

JVC

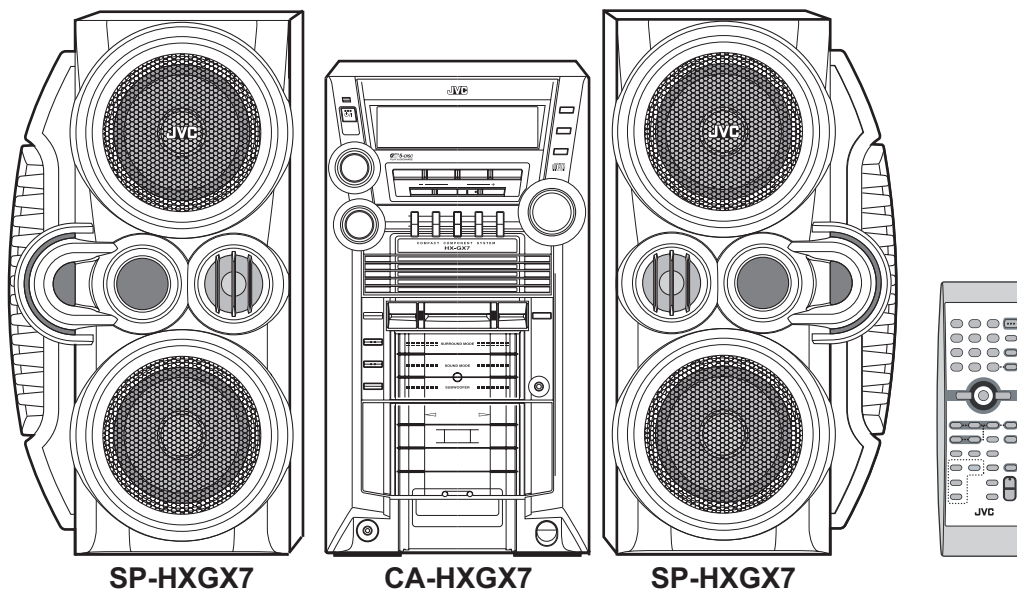
SERVICE MANUAL

COMPACT COMPONENT SYSTEM

HX-GX7

Area suffix

J ----- U.S.A.
C ----- Canada



SP-HXGX7

CA-HXGX7

SP-HXGX7

COMPACT
disc
DIGITAL AUDIO

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SPECIFICATION

Amplifier section-CA-HXGX7		
Output Power		
SUBWOOFERS	180 W per channel, min. RMS, driven into 6 Ω at 63 Hz with no more than 10 %total harmonic distortion.	
MAIN SPEAKERS	80 W per channel, min. RMS, driven into 6 Ω at 1 kHz with no more than 10 %total harmonic distortion.	
Audio input sensitivity/impedance (Measured at 1 kHz, with tape recording signal 300 mV)		
AUX	300 mV/47 k Ω	
Speakers/impedance	SUBWOOFERS	6 Ω - 16 Ω
	MAIN SPEAKERS	6 Ω - 16 Ω
Tuner		
FM tuning range	87.5 MHz - 108.0 MHz	
AM tuning range	530 kHz - 1 710 kHz	
CD player		
CD capacity	5 discs	
Dynamic range	87 dB	
Signal-to-noise ratio	90 dB	
Wow and flutter	Immeasurable	
MP3 recording format	MPEG 1/2 Audio Layer 3	
Max. Bit rate	320 kbps	
Cassette deck		
Frequency response	Normal (type I)	50 Hz - 14 000 Hz
	Wow and flutter	0.15 % (WRMS)
General		
Power requirement	AC 120 V , 60 Hz	
Power consumption	245 W/310 VA (at operation) 26 W (on standby)	
Dimensions (approx.)	205 mm \times 370 mm \times 432 mm (W/H/D) (8 1/8 in. \times 14 5/8 in. \times 17 1/0 16 in.)	
Mass (approx.)	10.5 kg (23.2 lbs)	
Speaker section-SP-HXGX7		
Type	3-Way 4-Speaker Bass-Reflex Type	
Speaker Systems	Subwoofer	16 cm (6 5/16 in.) cone \times 1
	Woofer	12 cm (4 3/4 in.) cone \times 2
	Tweeter	5 cm (2 in.) cone \times 1
Power handling capacity	Subwoofer	360 (180 + 180) W
	Main speaker	160 (80 + 80) W
Impedance	Subwoofer	6 Ω
	Main speaker	6 Ω
Frequency range	Subwoofer	27 Hz - 1000 Hz
	Main speaker	70 Hz - 25 000 Hz
Sound pressure level	Subwoofer	78 dB/W·m
	Main speaker	88 dB/W·m
Dimensions (approx.)	227 mm \times 432 mm \times 376 mm (W/H/D) (8 15/16 in. \times 17 1/16 in. \times 14 13/16 in.)	
Mass (approx.)	8 kg (17.7 lbs) each	

Design and specifications are subject to change without notice.

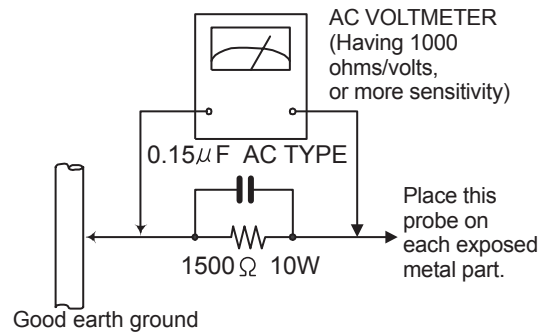
SECTION 1 PRECAUTION

1.1 Safety Precautions

- (1) This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
- (2) Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the 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 (Δ) 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 part 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 Ω per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ 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 " Δ " mark nearby are critical for safety. When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (This regulation does not Except the J and C version)

1.5 Preventing static electricity

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

1.5.1 Grounding to prevent damage by static electricity

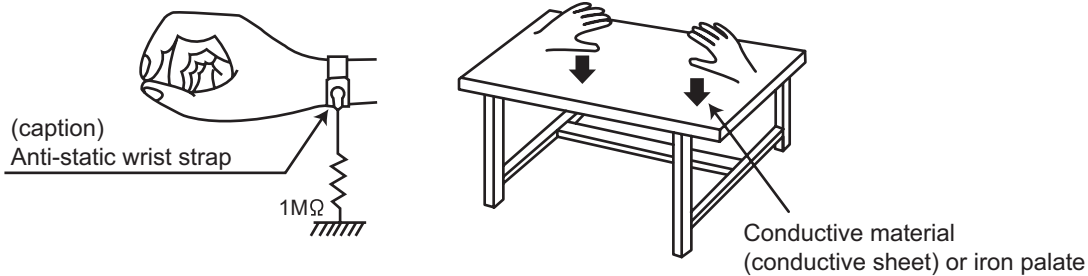
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as laser products. Be careful to use proper grounding in the area where repairs are being performed.

(1) Ground the workbench

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

(2) Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



(3) Handling the optical pickup

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

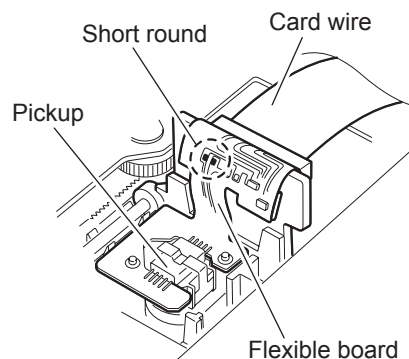
1.6 Handling the traverse unit (optical pickup)

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

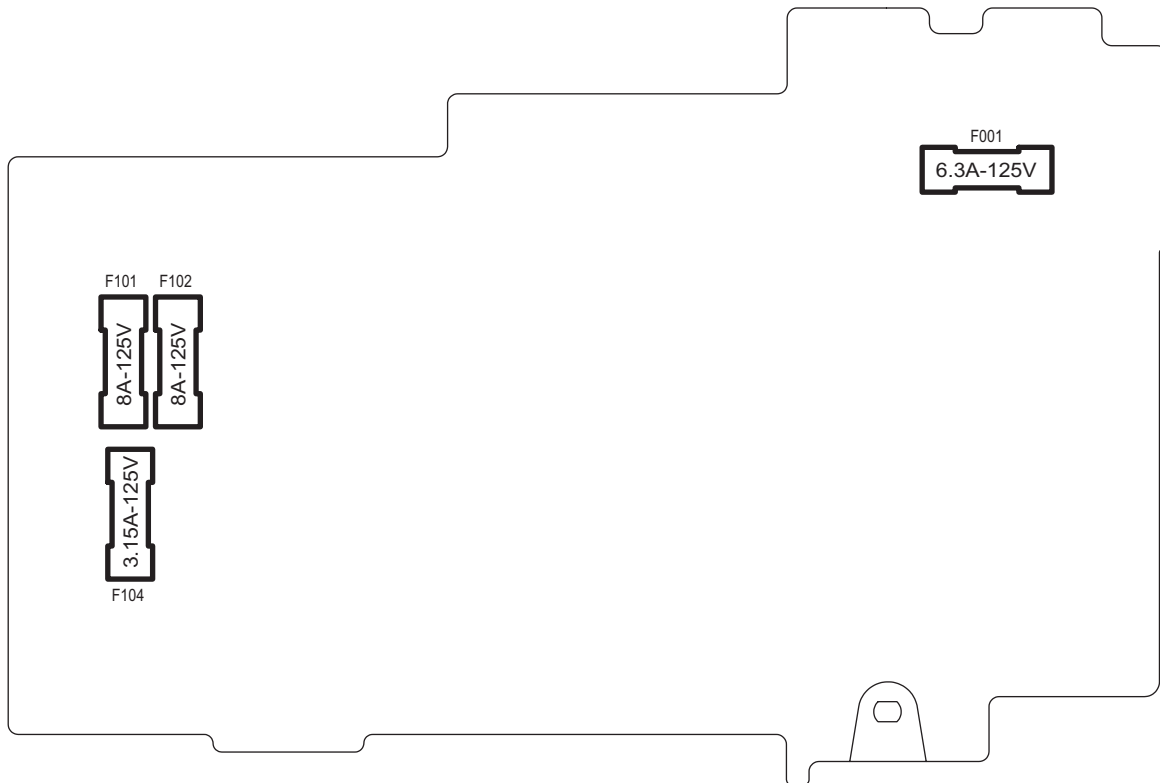
1.7 Attention when traverse unit is decomposed

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

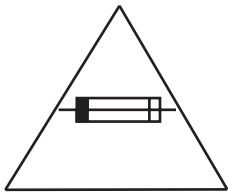
- Apply solder to the short land sections before the flexible wire is disconnected from the connector on the servo board. (If the flexible wire is disconnected without applying solder, the pickup may be destroyed by static electricity.)
- In the assembly, be sure to remove solder from the short land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



1.8 Importance administering point on the safety



For USA and Canada / pour Etats - Unis d' Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 6.3 A/125 V for F001, 8 A/125 V for F101 and F102, 3.15 A/125 V for F104.

This symbol specifies type of fast operating fuse.

Précaution: Pour éviter risques de feux, remplacez le fusible de sûreté de F001 comme le même type que 6,3 A/125 V, 8 A/125 V pour F101 et F102, et 3.15 A/125 V pour F104.

Ce sont des fusibles sûretés qui fonctionnent rapide.

SECTION 2 SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

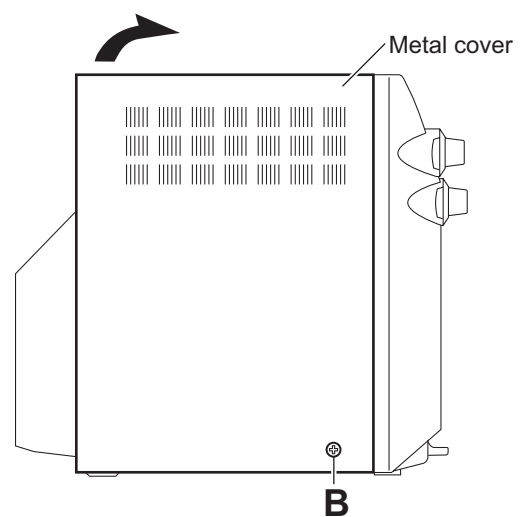
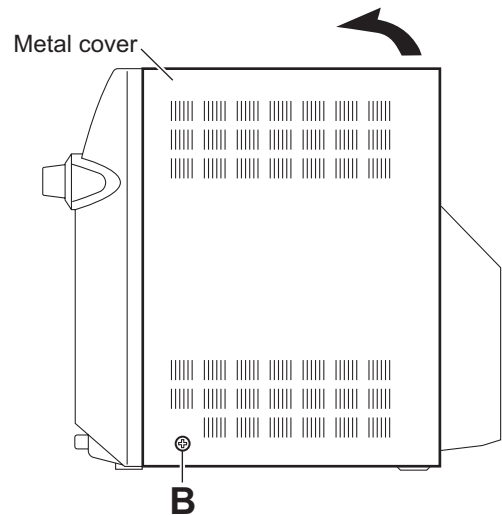
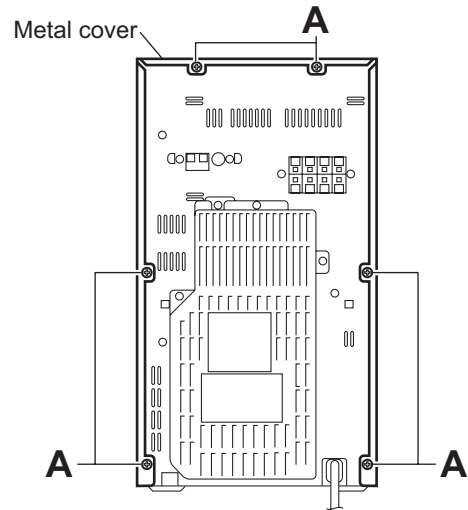
SECTION 3 DISASSEMBLY

3.1 Main body section

3.1.1 Removing the metal cover

(See Figs.1 to 3)

- (1) From the back side of the main body, remove the six screws **A** attaching the metal cover. (See Fig.1.)
- (2) From the both sides of the main body, remove the two screws **B** attaching the metal cover. (See Figs.2 and 3.)
- (3) Remove the metal cover from the main body while lifting the rear section of the metal cover in the direction of the arrow. (See Figs.2 and 3.)



3.1.2 Removing the front panel assembly (See Figs.4 to 7)

- Prior to performing the following procedures, remove the metal cover.

- (1) From the right side of the main body, disconnect the card wires from the connectors (CN43, CN44, CN802, CN803) on the main board. (See Fig.4.)
- (2) Disconnect the earth wire from the chassis base. (See Fig.4.)
- (3) From the top side of the main body, disconnect the parallel wires from the connectors (CN201, CN205) on the bridge board. (See Fig.5.)

Reference:

When reassembling, pass the parallel wire through the hole a on the plastic chassis before connecting the parallel wire to the connector CN201 on the bridge board. (See Fig.5.)

- (4) Disconnect the earth wire from the chassis base. (See Fig.6.)
- (5) From the both sides of the main body, remove the two screws C attaching the front panel assembly. (See Figs.4 and 6.)
- (6) From the bottom side of the main body, remove the three screws D attaching the front panel assembly. (See Fig.7.)
- (7) Release the joints b of the front panel assembly from the chassis base and remove the front panel assembly in the direction of the arrow. (See Figs.4,6 and 7.)

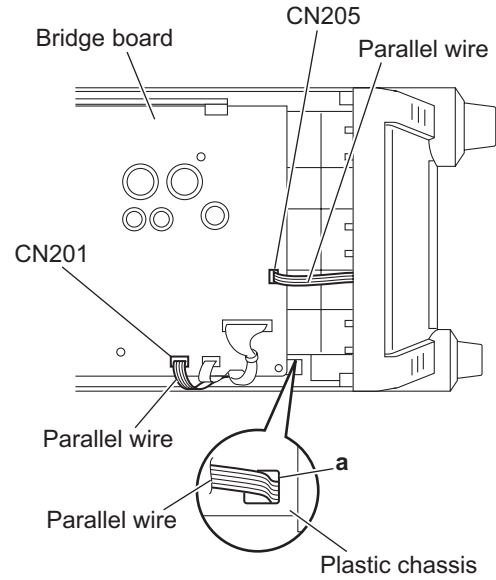


Fig.5

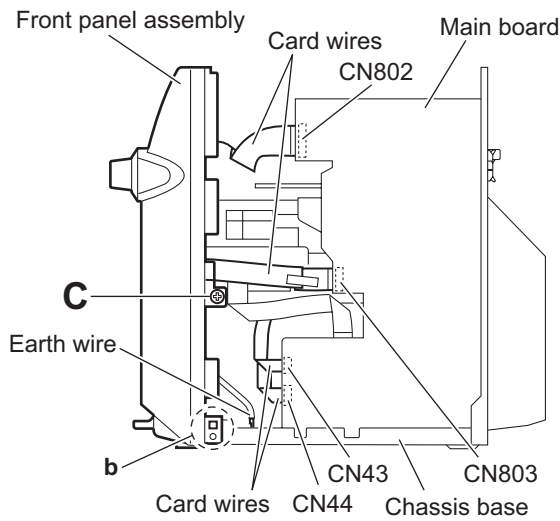


Fig.4

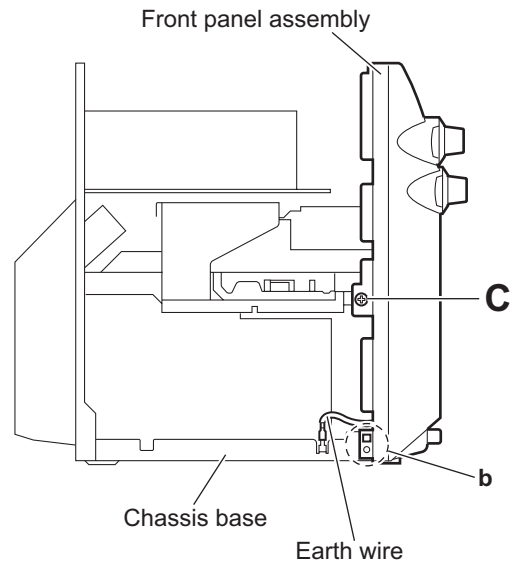


Fig.6

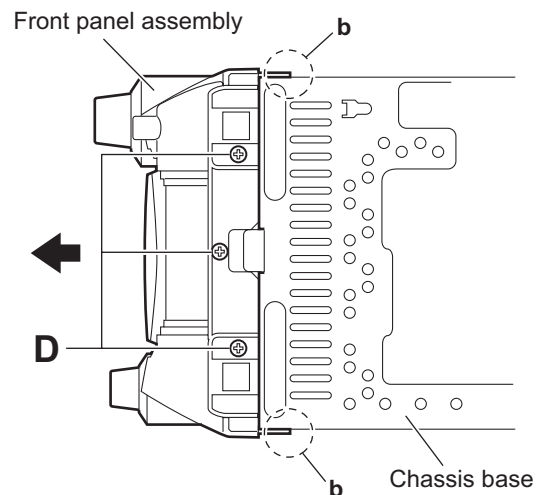
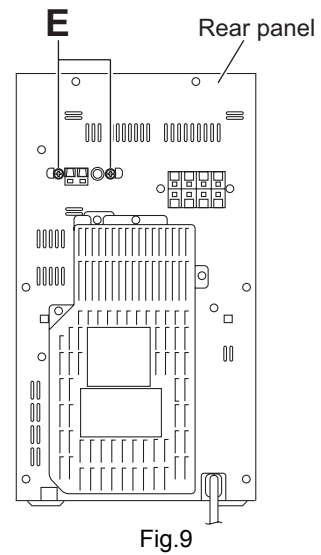
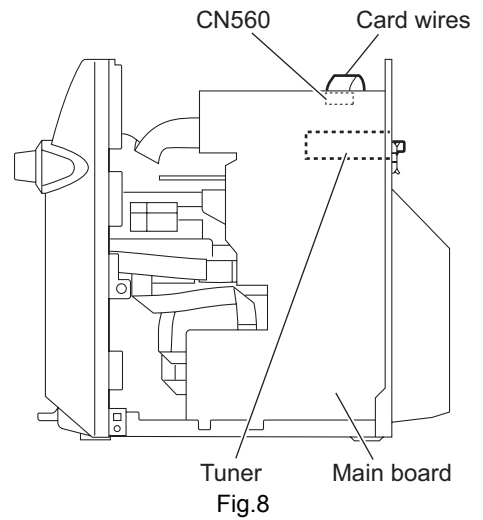


Fig.7

3.1.3 Removing the tuner (See Figs.8 and 9.)

- Prior to performing the following procedures, remove the metal cover.
 - (1) From the right side of the main body, disconnect the card wire from the connector [CN560](#) on the main board. (See Fig.8.)
 - (2) From the back side of the main body, remove the two screws **E** attaching the tuner to the rear panel. (See Fig.9.)



