

# JVC

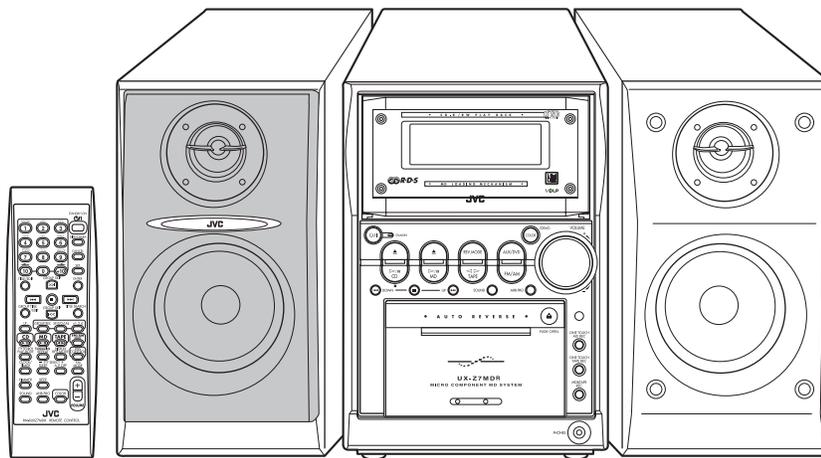
## SERVICE MANUAL

### MICRO COMPONENT MD SYSTEM

# UX-Z7MDR

Area Suffix

E ----- Continental Europe



**CD-R-D-S**

**MDLP**

**Mini  
Disc**

**COMPACT  
disc  
DIGITAL AUDIO**

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## SECTION 1

### Important Safety Precautions

#### 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 manufacturer's warranty and will further relieve the manufacturer 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.

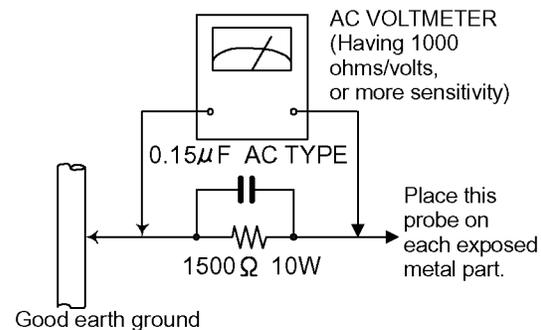
  - Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).
  - Alternate check method
 

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 ohm 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 pre-forming 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. (Except the JC version)

## 1.5 Preventing static electricity

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

### 1.5.1 Grounding to prevent damage by static electricity

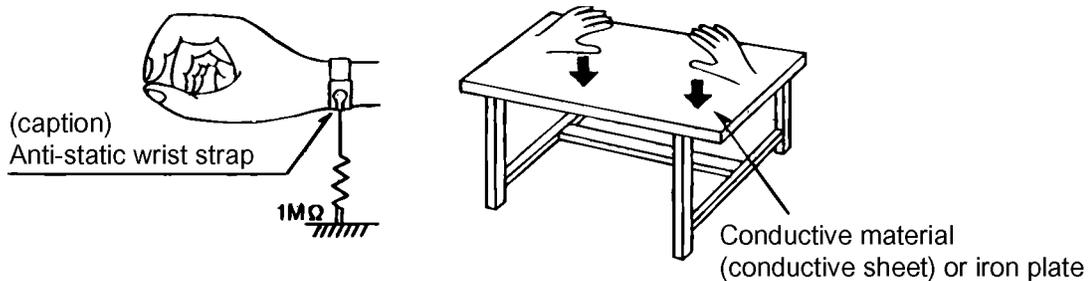
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as DVD players. Be careful to use proper grounding in the area where repairs are being performed.

(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.

## 1.6 Handling the traverse unit (optical pickup)

(1) Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

(2) Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.

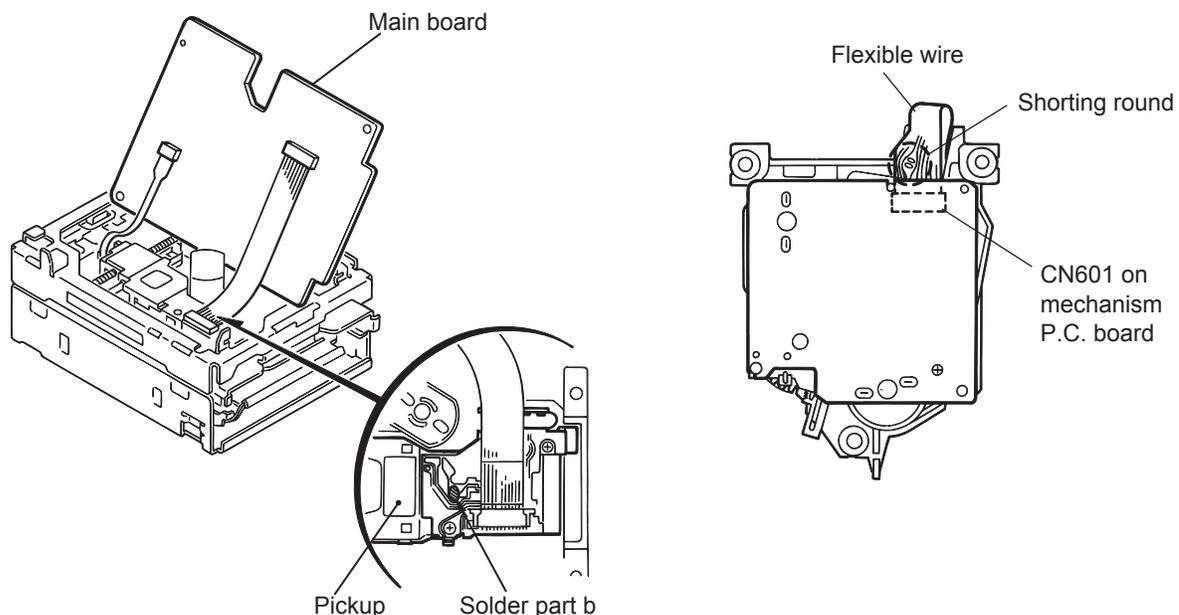
(3) Handle the flexible cable carefully as it may break when subjected to strong force.

(4) It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

## 1.7 Attention when traverse unit is decomposed

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

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



**1.8 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 spärren är urkopplad. Betrakta ej strålen.

**VARO**

Avattaessa ja suojalukitus ohitettaessa olet alltiina näkymättömälle lasersäteilylle. Älä katso säteeseen.

**ADVARSEL**

Usynlig laserstrålning ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

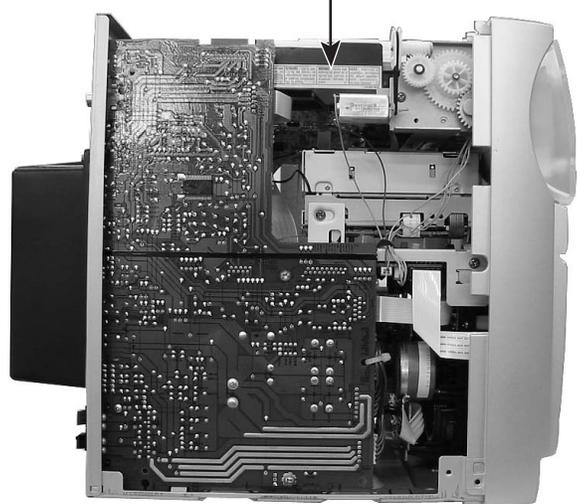
**ADVARSEL**

Usynlig laserstrålning ved åbning, når sikkerhedsbryteren er avslott. unngå utsettelse for stråling.

**REPRODUCTION AND POSITION OF LABELS**

**WARNING LABEL**

<p><b>DANGER</b> : Invisible laser radiation when open and interlock or defeated.                  AVOID DIRECT EXPOSURE TO BEAM (e)</p>	<p><b>VARO</b> : Avattaessa ja suojalukitus ohitettaessa olet alltiina näkymättömälle lasersäteilylle. Älä katso säteeseen. (d)</p>	<p><b>VARNING</b> : Osynlig laserstrålning är denna del är öppnad och spärren är urkopplad. Betrakta ej strålen. (s)</p>	<p><b>ADVARSEL</b> : Usynlig laserstrålning ved åbning , når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling. (f)</p>
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## SECTION 2

### Disassembly Method

#### 2.1 Main body

##### 2.1.1 Removing the metal cover (See Fig.1 to 3.)

- (1) Remove the six screws **A** on the rear part of the main body that attach the metal cover.
- (2) Remove the two screws **B** on each side of the main body that attach the metal cover.
- (3) Lift the rear part of the metal cover upward while releasing the lower sides of the metal cover in the right and left direction. The metal cover will be removed.

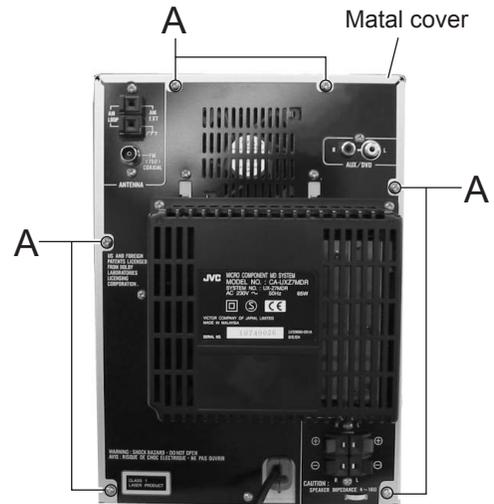


Fig.1

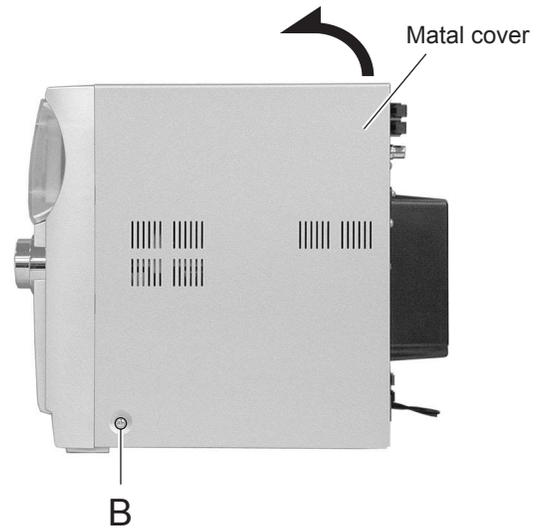


Fig.2

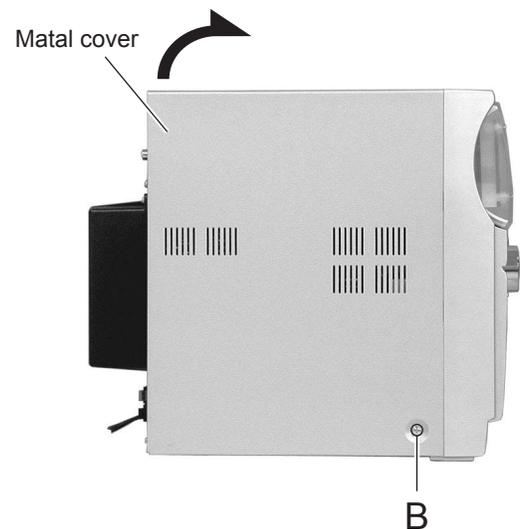


Fig.3

**2.1.2 Removing the CD mechanism assembly  
(See Fig.4 to 7.)**

- Prior to this procedure, remove the metal cover.
  - (1) Remove the card wire from the connector CN302 on amp board on the left side of the main body.
  - (2) Remove the three screws **C** on top of the body that attach the CD mechanism assembly.
  - (3) Lift the CD mechanism assembly upward and move it backward to remove.
  - (4) Remove the card wire from CN606 on CD servo board, on the bottom of the CD mechanism assembly.

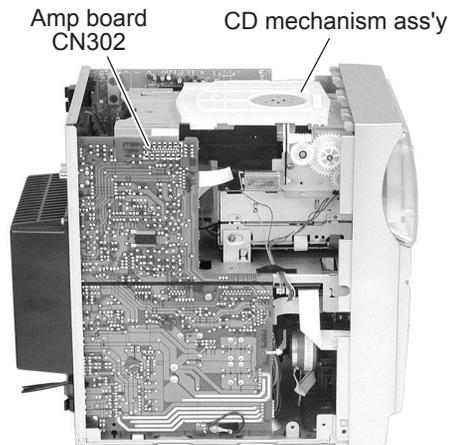


Fig.4

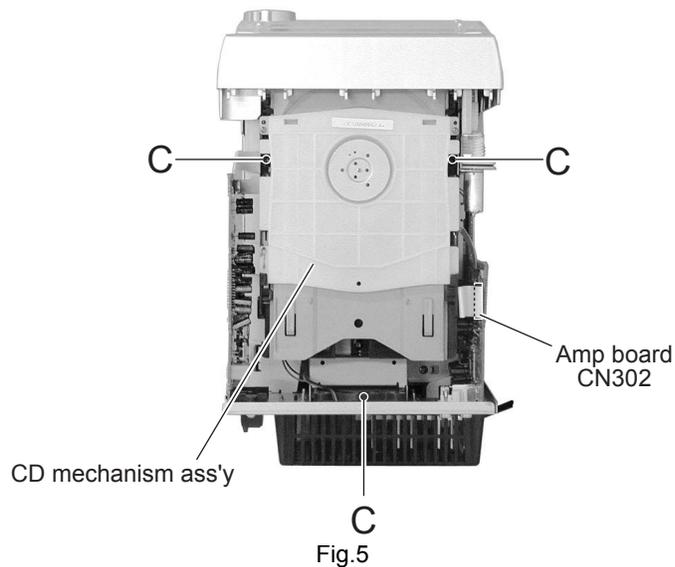


Fig.5

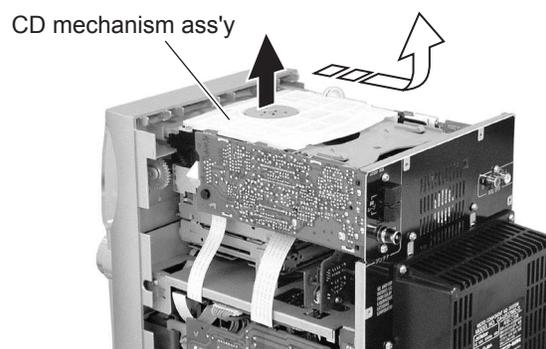


Fig.6

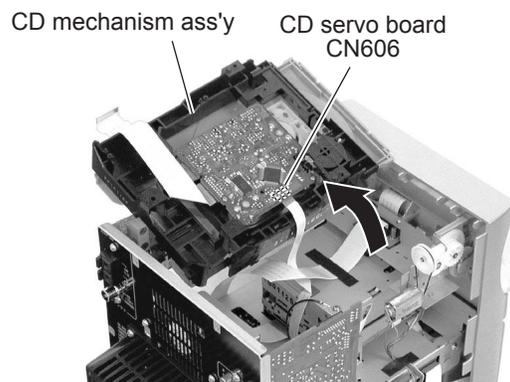
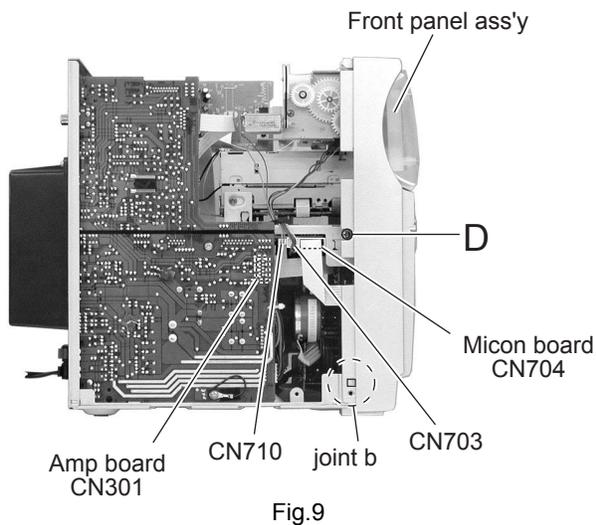
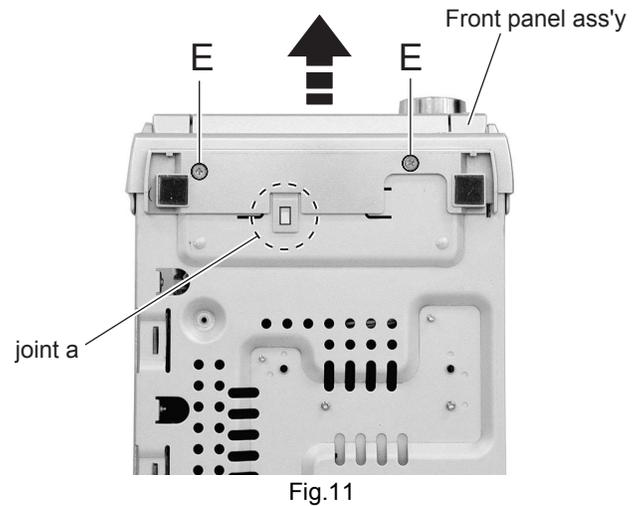
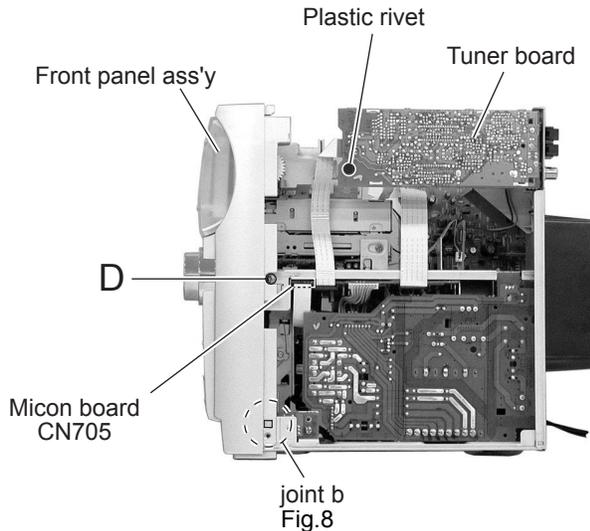
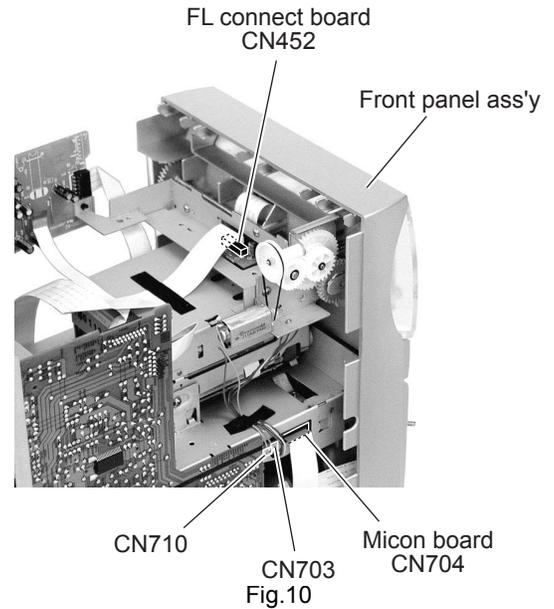


Fig.7

**2.1.3 Removing the front panel**  
**(See Fig.8 to11.)**

- Prior to this procedure, remove the metal cover and the CD mechanism assembly.
  - (1) Remove the card wire from the connector CN705 on micon board, in the center of the right side of the main body.
  - (2) Remove the plastic rivet in the right side of the main body that attaches tuner board.
  - (3) Remove the card wire from the connector CN301 on amp board in the center of the left side of the main body. Remove the card wire from the connector CN704 on micon board. Remove the wire from each connector CN703 and CN710 respectively.
  - (4) Remove the card wire from the connector CN452 on FL connection board on top of the main body.
  - (5) Remove the two screws **D** on the right and left sides of the main body that attach the front panel assembly.
  - (6) Remove the two screws **E** on the bottom of the main body that attach the front panel assembly.
  - (7) Remove the joint "a" on the bottom of the main body and the joint "b" on the right and left sides respectively by using a screwdriver. Remove the front panel assembly in the front direction.



**2.1.4 Removing the tuner board  
(See Fig.12.)**

- Prior to this procedure, remove the metal cover.
- (1) Remove the card wire on the right side of the main body from the connector CN1 on the tuner board.
- (2) Remove the plastic rivet on the right side of the main body that attaches the tuner board.
- (3) Remove the two screws **F** on the rear side of the main body that attach the tuner board.

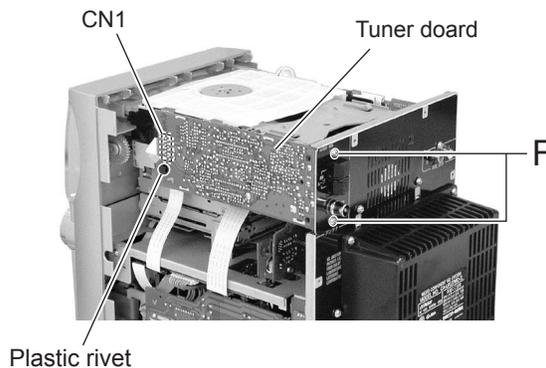
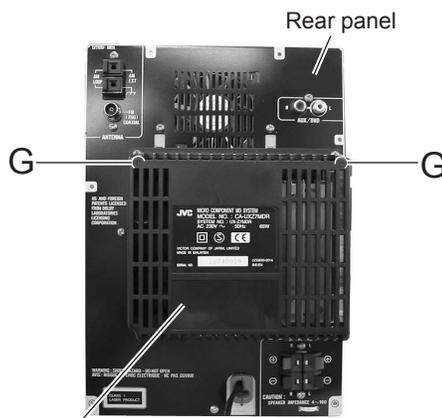


Fig.12

**2.1.5 Removing the rear cover  
(See Fig.13.)**

- Prior to this procedure, remove the metal cover and the CD mechanism assembly.
- (1) Remove the two screws **G** on the rear side of the main body that attach the rear cover.



Rear cover

Fig.13

**2.1.6 Removing the fan  
(See Fig.14 to 16.)**

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the rear cover.
- (1) Remove the wire from the connector CN603 on the MD connect board in the right side of the main body.
- (2) Remove the four screws **H** on the rear side of the main body that attach the fan.
- (3) Move the fan bracket that attaches the fan from inside the rear panel upward to remove the two fixing points "c". Fan will be detached at the same time.

**Notice**

When attaching the fan, attach the two "e" to the two "d" respectively before pressing the fan with fan bracket.

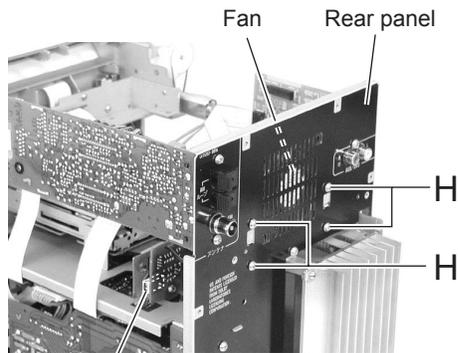


Fig.14

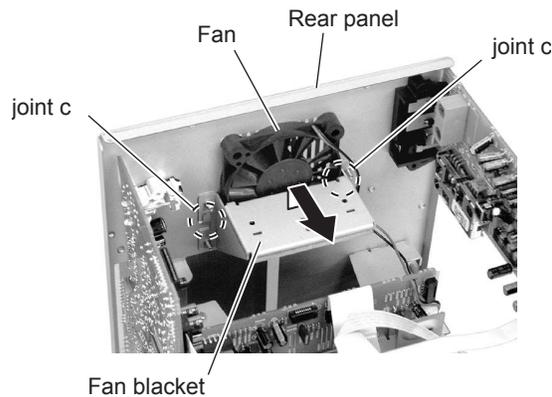


Fig.15

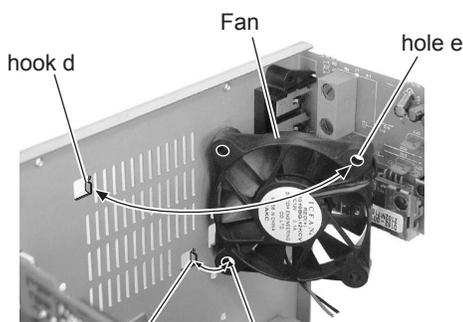


Fig.16

**2.1.7 Removing the rear panel**  
**(See Fig.17 to 20.)**

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the rear cover.
  - (1) Remove the wire from the connector CN603 on MD connect board on the right side of the main body.
  - (2) Remove the eight screws **F** on the rear side of the main body that attach the rear panel.
  - (3) Remove the two joint **"f"** on the right and left bottom of the rear panel.

**Notice**

The fan assembly will be kept attached to the rear panel.

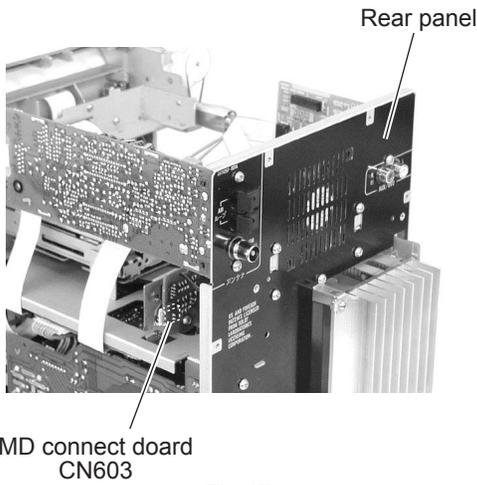
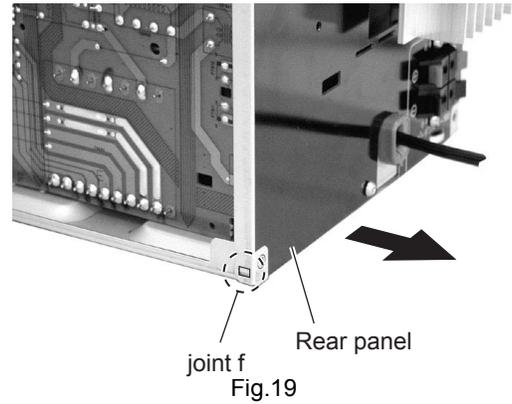


Fig.17

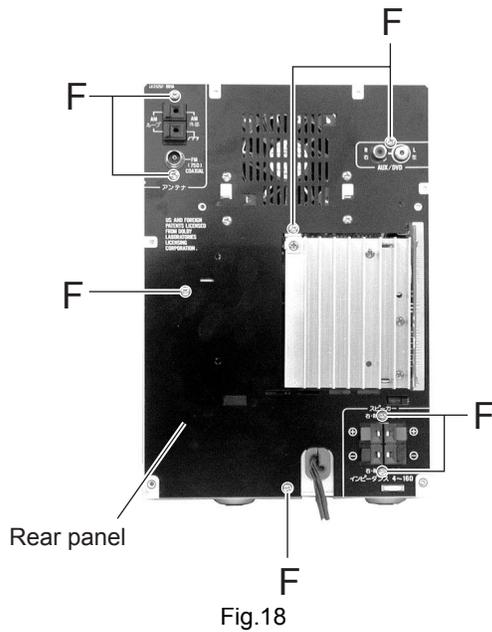
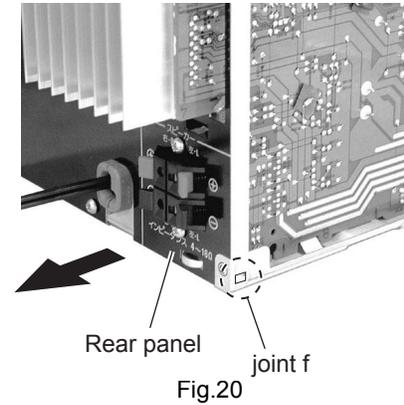


Fig.18

### 2.1.8 Removing the MD mechanism assembly (See Fig.21 and 22.)

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the rear cover.
  - (1) Remove the card wire from the connector CN601 on the MD connect board in the rear part of the MD mechanism assembly.
  - (2) Remove the four screws **H** on the front side and the rear side that attach the MD mechanism assembly. Remove the MD mechanism assembly upward.

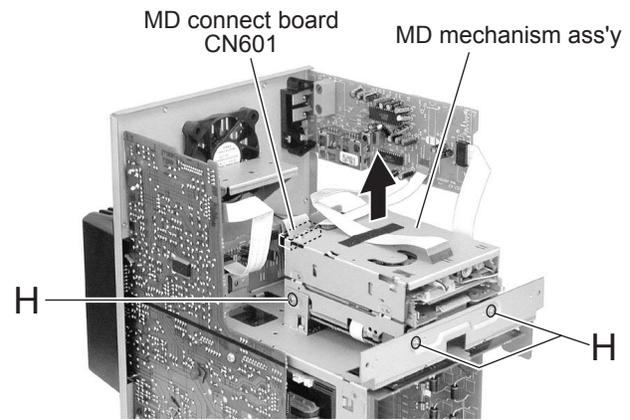


Fig.21

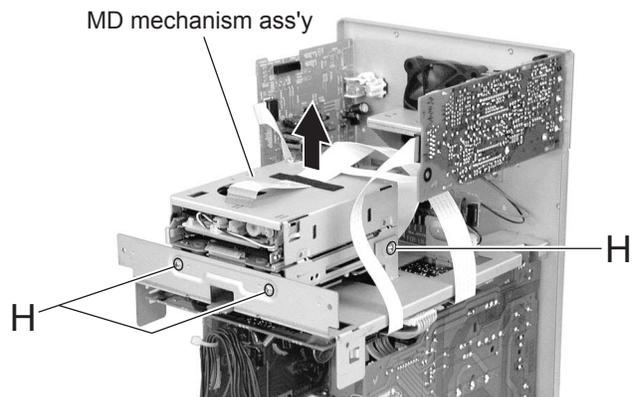


Fig.22

### 2.1.9 Removing the headphone board (See Fig.23 and 24.)

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the rear cover.
  - (1) Remove the wire from the connector CN101 on the amp board on the left side of the main body.
  - (2) Remove the band that fixes the wire to the amp board. Remove the wire from the two clamps in the bottom chassis.
  - (3) Remove the screw **I** on the right side of the main body that attaches the headphone board.

