# SECTION 1
# PRECAUTION

## 1.1 Safety Precautions

(1) This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturers warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by ( ⚠ ) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.

(4) The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after reassembling.

(5) Leakage shock hazard testing
After reassembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
- Alternate check method
  Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000Ω per volt or more sensitivity in the following manner. Connect a 1,500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground.
  Measure the AC voltage across the resistor with the AC voltmeter.
  Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).

## 1.2 Warning

(1) This equipment has been designed and manufactured to meet international safety standards.
(2) It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
(3) Repairs must be made in accordance with the relevant safety standards.
(4) It is essential that safety critical components are replaced by approved parts.
(5) If mains voltage selector is provided, check setting for local voltage.

## 1.3 Caution

**Burrs formed during molding may be left over on some parts of the chassis.**
**Therefore, pay attention to such burrs in the case of preforming repair of this system.**

## 1.4 Critical parts for safety

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor ( ▬ ), diode ( ▮ ) and ICP ( ● ) or identified by the " ⚠ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer.
(This regulation dose not Except the J and C version)

### 1.5 Preventing static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

#### 1.5.1 Grounding to prevent damage by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as laser products.
Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench
Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

(2) Ground yourself
Use an anti-static wrist strap to release any static electricity built up in your body.

(3) Handling the optical pickup
- In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition.
(Refer to the text.)
- Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

### 1.6 Handling the traverse unit (optical pickup)

(1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
(2) Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.
(3) Handle the flexible cable carefully as it may break when subjected to strong force.
(4) I t is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

### 1.7 Attention when traverse unit is decomposed

***Please refer to "Disassembly method" in the text for the pickup unit.**

- Apply solder to the short land sections before the flexible wire is disconnected from the connecto on the servo board. (If the flexible wire is disconnected without applying solder, the pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land sections after connecting the flexible wire.

## 1.8 Important for laser products

**1.CLASS 1 LASER PRODUCT**

**2.DANGER :** Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

**3.CAUTION :** There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

**4.CAUTION :** The CD,MD and DVD player uses invisible laser radiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

**5.CAUTION :** If safety switches malfunction, the laser is able to function.

**6.CAUTION :** Use of controls, adjustments or performance of procedures other than those specified here in may result in hazardous radiation exposure.

⚠ ***CAUTION*** **Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.**

**CAUTION :** Visible and invisible laser radiation when open and interlock failed or defeated.
AVOID DIRECT EXPOSUREBTO BEAM.

**ADVARSEL :** Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejler. Undgå direkte eksponering til stråling.

**VARNING :** Synlig och osynlig laserstråling när den öppnas och spärren är urkopplad. Betrakta ej strålen.

**VARO :** Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymätttömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi.

REPRODUCTION AND POSITION OF LABELS

**WARNING LABEL**

| | | | |
|---|---|---|---|
| **CAUTION** : Visible and Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e) | **ADVARSEL** : Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejeler. Undgå direkte eksponering til stråling. (d) | **VARNING** : Synlig och osynling laserstrålning när den öppnas och spärren är urkopplad. Betrakta ej strålen. (s) | **VARO** : Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymättömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi. (f) |

CLASS 1
LASER PRODUCT

| | |
|---|---|
| **CAUTION** : Visible and Invisible laser radiation when open and interlock failed or defeated. AVOID DIRECT EXPOSURE TO BEAM. (e) | **VARO** : Avattaessa ja suojalukitus ohitettuna tai viallisena olet alttiina näkyvälle ja näkymättömälle lasersäteilylle. Vältä säteen kohdistumista suoraan itseesi. (f) |
| **VARNING** : Synlig och osynling laserstrålning när den öppnas och spärren är urkopplad. Betrakta ej strålen. (s) | **ADVARSEL** : Synlig og usynlig laserstråling når maskinen er åben eller interlocken fejeler. Undgå direkte eksponering til stråling. (d) |

# SECTION 3
# DISASSEMBLY

## 3.1 Main body section

### 3.1.1 Removing the metal cover (See Figs.1 to 4)

(1) From the both sides of the main body, remove the four screws **A** attaching the metal cover. (See Figs.1 and 2.)
(2) From the back side of the main body, remove the five screws **B** attaching the metal cover. (See Fig.3.)
(3) Lift the rear section of the metal cover in the direction of the arrow while extending the lower sections of the metal cover, release the claws **a** using a longer screwdriver from the inside as required. (See Fig.4.)

