JVC

SERVICE MANUAL

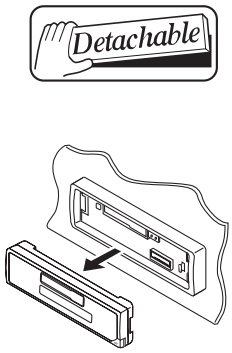
CASSETTE RECEIVER

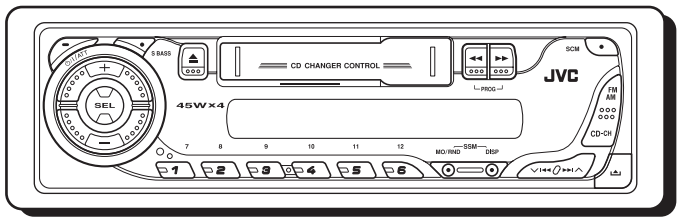
KS-FX385,KS-FX385S,KS-FX385G

KS-FX385
Area suffix
UT ---------- Taiwan UH ---------- Thailand UN ---------- Indonesia U ---------- Other Areas

KS-FX385S
Area suffix
UN ---------- Indonesia

KS-FX385G
Area suffix
UN ---------- Indonesia





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No.MA093B
2005/4

SPECIFICATION

AUDIO AMPLIFIER SECTION		
Maximum Power Output	Front	45 W per channel
	Rear	45 W per channel
Continuous Power Output (RMS)	Front	17 W per channel into 4 Ω, 40 Hz to 20 000 Hz at no more than 0.8% total harmonic distortion.
	Rear	17 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)
Tone Control Range	Bass	±10 dB at 100 Hz
	Treble	±10 dB at 10 kHz
Frequency Response		40 Hz to 20 000 Hz
Signal-to-Noise Ratio		70 dB
Line-Out Level/Impedance		2.0 V/20 kΩ load (250 nWb/m)
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	35 dB
	Capture Ratio	2.0 dB
AM Tuner	Sensitivity	20 μV
	Selectivity	35 dB
CASSETTE DECK SECTION		
Wow & Flutter		0.15% (WRMS)
Fast-Wind Time		190 sec. (C-60)
Frequency Response		50 Hz to 14 000 Hz (Normal tape)
Signal-to-Noise Ratio		52 dB
Stereo Separation		40 dB
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 × 150 mm
	Panel Size (approx.)	188 mm × 58 mm × 11 mm
Mass (approx.)		1.3 kg (excluding accessories)

Design and specifications are subject to change without notice.

SECTION 1
PRECAUTION

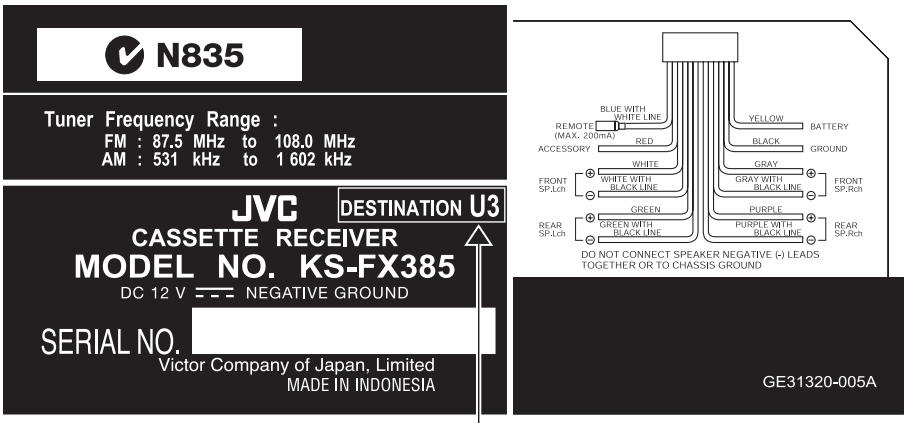
1.1 Safety Precautions

> ⚠ ***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 preforming repair of this system.**

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 HOW TO IDENTIFY MODELS

2.1.1 NAME PLATE



SECTION 3
DISASSEMBLY

3.1 Main body

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

(1) Push the detach button and remove the front panel assembly.

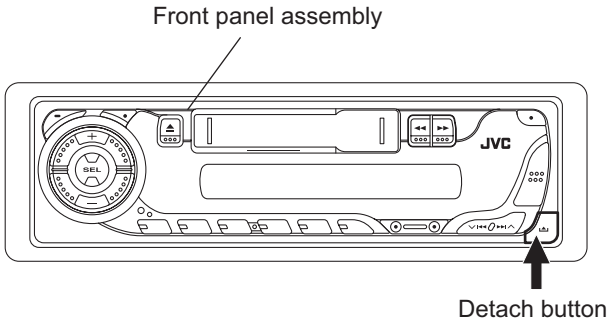


Fig.1

3.1.2 Removing the bottom cover (See Fig.2)

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

(1) Turn the body upside down.

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

CAUTION:

When releasing the joints using a screwdriver, do not damage the board.