3.1.4 Removing the rear panel (See Figs.10 to 12)

- Prior to performing the following procedures, remove the metal cover.
 - (1) From the top side of the main body, disconnect the wire from the connector [CN202](#) on the bridge board. (See Fig.10.)
 - (2) From the back side of the main body, remove the screw **F** and two screws **G** attaching the rear cover. (See Fig.11.)
 - (3) Release the sections **d** and remove the rear cover. (See Fig.11.)
 - (4) Remove the screw **H** and eleven screws **J** attaching the rear panel. (See Fig.12.)
 - (5) From the both sides of the main body, release the joints **e** attaching the rear panel to the chassis base and remove the rear panel with the fan. (See Fig.12.)

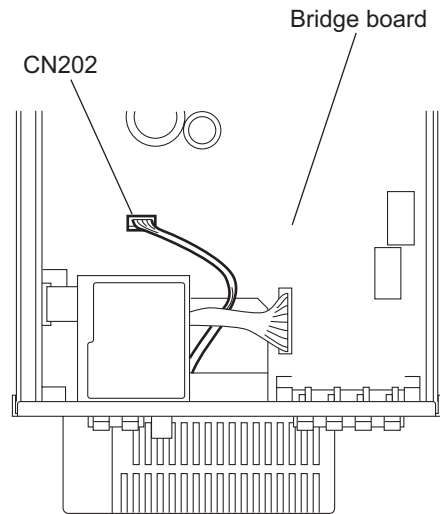


Fig.10

3.1.5 Removing the fan (See Figs.10 to 12)

- Prior to performing the following procedures, remove the metal cover.
 - (1) From the top side of the main body, disconnect the wire from the connector [CN202](#) on the bridge board. (See Fig.10.)
 - (2) From the back side of the main body, remove the screw **F** and two screws **G** attaching the rear cover. (See Fig.11.)
 - (3) Remove the two screws **K** attaching the fan. (See Fig.12.)
 - (4) Take out the fan from the main body.

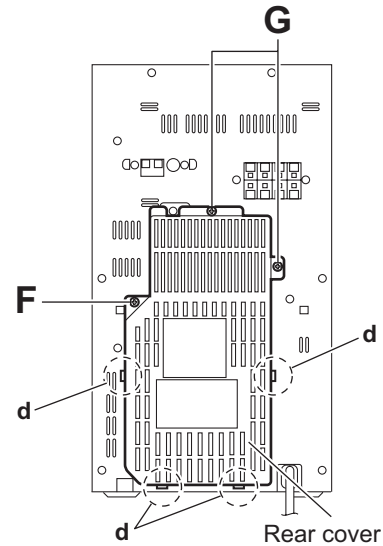


Fig.11

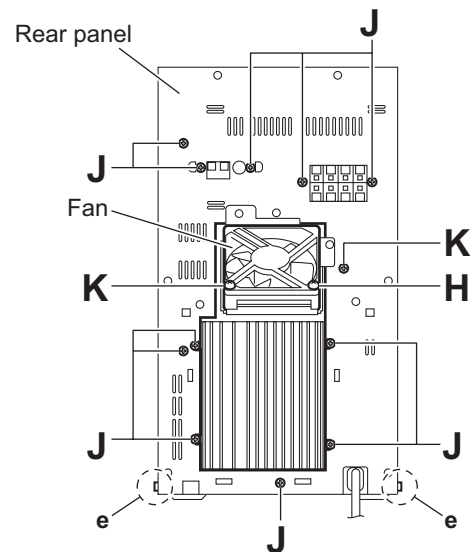


Fig.12

3.1.6 Removing the main board (See Figs.13 and 14)

- Prior to performing the following procedures, remove the metal cover and rear panel.

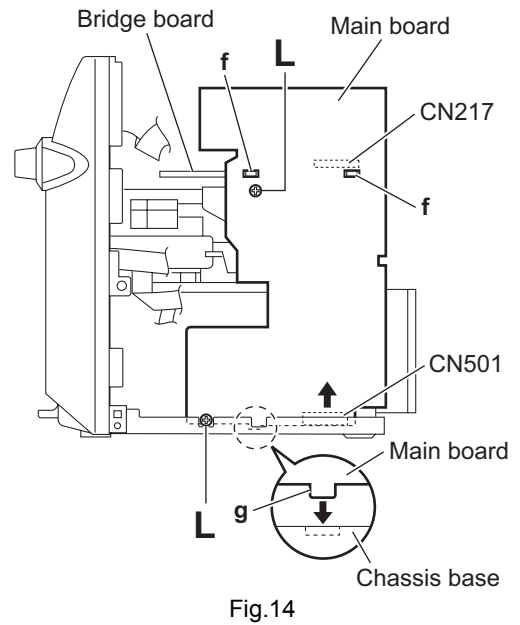
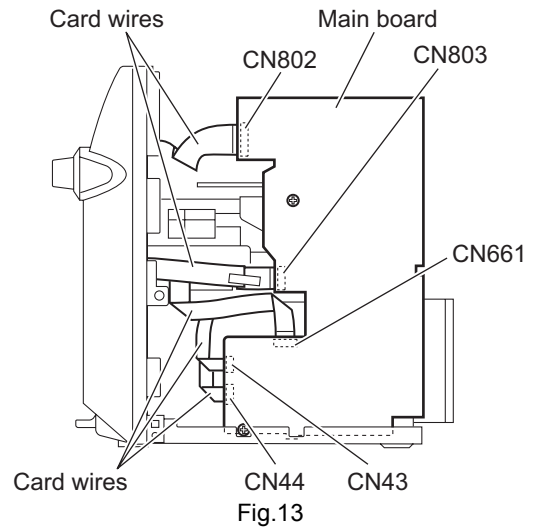
Reference:

Remove the tuner as required.

- (1) From the right side of the main body, disconnect the card wires from the connectors (CN43, CN44, CN661, CN802, CN803) on the main board. (See Fig.13.)
- (2) Remove the two screws L attaching the main board. (See Fig.14.)
- (3) Disconnect the connector CN217 on the main board toward this side and disconnect the connector CN501 on the main board in the direction of the arrow. (See Fig.14.)

Reference:

- When attaching the main board, insert the sections f of the bridge board in the hole of the main board. (See Fig.14.)
- Insert the section g of the main board in the hole of the chassis base before attaching the screws L.



3.1.7 Removing the main amplifier board/subwoofer amplifier boards (See Figs.15 to 17)

- Prior to performing the following procedures, remove the metal cover, rear panel and main board.

- (1) From the top side of the main body, disconnect the wires from the connector (CN206, CN208) on the bridge board. (See Fig.15.)
- (2) From the back side of the main body, disconnect the connectors (CN600, CN700) on the main amplifier/subwoofer amplifier boards from the connection board in the direction of the arrow. (See Fig.16.)
- (3) From the side of the main amplifier/subwoofer amplifier boards, remove the tie band bundling the wires. (See Fig.17.)

Reference:

After reassembling, bundle the wires with the tie band. (See Fig.17.)

- (4) Remove the two screws **M** and screw **N** attaching the main amplifier board. (See Fig.17.)
- (5) Removing the two screws **P** and screw **Q** attaching the subwoofer amplifier board. (See Fig.17.)

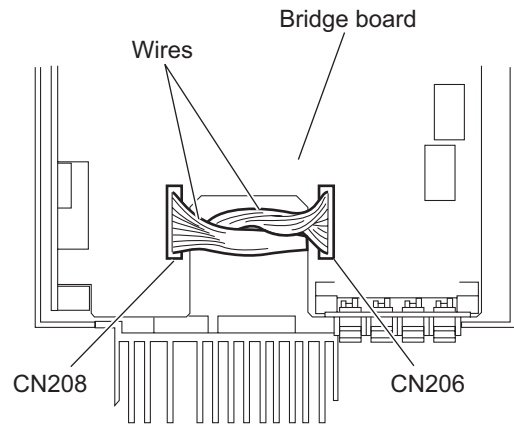


Fig.15

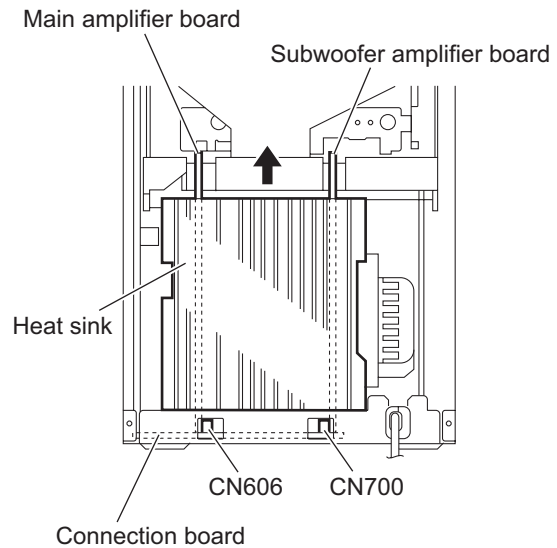


Fig.16

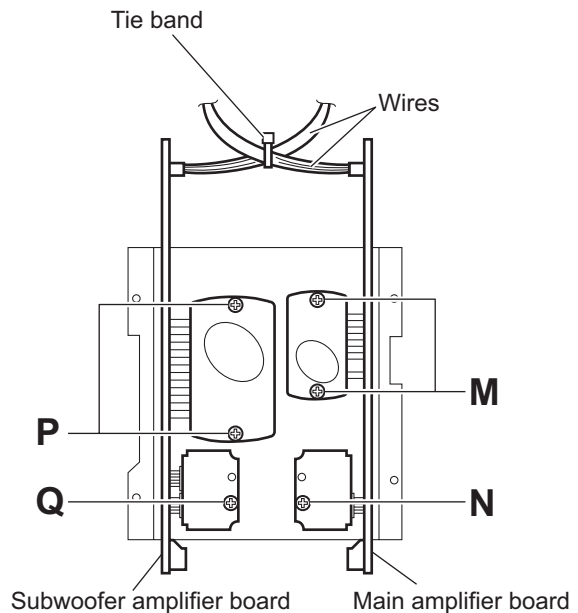


Fig.17

3.1.8 Removing the connection board (See Fig.18.)

- Prior to performing the following procedure, remove the metal cover, rear panel, main board and main amplifier/subwoofer amplifier boards.
 - (1) From the top side of the main body, remove the two screws **R** attaching the connection board on the chassis base.

Reference:

When reassembling, attach the connection board to the section **h** and align the projection **i** of the chassis base to the hole of the connection board.

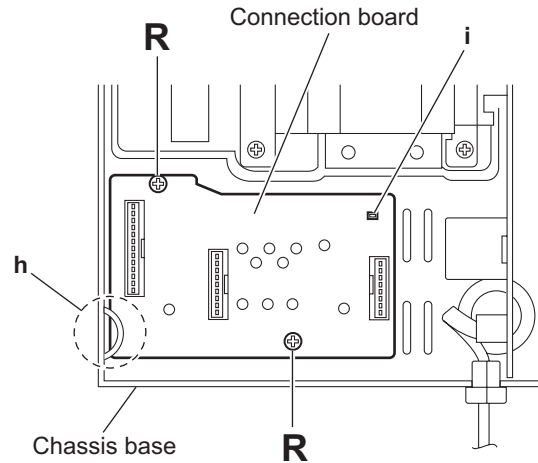


Fig.18

3.1.9 Removing the bridge board (See Figs.19 and 20)

- Prior to performing the following procedures, remove the metal cover, rear panel and main board.
 - (1) From the top side of the main body, disconnect the wires from the connectors (CN206, CN208, CN214) on the bridge board. (See Fig.19.)

Reference:

After connecting the wire to the connector [CN214](#), fix the wire with the wire holder. (See Fig.19.)

- (2) Disconnect the parallel wires from the connectors ([CN201](#), [CN205](#), [CN213](#)) on the bridge board. (See Fig.19.)
- (3) Remove the two screws **S** attaching the bridge board on the 5CD changer mechanism assembly. (See Fig.20.)
- (4) Bend the claw **j** in the direction of the arrow and remove the bridge board in an upward direction. (See Fig.20.)

Reference:

- When attaching the bridge board, align the projections (**k,m**) in the hole of the bridge board. (See Fig.20.)
- When reassembling, pass the wires through the sections (**n, p**) of the plastic chassis. (See Fig.19.)

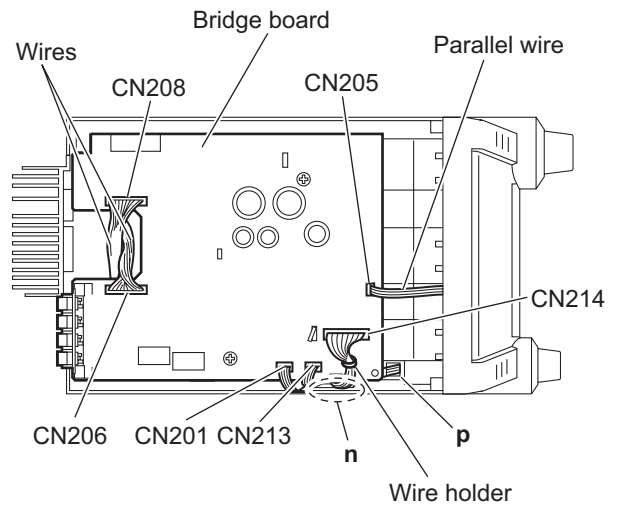


Fig.19

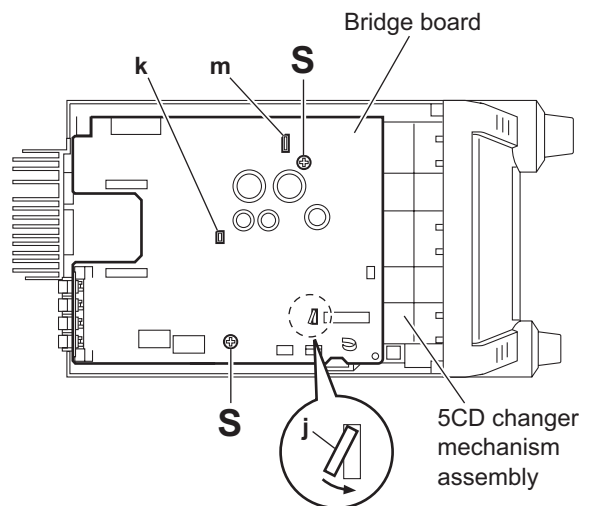


Fig.20

3.1.10 Removing the 5CD changer mechanism assembly (See Figs.21 and 23)

- Prior to performing the following procedures, remove the metal cover, rear panel, main board and bridge board.

- (1) From the both sides of the main body, remove the two screws **T** attaching the 5CD changer mechanism assembly to the front panel assembly. (See Figs.21 and 22.)
- (2) Take out the 5CD changer mechanism assembly from the main body.

Reference:

When attaching the 5CD changer mechanism assembly, pass the wires through the sections (**n**, **p**) of the plastic chassis. (See Fig.22.)

- (3) From the both and top sides of the 5CD changer mechanism assembly, remove the two screws **U** and screw **V** attaching the main chassis. (See Fig.23.)
- (4) From the top side of the 5CD changer mechanism assembly, remove the three screws **W** and screw **X** attaching the 5CD changer mechanism assembly on the plastic chassis. (See Fig.23.)

Reference:

- When reassembling, align the projections (q,r,s) of the plastic chassis to the holes of the 5CD changer mechanism assembly before attaching the screws **W** and **X**. (See Fig.23.)
- Align the projections t of the plastic chassis to the holes of the main chassis before attaching the screw **V**. (See Fig.23.)

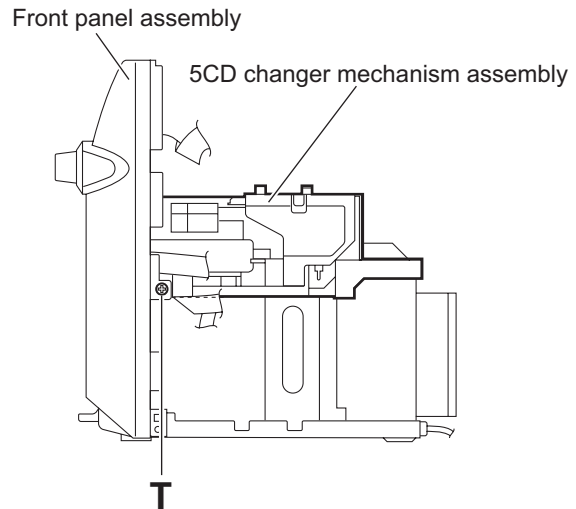


Fig.21

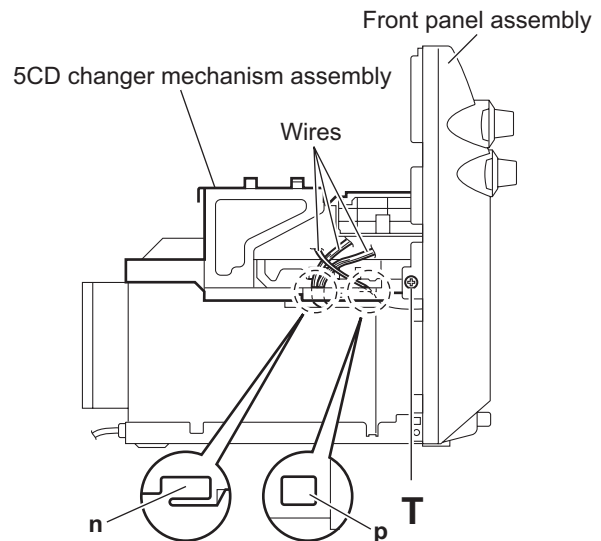


Fig.22

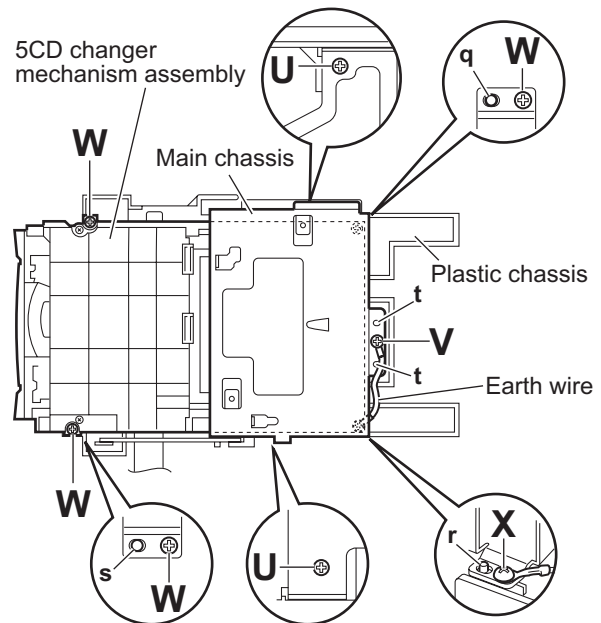


Fig.23

3.1.11 Removing the primary board (See Figs.19,21,22,24 and 25)

- Prior to performing the following procedures, remove the metal cover, rear panel and main board.

(1) From the top side of the main body, disconnect the wires from the connectors (CN206, CN208, CN214) on the bridge board. (See Fig.19.)

