

# JVC

## SERVICE MANUAL

### DVD DIGITAL CINEMA SYSTEM

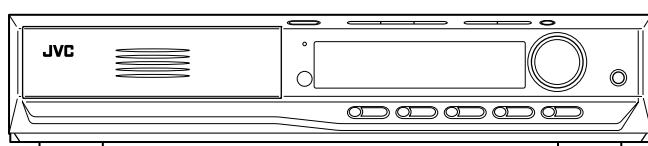
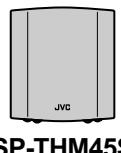
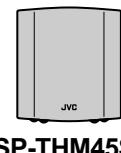
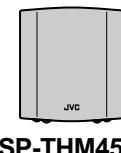
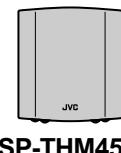
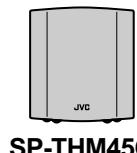
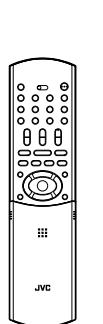
### TH-M45

Area suffix

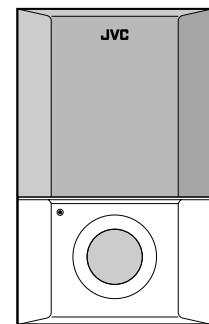
B ----- U.K.

E ----- Continental Europe

EN ----- Northern Europe



XV-THM45



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# SPECIFICATION

Center unit								
Audio section								
Total Harmonic Distortion	0.02% NOTE : This value is measured at System cord CONNECTOR for reference.							
Audio input sensitivity/ Impedance (at 1 kHz)	Analog input	AUX IN	290 mV/47 kΩ					
	Digital input*	DIGITAL IN (OPTICAL)	-21 dBm to -15 dBm (660 nm ±30 nm)					
* Corresponding to Linear PCM, Dolby Digital, and DTS Digital Surround (with sampling frequency - 32 kHz, 44.1 kHz, 48 kHz)								
Video section								
Color System	PAL							
Horizontal Resolution	500 lines							
Signal-to-Noise Ratio (Composite signal when "RGB" is selected)	64 dB							
Video output level	Composite	1.0 V(p-p)/75 Ω						
	S-video-Y	1.0 V(p-p)/75 Ω						
	S-video-C	0.286 V(p-p)/75 Ω						
Tuner section								
Tuning Range	FM	87.5 MHz to 108.0 MHz						
	AM (MW)	522 kHz to 1629 kHz						
General								
Power Requirements	AC 230 V, 50 Hz							
Power Consumption	20 W (at operation), 1.6 W (in standby mode)							
Dimensions (W × H × D)	400 mm × 85 mm × 386 mm							
Mass	4.6 kg							
Subwoofer								
Amplifier section								
Front/Center/Surround	80 W per channel, RMS at 6 Ω at 1 kHz, with 10 % total harmonic distortion.							
Subwoofer	120 W, RMS at 4 Ω at 100 Hz, with 10 % total harmonic distortion.							
Speaker section								
Speaker unit	16 cm Bass-reflex, Magnetically Shielded							
Frequency Range	30 Hz to 200 Hz							
General								
Power Requirements	AC 230 V, 50 Hz							
Power Consumption	150 W (at operation), 0 W (in standby mode)							
Dimensions (W × H × D)	216 mm × 353 mm × 485 mm							
Mass	12.0 kg							
Satellite Speakers								
Front speakers (SP-THM45F)								
Speakers	8.0 cm Bass-reflex, Magnetically Shielded							
Power Handling Capacity	80 W							
Impedance	6 Ω							
Frequency Range	90 Hz to 20 kHz							
Dimensions (W × H × D)	103 mm × 115 mm × 100 mm							
Mass	0.64 kg							
Surround speakers (SP-THM45S)								
Speakers	8.0 cm Bass-reflex, Magnetically Shielded							
Power Handling Capacity	80 W							
Impedance	6 Ω							
Frequency Range	90 Hz to 20 kHz							
Dimensions (W × H × D)	103 mm × 115 mm × 100 mm							
Mass	0.52 kg							
Center speaker								
Speakers								
Power Handling Capacity	80 W							
Impedance	6 Ω							
Frequency Range	90 Hz to 20 kHz							
Dimensions (W × H × D)	103 mm × 115 mm × 100 mm							
Mass	0.64 kg							
Accessories								
Remote control (1), Batteries (2), FM antenna (1), AM (MW) loop antenna (1), Power cord (1), System cord (1)								
Speaker codes								
5 m	For satellite (front left/right) and center speakers (3)							
10 m	For satellite speakers (surround left/right) (2) (The length of the above speaker cords are approximate.)							

Design and specifications are subject to change without notice.

# SECTION 1

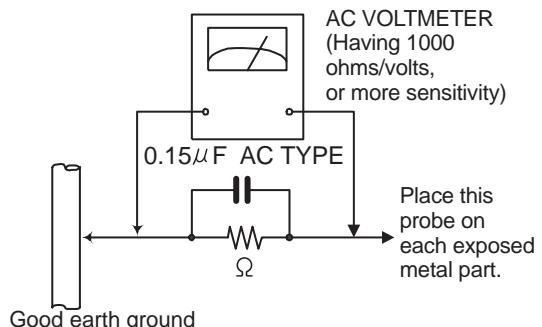
## PRECAUTION

### 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 ( $\Delta$ ) 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, 1,000 $\Omega$  per volt or more sensitivity in the following manner. Connect a 1,500 $\Omega$  10W resistor paralleled by a 0.15 $\mu$ F 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 performing 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 " $\Delta$ " 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 Safety Precautions (U.K only)**

- (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.
- (2) Any unauthorised design alterations or additions will void the manufacturer's guarantee; furthermore the manufacturer cannot accept responsibility for personal injury or property damage resulting therefrom.
- (3) Essential safety critical components are identified by (  $\Delta$  ) on the Parts List and by shading on the schematics, and must never be replaced by parts other than those listed in the manual. Please note however that many electrical and mechanical parts in the product have special safety related characteristics. These characteristics are often not evident from visual inspection. Parts other than specified by the manufacturer may not have the same safety characteristics as the recommended replacement parts shown in the Parts List of the Service Manual and 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 re-assembling.

### **1.5.1 Warning**

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



**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 performing repair of this system.

## 1.6 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.

### 1.6.1 Grounding to prevent damage by static electricity

Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players.

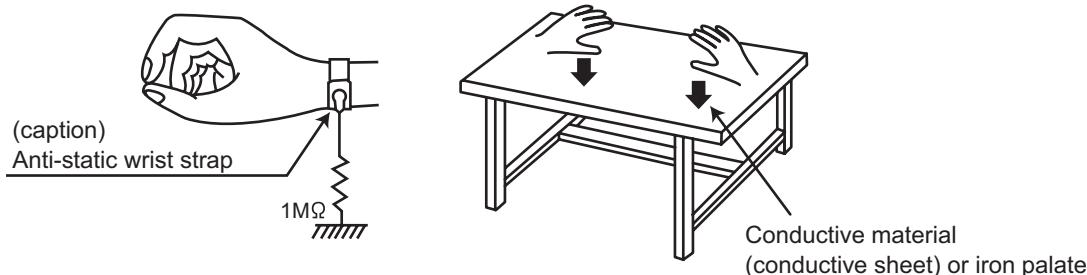
Be careful to use proper grounding in the area where repairs are being performed.

#### (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.

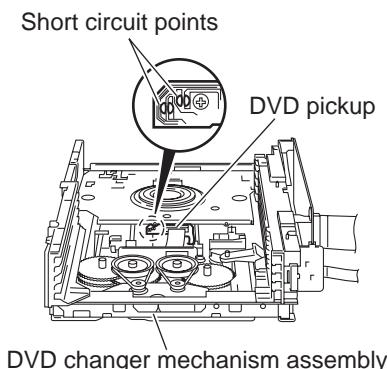
## 1.7 Handling the traverse unit (optical pickup)

- Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.
- 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.
- Handle the flexible cable carefully as it may break when subjected to strong force.
- It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

## 1.8 Attention when traverse unit is decomposed

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

- Apply solder to the short circuit points before the flexible wire is disconnected from the connector on the DVD pickup.  
(If the flexible wire is disconnected without applying solder, the DVD 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.



## 1.9 Important for laser products

### 1.CLASS 1 LASER PRODUCT

**2.DANGER :** Invisible laser radiation when open and interlock 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 compact disc 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 herein 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.

**VARNING** : Osynlig laserstrålning är denna del är öppnad och spårren är urkopplad. Betrakta ej strålen.

**VARO** : Avattaessa ja suojalukitus ohittaaessa olet alittiina näkymättömälle lasersäteilylle. Älä katso sääteeseen.

**ADVARSEL** : Usynlig laserstråling ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

**ADVARSEL** : Usynlig laserstråling ved åpning,når sikkerhetsbryteren er avslott. unngå utsettelse for stråling.

## **SECTION 2**

### **SPECIFIC SERVICE INSTRUCTIONS**

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

## SECTION 3

### DISASSEMBLY

#### 3.1 Main body section

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

- (1) From the right and left 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 three 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 joints **a** using a longer screwdriver.

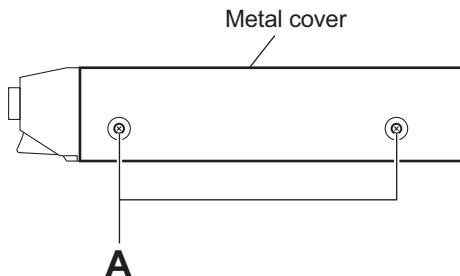


Fig.1

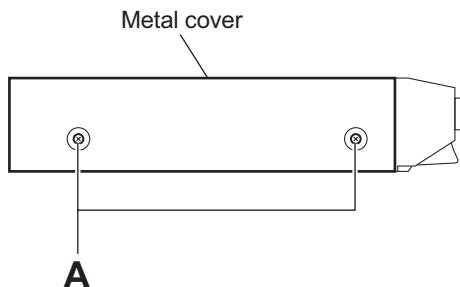


Fig.2

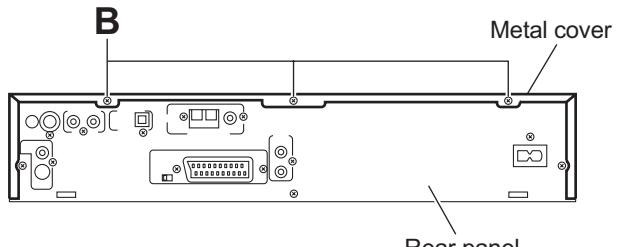


Fig.3

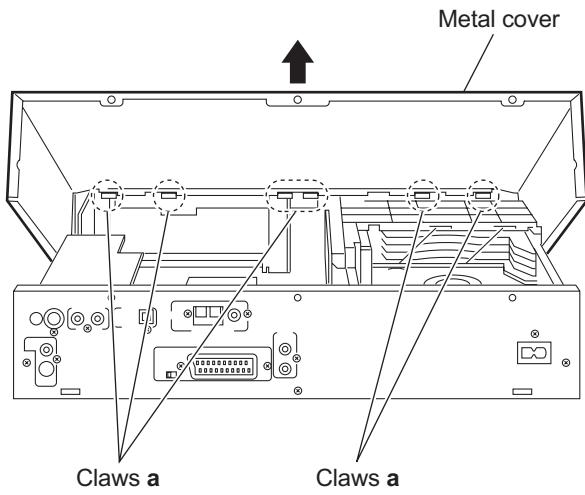


Fig.4

### 3.1.2 Removing the front panel assembly

(See Figs.5 and 6)

- Remove the metal cover.
- (1) From the top side of the main body, disconnect the parallel wires from the connectors ([CN408](#), [CN409](#)) on the main board. (See Fig.5.)
- (2) Disconnect the card wires from the connectors ([CN407](#), [CN412](#)) on the main board. (See Fig.5.)
- (3) Remove the screw **C** attaching the earth wire to the main board. (See Fig.5.)
- (4) From the bottom side of the main body, remove the three screws **D** attaching the front panel assembly. (See Fig.6.)
- (5) Release the two hooks **b** and hook **c** from the both and bottom sides of the main body, and remove the front panel assembly in the direction of the arrow. (See Figs.5 and 6.)

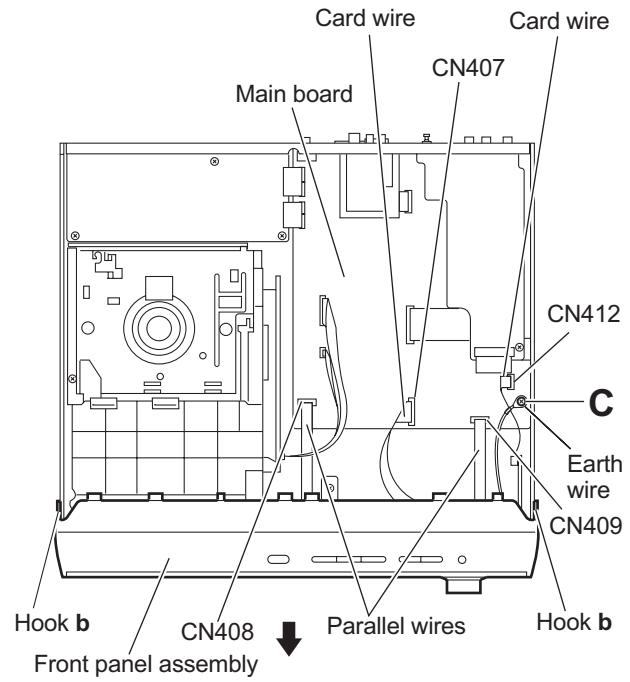


Fig.5

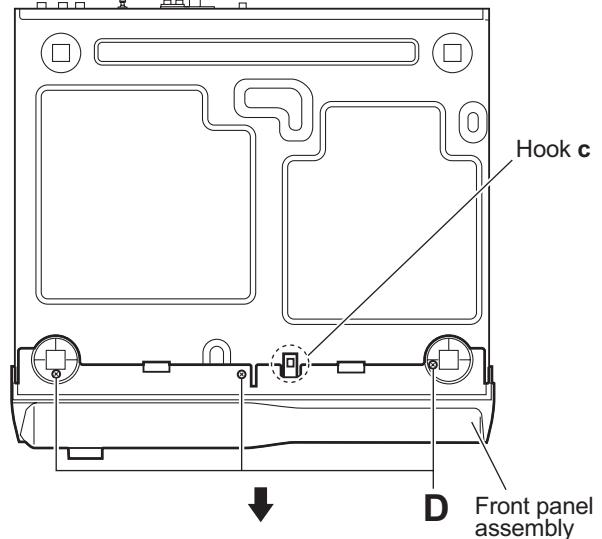


Fig.6

### 3.1.3 Removing the DVD changer mechanism assembly (See Fig.7)

- Remove the metal cover.
- Remove the front panel assembly.
- (1) From the top side of the main body, disconnect the card wires from the connectors ([CN405](#), [CN415](#)) on the main board.
- (2) Remove the four screws **E** attaching the DVD changer mechanism assembly to the chassis base.
- (3) Take out the DVD changer mechanism assembly in an upward direction.

#### Note:

When attaching the screw **E**, fit the hole of the DVD changer mechanism assembly to the bosses **d** on the chassis base.

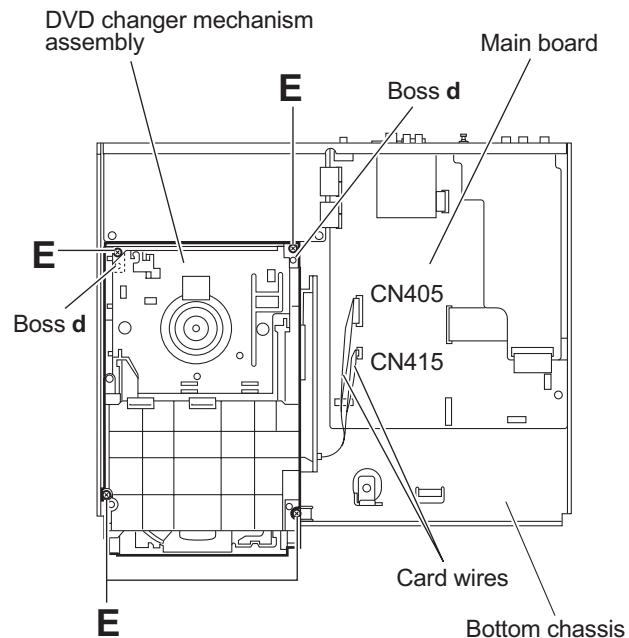


Fig.7

### 3.1.4 Removing the rear panel (See Fig.8)

- Remove the metal cover.
- (1) From the back side of the main body, remove the screw **F**, nine screws **G** and three screws **H** attaching the rear panel.

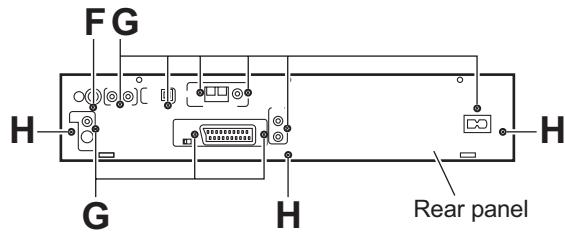


Fig.8

### 3.1.5 Removing the audio & digital input board

(See Figs.9 and 10)

- Remove the metal cover.
- (1) From the top side of the main body, disconnect the card wire from the connector [CN401](#) on the audio & digital input board. (See Fig.9.)
- (2) Remove the screw **J** attaching the audio & digital input board. (See Fig.9.)
- (3) From the back side of the main body, remove the screw **K** and two screws **L** attaching the audio & digital input board to the rear panel. (See Fig.10.)
- (4) Take out the audio & digital input board from the main body.

### 3.1.6 Removing the tuner

(See Figs.9 and 10)

- Remove the metal cover.
- (1) From the top side of the main body, disconnect the card wire from the connector [CN1](#) on the tuner. (See Fig.9.)
- (2) From the back side of the main body, remove the two screws **M** attaching the tuner to the rear panel. (See Fig.10.)
- (3) Take out the tuner from the main body.

### 3.1.7 Removing the power supply board

(See Figs.9 and 10)

- Remove the metal cover.
- (1) From the top side of the main body, disconnect the parallel wires from the connectors ([CN401](#) to [CN404](#)) on the main board. (See Fig.9.)
- (2) Remove the three screws **N** attaching the power supply board. (See Fig.9.)
- (3) From the back side of the main body, remove the screw **P** attaching the power supply board to the rear panel. (See Fig.10.)
- (4) Take out the power supply board from the main body.

#### Reference:

Remove the rear panel as required. (See Fig.8.)

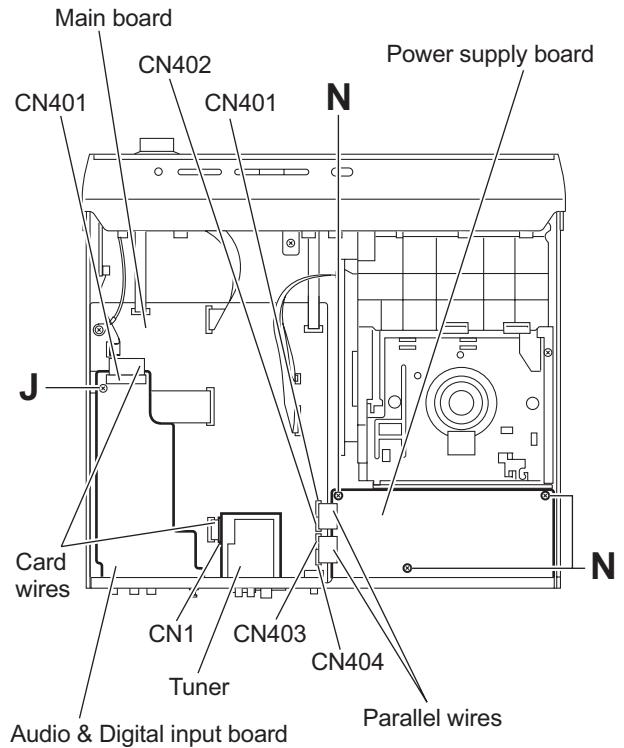


Fig.9

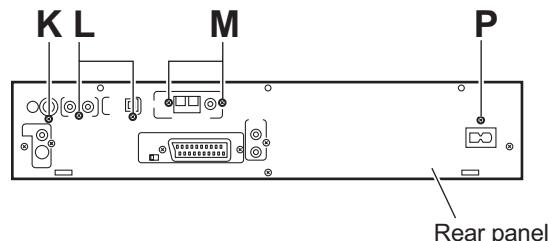


Fig.10

### 3.1.8 Removing the main board

(See Figs.11 to 13)

- Remove the metal cover.

(1) From the top side of the main body, disconnect the card wires from the connectors ([CN405](#), [CN407](#), [CN410](#) to [CN412](#), [CN415](#)) on the main board (See Fig.11.)

(2) Disconnect the parallel wires from the connectors ([CN401](#) to [CN404](#), [CN408](#), [CN409](#)) on the main board. (See Fig.11.)

(3) Remove the screw **Q** attaching the audio & digital input board. (See Fig.11.)

(4) From the back side of the main body, remove the five screws **R** and three screws **S** attaching the rear panel. (See Fig.12.)

(5) Take out the rear panel together the audio & digital input board and tuner.

(6) From the top side of the main body, remove the screw **T** and two screws **U** attaching the main board to the chassis base. (See Fig.13.)

**Note:**

When attaching the screw **T**, attach the earth wire of the front panel assembly at the same time.

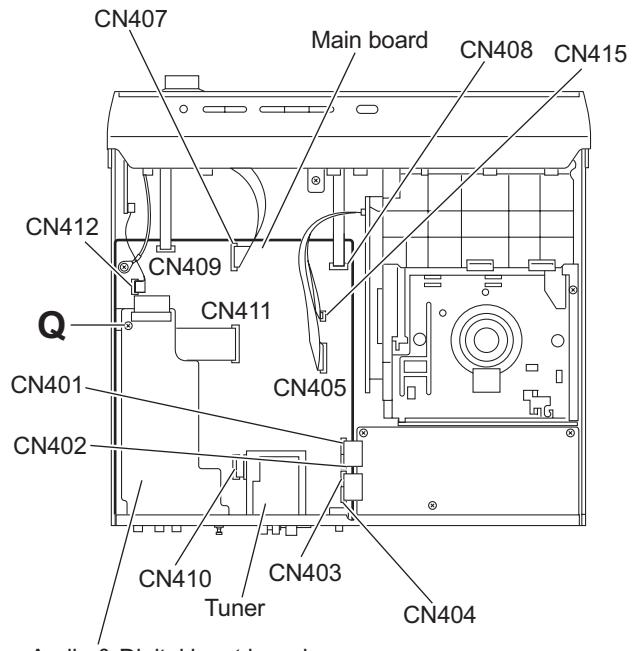


Fig.11

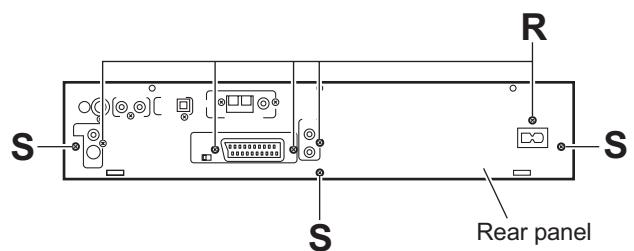


Fig.12

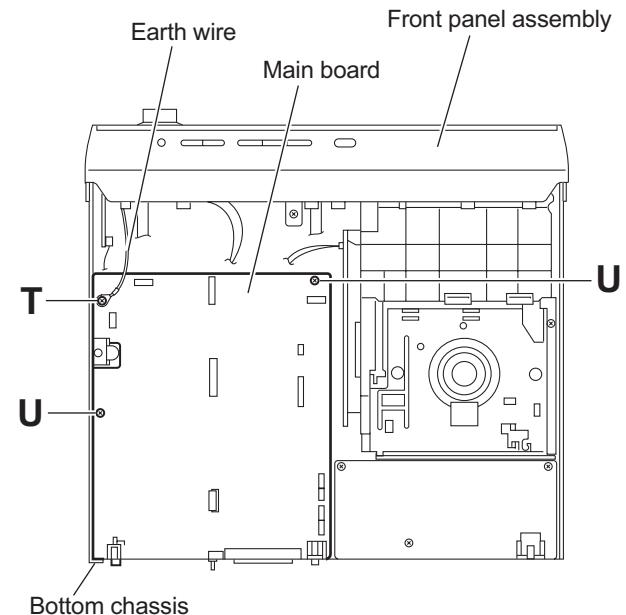


Fig.13

### 3.1.9 Removing the connect board

(See Fig.14)

- Remove the metal cover.
- Remove the front panel assembly.
  - (1) From the inside of the front panel assembly, disconnect the card wire from the connector **CN561** on the connect board.
  - (2) Remove the screw **V** attaching the support board.
  - (3) Take out the connect board.

### 3.1.10 Removing the phone jack board

(See Fig.14)

- Remove the metal cover.
- Remove the front panel assembly.
  - (1) From the inside of the front panel assembly, remove the two screws **W** attaching the phone jack board.
  - (2) Take out the phone jack board.

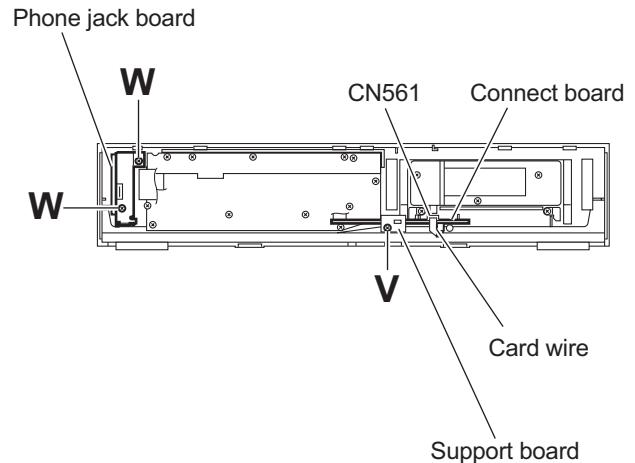


Fig.14

### 3.1.11 Removing the operation board

(See Fig.15)

- Remove the metal cover.
- Remove the front panel assembly.
- Remove the support board.
  - (1) Remove the two screws **X** attaching the operation board.
  - (2) Take out the operation board together with the Button(top).

#### Reference:

Remove the Button(top) from the front board as required.

### 3.1.12 Removing the front board

(See Figs.15 and 16)

- Remove the metal cover.
- Remove the front panel assembly.
- Remove the connect board.
- Remove the operation board.
  - (1) From the front side of the front panel assembly, pull out the volume knob. (See Fig.16.)
  - (2) Remove the screw **Y** attaching the front board. (See Fig.16.)
  - (3) From the inside of the front panel assembly, remove the eight screws **Z** attaching the front board. (See Fig.15.)
  - (4) Take out the front board while releasing the claws **e** in the direction of the arrow. (See Fig.15.)

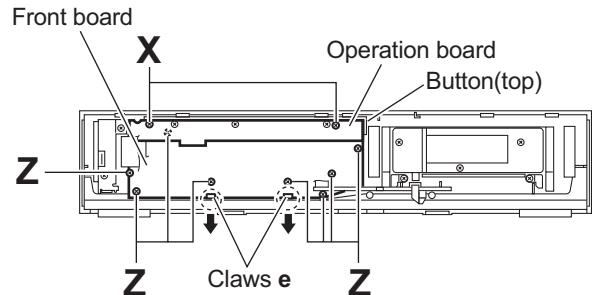


Fig.15

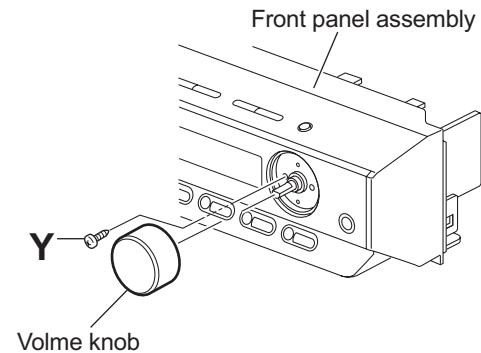


Fig.16

### 3.1.13 Removing the illumination board

(See Figs.17 and 18)

- (1) Open the door assembly of the front panel assembly and remove the three screws **AA** attaching the door cover to the door assembly. (See Fig.17.)
- (2) Disconnect the card wire from the connector **CN551** on the illumination board. (See Fig.18.)
- (3) Take out the illumination board from the door assembly.

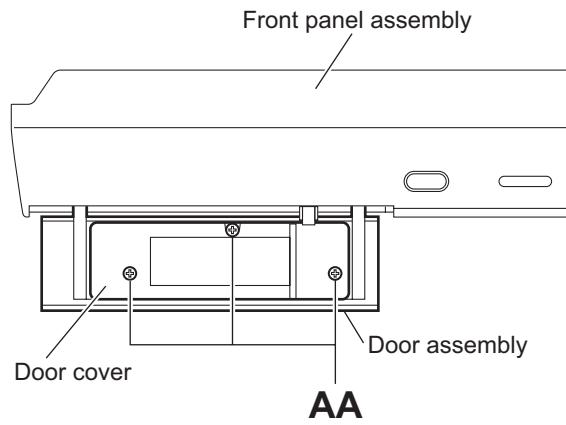


Fig.17

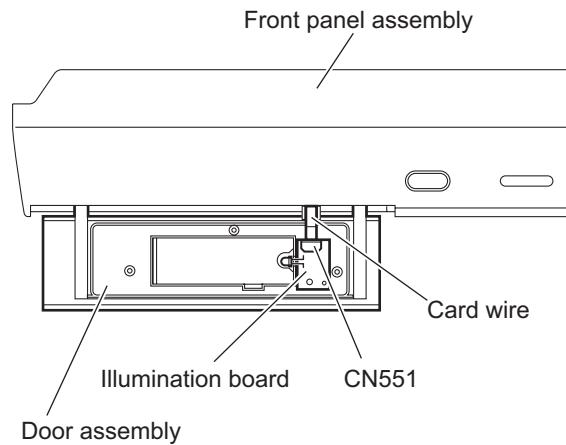


Fig.18

### 3.2 DVD changer mechanism assembly section

#### 3.2.1 Removing the tray assemblies (See Figs.1 to 5)

- (1) Remove the two screws A from the top cover and release the two joints a on the both sides of the DVD changer mechanism assembly. (See Figs.1 and 2.)
- (2) Remove the two rods from the top cover and remove the top cover from the lifter assembly. (See Figs.1 and 2.)
- (3) Remove the open det lever on the left side of the DVD changer mechanism assembly. (See Fig.3.)
- (4) From the right side of the DVD changer mechanism assembly, draw out the tray assemblies toward the front while pushing the part b of the side (R) assembly. (See Fig.4.)

**Attention:**

The tray can be locked if all tray assemblies are attached.

- (5) From the topside of the DVD changer mechanism assembly, move the stopper tabs c in the direction of the arrow and release them. Pull out the tray assemblies from the DVD changer mechanism assembly. (See Figs.4 and 5.)

**Caution:**

Remove the tray assembly from top tray 5 in order.

**Attention:**

When reattaching the tray assembly, or when removing the disc remaining inside, refer to another section "3.2.15 Taking out the disc in the play mode (See Fig.39 to 42)".

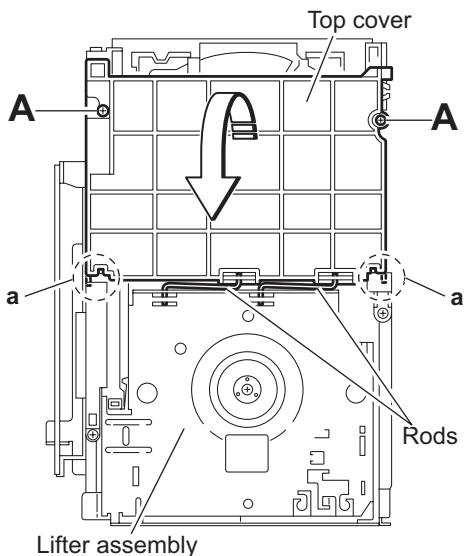


Fig.1

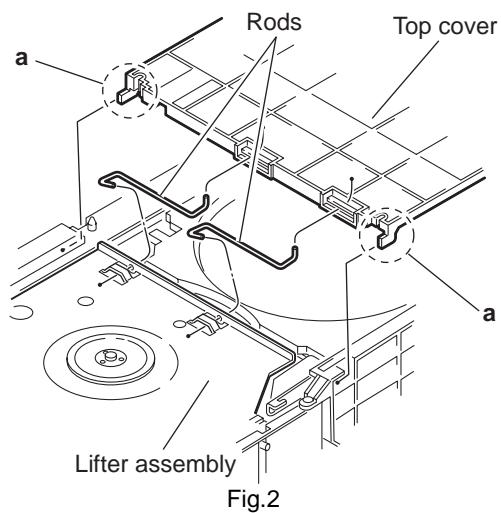


Fig.2

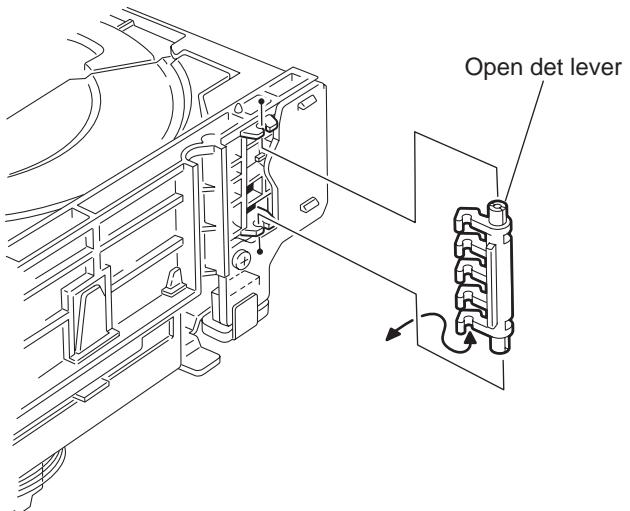


Fig.3

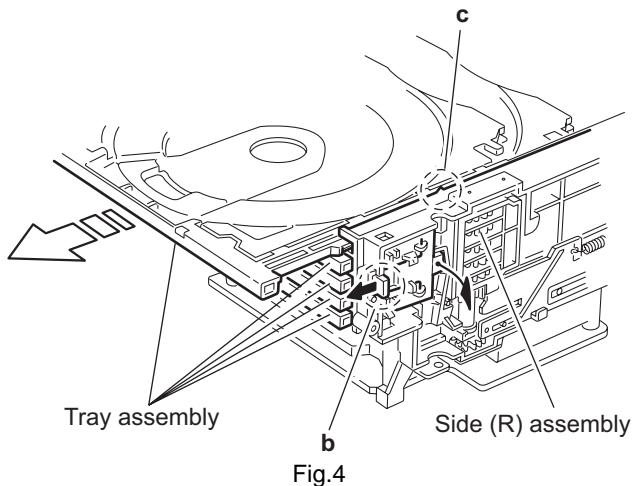


Fig.4

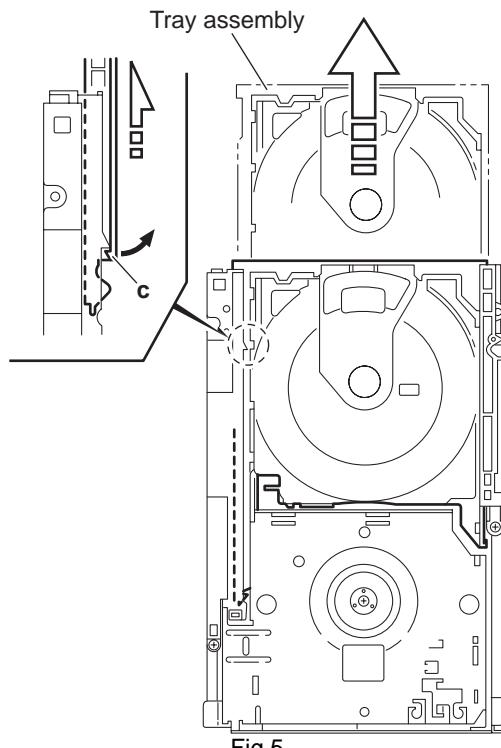


Fig.5

### 3.2.2 Removing the DVD servo board

(See Figs.6 and 7)

- Prior to performing the following procedures, remove the tray assemblies.
- (1) From the topside of the DVD changer mechanism assembly, solder the short-circuit points **d** on the DVD pick up. (See Fig.6.)
- Caution:**  
Solder the short-circuit points **d** on the DVD pickup before disconnecting the flexible wire extending from the DVD pickup. If you do not follow this instruction, the DVD pickup may be damaged.
- (2) From the right side of the DVD changer mechanism assembly, disconnect the card wires from the connectors ([CN103](#), [CN201](#)) and the wires from the connectors ([CN104](#), [CN205](#)) and the flexible wire from the connector [CN101](#) on the DVD servo board. (See Fig.7.)
- (3) Remove the screw **B** attaching the bracket to the DVD changer mechanism assembly. (See Fig.7.)
- (4) Release the two sections **e** of the bracket from the DVD changer mechanism assembly and remove the DVD servo board with the bracket. (See Fig.7.)
- (5) Remove the two screws **C** attaching the DVD servo board to the bracket. (See Fig.7.)
- (6) Release the three sections **f** of the bracket and remove the DVD servo board. (See Fig.7.)