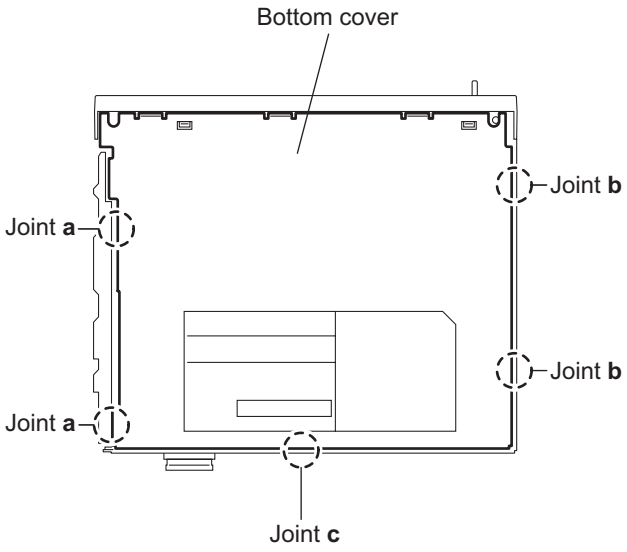


Fig.2

3.1.3 Removing the front chassis assembly (See Fig.3)

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

(1) Remove the two screws **A** on each side of the body.

(2) Release the two joints **d** and the two joints **e** on the sides, then remove the front chassis assembly toward the front.

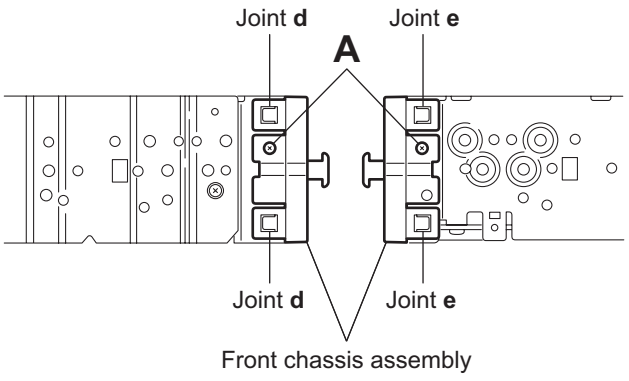


Fig.3

3.1.4 Removing the side panel (See Fig.4)

- Prior to performing the following procedure, remove the front panel assembly.
  (1) Remove the screw **B** and two screws **C** attaching the side panel on the left side of the body, and remove the side panel.

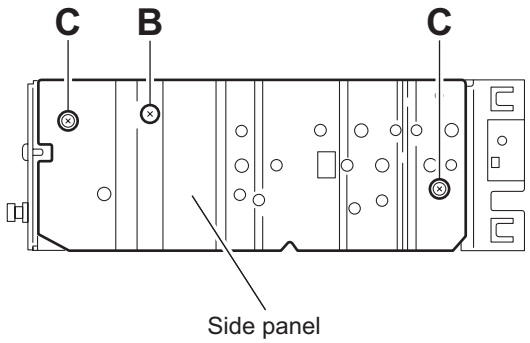


Fig.4

3.1.5 Removing the rear panel (See Fig.5)

- Prior to performing the following procedure, remove the front panel assembly and bottom cover.
  (1) Remove the two screws **D**, two screws **E** and three screws **F** attaching the rear panel on the back of the body.

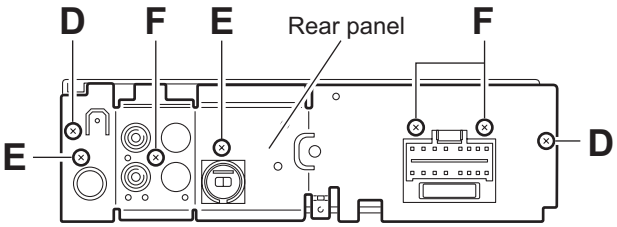


Fig.5

3.1.6 Removing the main board (See Fig.6)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, side panel and rear panel.
  (1) Remove the two screws **G** attaching the main board on the top chassis.
  (2) Disconnect the two connectors CN901 and CN721 (UT,UH,UN,U version) or CN902 (UT3,UH3,UN3,U3 version) on the main board from the cassette mechanism assembly.

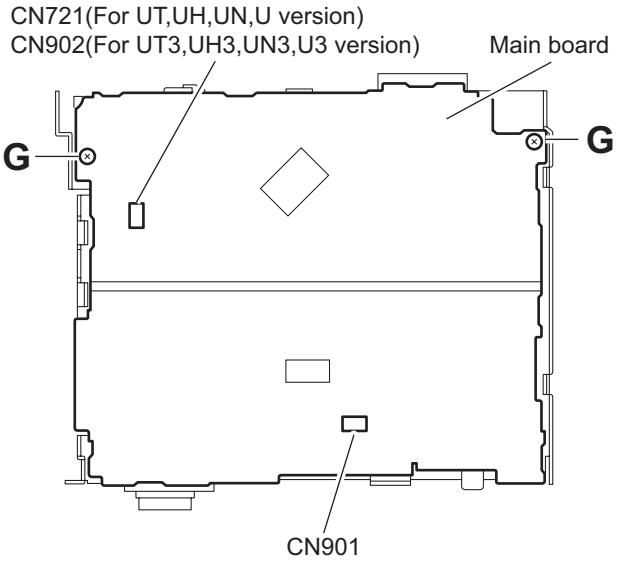


Fig.6

3.1.7 Removing the cassette mechanism assembly (See Fig.7)

- Prior to performing the following procedure, remove the front panel assembly, bottom cover, front chassis assembly, side panel, rear panel and main board.
  (1) Remove the four screws **H** attaching the cassette mechanism assembly from the top chassis.