**Note:**

Do not damage any parts and boards inside the main body when releasing the claws **a** using the longer screwdriver. (See Fig.4.)

Fig.1

Fig.2

Fig.3

Fig.4

### 3.1.2 Removing the front panel assembly (See Figs.5 to 7)

- Remove the metal cover.
  (1) From the right side of the DVD mechanism assembly, push the slide cam and pull the tray assembly out of the main body in the direction of the arrow. (See Fig.5.)
  (2) From the front side of the main body, remove the CD fitting assembly from the tray assembly in the direction of the arrow and push in the tray assembly as before. (See Fig.6.)
  (3) From the top side of the main body, disconnect the card wire from the connector CN428 on the main board. (See Fig.5.)

  **Reference:**
  When attaching the front panel assembly, connect the card wire to the connector CN428 on the main board after passing it through the lower part of the holder board. (See Fig.5.)
  (4) Disconnect the card wire from the connector CN454 on the HP terminal board. (See Fig.5.)
  (5) From the bottom side of the main body, remove the three screws **C** attaching the front panel assembly. (See Fig.7.)
  (6) From both sides and back side of the main body, remove the front panel assembly in the direction of the arrow while releasing the joints **b** and **c**. (See Fig.7.)

Fig.5

Fig.6

Fig.7

### 3.1.3 Removing the DVD mechanism assembly (See Figs.5,6 and 8)

- Remove the metal cover.
  (1) From the right side of the DVD mechanism assembly, push the slide cam and pull the tray assembly out of the main body in the direction of the arrow. (See Fig.5.)
  (2) From the front side of the main body, remove the CD fitting from the tray assembly in the direction of the arrow and push in the tray assembly as before. (See Fig.6.)
  (3) From the top side of the main body, disconnect the card wires from the connectors (CN422 to CN426) on the main board. (See Fig.8.)
  (4) Disconnect the wire from the connector CN430 on the main board. (See Fig.8.)
  (5) Remove the three screws **D** attaching the DVD mechanism assembly to the chassis base. (See Fig.8.)

**Reference:**

When attaching the DVD mechanism assembly, align the holes of the chassis base to the projections d of the DVD mechanism assembly. (See Fig.8.)

Fig.8

### 3.1.4 Removing the HP terminal board (See Fig.8)

- Remove the metal cover.

**Reference:**

Remove the front panel assembly as required. (See 3.1.2 “Removing the front panel assembly”.)
(1) From the top side of the main body, remove the screw **E** attaching the HP terminal board to the chassis base.
(2) Take out the HP terminal board from the main body.

**Reference:**

When attaching the HP terminal board, align the hole on the HP terminal board to the projection e of the chassis base before attaching the screw **E**.

### 3.1.5 Removing the rear panel (See Fig.9)

- Remove the metal cover.
  (1) From the back side of the main body, remove the strain relief attaching the power cord in the direction of the arrow.
  (2) Remove the nine screws **F** and the two screws **G** attaching the rear panel.
  (3) Release the joints **f**, and remove the rear panel from the main body.

Fig.9

### 3.1.6 Removing the tuner assembly (See Figs.10 and 11)

- Remove the metal cover.
  (1) From the top side of the main body, disconnect the card wire from the connector on the tuner assembly. (See Fig.10.)
  (2) From the back side of the main body, remove the screw **H** attaching the tuner assembly to the rear panel. (See Fig.11.)
  (3) Take out the tuner assembly from the main body.

Fig.10

Fig.11

### 3.1.7 Removing the main board (See Figs.12 and 13)

- Remove the metal cover.

(1) From the top side of the main body, disconnect the card wires from the connectors (CN422 to CN428) on the main board. (See Fig.12.)

