

JVC

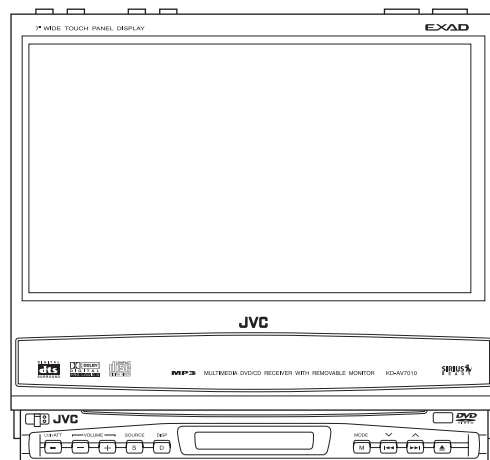
SERVICE MANUAL

DVD RECEIVER WITH MONITOR

KD-AV7010

Area suffix

J ----- Northern America



EXAD
MP3

DIGITAL
dts
SURROUND

DOLBY
DIGITAL
PRO LOGIC II

COMPACT
disc
DIGITAL VIDEO

DVD
VIDEO

SIRIUS
READY

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SPECIFICATION

Main unit

AUDIO AMPLIFIER SECTION		
Power Output	Front and Rear	20 W RMS \times 4 Channels at 4 Ω and [$<$ or $=$] 1% THD+N
	Center	18 W RMS \times 1 Channel at 4 Ω and [$<$ or $=$] 1% THD+N
Signal to Noise Ratio		80 dBA (reference: 1 W into 4 Ω)
Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
Equalizer Control Range	Frequencies	100 Hz, 300 Hz, 1 kHz, 3 kHz, 10 kHz
	Level	\pm 10 dB
Frequency Response		40 Hz to 20 000 Hz
TUNER SECTION		
Frequency Range	FM	87.5 MHz to 107.9 MHz
	AM	530 kHz to 1 710 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 μ V/75 Ω)
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μ V/75 Ω)
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	35 dB
	Capture Ratio	1.5 dB
AM Tuner	Sensitivity	20 μ V
	Selectivity	35 dB
DVD/CD PLAYER SECTION		
Signal Detection System		Non-contact optical pickup (semiconductor laser)
Number of channels		2 channels (stereo)
Frequency Response	DVD, fs=48 kHz	16 Hz to 22 000 Hz
	DVD, fs=96 kHz	16 Hz to 44 000 Hz
	VCD, CD, MP3	16 Hz to 20 000 Hz
Dynamic Range		96 dB
Signal-to-Noise Ratio		98 dB
Wow and Flutter		Less than measurable limit
MP3 Recording Format		MPEG 1/2 Audio Layer 3 Max. Bit rate: 320 kbps

REMOVABLE MONITOR		
Screen Size		7 inch wide liquid crystal display
Number of Pixel		336 960 pixels (480 vertical × 234 horizontal × 3)
Drive Method		TFT (Thin Film Transistor) active matrix format
Color System		NTSC
Aspect Ratio		16:9 (wide)
Allowable Storage Temperature		-10°C to +60°C (14°F to 140°F)
Allowable Operating Temperature		0°C to +40°C (32°F to 104°F)
Dimensions (W × H × D)		170 mm × 141 mm × 15 mm (6-3/4 in. × 5-5/8 in. × 5/8 in.)
Mass		475 g (1.1 lbs)
GENERAL		
Power Requirement	Operating Voltage	DC 14.4 V (11 V to 16 V allowance)
Grounding System		Negative ground
Allowable Operating Temperature		0°C to +40°C (32°F to 104°F)
Other Terminal		Steering wheel remote input (OE REMOTE)
Dimensions (W × H × D)	Installation Size	182 mm × 52 mm × 165 mm (7-3/16 in. × 2-1/16 in. × 6-1/2 in.) (With sleeve-mounting plate Type B (standard))
		182 mm × 52 mm × 160 mm (7-3/16 in. × 2-1/16 in. × 6-5/16 in.) (With sleeve-mounting plate Type A)
	Panel Size	188 mm × 58 mm × 14 mm (7-7/16 in. × 2-5/16 in. × 5/8 in.)
Mass		2.25 kg (5.1 lbs) (including monitor)

Hideaway unit

Input Terminals	AV INPUT 1/2	Audio: 0.5 Vrms (Left/Right)
		Video (composite): 1 Vp-p/75 Ω
Output Terminals (Level/Impedance)	AV OUTPUT	Audio: 2.0 V/20 kΩ load (full scale)
		Video (composite): 1 Vp-p/75 Ω
	PRE OUT	Audio: 2.0 V/20 kΩ load (full scale)
Other Terminals		System integration (TO MAIN UNIT)
		FM/AM antenna (FM/AM ANTENNA)
		AV bus (AV BUS)
		CD changer (TO CHANGER)
		Rear view camera/Center speaker (BACKCAMERA REMOTE/CENTER SPEAKER)
		Power cord (POWER)
Dimensions (W × H × D)		230 mm × 35 mm × 181 mm (9-1/16 in. × 1-7/16 in. × 7-3/16 in.)
Mass		1.3 kg (2.9 lbs)

Design and specifications are subject to change without notice.

SECTION 1

PRECAUTIONS

1.1 Safety Precautions



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



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

1.2 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.

1.2.1 Grounding to prevent damage by static electricity

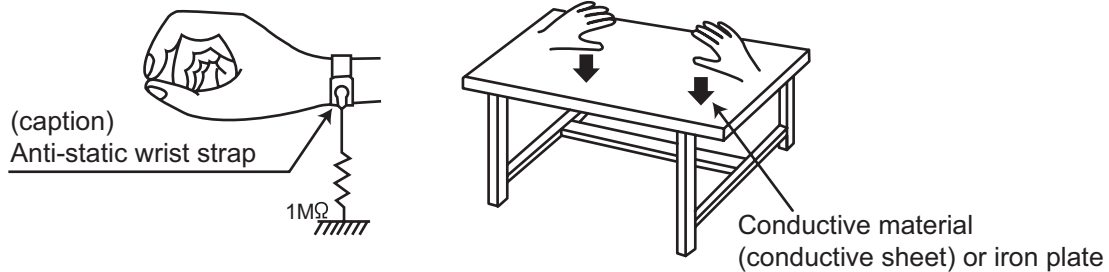
Static electricity in the work area can destroy the optical pickup (laser diode) in devices such as CD players. Be careful to use proper grounding in the area where repairs are being performed.

(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.

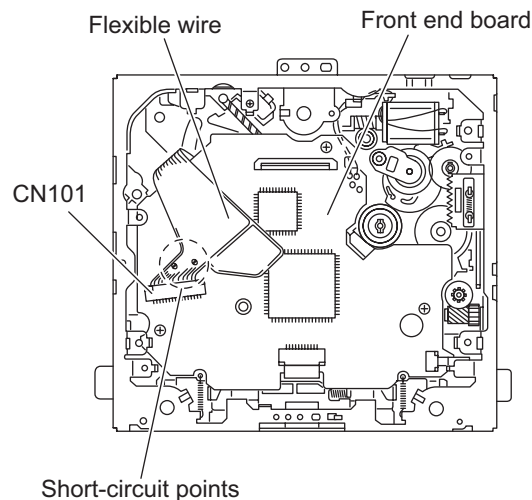
1.3 Handling the traverse unit (optical pickup)

- (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.

1.4 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.



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

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

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



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

CAUTION : Visible and invisible laser radiation when open and interlock failed or defeated.

AVOID DIRECT EXPOSURE TO BEAM.

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

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

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

REPRODUCTION AND POSITION OF LABELS

WARNING LABEL



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

SECTION 2

SPECIFIC SERVICE INSTRUCTIONS

This service manual does not describe SPECIFIC SERVICE INSTRUCTIONS.

SECTION 3 DISASSEMBLY

3.1 Receiver unit section

3.1.1 Removing the detach panel assembly (See Fig.1)

From the front side of the main body, slide the detach button in the direction of the arrow and remove the detach panel assembly.

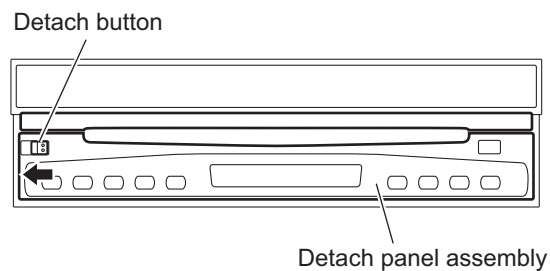


Fig.1

3.1.2 Removing the front panel assembly (See Fig.2 to 4)

- Remove the detach panel assembly as required.
 - (1) From the both sides of the main body, remove the two screw **A** attaching the front panel assembly. (See Figs.2 and 3)
 - (2) From the bottom side of the main body, remove the FPC cover. (See Fig.4.)
 - (3) Release the lock of the connector **CN75** on the main board and disconnect the card wire. (See Fig.4.)
 - (4) Release the joints **a** and remove the front panel assembly in the direction of the arrow. (See Fig.4.)

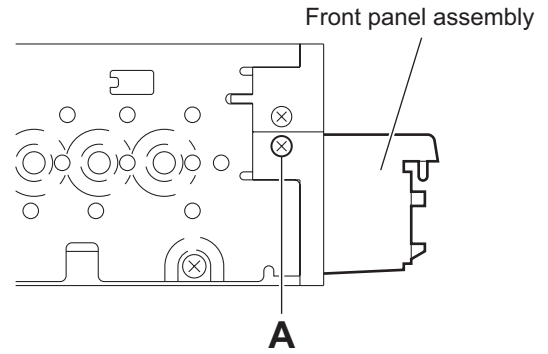


Fig.2

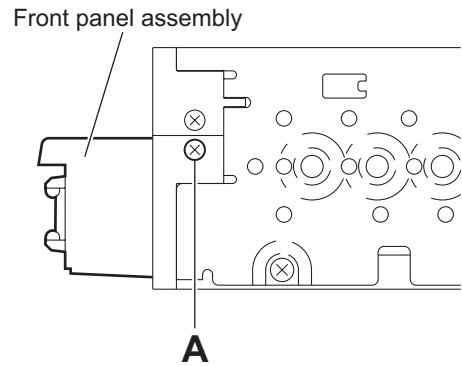


Fig.3

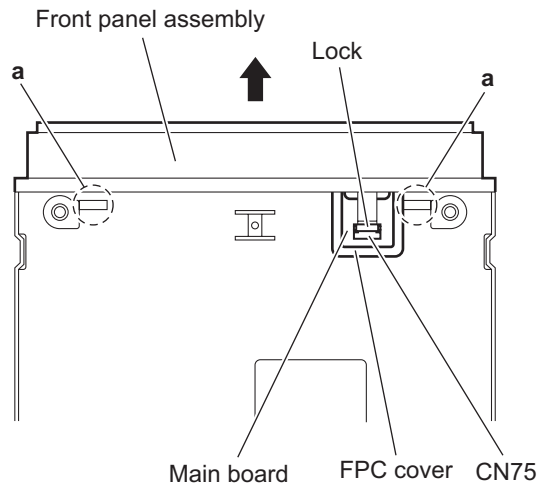


Fig.4

3.1.3 Removing the top drive unit (See Figs.5 to 8)

- Prior to performing the following procedures, remove the detach panel assembly and front panel assembly.
- (1) From the both sides of the main body, remove the four screws **B** attaching the top drive unit. (See Figs.5 and 6.)
- (2) From the rear side of the main body, remove the three screws **C** attaching the top drive unit. (See Fig.7.)
- (3) Remove the top drive unit from the main body and turn it inside out. (See Fig.8.)
- (4) Remove the two screws **C** attaching the F.P.C. guide on the display drive unit. (See Fig.8.)
- (5) Release the lock of the connector **CN301** on the mechanism board and disconnect the flexible wire. (See Fig.8.)
- (6) Remove the two screws **D** attaching the CN guide. (See Fig.8.)
- (7) Remove the three screws **E** attaching the PWB base. (See Fig.8.)
- (8) Remove the screw **F** attaching the connect board. (See Fig.8.)
- (9) Take out the connect board in the direction of the arrow. (See Fig.8.)
- (10) Release the lock of the connector **CN391** on the connect board and disconnect the flexible wire. (See Fig.8.)

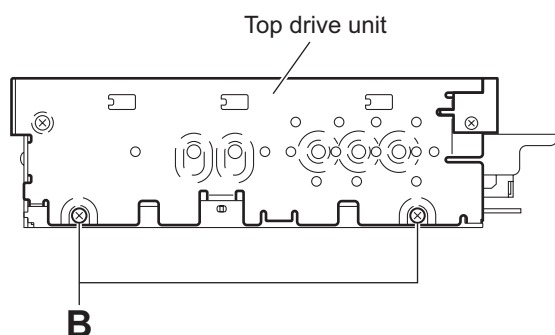


Fig.5

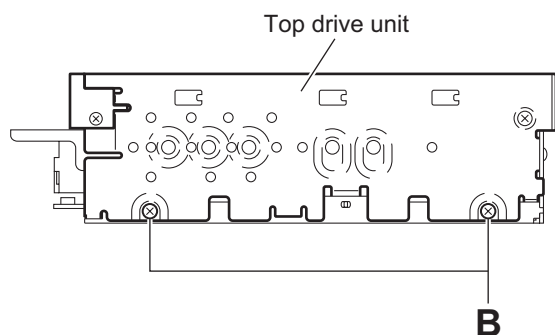


Fig.6

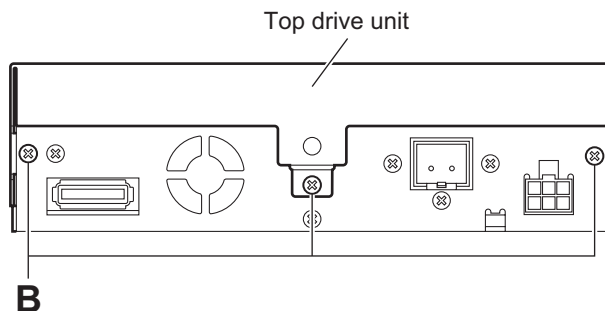


Fig.7

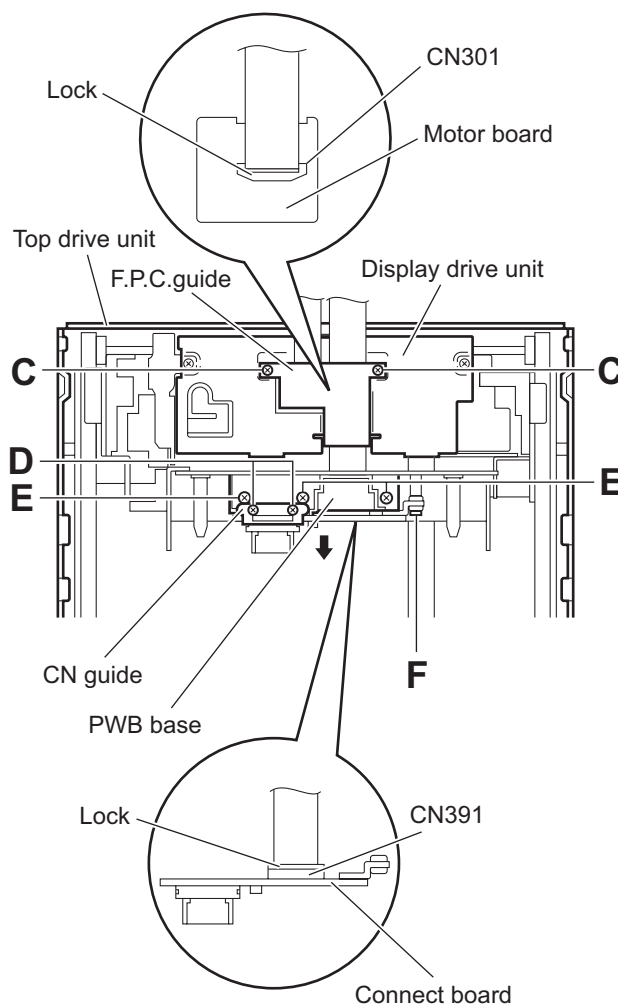


Fig.8

3.1.4 Removing the rear bracket (See Figs.9)

- Prior to performing the following procedures, remove the detach panel assembly, front panel assembly and top drive unit. From the rear side of the main body, remove the five screws **G** attaching the rear bracket.

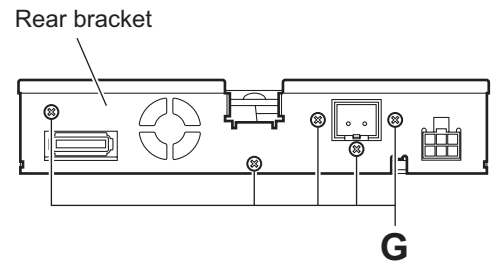


Fig.9

3.1.5 Removing the DVD mechanism assembly (See Figs.10 and 11)

- Prior to performing the following procedures, remove the detach panel assembly, front panel assembly and top drive unit.
 - (1) From the top side of the main body, release the lock of the connector [CN52](#) on the main board in an upward direction and disconnect the flexible wire. (See Fig.10.)
 - (2) Remove the two screws **H** and screw **J** attaching the mechanism cover. (See Fig.10.)
 - (3) Release the lock of the connector [CN101](#) on the main board in an upward direction and disconnect the card wire. (See Fig.11.)

Reference:

When connecting the card wire to the connector [CN101](#), pass it through the lower part of the mechanism bracket. (See Fig.11.)

