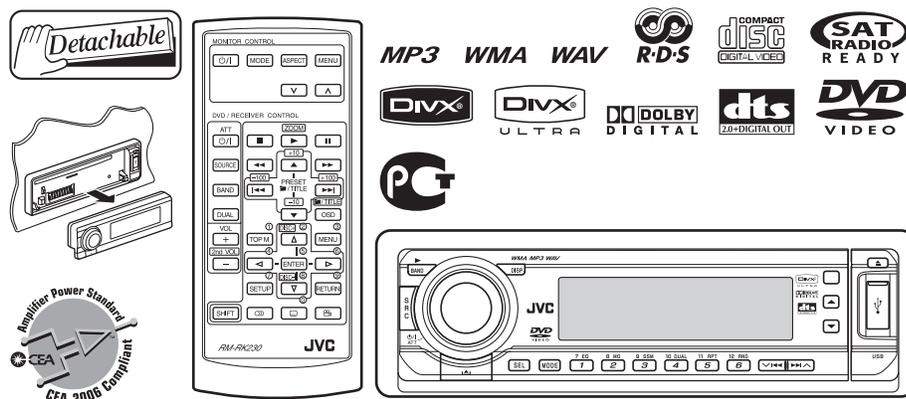


JVC

SERVICE MANUAL

DVD/CD RECEIVER

**KD-ADV6270J, KD-DV6200J, KD-DV6201E,
KD-DV6201EU, KD-DV6202E, KD-DV6202EU,
KD-DV7205U, KD-DV7205UN, KD-DV7205UT,
KD-DV7205A, KD-DV7206U, KD-DV7206UN,
KD-DV7206UT, KD-DV7206A, KD-DV6207EE**



Lead free solder used in the board (material : Sn-Ag-Cu, melting point : 219 Centigrade)

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SPECIFICATION

KD-ADV6270/KD-DV6200

AUDIO AMPLIFIER SECTION		
Power Output	20 W RMS × 4 Channels 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	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
	Level	±10 dB
Audio Output Level	Digital (DIGITAL OUT: Optical)	Signal wave length : 660 nm Output level : -21 dBm to -15 dBm
	Line-Out Level/Impedance	KD-ADV6270 : 5.0 V/20 kΩ load (full scale) KD-DV6200 : 2.5 V/20 kΩ load (full scale)
	Output Impedance	1 kΩ
Subwoofer-out Level/Impedance	KD-ADV6270 : 2.5 V/20 kΩ load (full scale) KD-DV6200 : 2.0 V/20 kΩ load (full scale)	
Color system	NTSC	
Video Output (composite)	1 Vp-p/75 Ω	
Other Terminals	LINE IN, CD changer, 2nd AUDIO OUT	
TUNER SECTION		
Frequency Range	FM	87.5 MHz to 107.9 MHz (with channel interval set to 100 kHz or 200 kHz) 87.5 MHz to 108.0 MHz (with channel interval set to 50 kHz)
	AM	530 kHz to 1 710 kHz (with channel interval set to 10 kHz) 531 kHz to 1 602 kHz (with channel interval set to 9 kHz)
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 μV/75 Ω)
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	35 dB
AM Tuner	Sensitivity/Selectivity	20 μV/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 22 000 Hz
	CD, fs=44.1 kHz	16 Hz to 20 000 Hz
Dynamic Range	96 dB	
Signal-to-Noise Ratio	98 dB	
Wow and Flutter	Less than measurable limit	
DivX	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
MPEG Video	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 384 kbps
	Sampling Frequency	32 kHz, 44.1 kHz, 48 kHz
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
WMA	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
WAV	Quantization Bit Rate	16 bit
	Sampling Frequency	44.1 kHz
USB MEMORY		
Format	FAT 12/16/32	
Storage	Less than 4 GB (1 partition type)	
Playable Audio Format	MP3/WMA	
Max. Current	Less than 500 mA	
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 48 kHz, 44.1 kHz, 32 kHz MPEG-2 : 24 kHz, 22.05 kHz, 16 kHz MPEG-2.5 : 12 kHz, 11.025 kHz, 8 kHz
WMA	Bit Rate	5 kbps - 320 kbps
	Sampling Frequency	8 kHz - 48 kHz
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)	
Dimensions (W × H × D)	Installation Size (approx.)	182 mm × 52 mm × 158 mm (7-3/16" × 2-1/16" × 6-1/4")
	Panel Size (approx.)	188 mm × 58 mm × 11 mm (7-7/16" × 2-5/16" × 7/16")
Mass (approx.)	1.7 kg (3.3 lbs) (excluding accessories)	

KD-DV6201/KD-DV6202

AUDIO AMPLIFIER SECTION		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 Ω, 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion
Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
Equalizer Control Range	Frequencies	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
	Level	±10 dB
Signal to Noise Ratio		70 dB
Audio Output Level	Digital (DIGITAL OUT: Optical)	Signal wave length : 660 nm Output level : -21 dBm to -15 dBm
	Line-Out Level/Impedance	2.5 V/20 kΩ load (full scale)
	Output Impedance	1 kΩ
Subwoofer-out Level/Impedance		2.0 V/20 kΩ load (full scale)
Color system		PAL
Video Output (composite)		1 V _{p-p} /75 Ω
Other Terminals		LINE IN, CD changer, 2nd AUDIO OUT
TUNER SECTION		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	(MW) 522 kHz to 1 620 kHz (LW) 144 kHz to 279 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 μV/75 Ω)
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
MW Tuner	Sensitivity/Selectivity	20 μV/35 dB
LW Tuner	Sensitivity	50 μV
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 22 000 Hz
	CD, fs=44.1 kHz	16 Hz to 20 000 Hz
Dynamic Range		96 dB
Signal-to-Noise Ratio		98 dB
Wow and Flutter		Less than measurable limit
DivX	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
MPEG Video	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 384 kbps Sampling Frequency : 32 kHz, 44.1 kHz, 48 kHz
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
WMA	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
WAV	Quantization Bit Rate	16 bit
	Sampling Frequency	44.1 kHz
USB MEMORY		
Format		FAT 12/16/32
Storage		Less than 4 GB (1 partition type)
Playable Audio Format		MP3/WMA
Max. Current		Less than 500 mA
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 48 kHz, 44.1 kHz, 32 kHz MPEG-2 : 24 kHz, 22.05 kHz, 16 kHz MPEG-2.5 : 12 kHz, 11.025 kHz, 8 kHz
WMA	Bit Rate	5 kbps - 320 kbps
	Sampling Frequency	8 kHz - 48 kHz
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
Dimensions (W × H × D)	Installation Size (approx.)	182 mm × 52 mm × 158 mm
	Panel Size (approx.)	188 mm × 58 mm × 11 mm
Mass (approx.)		1.7 kg (excluding accessories)

KD-DV7205/KD-DV7206

AUDIO AMPLIFIER SECTION		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 Ω, 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion
Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
Equalizer Control Range	Frequencies	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
	Level	±10 dB
Signal to Noise Ratio		70 dB
Audio Output Level	Digital (DIGITAL OUT: Optical)	Signal wave length : 660 nm Output level : -21 dBm to -15 dBm
	Line-Out Level/Impedance	2.5 V/20 kΩ load (full scale)
	Output Impedance	1 kΩ
Subwoofer-out Level/Impedance		2.0 V/20 kΩ load (full scale)
Color system		PAL/NTSC
Video Output (composite)		1 V _{p-p} /75 Ω
Other Terminals		LINE IN, CD changer, 2nd AUDIO OUT
TUNER SECTION		
Frequency Range	FM	87.5 MHz to 108.0 MHz
	AM	531 kHz to 1 602 kHz
FM Tuner	Usable Sensitivity	11.3 dBf (1.0 μV/75 Ω)
	50 dB Quieting Sensitivity	16.3 dBf (1.8 μV/75 Ω)
	Alternate Channel Selectivity (400 kHz)	65 dB
	Frequency Response	40 Hz to 15 000 Hz
	Stereo Separation	30 dB
AM Tuner	Sensitivity/Selectivity	20 μV/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 22 000 Hz
	CD, fs=44.1 kHz	16 Hz to 20 000 Hz
Dynamic Range		96 dB
Signal-to-Noise Ratio		98 dB
Wow and Flutter		Less than measurable limit
DivX	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
MPEG Video	Video : Max. Resolution	720 × 480 pixels (30 fps) 720 × 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 384 kbps Sampling Frequency : 32 kHz, 44.1 kHz, 48 kHz
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
WMA	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
WAV	Quantization Bit Rate	16 bit
	Sampling Frequency	44.1 kHz
USB MEMORY		
Format		FAT 12/16/32
Storage		Less than 4 GB (1 partition type)
Playable Audio Format		MP3/WMA
Max. Current		Less than 500 mA
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 48 kHz, 44.1 kHz, 32 kHz MPEG-2 : 24 kHz, 22.05 kHz, 16 kHz MPEG-2.5 : 12 kHz, 11.025 kHz, 8 kHz
WMA	Bit Rate	5 kbps - 320 kbps
	Sampling Frequency	8 kHz - 48 kHz
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
Dimensions (W × H × D)	Installation Size (approx.)	182 mm × 52 mm × 158 mm
	Panel Size (approx.)	188 mm × 58 mm × 11 mm
Mass (approx.)		1.7 kg (excluding accessories)