(2) Disconnect the wires from the connectors (CN190, CN430, CN901) on the main board. (See Fig.12.)

**Reference:**

After connecting the wires to the connectors (CN190, CN901), fix the wires with the wire holder. (See Fig.12.)

(3) Disconnect the power cord and wire from the connectors (CN950, CN953) on the transformer board. (See Fig.12.)

(4) Remove the three screws **J** and screw **J'** attaching the main board to the chassis base. (See Fig.12.)

**Reference:**

When attaching the screw **J'**, attach the wire holder with it. (See Fig.12.)

(5) From the back side of the main body, remove the seven screws **K** attaching the main board to the rear panel. (See Fig.13.)

(6) Release the joints **g** and remove the rear panel together with the tuner assembly. (See Fig.13.)

(7) Take out the main board from the main body.

**Reference:**

When attaching the main board, align the hole on the main board to the projections h of the chassis base before attaching the screws **J** and **J'**. (See Fig.12.)

Fig.12

Fig.13

### 3.1.8 Removing the heat sink (See Fig.14)

- Remove the metal cover and main board.
  (1) From the reverse side of the main board, remove the four screws **L** attaching the heat sink.
  (2) Take out the heat sink.

Fig.14

### 3.1.9 Removing the transformer board (See Fig.15)

- Remove the metal cover.
  (1) From the top side of the main body, disconnect the wires from the connectors (CN952, CN953) on the transformer board.
  (2) From the top side of the main body, disconnect the wires from the connector CN951 on the transformer board. [US, UT, UW, UX, UG and UN version only]
  (3) Disconnect the power cord from the connector CN950 on the transformer board.
  (4) Remove the wire holders bundling the wires.

  **Reference:**
  After attaching the transformer board, bundle the wires with the wire holders as before.

  (5) Remove the two screws **M** and screw **M'** attaching the transformer board.

  **Reference:**
  When attaching the screw **M'**, attach the shield with it as before.

  (6) Release the holder using a pliers and take out the transformer board from the main body.

Fig.15

### 3.1.10 Removing the power transformer (See Fig.16)

- Remove the metal cover.
  (1) From the top side of the main body, remove the tie bands and wire holders bundling the wires.
  (2) Disconnect the wire from the connector CN952 on the transformer board.
  (3) Disconnect the wire from the connector CN951 on the transformer board. [US, UT, UW, UX, UG and UN version only]
  (4) Disconnect the wire from the connector CN901 on the main board.

  **Reference:**
  After connecting the wires to the connectors, bundle the wires with the wire holders and new tie bands as before.

  (5) Remove the four screws **N** and take out the power transformer from the main body.

### 3.1.11 Removing the fan motor (See Figs.16 and 17)

- Remove the metal cover.
  (1) From the top side of the main body, remove the wire holders bundling the wires. (See Fig.16.)
  (2) Disconnect the wire from the connector CN190 on the main board. (See Fig.16.)
  (3) From the right side of the main body, remove the two screws **P** and take out the fan motor from the chassis base. (See Fig.17.)

**Reference:**
After connecting the wire to the connector CN190, bundle the wires with the wire holders as before. (See Fig.16.)

Fig.16

Fig.17

### 3.1.12 Removing the front board (See Figs.18 and 19)

- Remove the metal cover and front panel assembly.
  (1) From the front side of the front panel assembly, pull out the volume knob in the direction of the arrow. (See Fig.18.)
  (2) From the inside of the front panel assembly, remove the six screws **Q** attaching the front board. (See Fig.19.)
  (3) Take out the front board from the front panel assembly.

**Reference:**

When attaching the front board, align the projections i of the front panel assembly to the holes of the front board. (See Fig.19.)

Fig.18

Fig.19

### 3.2 DVD mechanism section

- Remove the DVD mechanism assembly from the main body. (See "3.1.3 Removing the DVD mechanism assembly".)