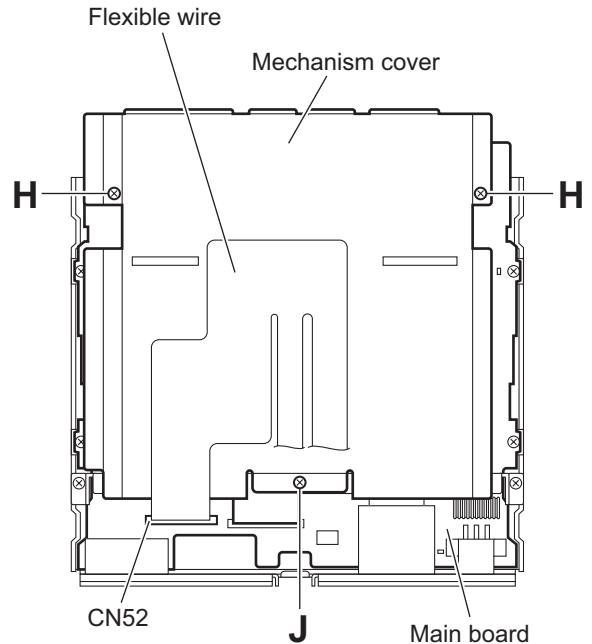


Fig.10

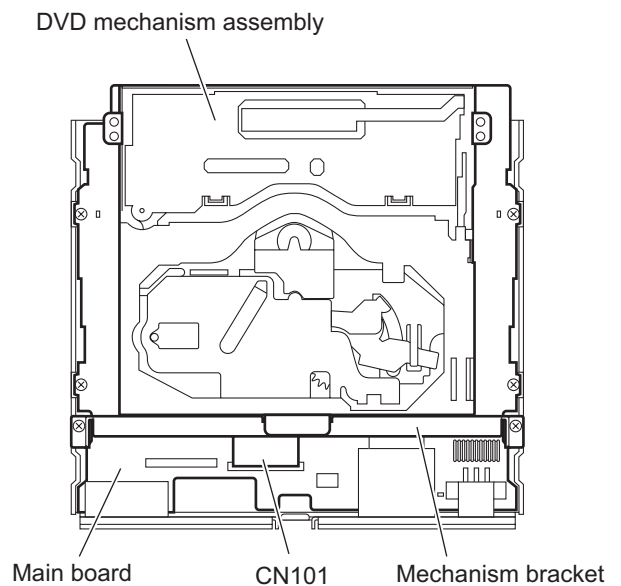


Fig.11

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

- Prior to performing the following procedures, remove the detach panel assembly, front panel assembly, top drive unit and DVD mechanism assembly.

- (1) From the rear side of the main body, remove the four screws **K** attaching the rear bracket. (See Fig.12.)
- (2) From the top side of the main body, remove the two screws **M** attaching the mechanism bracket on the bottom chassis assembly. (See Fig.13.)
- (3) Remove the five screws **N** and two screws **P** attaching the main board. (See Fig.13.)
- (4) Take out the main board from the bottom chassis assembly.

Reference:

When attaching the main board on the bottom chassis assembly, align the projections **b** of the bottom chassis assembly in the hole of the main board. (See Fig.13.)

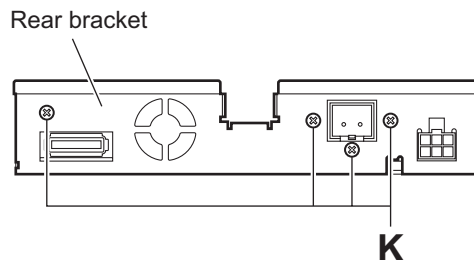


Fig.12

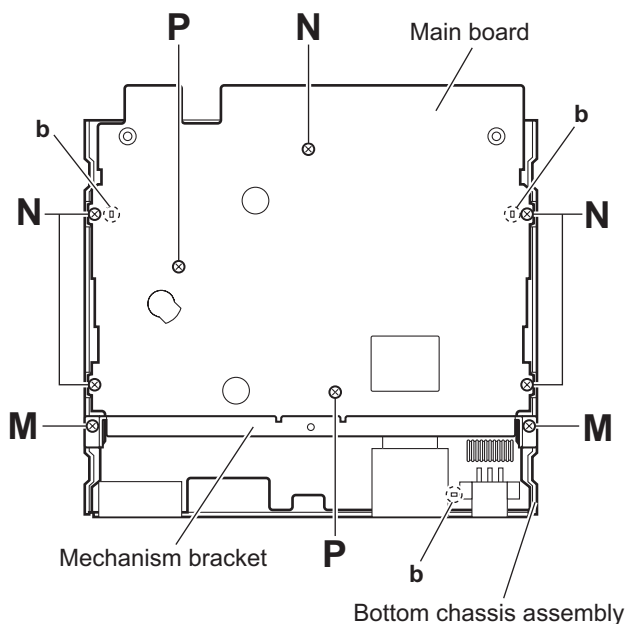


Fig.13

3.1.7 Removing the front board (See Fig.14)

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

- (1) From the inside of the front panel assembly, remove the three screws **Q** and screw **Q'** attaching the front board.
- (2) Take out the lock lever assembly from the front panel assembly.
- (3) Bend the hooks **c** in the direction of the arrow.
- (4) Release the front board from the sections **d** and take out the front board from the front panel assembly.

Reference:

When attaching the screw **Q'**, attach the lock lever assembly with it.

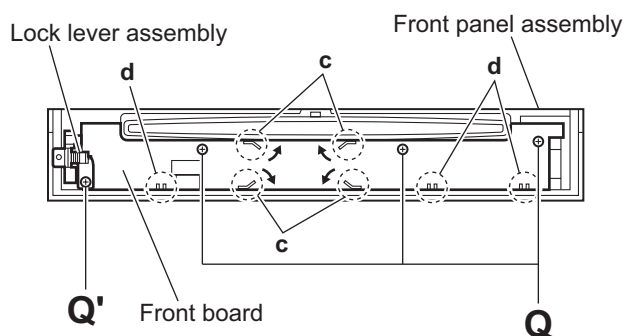


Fig.14

3.2 Top drive unit section

- Remove the top drive unit from the main body.
(See "3.1.4 Removing the top drive unit".)

3.2.1 Removing the display drive unit (See Fig.1)

- (1) From the both sides of the top drive unit, remove the two screws **A** attaching the display guides L/R and remove the display guides L/R from the top chassis assembly.
- (2) Slide the display drive unit by manual operation in the direction of the arrow and remove it from the top chassis assembly.

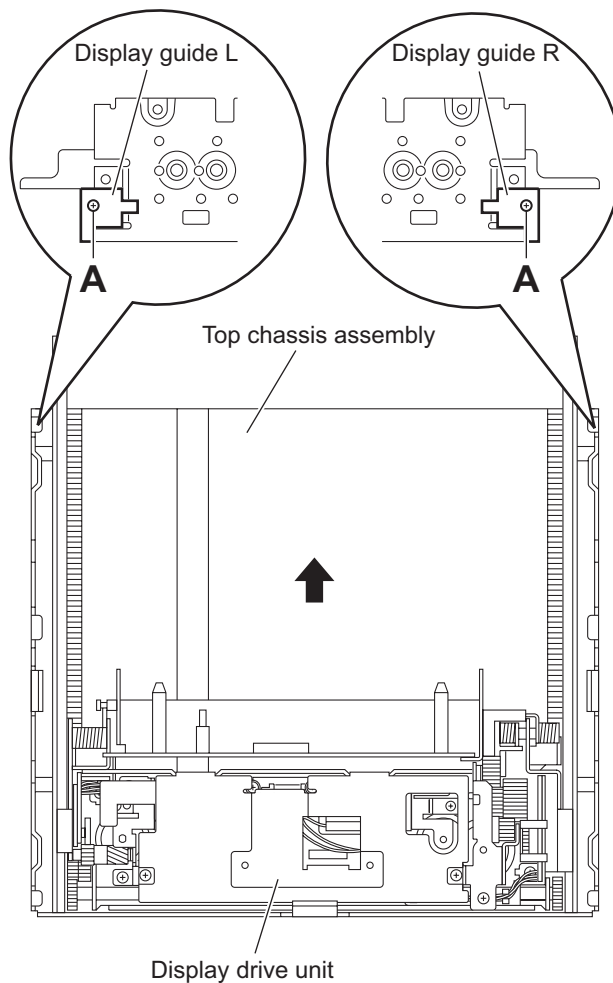


Fig.1

3.2.2 Removing the drive gears and forth gear (See Figs.2 to 4)

- Remove the display drive unit.

- (1) From the both sides of the display drive unit, remove the four screws **B** attaching the guide rails (L)/(R). (See Figs.2 and 3.)
- (2) From the top side of the display drive unit, pull the drive gears out of a drive gear shaft in the direction of the arrow while holding the drive gear shaft. (See Fig.4.)

Reference:

Remove the drive gear shaft as required. (See Fig.4.)

- (3) From the left side of the display drive unit, remove the E.ring fixing the forth gear. (See Fig.4.)
- (4) Remove the forth gear toward this side. (See Fig.4.)

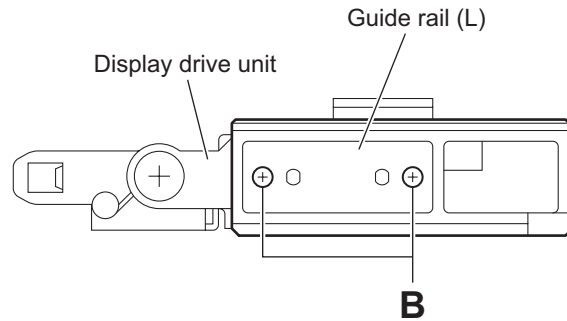


Fig.2

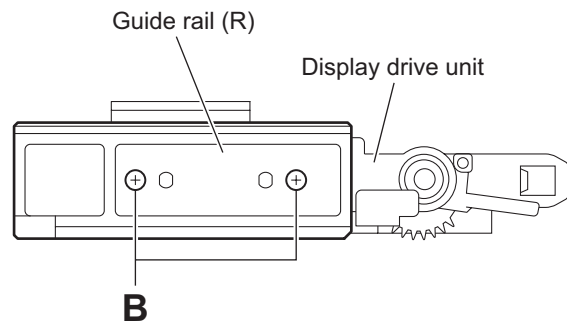


Fig.3

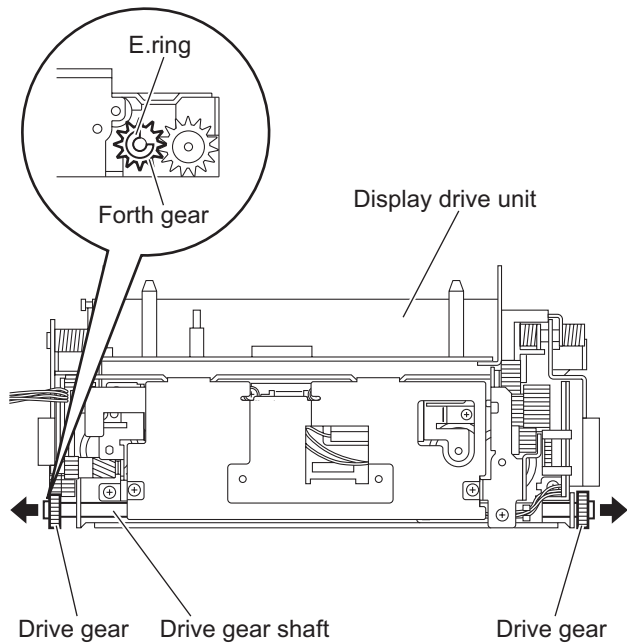


Fig.4

3.2.3 Removing the cover (See Fig.5)

- Remove the display drive unit.
From the top side of the display drive unit, remove the two screws **C** attaching the cover.

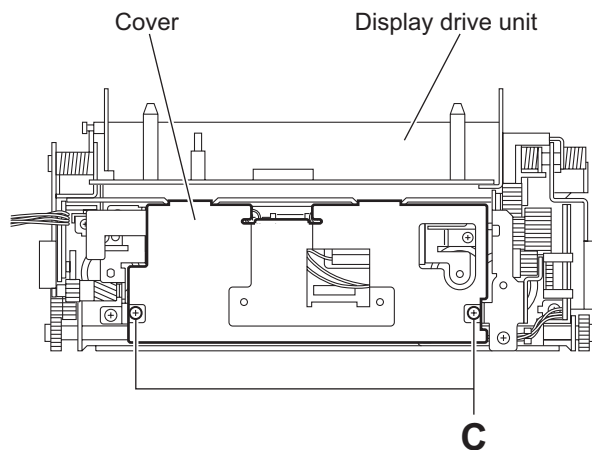


Fig.5

3.2.4 Removing the third gear, worm gear and double worm (See Figs.6 to 11)

- Remove the display drive unit and cover.

- (1) Remove the wire sheet with the wire from the motor. (See Fig.6.)

Reference:

Disconnect the wire from the connector [CN332](#) on the motor board as required.

- (2) Disconnect the wire from the connector [CN312](#) on the motor board. (See Fig.7.)
- (3) Remove the two screws **D** attaching the motor bracket (S). (See Fig.7.)
- (4) Take out the motor bracket (S), worm guide, motor and third gear together. (See Fig.7.)
- (5) Pull the third gear out of the motor bracket (S) in the direction of the arrow. (See Fig.8.)
- (6) Remove the two screws **E** attaching the motor and remove the motor from the motor bracket (S). (See Fig.9.)
- (7) Pull the worm gear out of the motor. (See Fig.10.)

Reference:

When inserting the worm gear in the shaft of the motor, insert it by a measurement of a rule. (See Fig.10.)

- (8) From the top side of the display drive unit, pull the double worm in an upward direction. (See Fig.11.)

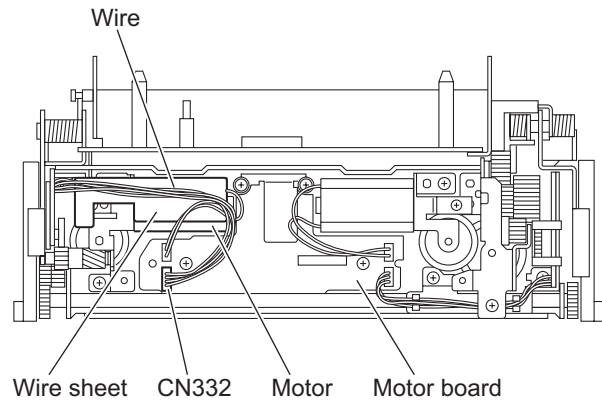


Fig.6

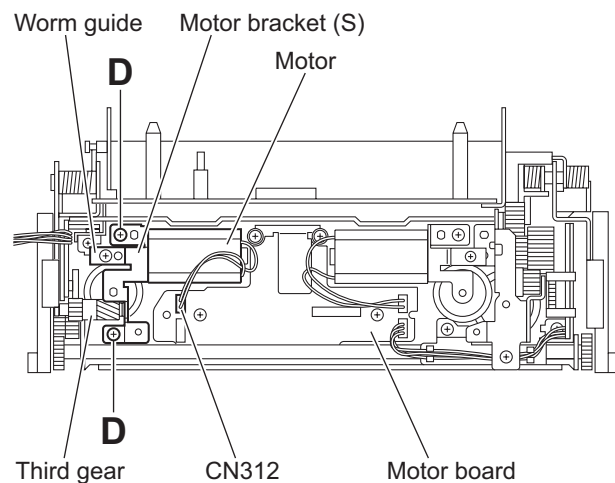


Fig.7

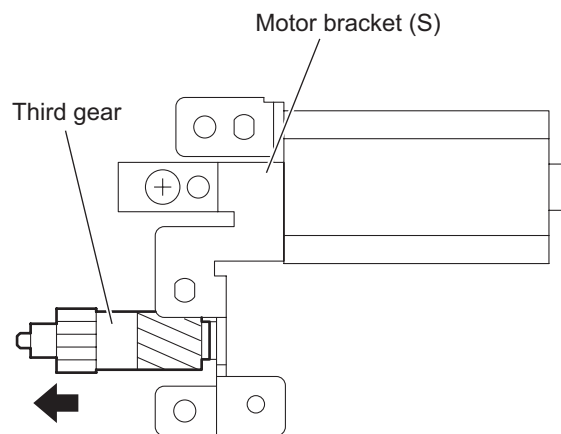


Fig.8

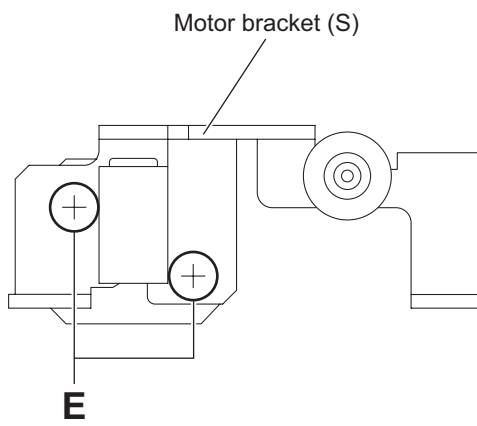


Fig.9

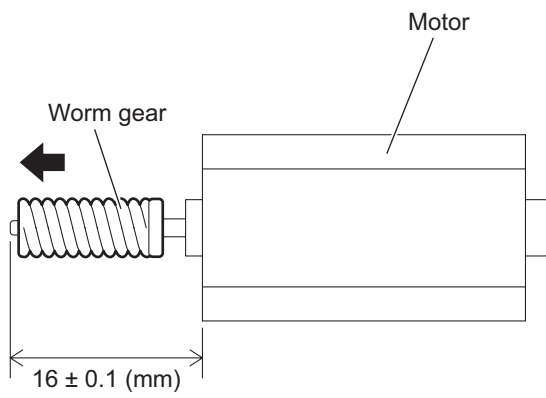


Fig.10

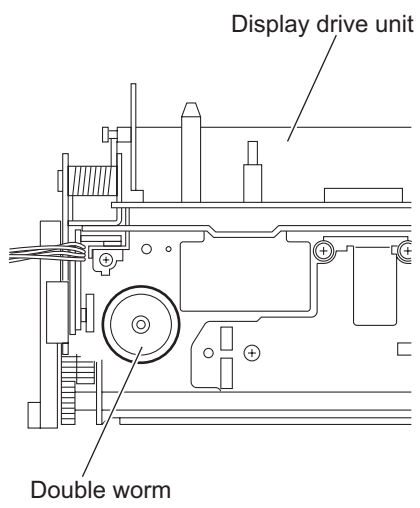


Fig.11

3.2.5 Removing the worm gear, motor bracket (A) and third worm (See Figs.12 to 16)

- Remove the display drive unit and cover.
 - (1) Disconnect the wire from the connector [CN311](#) on the motor board. (See Fig.12.)
 - (2) Remove the screw **F** attaching the motor bracket (A). (See Fig.12.)
 - (3) Take out the motor bracket (A), worm guide and motor together. (See Fig.12.)
 - (4) Remove the two screws **G** attaching the motor and remove the motor from the motor bracket (A). (See Fig.13.)
 - (5) Pull the worm gear out of the motor. (See Fig.14.)

