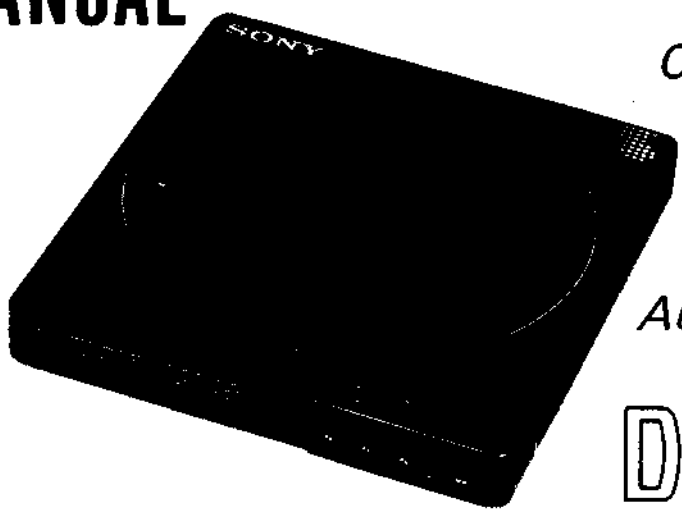
D-25/250

SERVICE MANUAL



US Model
Canadian Model
D-25

AEP Model
UK Model
E Model
Australian Model
D-250

Discman

SPECIFICATIONS

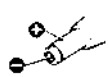
CD section	
System	Compact disc digital audio system
Laser diode properties	Material: GaAlAs Wavelength: 780 nm Emission duration: Continuous Laser output: Less than 44.6 μW * This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.
Error correction	Sony Super Strategy Cross Interleave Reed Solomon Code
D-A conversion	16-bit linear, 4 fs digital filter
Frequency response	20–20,000 Hz ±1 dB *
Dynamic range	More than 90 dB *
Signal-to-noise ratio	More than 85 dB
Wow and flutter	Below measurable limit *
Outputs (at 9 V input level)	Line output (stereo minijack) Output level 0.7 V rms at 50 kilohms Load impedance over 10 kilohms Headphones (stereo minijack) 9 mW + 9 mW at 32 ohms

* Measured by EIAJ CP-307

* Measured by EIAJ CP-307

General	
Power requirements	Supplied rechargeable battery pack BP-2 or BP-100 (optional) DC IN 9 V jack accepts: Supplied AC power adaptor Sony CPM-100P car mount plate (optional) or Sony DCC-120A car battery cord (optional) for use on 12 V car battery
Power consumption	1.9 W DC
Dimension	Approx. 125.8 × 20.8 × 134.6 mm (5 × 27/32 × 5 3/8 in.) (w/h/d) not incl. inclined part (depth), projecting parts and controls Approx. 127.3 × 24.1 × 136.2 mm (5 1/8 × 31/32 × 5 3/8 in.) (w/h/d) incl. projecting parts and controls
Weight	Approx. 380 g (13.5 oz), not incl. rechargeable battery Approx. 460 g (1 lb) incl. rechargeable battery
Supplied accessories	AC power adaptor (1) Rechargeable battery pack (1) Carrying case (1) Connecting cord (1) (stereo miniplug ⟷ two phono plugs)

Note: Use only the supplied AC power adaptor or the recommended car battery cord manufactured by Sony. Polarity of the plugs of other manufacturers may be different.



MICROFILM

CAUTION

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

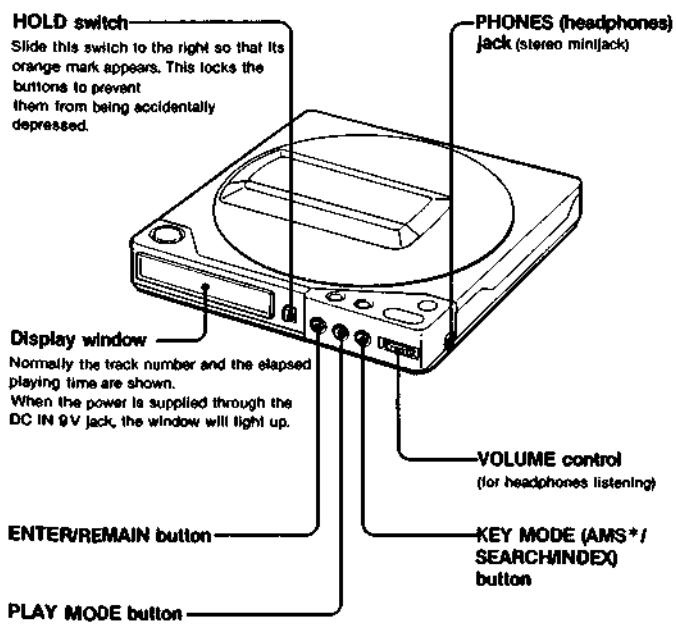
COMPACT DISC COMPACT PLAYER

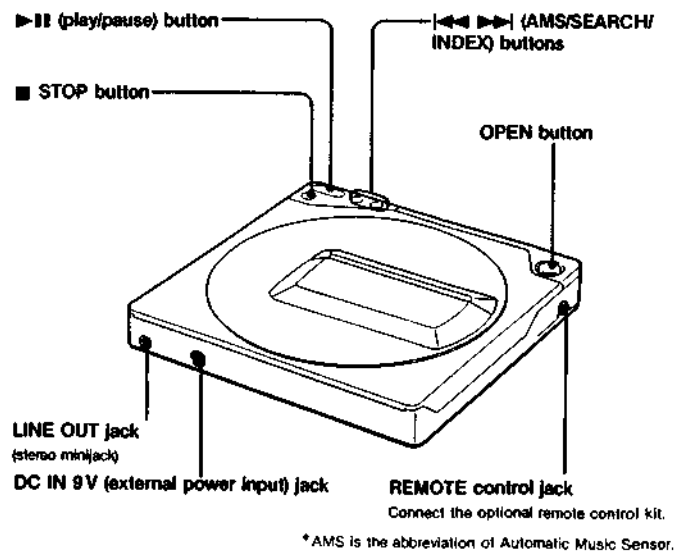
SONY®

TABLE OF CONTENTS

SECTION 1
GENERAL

Location and Function of Controls





*AMS is the abbreviation of Automatic Music Sensor.

SECTION 2
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK

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.

Flexible Circuit Board Repairing

1. Keep the temperature of the soldering iron at 270° ± 10°C during repairing.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not 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 par 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: IC501 (9) pin
  When checking FOK, remove the lead wire to disc motor and unsolder and open IC801 (24) pin.
- S carve P-to-P value: 2.95 Vp-p
- Adjusted part for focus gain adjustment: RV505
- RF signal P-to-P value: 0.75 – 1.4 Vp-p
- Traverse signal P-to-P value: 1.8 Vp-p
- The grating holder can not repair.
- Adjusted part for tracking gain adjustment: RV501

SAFETY-RELATED COMPONENT WARNING!!

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

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

NOTES ON LASER DIODE EMISSION CHECK

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

Laser Diode Check Procedure

The laser diode on this set will not emit unless the top panel is closed and S901 (leaf SW 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 UPF.

Procedure 1 (service mode or normal operation)
Check the laser diode emission with the eye.

1. Open upper panel.
2. S901 on as Fig. 1.
   (In service mode, this operation is not necessary.)
3. Press the ▶II key.
   (In service mode, this operation is not necessary.)
4. Observe the objective lens and confirm that the laser diode is emitting light. At this time, the laser diode goes on about 10 seconds due to focus serarch. If it does not, APC circuit or UPF is defective.

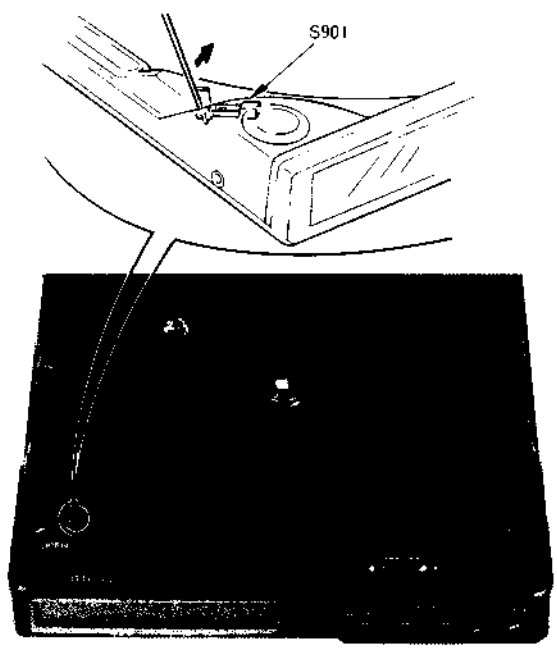
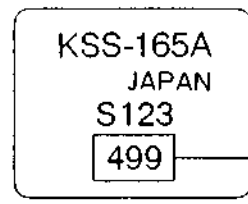


Fig. 1 Turning S901 on

Procedrue 2 (service mode or normal operation)
Check by the curent with flows in the laser diode.

1. Close the top panel.
2. Remove the main board and read the current value on the label affixed to the UPF.
   (Label on UPF)



   The current value varies with the set.
3. Connect a VOM as shown in Fig. 2.
4. Press the ▶II key.
5. Calculate the current by the VOM reading.
   VOM reading (V) ÷ 10 = current (A)
   ex. VOM reading = 0.49 V
   0.49 ÷ 10 = 0.049 (A) = 49 (mA)
6. Confirm that the ammeter reading is within the range given below.
   value on label $^{+5}_{-11}$ mA (25°C)
   variation relative to temperature:
   0.4 mA/°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 or UPF is defective.

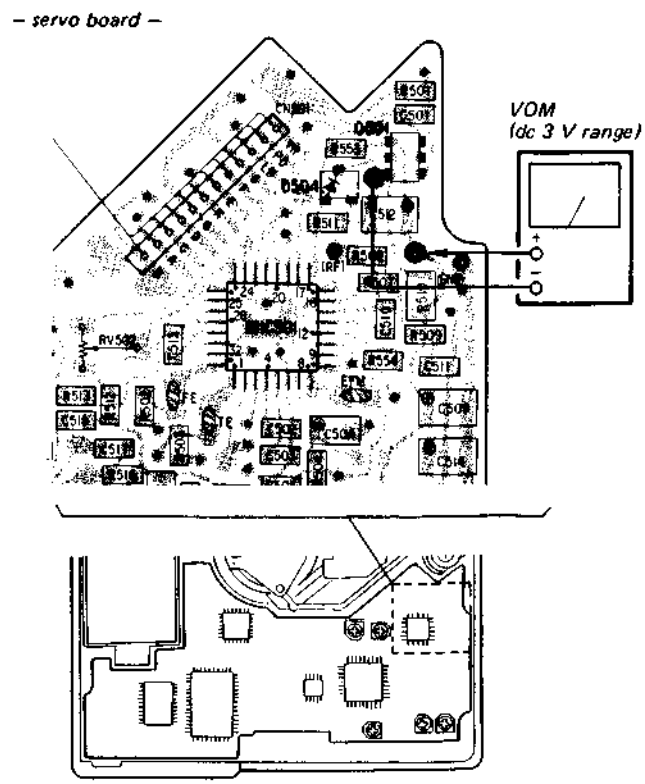
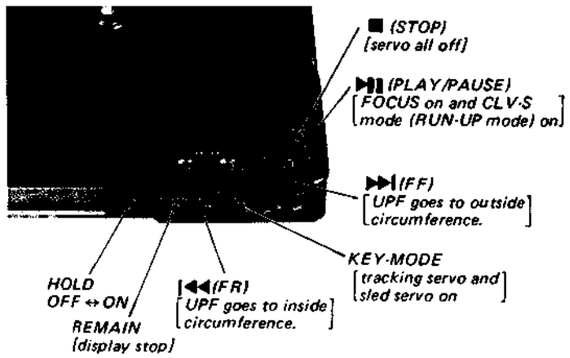


Fig. 2 VOM Connection

SERVICE MODE (service program)

This set has built-in service program in the microcomputer as usual sets.
The operation method of service program is explained below.

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



Be sure to set HOLD switch OFF.
If not key inputs can not be operated.

Fig. 3 Key Positions

Step 1 (Service Mode setting method)

1. Turn the HOLD switch OFF with the external power supply not plugged in (no power applied to set) and press the ▶II key.
2. Solder jumper TEST point.
   (IC801 pin (9) (BAT-E) pin is grounded.
3. Plug in external power supply.
   This puts the set into service mode.

Step 2 (Service Mode operation)

1. When service mode is set, the display will change 6 times, and those 6 changes will be repeated over and over.
   With this the LCD display should be present in service mode. Even if LCD does not display, other operations will be performed.
2. When ▶▶I or I◀◀ key is pressed, the UPF moves to the inside or outside circumference. Tracking servo and sled servo go off when this is done, so press KEY-MODE to turn on the tracking servo if necessary.
3. When REMAIN is pressed, the display stops. When REMAIN is released, the display continues to change. This allows check of each segment.
4. When ▶II key is pressed, CLV-S (pull-in mode) starts while performing focus search. When there is no disc installed, focus search is repeated several times while disc motor is rotating.
5. When KEY-MODE is pressed, tracking servo, sled servo and CLV-A (servo during PLAY) go ON.
6. When 4 and 5 are performed, the disc begins to play. At this time, the top panel should be closed and S901 are to be ON.
7. All servo (focus, tracking, sled and spindle) go off when ■ key is pressed. But disc motor continues rotating for a while by inartia.