Reference:

After connecting the wire to the connector CN214, fix the wire with the wire holder. (See Fig.19.)

(2) Disconnect the parallel wires from the connectors (CN201, CN205, CN213) on the bridge board. (See Fig.19.)

(3) From the both sides of the main body, remove the two screws T attaching the 5CD changer mechanism assembly to the front panel assembly. (See Figs.21 and 22.)

Reference:

It is not necessary to remove the bridge board from the 5CD changer mechanism assembly.

(4) Take out the 5CD changer mechanism assembly with the bridge board from the main body.

Reference:

When attaching the 5CD changer mechanism assembly, pass the wires through the sections (m, n) of the 5CD changer mechanism assembly. (See Fig.22.)

(5) From the top and left sides of the main body, remove the four screws Y and screw Z attaching the primary board on the chassis base. (See Figs.24 and 25.)

(6) From the forward side of the primary board, disconnect the power cord from the connector CN200. (See Fig.25.)

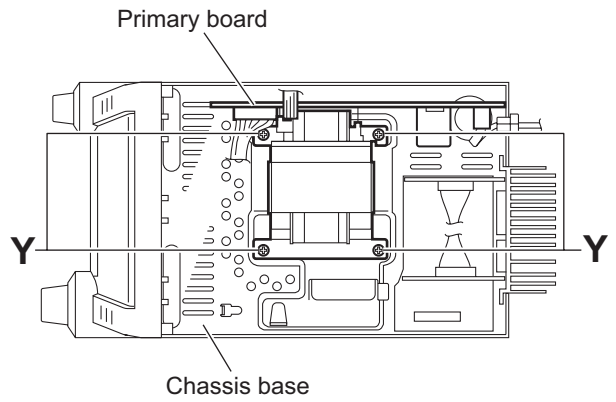


Fig.24

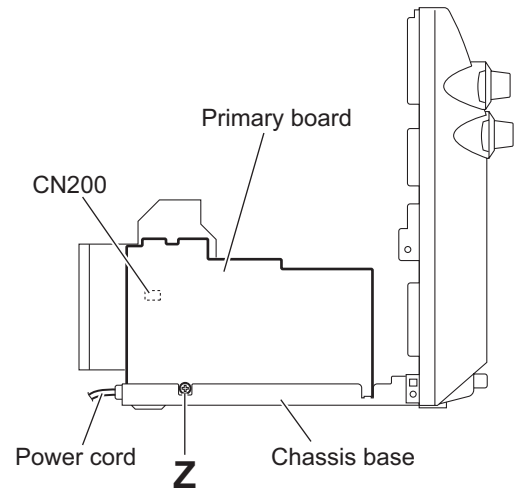


Fig.25

3.1.12 Removing the FL board (See Fig.26)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.

(1) From the inside of the front panel assembly, remove the soldered sections (u, v) on the FL board to remove the parallel wires.

(2) Disconnect the card wire from the connector CN902 on the FL board.

(3) Remove the four screws AA attaching the FL board.

Reference:

When attaching the FL board, align the projections w of the front panel assembly in the holes of the FL board before attaching the screws AA.

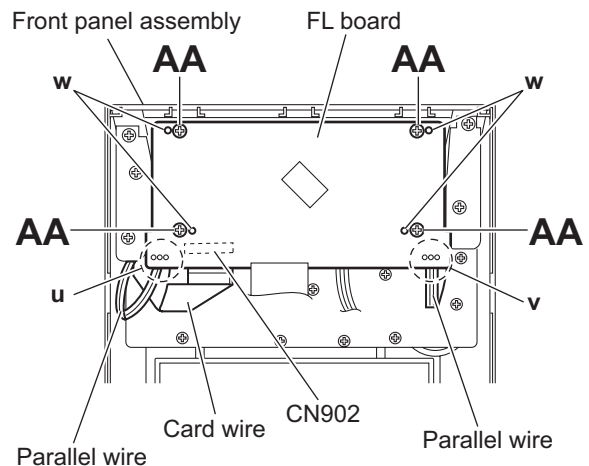


Fig.26

3.1.13 Removing the switch board
(See Fig.27)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
 - (1) From the inside of the front panel assembly, remove the three screws **AB** attaching the switch board.
 - (2) Take out the switch board and remove the soldered section **x** on the switch board to remove the parallel wire.

Reference:

When attaching the switch board, align the projections **y** in the holes of the switch board before attaching the screws **AB**.

3.1.14 Removing the standby LED board
(See Fig.27)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
 - (1) From the inside of the front panel assembly, remove the two screws **AC** attaching the standby LED board.
 - (2) Take out the standby LED board and remove the soldered section **z** on the standby LED board to remove the parallel wire.

Reference:

When attaching the standby LED board, align the projections **aa** in the holes of the standby LED board before attaching the screws **AC**.

3.1.15 Removing the encoder board
(See Figs.26 to 29)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
 - (1) From the outside of the front panel assembly, pull out the knobs toward this side. (See Fig.28.)
 - (2) Remove the nut attaching the encoder board. (See Fig.28.)
 - (3) From the inside of the front panel assembly, disconnect the card wire from the connector [CN902](#) on the FL board. (See Fig.26.)
 - (4) Remove the four screws **AA**, three screws **AB** and two screws **AC** attaching the each board. (See Figs.26 and 27.)
 - (5) Take out the FL board with the switch and standby LED boards.

Reference:

It is not necessary to remove the parallel wires.

- (6) Remove the ten screws **AD** attaching the encoder board. (See Fig.29.)

Reference:

When attaching the encoder board, align the projections **ab** of the front panel assembly in the holes of the encoder board before attaching the screws **AD**. (See Fig.29.)

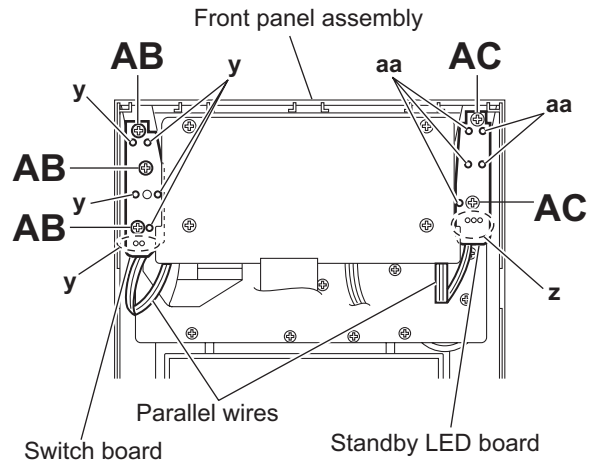


Fig.27

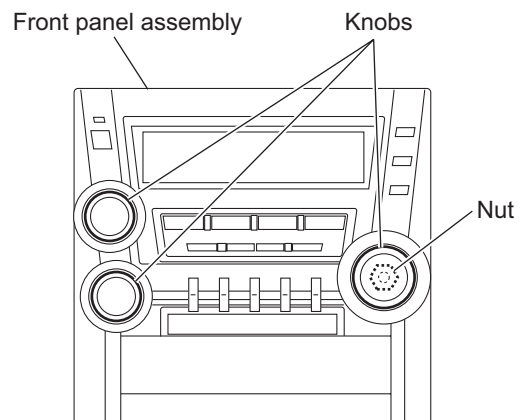


Fig.28

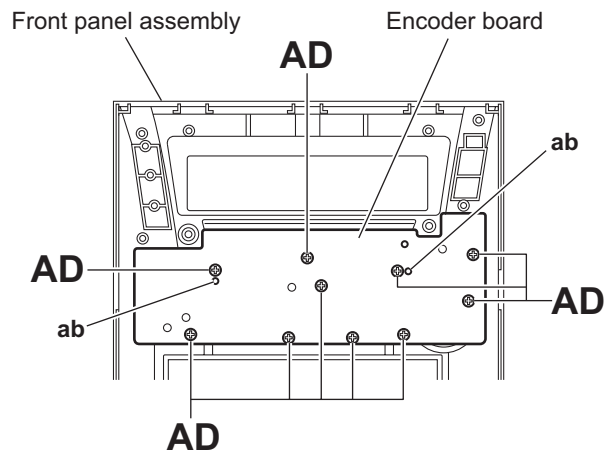


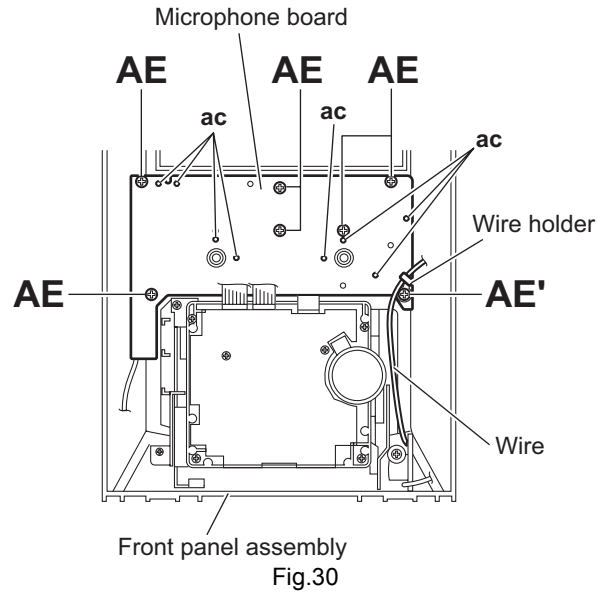
Fig.29

3.1.16 Removing the microphone board
(See Fig.30)

- Prior to performing the following procedure, remove the metal cover and front panel assembly.
- (1) From the inside of the front panel assembly, remove the six screws **AE** and screw **AE'** attaching the microphone board.

Reference:

- When attaching the microphone board, align the projections **ac** of the front panel assembly in the holes of the microphone board before attaching the screws **AE** and **AE'**.
- When attaching the screw **AE'**, attach it with the wire holder.



3.1.17 Removing the headphone board
(See Fig.31)

- Prior to performing the following procedures, remove the metal cover and front panel assembly.
- (1) From the inside of the front panel assembly, remove the screw **AF** attaching the headphone board.
- (2) Remove the wire holder fixing the wire and take out the headphone board.

Reference:

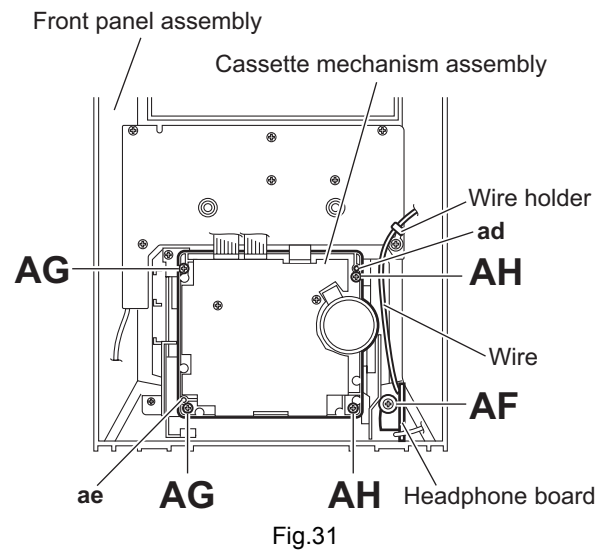
After attaching the headphone board, fix the wire with the wire holder.

3.1.18 Removing the cassette mechanism assembly
(See Fig.31)

- Prior to performing the following procedure, remove the metal cover and front panel assembly.
- (1) From the inside of the front panel assembly, remove the two screws **AG** and two screws **AH** attaching the cassette mechanism assembly.

Reference:

When attaching the cassette mechanism assembly, align the projections (**ad,ae**) in the holes of the cassette mechanism assembly.



3.2 CD changer mechanism

3.2.1 Removing the tray assembly

(See Fig.1 ~ 5)

- (1) Remove the two screws **A** from the top cover and release the two joints **a** on both sides of the body.
- (2) Remove the top cover with the two rods attached to the top cover and lifter assembly respectively.
- (3) Remove the open det lever on the left side of the body.
- (4) Push part **b** of the slide (R) assembly on the right side of the body to unlock the tray assembly. Draw out the trays toward the front.

Attention:

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

- (5) From top of the body, move the stopper tab **c** in the direction of the arrow and release. Pull out the tray assemblies from the body.

Caution:

Remove the tray assembly from top tray 5 in order.

Attention:

When reattaching the sub tray of the tray assembly, or when removing the CD remaining inside, refer to another section.

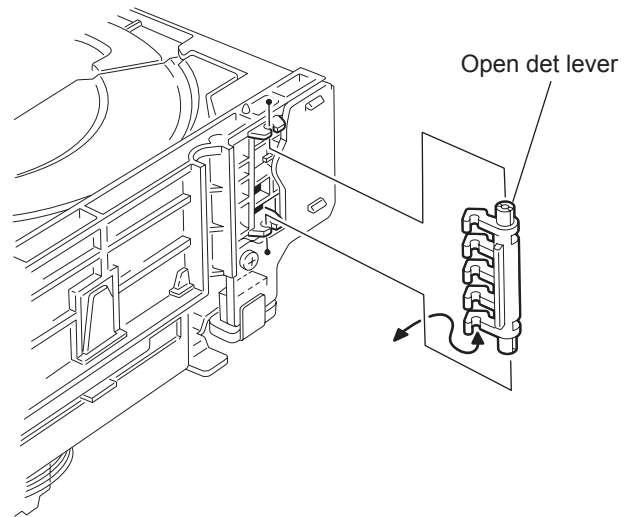


Fig.3

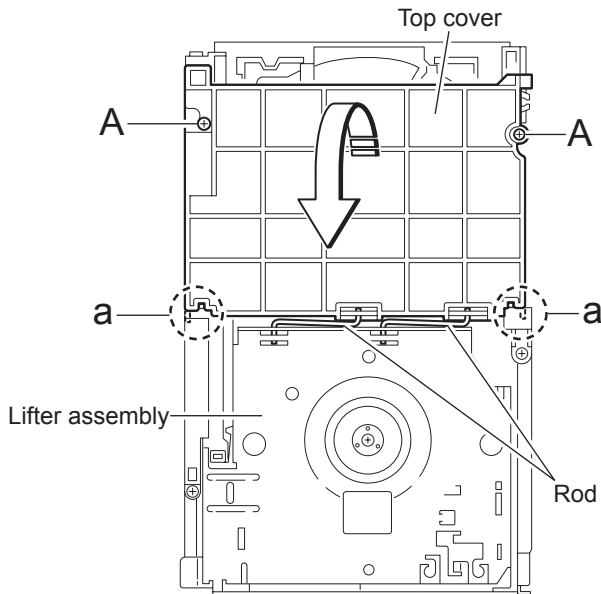


Fig.1

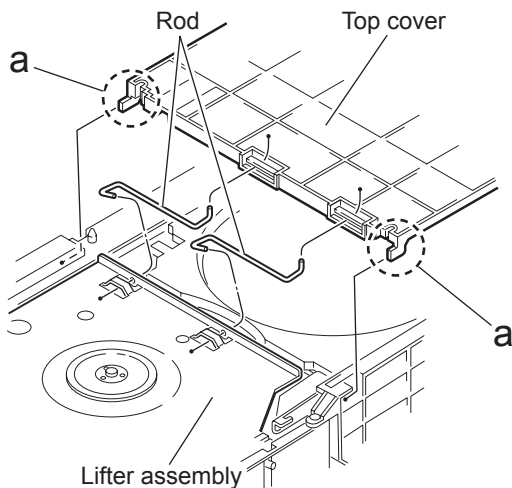


Fig.2

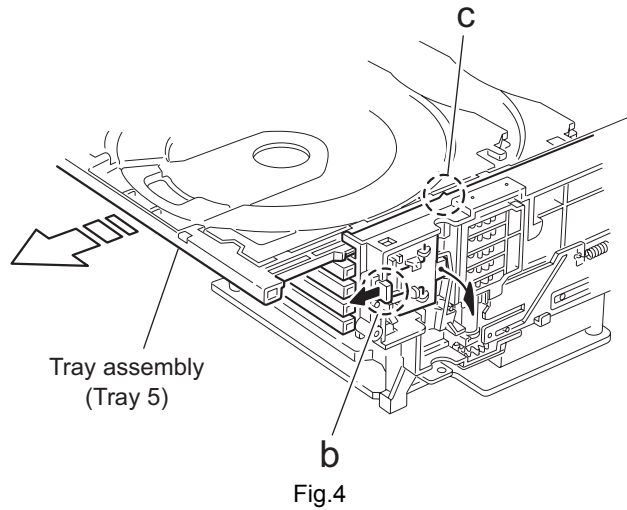


Fig.4

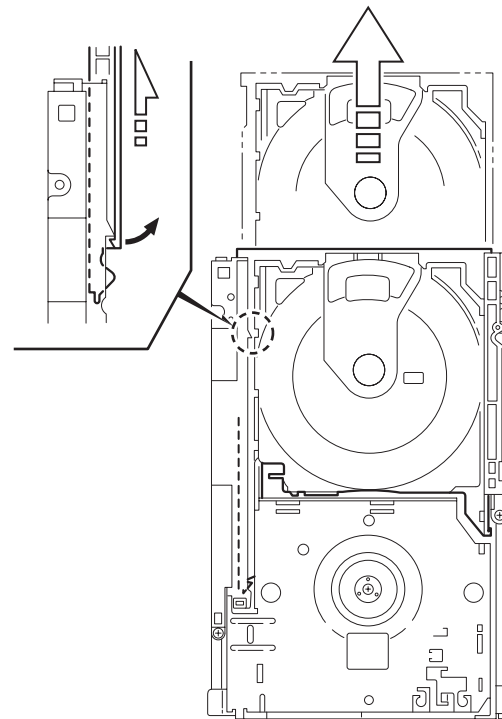


Fig.5

3.2.2 Removing the servo control board (See Fig.6 ~ 9)

Caution:

Solder the short-circuit point on the pickup before disconnecting the card wire extending from the pickup. If you do not follow this instruction, the pickup may be damaged.

- (1) Disconnect the card wire from connector **CN251** and each wire from connector **CN252**, **CN253** and **CN602** on the servo control board on the bottom of the body. Disconnect the wire from joint **d**.
- (2) Solder the short round point on the flexible board of the pickup.
- (3) Remove the four screws **B** and turn the servo control board as shown in the figure.
- (4) Disconnect the card wire from connector **CN601** on the servo control board. **Caution:** Unsolder the short-circuit point after reassembling.

Caution:

When reassembling, twist the wires to be connected to connector **CN252** and **CN253** twice.

3.2.3 Removing the switch board (See Fig.9)

- (1) Disconnect the wires from connector **CN252** and **CN253** on the servo control board.
- (2) Remove the screw **C** attaching the switch board.
- (3) Release the wires from the slot **e** of the switch board.

Caution:

When reassembling, let the wires through the slot **e** of the switch board and twist them twice.