#### 3.2.1 Removing the tray assembly (See Figs.1 to 3)

(1) From the right side of the DVD mechanism assembly, push the slide cam and pull the tray assembly out of the DVD mechanism assembly in the direction of the arrow. (See Fig.1.)
(2) From the top side of the DVD mechanism assembly, remove the two screws **A** attaching the leaf spring to the bushing and remove the leaf spring. (See Fig.2.)
(3) Remove the bushing of the tray assembly from the projection **a** on the DVD mechanism assembly and move the tray assembly in the direction of the arrow. (See Fig.3.)
(4) Remove the claw **b** of the tray assembly from the DVD mechanism assembly and take out the tray assembly. (See Fig.3.)

Fig.1

Fig.2

Fig.3

### 3.2.2 Removing the traverse mechanism assembly (See Figs.4)

From the bottom side of the DVD mechanism assembly, remove the three screws **B** and screw **B'** attaching the traverse mechanism assembly and take out the DVD traverse mechanism assembly with the DVD servo board.

**Reference:**

When attaching the screw **B'**, attach the washer with it.

Fig.4

### 3.2.3 Removing the DVD servo board (See Figs.5 and 6)

- Remove the traverse mechanism assembly.
  (1) From the side of the traverse mechanism assembly, solder the short land sections **c** on the pickup. (See Fig.5.)
  (2) From the bottom side of the traverse mechanism assembly, release the lock of the connector CN101 on the DVD servo board in the direction of the arrow 1 and disconnect the card wire. (See Fig.6.)

  **Caution:**
  - Solder the short land sections **c** on the pickup before disconnecting the card wire from the connector CN101 on the DVD servo board. If the card wire is disconnected without attaching solder, the pickup may be destroyed by static electricity. (See Figs.5 and 6.)
  - When attaching the DVD servo board, be sure to remove solders from the short land sections **c** after connecting the card wire to the connector CN101 on the DVD servo board. (See Figs.5 and 6.)

  (3) Disconnect the card wire from the connector CN201 on the DVD servo board. (See Fig.6.)
  (4) Remove the two screws **C** attaching the DVD servo board. (See Fig.6.)
  (5) Remove the DVD servo board from the engagement section **d** in an upward and remove the engagement section **f** in the direction 3 while removing the engagement section **e** in the direction of the arrow 2. (See Fig.6.)

Fig.5

Fig.6

### 3.2.4 Removing the pickup (See Figs.5,7 to 9)

- Remove the traverse mechanism assembly.
  (1) From the side of the traverse mechanism assembly, solder the short land sections **c** on the pickup. (See Fig.5.)
  (2) Release the lock of the connector on the pickup in the direction of the arrow and disconnect the card wire. (See Fig.7.)

  **Caution:**
  - Solder the short land sections **c** on the pickup before disconnecting the card wire from the connector on the pickup. If the card wire is disconnected without attaching solder, the pickup may be destroyed by static electricity. (See Figs.5 and 7.)
  - When attaching the pickup, be sure to remove solders from the short land sections **c** after connecting the card wire to the connector on the pickup. (See Figs.5 and 7.)

  (3) Remove the screw **D** attaching the plate and thrust spring. (See Fig.7.)
  (4) Remove the engagement section **g** attaching the plate to the feed holder and remove the plate with the thrust spring. (See Fig.7.)
  (5) Remove the shaft of the pickup from the section **h** on the traverse mechanism assembly and remove the shaft from the section **i** while moving it in the direction of the arrow. (See Fig.8.)
  (6) Remove the pickup from the section **j** of the traverse mechanism assembly and take out the pickup with the shaft. (See fig.8.)
  (7) From the bottom side of the pickup, remove the two screws **E** attaching the SW actuator and LEAD spring. (See Fig.9.)
  (8) Pull the shaft out of the pickup. (See Fig.9.)