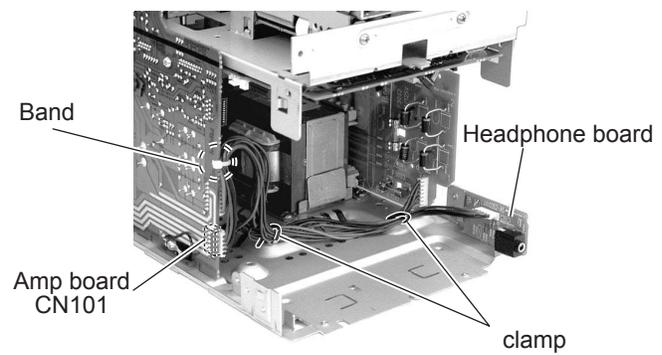


Fig.23

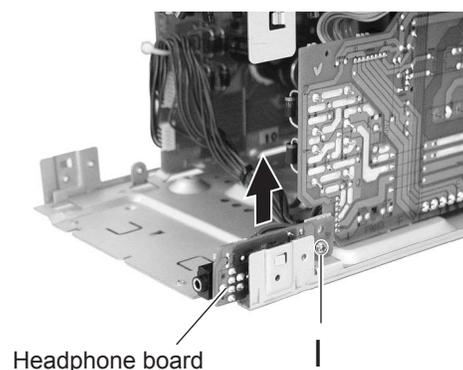


Fig.24

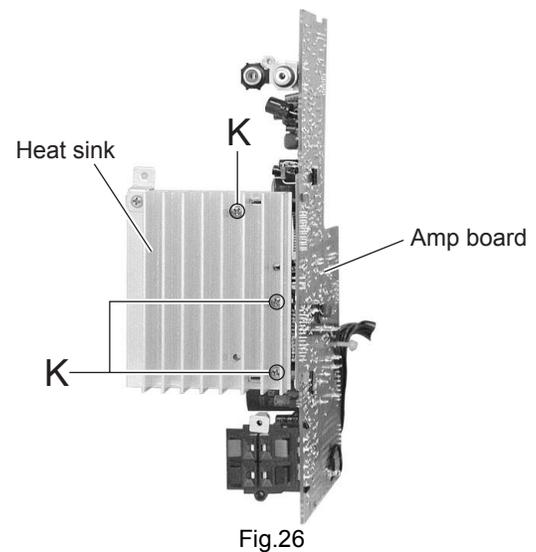
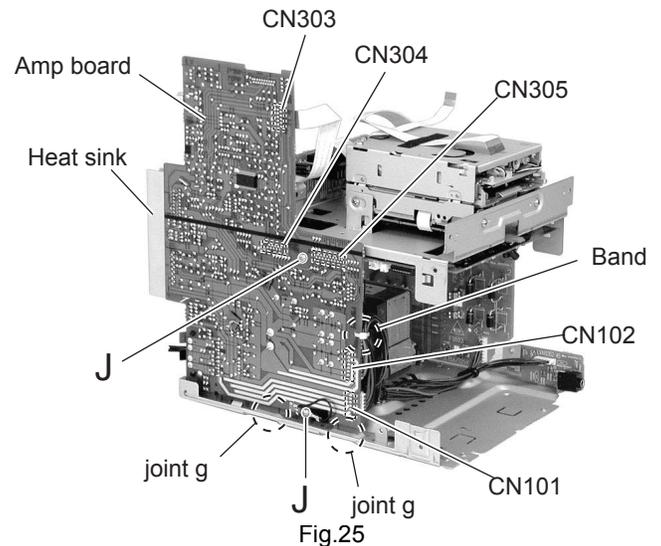
### 2.1.10 Removing the amp board and heat sink (See Fig.25 and 26.)

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, the front panel assembly, and the rear cover.
  - Remove the wire from the connector CN101 and CN102 on the amp board on the left side of the main body. Remove the band that fixes the wire. Remove the card wire from the connector CN303.
  - Remove the two screws **J** that attach the amp board.
  - Pull out and remove the connector CN304 and CN305 on the amp board outward. Remove the two joint "g" that fix the bottom chassis.

#### Notice

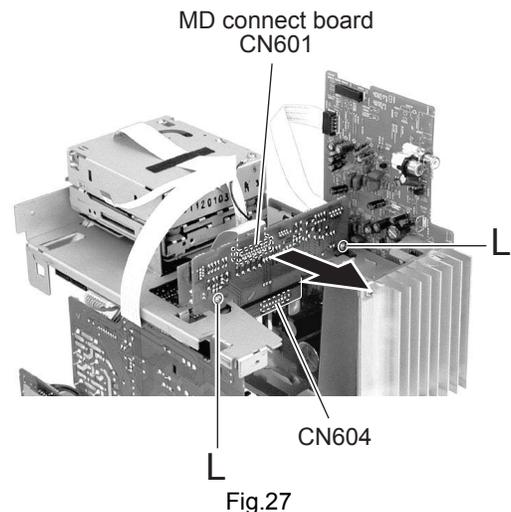
The heat sink will be kept attached to the amp board. The heat sink can be removed without removing the amp board.

- Remove the three screws **K** that attach the heat sink.



### 2.1.11 Removing the MD connect board (See Fig.27.)

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the rear cover.
  - Remove the card wire from the connector CN601 on the MD connect board.
  - Remove the two screws **L** on the rear side of the main body that attach the MD connect board.
  - Pull out the connector CN604 on the MD connect board in the rear direction.



**2.1.12 Removing the MD base chassis/the micon board**  
**(See Fig.28 to 30.)**

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, the front panel assembly, the rear cover, the amp board, and the MD connect board.

**Notice**

The MD base chassis/the micon board can be removed without removing the MD mechanism assembly.

- (1) Remove the wire from the micon board connector CN707 in the center of the right side of the main body. Remove the card wire from the connector CN708.
- (2) Remove the screw **M** on top of the main body that attaches the MD base chassis.

**Notice**

The MD mechanism assembly will be kept attached to the MD base chassis.

- (3) Remove the two screws **N** that attach the micon board. Remove the two joint "h" that fix the MD base chassis.

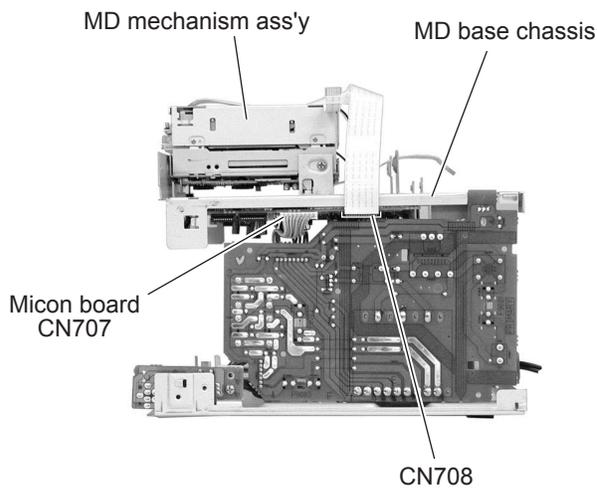


Fig.28

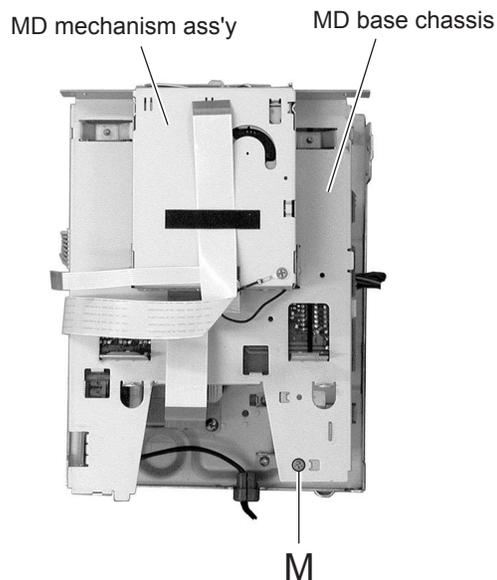


Fig.29

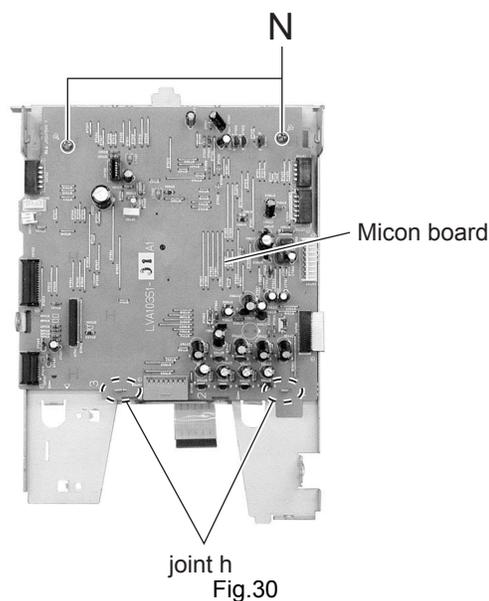


Fig.30

### 2.1.13 Removing the power trans assembly (See Fig.31 and 32.)

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, the front panel assembly, the rear cover, the amp board, and the MD base chassis.
- Move the power cord stopper upward from the rear part of the main body to remove. Remove the power supply cord from the connector CN901 on the power trans board.

#### Notice

The power cord can be removed without removing the power trans assembly.

- Remove the four screws **O** on top of the main body that attach the power trans assembly. Remove the wire from the two clamps on the bottom chassis.

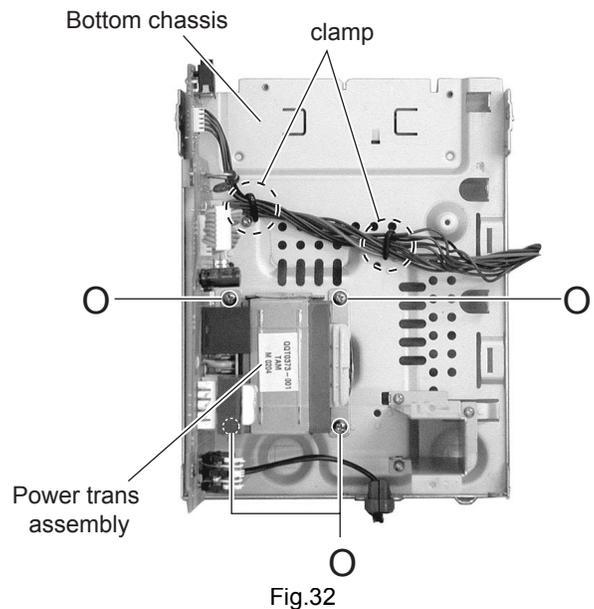
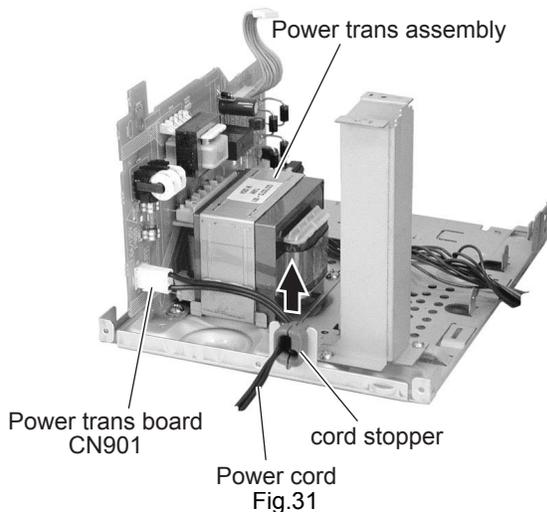


Fig.32

## 2.2 Front panel assembly

- Prior to this procedure, remove the metal cover, the CD mechanism assembly, and the front panel assembly.

### 2.2.1 Removing the cassette mechanism assembly (See Fig.33 and 34.)

- Remove the spring that is attached to the cassette door from inside the front panel.
- Remove the four screws **P** that attach the cassette mechanism assembly.

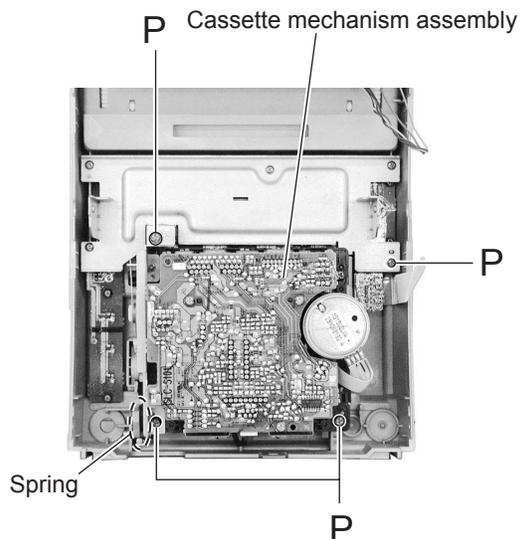
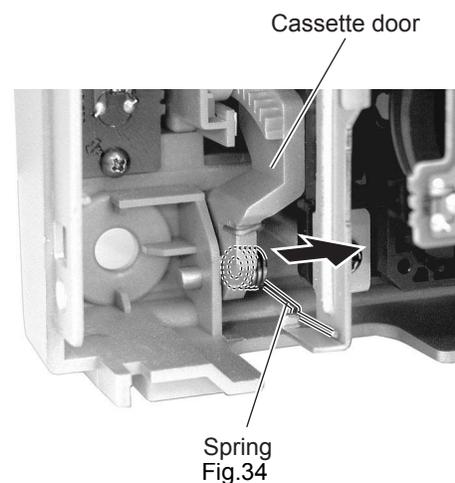


Fig.33



**2.2.2 Removing the key board**  
**(See Fig.35 to 37.)**

- Prior to this procedure, remove the cassette mechanism assembly.
  - (1) Pull out the volume knob in the front side of the front panel to remove.
  - (2) Remove the five screws **Q** that attach the bracket (1) from inside the front panel.
  - (3) Remove the ten screws **R** that attach the key board.

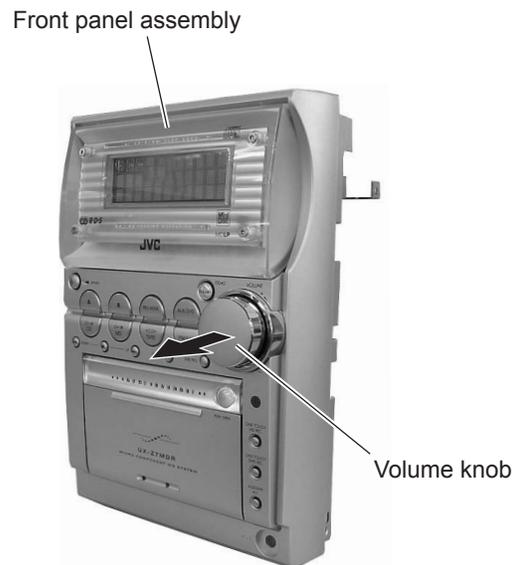
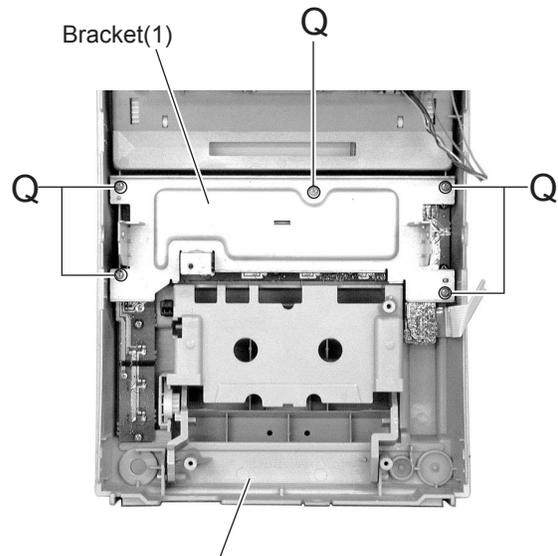


Fig.35



Front panel  
 Fig.36

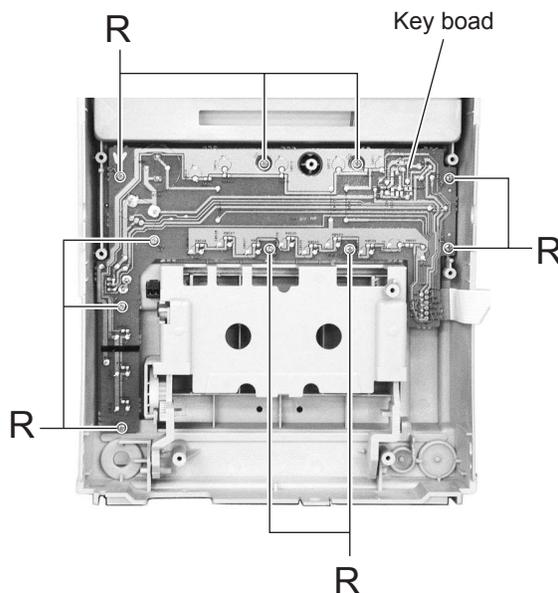


Fig.37

### 2.2.3 Removing the FM connection board (See Fig.38 to 40.)

- (1) Remove the three screws **S** and the screw **T** that attach the bracket (2) from inside the front panel.
- (2) Remove the card wire from the connector CN451 on the FL connection board.
- (3) Press the tab in the front panel and the one in joint "i" downward to remove. Pull out the FL connection board to remove.

### 2.2.4 Removing the drive motor assembly (See Fig.38, 39, and 41.)

- (1) Remove the three screws **S** and the screw **T** that attach the bracket (2) from inside the front panel.
- (2) Remove the screw **U** that attaches the drive motor assembly. Remove the tab in joint "j" that fixes the front panel. Pull out the drive motor assembly to remove.

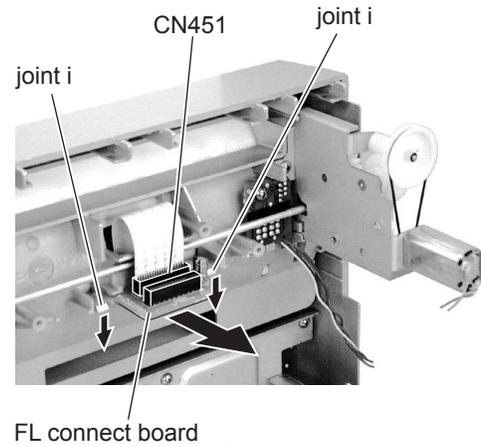


Fig.40

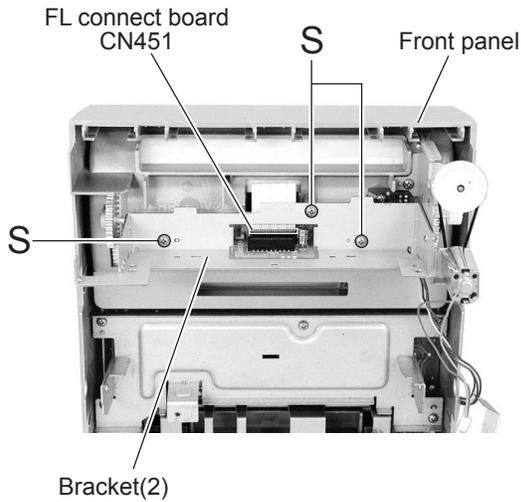


Fig.38

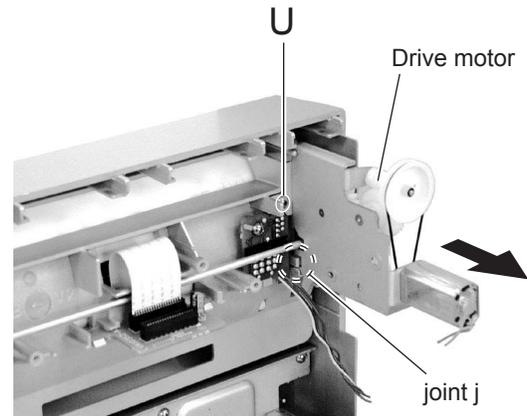


Fig.41

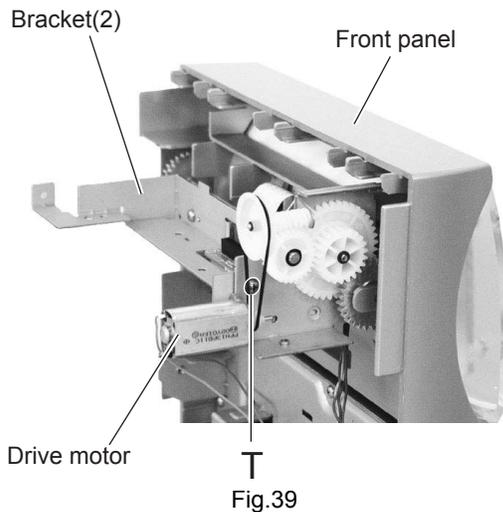


Fig.39

### 2.2.5 Removing the belt/drive motor (See Fig.42.)

- Prior to this procedure, remove the drive motor assembly.
  - (1) Remove the belt from the pulley.
  - (2) Remove the two screws **V** that attach the drive motor.

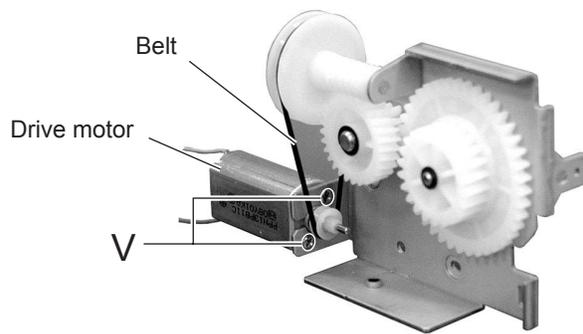


Fig.42

### 2.2.6 Removing the switch board (See Fig.43 and 44.)

- Prior to this procedure, remove the bracket (2) / the drive motor assembly.
  - (1) Remove the card wire from the connector CN451 on FL connection board.
  - (2) Remove the joint "k" by releasing it outward. And then, remove the joint "l" in the same way.
  - (3) Remove the screw **W** that attaches the switch board. Remove the tab on the joint "m" that fixes the front panel.

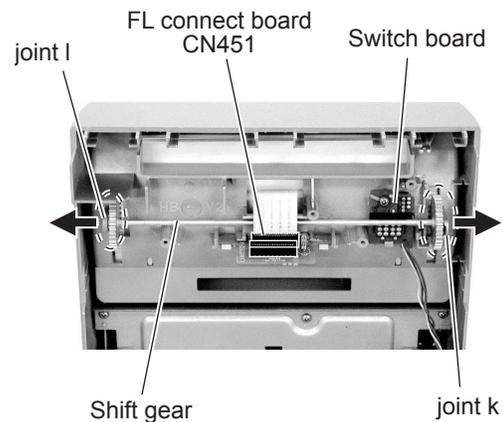


Fig.43

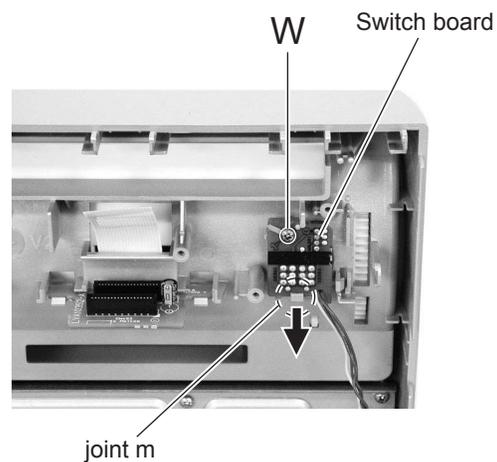


Fig.44

**2.2.7 Removing the FL display**  
**(See Fig.45 to 50.)**

- (1) Remove the four screws **X** on the front side of the front panel that attach the case cover.
- (2) Pull out the FL panel from the bosses of the four joint "n" on the FL display cover.
- (3) Remove the four screws **Y** that attach the FL display cover. Remove the card wire from the connector CN671 and CN 672 on the FL connect board inside the FL display cover.

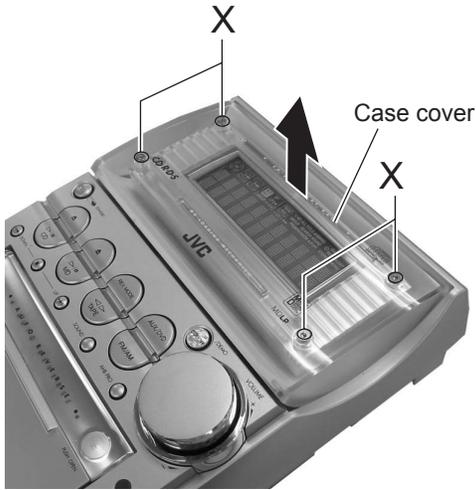


Fig.45

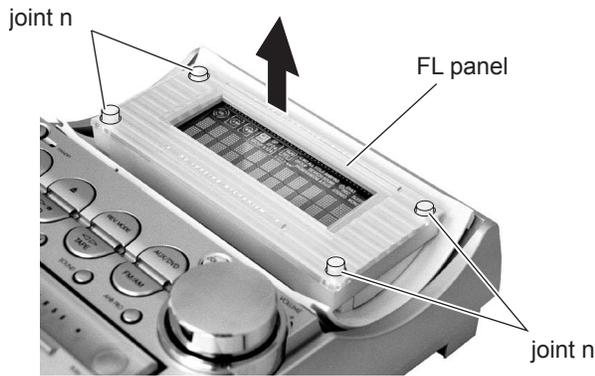


Fig.46



Fig.47

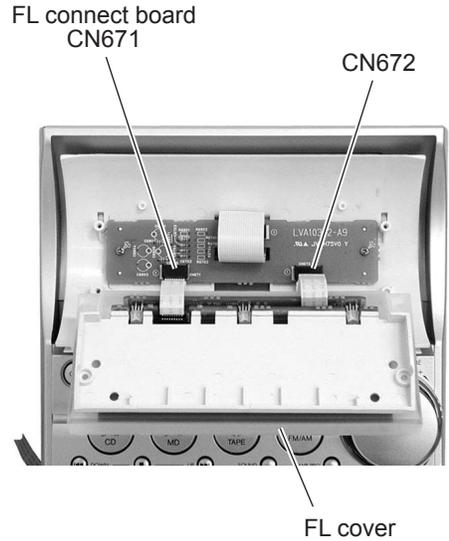


Fig.48

- (4) Remove the two screws **Z** on the front side of the FL display cover that attach the FL display.
- (5) FL board and lens will be detached from the FL display.

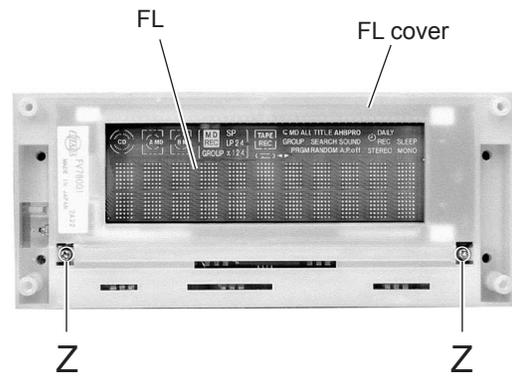


Fig.49

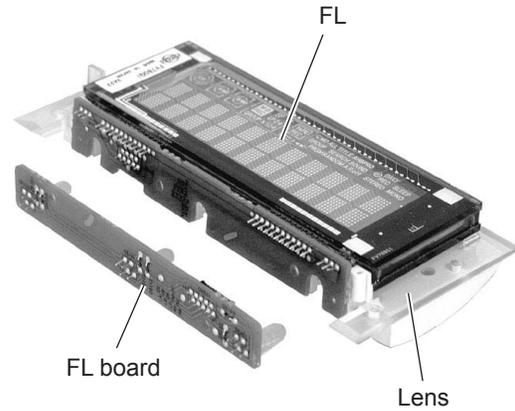


Fig.50

**2.2.8 Removing the FL connect board**

(See Fig.51.)

- Prior to this procedure, remove the FL display cover.
  - (1) Remove the card wire from the connector CN673 on the FL connect board.
  - (2) Remove the two screws **Z'** that attach the FL connect board.

