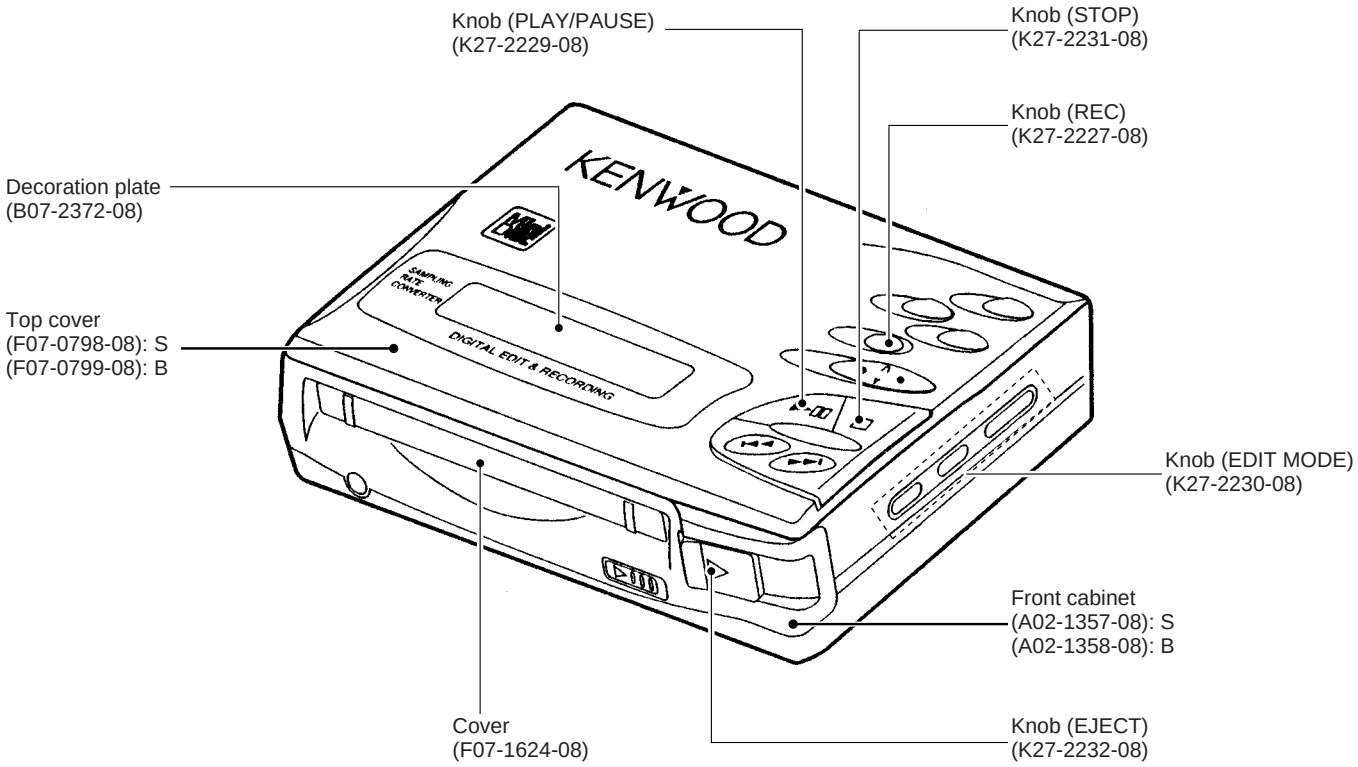
POTABLE MD RECORDER

DMC-G7R

SERVICE MANUAL

KENWOOD



S: SILVER, B: BLUE

SPECIFICATIONS

System .....MiniDisc digital audio system
Read method ...Noncontact optical reading system (semiconductor laser)
Rotating speed .....About 400 - 900 rpm
Sampling frequency.....44.1 kHz (32 kHz and 48 kHz are converted to 44.1 kHz and recorded)
Audio compression.....ATRAC (Adaptive Transform Acoustic Coding)
Number of channels .....Stereo : 2 Channels
Monaural Extended mode : 1 channel
Recording method.....Magnetic modulation overwrite system
Error correction method .....AC / RC method
Frequency response.....20 Hz to 20,000 Hz (±3 dB)
Wow & flutter .....Less than unmeasurable limit (±0.001 % W.PEAK)
Input jack.....Line/optical combined input x 1; microphone x 1 (plug-in power type)
Output jack .....Headphone/remote control combined jack
Input sensitivity : MIC H .....0.25 mV/10 kΩ
MIC L.....2.5 mV/10 kΩ
LINE .....100 mV/20 kΩ
Output level : phones.....10 mW + 10 mW (Maximum output level/at 16Ω)
LINE .....350 mV (at -12dB, standard output/50 kΩ)
Power source...DC 5 V : AC adaptor (AC 120 V, 50/60 HZ)
DC 3.6 V : Lithium ion battery x 1
DC 5 V : Car battery adaptor (sold separately, DC-C50)
DC 4.5 V : Dry batteries case (sold separately, BC-F5)

Battery life .....
(fully charged batteries)

Type of battery	Continuous playback time	Continuous recording time
Rechargeable battery only	Approx. 9.5 hours	Approx. 7 hours
Alkaline batteries	Approx. 24 hours	Approx. 17 hours
Rechargeable battery + Alkaline batteries	Approx. 35 hours	Approx. 25 hours

(Continuous recording time : based on analog input and recording monitor volume level of "0"
(Continuous playback time : based on volume level of "VOL 20")
• Time of use may vary depending on battery maker, batter type, use environment, and temperature.

Dimensions (W) x (H) x (D) .....109.2 mm x 29.8 mm x 81.3 mm (4-5/16" x 1-3/16" x 3-3/16")
Weight (Net) .....Approx. 270 g (0.59 lb)
Including the accessory rechargeable battery
Approx. 222g (0.49 lb)
not including the accessory rechargeable battery

1. KENWOOD follows a policy of continuous advancements in development, For reason specifications may be changed without notice.
2. The full performance may not be exhibited in an extremely cold location (under a water-freezing temperature).

In compliance with Federal Regulations, following are reproductions of labels on, or inside the product relating to laser product safety.

KENWOOD-Corp. certifies this equipment conforms to DHHS Regulations No. 21 CFR 1040. 10, Chapter 1, Subchapter J.

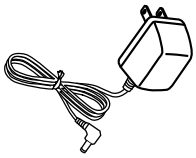
DANGER : Laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.

CONTENTS / ACCESSORIES

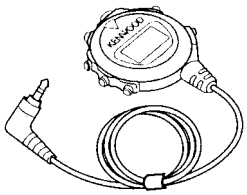
Contents

Accessories

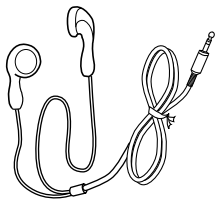
AC adaptor(1)
(W08-0668-08) : K
(W08-0669-08) : M
(W08-0670-08) : E
(W08-0671-08) : T



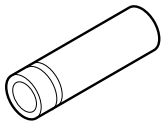
Remote control (1)
(A70-1129-05) : M



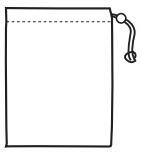
Stereo headphone(1)
(W01-0920-15) : MET



Rechargeable battery (NB-L5) (1)
(W03-5679-08)

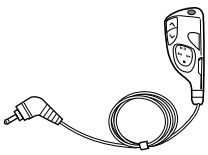


Carrying case (1)
(W01-0918-08)

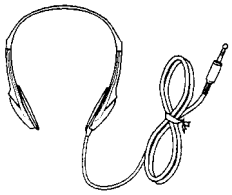


Patch cord (1)
(E30-2836-08)

Remote control unit (1)
(A70-1177-05) : KET



Stereo headphone(1)
(W01-0941-15) : K



DISASSEMBLY FOR REPAIR

Caution on Disassembly
Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:
1. Take the battery and minidisc out of the unit.
2. When disassembling the machine, be sure to withdraw the power plug from the socket in advance.
3. When disassemble the parts, remove the nylon band or wire holder as necessary.
   To assemble after repair, be sure to arrange the wires as they were.
   If a screw of different length is fitted to the MD mechanism (the screw of the part to be fitted to the MD mechanism chassis), it may contact the optical pickup, resulting in malfunction.
4. When repairing, pay due attention to electrostatic charges of IC.

STEP	REMOVAL	PROCEDURE	FIGURE
1	Bottom Cover	1. Screw ..... (A1) x5	7-1
2	Disc Cover (Note)	1. Screw ..... (B1) x4 2. Flexible PWB ..... (B2) x1	7-1
3	Main PWB	1. Screw ..... (C1) x3 2. Flexible PWB ..... (C2) x4 3. Soldering ..... (C3) x2	7-2
4	Front Cabinet	1. Screw ..... (D1) x1 2. Remove the front cabinet in the arrow direction.	7-2

Note:
When removing the upper lid, at first turn the operation knob side in the arrow direction to remove.

Installing the front cabinet (See Fig. 7-3.)

1. Make sure that the lid opening and closing spring has been engaged at the upper side as shown in Figure **< A >** .
2. Fit the MD lid right pin into the lid opening and closing lever to install it.

Note:
- Take care since the antivibration rubber may come off.
- If the main PWB has been installed previously, fit the knob to the HOLD switch shown in Figure **< B >** .
- If the mechanism has been installed, the antivibration rubber may come off from the center cabinet fitting part when the front part of center cabinet is widened.

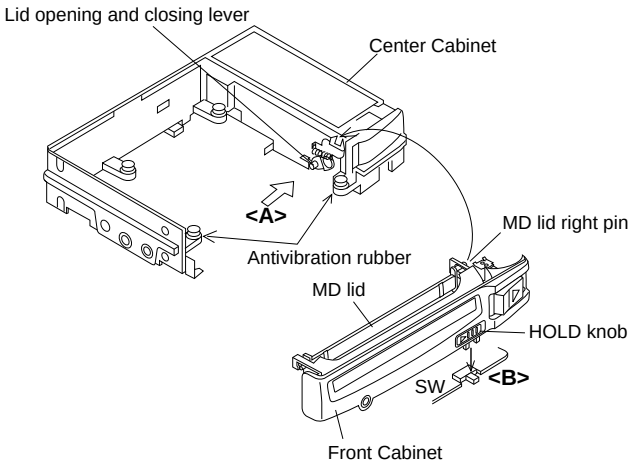
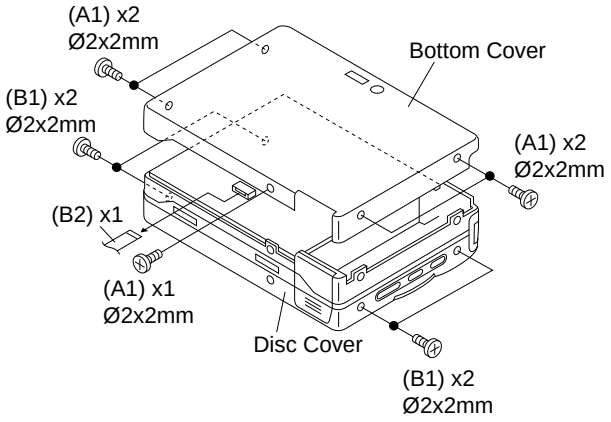


Figure 7-4



Figu re 7-1

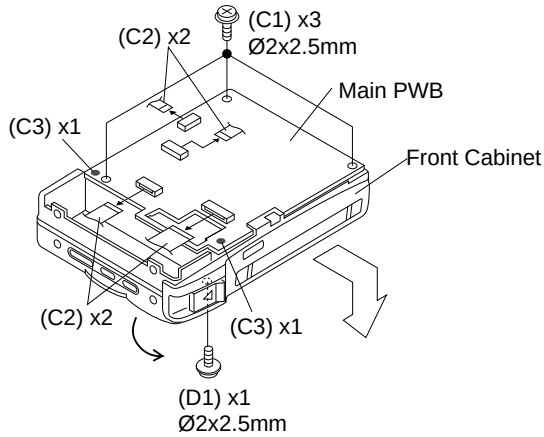
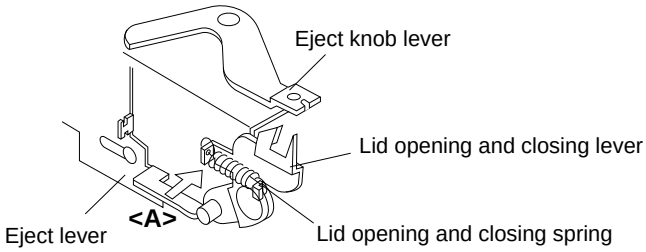


Figure 7-2



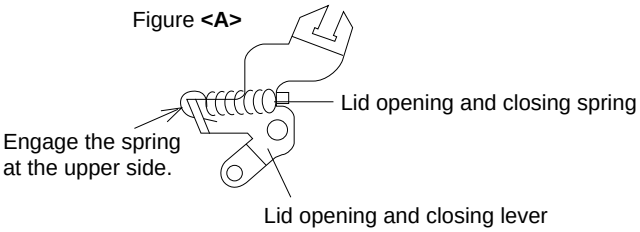


Figure 7-3

DISASSEMBLY FOR REPAIR

Remove the mechanism according to the disassembling methods 1 to 4. (See Page 7.)

How to remove the disc motor (See Fig. 8-1.)

1. Remove the solder joint (A1) x 1 of flex PWB.
2. Remove the screws (A2) x 3 pcs. and remove the disc motor.
   Take care so that the turnrable is not damaged.

How to remove the slide motor (See Fig. 8-2.)

1. Remove the solder joint (B1) x 1 of slide motor lead wire.
2. Remove the screw (B2) x 1, and remove the slide motor.

Note:
Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is raised in search mode.)

How to reinstall the optical pickup unit (See Fig. 8-3.)

1. Remove the screws (C1) x 5 pcs.
2. Remove the magnetic fielt arm block from the pickup, and move the magnetic field arm block outwards.

Note:
Take due care so that the magnetic head is not damaged.

3. Withdraw a little the slide motor side shaft (C2) x 1 pcs., and slowly raise the optical pickup.

How to remove the magnetic head (See Fig. 8-4.)

1. Remove the screw (D1) x 1 pc.
2. Remove the unsolder (D2) x 2 pcs. which connects the magnetic head and the head hookup flex.

Note:
Mount carefully so as not to damage the magnetic head.

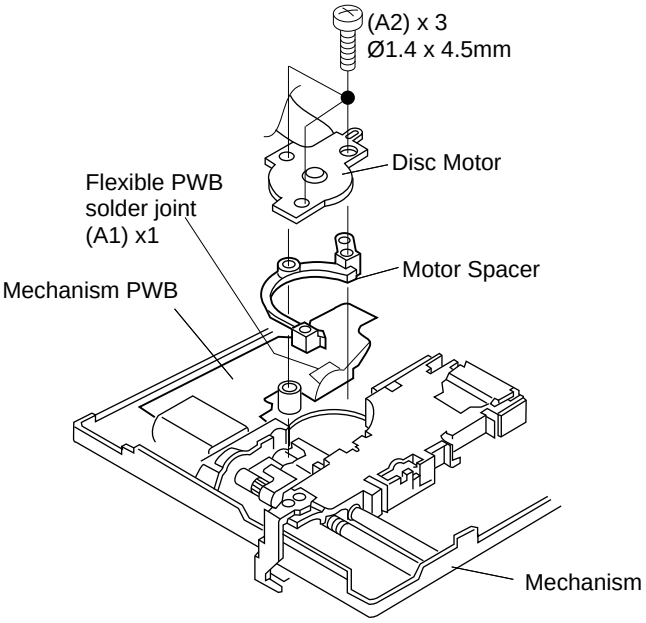


Figure 8-1

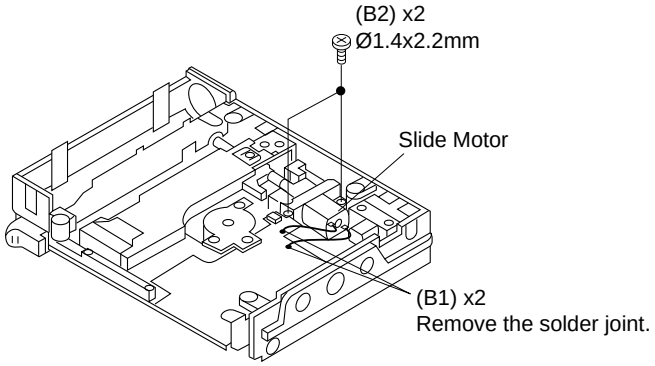


Figure 8-2

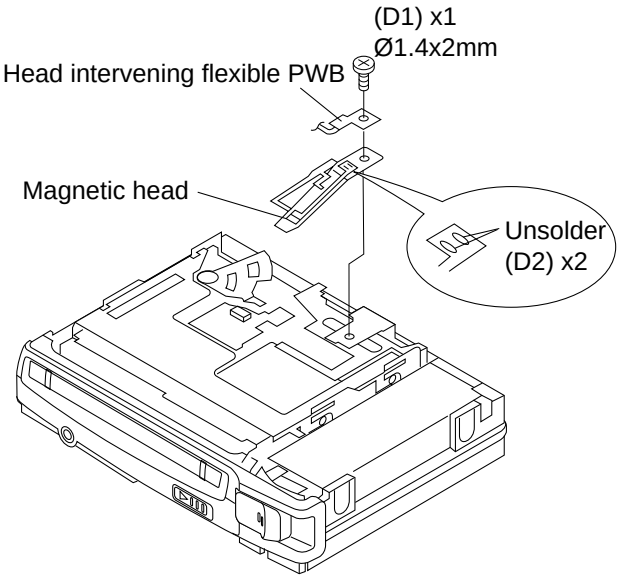


Figure 8-4

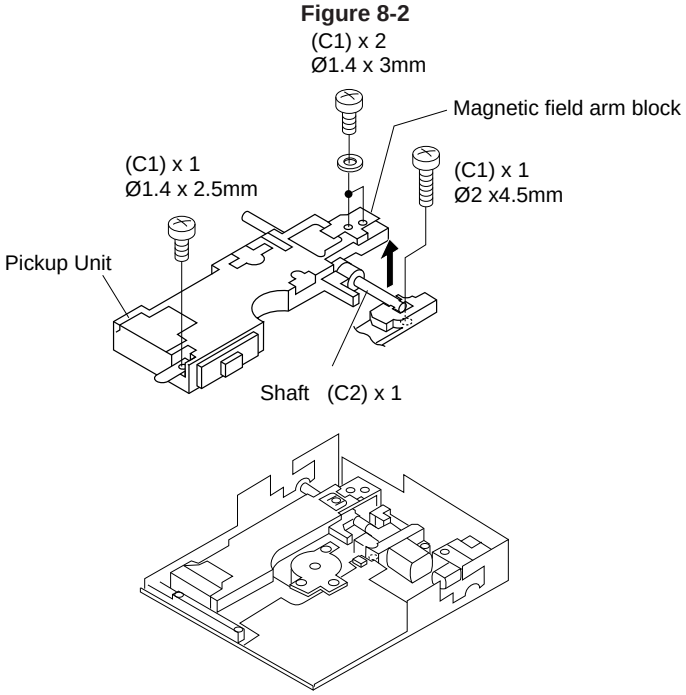


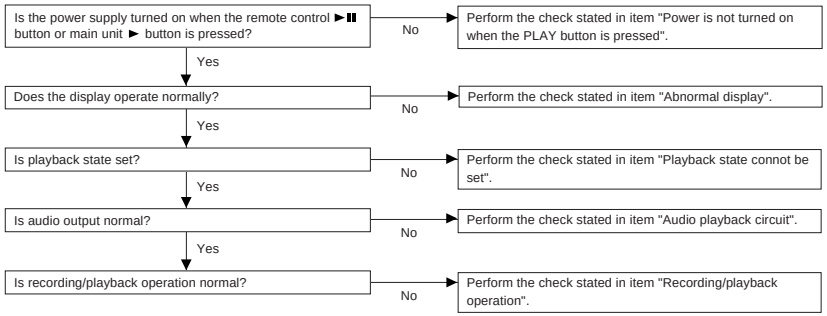
Figure 8-3

It is advisable to use the TEST mode (refer to Error Data Display Mode, P15) indicating the causes of troubles before starting repair. Causes of operation errors (up to 10 errors) are recorded as error codes. This information is useful for repair.