KD-DV6207

AUDIO AMPLIFIER SECTION		
Maximum Power Output	Front/Rear	50 W per channel
Continuous Power Output (RMS)	Front/Rear	19 W per channel into 4 Ω , 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion
Load Impedance		4 Ω (4 Ω to 8 Ω allowance)
Equalizer Control Range	Frequencies	60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz
	Level	± 10 dB
Signal to Noise Ratio		70 dB
Audio Output Level	Digital (DIGITAL OUT: Optical)	Signal wave length : 660 nm Output level : -21 dBm to -15 dBm
	Line-Out Level/Impedance	2.5 V/20 k Ω load (full scale)
	Output Impedance	1 k Ω
Subwoofer-out Level/Impedance		2.0 V/20 k Ω load (full scale)
Color system		PAL
Video Output (composite)		1 V _{p-p} /75 Ω
Other Terminals		LINE IN, CD changer, 2nd AUDIO OUT
TUNER SECTION		
Frequency Range	FM1 /FM2	87.5 MHz to 108.0 MHz
	FM3	65.00 MHz to 74.00 MHz
	AM	(MW) 522 kHz to 1 620 kHz (LW) 144 kHz to 279 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	30 dB
MW Tuner	Sensitivity/Selectivity	20 μ V/35 dB
LW Tuner	Sensitivity	50 μ V
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 22 000 Hz
	CD, fs=44.1 kHz	16 Hz to 20 000 Hz
Dynamic Range		96 dB
Signal-to-Noise Ratio		98 dB
Wow and Flutter		Less than measurable limit
DivX	Video : Max. Resolution	720 \times 480 pixels (30 fps) 720 \times 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
MPEG Video	Video : Max. Resolution	720 \times 480 pixels (30 fps) 720 \times 576 pixels (25 fps)
	Audio	Bit Rate : 32 kbps - 384 kbps
	Sampling Frequency	32 kHz, 44.1 kHz, 48 kHz
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 32 kHz, 44.1 kHz, 48 kHz MPEG-2 : 16 kHz, 22.05 kHz, 24 kHz
WMA	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	22.05 kHz, 32 kHz, 44.1 kHz, 48 kHz
WAV	Quantization Bit Rate	16 bit
	Sampling Frequency	44.1 kHz
USB MEMORY		
Format		FAT 12/16/32
Storage		Less than 4 GB (1 partition type)
Playable Audio Format		MP3/WMA
Max. Current		Less than 500 mA
MP3	Bit Rate	32 kbps - 320 kbps
	Sampling Frequency	MPEG-1 : 48 kHz, 44.1 kHz, 32 kHz MPEG-2 : 24 kHz, 22.05 kHz, 16 kHz MPEG-2.5 : 12 kHz, 11.025 kHz, 8 kHz
WMA	Bit Rate	5 kbps - 320 kbps
	Sampling Frequency	8 kHz - 48 kHz
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
Dimensions (W \times H \times D)	Installation Size (approx.)	182 mm \times 52 mm \times 158 mm
	Panel Size (approx.)	188 mm \times 58 mm \times 11 mm
Mass (approx.)		1.7 kg (excluding accessories)

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 laser products.

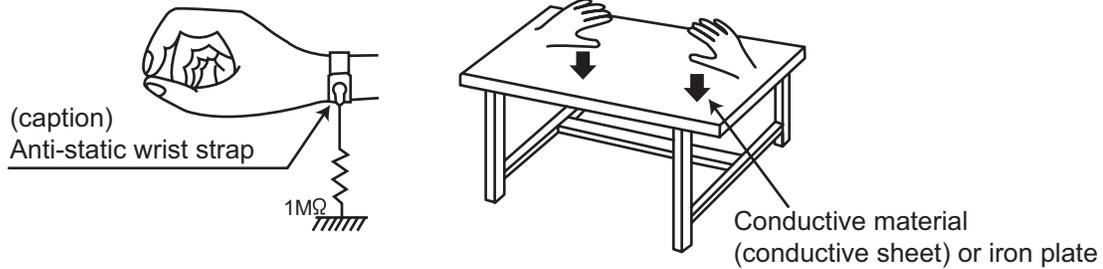
Be careful to use proper grounding in the area where repairs are being performed.

(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.

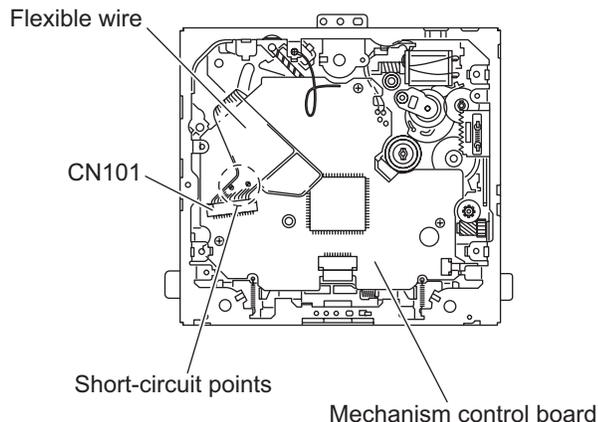
1.3 Handling the traverse unit (optical pickup)

- (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 pickup unit.**

- Apply solder to the short land before the flexible wire is disconnected from the connector on the pickup unit. (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 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. (e)

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

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

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

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 front panel assembly (See Fig.1)

- (1) Push the control panel release button in the lower left part of the front panel assembly and remove the front panel assembly.
- (2) Take out the front panel assembly.

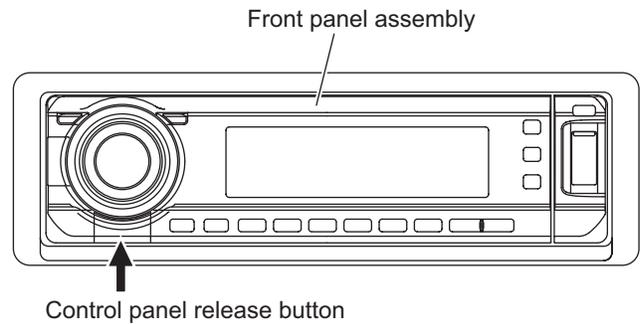


Fig.1

3.1.2 Removing the bottom cover (See Fig.2)

- (1) Turn the main body up side down.
- (2) Insert a screwdriver under the joints to release the joints **a** on the left side, joints **b** on the right side and joint **c** on the back side of the main body, then remove the bottom cover from the main body.

Caution:

When releasing the joints using a screwdriver, do not damage the main board.
When remove the bottom cover, do not missing the cooling rubber.

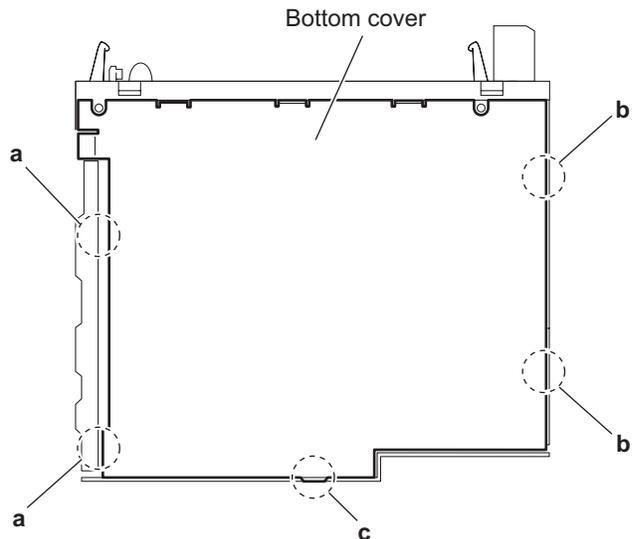


Fig.2

3.1.3 Removing the front chassis assembly (See Figs.3 and 4)

- Remove the front panel assembly and bottom cover.
 - (1) Remove the two screws **A** on the front side of the main body. (See Fig.3)
 - (2) Remove the two screws **B** on the both sides of the main body. (See Fig.4)
 - (3) Release the joints **d** and joints **e** on the both sides of the main body, and then remove the front chassis assembly toward the front. (See Fig.4)

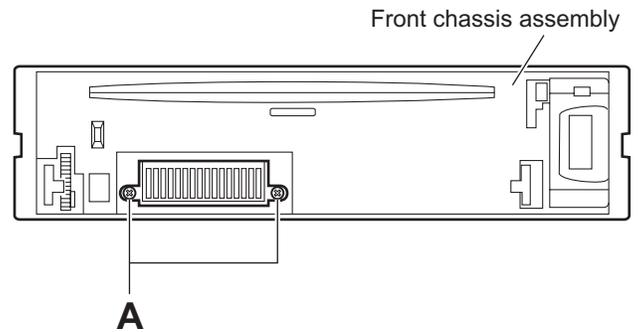


Fig.3

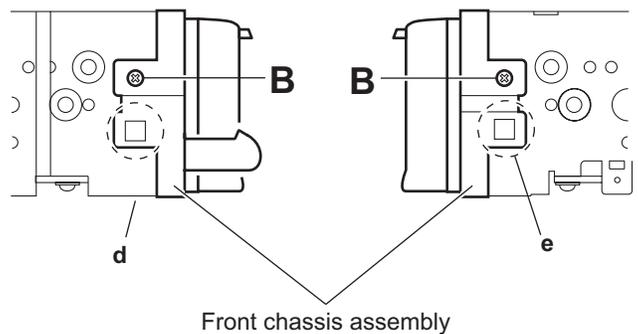


Fig.4

3.1.4 Removing the side panel (See Fig.5)

Reference:

- Remove the front panel assembly as required.
- (1) Remove the two screws **C** and two screws **D** attaching the side panel on the left side of the main body.
 - (2) Take out the side panel from the main body.

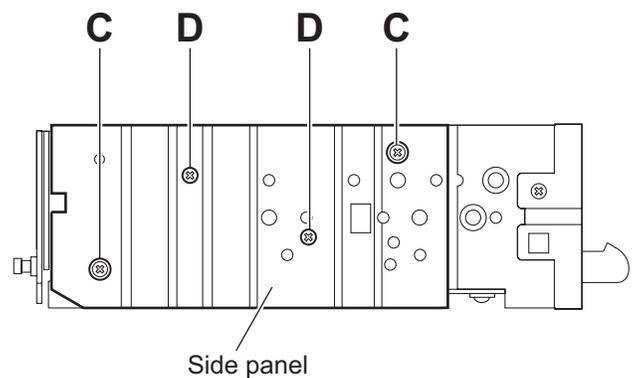


Fig.5

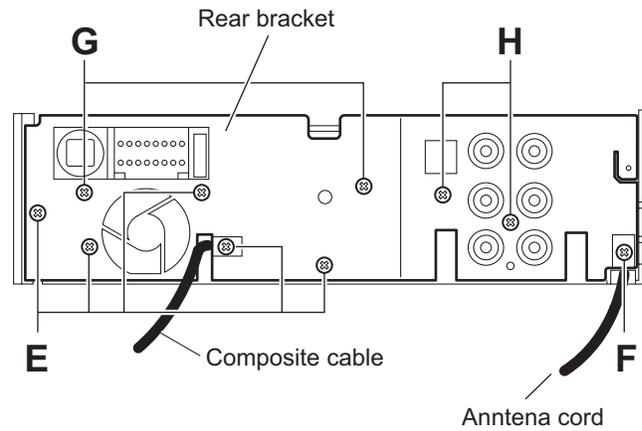
**3.1.5 Removing the rear bracket
(See Fig.6) [except KD-DV6201]**

- Remove the bottom cover.
 - (1) Remove the five screws **E**, one screw **F**, two screws **G** and two screws **G** attaching the rear bracket on the back side of the main body.
 - (2) Take out the rear bracket.