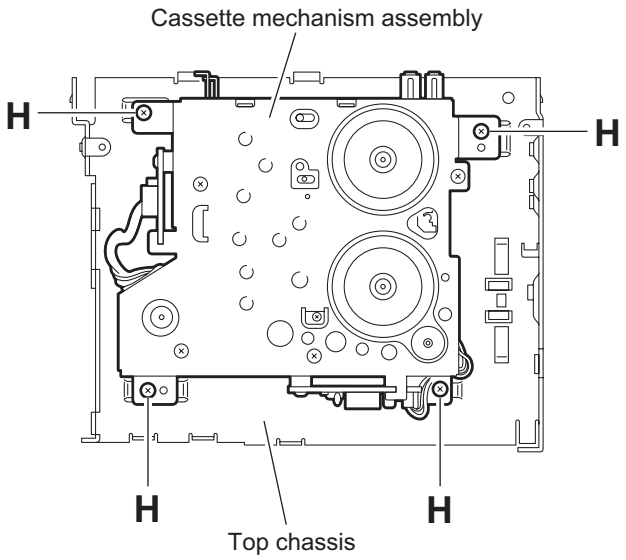


Fig.7

3.1.8 Removing the head amplifier board (See Fig.8)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, side panel, rear panel, main board and cassette mechanism assembly.
  (1) Disconnect the wire from CJ901 on the head amplifier board.
  (2) Remove the one screw **J** attaching the head amplifier board.
  (3) Move the head amplifier board in the direction of the arrow to release the two joints **f**, the head amplifier board can be removed.

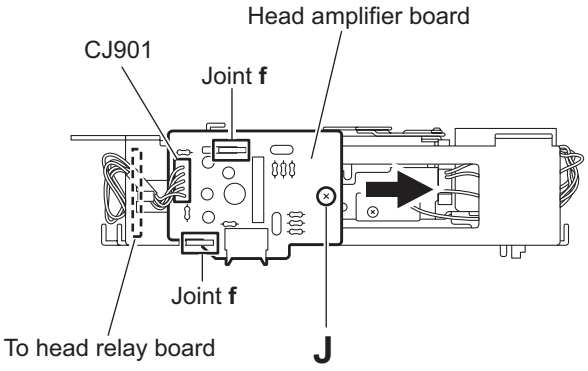


Fig.8

3.1.9 Removing the relay board (See Fig.9)

- Prior to performing the following procedures, remove the front panel assembly, bottom cover, front chassis assembly, side panel, rear panel, main board and cassette mechanism assembly.
  (1) Disconnect the wire from CP722 on the relay board.
  (2) Remove the one screw **K** attaching the relay board.
  (3) Move the relay board in the direction of the arrow to release the joint **g**, the relay board can be removed.

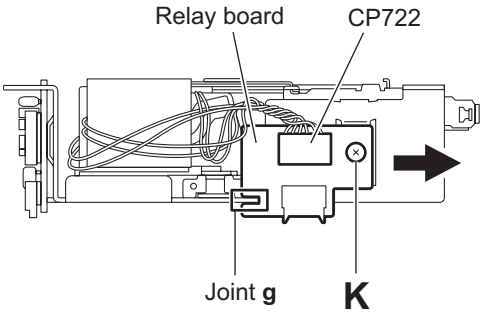


Fig.9

3.1.10 Removing the mecha bracket (See Fig.10)

- Prior to performing the following procedure, remove the front panel assembly, bottom cover, front chassis assembly, side panel, rear panel, main board, cassette mechanism assembly, head amplifier board and relay board.
  (1) Remove the four screws **L** attaching the mecha bracket.

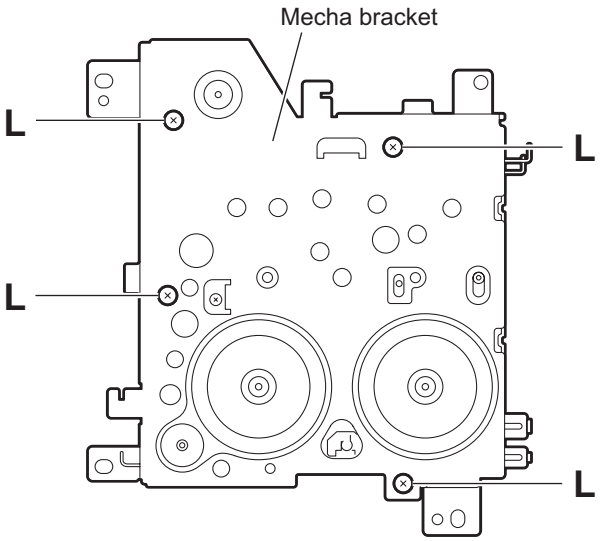


Fig.10

3.1.11 Removing the switch (LCD & key) board (See Fig.11 to 13)

- Prior to performing the following procedures, remove the front panel assembly.
  (1) Remove the four screws **M** attaching the rear cover on the back of the front panel assembly. (See Fig.11)
  (2) Release the nine joints **h**, the front panel and the rear cover become separate. (See Fig.12)
  (3) Remove the switch board from the rear cover. (See Fig.13)

CAUTION:
Take care not to lose the springs.