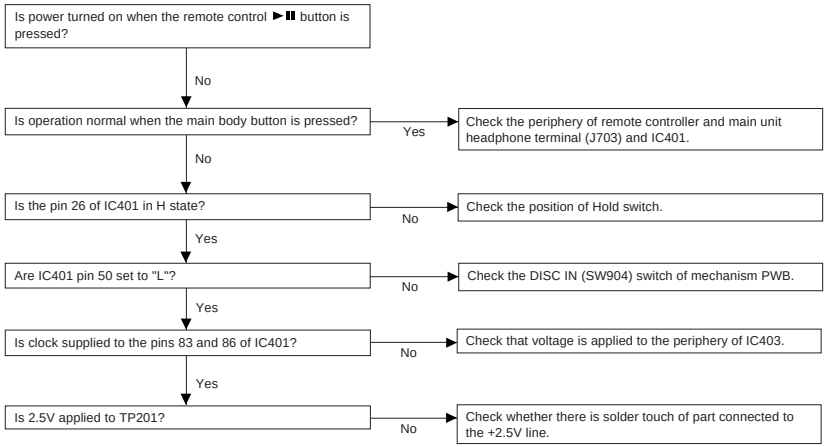
When does not function

When the CD section does not operate When the objective lens of the optical pickup is dirty,this section may not operate.Clean the objective lens,and check the playback operation.When this section does not operate even after the above step is taken,check the following items.
Remove the cabinet and follow the troubleshooting instructions.
"Track skipping and/or no TOC(Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

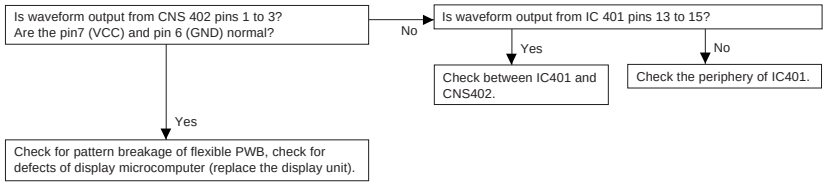
Turn the power off.
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.
Do not touch the lens with the bare hand.



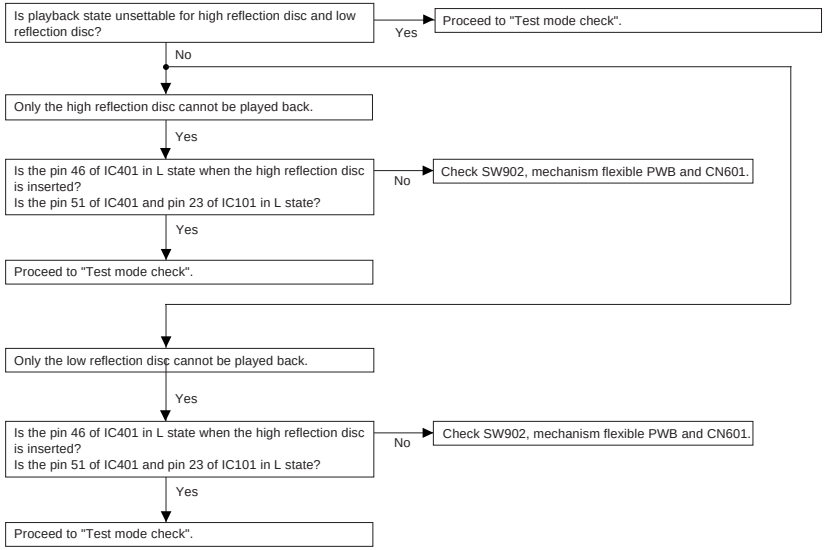
• Power is not turned on when the ► / ►II button is pressed.



• Abnormal display



• Playback state cannot be set

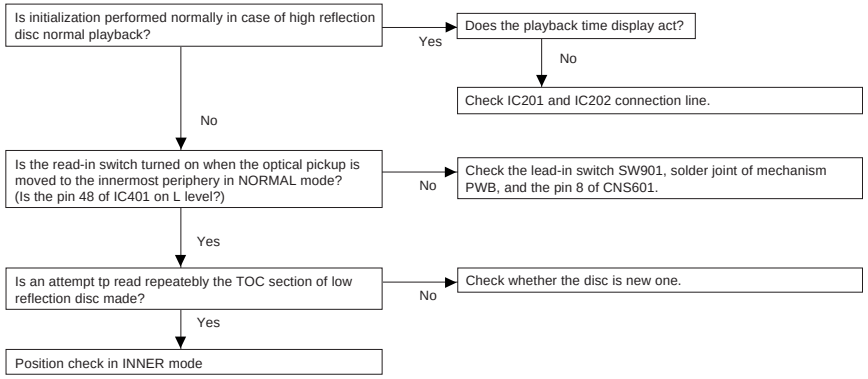


• Test mode check

Insert a high reflection (low reflection) disc, and once perform automatic adjustment in AUTO mode, and then check in MANUAL mode.
Simultaneously observe waveforms of EFM(TP145), FEOUT(TP143), and TEOUT(TP144).

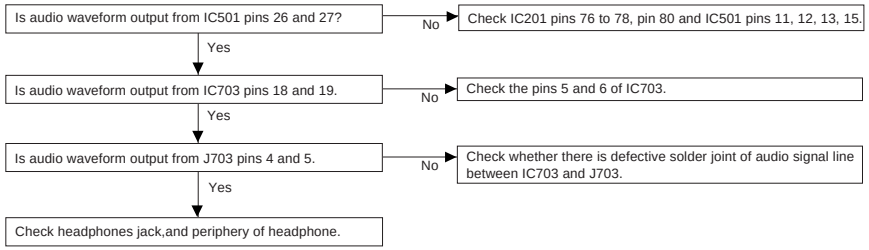
• Normal playback

When the address up to the sector address has been proved to be normal in the test mode.

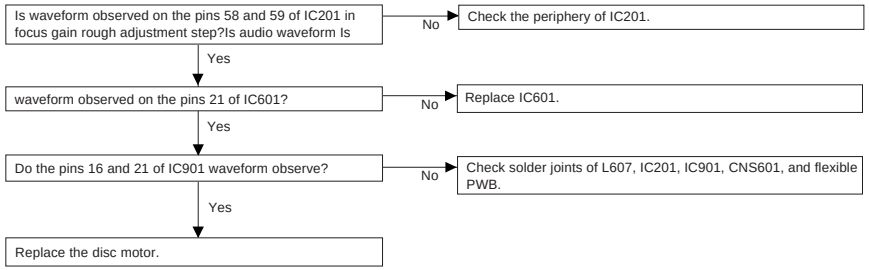


• Audio playback circuit

Although the playback time display is acting, no sound is given during playback in the normal mode.

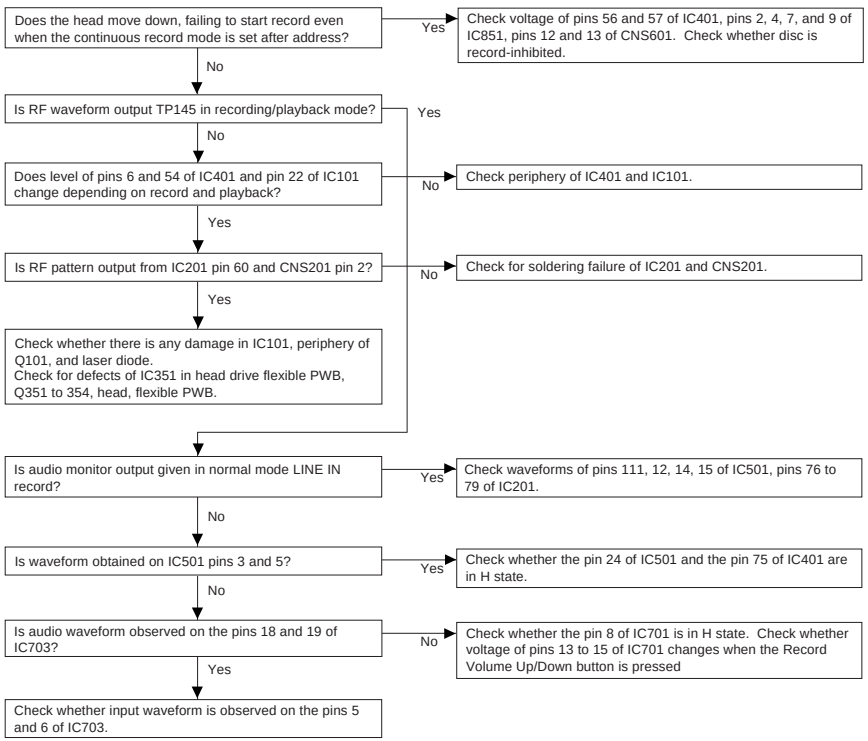


• The disc motor fails to rotate.



• Recording/playback operation

Insert a low reflection disc, and ascertain audio output by normal playback, and then set TEST REC mode.



● Test disc

MD adjustment needs two types of disc, namely recording disc (low reflection disc) and playback-only disc (high reflection disc).

	Type	Test disc	Parts No.	Price Code
1	High reflection disc	ESYA 1014 (SONY)	————	————
2	Low reflection disc	Recording minidisc	UDSKM0001AFZZ	AZ

Note: Use the low reflection disc on which music has been recorded.

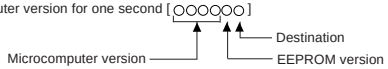
● Entering the TEST mode

1. Setting at port (in standby state, disc-free state or power nonconnected state)

(1) Set the port as follows.
TEST1 : "Low"
TEST0 : "High"
(2) Press the PLAY button in the standby state (it is allowed to insert the disc or to connect the power supply).
(3) Test Mode STOP [_ T E S T _]

2. Setting by special button operation (in standby state)

(1) Holding down the DISP button and ENTER button, press the PLAY button.
(2) Normal mode setting initialization (BASS setting, VOL setting, etc.)
(3) Indication of microcomputer version for one second [○○○○○○]



(4) Whole LCD lighting for 2 seconds
(5) Test Mode STOP [_ T E S T _]
*When the PLAY button is pressed during indication (3) and (4), the process proceeds to (5).

● Leaving the TEST mode

(1) Press the STOP button in the TEST mode stop state or version indicating state or whole LCD lighting state.
(2) EEPROM rewrite-enable area updating, adjustment error setting (so as to adjust all the items when the power supply is turned on in the normal mode)
(3) Change to standby state

● Test Mode

1. AUTO Mode	• Automatic adjustment is performed. (After adjustment the grating adjustment mode is set.) • Continuous playback is performed (Error rate indication, jump test). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed.
2. MANUAL Mode	• Temperature is displayed. (Updating in real time) • Seeing the displayed measurement value/set value, make manualadjustment to set values within the allowable range. • Continuous playback is performed (error rate display, jump test). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed.
3. RESULT Mode	• Adjustment value is indicted. • Adjustment value is changed manually. (in servo OFF state).
4. TEST-PLAY Mode	• Continuous playback from the specified address is performed. • 1 line, 10 lines or 400 lines manual jump is performed. • C1 error rate display (pit section), ADIP error rate display (groove section) • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous playback.
5. TEST-REC Mode	• Continuous record from the specified address is performed. • Change of record laser output(servo gain is also changed according to laser output). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous recording.
6. INNER Mode	• Determine the position where the INNER switch is turned on.(only high reflection disc). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed.
7. NORMAL Mode	• The mode is changed from the TEST mode to the normal mode without adjustment. • In the normal mode the internal operation mode, memory capacity, etc. areindicated. • In the normal mode both temperature correction and posture correction are performed.
8. Digital input display Mode	• Digital input information is displayed.
9. Error data display Mode	• Error information is displayed. • Error information is initialized.
10. E^2-PROM setting mode	• Factors of digital servo are changed manually. (Each servo is turned on individually.) • Cut-off frequency of BASS1, BASS2 and BASS3 is selected manually. • Temperature detection terminal voltage is measured, and the reference value is set. • Defaults are selected and set. • Setting of EEPROM protect area is updated. (In case of protect releasing)

● Operation in each TEST mode

1. AUTO Mode

- When the STOP button is pressed while the AUTO menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- As for operation during continuous playback refer to [Explanation of TEST-PLAY mode].
- Adjustment NG: If the measurement value of adjustment FEO is out of range,focus ON failure occurs or adjustment error or TZC error occurs.
- When the high reflection disc is used, ✳✳ changes as follows. TEO — FEO — Hf — Hg — Hb — Hf
- When the low reflection disc is used, ✳✳ changes as follows. TEO — FEO — If — Lg — Lb — Lf — Gl — Gg — Gb — Lf
- Grating adjustment: When the focus servo and spin servo are ON.

- ✳✳✳ : Adjustment name
- ○○ : Measurement value
- ●● : Set value
- □□□□: Address

Step No.	Operation and state	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button.	
Step 3	AUTO menu.	[A U T O]
Step 4	PLAY button --> Slide shift to innermost periphery	
Step 5	Automatic adjustment	[✳✳ ○○ ●●]
Step 6	End of adjustment	
Step 7	When adjustment is OK, the process proceeds to (8). When adjustment is NG, the process proceeds to (13).	
Step 8	Grating adjustment, adjustment value output	[A D J . O K]
Step 9	When the PLAY button is pressed, the process proceeds to (10). When the STOP button is pressed, the process proceeds to (12).	
Step 10	Continuous playback (pit section) Continuous playback (groove section)	[S Q □□□□] [A P □□□□]
Step 11	STOP button	
Step 12	Test mode STOP state	[T E S T]
Step 13	Adjustment value output	[A D J . N G]
Step 14	STOP button	
Step 15	Test mode STOP state	[T E S T]

2. MAMUAL Mode

Step No.	Operation and state	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 1 times (Or SKIP DOWN button x 9 times)	
Step 5	MANUAL menu	[M A N U A L]
Step 6	PLAY button	
Step 7	Temperature measurement	[T M P : ◆◆]
Step 8	SKIP UP button	
Step 9	Tracking error offset measurement	[T E O : ○○]
Step 10	SKIP UP button	
Step 11	Focus error offset measurement	[F E O : ○○]
Step 12	SKIP UP button—Laser lighting	[L O N : _ _]
Step 13	SKIP UP button— Slide shift to innermost periphery	
Step 14-a	Focus gain rough adjustment (high reflection)	[H f ○○ ●●]
Step 14-b	Focus gain rough adjustment (low reflection)	[L f ○○ ●●]
Step 15	SKIP UP button	
Step 16-a	Pit:Tracking gain adjustment (high reflection)	[H g ○○ ●●]
Step 16-b	Pit:Tracking gain adjustment (low reflection)	[L g ○○ ●●]
Step 17	SKIP UP button	
Step 18-a	Pit: Tracking balance adjustment (high reflection)	[H b ○○ ●●]
Step 18-b	Pit: Tracking balance adjustment (low reflection)	[L b ○○ ●●]
Step 19	SKIP UP button	
Step 20-a	Pit: Focus gain adjustment (high reflection)	[H f ○○ ●●]
Step 20-b	Pit: Focus gain adjustment (low reflection)	[L f ○○ ●●]

Step No.	Operation and state	Display
Step 21	Step (24) when SKIP UP button, Step (22) when PLAY button.	
Step 22	Pit section continuous playback	[S Q □□□□]
Step 23	When the P-MODE button is pressed, the process proceeds to (20-a) or (20-b).	
Step 24	The high reflection disc is not accepted. When the low reflection disc is used, the process proceeds to (25).	
Step 25	TOTAL signal level adjustment	[G l ○○ ●●]
Step 26	SKIP UP button	
Step 27	Groove: Tracking gain adjustment	[G g ○○ ●●]
Step 28	SKIP UP button	
Step 29	Groove: Tracking balance adjustment	[G b ○○ ●●]
Step 30	SKIP UP button	
Step 31	Focus gain adjustment	[L f ○○ ●●]
Step 32	PLAY button	
Step 33	Groove section continuous playback	[A P □□□□]
Step 34	When the P-MODE button is pressed, the process to (31).	

- Reversing when the SKIP DOWN button is pressed.
- When the VOL UP button is pressed during adjustment, the set value increases, and the new set value is output.
- When the VOL DOWN button is pressed during adjustment, the set value reduces, and the new set value is output.
- When the VOL UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the STOP button is pressed while the MANUAL menu appears, or during measurement or adjustment, the mode changes to the TEST mode stop state.
- As for operation during continuous playback refer to [Explanation of TEST-PLAY mode].