**3.1.6 Removing the rear bracket
(See Fig.6) [For KD-DV6201]**

- Remove the bottom cover.
 - (1) Remove the six screws **E**, one screw **F**, two screws **G** and two screws **G** attaching the rear bracket on the back side of the main body.
 - (2) Take out the rear bracket.

for except KD-DV6201



for KD-DV6201

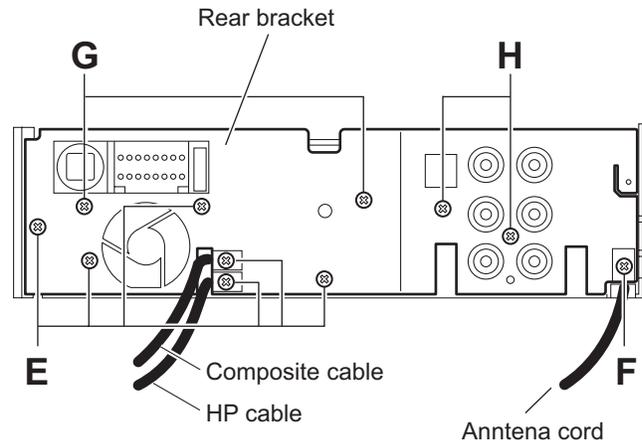


Fig.6

3.1.7 Removing the main board (See Figs.6 to 8)

- Remove the front panel assembly, bottom cover, front chassis assembly and side panel.
 - Remove the five screws **E** except KD-DV6201 or six screws **E** for KD-DV6201 attaching the rear bracket on the back side of the main body. (See Fig.6.)
 - Remove the three screws **J** attaching the main board. (See Fig.7)
 - Disconnect the connector [CN961](#) and take out the main board. (See Fig.7)
 - Remove the one screw **K** attaching the USB board. (See Fig.8)

Reference:

Remove the rear bracket as required.

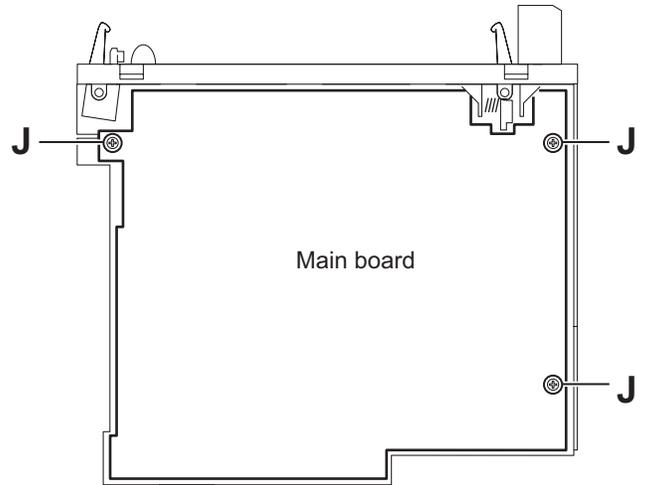


Fig.7

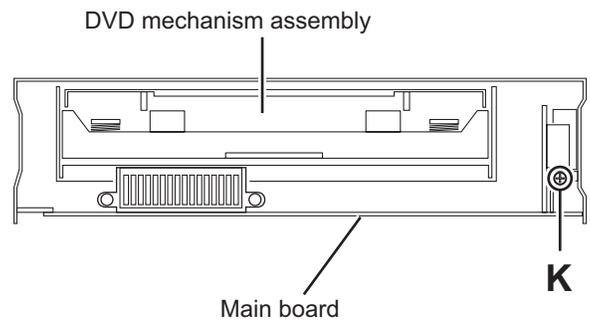


Fig.8

3.1.8 Removing the DVD mechanism assembly (See Fig.9)

- Remove the front panel assembly, bottom cover, front chassis assembly, side panel, main board and CD mechanism control board.
 - Remove the three screws **L** attaching the top chassis.
 - Take out the DVD mechanism assembly.

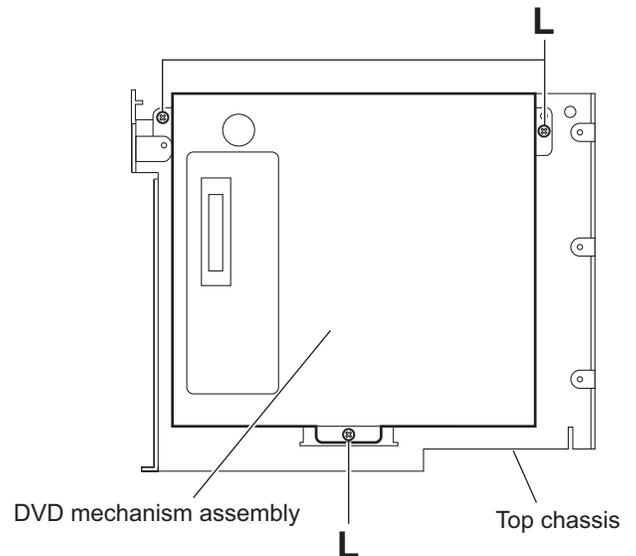


Fig.9

3.1.9 Removing the switch board (See Figs.10 to 13)

- Remove the front panel assembly.
 - Release the main volume knob from the front panel assembly. (See Fig.10)
 - Remove the five screws **M** and one screw **N** attaching the front panel assembly. (See Fig.11)
 - Release the nine joints **f** and take out the rear cover. (See Fig.12)
 - Lift the switch board from the front panel assembly little by little and take out the switch board. (See Fig.13)

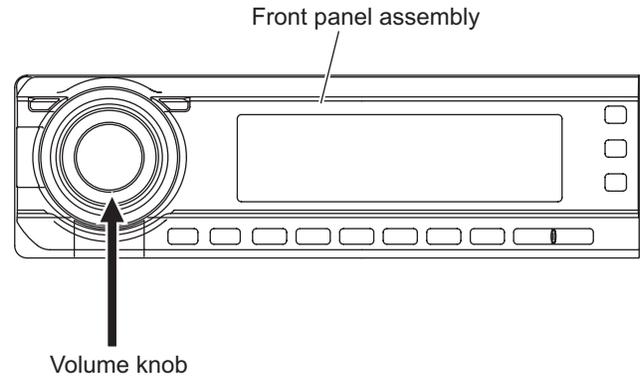


Fig.10

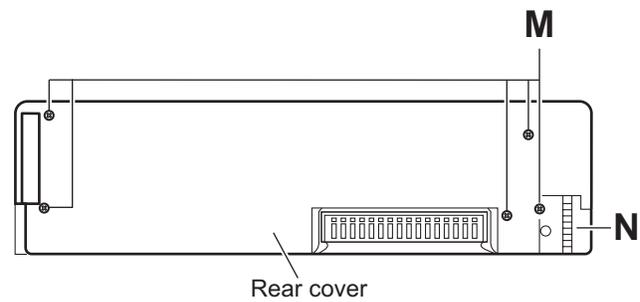


Fig.11

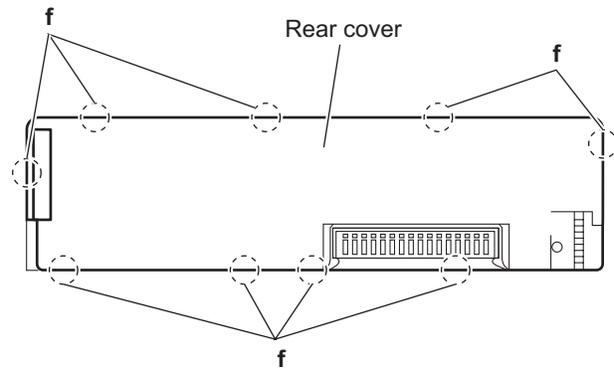


Fig.12

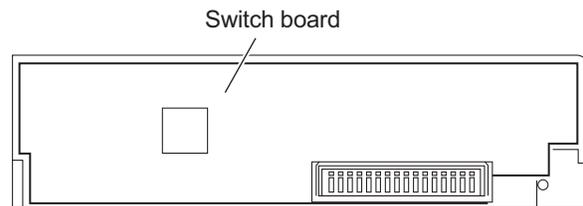


Fig.13

3.2 DVD mechanism assembly

3.2.1 Removing the mechanism control 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 mechanism control board.
- (3) Disconnect the card wire from connector [CN201](#) on the mechanism control board.
- (4) Disconnect the flexible wire from connector [CN202](#) on the mechanism control board.
- (5) Unsolder two soldered points **a** on the mechanism control board and remove the wire extending from the feed motor.
- (6) Remove the screw **A** attaching the lug wire.
- (7) Remove the two screws **B** and screw **C** attaching the mechanism control board.

Caution:

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

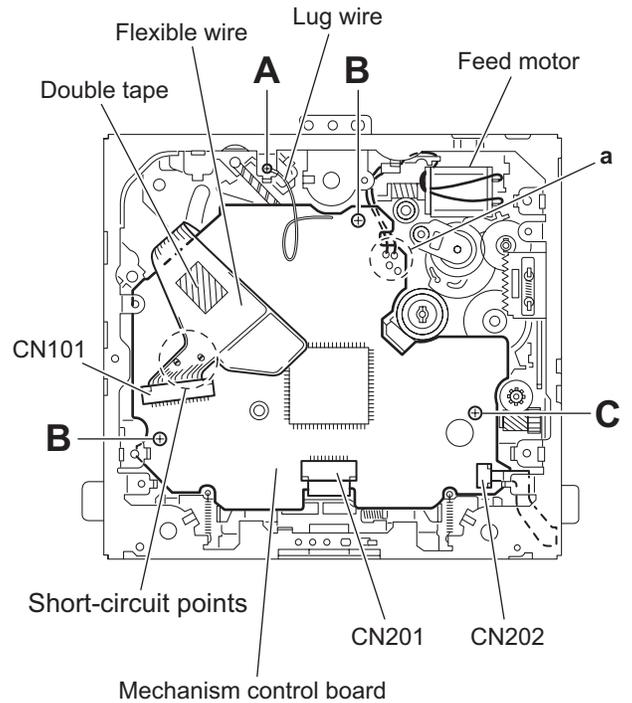


Fig.1

3.2.2 Removing the top cover (See Fig.2)

- (1) Remove the two screws **D** 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.

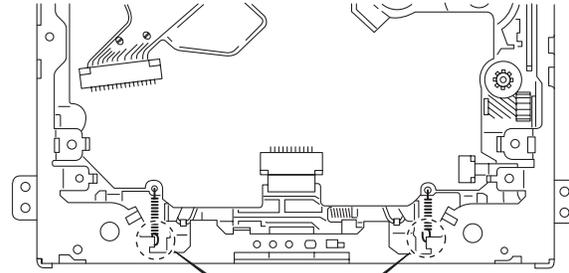
3.2.3 Removing the mechanism section (See Fig.2 to 4)

- Remove the top cover.
 - (1) From the bottom of the body, remove the screw **E** attaching the lug wire. (See Fig.2.)
 - (2) Remove the two screws **F** attaching the right and left stoppers on the front side. (See Fig.2.)
 - (3) Remove the two floating springs on the bottom of the body. (See Fig.3.)
 - (4) Move the mechanism section upward and remove from the chassis frame.