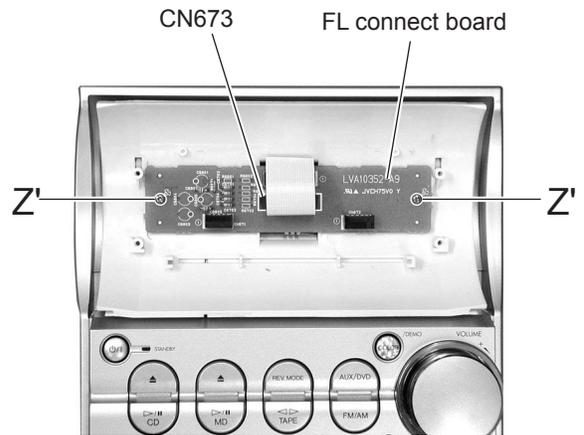


Fig.51

## 2.3 CD Mechanism Assembly

### 2.3.1 Removing the CL. Base Assembly and Tray (Refer to Figs. 1 to 5.)

- (1) Remove the two screws **A** fastening the CL. base assembly from the top of the CD mechanism assembly.
- (2) Move the CL. base assembly diagonally upwards as indicated by the arrow to release it from the two hooks **a**.
- (3) Turn the idle gear in the arrow-marked direction from the upper side of the CD mechanism assembly. Accordingly, the TRAMECHA assembly moves downwards.

**Note:**

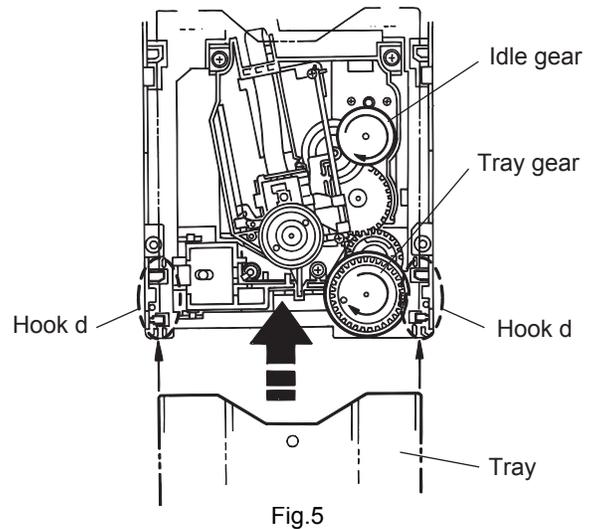
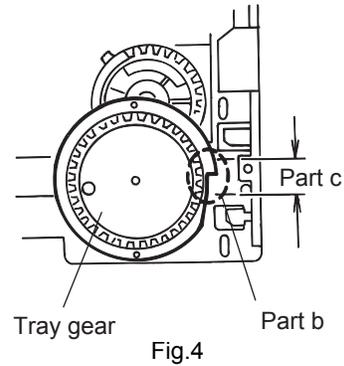
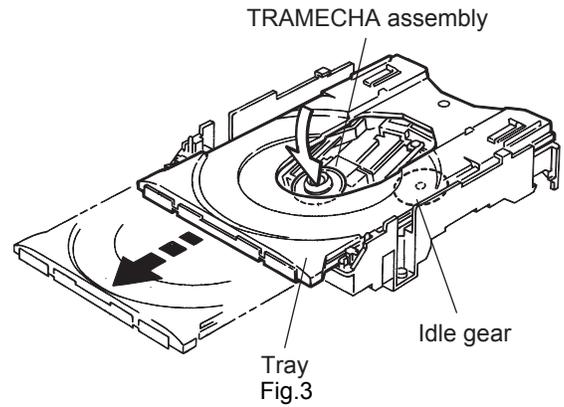
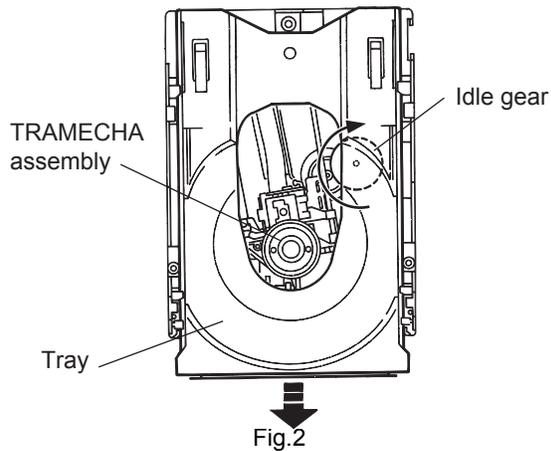
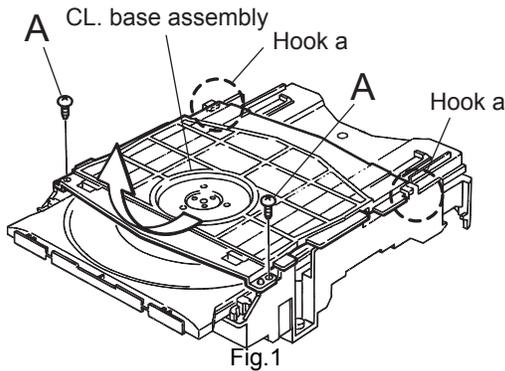
When drawing out the tray, shift down the TRAMECHA assembly to the position where the tray does not contact the T-T assembly of the TRAMECHA assembly.

- (4) Draw out the tray frontwards for removing it.

**Note:**

When reinstalling the tray:

- Turn the idle gear so that the part **b** of the tray gear is positioned in the part **c** shown in Fig. 4. (Eject position)
- Engage the right and left hooks **d** and **e** of the tray with the right and left grooves of the TRAMECHA assembly respectively for retaining the tray.



### 2.3.2 Removing the TRAMECHA Assembly (Refer to Figs. 6 to 9.)

- Remove the CL. base assembly and tray.

#### Reference:

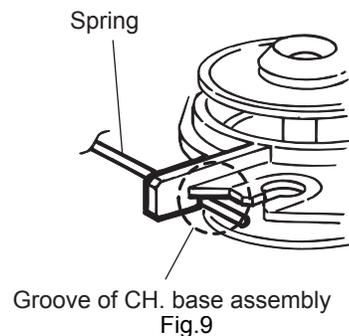
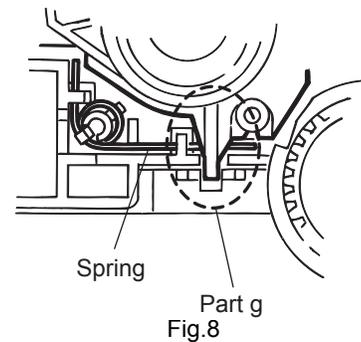
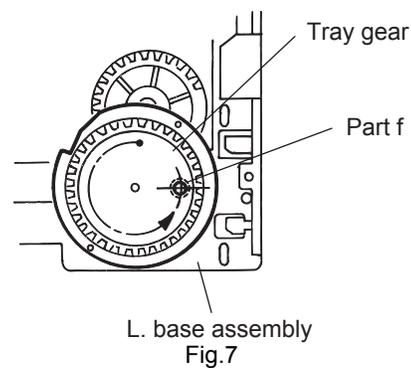
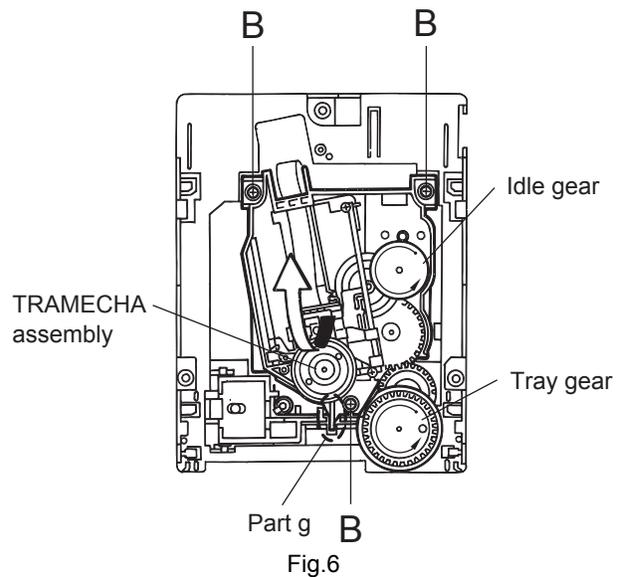
The TRAMECHA assembly can be removed without removal of the mechanism P.C. board.

- If the TRAMECHA assembly is lowered and it is located out of the PLAY position, turn the idle gear in the arrow-marked direction so that the hole in the part f of the tray gear meets the hole on the CL. base assembly. (Set the TRAMECHA assembly at the PLAY position.)
- Remove the three screws **B** fastening the TRAMECHA assembly and then remove the TRAMECHA assembly upwards from the front side.
- At the same time, remove the spring from the groove of the CH. base assembly in the part **g** of the TRAMECHA assembly.

#### Note:

When reinstalling the TRAMECHA assembly:

- Check to see if the spring is properly engaged with groove of the CH. base assembly in the part **g** of the TRAMECHA assembly.
- After making sure that the three insulators of the TRAMECHA assembly are properly set on the bosses of the L. base assembly's guide, fasten them with the screws.



### 2.3.3 Removing the Mechanism P.C. Board (Refer to Fig 10.)

#### Reference:

The mechanism P.C. board can be removed without removal of the TRAMECHA assembly.

#### Note:

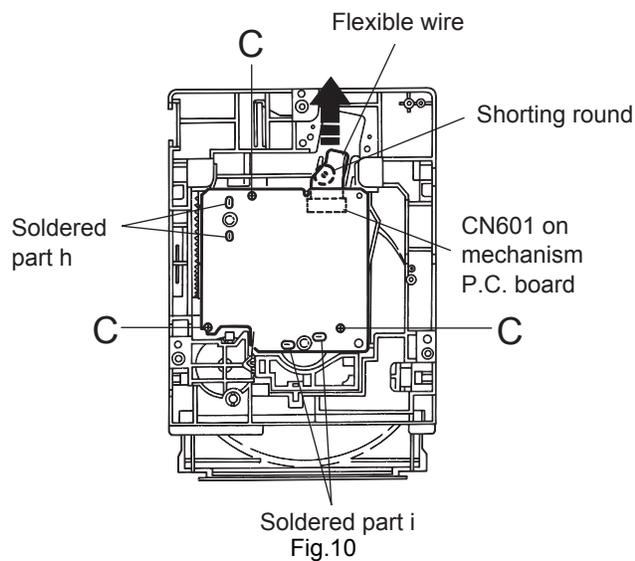
Before disconnecting the flexible wire coming from the pickup from the connector, be sure to solder its shorting round.

If the flexible wire is connected without soldering, it may cause breakdown of the pickup.

- (1) Solder the shorting round of the flexible wire connected with the mechanism P.C. board from the back of the mechanism assembly.
- (2) Disconnect the flexible wire from the connector CN601 on the mechanism P.C. board.
- (3) Remove the three screws **C** fastening the mechanism P.C. board.
- (4) Unsolder the two points of the part **h** and one point of the part **i** of the mechanism P.C. board. Then, remove the mechanism P.C. board upwards.

#### Note:

When reinstalling the mechanism P.C. board, connect the flexible wire coming from the pickup to the connector first and then remove the solder from the shorting round of the flexible cable.



### 2.3.4 Removing the Pickup(Refer to Figs. 11 to 14.)

- Remove the CL. base assembly and tray.
- Remove the TRAMECHA assembly.

#### Reference:

The pickup can be removed without removal of the mechanism P.C. board.

#### Note:

Before disconnecting the flexible wire coming from the pickup from the connector, be sure to solder its shorting round.

If the flexible wire is connected without soldering, it may cause breakdown of the pickup.

- (1) Solder the shorting round of the flexible wire connected with the mechanism P.C. board from the back of the TRAMECHA assembly.
- (2) Disconnect the flexible wire from the connector CN601 on the mechanism P.C. board.
- (3) Turn the idle gear in the arrow-marked direction from the top of the TRAMECHA assembly so that the pickup assembly is shifted to the reverse side of the T-T assembly. Move the pickup assembly until the part j of the rack plate in the lower part of the pickup assembly comes out of the CH. base assembly.
- (4) Remove the two screws **D** retaining the shaft of the pickup assembly. Next, disengage the hook **k** from the CH. base assembly and then remove the pickup assembly together with the shaft.
- (5) Pull the shaft out of the pickup.
- (6) Remove the two screws **E** fastening the rack plate from the pickup.
- (7) Remove the screw **F** retaining the P.S. spring from the pickup.

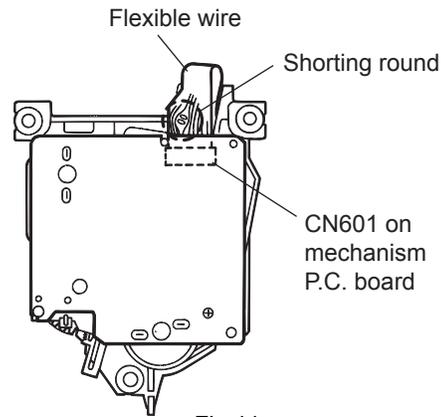


Fig.11

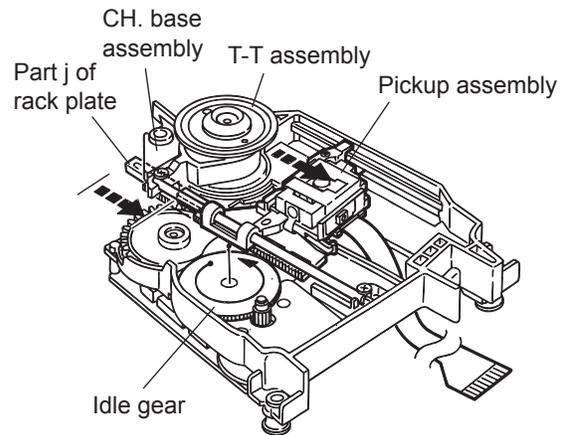


Fig.12

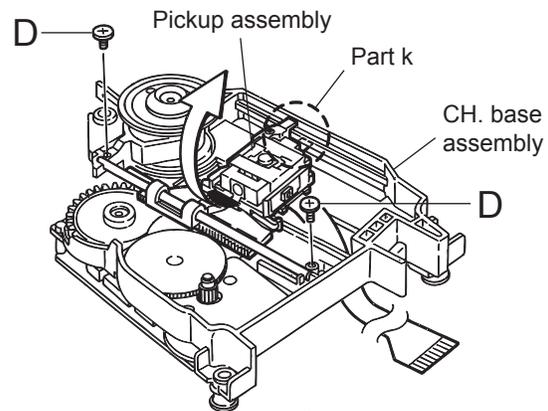


Fig.13

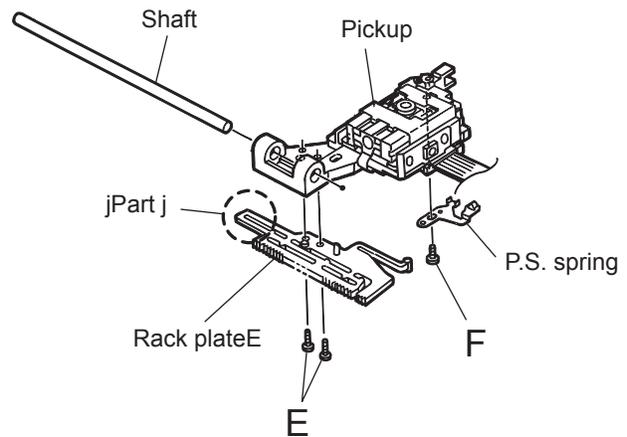


Fig.14

### 2.3.5 Reinstalling the Pickup Assembly (Refer to Figs. 15 and 16.)

#### Reference:

Refer to the explanation of "Removing the Pickup" on the preceding page.

- (1) Fit the P.S. spring and rack plate to the pickup.
- (2) Insert the shaft into the pickup.
- (3) Engage the hook **k** of the pickup assembly with the CH. base assembly first, and set the part **j** of the rack plate in the opening **l** next. Then, reinstall the pickup assembly while shifting it to the T-T side (inward) so that the part **m** of the rack plate is positioned as shown in Fig. 16.
- (4) Move the pickup assembly to the center position and fasten the shaft with the two screws **D**. (Make sure that the part **n** of the rack plate is correctly engaged with the middle gear.)
- (5) After passing the flexible wire coming from the pickup through the opening of the CH. base assembly, connect it to the connector CN601.

#### Note:

When reinstalling the pickup assembly, remove the solder from the shorting round after connecting the flexible wire coming from the pick to the connector CN601.

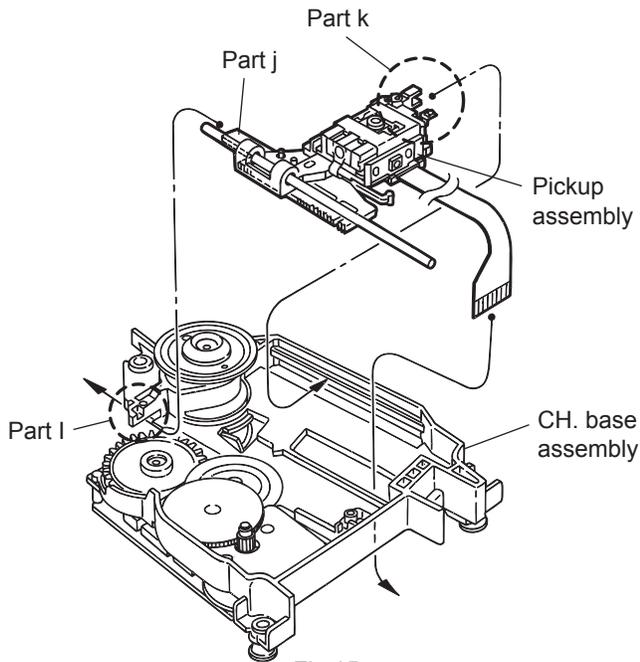


Fig.15

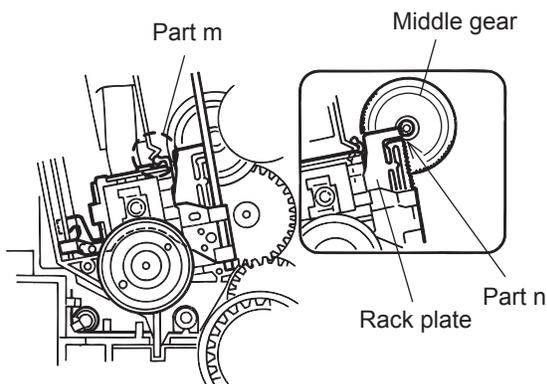


Fig.16

### 2.3.6 Removing the Feed Motor Assembly (Refer to Fig. 17.)

- Remove the CL. base assembly and tray.
  - Remove the mechanism P.C. board.
- Remove the two screws **E** fastening the feed motor assembly from the top of the mechanism assembly.

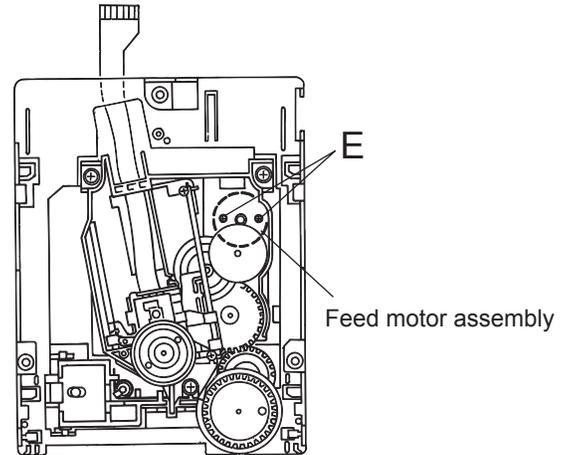
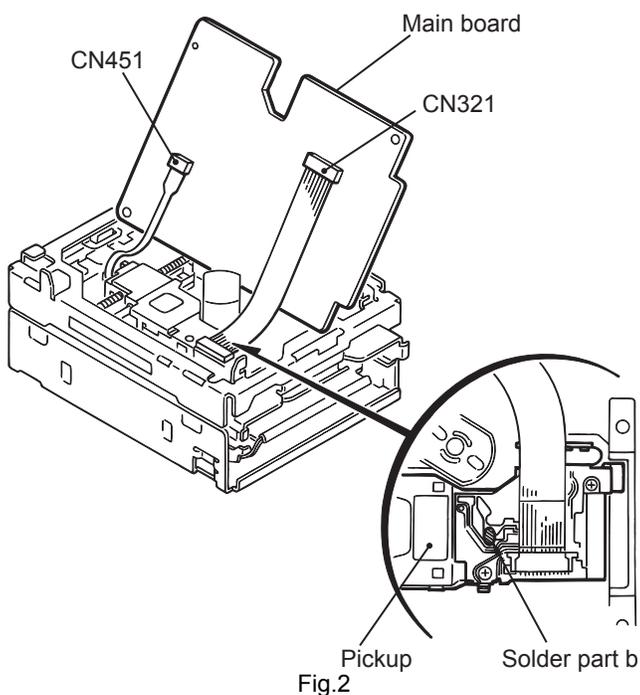
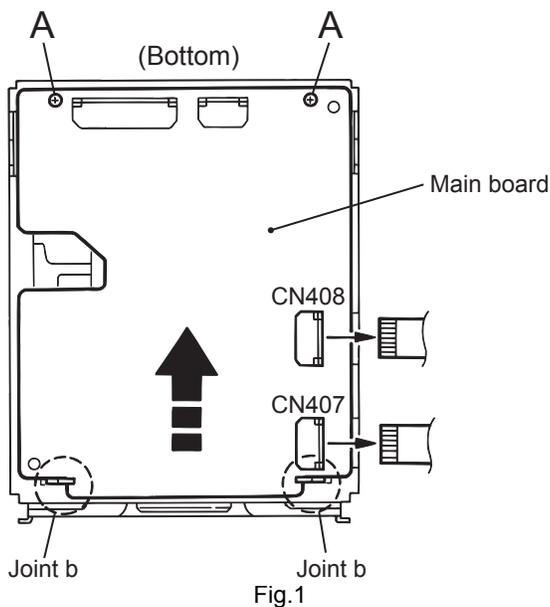


Fig.17

## 2.4 MD mechanism assembly

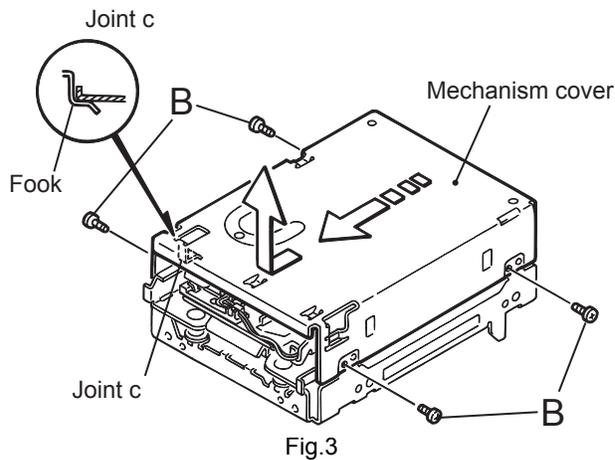
### 2.4.1 Removing the main board (See Fig.1 and 2)

- (1) Turn over the body and disconnect the card wire from connector CN408 and the flexible wire from CN407 on the main board.
- (2) Remove the two screws **A** attaching the main board. Slide the main board in the direction of the arrow to release the two joints **a** with the single flame.
- (3) Solder part **b** on the pickup in the body. Disconnect the flexible harness from connector CN321 and CN451 on the underside of the main board. Then remove the main board.



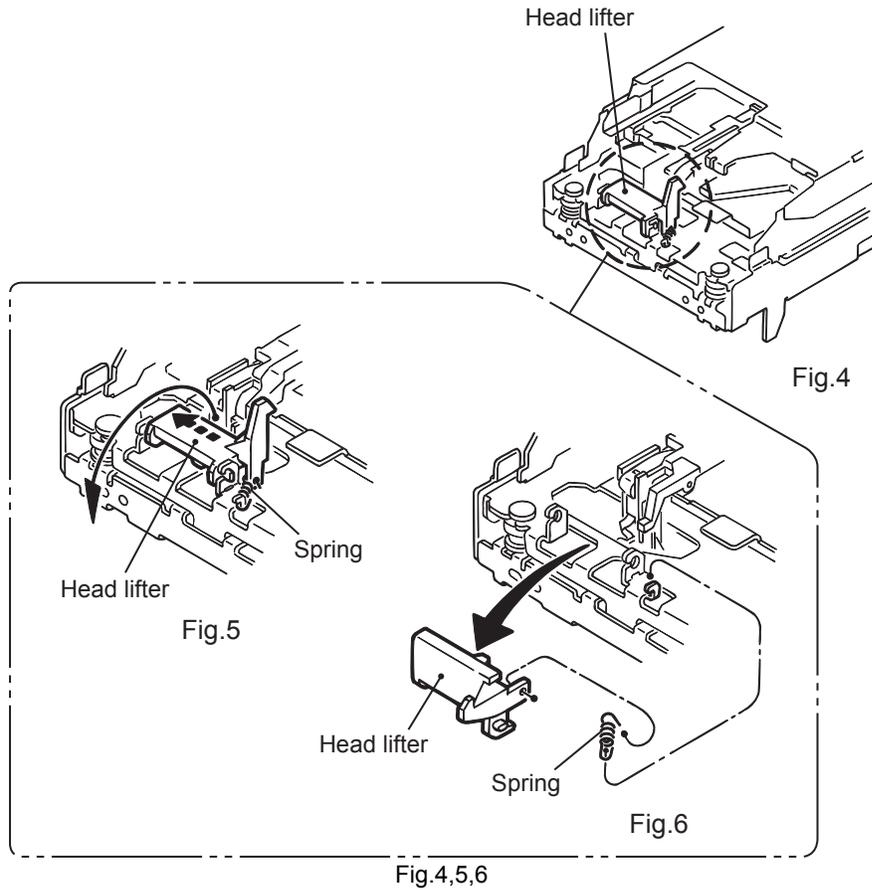
### 2.4.2 Removing the mechanism cover (See Fig.3)

- (1) Remove the four screws **B** on both sides of the body.
- (2) Move the mechanism cover toward the front to disengage the front hook of the mechanism cover from the internal loading assembly (Joint c). Then remove the mechanism cover upward.



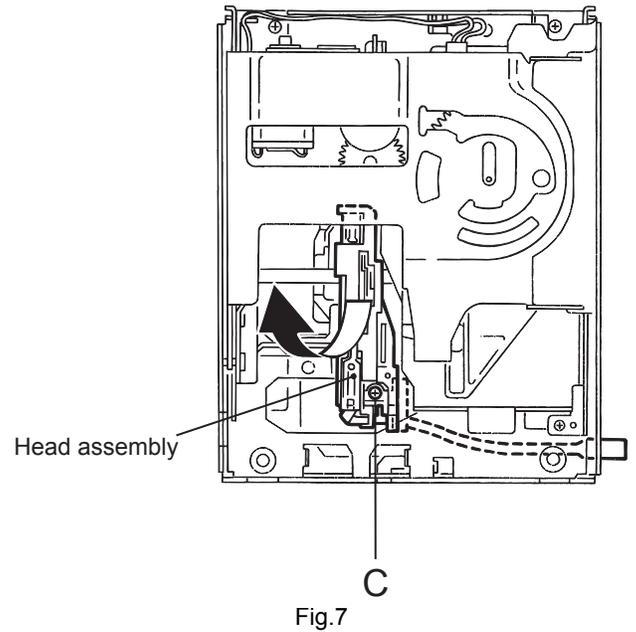
### 2.4.3 Removing the head lifter (See Fig.4 to 6)

- (1) Move the head lifter on top of the body in the direction of the arrow and turn around.
- (2) Detach the spring from the hook of the body. Remove the head lifter with the spring.
- (3) If necessary, remove the spring from the head lifter.



### 2.4.4 Removing the head assembly (See Fig.7)

- (1) Remove the screw **C** on the upper side of the body.  
Remove the head assembly while pulling the flexible harness from the body.