- ○○ : Measurement value
- ●● : Set value
- □□□□: Address
- ◆◆ : Temperature code

3. RESULT Mode

Step No.	Operation and state	Display
Step 1	Test mode STOP state	[TEST]
Step 2	BASS button	
Step 3	AUTO menu	[AUTO]
Step 4	SKIP UP button x 2 times (Or SKIP DOWN button x 8 times)	
Step 5	RESULT menu	[RESULT]
Step 6	PLAY button	
Step 7	Indication of measurement value: Tracking error offset	[TEO: ○○]
Step 8	SKIP UP button	
Step 9	Indication of measurement value: Focus error offset	[FEO: ○○]
Step 10	SKIP UP button	
Step 11	Indication of measurement value: High reflection focus gain	[Hf_ _ ●●]
Step 12	SKIP UP button	
Step 13	Indication of measurement value: High reflection pit tracking gain	[Hg_ _ ●●]
Step 14	SKIP UP button	
Step 15	Indication of measurement value: High reflection pit tracking balance	[Hb_ _ ●●]
Step 16	SKIP UP button	
Step 17	Indication of measurement value: Low reflection focus gain	[Lf_ _ ●●]
Step 18	SKIP UP button	
Step 19	Indication of measurement value: Low reflection tracking gain	[Lg_ _ ●●]
Step 20	SKIP UP button	
Step 21	Indication of measurement value: Low reflection pit tracking balance	[Lb_ _ ●●]
Step 22	SKIP UP button	
Step 23	Indication of measurement value: Low reflection TOTAL signal level	[Gl_ _ ●●]
Step 24	SKIP UP button	
Step 25	Indication of measurement value: Low reflection groove tracking gain	[Gg_ _ ●●]
Step 26	SKIP UP button	
Step 27	Indication of measurement value: Low reflection groove tracking balance	[Gb_ _ ●●]
Step 28	STOP button	
Step 29	Test mode STOP state	[TEST]

- Reversing when the SKIP DOWN button is pressed
- When the VOL UP button is pressed during set value indication, the set value increases, and the new set value is stored in RAM.
- When the VOL DOWN button is pressed during set value indication, the set value decreases, and the new set value is stored in RAM.
- When the VOL UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the STOP button is pressed while the RESULT menu appears, or during measurement value or set value indication, the mode changes to the TEST mode stop state.
- ○○: Measurement value
- ●●: Set value

7. TEST/PLAY Mode

Step No.	Operation and state	Display
Step 1	Test mode STOP state	[TEST]
Step 2	BASS button	
Step 3	AUTO menu	[AUTO]
Step 4	SKIP UP button x 3times (Or SKIP DOWN button x 7 times)	
Step 5	TEST-PLAY menu	[T_ PLAY]
Step 6	When the DISP button is pressed, the process proceeds to (7). When the PLAY button is pressed, the process proceeds to (9).	
Step 7	TEST-PLAY mode	[Ad0050]
Step 8	PLAY button	
Step 9	Continuous playback (pit section) Continuous playback (groove section)	[SQ □□□□] [AP □□□□]
Step 10	STOP button	
Step 11	Test mode STOP state	[TEST]

•When the STOP button is pressed while the TEST-PLAY menu appears, or in TEST-PLAY or continuous playback mode, the mode changes to the TEST mode stop state.
• When the PLAY button is pressed while the TEST-PLAY menu appears,continuous playback is initiated from the current pickup position.
• Whenever the DISP button is pressed in the TEST-PLAY mode, the address changes as follows.
0050 — 03C0 — 0700 — 08A0 — 0050 —
• Whenever the BASS key is pressed in the TEST-PLAY mode, the digit which is changed by the SKIP UP/DOWN button changes as follows.
0050 — 0050 — 0050 — 0050 — 0050 —
• When the SKIP UP button is pressed in the TEST-PLAY mode, the digit of address specified by the BASS button is set to +1h. (0 to F)
• When the SKIP DOWN button is pressed in the TEST-PLAY mode, the digit of address specified by the BASS button is set to -1h. (0 to F)
* When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
• When the BASS button is pressed in the continuous playback mode, the number of jump lines changes as follows.
1 — 10 — 400 — 1
* After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲T R _]
• When the SKIP UP button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD direction.
• When the SKIP DOWN button is pressed in the continuous playback mode, the specified number of lines is jumped in the REV direction.
* When the SKIP UP/DOWN button is held down, jump is repeated every approx. 100 ms.
•Whenever the DISP button is pressed in the continuous playback mode, the indication changes as follows.
* Pit section
Continuous playback (SUBQ address indication) [S Q □□□□]
|
Continuous playback (C1 error indication) [C E ☆☆☆☆]
|
Continuous playback (SUBQ address indication) [S Q □□□□]
* Groove section
Continuous playback (ADIP address indication) [A P □□□□]
|
Continuous playback (C1 error indication) [C E ☆☆☆☆]
|
Continuous playback (ADIP error indication) [A E ★★★★]
|
Continuous playback (ADIP address indication) [A P □□□□]
•□□□□: Address
•☆☆☆☆: C1 Error rate
•★★★★: ADIP Error rate
•▲▲▲ : JUMP lines

● Mechanism Adjustment

1. Optical pickup grating inspecting method

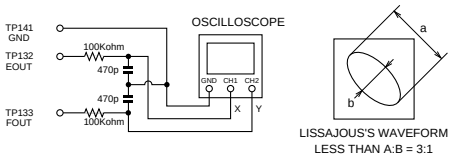
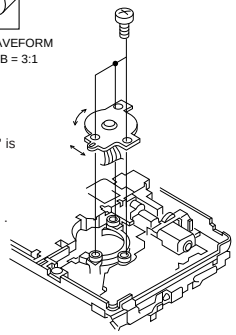
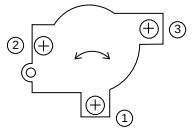


Figure 12-1 OPTICAL PICKUP GRATING DEVIATION MEASURING METHOD

After the automatic adjustment is performed in the AUTO mode (test mode) with the aid of high refection MD disc ("COMPLATE" is displayed), the Lissajous's waveform (x-y) is adjusted.
1. Slightly loosen the 3 screws of spin motor, and make an adjustment, observing the Lissajous's wavefor.
2. After adjustment tighten the screws in arder of**<1> , <2> ,< 3>** .
3. It confirms Lissajous's wavwform ripple mark once again.





Shifting the spin motor installation position, check the Lissajous's waveform.

Figure 12-2

5. TEST-REC Mode

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 4times (Or SKIP DOWN button x 6 times)	
Step 5	TEST-REC menu	[T R E C]
Step 6	When the DISP button is pressed, the process proceeds to (7). When the PLAY button is pressed, the process proceeds to (9).	
Step 7	TEST-REC mode	[A d 0 0 5 0]
Step 8	PLAY button	
Step 9	Continuous playback mode (groove)	[A P □□□□]
Step 10	STOP button	
Step 11	Test mode STOP state	[T E S T]

• When the STOP button is pressed while the TEST-REC menu appears, or in the TEST-REC mode or continuous record mode, the mode changes to the TEST mode stop state.
• When the PLAY button is pressed while the TEST-REC menu appears, the continuous record is initiated from the current pickup position.
• Whenever the DISP button is pressed in the TEST-REC mode, the address changes as follows.
0050 — 03C0 — 0700 — 08A0 — 0050 —
• Whenever the BASS button is pressed in the TEST-REC mode, the digit which is changed by the SKIP UP/DOWN button changes as follows.
0050 — 0050 — 0050 — 0050 — 0050 —
• When the SKIP UP button s pressed in the TEST-REC mode, the digit of address specified by the BASS button is set to +1h.(0 to F)
• When the SKIP DOWN button is pressed in the TEST-REC mode, the digit of address specified by the BASS button is set to -1h. (0 to F)
* When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
• When the VOL UP/DOWN button is pressed in the TEST-REC mode or continuous record mode, the laser record power changes. (Servo gain changes also according to record power.)
* After the laser record power is indicated for one second, the address indication is restored. [R P W ▽▽]
• □□□□: Address
• ▽▽ : Laser power cord
• Operation is disabled if the premastered disc or disc is in miserase-protected state.

6. INNER Mode

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 5 times (Or SKIP DOWN button x 5 times)	
Step 5	INNER menu	[I N N E R]

Step No.	Setting Method	Display
Step 6	PLAY button	
Step 7	INNER switch position measurement	[S Q □□□□]
Step 8	STOP button	
Step 9	Test mode STOP state	[T E S T]

• When the STOP button is pressed while the INNER menu appears, the mode changes to TEST mode stop state.
• □□□□ : Address

7. NORMAL Mode

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 6times (Or SKIP DOWN button x 4 times)	

Step No.	Setting Method	Display
Step 5	NORMAL menu	[N O R M A L]
Step 6	PLAY button	
Step 7	TOC read	[Refer to the following description.]
Step 8	Hereafter operation in normal mode	

- When the STOP button is pressed while the NORMAl menu appears, the mode changes to the TEST mode stop state.
- Indication during operation

  Indication of memory capacity on main unit LCD [✳✳✳ ◇◆○○○○] + Level meter
  - ✳✳✳ : TNO
  - ◇ : Internal mode
  - ◆ : Servo state (#3: Slide, #2: Tracking, #1: Spin, #0: Focus)
  - ○○○○ : Address

  LCD remote control [◇◆○○○☆] + TNO indication
  - ◇ : Internal mode
  - ◆ : Servo state (#3: Slide, #2: Tracking, #1: Spin, #0: Focus)
  - ○○○ : Address
  - ☆ : Memory capacity (graphic indication)
- Selection of sound volume, BASS, etc. is possible (without indication)
- Recording is also possible.

8. Digital input display mode

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 7times (Or SKIP DOWN button x 3 times)	
Step 5	Digital input indication menu	[D I N M O N]
Step 6	PLAY button	

Step No.	Setting Method	Display
Step 7	FS code, channel status indication	[C ƒ ƒ ƒƒ ƒƒ]
Step 8	SKIP UP button	
Step 9	U bit indication 1	[U 1 ■■ ⊠⊠]
Step 10	SKIP UP button	
Step 11	U bit indication 2	[U 2 † † ‡ ‡]
Step 12	STOP button	
Step 13	Test mode STOP state	[T E S T]

- When the STOP button is pressed while the digital input indication menu appears or during digital input information indication, the mode changes to the TEST mode stop state.
- In case of analog input or digital input unlocking the indication data is _.
- ƒ ƒ : Control Code
- ƒƒƒƒ : Category code
- ■■ : TNO
- ⊠⊠ : INDEX
- † † : TIME(min.)
- ‡ ‡ : TIME(Sec.)

9. Error data display Mode

Step No.	Setting Method	Display
Step 1	Test mode STOP state	[T E S T]
Step 2	BASS button	
Step 3	AUTO menu	[A U T O]
Step 4	SKIP UP button x 8times (Or SKIP DOWN button x 2 times)	
Step 5	Error data indication menu	[E D A T A]
Step 6	PLAY button	
Step 7	Indication of error data 0	[E 0 ◇◇]
Step 8	SKIP UP button	
Step 9	Indication of error data 1	[E 1 ◇◇]
Step 10	SKIP UP button	
Step 11	Indication of error data 2	[E 2 ◇◇]
Step 12	SKIP UP button	
Step 13	Indication of error data 3	[E 3 ◇◇]
Step 14	SKIP UP button	
Step 15	Indication of error data 4	[E 4 ◇◇]
Step 16	SKIP UP button	
Step 17	Indication of error data 5	[E 5 ◇◇]
Step 18	SKIP UP button	
Step 19	Indication of error data 6	[E6 ◇◇]
Step 20	SKIP UP button	
Step 21	Indication of error data 7	[E 7 ◇◇]
Step 22	SKIP UP button	
Step 23	Indication of error data 8	[E 8 ◇◇]
Step 24	SKIP UP button	
Step 25	Indication of error data 9	[E 9 ◇◇]
Step 26	STOP button	
Step 27	Test mode STOP state	[T E S T]

- Reversing when SKIP DOWN button is pressed
- When the STOP button is pressed while the error data indication menu appears or during error data indication, the mode changes to the TEST mode stop state.
- Error data 0 is the latest error.
- Error which occurred in the TEST mode is also stored in the memory.
- When the DISP button is pressed while the error data indication menu appears, the error data is initialized. [C L E A R _]
- ◇◇: Error Code

Error data list

Error Code	Contents
11	Automatic adjustment Gain maximum or error adjustment judgment NG during adjustment retry in TG, FG adjustment.
12	Automatic adjustment Out of allowable range
13	Automatic adjustment Servo retry error (4 times) during adjustment
16	Automatic adjustment TZC error in TG, TB adjustment (TG, TB measurement value does not change.)
17	Automatic adjustment TEO, FEO allowable range error
21	Focus setting disabled
23	Track search time-over
32	P-TOC read disabled
42	U-TOC read disabled
44	U-TOC write disabled
52	Music data write disabled
71	Pickup position initialization error (Inner switch ON failure)
72	EEPROM read error
73	Record head drive disabled (EJECT operation)
82	Overvoltage detection
91	TEMP over

● Jitter checking method

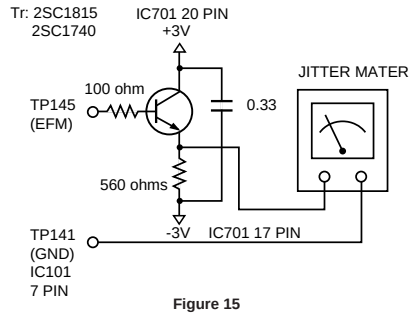


Figure 15

After automatic adjustment is performed in the AUTO mode (low reflection MD disc use TEST mode), jitter must be less than 32 ns.

● Lead-in switch position adjusting method

Note: Measure the position of lead-in switch in the INNER mode, and fix the position of lead-in switch at SUBQ FF85 to FF02.
After retightening the screw, pressing the mechanism PWB in the arrow direction, measure again the position of lead-in switch. If the removed screw cannot be fit after position adjustment, fix with two screws.

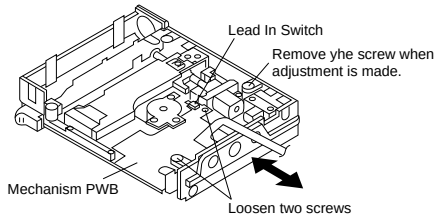


Figure 16-1

● Adjustment of magnetic head mounting position

- When the magnetic head and optical pickup have been replaced, be sure to adjust the mounting position.
- For easier adjustment of mounting position move the optical pickup to the center position, and then adjust the position.

1. Set the transparent disc 3 for adjustment.(*1)
2. Turn off the power supply, turn the head drive gear by hand to lower the head.
3. Viewing the set from above, make an adjustment so that the magnetic head aligns with the optical pickup objective lens.
   - Circumferential direction: Slightly loosen the head fixing screw (A), and shift the magnetic head fitting to align the head with the pickup abjective lens.
   - Radial direction:Turn the magnetic head circumferential adjustment nut (B), and adjust to align the head with the objective lens.

*1: Before setting the disc remove the decoration plate from the disc lid, and fix it as shown in Figure 16-2.

4. Make sure that there is a clearance as shown in Figure 16-2 and that the magnetic head moves up and down smoothly.
5. After adjustment apply Screw Lock to the head fixing screw (A) and adjusted magnetic head radial adjusting screw (B).

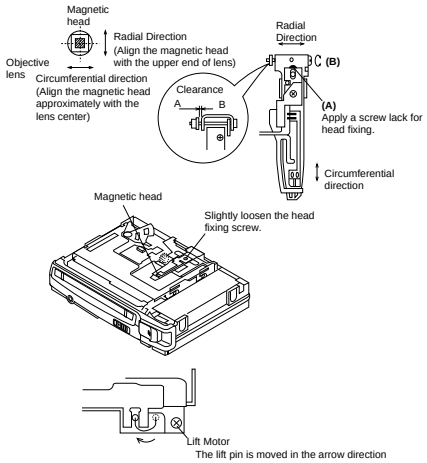


Figure 16-2

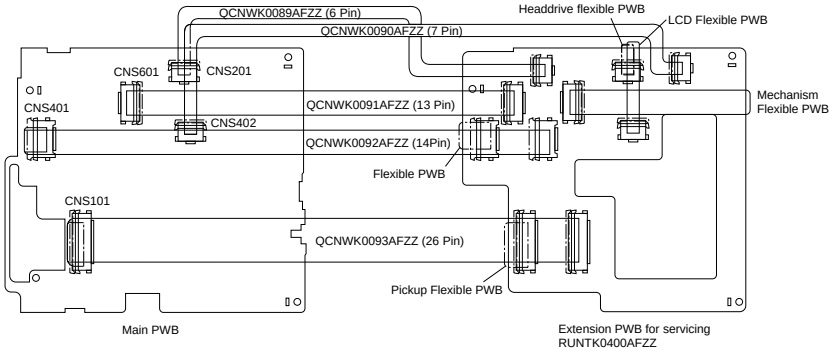


Figure 16-3

E²-PROM (IC402) writing procedure

1. Procedure to replace E²-PROM and write initial value of microcomputer in E²-PROM

(1) Replace E²-PROM.
(2) Deprive E²-PROM of protection (connect the pins 8 and 2 of IC402).
(3) Refer to the latest E²-PROM data list.
(4) Press the Display/Lower-case Character button, Enter/Synchro button and Play/Pause button to start the test mode.
(5) Version display
[V e r . ✳✳✳✳✳✳]
E²-PROM version (C ~ Z)
Microcomputer ROM version
(6) The whole LCD lights.
(7) Test mode stop state
[T E S T]
(8) Press the Enter/Synchro button.
[E E P R O M]
(9) Perform the operation to display "E²-PROM SETTING MODE CHART", compare the E²-PROM DATA LIST with the display, and set according to the E²-PROM DATA LIST with the VOL UP or VOL DOWN key.
(10) Set the temperature reference. (Refer to the Temperature Reference Setting Method.)
(11) Set according to the E²-PROM DATA LIST.
(12) Press the Stop button.
[T E S T]
(13) Press the Stop button.
(14) After data is written in E²-PROM, turn off power .
(15) Restore protection of E²-PROM (Disconnect connection made in Step (2) above).

2. Temperature reference setting method (to be performed at room temperature 21 to 29°C)

(1) Test mode stop state
[T E S T M O D E]
(2) Measure voltage of TEMP terminal (pin 3, IC401) of microcomputer.
(3) Calculate the temperature reference, using the following formula.

$$\text{Temperature reference} = \frac{\text{Measured voltage} \times 256}{2.8}$$

(4) Round down decimal fractions of calculated temperature reference, and convert it to hexadecimal value.
(5) Correct the temperature according to the table below depending on ambient temperature.

Ambient temperature	Temperature correction
21 - 23	+ 1
24 - 26	± 0
27 - 29	- 1

An example: Environmental temperature is 22°C and set voltage is 1.25V.

$$\text{Temperature reference} = \frac{1.25 \times 256}{2.8}$$

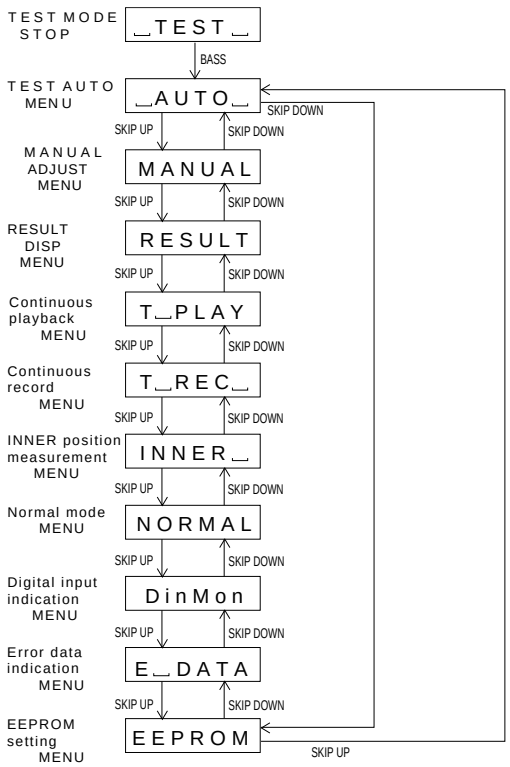
$$= 114.286$$

= 114 (Decimal fraction is rounded down.)
= 72_H (Conversion to hexadecimal value)

(6) Press the BASS button, and press the SKIP DOWN button.
[E E P R O M]
(7) Press the PLAY button, and press the SKIP button.
[T e m p]
(8) Press the PLAY button.
[T E M P ○○] ○○: Temperature reference
(9) Set the temperature standard value to the value obtained above with the VOL UP and VOL DOWN buttons.
(10) Press the STOP button.
[T E S T]

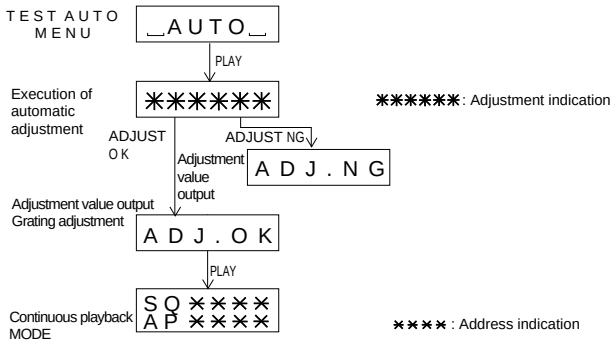
TROUBLE SHOOTING

●Test Mode Change Chart



• When the STOP key is pressed in the specific mode, the mode changes to the TEST mode stop state.

●Test Auto Change Chart



• When the STOP key is pressed in the specific mode, the mode changes to the TEST mode stop state.