**Caution:**

Unsolder the solders from the short-circuit points **d** after reassembling.

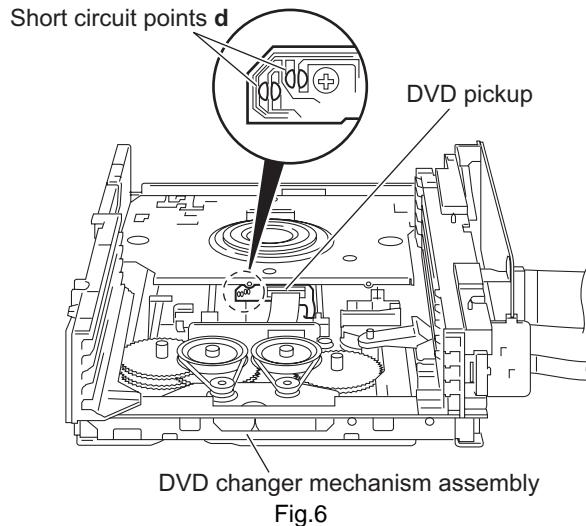


Fig.6

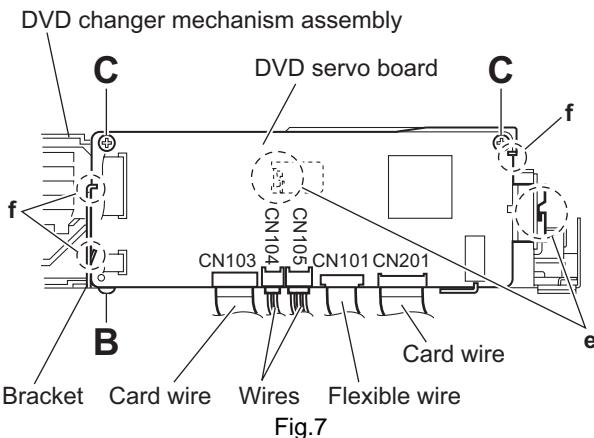


Fig.7

### 3.2.3 Removing the switch board

(See Fig.8)

- (1) From the bottom side of the DVD changer mechanism assembly, disconnect the wires from connectors [CN104](#) and [CN105](#) on the DVD servo board.
- (2) Remove the screw **D** attaching the switch board to the DVD changer mechanism assembly.
- (3) Release the wires from the slots **g** of the switch board.

**Caution:**

When reassembling, let the wires through the slots **g** of the switch board.

**Reference:**

When connecting the wires to the connectors on the DVD servo board, fix the wires with spacer.

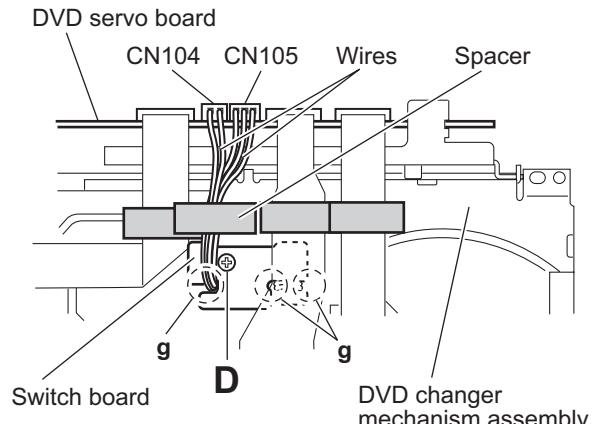


Fig.8

### 3.2.4 Removing the motor board (See Figs.9 and 10)

- From the top side of the DVD changer mechanism assembly, remove the two belts from the motor pulleys. (See Fig.9.)

**Caution:**

Take care not to attach grease on the belt.

- Remove the four screws **E** attaching the motors to the chassis assembly. (See Fig.9.)
- From the bottom side of the DVD changer mechanism assembly, remove the two screws **F**. (See Fig.10.)
- Disconnect the connector **CN2** on the motor board from the tray switch board and remove the motor board. (See Fig.10.)
- Disconnect the card wire from the connector **CN1** on the motor board. (See Fig.10.)

**Caution:**

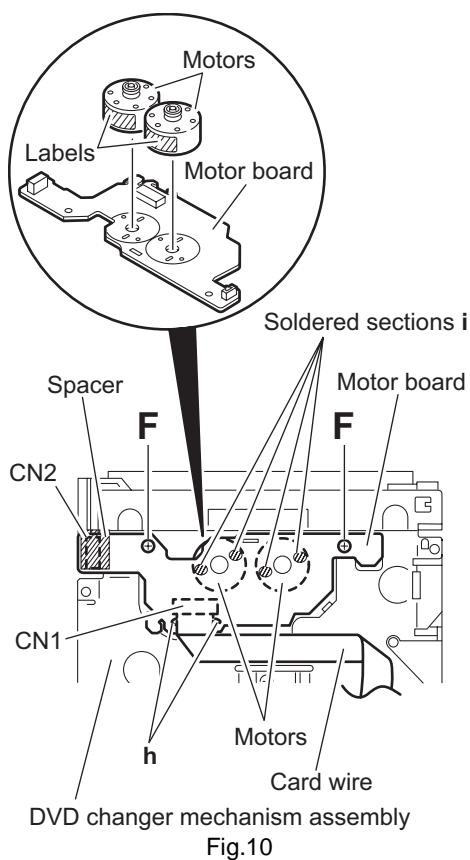
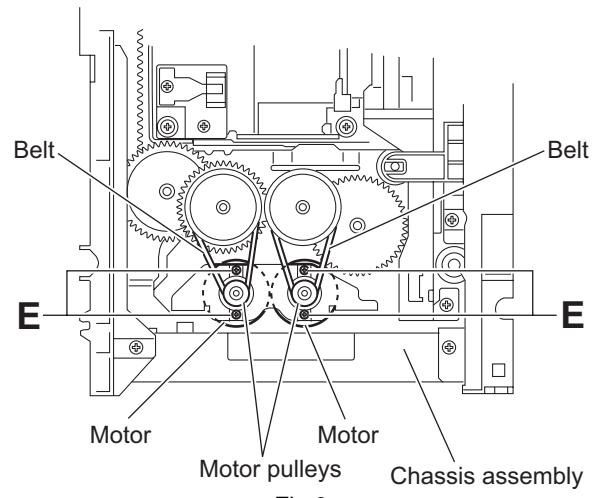
- When connecting the card wire, let the card wire through the slots **h** of the motor board. (See Fig.10.)
- When reattaching the motor, turn the side where the label should be put to the front side. (See Fig.10.)

**Reference:**

- You need not to remove the tray assemblies, and in such case, move it.
- After connecting the motor board, attach the spacer on the motor board. (See Fig.10.)

### 3.2.5 Removing the motor (See Fig. 10)

- Prior to performing the following procedures, remove the motor board.
  - From the reverse side of the motor board, unsolder the four soldered sections **i** on the motor board.
  - From the forward side of the motor board, remove the motors.



### 3.2.6 Removing the DVD traverse mechanism assembly (See Figs.6 and 11)

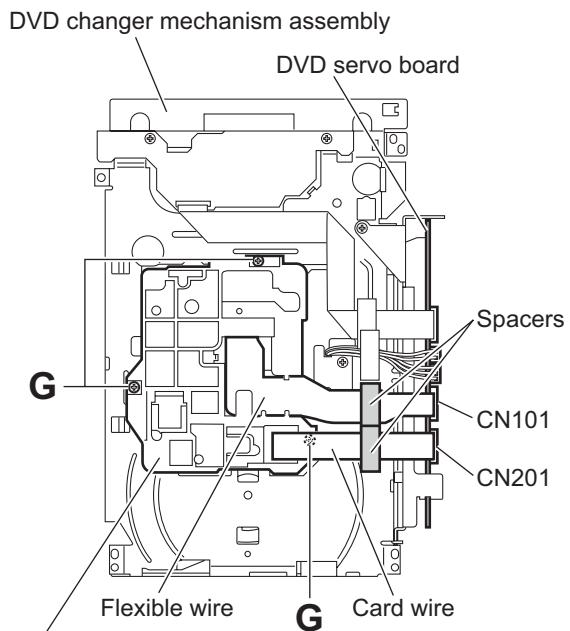
- Prior to performing the following procedures, remove the tray assemblies.
- From the topside of the DVD changer mechanism assembly, solder the short-circuit points **d** on the DVD pick up. (See Fig.6.)
  - From the bottom side of the DVD changer mechanism assembly, disconnect the flexible wire from the connector [CN101](#) on the DVD servo board. (See Fig.11.)
  - Disconnect the card wire from the connector [CN201](#) on the DVD servo board. (See Fig.11.)
  - Remove the three screws **G** attaching the DVD traverse mechanism assembly. (See Fig.11.)
  - Take out the DVD traverse mechanism assembly from the DVD changer mechanism assembly.

**Caution:**

Unsolder the solders from the short-circuit points **d** after reassembling.

**Reference:**

When connecting the each wire to the connectors on the DVD servo board, fix the each wire with spacers.



DVD traverse mechanism assembly

Fig.11

### 3.2.7 Removing the DVD pickup (See Figs.12 to 14)

- Prior to performing the following procedures, remove the tray assemblies and DVD traverse mechanism assembly.
- From topside of the DVD traverse mechanism assembly, disconnect the flexible wire from the connector on the DVD pickup. (See Fig.12.)
  - Turn the screw shaft gear in the direction of the arrow 1 to move the DVD pickup in the direction of the arrow 2. (See Fig.12.)
  - Remove the screw **H** attaching the gear holder. (See Fig.12.)
  - Remove the screw **J** attaching the SS adj. spring. (See Fig.12.)
  - Move the DVD pickup in the direction of the arrow and remove the screw shaft from the section **j** on the screw shaft holder. (See Fig.13.)
  - Remove the section **k** of the DVD pickup from the guide shaft. (See Fig.13.)
  - Remove the two screws **K** attaching the rack arm to the DVD pickup. (See Fig.14.)
  - Pull the screw shaft from the DVD pickup in the direction of the arrow. (See Fig.14.)

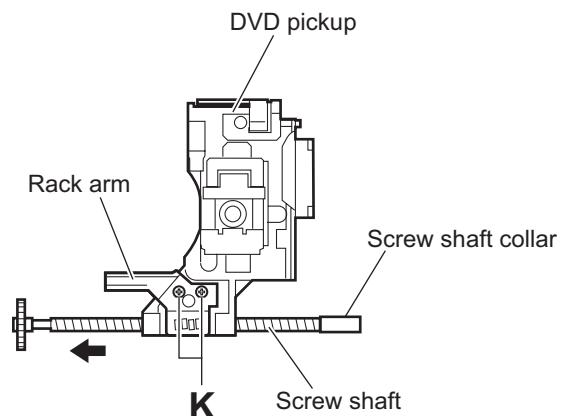
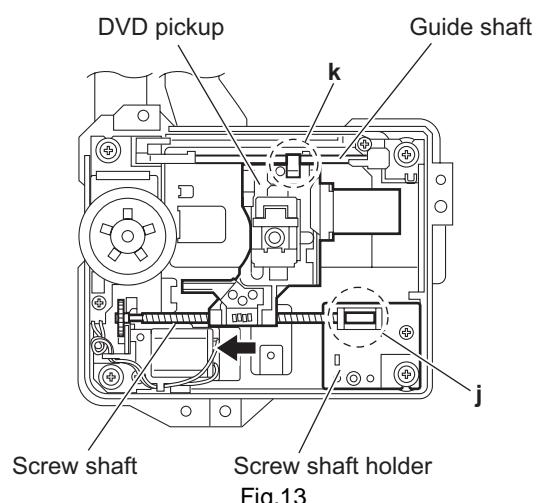
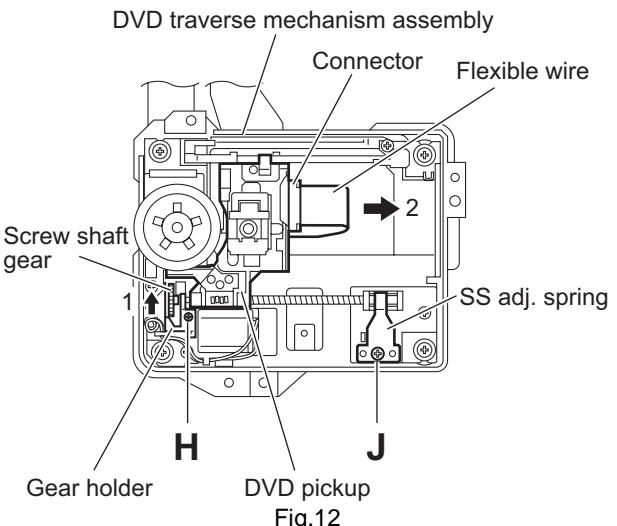
### 3.2.8 Attaching the DVD pickup (See Figs.12 to 14)

- Attach the screw shaft to the DVD pickup and attach the rack arm with the screws **K**. (See Fig.14.)

**Reference:**

After attaching the screw shaft to the DVD pickup, attach the screw shaft collar to the screw shaft. (See Fig.14.)

- Attach the section **k** of the DVD pickup to the guide shaft first and attach the screw shaft to the section **j** on the screw shaft holder. (See Fig.14.)
- Attach the SS adj. spring and gear holder with the screws **H** and **J**. (See Fig.12.)
- Turn the screw shaft gear to move the DVD pickup toward the left. (See Fig.12.)
- Connect the flexible wire to the connector on the DVD pickup. (See Fig.12.)



### 3.2.9 Removing the spindle motor board

(See Figs.15 and 16)

- Prior to performing the following procedures, remove the tray assemblies and DVD traverse mechanism assembly.
- (1) From the topside of the DVD traverse mechanism assembly, remove the four screws **L** attaching the DVD traverse mechanism assembly to the DVD traverse mechanism base. (See Fig.15.)
- (2) Remove the wires from the soldered section **m** on the spindle motor board. (See Fig.15.)
- (3) Remove the screw **M** attaching the spindle motor board. (See Fig.15.)
- (4) From the bottom side of the DVD traverse mechanism assembly, remove the three screws **N** attaching the spindle motor board. (See Fig.16.)

**Reference:**

When attaching the spindle motor board, let the card wire through the hole **n** on the motor base. (See Fig.15.)

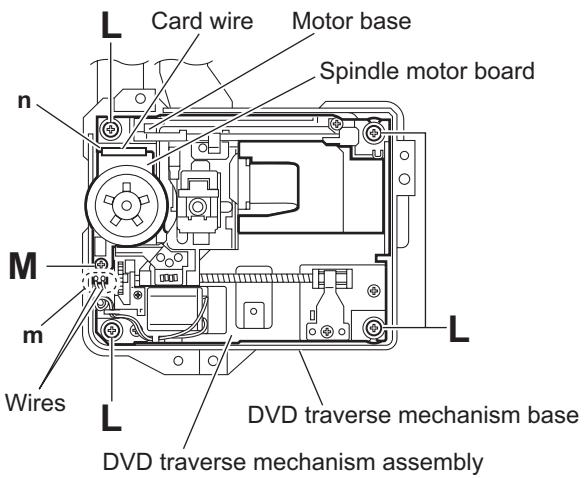


Fig.15

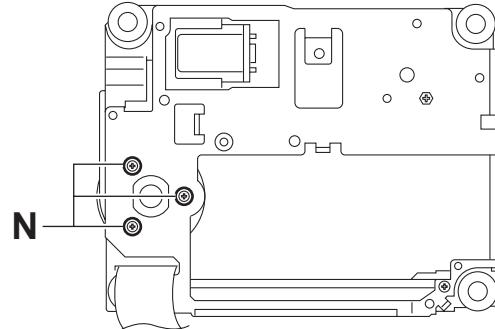


Fig.16

### 3.2.10 Removing the feed motor

(See Figs.17 and 18)

- Prior to performing the following procedures, remove the tray assemblies, DVD traverse mechanism assembly, DVD pickup and spindle motor board.
- Remove the wires of the feed motor as required.
- (1) Remove the middle gear in the direction of the arrow. (See Fig.17.)
- (2) Remove the screw **P** and screw **Q** attaching the motor base.
- (3) Remove the screw **R** attaching the feed motor to the motor base. (See Fig.18.)
- (4) Take out the feed motor from the motor base.

**Reference:**

After attaching the feed motor, let the wires through the sections **p** and **q** on the motor base. (See Fig.17.)

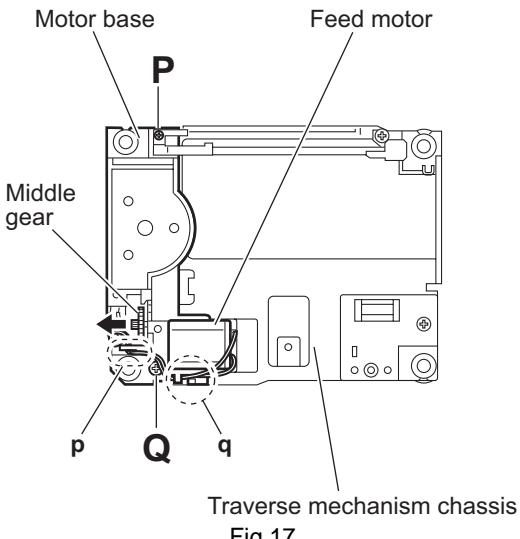


Fig.17

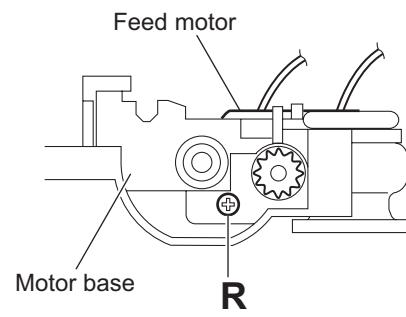


Fig.18

### 3.2.11 Removing the side (L) assembly and tray switch board (See Figs.19 to 21)

- Prior to performing the following procedures, remove the tray assemblies.
- From the topside of the DVD changer mechanism assembly, remove the two screws **S** attaching the side (L) assembly. (See Fig.19.)
  - From the left side of the DVD changer mechanism assembly, removing the spacer fixing the tray switch board and motor board. (See Fig.20.)
  - Disconnect the connector **CN3** on the tray switch board from the motor board and detach the side (L) assembly in an upward direction. (See Fig.20.)
  - Remove the screw **T** attaching the tray switch board to the side (L) assembly. (See Fig.21.)
  - Release the joint tab **r** of the side (L) assembly in the direction of the arrow 1 and release the joint tab **s** while removing the tray switch board in the direction of the arrow 2. (See Fig.21.)

#### Reference:

After attaching the tray switch board to the motor board, fix them with spacers.

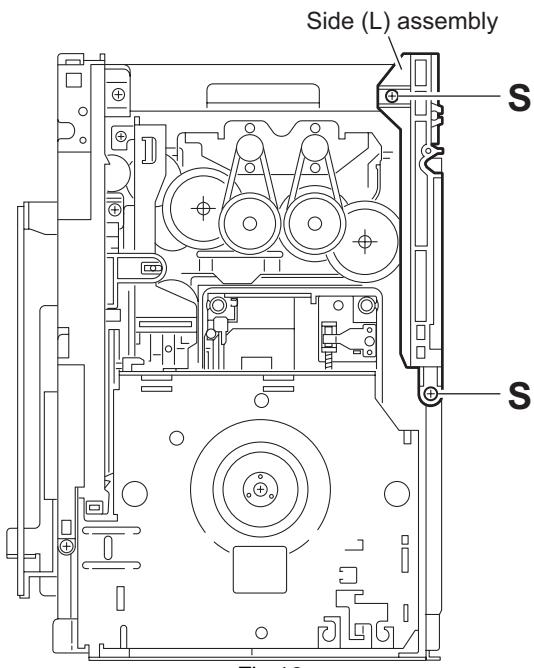


Fig.19

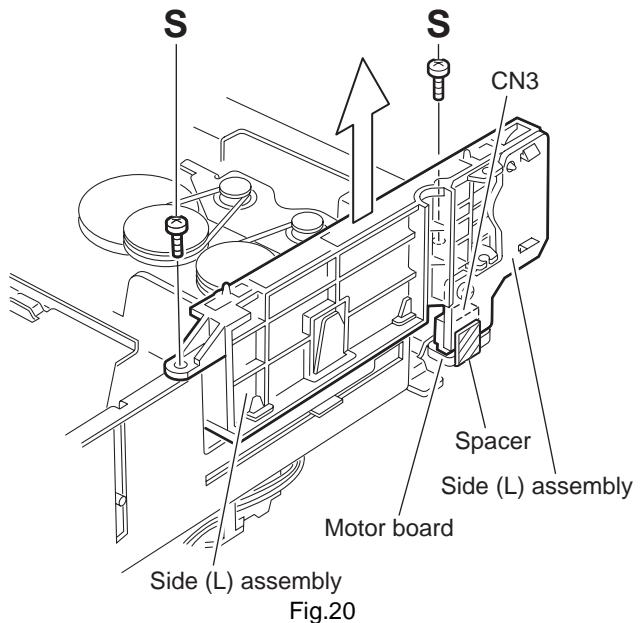


Fig.20

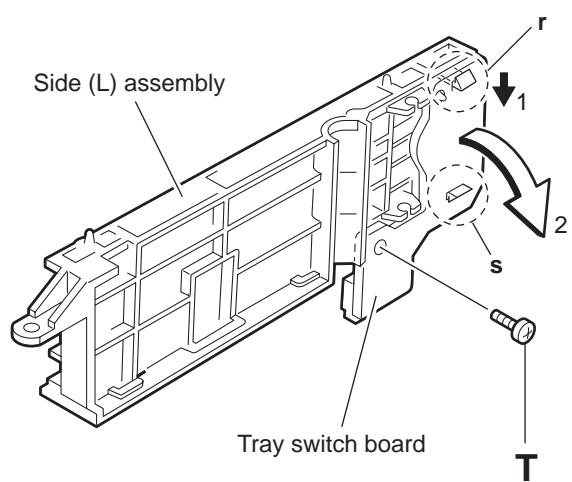


Fig.21

### 3.2.12 Removing the side (R) assembly

(See Fig.22 to 26)

- Prior to performing the following procedures, remove the tray assemblies and DVD servo board.
- When removing the DVD servo board, it is not necessary to remove the DVD servo board from the bracket.
- (1) From the inside of the side (R) assembly, release the two tabs **t** of the gear cover and remove the gear cover outward. (See Figs.22 and 23.)
- (2) From the right side of the DVD changer mechanism assembly, remove the elevator spring attached to the hook **u** of the chassis assembly. (See Figs.23 and 24.)
- (3) From the topside of the DVD changer mechanism assembly, turn the gear 1 clockwise to move the elevator cam rearward. (See Fig.24.)
- (4) Move the two slots **v** and joint **w** of the elevator cam and remove the elevator cam outward. (See Fig.24.)
- (5) Remove the three screws **U** and detach the side (R) assembly upward. (See Figs.25 and 26.)

**Caution:**

When reattaching the side (R) assembly, make sure to fit the shaft (part **x**) into the slot of the select lever. (See Fig.25.)

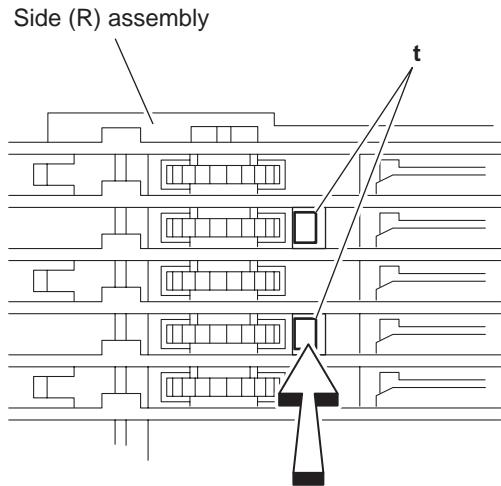


Fig.22

Elevator spring

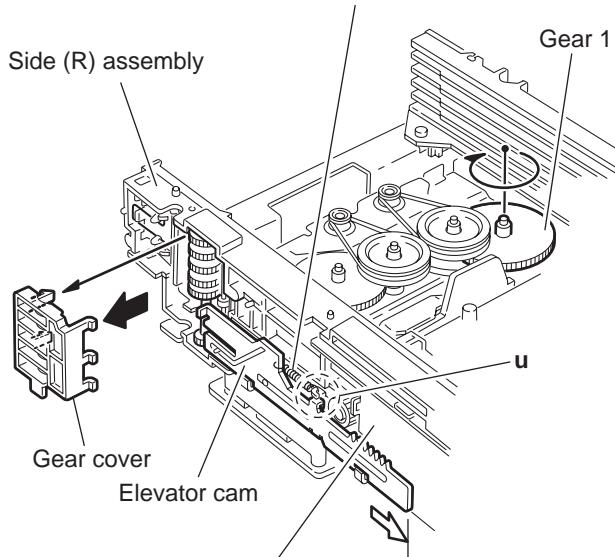


Fig.23

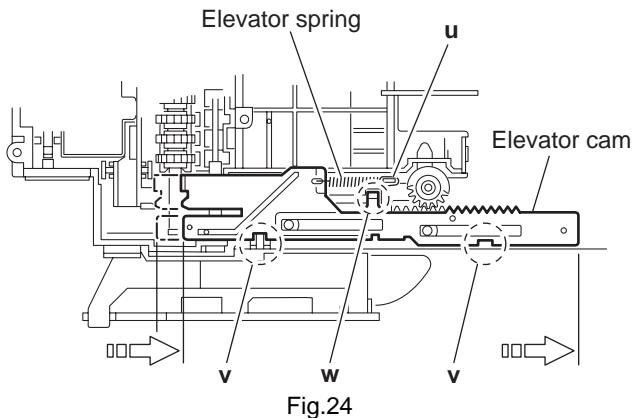
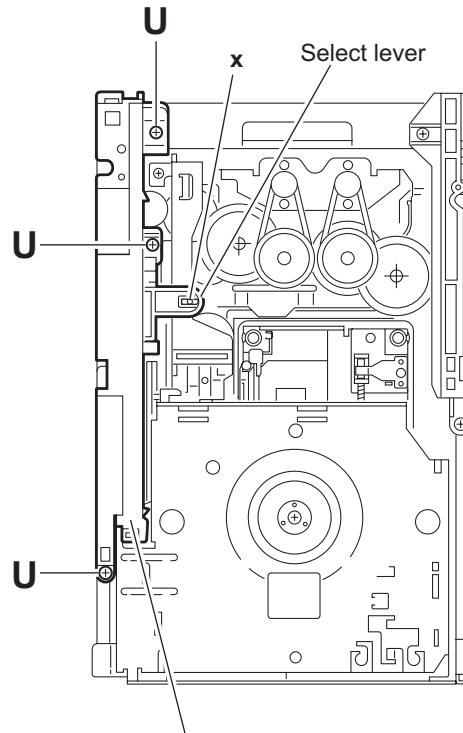


Fig.24



Side (R) assembly  
Fig.25

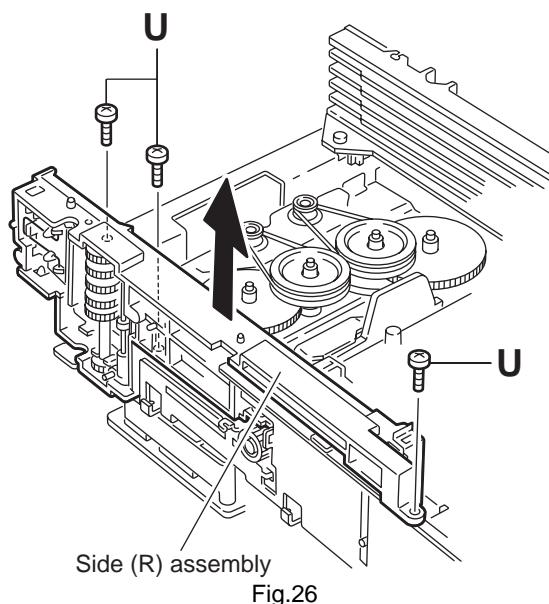


Fig.26

### 3.2.13 Removing the lifter assembly

(See Figs.27 to 31)

- Prior to performing the following procedures, remove the tray assemblies, DVD servo board, side (L) assembly and side (R) assembly.
- When removing the DVD servo board, it is not necessary to remove the DVD servo board from the bracket.
- (1) From the topside of the DVD changer mechanism assembly, turn the gear 1 clockwise to move the lifter assembly upward. (See Figs.27 and 28.)
- (2) Turn the gear 2 clockwise to move the hook toward the front until it stops. (See Figs.27 and 28.)
- (3) Move the hook stopper in the direction of the arrow 2 while pushing the tab y of the hook stopper to unlock it in the direction of the arrow 1 and release four joints z to detach from the rack holder. (See Fig.29.)
- (4) Release the rod from part aa. (See Fig.29.)
- (5) Turn the gear 1 clockwise again to move the lifter assembly upward. (See Fig.30.)
- (6) Remove the lifter assembly from the DVD changer mechanism assembly upward at the positions ab where the four pins on the both sides of the lifter assembly fit to the notches of the chassis assembly. (See Fig.30.)
- (7) Move the lifter assembly in the direction of the arrow and release it from the hook. (See Fig.31.)