Step 3 (Service Mode release)

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

— main board —

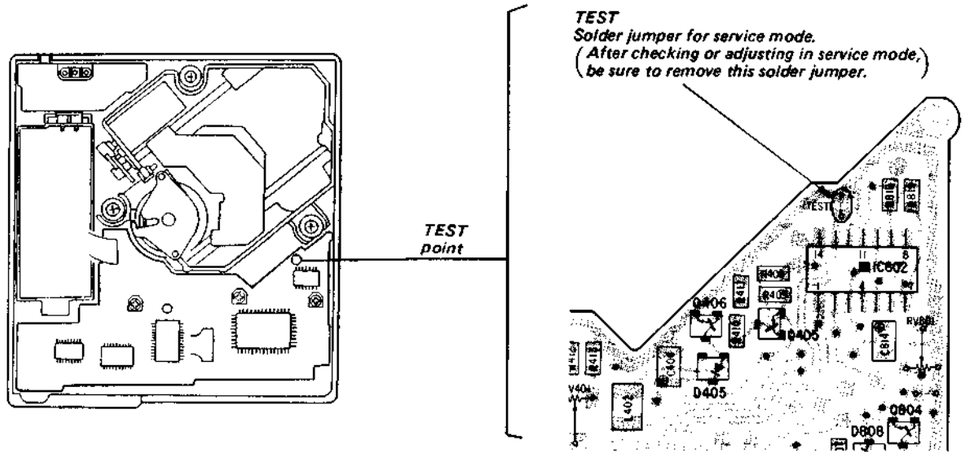


Fig. 4 TEST Point Position

SECTION 3
ELECTRICAL ADJUSTMENTS

Notes on Adjustment

1. Perform adjustments except for RECHARGEABLE VOLTAGE ADJUSTMENT and BATTERY DISPLAY ADJUSTMENT in service mode. Be sure to release service mode after completing adjustment.
   (Refer to "Service Mode (service program)" on page 5.)
2. Perform adjustments in the order given.
3. Use YEDS-18 disc (part No.: 3-702-101-01) unless otherwise indicated.
4. Power supply voltage: DC 9 V
   HOLD switch: OFF

PREPARATION

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

- **Sled Motor Check**

1. Press the OPEN button and open the top panel.
2. Press the ▶▶I , I◀◀ keys and make sure that the UPF moves smoothly, without catching, from the inmost → outmost → inmost circumference.
   ▶▶I : UPF moves outward
   I◀◀ : UPF moves inward

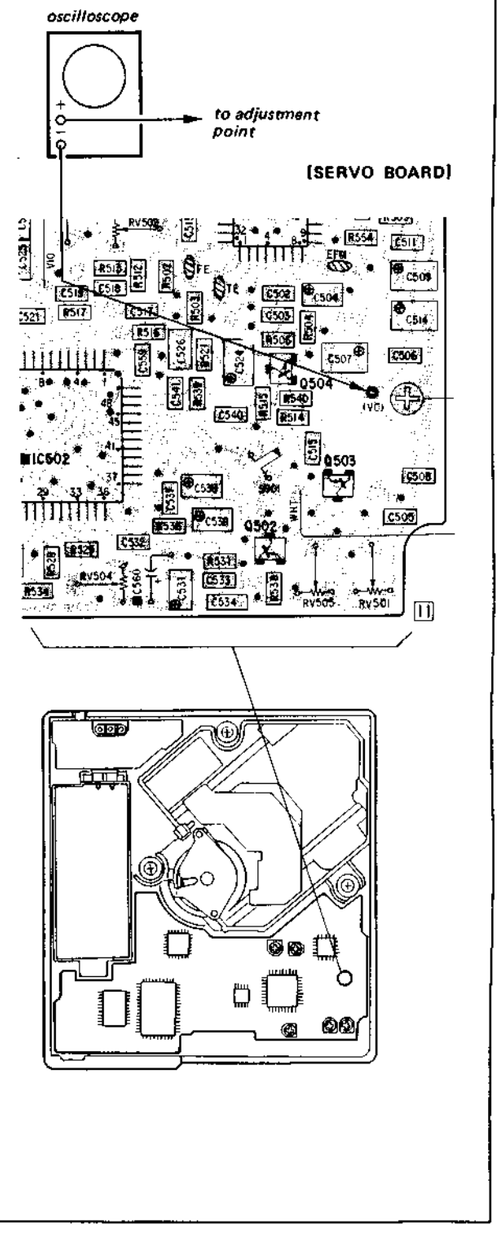
- **Focus Search Check**

1. Press the OPEN button and open the top panel.
2. Press the ▶II key. (Focus search is performed continuously.)
3. Observe the UPF objective lens and check that it moves smoothly up and down with no catching or noises.
4. Press the ■ key.
   Check that focus search operation stops. If it does not stop, press the ■ key again longer than before. But disc motor continues rotating for a while by inartia.

VC (1/2 Vcc) Connecting Point

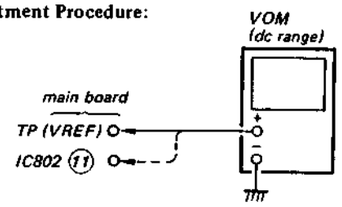
FOCUS BIAS ADJUSTMENT
TRACKING BALANCE ADJUSTMENT

When the adjustments above are performed, connect the ⊖ side of oscilloscope to the point below.



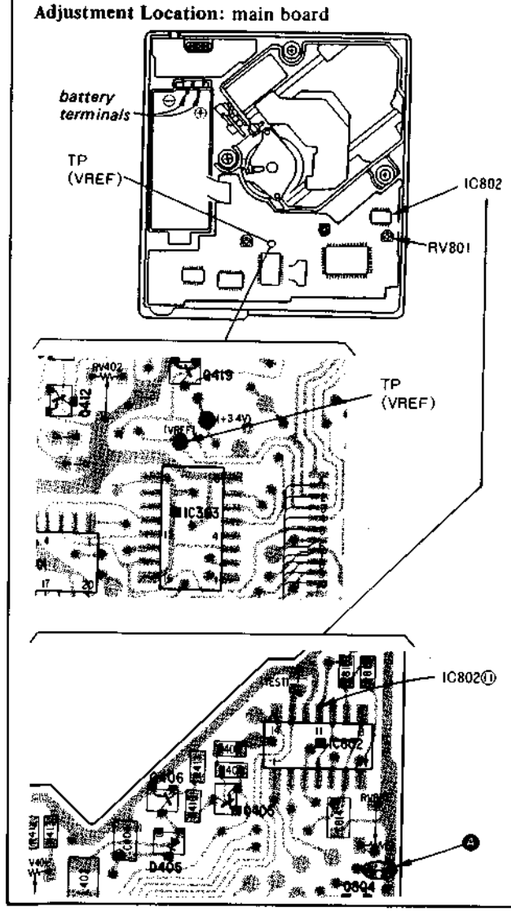
Battery Display Adjustment

Adjustment Procedure:



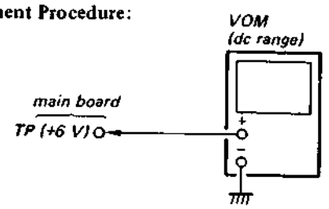
1. Apply dc +3.5 V to terminals for bult-in battery (BP-2).
2. Insert the disc (YEDS-18) and put the set into play mode.
3. Adjust RV801 so that main board IC802 (11) voltage and TP (VREF) voltage are equal.
4. If IC802 (11) voltage is heigher than TP (VREF) voltage when turning the RV801 fully counter-clockwise, short the jumper point (A) as shown below and adjust RV801.

Adjustment Location: main board



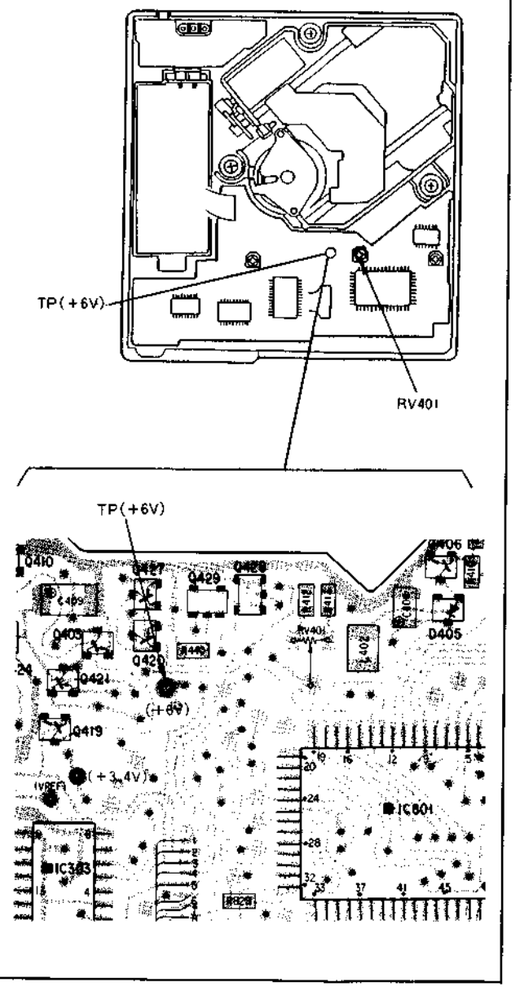
+6 V Adjustment

Adjustment Procedure:



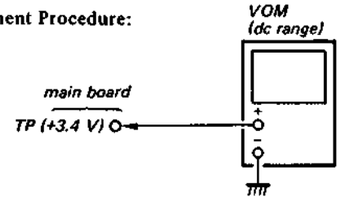
1. Put the set into service mode (see page 5).
2. Connect the VOM to main board TP (+6 V).
3. Adjust RV401 for +6 ±0.1 V reading on the VOM.
4. After adjustment, release service mode (see page 5).

Adjustment Location: main board



+3.4 V Adjustment

Adjustment Procedure:



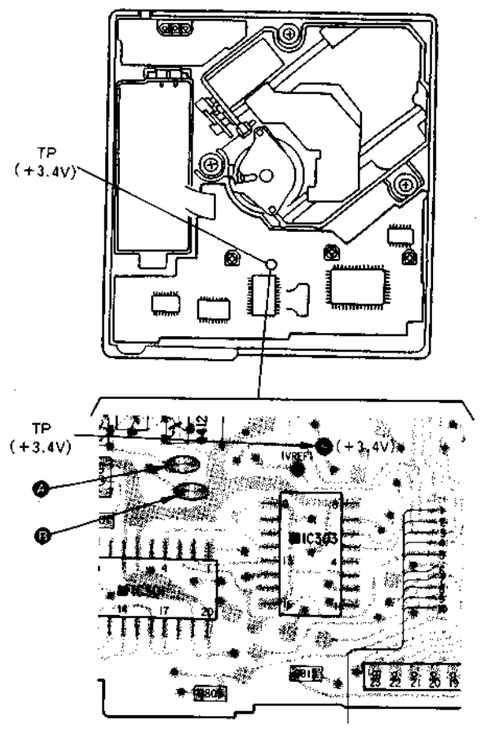
1. Put the set into service mode (see page 5).
2. Connect the VOM to main board test point TP (+3.4 V).
3. Adjust the pattern connecting (Ⓐ or Ⓑ) to obtain 3.4 to 3.55 V reading on the VOM.

pattern connection		VOM reading
Ⓐ	Ⓑ	
O	X	down
X	X	
X	O	
O	O	up

O: short X: open

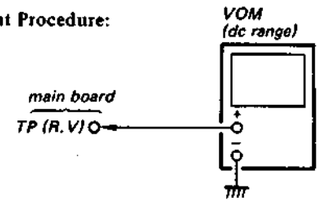
4. After adjustment, release service mode (see page 5).

Adjustment Location: main board



Rechargeable Voltage Adjustment

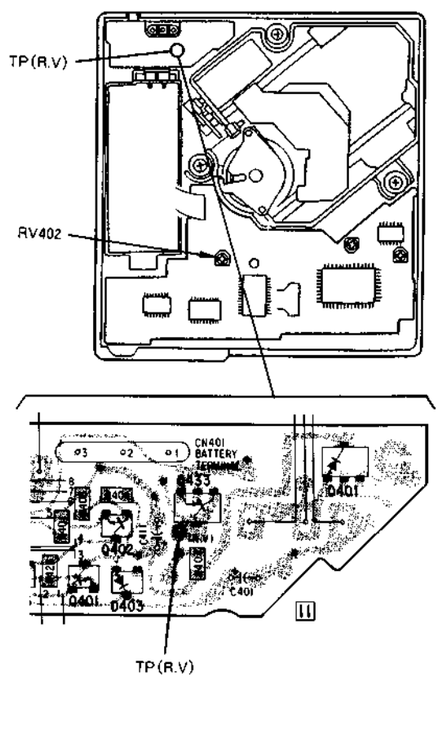
Adjustment Procedure:



1. Connect the VOM to main board test point TP (R.V).
2. Apply DC 9 V with requrated dc power supply from external power jack CN401.
3. Adjust RV402 for 7.05 – 7.5 V reading on the VOM.

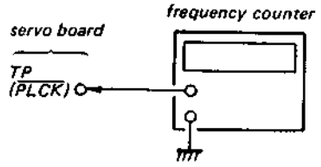
Note: Measure after the VOM reading becomes stable.

Adjustment Location: main board



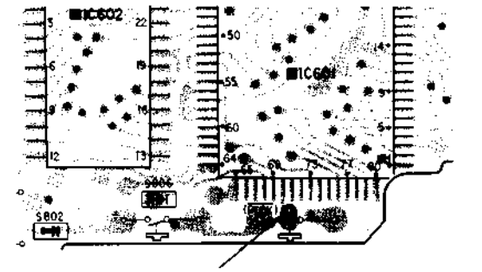
PLL Free Run Frequency Check and Adjustment

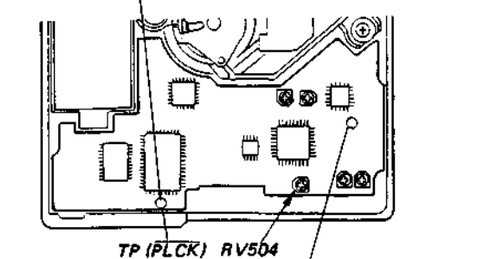
Check/Adjustment Procedure:



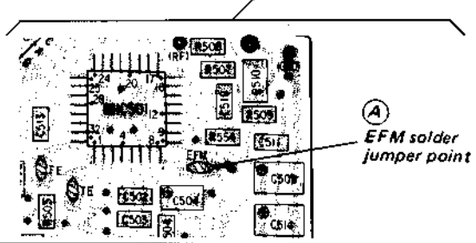
1. Disconnect the jumper point Ⓐ (EFM) in the diagram below.
2. Connect a frequency counter to servo board test point TP ($\overline{\text{PLCK}}$).
3. Put the set into service mode (see page 5).
4. Check that the frequency counter reading is 4.3218 ±0.01 MHz. If not, adjust RV504 so that it is 4.3218 ±0.01 MHz.
5. After adjustment, release service mode (see page 5).
6. Short the jumper point shorted in step 1.

Check/Adjustment Location: servo board





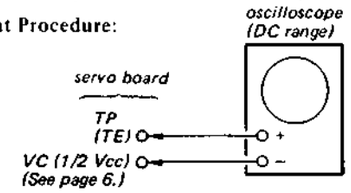
Ⓐ EFM solder jumper point
(Disconnect for checking and adjustment. Short after checking and adjustment.)



Tracking Balance Adjustment

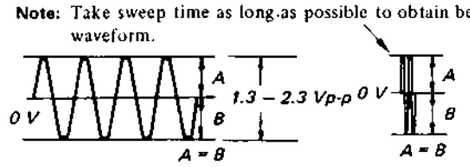
Conditions:
The set should be placed either horizontally.

Adjustment Procedure:



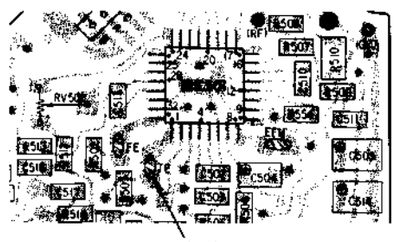
1. Connect the oscilloscope to servo board TP (TE).
2. Put the set into service mode (see page 5).
3. Press the ▶▶| and |◀◀ keys to move the UPF to the center.
4. Insert the disc (YEDS-18) and close the top panel.
5. Press the ▶II key.
   (It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF.)
6. Adjust RV502 so that the oscilloscope waveform is symmetrical on the top and bottom in relation to 0 V.

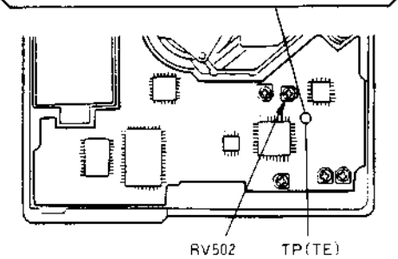
   Note: Take sweep time as long as possible to obtain best waveform.