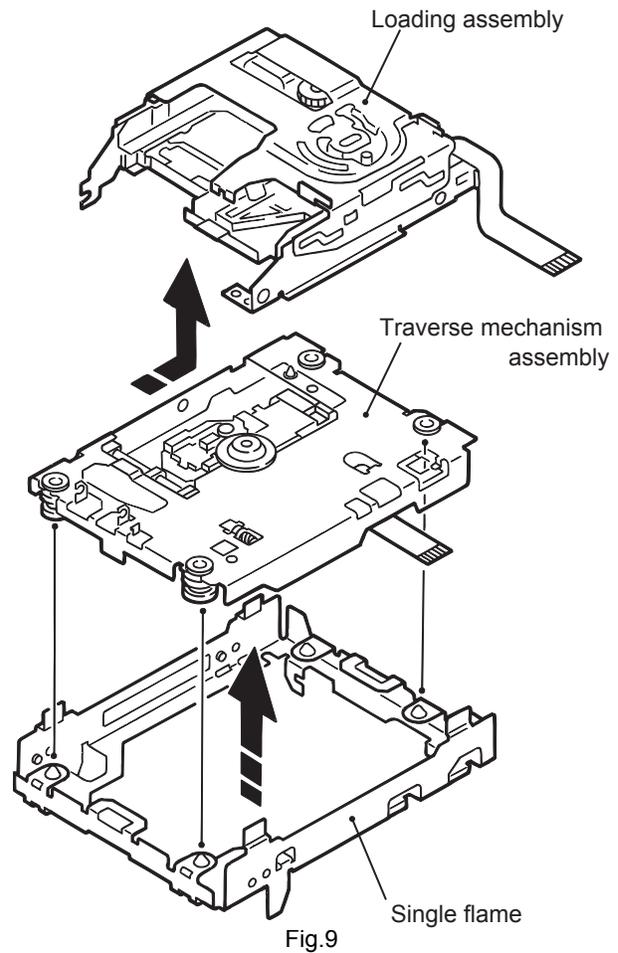
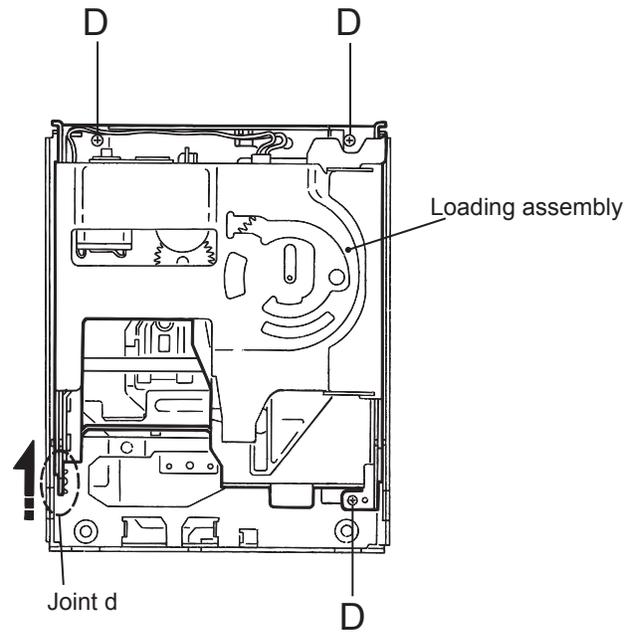
### 2.4.5 Removing the Loading assembly (See Fig.8 and 9)

#### Ref:

The loading assembly, the traverse mechanism assembly and the single frame will be removable after removing the loading assembly from the body.

- Prior to performing the following procedure, remove the main board, the mechanism cover, the head lifter and the head assembly.

- (1) Remove the three screws **D** on the upper side of the body.
- (2) Move the loading assembly forward to disengage it from the traverse mechanism assembly (Joint **d**). Then remove it upward.
- (3) Remove the traverse mechanism assembly from the single frame.



## 2.4.6 Loading assembly

### 2.4.6.1 Removing the slide base (L) / (R) (See Fig.10)

- (1) Remove the two screws **E** on the upper side of the loading assembly.
- (2) Remove the slide base (**L**) outward. (Release it from the joint bosses **E**.)
- (3) Remove the slide base (**R**) outward.

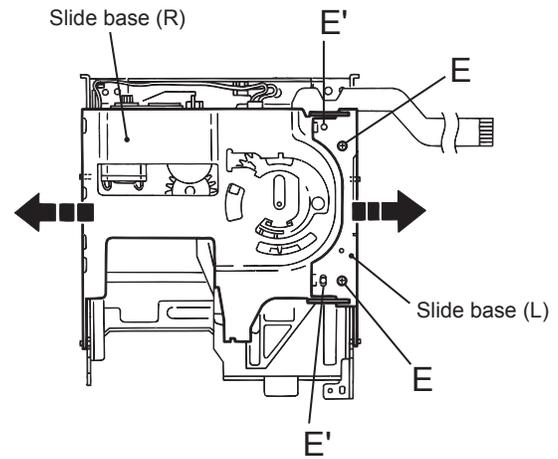


Fig.10

### 2.4.6.2 Removing the loading mechanism assembly (See Fig.11)

- (1) Detach the loading mechanism assembly upward to release the four pins on both sides from the loading motor, paying attention to the part e of the loading mechanism base.

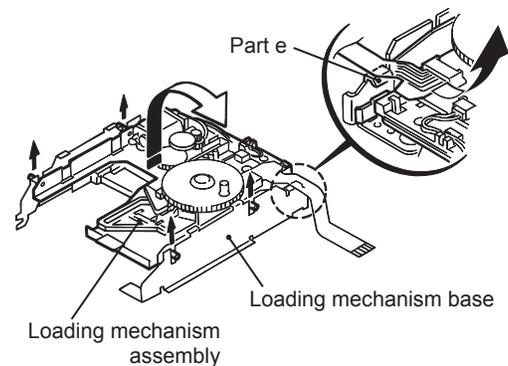


Fig.11

## 2.4.7 Loading mechanism assembly

### 2.4.7.1 Removing the loading motor (See Fig.12 and 13)

- (1) Disconnect the harnesses from the wire holder and from connector CN612 on the cam switch board.
- (2) Remove the screw **F** attaching the loading motor and release the joint **f**.
- (3) Remove the belt from the loading motor assembly.
- (4) Remove the two screws **G** attaching the loading motor.

### 2.4.7.2 Removing the cam gear and the cam switch board (See Fig.12)

- (1) Remove the slit washer attaching the cam gear and pull out the cam gear.
- (2) Disconnect the harness from the wire holder and from connector CN612 on the cam switch board.
- (3) Remove the two screws **H** and the clamp. Remove the cam switch board.

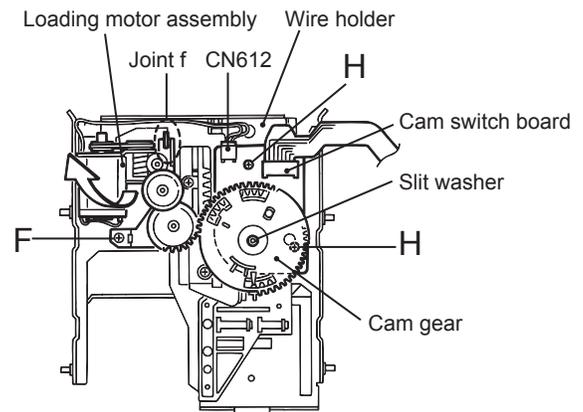


Fig.12

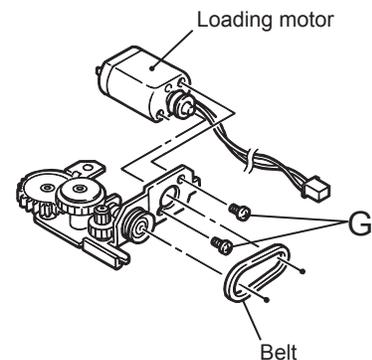


Fig.13

**2.4.7.3 Removing the cartridge holder assembly**  
**(See Fig.14 and 15)**

(1) Remove the two screws **I** on the upper side of the loading assembly.

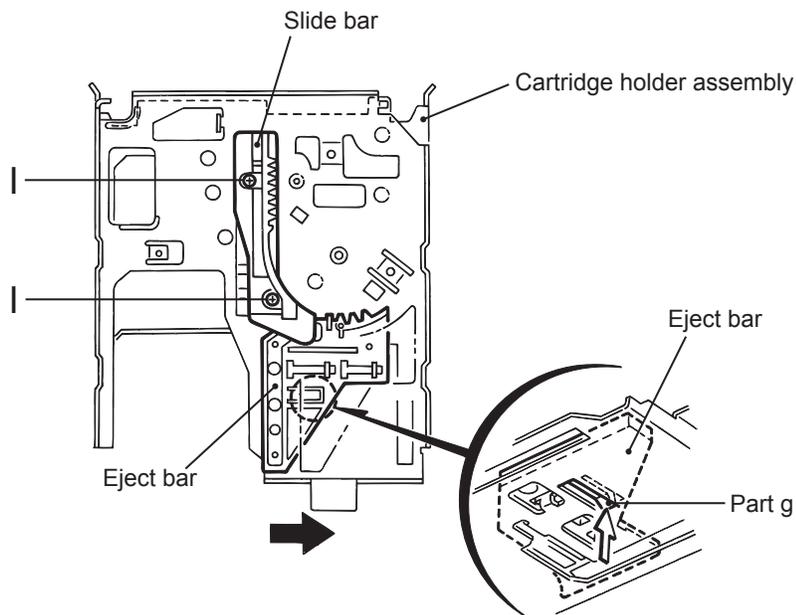


Fig.14

**2.4.7.4 Removing the slide bar and the eject bar**  
**(See Fig.14 and 15)**

• Prior to performing the following procedure, remove the cartridge holder assembly.

- (1) Remove the slide bar upward.
- (2) Move the eject bar outward until it stops as shown in Fig.14. Push the convex part **g** on the bottom of the body and remove the eject bar from the chassis.

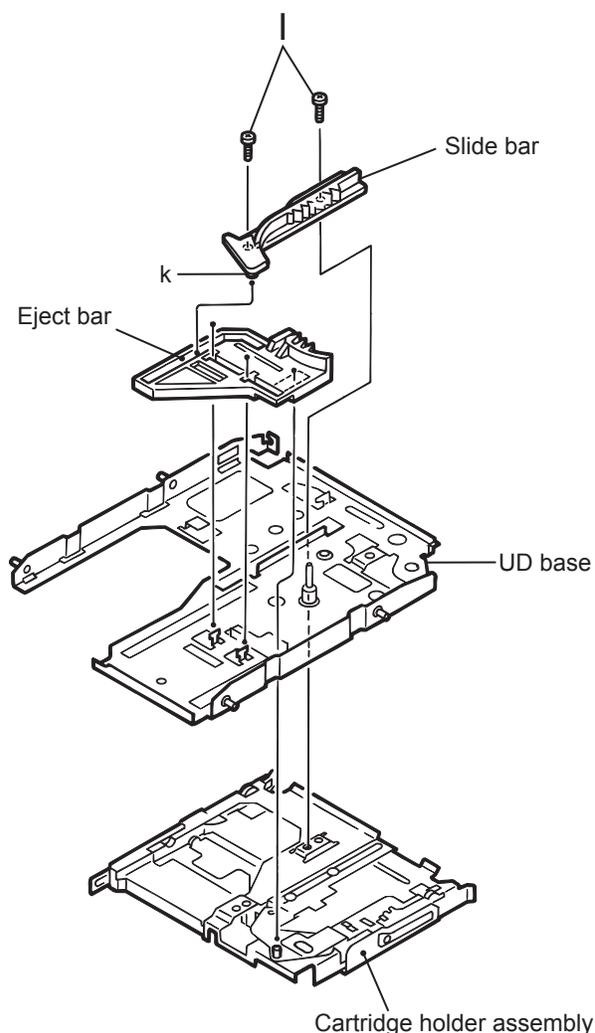
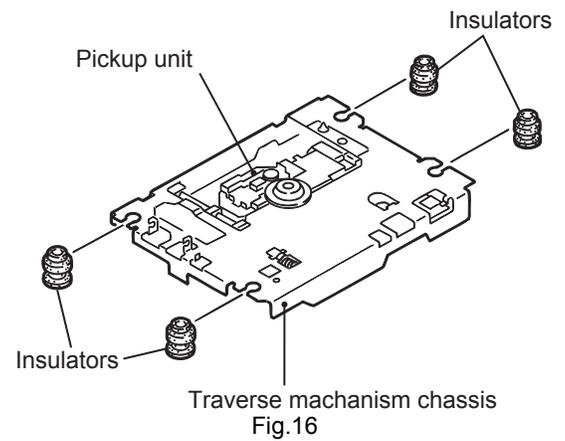


Fig.15

## 2.4.8 Traverse mechanism assembly

### 2.4.8.1 Removing the Insulators (See Fig.16)

- (1) Disengage the four insulators from the notches of the traverse mechanism chassis.



### 2.4.8.2 Removing the pickup unit (See Fig.17)

- (1) Turn over the traverse mechanism assembly and remove the screw **J** attaching the shaft holder (**F**).
- (2) Move the shaft inward and remove it from the shaft holder (**R**).
- (3) Detach the shaft side of the pickup unit upward and release the joint **h** with the pickup guide. Then remove the pickup unit with the shaft.

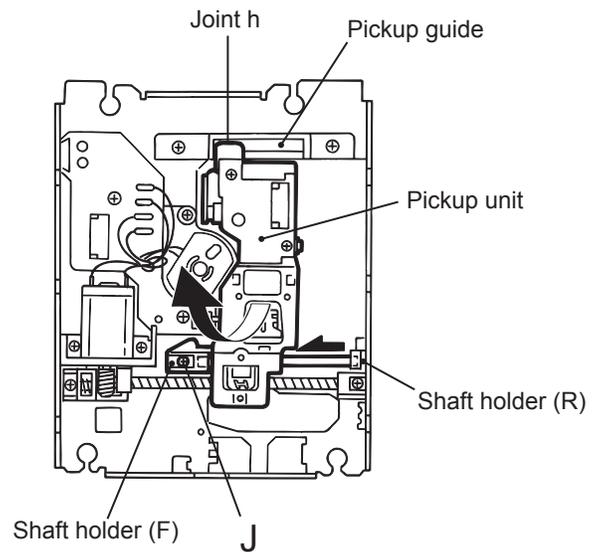


Fig.17

### 2.4.8.3 Removing the pickup (See Fig.18)

- (1) Draw out the shaft from the pickup.
- (2) Remove the two screws **K** attaching the rack spring.

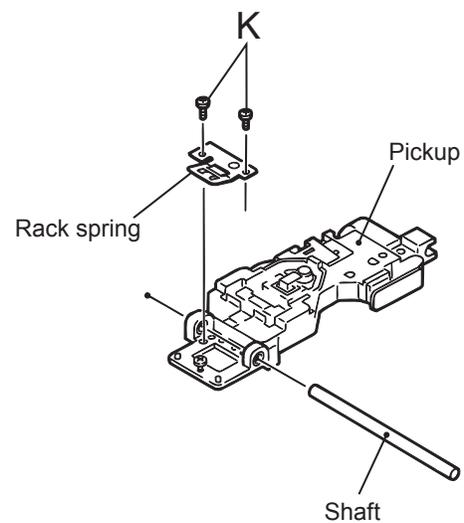


Fig.18

#### 2.4.8.4 Removing the feed motor assembly (See Fig.15, 20)

- It is not necessary to remove the pickup unit.
  - (1) For the white and black harnesses extending from the feed motor assembly, unsolder the soldering **i** on the traverse mechanism board.
  - (2) Remove the two screws **L** attaching the feed motor assembly.
  - (3) Remove the two screws **N** attaching the feed motor bracket.

#### 2.4.8.5 Removing the traverse mechanism board (See Fig.19)

- Prior to performing procedure, remove the feed motor assembly.
  - (1) For the red and black harnesses extending from the spindle motor, unsolder the soldering **j** on the traverse mechanism board.
  - (2) Remove the screw **M** attaching the traverse mechanism board.

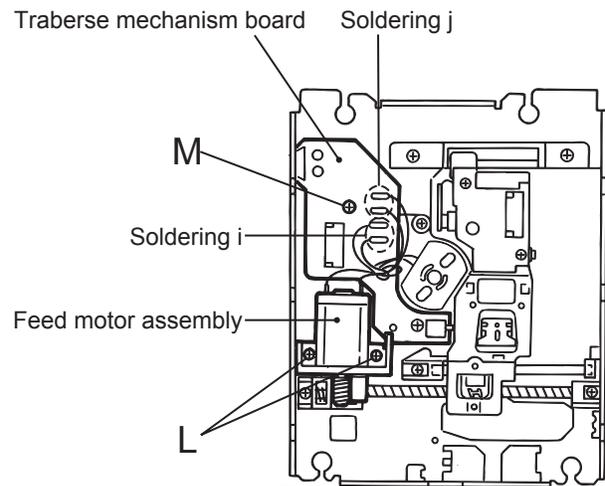


Fig.19

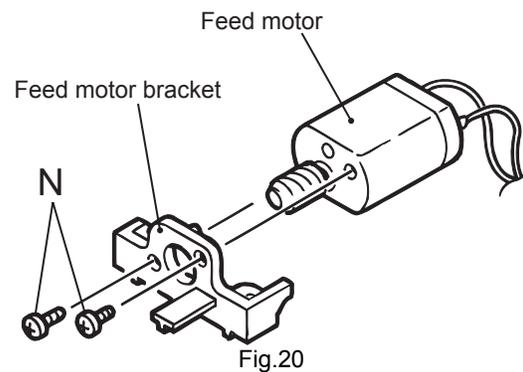


Fig.20

### 2.4.9 Reattaching the loading assembly

- (1) Reattach the eject bar to the UD base. (Fig.15 and 21)
- (2) Reattach the slide bar to the loading mechanism chassis while fitting the boss marked k to the eject bar slot. (Fig.21)
- (3) Slide the slide bar and the eject bar in the direction of the arrow in Fig.20 and reattach the cartridge holder assembly using the two screws I. (Fig.21 and 22)

#### ATTENTION:

Make sure the pin of the eject lever marked I is fitted to the slot of the eject bar marked m at the bottom of the loading mechanism chassis after moving the eject lever and the loading slider of the cartridge holder assembly in the direction of the arrow. (Refer to Fig.22)

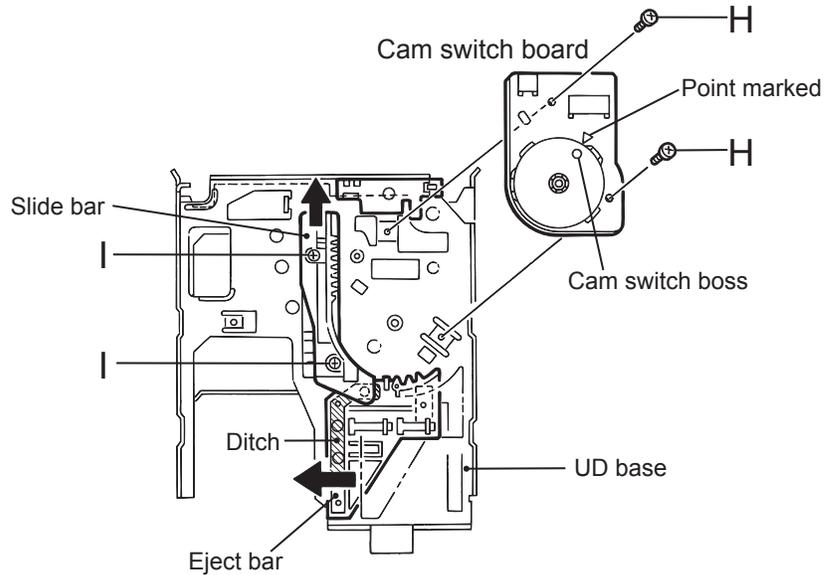


Fig.21

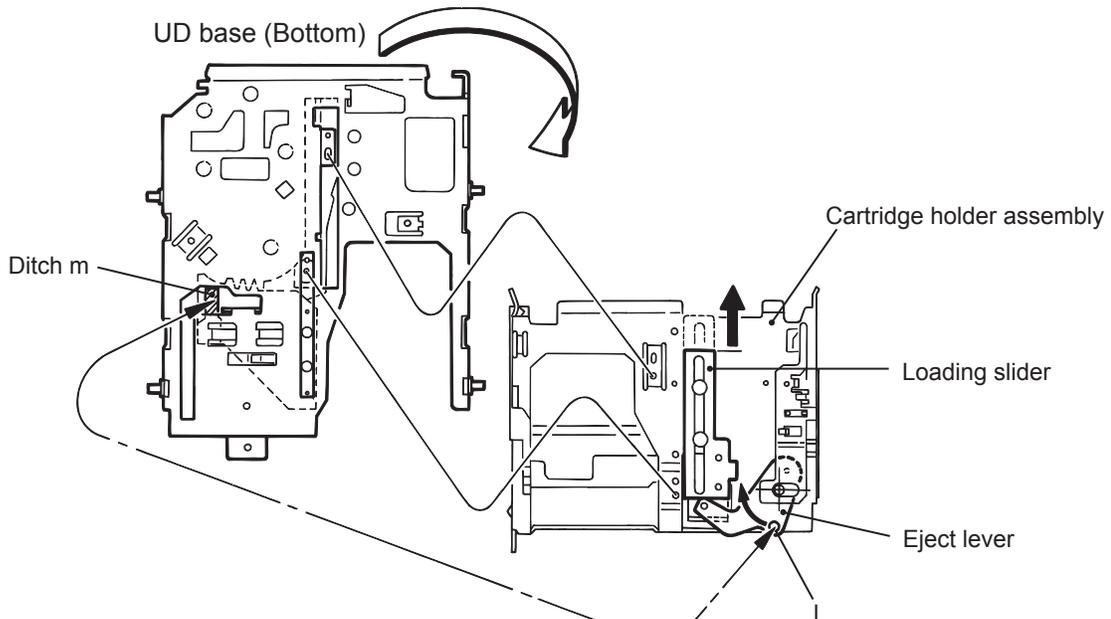


Fig.22

- (4) Reattach the wire holder to the UD base while engaging the UD base hook marked u to the wire holder slot marked t (At the same time, the boss on the reverse side of the wire holder is fitted to the UD base round hole).
- (5) Reattach the cam switch board using the two screws **H**. (Fig.23)
- (6) Turn the cam switch to bring the boss to the point marked  $\nabla$  on the cam switch board. Reattach the cam gear using a slit washer while fitting the cam gear slot to the cam switch boss. (Fig.23)

**ATTENTION:**

When reattaching the cam gear, the cam switch boss should be fitted to the cam gear slot, and the triangle mark of the cam gear should be aligned to the hole of the eject bar as shown in Fig.23.

- (7) Reattach the loading motor assembly, using the screw **F**. Connect the harness extending from the loading motor to connector CN612 on the switch board and fix it with the wire holder. (Fig.23)

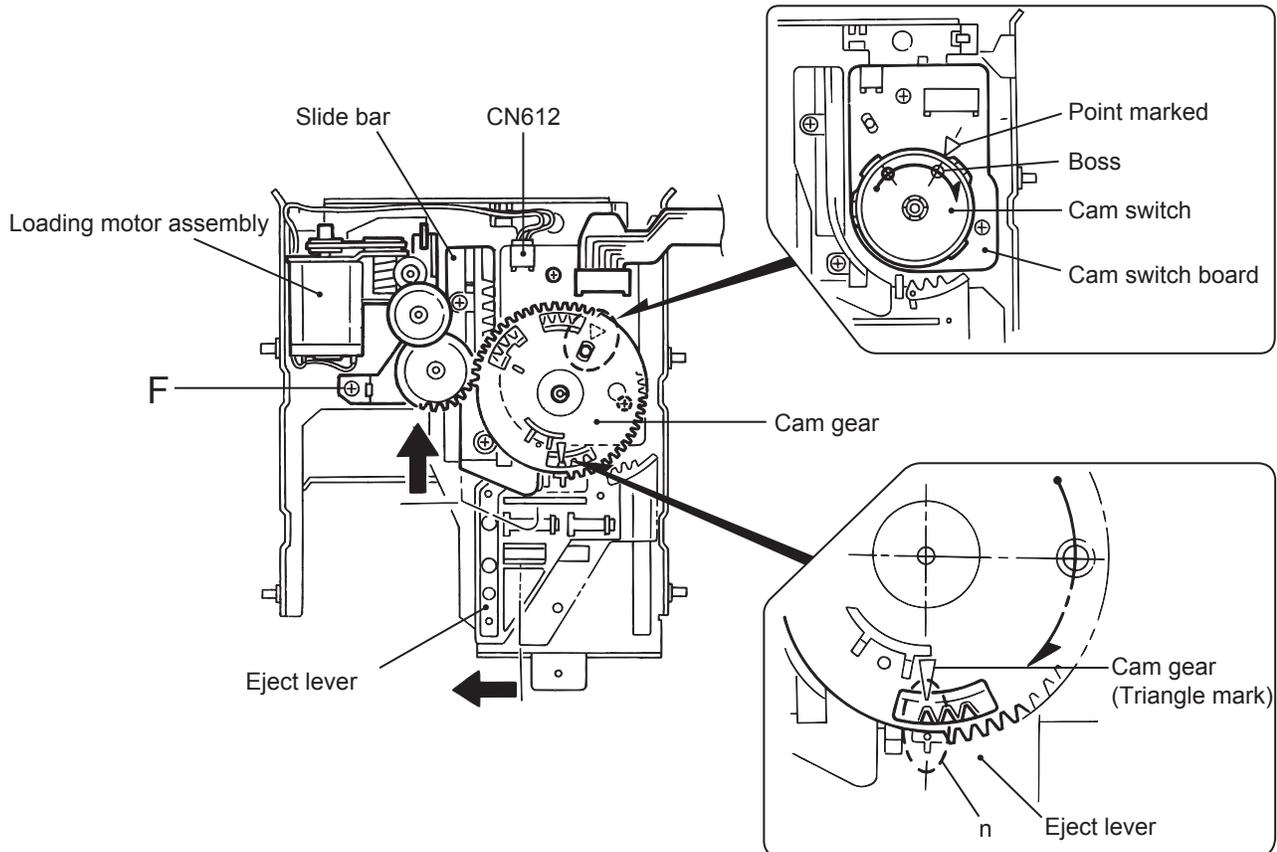


Fig.23

- (8) Reattach the UD base while engaging the four pins on both sides of the UD base to the notches of the loading mechanism base and placing the edge (marked e') of the cartridge holder assembly under the hook e of the loading mechanism base. (Fig.24)

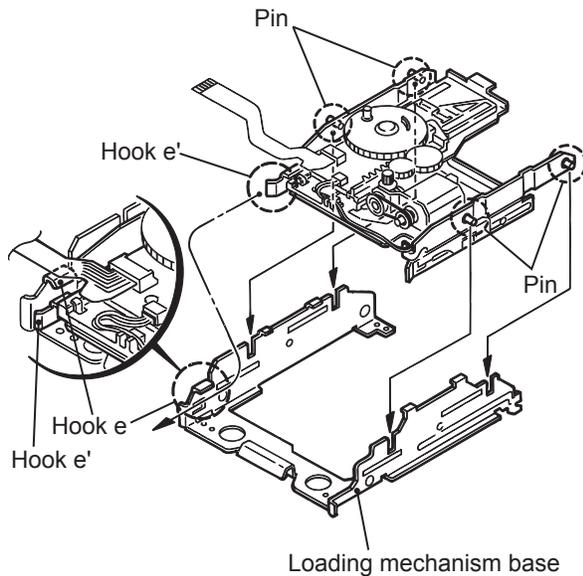


Fig.24

- (9) Reattach the slide base (R) while fitting the two pins on another side of the UD base to the slots of the slide base (R). (Fig.25)

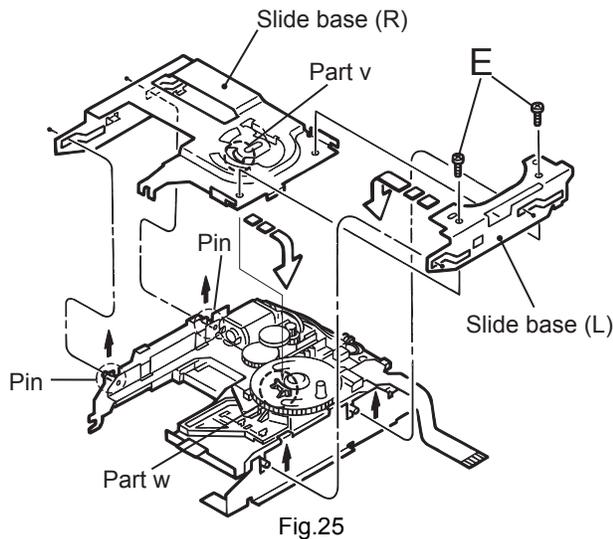


Fig.25

**ATTENTION:**

Fit the part v of the slide base (R) to the part w on the inward side of the cam gear rib. (Fig.26)

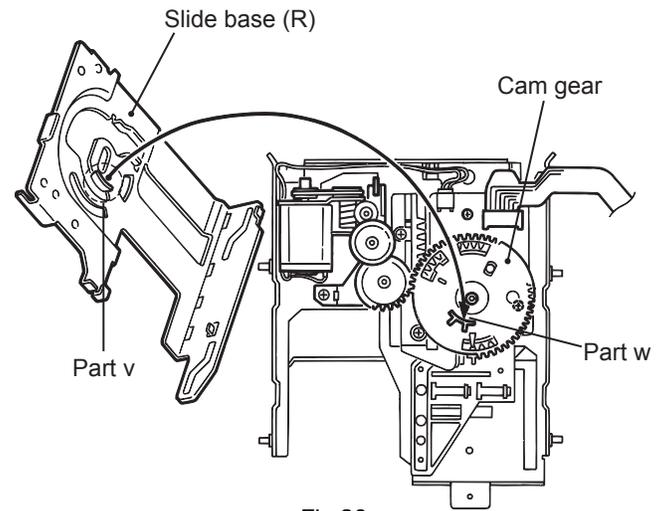


Fig.26

- (10) Reattach the slide base (L) on the slide base (R) while fitting the two pins on another side of the UD base to the slots of the slide base (L) (Fig.26). Make sure the two slots of the slide base (L) are fitted to the two bosses marked E' and tighten the two screws E. (Fig.27)

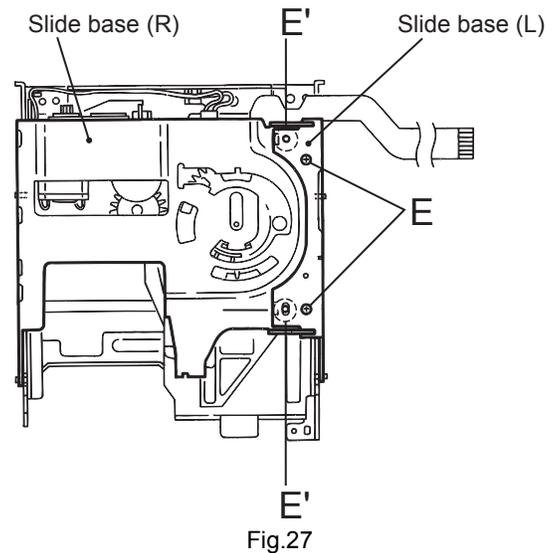


Fig.27

**Ref:**

To expedite the work, bring up the UD base slightly when fitting each pin to the appropriate notch.