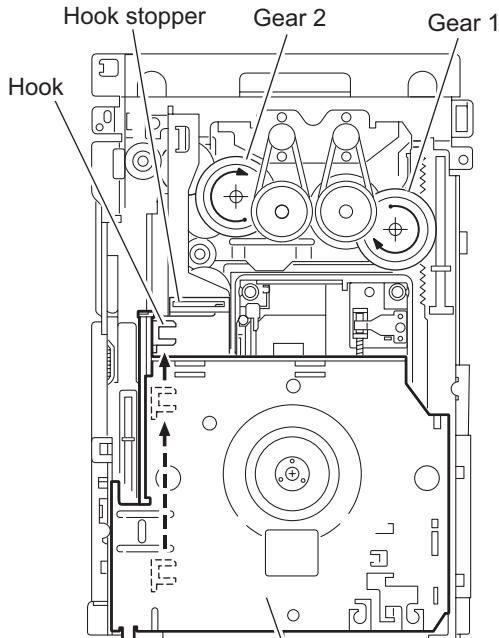


Fig.27

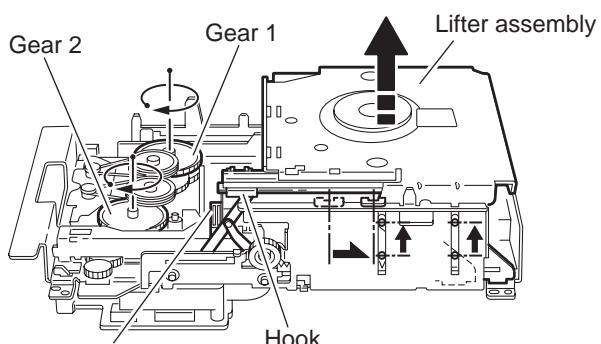


Fig.28

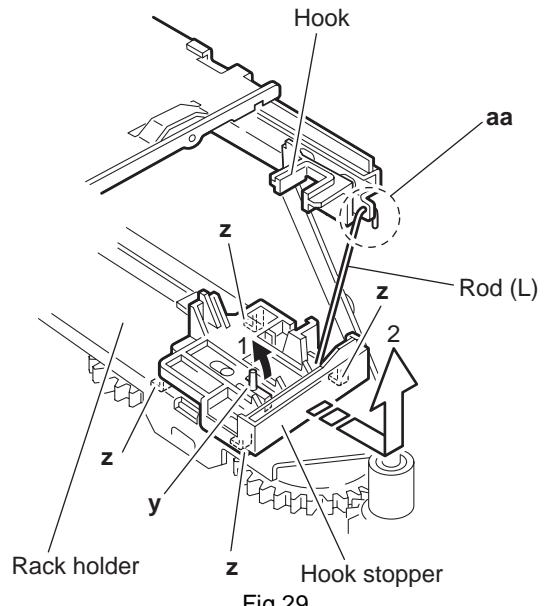


Fig.29

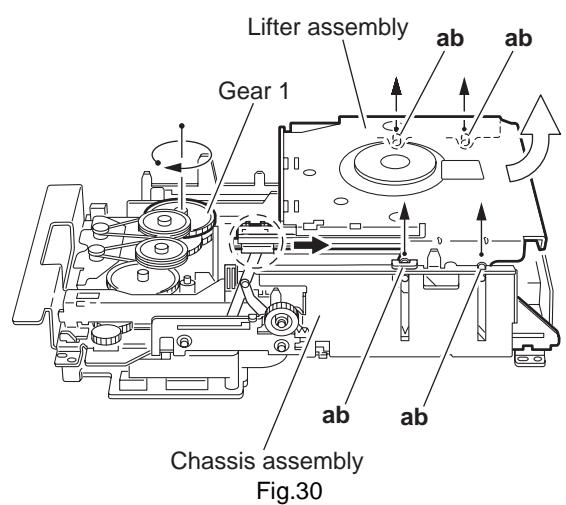


Fig.30

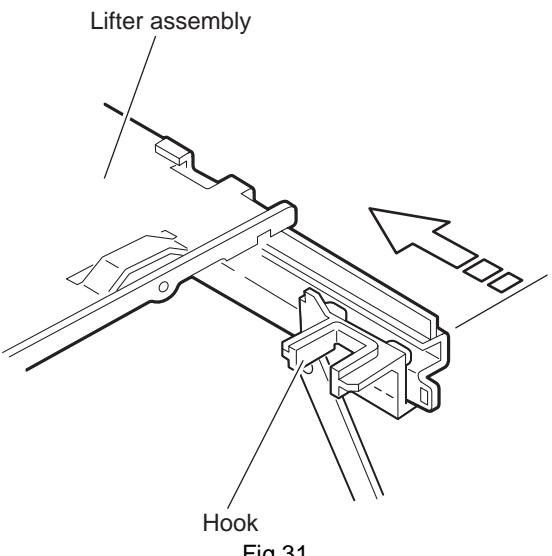


Fig.31

### 3.2.14 Removing the rack holder assembly and sensor assembly (See Figs.32 to 38)

- Prior to performing the following procedures, remove the tray assemblies, side (L) assembly, side (R) assembly and lifter assembly.

#### Reference:

If the slide gear of the DVD changer mechanism assembly places at joint **ac** of the rack holder assembly, turn the gear 1 counterclockwise to move the slide gear in the direction of the arrow. Then Remove the rack holder assembly. (See Figs.32 and 33.)

- Remove the three screws **V** attaching the rack holder assembly and release joint **ac** from the notch ad. (See Figs.32 and 34.)

#### Caution:

When reattaching the rack holder assembly, do not nip the wires extending from the sensor assembly. (See Fig.32.)

- Remove the two screws **W** attaching the sensor assembly. (See Figs.35 and 38.)
- Move the sensor assembly in the direction of the arrow to release from the joint section **ae**. (See Figs.35 and 38.)
- Remove the sensor spring attached to the bottom of the sensor assembly from the boss **af** on the sensor slider. (See Figs.35 and 36.)
- Remove the screw **X** and **Y** attaching the sensor board and SV. resister respectively. (See Fig.37.)

#### Reference:

Remove the soldered section **ai** on the sensor board as required. (See Fig.37.)

#### Caution:

- When reattaching the SV. resister, attach the sensor slider to the sensor bracket and fit the lever on the bottom of the SV. resister into slot **aj** of the sensor slider. (See Figs.36 and 37.)
- When reattaching the rack holder assembly, turn the gear 1 clockwise to move the slide gear and slide lever inside the body in the direction of the arrow. (See Figs.32 and 38.)
- Let the wire extending from the sensor assembly through notch **ag** to the bottom of the DVD changer mechanism assembly. (See Figs.35 and 38.)
- Fit pin **ak** of the slide lever into hole **ah** of the sensor slider on the bottom of the sensor assembly while attaching the sensor spring to the boss **af** of the sensor slider. (See Figs.36 and 38.)
- Joint section **ae** of the sensor assembly to the notch **am** of the DVD changer mechanism assembly. (See Figs.35 and 38.)

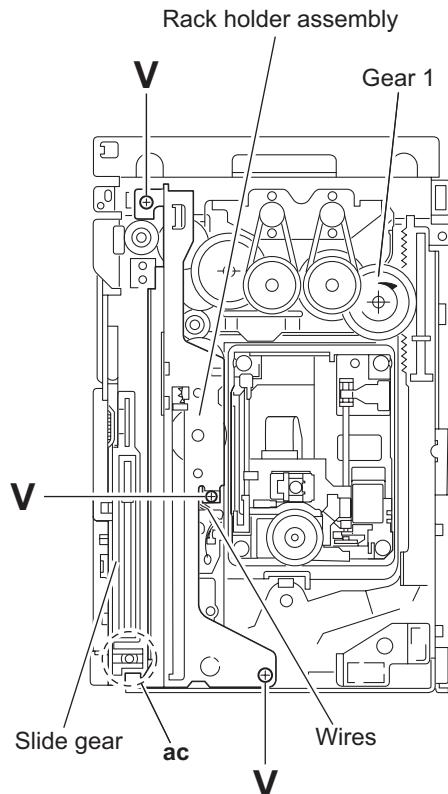


Fig.32

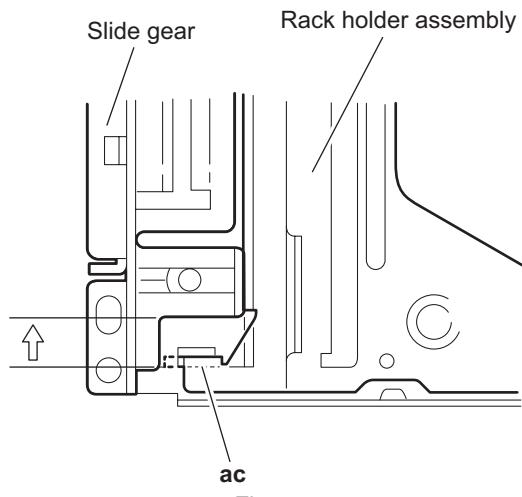


Fig.33

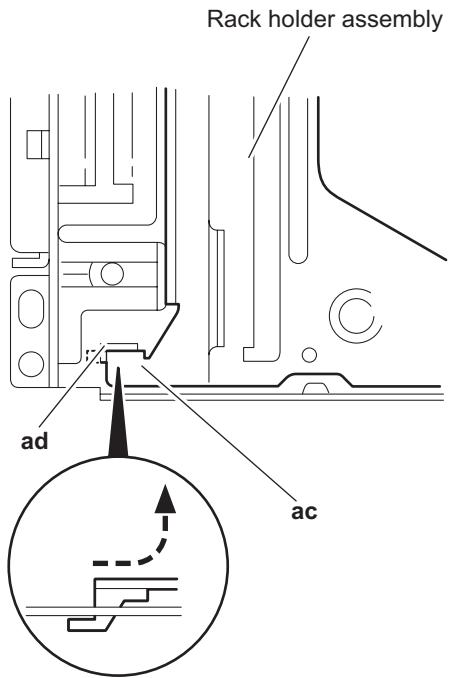


Fig.34

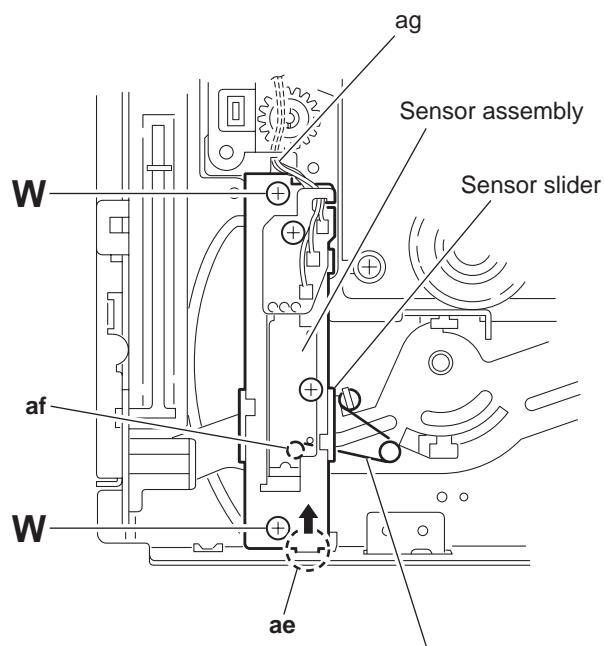


Fig.35

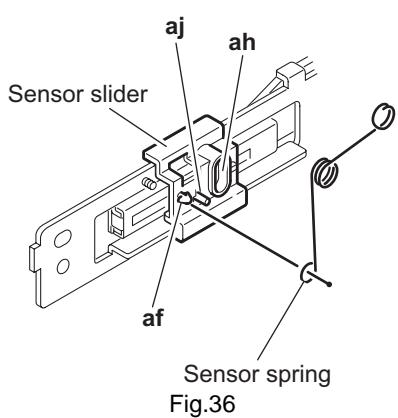


Fig.36

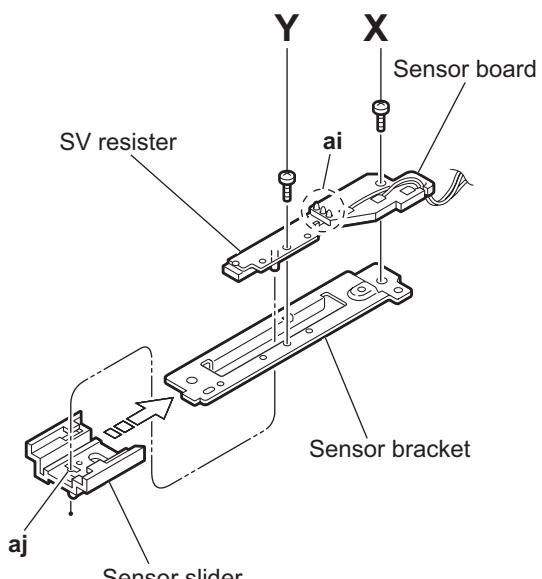


Fig.37

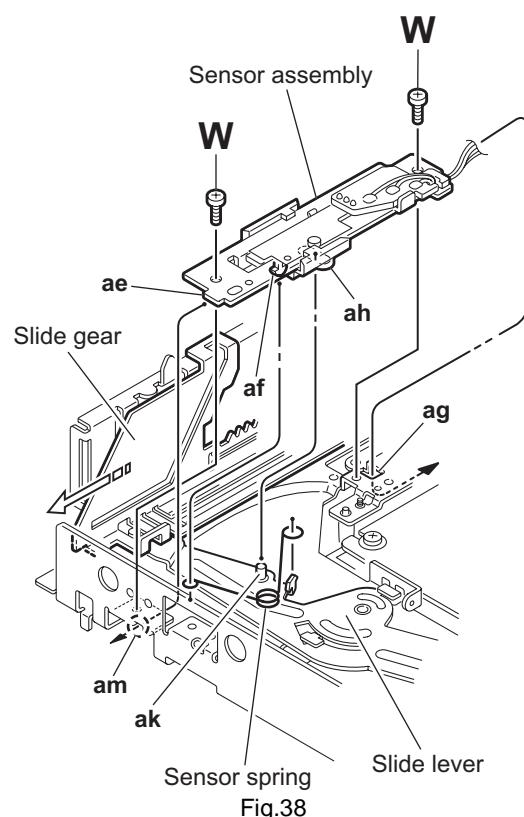


Fig.38

### 3.2.15 Taking out the disc in the play mode (See Fig.39 to 42)

#### Reference:

Refer to "Removing the tray assemblies".

- (1) From the topside of the DVD mechanism assembly, remove the top cover.
- (2) Unlock the tray assemblies and draw out the tray assemblies toward the front.
- (3) From the top side of the DVD mechanism assembly, turn the gear 1 clockwise to move the lifter assembly upward. (See Fig.39.)
- (4) Turn the gear 2 clockwise to move the sub tray remaining inside the lifter assembly toward the front, then pull out. (See Fig.39.)
- (5) Take out the disc on the sub tray. (See Fig.40.)
- (6) After clearing away the disc, insert the sub tray into the main tray. (See Fig.41.)

#### Caution:

When reattaching the sub tray, move the tray stopper on the bottom of the main tray in the direction of the arrow to lock the sub tray certainly. (See Figs.41 and 42.)

- (7) Push the tray assembly toward the body and reattach.

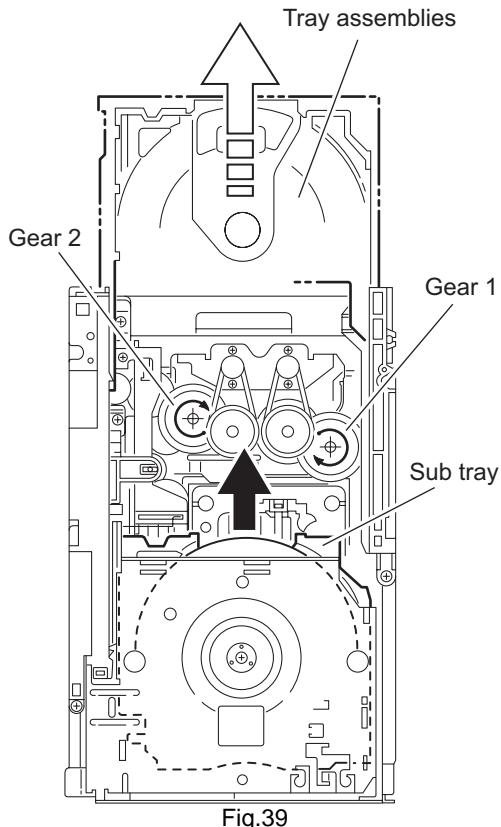


Fig.39

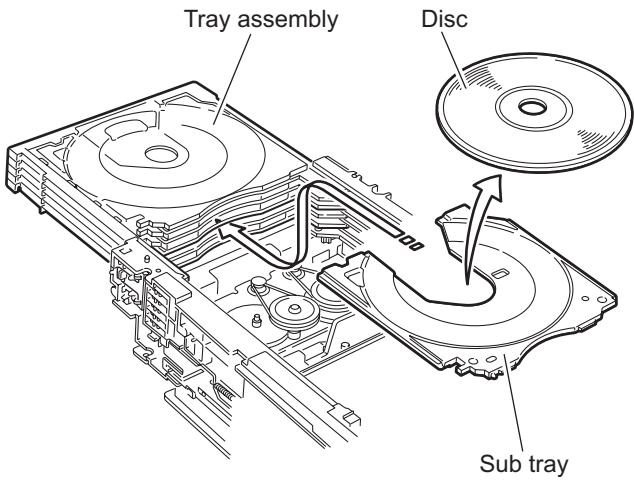


Fig.40

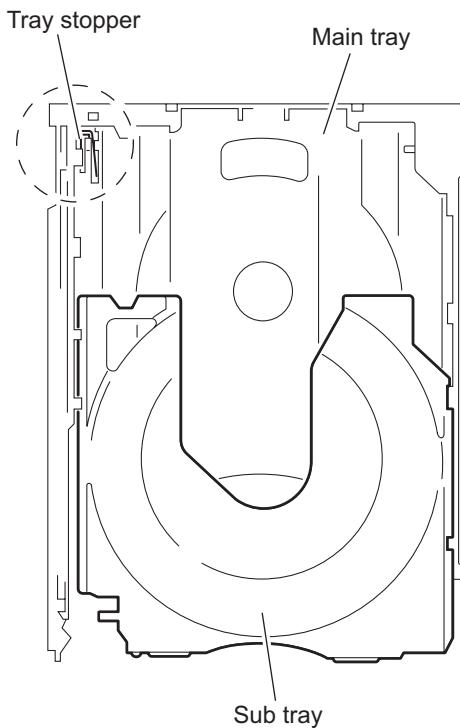


Fig.41

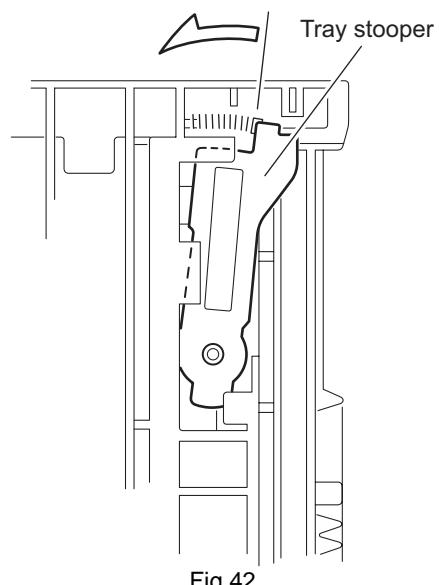


Fig.42

### 3.3 Speaker section

#### 3.3.1 Removing the amplifier assembly (See Figs.3 and 4)

- (1) From the back side of the speaker main body, remove the four screws **A** attaching the heat sink cover and then remove the heat sink cover. (See Fig.1.)
- (2) Remove the nine screws **B** attaching the amplifier assembly. (See Fig.2.)
- (3) Move the amplifier assembly backward and disconnect the wire from the connector CN402 on the speaker terminal board. (See Fig.3.)

#### 3.3.2 Removing the rear panel (See Figs.1 and 4)

- (1) From the back side of the speaker main body, remove the four screws **A** attaching the heat sink cover and then remove the heat sink cover. (See Fig.1.)

**Reference:**

If the amplifier assembly was removed from the main body, this step (1) is unnecessary.

- (2) Remove the four screws **C**, twelve screws **D** and screw **E** attaching the rear panel. (See Fig.4.)

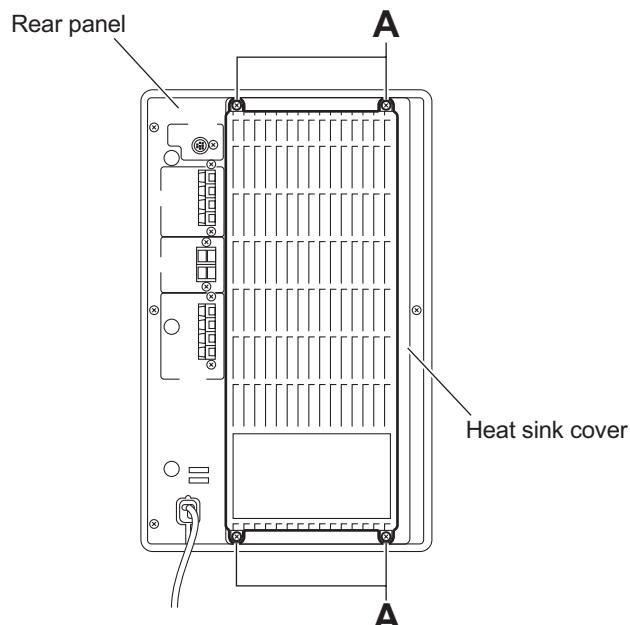


Fig.1

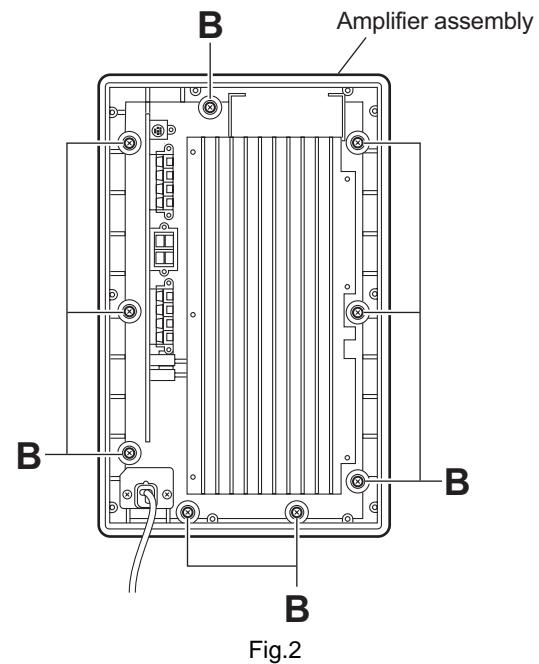


Fig.2

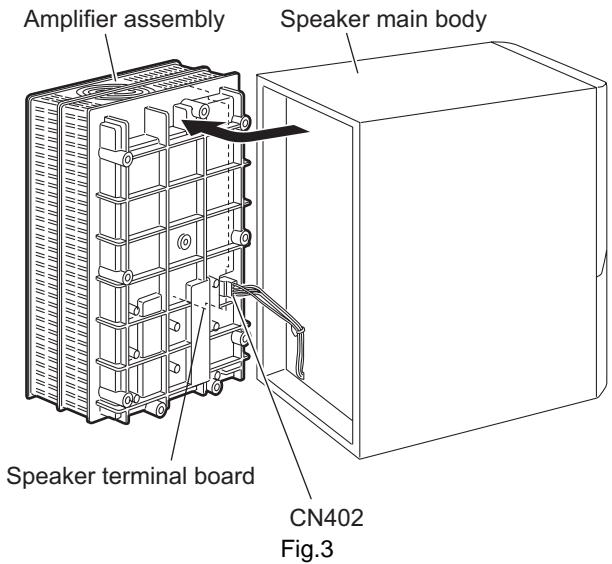


Fig.3

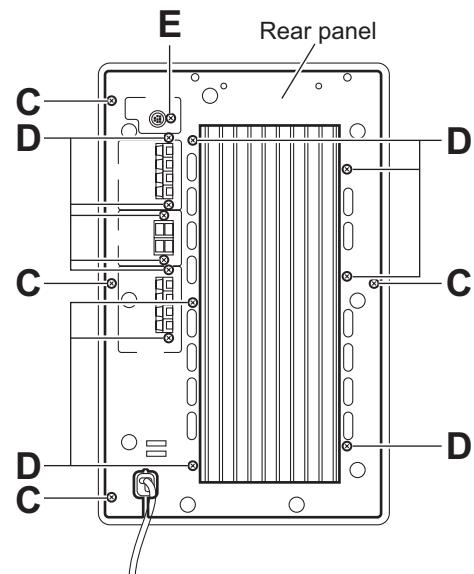


Fig.4

### 3.3.3 Removing the speaker terminal board (See Figs.5 and 6)

- Remove the amplifier assembly.
  - Remove the rear panel.
- (1) From the back side of the amplifier assembly, remove the two screws **F** attaching the AC bracket. (See Fig.5.)
  - (2) Disconnect the wires from the connectors CN101 and CN102 on the speaker terminal board. (See Figs.5 and 6.)
  - (3) Disconnect the speaker terminal board from the connectors (CN501, CN503, CN504) on the mother board. (See Fig.6.)

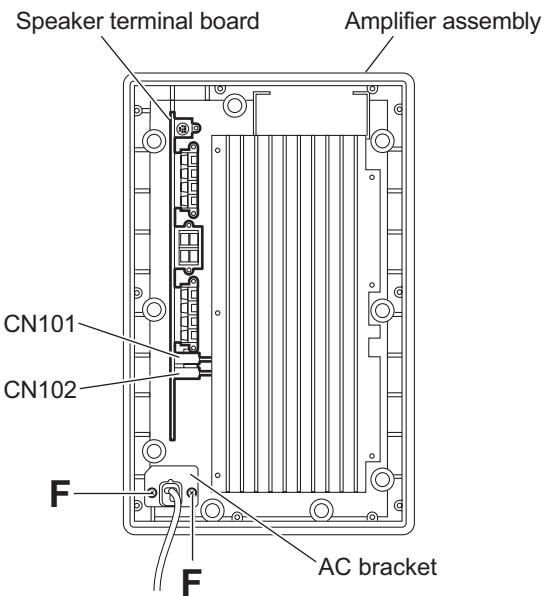


Fig.5

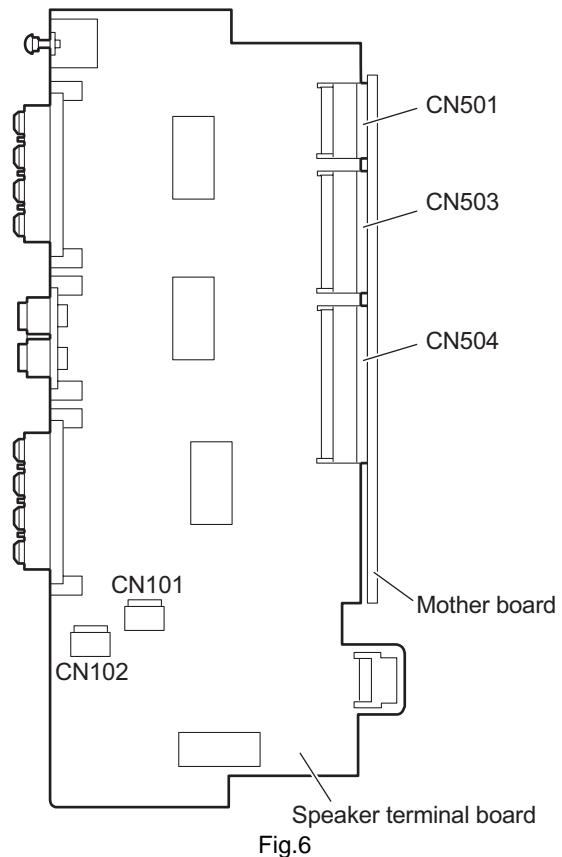


Fig.6

### 3.3.4 Removing the mother board

(See Figs.7 to 9)

- Remove the rear panel.
  - Remove the amplifier assembly.
  - Remove the speaker terminal board.
- (1) From the inside of the amplifier assembly, disconnect the wire from the connector [CN151](#) on the mother board. (See Fig.7.)
  - (2) Remove the five screws **G** attaching the mother board. (See Fig.7.)
  - (3) Take out the mother board together the amplifier boards (A,B) and heat sink.
  - (4) Remove the four screws **H** attaching the mother board. (See Fig.8.)
  - (5) Release the claws **a** and **b** of the connectors ([CN521](#), [CN522](#), [CN531](#), [CN532](#)) on the mother board using the flat-bladed screwdriver or a similar tool, disconnect the mother board from the connectors ([CN251](#), [CN252](#), [CN351](#), [CN352](#)) on the amplifier boards (A,B). (See Fig.9.)

**Note:**

When releasing the claws **a** and **b** of the connectors ([CN521](#), [CN522](#), [CN531](#), [CN532](#)) on the mother board, be careful not to break the claws of the connectors.

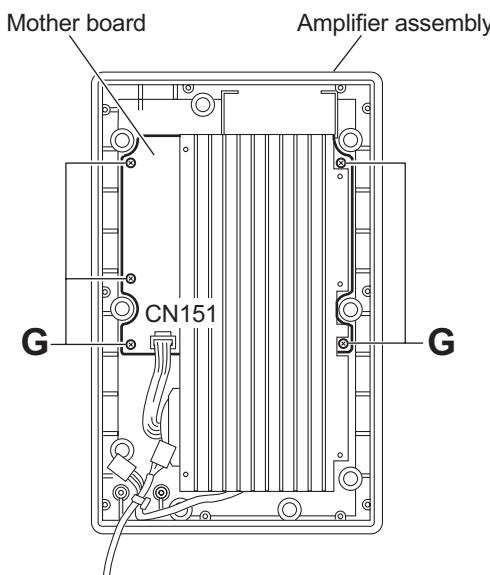


Fig.7

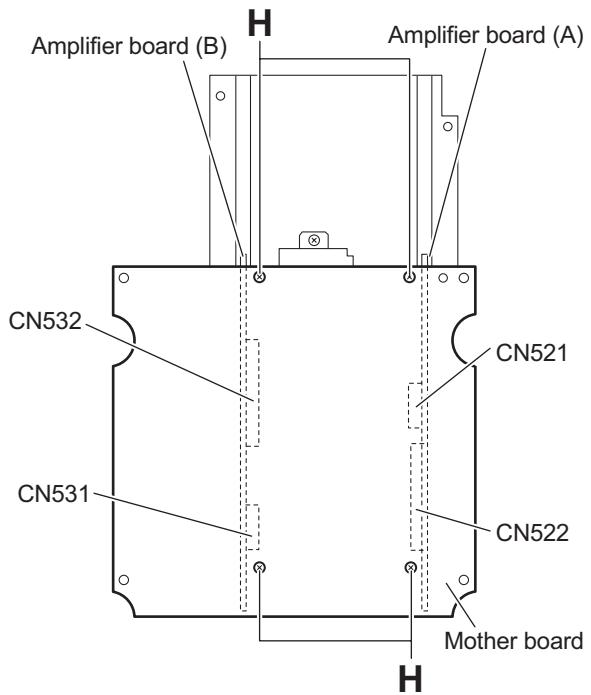


Fig.8

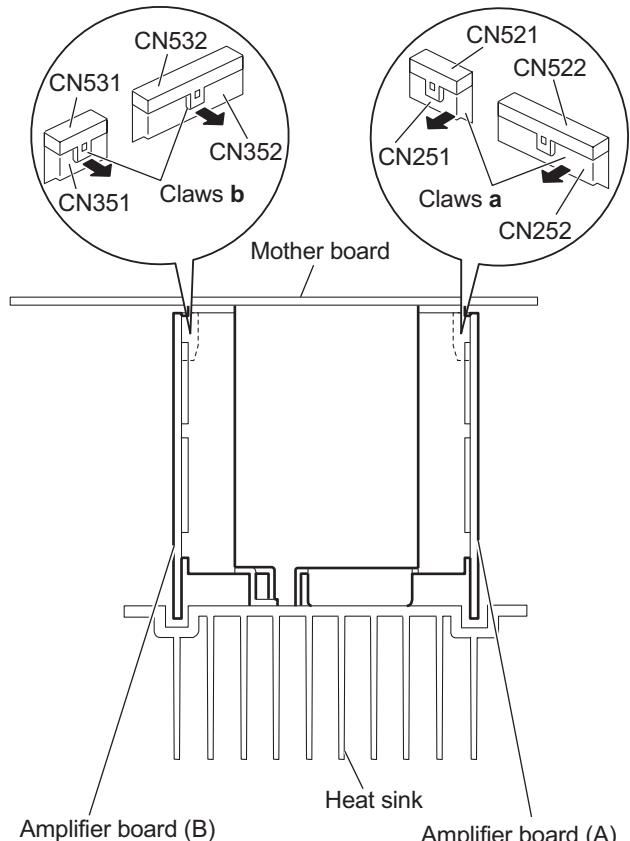


Fig.9

### 3.3.5 Removing the amplifier board (A) (See Figs.10 and 11)

- Remove the rear panel.
  - Remove the amplifier assembly.
  - Remove the speaker terminal board.
  - Remove the mother board.
- (1) Remove the three screws **J** attaching the IC bracket. (See Fig.10.)
- (2) Remove the amplifier board (A) from the heat sink together with the IC bracket.
- (3) Disengage the engagement sections **c**. (See Fig.11.)
- (4) Slide the amplifier board (A) in the direction of the arrow and then disengage the amplifier board (A) from the engagement sections **d** and **e** of the IC bracket. (See Fig.11.)

#### Reference:

After attaching the IC bracket to the amplifier board (A), apply the bond to the engagement sections **c** and **d**. (See Fig.11.)

### 3.3.6 Removing the amplifier board (B) (See Figs.10 and 12)

- Remove the mother board.
- (1) Remove the three screws **K** attaching the IC bracket. (See Fig.10.)
- (2) Remove the amplifier board (B) from the heat sink together with the IC bracket.
- (3) Disengage the engagement sections **f**. (See Fig.11.)
- (4) Slide the amplifier board (B) in the direction of the arrow and then disengage the amplifier board (B) from the engagement sections **g** and **h** of the IC bracket. (See Fig.12.)

#### Reference:

After attaching the IC bracket to the amplifier board (B), apply the bond to the engagement sections **f** and **g**. (See Fig.12.)