7. Unplug the external power supply to stop spindle motor from rotating.
8. After adjustment, release service mode (see page 5).

Adjustment Location: servo board

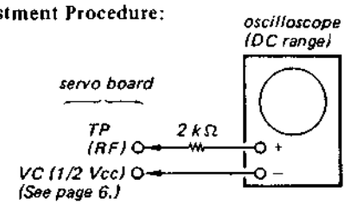


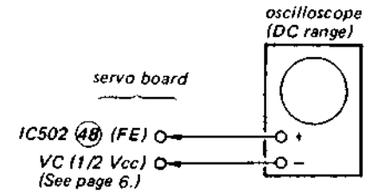


Focus Bias Adjustment

Conditions:
The set should be placed either horizontally.

Adjustment Procedure:

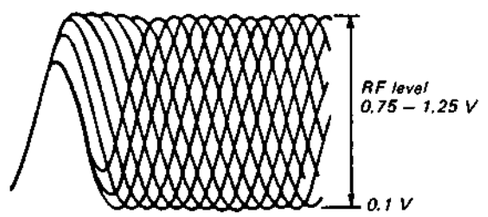




1. Put the set into service mode (see page 5).
2. Connect the oscilloscope to servo board test point TP (RF).
3. Press the ▶▶| and |◀◀ keys to move the UPF to the center. (Move the UPF to the music area on the disc to enable easy visibility of the eye pattern).
4. Insert the disc (YEDS-18) and close the top panel.
5. Press the ▶II key.
   (It will go from focus search to focus on, and CLV pull-in mode state. Tracking and sled are OFF.)
6. Press the KEY-MODE button. (Tracking and sled go ON.)
7. Adjust RV503 so that the oscilloscope waveform eye pattern is good. 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: 200 mV
  TIME/DIV: 500 nS



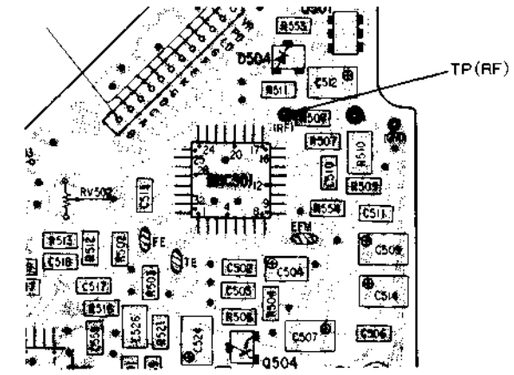
When observing the eye pattern, set the oscilloscope for AC range and raise vertical sensitivity.

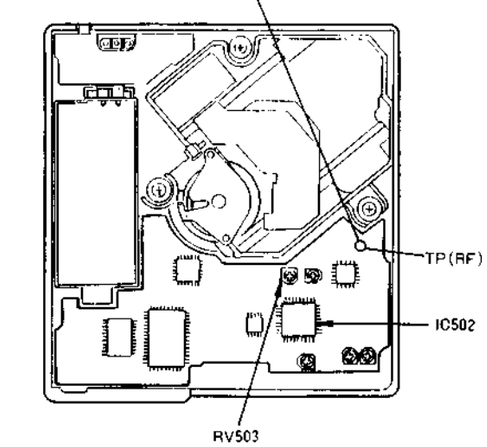
8. Unplug the external power supply to stop spindle motor from rotating and remove the disc.
9. Remove the disc and connect the oscilloscope to main board IC502 (48) (FE).
10. Adjust RV503 again refering to the table followed.

oscilloscope reading	adjustment
more than +50 mV	Not adjust again.
+50 mV ~ +20 mV	Adjust RV503 again for +50 mV reading on oscilloscope.
+20 mV ~ –20 mV	Adjust RV503 again for –20 mV reading on oscilloscope.
less than –20 mV	Not adjust again.

11. After adjustment, release service mode (see page 5).

Adjustment Location: servo board





Reference

Focus/Tracking Gain Adjustment

A frequency responce analyzer or CD jig is necessary in order to perform this adjustment exactly.
However, this gain has a margin, so even if it is slightly off, there is no problem. Therefore, do not perfrom this adjustment.
Focus/tracking gain determines the pick-up followup (vertical and horizontal) relative to mechanical noise and metchnical shock when the 2-axis device operate. However, as these reciprocate, the adjustment is at the point where both are satisfied.

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

This adjustment is to be performed when replacing the following parts:

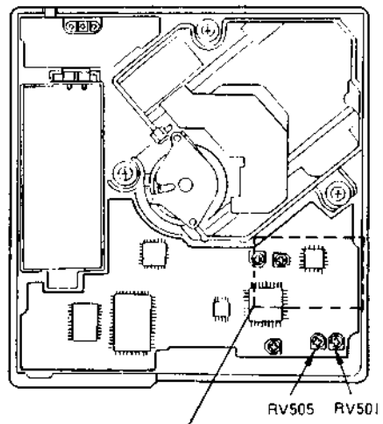
- optical pick-up block
- RV505 (focus gain VR)
- RV501 (tracking gain VR)

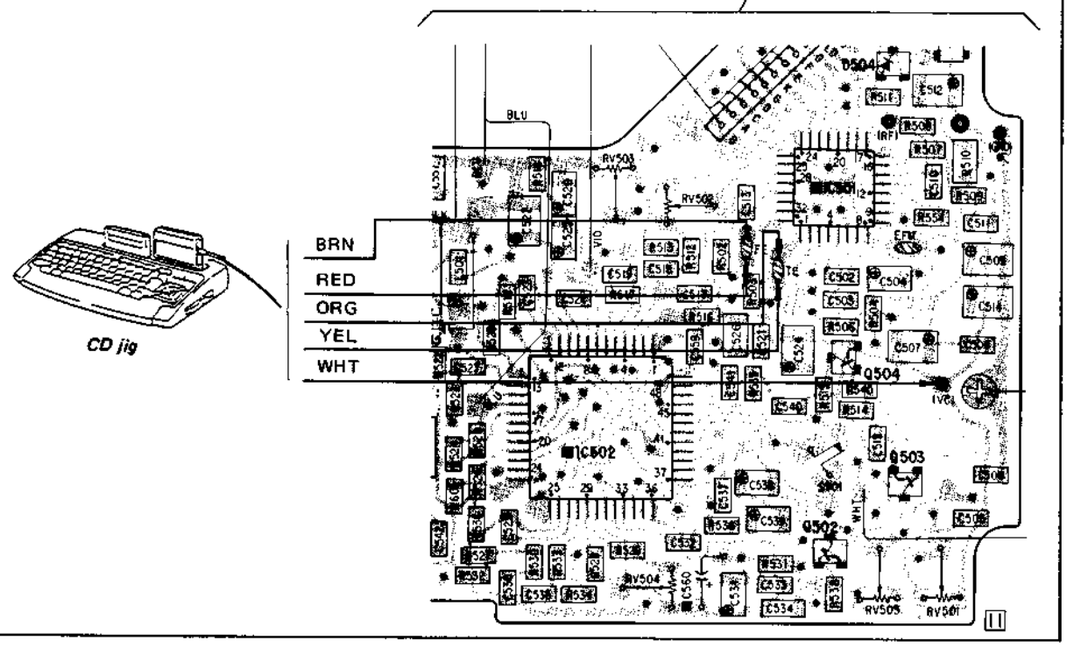
Be careful not to move RV505 (focus gain volume) and RV501 (tracking gain volume) ordinarily.

On this set, it is very difficult to simplify this adjustment. For those sets on which symptoms such as "occasional skipping" are hard to discover, or it is hard to tell if the set has been repaired, use the CD jig and perform this adjustment. Refer to the diagram below for connection of the CD jig. The adjustment procedure is described in the separate CD Jig Instruction Manual.

CD Jig Connecting Procedure:
Remove the solder jumpers at the TE and FE locations and connect the DC jig.
(Connect the points on both TE and FE located on the side of IC501 to the output to the CD jig, and points located on the side of volumes to the input from the CD jig.)

– servo board –





SECTION 4
DIAGRAMS

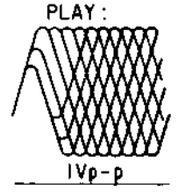
4-1. WAVEFORMS

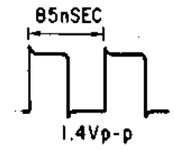
❶ PLAY :

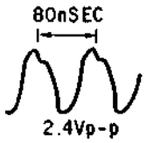
−1.6V
APPROX. 100mVp-p

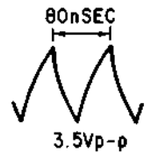
❷ PLAY :

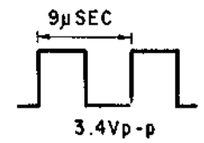
−1.6V
APPROX. 500mVp-p

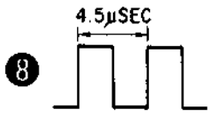
❸ PLAY :

−2.4V
1Vp-p
−0V

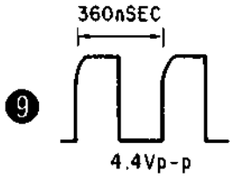
❹

85nSEC
1.4Vp-p

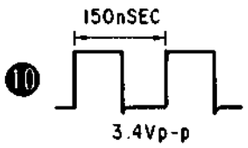
❺

80nSEC
2.4Vp-p

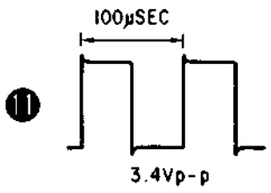
❻

80nSEC
3.5Vp-p

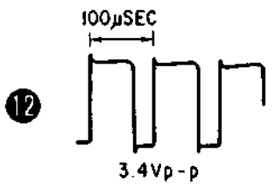
❼

9µSEC
3.4Vp-p

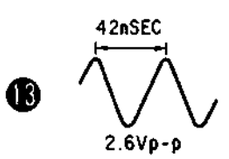
❽

4.5µSEC

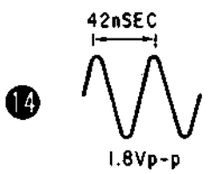
❾

360nSEC
4.4Vp-p

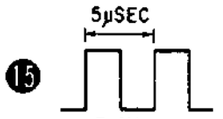
❿

150nSEC
3.4Vp-p

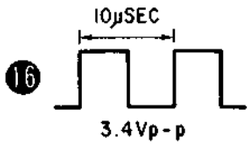
⓫

100µSEC
3.4Vp-p

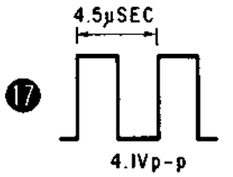
⓬

100µSEC
3.4Vp-p

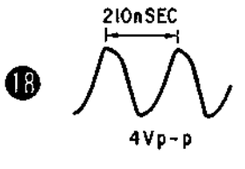
⓭

42nSEC
2.6Vp-p

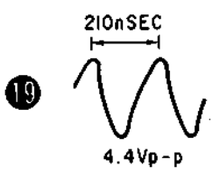
⓮

42nSEC
1.8Vp-p

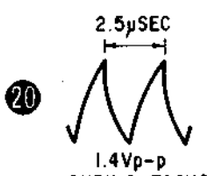
⓯

5µSEC
3.4Vp-p

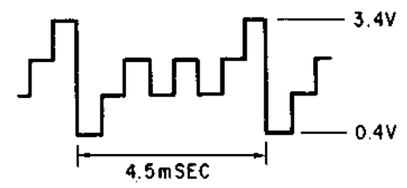
⓰

10µSEC
3.4Vp-p

⓱

4.5µSEC
4.1Vp-p

⓲

210nSEC
4Vp-p

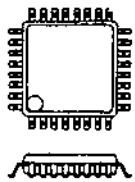
⓳

210nSEC
4.4Vp-p

⓴

2.5µSEC
1.4Vp-p
DURING FOCUS SEARCH

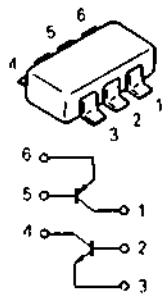
㉑

3.4V
0.4V
4.5mSEC

4-2. SEMICONDUCTOR LEAD LAYOUTS

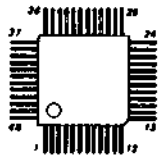
CXA1271Q



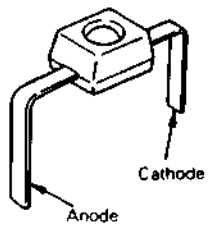
IMD2
XN4609



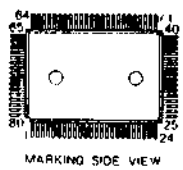
CXA1272Q-Z



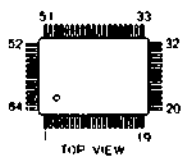
SLM125YW



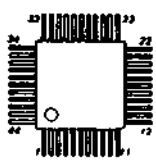
CXD11250



CXP5086-047Q



MPC1715FU



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▬▬ : B+ Line
- ▭ : adjustment for repair.
- Voltages and waveforms and total current are measured with top panel closed.
- Power voltage is dc 9 V and fed with regulated dc power supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground in service mode.
  no mark : stop
  ( ) : play
- Voltages are taken with a VOM (input inpedance 1 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : CD
- Switch

Ref. No.	Switch	Position
S801	■	OFF
S802	▶/❚❚	OFF
S803	PLAY MODE	OFF
S804	REMAIN/ENTER	OFF
S805	KEY MODE	OFF
S806	▶▶❙	OFF
S807	❙◀◀	OFF
S808	HOLD	OFF
S901	DOOR	ON
S902	LIMIT	OFF

See page 5 for setup of service mode.