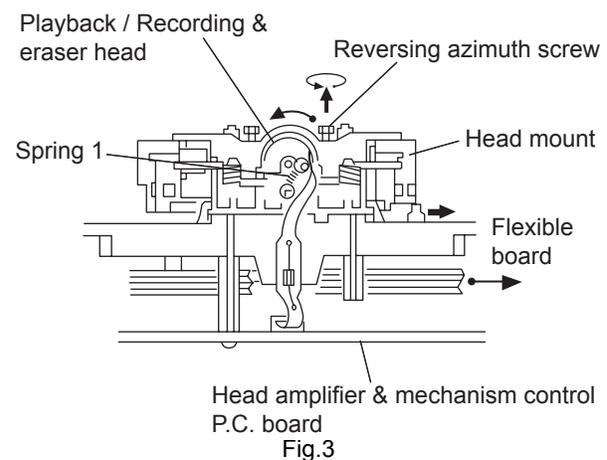
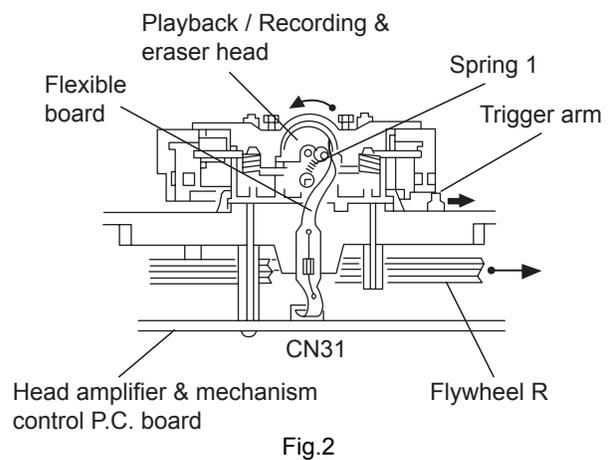
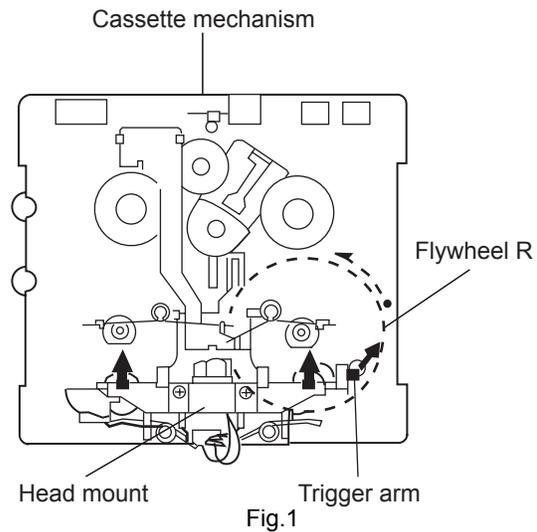
## 2.5 Cassette mechanism section

### 2.5.1 Removing the playback / recording & eraser head (See Fig. 1 to 3)

- (1) While shifting the trigger arms seen on the right side of the head mount in the arrow direction, turn the flywheel **R** in counterclockwise direction until the head mount has gone out with a click (See Fig. 1).
- (2) When the flywheel **R** is rotated in counterclockwise direction, the playback / recording & eraser head will be turned in counterclockwise direction from the position in Fig. 2 to that in Fig. 3.
- (3) At this position, disconnect the flexible P.C. board (outgoing from the playback / recording & eraser head) from the connector CN31 on the head amplifier & mechanism control P.C. board.
- (4) Remove the flexible P.C. board from the chassis base.
- (5) Remove the spring 1 from behind the playback / recording & eraser head.
- (6) Loosen the reversing azimuth screw retaining the playback / recording & eraser head.
- (7) Take out the playback / recording & eraser head from the front of the head mount.
- (8) The playback / recording & eraser head should also be removed similarly according to steps 1 to 7 above.

### 2.5.2 Reassembling the playback / recording & eraser head (See Fig.3)

- (1) Reassemble the playback head from the front of the head mount to the position as shown in Fig. 3.
- (2) Fix the reversing azimuth screw.
- (3) Set the spring 1 from behind the playback / recording & eraser head. Attach the flexible P.C. board to the chassis base, as shown in Fig. 3.
- (4) Attach the flexible P.C. board to the chassis base, as shown in Fig. 3.
- (5) The playback / recording & eraser head should also be re-assembled similarly to step 1 to 4 above.



### 2.5.3 Removing the head amplifier & mechanism control board

(See Fig. 4)

- (1) Remove the cassette mechanism assembly.
- (2) After turning over the cassette mechanism assembly, remove the three screws **A** retaining the head amplifier & mechanism control board.
- (3) Disconnect the connector CN32 on the board including the connector CN 1 on the reel pulse P.C. board.
- (4) When necessary, remove the 4 pin parallel wire soldered to the main motor.

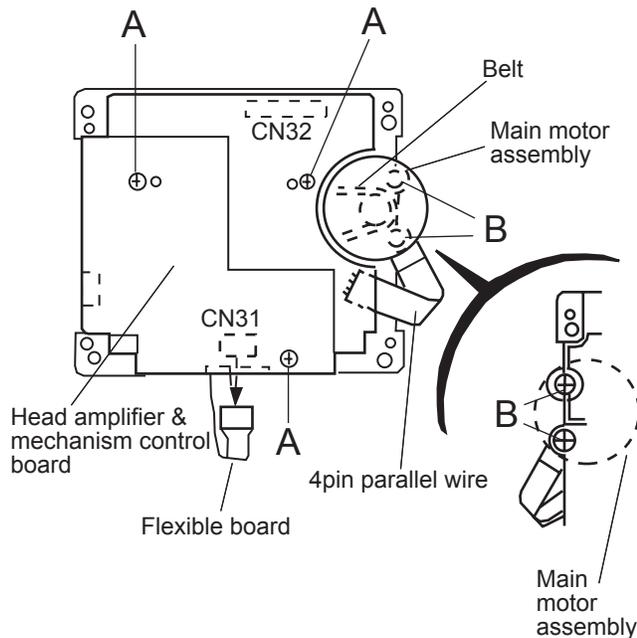


Fig.4

### 2.5.4 Removing the main motor assembly

- (1) Remove the two screws **B** retaining the main motor assembly (See Fig. 4 and 5).
- (2) While raising the main motor, remove the capstan belt from the motor pulley (See Fig. 5).

#### CAUTION:

Be sure to handle the capstan belt so carefully that this belt will not be stained by grease and other foreign matter. Moreover, this belt should be hanged while referring to the capstan belt hanging method in Fig. 5 and 6.

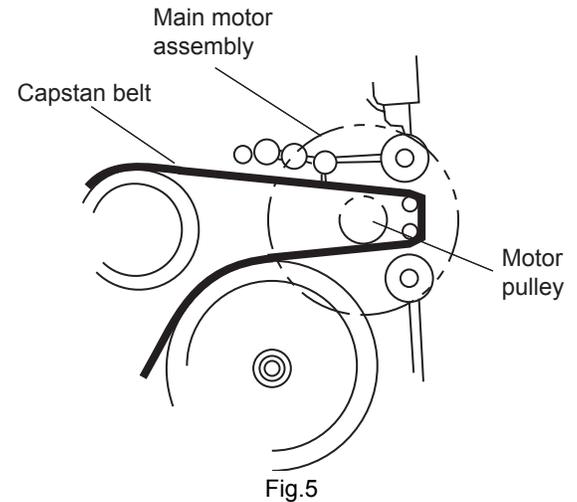


Fig.5

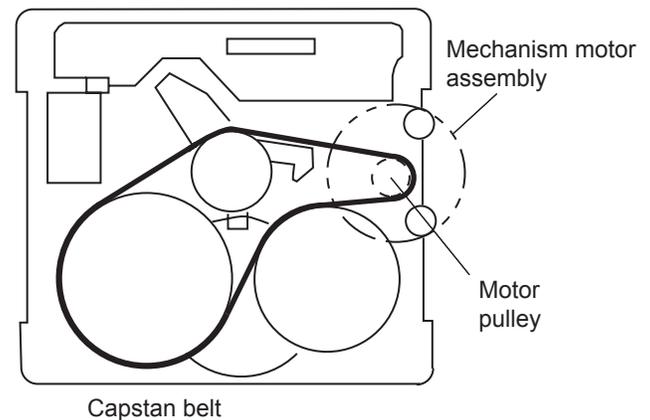


Fig.6

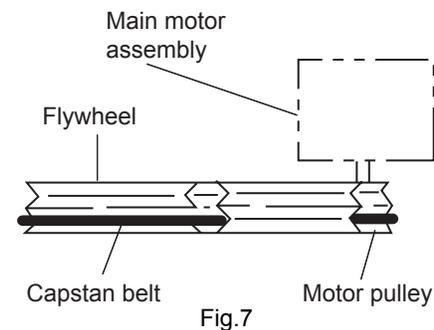


Fig.7

### 2.5.5 Removing the flywheel (See Fig. 8 and 9)

- (1) Remove the head amplifier & mechanism control P.C. board.
- (2) Remove the main motor assembly.
- (3) After turning over the cassette mechanism, remove the two slit washers **1** and fixing the capstan shafts **R** and **L**, and pull out the flywheel **R** and **L** respectively from behind the cassette mechanism.

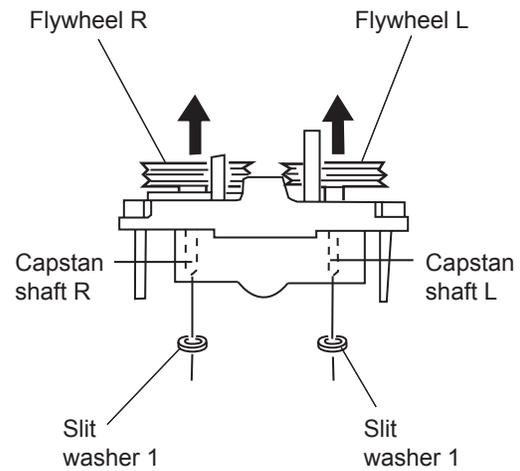


Fig.8

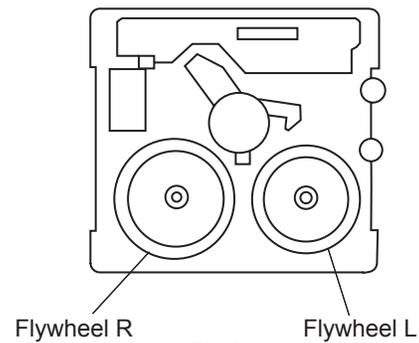


Fig.9

### 2.5.6 Removing the reel pulse P.C. board and solenoid (See Fig. 10)

- (1) Remove the five pawls **a** to **e** reattaining the reel pulse board.
- (2) From the surface of the reel pulse board parts, remove the two pawls **f** and **g** retaining the solenoid.

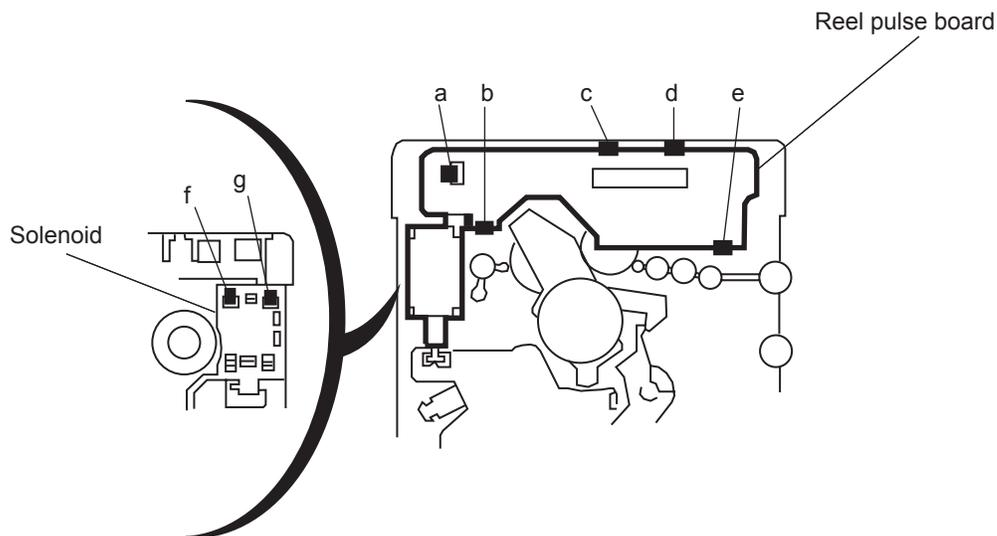
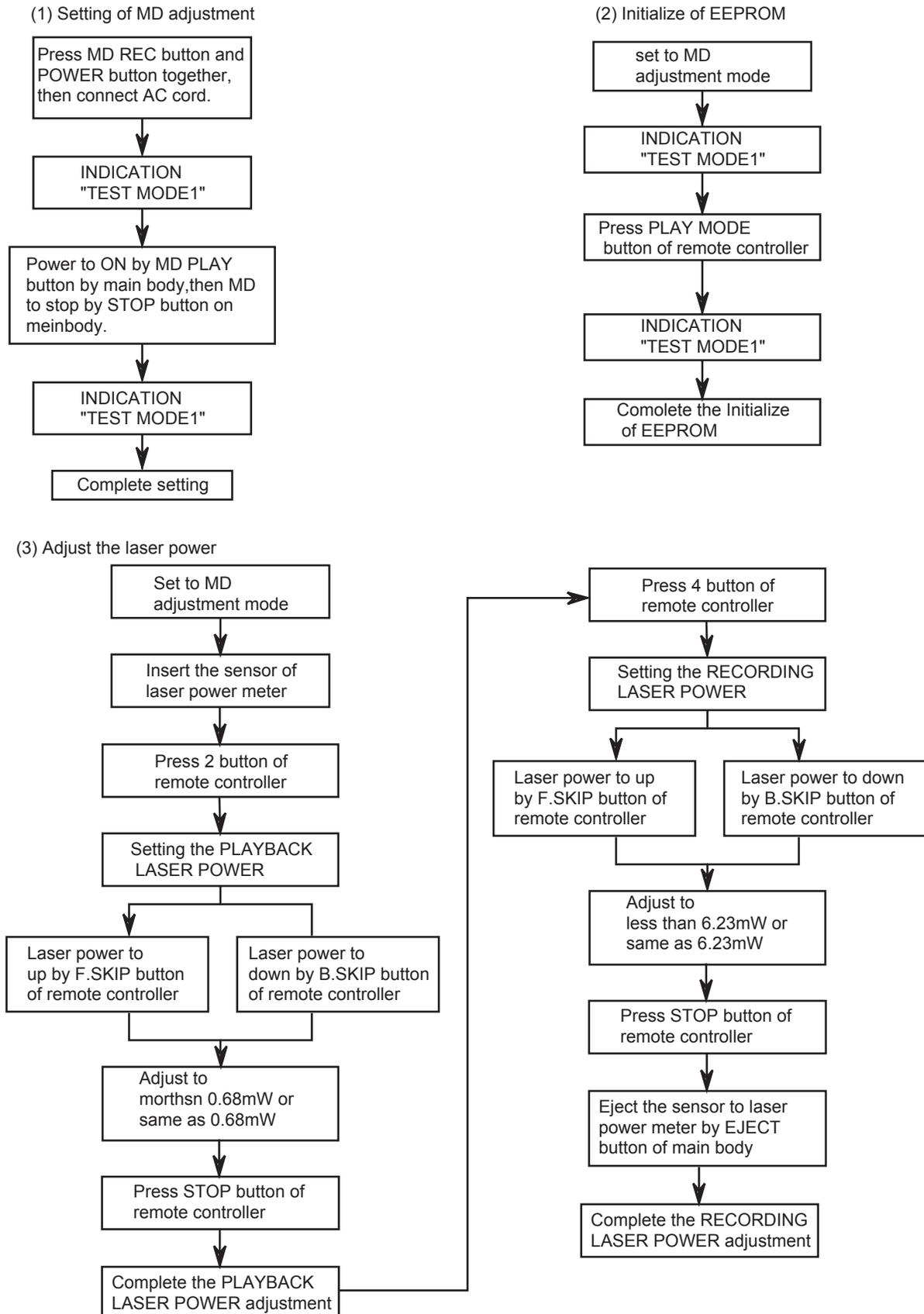


Fig.10

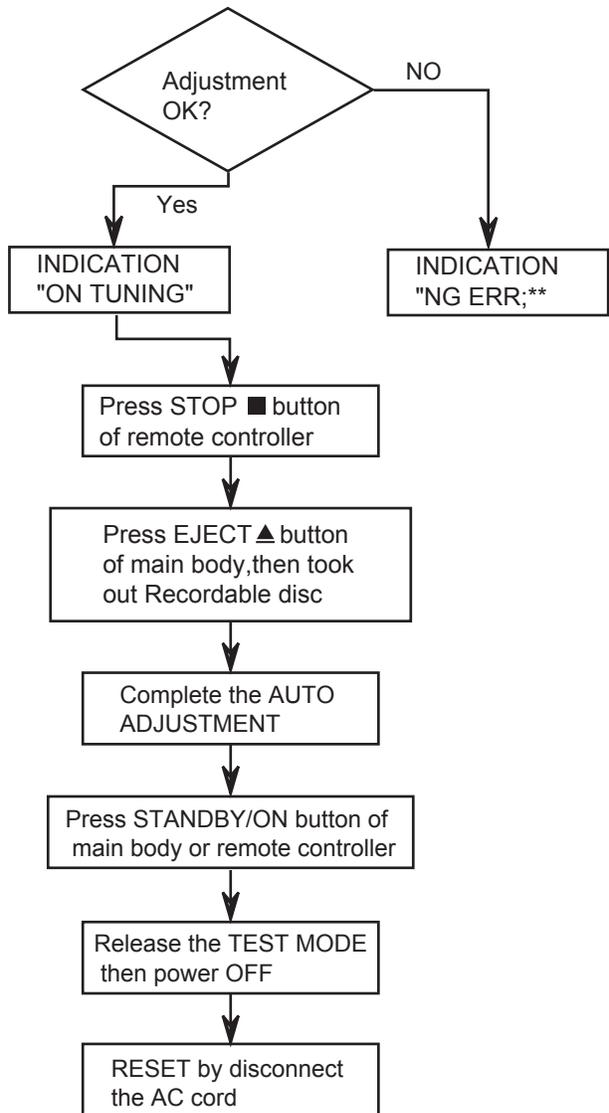
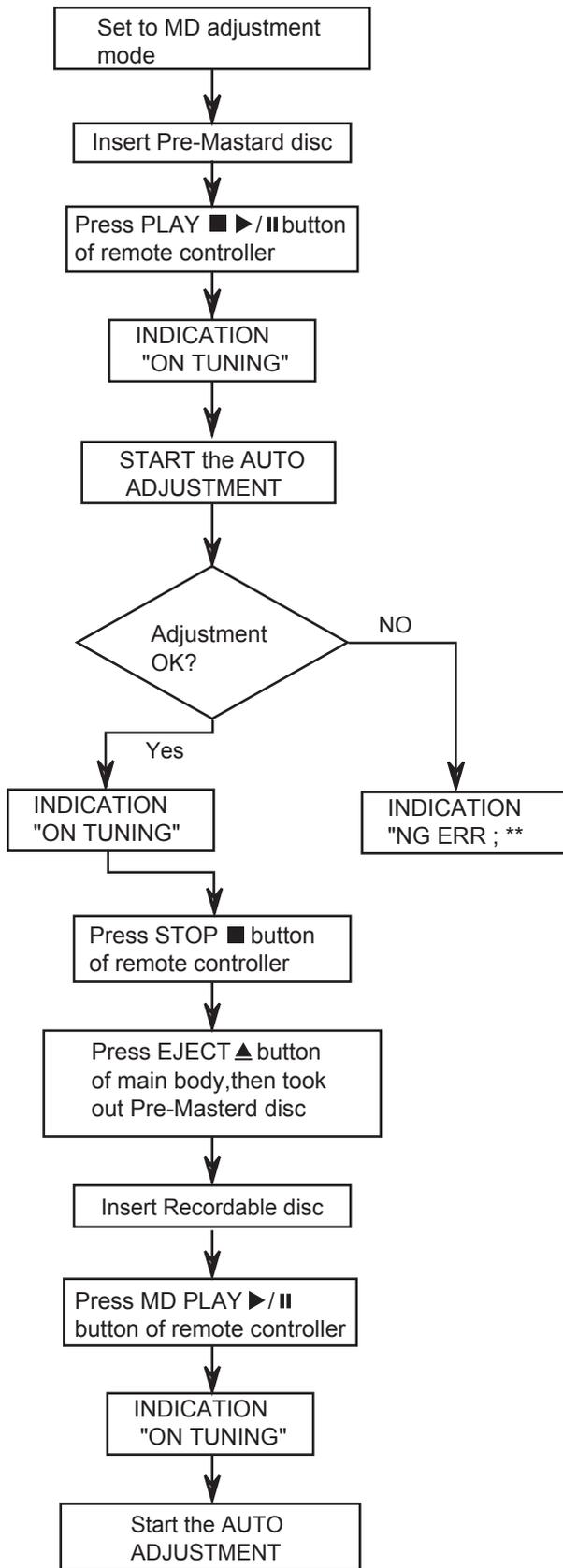
## SECTION 3

### Adjustment method

#### 3.1 MD adjustment(Auto adjust)



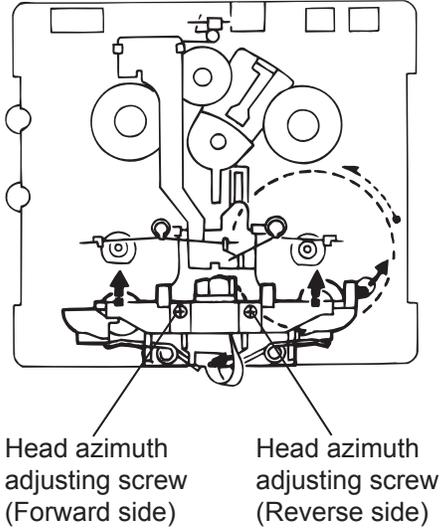
(4) Disc adjustment(Auto adjust)



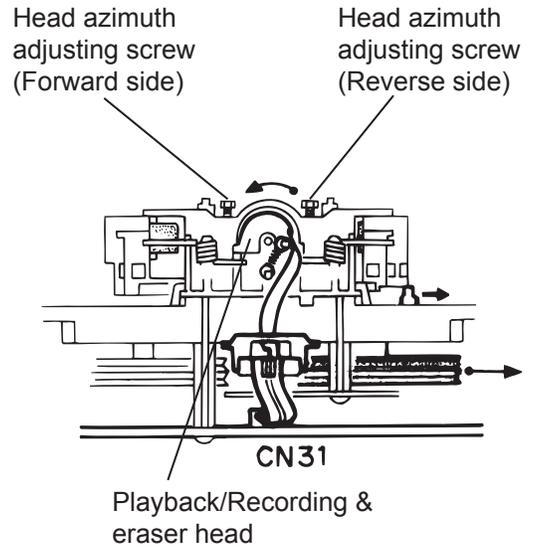
CODE	Adjustment NG part
00	Not complete the AUTO ADJUSTMENT
01	Rest swith detection
02	Focus ON
03	Pit area EF barance, Tr offset adj
04	Pit area ABCD level adj
05	Pit area Focus servo AGC
06	Pit area Tracking servo AGC
07	Pit area Focus bias adj
08	GRV area EF baranee, TR offset adj
09	GRV area ABCD level adj
0A	GRV area Focus servo AGC
0B	GRV area Tracking servo AGC
0C	GRV area Focus bias adj
0D	Temp
0E	EEPROM write
FF	AUTO ADJUST complte

3.2 Cassette adjustment

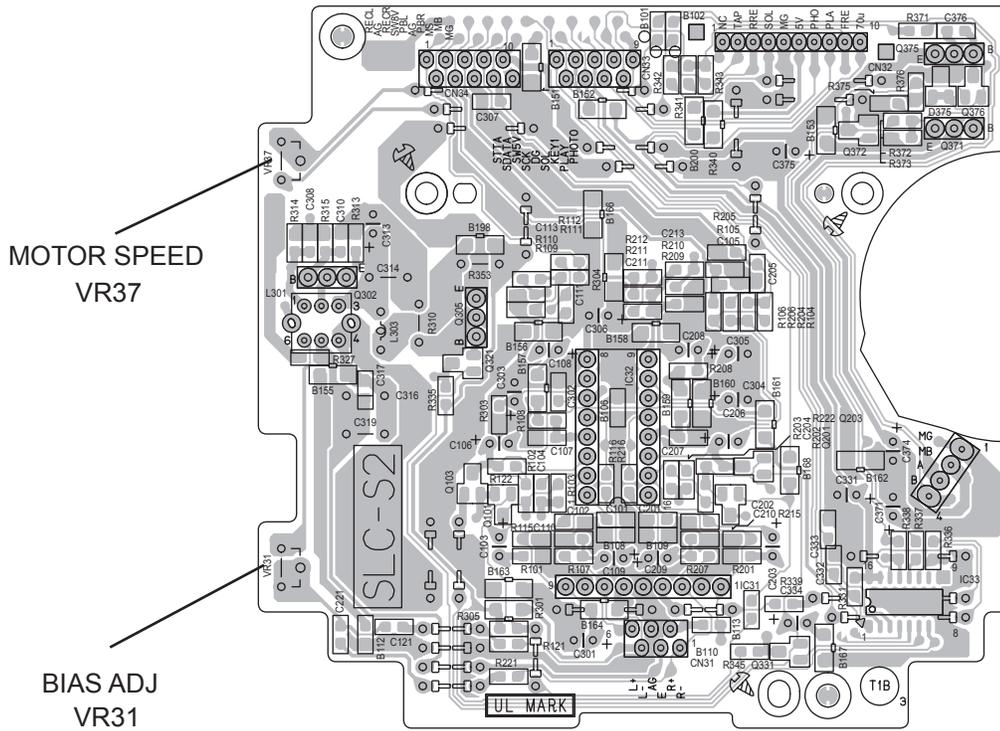
3.2.1 Cassette mechanism section



3.2.2 Cassette mechanism section (Back side)



3.2.3 Cassette AMP board



### 3.2.4 Tape Recorder Section

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Confirmation of head angle	Test tape : VT703L (8kHz) Measurement output terminal : Speaker terminal Speaker R (Load resistance: 4 ohm) : Headphone terminal	1 Playback the test tape VT703L (8kHz) 2 With the recording & playback mechanism, adjust the head azimuth screw so that the forward and reverse output levels become maximum. After adjustment lock the head azimuth at least by half turn. 3 In either case this adjustment should be performed in both the forward and reverse directions with the head azimuth screw.	Maximum output	Adjust the head azimuth screw only when the head has been changed.
Confirmation of tape speed	Test tape : VT712 (3kHz) Measurement output terminal : Headphone terminal	Adjust VR37 so that the frequency counter reading becomes 2,940~3,090Hz $\pm$ when playing back the test tape VT712 (3kHz) with playback and recording mechanism after ending forward winding of the tape.	Tape speed of deck : 2,940 ~ 3,090Hz	VR37

### 3.2.5 Reference Values for Confirmation Items

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Difference between the forward and reverse speed	Test tape : VT712 (3kHz) Measurement output terminal : Speaker terminal Speaker R (Load resistance: 4 ohm) Measurement output terminal : Headphone	When the test tape VT712 (3kHz) has been played back with the recording and playback mechanism at the beginning of forward winding, the frequency counter reading of the difference between both of the mechanism should be 6.0Hz or less.	6.0Hz or less	Head azimuth screw
Wow & flutter	Test tape : VT712 (3kHz) Measurement output terminal : Headphone terminal	When the test tape VT712 (3kHz) has been played back with the recording and playback mechanism at the beginning of forward winding, the frequency counter reading of wow & flutter should be 0.25% or less (WRMS).	0.25% or less (WRMS)	