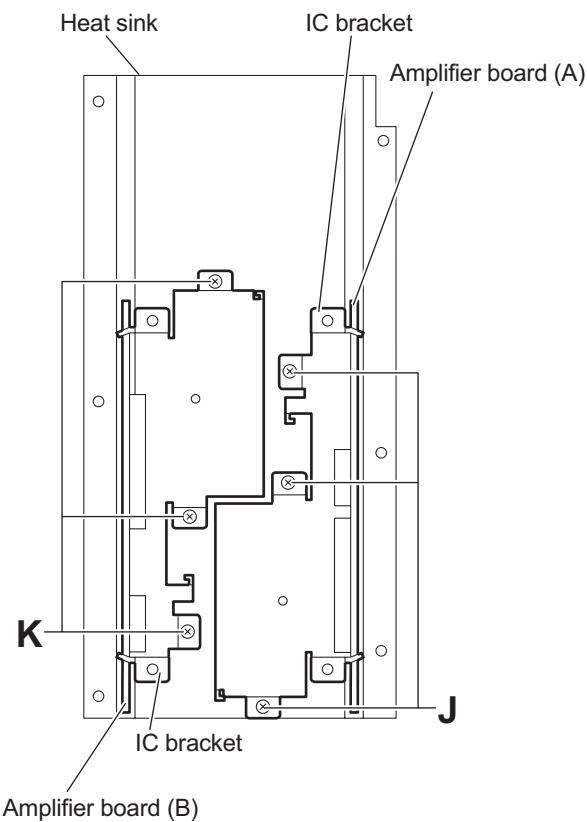


Fig.10

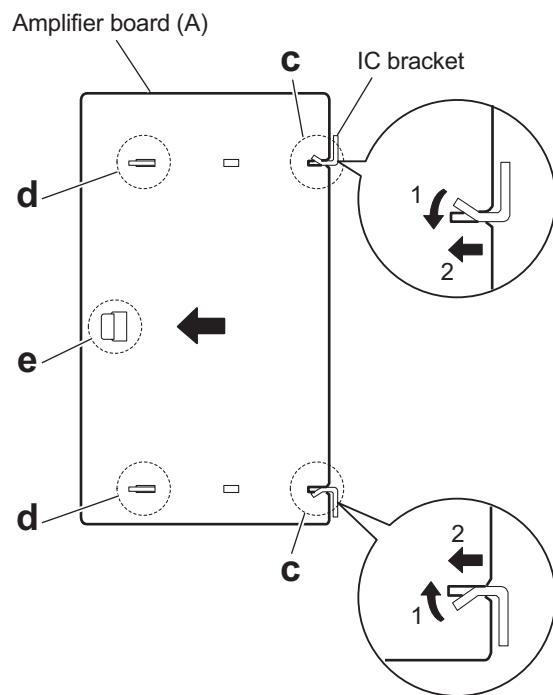


Fig.11

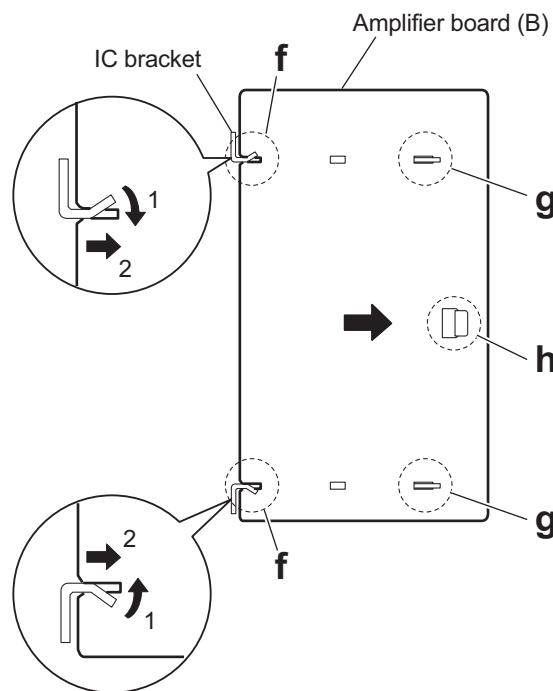
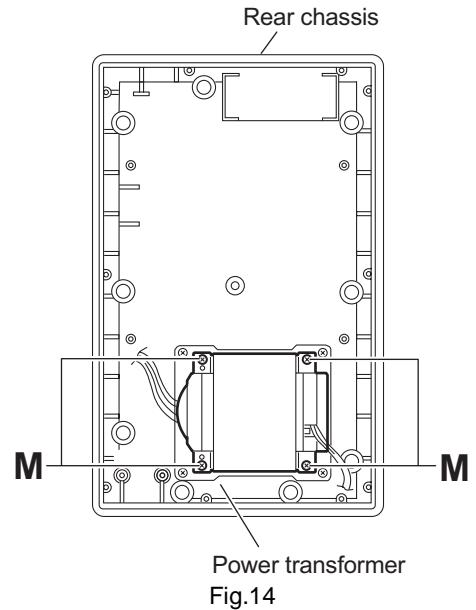
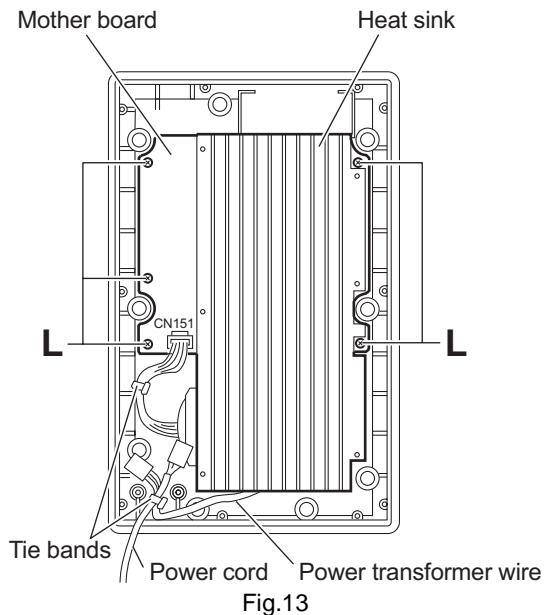


Fig.12

### 3.3.7 Removing the power transformer

(See Figs.13 and 14)

- Remove the rear panel.
- Remove the amplifier assembly.
- Remove the speaker terminal board.
  - (1) Remove the tie bands bundling the power cord and power transformer wire. (See Fig.13.)
  - (2) Disconnect the wire from the connector **CN151** on the mother board. (See Fig.13.)
  - (3) Remove the five screws **L** attaching the mother board. (See Fig.13.)
  - (4) Take out the mother board together the heat sink.
  - (5) Remove the four screws **M** attaching the power transformer. (See Fig.14.)
  - (6) Take out the power transformer from the rear chassis.



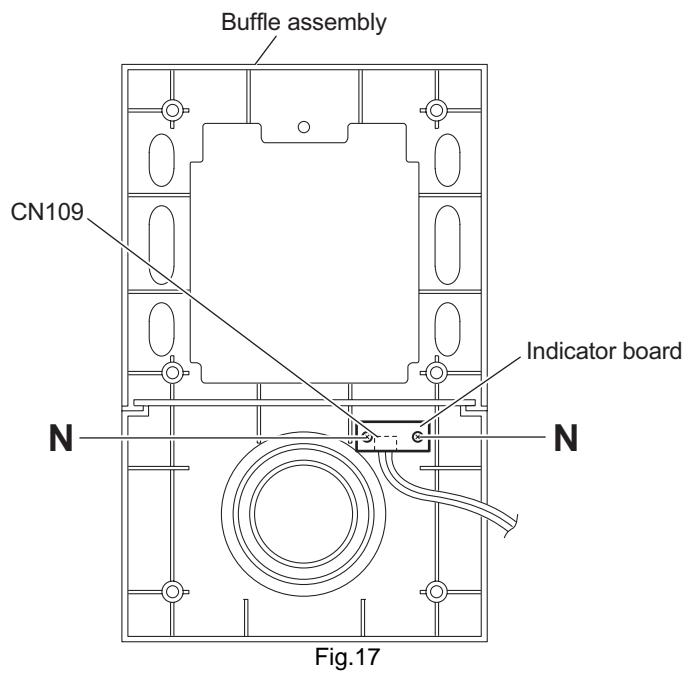
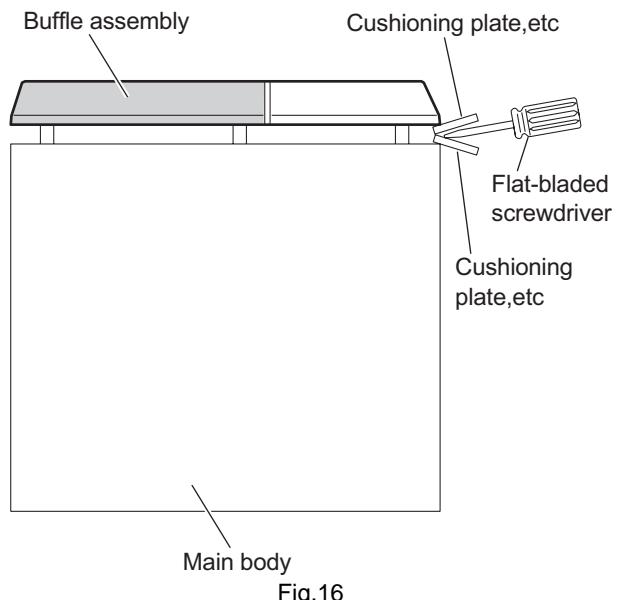
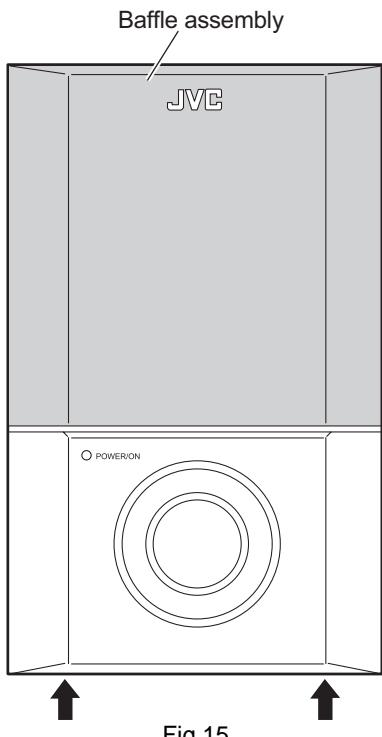
### 3.3.8 Removing the indicator board (See Fig.15 to 17)

- (1) Insert the tip of a flat-bladed screwdriver or a similar tool into the space between the speaker main body and baffle assembly (the section indicated by the arrows), and lift the baffle assembly little by little to move. (See Fig.15.)

**Note:**

To prevent damaging the baffle assembly and speaker main body, insert cushioning plates etc. above and below the tip of the flat-bladed screwdriver or a similar tool. (See Fig.16.)

- (2) From the inside of the baffle assembly, remove the two screws **N** attaching the indicator board. (See Fig.17.)
- (3) Disconnect the wire from the connector **CN109** on the indicator board. (See Fig.17.)



### 3.3.9 Removing the speaker

(See Figs.18 and 19)

- (1) Remove the four screws **P** attaching the speaker. (See Fig.18.)
- (2) Take out the speaker.
- (3) Disconnect the wires from the terminal of the speaker. (See Fig.19.)

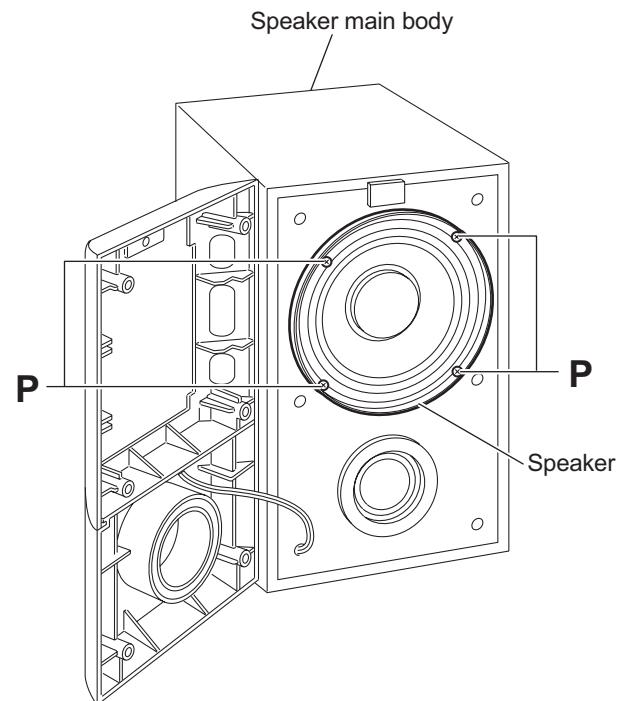


Fig.18

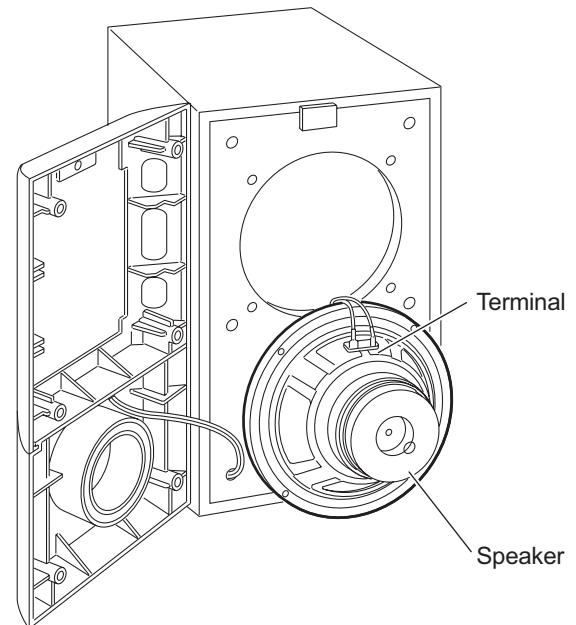


Fig.19

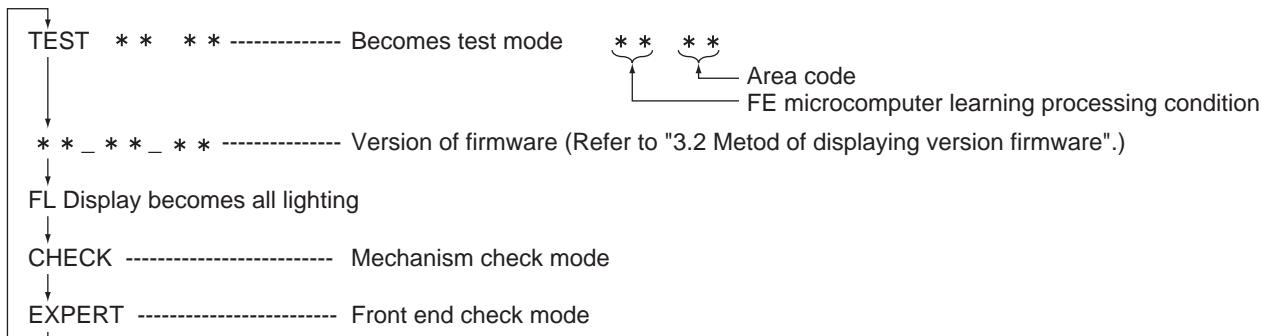
## SECTION 4 ADJUSTMENT

### 4.1 Test mode setting method

- (1) Unplug the power plug.
- (2) Insert power plug into outlet while pressing both "STOP" key and "OPEN/CLOSE" key (for DISC 1) of the main body.
- (3) "Area code" is indicated at the upper left of display.
- (4) To release test mode, press "STANDBY/ON" key of the main body.

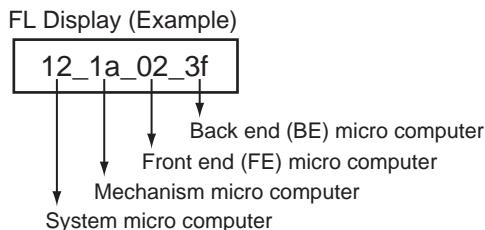
#### NOTE:

Each pressing of "CHOICE" key of the remote controller in test mode changes the mode as follows.



### 4.2 Method of displaying version of firmware

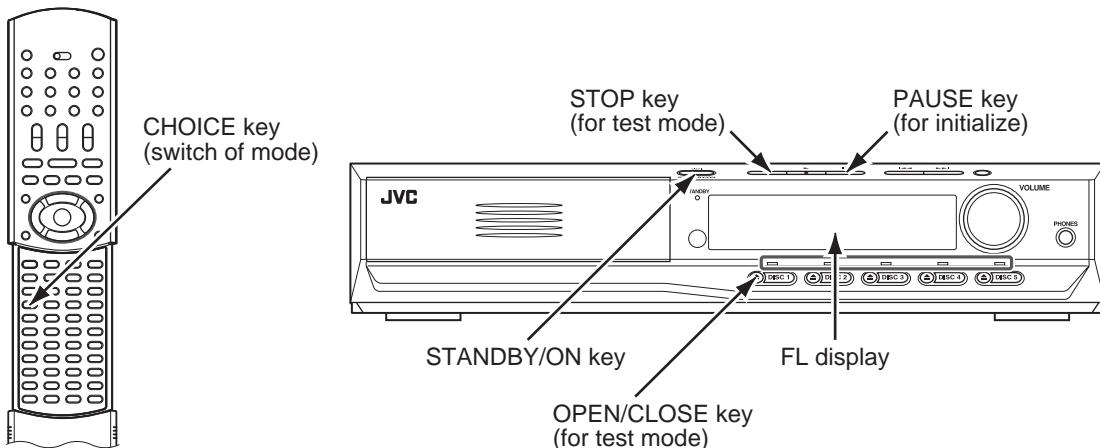
- (1) Set the main body at test mode.
- (2) Press "CHOICE" key of the remote controller once. Then, version number and alphabetical letter of the system controller and the back end are displayed in the FL display as follows.



### 4.3 Initialization method

Please initialize according to the following procedures in the following case:

- Just after you upgrade the firmware.
- After you confirm the symptoms that a customer points out. First Initialize, and then confirm whether the symptoms are improved or not.
- After servicing, before returning the main body to a customer. (Initialized main body should be returned to a customer.)  
(1) Set the main body at test mode.  
(2) Press "PAUSE" key of the main body.  
(3) When initialization is completed, "00" and "RDS" is displayed in the FL display



#### 4.4 All-initialization method

Please perform all-initialization according to the following procedures in the following case:

- Just after you exchange the pick-up.
- Just after you exchange the spindle motor.
- Just after you exchange the traverse mechanism base.

**NOTE:**

Please perform all-initialization when you exchange the parts above and also when you remove the parts above.

- Just after the flap adjustment of the pick-up guide shaft.

(1) Set the main body at test mode.

(2) Press and hold "REVERSE SKIP" key of the main body for more than 1.5 seconds.

(3) When all-initialization is completed, "33" and "RDS" is displayed in the FL display.

(4) To release test mode, press "STANDBY/ON" key of the main body

**NOTE:**

After all-initialization, be sure to perform optimization adjustment of Front End parameter.

#### 4.5 Optimization adjustment of Front End parameter

Adjustment to optimize Front End parameter must be performed in each mechanism assembly of this model for high-speed starting. Please perform optimization according to the following procedures just after all-initialization is completed and when FL display shows anything except "0" (For example when FL display shows "1", "2", and "3") at test mode

- (1) Press "STANDBY/ON" key of the main body to turn the main body on (not to set the main body at test mode).
- (2) Insert the test disc VT-501 or commercial dual-layer DVD software.
- (3) Remove the disc when the FL display changes from "READING" to disc information.
- (4) Perform the same procedures as in (2) and (3) above by using the test disc CTS-1000 or commercial CD-DA software.
- (5) Set the main body at test mode, and check that the FL display shows "0".

**NOTE:**

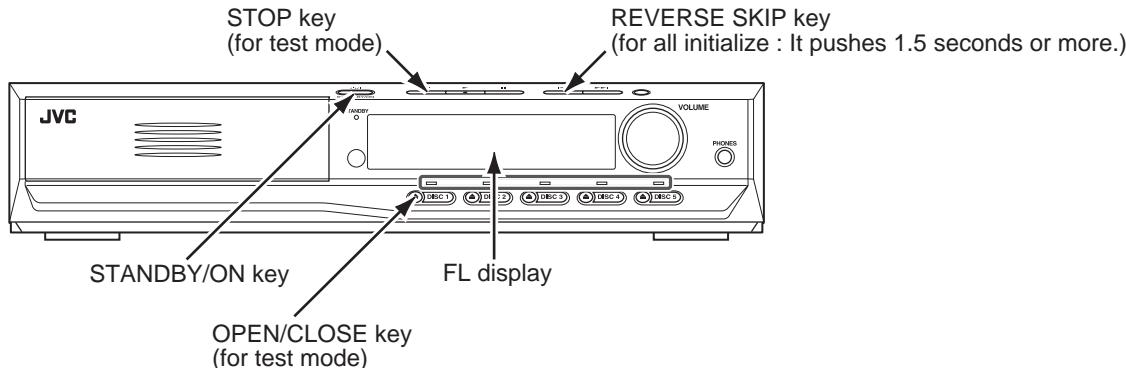
Status of this adjustment can be judged by the number displayed at test mode as follows:

DVD adjustment	CD adjustment	FL display at test mode
Adjusted	Adjusted	0
Not adjusted	Adjusted	1
Adjusted	Not adjusted	2
Not adjusted	Not adjusted	3

**NOTE:**

As for a disc used for adjustment,

- Disc should be mounted. ("Mounting" means to display "READING" after the disc is inserted and then display the disc information.) Disc need not be played.
- If you do not have test disc either VT-501 (DVD) or CTS-1000 (CD-DA), use a commercial disc (for DVD, dual-layer software) after seeing and checking that the disc is neither curved nor foreseen that it may shake at the time of playback. If you use a disc with bad features, starting time may be slow or disc may not be read.



#### 4.6 Display of current value of laser

- (1) Set the main body at test mode.
- (2) Press "CHOICE" key of the remote controller three times. Then, FL display is displayed "CHECK".
- (3) The laser current value can be switched between the value of CD and that of DVD by pressing the following key of the remote controller.

FL Display (Example)

1419 0000

Remote controller "4" key --- Laser of CD  
Remote controller "5" key --- Laser of DVD

- The number shown in the FL display shows mA of current value of laser.
- The first two numbers ("14" in "1419") shows current value of laser at the time of adjustment after the latest all-initialization, 14mA in this example.
- The last two numbers ("19" in "1419") shows the present current value of laser, 19mA in this example.
- The first two numbers ("14" in "1419") usually shows current value of laser at the time of shipment, so you can see how the product has been deteriorated by comparing the first two numbers ("14" in "1419") and the last two numbers ("19" in "1419").

##### CD and DVD:

The laser current value of 80mA or less in normal. The laser current value of over 81mA is not normal. Laser diode of the pickup has been deteriorated.

- To return to test mode, press "STOP" key of the main body.

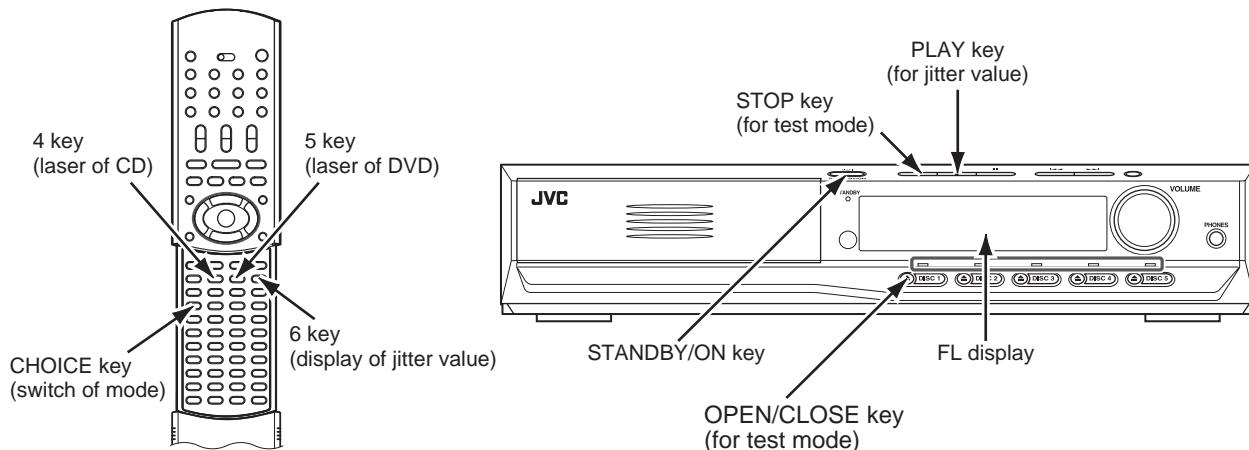
#### 4.7 Flap adjustment of the pick-up guide shaft

Please perform flap adjustment of the pick-up guide shaft in the following case:

- Just after you exchange the pick-up.
- Just after you exchange the spindle motor.
- Just after you exchange the traverse mechanism base.

##### NOTE:

- Please perform flap adjustment of the pick-up guide shaft when you exchange the parts above and also when you remove the parts above.
- When the reading accuracy of the signal is bad (There is a block noise in the screen, Screen stops in the outer circumference of a disc, etc.)



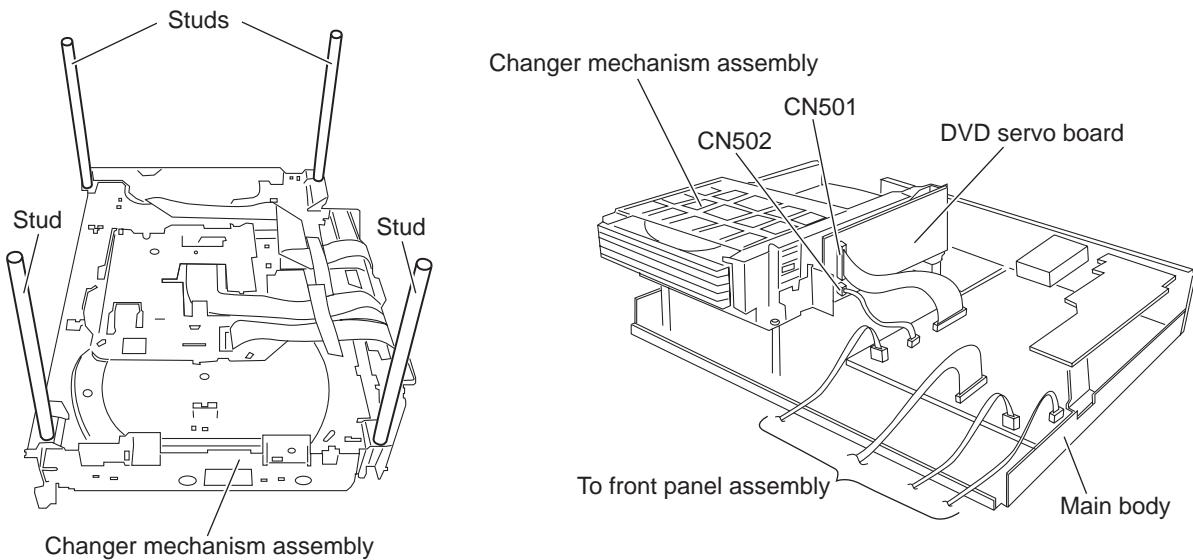
#### 4.7.1 Tool for adjustment

\*Stud: One set (four studs), Part number: JIGXVS40



#### 4.7.2 Preparation for adjustment

- (1) Set the disassembly procedure, and remove the changer mechanism assembly from the main body.
- (2) Disconnect the card wires from the connectors [CN501](#) and [CN502](#) on the DVD servo board.
- (3) Attach the four studs to the changer mechanism assembly.
- (4) Put the changer mechanism assembly in the main body, and connect the card wires to the connector [CN501](#) and [CN502](#) on the DVD servo board.

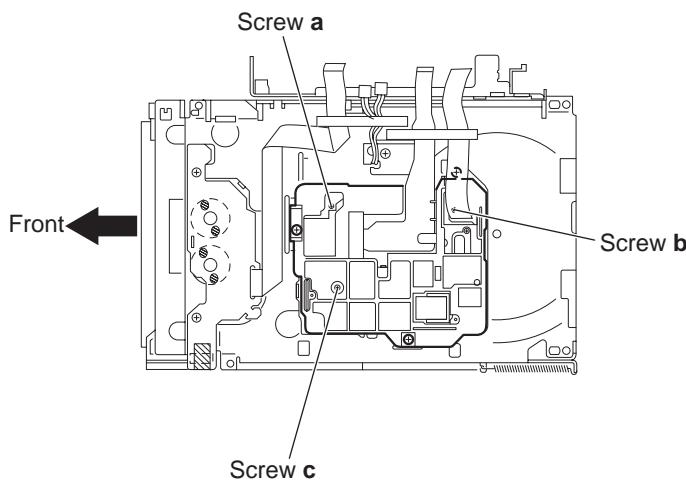


#### 4.7.3 Adjustment

- (1) Set the unit to test mode.
- (2) Press the "CHOICE" key of the remote controller three times, and the FL display is displayed "CHECK".
- (3) A "PLAY" key is pushed after insert a test disc (VT-501), and press the numeric key "1" of the remote controller for automatic adjustment.
- (4) After a few seconds, press the numeric key "6" of the remote controller. Then, the FL display displays a jitter value.
- (5) Turn the adjustment screws on the underside of the traverse mechanism with Phillips screw driver until the maximum jitter value is displayed on the FL display. (In this model, a bigger jitter value means a better result.)

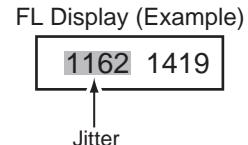
**NOTE:**

Reference values to judge whether the jitter is allowable or not are displayed, instead of actual jitter values.



**POINT:**

Turn the adjustment screws **a** and **b** to the same angle in the right direction. And turn the adjustment screws **a** and **b** to the same angle in the left direction. Then, turn the screws **a** and **b** in either the right or the left direction to increase the number of jitter. Don't turn the adjustment screw **c**.



#### 4.8 Confirmation of region

- (1) Unplug the power plug.
- (2) Insert power plug into outlet while pressing both "PAUSE" key and "FORWARD SKIP" key of the main body.  
About 3 seconds later, FL display indicates "REGION \_\_\_\_".
- (3) Push the "OPEN/CLOSE" key (for DISC 1) and confirm the tray of DISC 1 is ejected.
- (4) To release test mode, press "STANDBY/ON" key of the main body.

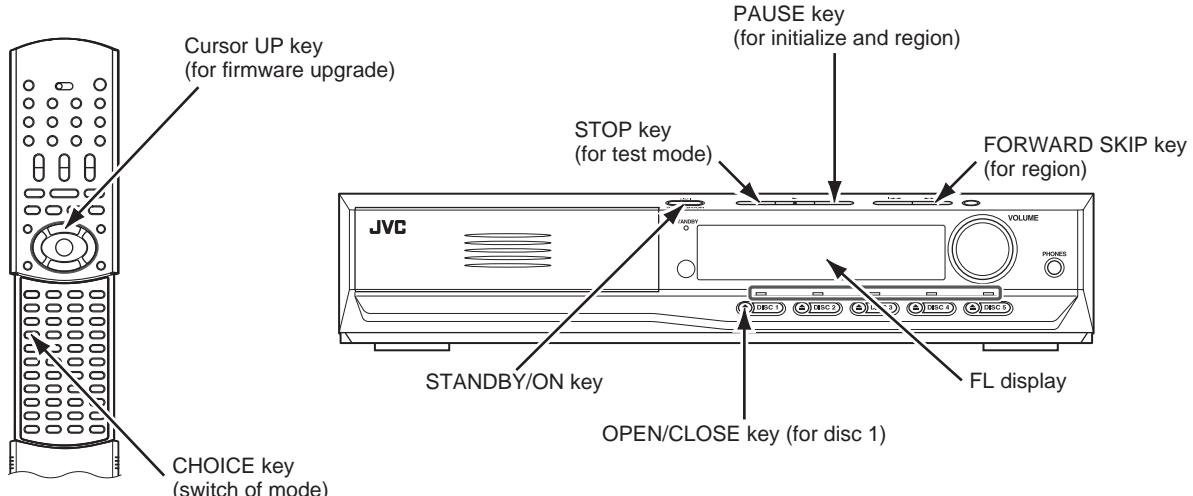
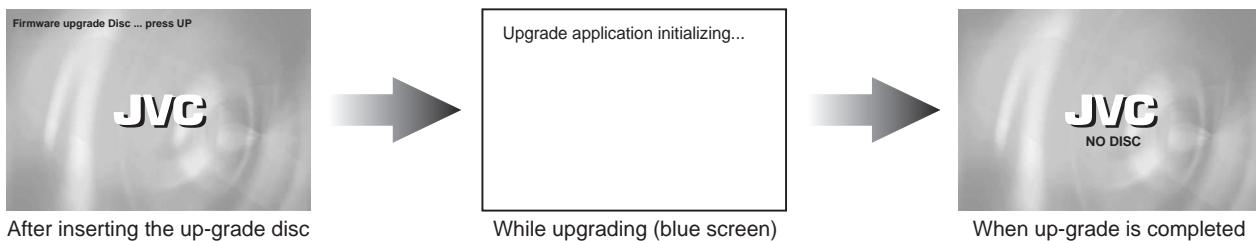
##### NOTE:

Until the tray is completely close up and the sound of mechanism movement disappears, do not pull the power plug from the outlet.

#### 4.9 Upgrading of firmware

The latest firmware for upgrading is updated in "Optical disc CSG" page in JS-net. At the time of service, compare the version of the product and the latest version, and upgrade the old version into the latest version.

- (1) Press the "STANDBY/ON" key of the main body to turn the main body on.
- (2) A disc button is pushed after inserting an upgrade disc in a tray 1.
- (3) When FL display of the main body changes from "READING" to "UPGRADE", press "cursor UP" key ( ) of the remote controller.
- (4) The entire screen becomes blue, and upgrading starts.
- (5) The tray opens automatically. Remove the upgrade disc.
- (6) The screen returns to the normal screen. Then, press the "STANDBY/ON" key of the main body. When the stand-by indicator is lighted, upgrading is completed.
- (7) Set the main body at test mode, and perform initialization. Then, confirm the version of the firmware.



## **SECTION 5**

## **TROUBLESHOOTING**

This service manual does not describe TROUBLESHOOTING.



VICTOR COMPANY OF JAPAN, LIMITED

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(No.MB033)



Printed in Japan  
WPC

# PARTS LIST

## [ TH-M45 ]

\* All printed circuit boards and its assemblies are not available as service parts.