Reference:

When inserting the worm gear in the shaft of the motor, insert it by a measurement of a rule. (See Fig.14.)

- (6) Remove the screw **H** attaching the worm guide to the motor bracket (A). (See Fig.15.)
- (7) From the top side of the display drive unit, pull the third worm in an upward direction. (See Fig.16.)

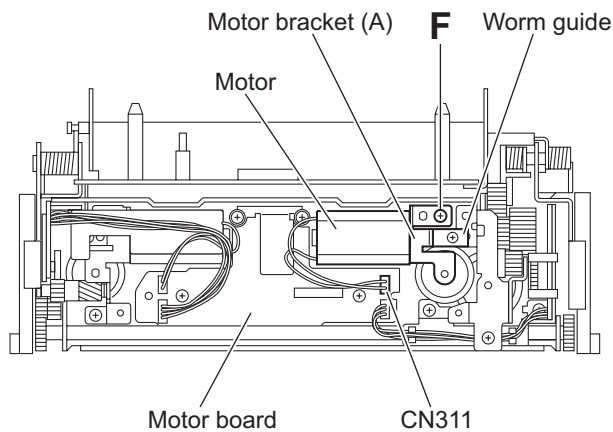


Fig.12

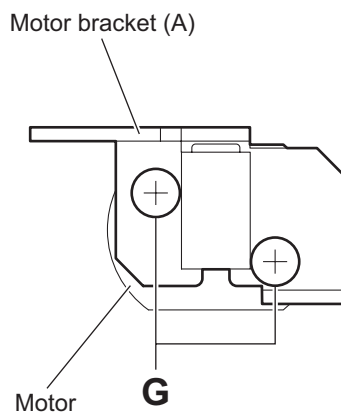


Fig.13

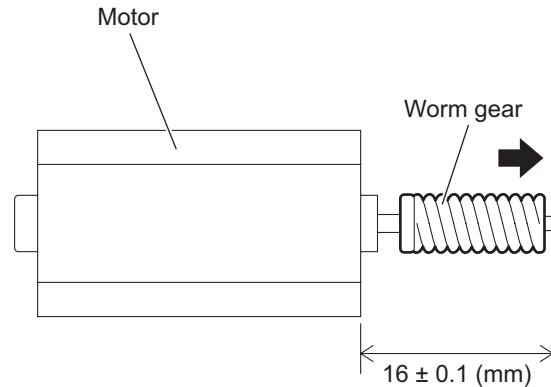


Fig.14

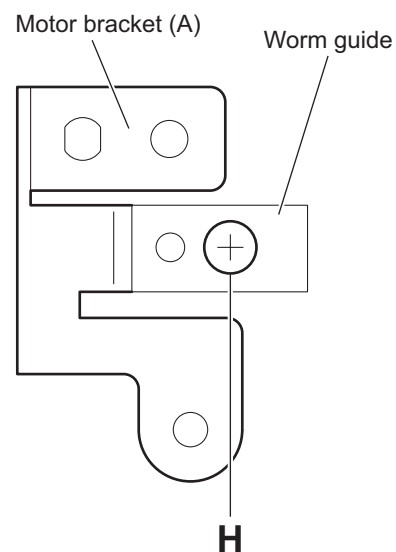


Fig.15

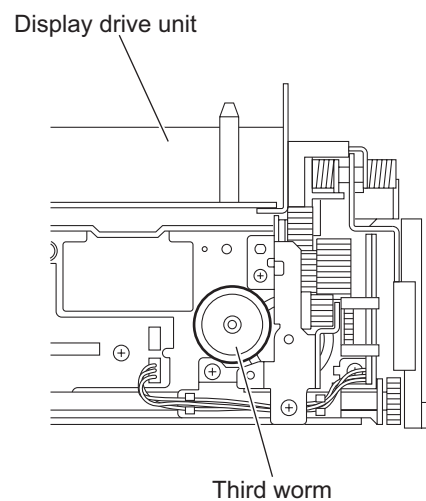


Fig.16

3.2.6 Removing the second wheel and R.L.S. gear (See Figs.17 to 24)

- Remove the display drive unit and cover.
 - (1) Disconnect the wire from the connector [CN311](#) on the motor board. (See Fig.17.)
 - (2) Remove the screw **J** attaching the motor bracket (A). (See Fig.17.)
 - (3) Take out the motor bracket (A), worm guide and motor together. (See Fig.17.)
 - (4) Remove the two screws **K** attaching the gear bracket assembly. (See Fig.18.)
 - (5) Take out the gear bracket assembly with other parts from the display drive unit.
 - (6) From the left side of the gear bracket assembly, remove the two screws **L** attaching the gear bracket cover. (See Fig.19.)
 - (7) Pull out the joint gear in the direction of the arrow. (See Fig.20.)
 - (8) Pull out the hex gear and second wheel together in the direction of the arrow. (See Fig.20.)
 - (9) Pull the second wheel out of the hex gear. (See Fig.21.)
 - (10) Pull the third gear in an upward direction. (See Fig.22.)
 - (11) From the top side of the display drive unit, disconnect the wire from the connector [CN331](#) on the motor board. (See Fig.22.)
 - (12) Remove the screw **M** attaching the R.L.S. bracket. (See Fig.22.)
 - (13) Take out the R.L.S. bracket with other parts from the display drive unit. (See Fig.22.)

Reference:

When attaching the R.L.S. bracket, pass the wire through the sections **a** on the wire holder as before. (See Fig.22.)

- (14) From the back side of the R.L.S. bracket, remove the screw **N** attaching the R.L.S. spring to the R.L.S. bracket and remove the R.L.S. spring in the direction of the arrow. (See Fig.23.)

Reference:

When attaching the R.L.S. spring, hang the torsion spring (R.L.S.) on the R.L.S. spring as before. (See Fig.23.)

- (15) From the front side of the R.L.S. bracket, remove the R.L.S. gear toward this side. (See Fig.24.)

Reference:

When attaching the R.L.S. gear, attach the torsion spring (R.L.S.) with it as before. (See Fig.24.)

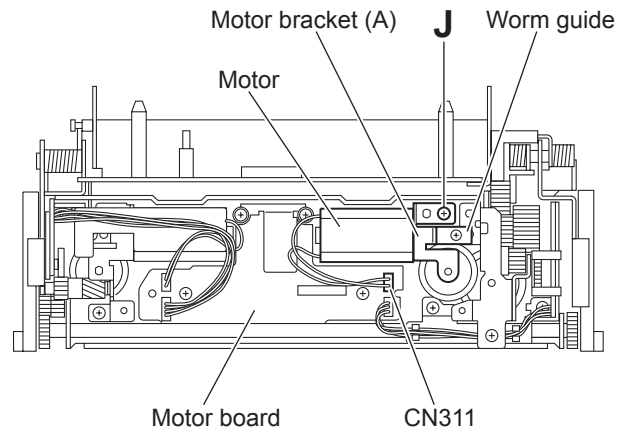


Fig.17

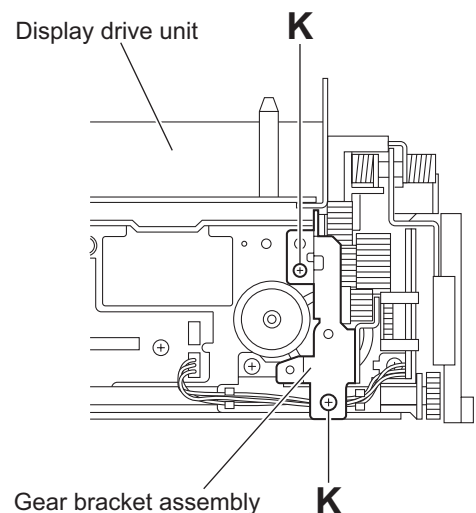


Fig.18

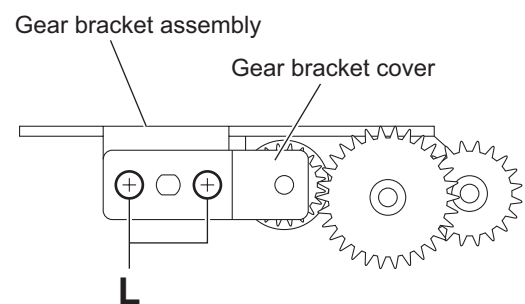


Fig.19

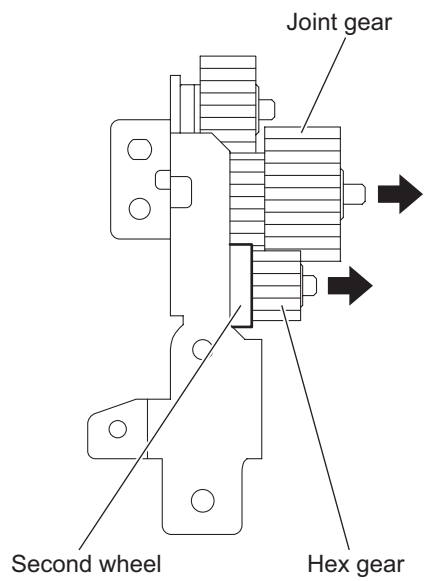


Fig.20

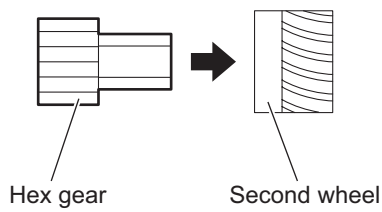


Fig.21

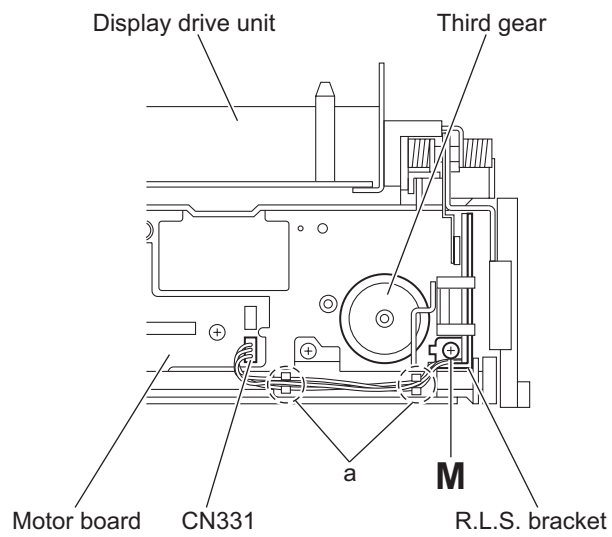


Fig.22

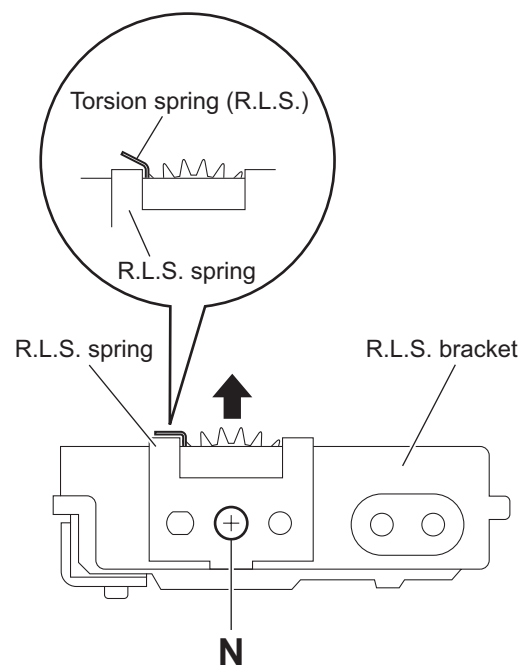


Fig.23

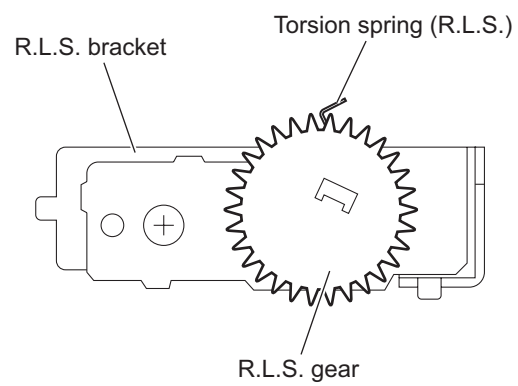


Fig.24

3.3 Display unit section

- Remove the display unit from the main body.
(See "3.1.1 Removing the display unit".)

3.3.1 Removing the display back panel (See Figs.1 to 3)

- (1) From the both sides of the display unit, remove the six screws **A** attaching the display back panel. (See Figs.1 and 2.)
- (2) From the rear side of the display unit, remove the three screws **A** attaching the display rear cover. (See Fig.3.)
- (3) Release the joints **a** first and release the joint **b**. (See Fig.3.)
- (4) Remove the display rear cover.

Note:

When releasing the joints **a** and joints **b**, take care not to break the claws of the display rear cover. (See Fig.3.)

- (5) Remove the four screws **B** attaching the display back panel. (See Fig.3.)
- (6) Take out the display back panel from the display unit.

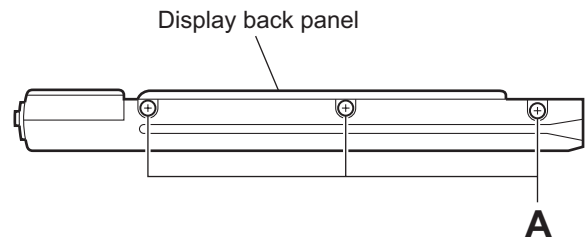


Fig.1

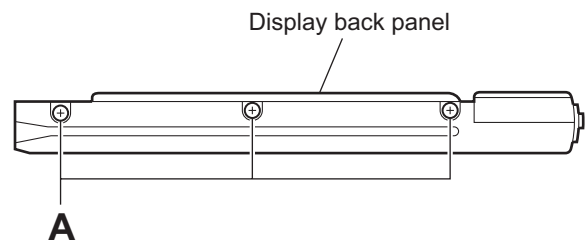


Fig.2

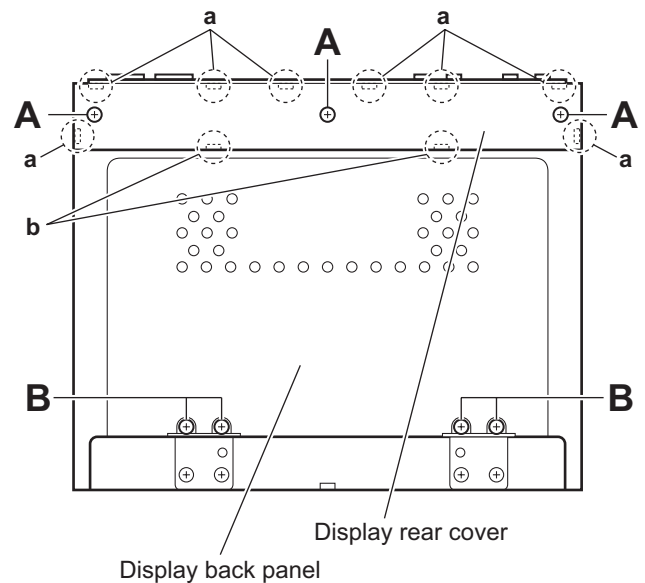


Fig.3

3.3.2 Removing the switch board (See Fig.4)

- Removing the switch board (See Fig.4)
 - (1) Release the lock of the connector [CN402](#) on the display board in the direction of the arrow and disconnect the card wire.

Reference:

After connecting the card wire, fix it with the spacer(H) as before.

- (2) Take out the switch board from the display unit.

3.3.3 Removing the display board (See Fig.4)

- Prior to performing the following procedures, remove the display back panel.

Reference:

Remove the switch board as required.

- (1) Release the lock of the connector [CN402](#) on the display board in the direction of the arrow and disconnect the card wire.
- (2) Release the locks of the connectors ([CN421](#), [CN451](#)) on the display board in the direction of the arrow and disconnect the flexible wire.
- (3) Disconnect the wire from the connector [CN471](#) on the display board.
- (4) Bend the hooks c in the direction of the arrow.
- (5) Remove the two screws **C** attaching the slider assembly.
- (6) Remove the tension spring from the section **d** and remove the slider assembly in the direction of the arrow 1.
- (7) Remove the three screws **D** attaching the display board and take out the display board from the display unit.

Reference:

After connecting the each wire, fix them with the spacer(H) as before.

3.3.4 Removing the LCD module (See Fig.5)

- Prior to performing the following procedures, remove the display back panel and display board.
Release the claws **e** in the direction of the arrow and take out the LCD module from the display panel.