Slide setting

Item display	Set values
SLG_	80H
SL2_	1CH
SLM_	7FH
SLV_	20H
SKK_	78H
SKt_	50H
SKm_	78H

Control setting

Item display	Set values
TBA_	A8H
CT1_	13H
CT2_	A8H
CT3_	02H
C00_	00H
C01_	90H
C02_	83H
C03_	05H
C04_	13H
C05_	08H
C06_	26H
C07_	20H
C08_	80H
C09_	00H
C10_	10H
C11_	00H
C12_	1EH
C13_	08H
C14_	5CH
C15_	1DH
C16_	1FH
C17_	1FH
C18_	20H
C19_	23H
C20_	24H
C21_	1DH
C22_	1EH
C23_	1EH

Item display	Set values
C24_	1FH
C25_	23H
C26_	25H
C27_	31H
C28_	2CH
C29_	21H
C30_	1EH
C31_	14H
C32_	85H
C33_	86H
C34_	85H
C35_	87H
C36_	05H
C37_	C0H
C38_	07H
C39_	70H
C40_	09H
C41_	40H
C42_	0BH
C43_	20H
C44_	0DH
C45_	10H
C46_	65H
C47_	50H
C48_	50H
C49_	15H
C50_	D4H

E²-PROM DATA LIST

Focus setting

Item display	Set values
FG__	6CH
FF1_	70H
FF2_	F0H
FF3_	FEH
FF4_	00H
FZH_	EDH
FLn_	F6H
FLf_	7FH
FPn_	00H
FPf_	88H
FLV_	28H
WTf_	90H
FSS_	06H

Spin setting

Item display	Set values
SPG_	1AH
SPi_	D0H
SPm_	A0H
SPo_	68H
SP1_	10H
SP2_	60H
SP3_	F2H
SP4_	F2H
SP5_	10H

BASS setting

Item display	Set values
BS1_	00H
BS2_	00H
BS3_	00H

TEMP setting

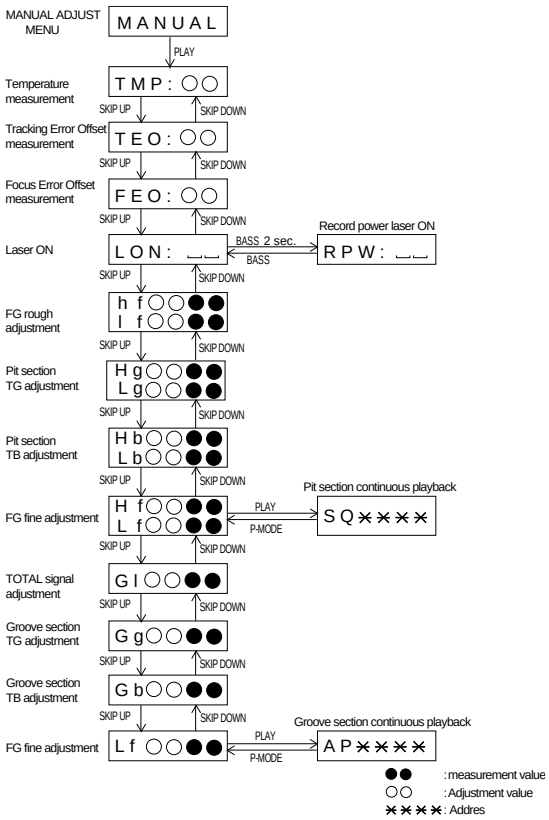
Item display	Set values
TM__	Calculate values

Tracking setting

Item display	Set values
TG__	40H
TF1_	E0H
TF2_	E8H
TFS_	00H
TBo_	40H
TBt_	60H
TKo_	48H
TKt_	28H
TDo_	75H
TDt_	1AH
SCo_	00H
SCt_	40H
SCm_	53H
DBO_	00H
CHp_	10H
CLp_	F0H
CHr_	20H
CLr_	E0H
WTm_	90H

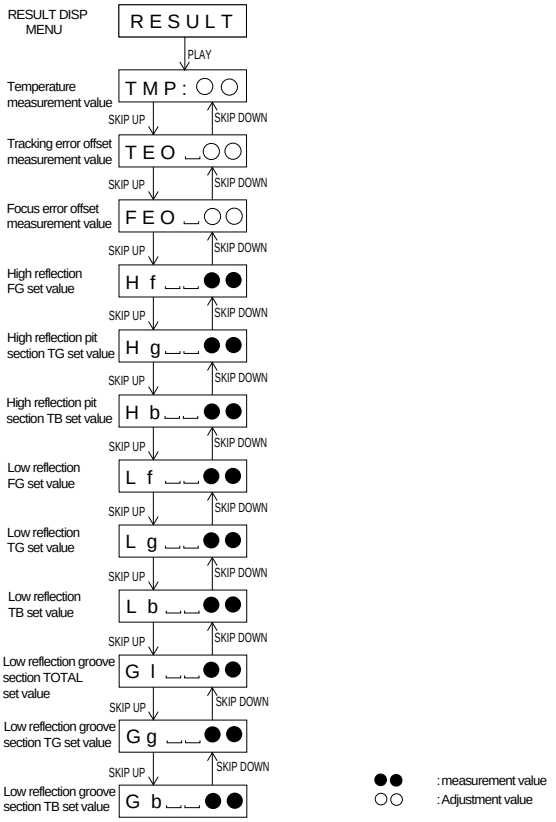
TROUBLE SHOOTING

●Manual Adjustment Change Chart



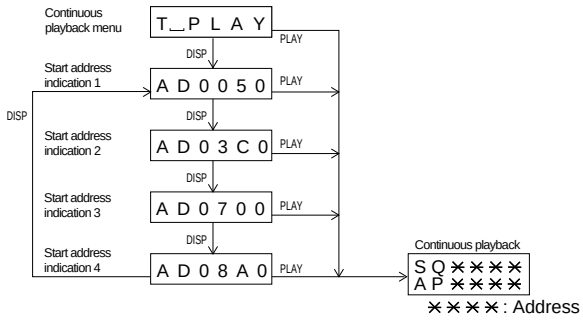
• When the STOP key is pressed in the specified mode, the mode changes tothe TEST mode stop state.

●Result Indication Change Chart



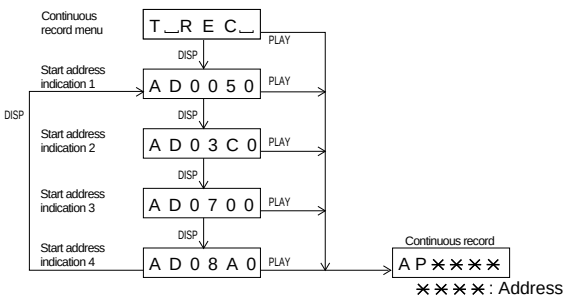
• When the STOP key is pressed in the specified mode, the mode changes tothe TEST mode stop state.

●Continuous Playback Change Chart



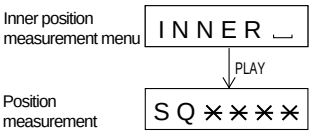
• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.
• When the SKIP UP/DOWN key is pressed in the start address indication state, the address of specific digit changes.
• When the BASS key is pressed in the start address indication state, the digit of address which is changed by the SKIP UP/DOWN key is changed.

●Continuous Record Change Chart



• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.
• When the SKIP UP/DOWN key is pressed in the start address indication state, the address of specific digit changes.
• When the BASS key is pressed in the start address indication state, the digit of address which is changed by the SKIP UP/DOWN key is changed.
• When the VOL UP/DOWN key is pressed in the start address indication state or continuous record state, the record laser power changes.

●Inner Position Measurement Change Chart

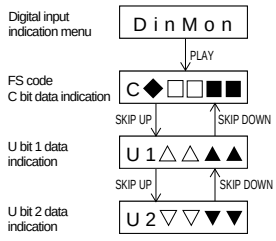


• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

●Normal Mode Change Chart

• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

●Digital Input Indication Change Chart

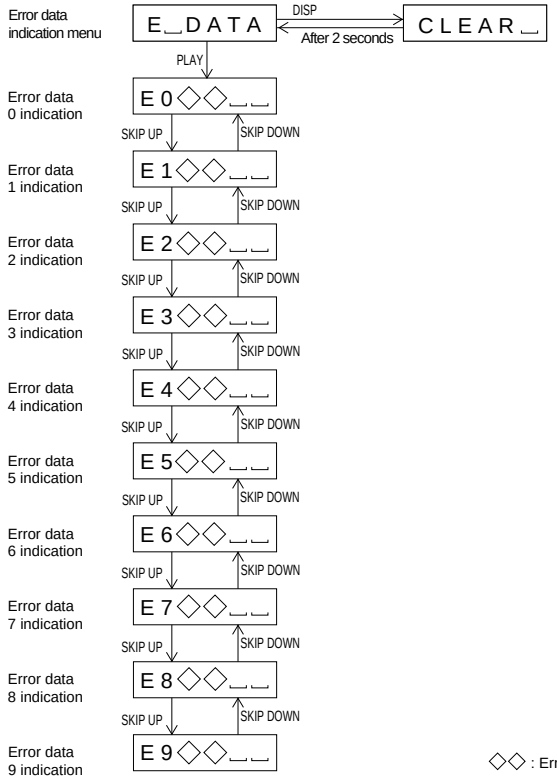


◆ : FS Code
□□ : Control Code
■■ : Category Code
△△ :TNO
▲▲ : INDEX
▽▽ : TIME (min)
▼▼ : TIME (sec)

• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

TROUBLE SHOOTING

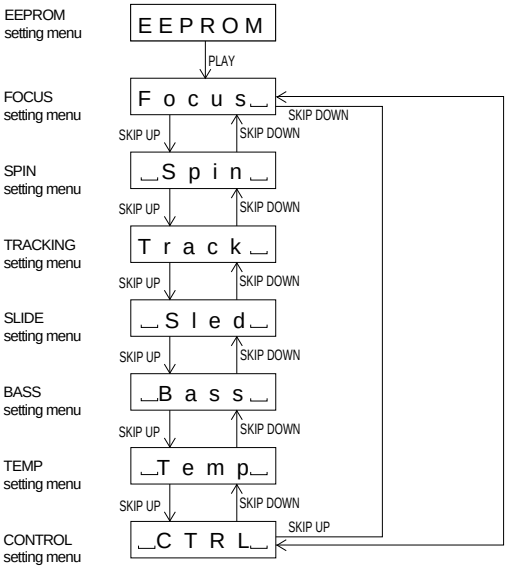
●Error Data Indication Change Chart



◇◇ : Error Code

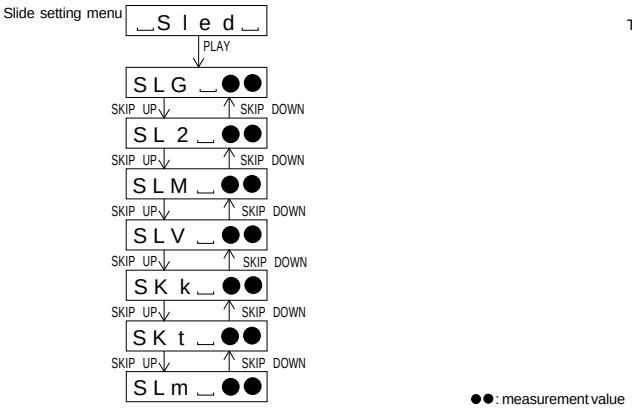
• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

●EEPROM Setting Change Chart



• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

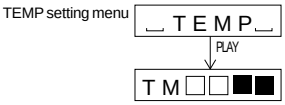
●EEPROM Slide Setting Change Chart



●● : measurement value

• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

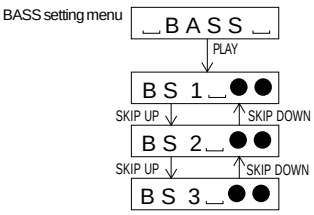
●EEPROM TEMP Setting Change Chart



□□ : Temperature code
■■ : Normal setting value

• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

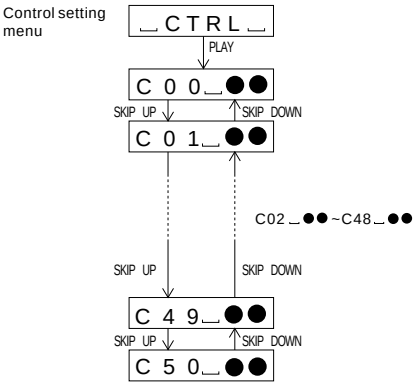
●EEPROM BASS Setting Change Chart



●● : measurement value

• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

●EEPROM Control Setting Change Chart



●● : measurement value

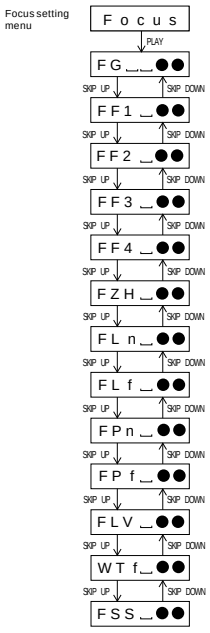
• When the STOP key is pressed in the specified mode, the mode changes to the TEST mode stop state.

TROUBLE SHOOTING

EXPLANATION OF ERROR DISPLAY

Error display	Errors	Corrective action
Can't REC	• Defect occurred 10 times successively during REC-PLAY. • During REC-PLAY, the break that full, high temperature memory taped occurred. • When reads it, and impossibility tries it again, and an address doesn't hire you in REC state repeatedly for 20 seconds either.	• Check that disc is free from flaws, dust, fingerprint, black spots, etc. Check for significant disalignment and runout of disc.
Can't COPY	• The following judgment was made based on the channel status of digital signal which was input from D-IN during REC-PAUSE or REC-PLAY significant disalignment and runout of disc. (1) Other than audio uses (2) Other than home-uses (3) SCNS revealed that copy is impossible.	• Record, using the analog cable.
Din UNLOCK	• The following result occurred when the digital signal was input from D-IN during REC-PAUSE or RECD-PLAY. (1) PLL of digital IN was unlocked.	• Check for troubles in D-IN signal line.
TOC FULL	• The domain that music turn and character information (title of a musical composition, disk names) was registered during REC-PLAY.	• Replace disc with another record/playback disc having a sufficient area to write UTOC.
UTOC ERROR	• UTOC recorded in the disc could not be read. • Data of UTOC 0 to 4 was looped.	• Record, using the analog cable. • UTOC data has error. Replace disc with another disc
? DISC	• "MINI" data of system ID written with ASCII code in TOC is not correct. • The disc type written in TOC is not for premastered MD, recording MD or hybrid MD.	• The disc is nonstandard disc. Replace disc with another disc, and check.
DISC FULL	• When an attempt to set REC-PAUSE was made, there was no record-enable area in the disc.	• Replace the disc with another record disc having record-enable area.
PB DISC	• An attempt to set REC-PAUSE or to edit was made on the playback-only disc.	• Replace the playback-only disc with record disc.
PROTECTED	• An attempt to record or edit was made on the record/playback disc whose safety lug has been set to careless protected. Redo on another track.	• Release the safety lug, and try again.
TR. PROTECT	• An attempt was made to edit the write-protected track according to information written in UTOC.	• The track which you want to edit is write-erase preventing position.
TOC FULL	• When an attempt to enter REC-PAUSE or DIVIDE mode or to write the character information was made, the UTOC writing area was full of data.	• Replace disc with another record/playback disc having a sufficient area to write UTOC.
Can't EDIT	• The specific editing conditions were not satisfied in editing.	• Operation procedure is not proper. Redo, following the correct operation procedure.
TEMP OVER	• Because any abnormality occurred, temperature in a set (MD unit) became too high.	• It checks it by troubleshooting. • It uses it at a place of high temperature, and is there not it?
DISC ERROR	• Data weren't right or didn't just understand it as a result of having read data. • Abnormality occurred during a record of music data, and wasn't able to do a record justly.	• Data has error or the disc has flaw. Replace the disc.
TOC ERROR ✳	• An attempt to read TOC was made, but it could not be read. • It was going to read TOC, but wasn't able to read it. • The servo automatic adjustment was not made correctly.	• Because it isn't in MD standard, TOC information recorded in DISC tries to turn it into other disk. • Because there is wound on a disk, it tries to turn it into a disk else.
UTOC ERROR BLANK DISC OCTr 0:00	• Error occurred during UTOC rewriting, resulting in UTOC rewriting failure. • As a result of reading of UTOC it has been revealed that the total TNO number is 0.	• Because there is wound on a disk, it tries to turn it into a disk else. • Check whether disc is record-enable disc by attempting record.
DEFECT	• Data cannot be written in the target address data due to track deviation during REC-PLAY.	• Check that disc is free from dust, fingerprint and black spot. Check for disalignment and runout of disc.

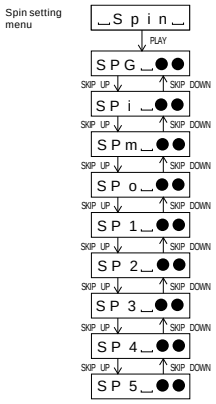
●EEPROM Focus Setting Change Chart



●● : measurement value

• When the STOP key is pressed in the specified mode, the mode changes tothe TEST mode stop state.

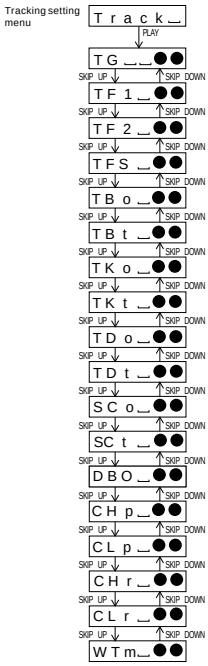
●EEPROM Spin Setting Change Chart



●● :measurement value

• When the STOP key is pressed in the specified mode, the mode changes tothe TEST mode stop state.

●EEPROM Tracking Setting Change Chart



●● :measurement value

• When the STOP key is pressed in the specified mode, the mode changes tothe TEST mode stop state.

NOTES ON SCHEMATIC DIAGRAM

• Resistor:
To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with "Fusible" is a fuse type.

• Capacitor:
To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used.

(CH), (TH), (RH), (UJ): Temperature compensation
(ML): Mylar type

• The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.