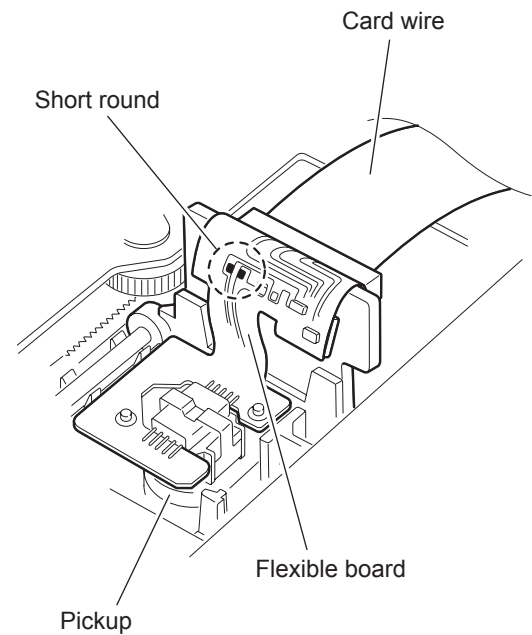


Fig.7

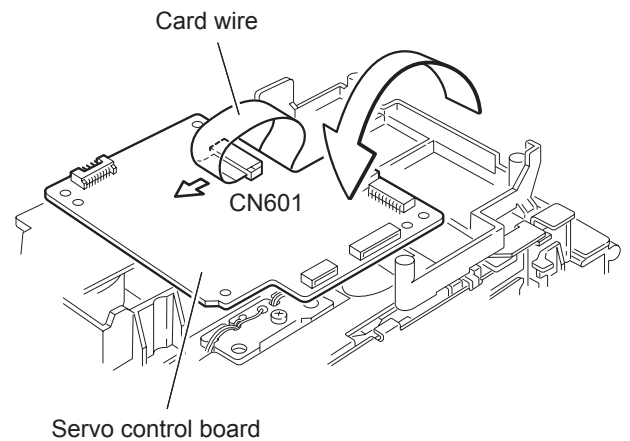


Fig.8

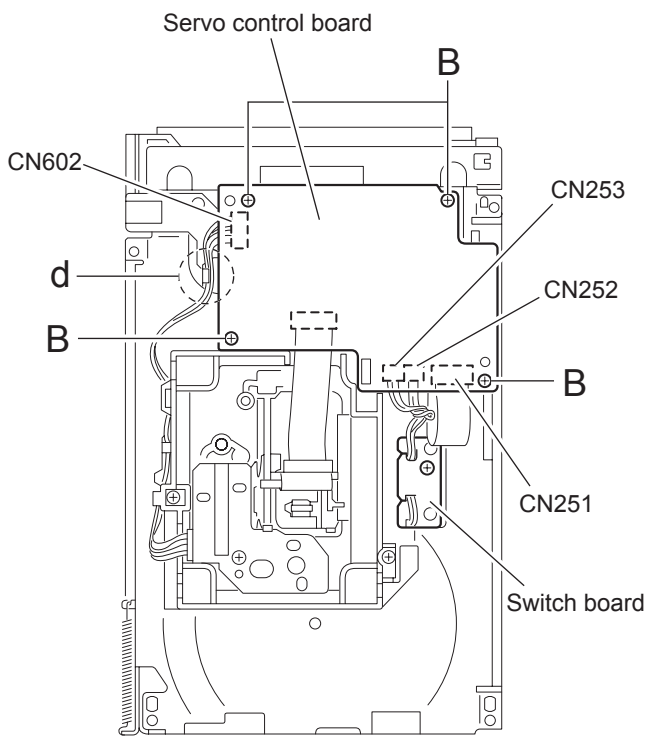


Fig.6

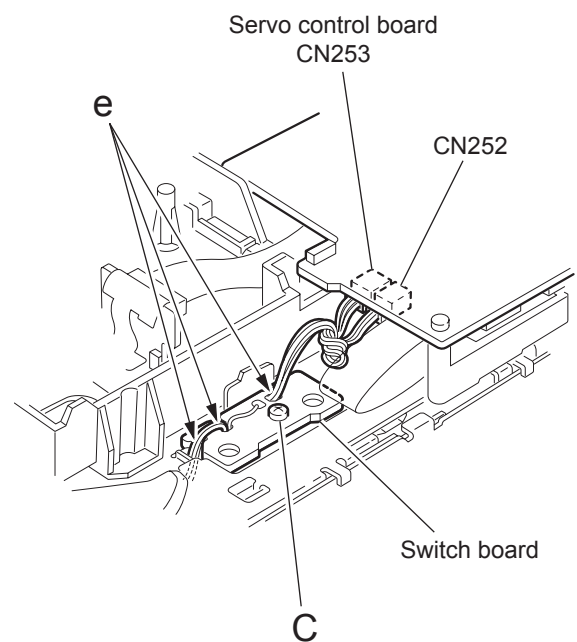


Fig.9

3.2.4 Removing the motor board (See Fig.10 , 11)

- Prior to performing the following procedure, remove the servo control board.

(1) Turn over the body and remove the two screws **D**. Move the CD module bkt. in the direction of the arrow to release two joints **f**.

(2) Unsolder the four soldered parts on the motor of the motor board.

Caution:

If removing the motor board with the motor, you should remove the screws attaching the motor from top of the body(Refer to another section).

(3) Remove the two screws **E** attaching the motor board.

(4) Remove the spacer fixing the motor board and tray switch board, and disconnect connector **CN2** on the motor board.

(5) Disconnect the card wire from connector **CN1** on the motor board.

Caution:

When reconnecting the card wire, let the card wire through the slot **g** of the motor board and attach it to the bottom of the body using a double tape.

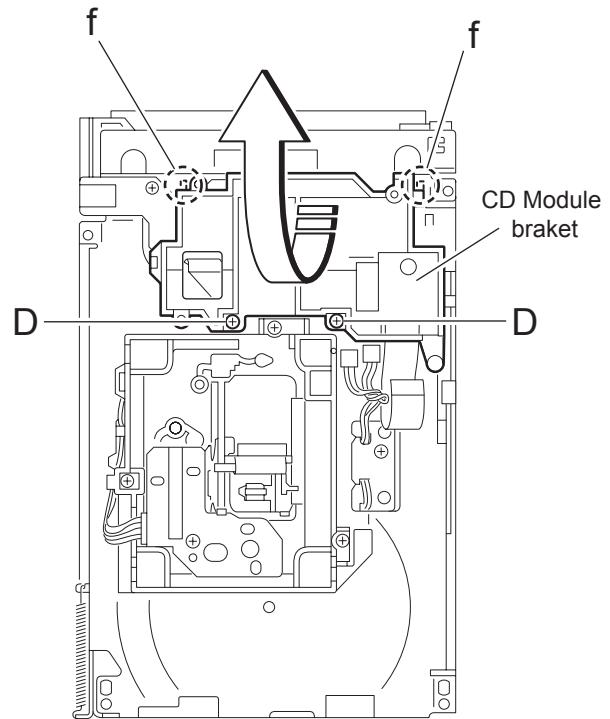


Fig.10

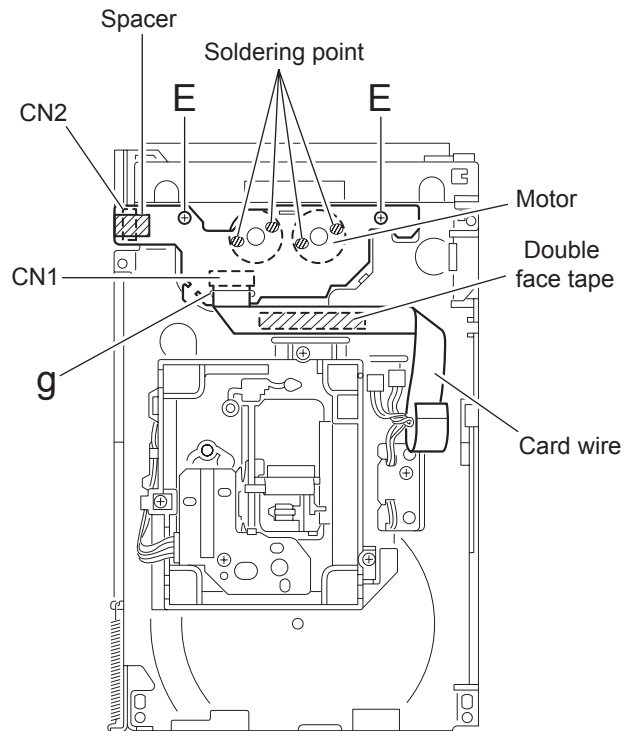
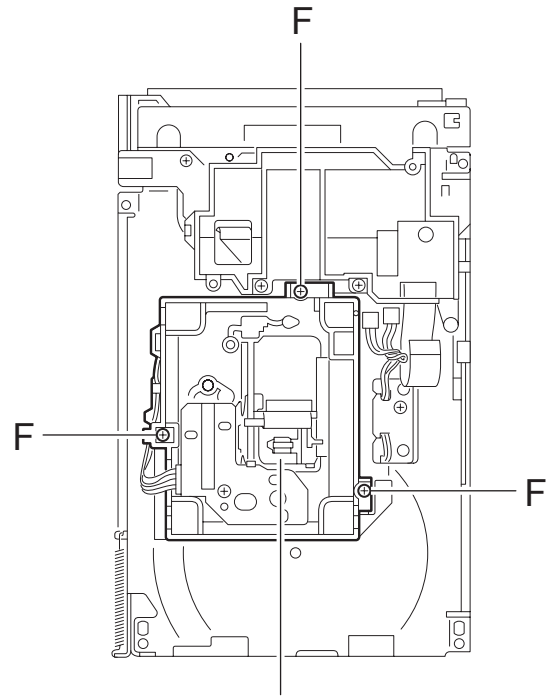


Fig.11

3.2.5 Removing the CD tramecha assembly (See Fig.12)

- Prior to performing the following procedure, remove the servo control board.
 - (1) Turn over the body and remove the three screws **F** attaching the tramecha.



CD Tramecha assembly
Fig.12

3.2.6 Removing the pickup (See Fig.13 , 14)

- Prior to performing the following procedure, remove the servo control board and CD tramecha assembly.
 - (1) From top of the CD tramecha assembly, turn the cam gear in the direction of the arrow to move the pickup assembly outward.
 - (2) Push down the stopper **h** in the direction of the arrow and pull out the shaft.
 - (3) Release the joint **i** of the pickup assembly and mecha base.
 - (4) Remove the screw **G** attaching the CD rack. Release the four tabs **j** at the bottom of the CD rack.

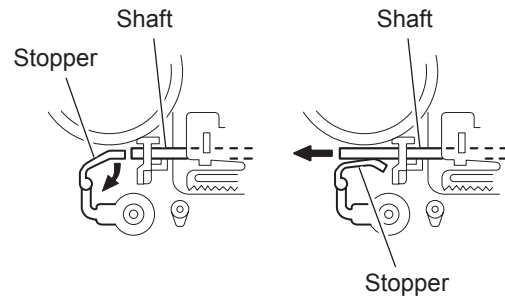
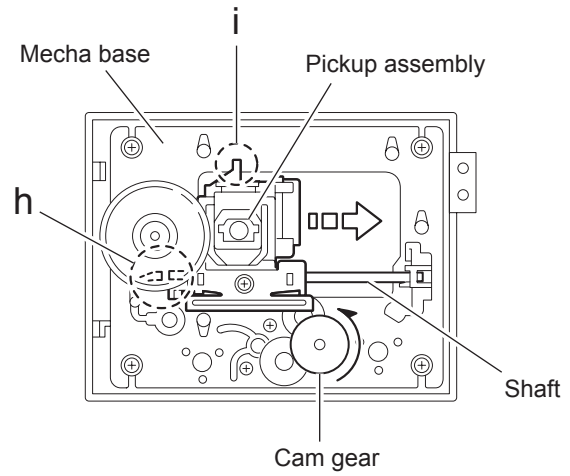


Fig.13

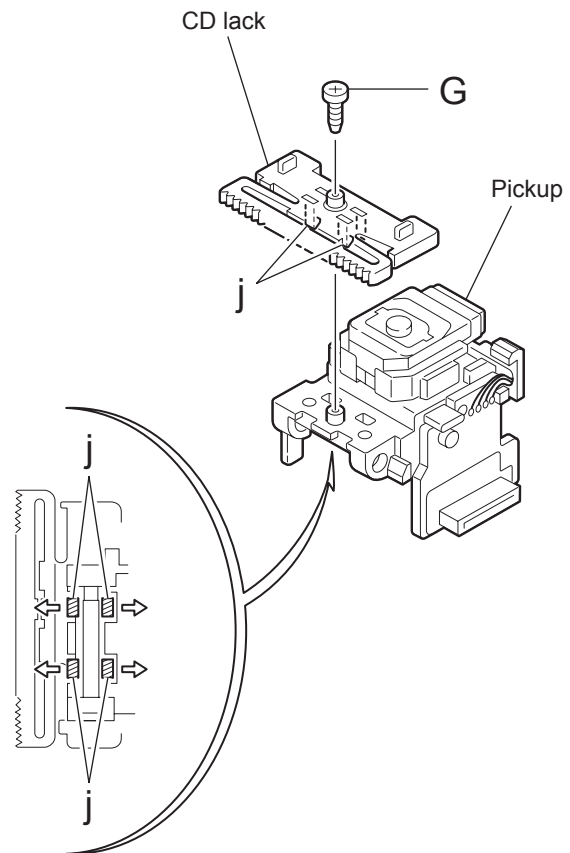


Fig.14

3.2.7 Removing the side (L)/ tray switch board (See Fig.15 ~ 17)

- Prior to performing the following procedure, remove the tray assembly.
 - (1) Remove the two screws **H** attaching the side (L) on top of the body.
 - (2) From the side of the body, remove the spacer fixing the tray switch board and motor board. Disconnect connector **CN3** on the tray switch board and detach the side (L) upward.
 - (3) Remove the screw **J** attaching the tray switch board.
 - (4) Push the joint tab **k** of the side (L) in the direction of the arrow and remove the tray switch board outward, then release joint **I**.

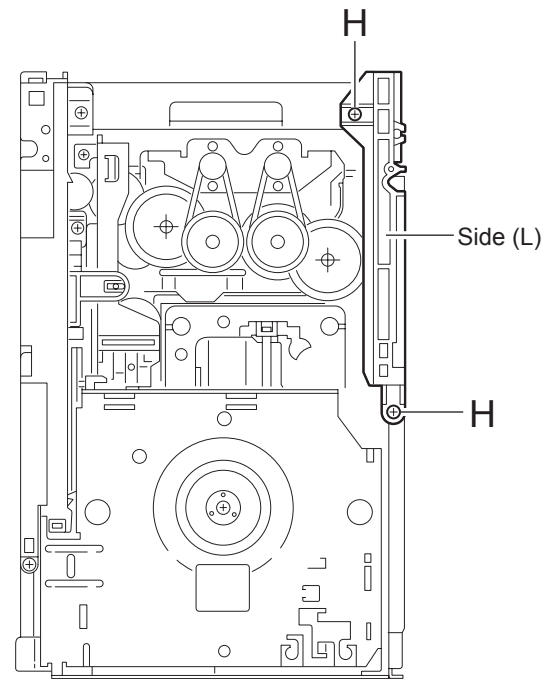


Fig.15

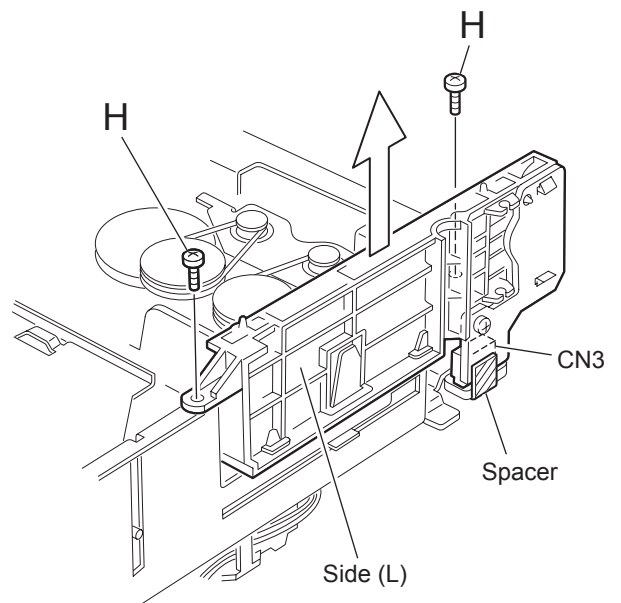


Fig.16

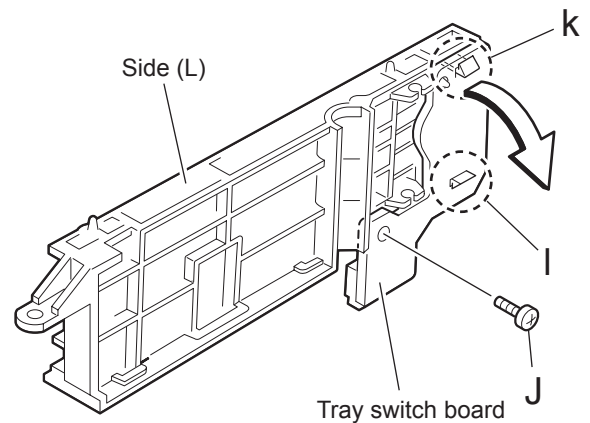


Fig.17

3.2.8 Removing the side (R) assembly (See Fig.18 ~ 22)

- Prior to performing the following procedure, remove the tray assembly.
 - (1) Push and release the two tabs **m** of the gear cover through the two notches inside the side (R) assembly. Remove the gear cover outward.
 - (2) Remove the spring attached to part **n** of the hook on the right side of the body.
 - (3) From top of the body, turn the 1 gear clockwise to move the elevator cam rearward. Move the two slots **o** and joint **p** of the elevator cam as shown in Fig.21 and remove the elevator cam outward.
 - (4) Remove the three screws **K** and detach the side (R) upward.

Caution:

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

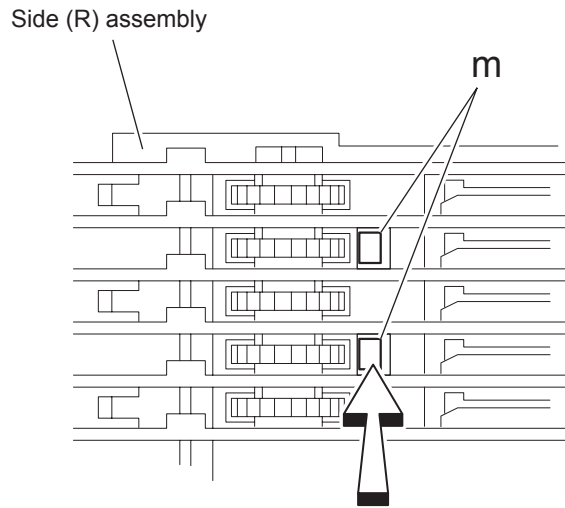


Fig.20

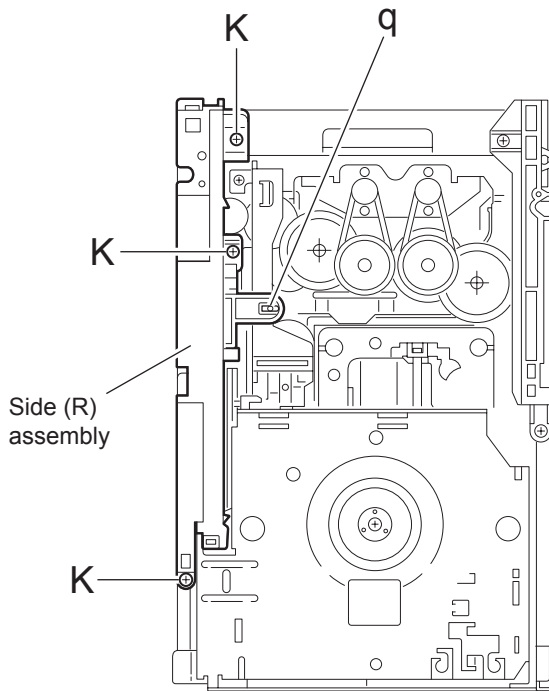


Fig.18

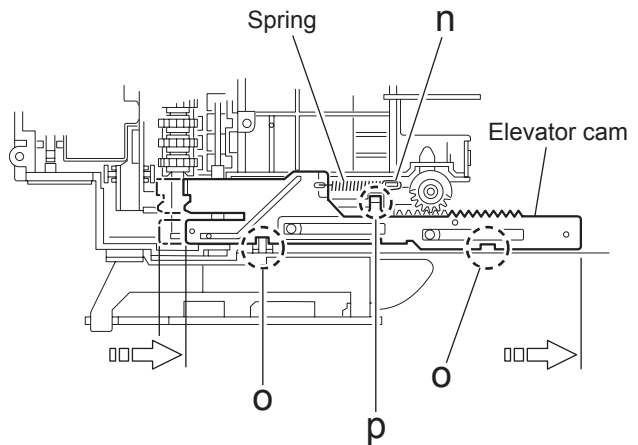


Fig.21

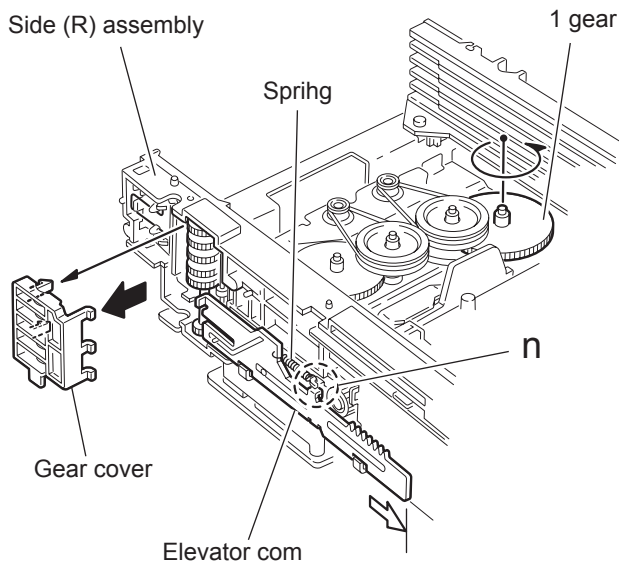


Fig.19

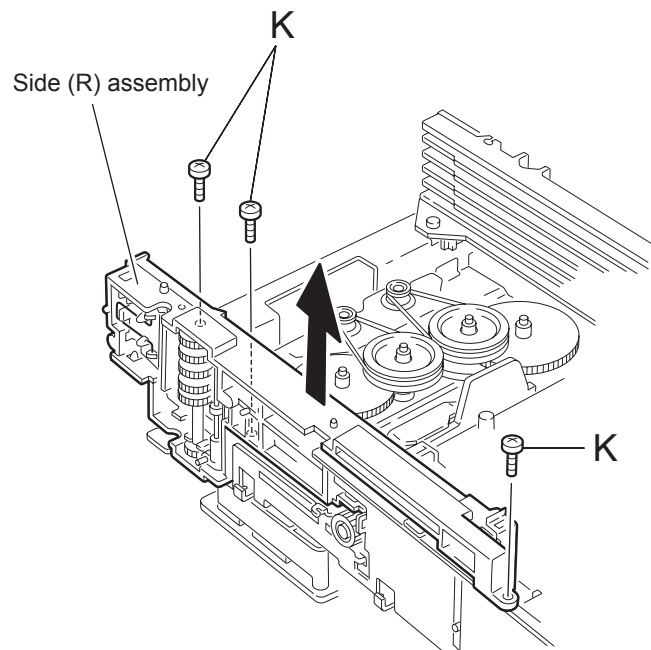


Fig.22

3.2.9 Removing the lifter assembly (See Fig.23 ~ 27)

- Prior to performing the following procedure, remove the tray assembly and side (L)/ side (R) assembly.
 - (1) From top of the body, turn the 1 gear clockwise to move the lifter assembly upward as shown in Fig.24.
 - (2) From top of the body, turn the 2 gear clockwise to move the hook toward the front until it stops.
 - (3) Move the hook stopper in the direction of the arrow while pushing the tab r of the hook stopper to unlock it. Release four joints s to detach from the rack holder. Release the rod from part t.
 - (4) Turn the 1 gear clockwise again to move the lifter assembly upward.
 - (5) Remove the lifter assembly from the body upward at position u where the four pins on the right and left sides of the lifter assembly fit to the notches of the v. Move the lifter assembly toward the front and release from the hook.

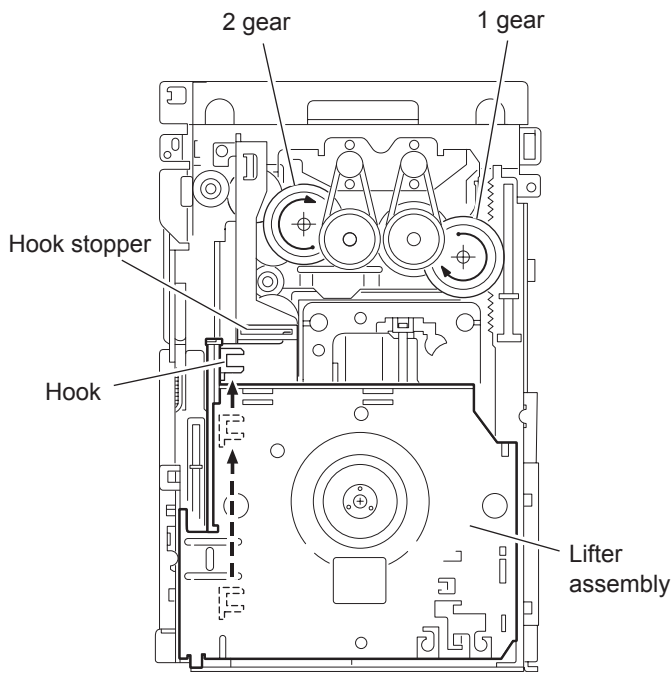


Fig.23

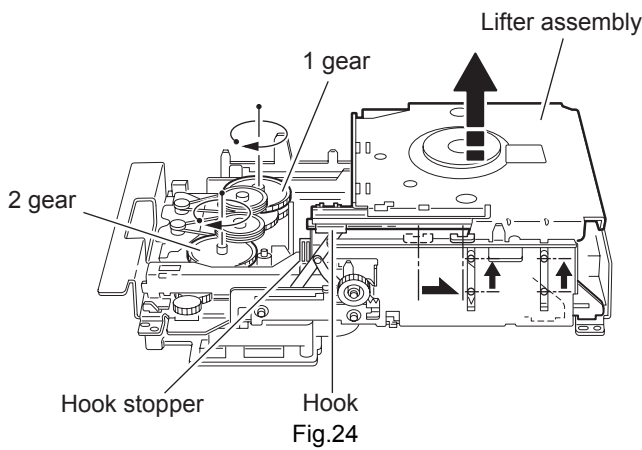


Fig.24

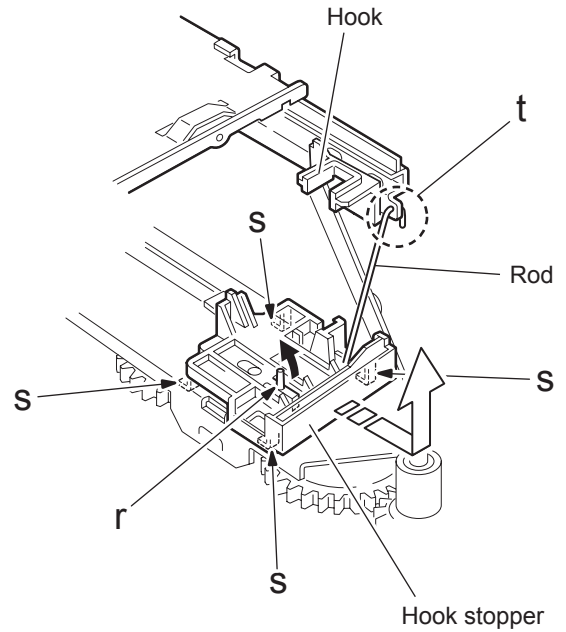


Fig.25

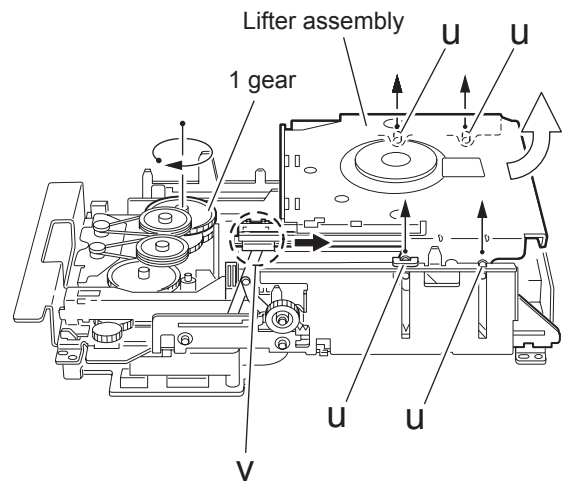


Fig.26

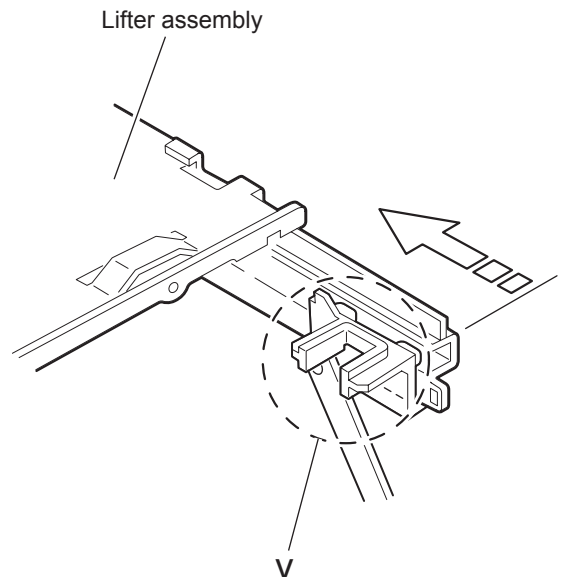


Fig.27

3.2.10 Removing the rack holder assembly/ sensor assembly (See Fig.28 ~ 33)

- Prior to performing the following procedure, remove the tray assembly, side (L)/ side (R) assembly, lifter assembly.

Attention:

If the slide gear of the body places at joint **w** of the rack holder assembly, turn the 1 gear counterclockwise to move the slide gear toward the front. Remove the rack holder assembly.

- (1) Remove the three screws **J** attaching the rack holder assembly. Release joint **w** from the notch.

Caution:

When reattaching the rack holder assembly, do not nip the wire **x** extending from the sensor assembly.

- (2) Remove the two screws **M** attaching the sensor assembly.
- (3) Move the sensor assembly in the direction of the arrow to release from the slot at joint **y**.
- (4) Remove the spring attached to the bottom of the sensor assembly from the boss **z** on the sensor slider.
- (5) Remove the screw **N** and **O** attaching the sensor board and SV resistor respectively. If necessary, unsolder the sensor board.

Caution:

When reattaching the SV resistor, attach the sensor slider to the sensor bracket and fit the lever on the bottom of the SV resistor into slot **a'** of the sensor slider.

Caution:

When reattaching the rack holder assembly, turn the 1 gear clockwise to move the slide gear and slide lever inside the body rearward.

- Let the wire extending from the sensor assembly through notch **x** to the bottom of the body.
- Fit pin **c'** of the slide lever into hole **b'** of the sensor slider on the bottom of the sensor assembly while attaching the spring to the boss **z** of the sensor slider.
- Engage joint **y** of the sensor assembly to the notch of the body.

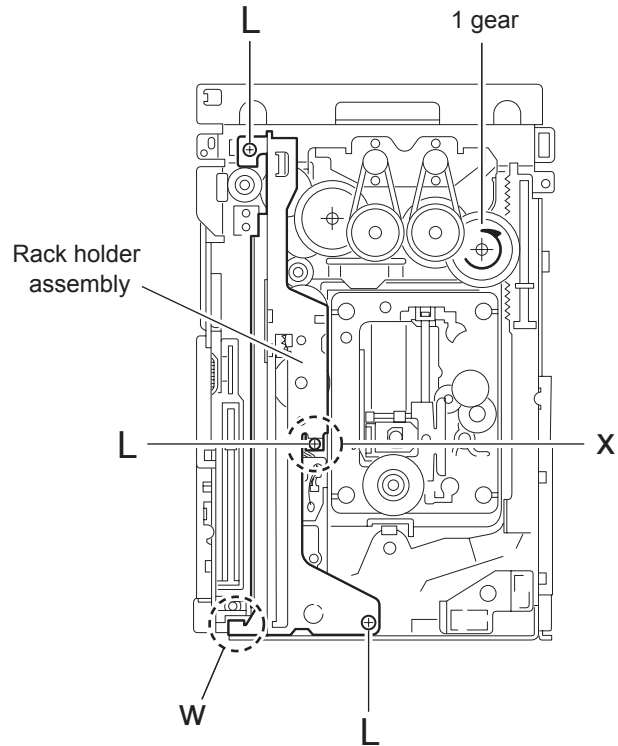


Fig.28

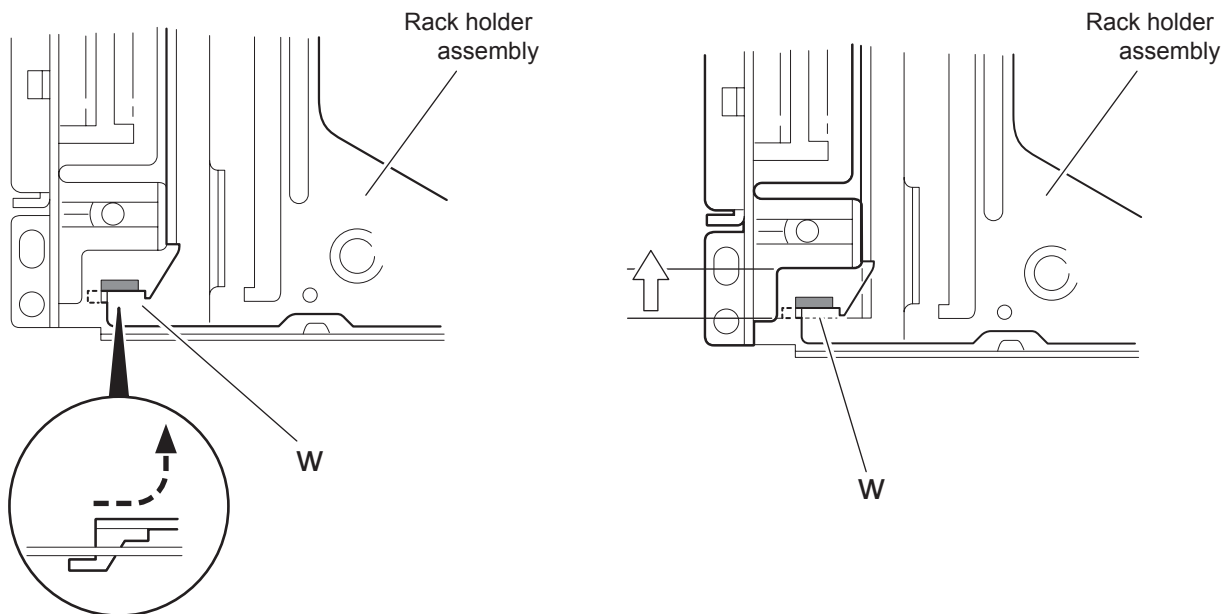


Fig.29

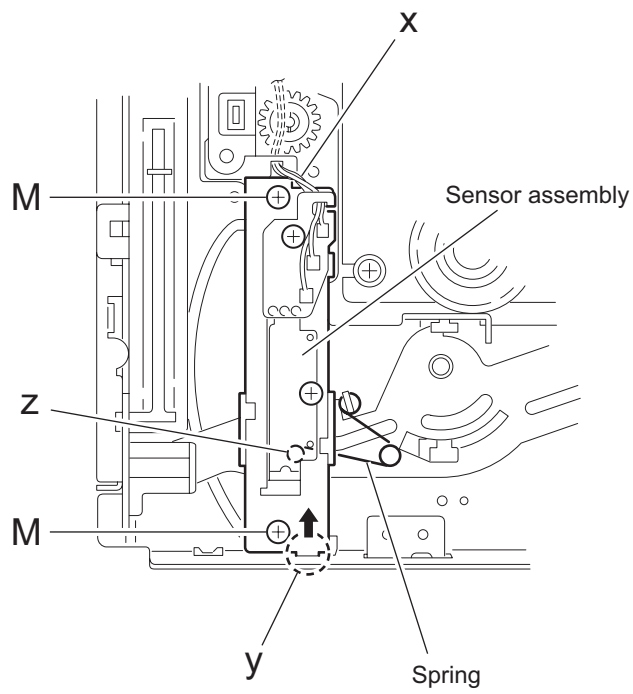


Fig.30

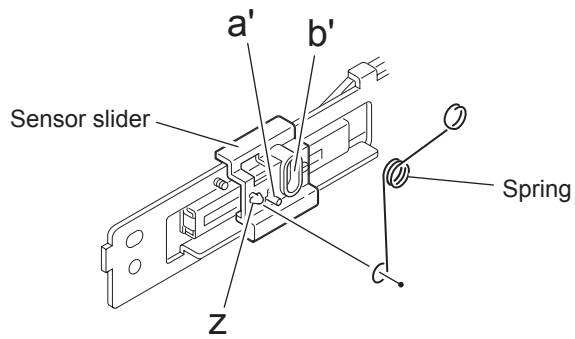


Fig.31

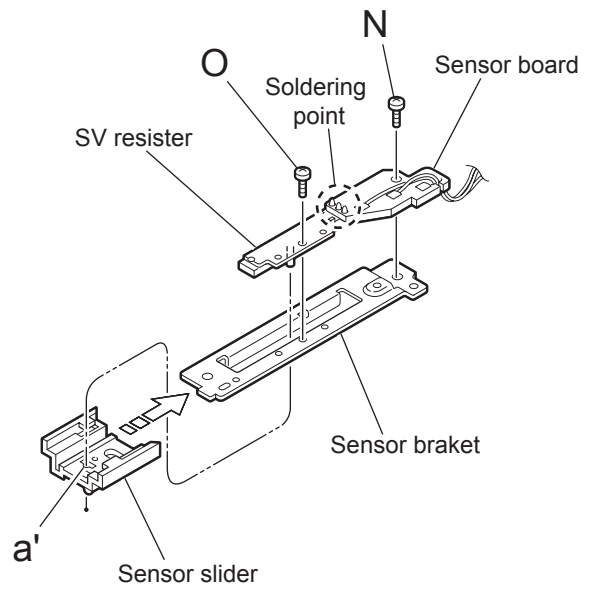


Fig.32

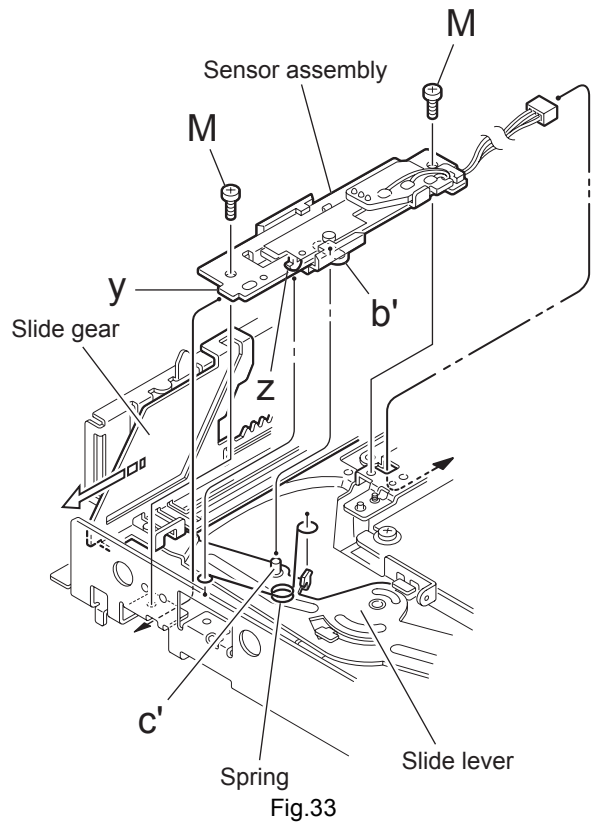


Fig.33

3.2.11 Removing the motor (See Fig.34 ,35)

- Prior to performing the following procedure, remove the servo control board and top cover.

Attention:

You need not to remove the tray assembly, and in such case, move it.

- (1) Remove the two belts on top of the body.
- (2) Remove the four screws **N** attaching the motor.
- (3) Remove the motor board from the bottom of the body.
(Refer to the section "Removing the motor board".)