Fig.7

Fig.8

Fig.9

### 3.2.5 Attaching the pickup (See Figs.5,7 to 10)

- See "3.2.4 Removing the pickup".
  (1) Attach the shaft, SW actuator and LEAD spring to the pickup. (See Fig.9.)
  (2) Align the pickup to the section **j** of the traverse mechanism assembly first, and set the both ends of the shaft of the pickup in the sections **g** and **i** of the traverse mechanism assembly. (See Fig.8.)
  (3) Attach the plate and thrust spring. (See Fig.7.)
  (4) Remove solders from the short land sections **c** after connecting the card wire to the connector on the pickup. (See Figs.5 and 7.)
  (5) Turn the feed gear **M** in the direction of the arrow 1 to move the pickup in the direction of the arrow 2. (See Fig.10.)

Fig.10

### 3.2.6 Removing the feed motor (See Figs.7,11 and 12)

- Remove the traverse mechanism assembly.
  (1) From the top side of the traverse mechanism assembly, remove the screw **D** attaching the plate and thrust spring. (See Fig.7.)
  (2) Remove the engagement section **g** attaching the plate to the feed holder and remove the plate with the thrust spring. (See Fig.7.)
  (3) Remove the wires from the soldered section **k** on the spindle motor board. (See Fig.11.)

  **Reference:**
  When attaching the feed motor, pass the wire through the section **m** on the spindle base. (See Fig.11.)
  (4) Remove the feed holder, feed motor, lead screw, feed gear **E** and feed gear **M** at the same time after removing the two screws **F** attaching the feed holder. (See Fig.11.)
  (5) From the side of the feed holder, remove the two screws **G** attaching the feed motor. (See Fig.12.)

Fig.11

Fig.12

### 3.2.7 Removing the spindle motor board (See Figs.11 and 13)

- Remove the traverse mechanism assembly and DVD servo board.
  (1) From the top side of the traverse mechanism assembly, remove the wires from the soldered section **k** on the spindle motor board. (See Fig.11.)
  (2) From the bottom side of the traverse mechanism assembly, remove the three screws **H** attaching the spindle motor board. (See Fig.13.)

Fig.13

### 3.2.8 Removing the switch board (See Fig.14.)

(1) From the bottom side of the DVD mechanism assembly, remove the wires from the soldered section **n** on the switch board.
(2) Lift the switch board while pressing the claw **p** of the DVD mechanism assembly in the direction of the arrow and remove it from the section **q**.

**Reference:**

- Put the wires on the section **r** after attaching the switch board to the DVD mechanism assembly.
- Fix the claw **p** on the DVD mechanism assembly with bonds after attaching the switch board.

Fig.14

### 3.2.9 Removing the motor (See Figs.14 and 15)

- Remove the tray assembly.
  (1) From the bottom side of the DVD mechanism assembly, remove the wires from the soldered section **n** on the switch board. (See.Fig.14.)
  (2) From the top side of the DVD mechanism assembly, remove the belt from the motor pulley. (See Fig.15.)

  **Note:**
  Take care not to attach grease on the belt.
  (3) Remove the two screws **J** attaching the motor to the DVD mechanism assembly and take out the motor from the bottom side of the DVD mechanism assembly. (See Fig.15.)

**Reference:**

Put the wires on the section **r** after attaching the motor to the DVD mechanism assembly. (See Fig.14.)

Fig.15

# SECTION 4
# ADJUSTMENT

## 4.1 Special mode

### 4.1.1 Outline

The contents in the special mode of operation, and the definition of a key (remote controller or main unit)

### 4.1.2 Special mode

(1) TRAYLOCK

A loader mechanism's tray lock is carried out.
In the tray lock function ON state, EJECT processing is not performed to the EJECT key.
And, a LOCK display is performed at this time. (___LOCKED___/_UNLOCKED_)
When it turns off a tray lock function, STOP and EJECT KEY are pushed simultaneously again.
Back up ON/OFF of a tray lock.

Press the "PAUSE" and "EJECT" keys on the remote controller at standby.
↓
A tray lock is completed.

(2) DVD TEST MODE

It goes into the TEST mode of DVD.
Refer to the DVD specifications for the contents performed in TEST mode.
DVD test mode is canceled by except DVD source, and POWER OFF.
It is referring to the "4.2 DVD test mode" for details.