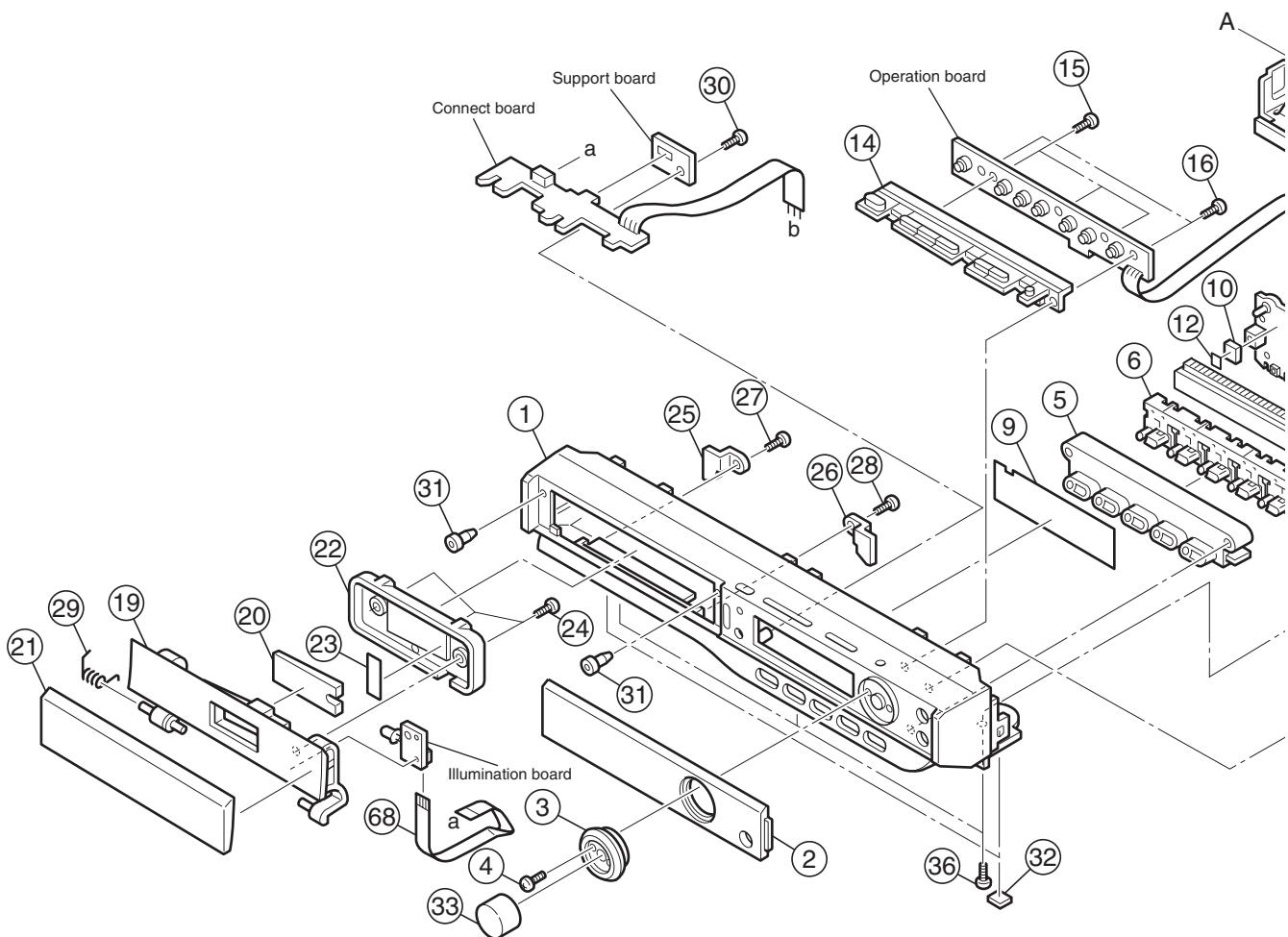
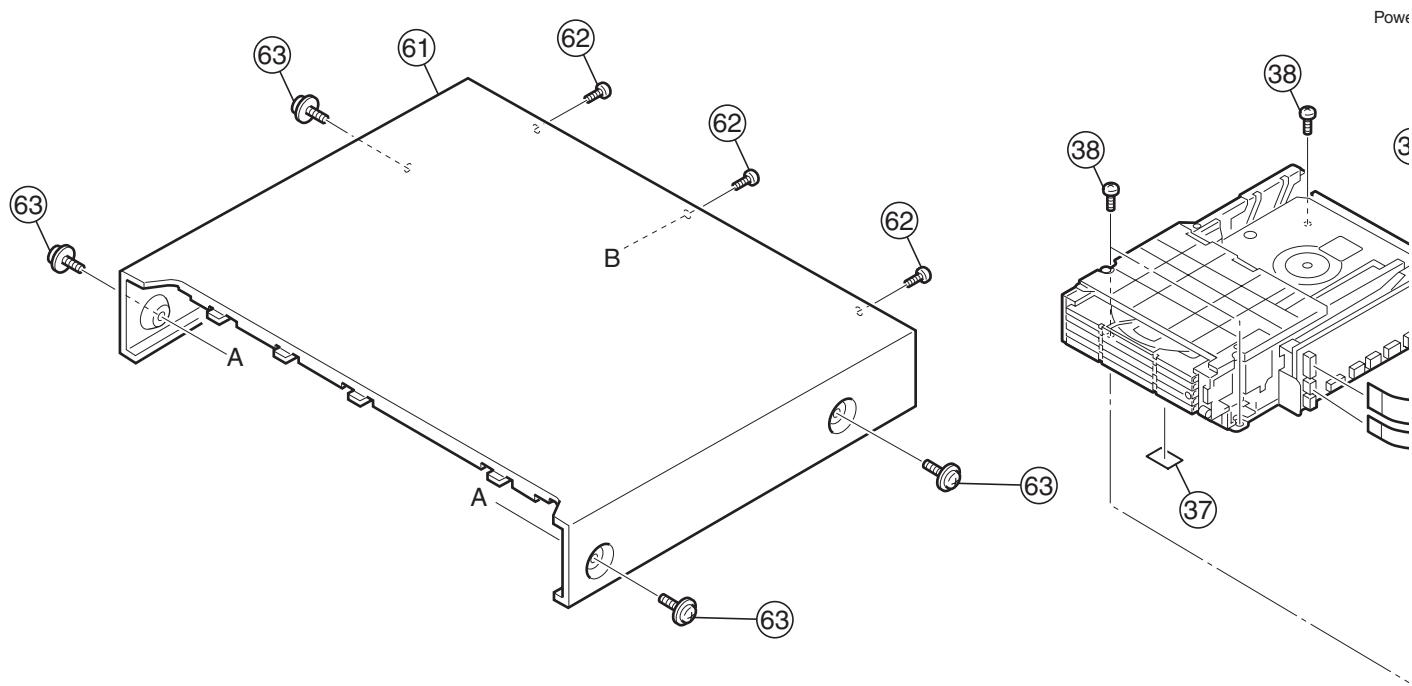
Area suffix	
B	U.K.
E	Continental Europe
EN	Northern Europe

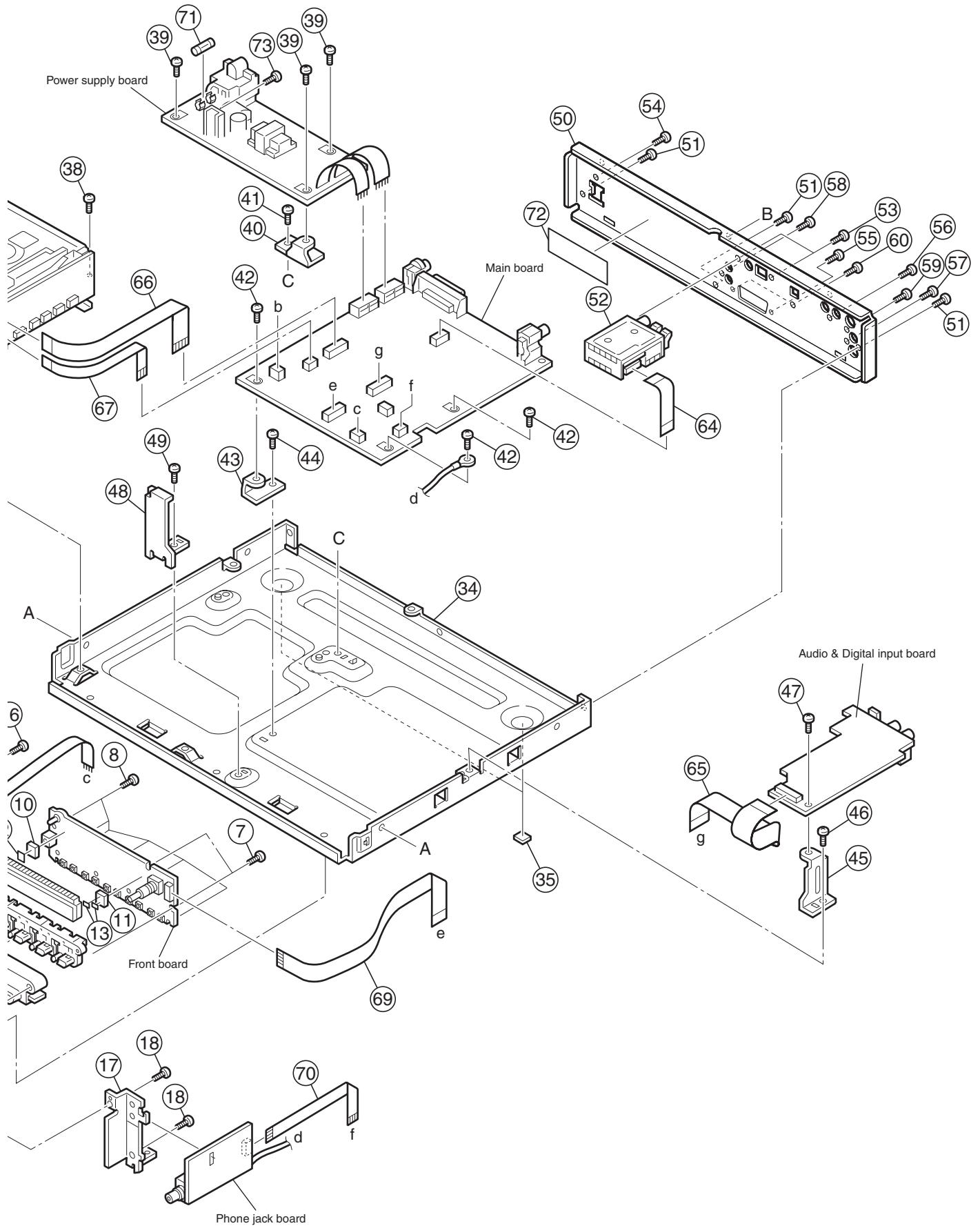
### - Contents -

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Speaker assembly and parts list (Subwoofer) (Block No.M2) .....	3- 5
Speaker assembly and parts list (Front speaker,Center speaker,Surround speaker) (Block No.M6) .....	3- 7
DVD changer mechanism assembly and parts list (Block No.MK) .....	3- 8
Electrical parts list (Block No.01~07) .....	3-10
Packing materials and accessories parts list (Block No.M3) .....	3-22

# Exploded view of general assembly and parts list

Block No. M 1 M M





## General assembly

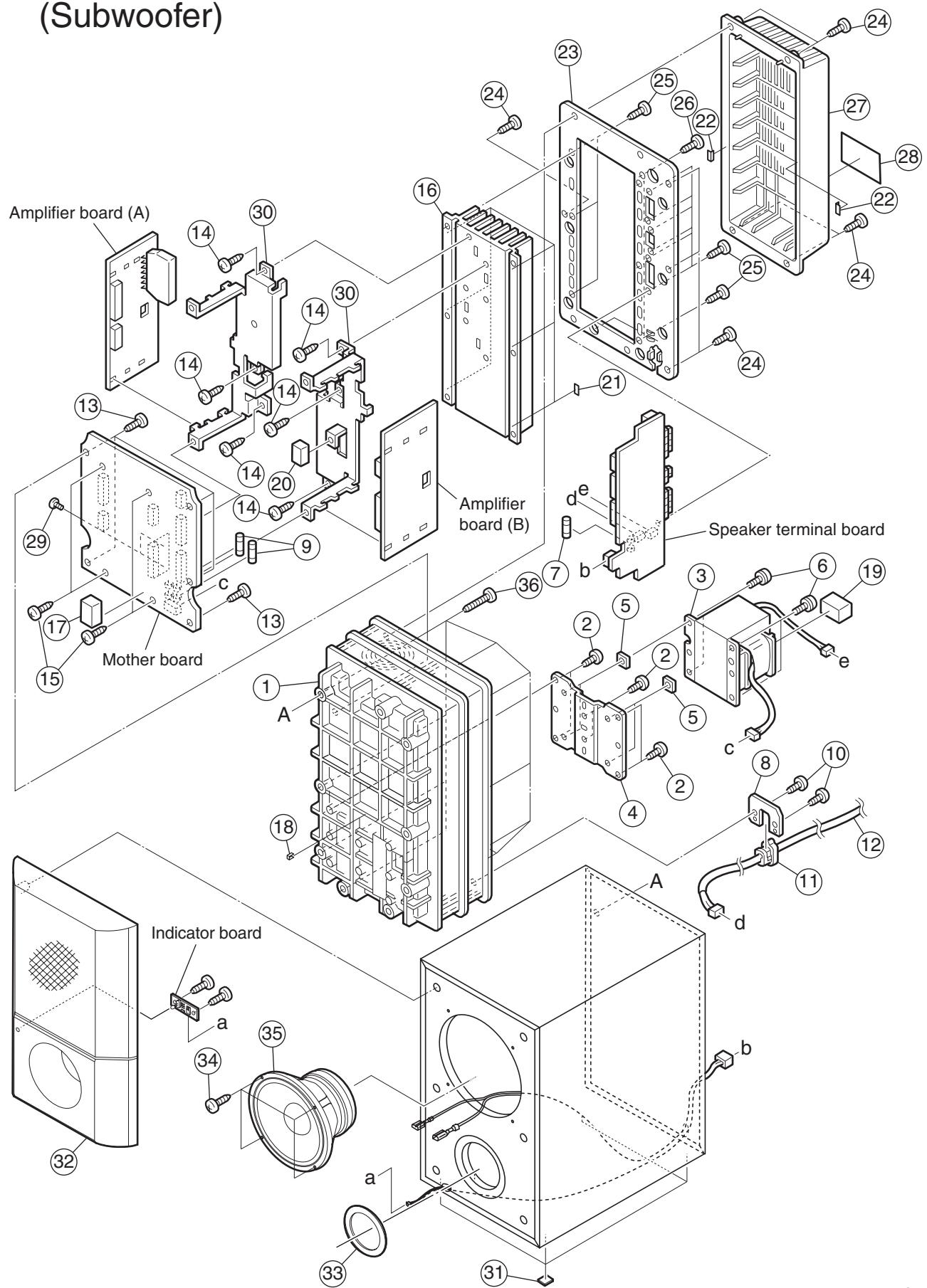
Block No. [M][1][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	LV10769-005A	FRONT PANEL		
2	LV34038-004A	FL LENS		
3	LV43327-002A	VOL RING		
4	QYSDSF2608Z	SCREW	2.6mm x 8mm	
5	LV21451-002A	BUTTON ORNAMENT		
6	LV21448-001A	BUTTON(DISC)		
7	QYSDSF2608Z	SCREW	2.6mm x 8mm(x2)	
8	QYSDSF2608Z	SCREW	2.6mm x 8mm(x6)	
9	LV43329-001A	FL SCREEN		
10	LV43330-001A	FL HOLDER(L)		
11	LV43331-001A	FL HOLDER(R)		
12	VYSH101-009	SPACER		
13	LV30225-0M9A	SPACER	(x2)	
14	LV21460-001A	BUTTON(TOP)		
15	QYSDSF2608Z	SCREW	2.6mm x 8mm(x3)	
16	QYSDSF2612Z	TAP SCREW	M2.6 x 12mm(x2)	
17	LV43332-002A	BKT(H.PHONE)		
18	QYSDSF2608Z	SCREW	2.6mm x 8mm(x2)	
19	LV21447-002A	DOOR		
20	LV43326-001A	LED LENS		
21	LV34036-005A	DOOR LENS		
22	LV34037-001A	DOOR COVER		
23	LV30225-011A	SPACER		
24	QYSDSF2608Z	SCREW	2.6mm x 8mm(x3)	
25	LV41694-001A	DOOR BKT(L)		
26	LV41695-001A	DOOR BKT(R)		
27	QYSDSF2608Z	SCREW	2.6mm x 8mm	
28	QYSDSF2608Z	SCREW	2.6mm x 8mm	
29	LV43334-001A	DOOR SPRING		
30	QYSDSF2608Z	SCREW	2.6mm x 8mm	
31	E69897-002	CUSHION	(x2)	
32	LV40301-001A	FELT SPACER	(x2)	
33	LV34039-001A	VOLUME KNOB		
34	LV10770-002A	BOTTOM CHASSIS		
35	LV40301-002A	FELT SPACER	(x2)	
36	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm(x3)	
37	LV30225-0Q2A	SPACER		
38	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm(x4)	
39	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm(x3)	
40	LV41548-001A-NK	C.B BKT		
41	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm	
42	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm(x3)	
43	LV41548-001A-NK	C.B BKT		
44	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm	
45	LV43333-001A	BKT(DSP)		
46	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm	
47	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm	
48	LV43429-001A	STAY BKT		
49	QYSBSG3006Z	TAPPING SCREW	3mm x 6mm	
50	LV21450-018A	REAR PANEL		
51	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm(x3)	
52	QAU0278-003	TUNER		
53	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm(x2)	
54	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm	
55	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm(x2)	
56	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm	
57	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm	
58	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm	
59	QYSBST3006M	TAPPING SCREW	3mm x 6mm	
60	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm	
61	LV21449-002A/S	METAL COVER		
62	QYSBSGY3008M	SPECIAL SCREW	3mm x 8mm(x3)	
63	E406308-004	SPECIAL SCREW	(x4)	
64	QUQ412-1107CJ	FFC WIRE		
65	QUQ410-3115CJ	FFC WIRE		
66	QUQ410-2317CJ	FFC WIRE		
67	QUQ410-0712CJ	FFC WIRE		
68	QUQ610-0407BJ	FFC WIRE		
69	QUQM10-2124AJ	FFC WIRE		
70	QUQ412-0610CJ	FFC WIRE		
△ 71	QMF51W2-1R6-J8	FUSE	F 901 1.6A AC250V	
72	LV41843-002A	LASER CAUTION		
73	QYSBSE3008Z	SCREW	3mm x 8mm	

# Speaker assembly and parts list

## (Subwoofer)

Block No. M 2 M M M



## Speaker (Subwoofer)

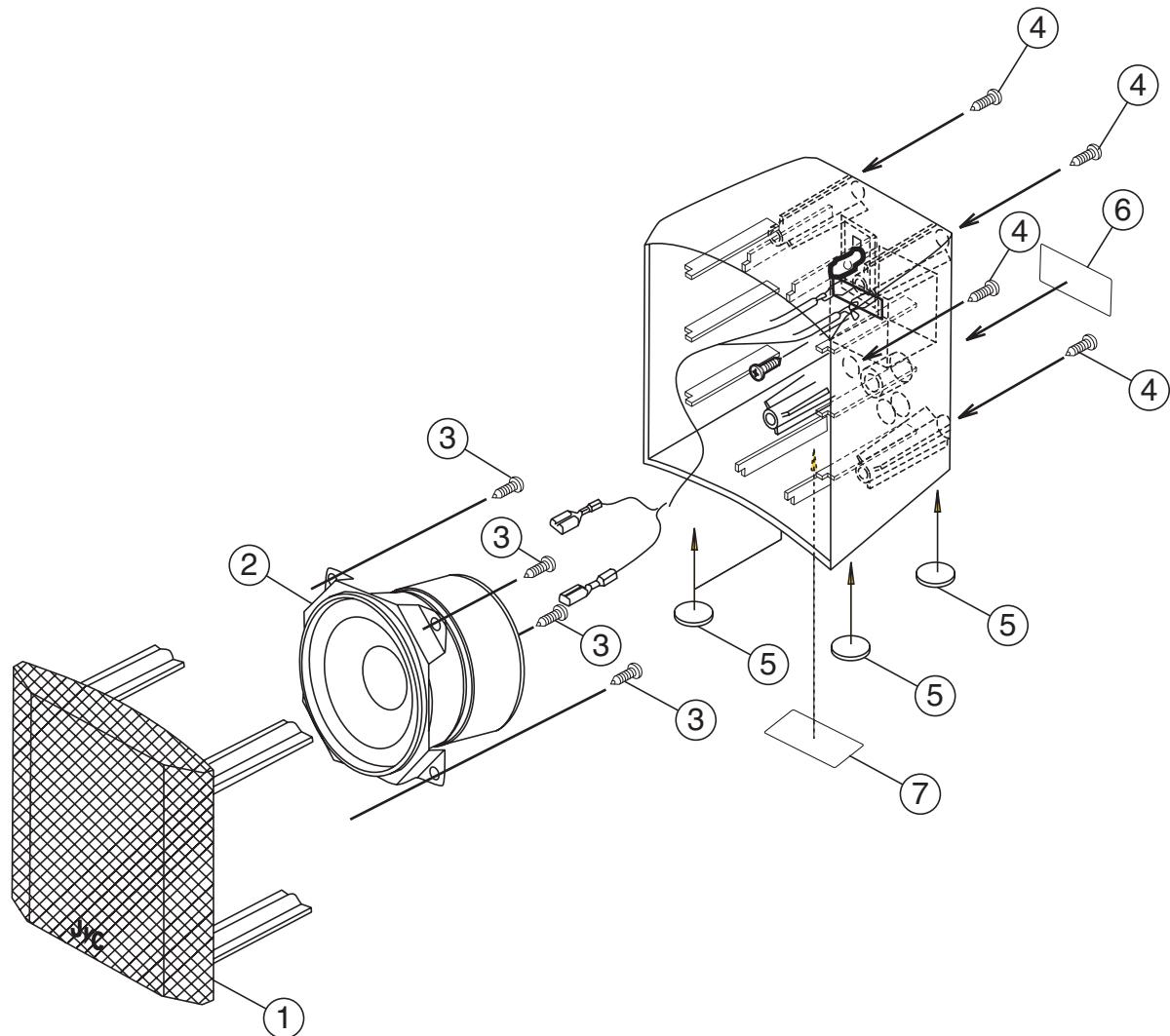
Block No. [M][2][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
△ 1	LV10784-010A	REAR CHASSIS		
2	QYSBSF4010Z	TAP SCREW	M4 x 10mm(x6)	
△ 3	QQT0417-002	POWER TRANSF		
4	LV31723-001A	TRANS BRACKET		
5	E406309-002	SPACER	(x4)	
6	QYSDSTL4010E	TAP SCREW	M4 x 10mm(x4)	
△ 7	QMF51W2-3R15-J8	FUSE	F 101 3.15A	
8	LV42032-001A	AC BRACKET	AC250V	
△ 9	QMFZ051-8R0-J8	FUSE	F 153 F 154 8A(x2)	
10	QYSBSF3010Z	TAP SCREW	3mm x 10mm(x2)	
△ 11	QHS3771-108	CORD STOPPER		
△ 12	QMPK210-205-JN	POWER CORD(EU)	2.05m BLACK	THM4 5E,TH M45E N
△ 12	QMPN150-200-JC	POWER CORD		THM4 5B
13	QYSBSF3010Z	TAP SCREW	3mm x 10mm(x5)	
14	QYSBSG3008E	TAPPING SCREW	3mm x 8mm(x6)	
15	QYSBSG3008E	TAPPING SCREW	3mm x 8mm(x4)	
△ 16	LV21474-001A	HEAT SINK		
17	LV30225-078A	SPACER		
18	LV30225-0N4A	SPACER		
19	LV30225-0N5A	SPACER		
20	LV30225-0N6A	SPACER		
21	LV30225-0N7A	SPACER	(x6)	
22	LV30225-0N7A	SPACER	(x2)	
23	LV21475-013A	REAR PANEL		
24	QYSDSF3012M	TAP SCREW	M3 x 12mm(x8)	
25	QYSBSGY3008E	SPECIAL SCREW	3mm x 8mm(x12)	
26	QYSBSP3006M	SCREW	M3 x 6mm	
27	LV10785-002A	H.S.COVER		
28	LV34201-011A	RATING LABEL		
29	QYSPSPD3008Z	SCREW	3mm x 8mm(x2)	
30	LV34197-003A	IC BRACKET	(x2)	
31	5600006901	RUBBER FOOT	(x4)	
32	9916011101	BAFFLE ASSY		
33	2910008601	PACKING		
34	7005942002	SCREW	(x4)	
35	CR16006601	SPEAKER		
36	7001542506	SCREW	(x9)	

# Speaker assembly and parts list

Block No. [M] [6] [M] [M]

(Front speaker, Center speaker, Surround speaker)



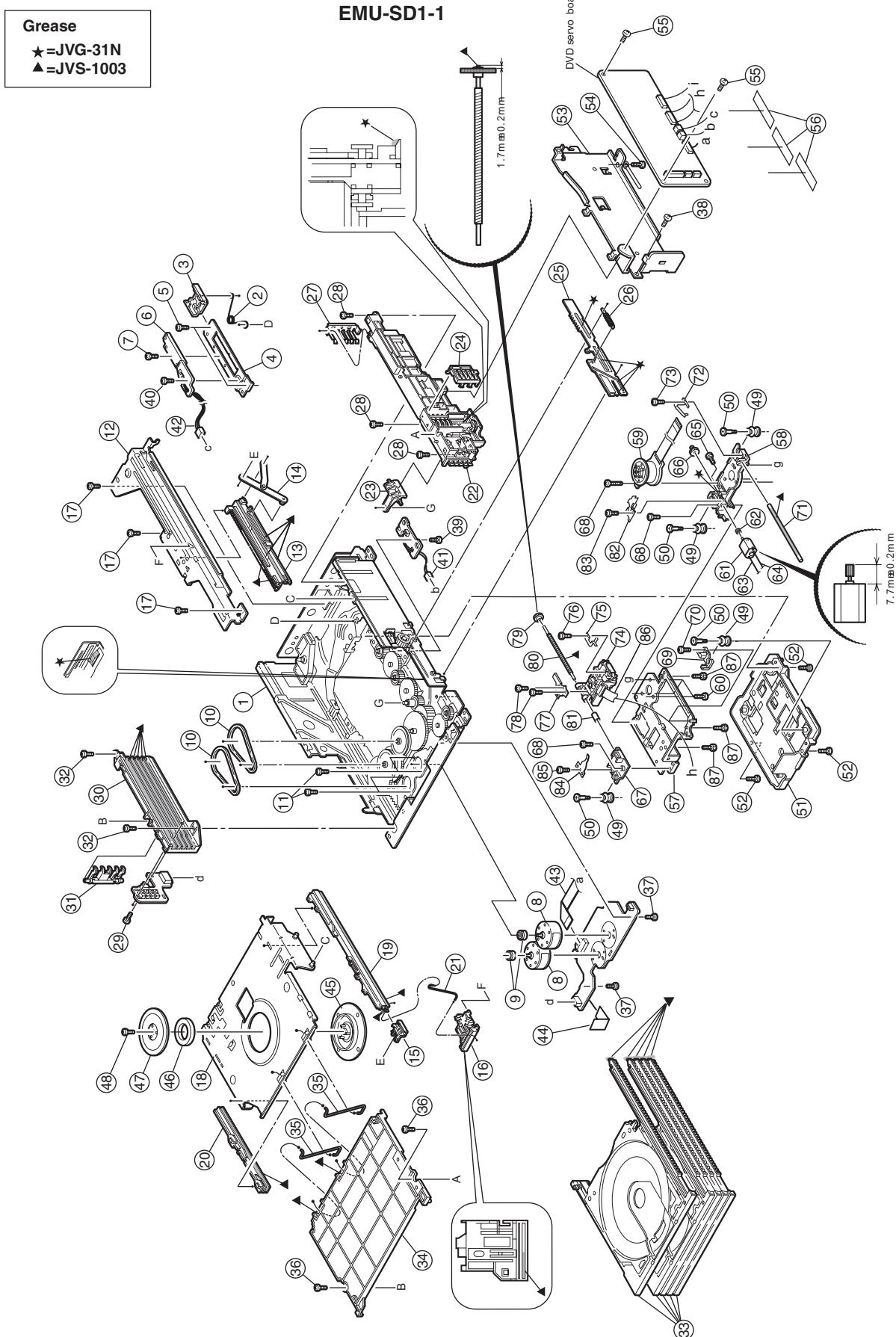
## Speaker (Front speaker, Center speaker, Surround speaker)

Block No. [M][6][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	9907701001	NET ASSY	(x5)	
2	KK07701001	SPEAKER(FRONT/ CENTRE)	(x3)	
2	KK07701101	SPEAKER(SURROU ND)	(x2)	
3	7001040801	SCREW	(x20)	
4	7001741201	SCREW	(x20)	
5	9000005361	FOOT	(x20)	
6	6000197701	LABEL(FRONT)	(x2)	
6	6000197501	LABEL(CENTRE)		
6	6000197601	LABEL(SURROUND)	(x2)	
7	6000196301	RATING		
7	6000197801	LABEL(FRONT)	(x2)	
7	6000197901	RATING		
		LABEL(CENTRE)		
		RATING		
		LABEL(SURROUND)	(x2)	

# DVD changer mechanism assembly and parts list

Block No. M K M M



# DVD changer mechanism

Block No. [M][K][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
1	LV10743-003A	CHASSIS ASSY		
2	LV43278-001A	SENSOR SPRING		
3	LV33961-001A	SENSOR SLIDER		
4	LV33962-001A	SENSOR BRACKET		
5	QYSDST2605Z	SCREW	2.6mm x 5mm(x2)	
6	QVY0027-B14	S V RESISTOR		
7	QYSDST2004Z	SCREW	2mm x 4mm	
8	QAR0164-001	MOTOR	(x2)	
9	LV42340-001A	MOTOR PULLEY	(x2)	
10	LV41431-001A	BELT	(x2)	
11	QYSPSPU1725N	SCREW	1.7mm x 2.5mm(x4)	
12	LV10744-002A	RACK HOLDER		
13	LV21406-002A	LOADING RACK		
14	LV43279-001A	LIFT ARM ASSY		
15	LV33963-001A	HOOK		
16	LV33964-001A	HOOK STOPPER		
17	QYSDST2605Z	SCREW	2.6mm x 5mm(x3)	
18	LV33965-005A	LIFTER ASSY		
19	LV21408-002A	RAIL(R)		
20	LV21409-002A	RAIL(L)		
21	LV43285-001A	ROD (L)		
22	LV21520-002A	SIDE(R) ASSY		
23	LV33974-001A	SELECT LEVER		
24	LV33975-001A	GEAR COVER		
25	LV33976-001A	ELEVATOR CAM		
26	LV43287-001A	ELEVATOR SPRING		
27	LV33977-002A	CLICK SPRING		
28	QYSDST2605Z	SCREW	2.6mm x 5mm(x3)	
29	QYSDSF2608Z	SCREW	2.6mm x 8mm	
30	LV10749-001A	SIDE(L)		
31	LV33980-001A	OPEN DET.LEVER		
32	QYSDST2605Z	SCREW	2.6mm x 5mm(x2)	
33	LV10746-002A	TRAY ASSY	(x5)	
34	LV10750-002A	TOP COVER		
35	LV43289-001A	ROD	(x2)	
36	QYSDSF2608Z	SCREW	2.6mm x 8mm(x2)	
37	QYSDST2605Z	SCREW	2.6mm x 5mm(x2)	
38	QYSDSF2608Z	SCREW	2.6mm x 8mm	
39	QYSDST2605Z	SCREW	2.6mm x 5mm	
40	QYSDST2004Z	SCREW	2mm x 4mm	
41	WJM0330-001A	E-SI C WIRE C-F		
42	WJM0331-001A	E-SI C WIRE C-F		
43	QUQ110-1521BF	FFC WIRE		
44	VYSA1R4-056	SPACER		
45	LV32417-001A	CLAMPER		
46	LV42930-003A	P.C.MAGNET		
47	LV33992-001A	DVD YOKE		
48	LV41741-001A	SPECIAL SCREW		
49	LV41659-002A	INSULATOR	(x4)	
50	LV43245-001A	SPECIAL SCREW	(x4)	
51	LV10753-001A	DVD TM BASE		
52	QYSDST2605Z	SCREW	2.6mm x 5mm(x3)	
53	LV21414-001A	DVD MOD BKT.		
54	QYSDST2605Z	SCREW	2.6mm x 5mm	
55	QYSDST2605Z	SCREW	2.6mm x 5mm(x2)	
56	VYSA1R4-057	SPACER	(x3)	
57	LV10751-001A	TM CHASSIS		
58	LV10752-001A	SF MOTOR BASE		
59	QAR0270-001	SPINDLE MOTOR		
60	LV43461-001A	SPECIAL SCREW	(x3)	
61	QAR0251-002	MOTOR		
62	VKS5557-001	F.M. GEAR		
63	QUB549-08A1A1	SIN TWIST WIRE		
64	QUB544-08A1A1	SIN TWIST WIRE		
65	QYSPSP2030M	SCREW	M2 x 3mm	
66	LV33985-001A	MIDDLE GEAR		
67	LV33989-001A	S.SHAFT HOLDER		
68	QYSDST2008Z	TAP SCREW	M2 x 8mm(x3)	
69	LV33990-001A	G.SHAFT HOLDER		
70	QYSDST2008Z	TAP SCREW	M2 x 8mm	
71	LV43291-002A	GUIDE SHAFT		
72	LV33991-001A	ADJUST SPRING		
73	QYSPST2008Z	TAP SCREW	M2 x 8mm	

△ Symbol No.	Part No.	Part Name	Description	Local
74	QAL0478-001	PICK UP		
75	LV33983-001A	PS SPRING		
76	QYSPSFT1730Z	TAP SCREW	M1.7 x 3mm	
77	LV33984-001A	RACK ARM		
78	QYSPSFT1730Z	TAP SCREW	M1.7 x 3mm(x2)	
79	LV33986-001A	S.SHAFT GEAR		
80	LV43293-001A	SCREW SHAFT		
81	LV43290-001A	S.SHAFT COLLOR		
82	LV33987-001A	GEAR HOLDER		
83	QYSPSFT2040Z	TAP SCREW	M2 x 4mm	
84	LV33988-001A	SS ADJ SPRING		
85	QYSDST2008Z	TAP SCREW	M2 x 8mm	
86	LVB30013-001A	FPC		
87	LV43292-002A	ADJUST SCREW	(x3)	



