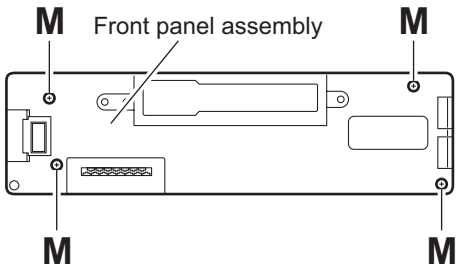


Fig.11

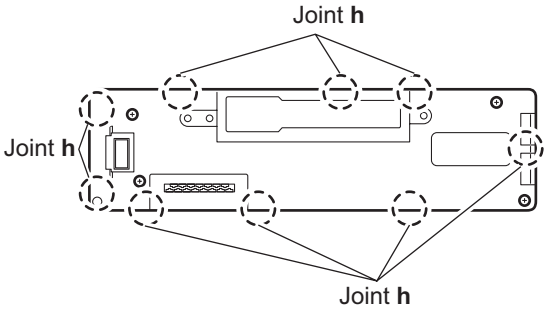


Fig.12

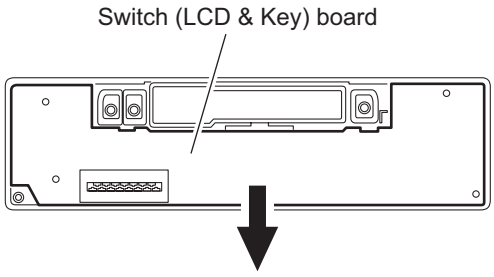


Fig.13

3.2 Cassette mechanism assembly

- Prior to performing the following procedures, remove the head amplifier board, the relay board and the mechanism bracket.

3.2.1 Removing the direction switch board (See Fig.1)

(1) Unsolder the three wires **a** on the direction switch board.
(2) Remove the one screw **A** attaching the direction switch board.

3.2.2 Removing the FF / REW lever assembly (See Fig.1)

(1) Remove the screw **B** attaching the FF / REW lever assembly on the back of the cassette mechanism assembly.
(2) Remove the screw **C** on the upper side of the FF / REW lever assembly.
(3) Lift and pull forward the FF / REW lever assembly to disengage the joints **b**, **c**, **d** and **e**.

3.2.3 Reattaching the FF / REW lever assembly (See Fig.1)

(1) Reattach the FF / REW lever assembly to the joint **c** on the back of the chassis.
(2) Reattach the pinch-roller shaft **e**, the change lever **d** and the return link **e** to the chassis.

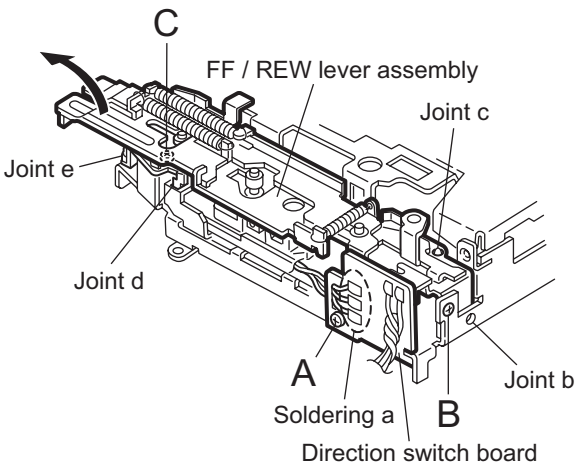


Fig.1

3.2.4 Removing the playback head (See Fig.2)

- Prior to performing the following procedure, remove the direction switch board and the FF / REW lever assembly.
(1) Remove the screw **D** attaching the playback head.
(2) Remove the **C** washer and pull out the FF roller.
(3) Remove the **S** support plate, the A arm spring **(a)** and **(b)**, the playback head.

ATTENTION:
The A arm spring **(a)** differs from the A arm spring **(b)**.

3.2.5 Removing the pinch-roller (R) and (F) assembly (See Fig.2)

- Prior to performing the following procedure, remove the direction switch board and the FF / REW lever assembly.
(1) Remove the P arm spring **(f)** in the pinch-roller **(F)** assembly from the chassis.
(2) Remove the P arm spring **(r)** in the pinch-roller **(R)** assembly from the chassis.
(3) Draw out the pinch roller **(F)** and **(R)** assembly from the shaft.

ATTENTION:
The P arm spring **(f)** differs from the P arm spring **(r)**.

ATTENTION:
The pinch roller **(F)** assembly differs from the pinch roller **(R)** assembly.

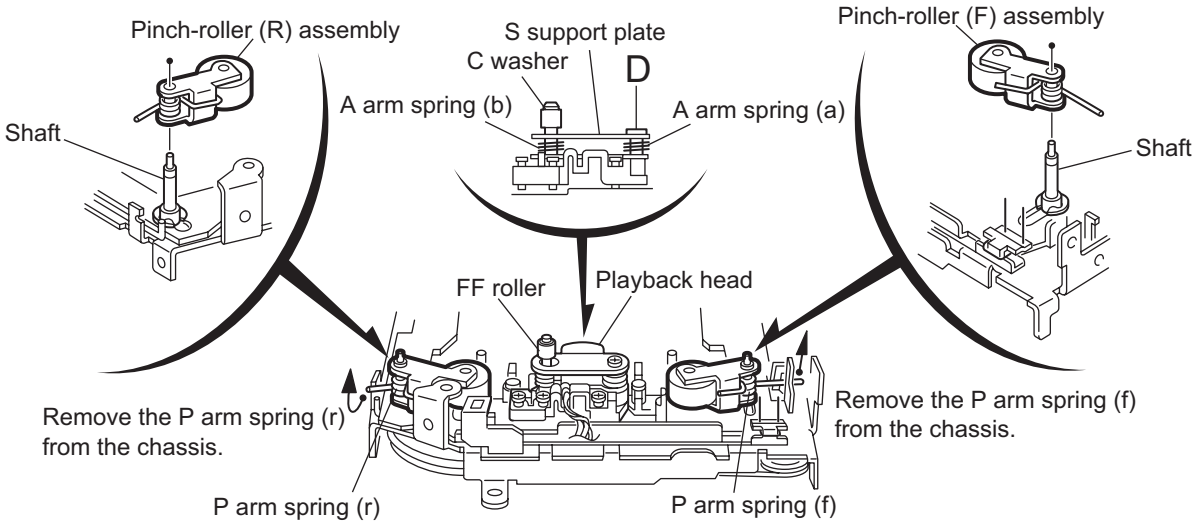


Fig.2

3.2.6 Removing the cassette hanger / cassette holder (See Fig.3)

- Prior to performing the following procedure, remove the FF / REW lever assembly.
  (1) From the rear of the unit, bend the two tabs **f** outwards and disengage the two joints **g** in the direction of the arrow.
  (2) Push the eject lever and remove the cassette holder from the playback head. Disengage the two joints **h** of the cassette hanger / cassette holder and the eject lever in the direction of the arrow.
  (3) Lift the cassette hanger / cassette holder and disengage the joint i of the return link and the eject lever.

