72	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-73	WHEEL COVER (24-0006)	00
	1-60-04-74	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-75	WHEEL COVER (24-0006)	00
	1-60-04-76	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-77	WHEEL COVER (24-0006)	00
	1-60-04-78	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-79	WHEEL COVER (24-0006)	00
	1-60-04-80	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-81	WHEEL COVER (24-0006)	00
	1-60-04-82	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-83	WHEEL COVER (24-0006)	00
	1-60-04-84	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-85	WHEEL COVER (24-0006)	00
	1-60-04-86	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-87	WHEEL COVER (24-0006)	00
	1-60-04-88	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-89	WHEEL COVER (24-0006)	00
	1-60-04-90	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-91	WHEEL COVER (24-0006)	00
	1-60-04-92	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-93	WHEEL COVER (24-0006)	00
	1-60-04-94	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-95	WHEEL COVER (24-0006)	00
	1-60-04-96	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-97	WHEEL COVER (24-0006)	00
	1-60-04-98	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05
	1-60-04-99	WHEEL COVER (24-0006)	00
	1-60-04-100	WHEEL COVER (24-0006)	U.S.L. 01, 02, 03, 04, 05

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**HARDWARE LIST**  
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- 1-60-04-100 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05  
 1-60-04-101 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05  
 1-60-04-102 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05  
 1-60-04-103 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05  
 1-60-04-104 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05  
 1-60-04-105 WHEEL COVER (24-0006) U.S.L. 01, 02, 03, 04, 05

The components identified by  
 dash 00 in column (4) with dash  
 00 are identified as either  
 surplus items with serial number  
 specified.