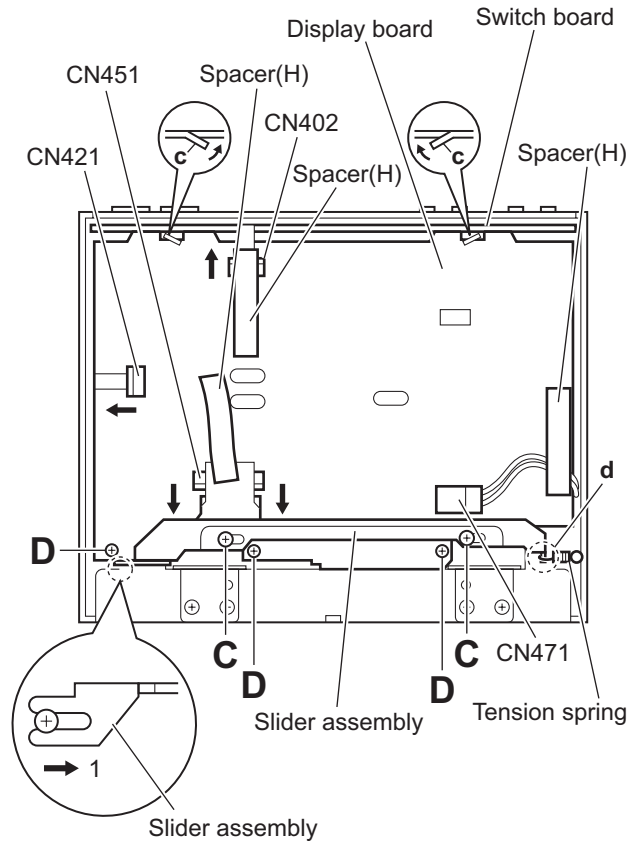


Fig.4

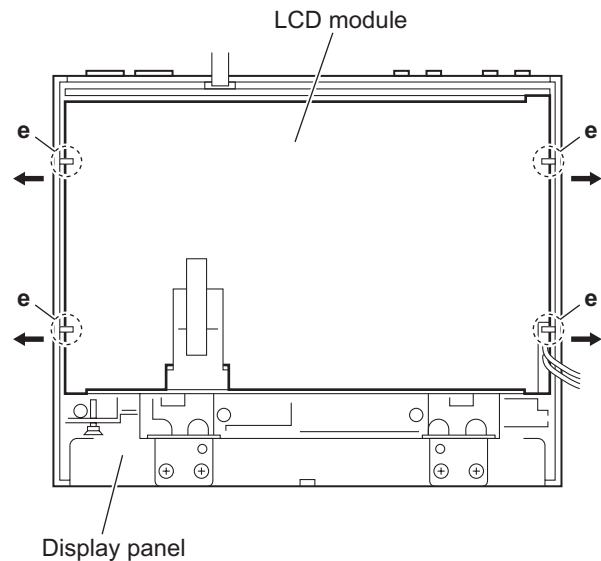


Fig.5

3.4 DVD mechanism assembly section

3.4.1 Removing the front end board

(See Fig.1)

Caution:

Before disconnecting the flexible wire extending from the DVD pickup, solder the short-circuit point on the flexible wire using a grounding soldering iron.

If you do not follow this instruction, the DVD pickup may be damaged.

- (1) Turn over the body, and solder the short-circuit points on the flexible wire extending from the DVD pickup.
- (2) Disconnect the flexible wire from connector [CN101](#) on the front end board.
- (3) Disconnect the card wire from connector [CN201](#) on the front end board.
- (4) Disconnect the flexible wire from connector [CN202](#) on the front end board.
- (5) Unsolder two soldered points **a** on the front end board and remove the wire extending from the feed motor.
- (6) Remove the two screws **A** and screw **B** attaching the front end board.

Caution:

- As the flexible wire to be connected to [CN101](#), make sure to attach it to the front end board using a double tape.
- After reassembling, unsolder the short-circuit points.

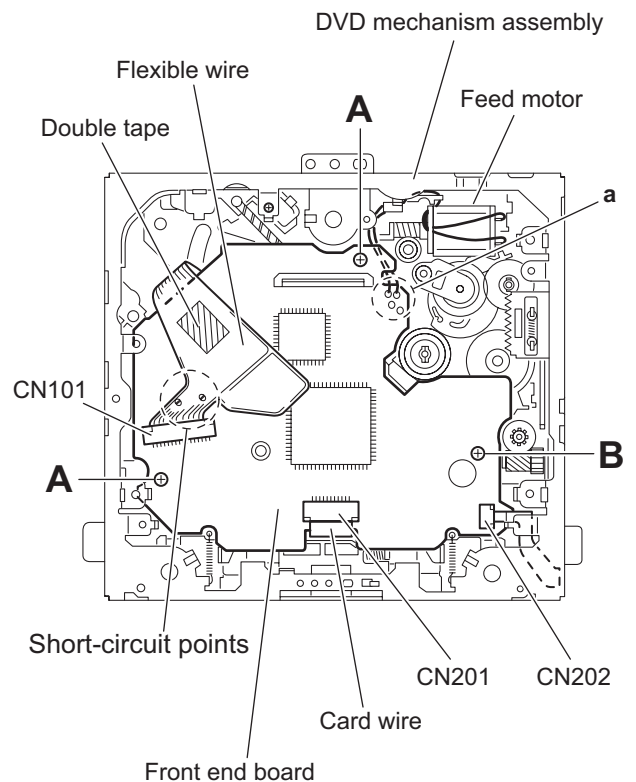


Fig.1

3.4.2 Removing the top cover (See Fig.2)

- (1) Remove the two screws **C** attaching the top cover on the back of the body.
- (2) Remove the top cover upward.

Reference:

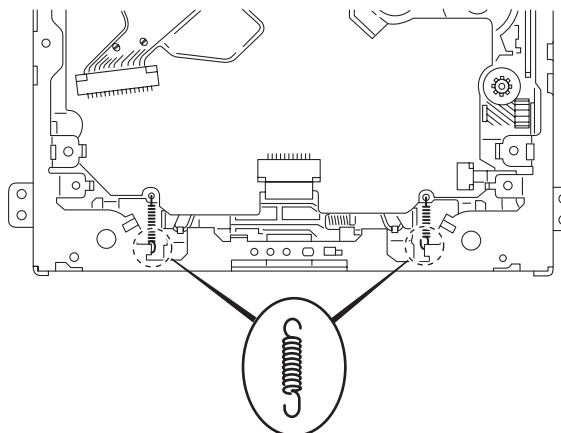
When reassembling, set part **b** of the top cover under the bending part **c** of the chassis frame.

3.4.3 Removing the mechanism section (See Figs.2 to 4)

- Remove the top cover.
 - (1) Remove the two screws **D** attaching the right and left stoppers on the front side. (See Fig.2.)
 - (2) Remove the two floating springs on the bottom of the body. (See Fig.3.)
 - (3) Move the mechanism section upward and remove from the chassis frame.
 - (4) The three damper springs (damper SP. (F) and damper SP. (R)) come off from the dampers (damper(F) and damper (R)). (See Fig.4.)

Caution:

- When reassembling, reattach the damper spring to the damper respectively and insert the three shafts on the bottom of the mechanism to the dampers.
- Before inserting the shaft to the dampers, apply IPA to the hole of the dampers.



Floating spring

Fig.3

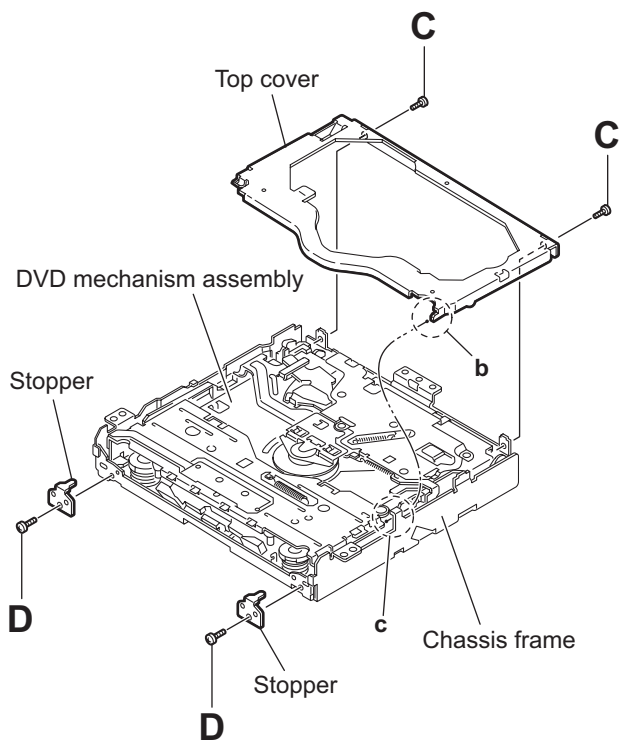


Fig.2

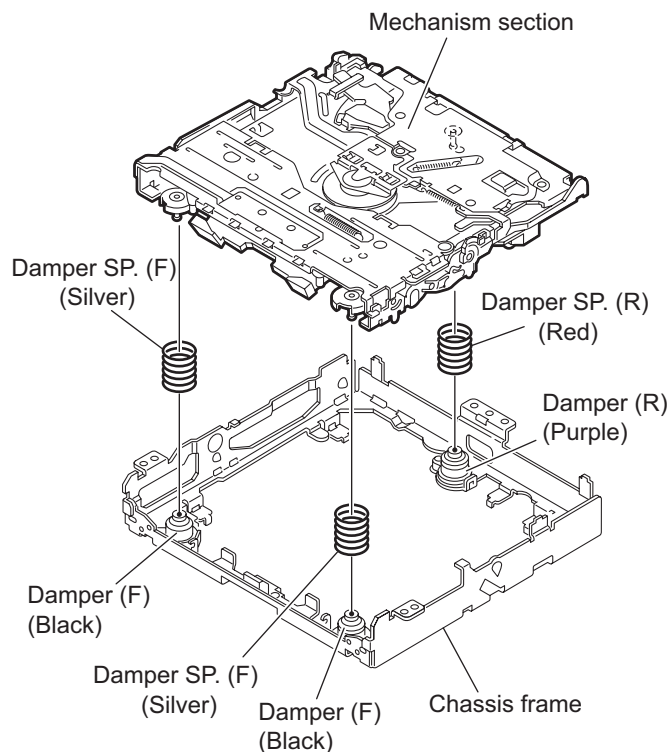


Fig.4

3.4.4 Removing the clamper unit (See Figs.5 to 7)

- Remove the top cover and the mechanism section.
- (1) Remove the clamper2 spring on the bottom of the mechanism section. (See Figs.5.and 6.)
- (2) Release the part **d** of the clamper spring from the bending part of the chassis base assembly. (See Fig.7.)
- (3) Move the clamper unit in the direction of the arrow and turn. Release the two joints **e** and **f**, then remove the clamper unit upward. (See Fig.5.)

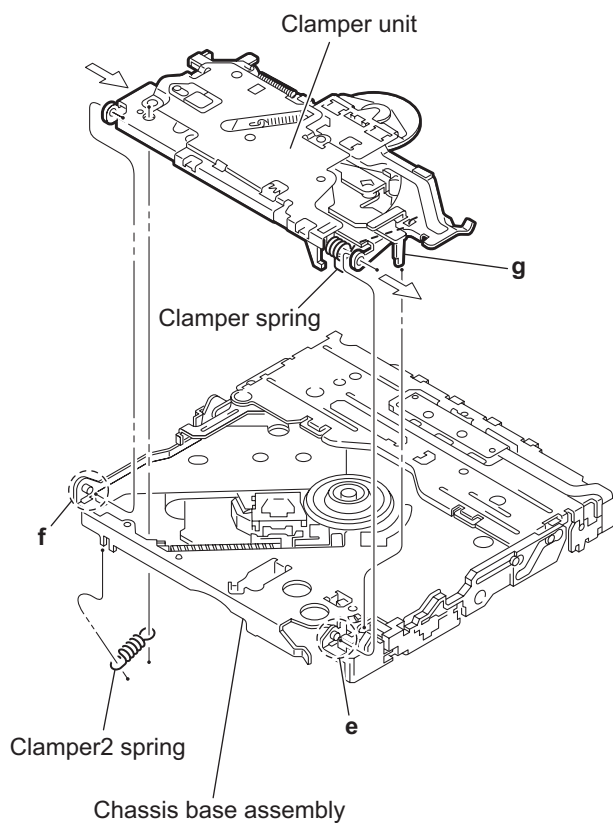


Fig.5

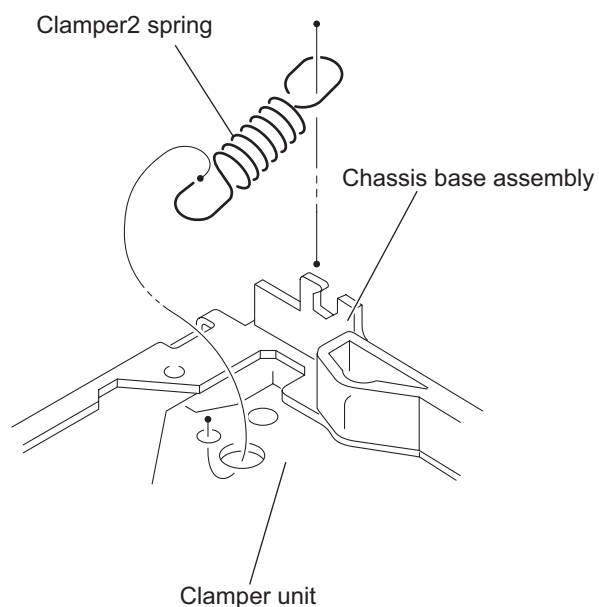


Fig.6

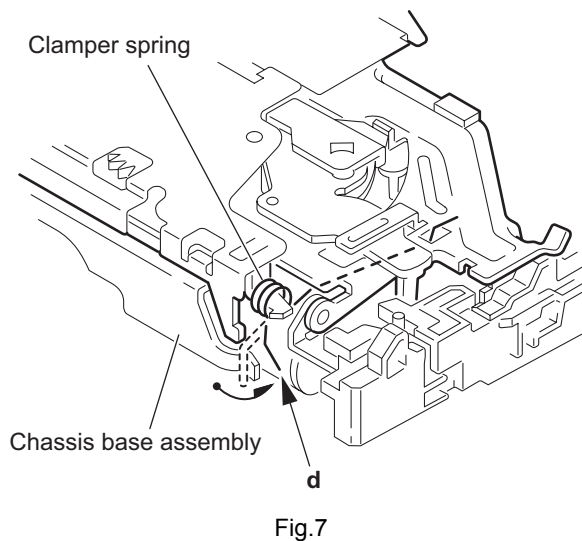


Fig.7

3.4.5 Reattaching the clamper unit (See Figs.5 to 9)

- (1) Attach the clamper spring to the clamper unit. (See Fig.8.)
- (2) Move the clamper unit to set the side joints **e** and **f** to each boss of the chassis base assembly. Make sure that part **g** is inserted to the notch of the chassis base assembly. (See Figs.5 and 9.)
- (3) Move the part **d** of the clamper spring to the outside of the bending part of the chassis base assembly. (See Fig.7.)
- (4) Attach the clamper2 spring to the chassis base assembly. (See Figs.5 and 6.)

Reference:

When reattaching, temporarily hook the end of the clamper spring as shown in the figure to make the work easy. (See Fig.8.)

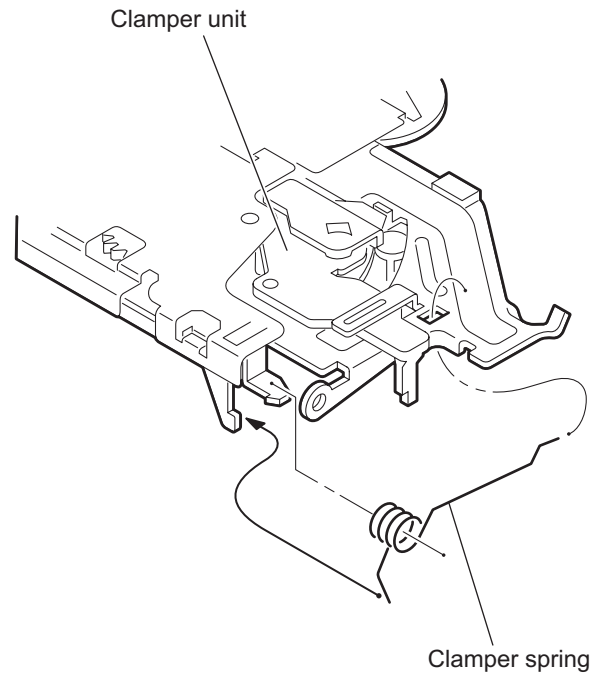


Fig.8

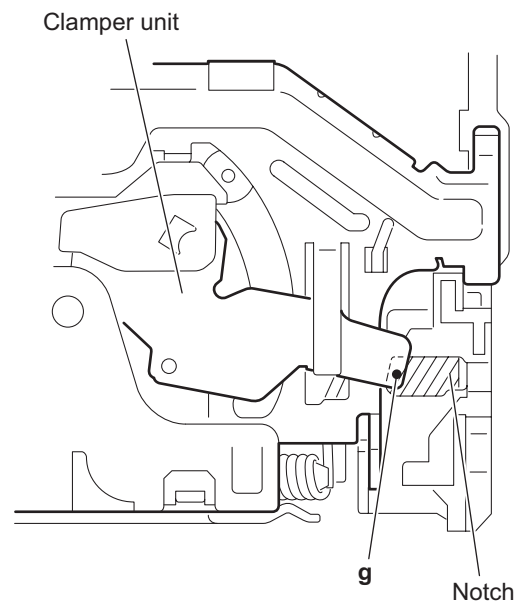


Fig.9

3.4.6 Removing the front unit (See Figs.10 to 12)

- Remove the top cover and the mechanism section.
 - (1) Disconnect the flexible wire from connector [CN202](#) on the front end board at the bottom of the body. (See Fig.10.)
 - (2) Remove the screw **E** attaching the front unit on the top of the body. (See Figs.11 and 12.)
 - (3) Move the front unit toward the front to release joint **h**, and release two joints **i** and **j** on the right side of the chassis base assembly. Then remove the front unit upward. (See Figs.11 and 12.)
 - (4) Remove the two screws **F** attaching the switch board. (See Fig.12.)

Reference:

You can remove the switch board only without removing the front unit.

Caution:

When reassembling, attach the flexible wire extending from the switch board using the double tape. (See Figs.10 and 12.)