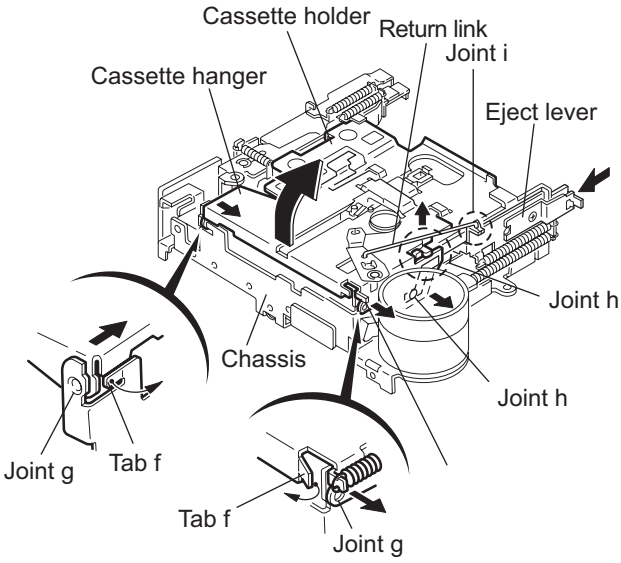


Fig.3

3.2.7 Removing the reel disc assembly (See Fig.4)

- Prior to performing the following procedure, remove the FF / REW lever assembly and the cassette hanger / cassette holder.
  (1) Remove the C washer and pull out reel disc assembly.

ATTENTION:
Replace with a new C washer when reattaching.

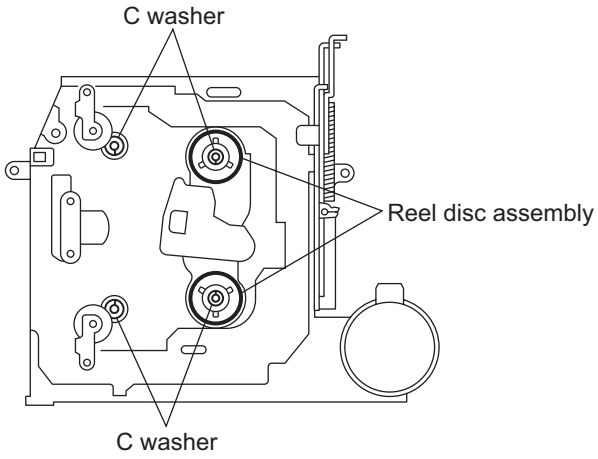


Fig.4

3.2.8 Removing the motor assembly (See Fig.5)

(1) Unsolder the two wires **j** on the motor assembly.
(2) Turn over the cassette mechanism assembly and remove the main belt and the sub-belt from the motor pulley.

ATTENTION:
The main belt can now be removed.

(3) Remove the two screws **G** attaching the motor assembly.

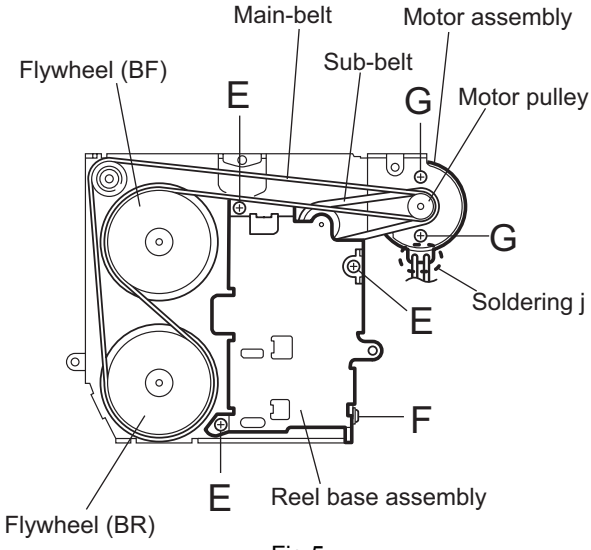


Fig.5

3.2.9 Removing the Flywheel (BF) and (BR) assembly (See Fig.4 and 5)

- Prior to performing the following procedure, remove the cassette hanger / cassette holder.
  (1) From the upper side of the cassette mechanism assembly, remove the C washer from each shaft of the flywheel **(BF)** and **(BR)**.
  (2) Turn over the cassette mechanism assembly and remove the main belt. Pull out the flywheel **(BF)** and **(BR)** downward respectively.