The three damper springs come off from the dampers.
(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 damper.



Floating spring

Fig.3

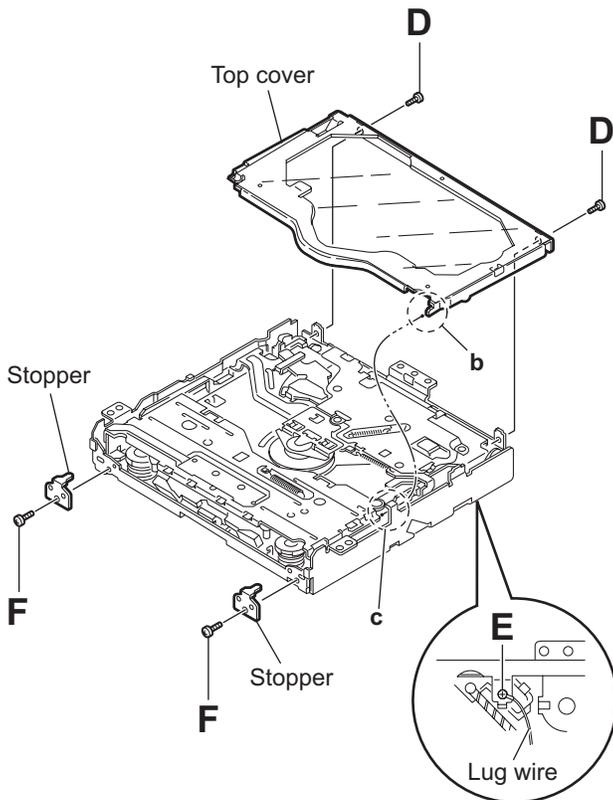


Fig.2

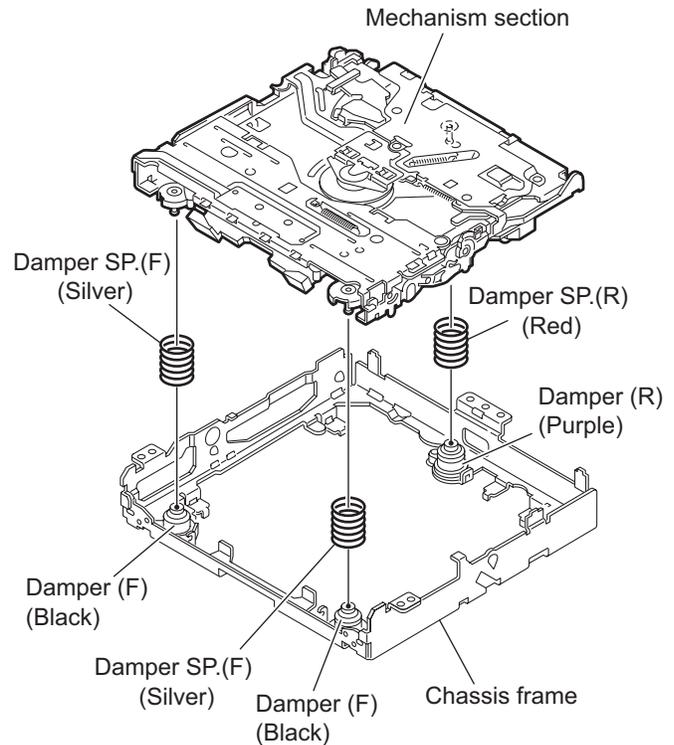


Fig.4

**3.2.4 Removing the clamber unit
(See Fig.5 to 7)**

- Remove the top cover and the mechanism section.
 - (1) Remove the clamber2 spring on the bottom of the mechanism section. (See Figs.5.and 6.)
 - (2) Release the part **d** of the clamber spring from the bending part of the chassis base assembly. (See Fig.7.)
 - (3) Move the clamber unit in the direction of the arrow and turn. Release the two joints **e** and **f**, then remove the clamber unit upward. (See Fig.6.)

**3.2.5 Reattaching the clamber unit
(See Fig.5 to 9)**

- (1) Attach the clamber spring to the clamber unit. (See Fig.8.)
- (2) Move the clamber 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 clamber spring to the outside of the bending part of the chassis base assembly. (See Fig.7.)
- (4) Attach the clamber2 spring to the chassis base assembly. (See Figs.5 and 6.)

Caution:

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

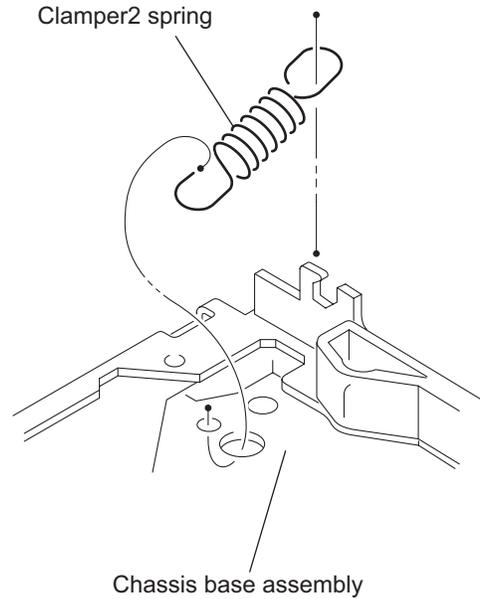


Fig.6

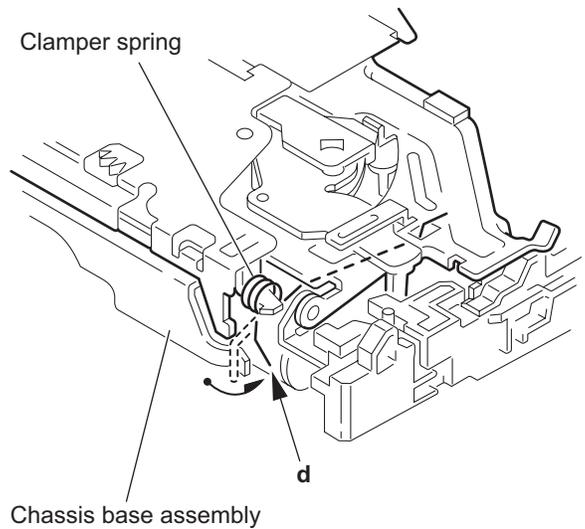


Fig.7

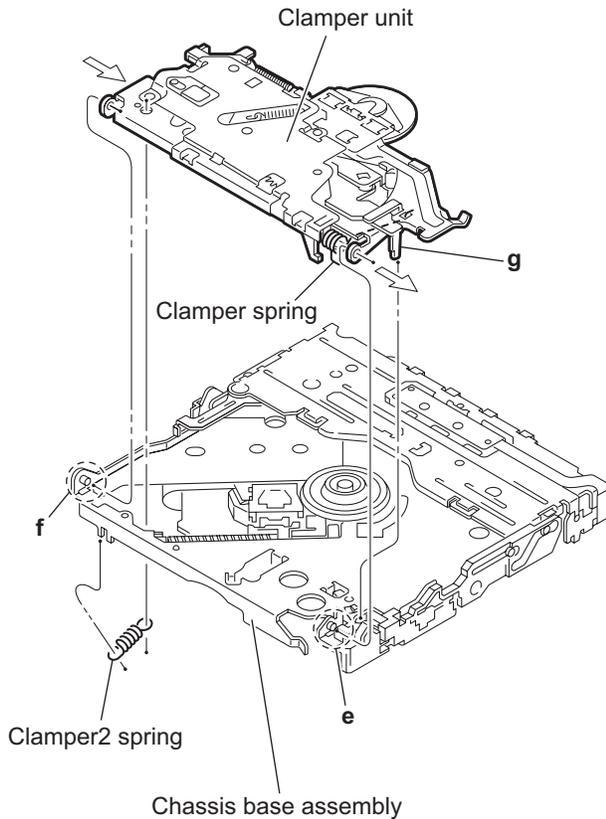


Fig.5

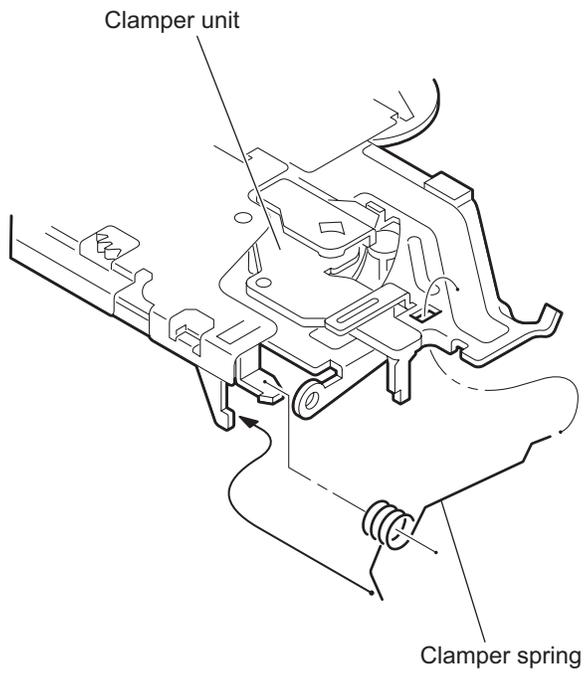


Fig.8

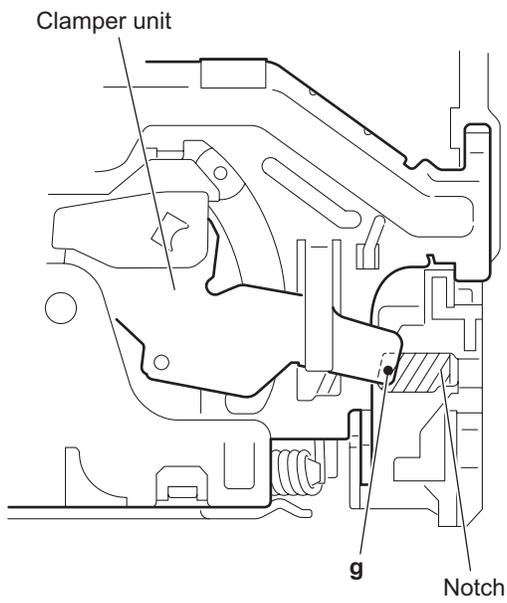


Fig.9

3.2.6 Removing the front unit (See Fig.10 to 12)

- Remove the top cover and the mechanism section.
 - (1) Disconnect the flexible wire from connector [CN202](#) on the mechanism control board at the bottom of the body. (See Fig.10.)
 - (2) Remove the screw **G** attaching the front unit on the top of the body. (See Fig.11.)
 - (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 **H** 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.)