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

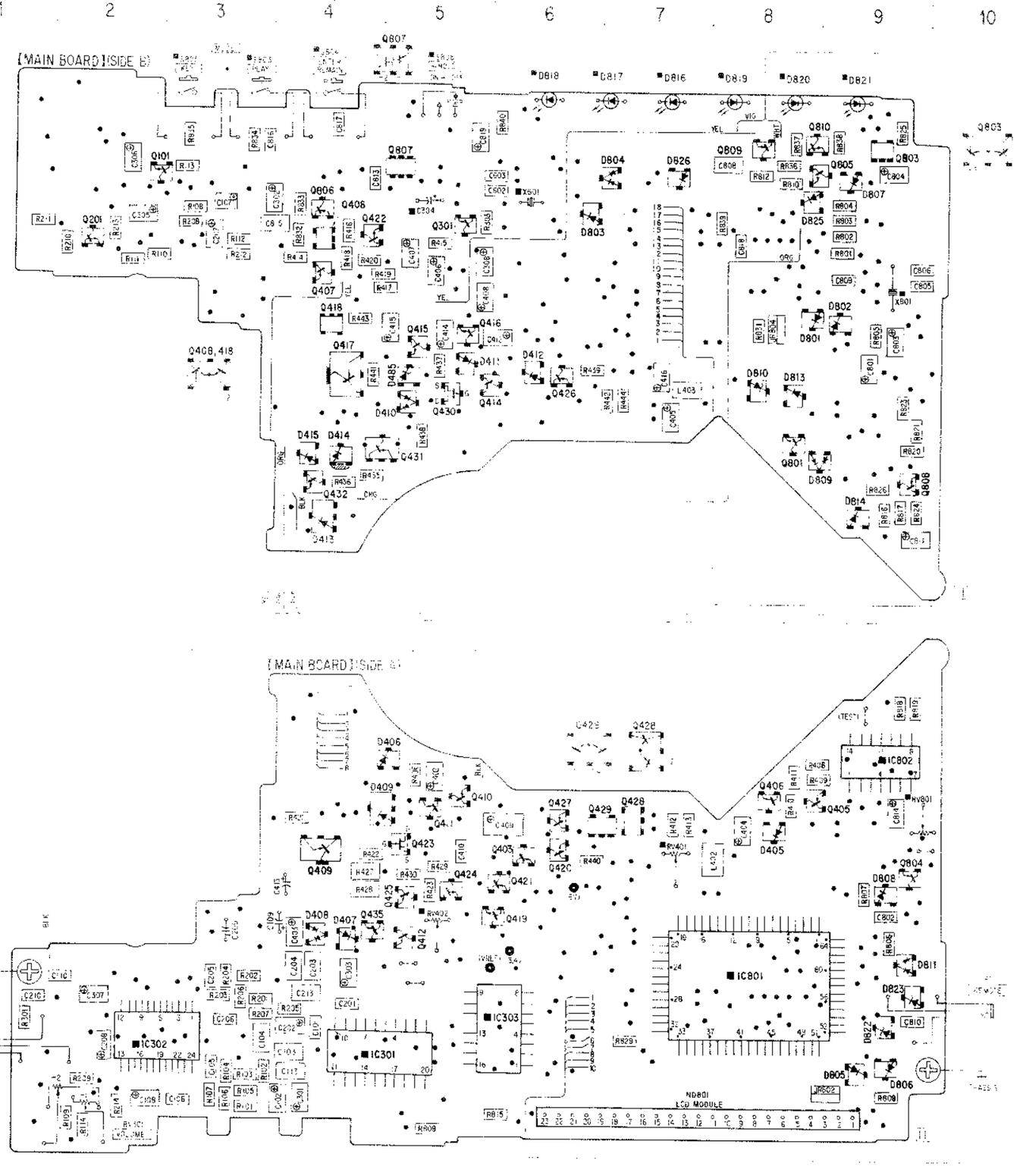
Note on Mounting Diagram:

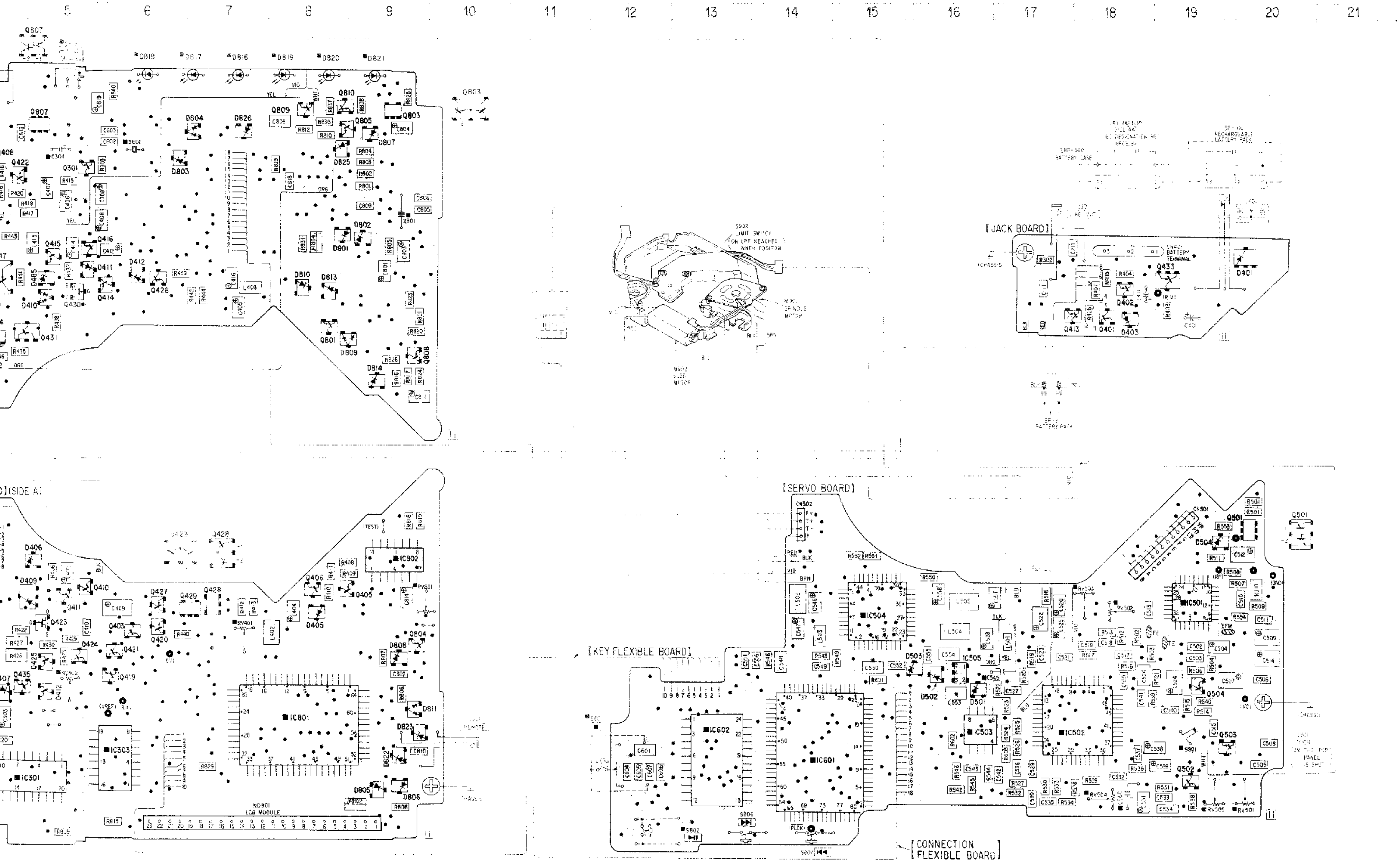
- ○—— : parts extracted from the component side.
- —— : parts extracted from the conductor side.
- ■ : parts mounted on the conductor side.
- ● : Through hole.
- ▒▒ : Pattern on the side which is seen.
- ▒▒ : Pattern of the rear side.
- ○- - - : Components extracted from the rear side.

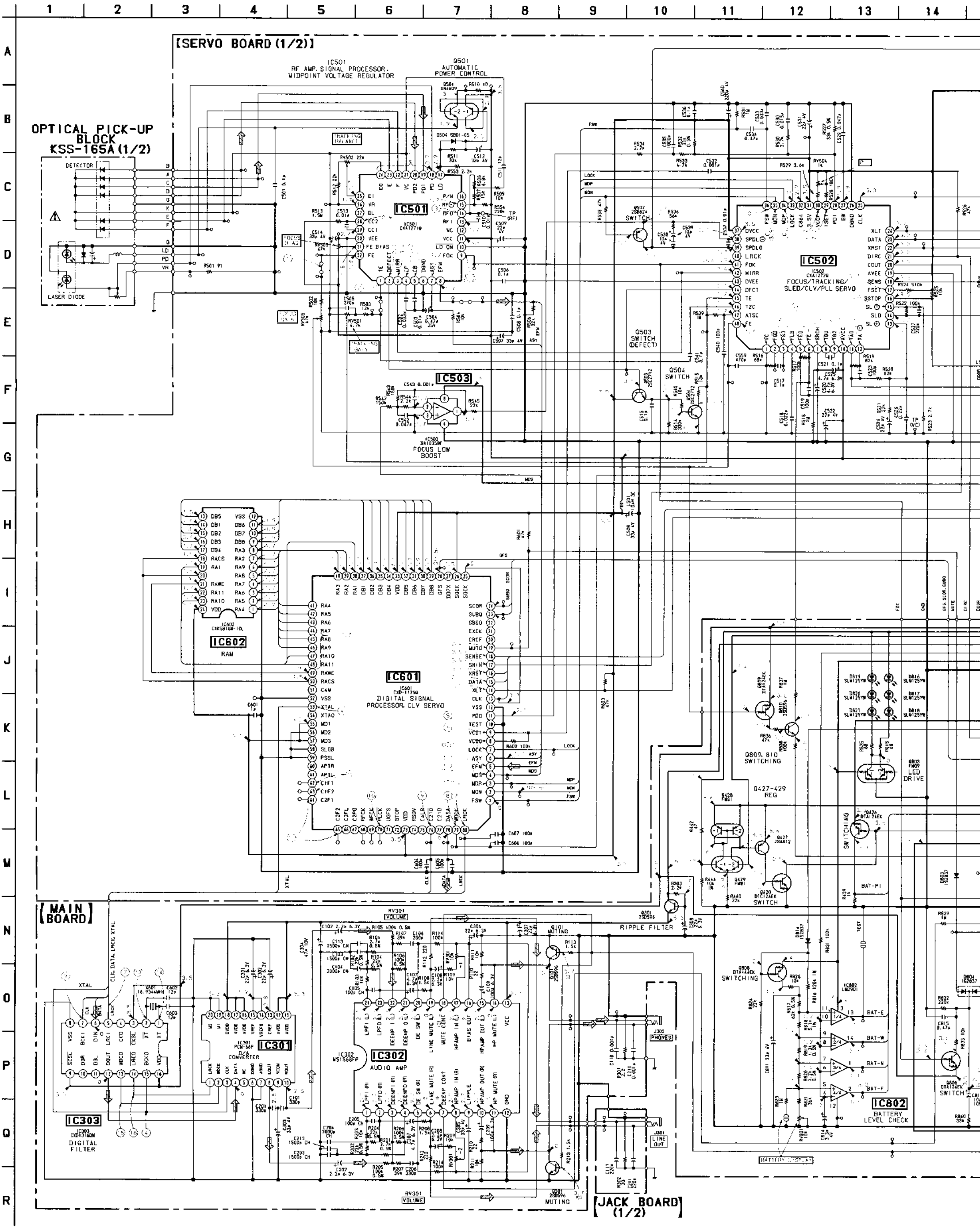
4-3. PRINTED WIRING BOARD

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D401	D-20	Q101	B-2
D403	D-18	Q201	B-2
D405	H-8	Q301	B-5
D406	G-5	Q401	D-19
D407	I-4	Q402	D-18
D408	J-4	Q403	H-6
D409	G-5	Q405	H-9
D410	D-5	Q406	G-8
D411	D-5	Q407	C-4
D412	D-6	Q408	B-4
D413	E-4	Q409	H-4
D414	D-4	Q410	H-5
D415	D-4	Q411	H-6
D485	D-5	Q412	I-5
D501	I-16	Q413	D-18
D502	I-16	Q414	D-5
D503	H-16	Q415	C-5
D504	G-19	Q416	C-5
D801	C-8	Q417	C-4
D802	C-9	Q418	C-4
D803	B-6	Q419	I-6
D804	B-7	Q420	H-5
D805	J-9	Q421	H-6
D806	J-9	Q422	B-4
D807	B-9	Q423	H-5
D808	H-9	Q424	H-5
D809	E-8	Q425	H-5
D810	D-8	Q426	D-6
D811	I-9	Q427	H-6
D813	D-8	Q428	H-7
D814	E-9	Q429	H-7
D816	A-7	Q430	D-5
D817	A-7	Q431	D-5
D818	A-6	Q432	E-4
D819	A-8	Q433	D-19
D820	A-8	Q435	I-4
D821	A-9	Q501	G-20
D822	J-9	Q502	J-19
D823	I-9	Q503	I-19
D825	B-8	Q504	I-19
D826	B-7	Q801	D-8
		Q803	B-8
IC301	J-5	Q804	H-9
IC302	J-2	Q805	B-9
IC303	J-6	Q806	J-4
IC501	H-19	Q807	B-5
IC502	I-18	Q808	E-9
IC503	I-16	Q809	B-8
IC504	H-15	Q810	A-8
IC505	H-16		
IC601	J-14		
IC602	I-13		
IC801	I-8		
IC802	G-9		




[JACK BOARD]
[SERVO BOARD]
[KEY FLEXIBLE BOARD]
[CONNECTION FLEXIBLE BOARD]
(SIDE A)
IC801
IC802
IC301
IC303
IC601
IC602
IC501
IC502
IC503
IC504
ND801 LCD MODULE


[SERVO BOARD (1/2)]
OPTICAL PICK-UP BLOCK KSS-165A (1/2)
DETECTOR
LASER DIODE
IC501
RF AMP, SIGNAL PROCESSOR, MIDPOINT VOLTAGE REGULATOR
IC501
CXA1271Q
Q501
AUTOMATIC POWER CONTROL
TRACKING BALANCE
FOCUS BALANCE
IC503
BA10358F
FOCUS LOW BOOST
IC502
CXA1272Q
FOCUS/TRACKING/ SLED/CLV/PLL SERVO
Q503 SWITCH (DEFECT)
Q504 SWITCH
Q502 2SB624 SWITCH
IC601
CXD-1125Q
DIGITAL SIGNAL PROCESSOR, CLV SERVO
IC602
CMK5816M-10L
RAM
0809, 810 SWITCHING
0427-429 REG
LED DRIVE
SWITCHING
Q420 DTC124EK SWITCH
[MAIN BOARD]
IC303
CXD1314QN
DIGITAL FILTER
IC301
PCM-64P
D/A CONVERTER
IC302
MS1568FP
AUDIO AMP
Q101 MUTING
RIPPLE FILTER
Q201 2SD596 MUTING
IC802
BATTERY LEVEL CHECK
[JACK BOARD (1/2)]
J302 PHONES
J301 LINE OUT

OPTICAL PICK-UP BLOCK KSS-165A(2/2)

IC504 MPC1715 PWM DRIVER

IC505 INVERTER

IC801 CXP50064-047Q SYSTEM CONTROL

IC802 BATTERY LEVEL CHECK

MD801 LCD MODULE

FOCUS COIL

TRACKING COIL

M901 SPINDLE MOTOR

M902 SLED MOTOR

S902 LIMIT SWITCH (ON: UPF REACHES INNER POSITION)

S901 DOOR (ON: THE TOP PANEL IS SHUT)

Q402, 407, 408 REG

Q417, 418 REG

Q414, 430 REG

Q422 SWITCH

Q406 SWITCH

Q405 SWITCH

Q409 REG

Q423 REG

Q412, 424, 425, 435 SWITCHING

Q410 SWITCH

Q411 SWITCH

Q415, 416, 419 SWITCHING

Q431 B+ SWITCH

Q432 SWITCH

Q801 RESET

Q403, 421 SWITCH (POWER ON)

Q804 RESET

Q805 RESET

Q807 MUTE SWITCH

Q808 SWITCH

Q803 LED DRIVE

[JACK BOARD (1/2)]