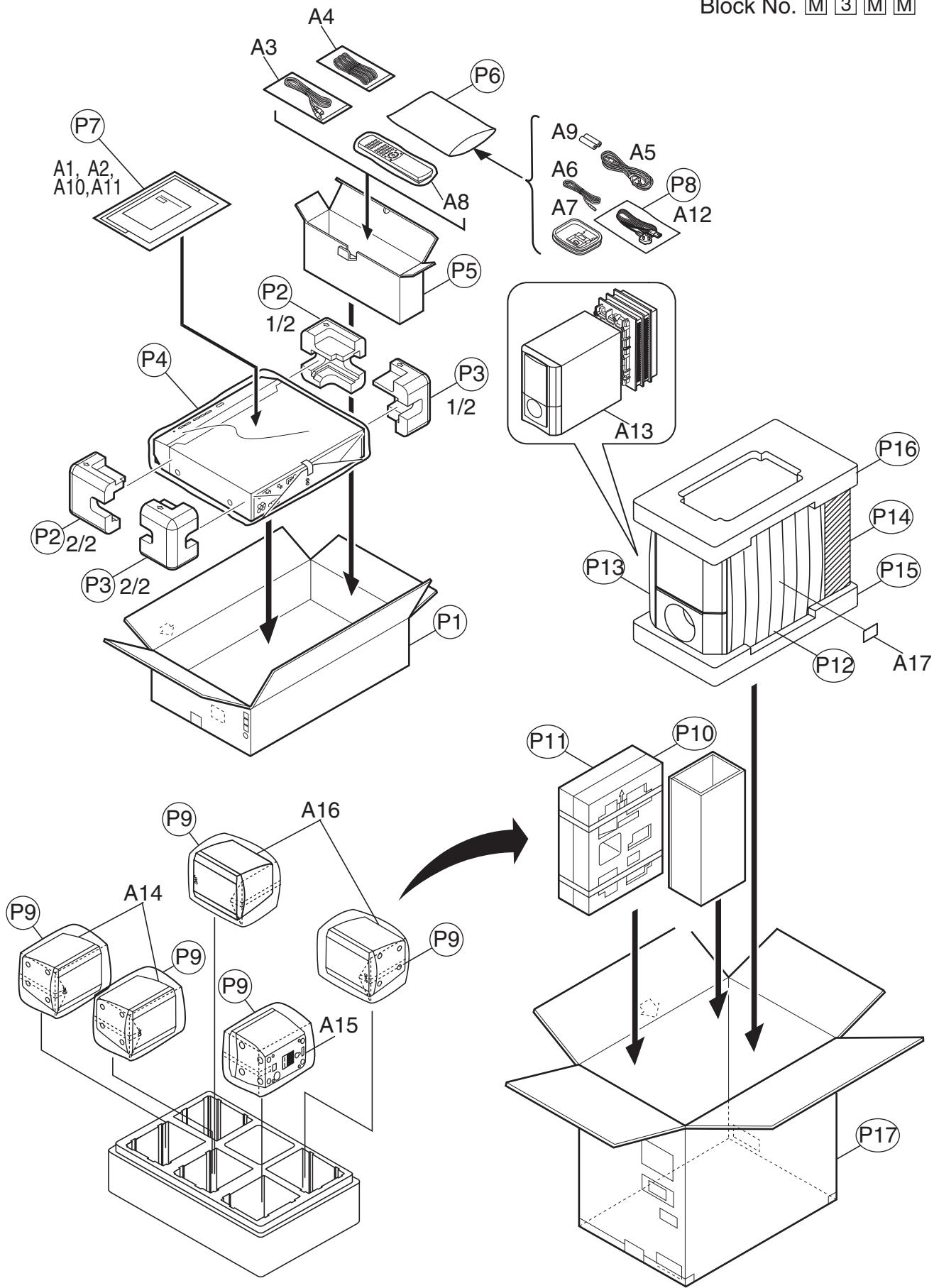




**< MEMO >**

# Packing materials and accessories parts list

Block No. M 3 M M



## Packing and accessories

Block No. [M][3][M][M]

△ Symbol No.	Part No.	Part Name	Description	Local
A 1	LVT1024-003B	INST BOOK	ENG	THM45B
A 1	LVT1024-004B	INST BOOK	GER,FRE,DUT	THM45E
A 1	LVT1024-005B	INST BOOK	SWE,FIN,DAN	THM45EN
A 2	BT-54013-6	WARRANTY CARD		
A 3	QAM0381-001	SYSTEM CABLE		
A 4	LV43454-001A	SPK CORD ASSY		
△ A 5	QMPL060-183-JD	POWER CORD(EU)	1.83m BLACK	THM45E, THM45EN
A 6	QAL0457-001	ANT.WIRE		
A 7	QAL0014-001	AM LOOP ANT		
A 8	RM-STHM45R	REMOCON UNIT		
A 9	-----	BATTERY	(x2)	
A 10	VNA3000-204	REGISTER CARD		THM45B
A 11	LVT1024-006B	INST BOOK	GER FRE SPA ITA	THM45EN
△ A 12	QMPP060-183-JD	POWER CORD(EK)	1.83m BLACK	THM45B
A 13	SPPWM45E-SPBOX	SPEAKER BOX		THM45E
A 14	SPTHM45FE-SPBOX	SPEAKER BOX	(x2)	
A 15	SPTHM45CE-SPBOX	SPEAKER BOX		
A 16	SPTHM45SE-SPBOX	SPEAKER BOX	(x2)	
A 17	6000200621	LABEL		THM45B
A 17	6000200631	LABEL		THM45EN
A 17	6000200611	LABEL		THM45E
P 1	LV34043-001A	CARTON BOX		
P 2	LV21452-001A	CUSHION FRONT		
P 3	LV21453-001A	CUSHION REAR		
P 4	QPC06006015P	ENVELOPE	60cm x 60cm	
P 5	LV34231-002A	ACCESSORY BOX		
P 6	QPA02503503P	POLY BAG	25cm x 35cm	
P 7	QPA02503505P	POLY BAG	25cm x 35cm	THM45B, THM45E
P 7	QPA03004503P	POLY BAG	30cm x 45cm	THM45EN
P 8	QPA01503503	POLY BAG	15cm x 35cm	THM45B
P 9	8500048151	POLY BAG	(x5)	
P 10	8000051401	CUSHION		
P 11	8000051501	CUSHION		
P 12	8500051801	MIRROR MAT		
P 13	8500051901	POLY BAG		
P 14	8100117501	PARTITION		
P 15	8000053011	CUSHION(BTTM)		
P 16	8000053001	CUSHION(TOP)		
P 17	8300047731	INDI.CARTON		

# JVC

# SCHEMATIC DIAGRAMS

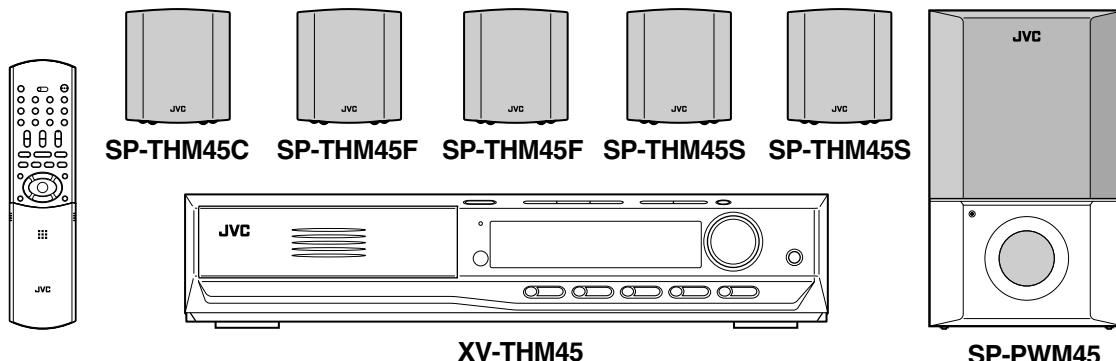
DVD DIGITAL CINEMA SYSTEM

## TH-M45

CD-ROM No.SML200311

Area suffix

B ----- U.K.  
E ----- Continental Europe  
EN ----- Northern Europe



### Contents

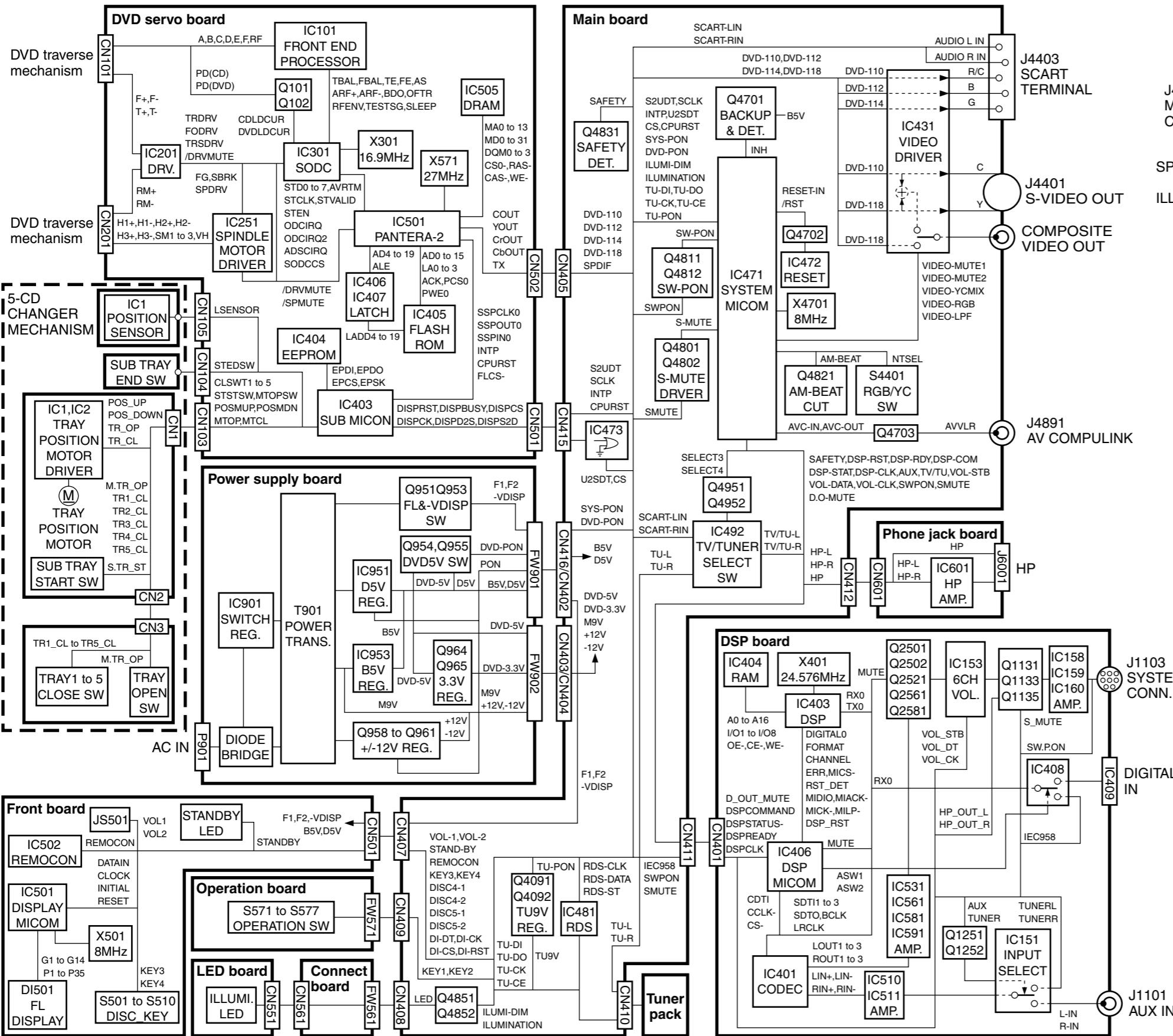
Block diagrams	2-1
Standard schematic diagrams	2-2
Printed circuit boards	2-14 to 19

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.

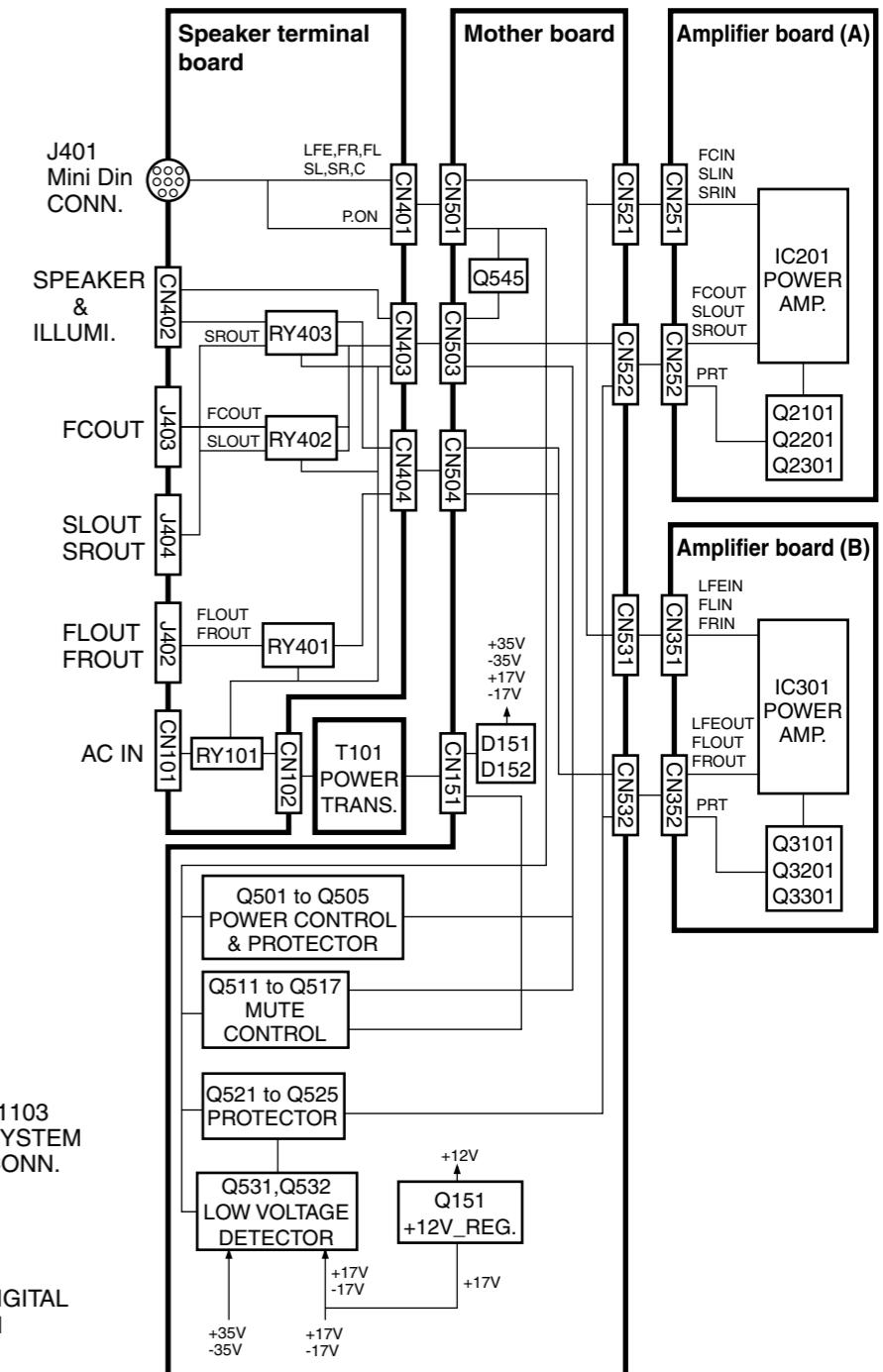
(This regulation does not correspond to J and C version.)

# Block diagrams

## <Main body section>



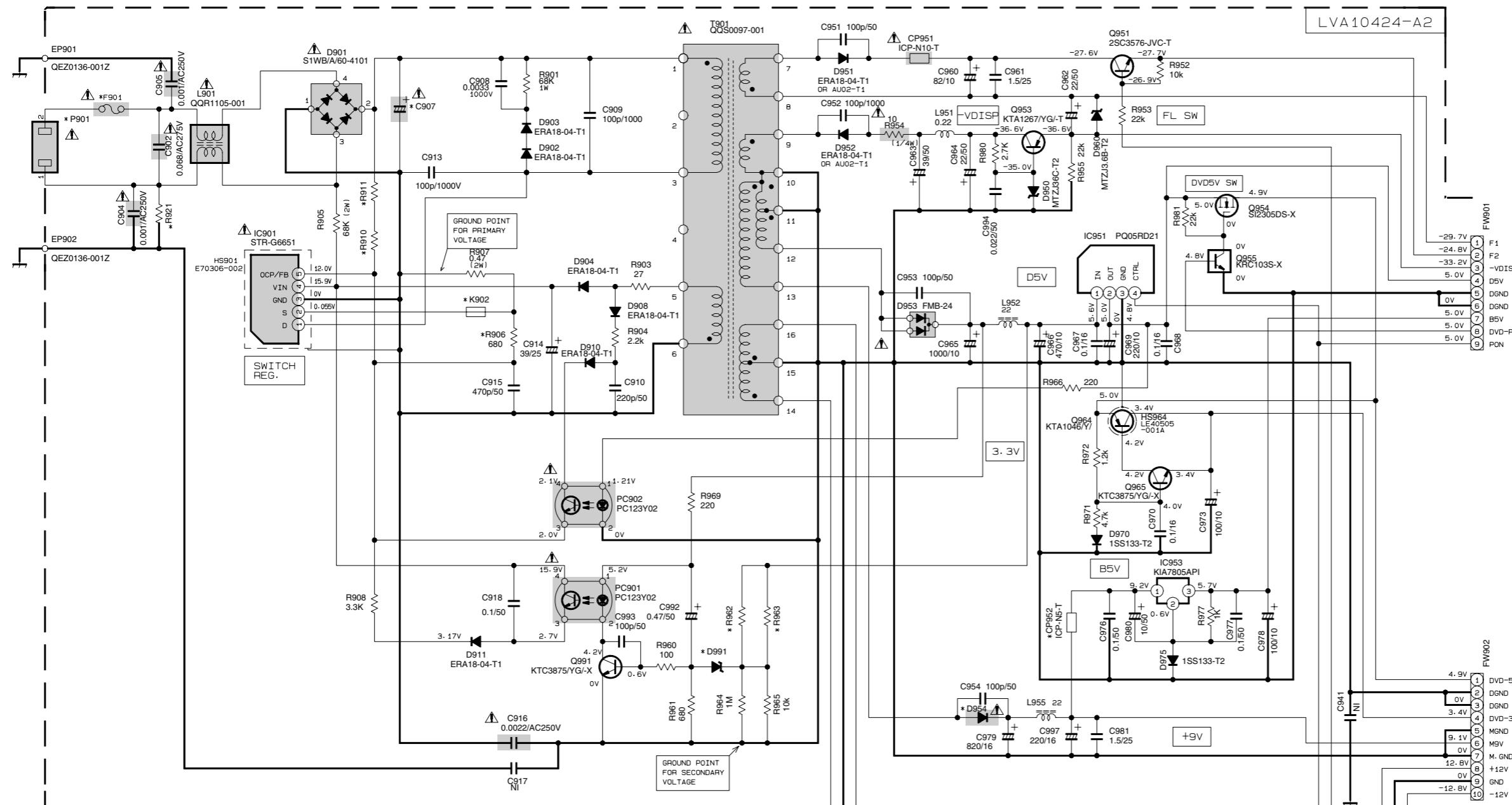
## <Subwoofer section>



# Standard schematic diagrams

<Main body section>

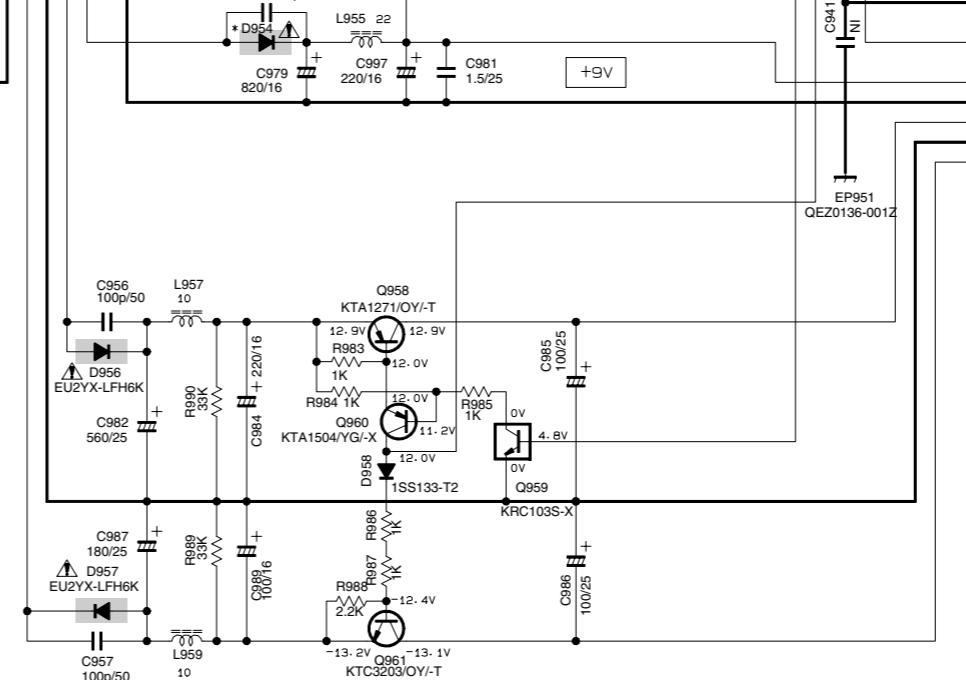
■ Power supply section



REF NO	Ver	ADDRESS	D	J/C	B/E/EN/EE/EV	U6/US/UW/UJ/UP/UF/A/UB/UY/UX/UT
*F901	(A-3)	GMF51U1-1R6-JB (1.6A/125V)	GMF51U1-1R6-JB (1.6A/125V)	GMF51U2-1R6-JB (1.6A/125V)	GMF51U2-1R6-JB (1.6A/125V)	
*R962	(E-7)	1M	1M	0 (B3099)	0 (B3099)	
*R963	(E-8)	100	100	NONE	NONE	
*D991	(F-7)	MTZJ5.1C-T2	MTZJ5.1C-T2	MTZJ5.1B-T2	MTZJ5.1B-T2	
*K902	(C-5)	QQR0779-001Z	QQR0779-001Z	0 (B3199)	0 (B3199)	
*R921	(B-3)	NONE	3.3M	NONE	NONE	
*P901	(B-2)	QNC00B1-001	QNC00B2-001	QNC00B1-001	QNC00B1-001	
*R910 *R911	(B-5)	750k	750k	470k	470k	
*CP952	(F-10)	0 (B3198)	0 (B3198)	ICP-N5-T	ICP-N5-T	

VERSION CODES	
J: U. S. A.	
C: CANADA	
E: GERMANY/FRANCE/HOLLAND	
B: GREAT BRITAIN	
EE: RUSSIA	
EN: SWEDEN/NORWAY/FINLAND/DENMARK	
EV: EAST EUROPE	
A: AUSTRALIA	
UW: BRAZIL/MEXICO/PERU	
US: SINGAPOLE	
UJ: USA MILITARY BASE	
UG: TURKEY/EGYPT/SOUTHAFRICA	

REF NO	Ver	ADDRESS	D	J/C	B/E/EN/EE/EV	U6/US/UW/UJ/UP/UF/A/UB/UY/UX/UT
*C907	(B-5)	QETM2DM-157 (150/200)	QETM2DM-157 (150/200)	QE20522-B26 (B2/400)	QE20374-B26 (B2/400)	QE20445-127 (120/400)
*D954	(F-9)	EU2YX-LFH6K	ERA18-04-T1	EU2YX-LFH6K	EU2YX-LFH6K	



TO CN401, CN402  
OF LVA10424-A1  
(SHEET 2/10)

TO CN403, CN404  
OF LVA10424-A1  
(SHEET 2/10)

FW901

F1  
F2  
-VDISP  
D5V  
DGND  
B5V  
DVD-PON  
PON

FW902

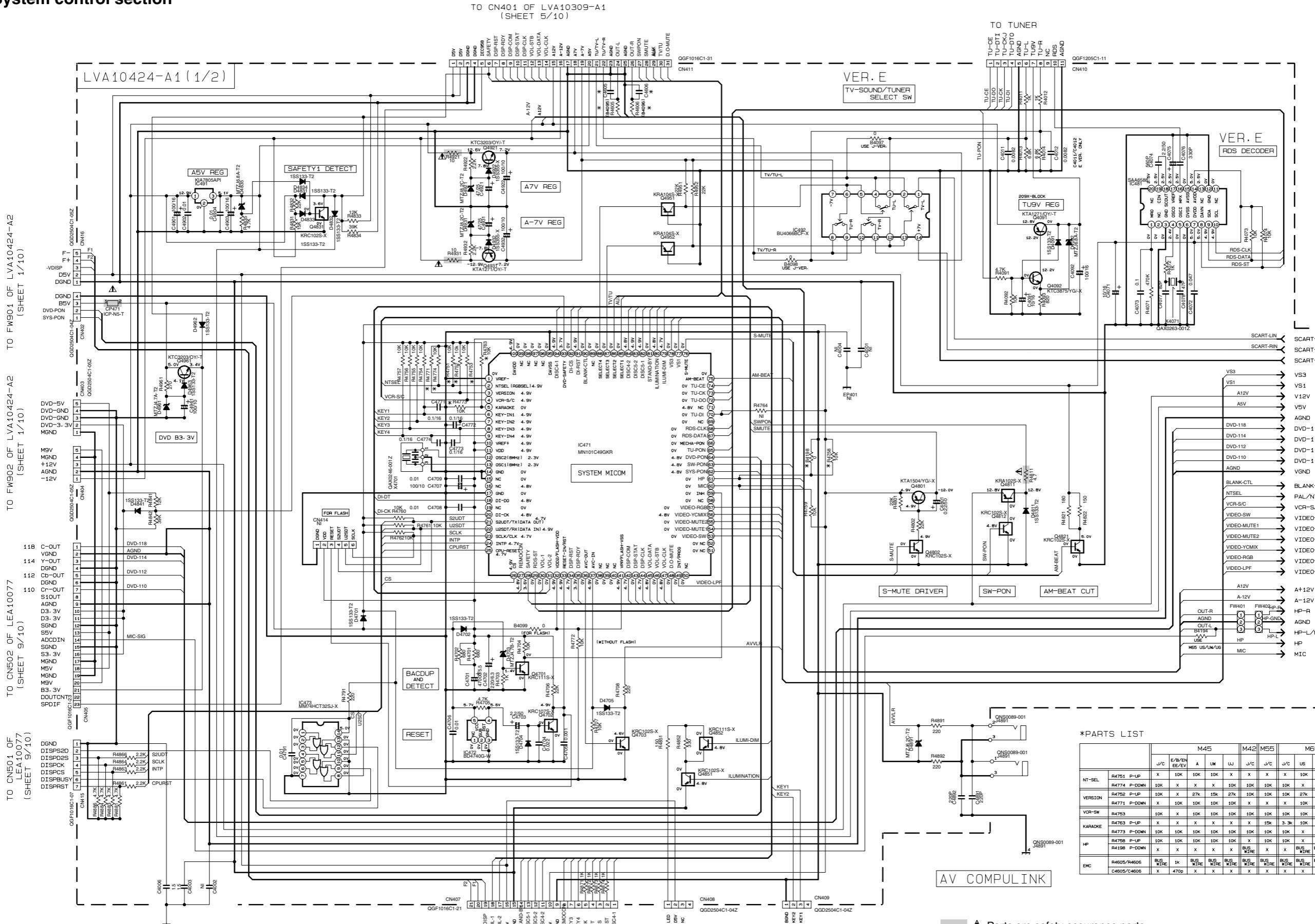
DVD-5V  
DGND  
DVD-3.3V  
M9V  
M. GND  
+12v  
GND  
-12v

TO CN401, CN402  
OF LVA10424-A1  
(SHEET 2/10)

TO CN403, CN404  
OF LVA10424-A1  
(SHEET 2/10)

▲ Parts are safety assurance parts.  
When replacing those parts make  
sure to use the specified one.

## ■ System control section



TO FW901 OF LVA10424-A2  
(SHEET 1/10)

TO CN502 OF LEA10077  
(SHEET 9/10)

TO FW902 OF LVA10424-A2  
(SHEET 1/10)

TO CN501 OF LEA10077  
(SHEET 9/10)

TO CN401 OF LVA10309-A1  
(SHEET 5/10)

TO CN501 OF LVA10425-A1  
(SHEET 4/10)

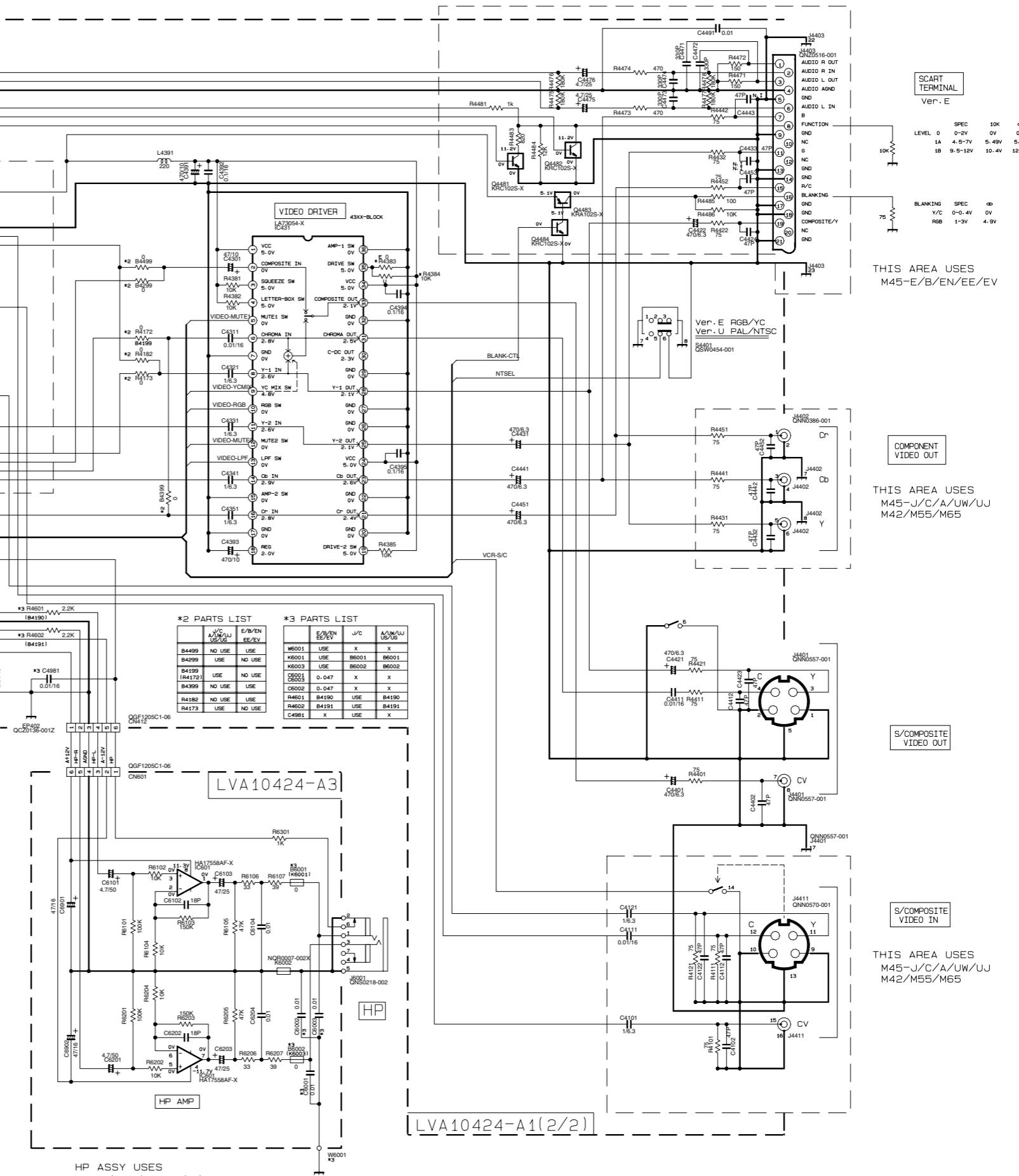
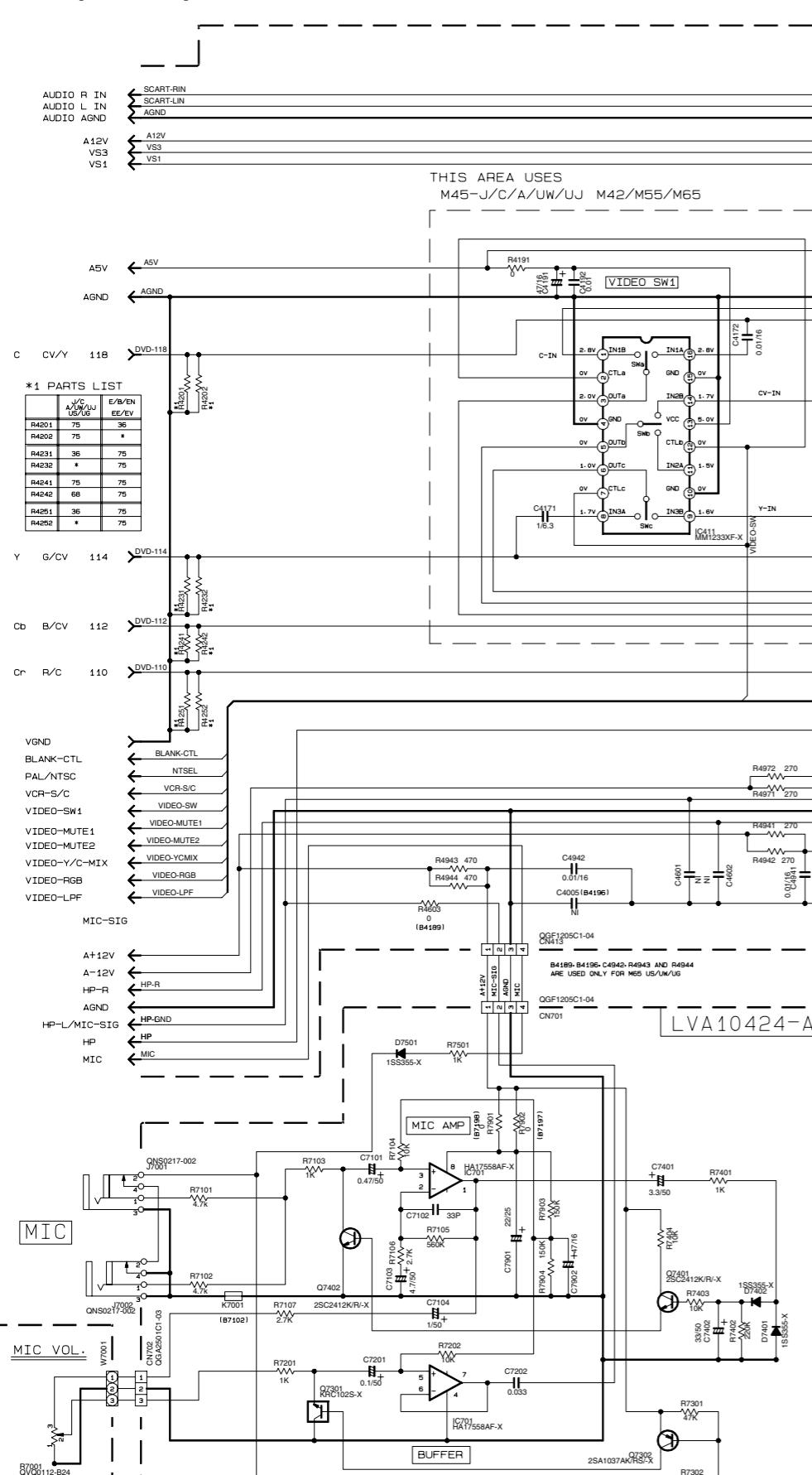
TO FW561 OF  
LVA10425-A3  
(SHEET 4/10)