Attention:

When removing the motor board with the motor, you need not to unsolder four soldered parts.

Caution:

When reattaching the motor, turn the side where the label should be put to the front side.

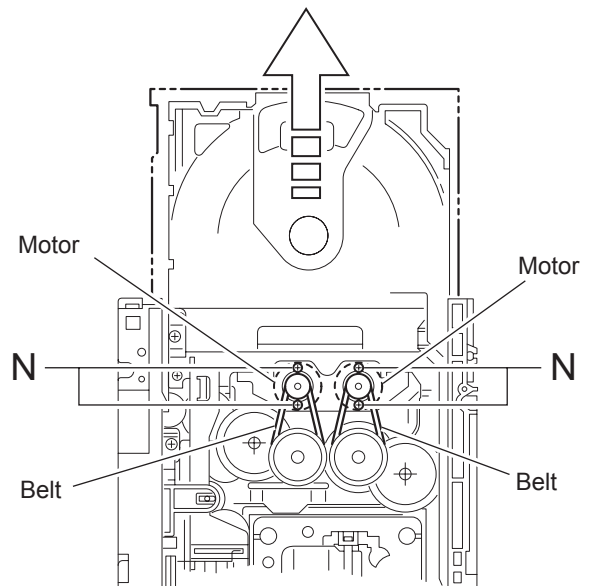


Fig.34

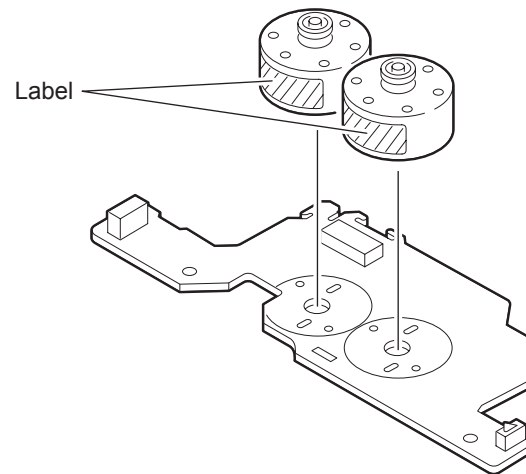


Fig.35

3.2.12 Taking out the CD in play mode (See Fig.36 ~ 39)

Attention:

Refer to "Removing the tray assembly".

- (1) Remove the top cover upward.
- (2) Unlock the tray assembly and draw out the tray assembly toward the front.
- (3) From top of the body, turn the 1 gear clockwise to move the lifter assembly upward.
- (4) From top of the body, turn the 2 gear clockwise to move the sub tray remaining inside the lifter assembly toward the front, then pull out.
- (5) Take out the CD on the sub tray.
- (6) After clearing away the CD, insert the sub tray into the main tray.

Caution:

When reattaching the sub tray, move the tray stopper on the bottom of the main tray in the direction of the arrow to lock the sub tray certainly.

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

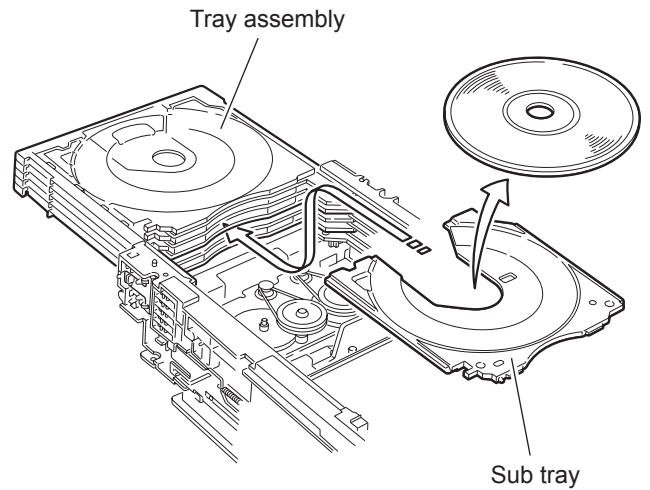


Fig.37

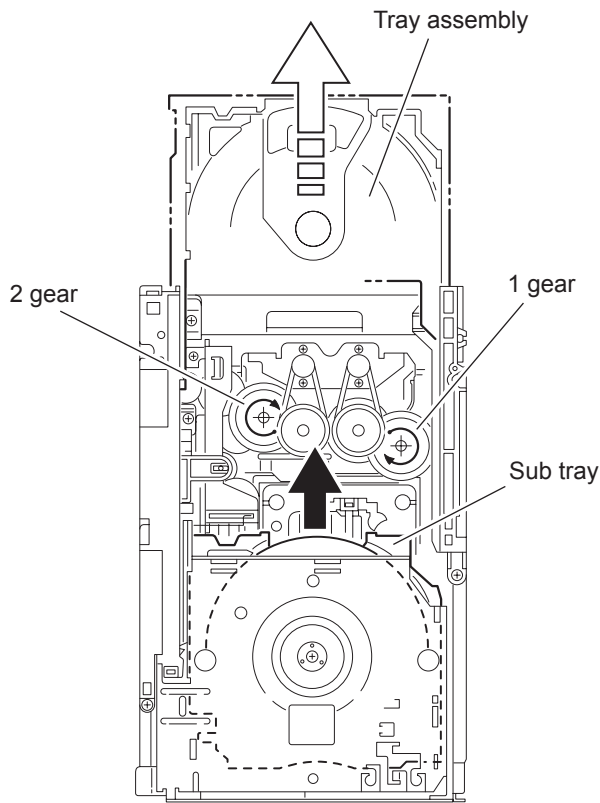


Fig.36

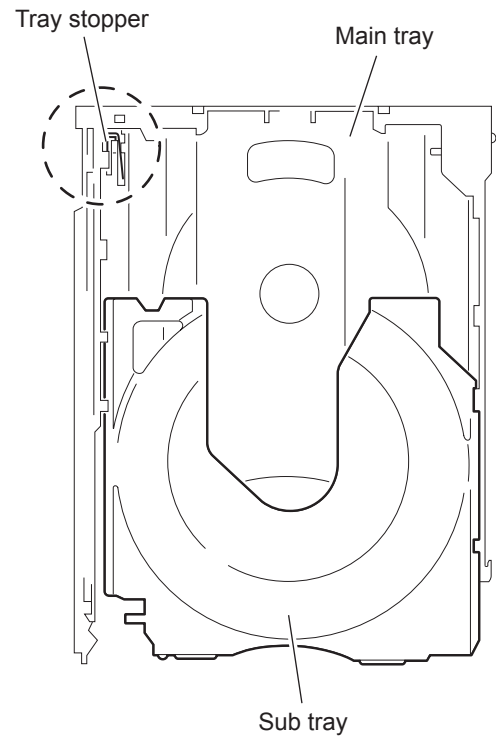


Fig.38

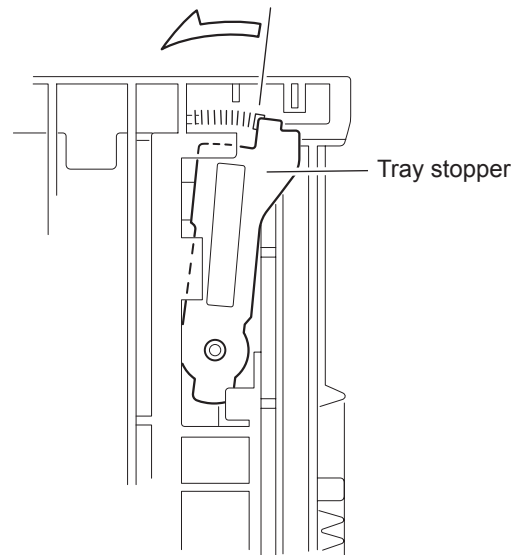


Fig.39

3.3 Cassette mechanism assembly

3.3.1 Removing the Play/Record & Clear head (See Fig.1~3)

- (1) While moving the trigger arm on the right side of the head mount in the direction of the arrow, turn the flywheel R counterclockwise until the head mount comes ahead and clicks.
- (2) The head turns counterclockwise as you turn the flywheel R counterclockwise (See Fig.2 and 3).
- (3) Disconnect the flexible wire from connector [CN31](#) on the head amplifier & mechanism control board.
- (4) Remove the spring from the back of the head.
- (5) Loosen the azimuth screw for reversing attaching the head.
- (6) Remove the head on the front side of the head mount.

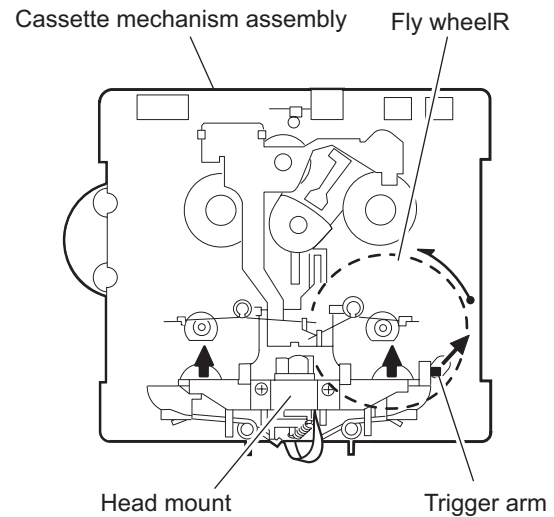


Fig.1

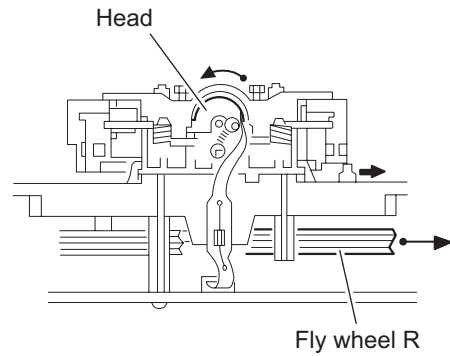


Fig.2

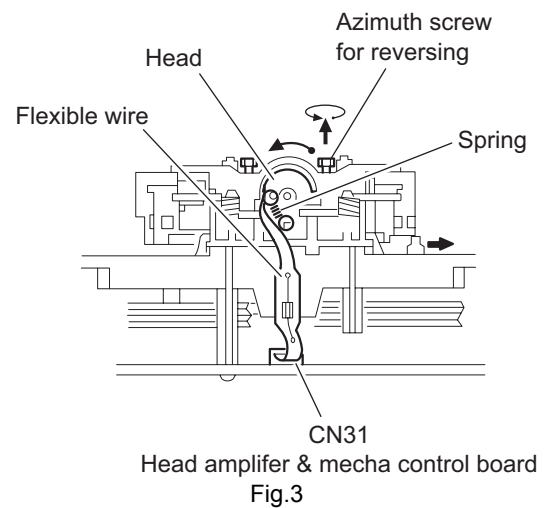


Fig.3

3.3.2 Removing the head amplifier & mechanism control board (See Fig.4)

- (1) Turn over the cassette mechanism assembly and remove the three screws **A** attaching the head amplifier & mechanism control board.
- (2) Disconnect the flexible wire from connector **CN31** on the head amplifier & mechanism control board.
- (3) Disconnect connector **CN32** of the head amplifier & mechanism control board from connector **CN1** on the reel pulse board. REFERENCE: If necessary, unsolder the 4-pin wire soldered to the main motor.

3.3.3 Removing the main motor (See Fig.4~7)

- (1) Remove the two screws **B**.
- (2) Half raise the motor and remove the capstan belt from the motor pulley.

ATTENTION:

Be careful to keep the capstan belt from grease. When reassembling, refer to Fig.6 and 7 for attaching the capstan belt.

Head amplifier & mecha control board

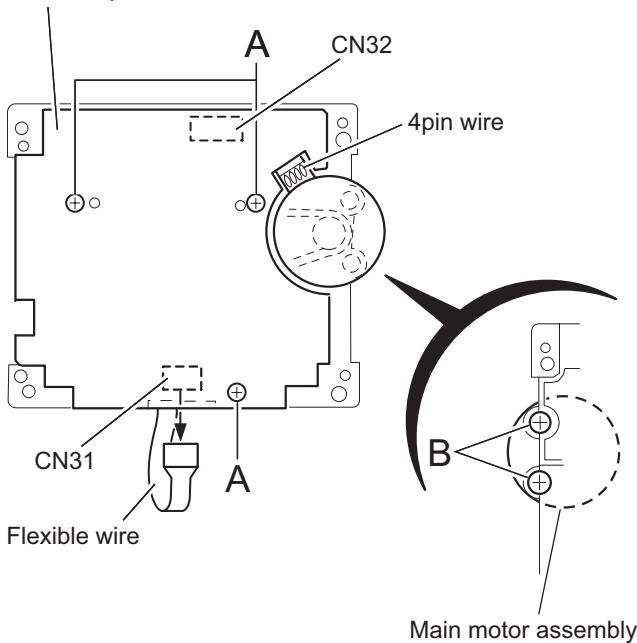


Fig.4

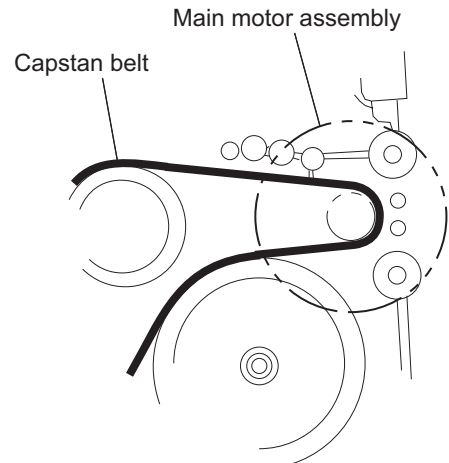


Fig.5

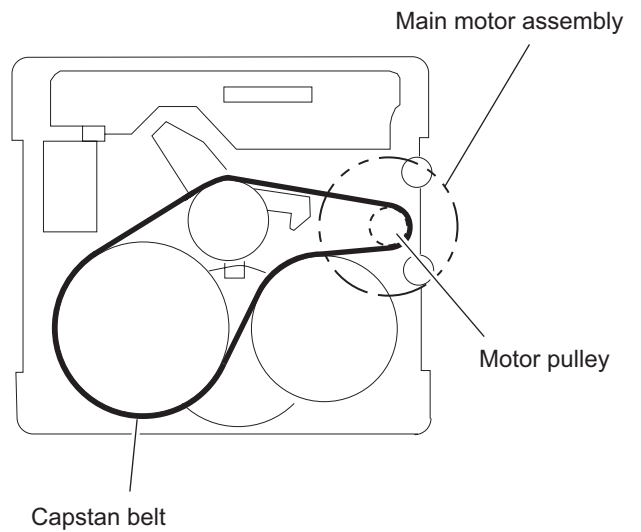


Fig.6

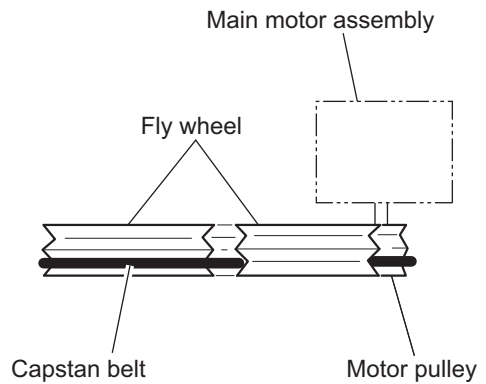
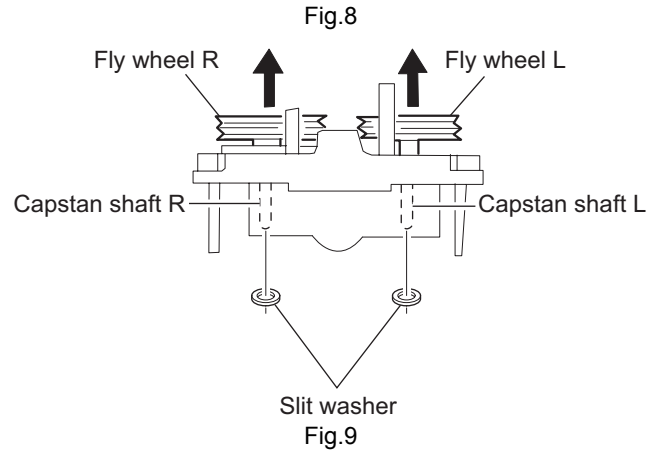
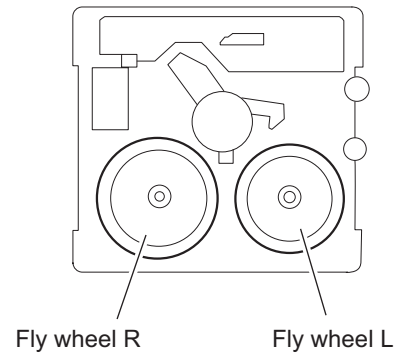


Fig.7

3.3.4 Removing the flywheel (See Fig.8, 9)

- Prior to performing the following procedure, remove the head amplifier & mechanism control board and the main motor assembly.
 - (1) From the front side of the cassette mechanism, remove the slit washers attaching the capstan shaft **L** and **R**. Pull out the flywheels backward.



3.3.5 Removing the reel pulse board and solenoid (See Fig.10)

- Prior to performing the following procedure, remove the head amplifier & mechanism control board.
 - (1) Remove the screw **C**.
 - (2) Release the tab **a**, **b**, **c**, **d** and **e** retaining the reel pulse board.
 - (3) Release the tab **f** and **g** attaching the solenoid on the reel pulse board.
 - (4) The reel pulse board and the solenoid come off.

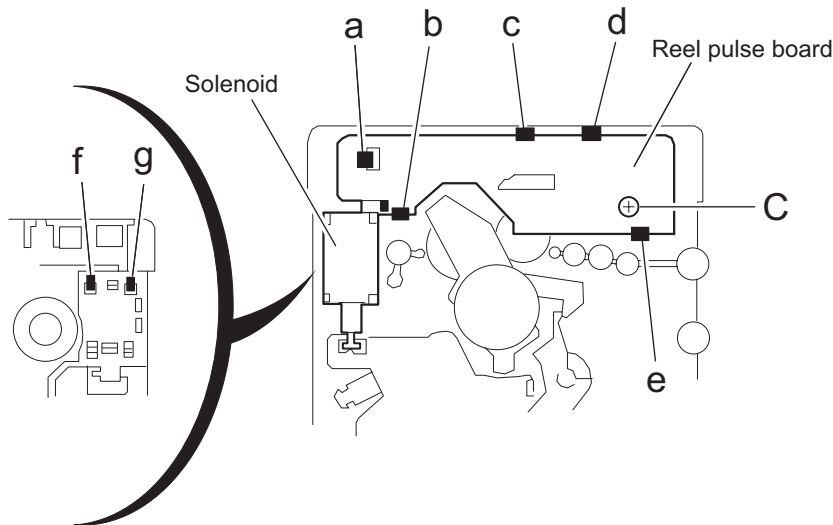


Fig.10

3.3.6 Reattaching the Play/ Record & Clear head (See Fig.11~13)

- (1) Reattaching the head mount assembly.
 - a) Change front of the direction cover of the head mount assembly to the left (Turn the head forward).
 - b) Fit the bosses **O'**, **P'**, **Q'**, **U'** and **V'** on the head mount assembly to the holes **P** and **V**, the slots **O**, **U** and **Q** of the mechanism sub assembly (See Fig.11 to 13).

CAUTION:

To remove the head mount assembly, turn the direction cover to the left to disengage the gear. If the gear can not be disengaged easily, push up the boss **Q'** slightly and raise the rear side of the head mounts slightly to return the direction lever to the reversing side.

- (2) Tighten the azimuth screw for reversing.
- (3) Reattach the spring from the back of the Play/ Record & Clear head.
- (4) Connect the flexible wire to connector **CN31** on the head amplifier & mechanism control board.