Q401, 402, 413 REG

Q433 REG

J401 DC IN 9V

BP-100 RECHARGEABLE BATTERY PACK

ESP-360 BATTERY CASE DRY BATTERY IEC DESIGNATION R6 SIZE "AA" 6PCS. 9V

BP2 BATTERY PACK

J801 REMOTE

S803 PLAY

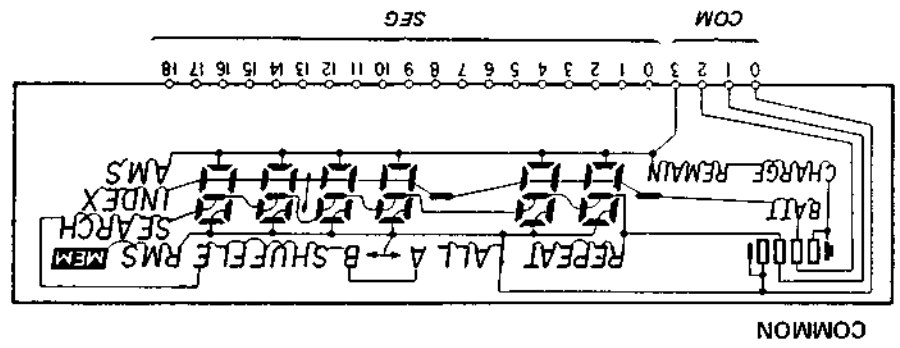
S805 MODE KEY

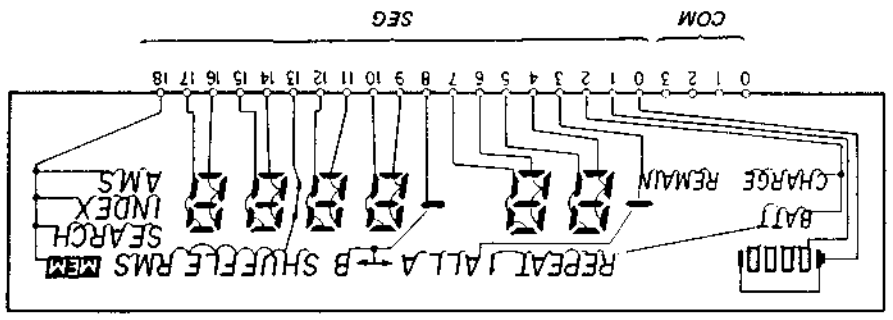
S804 REMAIN ENTER

S807 S801 S802

[SERVO BOARD (1/2)]