• Parts marked with " ⚠ " (⊏ = = = ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW401	DISC COVER OPEN/CLOSE DELECTION	OFF—ON
SW402	HOLD	OFF—ON
SW901	LEAD IN	OFF—ON
SW902,904	DISC MEDIA	OFF—ON
SW903	DISC PROGRAM	OFF—ON

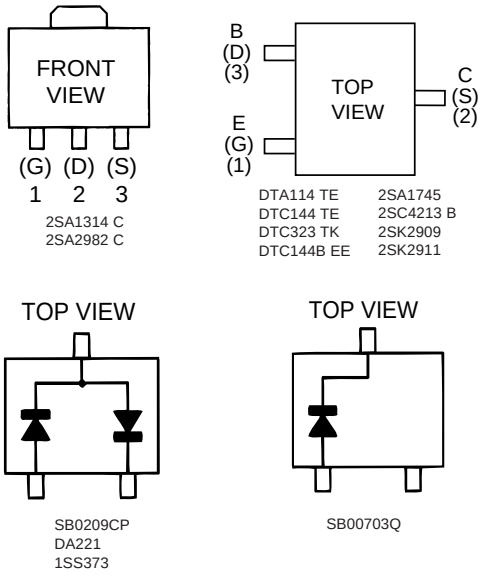
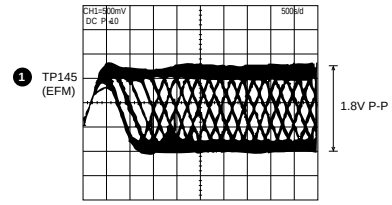


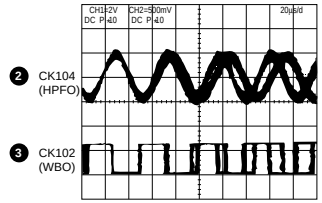
Figure 26 TYPES OF TRANSISTORS AND DIODES

WAVEFORM

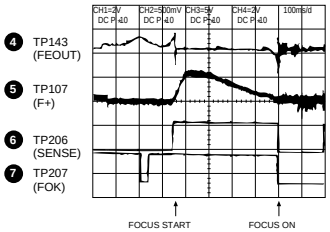
PLAY Condition

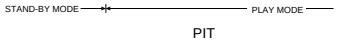


PLAY Codition (MO DISC)

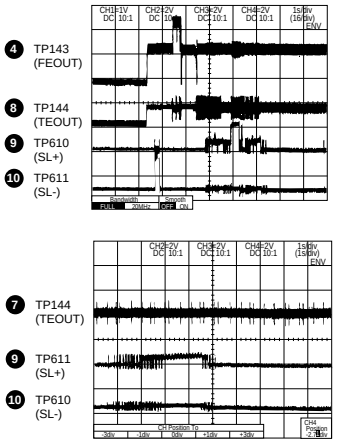


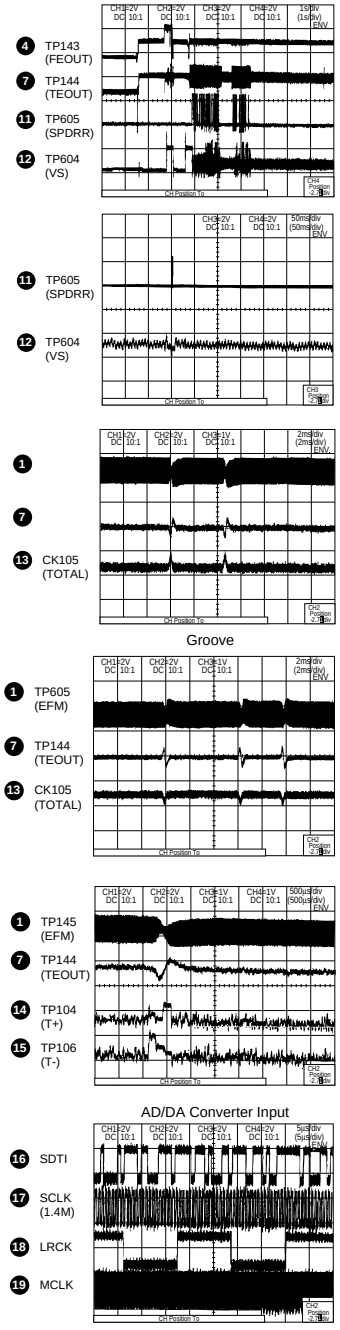
STAND-BY → PLAY





PIT



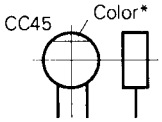


PARTS DESCRIPTIONS

CAPACITORS

CC 45 TH 1H 220 J
1 2 3 4 5 6

1 = Type ... ceramic, electrolytic, etc.
2 = Shape ... round, square, ect.
3 = Temp. coefficient
4 = Voltage rating
5 = Value
6 = Tolerance



• Capacitor value

010 = 1pF
100 = 10pF
101 = 100pF
102 = 1000pF = 0.001µF
103 = 0.01µF

2 2 0 = 22pF
Multiplier
2nd number
1st number

• Temperature coefficient

1st Word	C	L	P	R	S	T	U
Color*	Black	Red	Orange	Yellow	Green	Blue	Violet
ppm/°C	0	–80	–150	–220	–330	–470	–750

2nd Word	G	H	J	K	L
ppm/°C	±30	±60	±120	±250	±500

Example : CC45TH = –470 ± 60ppm/°C

• Tolerance (More than 10pF)

Code	C	D	G	J	K	M	X	Z	P	No code
(%)	±0.25	±0.5	±2	±5	±10	±20	+40	+80	+100	More than 10µF – 10 ~ +50
							–20	-20	–0	Less than 4.7µF –10 ~ +75

(Less than 10pF)

Code	B	C	D	F	G
(pF)	±0.1	±0.25	±0.5	±1	±2

• Voltage rating

1st word \ 2nd word	A	B	C	D	E	F	G	H	J	K	V
0	1.0	1.25	1.6	2.0	2.5	3.15	4.0	5.0	6.3	8.0	–
1	10	12.5	16	20	25	31.5	40	50	63	80	35
2	100	125	160	200	250	315	400	500	630	800	–
3	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	–

• Chip capacitors

(EX) C C 7 3 F S L 1 H 0 0 0 J
1 2 3 4 5 6 7
(Chip) (CH, RH, UJ, SL)

(EX) C K 7 3 F F 1 H 0 0 0 Z
1 2 3 4 5 6 7
(Chip) (B, F)

Refer to the table above.
1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Voltage rating
6 = Value
7 = Tolerance

Dimension (Chip capacitors)

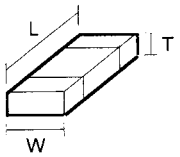
Dimension code	L	W	T
Empty	5.6 ± 0.5	5.0 ± 0.5	Less than 2.0
A	4.5 ± 0.5	3.2 ± 0.4	Less than 2.0
B	4.5 ± 0.5	2.0 ± 0.3	Less than 2.0
C	4.5 ± 0.5	1.25 ± 0.2	Less than 1.25
D	3.2 ± 0.4	2.5 ± 0.3	Less than 1.5
E	3.2 ± 0.2	1.6 ± 0.2	Less than 1.25
F	2.0 ± 0.3	1.25 ± 0.2	Less than 1.25
G	1.6 ± 0.2	0.8 ± 0.2	Less than 1.0

RESISTORS

• Chip resistor (Carbon)

(EX) R K 7 3 E B 2 B 0 0 0 J
1 2 3 4 5 6 7
(Chip) (B,F)

Dimension



• Carbon resistor (Normal type)

(EX) R D 1 4 B B 2 C 0 0 0 J
1 2 3 4 5 6 7

1 = Type
2 = Shape
3 = Dimension
4 = Temp. coefficient
5 = Rating wattage
6 = Value
7 = Tolerance

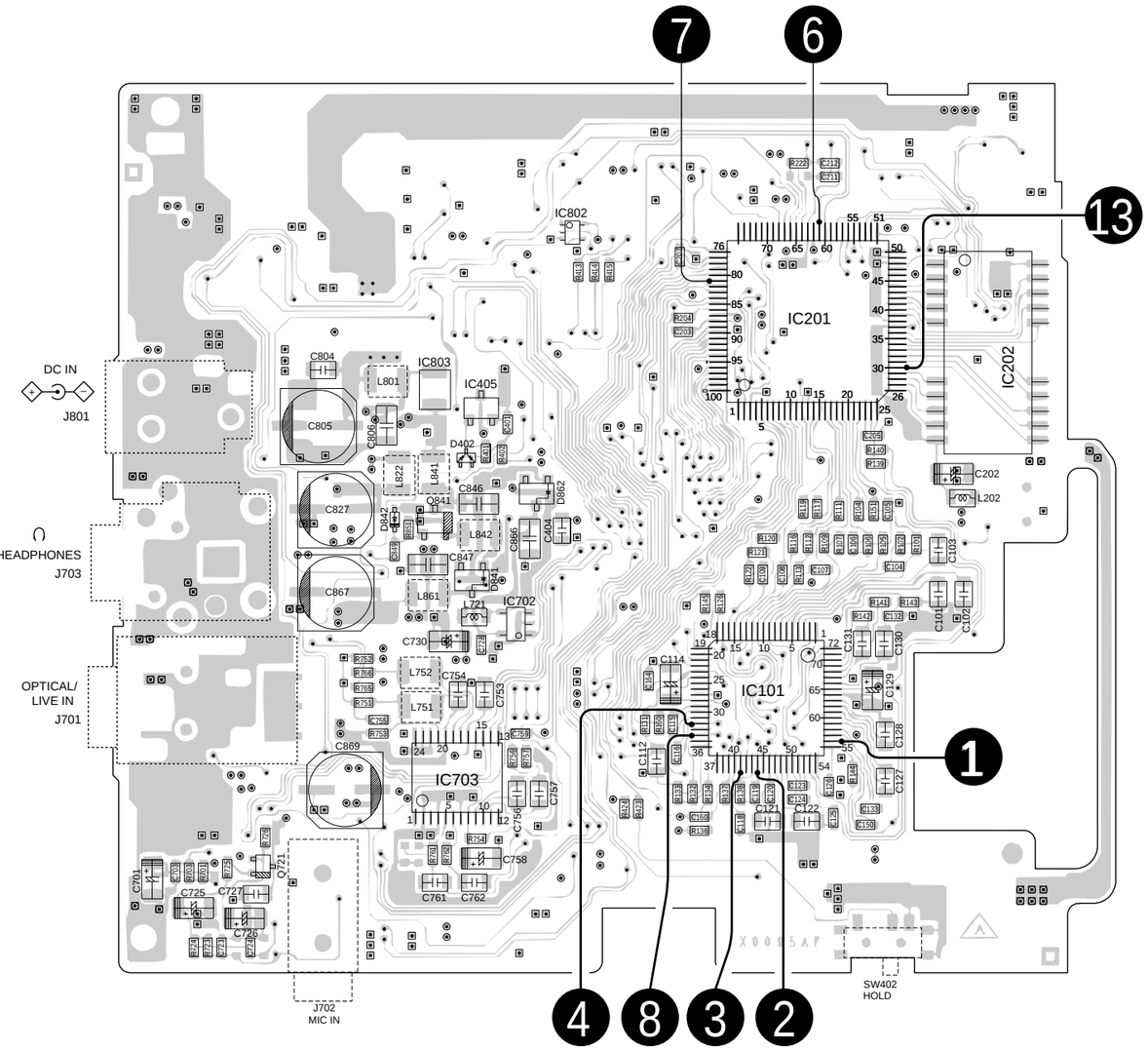
Dimension (Chip resistor)

Dimension code	L	W	T
E	3.2 ± 0.2	1.6 ± 0.2	1.0
F	2.0 ± 0.3	1.25 ± 0.2	1.0
G	1.6±0.2	0.8±0.2	0.5±0.1

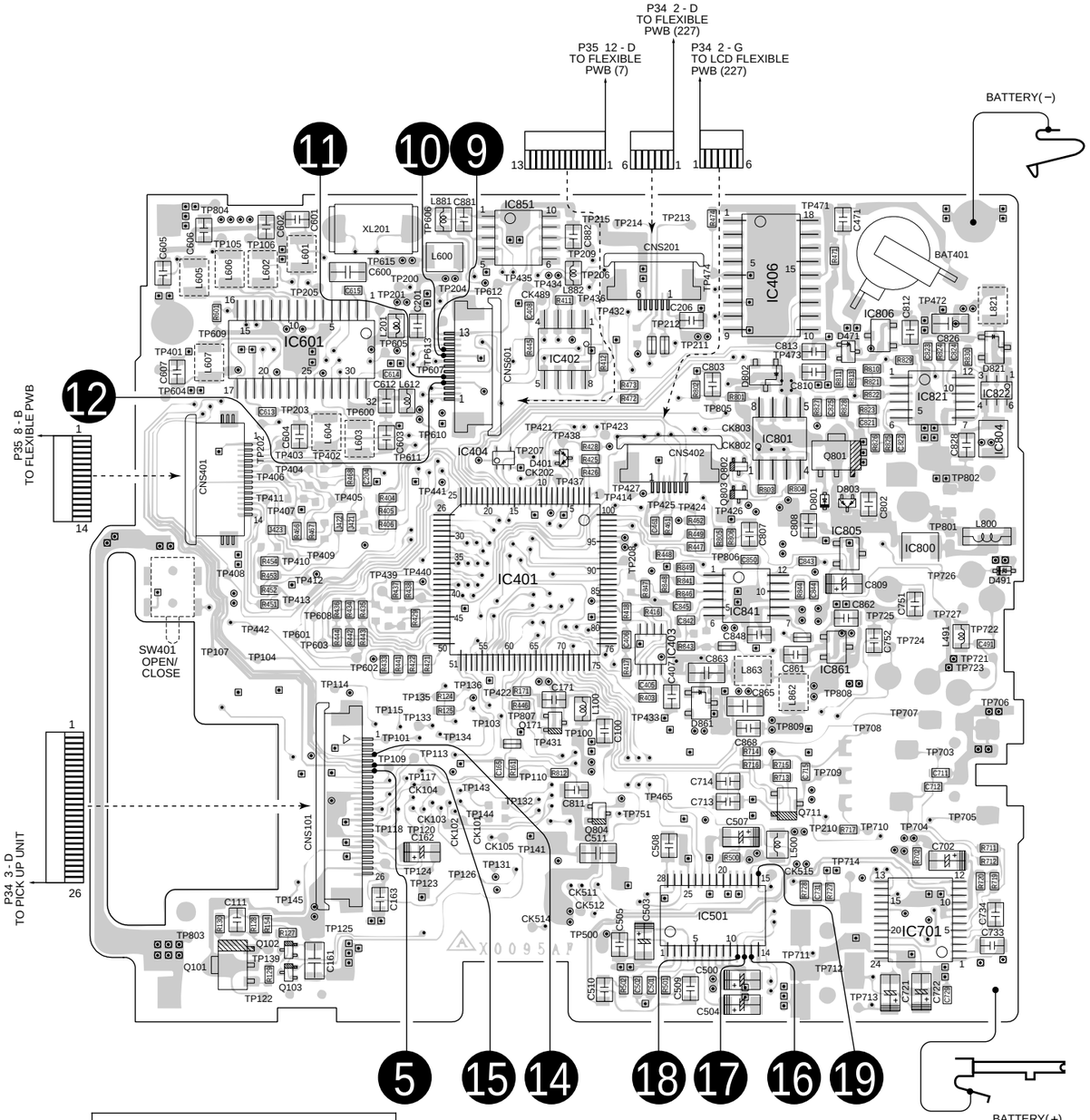
Rating wattage

Code	Wattage	Code	Wattage	Code	Wattage
1J	1/16W	2C	1/6W	3A	1W
2A	1/10W	2E	1/4W	3D	2W
2B	1/8W	2H	1/2W		

PC BOARD(Component side view)



MAIN PWB-A(BOTTOM VIEW)



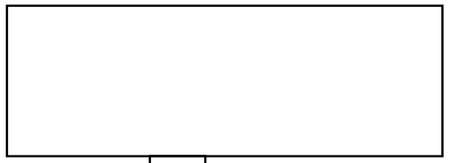
MAIN PWB-A(TOP VIEW)

COLOR	BR	RD(R)	OR	YL	GR	BL	VL	GY	WH(W)	BK	PK
TABLE	BROWN	RED	ORANGE	YELLOW	GREEN	BLUE	VIOLET	GRAY	WHITE	BLACK	PINK

The numbers ❶ to ⓳ are waveform numbers shown in page 17.

Refer to the schematic diagram for the value of resistors and capacitors.

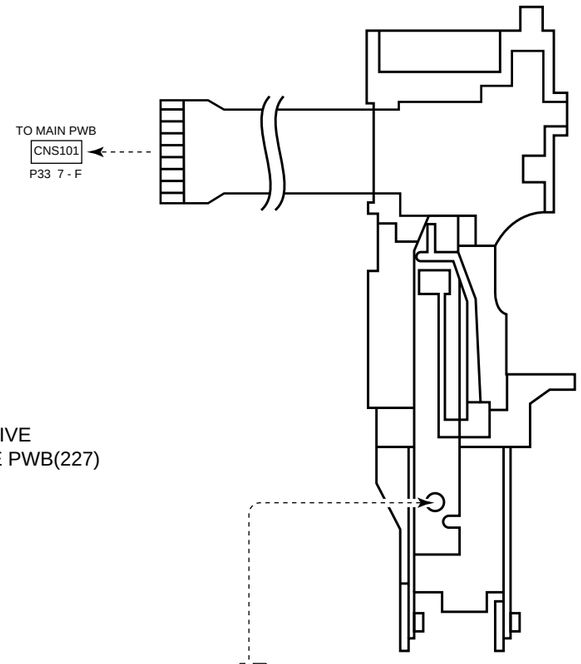
PC BOARD(Component side view)

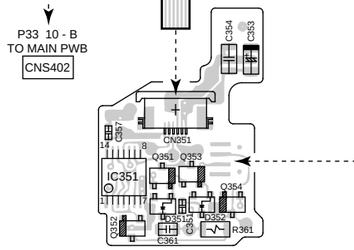


LCD UNIT(220)

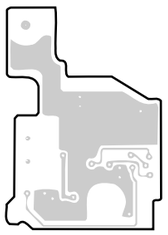
COLOR	BR	RD(R)	OR	YL	GR	BL	VL	GY	WH(W)	BK	PK
TABLE	BROWN	RED	ORANGE	YELLOW	GREEN	BLUE	VIOLET	GRAY	WHITE	BLACK	PINK

PICK UP UNIT(3)

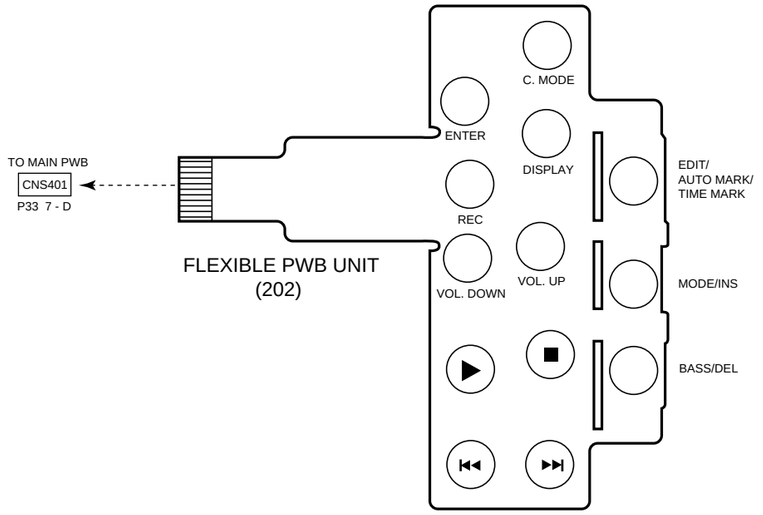


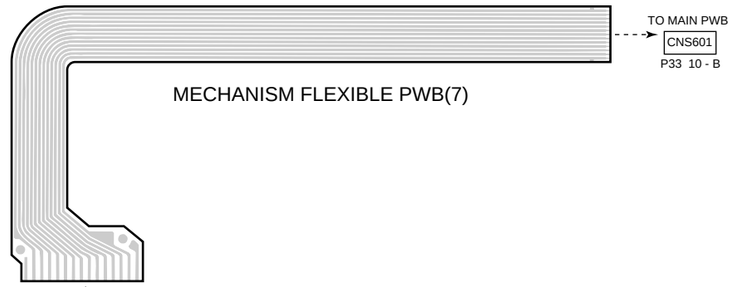


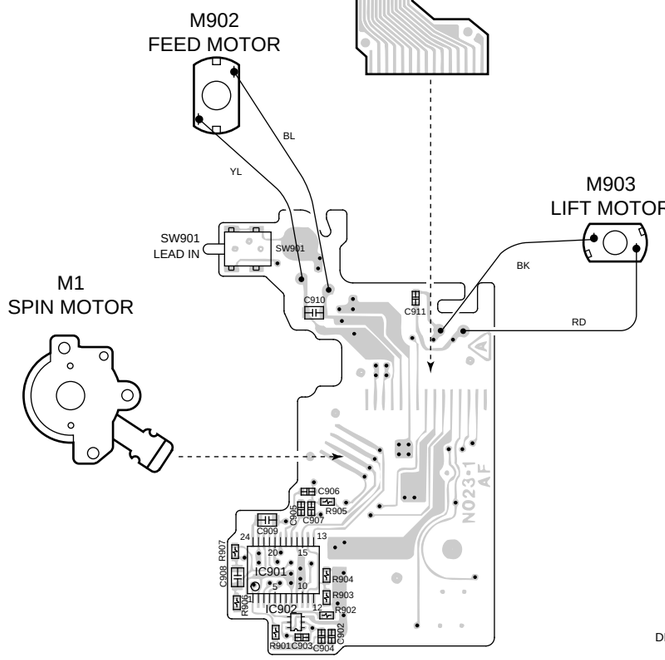
HEAD DRIVE PWB-B1(TOP VIEW)