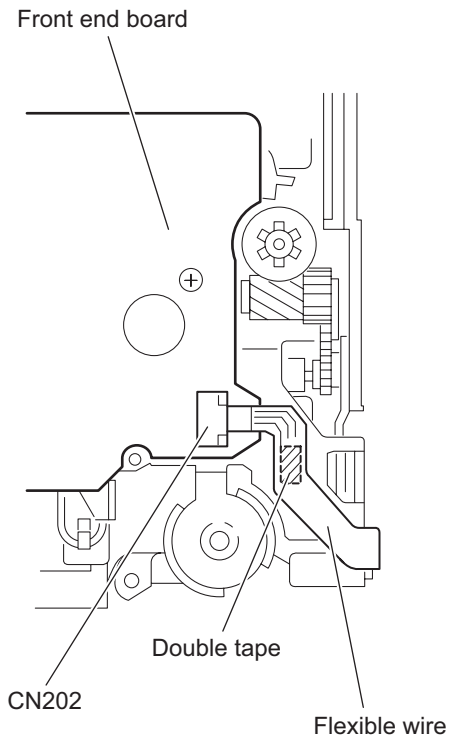


Fig.10

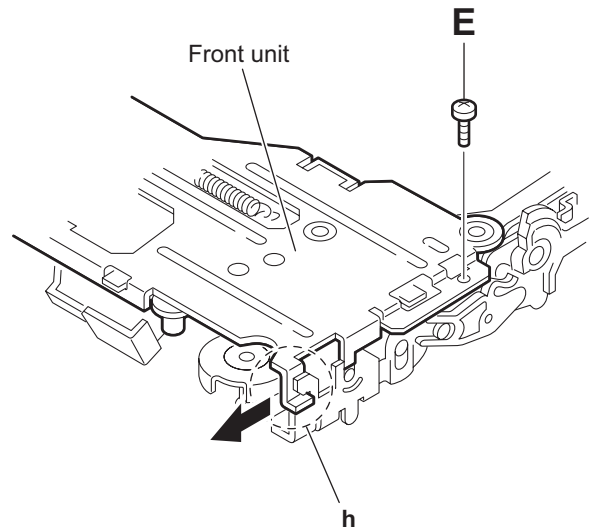


Fig.11

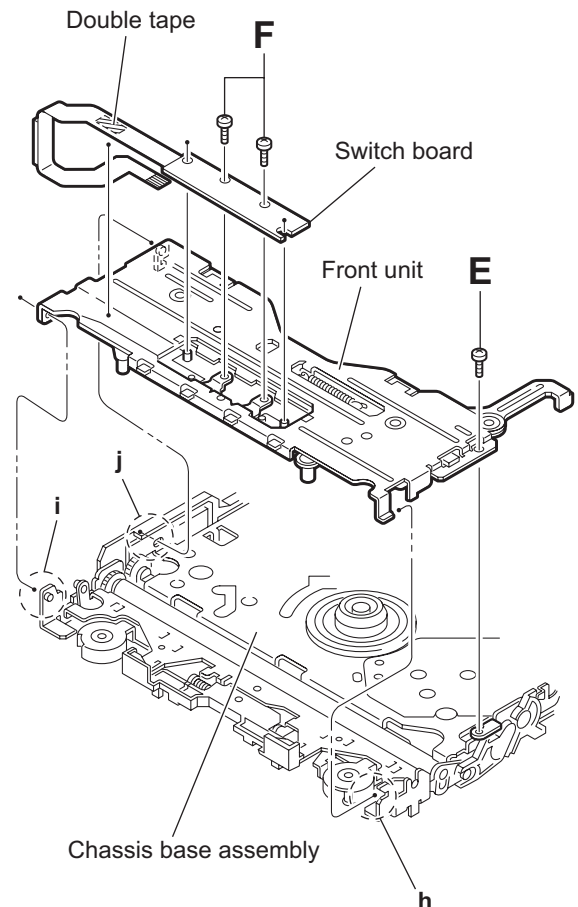


Fig.12

3.4.7 Removing the loading arm assembly. (See Figs.13 and 14)

- Remove the top cover, the mechanism section and the front unit.
 - (1) From the top of the body, move the loading arm assembly from the front side upward, and release the bosses from the right and left joints **k** and **m** of the chassis base assembly.
 - (2) Release the boss from notch **n** of the connect arm on the right side of the body, and release the boss from notch **p** of the slide cam assembly on the left side.

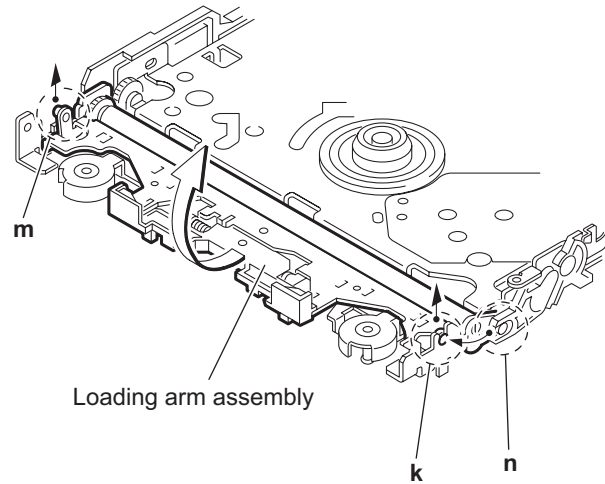


Fig.13

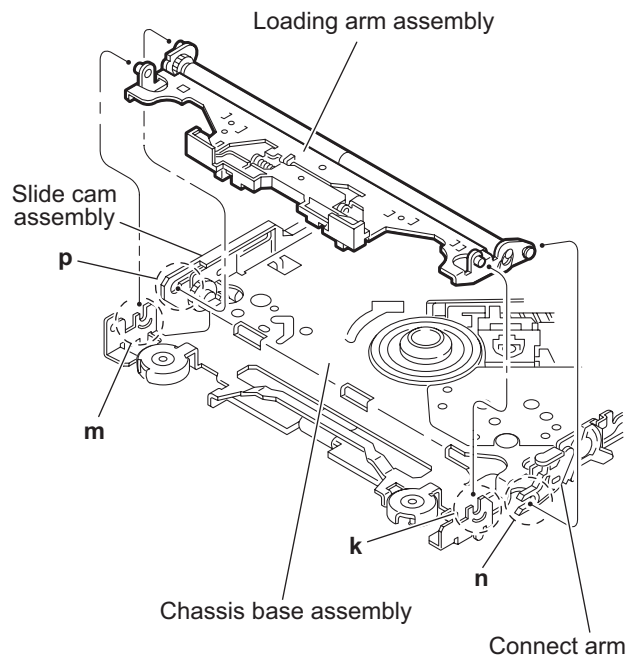


Fig.14

3.4.8 Removing the rod (L)(R)/roller assembly (See Figs.15 and 16)

- Remove the top cover, the mechanism section, the front unit and the loading arm assembly.
 - (1) Release the rod (L) and (R) from the joints **q** at the bottom of the loading arm assembly. (See Fig.15.)
 - (2) Remove the roller assembly from the loading arm assembly. (See Fig.16.)
 - (3) Remove the two collars and washer from the roller assembly. (See Fig.16.)

Caution:

After attaching the loading arm assembly to the roller assembly, attach the rod (L) and (R). Attach the rods to the right and left collars of the roller assembly. (See Figs.15.)

When reattaching the rod (L) and (R) to the loading arm assembly, engage each joints **q** as shown in Fig.15. As joints **r** of the rod (L), let the rod through **r** before reattaching it.

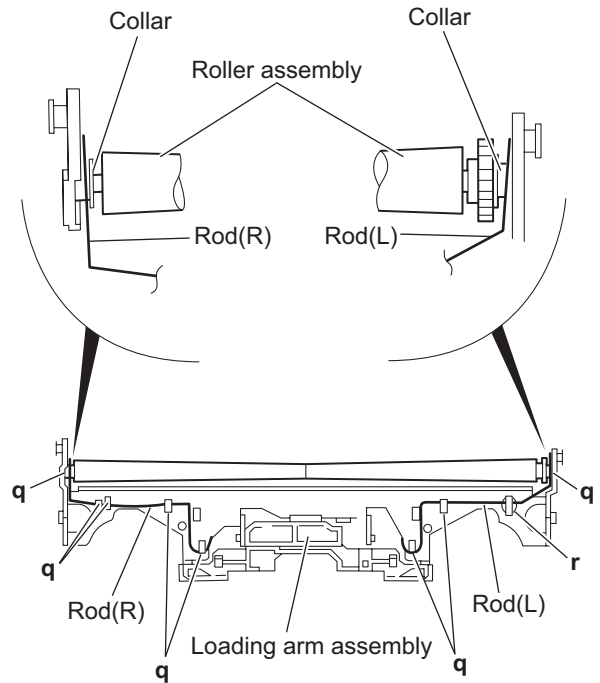


Fig.15

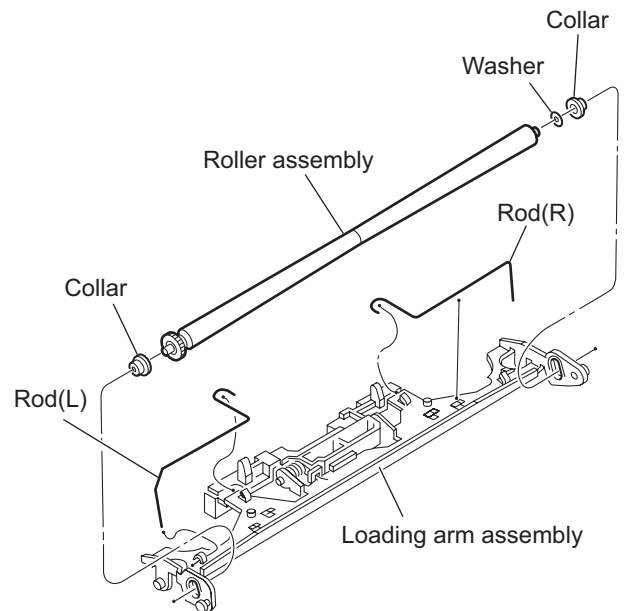


Fig.16

3.4.9 Removing the DVD pickup (See Figs.17 to 19)

- Remove the front end board.

- (1) From the bottom of the body, turn the feed gear in the direction of the arrow to move the DVD pickup outwards. (See Fig.17.)
- (2) Remove the screw **G** attaching the thrust spring. (See Fig.17.)
- (3) Remove the DVD pickup assembly upward on the L.S. gear side and release from sub shaft at joint **s**. Move the lead screw of the DVD pickup assembly in the direction of the arrow to release from joint **t**. (See Fig.18.)
- (4) Remove the screw **H** attaching the rack spring/ rack plate on the DVD pickup. (See Fig.19.)
- (5) Pull out the lead screw. (See Fig.19.)

Caution:

- When releasing the lead screw, the L.S. collar comes off at the end of the lead screw. When reassembling, reattach the L.S. collar to the lead screw. (See Fig.19.)
- After reattaching the L.S. collar, reattach it to the point **t** of the lead screw, and to the holder (M). Make sure that the L.S. collar is set on the lod (M). (See Fig.18.)
- Perform adjustment after replacing the pickup.

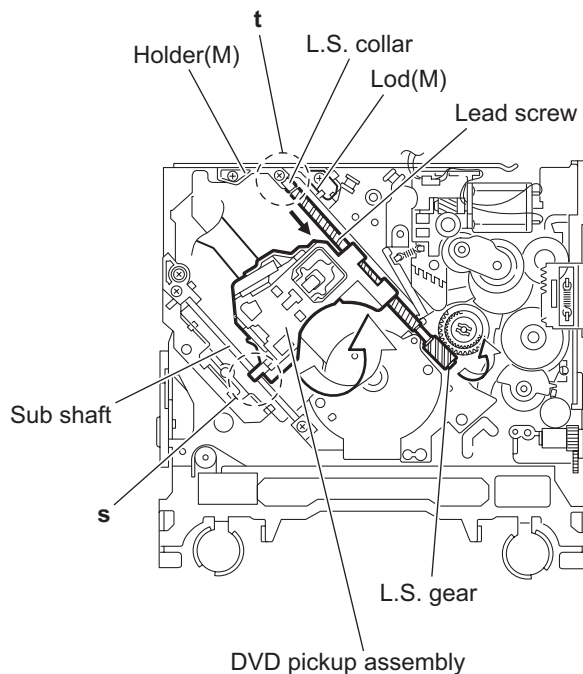


Fig.18

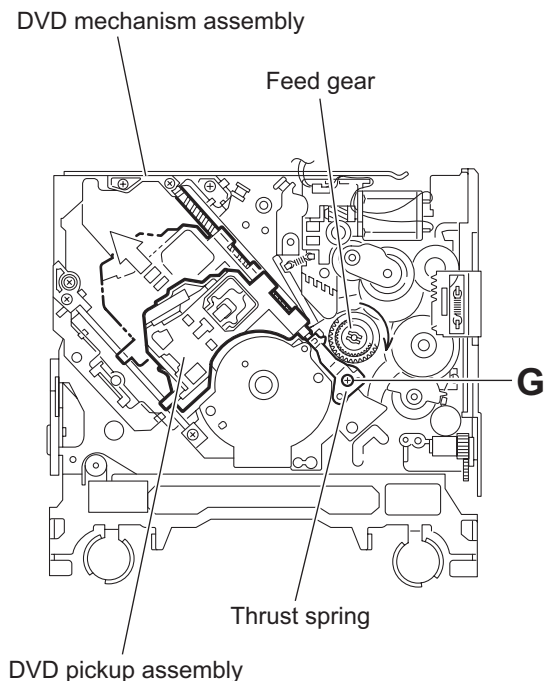


Fig.17

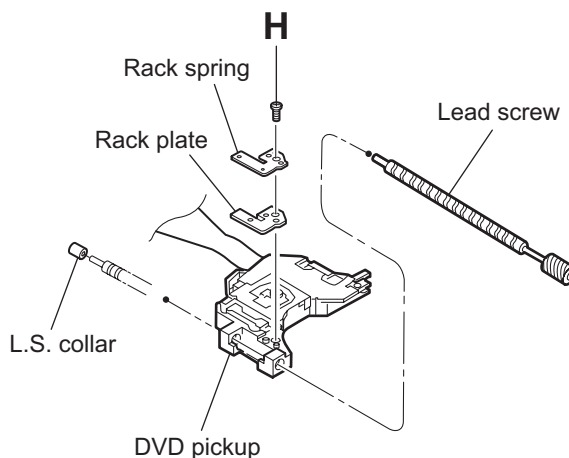


Fig.19

3.4.10 Removing the spindle motor (See Fig.20)

- Remove the front end board.
Remove the two screws **J** attaching the spindle motor on the bottom of the body.

Caution:

Perform adjustment when reattaching the spindle motor.

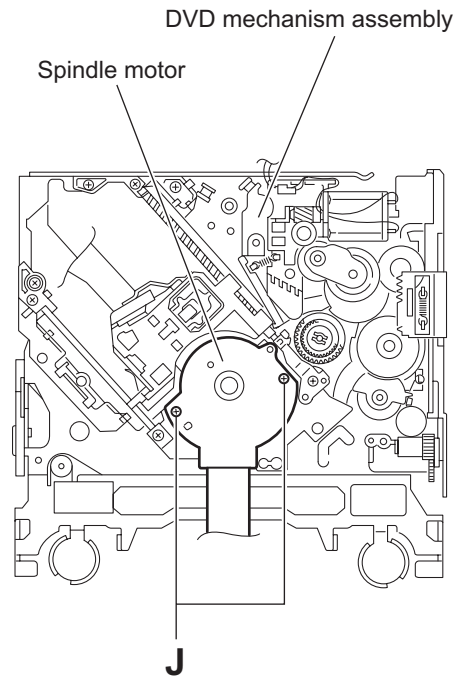


Fig.20

3.4.11 Removing the feed motor assembly (See Figs.21 and 22)

- Remove the front end board.
 - (1) Remove the feed TRI. spring on the bottom of the body.
(See Fig.21.)
 - (2) Remove the two screws **K** attaching the feed motor assembly.
(See Fig.21.)
 - (3) Remove the slit washer from the motor H. assembly and pull out the worm wheel.
(See Fig.22.)
 - (4) Remove the two screws **L** attaching the feed motor.
(See Fig.22.)

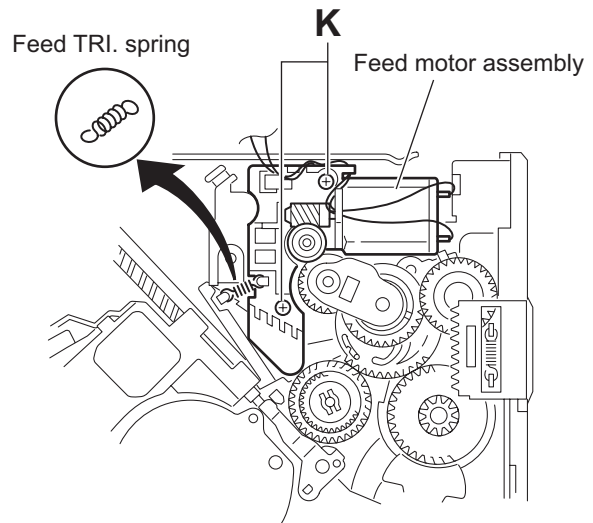


Fig.21

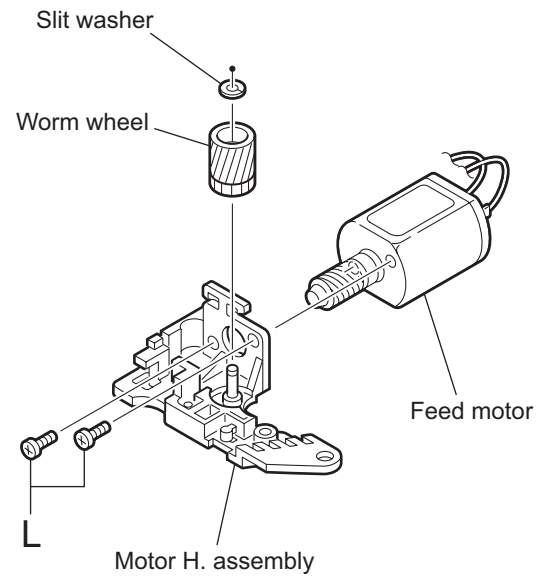


Fig.22

3.5 Hideaway unit section

3.5.1 Removing the top chassis

(See Figs.11 to 3)

- (1) From the both sides of the main body, remove the four screws **A** attaching the top chassis. (See Fig.1 and 2.)
- (2) From the front side of the main body, remove the three screws **A**, screw **B** and four screws **C** attaching the top chassis. (See Fig.3.)
- (3) Take out the top chassis from the main body in the direction of the arrow. (See Figs.1 to 3.)