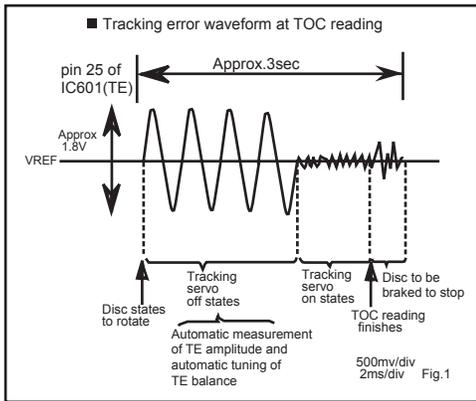
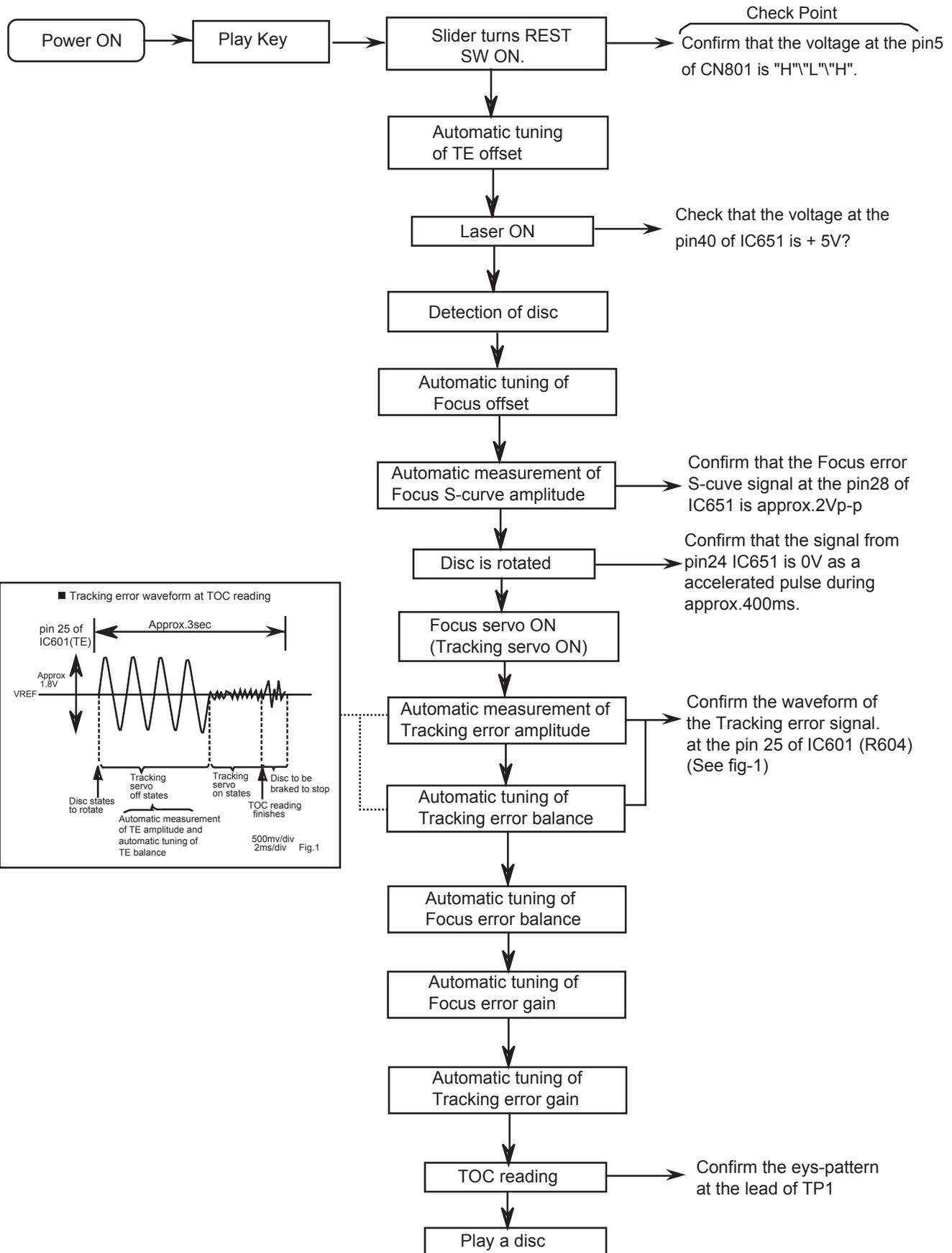
### 3.2.6 Electrical Performance

Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Adjustment of recording bias current (Reference Value)	Mode : Forward or reverse mode • Recording mode • Test tape : AC-514 to TYPE II and AC-225 to TYPE I Measurement output terminal : Both recording and headphone terminals	1 With the recording and playback mechanism load the test tapes(AC-514 to TYPE II and AC-225 to TYPE I ), and set the mechanism to the recording and pausing condition in advance. 2 After connecting 100 ohm in series to the recorder head measure the bias current with a valve voltmeter at both of the terminals. 3 After resetting the [PAUSE] mode start recording. At this time adjust VR31 for Lch and VR32 for Rch so that the recording bias current values become 4.0μA (TYPE I ) and 4.20μA (TYPE II ).	AC-225 : 4.20μA AC-514 : 4.0μA	VR31
Adjustment of recording and playback frequency characteristics	Reference frequency : 1kHz and 10kHz (REF.: -20dB) Test tape : AC-514 to TYPE II Measurement input terminal : OSC IN	1 With the recording and playback mechanism load the test tapes (AC-514 to TYPE II ), and set the mechanism to the recording and pausing condition in advance. 2 While repetitively inputting the reference frequency signal of 1kHz and 10kHz from OSC IN record and playback the tape. 3 While recording and playback the test tape in TYPE II ,adjust VR31 for Lch and VR32 for Rch so that the output deviation between 1kHz and 10kHz becomes -1dB ± 2dB.	Output deviation between 1kHz and 10kHz : -1dB ± 2dB	VR31

### 3.2.7 Reference Values for Electrical Function Confirmation Items

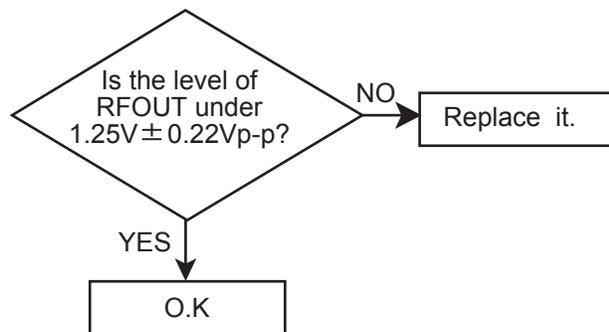
Items	Measurement conditions	Measurement method	Standard Values	Adjusting positions
Recording bias frequency	Forward or reverse • Test tape : TYPE II (AC-514) Measurement terminal : BIAS TP on P.C. board	1 While changing over to and from BIAS 1 and 2, confirm that the frequency is changed. 2 With the recording and playback mechanism load the test tape. (AC-514 to TYPE II ), and set the mechanism to the recording and pausing condition in advance. 3 Confirm that the BIAS TP frequency on the P.C. board is 100kHz ± 6kHz.	100 kHz ± 6 kHz	
Eraser current (Reference value)	Forward or reverse • Recording mode • Test tape : AC-514 to TYPE II and AC-225 to TYPE I Measurement terminal : Both of the eraser head terminals	1 While recording and playback mechanism, load the test tapes (AC-514 to TYPE II and AC-225 to TYPE I), and set the mechanism to the recording and pausing conditions in advance. 2 After setting to the recording conditions, connect 1W in series to the eraser head on connect 1W in series to the eraser head on the recording and playback mechanism side and measure the eraser current from both of the eraser terminals.	TYPE II : 120 mA TYPE I : 75 mA	

3.3 Flow of functional operation until TOC read



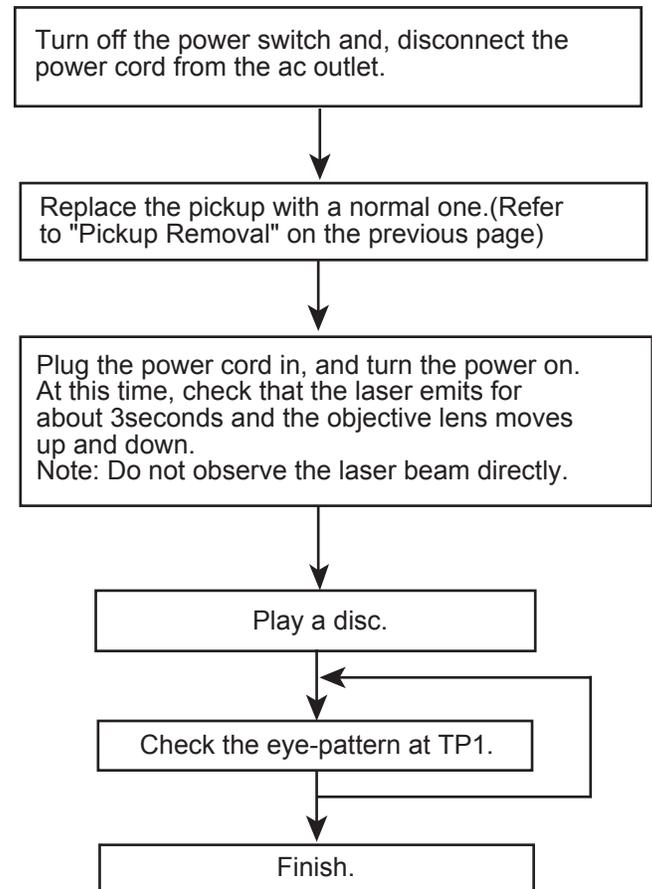
### 3.4 Maintenance of laser pickup

- (1) Cleaning the pick up lens  
Before you replace the pick up, please try to clean the lens with a alcohol soaked cotton swab.
- (2) Life of the laser diode  
When the life of the laser diode has expired, the following symptoms will appear.
  - 1.The level of RF output (EFM output : amplitude of eye pattern) will below.



- (3) Semi-fixed resistor on the APC PC board  
The semi-fixed resistor on the APC printed circuit board which is attached to the pickup is used to adjust the laser power. Since this adjustment should be performed to match the characteristics of the whole optical block, do not touch the semi-fixed resistor.  
If the laser power is lower than the specified value, the laser diode is almost worn out, and the laser pickup should be replaced.  
If the semi-fixed resistor is adjusted while the pickup is functioning normally, the laser pickup may be damaged due to excessive current.

### 3.5 Replacement of laser pickup

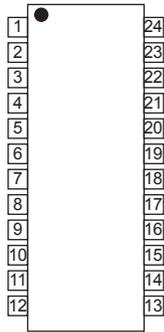


## SECTION 4

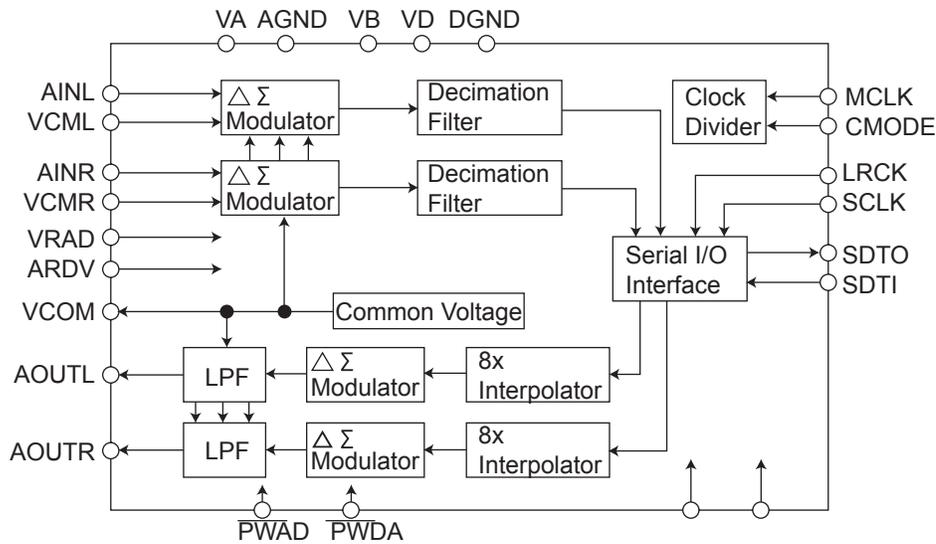
### Description of major ICs

#### 4.1 AK4519VF-X (IC480) : A/D D/A converter

- Pin layout



- Block diagram



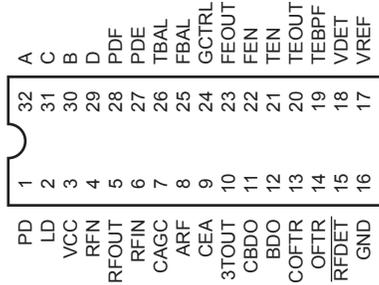
- Pin Function

Pin No.	Symbol	I/O	Function
1	VRDA	I	Voltage Reference Input Pin for DAC, VA
2	VRAD	I	Voltage Reference Input Pin for ADC, VA
3	AINR	I	Rch Analog Input Pin
4	VCMR	O	Rch Common Voltage Output Pin, 0.45xVA
5	VCML	O	Lch Common Voltage Output Pin, 0.45xVA
6	AINL	I	Lch Analog Input Pin
7	PWAD	I	ADC Power-Down Mode Pin "L":Power Down
8	PWDA	I	DAC Power-Down Mode Pin "L":Power Down
9	MCLK	I	Master Clock Input Pin
10	LRCK	I	Input/Output Channel Clock Pin
11	SCLK	I	Audio Serial Data Clock Pin

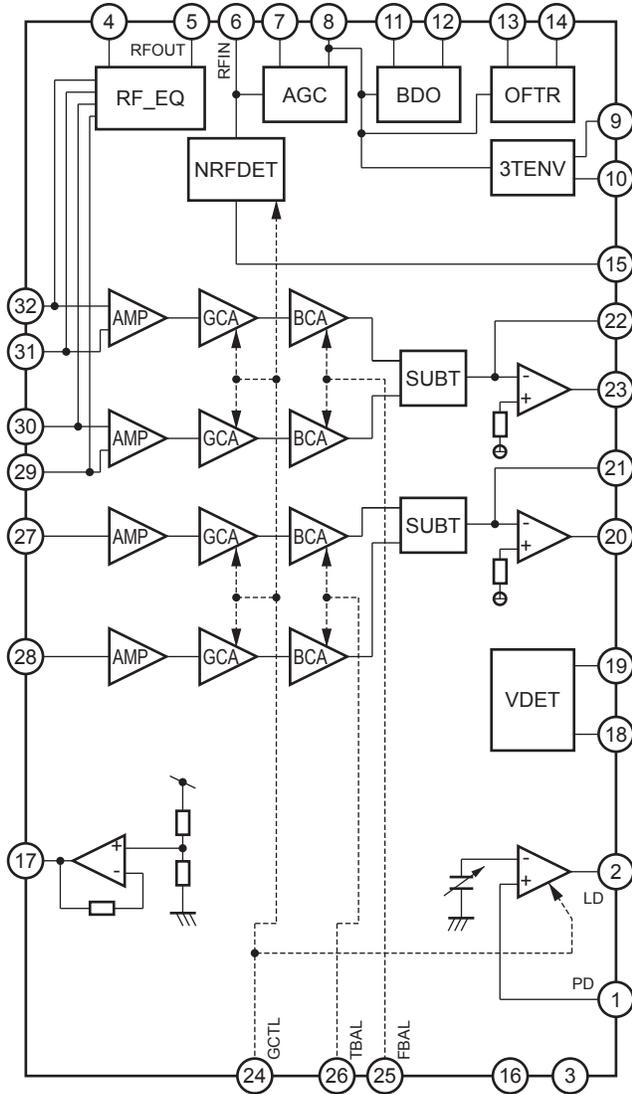
Pin No.	Symbol	I/O	Function
12	SDTO	O	Audio Serial Data Output Pin
13	DGND	-	Digital Ground Pin
14	VD	-	Digital Power Supply Pin
15	SDTI	I	Audio Serial Data Input Pin
16	CMODE	I	Master Clock Select Pin
17	DEM1	I	De-emphasis Frequency Select Pin
18	DEM0	I	De-emphasis Frequency Select Pin
19	AOUTL	O	Lch Analog Output Pin
20	AOUTR	O	Rch Analog Output Pin
21	VCOM	O	Common Voltage Output Pin, 0.45xVA
22	AGND	-	Analog Ground Pin
23	VB	-	Substrate Pin
24	VA	-	Analog Power Supply Pin

4.2 AN22000A-W (IC601) : RF & SERVO AMP

• Terminal layout



• Block diagram

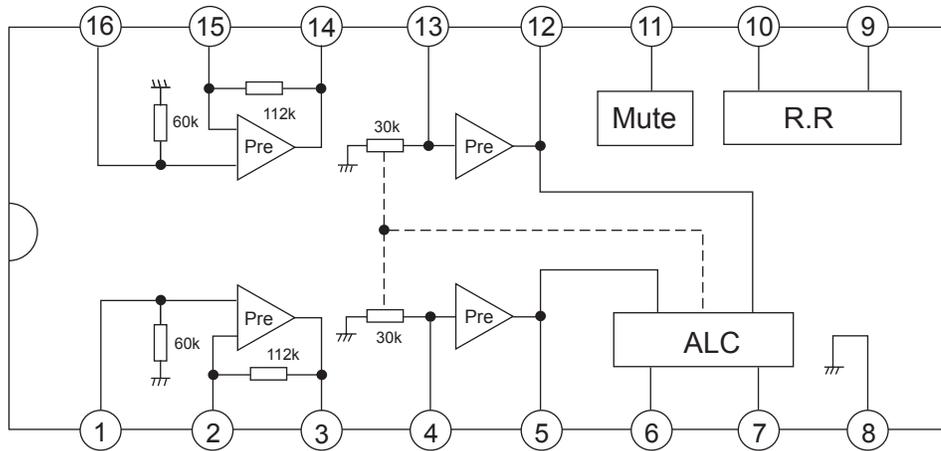


• Pin function

Pin No.	Symbol	I/O	Function
1	PD	I	APC Amp. input terminal
2	LD	O	APC Amp. output terminal
3	VCC	-	Power supply terminal
4	RFN	I	RF adder Amp. inverting input terminal
5	RFOUT	O	RF adder Amp. output terminal
6	RFIN	I	AGC input terminal
7	CAGC	I	Input terminal for AGC loop filter capacitor
8	ARF	O	AGC output terminal
9	CEA	I	Capacitor connecting terminal for HPF-Amp.
10	3TOUT	O	3 TENV output terminal
11	CBDO	I	Capacitor connecting terminal for envelope detection on the darkness side
12	BDO	O	BDO output terminal
13	COFTR	I	Capacitor connecting terminal for envelope detection on the light side
14	OFTR	O	OFTR output terminal
15	NRFDET	O	NRFDET output terminal
16	GND	-	Ground
17	VREF	O	VREF output terminal
18	VDET	O	VDET output terminal
19	TEBPF	I	VDET output terminal
20	TEOUT	O	TE Amp. output terminal
21	TEN	I	TE Amp. inverting input terminal
22	FEN	I	FE Amp. inverting input terminal
23	FEOUT	O	FE Amp. output terminal
24	GCTL	O	GCTL & APC terminal
25	FBAL	O	FBAL control terminal
26	TBAL	O	TBAL control terminal
27	E	I	Tracking signal input terminal 1
28	F	I	Tracking signal input terminal 2
29	D	I	Focus signal input terminal 4
30	B	I	Focus signal input terminal 3
31	C	I	Focus signal input terminal 2
32	A	I	Focus signal input terminal 1

**4.3 AN7317 (IC32) : R / P amp.**

- Pin layout & block diagram

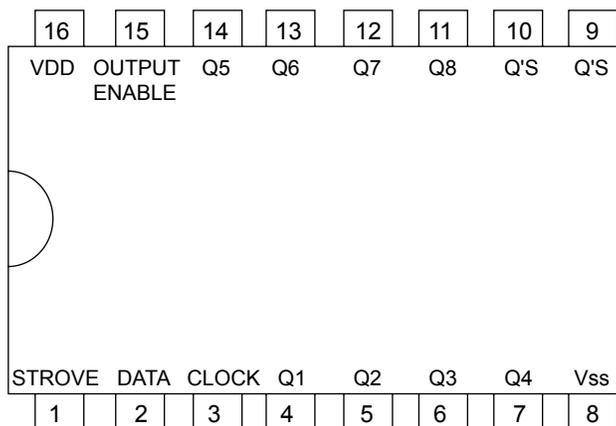


- Pin functions

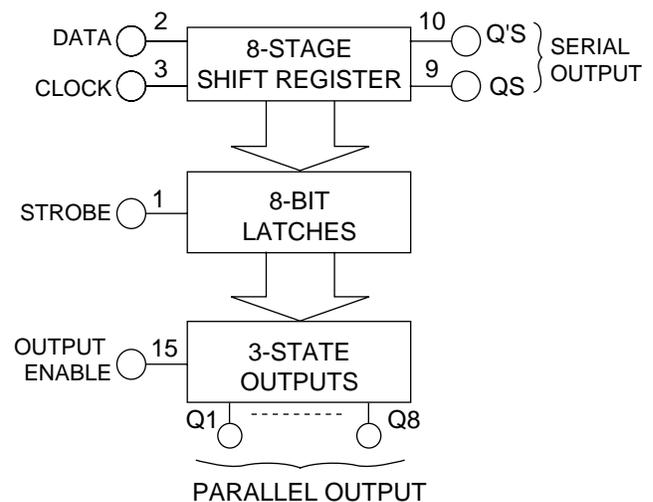
Pin No.	Function
1	Channel 1 playback amplifier input
2	Channel 1 playback amplifier negative feedback
3	Channel 1 playback amplifier output
4	Channel 1 record amplifier input
5	Channel 1 record amplifier output
6	ALC low-cut
7	ALC time
8	Ground
9	Vcc
10	Ripple filter
11	Record-Amplifier mute
12	Channel 2 record amplifier output
13	Channel 2 record amplifier input
14	Channel 2 playback amplifier output
15	Channel 2 playback amplifier negative feedback
16	Channel 2 playback amplifier input

**4.4 BU4094BCF-X (IC33) : Shift / store register**

- Pin layout

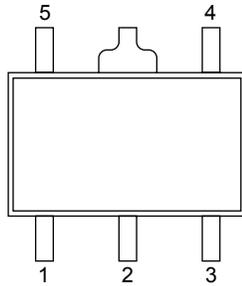


- Block diagram



### 4.5 XC62HR3502P-X (IC291) : Regulator

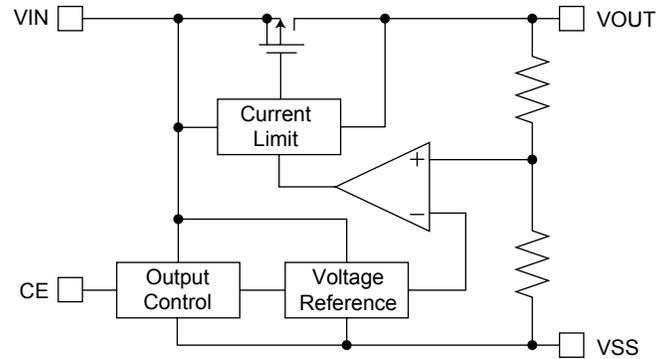
- Pin layout



- Pin function

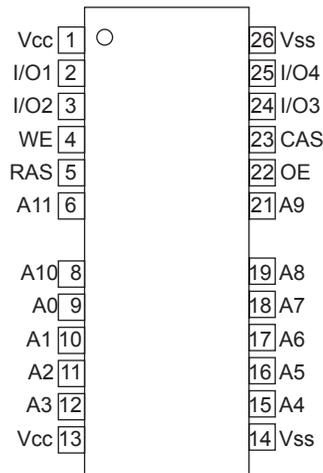
Pin No.	Symbol	Function
1	VSS	Ground
2	VIN	Supply voltage input
3	CE	Chip enable
4	NC	Non connect
5	VOUT	Regulated output voltage

- Block diagram



### 4.6 GM71VS17400CLT5 (IC390,IC790) : DRAM

- Pin layout

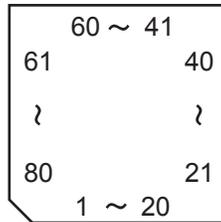


- Pin function

Pin No.	Symbol	Function
1	Vcc	Power supply (+3.3V)
2	I/O1	Date input/output
3	I/O2	Date input/output
4	WE	Read/write enable
5	RAS	Address stroke
6	A11	Address input
7	-	Not use
8	A10	Address input
9~12	A0~A3	Address input
13	Vcc	Power supply (+3.3V)
14	Vss	GND
15~19	A4~A8	Address input
20	-	Not use
21	A9	Address input
22	OE	Output enable
23	CAS	Calum address stroke
24	I/O3	Date input/output
25	I/O4	Date input/output
26	Vss	GND

#### 4.7 MN662790RSC(IC651):Digital servo & processor

- Pin layout



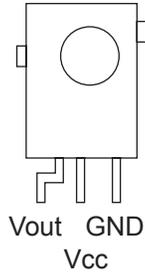
- Pin function

Pin No.	Symbol	I/O	Description
1	BCLK	O	Bit clock output for SRDATA
2	LRCK	O	Identifying signal output of L,R
3	SRDATA	O	Serial data output
4	DVDD1	-	Power supply for digital circuit
5	DVSS1	-	Connect to ground for digital circuit
6	TX	O	Digital audio interface output signal
7	MCLK	I	Micom command clock signal input
8	MDATA	I	Micom command data signal input
9	MLD	I	Micom command load signal input L:load
10	SENSE	-	Non connect
11	FLOCK	-	Non connect
12	TLOCK	-	Non connect
13	BLKCK	O	Sub code block clock signal (Command execution : CD-TEXT data readout enabling signal (DQSY) output)
14	SQCK	I	Export clock signal input for sub code Q register
15	SUBQ	O	Sub code Q data output
16	DMUTE	I	Muting input H:muting
17	STAT	O	Status signal output
18	LSI_RST	I	Reset signal input L:reset
19	SMCK	O	Clock signal output MSEL is H : 8.4672 MHz MSEL is L : 4.2336 MHz
20	CSEL	I	Oscillation frequency specification terminal H:33.8688 MHz L:16.9344 MHz
21	TEST2	-	TEST2 terminal usually : open
22	TVD	O	Traverse drive output
23	PC	-	Non connect
24	ECM	O	Spindle motor drive signal output (Compulsion mode output)
25	ECS	O	Spindle motor drive signal output (Servo error signal output)
26	VDETMON	-	Non connect
27	TRD	O	Tracking drive signal output
28	FOD	O	Focus drive signal output
29	VREF	-	Reference voltage for DA output section
30	FBAL	O	Focus balance adjust signal output
31	TBAL	O	Tracking balance adjust signal output
32	FE	I	Focus error signal input (analog input)
33	TE	I	Tracking error signal input (analog input)
34	RFENV	I	RF Envelope signal input (analog input)
35	TEST3	I	TEST3 Terminal usually : Fixation L
36	OFT	I	Off track signal input H : off track
37	TRCRS	I	Track cross signal input (analog input)

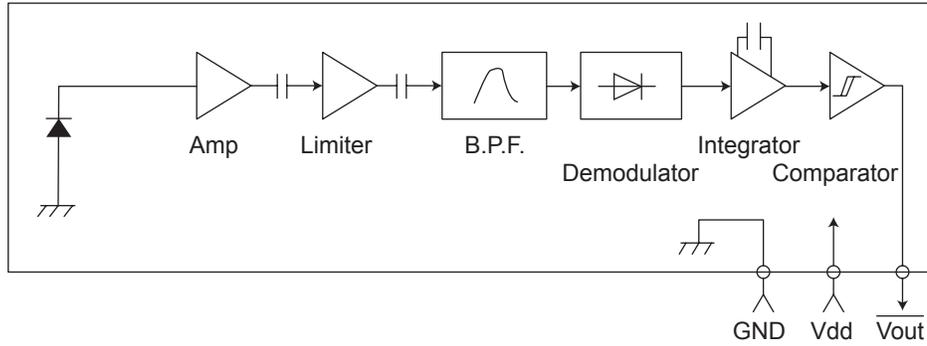
Pin No.	Symbol	I/O	Description
38	RFDET	I	RF detection signal input L : detection
39	BDO	I	Dropout signal input H : dropout
40	LDON	I	Non connect
41	PLL2	I/O	Terminal for loop filter characteristic switch for PLL
42	DSLBD	-	Non connect
43	WVEL	-	Non connect
44	ARF	I	RF Signal output
45	IREF	I	Standard electric current input terminal
46	DRF	I	Bias terminal for DSL
47	DSL2	I/O	Loop filter terminal for DSL
48	PLL	I/O	Loop filter terminal for PLL
49	VCOF	I/O	Loop filter terminal for VCO
50	AVDD2	-	Power supply terminal for analog circuit
51	AVSS2	-	Connect to ground terminal for analog circuit
52	EFM	-	Non connect
53	DSL	O	PLL extraction clock output
54	VCOF2	I/O	Loop filter terminal for VCO
55	SUBC	O	Sub code serial output
56	SBCK	I	Clock signal input for sub code serial output
57	VSS	-	Connect to ground terminal for oscillation circuit
58	X1	I	Oscillation circuit input terminal f=16.9344 MHz,33.8688 MHz
59	X2	O	Oscillation circuit output terminal f=16.9344 MHz,33.8688 MHz
60	VDD	-	Power supply terminal for oscillation circuit
61	BYTCK	-	Non connect
62	LDON	O	Laser ON signal output H : ON
63	GCTRL	O	General I/O port
64	IPFLA	-	Non connect
65	FLAG	O	Flag signal output
66	CLVS	-	Non connect
67	CRC	-	Non connect
68	DEMPH	O	De-emphasis detection signal output
69	RESY	-	Non connect
70	IOSEL	I	Mode switch terminal
71	TEST	I	TEST terminal usually : H
72	AVDD1	-	Power supply terminal for analog circuit (for audio output section)
73	OUTL	O	Lch audio output
74	AVSS1	-	Connect to ground terminal for analog circuit (for audio output section)
75	OUTR	O	Rch audio output
76	DQSY	I	RF signal polarity specification terminal
77	VCC5V	-	Power supply terminal (5V)
78	PSEL	O	IOSEL=H TEST terminal IOSEL=L SRDATA input
79	MSEL	O	IOSEL=H SMCK terminal output (frequency switch terminal) IOSEL=L LRCK input
80	SSEL	O	IOSEL=H SUBQ terminal output mode switch terminal IOSEL=L BCLK input