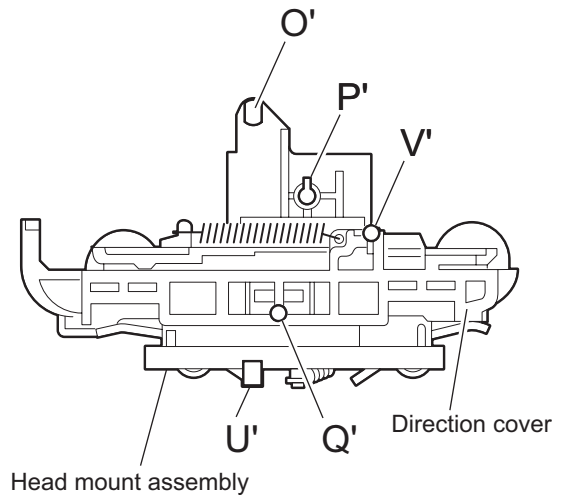


Fig.11

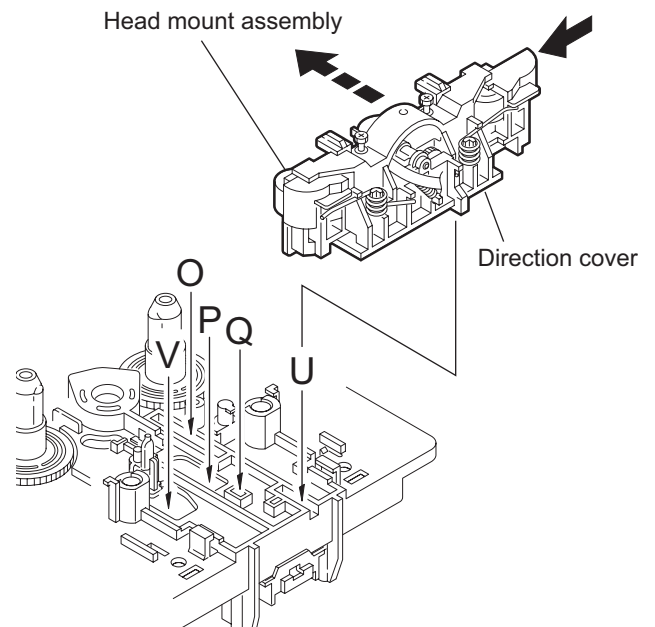


Fig.12

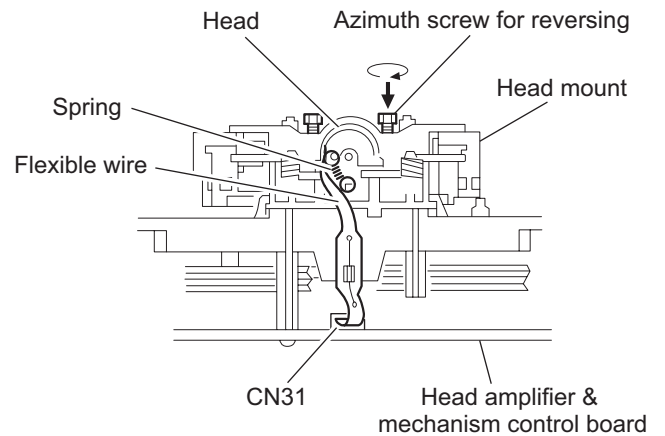


Fig.13

3.4 Speaker section

3.4.1 Removing the side panel assembly (See Fig.1)

- (1) From the side of the speaker main body, remove the seven screws **A** and screw **B** attaching the side panel assembly .

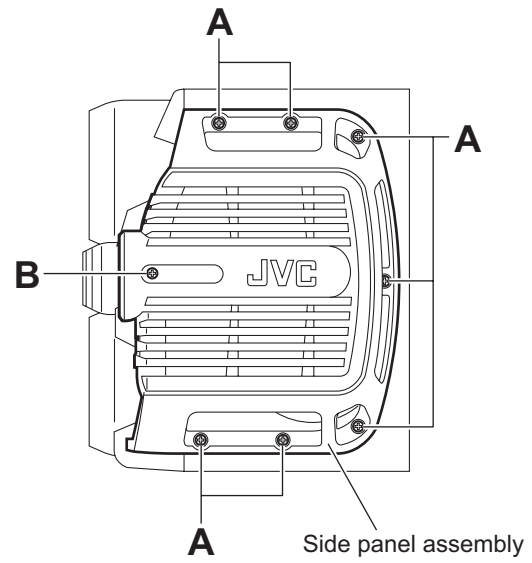


Fig.1

3.4.2 Removing the subwoofer (See Fig.2)

- Prior to performing the following procedures, remove the side panel assembly.
 - (1) Remove the four screws **C** attaching the subwoofer.
 - (2) From the back side of the subwoofer, disconnect the red and black wires from the terminal.

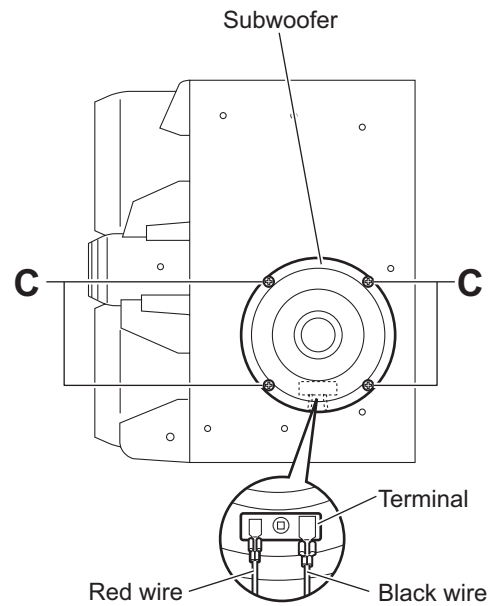


Fig.2

3.4.3 Removing the front panel assembly (See Figs.3 and 4)

- Prior to performing the following procedures, remove the side panel assembly.
 - (1) Remove the four screws **D** attaching the front panel assembly. (See Fig.3.)
 - (2) Release the two joints **a**. (See Fig.3.)

Caution:

When removing the front panel assembly from the speaker main body, do not break or damage them that are glued at the joints **a**. (See Fig.3.)

- (3) From the inside of the front panel assembly, disconnect the yellow and black wires from the two terminals on the tweeter. (See Fig.3.)

3.4.4 Removing the tweeter (See Fig.4)

- Prior to performing the following procedure, remove the side panel and front panel assemblies.
 - (1) From the inside of the front panel assembly, remove the two screws **E** attaching the tweeter.

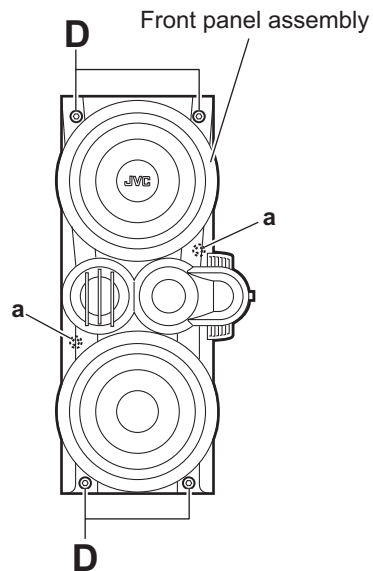


Fig.3

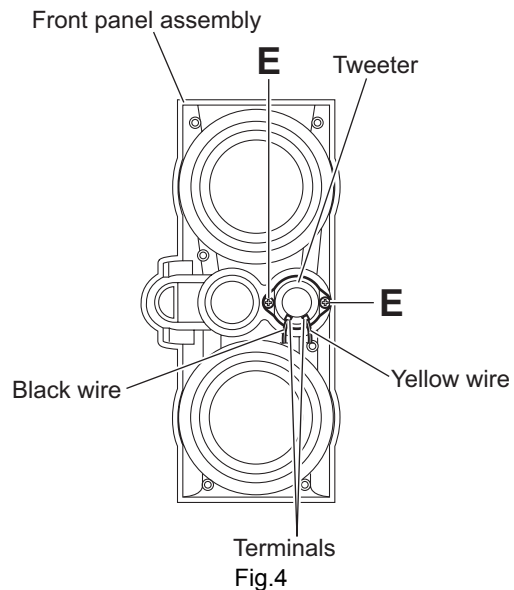
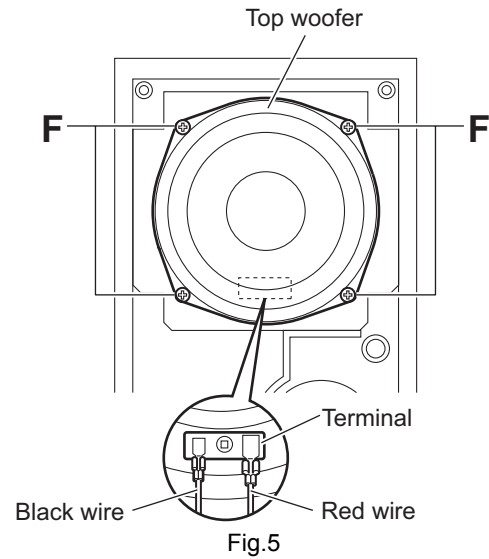


Fig.4

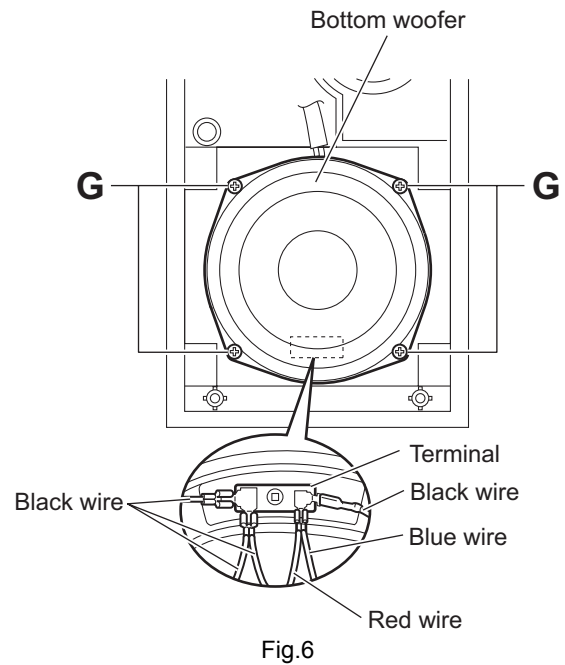
3.4.5 Removing the top woofer (See Fig.5)

- Prior to performing the following procedures, remove the side panel and front panel assemblies.
 - (1) Remove the four screws **F** attaching the top woofer.
 - (2) From the back side of the top woofer, disconnect the red and black wires from the terminal.



3.4.6 Removing the bottom woofer (See Fig.6)

- Prior to performing the following procedures, remove the side panel and front panel assemblies.
 - (1) Remove the four screws **G** attaching the bottom woofer.
 - (2) From the back side of the bottom woofer, disconnect the black, red and blue wires from the terminal respectively.



SECTION 4 ADJUSTMENT

4.1 Measurement Instruments Required for Adjustment

- (1) Low frequency oscillator
This oscillator should have a capacity to output 0dBs to 600Ω at an oscillation frequency of 50Hz-20kHz.
- (2) Attenuator impedance : 600Ω
- (3) Electronic voltmeter
- (4) Distortion meter
- (5) Frequency counter
- (6) Wow & flutter meter
- (7) Test tape
VT703L : Head azimuth
VT712 : Tape speed and running unevenness (3kHz)
VT724 : Reference level (1kHz)
- (8) Blank tape
TYPE I : AC-225
TYPE II : AC-514
- (9) Torque gauge : For play and back tension
FWD(TW2111A), REV(TW2121a) and FF/REW(TW2231A)
- (10) Test disc: CTS-1000

4.2 Measurement conditions

Power supply voltage	AC 120V ~, 60Hz
Reference output	Speaker : 0.775V/4Ω Headphone : 0.077V/32Ω
Reference frequency and input level	1kHz, AUX : -8dBs
Measurement output terminal	at Speaker J3002
Load resistance	4Ω

4.2.1 Radio Input signal

AM frequency	400Hz
AM modulation	30%
FM frequency	400Hz
FM frequency deviation	22.5kHz

4.2.2 Tuner section

Voltage applied to tuner	+B : DC5.7V VT : DC 12V
Reference measurement output	26.1mV(0.28V)/3Ω
Input positions	AM : Standard loop antenna FM : TP1 (hot) and TP2 (GND)

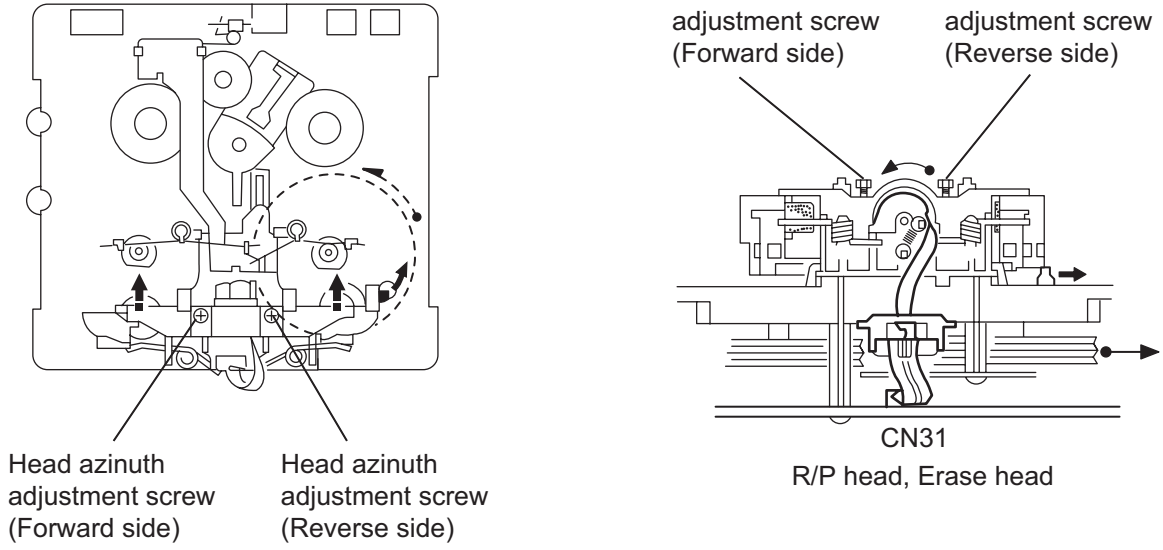
4.2.3 Standard measurement position of volume

Function switch	to Tape
Beat cut switch	to Cut
Super Bass/Active hyper Bass	to OFF
Bass Treble	to Center
Adjustment of main volume to reference output	VOL : 0.775V

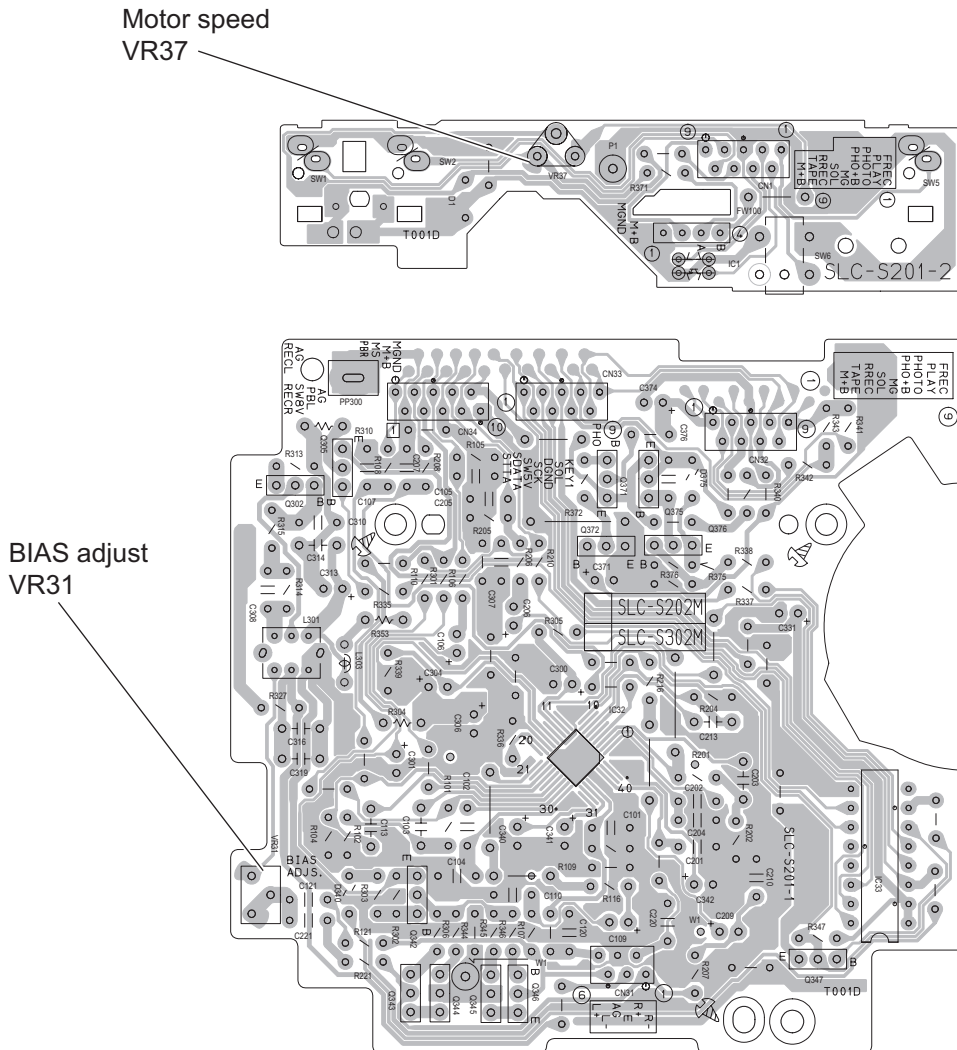
Precautions for measurement

- (1) Apply 30pF and 33kΩ to the IF sweeper output side and 0.082μ F and 100kΩ in series to the sweeper input side.
- (2) The IF sweeper output level should be made as low as possible within the adjustable range.
- (3) Since the IF sweeper is a fixed device, there is no need to adjust this sweeper.
- (4) Since a ceramic oscillator is used, there is no need to perform any MIX adjustment.
- (5) Since a fixed coil is used, there is no need to adjust the FM tracking.
- (6) The input and output earth systems are separated. In case of simultaneously measuring the voltage in both of the input and output systems with an electronic voltmeter for two channels, therefore, the earth should be connected particularly carefully.
- (7) In the case of BTL connection amp., the minus terminal of speaker is not for earthing. Therefore, be sure not to connect any other earth terminal to this terminal. This system is of an BTL system.
- (8) For connecting a dummy resistor when measuring the output, use the wire with a greater code size.
- (9) Whenever any mixed tape is used, use the band pass filter (DV-12).