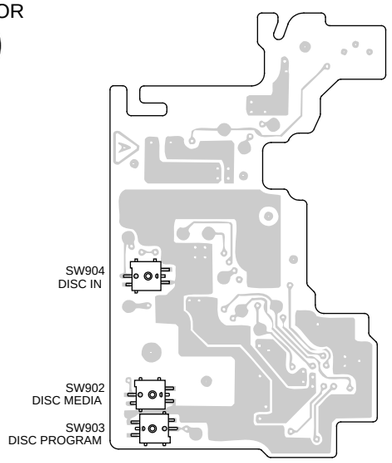
HEAD DRIVE PWB-B1(BOTTOM VIEW)





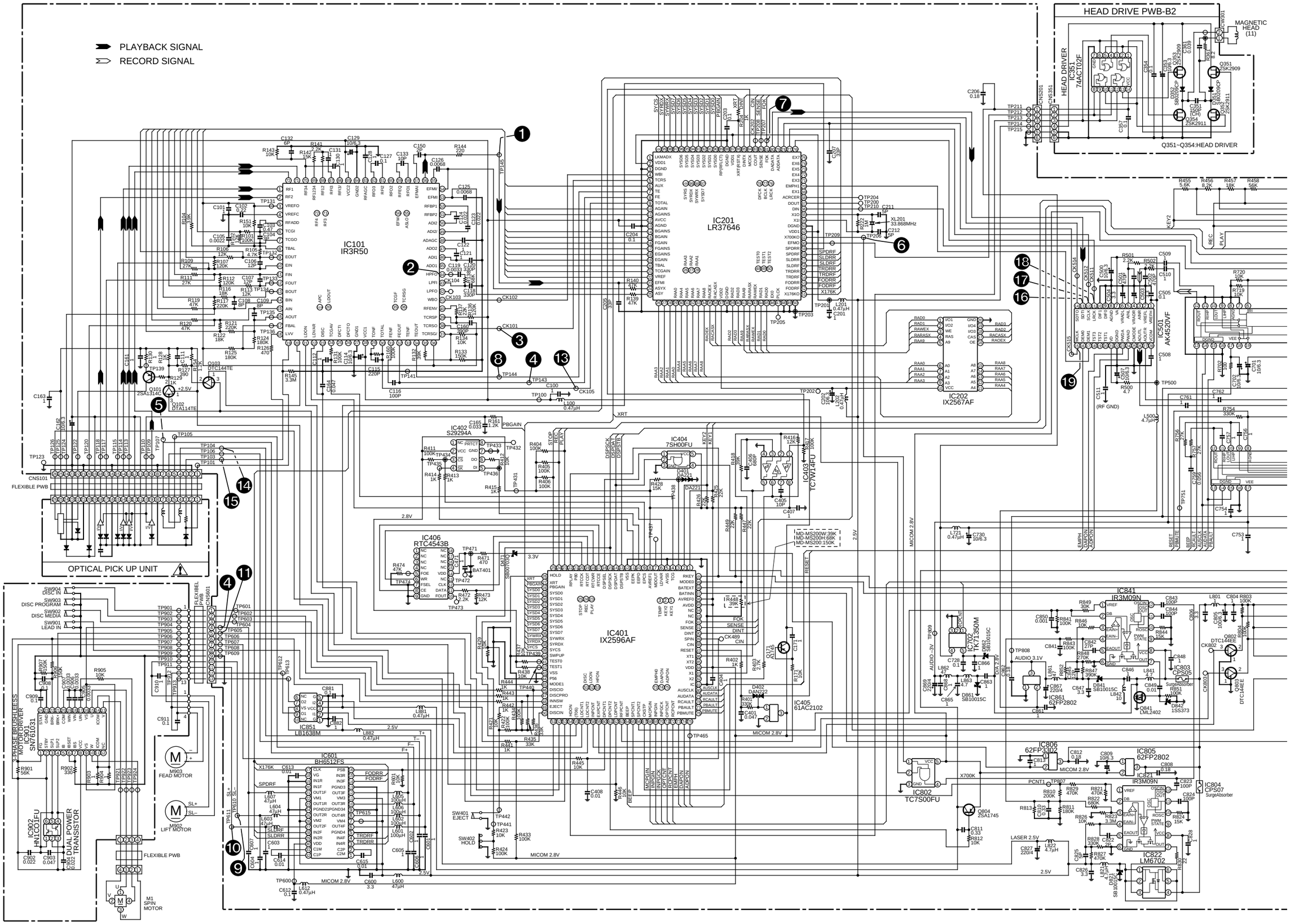


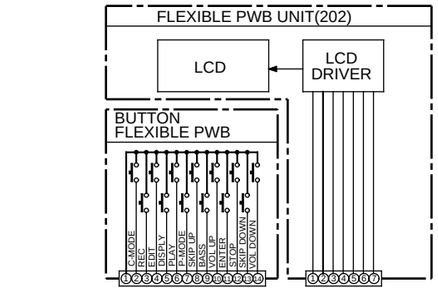
MECHANISM PWB-B1(TOP VIEW)

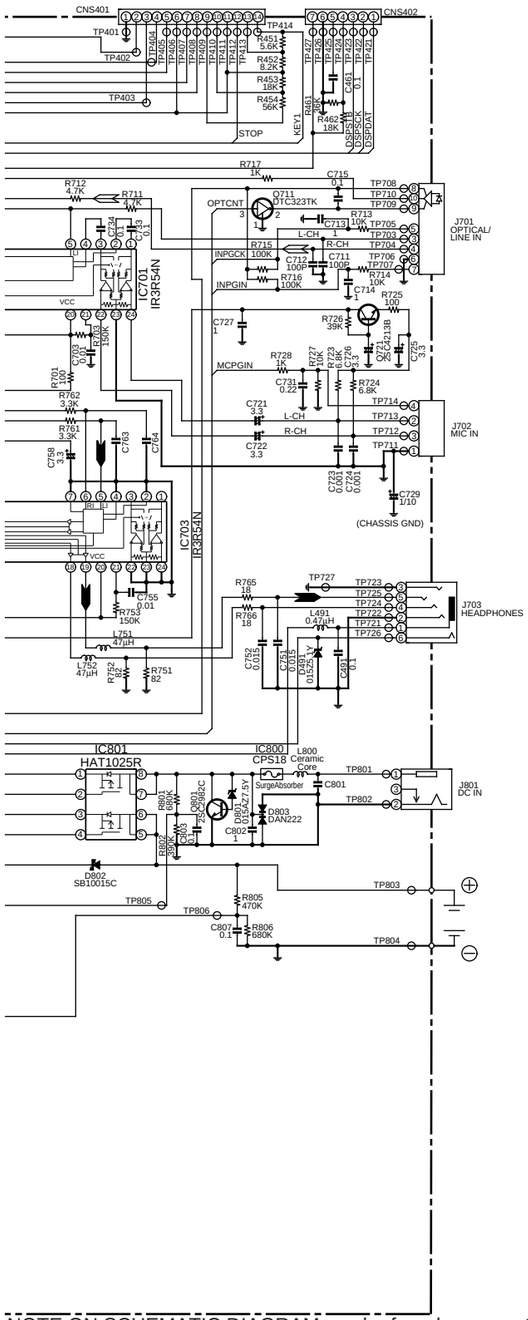


MECHANISM PWB-B1(BOTTOM VIEW)

Refer to the schematic diagram for the value of resistors and capacitors.


PLAYBACK SIGNAL
RECORD SIGNAL
HEAD DRIVE PWB-B2
MAGNETIC HEAD (11)
HEAD DRIVER IC351 74AC102F
Q351~Q354:HEAD DRIVER
IC101 IR3R50
IC201 LR37646
IC202 IX2567AF
IC401 IX2596AF
IC402 S29294A
IC404 7SH00FU
IC405 61AC2102
IC406 RTC4543B
IC501 AK4520VF
IC601 BH6512FS
IC702 TK71350M
IC802 TC7S00FU
IC821 IR3M09N
IC822 LM6702
IC841 IR3M09N
IC851 LB1638M
IC902 HN1C01FU
XL201 33.868MHz
OPTICAL PICK UP UNIT
FLEXIBLE PWB
2 PHASE BRUSHLESS MOTOR DRIVER IC SN761031
DUAL POWER TRANSISTOR
M903 FEAD MOTOR
M902 LIFT MOTOR
M1 SPIN MOTOR
MD-MS200W MAIN
NOTE ON SCHEMATIC DIAGRAM can be found on page 17.
The numbers ❶ to ⑲ are waveform numbers shown in page 17.





CAUTION: *For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.*

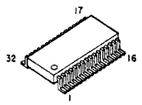
The DC voltage is an actual reading measured with a high impedance type voltmeter. The measurement value may vary depending on the measuring instruments used or on the product. Refer to the voltage during RECORDABLE MD PLAY unless otherwise specified; The value shown in ( ) is the voltage measured at the moment of STOP. The voltage followed by (REC) refers to the value during MD RECORDING.

DTA114TE
DTC144EE
DTC144TE
DTC323TK
2SA1745

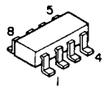
DA221

TC7S00FU

BH6512FS



LB1638M



IC101			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	0.7V	37	1.3V
2	0.7V	38	0V
3	1.37V	39	1.48V
4	1.37V	40	1.25V
5	1.12V	41	0.7V
6	1.37V	42	1.35V
7	1.37V	43	1.37V
8	1.37V	44	1.3V
9	1.37V	45	1.36V
10	1.37V	46	1.37V
11	1.37V	47	1.34V
12	1.37V	48	0.03V
13	1.37V	49	1.18V
14	1.37V	50	1.16V
15	1.37V	51	0.67V
16	1.37V	52	0.67V
17	1.37V	53	1.35V
18	1.37V	54	1.36V
19	1.34V	55	1.67V
20	2.36V	56	1.16V
21	0V	57	1.37V
22	0.02V	58	1.37V
23	0V	59	0V
24	0.08V	60	1.18V
25	1.37V	61	1.37V
26	1.37V	62	1.34V
27	0V	63	0.2V
28	2.75V	64	0V
29	1.37V	65	2.75V
30	0.9V	66	1.2V
31	1.37V	67	1.17V
32	1.34V	68	0.42V
33	1.37V	69	0.03V
34	1.37V	70	0.3V
35	1.37V	71	0.7V
36	1.37V	72	0.7V

IC201			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	0V	51	1.27V
2	2.56V	52	0V
3	0V	53	0V
4	0.7V	54	0V
5	0V	55	0V
6	1.38V	56	0V
7	1.36V	57	0V
8	1.34V	58	0V
9	0.9V	59	0V
10	1.4V	60	1.16V
11	1.4V	61	1.26V
12	2.75V	62	2.56V
13	0V	63	0V
14	1.4V	64	1.24V
15	1.4V	65	1.24V
16	1.4V	66	2.28V
17	1.4V	67	1.23V
18	1.4V	68	2.48V
19	1.4V	69	0V
20	1.4V	70	0V
21	1.4V	71	0V
22	1.4V	72	0V
23	1.15V	73	0V
24	1.3V	74	0V
25	1.3V	75	0V
26	0.8V	76	1.27V
27	0.8V	77	1.23V
28	0.65V	78	1.13V
29	1.89V	79	0V
30	0.8V	80	0V
31	1.36V	81	2.55V
32	1.11V	82	0V
33	1.36V	83	2.55V
34	1.36V	84	1.05V
35	2.59V	85	2.55V
36	2.88V	86	2.8V
37	3.6V	87	2.56V
38	0V	88	0V
39	1.5V	89	0V
40	2.06V	90	0.2V
41	1.28V	91	0.4V
42	2.48V	92	0.3V
43	3.42V	93	1.75V
44	2.22V	94	2.09V
45	1.3V	95	1.7V
46	0V	96	1.9V
47	1.11V	97	0.3V
48	0V	98	2.74V
49	0V	99	2.8V
50	0V	100	0.2V

IC403	
PIN NO.	VOLTAGE
1	1.05V
2	1.35V
3	1.33V
4	0V
5	1.33V
6	1.35V
7	1.45V
8	2.8V

IC401			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.8V	51	0V
2	2.8V	52	0V
3	1.4V	53	0V
4	0V	54	2.8V
5	0V	55	1.66V
6	0V	56	0V
7	2.27V	57	0V
8	2.8V	58	2.8V
9	2.8V	59	2.8V
10	–	60	2.72V
11	0V	61	0V
12	0V	62	2.76V
13	2.65V	63	0V
14	2.8V	64	2.8V
15	1.66V	65	2.8V
16	2.15V	66	0.77V
17	0V	67	1.36V
18	0V	68	2.62V
19	0V	69	2.74V
20	0V	70	2.76V
21	0V	71	0V
22	2.8V	72	0V
23	2.8V	73	2.8V
24	2.8V	74	2.8V
25	2.8V	75	0V
26	2.8V	76	2.8V
27	2.8V	77	2.8V
28	0V	78	2.8V
29	0.28V	79	2.8V
30	0.43V	80	0V
31	0.3V	81	0V
32	1.5V	82	1.66V
33	1.5V	83	1.34V
34	1.6V	84	2.8V
35	1.8V	85	1.55V
36	0.2V	86	1.36V
37	2.8V	87	2.7V
38	2.8V	88	2.6V
39	0.1V	89	–
40	2.8V	90	2.6V
41	2.8V	91	0V
42	2.8V	92	2.6V
43	0V	93	0V
44	0V	94	0V
45	0V	95	2.8V
46	2.8V	96	2.8V
47	0V	97	2.88V
48	2.8V	98	1.78V
49	0V	99	2.8V
50	0V	100	2.8V

IC404	
PIN NO.	VOLTAGE
1	2.15V
2	0.28V
3	0V
4	2.5V
5	2.8V

IC405	
PIN NO.	VOLTAGE
1	2.8V
2	0V
3	2.8V

IC702	
PIN NO.	VOLTAGE
1	0V
2	0V
3	0V
4	5V
5	8.17V

IC202	
PIN NO.	VOLTAGE
1	1.2V
2	1.8V
3	2.47V
4	1.75V
5	1.14V
6	1.39V
7	0.57V
8	0.6V
9	0.6V
10	2.62V
11	0.5V
12	0.98V
13	0.98V
14	0.98V
15	0.98V
16	1.85V
17	1.91V
18	1.3V
19	1.6V
20	0V

IC406	
PIN NO.	VOLTAGE
1	–
2	–
3	–
4	–
5	0V
6	0V
7	0V
8	0V
9	0V
10	0.34V
11	0V
12	0V
13	–
14	3.1V
15	–
16	–
17	–
18	–

IC801	
PIN NO.	VOLTAGE
1	4.83V
2	0V
3	4.89V
4	0V
5	4.9V
6	4.9V
7	4.9V
8	4.9V

IC402	
PIN NO.	VOLTAGE
1	–
2	2.8V
3	2.8V
4	0V
5	0V
6	0V
7	0V
8	0V

IC501			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.75V	15	1.68V
2	0V	16	2.8V
3	2.74V	17	0V
4	2.74V	18	0V
5	2.74V	19	0V
6	2.74V	20	0V
7	2.75V	21	2.74V
8	0V	22	0V
9	0V	23	2.8V
10	0V	24	0V
11	1.3V	25	0V
12	1.3V	26	1.37V
13	0V	27	1.37V
14	0V	28	1.37V

IC701			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	–	13	2.8V
2	0V	14	0V
3	–	15	2.8V
4	0V	16	0V
5	0V	17	–3.24V
6	0V	18	0V
7	0V	19	0V
8	0V	20	3.08V
9	0V	21	0.86V
10	0V	22	0V
11	0V	23	0V
12	0V	24	0V

IC703			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	0V	13	2.8V
2	0V	14	0V
3	0V	15	2.8V
4	0V	16	0V
5	0V	17	–3.27V
6	0V	18	0V
7	0V	19	0V
8	1.0V	20	3.12V
9	0V	21	0.85V
10	0V	22	0V
11	0V	23	0V
12	0V	24	0V

IC802	
PIN NO.	VOLTAGE
1	1.3V
2	2.8V
3	0V
4	1.4V
5	2.8V

IC804	
PIN NO.	VOLTAGE
1	0V
2	5.15V
3	0.77V

IC805	
PIN NO.	VOLTAGE
1	0V
2	2.8V
3	4.9V

IC806	
PIN NO.	VOLTAGE
1	0V
2	3.3V
3	5.0V

IC902	
PIN NO.	VOLTAGE
1	2.75V
2	2.75V
3	2.8V
4	2.75V
5	2.75V
6	2.8V

IC821	
PIN NO.	VOLTAGE
1	1.27V
2	1.23V
3	1.01V
4	1.08V
5	0.86V
6	0V
7	4.2V
8	4.9V
9	2.5V
10	0.41V
11	1V
12	1V

IC822	
PIN NO.	VOLTAGE
1	2.74V
2	2.74V
3	4.16V
4	4.96V
5	2.74V
6	2.74V

IC841	
PIN NO.	VOLTAGE
1	1.22V
2	0.92V
3	1.3V
4	1.27V
5	1.15V
6	0V
7	0.52V
8	4.9V
9	0V
10	0.4V
11	1V
12	1V

IC901			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.75V	13	0V
2	2.73V	14	0V
3	2.75V	15	0V
4	2.75V	16	0.35V
5	0.61V	17	0V
6	0V	18	0V
7	0V	19	0V
8	2.8V	20	0V
9	0V	21	0V
10	0V	22	1.4V
11	0V	23	0V
12	0V	24	0V

IC601			
PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	0V	17	1.29V
2	2.37V	18	8.34V
3	0V	19	0V
4	0V	20	0V
5	0V	21	0V
6	0V	22	2.62V
7	2.62V	23	0V
8	0V	24	0V
9	0V	25	0V
10	0V	26	2.62V
11	2.62V	27	0V
12	0V	28	0V
13	0V	29	0V
14	0V	30	2.8V
15	0V	31	0V
16	2.73V	32	4.1V

IC851	
PIN NO.	VOLTAGE
1	0V
2	0V
3	2.8V
4	0V
5	0V
6	–
7	–
8	2.6V
9	–
10	–

IC861	
PIN NO.	VOLTAGE
1	0V
2	2.8V
3	3.12V

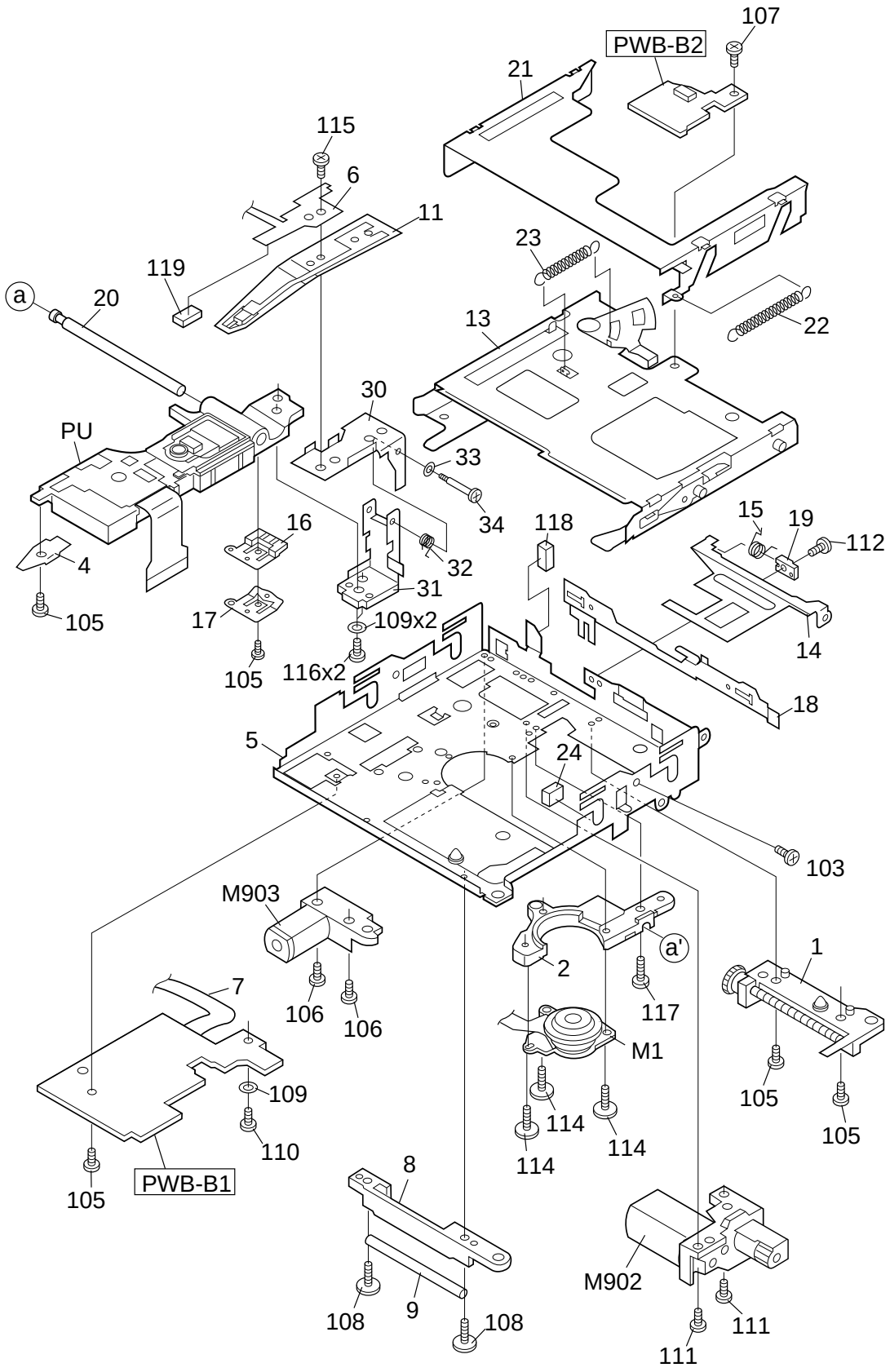
NOTE ON SCHEMATIC DIAGRAM can be found on page 17.