Insert the power cord in an outlet while pressing the "PLAY" and "PAUSE" keys on the main unit simultaneously.
↓
A main unit entered in the DVD TEST MODE.

(3) DVD INITIALIZE

DVD is initialized.
The RDS segment of FL is made to turn on at the time of an initialization end.
It is referring to the "4.2 DVD test mode" for details.

Press the "PAUSE" key on the remote controller during the DVD test mode.
↓
DVD initialization is completed

(4) DVD region check mode

A region No. display is performed to FL by the toggle in DVD test mode.
It is referring to the "4.2 DVD test mode" for details.

(5) Compulsive NTSC mode

It is made compulsive NTSC mode.
From this, with regards to the input of NTSEL_SW, there is nothing only at the time of 1st power on, and it performs NTSC starting. (Command specification is performed to a module.)
A mode clearance is performed by power off.

Insert the power cord in an outlet while pressing the "STOP" and "F.SKIP" keys on the main unit simultaneously.

↓

A main unit entered in the NTSC mode compulsively.

(6) TUNER AM 9k step SW (only U version)

AM frequency is changed with 9k STEP.

Press the "STOP" and "B.SKIP" keys on the main unit simultaneously.

↓

A tuner unit entered in the 9k step mode.

(7) TUNER AM 10k step SW (only U version)

AM frequency is changed with 9k STEP.

Press the "STOP" and "F.SKIP" keys on the main unit simultaneously.

↓

A tuner unit entered in the 10k step mode.

## 4.2 DVD TEST MODE

Refer to "4.2.2 Indication of FL display in the DVD test mode" as required

①
Press the "MENU" key on the remote controller.
Enter to CHECK MODE
FL indication CHECK
Press the "1" key on the remote controller.
Starting of DISC & normal play
(Play from the started position)
FL indication CHECK
Press the "2" key on the remote controller.
Existence of WOBBLE
0 : WOBBLE_NO_CHECK (Un-checking.)
1 : WOBBLE_PRESS_MEDIA (Press)
2 : WOBBLE_MINUS_MEDIA (DVD-R/-RW Media)
3 : WOBBLE_PLUS_MEDIA (DVD+R/+RW Media)
FL indication **** ****
Press the "3" key on the remote controller.
With no assignment
FL indication CHECK
Press the "4" key on the remote controller.
CD_LD lighting & laser current display
FL indication **** ****
Press the "5" key on the remote controller.
DVD_LD lighting & laser current display
FL indication **** ****
Press the "6" key on the remote controller.
DVD_SLx1 JITTER measurement mode
FL indication **** ****
Press the "7" key on the remote controller.
The contents of a backup memory display (BWD)
FL indication **** ****
Press the "8" key on the remote controller.
The contents of a backup memory display (FWD)
FL indication **** ****
Press the "9" key on the remote controller.
Temperature sensor value (AD value) display
FL indication **** ****
Press the "10" key on the remote controller.
DVD-DL (Parallel, opposite), DVD-SL
Search & JITTA measurement to a predetermined position
FL indication **** ****
②
③

②
③
Press the "0" key on the remote controller.
FL indication
**** ****
MONITOR output change
1 : SRV_MONI_CIRC
2 : SRV_MONI_SERVO
3-5 : SRV_MONI_ANALOG
6-7 : SRV_MONI_DRC
8-11 : SRV_MONI_SERVO_JIG
12 : SRV_MONI_DEFAULT
Press the "+10" key on the remote controller.
FL indication
**** ****
Initialization of the contents of a backup memory
Press the "STOP" key on the main unit or remote controller.
FL indication
CHECK
Disc stop, LD-OFF
Press the "OPEN/CLOSE" key on the main unit or remote controller.
FL indication
CHECK
Insert a adjustment disc.
Press the "PLAY" key on the main unit or remote controller.
FL indication
**** ****
Play disc
Press the "MENU" key on the remote controller.
FL indication
TEST bb# **
Press the "STANDBY" key on the main unit or remote controller.
Cancellation of the "DVD TEST MODE"