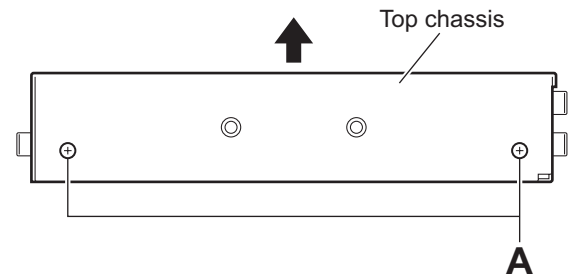


Fig.1

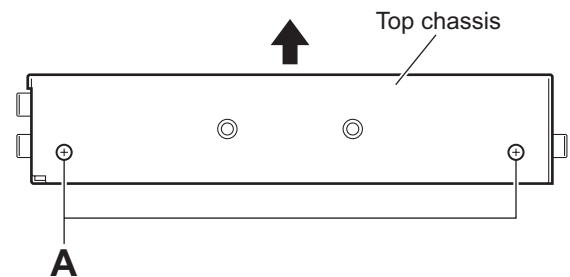


Fig.2

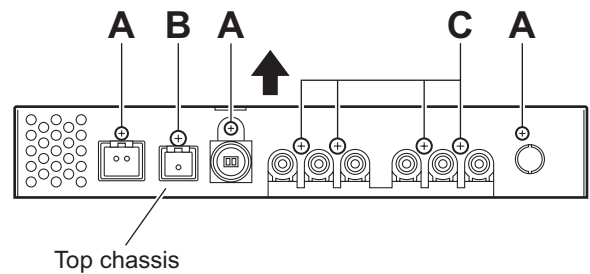


Fig.3

3.5.2 Removing the DSP board

(See Fig.4)

- Prior to performing the following procedures, remove the top chassis.
 - (1) Remove the four screws **D** attaching the DSP board.
 - (2) Disconnect the connector [CN901](#) from the hideaway board.

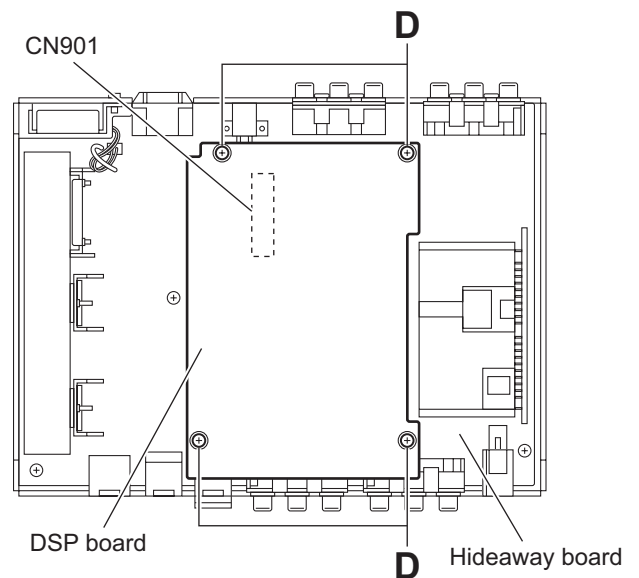


Fig.4

3.5.3 Removing the hideaway board (See Figs.5 and 6)

- Prior to performing the following procedures, remove the top chassis and DSP board.
 - (1) From the rear side of the main body, remove the four screws **E** attaching the hideaway board. (See Fig.5.)
 - (2) From the top side of the main body, disconnect the wire from the connector [CN601](#) on the hideaway board. (See Fig.6.)

Reference:

After connecting the wire to the connector [CN601](#), fix it with the wire holder as before. (See Fig.6.)

- (3) Remove the three screws **F** attaching the hideaway board. (See Fig.6.)
- (4) Take out the hideaway board from the bottom chassis assembly.

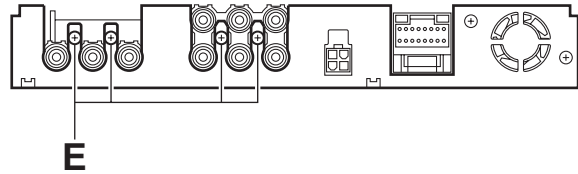


Fig.5

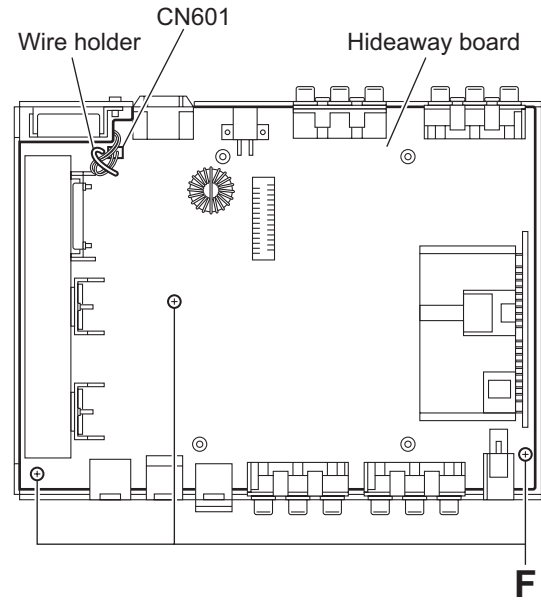


Fig.6

SECTION 4 ADJUSTMENT

4.1 Adjustment method

4.1.1 Test instruments required for adjustment

- (1) Digital oscilloscope (100MHz)
- (2) Jitter meter
- (3) Digital tester
- (4) Digital multi meter (For voltage measurement)
- (5) Electric voltmeter
- (6) Frequency counter
- (7) Tracking offset meter
- (8) Test Disc : VT501 or VT502
- (9) Extension studs : STDV001-3P
- (10) Extension cable : EXTAV70X-50PF

4.1.2 Standard measuring conditions

Power supply voltage	DC14.4V(11 to 16V)
Load impedance	4Ω(2 Speakers connection)
Line output	20kΩ

Caution:

Be sure to attach the heat sink and rear bracket onto the power amplifier IC and regulator IC respectively, before supply the power. If voltage is applied without attaching these parts, the power amplifier IC and regulator IC will be destroyed by heat.

4.1.3 Connection method

When confirming the mechanism movement, connect each unit shown in Fig.1.

Connection procedure

- (1) Connect the front panel assembly to the main board.
- (2) Attach the extension studs to the DVD mechanism assembly.
- (3) Connect the DVD mechanism assembly and the main board with a extension cable.
- (4) Connect the hideaway unit and the main board with an attached cable.
- (5) Fix the mechanism cover with tape in the top drive unit.
- (6) Hang the mechanism cover on the rear bracket.
- (7) Spread the wooden boards under the top drive unit in order to put it up shown in Fig.1.
- (8) Attach the display unit to the top drive unit.

4.1.4 Connecting diagram of extension cable

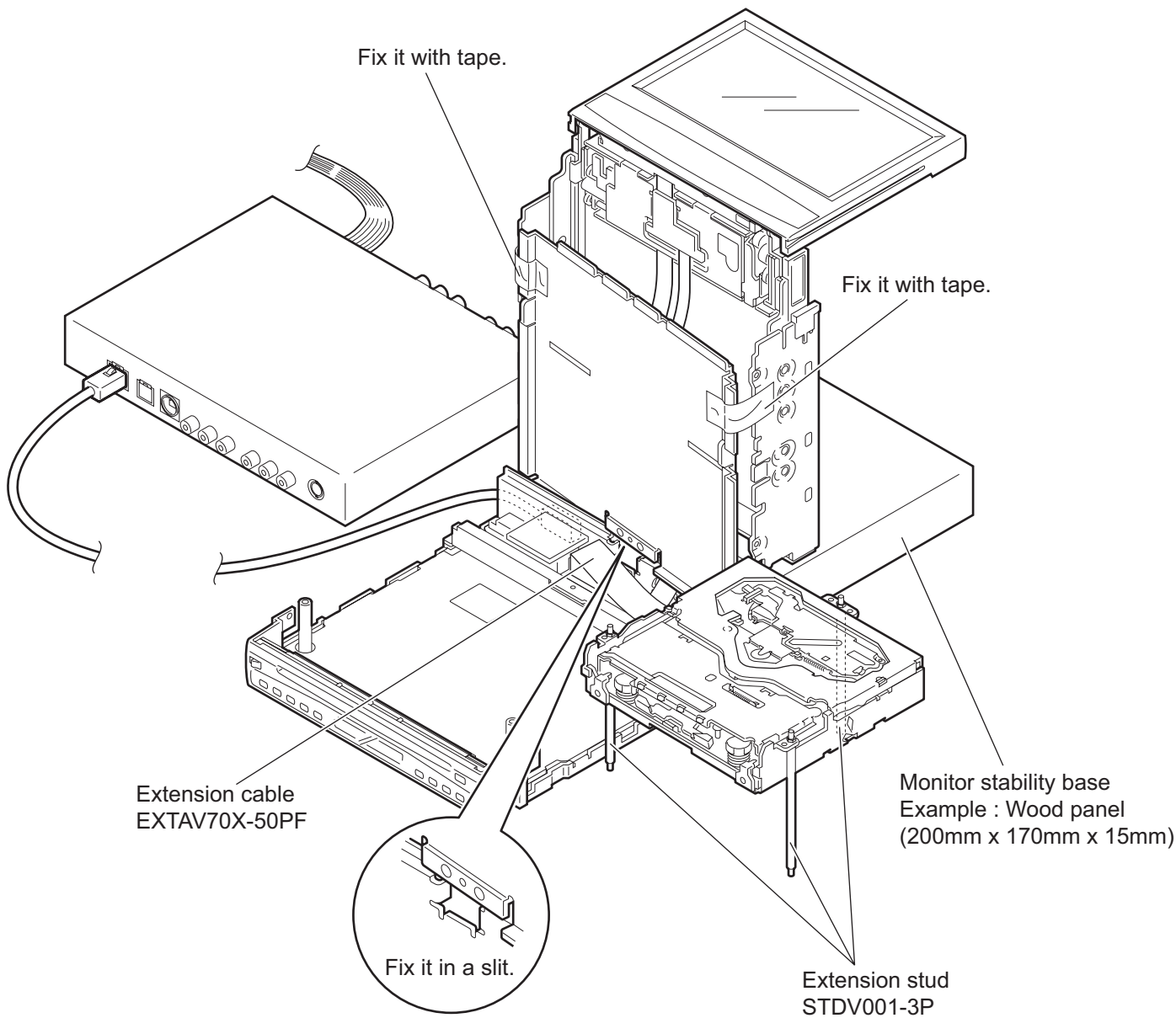


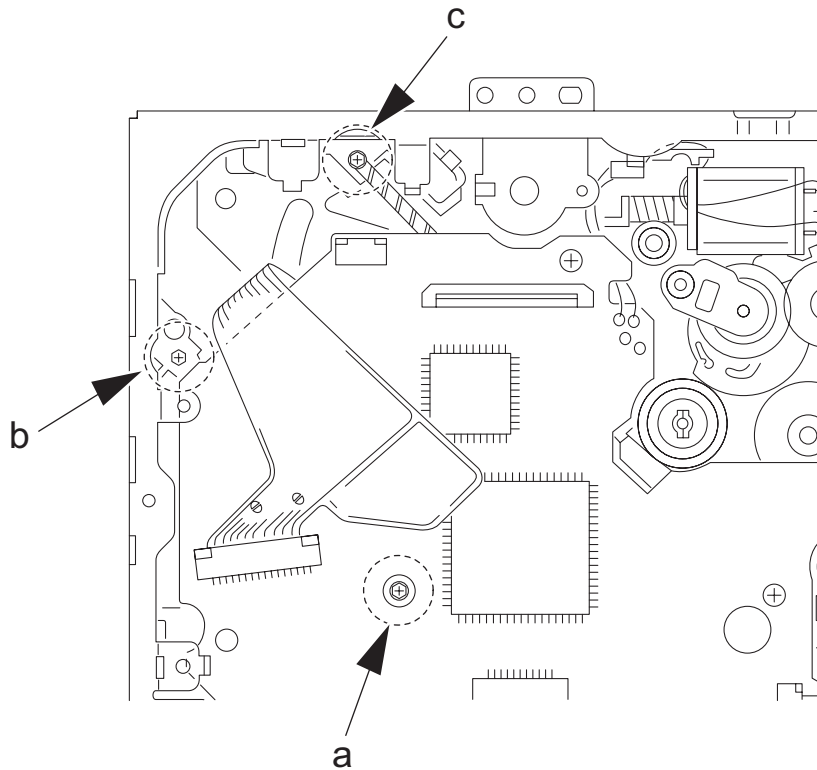
Fig.1

4.1.5 Adjustment method for jitter

After replacing the pickup, set the unit in the service mode to display a jitter value on the LCD. Confirm that the jitter value measured with a jitter meter is within 12.0% of the jitter value displayed on the LCD. If it is within 12.0%, then adjustment is not necessary. If the measured jitter value is outside the 12.0% tolerance range, perform the following adjustments.

4.1.5.1 Adjustment procedure

- (1) Connect each unit shown in Fig.1.
- (2) Set the unit to the service mode and display a jitter value (hex data) on the LCD.
- (3) Turn each of the screws a, b and c, by a half-turn per step, in the direction that reduces the jitter value in order to minimize it.
(Do not turn a screw more than a half turn at a time, but adjust the screws in the cycle of a → b → c → a.)
- (4) After completing the adjustment, secure the screws with screw lock paint.



Jitter value adjustment procedure (Pickup horizontal level adjustment relative to the DVD recording surface)(For the adjustment tool use a 3 mm wrench and not a screwdriver, this procedure will make the adjustment easier.)

3 mm wrench



4.1.6 Jitter value conversion table

Load the test disc and set the unit to the service mode. A jitter value converted to the hex value is displayed on the LCD. Refer to the corresponding decimal notation value shown in the following Jitter Conversion Table.

The adjustment is OK if the jitter value measured with a jitter meter is within 12.0% of the jitter value displayed on the LCD.

If the measured jitter value is outside the 12.0% tolerance range, adjust it to minimize the difference between the measured value and the displayed value.

Indicated on the LCD	JIT OUT	Jitter value (%)		Indicated on the LCD	JIT OUT	Jitter value (%)		Indicated on the LCD	JIT OUT	Jitter value (%)	
20A7	1957.98	4.7	3818	18C2	1856.9	8.5	3A11	10DC	1755.82	12.3	3C0A
2072	1955.32	4.8	3825	188C	1854.24	8.6	3A1E	10A7	1753.16	12.4	3C18
203D	1952.66	4.9	3832	1857	1851.58	8.7	3A2C	1072	1750.5	12.5	3C25
2008	1950	5.0	3840	1822	1848.92	8.8	3A39	103C	1747.84	12.6	3C32
1FD2	1947.34	5.1	384D	17ED	1846.26	8.9	3A46	1007	1745.18	12.7	3C40
1F9D	1944.68	5.2	385A	17B8	1843.6	9.0	3A54	FD2	1742.52	12.8	3C4D
1F68	1942.02	5.3	3867	1782	1840.94	9.1	3A61	F9D	1739.86	12.9	3C5A
1F33	1939.36	5.4	3875	174D	1838.28	9.2	3A6E	F68	1737.2	13.0	3C68
1EFE	1936.7	5.5	3882	1718	1835.62	9.3	3A7B	F32	1734.54	13.1	3C75
1EC8	1934.04	5.6	388F	16E3	1832.96	9.4	3A89	EFD	1731.88	13.2	3C82
1E93	1931.38	5.7	389D	16AE	1830.3	9.5	3A96	EC8	1729.22	13.3	3C8F
1E5E	1928.72	5.8	38AA	1678	1827.64	9.6	3AA3	E93	1726.56	13.4	3C9D
1E29	1926.06	5.9	38B7	1643	1824.98	9.7	3AB1	E5E	1723.9	13.5	3CAA
1DF4	1923.4	6.0	38C5	160E	1822.32	9.8	3ABE	E28	1721.24	13.6	3CB7
1DBE	1920.74	6.1	38D2	15D9	1819.66	9.9	3ACB	DF3	1718.58	13.7	3CC5
1D89	1918.08	6.2	38DF	15A4	1817	10.0	3AD9	DBE	1715.92	13.8	3CD2
1D54	1915.42	6.3	38EC	156E	1814.34	10.1	3AE6	D89	1713.26	13.9	3CDF
1D1F	1912.76	6.4	38FA	1539	1811.68	10.2	3AF3	D54	1710.6	14.0	3CED
1CEA	1910.1	6.5	3907	1504	1809.02	10.3	3B00	D1E	1707.94	14.1	3CFA
1CB4	1907.44	6.6	3914	14CF	1806.36	10.4	3B0E	CE9	1705.28	14.2	3D07
1C7F	1904.78	6.7	3922	149A	1803.7	10.5	3B1B	CB4	1702.62	14.3	3D14
1C4A	1902.12	6.8	392F	1464	1801.04	10.6	3B28	C7F	1699.96	14.4	3D22
1C15	1899.46	6.9	393C	142F	1798.38	10.7	3B36	C4A	1697.3	14.5	3D2F
1BE0	1896.8	7.0	394A	13FA	1795.72	10.8	3B43	C14	1694.64	14.6	3D3C
1BAA	1894.14	7.1	3957	13C5	1793.06	10.9	3B50	BDF	1691.98	14.7	3D4A
1B75	1891.48	7.2	3964	1390	1790.4	11.0	3B5E	BAA	1689.32	14.8	3D57
1B40	1888.82	7.3	3971	135A	1787.74	11.1	3B6B	B75	1686.66	14.9	3D64
1B0B	1886.16	7.4	397F	1325	1785.08	11.2	3B78	B40	1684	15.0	3D72
1AD6	1883.5	7.5	398C	12F0	1782.42	11.3	3B85	B0A	1681.34	15.1	3D7F
1AA0	1880.84	7.6	3999	12BB	1779.76	11.4	3B93	AD5	1678.68	15.2	3D8C
1A6B	1878.18	7.7	39A7	1286	1777.1	11.5	3BA0	AA0	1676.02	15.3	3D99
1A36	1875.52	7.8	39B4	1250	1774.44	11.6	3BAD	A6B	1673.36	15.4	3DA7
1A01	1872.86	7.9	39C1	121B	1771.78	11.7	3BBB	A36	1670.7	15.5	3DB4
19CC	1870.2	8.0	39CF	11E6	1769.12	11.8	3BC8	A00	1668.04	15.6	3DC1
1996	1867.54	8.1	39DC	11B1	1766.46	11.9	3BD5	9CB	1665.38	15.7	3DCF
1961	1864.88	8.2	39E9	117C	1763.8	12.0	3BE3	996	1662.72	15.8	3DDC
192C	1862.22	8.3	39F6	1146	1761.14	12.1	3BF0	961	1660.06	15.9	3DE9
18F7	1859.56	8.4	3A04	1111	1758.48	12.2	3BFD	92C	1657.4	16.0	3DF7

Calculation

Indicated on the LCD

1AD6

JIT OUT

1883.5

Jitter (%)

7.5

4.1.7 Monitor adjustment

Procedure:

- (1) Install a monitor to the main unit in the state that took off a display back panel.
- (2) Switch on the main unit.
- (3) According to the following chart, perform each adjustment.