### 4.8 GP1UM261XK (IC602) : Receiver

- Pin layout

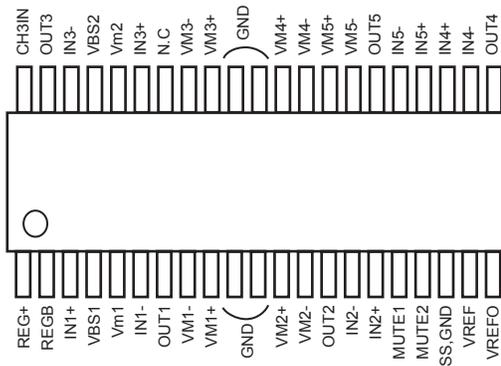


- Block diagram

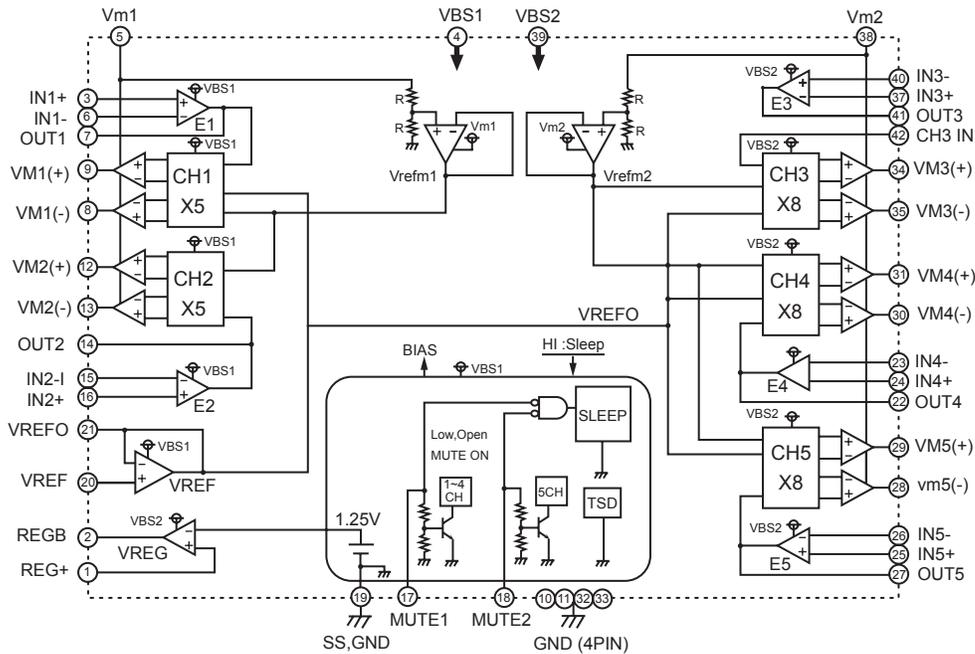


### 4.9 M63008FP-X (IC604) : 5ch Actuator driver

- Pin layout

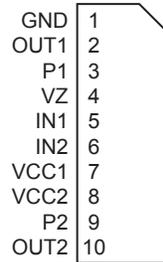


- Block diagram



#### 4.10 LB1641 (IC402) : DC Motor driver

- Pin layout

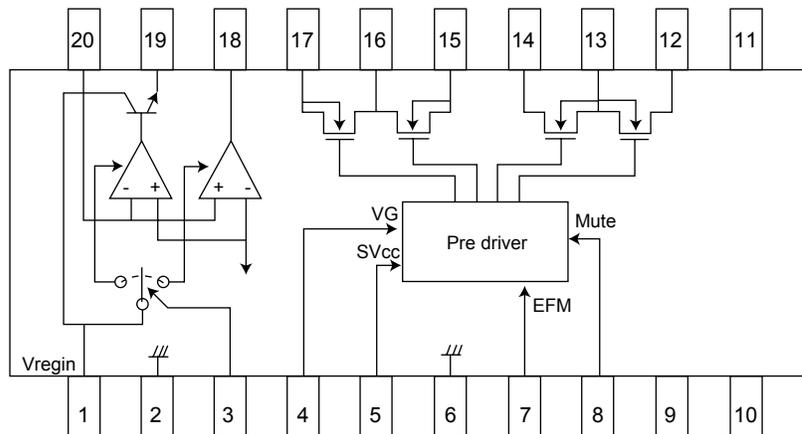


- Truth table

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

#### 4.11 BD7910FV-X (IC450) : Pre driver

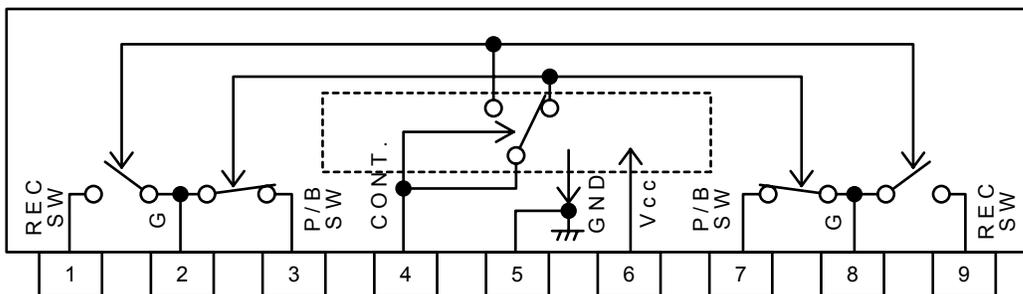
- Block diagram



- Pin function

Pin No.	Symbol	I/O	Function
1	Vreg IN	I	Regulator input and regulator power supply
2	Reg GN	-	Regulator GND
3	NC	-	Non connect
4	VG	I	Voltage input for power MOS drive
5	SVCC	O	EFM high level output voltage
6	PDGND	-	Pre-driver GND
7	EFM	I	EFM signal input
8	MUTE	I	Mute control (Low active)
9	NC	O	Non connct
10	NC	O	Non connect
11	NC	-	Non connect
12	VOD2	O	Sync.output (Lower power MOS,drain)
13	VSS	-	Hbridge GND (Lower power MOS,source)
14	VOD1	O	Sync.output (Lower power MOS,drain)
15	VOS1	O	Source output (Upper power MOS,source)
16	VDD	-	H bridge power supply terminal(Upper power MOSsource)
17	VOS2	O	Source output (Upper power MOSsource)
18	Reg DRV	O	External PNP drive output for regulator
19	Reg OUT	O	Reglator output (Emitter follower output)
20	Reg NF	-	Regulator feedbaack terminal

4.12 BA3126N(IC31) : R/P Switch



4.13 BR93LC66F-X (IC403):EEPROM

• Terminal layout

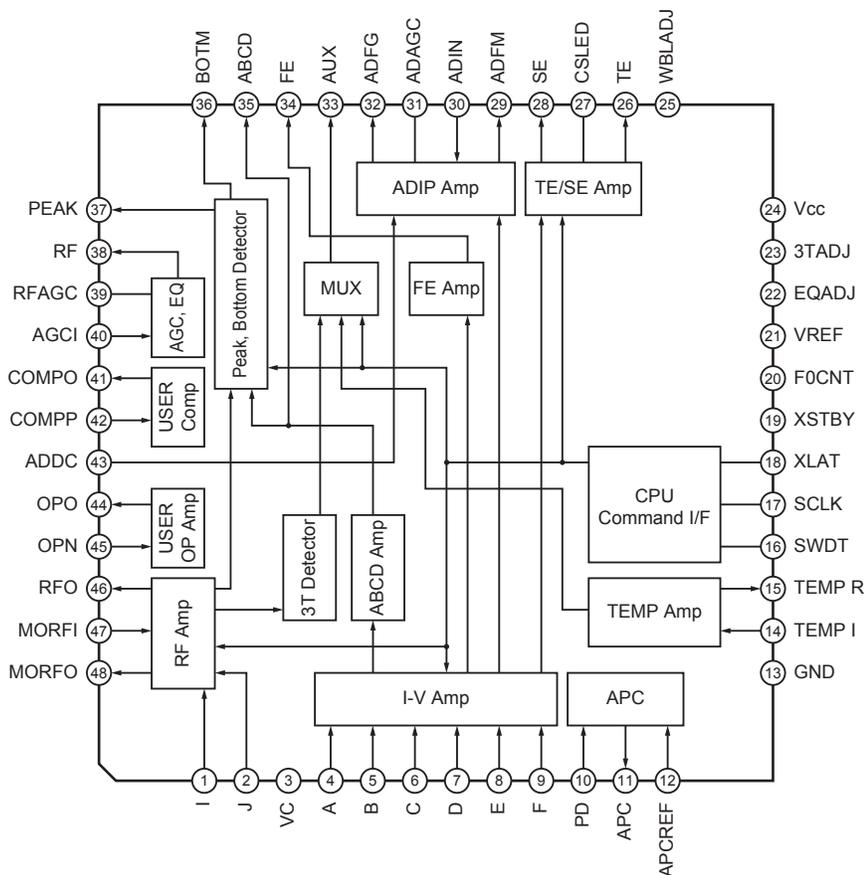
NC	1	8	NC
VCC	2	7	GND
CS	3	6	DO
SK	4	5	DI

• Pin Functions

Symbol	I/O	Function
VCC	-	Power supply
GND	-	Connect to GND
CS	I	Chip select input
SK	I	Serial clock input
DI	I	Start bit, OP-code, address, serial data input
DO	O	Serial data output Internal state display output of READY/BUSY

4.14 CXA2523AR (IC300) : MD servo

• Block diagram

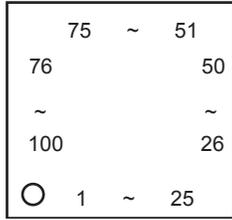


## • Pin function

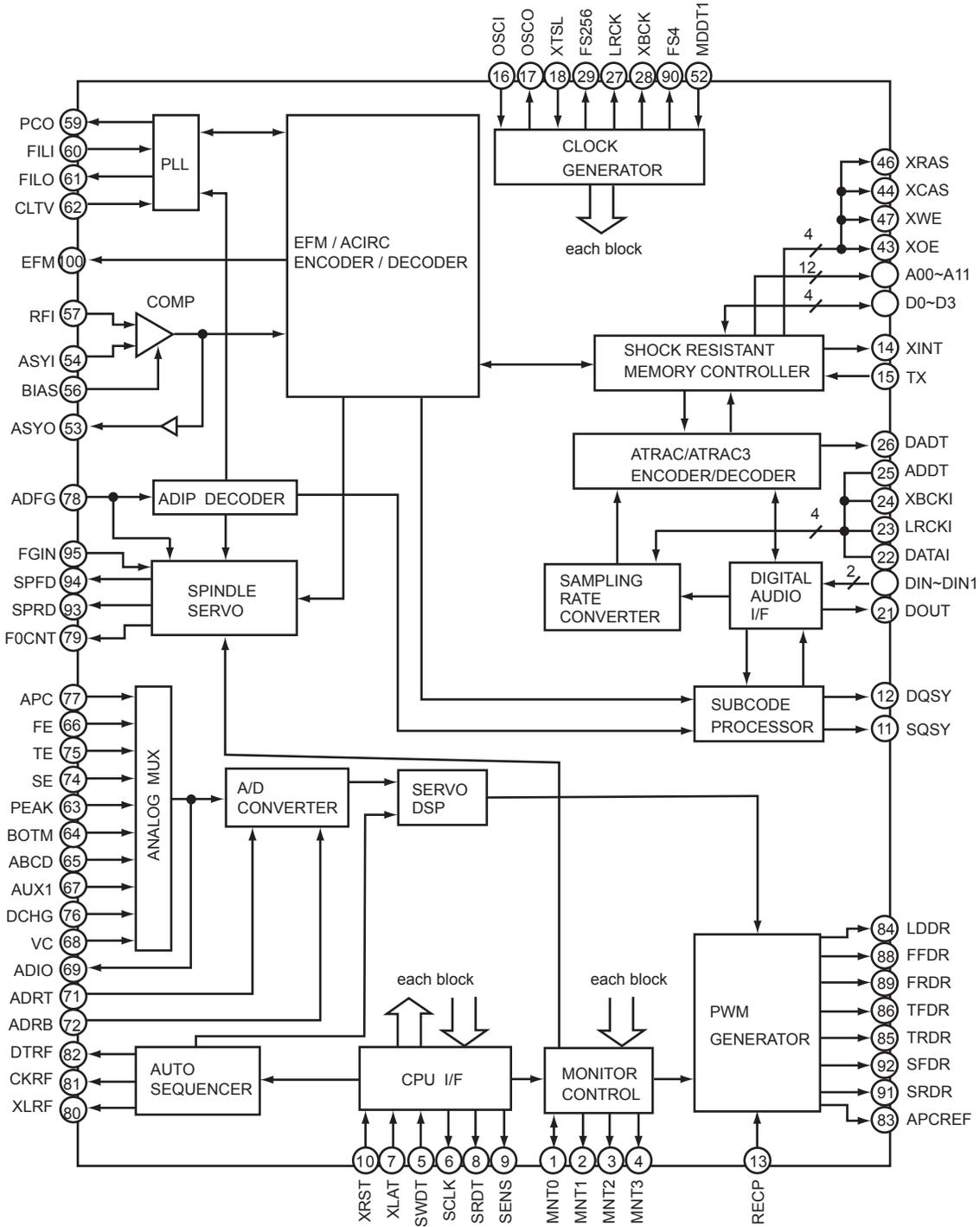
Pin No.	Symbol	I/O	Function
1	I	I	I-V converted RF signal I input.
2	J	I	I-V converted RF signal J input.
3	VC	O	Vcc/2 voltage output.
4	A	I	A current input for main beam servo signal.
5	B	I	B current input for main beam servo signal.
6	C	I	C current input for main beam servo signal.
7	D	I	D current input for main beam servo signal.
8	E	I	E current input for side beam servo signal.
9	F	I	F current input for side beam servo signal.
10	PD	I	Reflection light quantity monitor signal input.
11	APC	O	Laser APC output.
12	APCREF	I	Reference voltage input for the laser power intensity setting.
13	GND	-	Connect to GND.
14	TEMPI	I	Connects the temperature sensor.
15	TEMP R	I	Connects the temperature sensor. outputs the reference voltage.
16	SWDT	I	Data input for microcomputer serial interface.
17	SCLK	I	Shift clock input for microcomputer serial interface.
18	XLAT	I	Latch signal input for microcomputer serial interface. Latched when low.
19	XSTBY	I	Standby setting pin. Normal operation when high Standby when low.
20	F0CNT	I	Internal current source setting pin.
21	VREF	O	Reference voltage output.
22	EQADJ	I/O	Equalizer center frequency setting pin.
23	3TADJ	I/O	BPF3T center frequency setting pin.
24	Vcc	-	Power supply.
25	WBLADJ	I/O	BPF22 center frequency setting pin.
26	TE	O	Tracking error signal output.
27	CSLED	-	Connects the sled error signal LPF capacitor.
28	SE	O	Sled error signal output.
29	ADFM	O	ADIP FM signal output.
30	ADIN	I	ADIP signal comparator input.
31	ADAGC	-	Connects the ADIPAGC capacitor.
32	ADFG	O	ADIP2 binary value signal output.
33	AUX	O	13 output / temperature signal output. Switched with serial commands.
34	FE	O	Focus error signal output.
35	ABCD	O	Reflection light quantity signal output for the main beam servo detector.
36	BOTM	O	RF/ABCD bottom hold signal output.
37	PEAK	O	Peak hold signal output for the RF/ABCD signals.
38	RF	O	RF equalizer output.
39	RFAGC	-	Connects the RFAGC capacitor.
40	AGCI	I	RFAGC input.
41	COMPO	O	User comparator output.
42	COMPP	I	User comparator non-inverted input.
43	ADDC	I/O	Connects the capacitor for ADIP amplifier feedback circuit.
44	OPO	O	User operational amplifier output.
45	OPN	I	User operational amplifier inverted input.
46	RFO	O	RF amplifier output. Eye pattern checkpoint.
47	MORFI	I	Input of the groove RF signal with AC coupling.
48	MORFO	O	Groove RF signal output.

4.15 CXD2662R (IC350) : DSP

- Pin layout



- Block diagram



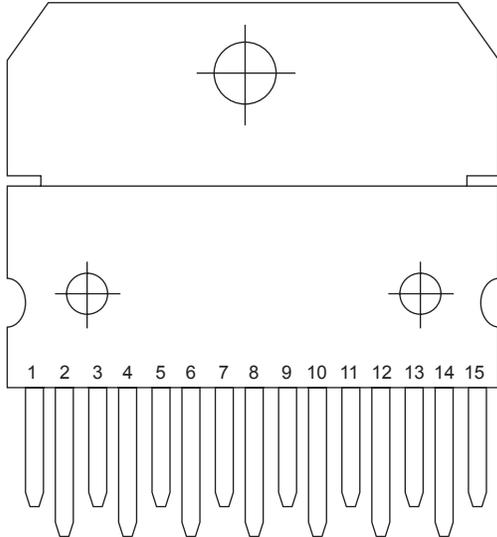
## • Pin function (CXD2662R)

Pin No.	Symbol	I/O	Function
1	MNT0	I/O	Monitor output.
2	MNT1	O	Monitor output.
3	MNT2	O	Monitor output.
4	MNT3	O	Monitor output.
5	SWDT	I	Data input for microcomputer serial interface.
6	SCLK	I	Shift clock input for microcomputer serial interface.
7	XLAT	I	Latch input for microcomputer serial interface. Latched at the falling edge.
8	SRDT	O	Data output for microcomputer serial interface.
9	SENS	O	Outputs the internal status corresponding to the microcomputer serial interface address.
10	XRST	I	Reset input. Low : reset
11	SQSY	O	Disc subcode Q sync / ADIP sync output.
12	DQSY	O	Subcode Q sync output in U-bit CD or MD format when the Digital In source is CD or MD.
13	RECP	I	Laser power switching input. High : recording power ; low ; playback power
14	XINT	O	Interruption request output. Low when the interruption status occurs.
15	TX	I	Enable signal input for recoding data output. High : enabled
16	OSCI	I	Crystal oscillation circuit input.
17	OSCO	O	Crystal oscillation circuit output. (inverted output of the OSCI pin)
18	OSCO	I	OSCI input frequency switching. XTSL1(command) = low and XTSL = high : 512Fs (22.5792MHz) XTSL1(command) = low and XTSL = low : 1024Fs (45.1584MHz) XTSL1(command) = high : 2048Fs (90.3168MHz)
19	DIN0	I	Digital audio interface signal input 1.
20	DIN1	I	Digital audio interface signal input 2.
21	DOUT	O	Digital audio interface signal output.
22	DATAI	I	Test pin. Connect to GND.
23	LRCKI	I	Test pin. Connect to GND.
24	XBCKI	I	Test pin. Connect to GND.
25	ADDT	I	Data input from A / D converter.
26	DADT	O	REC monitor output / decoded audio data output.
27	LRCK	O	LA clock (44.1kHz) output to the external audio block.
28	XBCK	O	Bit clock (2.8224kHz) output to the external audio block.
29	FS256	O	256Fs output.
30	DVDD	-	Digital power supply.
31	A03	O	External DRAM address output.
32	A02	O	External DRAM address output.
33	A01	O	External DRAM address output.
34	A00	O	External DRAM address output.
35	A10	O	External DRAM address output.
36	A04	O	External DRAM address output.
37	A05	O	External DRAM address output.
38	A06	O	External DRAM address output.
39	A07	O	External DRAM address output.
40	A08	O	External DRAM address output.
41	A11	O	External DRAM address output.
42	DVSS	-	Digital ground.
43	XOE	O	External DRAM output enable.
44	XCAS	O	External DRAM CAS output.
45	A09	O	External DRAM address output.
46	XRAS	O	External DRAM RAS output.
47	XWE	O	External DRAM write enable.
48	D1	I/O	External DRAM data bus.
49	D0	I/O	External DRAM data bus.
50	D2	I/O	External DRAM data bus.

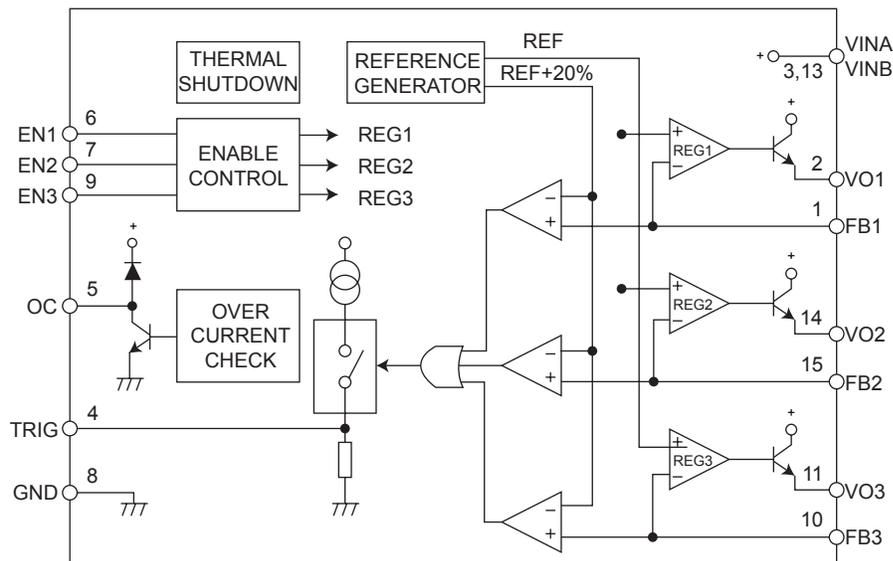
Pin No.	Symbol	I/O	Function
51	D3	I/O	External DRAM data bus.
52	MDDTI	I	MD-DATA mode 1 switching input. (Low : normal mode ; high : MD-DATA mode 1)
53	ASYO	O	Playback EFM full-swing input. (Low : vss ; high : Vdd)
54	ASYI	I	Playback EFM comparator slice voltage input.
55	AVDD	-	Analog power supply.
56	BIAS	I	Playback EFM comparator bias current input.
57	RFI	I	Playback EFM RE signal input.
58	AVSS	-	Analog ground.
59	PCO	O	Phase comparison output for master PLL of playback digital PLL and recording EFM PLL.
60	FILI	I	Filter input for master PLL of playback digital PLL and recording EFM PLL.
61	FILO	O	Filter output for master PLL of playback digital PLL and recording EFM PLL.
62	CLTV	I	Internal VCO control voltage input for master PLL of playback digital EFM PLL and recording EFM PLL.
63	PEAK	I	Peak hold signal input for quantity of light.
64	BOTM	I	Bottom hold signal input for quantity of light.
65	ABCD	I	Signal input for quantity of light.
66	FE	I	Focus error signal input. Auxillary input 1.
67	AUXI	I	Auxillary input 1.
68	VC	I	Center voltage input.
69	ADIO	I	Monitor output for A / D converter input signal.
70	AVDD	-	Analog power supply.
71	ADRT	I	Voltage input for the upper limit of the A / D converter operating range.
72	ADRB	I	Voltage input for the lower limit of the A / D converter operating range.
73	AVSS	-	Analog ground.
74	SE	I	Sled error signal input.
75	TE	I	Tracking error signal input.
76	DCHG	I	Connect to the low-impedance power supply.
77	APC	I	Error signal input for laser digital APC.
78	ADFG	I	ADIP binary FM signal (22.05 +/- 1kHz) input.
79	F0CNT	O	CXA2523 current source setting output.
80	XLRF	O	CXA2523 control latch output. Latched at the falling edge.
81	CKRF	O	CXA2523 control shift clock output.
82	DTRF	O	CXA2523 control data output.
83	APCREF	O	Reference PWM output for laser APC.
84	LDDR	O	PWM output for laser digital APC.
85	TRDR	O	Tracking servo drive PWM output. (-)
86	TFDR	O	Tracking servo drive PWM output. (+)
87	DVDD	-	Digital power supply.
88	FFDR	O	Focus servo drive PWM output. (+)
89	FRDR	O	Focus servo drive PWM output. (-)
90	FS4	O	4Fs output. (176.4kHz)
91	SRDR	O	Sled servo drive PWM output. (-)
92	SFDR	O	Sled servo drive PWM output. (+)
93	SPRD	O	Spindle servo drive output. (PWM (-) or polarity)
94	SPFD	O	Spindle servo drive output. (PWM (+) or PWM absolute value)
95	FGIN	I	Spindle CAV servo FG input.
96	TEST1	I	Test pin. Connect to GND.
97	TEST2	I	Test pin. Connect to GND.
98	TEST3	I	Test pin. Connect to GND.
99	DVSS	-	Digital ground.
100	EFMO	O	Low when playback ; EFM (encoded data) output when recording.