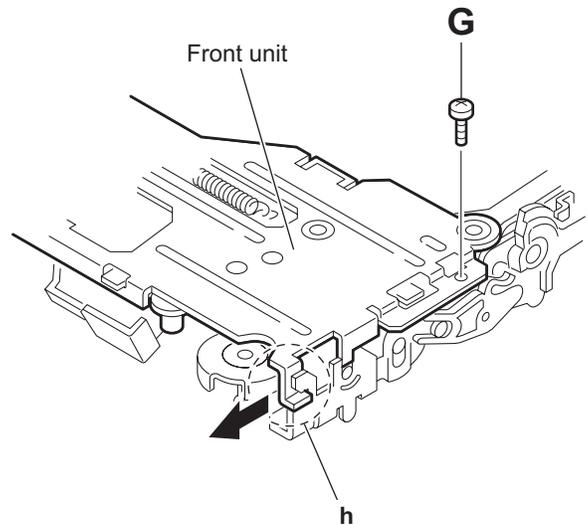


Fig.11

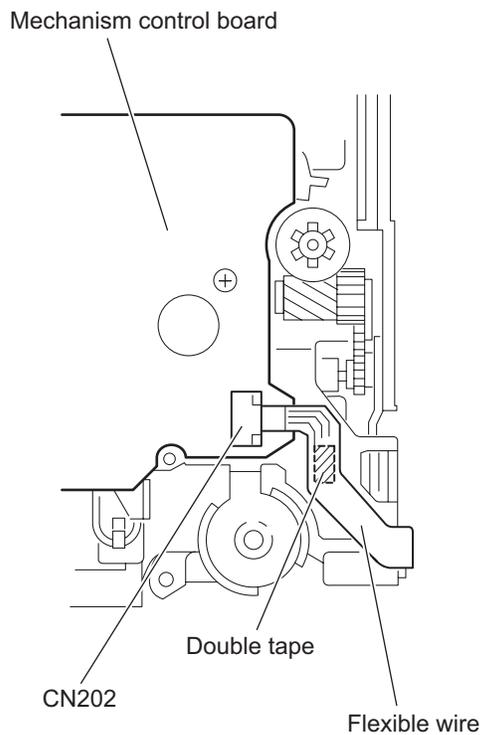


Fig.10

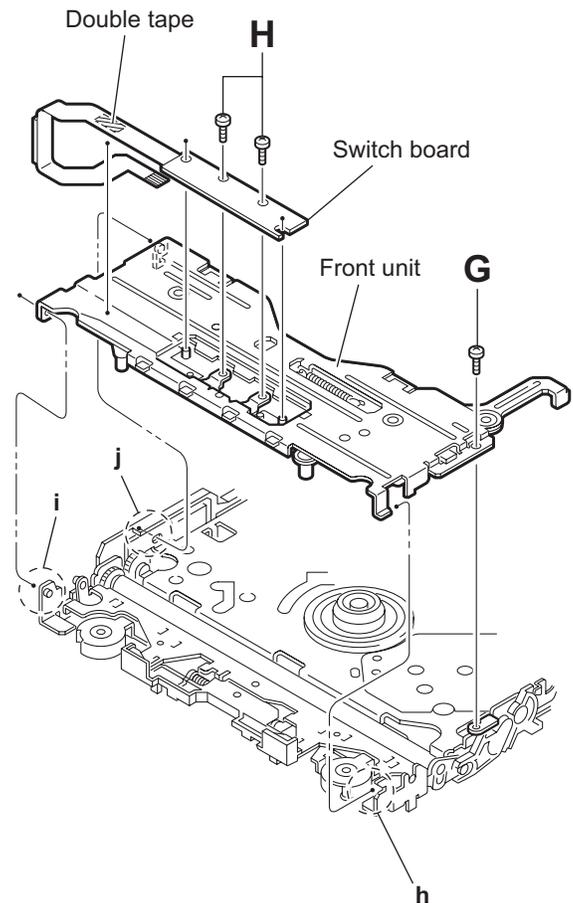


Fig.12

3.2.7 Removing the loading arm assembly (See Fig.13 , 14)

- Remove the top cover, the mechanism section and the front unit.
 - 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.
 - 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 side cam assembly on the left side.

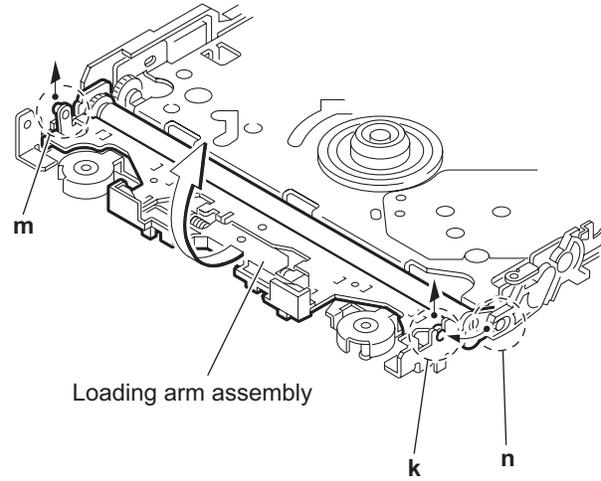


Fig.13

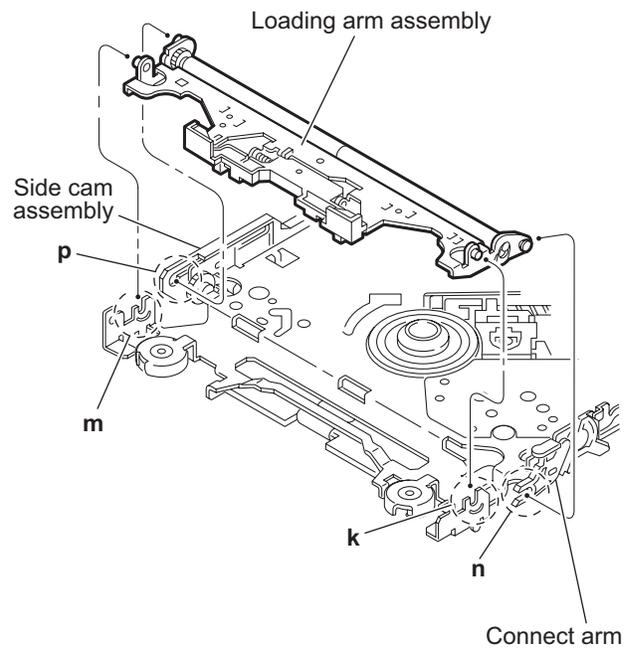


Fig.14

3.2.8 Removing the rod (L)(R)/roller assembly (See Fig.15 and 16)

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

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

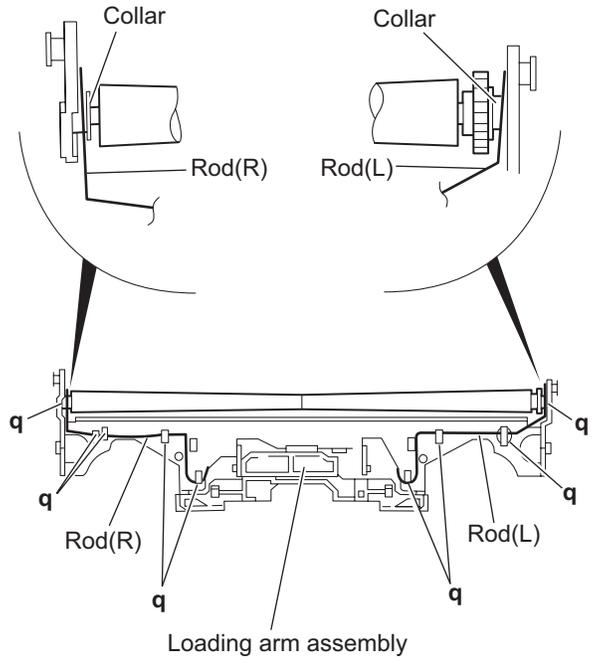


Fig.15

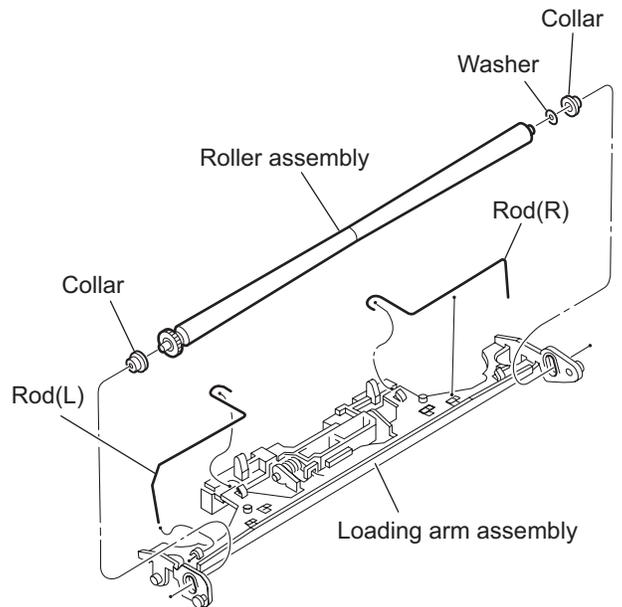


Fig.16

3.2.9 Removing the DVD pickup assembly (See Fig.17 to 19)

- Remove the mechanism control 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 **J** 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 **r**. Move the lead screw of the DVD pickup assembly in the direction of the arrow to release from joint **s**. (See Fig.18.)

Caution:

- When releasing the lead screw at joint **s**, the L.S.collar comes off at the end of the lead screw. When reassembling, reattach the L.S.collar to the lead screw and engage joint **s**. (See Fig.18.)
 - When reattaching the L.S.collar, reattach it to the point **s** of the lead screw, and to the rod (M). Make sure that the L.S.collar is set on the rod (M) spring. (See Fig.18.)
- (4) Remove the screw **K** attaching the rack spring/ rack plate on the DVD pickup. (See Fig.19.)
 - (5) Pull out the lead screw. (See Fig.19.)

Caution:

Perform adjustment after replacing the pickup.