The numbers ❶ to ⑲ are waveform numbers shown in page 17.

DMC-G7R

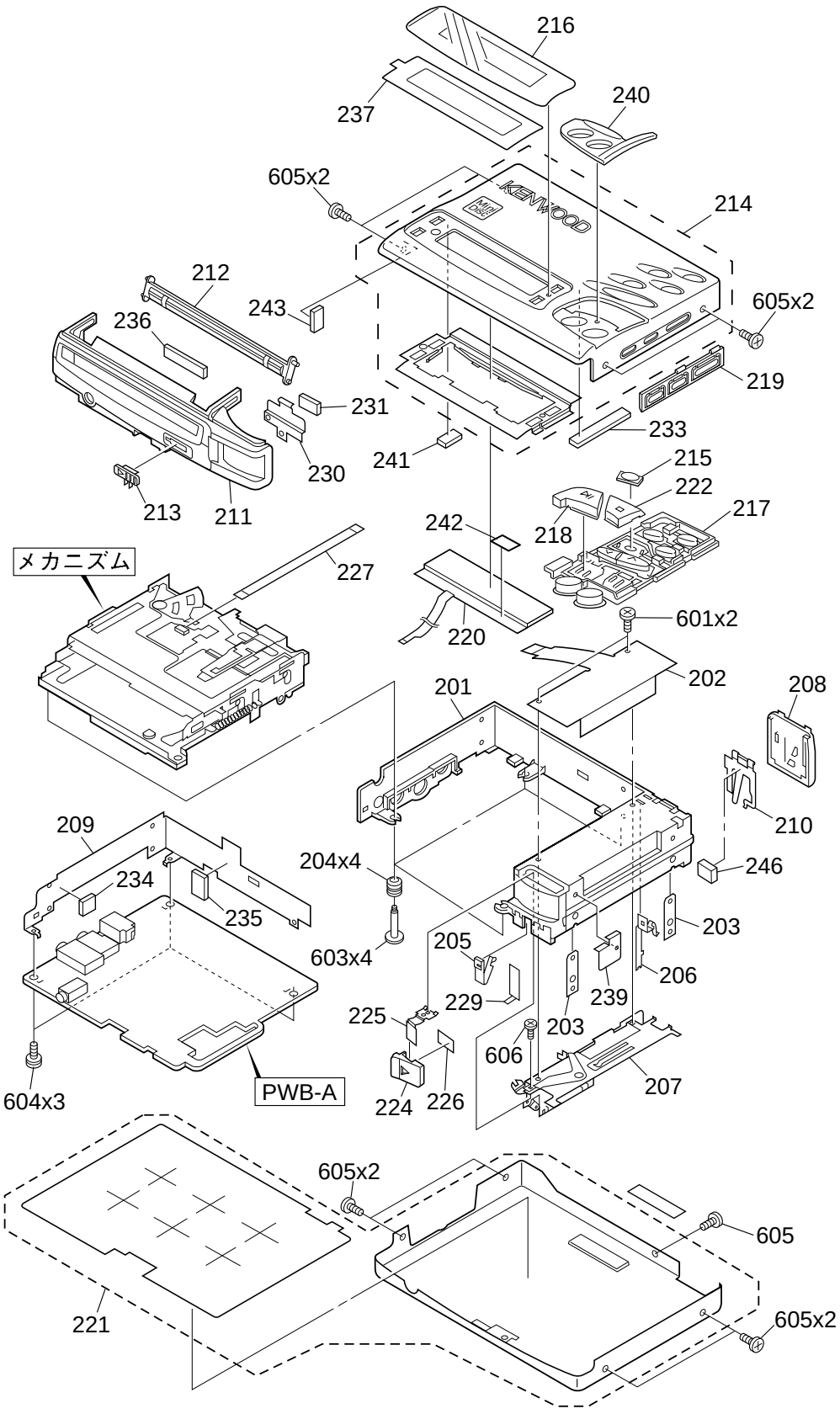
KENWOOD

EXPLODED VIEW(MD MECHANISM)



Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW(UNIT)



Parts with the exploded numbers larger than 700 are not supplied.

✻ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❶

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
			DMC-G7R			
201	2D		A02-1355-08	CENTER CABINET (BLUE)	KET	B
201	2D		A02-1356-08	CENTER CABINET (SILVER)	ME	S
202	2D		E35-1924-08	FLEXIBLE PCB ASSY		
203	3D		J21-6402-08	MOUNTING HARDWARE		
204	2C		G13-0547-08	CUSHION		
205	2D		E23-1722-08	TERMINAL(+)		
206	2D		E23-1721-08	TERMINAL(-)		
207	3D		A13-3098-08	FRAME ASSY		
208	3D		A09-0352-08	BATTERY COVER (BLUE)	KET	B
208	3D		F07-0796-08	BATTERY COVER (SILVER)	ME	S
209	2C		J21-6403-08	MOUNTING HARDWARE		
210	2D		J21-6404-08	MOUNTING HARDWARE		
211	2C		A02-1357-08	FRONT CABINET (SILVER)	ME	S
211	2C		A02-1358-08	FRONT CABINET (BLUE)	KET	B
212	1C	✻	F07-1624-08	COVER (MD)		
213	2C		K27-2204-08	KNOB (HOLD) (BLUE)	KET	B
213	2C		K27-2226-08	KNOB (HOLD) (SILVER)	ME	S
214	1D		F07-0798-08	TOP COVER ASSY (SILVER)	ME	S
214	1D		F07-0799-08	TOP COVER ASSY (BLUE)	KET	B
215	1D		K27-2227-08	KNOB (REC)		
216	1D		B07-2372-08	DECORATION PLATE		
217	2D		K27-2228-08	KNOB (FUNCTION)		
218	2D		K27-2229-08	KNOB (PLAY PAUSE)		
219	1D		K27-2230-08	KNOB (EDIT MODE)		
220	2D		B38-0154-08	LCD ASSY		
221	3C	✻	F07-1626-08	BOTTOM COVER ASSY (BLUE)	ET	B
221	3C	✻	F07-1625-08	BOTTOM COVER ASSY (BLUE)	K	B
221	3C	✻	F07-1627-08	BOTTOM COVER ASSY (SILVER)	E	S
221	3C	✻	F07-1628-08	BOTTOM COVER ASSY (SILVER)	M	S
222	2D		K27-2231-08	KNOB (STOP/OFF)		
224	3C		K27-2232-08	KNOB (EJECT)		
225	3C		J21-6507-08	MOUNTING HARDWARE		
226	3D		F09-0128-08	SHEET		
227	2C		E35-1567-08	FLEXIBLE WIRE		
229	3D		F29-0116-08	TERMINAL COVER		
230	2C		J90-0842-08	MD GUIDE BRACKET		
231	1C		G13-0530-08	MD GUIDE CUSHION		
233	1D		G13-0548-08	CUSHION (MECHANISM)		
234	2C		G13-0531-08	CUSHION (MECHANISM)		
235	2C		G13-0532-08	CUSHION (MECHANISM)		
236	1C		G13-0549-08	CUSHION (MECHANISM)		
237	1C		F09-0129-08	SHEET		
239	3C		F12-0146-08	SHIELD		
240	1D		B07-2373-08	DECORATION PLATE		
241	1C		G13-0550-08	CUSHION MECHANISM		
242	2D		F09-0130-08	LCD SHEET		
243	1C		F09-0131-08	SHEET		
246	2D		G13-0551-08	CUSHION		
601	2D		N09-3293-08	SCREW 1.4X3.0		
603	2C		N09-3197-08	SCREW 1.8X7.7		
604	3C		N09-3198-08	SCREW 1.7X2.5		
605	1C,1D		N09-3395-08	SCREW 1.4X2.0		

L : Scandinavia **K :** USA **P :** Canada **R :** Mexico **B :** BLUE
Y : PX(Far East, Hawaii) **T :** Europe **E :** Europe **G :** Germany **S :** SILVER
Y : AAFES(Europe) **X :** Australia **M :** Other Areas

⚠ indicates safety critical components.

✻ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

❷

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
606	3D		N09-3295-08	SCREW 1.7X2.5		
-			A70-1129-05	REMOTE CONTROL	M	
-		✻	A70-1177-05	REMOTE CONTROL	KET	
-			B46-0100-40	WARRANTY CARD	MET	
-			B46-0328-03	WARRANTY CARD	K	
-		✻	B60-3590-08	INSTRUCTION MANUAL(EN,FR)	K	
-		✻	B60-3591-28	INSTRUCTION MANUAL(ENGLISH)	M	
-		✻	B60-3592-08	INSTRUCTION MANUAL(G,F,I,D)	E	
-		✻	B60-3593-08	INSTRUCTION MANUAL(ENGLISH)	T	
-		✻	B60-3630-08	INSTRUCTION MANUAL(SPANISH)	M	
-			E30-2836-08	CONNECTING CORD		
-		✻	H50-2749-08	AC ADAPTOR PAD	K	
-		✻	H50-2745-08	AC ADAPTOR CASE	K	
-		✻	H50-2746-08	AC ADAPTOR CASE	MET	
-		✻	H50-2748-08	AC ADAPTOR PAD	MET	
-		✻	H50-2747-08	PACKING CASE		
-		✻	H19-0054-08	PACKING ADD		
-			H25-1592-08	PROTECTION BAG		
-		✻	H50-2670-08	ITEM CARTON BLUE	K	B
-		✻	H50-2671-08	ITEM CARTON BLUE	E	B
-		✻	H50-2672-08	ITEM CARTON SILVER	ET	S
-		✻	H50-2714-08	ITEM CARTON SILVER	M	S
-			W01-0918-08	CARRYING BAG		
-			W01-0920-15	STEREO HEADPHONE	MET	
-		✻	W01-0941-05	STEREO HEADPHONE	K	
-			W03-5679-08	BATTERY		
-		✻	W08-0668-08	AC ADAPTOR	K	
-		✻	W08-0669-08	AC ADAPTOR	M	
-		✻	W08-0670-08	AC ADAPTOR	E	
-		✻	W08-0671-08	AC ADAPTOR	T	
PWB-A	3C	✻	W02-2628-08	MAIN PCB	ET	
PWB-A	3C	✻	W02-2627-08	MAIN PCB	K	
PWB-A	3C	✻	W02-2629-08	MAIN PCB	M	
			ELECTRIC PARTS			
C102			CK73FB1C224K	CHIP C 0.22UF K		
C103			CK73FB1C474K	CHIP C 0.47UF K		
C104			CC73GCH1H3R0C	CHIP C 3.0PF C		
C105			CK73GB1H222K	CHIP C 2200PF K		
C106,107			CC73GCH1H120J	CHIP C 12PF J		
C108,109			CC73GCH1H8R0D	CHIP C 8.0PF D		
C111,112			CK73FB0J105K	CHIP C 1.0UF K		
C114			SH1245920008	CHIP 10UF 6.3WV		
C115			CC73GCH1H221J	CHIP C 220PF J		
C116			CC73GCH1H101J	CHIP C 100PF J		
C118			CK73GB1H331K	CHIP C 330PF K		
C119			CK73GB1H332K	CHIP C 3300PF K		
C120			CK73GB1H331K	CHIP C 330PF K		
C121,122			CK73FB0J105K	CHIP C 1.0UF K		
C123,124			CK73GB1E223K	CHIP C 0.022UF K		
C125,126			CK73GB1H682K	CHIP C 6800PF K		
C127			CK73FB1C104K	CHIP C 0.10UF K		
C128			CK73FB0J105K	CHIP C 1.0UF K		
C129			SH1245920008	CHIP 10UF 6.3WV		
C130,131			CK73FB0J105K	CHIP C 1.0UF K		

L : Scandinavia **K :** USA **P :** Canada **R :** Mexico
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❸

Ref. No	Add-ress	New Parts	Parts No.	Description			Desti-nation	Re-marks
C132			CC73GCH1H6R0C	CHIP C	6.0PF	C		
C133			CC73GCH1H100D	CHIP C	10PF	D		
C150			CC73GCH1H2R0C	CHIP C	2.0PF	C		
C160			CC73FSL1H391J	CHIP C	390PF	J		
C161			CK73EB1C105K	CHIP C	1.0UF	K		
C162			SH1245920008	CHIP	10UF	6.3WV		
C163			CK73FB0J105K	CHIP C	1.0UF	K		
C164			CK73GB1C473K	CHIP C	0.047UF	K		
C165			CK73GB1C333K	CHIP C	0.033UF	K		
C171			CK73FB0J105K	CHIP C	1.0UF	K		
C201			CK73FB1C105Z	CHIP C	1.0UF	Z		
C202			SH1245920008	CHIP	10UF	6.3WV		
C203,204			CK73GB1E104Z	CHIP C	0.10UF	Z		
C205			CC73GCH1H330J	CHIP C	33PF	J		
C206			CK73FB1C184K	CHIP C	0.18UF	K		
C207			CC73GCH1H330J	CHIP C	33PF	J		
C211,212			CC73GCH1H5R0C	CHIP C	5.0PF	C		
C351			CC73GCH1H151J	CHIP C	150PF	J		
C353			SH1245920008	CHIP	10UF	6.3WV		
C354			CK73EB1E104K	CHIP C	0.10UF	K		
C357			CK73GB1C104Z	CHIP C	0.10UF	Z		
C361			CK73FB1H393K	CHIP C	0.039UF	K		
C401			CK73GB1C473K	CHIP C	0.047UF	K		
C402			CK73FB1E104Z	CHIP C	0.10UF	Z		
C404			CK73FB1C105Z	CHIP C	1.0UF	Z		
C405			CC73GCH1H100D	CHIP C	10PF	D		
C406			CK73GB1H681K	CHIP C	680PF	K		
C407			CK73FB1C105Z	CHIP C	1.0UF	Z		
C408			CK73GB1E103K	CHIP C	0.010UF	K		
C461			CK73GB1E104Z	CHIP C	0.10UF	Z		
C471			CK73FB1C105Z	CHIP C	1.0UF	Z		
C491			CK73GB1C104Z	CHIP C	0.10UF	Z		
C500			SH1245920008	CHIP	10UF	6.3WV		
C501,502			CK73GB1H471K	CHIP C	470PF	K		
C503,504			SH1245920007	CHIP	3.3UF	10WV		
C505			CK73FB1C104K	CHIP C	0.10UF	K		
C507			SH1245920008	CHIP	10UF	6.3WV		
C508-510			CK73FB0J105K	CHIP C	1.0UF	K		
C511			CK73EB1C105K	CHIP C	1.0UF	K		
C600			SH1245920008	CHIP	10UF	6.3WV		
C601-607			CK73FB1C105Z	CHIP C	1.0UF	Z		
C612			CK73FB1C104K	CHIP C	0.10UF	K		
C613-615			CK73GB1E103K	CHIP C	0.010UF	K		
C701,702			SH1245920008	CHIP	10UF	6.3WV		
C703			CK73GB1E103K	CHIP C	0.010UF	K		
C711,712			CK73FB1C104K	CHIP C	0.10UF	K		
C713,714			CK73FB0J105K	CHIP C	1.0UF	K		
C715			CK73GB1E104Z	CHIP C	0.10UF	Z		
C721,722			SH1245920007	CHIP	3.3UF	10WV		
C723,724			CK73GB1E103K	CHIP C	0.010UF	K		
C725,726			SH1245920007	CHIP	3.3UF	10WV		
C727			CK73FB1C105Z	CHIP C	1.0UF	Z		
C728			CK73GB1E104Z	CHIP C	0.10UF	Z		
C729			CK73GBIC105Z	CHIP C	1.0UF	Z		
C730			SH1245920008	CHIP	10UF	6.3WV		