X801 3.58MHZ

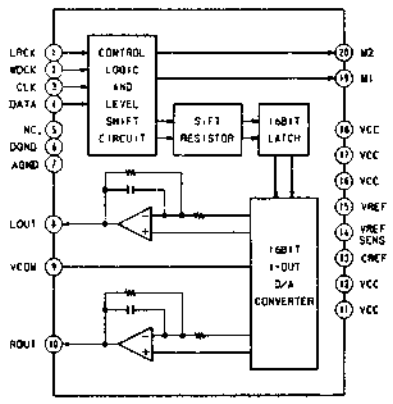




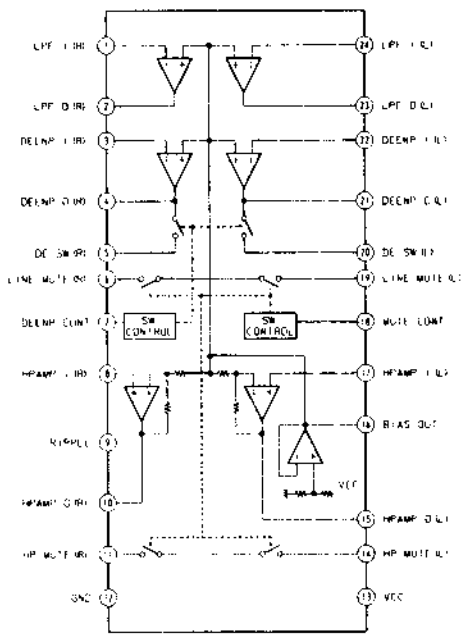
● LCD Module

4-5. IC BLOCK DIAGRAM

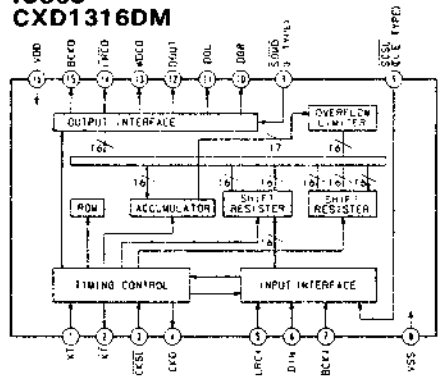
IC 301
PCM-66



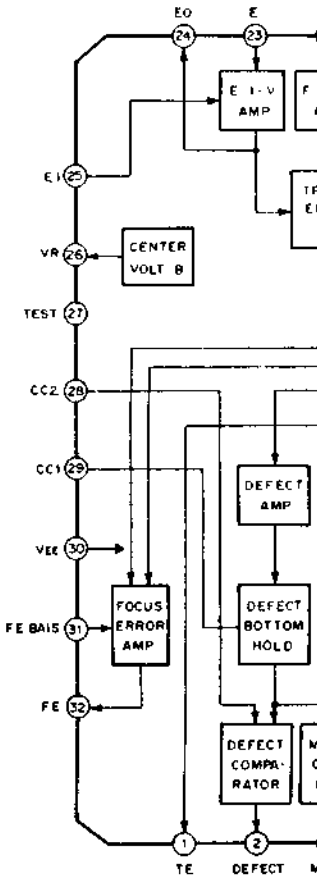
IC302
M51568FP



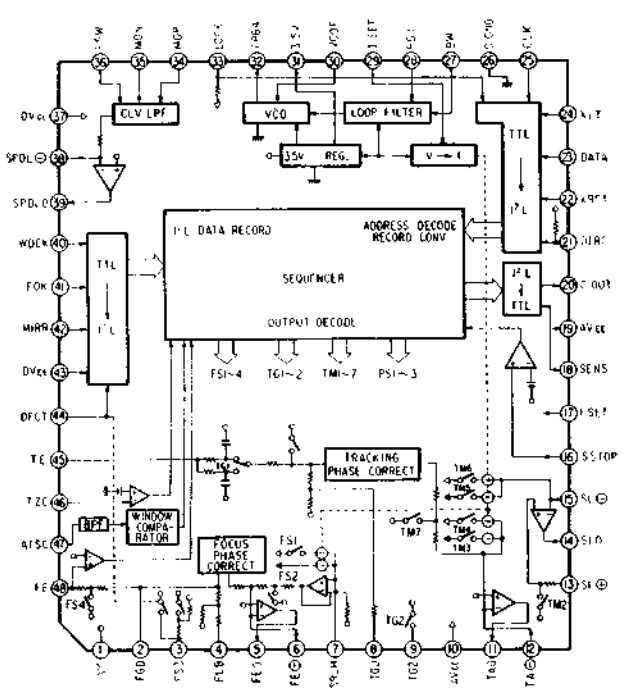
IC303
CXD1316DM



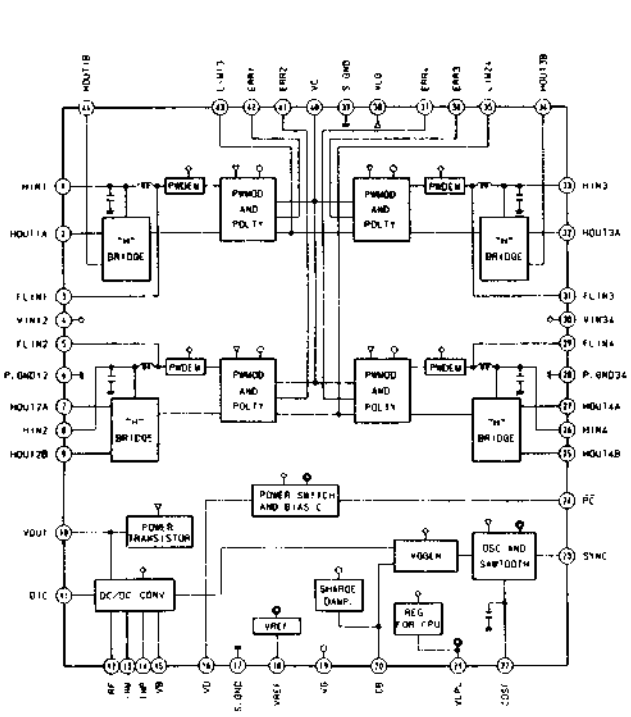
IC501
CXA1271Q



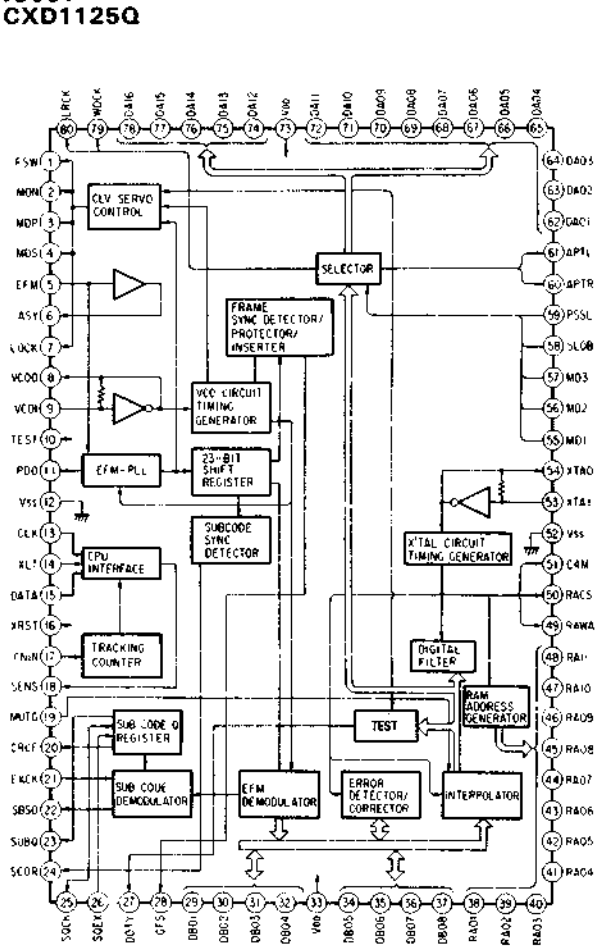
IC502
CXA1272Q

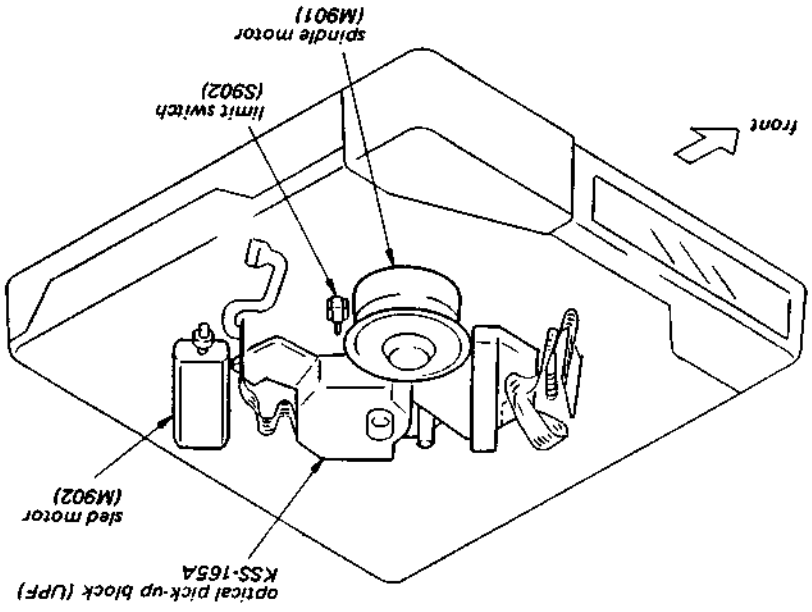


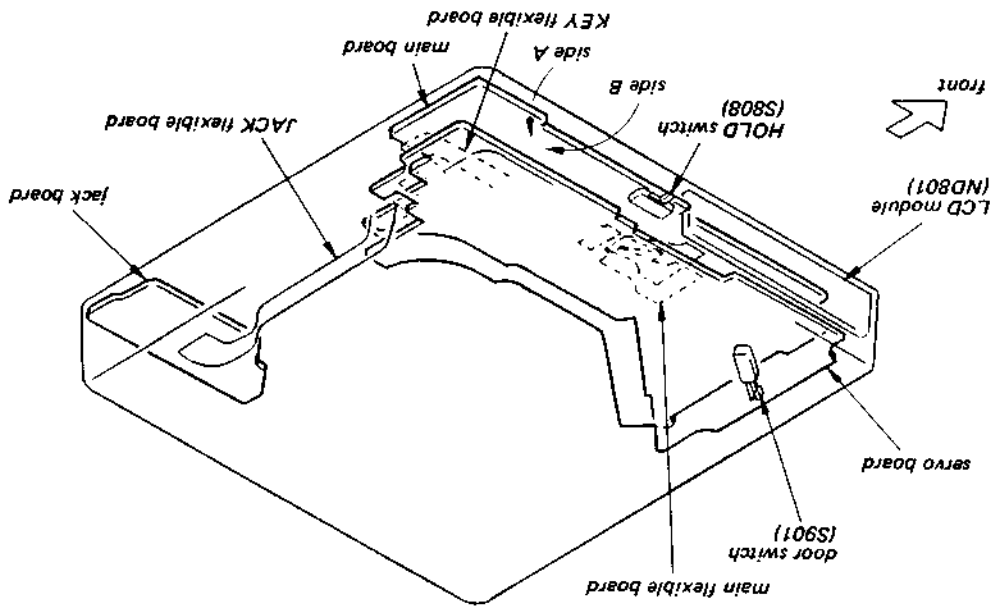
IC504
MPC1715



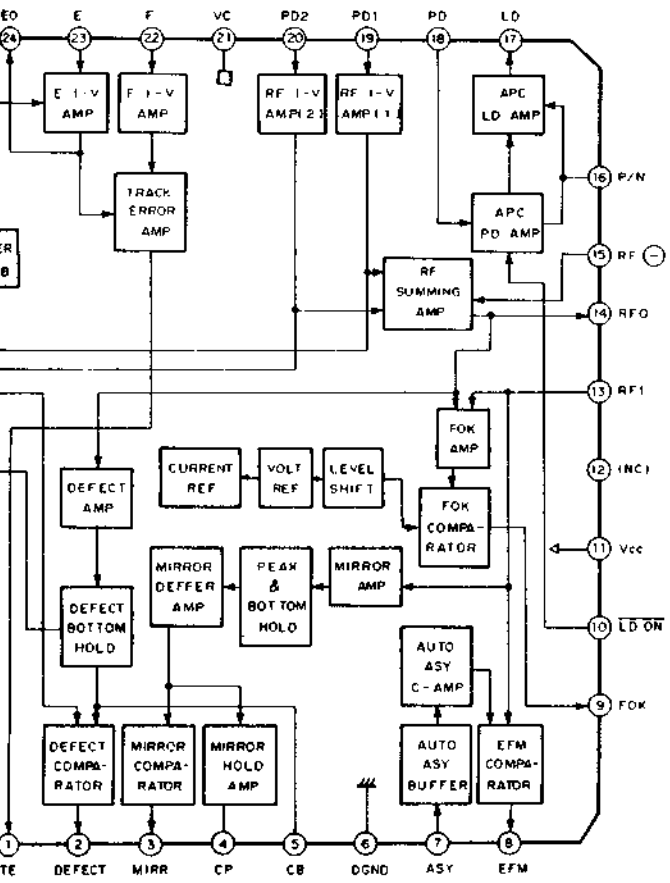
IC601
CXD1125Q







● PC Board/Switch/Motor Layouts



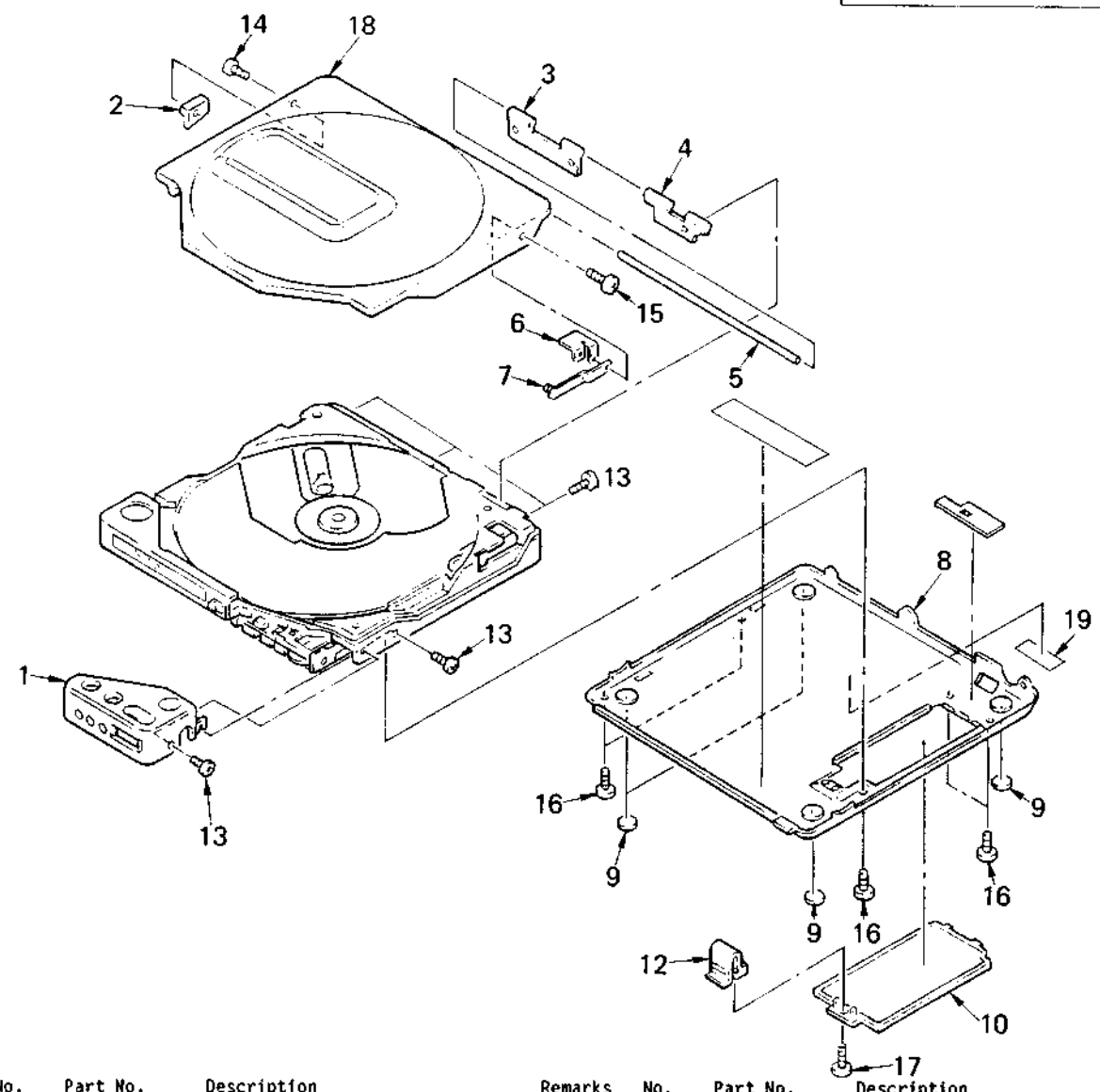
SECTION 5
EXPLODED VIEWS

NOTE:

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

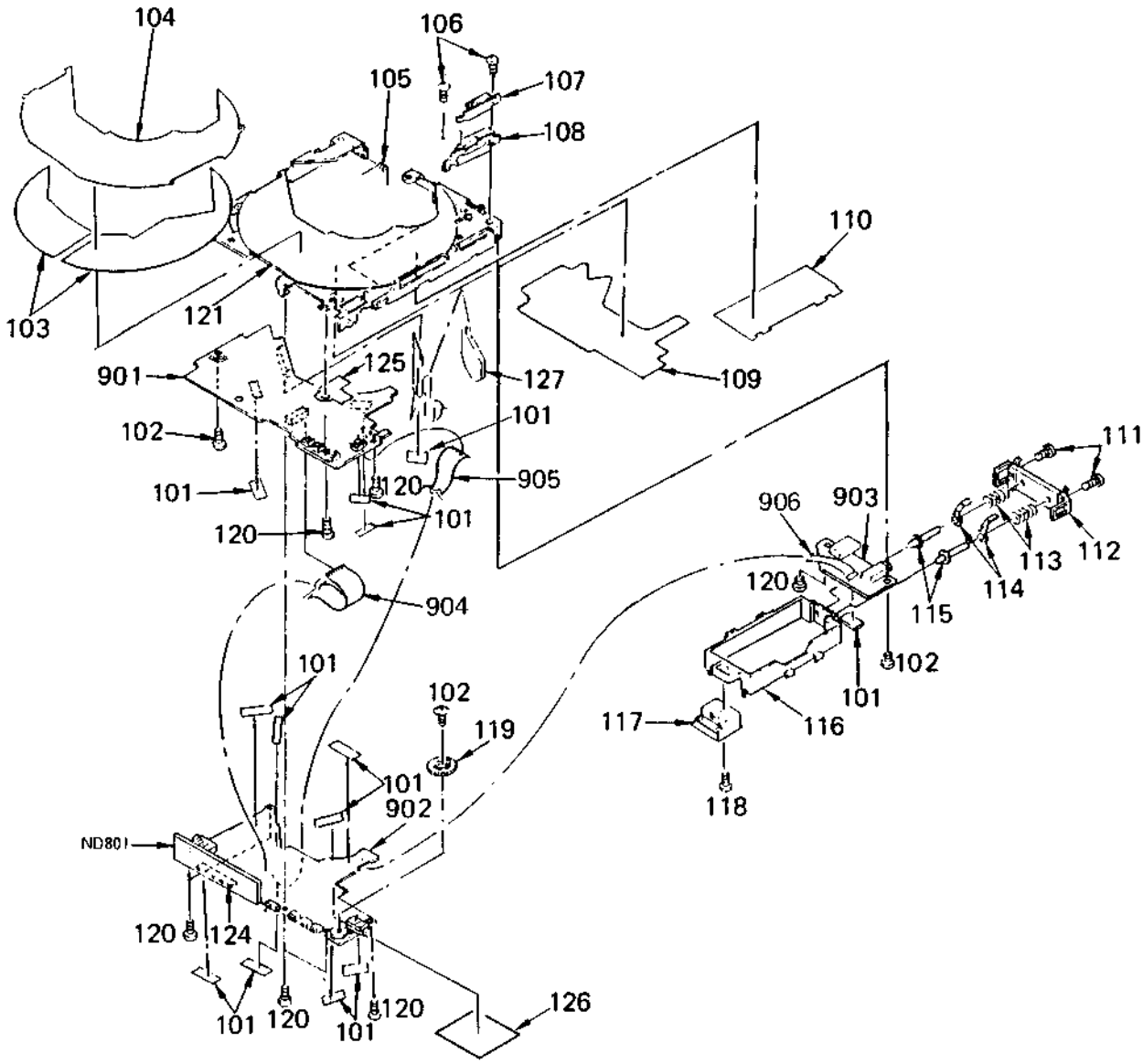
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifé.

5-1.



No.	Part No.	Description	Remarks
1	X-4921-211-1	(BLACK)...ORNAMENT ASSY (BLACK), BUTTON	
	X-4921-235-1	(TITAN)...ORNAMENT ASSY (TITAN), BUTTON	
2	4-920-272-01	RETAINER, SPRING, SWITCHING	
3	4-924-142-01	(BLACK)...HINGE (LEFT)	
	4-924-142-11	(TITAN)...HINGE (LEFT)	
4	4-924-143-01	(BLACK)...HINGE (RIGHT)	
	4-924-143-11	(TITAN)...HINGE (RIGHT)	
5	4-924-144-01	SHAFT, FULCRUM	
6	X-4917-704-1	BRACKET ASSY, SWITCHING PLATE	
7	X-4921-216-1	PLATE (B) ASSY, SWITCHING	
8	X-4921-231-1	(BLACK)...PANEL ASSY, BOTTOM	9
	X-4921-237-1	(TITAN)...PANEL ASSY (TITAN), BOTTOM	9
9	4-912-641-01	FOOT, RUBBER	
10	4-924-164-01	(BLACK)...LID, BATTERY CASE	
	4-924-164-21	(TITAN)...LID, BATTERY CASE	
12	4-924-165-01	CHIP, LOCK, BATTERY CASE LID	
13	3-703-816-71	(TITAN)...SCREW (MI.4X3.0), SPECIAL	
	3-703-816-72	(BLACK)...SCREW (MI.4X3.0), SPECIAL	
14	3-895-823-41	(BLACK)...SCREW (BI.4X4), TAPPING	
	3-895-823-51	(TITAN)...SCREW (BI.4X4), TAPPING	
15	3-703-816-01	(TITAN)...SCREW (MI.4X2.0), SPECIAL	
	3-703-816-02	(BLACK)...SCREW (MI.4X2.0), SPECIAL	
16	3-703-816-41	(TITAN)...SCREW (MI.4X2.5), SPECIAL	
	3-703-816-42	(BLACK)...SCREW (MI.4X2.5), SPECIAL	
17	3-318-203-71	(BLACK)...SCREW (BI.7X5), TAPPING	
	3-318-203-72	(TITAN)...SCREW (BI.7X5), TAPPING	
18	A-3043-233-A	(BLACK)...PANEL, UPPER	
	A-3043-238-A	(TITAN)...PANEL, UPPER	
19	4-885-838-00	(AEP,UK)...LABEL, CLASS 1	

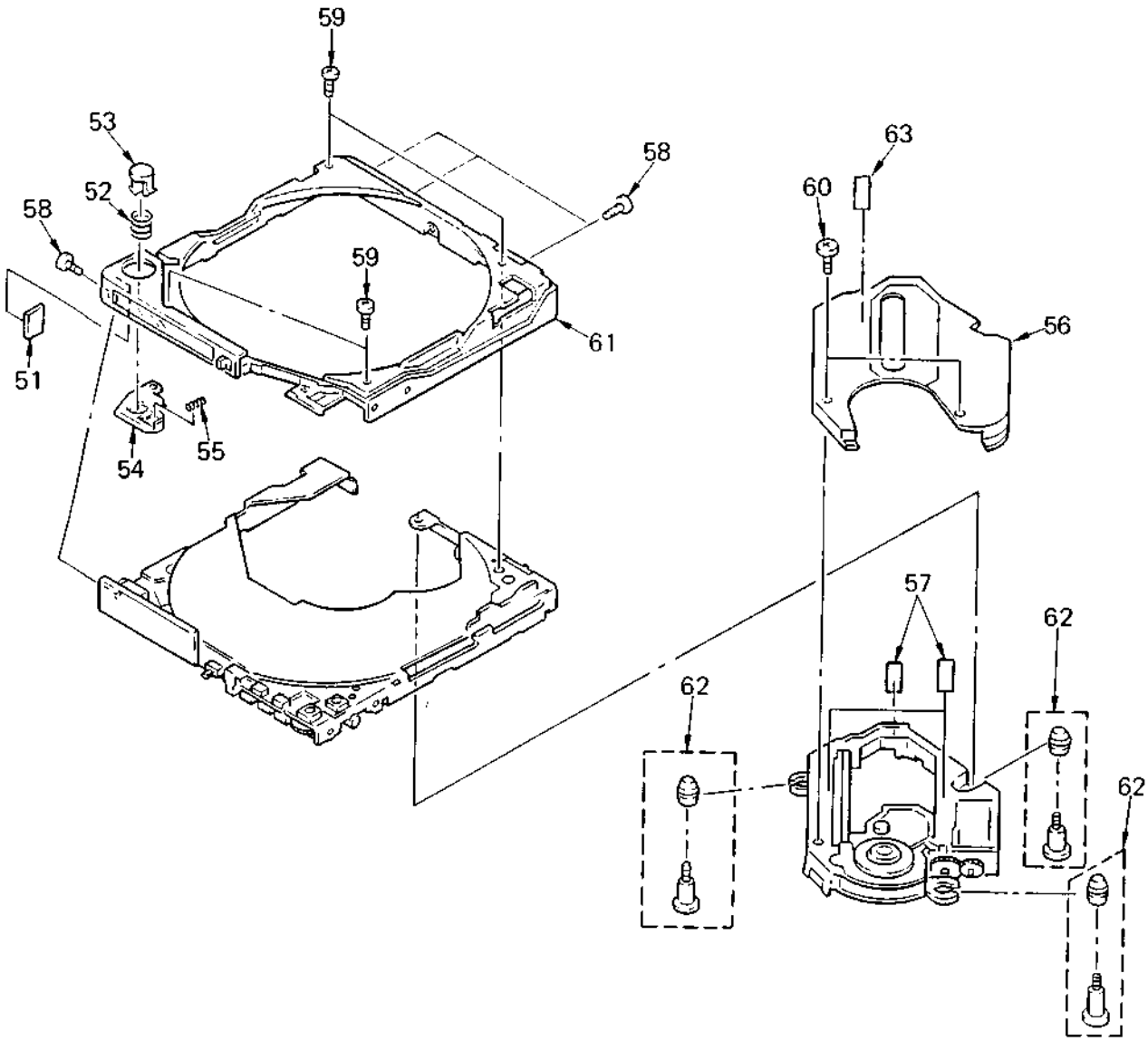
5-3.