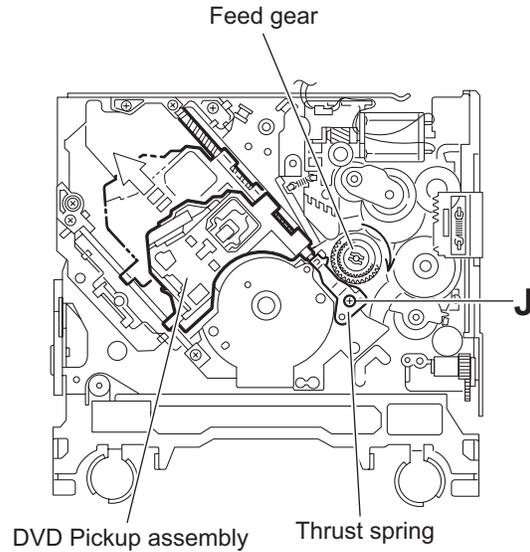


Fig.17

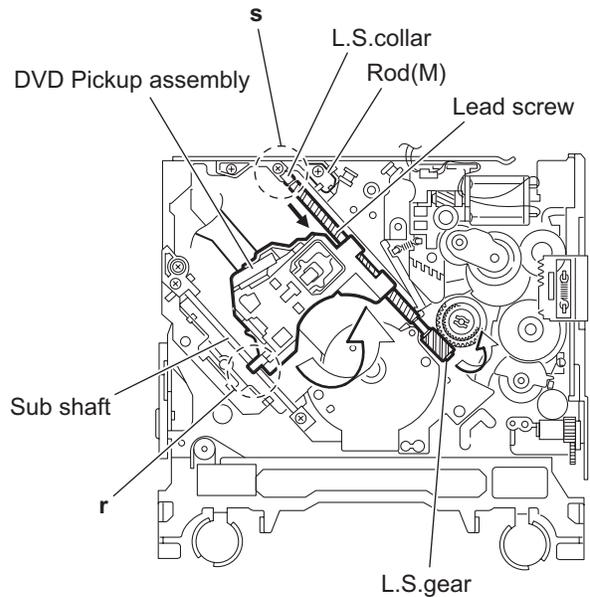


Fig.18

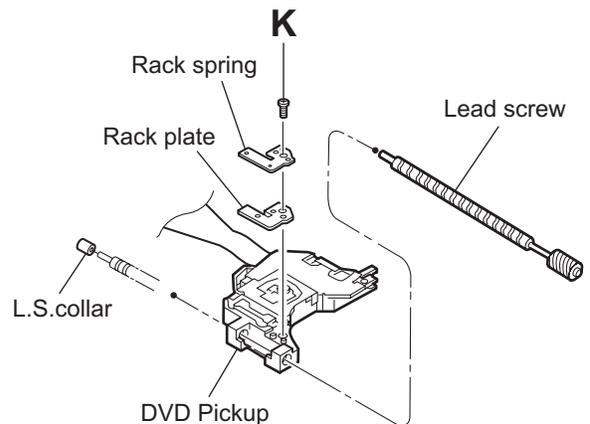


Fig.19

3.2.10 Removing the spindle motor (See Fig.20)

- Remove the mechanism control board.
Remove the two screws **L** attaching the spindle motor on the bottom of the body.

Caution:

Perform adjustment when reattaching the spindle motor.

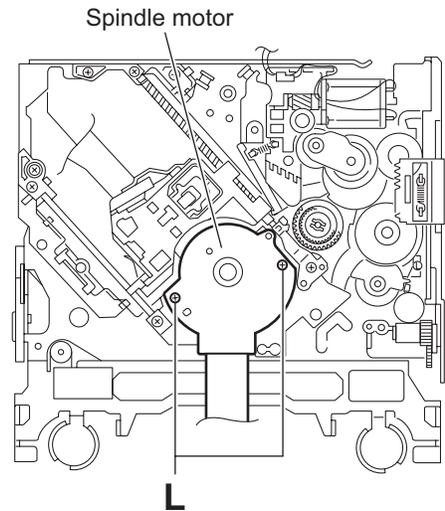


Fig.20

3.2.11 Removing the feed motor assembly (See Fig.21 and 22)

- Remove the mechanism control board.
 - Remove the feed TRI. spring on the bottom of the body.
(See Fig.21.)
 - Remove the two screws **M** attaching the feed motor assembly. (See Fig.21.)
 - Remove the slit washer from the motor H. assembly and pull out the worm wheel. (See Fig.22.)

Remove the two screws **N** attaching the feed motor. (See Fig.22.)

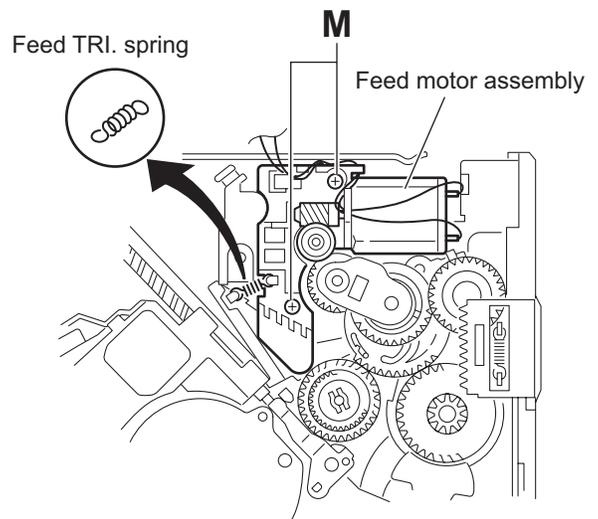


Fig.21

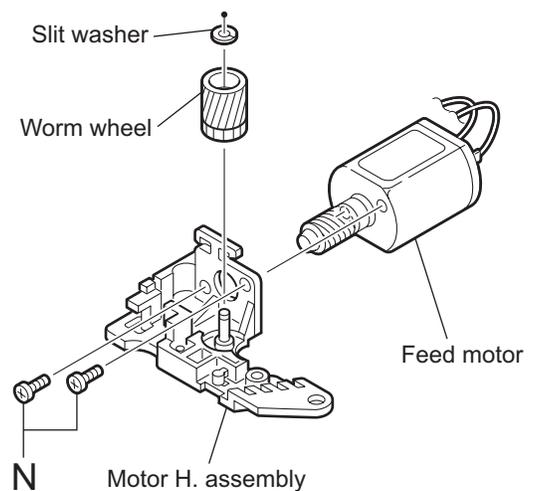


Fig.22

SECTION 4 ADJUSTMENT

4.1 Test instruments required for adjustment

- (1) Digital oscilloscope (199MHz)
- (2) Jitter meter
- (3) Digital tester
- (4) Electric voltmeter
- (5) Tracking offset meter
- (6) Test Disc : VT501 or VT502
- (7) Extension studs : STDV001-3P
- (8) Extension cable : EXTDV002-30P

4.2 Standard measuring conditions

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

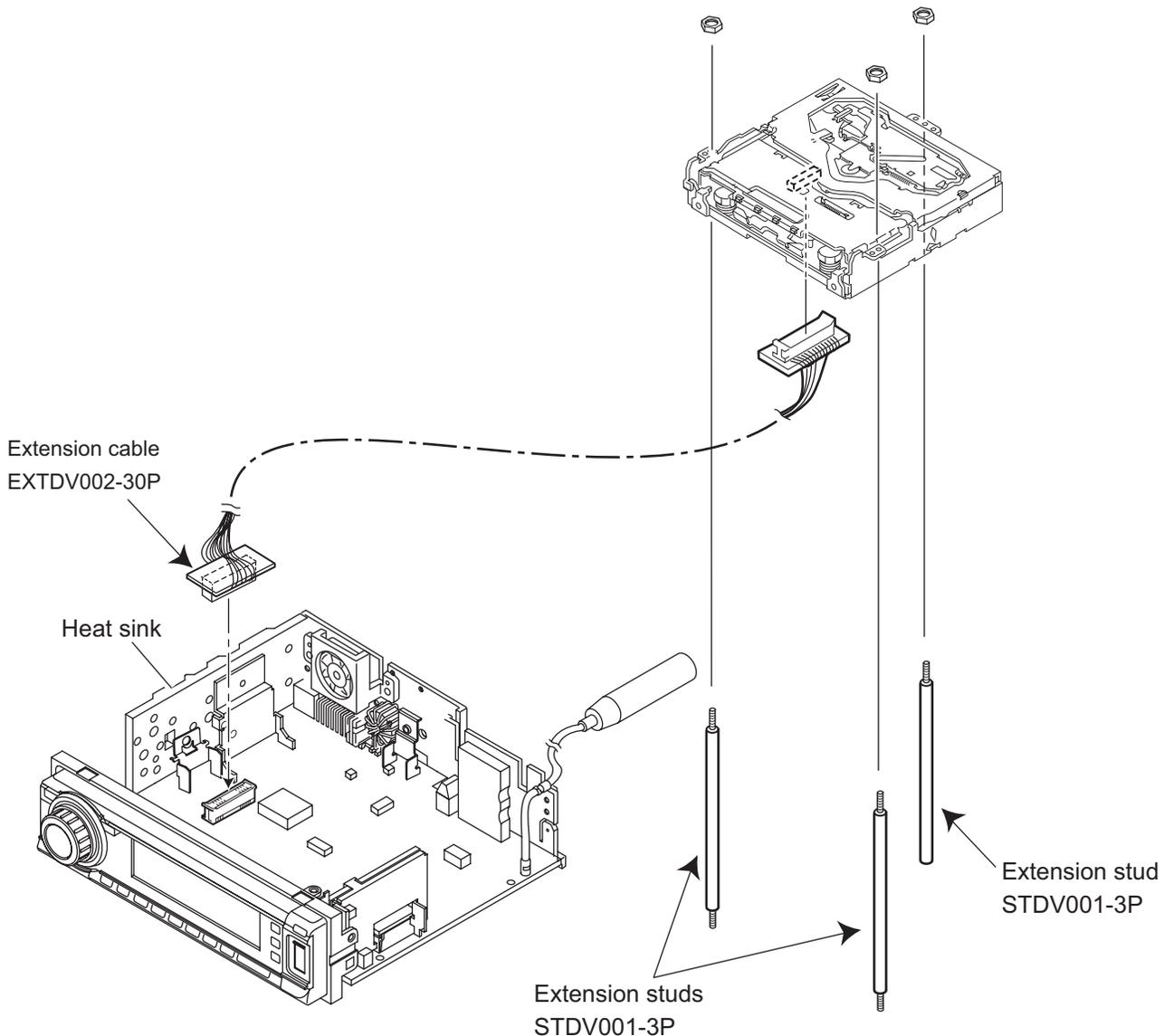
Caution:

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.

4.3 Connection method

Connection procedure

- (1) Attach the front chassis assembly to the main board.
- (2) Connect the front panel assembly to the main board.
- (3) Attach the heat sink and rear bracket to the main board.
- (4) Attach the extension studs to the DVD mechanism assembly.
- (5) Connect the DVD mechanism assembly and the main board with a extension cable.



4.4 Adjustment method for jitter

After replacing the pickup, set the unit in the service mode to display a jitter value on the LCD.