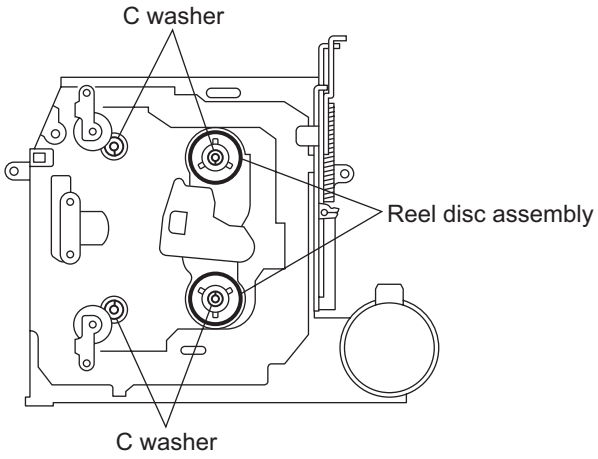


Fig.4

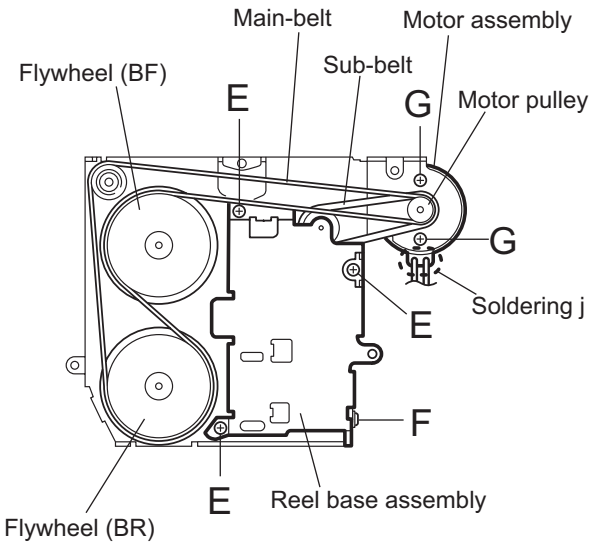


Fig.5

3.2.10 Removing the reel base assembly (See Fig.5 and 6)

(1) Raise the part **k** of the reel base assembly slightly and remove the selector link **(B)** on the front side of the cassette mechanism assembly by turning it as shown in Fig.6.
(2) Remove the three screws **E** and the one screw **F** on the underside of the cassette mechanism assembly.

ATTENTION:

The reel base assembly is not repairable. Handle with care.

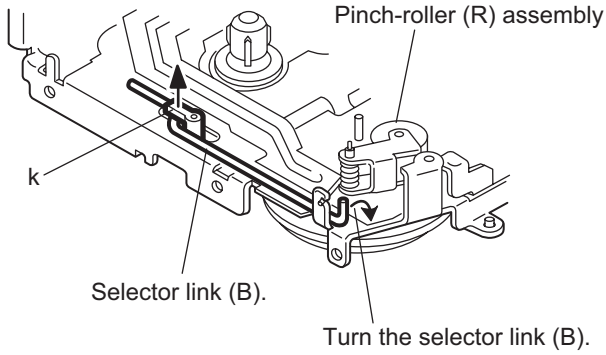


Fig.6

Inside of the reel base assembly

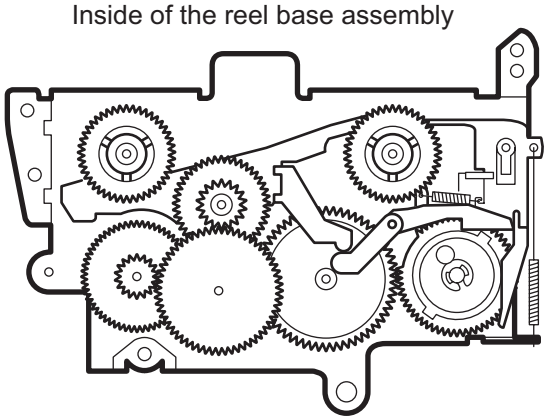


Fig.7

3.2.11 Removing the mute switch board (See Fig.8)

(1) Unsolder the two wires **l** on the mute switch board on the back of the cassette mechanism assembly.
(2) Remove the screw **H** attaching the mute switch board.

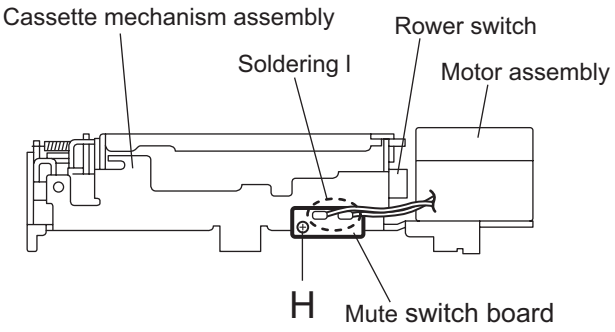


Fig.8

3.2.12 Removing the power switch (See Fig.9)

• Prior to performing the following procedure, remove the motor assembly.
(1) Unsolder the two wires **m** on the power switch on the side of the cassette mechanism assembly.
(2) Remove the screw **l** attaching the power switch.

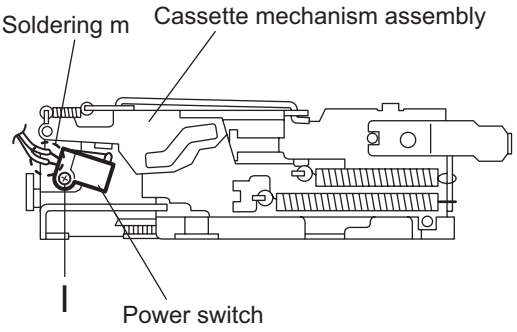


Fig.9

SECTION 4
ADJUSTMENT

4.1 Adjustment method

■ **Test instruments required for adjustment**

(1) Digital oscilloscope (100MHz)
(2) Frequency counter meter
(3) Electric voltmeter
(4) Wow & flutter meter
(5) Test tapes
- VT724.....For DOLBY level measurement
- VT739.....For playback frequency measurement
- VT712....For wow flutter & tape speed measurement
- VT703.....For head azimuth measurement

(6) Torque gauge
....Cassette type for CTG-N (Mechanism adjustment)

■ **Standard volume position**

Balance and Bass, Treble volume, Fader : Center (Indication "0")
Loudness, Dolby NR, Sound, Cruise : Off
Volume position is about 2V at speaker output with following conditions, Playback the test tape VT721.