4.3 Cassette mechanism adjustment



Mecha control board



4.3.1 Mechanism section

Item	Condition	Measurement method	Ref. value	Adjustment position
Head azimuth	Test tape :VT703L (8kHz) Output terminal :Speaker out	(1) Playback the test tape VT703L (8kHz). (2) Adjust to maximum output level by azimuth adjustment screw for forward side and reverse side. (3) This adjustment is adjust by adjustment screw of forward side and adjustment screw of reverse side.	Maximum output	Only adjust at changed head
Tape speed	Test tap :VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at end of forward side,adjust to 2,940~3,90Hz indication of frequency counter by VR37.	2,940 ~ 3,090Hz	VR37

Item	Condition	Measurement method	Ref. value	Adjustment position
Tape speed diviation at FWD/ REV	Test tape : VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at end of forward and reverse, tape speed deviation should be less than 6.0Hz.	Leass than 6.0Hz	VR31
Wow & Flutter	Test tape : VT712 (3kHz) Output terminal :Speaker out or Headphone out	Playback the test tape VT712 (3kHz) at start of forward and reverse, Wow & Flutter are should be less than 0.25%(WRMS).	Less than 0.25% (WRMS)	

4.3.2 Electrical adjustment

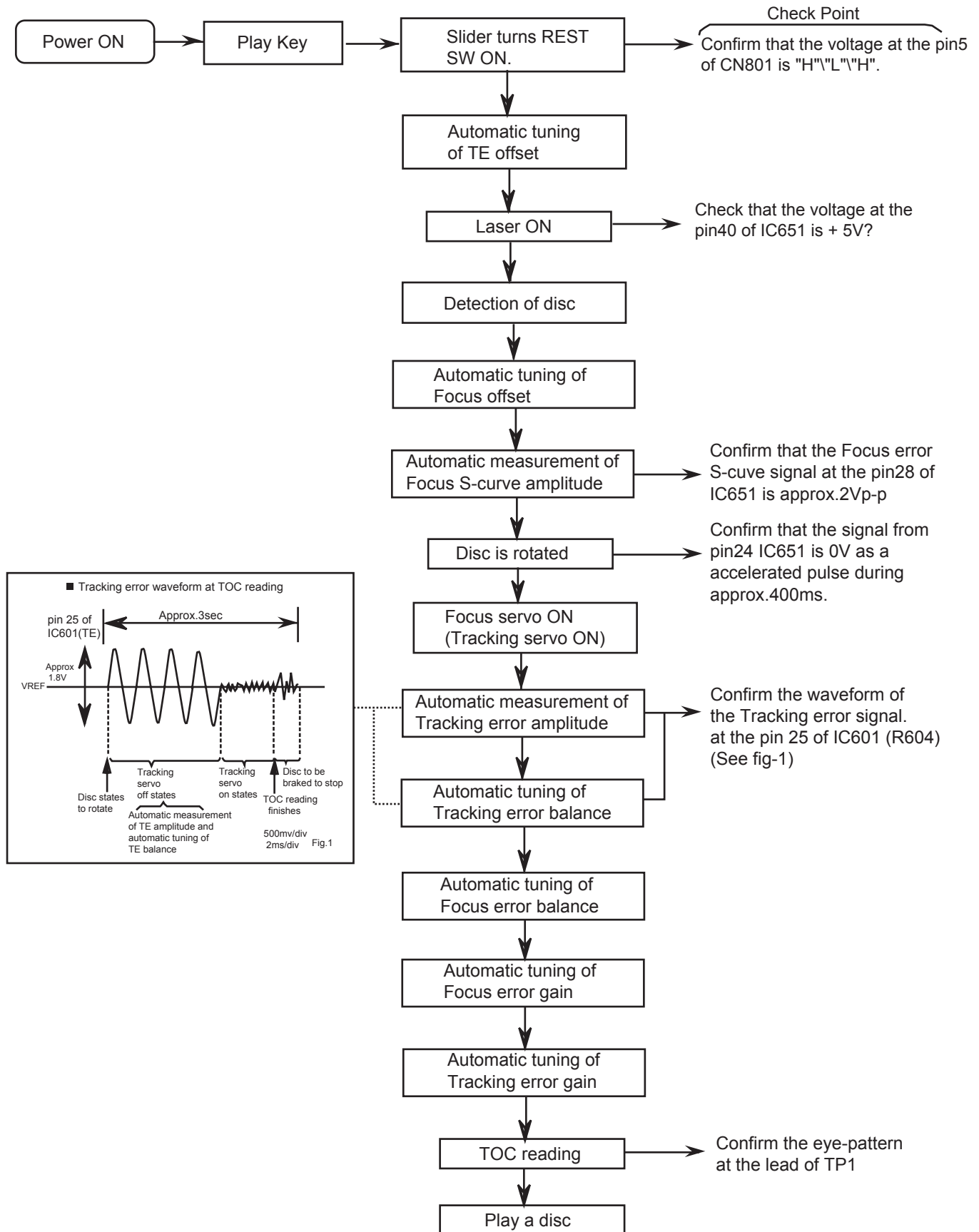
Item	Condition	Measurement method	Ref. value	Adjustment position
Recording BIAS adjustment	<ul style="list-style-type: none"> Forward or Reverse Test tape : AC-514 TYPE II : AC-225 TYPE I Output terminal Recording head 	<ol style="list-style-type: none"> Set the test tape(AC-514 TYPE II and AC-225 TYPE I), then make REC/ PAUSE condition. Connect 100Ω to recording head by series, then connect to VTVM for measurement the current. After setting, start the recording by release the PAUSE, in this time bias current adjust to next fig. by VR31 for Lch and VR32 for Rch. 4.0 μA (TYPE II) and 4.20 μA (TYPE I). 	AC-225 : 4.20μA AC-514 : 4.0μA	VR31
R/P playback frequency response	<ul style="list-style-type: none"> Reference frequency : 1kHz / 10kHz (Reference: -20dB) Test tape : AC-514 TYPE II Input terminal : OSC IN 	<ol style="list-style-type: none"> Set the test tape (AC-514 TYPE), then make REC/PAUSE condition. Release the PAUSE, then start recording the 1kHz and 10kHz of reference frequency from oscillator. Playback the recorded position, 1kHz and 10kHz output deviation should -1dB 2dB to readjust by VR31 for Lch and VR32 for Rch. 	Output deviation 1kHz/10kHz : -1dB ± 2dB	VR31

4.3.3 Electrical response confirmation

Item	Condition	Measurement method	Ref. value	Adjustment position
Recording bias current	<ul style="list-style-type: none"> Forward or Reverse Test tape : TYPE II (AC-514) Measurement terminal : BIAS test point on printed circuit board 	<ol style="list-style-type: none"> Change BIAS1 and 2, confirm the frequency should be change. Set the test tape (AC-514 TYPE II), then make REC/PAUSE condition. Confirm the frequency should 100Hz ± 6kHz at BIAS test point on printed circuit board. 	100 kHz ± 6 kHz	
Erase current (reference value)	<ul style="list-style-type: none"> Forward or Reverse Rec condition Test tape : AC-514 TYPE II : AC-225 TYPE I Measurement terminal Both side of Erase head 	<ol style="list-style-type: none"> Set the test tape (AC-514 TYPE II and AC-225 TYPE I), then make REC/ PAUSE condition. Release the PAUSE to REC condition, connect 1W to ERASE head by series, then confirm the erase current at both side of erase head. 	TYPE II : 120 mA TYPE I : 75 mA	

SECTION 5 TROUBLESHOOTING

5.1 Flow of functional operation until TOC read



5.2 Maintenance of laser pickup (CD)

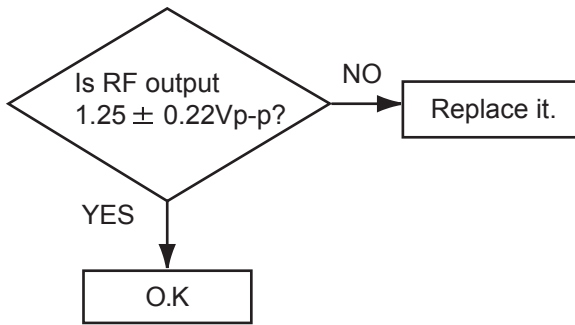
(1) Cleaning the pick up lens

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.

- The level of RF output (EFM output : amplitude of eye pattern) will below.



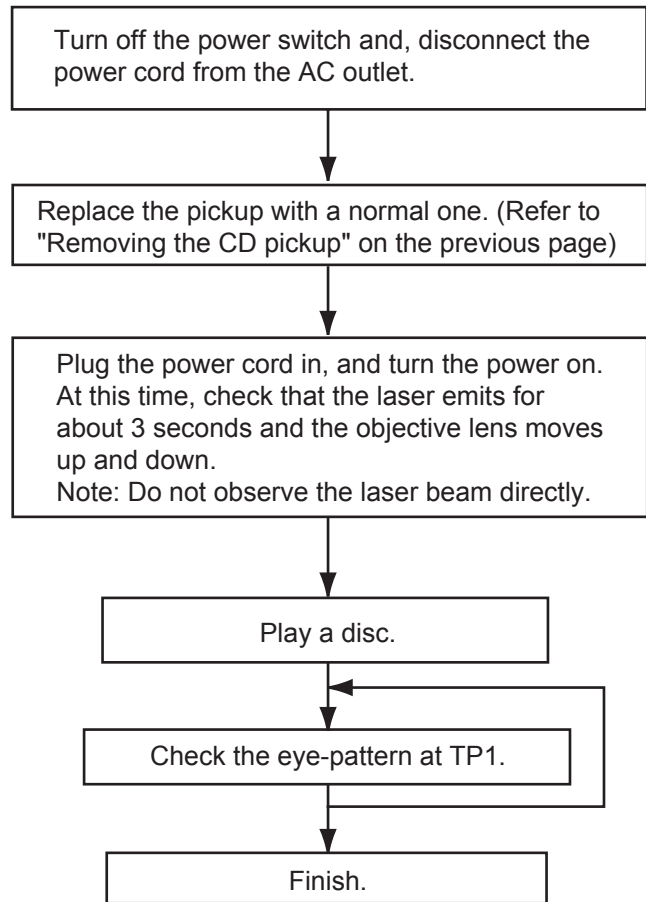
(3) Semi-fixed resistor on the APC PC board

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.

5.3 Replacement of laser pickup (CD)



5.4 Service mode

5.4.1 Confirming contents

- (1) System micon reset
- (2) System micon cold start
- (3) FL display check
- (4) Micon version check

5.4.2 Confirming methods

1. System micon reset

When CD mechanism stuck, this may solve the problem without removing/inserting power cord.

Press the STANDBY/ON, CANCEL and ◀ buttons on the main unit simultaneously.



System micon is initialized.

2. System micon cold start

This function clears all user setting, and return to initial setting.

- Daily timer, REC timer
- Tuner preset
- SEA preset
- Last condition (Source, Volume)

While pressing both the CANCEL and ◀ buttons on the main unit, insert the power cord in an outlet



This unit returns to initial setting.

* Operating method using a remote controller

Press the VOLUME UP, STOP and STANDBY/ON buttons twice on the remote controller at standby.

3. FL display check

This enables all FL segment light up.

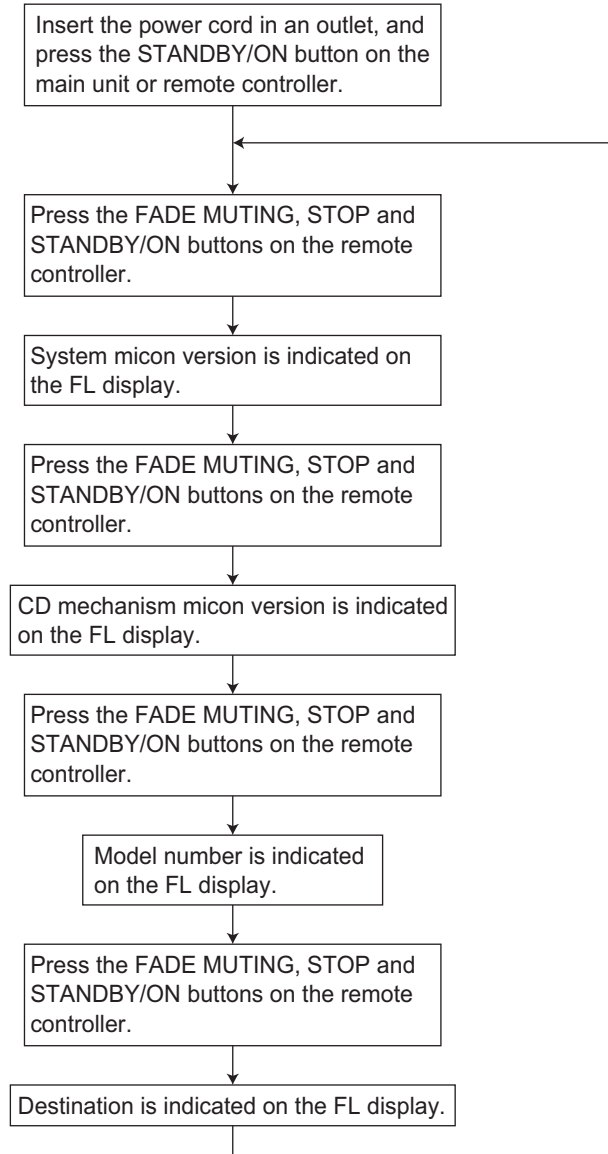
Press the VOLUME DOWN, STOP and STANDBY/ON buttons on the remote controller at standby.



All of the FL displays light up.

4. Micon version check

You can confirm Micon version and destination.



No.	Function	FL display										Note		
4	TONE SETTING													
	TONE MEMORY	S	E	A	C	O	N	T						
	TONE MEMORY	B	A	S	S	±	0					RANGE: -3 ~ ±0 ~ +3		
	TONE MEMORY		T	R	E	±	0					RANGE: -3 ~ ±0 ~ +3		
	TONE MEMORY		U	S	E	R	1					NUMBER BLINKING		
	TONE MEMORY		M	E	M	O	R	Y				TEMPORARY		
	KARAOKE													
	KARAOKE ON	K	A	R	A	O	K	E				TEMPORARY		
	KARAOKE OFF		O	F	F							TEMPORARY		
	MIC MIX													
	MIC MIX	M	I	C	M	I	X					TEMPORARY		
	MIC OFF	M	I	C	O	F	F							
	ECHO													
	ECHO *		E	C	H	O	*					RANGE: 1~ 3		
ECHO OFF	E	C	H	O	O	F	F							
KEY CONTROL														
KEYCON	K	E	Y	C	O	N	*	*				RANGE: -6 ~ ±0 ~ +6		
5	SLEEP	S	L	E	E	P	*	*	*			RANGE: 10/20/30/60/120		
	SLEEP 10 – 120													
	CLOCK													
	ADJUST	A	M		1	2:	0	0				HOUR BLINKING		
	SET	A	M		1	2:	0	0				MINUTE BLINKING		
	SET	C	L	O	C	K	O	K						
	DAILY TIMER													
	SELECT	D	A	I	L	Y	T	I	M	E	R			
		O	N		A	M	1	2:	0	0		HOUR BLINKING		
	SET	O	N		A	M	1	2:	0	0		MINUTE BLINKING		
	SET				S	E	T							
	SET	O	F	F	A	M	1	2:	0	0		HOUR BLINKING		
	SET	O	F	F	A	M	1	2:	0	0		MINUTE BLINKING		
	SET		1		S	E	T					BLINKING (ALL)		
	SET				T	A	P	E	1			BLINKING		
	SET				A	U	X	I	N			BLINKING		
	SET				T	U	N	E	R	-	F	M	BLINKING	
	SET				T	U	N	E	R	-	A	M	BLINKING	
SET						S	E	T						
SET			1			C	D	-	1			BLINKING DISC		
SET						S	E	T						
SET						C	D	-	1			BLINKING TRACK		
SET						S	E	T						
SET						V	O	L	U	M	E	--/5/10/15		
SET						S	E	T			O	K	*	

No.	Function	FL display										Note
5	REC TIMER SELECT		R	E	C		T	I	M	E	R	HOUR BLINKING MINUTE BLINKING HOUR BLINKING MINUTE BLINKING BLINKING BLINKING BLINKING
	SET	O	N			A	M	1	2:	0	0	
	SET	O	N			A	M	1	2:	0	0	
	SET	O	F	F		S	E	T				
	SET	O	F	F		A	M	1	2:	0	0	
	SET	O	F	F		A	M	1	2:	0	0	
6	TEST (ROM) by Remocon "B332"	S	Y	S	C	O	N	*	*	*	*	ROM correction +3 CHARACTORS 4 CHARACTORS (including ROM CORR) J / E / A / U S / U W / U X
		M	O	D	U	L	E	*	*	*	*	
		V	E	R						*	*	
7	CD STATUS											SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY
	OPEN				O	P	E	N				
	CLOSE				C	L	O	S	E			
	NO DISC	N	O			D	I	S	C		1	
	DISC CHANGE				D	I	S	C		2		
	TOC READING				R	E	A	D	I	N	G	
ROM CORRECTION (SYSCON)				U	P	G	R	A	D	E		
ROM CR. OK	S	Y	S	C	O	N				O	K	SOURCE CD and CURRENT ONLY SOURCE CD and CURRENT ONLY
ROM CR. NG	S	Y	S	C	O	N				E	R	
8	CD											DISPLAY TOTAL TIME TIME BLINKING
	STOP	C	D		1	2.		8	3:	4	5	
	PLAY	C	D			1.			3:	4	5	
	PAUSE	C	D			1.			3:	4	5	
	SEARCH	C	D			1.		-	-:	-	-	
+10KEY INPUT	C	D		1	-.			3:	4	5		
9	MP3											GROUP FILE NAME SCROLL G** BLINKING TRACK FILE NAME SCROLL T** BLINKING TRACK FILE NAME SCROLL TRACK "SONG TITLE" SCROLL TRACK "PERFORMER" SCROLL TRACK "ALBUM TITLE" SCROLL TIME BLINKING TRACK FILE NAME SCROLL
	STOP	*	*	*	*	*	*	*	*	*	*	
	STOP	G	0	1		T	0	0	1			
	STOP	*	*	*	*	*	*	*	*	*	*	
	STOP	G	0	1		T	0	0	1			
	PLAY	*	*	*	*	*	*	*	*	*	*	
	PLAY	*	*	*	*	*	*	*	*	*	*	
	PLAY	*	*	*	*	*	*	*	*	*	*	
	PLAY	*	*	*	*	*	*	*	*	*	*	
	PLAY		1.		2	3.			3:	4	5	
	PAUSE		1.		2	3.			3:	4	5	
	SEARCH	*	*	*	*	*	*	*	*	*	*	

No.	Function	FL display										Note
10	PROGRAM PROGRAM MODE DISC INPUT (Disc# key) TRACK INPUT STOP PLAY FULL MEMORY	C	D		P	R	O	G	R	A	M	DISC#, TRACK# Blink 10key or SEARCH Jog input DEPEND ON DISC TYPE TEMPORARY
		D	1	-			1	P	-	-	-	
		D	1	-	1	2	3	P			1	
		D	1	-	1	2	3	P			1	
		-	-	-	-	-	-	-	-	-	-	
		C	D			F	U	L	L			
11	RANDOM RANDOM MODE SEARCH PLAY	C	D			R	A	N	D	O	M	* : MOVING DEPEND ON DISC TYPE
		C	D	*	*	R	A	N	D	O	M	
		-	-	-	-	-	-	-	-	-	-	
12	REPEAT REPEAT 1 track REPEAT 1 disc REPEAT ALL	C	D			1.			3:	4	5	CD/MP3 case ANY case ANY case
		C	D			1.			3:	4	5	
		C	D			1.			3:	4	5	
13	PROGRESSIVE INTERLACE PROGRESSIVE	I	N	T	E	R	L	A	C	E		TEMPORARY TEMPORARY
		P	R	O	G	R	E	S	S	I	V	
14	DEMO DEMO START	D	E	M	O	S	T	A	R	T		
			W	E	L	C	O	M	E			
						J	V	C				
				C	D	P	L	A	Y			
		D	I	S	C	1	P	L	A	Y		
		D	I	S	C		P	L	A	Y		
		D	I	S	C	2	P	L	A	Y		
		D	I	S	C		P	L	A	Y		
		D	I	S	C	3	P	L	A	Y		
		D	I	S	C		P	L	A	Y		
		D	I	S	C	4	P	L	A	Y		
		D	I	S	C		P	L	A	Y		
		D	I	S	C	5	P	L	A	Y		
		D	I	S	C		P	L	A	Y		
		T	U	N	E	R	-	F	M			
		T	U	N	E	R	-	F	M			
				A	U	X						
				A	U	X		I	N			
				A	A	N	C	E	L			
		S	T	A	D	I	U	M				



JVC

VICTOR COMPANY OF JAPAN, LIMITED

AV & MULTIMEDIA COMPANY AUDIO/VIDEO SYSTEMS CATEGORY 10-1,1chome,Ohwatari-machi,Maebashi-city,371-8543,Japan

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