TO FW571 OF  
LVA10425-A5  
(SHEET 4/10)

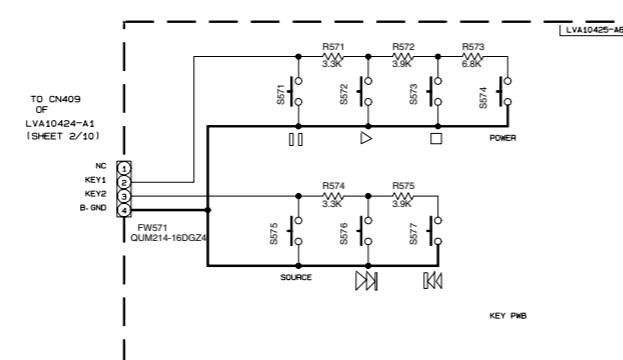
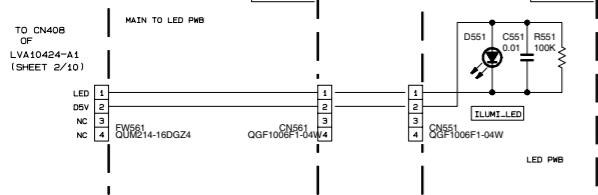
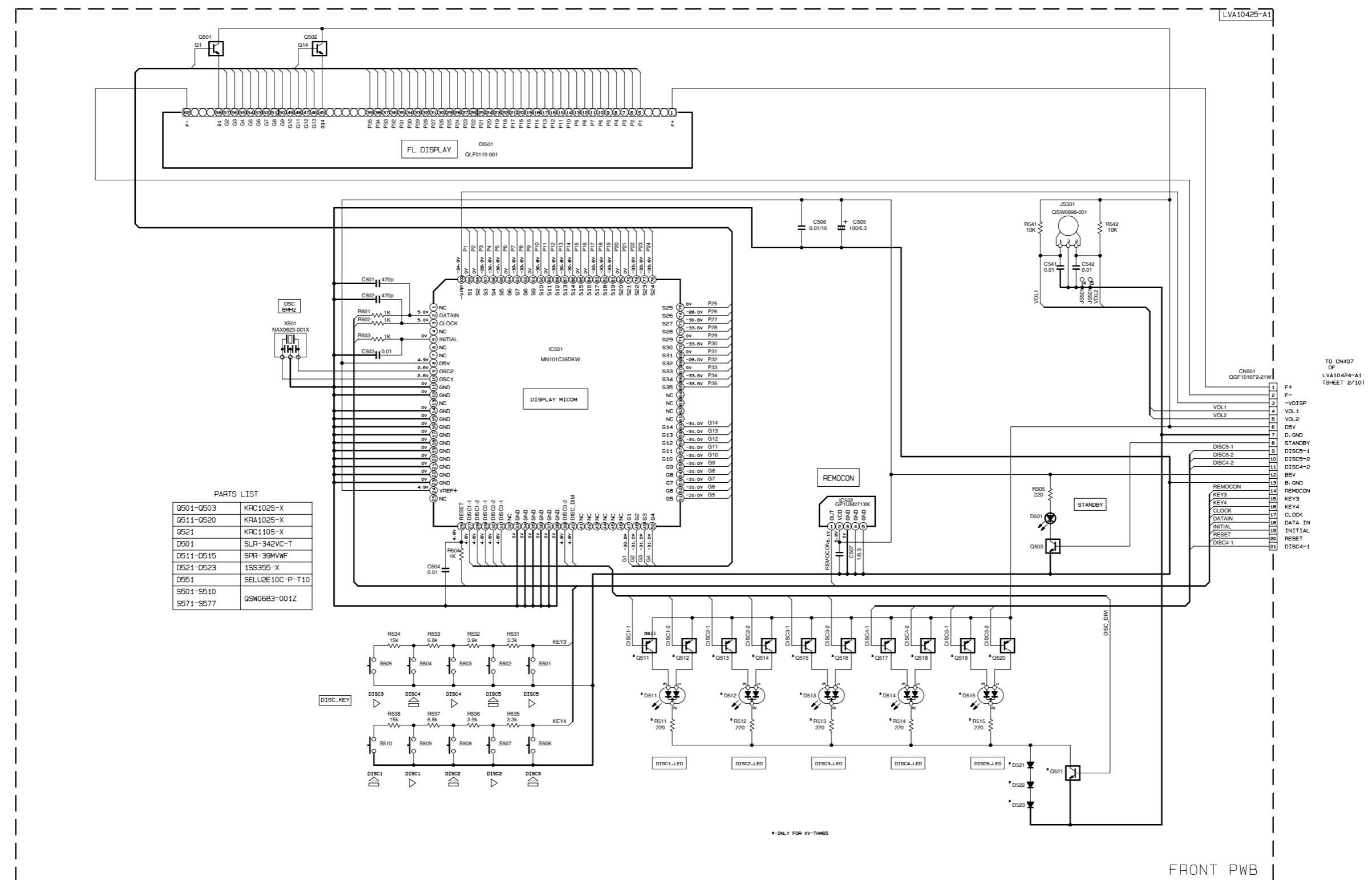
⚠ Parts are safety assurance parts.  
When replacing those parts make  
sure to use the specified one.

## ■ Video input / output section

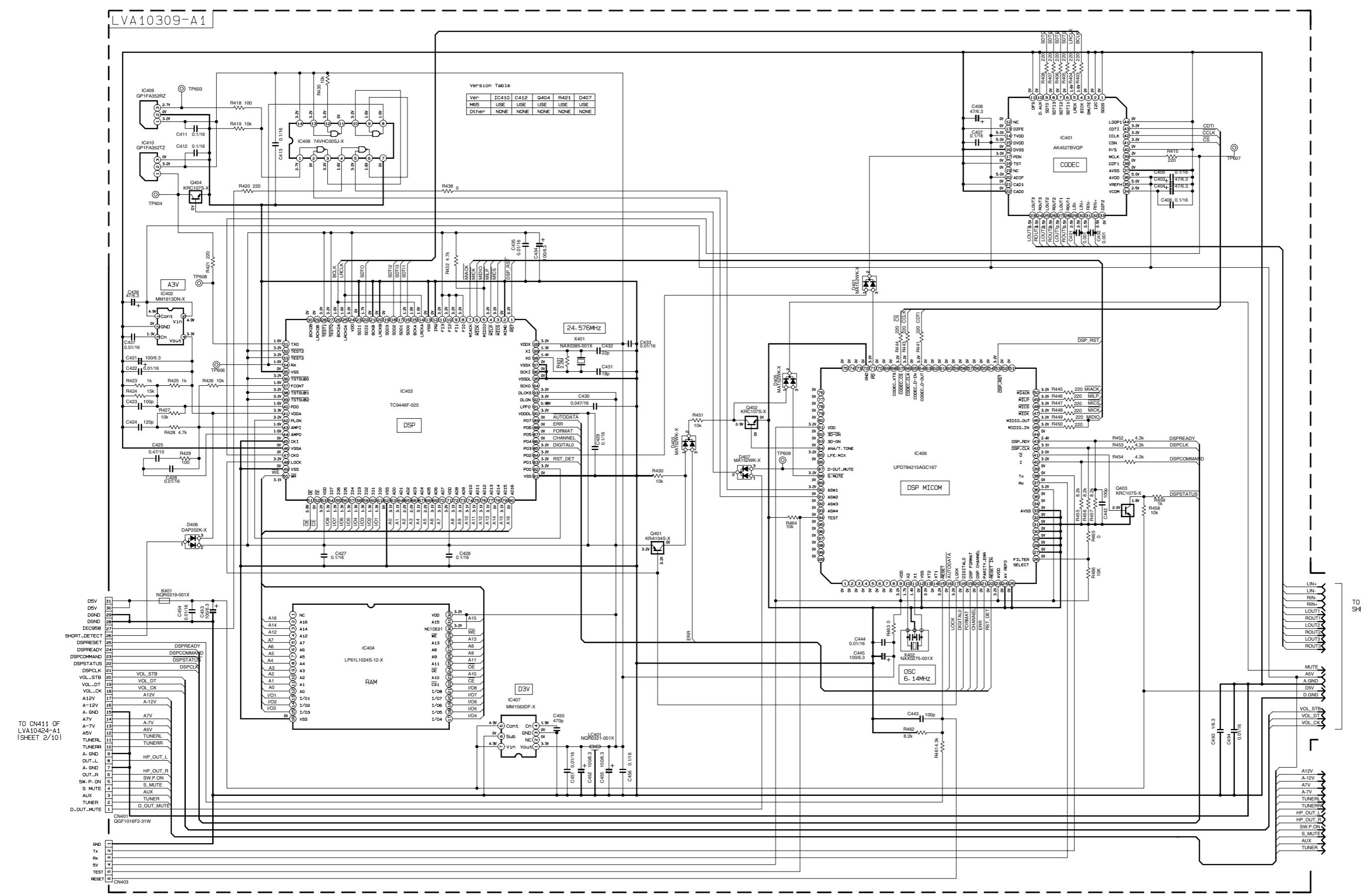
TO MICOM BLOCK (SHEET 2/10)



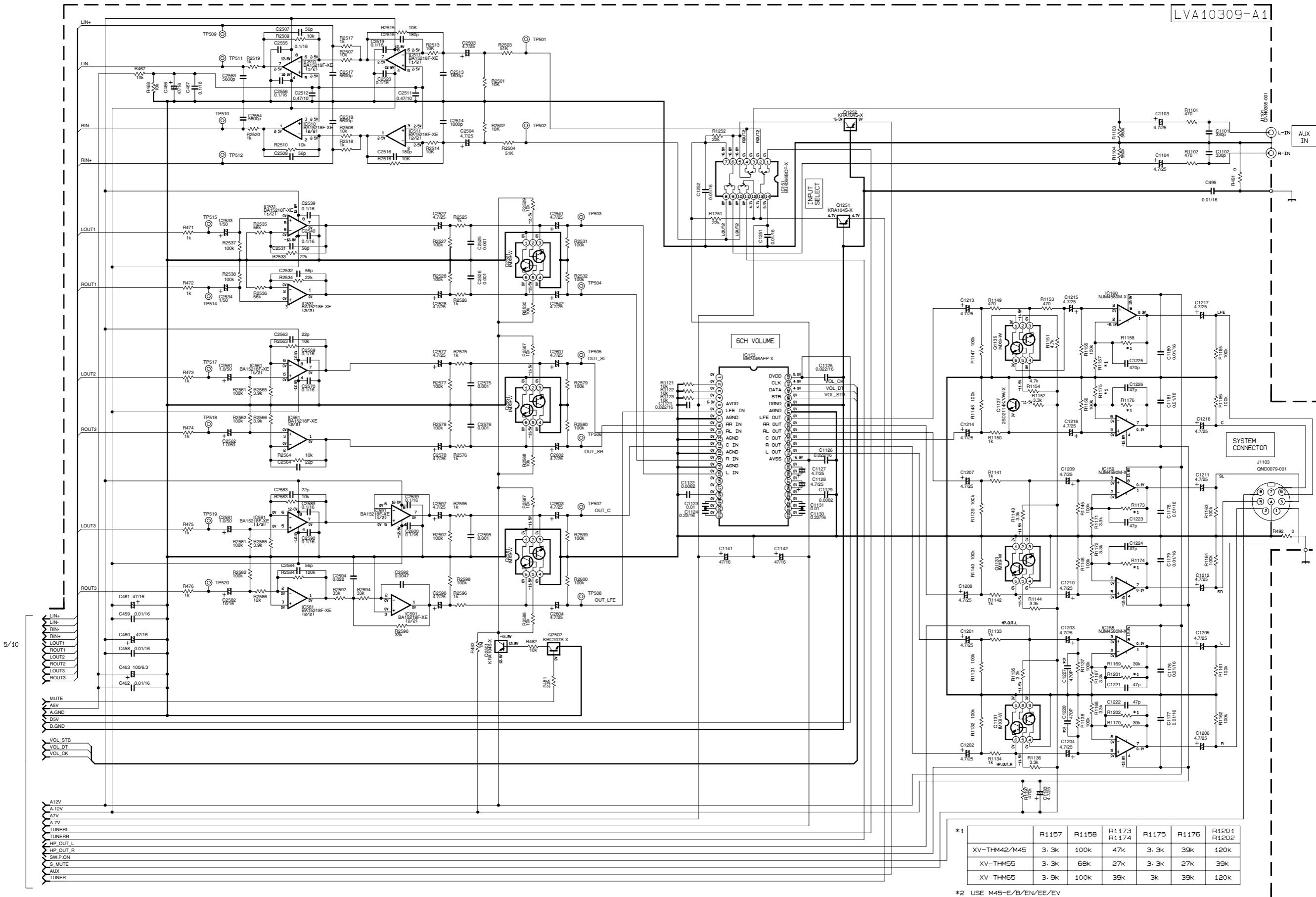
## ■ FL display section



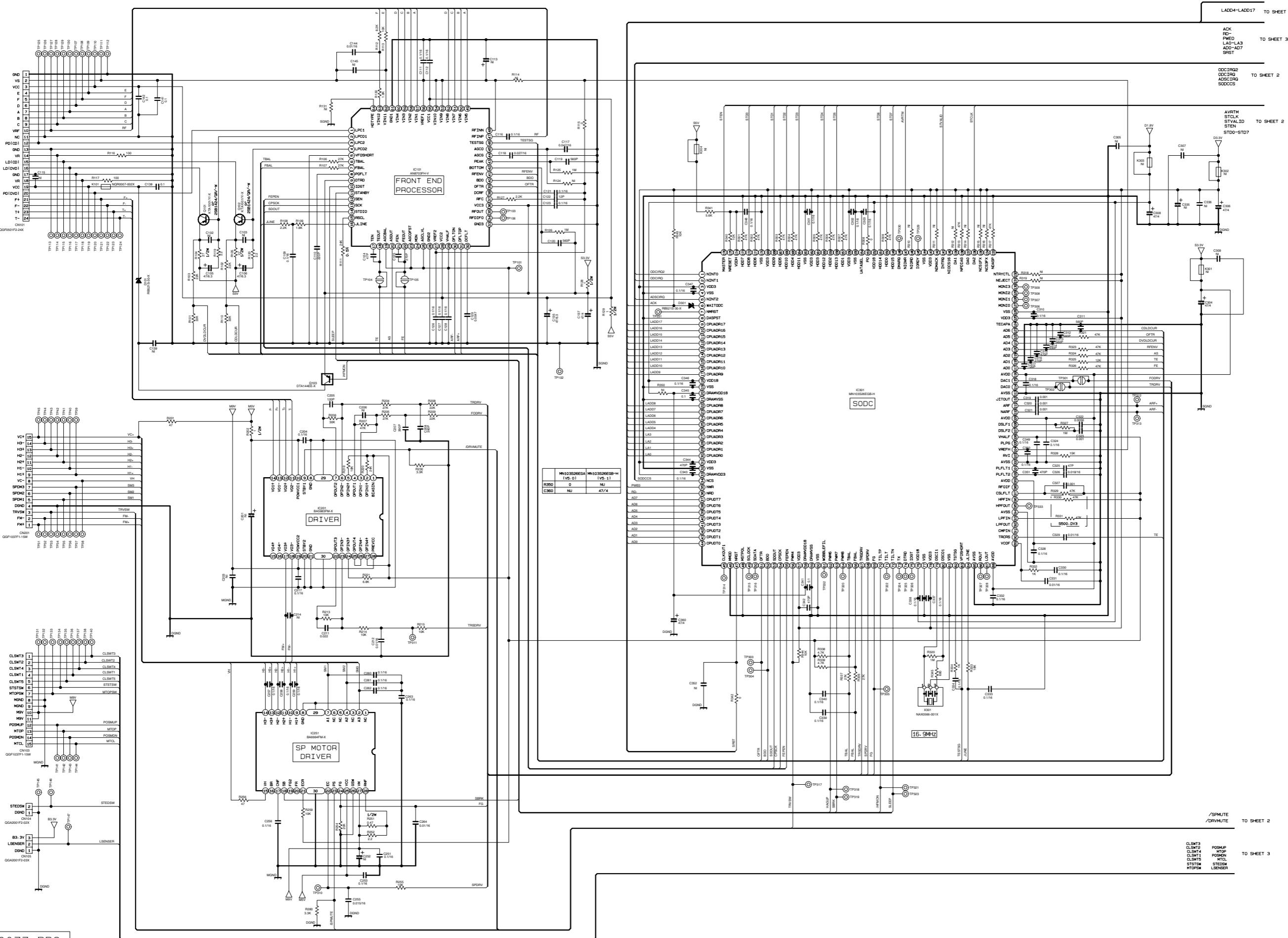
## DSP section



## ■ Audio input / output section



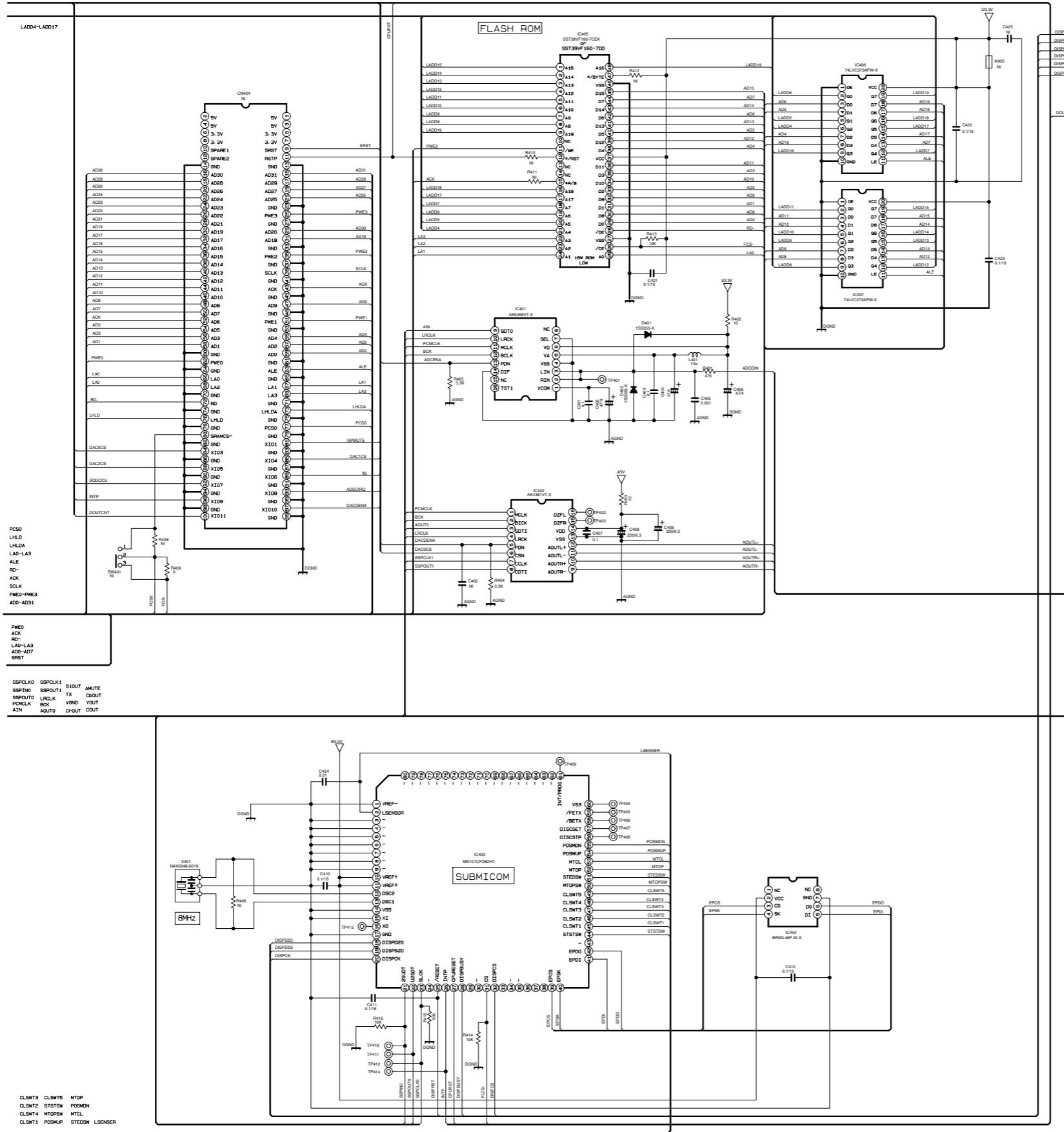
## DVD servo section 1/4





## DVD servo section 3/4

FROM SHEET 2  
 FLCs-  
 DAC0CS  
 DAC1CS  
 SRST  
 INTP  
 DOUTCNT  
 XE  
 DACDENA  
 SODCS  
 /SPMUTE



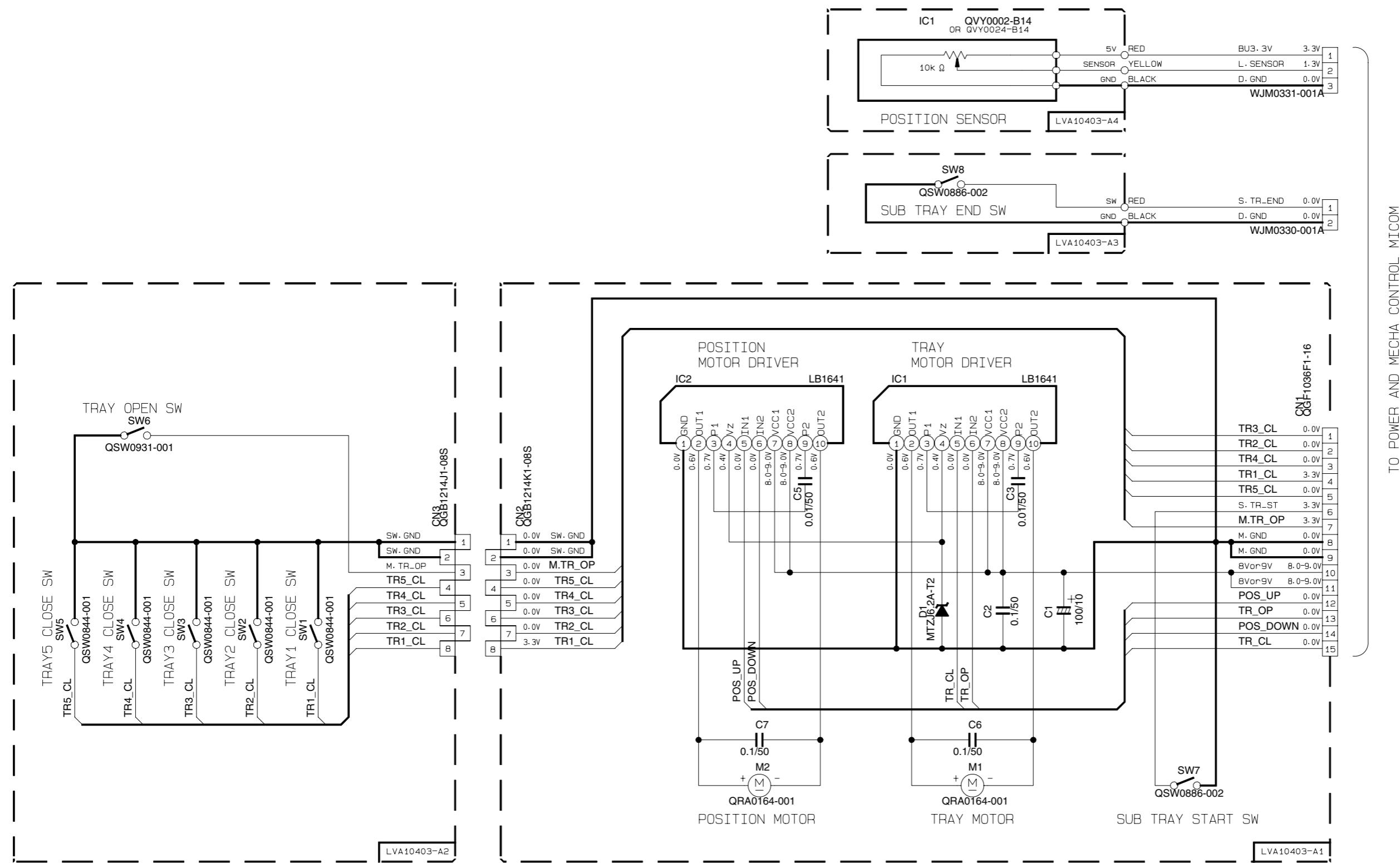
	EMU-SD1-1	EMU-SD1-11	EMU-S02-1	EMU-S02-11
IC402	NO INSERT	NO INSERT	INSERT	INSERT
C400	NO INSERT	NO INSERT	INSERT	INSERT
C407	NO INSERT	NO INSERT	INSERT	INSERT
C406	NO INSERT	NO INSERT	INSERT	INSERT
C409	NO INSERT	NO INSERT	INSERT	INSERT
R403	NO INSERT	NO INSERT	INSERT	INSERT
R404	NO INSERT	NO INSERT	INSERT	INSERT
R407	NO INSERT	NO INSERT	INSERT	INSERT
C418	NO INSERT	NO INSERT	INSERT	INSERT
CN503	NO INSERT	INSERT	NO INSERT	INSERT
IC401	NO INSERT	INSERT	NO INSERT	INSERT
C401	NO INSERT	INSERT	NO INSERT	INSERT
C402	NO INSERT	INSERT	NO INSERT	INSERT
C403	NO INSERT	INSERT	NO INSERT	INSERT
C404	NO INSERT	INSERT	NO INSERT	INSERT
C405	NO INSERT	INSERT	NO INSERT	INSERT
C406	NO INSERT	INSERT	NO INSERT	INSERT
R401	NO INSERT	INSERT	NO INSERT	INSERT
R402	NO INSERT	INSERT	NO INSERT	INSERT
L401	NO INSERT	INSERT	NO INSERT	INSERT
K554	NO INSERT	NO INSERT	INSERT	INSERT
K555	NO INSERT	NO INSERT	INSERT	INSERT

TO CN415 OF  
 LVA10424-A1  
 (SHEET 2/10)

TO CN406 OF  
 LVA10424-A1  
 (SHEET 2/10)



## ■ DVD mechanism control section

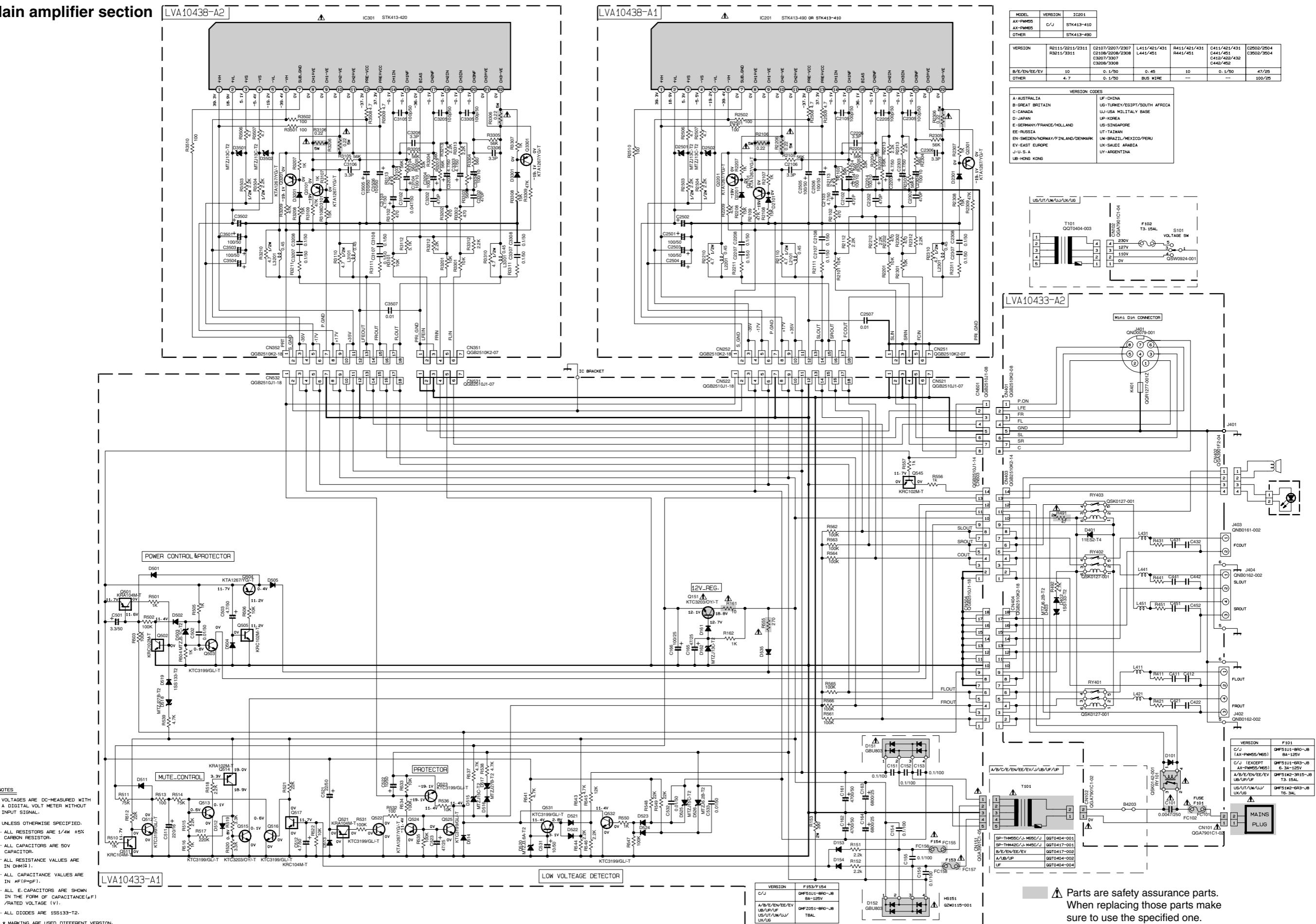


### NOTES

- VOLTAGES ARE DC-MEASURED WITH A DIGITAL VOLT METER.  
CONDITION:DISC1 STOP
- UNLESS OTHERWISE SPECIFIED.  
ALL CAPACITORS ARE SHOWN IN THE FORM OF CAPACITANCE ( $\mu$  F)/RATED VOLTAGE (V).