No.	Part No.	Description	Remarks
101	3-831-441-XX	CUSHION, SPEAKER	
102	3-335-797-21	SCREW (M1.4X3), TOOTHED LOCK	
103	4-924-139-01	SHEET, ADHESIVE, CHASSIS COVER	
104	4-924-138-01	COVER, CHASSIS	
105	4-917-745-01	SPRING	
106	3-703-816-02	SCREW (M1.4X2.0), SPECIAL HEAD	
107	*4-917-753-01	SPRING	
108	4-917-751-01	PLATE, SLIDE, SWITCHING PLATE	
109	*4-924-141-01	SHEET, INSULATING, PC BOARD	
110	*4-924-145-01	SHEET, CASE (LOWER)	
111	3-318-203-62	SCREW (B1.7X4), TAPPING	
112	4-924-134-01	CHIP, HOLDING, TERMINAL	
113	4-924-136-01	SPRING, COMPRESSION	
114	4-924-137-01	PLATE, CONNECTION	
115	4-924-135-01	PIN, TERMINAL	
116	4-924-169-01	CASE, BATTERY	
117	4-924-133-01	CHIP, FIXED, BOTTOM PANEL	

No.	Part No.	Description	Remarks
118	3-703-816-42	SCREW (M1.4X2.5), SPECIAL HEAD	
119	4-924-155-01	KNOB, VOLUME	
120	3-703-816-41	SCREW (M1.4X2.5), SPECIAL HEAD	
121	*X-4921-210-1	CHASSIS ASSY, MAIN	
123	3-831-441-11	CUSHION (B)	
124	*4-924-182-01	SPACER, LCD	
125	*4-926-105-01	SHEET, INSULATING, SERVO PCB	
126	*4-926-102-01	COVER (A), FLEXIBLE INSULATING	
127	*A-3039-683-A	PAPER (B) ASSY, SHIELD	
901	*A-3015-732-A	PC BOARD ASSY, SERVO	
902	*A-3015-733-A	PC BOARD ASSY, MAIN	
903	*1-629-281-11	PC BOARD, JACK	
904	1-625-584-11	PC BOARD, CONNECTION FLEXIBLE	
905	1-625-585-11	PC BOARD, KEY SWITCH FLEXIBLE	
906	1-625-586-11	PC BOARD, JACK FLEXIBLE	
ND801	1-808-290-11	LCD MODULE	

5-2.



No.	Part No.	Description	Remarks
51	9-911-840-XX	CUSHION, LID	
52	4-917-727-01	SPRING, COMPRESSION	
53	4-924-130-01	(BLACK)...BUTTON, OPEN	
	4-924-130-21	(TITAN)...BUTTON, OPEN	
54	4-924-131-01	LEVER, LOCK	
55	4-924-140-01	SPRING, COMPRESSION	
56	4-926-141-01	COVER, MD	
57	3-831-441-XX	CUSHION	
58	3-703-816-71	(TITAN)...SCREW (M1.4X3.0), SPECIAL HEAD	
	3-703-816-72	(BLACK)...SCREW (M1.4X3.0), SPECIAL HEAD	
59	3-703-816-21	(BLACK)...SCREW (M1.4X5.0), SPECIAL HEAD	
	3-703-816-22	(TITAN)...SCREW (M1.4X5.0), SPECIAL HEAD	
60	3-895-823-11	SCREW (B1.4X3), TAPPING	
61	X-4921-217-1	(BLACK)...CABINET ASSY	
	X-4921-238-1	(TITAN)...CABINET ASSY	
62	X-4917-723-1	INSULATOR ASSY	
63	4-908-711-01	LABEL, CAUTION, LENS	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

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

CAPACITORS:
MF: μF, PF: μμF.

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

COILS
- MMH: mH, UH: μH

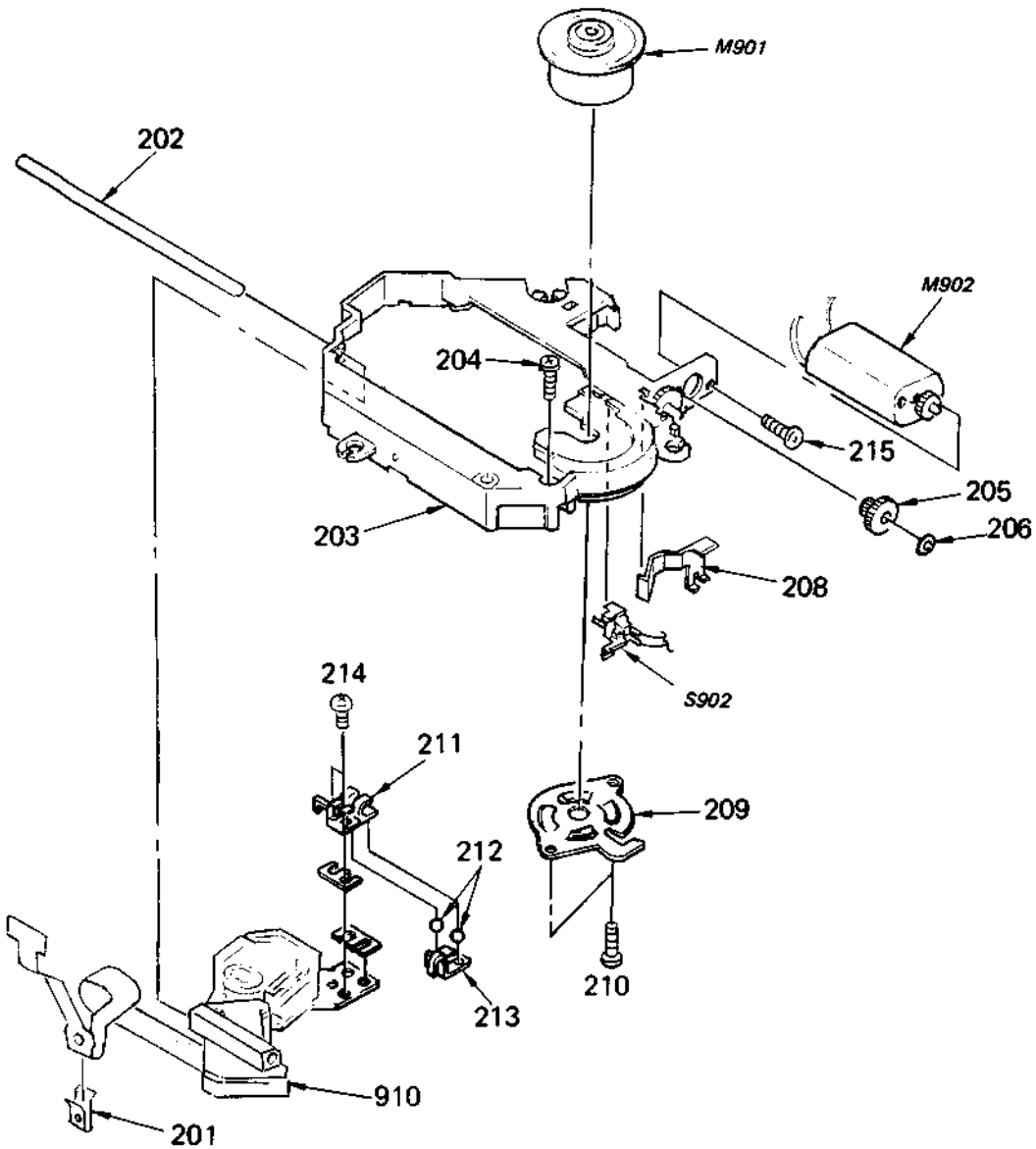
SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

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

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

Ref.No.	Part No.	Description		
901	*A-3015-732-A	PC BOARD ASSY, SERVO		
902	*A-3015-733-A	PC BOARD ASSY, MAIN		
903	*1-629-281-11	PC BOARD, JACK		
904	1-625-584-11	PC BOARD, CONNECTION FLEXIBLE		
905	1-625-585-11	PC BOARD, KEY SWITCH FLEXIBLE		
906	1-625-586-11	PC BOARD, JACK FLEXIBLE		
910	⚠ 8-848-096-11	DEVICE, OPTICAL KSS-165A		
C101	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C102	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C103	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C104	1-163-212-00	CERAMIC CHIP 0.002MF		50V
C105	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C106	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C107	1-135-130-11	TANTAL. CHIP 4.7MF	20%	6.3V
C108	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C109	1-124-225-00	ELECT 100MF	20%	6.3V
C110	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C111	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C113	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C201	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C202	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C203	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C204	1-163-212-00	CERAMIC CHIP 0.002MF		50V
C205	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C206	1-163-129-00	CERAMIC CHIP 330PF	5%	50V
C207	1-135-130-11	TANTAL. CHIP 4.7MF	20%	6.3V
C208	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C209	1-124-225-00	ELECT 100MF	20%	6.3V
C210	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C211	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C213	1-163-209-00	CERAMIC CHIP 0.0015MF	5%	50V
C301	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C302	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C303	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C304	1-131-381-00	TANTALUM 47MF	10%	10V
C305	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C306	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C307	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C308	1-135-161-21	TANTAL. CHIP 22MF	20%	6.3V
C401	1-124-225-00	ELECT 100MF	20%	6.3V
C402	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C403	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C404	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
C405	1-135-130-11	TANTAL. CHIP 4.7MF	20%	6.3V
C406	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C407	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C408	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
C409	1-135-159-21	TANTAL. CHIP 10MF	20%	16V
C410	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C411	1-126-357-11	ELECT 150MF	20%	16V
C412	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C413	1-131-365-00	TANTALUM 10MF	10%	16V
C414	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C415	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
C416	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C501	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C502	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C503	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C504	1-135-145-11	TANTAL. CHIP 0.47MF	20%	25V
C505	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C506	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C507	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C508	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C509	1-135-157-21	TANTAL. CHIP 22MF	20%	4V
C510	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C511	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C512	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C513	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C514	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C515	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C517	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C518	1-163-037-11	CERAMIC CHIP 0.022MF	10%	25V
C519	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C520	1-135-130-11	TANTAL. CHIP 4.7MF	20%	6.3V
C521	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C522	1-135-157-21	TANTAL. CHIP 22MF	20%	4V
C523	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C524	1-135-157-21	TANTAL. CHIP 22MF	20%	4V
C525	1-135-130-11	TANTAL. CHIP 4.7MF	20%	6.3V
C526	1-163-081-00	CERAMIC CHIP 0.22MF		25V
C527	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C528	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C529	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C530	1-163-023-00	CERAMIC CHIP 0.015MF	10%	50V
C531	1-135-157-21	TANTAL. CHIP 22MF	20%	4V
C532	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C533	1-163-989-11	CERAMIC CHIP 0.033MF	10%	25V
C534	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C535	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C536	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C537	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V

5-4. MECHANISM SECTION (CDM-150)



No.	Part No.	Description	Remarks
201	4-917-622-01	RETAINER, FLEXIBLE	
202	4-917-611-01	SHAFT (A)	
203	X-4917-725-1	CHASSIS ASSY, MD	
204	4-921-299-01	SCREW (1.7X8), SPECIAL	
205	4-921-292-01	GEAR (B)	
206	3-315-384-11	WASHER, STOPPER	
208	4-921-290-01	SPRING	
209	4-921-287-01	BRACKET, MOTOR	
210	4-912-432-01	SCREW (B1.4X5), TAPPING	
211	4-921-294-01	RACK (A)	
212	7-671-111-11	STEEL, BOUL 1.5MM	
213	4-921-296-01	SPRING	
214	7-627-552-38	SCREW, PRECISION +P 1.7X3	
215	7-627-553-38	SCREW, PRECISION +P 2X3	
910 ⚠	.8-848-096-11	DEVICE, OPTICAL KSS-165A	
M901	A-3133-335-A	MOTOR ASSY, CLV (SPINDLE MOTOR)	
M902	A-3133-334-A	MOTOR SUB ASSY, FEED (SLED MOTOR)	
S902	1-571-099-11	SWITCH (LIMIT)	

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

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

Ref.No.	Part No.	Description		
C538	1-135-157-21	TANTAL. CHIP 10MF	20%	4V
C539	1-135-157-21	TANTAL. CHIP 10MF	20%	4V
C540	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C541	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C542	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C543	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C545	1-131-381-00	TANTALUM 47MF	10%	10V
C546	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C547	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
C548	1-163-081-00	CERAMIC CHIP 0.22MF		25V
C549	1-163-986-00	CERAMIC CHIP 0.027MF	10%	25V
C550	1-162-638-11	CERAMIC CHIP 1MF		16V
C551	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C552	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C553	1-162-638-11	CERAMIC CHIP 1MF		16V
C554	1-162-638-11	CERAMIC CHIP 1MF		16V
C555	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C556	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C557	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
C558	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C559	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C560	1-124-576-11	ELECT 220MF	20%	4V
C601	1-162-638-11	CERAMIC CHIP 1MF		16V
C602	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C603	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C604	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C605	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C606	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C607	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C801	1-135-157-21	TANTAL. CHIP 22MF	20%	4V
C802	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C803	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C804	1-135-149-21	TANTAL. CHIP 2.2MF	20%	6.3V
C805	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C806	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C808	1-162-638-11	CERAMIC CHIP 1MF		16V
C809	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C810	1-163-009-11	CERAMIC CHIP 0.001MF	10%	50V
C811	1-135-162-21	TANTAL. CHIP 33MF	20%	4V
C813	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C814	1-135-103-00	TANTAL. CHIP 3.3MF	20%	4V
C815	1-162-637-11	CERAMIC CHIP 0.47MF		16V
C816	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C817	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C818	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C819	1-135-174-11	TANTAL. CHIP 10MF	20%	10V
CN401	1-535-608-21	TERMINAL, BATTERY		
CN501	1-563-546-11	HOUSING, CONNECTOR 12P		
CN502	1-563-552-11	SOCKET, CONNECTOR 4P		
D401	8-719-938-78	DIODE SB10-05PCP		
D403	8-719-100-05	DIODE 1S2837		
D405	8-719-938-75	DIODE SB05-05CP		
D406	8-719-100-05	DIODE 1S2837		
D407	8-719-105-63	DIODE RD4.3M-B1		
D408	8-719-800-76	DIODE 1SS226		
D409	8-719-938-78	DIODE SB10-05PCP		
D410	8-719-800-76	DIODE 1SS226		
D411	8-719-100-05	DIODE 1S2837		