Item	Adjustment points	Adjustment volume	Adjustment value
Free Run Frequency adjustment	TP431	VR451	15.73kHz
Touch Panel Sensor adjustment	TP425	VR426	DC1.1V~DV1.4V
Touch Panel Sensor adjustment	TP426	VR428	DC1.1V~DV1.4V
Touch Panel Sensor adjustment	TP427	VR423	DC1.1V~DV1.4V
Touch Panel Sensor adjustment	TP428	VR425	DC1.1V~DV1.4V
Screen right and left adjustment	Monitor screen	VR441	Adjust it so that right and left position becomes it centrally.

4.2 Service mode

4.2.1 Jigs and test instruments

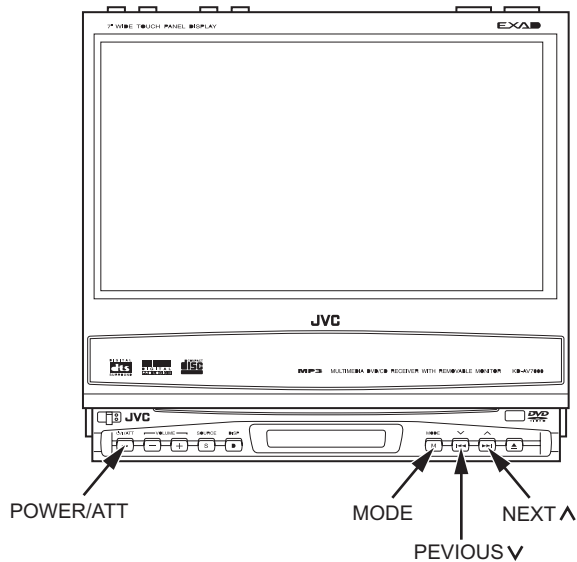
- (1) Test disc: VT-501, VT-502
- (2) NTSC signal generator (E version only)

4.2.2 Standard input/output conditions

Power supply voltage: C14.4V (11V to 16V)
Load impedance: 4 Ω (2 Speakers connection)
Line output: 20k Ω

4.2.3 Service mode setting procedure

(The DVD does not need to be loaded before starting the following procedure.)



1. Press a [POWER/ATT] button on a main unit and switch it on.
2. Press the [NEXT ^] button and [PREVIOUS v] button simultaneously while pressing the [POWER/ATT] button on the main unit.
3. This unit is set by a service mode and a service menu is displayed on the monitor..
- * Exchanging it operate a menu of a service mode with the [NEXT ^] button and [PREVIOUS v] button.
Operate choice of a menu with a [MODE] button.
4. The indication of monitor return to the normal menu by pressing the [POWER/ATT] button on the main unit.

4.2.4 Service mode menu

MENU

```
Service Mode Menu
MONITOR
TOUCH PANEL TEST
TOUCH PANEL CALIBRATION
AREA / REGION
VERSION
RUNNING MODE
CHECK MODE
EXPERT MODE
[NEXT] : UP [PREV] : DW [MODE] : ENT
```

* This menu scrolls it with the [NEXT▲]/[PREVIOUS▼] buttons.

AREA/REGION : Indication of destination and region

```
AREA / REGION
HIDE - AREA : aa
B / E - AREA : bb
B / E - REGION : cc
```

[MODE] : REGION CHANGE

aa ----- Destination of hideaway
bb ----- Destination of DVD unit
cc ----- Region of DVD unit

(Note)

REGION CHANGE not using it by service.

VERSION : Indication of microcomputer version

```
VERSION
SYS - VER : aaaa aa
F / E - VER : bb
B / E - VER : cc
SDK - VER : dddddddddddd
GUI - VER : eeee
MONITOR - VER : gggg
HIDE - VER : hhhh
TV - VER : kkkk
CDCH - VER : nnnn
```

aaaa aa ----- System control microcomputer version
and ROM correction version
bb ----- Front end microcomputer version
cc ----- Back end microcomputer version
dddddddddddddd ----- DVD back end SKD version
eeee ----- GUI version
gggg ----- Monitor version
hhhh ----- Hideaway version
kkkk ----- TV tuner version (In connection)
nnnn ----- CD changer version (In connection)

RUNNING MODE (For use in various running tests)

(Note)

This mode not using it by service.

CHECK MODE : Check mode for DVD unit

```
CHECK MODE
CURRENT : ****
JITTER : ####
EJECT
CLOSE
NOMAL PLAY
OUT - TRACKING OFF
IN - TRACKING OFF
CD - LASER ON
[NEXT] : UP [PREV] : DW [MODE] : ENT
```

* This menu scrolls it with the [NEXT▲]/[PREVIOUS▼] buttons.

* A thing without CURRENT/JITTER indication is space.

* See "4.2.5 DVD unit check mode" for details.

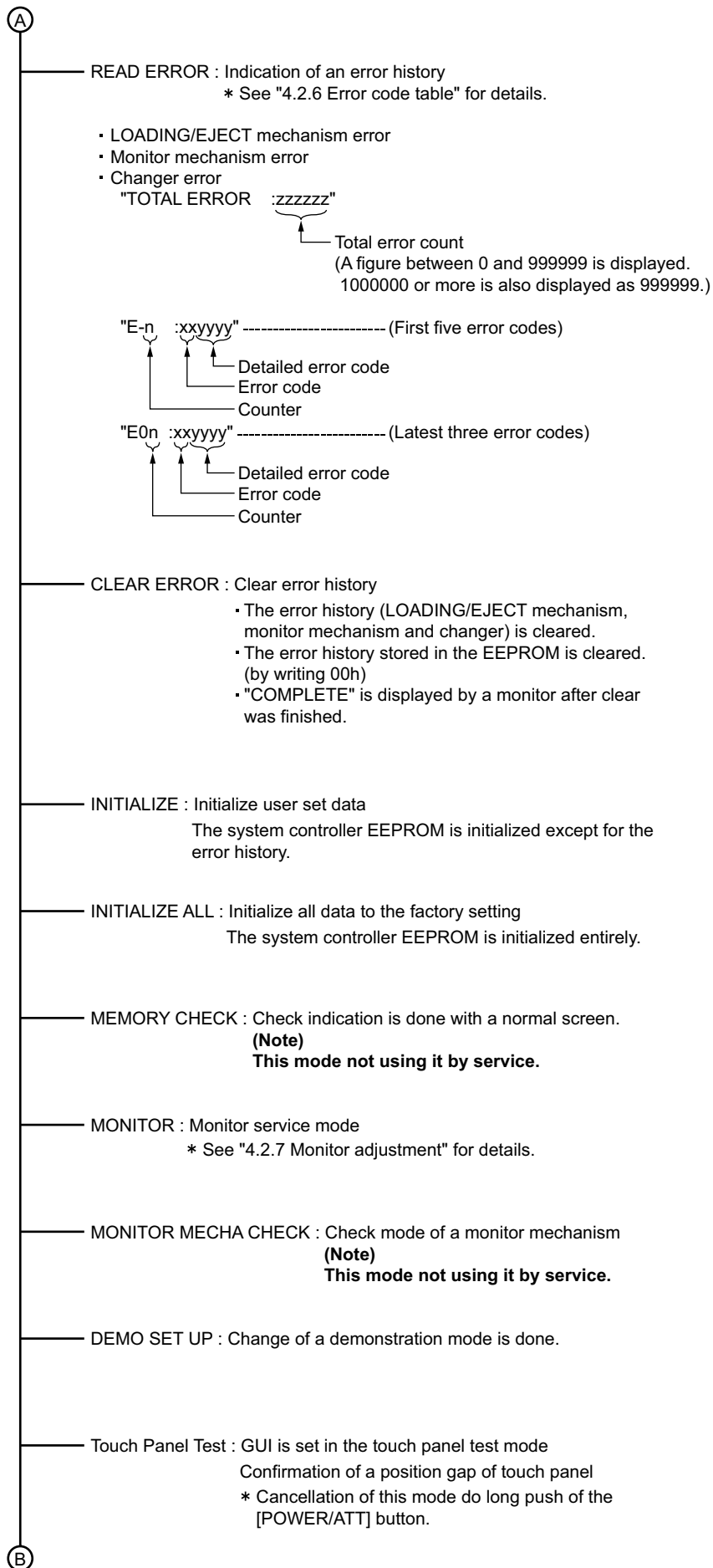
EXPERT MODE (DVD unit expert mode)

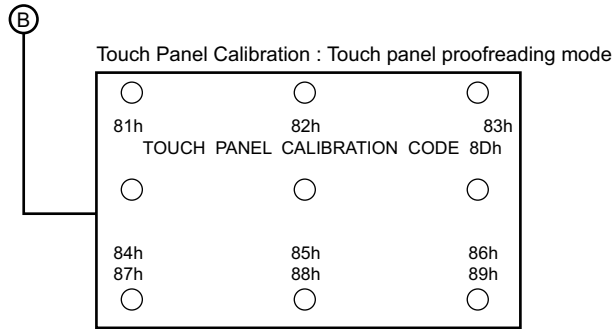
(Note)

This mode not using it by service.

TEMPERATURE : Data in the temperature sensor in the system controller/hideaway
is read every 5 seconds and displayed in hex numbers.

(A)





- * See "4.2.8 Touch panel manual operation proofreading procedure" for details.
- Push ○ with a finger from 81h in turn.
- After the proofreading end, push the [PREVIOUS ▼] button in order to switch off the panel.
- An effective key in a proofreading mode
 - [NEXT ▲] : 1. Monitor power supply ON
2. Touch panel proofreading mode ON
 - [PREVIOUS ▼] : 1. Touch panel proofreading mode OFF
2. Monitor power supply OFF
 - [POWER/ATT] : Power supply OFF (Proofreading mode cancellation)

4.2.5 DVD unit check mode

No.	Key	DVD unit operation	Remark
1	NORMAL PLAY	Disc startup and through playback (Playback starts from the start position)	
2	OUT TRACKING	Tracking off the outermost position of CD	For EF phase error
3	IN TRACKING OFF	Tracking off the innermost position of CD	For EF phase error
4	CD-LASER ON	CD_LD lights and laser current is displayed	**** : Laser current value #### : Jitter value
5	DVD-LASER ON	DVD_LD lights and laser current is displayed	**** : Laser current value #### : Jitter value
6	DVDx1 JITTER MODE	DVD x1 jitter measuring mode (for use in mechanism adjustment)	**** : Laser current value #### : Jitter value
7	EEPROM DATA+	Contents of EEPROM used by mechanism (0x00 - 0xFF) displayed (FWD)	**** : EEPROM address #### : EEPROM contents
8	EEPROM DATA-	Contents of EEPROM used by mechanism (0x00 - 0xFF) displayed	**** : EEPROM address #### : EEPROM contents
9	EEPROM DATA CLEAR	Initialization of EEPROM contents used by the mechanism	
10	DVD-SL	Search & jitter measurement of the specified position of DVD-SL	**** : 0x00-0x02 (Position measured with VT-502) #### : Jitter value
11	DVD-DL (PARALLEL)	Search & jitter measurement of the specified position of parallel disc of the DVD-DL	**** : 0x00-0x06 (Position measured with VT-501) #### : Jitter value
12	DVD-DL (OPPOSITE)	Search & jitter measurement of the specified position of opposite disc of DVD-DL	**** : 0x00-0x06 (Position measured with VT-501) #### : Jitter value
13	PLAY	Disc playback	**** : Laser current value #### : Jitter value
14	STOP	Disc stopped & LD-OFF	
15	EJECT	OPEN	
16	CLOSE	CLOSE	

- * Indication is displayed in hex numbers.
- The check mode can be exited by pressing the [POWER] key.

4.2.6 Error code table

(1) Error code table of LOADING/EJECT mechanism error

Error code (1 byte)

First byte	[01] Eject error [09] Loading error
------------	--

Detailed error codes (2 bytes)

First byte	Higher 4 bits ▪ ▪ ▪ ▪ Route No. (Process of error occurrence) → Refer to charts 1.1 and 1.2. Lower 4 bits ▪ ▪ ▪ ▪ Error type [1] Time out [2] Switch status defectiveness [3] Swinging error
Second byte	bit7 ▪ ▪ ▪ ▪ Disc type (0: 12 cm. 1: 8 cm) bit6,5 ▪ ▪ ▪ Fixed at 0 bit4 ▪ ▪ ▪ ▪ SW1 status bit3 ▪ ▪ ▪ ▪ SW2 status bit2 ▪ ▪ ▪ ▪ SW3 status bit1 ▪ ▪ ▪ ▪ SW4 status bit0 ▪ ▪ ▪ ▪ REST SW status

(Example) When a switch status error occurs during loading route 3 and the switch status is L/L/H/H/H (00111B = 07H), the error code and detailed error code become: [09 3207].

Route No. (EJECT route No.)	SW1/2/3/4	[Rest SW]	Loading	Eject	Reload	
-	1,1,1,1	[0]	No Disc	No Disc	Disc push in	
1(2)	0,1,1,1	[0]	Disc insert detection	↑		
1(2)	0,0,1,1	[0]	↓	Eject completion	↙	
2(2)	0,0,0,1	[0]			↑	Reload start
2(2)	0,0,1,1	[0]				
2(2)	0,1,1,1	[0]				
2(2)	1,1,1,1	[0]				
3(1)	1,1,1,0	[0]				
3(1)	1,1,1,0	[1]	Load completion	Eject start	Load completion	

Chart 1.1 12cm Disc switch status transition

Route No. (EJECT route No.)	SW1/2/3/4	[Rest SW]	Loading*	Eject	Reload
-	1,1,1,1	[0]	No Disc	No Disc	Disc push in
1(2)	0,1,1,1	[0]	Disc insert detection	Eject completion	↙
1(2)	0,0,1,1	[0]	↓	↑	Reload start
2(2)	0,1,1,1	[0]			
2(2)	1,1,1,1	[0]			
3(1)	1,1,1,0	[0]			
3(1)	1,1,1,0	[1]	Load completion	Eject start	Load completion

* Transition in the center loading (Similar to 12cm in the side loading)

Chart 1.2 8cm Disc switch status transition

(2) Error code table of monitor mechanism error

Error code (1 byte)

First byte	[01] CLOSE error [09] OPEN error [0A] SLIDE error
------------	---

Detailed error codes (2 bytes)

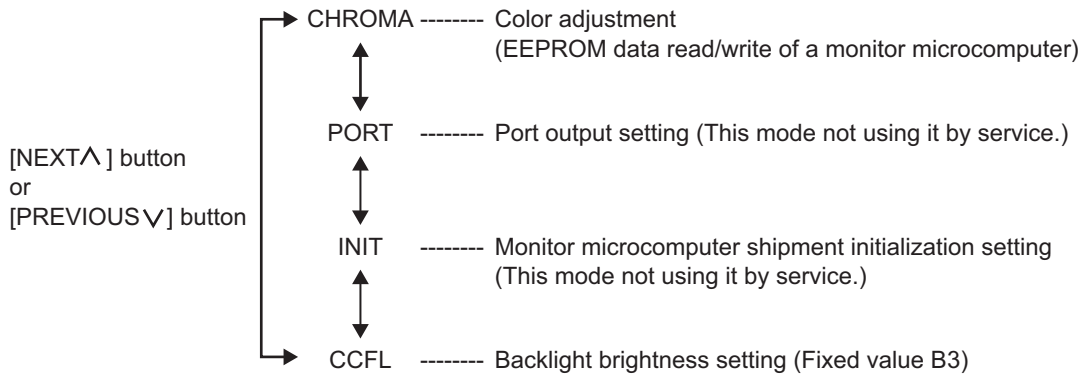
First byte	Higher 4 bits ▪ ▪ ▪ Route No. (Process of error occurrence) Lower 4 bits ▪ ▪ ▪ Error type [1] Time out [2] Pulse nothing [3] Angle change nothing [4] Switch status defectiveness
Second byte	Higher 4 bits ▪ ▪ ▪ Motor status (Motor output status in an error) Bit7 ▪ ▪ ▪ 0=Off/1=On Bit6 ▪ ▪ ▪ 0=Slide/1=Angle Bit5 ▪ ▪ ▪ 0=Minus/1=Plus Bit4 ▪ ▪ ▪ Fixed at 0 Lower 4 bits ▪ ▪ ▪ SW status Bit3 ▪ ▪ ▪ MO_DET Bit2 ▪ ▪ ▪ Bit1 ▪ ▪ ▪ ANGSW Bit0 ▪ ▪ ▪ CLSW