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❹

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C731			CK73FB1C224Z	CHIP C	0.22UF	Z		
C733,734			CK73FB1C104K	CHIP C	0.10UF	K		
C751,752			CK73GB1E823K	CHIP C	0.082UF	K		
C753,754			CK73FB1C105Z	CHIP C	1.0UF	Z		
C755			CK73GB1E103Z	CHIP C	0.010UF	Z		
C756			CK73FB1C105Z	CHIP C	1.0UF	Z		
C758			SH1245920007	CHIP	3.3UF	10WV		
C759			CK73GB1C563K	CHIP C	0.056UF	K		
C761,762			CK73FB0J105K	CHIP C	1.0UF	K		
C802			CK73FB1C105Z	CHIP C	1.0UF	Z		
C803			CK73FB1C104K	CHIP C	0.10UF	K		
C804			CK73FB1C105Z	CHIP C	1.0UF	Z		
C805			SH1185940013	CHIP C	100UF	6.3WV		
C806			SH1245920008	CHIP	10UF	6.3WV		
C807			CK73FB1C104K	CHIP C	0.10UF	K		
C808			CK73FB1C184K	CHIP C	0.18UF	K		
C809			SH1245920008	CHIP	10UF	6.3WV		
C810,811			CK73FB1C334K	CHIP C	0.33UF	K		
C812			CK73FB1C184K	CHIP C	0.18UF	K		
C813			CK73FB1C105Z	CHIP C	1.0UF	Z		
C822			CC73GCH1H2R0C	CHIP C	2.0PF	C		
C823,824			CC73GCH1H101J	CHIP C	100PF	J		
C825			CC73GCH1H5R0C	CHIP C	5.0PF	C		
C826			SH1245920008	CHIP	10UF	6.3WV		
C827			SH1265940014	CHIP C	220UF	4WV		
C828			CK73FB0J105K	CHIP C	1.0UF	K		
C842			CC73GCH1H270J	CHIP C	27PF	J		
C843,844			CC73GCH1H101J	CHIP C	100PF	J		
C845			CC73GCH1H120J	CHIP C	12PF	J		
C846			CK73EB1C105K	CHIP C	1.0UF	K		
C847			SH1245920008	CHIP	10UF	6.3WV		
C848			CK73FB0J105K	CHIP C	1.0UF	K		
C849			CK73FB1E103K	CHIP C	0.010UF	K		
C850			CK73GB1H102K	CHIP C	1000PF	K		
C851			CK73FB1C105Z	CHIP C	1.0UF	Z		
C862			CK73FB1C184K	CHIP C	0.18UF	K		
C863			CK73EB1C105K	CHIP C	1.0UF	K		
C865,866			CK73EB1C105K	CHIP C	1.0UF	K		
C867			SH1265940014	CHIP C	220UF	4WV		
C868			CK73FB1C105Z	CHIP C	1.0UF	Z		
C869			SH1265940014	CHIP C	220UF	4WV		
C881			CK73FB1C104K	CHIP C	0.10UF	K		
C882			CK73FB1C105Z	CHIP C	1.0UF	Z		
C902			CK73FB1E474Z	CHIP C	0.47UF	Z		
C903			CK73GB1C473K	CHIP C	0.047UF	K		
C904			CK73FB1E474Z	CHIP C	0.47UF	Z		
C905,907			CK73GB1H332K	CHIP C	3300PF	K		
C908,909			CK73FB1C104K	CHIP C	0.10UF	K		
C910			CK73FB1C105Z	CHIP C	1.0UF	Z		
C911			CK73GB1C104Z	CHIP C	0.10UF	Z		
CNS101			E40-9976-08	CONNECTOR(26P)				
CNS201			J19-5619-08	CONNECTOR(6P)				
CNS351			J19-5619-08	CONNECTOR(6P)				
CNS401			E40-9977-08	CONNECTOR(14P)				
CNS402			J19-5618-08	CONNECTOR(7P)				

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Ref. No	Address	New Parts	Parts No.	Description				Destination	Remarks
CNS601			E40-9978-08	CONNECTOR(13P)					
J701			E12-0024-08	JACK OPTICAL/LIVE IN					
J702			E12-0025-08	JACK MIC IN					
J703			E11-0364-08	JACK (PHONES)					
J801			E21-0022-08	JACK DC IN					
L100			L90-0092-08	CHOKE COIL					
L201,202			L90-0092-08	CHOKE COIL					
L491			L90-0092-08	CHOKE COIL					
L500			L90-0071-08	COIL					
L600			L90-0058-08	COIL					
L601,602			L90-0064-08	CHOKE COIL					
L603,604			L90-0058-08	COIL					
L605,606			SH1306140314	CHOKE COIL					
L607			L90-0058-08	COIL					
L612			L90-0092-08	CHOKE COIL					
L721			L90-0092-08	CHOKE COIL					
L751,752			L90-0058-08	COIL					
L800		✻	L92-0077-08	CORE					
L801			L90-0092-08	CHOKE COIL					
L821,822			L90-0074-08	CHOKE COIL					
L841			L90-0074-08	CHOKE COIL					
L842			L90-0075-08	CHOKE COIL					
L861,862			L90-0058-08	COIL					
L863			L90-0074-08	CHOKE COIL					
L881,882			L90-0092-08	CHOKE COIL					
XL201			L77-2218-08	RESONATOR (33.868MHZ)					
R101			RK73GB1J104J	CHIP R	100K	J	1/16W		
R102			RK73GB1J123J	CHIP R	12K	J	1/16W		
R104			RK73GB1J392J	CHIP R	3.9K	J	1/16W		
R105			RK73GB1J472J	CHIP R	4.7K	J	1/16W		
R106			RK73GB1J123J	CHIP R	12K	J	1/16W		
R107			RK73GB1J124D	CHIP R	120K	D	1/16W		
R109			RK73GB1J273D	CHIP R	27K	D	1/16W		
R111			RK73GB1J273D	CHIP R	27K	D	1/16W		
R112			RK73GB1J124D	CHIP R	120K	D	1/16W		
R113			RK73GB1J123J	CHIP R	12K	J	1/16W		
R116			RK73GB1J183J	CHIP R	18K	J	1/16W		
R117			RK73GB1J224D	CHIP R	220K	D	1/16W		
R119,120			RK73GB1J473D	CHIP R	47K	D	1/16W		
R121			RK73GB1J224D	CHIP R	220K	D	1/16W		
R122			RK73GB1J183J	CHIP R	18K	J	1/16W		
R124,125			RK73GB1J184J	CHIP R	180K	J	1/16W		
R126			RK73GB1J471J	CHIP R	470	J	1/16W		
R127			RK73GB1J391J	CHIP R	390	J	1/16W		
R128,129			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R130			RK73GB1J1R0J	CHIP R	1	J	1/16W		
R131			RK73GB1J104J	CHIP R	100K	J	1/16W		
R132			RK73GB1J393J	CHIP R	39K	J	1/16W		
R133			RK73GB1J154J	CHIP R	150K	J	1/16W		
R134			RK73GB1J103J	CHIP R	10K	J	1/16W		
R135			RK73GB1J124J	CHIP R	120K	J	1/16W		
R137			RK73GB1J223J	CHIP R	22K	J	1/16W		
R138			RK73GB1J683J	CHIP R	68K	J	1/16W		
R139,140			RK73GB1J473J	CHIP R	47K	J	1/16W		

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Ref. No	Address	New Parts	Parts No.	Description				Destination	Remarks
R141			RK73GB1J222J	CHIP R	2.2K	J	1/16W		
R142			RK73GB1J153J	CHIP R	15K	J	1/16W		
R143			RK73GB1J103J	CHIP R	10K	J	1/16W		
R144			RK73GB1J221J	CHIP R	220	J	1/16W		
R145			RK73GB1J335J	CHIP R	3.3M	J	1/16W		
R151			RK73GB1J103J	CHIP R	10K	J	1/16W		
R154			RK73GB1J122J	CHIP R	1.2K	J	1/16W		
R160			RK73GB1J104J	CHIP R	100K	J	1/16W		
R161			RK73GB1J122J	CHIP R	1.2K	J	1/16W		
R171			RK73GB1J103J	CHIP R	10K	J	1/16W		
R201,202			RK73GB1J000J	CHIP R	0	J	1/16W		
R203			RK73GB1J000J	CHIP R	0	J	1/16W		
R204			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R222			RK73GB1J105J	CHIP R	1.0M	J	1/16W		
R361			RK73EB2B8R2J	CHIP R	8.2	J	1/8W		
R401			RK73GB1J334J	CHIP R	330K	J	1/16W		
R402			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R403			RK73GB1J272J	CHIP R	2.7K	J	1/16W		
R404-406			RK73GB1J104J	CHIP R	100K	J	1/16W		
R411			RK73GB1J104J	CHIP R	100K	J	1/16W		
R412			RK73GB1J103J	CHIP R	10K	J	1/16W		
R413-415			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R416			RK73GB1J123J	CHIP R	12K	J	1/16W		
R418			RK73GB1J393J	CHIP R	39K	J	1/16W		
R421			RK73GB1J103J	CHIP R	10K	J	1/16W		
R422			RK73GB1J104J	CHIP R	100K	J	1/16W		
R423			RK73GB1J103J	CHIP R	10K	J	1/16W		
R424			RK73GB1J104J	CHIP R	100K	J	1/16W		
R425,426			RK73GB1J223J	CHIP R	22K	J	1/16W		
R428			RK73GB1J153J	CHIP R	15K	J	1/16W		
R429			RK73GB1J103J	CHIP R	10K	J	1/16W		
R433,434			RK73GB1J104J	CHIP R	100K	J	1/16W		
R435,436			RK73GB1J333J	CHIP R	33K	J	1/16W		
R437,438			RK73GB1J103J	CHIP R	10K	J	1/16W		
R441-444			RK73GB1J102J	CHIP R	1.0K	J	1/16W		
R445,446			RK73GB1J103J	CHIP R	10K	J	1/16W		
R447			RK73GB1J223J	CHIP R	22K	J	1/16W		
R448			RK73GB1J154J	CHIP R	150K	J	1/16W	K	
R448			RK73GB1J393J	CHIP R	39K	J	1/16W	M	
R448			RK73GB1J683J	CHIP R	68K	J	1/16W	ET	
R449			RK73GB1J233J	CHIP R	23K	J	1/16W		
R451			RK73GB1J562J	CHIP R	5.6K	J	1/16W		
R452			RK73GB1J822J	CHIP R	8.2K	J	1/16W		
R453			RK73GB1J183J	CHIP R	18K	J	1/16W		
R454			RK73GB1J563J	CHIP R	56K	J	1/16W		
R455			RK73GB1J562J	CHIP R	5.6K	J	1/16W		
R461			RK73GB1J363J	CHIP R	36K	J	1/16W		
R462			RK73GB1J183J	CHIP R	18K	J	1/16W		
R466			RK73GB1J822J	CHIP R	8.2K	J	1/16W		
R467			RK73GB1J183J	CHIP R	18K	J	1/16W		
R468			RK73GB1J563J	CHIP R	56K	J	1/16W		
R471			RK73GB1J471J	CHIP R	470	J	1/16W		
R472			RK73GB1J222J	CHIP R	2.2K	J	1/16W		
R473			RK73GB1J123J	CHIP R	12K	J	1/16W		
R474			RK73GB1J473J	CHIP R	47K	J	1/16W		

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R500			RK73GB1J4R7J	CHIP R 4.7 J 1/16W		
R501,502			RK73GB1J222J	CHIP R 2.2K J 1/16W		
R601			RK73GB1J103J	CHIP R 10K J 1/16W		
R701,702			RK73GB1J101J	CHIP R 100 J 1/16W		
R703			RK73GB1J154J	CHIP R 150K J 1/16W		
R711,712			RK73GB1J472J	CHIP R 4.7K J 1/16W		
R713,714			RK73GB1J103J	CHIP R 10K J 1/16W		
R715,716			RK73GB1J104J	CHIP R 100K J 1/16W		
R717			RK73GB1J102J	CHIP R 1.0K J 1/16W		
R719,720			RK73GB1J103J	CHIP R 10K J 1/16W		
R723,724			RK73GB1J682J	CHIP R 6.8K J 1/16W		
R725			RK73GB1J101J	CHIP R 100 J 1/16W		
R726			RK73GB1J393J	CHIP R 39K J 1/16W		
R727			RK73GB1J103J	CHIP R 10K J 1/16W		
R728			RK73GB1J102J	CHIP R 1.0K J 1/16W		
R751,752			RK73GB1J820J	CHIP R 82 J 1/16W		
R753			RK73GB1J154J	CHIP R 150K J 1/16W		
R754			RK73GB1J334J	CHIP R 330K J 1/16W		
R756,757			RK73GB1J273J	CHIP R 27K J 1/16W		
R761,762			RK73GB1J332J	CHIP R 3.3K J 1/16W		
R765,766			RK73GB1J180J	CHIP R 18 J 1/16W		
R801			RK73GB1J684J	CHIP R 680K J 1/16W		
R802			RK73GB1J394J	CHIP R 390K J 1/16W		
R803,804			RK73GB1J104J	CHIP R 100K J 1/16W		
R805			RK73GB1J474J	CHIP R 470K J 1/16W		
R806			RK73GB1J684J	CHIP R 680K J 1/16W		
R810			RK73GB1J204J	CHIP R 200K J 1/16W		
R811			RK73GB1J184J	CHIP R 180K J 1/16W		
R813			RK73GB1J335J	CHIP R 3.3M J 1/16W		
R821			RK73GB1J474J	CHIP R 470K J 1/16W		
R822			RK73GB1J684J	CHIP R 680K J 1/16W		
R823			RK73GB1J335J	CHIP R 3.3M J 1/16W		
R824			RK73GB1J153J	CHIP R 15K J 1/16W		
R825			RK73GB1J000J	CHIP R 0 J 1/16W		
R826			RK73GB1J103J	CHIP R 10K J 1/16W		
R827			RK73GB1J474J	CHIP R 470K J 1/16W		
R828			RK73GB1J334J	CHIP R 330K J 1/16W		
R829			RK73GB1J474J	CHIP R 470K J 1/16W		
R830			RK73GB1J220J	CHIP R 22 J 1/16W		
R841			RK73GB1J104J	CHIP R 100K J 1/16W		
R842			RK73GB1J000J	CHIP R 0 J 1/16W		
R843			RK73GB1J104J	CHIP R 100K J 1/16W		
R844			RK73GB1J153J	CHIP R 15K J 1/16W		
R845			RK73GB1J000J	CHIP R 0 J 1/16W		
R846			RK73GB1J103J	CHIP R 10K J 1/16W		
R847			RK73GB1J394J	CHIP R 390K J 1/16W		
R848			RK73GB1J274J	CHIP R 270K J 1/16W		
R849			RK73GB1J303J	CHIP R 30K J 1/16W		
R850			RK73GB1J000J	CHIP R 0 J 1/16W		
R901			RK73GB1J563J	CHIP R 56K J 1/16W		
R902			RK73GB1J331J	CHIP R 330 J 1/16W		
R903,904			RK73GB1J1R0J	CHIP R 1 J 1/16W		
R905			RK73GB1J103J	CHIP R 10K J 1/16W		
R906,907			RK73GB1J154J	CHIP R 150K J 1/16W		

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Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
SW401			S74-0043-08	PUSH SWITCH		
SW402			S90-0117-08	PUSH SWITCH		
SW901			S74-0043-08	PUSH SWITCH		
SW902			S74-0044-08	PUSH SWITCH		
SW903			S74-0045-08	PUSH SWITCH		
SW904			S74-0044-08	PUSH SWITCH		
D351,352			SB0209CP	DIODE		
D401			DA221	DIODE		
D402			DAN222	DIODE		
D471			SB00703Q	DIODE		
D491			015Z5R1Y	DIODE		
D801			15AZ7R5Y	DIODE		
D802			SB10015C	DIODE		
D803			DAN222	DIODE		
D821			SB10015C	DIODE		
D841			SB10015C	DIODE		
D842			1SS373	DIODE		
D861,862			SB10015C	DIODE		
IC101			IR3R50	IC		
IC201			LR37646	IC		
IC202			IX2567AF	IC		
IC351			74ACT02F	IC		
IC401			IX2596AF	IC		
IC402			S29294A	IC		
IC403			TC7W14FU	IC		
IC404			7SH00FU	IC		
IC405			61AC2102	IC		
IC406			RTC4543B	IC		
IC501			AK4520VF	IC		
IC601			BH6512FS	IC(4CH BTL)		
IC701			IR3R54N	IC		
IC702			TK71350M	IC		
IC703			IR3R54N	IC		
IC800			CPS18	IC		
IC801			HAT1025R	IC		
IC802			TC7S00FU	IC(NAND GATE)		
IC803			CPS05	IC		
IC804			CPS07	IC		
IC805			62FP2802	IC		
IC806			62FP3302	IC		
IC821			IR3M09N	IC		
IC822			LMS6702	IC		
IC841			IR3M09N	IC		
IC851			LB1638M	IC(MOTOR DRIVE)		
IC861			62FP2802	IC		
IC901			SN761031	IC		
IC902			HN1C01FU	IC		
Q101			2SA1314C	TRANSISTOR		
Q102			DTA114TE	TRANSISTOR		
Q103			DTC144TE	TRANSISTOR		
Q171			2SA1745	TRANSISTOR		
Q351			2SK2909	FET		
Q352			2SK2911	FET		
Q353			2SK2909	FET		

L : Scandinavia
Y : PX(Far East, Hawaii)
Y : AAFES(Europe)
K : USA
T : Europe
X : Australia
P : Canada
E : Europe
M : Other Areas
R : Mexico
G : Germany

⚠ indicates safety critical components.

✻ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	Address	New Parts	Parts No.	Description	Destination	Remarks
Q354			2SK2911	FET		
Q711			DTC323TK	TRANSISTOR		
Q721			2SC4213B	TRANSISTOR		
Q801			2SC2982C	TRANSISTOR		
Q802,803			DTC144EE	TRANSISTOR		
Q804			2SA1745	TRANSISTOR		
Q841			LML2402	TRANSISTOR		
BAT401		✻	W09-1261-08	BACKUP BATTERY		
				MECHANISM		
1	3B		J19-5711-08	BRACKET		
2	3B		J21-6504-08	BRACKET		
4	2A		G02-1053-08	SPRING		
5	2A		A02-1354-08	CHASSIS		
6	1A		E35-1923-08	HEAD JOINT FLEXIBLE PWB		
7	2A		E35-1565-08	MECHANISM FLEXIBLE PWB		
11	1B		T30-0016-08	MAGNETIC HEAD		
13	1B		J19-5831-08	HOLDER FLAME		
14	2B		D10-3747-08	LEVER		
15	2B		G01-3915-08	SPRING		
16	2A		SH1242810021	GEAR		
17	2A		SH1242580067	SPRING		
18	2B		D10-3653-08	LEVER		
19	2B		J21-6399-08	BRACKET		
20	1A		J21-6505-08	SHAFT(PICKUP SLIDE)		
21	1B		D10-3654-08	LEVER(EJECT)		
22	1B		G01-3916-08	SPRING(EJECT LEVER)		
23	1B		G01-3917-08	SPRING(CANCEL LEVER)		
24	2B		G13-0502-08	CUSHION(MECHANISM)		
30	1A		J21-6506-08	BRACKET(HEAD)		
31	2B		J21-6400-08	BRACKET(PICKUP)		
32	2B		G09-0665-08	SPRING HEAD		
33	2B		N19-1421-08	WASHER		
34	2B		N09-3290-08	SCREW		
103	2B	✻	N09-3416-08	SCREW 1.7X2		
106	3A	✻	N09-3417-08	SCREW 1.4X5.5		
105	3A,3B		N09-3118-08	SCREW 1.4X2.5		
107	1B		N09-3114-08	SCREW		
108	3A,3B		SH1249700055	SCREW		
109	3A		SH1309900937	WASHER		
110	3A		N09-3219-08	SCREW		
111	3B		N09-3115-08	SCREW		
112	2B		N09-3292-08	SCREW		
114	3B		N09-3123-08	SCREW		
115	1A		N09-3393-08	SCREW		
116	2A		N09-3126-08	SCREW		
117	3B		N09-3394-08	SCREW		
118	2B		G13-0546-08	CUSHION		
119	1A		F09-0127-08	SHEET		
M1	3B		T42-0893-08	MOTOR (DISC)		
M902	3B		T42-0843-08	MOTOR (FEED)		
M903	3A		T42-0844-08	MOTOR (LOADING)		
PU	1A		T25-0070-08	OPTICAL PICKUP UNIT		
PWB1,2	1B,3A		W02-2611-08	PCB(MECHANISM HEAD DRIVE)		

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DMC-G7R

Note:
Component and circuit are subject to modification to insure best operation under differing local conditions. This manual is based on Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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