Ref.No.	Part No.	Description		
D412	8-719-100-05	DIODE 1S2837		
D413	8-719-938-78	DIODE SB10-05PCP		
D414	8-719-938-72	DIODE SB01-05CP		
D415	8-719-100-05	DIODE 1S2837		
D485	8-719-105-73	DIODE RD4.7M-B2		
D501	8-719-938-72	DIODE SB01-05CP		
D502	8-719-938-72	DIODE SB01-05CP		
D503	8-719-938-72	DIODE SB01-05CP		
D504	8-719-938-72	DIODE SB01-05CP		
D801	8-719-100-05	DIODE 1S2837		
D802	8-719-100-05	DIODE 1S2837		
D803	8-719-100-05	DIODE 1S2837		
D804	8-719-100-05	DIODE 1S2837		
D805	8-719-938-72	DIODE SB01-05CP		
D806	8-719-938-72	DIODE SB01-05CP		
D807	8-719-100-05	DIODE 1S2837		
D808	8-719-938-72	DIODE SB01-05CP		
D809	8-719-100-05	DIODE 1S2837		
D810	8-719-105-91	DIODE RD5.6M-B2		
D811	8-719-800-76	DIODE 1SS226		
D813	8-719-100-03	DIODE 1S2835		
D814	8-719-100-05	DIODE 1S2837		
D816	8-719-970-11	DIODE SLM-125YW		
D817	8-719-970-11	DIODE SLM-125YW		
D818	8-719-970-11	DIODE SLM-125YW		
D819	8-719-970-11	DIODE SLM-125YW		
D820	8-719-970-11	DIODE SLM-125YW		
D821	8-719-970-11	DIODE SLM-125YW		
D822	8-719-106-70	DIODE RD12M-B1		
D823	8-719-106-70	DIODE RD12M-B1		
D825	8-719-100-05	DIODE 1S2837		
D826	8-719-100-05	DIODE 1S2837		
IC301	8-759-983-79	IC PCM-66P		
IC302	8-759-630-75	IC M51568FP		
IC303	8-759-946-27	IC CXD1316DM		
IC501	8-752-033-55	IC CXA1271Q		
IC502	8-752-033-54	IC CXA1272Q-Z		
IC503	8-759-970-89	IC BA10358F		
IC504	8-759-030-17	IC MPC1715FU		
IC505	8-759-230-43	IC TC7S04F		
IC601	8-759-947-02	IC CXD1125Q		
IC602	8-752-323-65	IC CXK5816M-15L		
IC801	8-752-808-85	IC CXP5086-047Q		
IC802	8-759-700-90	IC NJM2901M		
J301	1-563-280-21	JACK (LINE OUT)		
J302	1-563-280-11	JACK (PHONES)		
J401	1-562-961-11	JACK (DC IN 9V)		
J801	1-563-280-31	JACK (REMOTE)		
JR802	1-216-296-00	METAL GLAZE 0	5%	1/8W
JR804	1-216-296-00	METAL GLAZE 0	5%	1/8W
L402	1-412-142-11	INDUCTOR CHIP 100UH		
L403	1-412-031-11	INDUCTOR CHIP 47UH		
L501	1-412-029-11	INDUCTOR CHIP 10UH		
L502	1-412-142-11	INDUCTOR CHIP 100UH		
L503	1-412-032-21	INDUCTOR CHIP 100UH		
L504	1-412-142-11	INDUCTOR CHIP 100UH		
L505	1-412-142-11	INDUCTOR CHIP 100UH		

Ref.No.	Part No.	Description
M901	A-3133-335-A	MOTOR ASSY, CLV (SPINDLE MOTOR)
M902	A-3133-334-A	MOTOR SUB ASSY, FEED (SLED MOTOR)
ND801	1-808-290-11	LCD MODULE
Q101	8-729-159-64	TRANSISTOR 2SD596
Q201	8-729-159-64	TRANSISTOR 2SD596
Q301	8-729-159-64	TRANSISTOR 2SD596
Q401	8-729-162-43	TRANSISTOR 2SB624-BV3
Q402	8-729-100-66	TRANSISTOR 2SC1623
Q403	8-729-901-00	TRANSISTOR DTC124EK
Q405	8-729-100-75	TRANSISTOR 2SA812-M5
Q406	8-729-159-64	TRANSISTOR 2SD596
Q407	8-729-162-43	TRANSISTOR 2SB624-BV3
Q408	8-729-903-10	TRANSISTOR FMW1
Q409	8-729-101-07	TRANSISTOR 2SB798
Q410	8-729-901-03	TRANSISTOR DTC144WK
Q411	8-729-901-00	TRANSISTOR DTC124EK
Q412	8-729-207-55	TRANSISTOR RN1401
Q413	8-729-100-66	TRANSISTOR 2SC1623
Q414	8-729-901-05	TRANSISTOR DTA124EK
Q415	8-729-901-03	TRANSISTOR DTC144WK
Q416	8-729-901-00	TRANSISTOR DTC124EK
Q417	8-729-101-07	TRANSISTOR 2SB798
Q418	8-729-903-10	TRANSISTOR FMW1
Q419	8-729-901-00	TRANSISTOR DTC124EK
Q420	8-729-901-00	TRANSISTOR DTC124EK
Q421	8-729-901-05	TRANSISTOR DTA124EK
Q422	8-729-901-00	TRANSISTOR DTC124EK
Q423	8-729-116-06	TRANSISTOR 2SK160-K6
Q424	8-729-901-00	TRANSISTOR DTC124EK
Q425	8-729-100-05	TRANSISTOR 2SA812-M5
Q426	8-729-901-05	TRANSISTOR DTA124EK
Q427	8-729-100-05	TRANSISTOR 2SA812-M5
Q428	8-729-902-96	TRANSISTOR FMS1
Q429	8-729-903-10	TRANSISTOR FMW1
Q430	8-729-116-06	TRANSISTOR 2SK160-K6
Q431	8-729-101-07	TRANSISTOR 2SB798
Q432	8-729-901-00	TRANSISTOR DTC124EK
Q433	8-729-101-07	TRANSISTOR 2SB798
Q435	8-729-162-43	TRANSISTOR 2SB624-BV3
Q501	8-729-402-90	TRANSISTOR XN4609
Q502	8-729-162-44	TRANSISTOR 2SB624-BV4
Q503	8-729-271-23	TRANSISTOR 2SC2712
Q504	8-729-271-23	TRANSISTOR 2SC2712
Q801	8-729-901-00	TRANSISTOR DTC124EK
Q803	8-729-920-28	TRANSISTOR FMG9
Q804	8-729-901-05	TRANSISTOR DTA124EK
Q805	8-729-159-64	TRANSISTOR 2SD596
Q806	8-729-901-05	TRANSISTOR DTA124EK
Q807	8-729-907-39	TRANSISTOR IMD2
Q808	8-729-901-06	TRANSISTOR DTA144EK
Q809	8-729-901-05	TRANSISTOR DTA124EK
Q810	8-729-159-64	TRANSISTOR 2SD596
R101	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W
R102	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R103	1-216-833-11	METAL GLAZE 10K 5% 1/16W
R104	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R105	1-216-699-11	METAL CHIP 100K 0.50% 1/10W
R106	1-216-699-11	METAL CHIP 100K 0.50% 1/10W

Ref.No.	Part No.	Description
R107	1-216-748-11	METAL GLAZE 39K 5% 1/10W
R108	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R109	1-216-833-11	METAL GLAZE 10K 5% 1/16W
R110	1-216-009-00	METAL GLAZE 22 5% 1/10W
R111	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R112	1-216-033-00	METAL GLAZE 220 5% 1/10W
R113	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R114	1-216-097-00	METAL GLAZE 100K 5% 1/10W
R201	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W
R202	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R203	1-216-833-11	METAL GLAZE 10K 5% 1/16W
R204	1-216-683-11	METAL CHIP 22K 0.50% 1/10W
R205	1-216-699-11	METAL CHIP 100K 0.50% 1/10W
R206	1-216-699-11	METAL CHIP 100K 0.50% 1/10W
R207	1-216-748-11	METAL GLAZE 39K 5% 1/10W
R208	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R209	1-216-833-11	METAL GLAZE 10K 5% 1/16W
R210	1-216-009-00	METAL GLAZE 22 5% 1/10W
R211	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R212	1-216-033-00	METAL GLAZE 220 5% 1/10W
R213	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W
R214	1-216-845-11	METAL GLAZE 100K 5% 1/16W
R301	1-216-298-00	METAL GLAZE 2.2 5% 1/10W
R302	1-216-013-00	METAL GLAZE 33 5% 1/10W
R303	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W
R401	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W
R403	1-216-089-00	METAL GLAZE 47K 5% 1/10W
R404	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W
R405	1-216-106-00	METAL GLAZE 240K 5% 1/10W
R406	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R408	1-216-045-00	METAL GLAZE 680 5% 1/10W
R409	1-216-041-00	METAL GLAZE 470 5% 1/10W
R410	1-216-045-00	METAL GLAZE 680 5% 1/10W
R411	1-216-041-00	METAL GLAZE 470 5% 1/10W
R412	1-216-092-00	METAL GLAZE 62K 5% 1/10W
R413	1-216-067-00	METAL GLAZE 5.6K 5% 1/10W
R414	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R415	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R416	1-216-033-00	METAL GLAZE 220 5% 1/10W
R417	1-216-658-11	METAL CHIP 2K 0.50% 1/10W
R418	1-216-664-11	METAL CHIP 3.6K 0.50% 1/10W
R419	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W
R420	1-216-095-00	METAL GLAZE 82K 5% 1/10W
R421	1-216-041-00	METAL GLAZE 470 5% 1/10W
R422	1-216-041-00	METAL GLAZE 470 5% 1/10W
R423	1-216-073-00	METAL GLAZE 10K 5% 1/10W
R426	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W
R427	1-217-806-11	METAL GLAZE 1 5% 1/8W
R428	1-217-806-11	METAL GLAZE 1 5% 1/8W
R429	1-216-075-00	METAL GLAZE 12K 5% 1/10W
R430	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W
R435	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R436	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R437	1-216-081-00	METAL GLAZE 22K 5% 1/10W
R438	1-216-041-00	METAL GLAZE 470 5% 1/10W
R439	1-216-049-00	METAL GLAZE 1K 5% 1/10W
R440	1-216-081-00	METAL GLAZE 22K 5% 1/10W

Ref.No.	Part No.	Description			
R441	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R442	1-216-017-00	METAL GLAZE	47	5%	1/10W
R443	1-216-041-00	METAL GLAZE	470	5%	1/10W
R444	1-216-324-11	METAL GLAZE	10K	1%	1/10W
R501	1-216-024-00	METAL GLAZE	91	5%	1/10W
R502	1-216-079-00	METAL GLAZE	18K	5%	1/10W
R503	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R504	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R506	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R507	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R508	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W
R509	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R510	1-216-150-00	METAL GLAZE	10	5%	1/8W
R511	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R512	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R513	1-216-125-00	METAL GLAZE	1.5M	5%	1/10W
R514	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R515	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R516	1-216-093-00	METAL GLAZE	68K	5%	1/10W
R517	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R518	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R519	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R520	1-216-844-11	METAL GLAZE	82K	5%	1/16W
R521	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R522	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R523	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R524	1-216-114-00	METAL GLAZE	510K	5%	1/10W
R525	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R526	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R527	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R528	1-216-103-00	METAL GLAZE	180K	5%	1/10W
R529	1-216-062-00	METAL GLAZE	3.6K	5%	1/10W
R530	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R531	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R532	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R533	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R534	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W
R536	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R538	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R539	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R540	1-216-833-11	METAL GLAZE	10K	5%	1/16W
R542	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R543	1-216-101-00	METAL GLAZE	150K	5%	1/10W
R544	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R545	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R546	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R548	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R549	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R550	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R551	1-216-825-11	METAL GLAZE	2.2K	5%	1/16W
R552	1-216-827-11	METAL GLAZE	3.3K	5%	1/16W
R553	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R554	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R601	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R602	1-216-845-11	METAL GLAZE	100K	5%	1/16W
R603	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R801	1-216-073-00	METAL GLAZE	10K	5%	1/10W

Ref.No.	Part No.	Description			
R802	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R803	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R804	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R805	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R806	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R807	1-216-109-00	METAL GLAZE	330K	5%	1/10W
R808	1-216-041-00	METAL GLAZE	470	5%	1/10W
R809	1-216-009-00	METAL GLAZE	22	5%	1/10W
R810	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R812	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R815	1-216-021-00	METAL GLAZE	68	5%	1/10W
R816	1-218-163-11	METAL GLAZE	120K	1%	1/10W
R817	1-216-694-11	METAL CHIP	62K	0.50%	1/10W
R818	1-216-329-11	METAL GLAZE	5.1K	1%	1/10W
R819	1-216-654-11	METAL CHIP	1.3K	0.50%	1/10W
R820	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R821	1-216-086-00	METAL GLAZE	36K	5%	1/10W
R823	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R824	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R825	1-216-021-00	METAL GLAZE	68	5%	1/10W
R826	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R829	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R831	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R832	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R833	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R834	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R835	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R836	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R837	1-216-121-00	METAL GLAZE	1M	5%	1/10W
R838	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R839	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R840	1-216-085-00	METAL GLAZE	33K	5%	1/10W
RV301	1-237-092-11	RES. VAR. CARBON 10K/10K (VOLUME)			
RV401	1-237-325-11	RES. ADJ. METAL GLAZE 4.7K			
RV402	1-237-328-11	RES. ADJ. METAL GLAZE 47K			
RV501	1-230-869-11	RES. ADJ. METAL GLAZE 4.7K			
RV502	1-230-871-11	RES. ADJ. METAL GLAZE 22K			
RV503	1-230-873-11	RES. ADJ. METAL GLAZE 47K			
RV504	1-237-575-11	RES. ADJ. METAL GLAZE 1.0K			
RV505	1-230-873-11	RES. ADJ. METAL GLAZE 47K			
RV801	1-237-143-11	RES. ADJ. METAL GLAZE 10K			
S801	1-570-909-21	SWITCH. TACTIL (REFLOW TYPE)(■)			
S802	1-570-909-21	SWITCH. TACTIL (REFLOW TYPE)(▶/II)			
S803	1-570-204-11	SWITCH. KEY BOARD (PLAY MODE)			
S804	1-570-204-11	SWITCH. KEY BOARD (ENTER REMAIN)			
S805	1-570-204-11	SWITCH. KEY BOARD (KEY MODE)			
S806	1-570-204-11	SWITCH. KEY BOARD (▶▶I)			
S807	1-570-204-11	SWITCH. KEY BOARD (I◀◀)			
S808	1-570-397-11	SWITCH. SLIDE (HOLD)			
S901	1-554-911-11	SWITCH. LEAF (DOOR)			
S902	1-571-099-11	SWITCH (LIMIT)			
X601	1-567-737-11	VIBRATOR. CRYSTAL (16.9344MHz)			
X801	1-577-064-11	VIBRATOR. CHIP CERAMIC (3.58MHz)			

ACCESSORY & PACKING MATERIAL

1-463-694-11	(Canadian).....ADAPTOR, AC (AC-930A)
1-463-700-11	(UK).....ADAPTOR, AC (AC-930A)
1-463-701-11	(Australian)...ADAPTOR, AC (AC-930A)
1-463-702-11	(E).....ADAPTOR, AC (AC-950W)
1-463-705-11	(AEP,Franch)...ADAPTOR, AC (AC-930AEP)
1-463-968-11	(US).....ADAPTOR, AC (AC-940)
1-526-565-00	(E)...AC PLUG ADAPTOR
1-528-255-21	BATTERY PAC (BP-2)
1-555-658-21	CORD, CONNECTION
2-397-316-01	(EXCEPT for E)...SHEET, PROTECTION
3-786-975-11	(AEP,UK,E,Australian,Franch) ...MANUAL, INSTRUCTION
3-786-975-21	(US,Canadian)...MANUAL, INSTRUCTION
3-786-975-31	(Canadian).....MANUAL, INSTRUCTION
3-786-975-41	(AEP).....MANUAL, INSTRUCTION
*4-926-125-01	CUSHION (UPPER)
*4-926-126-01	(US,Canadian,E)....CUSHION (LOWER)
*4-926-146-01	(AEP,UK,Australian,Franch) ...CUSHION (LOWER)
*4-926-130-01	(US).....INDIVIDUAL CARTON
*4-926-132-01	(Canadian).....INDIVIDUAL CARTON
*4-926-134-01	(UK).....INDIVIDUAL CARTON
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