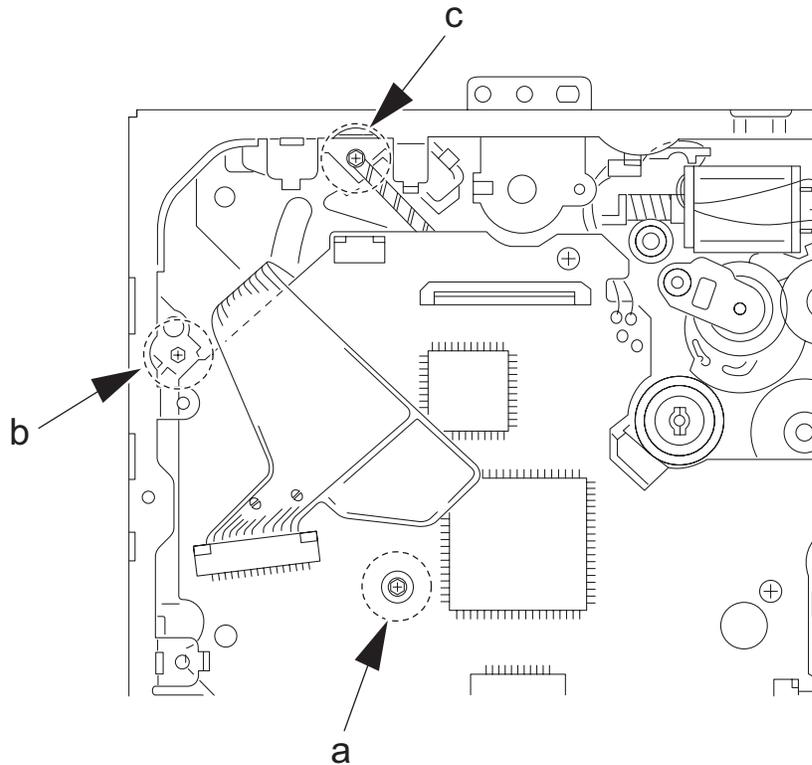
Confirm that the jitter value measured with a jitter meter is within 12% of the jitter value displayed on the LCD.

If it is within 12%, then adjustment is not necessary.

If the measured jitter value is outside the 12% tolerance range, perform the following adjustments.

4.4.1 Adjustment procedure

- (1) Set the unit to the service mode and display a jitter value (hex data) on the LCD.
- (2) 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 the same level is turned in the pair of b+c and the same level is turned in the pair of a+b.)
- (3) 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



- (1) Set the unit to the service mode and display a jitter value (hex data) on the LCD.
- (2) 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 screw in the cycle of same level turn by pair of b+c→ pair of a+b.)
- (3) After completing the adjustment, secure the screws with screw lock paint.

4.5 Jitter value conversion table

Load the test DVD 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% of the jitter value displayed on the LCD.

If the measured jitter value is outside the 12% tolerance range, adjust it to minimize the difference between the measured value and the displayed value.

Indicated on the LCD	Jitter value (%)	Indicated on the LCD	Jitter value (%)	Indicated on the LCD	Jitter value (%)
EF56	4.7	E79E	8.5	DFE6	12.3
EF22	4.8	E76A	8.6	DFB2	12.4
EEEE	4.9	E736	8.7	DF7E	12.5
EEBA	5.0	E702	8.8	DF4A	12.6
EE86	5.1	E6CE	8.9	DF16	12.7
EE52	5.2	E69A	9.0	DEE2	12.8
EE1E	5.3	E666	9.1	DEAE	12.9
EDEA	5.4	E632	9.2	DE7A	13.0
EDB6	5.5	E5FE	9.3	DE46	13.1
ED82	5.6	E5CA	9.4	DE12	13.2
ED4E	5.7	E596	9.5	DDDE	13.3
ED1A	5.8	E562	9.6	DDAA	13.4
ECE6	5.9	E52E	9.7	DD76	13.5
ECB2	6.0	E4FA	9.8	DD42	13.6
EC7E	6.1	E4C6	9.9	DD0E	13.7
EC4A	6.2	E492	10.0	DCDA	13.8
EC16	6.3	E45E	10.1	DCA6	13.9
EBE2	6.4	E42A	10.2	DC72	14.0
EBAE	6.5	E3F6	10.3	DC3E	14.1
EB7A	6.6	E3C2	10.4	DC0A	14.2
EB46	6.7	E38E	10.5	DBD6	14.3
EB12	6.8	E35A	10.6	DBA2	14.4
EADE	6.9	E326	10.7	DB6E	14.5
EAAA	7.0	E2F2	10.8	DB3A	14.6
EA76	7.1	E2BE	10.9	DB06	14.7
EA42	7.2	E28A	11.0	DAD2	14.8
EA0E	7.3	E256	11.1	DA9E	14.9
E9DA	7.4	E222	11.2	DA6A	15.0
E9A6	7.5	E1EE	11.3	DA36	15.1
E972	7.6	E1BA	11.4	DA02	15.2
E93E	7.7	E186	11.5	D9CE	15.3
E90A	7.8	E152	11.6	D99A	15.4
E8D6	7.9	E11E	11.7	D966	15.5
E8A2	8.0	E0EA	11.8	D932	15.6
E86E	8.1	E0B6	11.9	D8FE	15.7
E83A	8.2	E082	12.0	D8CA	15.8
E806	8.3	E04E	12.1	D896	15.9
E7D2	8.4	E01A	12.2	D862	16.0



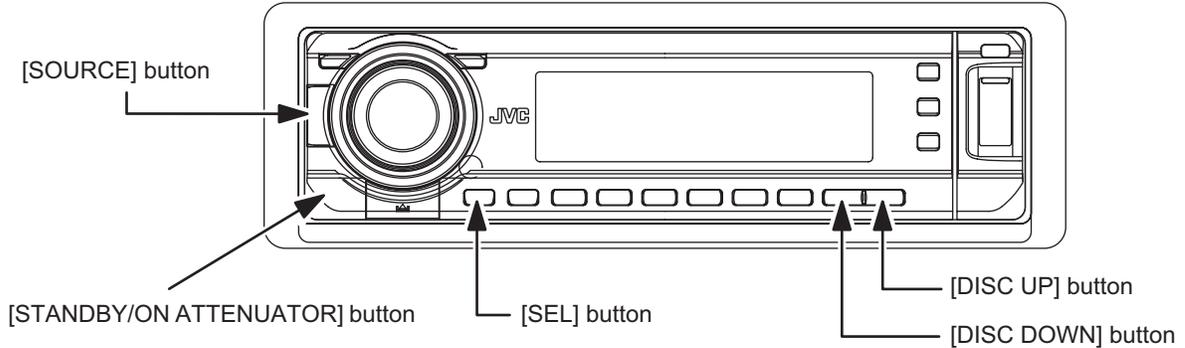
4.6 Service mode

4.6.1 Standard input/output conditions

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

4.6.2 Service mode setting procedure

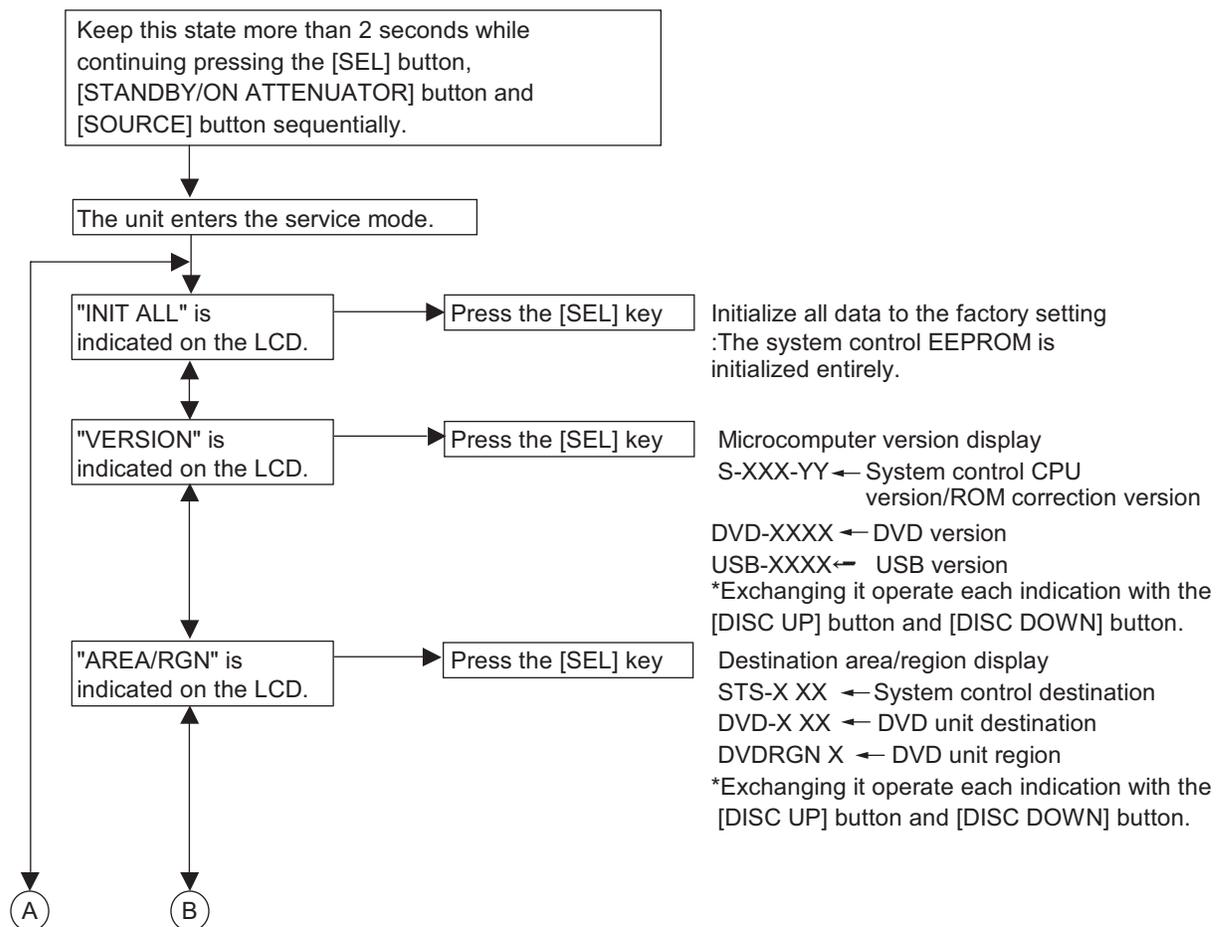
(The DVD does not need to be loaded before starting the following procedure.)