AM mode	999kHz/62dB, INT/400Hz, 30% modulation signal on receiving.
FM mono mode	97.9MHz/66dB, INT/400Hz, 22.5kHz deviation pilot off mono
FM stereo mode	1kHz, 67.5kHz dev. pilot 7.5kHz dev.
Output level	0dB (1μV,50Ω/open terminal)

■ **Measuring conditions (Amplifier section)**

Power supply voltage:	DC14.4V (11V to 15V allowance))
Load impedance:	4Ω (4Ω to 8Ω allowance)
Line out:	2.0V/20kΩ load (250 nWb/m)

■ **Information for using a car audio service jig**

(1) We're advancing efforts to make our extension cords common for all car audio products.
Please use this type of extension cord as follows.
(2) As a U-shape type top cover is employed, this type of extension cord is needed to check operation of the mechanism assembly after disassembly.
(3) Extension cord : EXTKSRT002-6P (6 pin extension cord) For connection between mechanism assemblyand main board.
(4) Check for mechanism driving section such as motor ,etc.

■ **Disassembly method**

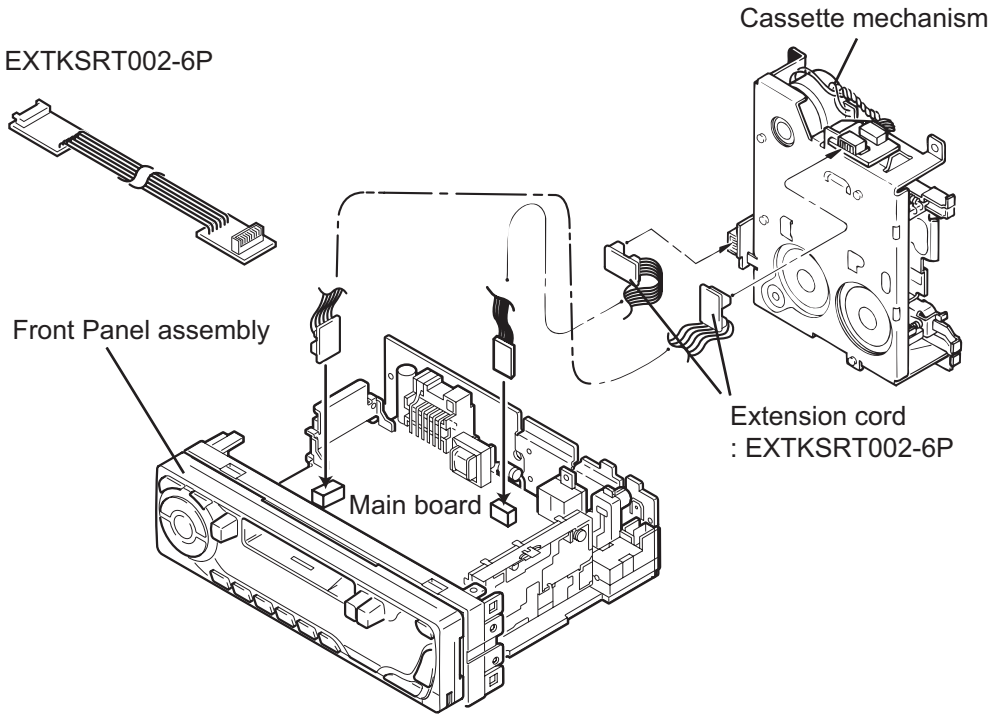
(1) Remove the front panel assembly.
(2) Remove the bottom cover.
(3) Remove the front chassis.
(4) Remove the heat sink.
(5) Remove the rear panel
(6) Remove the main board.
(7) Reattach the heat sink with the two screws **C**. (Refer to DISASSEMBLY.)
(8) Reattach the rear panel with the screw **F**. (Refer to DISASSEMBLY.)
(9) Reattach the front chassis assembly with the screw **A**. (Refer to DISASSEMBLY .).
(10) Reattach the front panel assembly.
(11) Confirm that current is being carried by connecting an extension cord jig.

NOTE:

Available to connect to the CJ701 connector when installing the front panel.

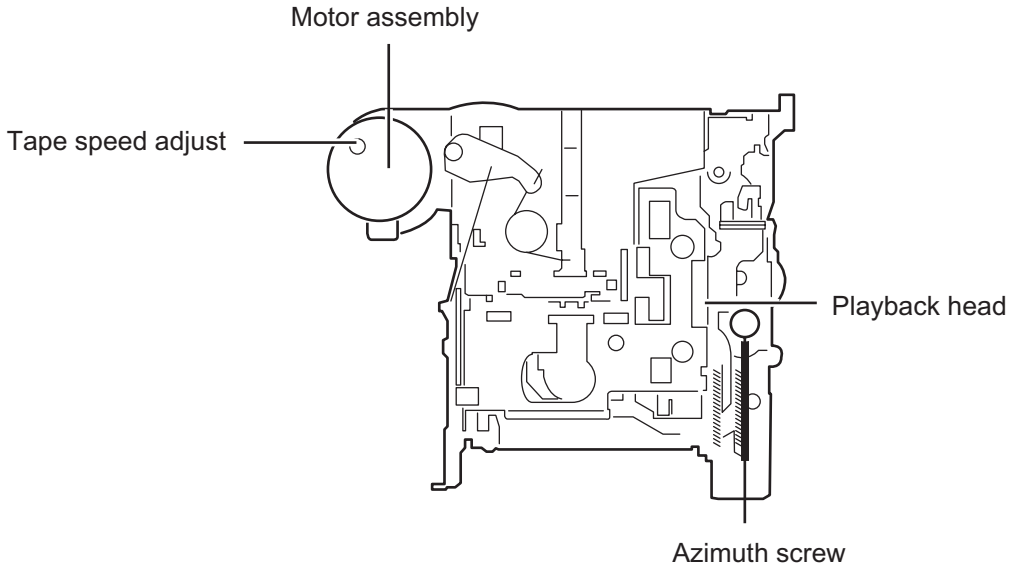
CAUTION :