## <Subwoofer section>

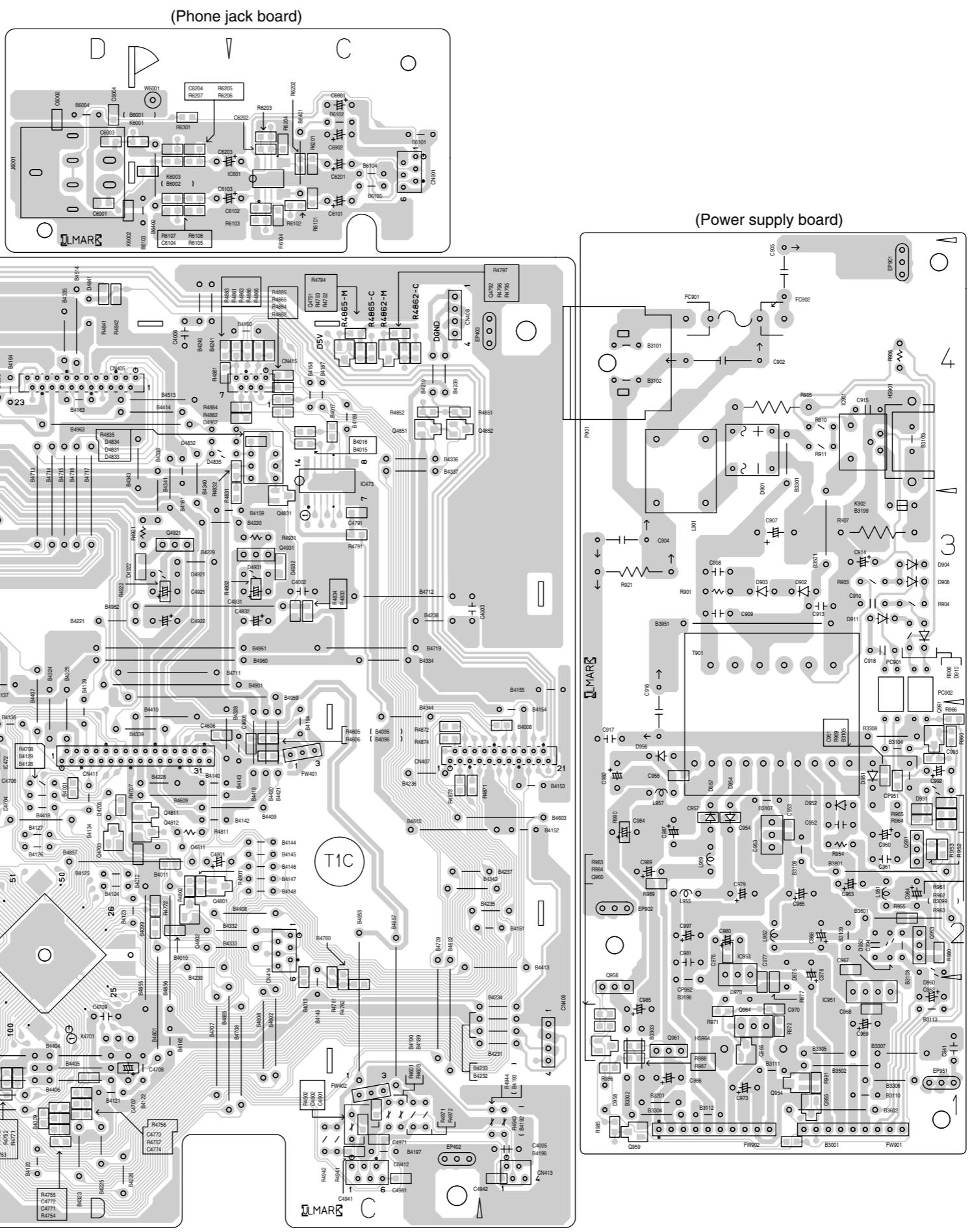
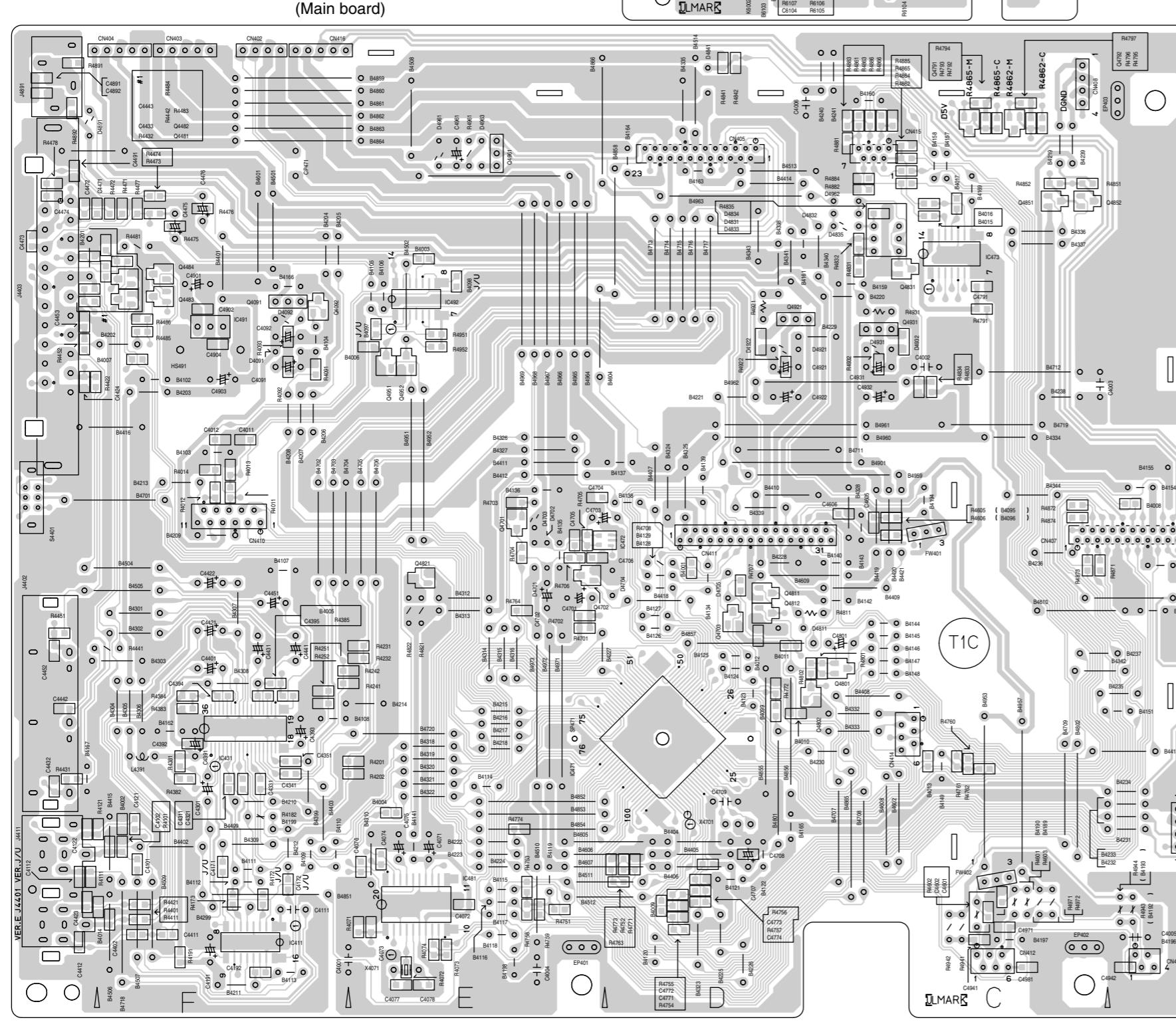
### ■ Main amplifier section



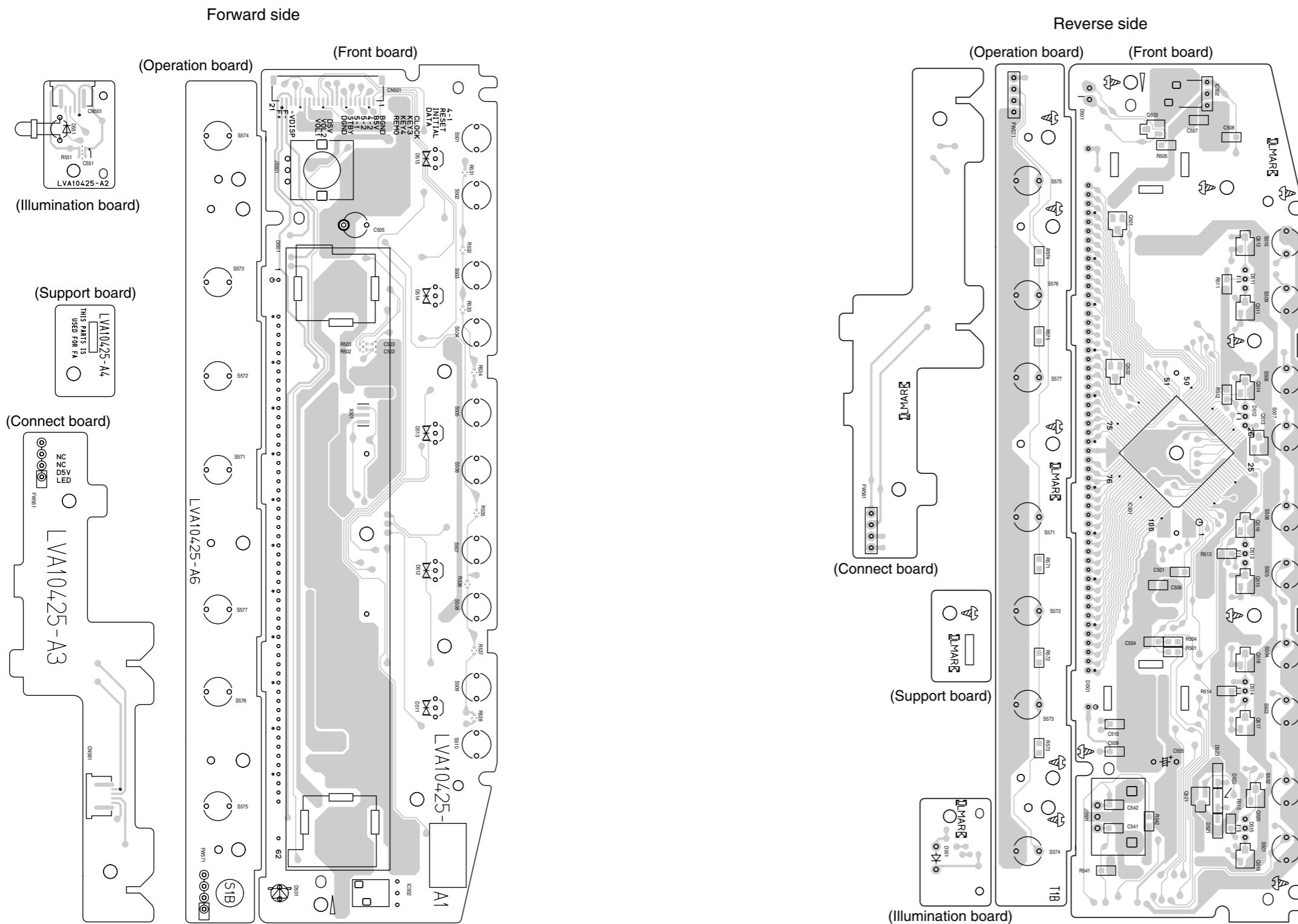
# Printed circuit boards

## <Main body section>

### ■ Main board

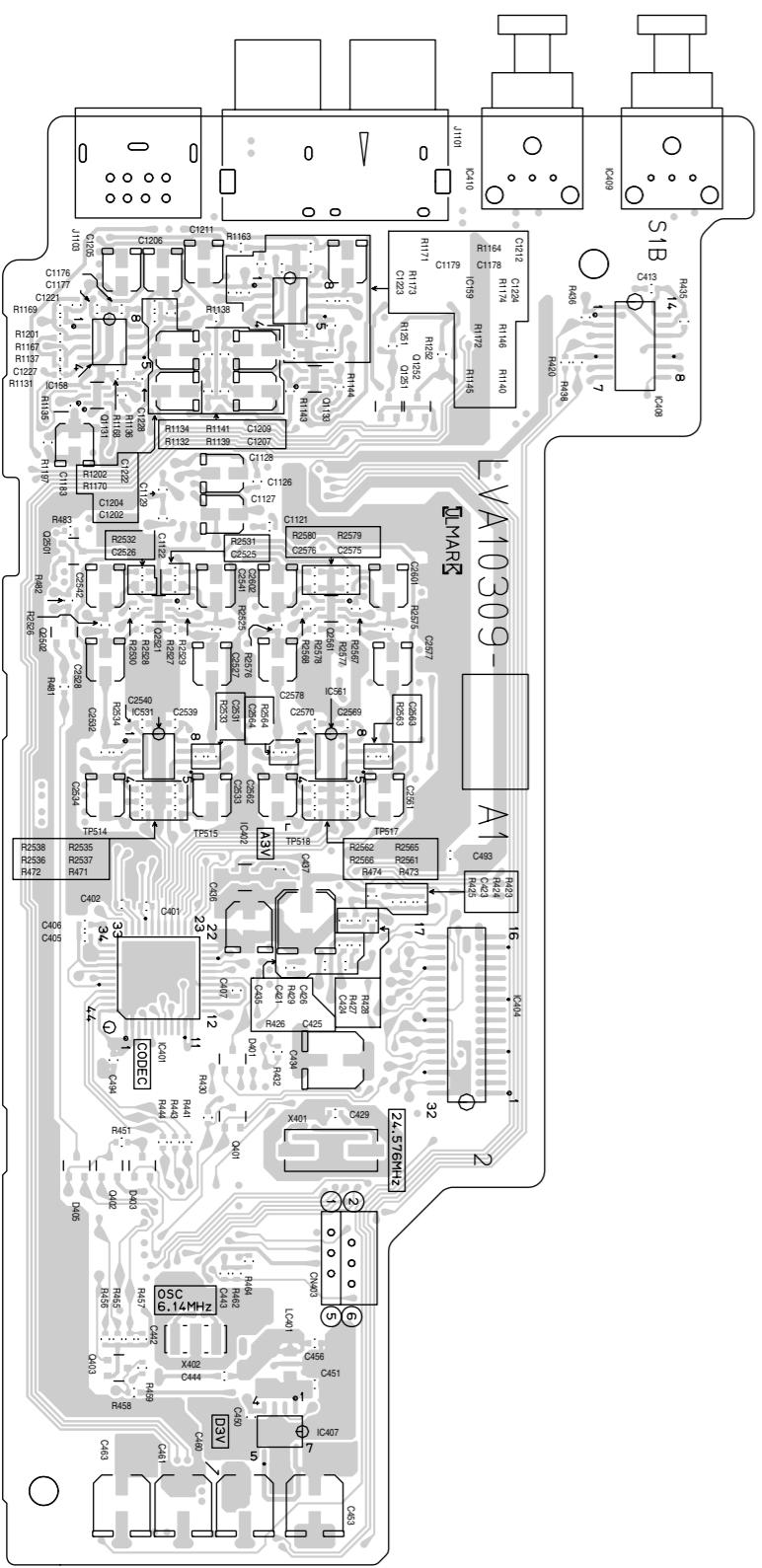


## ■ Front board

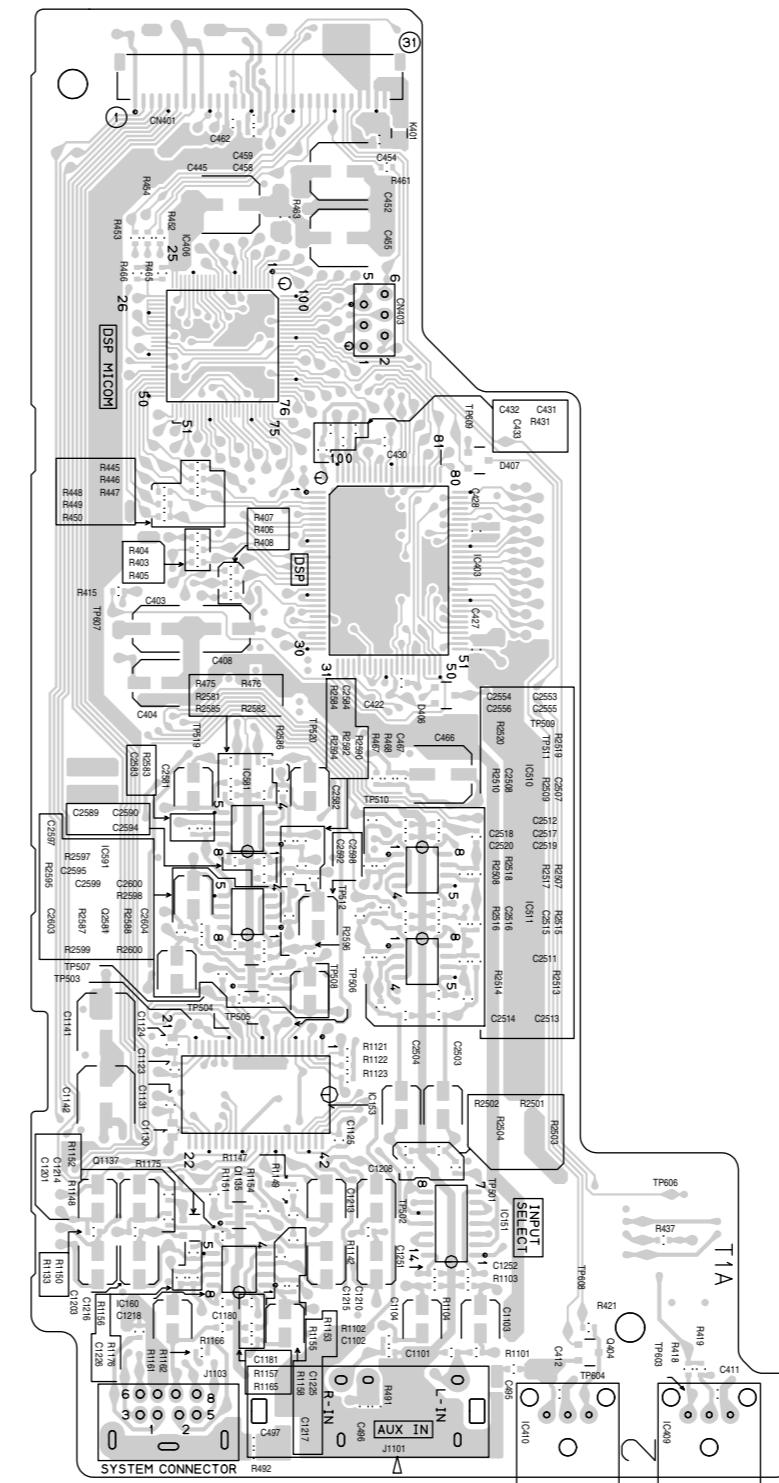


## ■ DSP board

Forward side

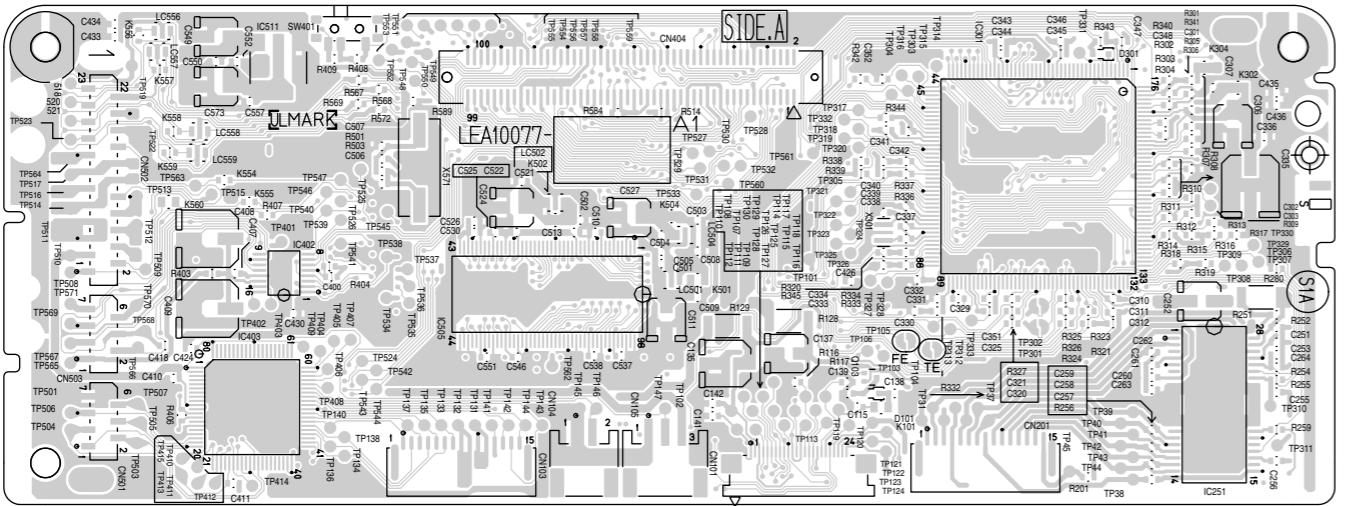


Reverse side



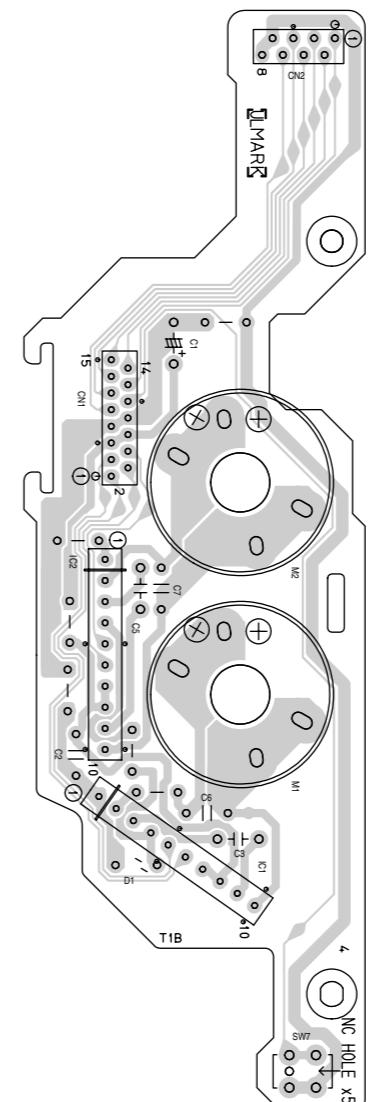
## ■ DVD servo board

Forward side

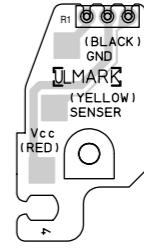


## ■ DVD loading board

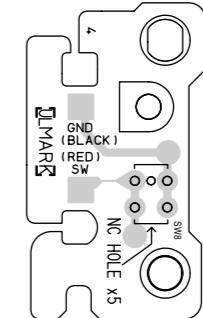
(Motor board)



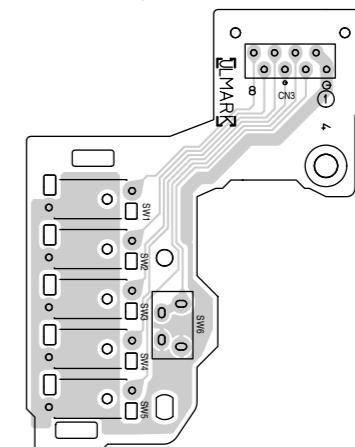
(Sensor board)



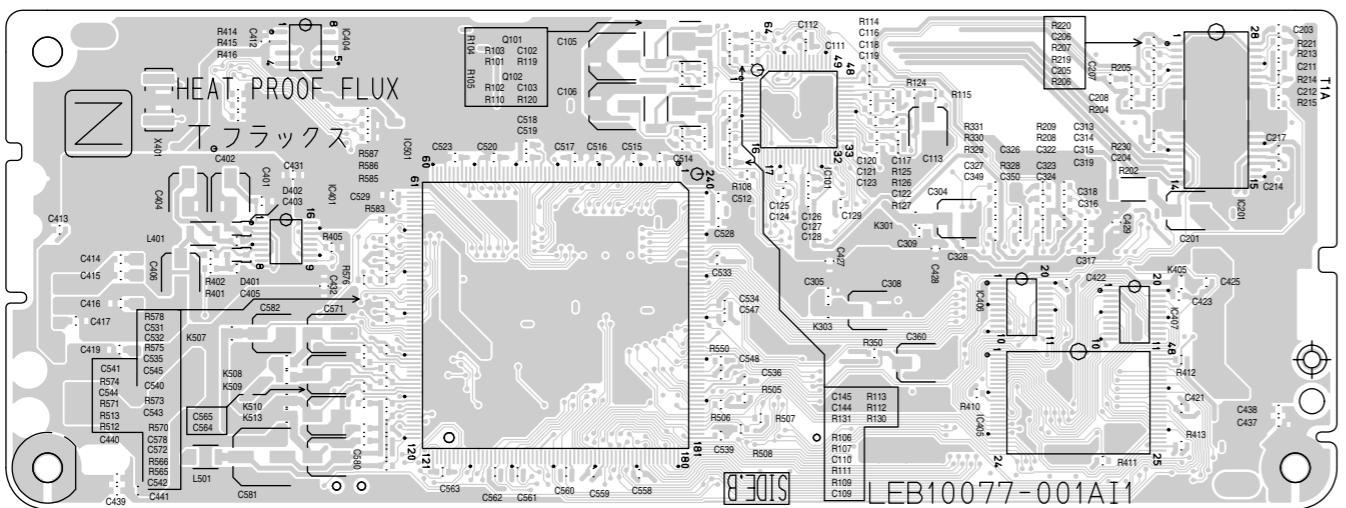
(Switch board)



(Tray switch board)

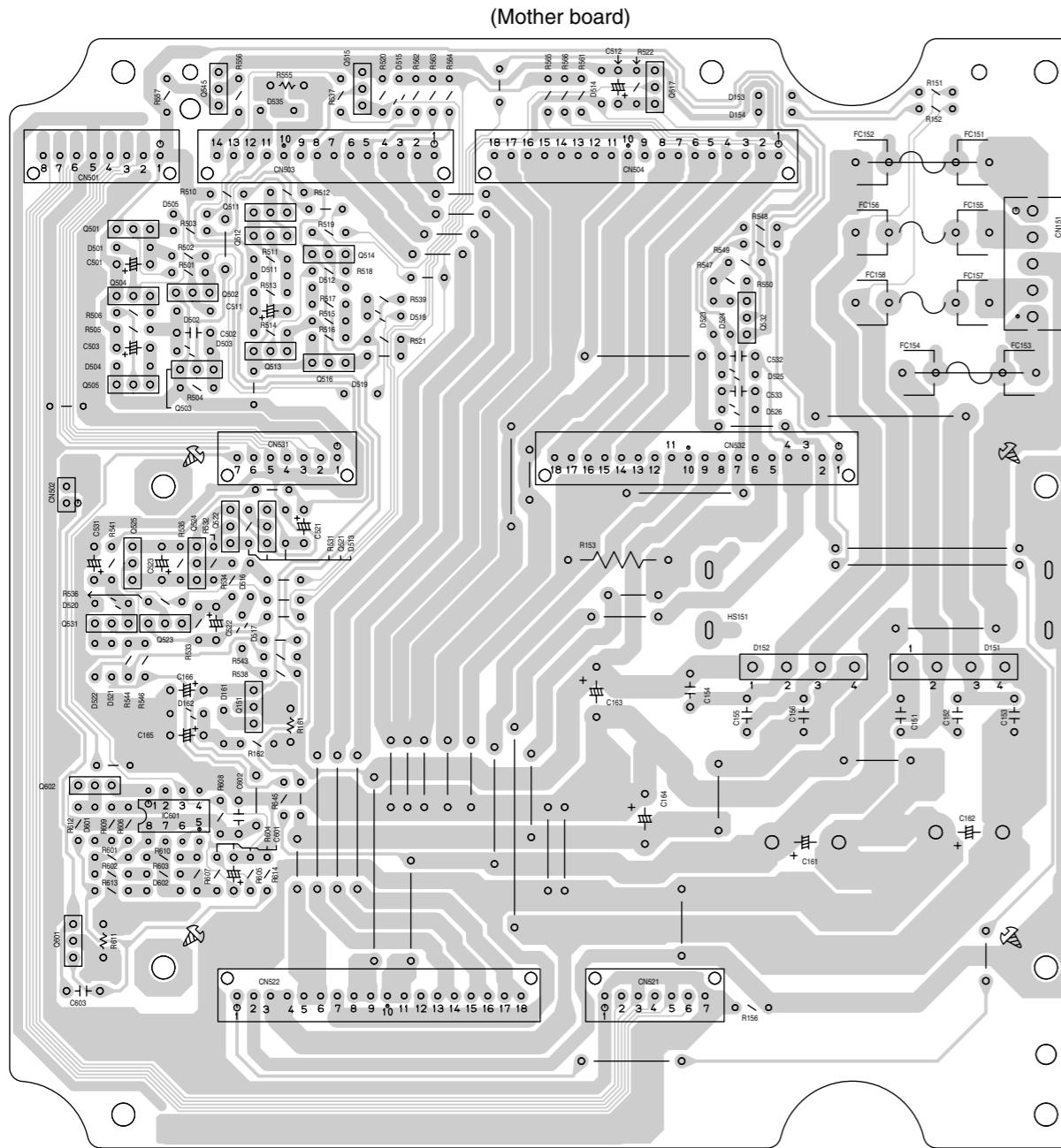


Reverse side

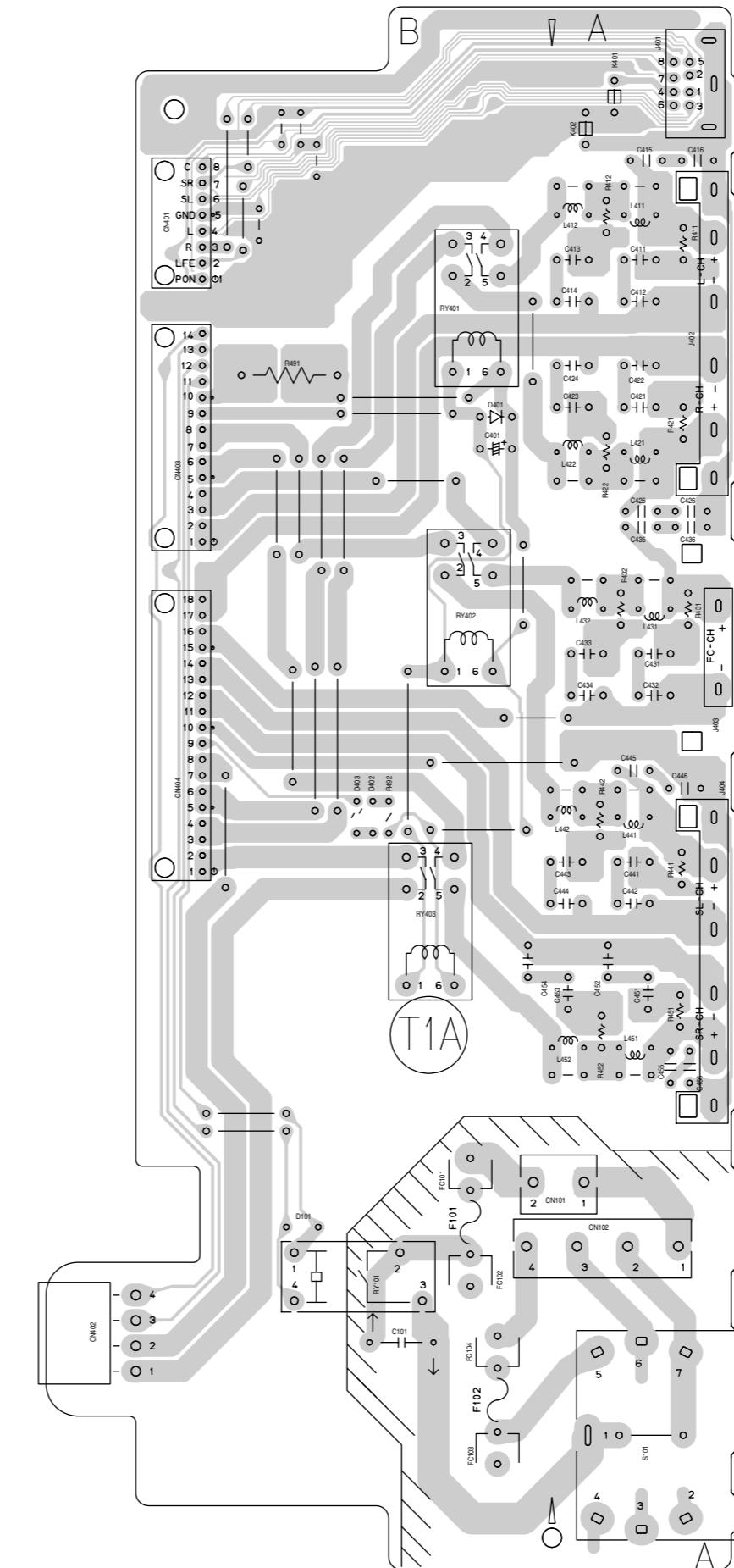


## <Subwoofer section>

### ■ Mother board

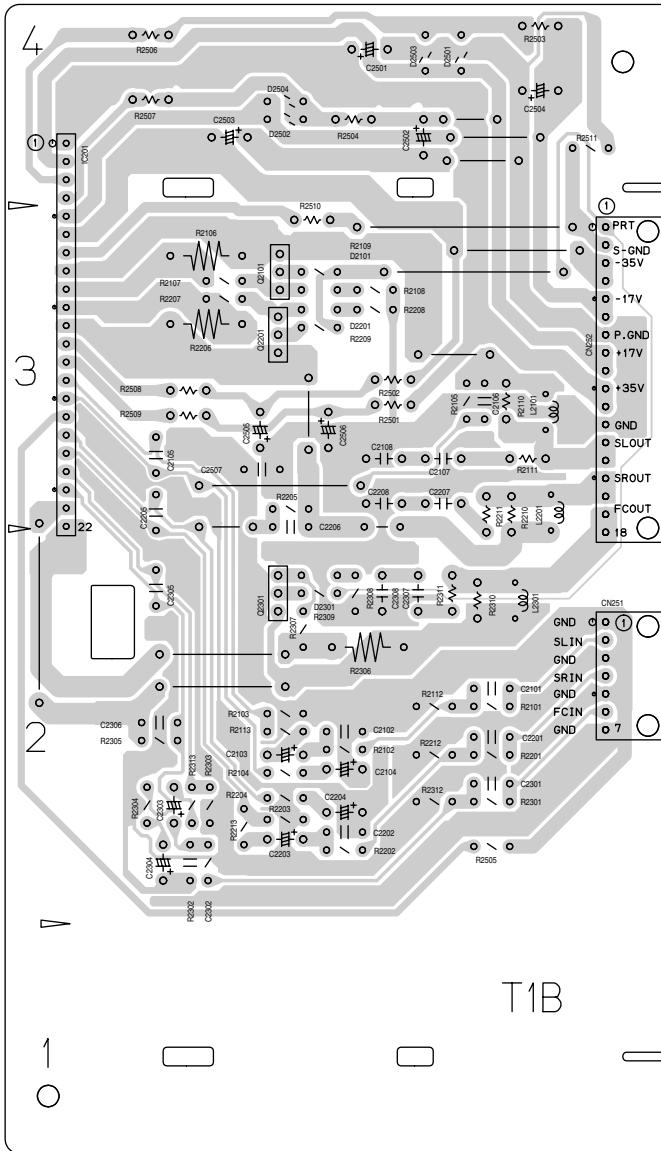


(Speaker terminal board)

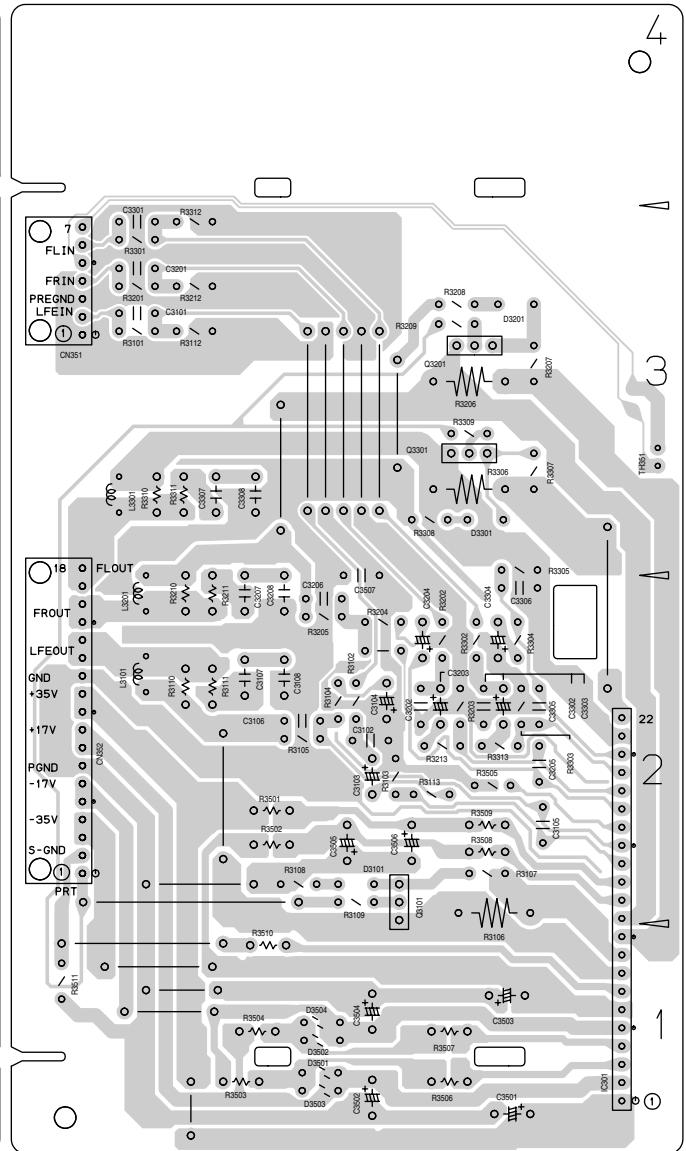


## ■ Amplifier board

( Amplifier board (A) )



( Amplifier board (B) )



# JVC

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