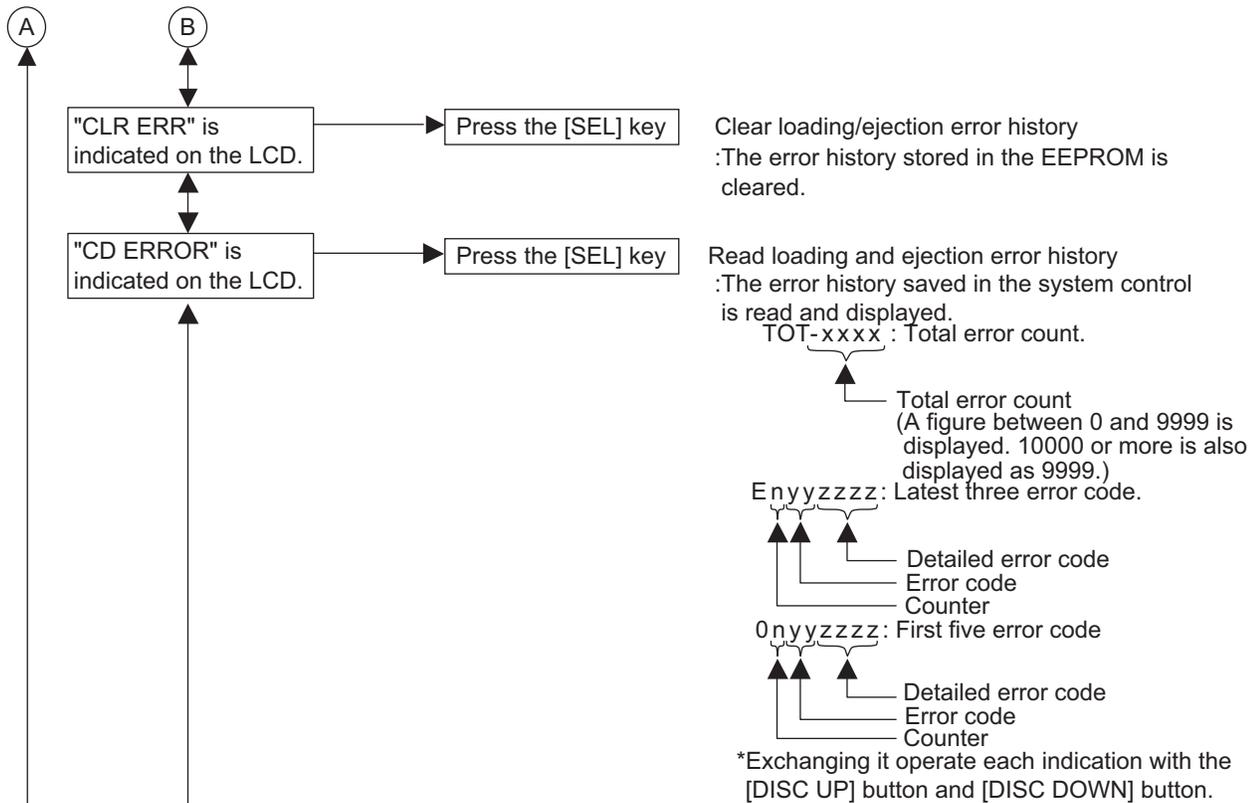


- (1) Press a [STANDBY/ON ATTENUATOR] button on a main unit and switch it on.
- (2) Keep this state more than 2 seconds while continuing pressing the [SEL] button, [STANDBY/ON ATTENUATOR] button and [SOURCE] button sequentially.
- (3) This unit is set by a service mode.

*Exchanging it operate a menu of a service mode with the [DISC UP] button and [DISC DOWN] button.
Operate choice of a menu with a [SEL] button.

4.6.3 Operation procedures





Error code (1 byte)

First byte	[01] Eject error [02] Loading error
------------	--

Detailed error code (2 bytes)

*Displayed with loading/ejection error only.

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 error [3] Swinging error
Second byte	bit7 Disc type (0: 12 cm. 1: 8 cm) bit6,5 Fixed at 0 bit4 SW 1 status bit3 SW 2 status bit2 SW 3 status bit1 SW 1 status bit0 RESET 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		
1(2)	0,1,1,1	[0]	Disc insert detection ↓	↑	Disc push in	
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

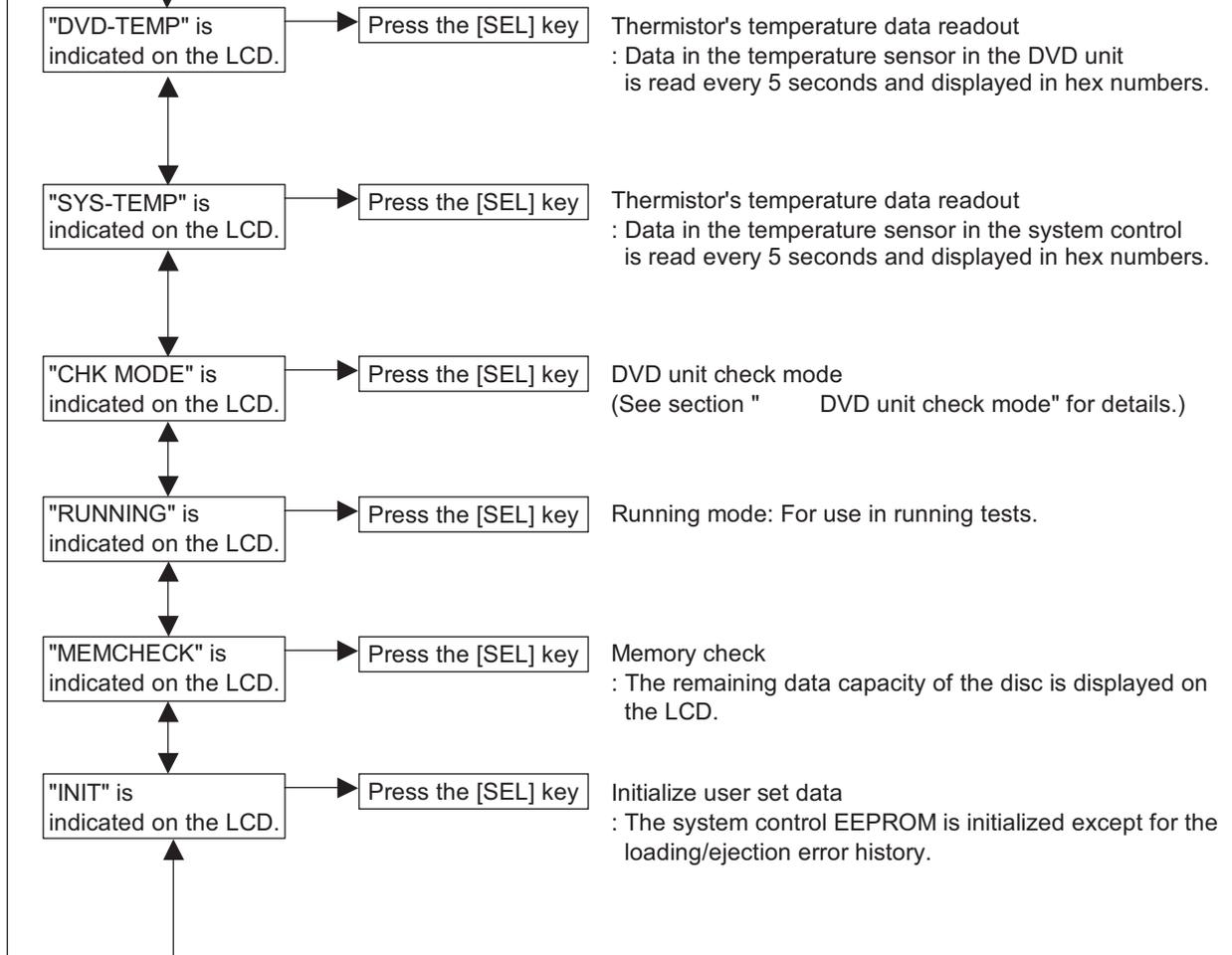
Chart 1.1 12cm Disc switch status transition

C

D

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]	Load completion	Eject start	Load completion
3(1)	1,1,1,0	[1]			

*Transition in the center loading (Similar to 12cm in the side loading)
 Chart 1.2 8cm Disc switch status transition



4.6.4 DVD unit check mode

Change LCD indication with a [FF ►►] button and a [REW ◀◀] button.

Check item list

No.	A/D key	DVD unit operation	Example of LCD indication	Indication contents
1	[1]	Start at normal speed (After start, it is measured JITTER on the internal position)	NORMPLAY CUR * * * * JIT * * * *	Laser current value Jitter value
2	[2]	Tracking off on the outermost position of CD	EF-BAL OUTTROFF	For EF phase error
3	[3]	Tracking off on the innermost position of CD	EF-BAL INNTROFF	For EF phase error
4	[4]	CD_LD lights and laser current is displayed	CDLD ON CUR * * * * JIT * * * *	Laser current value Jitter value
5	[5]	DVD_LD lights and laser current is displayed	DVDLD ON CUR * * * * JIT * * * *	Laser current value Jitter value
6	[6]	DVD x1 jitter measuring mode (for use in mechanism measurement)	DVDx1JIT CUR * * * * JIT * * * *	Laser current value Jitter value
7	[DISP]	Indication of EEPROM contents	ROM DATA ADDR * * * * DATA * * * *	EEPROM address EEPROM contents
8	[SOURCE]	Initialization of EEPROM contents	ROMCLEAR	
9	[SEL]	Indication of temperature	TEMP TEMP * * * *	Temperature
10	[MODE]	Search & jitter measurement to an appointed position of DVD	DVD JIT PLC * * * * JIT * * * *	(Position measured with VT-501 jitter value)
11	[BAND]	Setting of MONITOR terminal	MONITOR M1 * * * * M2 * * * *	
12	[DISC UP ▲]	DVDx1 double speed start (After start, it is measured JITTER on the internal position)	PLAY CUR * * * * JIT * * * *	Laser current value Jitter value
13	[DISC DW ▼]	Disc stopped & LD-OFF	STOP	

Note :

- In the case of the jitter measurement: Begin a service mode after insert a disc.
- Press key [1] of No.1 before an item in which the No.2 or 3 key is pressed.
- Press key [1] of No.1 or key [12] of No.12 before an item in which the No.10 key is pressed and confirm the indication of jitter value on the LCD.
- No.6 starts only a DVD1 layer disc. Even other discs start DVD1 layer.
- When No.1 and No.12 are pushed after jitter indication, a focus jump is executed. (only DVD2 layer)
- Stop a disc before OPEN, CLOSE by all means.(OPEN and CLOSE are not executed in a disc turn.)
- The check mode can be exited either by pressing the [POWER] key or by resetting the unit.

SECTION 5 TROUBLESHOOTING

This service manual does not describe TROUBLESHOOTING.



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