(3) Error code table of changer

Outbreak condition		Details	Error code	Detailed error code
Tray extension error	Tray-in switch time out (Tray-in switch Low,Tray-out switch High)	Tray motor does not work	03	0011
	Tray-out switch time out (Tray-in switch High,Tray-out switch High)	Tray stops on the way	03	0012
	Tray-in switch time out (Tray-in switch Low,Tray-out switch Low)	NG of Tray-in SW or other defect	03	0013
	MAG-in switch Low to high	Magazine removed when tray partly extend	03	0014
Tray retraction error	Tray-in switch time out (Tray-in switch High,Tray-out switch Low)	Tray motor does not work	03	0016
	Tray-out switch time out (Tray-in switch High,Tray-out switch High)	Tray stops on the way	03	0017
	Tray-in switch time out (Tray-in switch Low,Tray-out switch Low)	NG of Tray-in SW or other defect	03	0018
	MAG-in switch Low to high	Magazine removed when tray partly extend	03	0019
Lifter raise error	WAIT position time out	Position motor does not work	02	0021
	WAIT position time out	Position not stable in fine adjust mode	02	0022
	WAIT position time out	Other fault	02	0023
Lifter lower error	WAIT position time out	Position motor does not work	02	0026
	WAIT position time out	Position not stable in fine adjust mode	02	0027
	WAIT position time out	Other fault	02	0028
Chuck error	PLAY position time out	Position motor does not work	02	0031
	PLAY position time out	Position not stable in fine adjust mode	02	0032
	PLAY position time out	Other fault	02	0033
Unchuck error	WAIT position time out	Position motor does not work	02	0036
	WAIT position time out	Position not stable in fine adjust mode	02	0037
	WAIT position time out	Other fault	02	0038
Eject error	EJECT position time out	Position motor does not work	02	0041
	EJECT position time out	Eject position not attained	02	0042
	MAG-in switch time out	Magazine not ejected	02	0043
Initialize error	Mechanism switch time out	Both Tray-in and Tray-out Low	03	0046
	Absolute position time out	Not stable at absolute position	03	0047

4.2.7 Monitor adjustment

1. Switch on the main unit and insert a test disc (VT-501 or VT-502).
Play a 3TR(100% color bar) of the test disc and pause it.
2. In a state of procedure 1, set the main unit in a service mode. (See "5.1.3 Service mode setting procedure".)
3. Color bar is displayed to the monitor by pushing [MODE] button after having done select of [MONITOR] of the service menu with the [NEXT^] or [PREVIOUS v] buttons, and the following indication goes in mini-LCD of the main unit.



4. Select [CHROMA] and press the [MODE] button.
An address value and data value are displayed on the mini-LCD. (0 **)
Press the center of the monitor to turn off the GUI screen.
5. Change data of each address with the [VOL+]/[VOL -] button while observing the color bar (Data value flashes on and off in change operation.) and press the [MODE] button in order to write in data. (Adjust the fixed value in the value of a following table. Besides it, set it in reference value and make a fine adjustment while observing the monitor.)

No.	Address	Chrominance data	Minimum value	Maximum value	Fixed value	Reference value
1	0	INPUT MODE/SW	00	3F		1C
2	1	PICTURE	00	FF		2F
3	2	COLOR	00	3F		66
4	3	PHASE	00	FF		22
5	4	CONTRAST	00	FF		50
6	5	BRIGHT	00	FF	A5	
7	6	GAMMA 0	00	FF	3A	
8	7	GAMMA 1	00	FF	08	
9	8	OUT LIMIT	00	1F	1F	
10	9	RGB AMPLITUDE	00	FF	7C	
11	A	SUB-BRIGHT R	00	FF		7F
12	B	SUB-BRIGHT B	00	FF		60
13	C	COM AMPLITUDE	00	FF		D2
14	D	COM BLANK LEV	00	1F	11	
15	E	DAC OUT	00	FF		86
16	F	TINT	00	FF		87

- * Cancellation of a test mode
Push the [STANDBY] key on the main unit.

4.2.8 Touch panel manual operation proofreading procedure

Procedure 1 Proofreading

- (1) Set the main unit in a touch panel proofreading mode.
- (2) Push the center of the figure of a cross in a circle of green (81h to 89h) on the panel in turn.
 - a) Push for each 3 points of the upper part of 81h and 82h and 83h with a thumb of the right hand (or, left hand) on the panel from a direction.
 - b) Push 84h with a thumb of the left hand from the left course.
 - c) Push 85h with the middle finger of the right hand or the middle finger of the left hand from center direction.
 - d) Push 86h with a thumb of the right hand from the right course.
 - e) Push for each 3 points of the lower part of 87h and 88h and 89h with a thumb of the right hand (or, left hand) under the panel from a direction.
- (3) When proofreading was completed normally, OK is displayed.
- (4) Repeat since a beginning when NG was displayed.
- (5) After proofreading completion, turn off the power supply and confirm it again.

Procedure 2 Confirmation

- (1) Switch on the main unit and turn the main unit into normal movement.
- (2) Push a screen key of GUI and set the main unit in the mode that "NAME" is displayed in the right bottom.
- (3) Push "NAME" in order to let a screen display a keyboard of British number and push all keys in order to confirm misrecognition.
- (4) When misrecognition occurred, proofread it since a beginning.

4.2.9 The initialization method of a top drive unit

- (1) When top drive unit is exchanged.
- (2) When exchange or gear is shifted for gear by repair of top drive unit.
- (3) When Monitor Does Not Open and Close (when it Moves Manually Forcibly)

Please initialize at the above time.

Initialization procedure

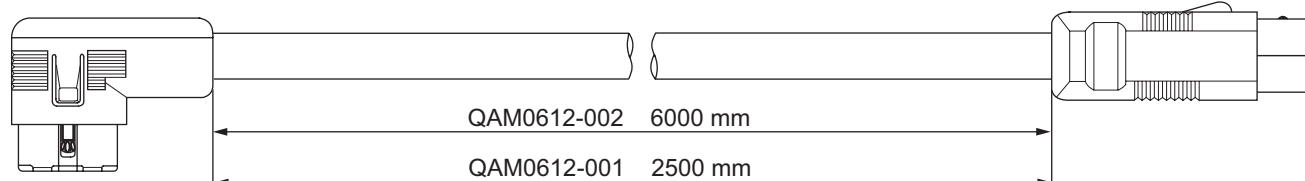
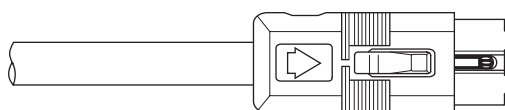
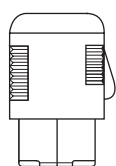
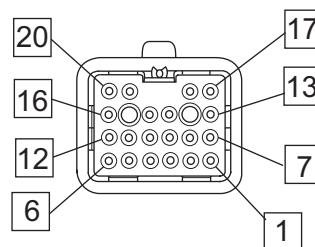
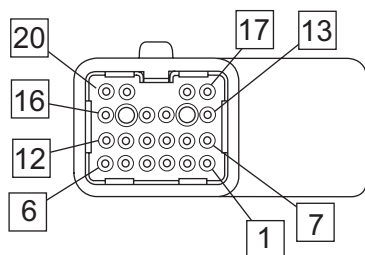
T1 button is detached after detaching reset button which pushes reset button, pushing T1 button.

* Even if it initializes by 3., when not being repaired, repair of a top drive unit and exchange are required.

SECTION 5

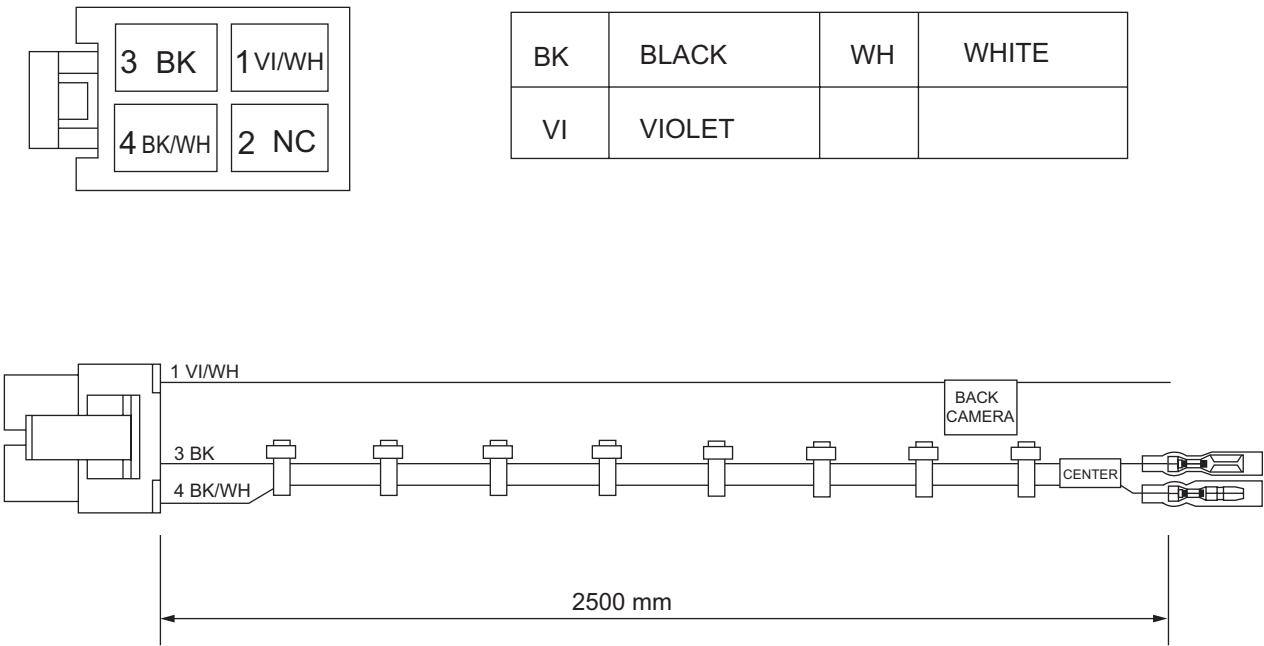
TROUBLESHOOTING

5.1 AV bus cable between main unit and hideaway unit

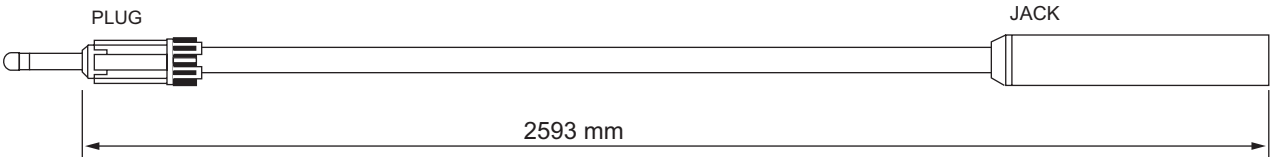


1	RESET	Black	11	NC	Pink
2	P-ON	White	12	HPA-GND	Black(Tube)
3	SDI	Light green	13	SPDIFGND	Black(Tube)
4	SDO	Brown	14	DVDAR	Red
5	GND	Yellow	15	DVDAL	Green
6	HPAL	Blue	16	HPAR	Purple
7	SPDIF	Natural	17	VIDEO-OUT	Natural
8	NC	Orange	18	VIDEO-GND	Black(Tube)
9	DVDAR-GND	Black(Tube)	19	VIDEO-IN	Natural
10	DVDAL-GND	Black(Tube)	20	VIDEO-GND	Black(Tube)

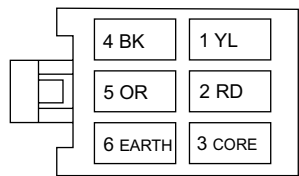
5.2 Center speaker / rear camera cord



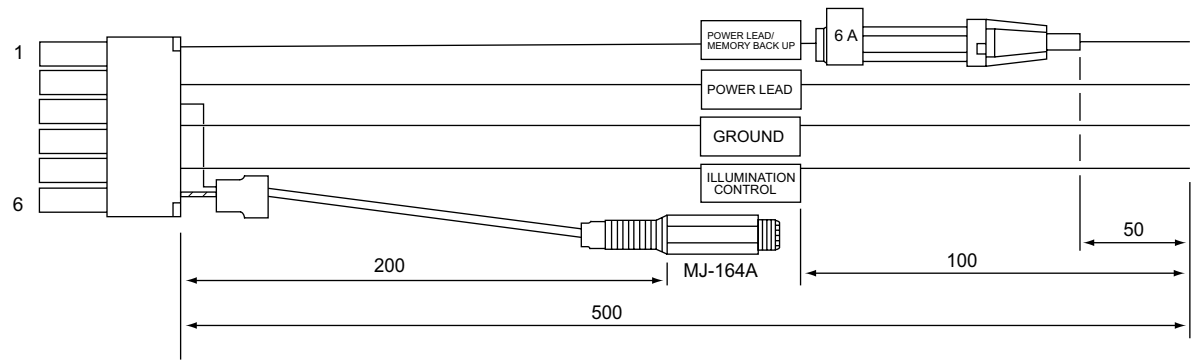
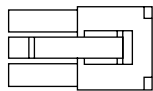
5.3 Extention aerial cord



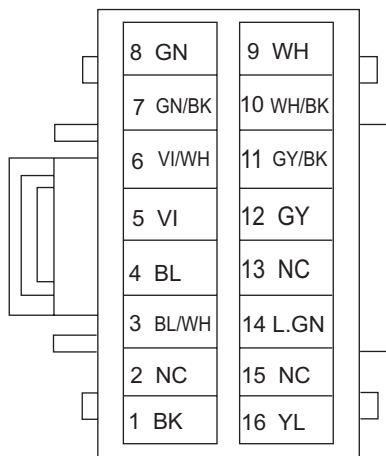
5.4 Power cord for main unit



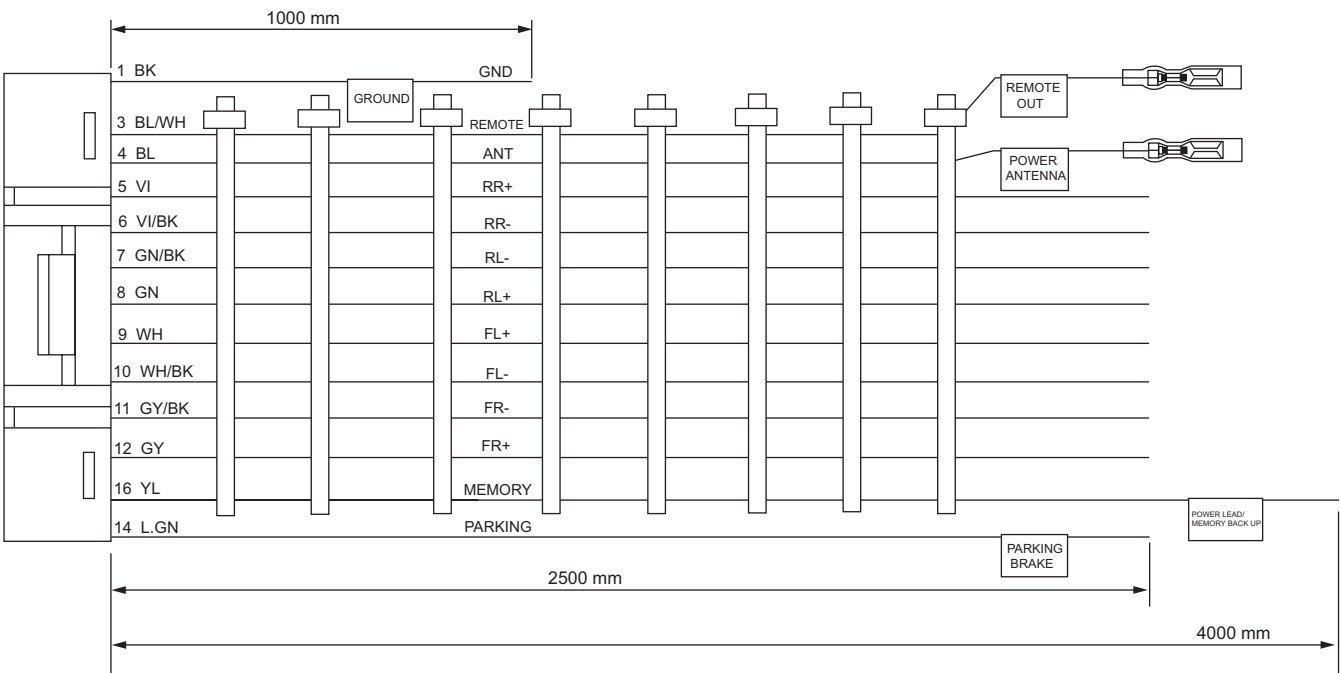
BK	Black	YL	Yellow
OR	Orange	RD	Red
EARTH	Earth	CORE	Core



5.5 Power cord for hideway unit



BK	Black	GN	Green
BL	Blue	VI	Violet
WH	White	GY	Gray
L.GN	Light Green	YL	Yellow



MEMORY	Memory back up battery+
GND	Ground
REMOTE	Remote out
PARKING	Parking brake
ANT	Power antenna
RR	Rear Right
FR	Front Right
RL	Rear Left
FL	Front Left



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