#### 4.16 L4909 (IC910) : Regulator

- Pin layout



- Block diagram

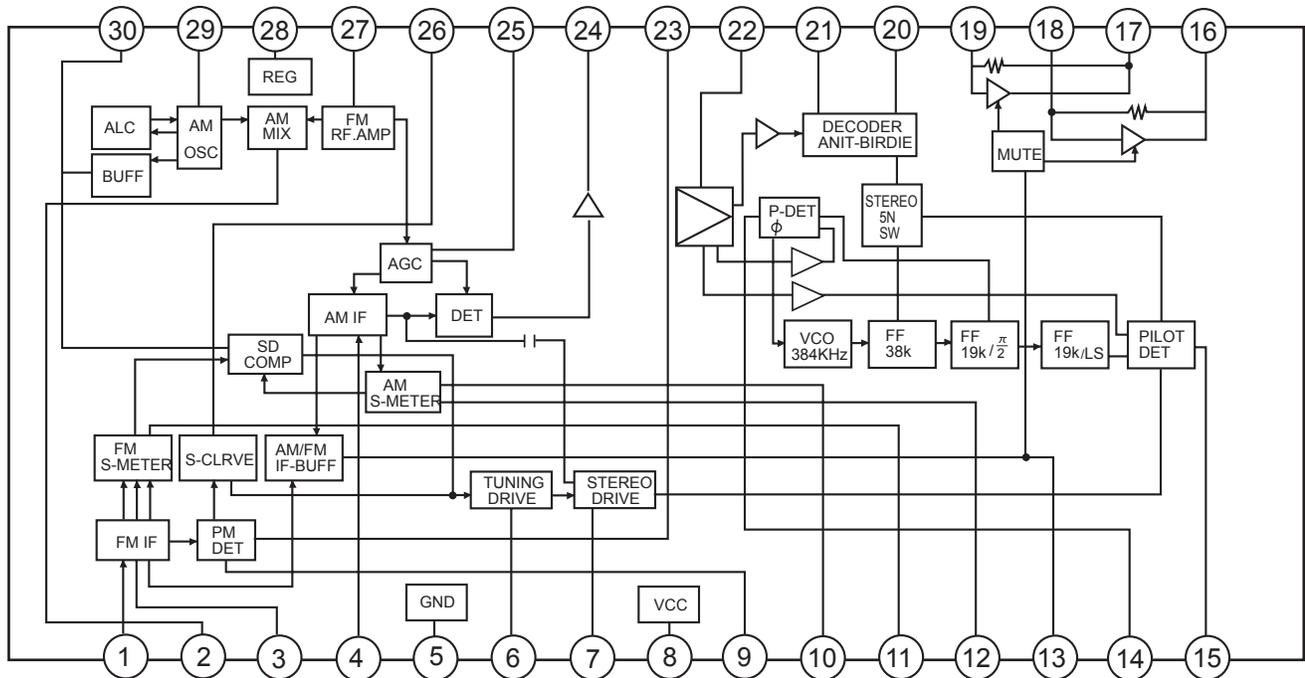


- Pin functions

Pin No.	Symbol	Function
1	FB1	REG1 feedback voltage input
2	VO1	REG1 output voltage
3	VINA	Input DC supply voltage
4	TRIG	Trigger for external SCR (crowbar protection)
5	OC	Over current warning output
6	EN1	REG1 enable input
7	EN2	REG2 enable input
8	GND	Analog ground
9	EN3	REG3 enable input
10	FB3	REG3 feedback voltage input
11	VO3	REG3 output voltage
12	N.C.	Not connected
13	VINB	Input DC supply voltage
14	VO2	REG2 output voltage
15	FB2	REG2 feedback voltage input

#### 4.17 LA1838 (IC1): FM AM IF AMP&detector, FM MPX Decoder

##### • Block Diagram

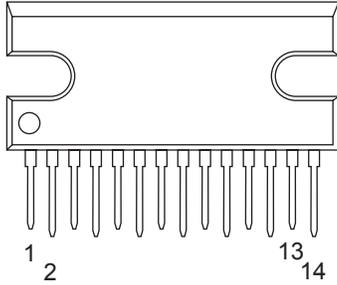


##### • Pin Function

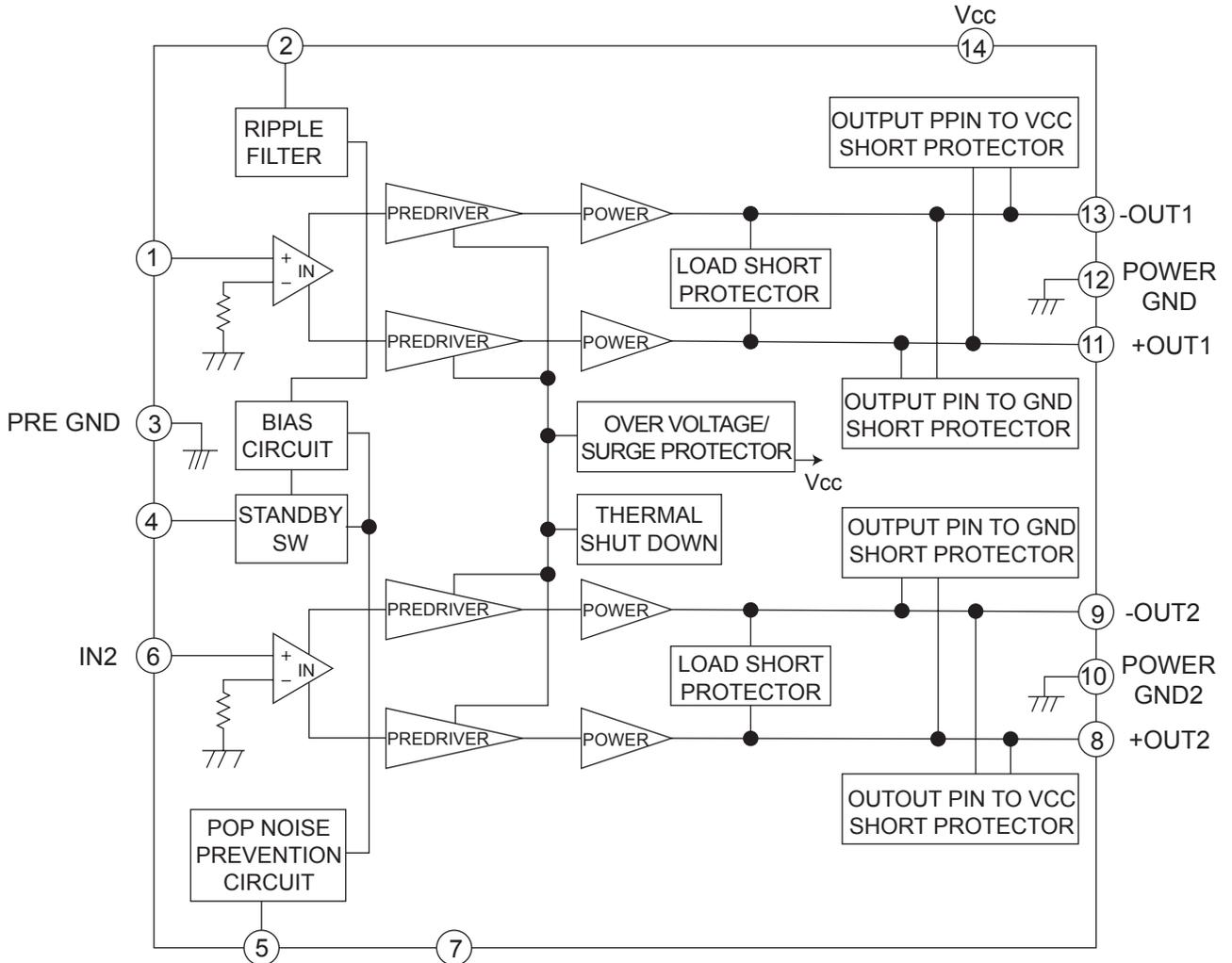
Pin No.	Symbol	I/O	Function
1	FM IN	I	This is an input terminal of FM IF signal.
2	AM MIX	O	This is an out put terminal for AM mixer.
3	FM IF	I	Bypass of FM IF
4	AM IF	I	Input of AM IF Signal.
5	GND	-	This is the device ground terminal.
6	TUNED	O	When the set is tuning,this terminal becomes "L".
7	STEREO	O	Stereo indicator output. Stereo "L", Mono: "H"
8	VCC	-	This is the power supply terminal.
9	FM DET	-	FM detect transformer.
10	AM SD	-	This is a terminal of AM ceramic filter.
11	FM VSM	O	Adjust FM SD sensitivity.
12	AM VSM	O	Adjust AM SD sensitivity.
13	MUTE	I/O	When the signal of IF REQ of IC121(LC72131) appear, the signal of FM/AM IF output. //Muting control input.
14	FM/AM	I	Change over the FM/AM input. "H" :FM, "L" : AM
15	MONO/ST	O	Stereo : "H", Mono: "L"
16	L OUT	O	Left channel signal output.
17	R OUT	O	Right channel signal output.
18	L IN	I	Input terminal of the Left channel post AMP.
19	R IN	I	Input terminal of the Right channel post AMP.
20	RO	O	Mpx Right channel signal output.
21	LO	O	Mpx Left channel signal output.
22	MPX IN	I	Mpx input terminal
23	FM OUT	O	FM detection output.
24	AM DET	O	AM detection output.
25	AM AGC	I	This is an AGC voltage input terminal for AM
26	AFC	-	This is an output terminal of voltage for FM-AFC.
27	AM RF	I	AM RF signal input.
28	REG	O	Register value between pin 26 and pin28 besides the frequency width of the input signal.
29	AM OSC	-	This is a terminal of AM Local oscillation circuit.
30	OSC BUFFER	O	AM Local oscillation Signal output.

**4.18 LA4628 (IC905) : Power amp.**

- Pin layout

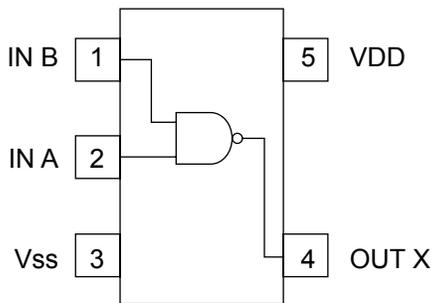


- Block diagram

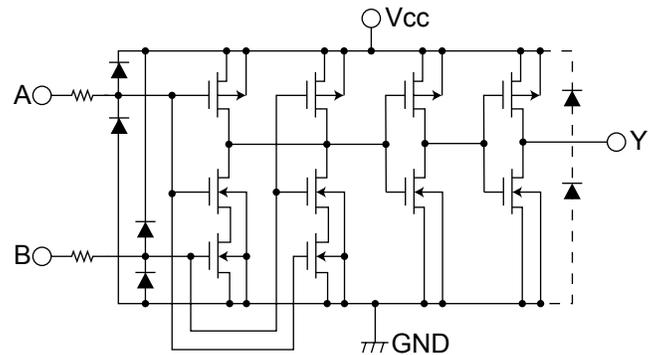


**4.19 TC7S08F-W (IC340) : Buffer**

- Pin layout



- Block diagram

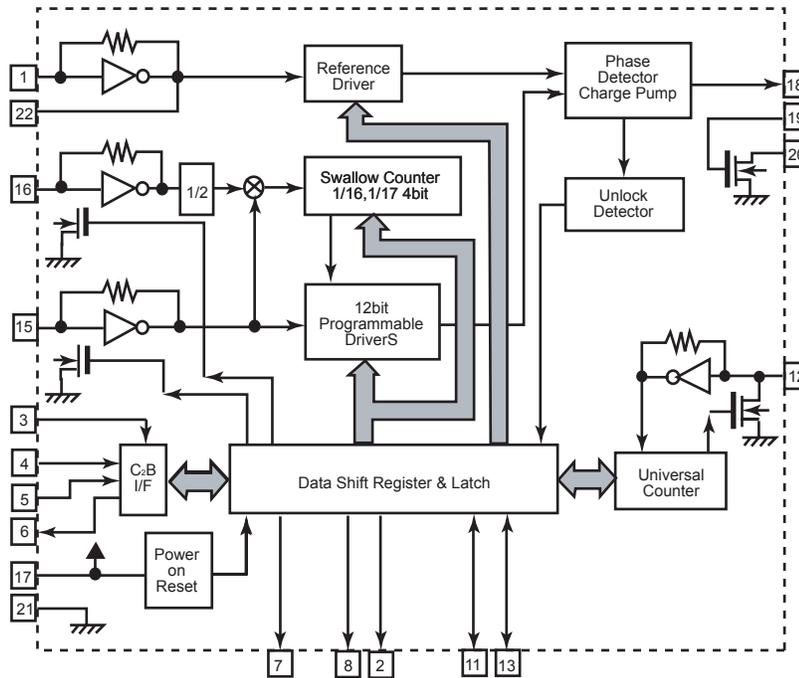


### 4.20 LC72136N (IC2) : PLL frequency synthesizer

- Pin layout

XT	1	22	XT
FM/AM	2	21	GND
CE	3	20	LPFOUT
DI	4	19	LPFIN
CLOCK	5	18	PD
DO	6	17	VCC
FM/ST/VCO	7	16	FMIN
AM/FM	8	15	AMIN
	9	14	
SDIN	10	13	IFCONT
	11	12	IFIN

- Block diagram



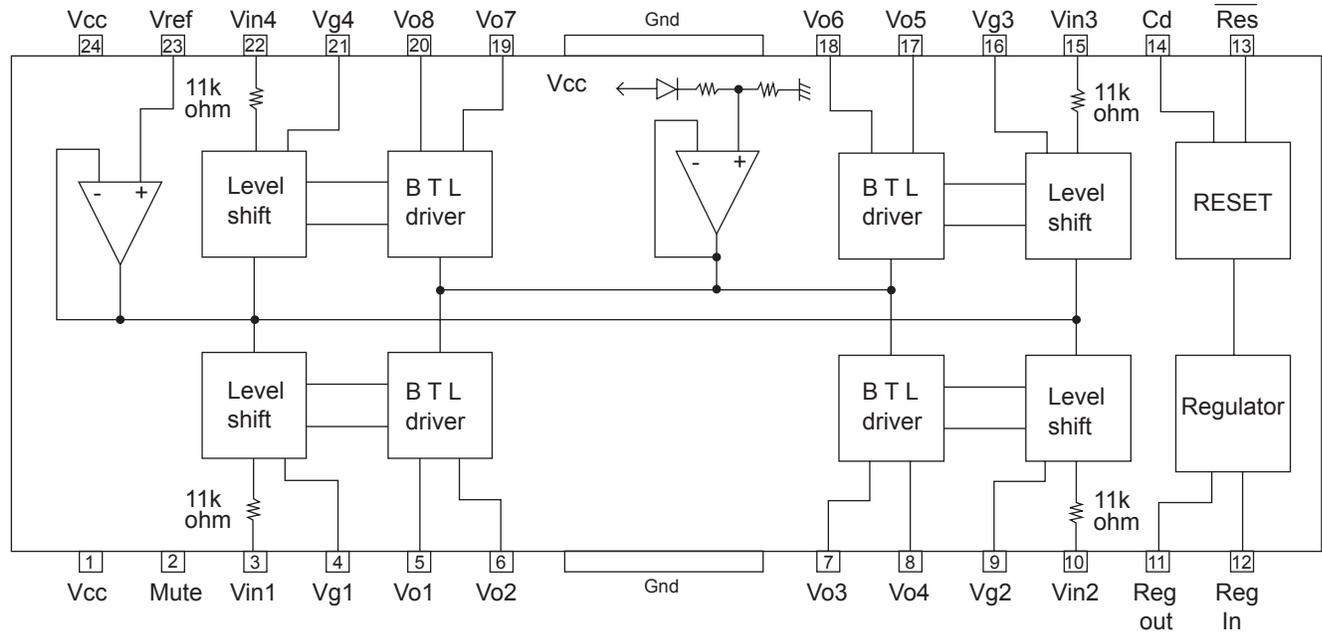
- Pin function

Pin No.	Symbol	I/O	Function
1	XT	I	X'tal oscillator connect (75kHz)
2	FM/AM	O	LOW:FM mode
3	CE	I	When data output/input for 4pin(input) and 6pin(output): H
4	DI	I	Input for receive the serial data from controller
5	CLOCK	I	Sync signal input use
6	DO	O	Data output for Controller Output port
7	FM/ST/VCO	O	Low: MW mode
8	AM/FM	O	Open state after the power on reset
9	LW	I/O	Input/output port
10	MW	I/O	Input/output port
11	SDIN	I/O	Data input/output
12	IFIN	I	IF counter signal input

Pin No.	Symbol	I/O	Function
13	IFCONT	O	IF signal output
14		-	Not use
15	AMIN	I	AM Local OSC signal output
16	FMIN	I	FM Local OSC signal input
17	VCC	-	Power supply(VDD=4.5-5.5V) When power ON:Reset circuit move
18	PD	O	PLL charge pump output (H: Local OSC frequency Height than Reference frequency.L: Low Agreement: Height impedance)
19	LPFIN	I	Input for active lowpassfilter of PLL
20	LPFOUT	O	Output for active lowpassfilter of PLL
21	GND	-	Connected to GND
22	XT	I	X'tal oscillator(75KHz)

#### 4.21 LA6541-X (IC801) : Servo driver

##### • Pin layout & Block diagram

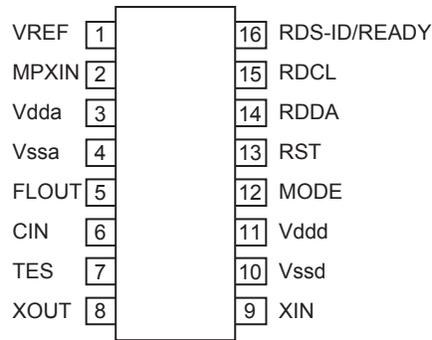


##### • Pin function

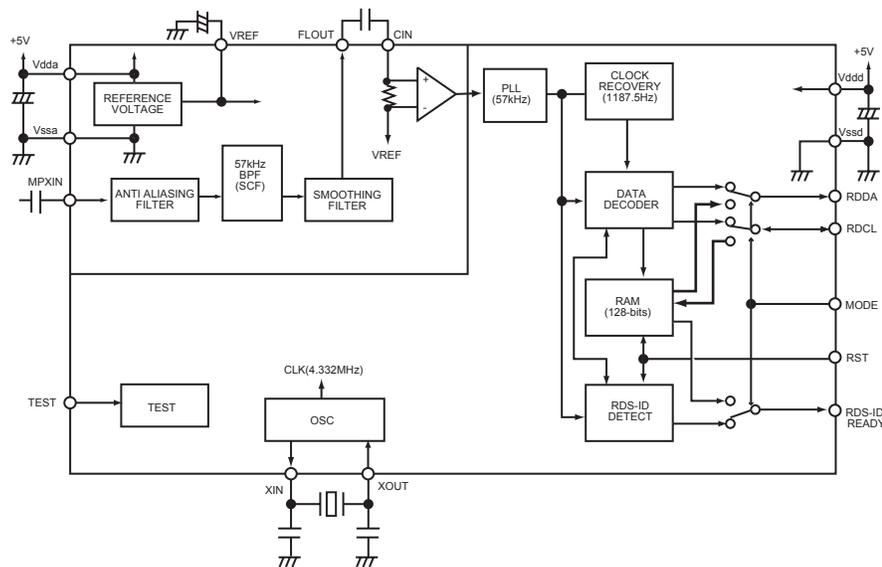
Pin No.	Symbol	Description
1	Vcc	Power supply (Shorted to pin 24)
2	Mute	All BTL amplifier outputs ON/OFF
3	Vin1	BTL AMP 1 input pin
4	Vg1	BTL AMP 1 input pin (For gain adjustment)
5	Vo1	BTL AMP 1 input pin (Non inverting side)
6	Vo2	BTL AMP 1 input pin (Inverting side)
7	Vo3	BTL AMP 2 input pin (Inverting side)
8	Vo4	BTL AMP 2 input pin (Non inverting side)
9	Vg2	BTL AMP 2 input pin (For gain adjustment)
10	Vin2	BTL AMP 2 input pin
11	Reg Out	External transistor collector (PNP) connection. 5V power supply output
12	Reg In	External transistor (PNP) base connection
13	Res	Reset output
14	Cd	Reset output delay time setting (Capacitor connected externally)
15	Vin3	BTL AMP 3 input pin
16	Vg3	BTL AMP 3 input pin (For gain adjustment)
17	Vo5	BTL AMP 3 output pin (Non inverting side)
18	Vo6	BTL AMP 3 output pin (Inverting side)
19	Vo7	BTL AMP 4 output pin (Inverting side)
20	Vo8	BTL AMP 4 output pin (Non inverting side)
21	Vg4	BTL AMP 4 output pin (For gain adjustment)
22	Vin4	BTL AMP 4 output pin
23	Vref	Level shift circuit's reference voltage application
24	Vcc	Power supply (Shorted to pin 1)

## 4.22 LA72723(IC3): RDS demodulation

### • Pin layout



### • Block Diagram

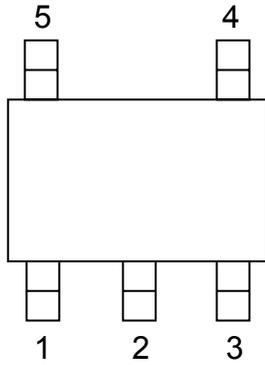


### • Pin functions

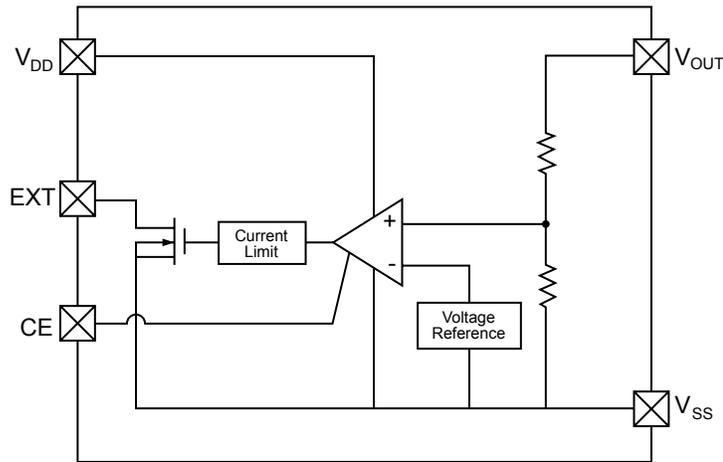
Pin No.	Symbol	I/O	Function
1	VREF	O	Reference voltage output ( $V_{dda}/2$ )
2	MPXIN	I	Baseband (multiplexed) signal input
3	Vdda	-	Analog power supply (+5V)
4	Vssa	-	Analog ground
5	FLOUT	O	Subcarrier input (filter output)
6	CIN	I	Subcarrier input (comparator input)
7	TEST	I	Test input
8	XOUT	O	Crystal oscillator output (4.332MHz)
9	XIN	I	Crystal oscillator input (external reference input)
10	Vssd	-	Digital ground
11	Vddd	-	Digital power supply
12	MODE	I	Read mode setting (0:master, 1:slave)
13	RST	I	RDS-ID/RAM reset (positive polarity)
14	RDDA	O	RDS data output
15	RDCL	I/O	RDS clock output (master mode)/RDS clock input (slave mode)
16	RDS-ID/READY	O	RDS-ID/READY output (negative polarity)

**4.23 XC62ER3602M-X (IC400) : Regulator**

- Pin layout



- Block diagram

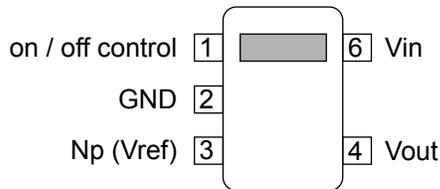


- Pin function

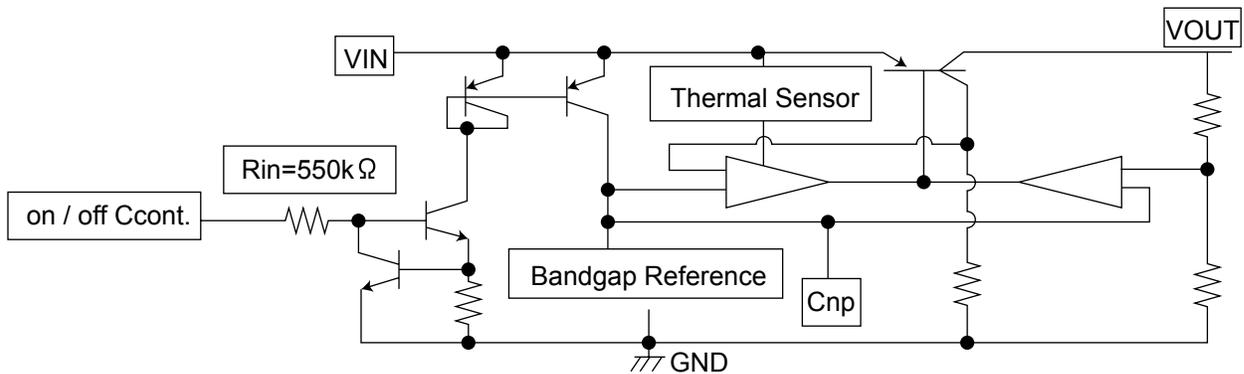
Pin No.	Symbol	Function
1	V <sub>SS</sub>	GND
2	V <sub>IN</sub>	Power supply input
3	V <sub>OUT</sub>	Regulator output
4	EXT	Base current control terminal
5	CE	Chip enable

**4.24 TK11140SC-W (IC485) : Regulator**

- Pin layout

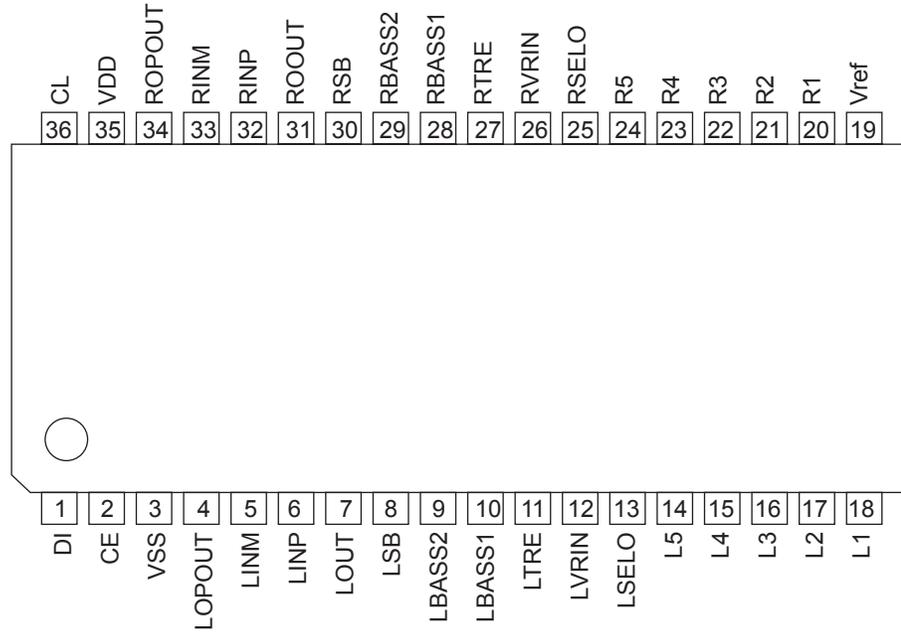


- Block diagram

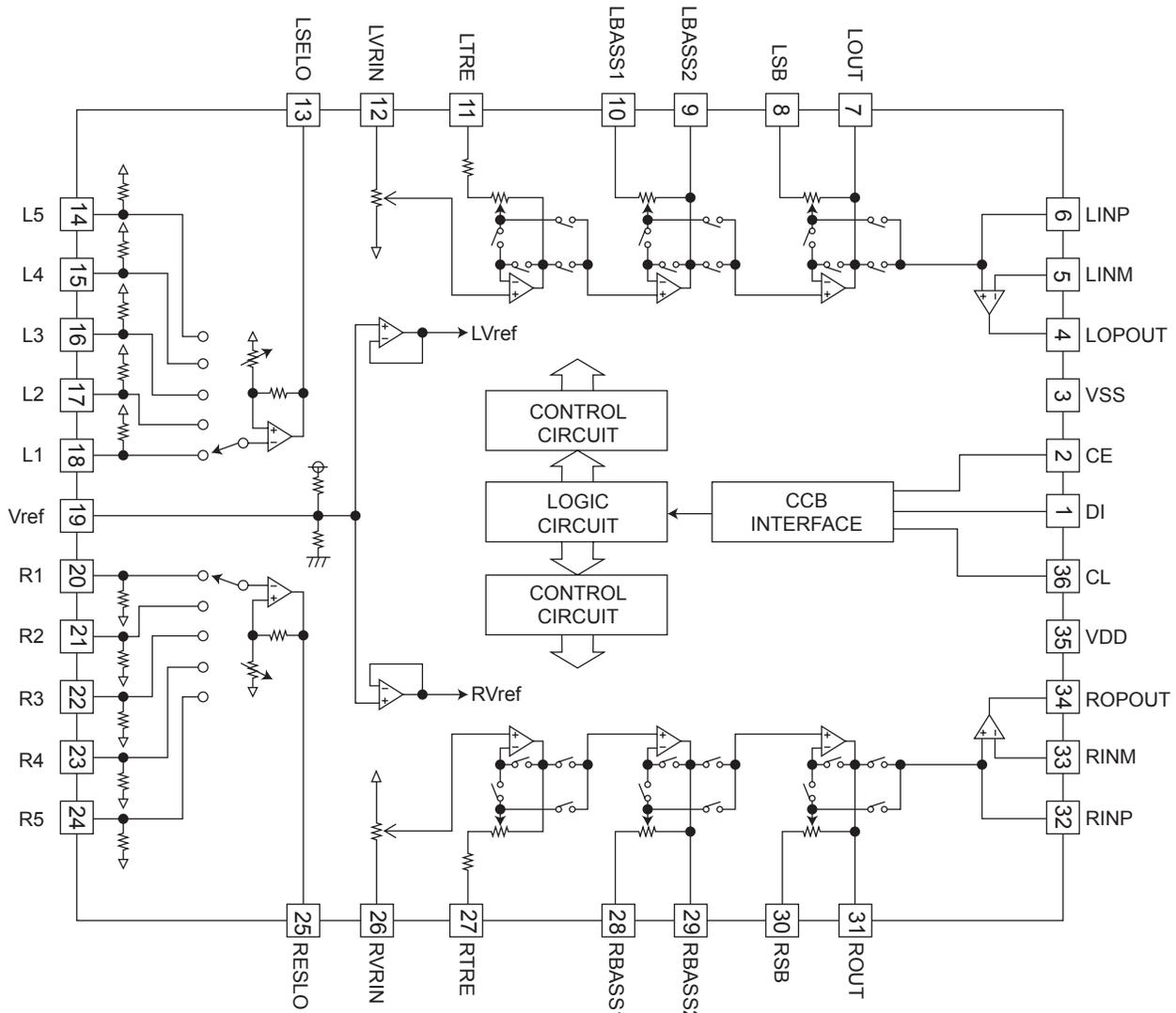


4.25 LC75345M-X (IC901) : E.volume

- Pin layout



- Block diagram



## • Pin function

Pin No.	Symbol	Function
1	DI	Serial data and clock input pin for control.
2	CE	Chip enable pin.
3	VSS	Ground pin.
4	LOPOUT	Output pin of general-purpose operation amplifier.
5	LINM	Non-inverted input pin of general-purpuse operation amplifier.
6	LINP	Non-inverted input pin of general-purpuse operation amplifier.
7	LOUT	ATT + equalizer output pin.
8	LSB	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
9	LBASS2	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
10	LBASS1	Capacitor and resistor connection pin comprising filters for bass and super-bass band.
11	LTRE	Capacitor and resistor connection pin comprising treble band filter.
12	LVRIN	Volume input pin.
13	LSELO	Input selector output pin.
14	L5	Input signal pin.
15	L4	Input signal pin.
16	L3	Input signal pin.
17	L2	Input signal pin.
18	L1	Input signal pin.
19	Vref	0.5 x VDD voltage generation block for analog ground.
20	R1	Input signal pin.
21	R2	Input signal pin.
22	R3	Input signal pin.
23	R4	Input signal pin.
24	R5	Input signal pin.
25	RSELO	Input selector output pin.
26	RVRIN	Volume input pin.
27	RTRE	Capacitor connection pin comprising treble band filter.
28	RBASS1	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
29	RBASS2	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
30	RSB	Capacitor and resistor connection pin comprising filter for bass and super-bass band.
31	ROUT	ATT + equalizer output pin.
32	RINP	Non inverted input pin of general-purpose operation amplifier.
33	RINM	Non inverted input pin of general purpose operation amplifier.
34	ROPOUT	Output pin of general-purpose operation amplifier.
35	VDD	Supply pin.
36	CL	Serial data and clock input pin for control.



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