Be sure to attach the heat sink and rear panel on the power amplifier IC and regulator IC of a main board when supplying the power.If voltage is applied without attaching those parts, the power amplifier IC and regulator IC will be destroyed by heat.

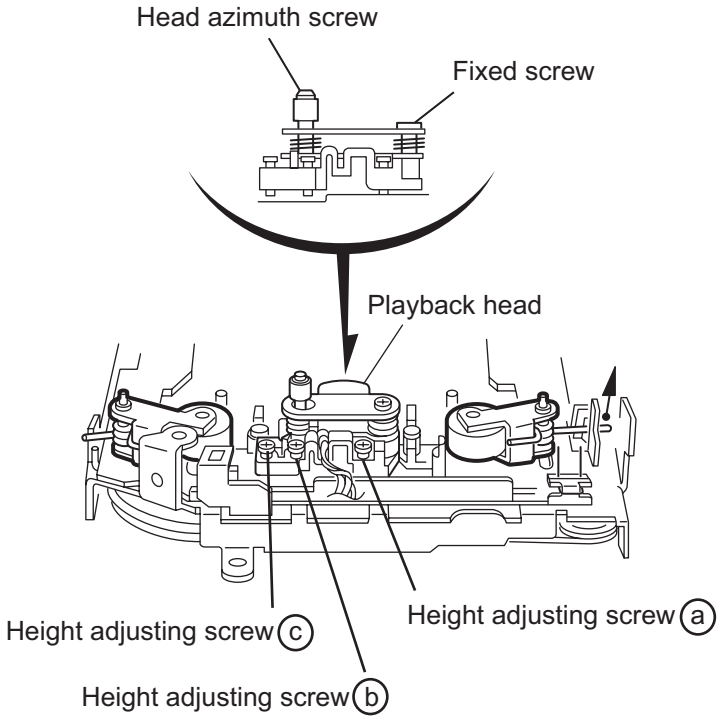


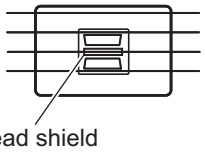
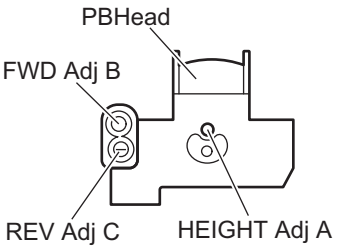
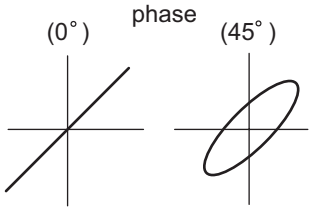
■ **Arrangement of adjusting & test points**

Cassette mechanism
(Surface)



Head section view

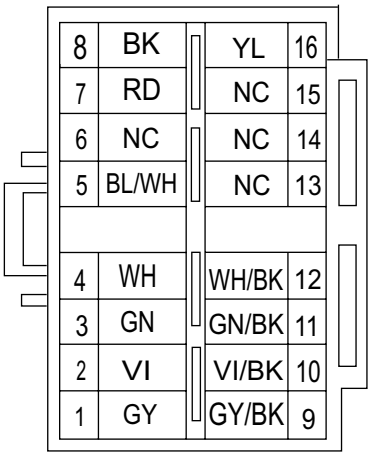


Item	Conditions	Adjustment and Confirmation methods	S.Values	Adjust
1. Head azimuth adjustment	Test tape: SCC-1659 VT703 (10kHz)	◆ Head height adjustment ※ Adjust the azimuth directly. When you adjust the height using a mirror tape, remove the cassette housing from the mechanism chassis. After installing thecassette housing, perform the azimuth adjustment. 1. Load the SCC-1659 mirror tape. Adjust with height adjustment screw A and azimuth adjustment screw B so that line A of the mirror tape runs in the center between Lch and Rch in the reverse play mode. 2. After switching from REV to FWD then to REV, check that the head position set in procedure 1 is not changed. (If the position has shifted, adjust again and check.) 3. Adjust with azimuth adjustment screw B so that line B of the mirror tape runs in the center between Lch and Rch in the forward play mode.	 Head shield The head is at low position during.  Head shield The head is at High position during REV.	
	Test tape: VT724 (1kHz) VT703 (10kHz) VT721 (315Hz)	◆ Head azimuth adjustment 1. Load VT724 (1kHz) and play it back in the reverse play mode. Set the Rch output level to max. 2. Load VT703 (10kHz) and play it back in the forward play mode. Adjust the Rch and Lch output levels to max, with azimuth adjustment screw B. In this case, the phase difference should be within 45°. 3. Engage the reverse mode and adjust the output level to max, with azimuth adjustment screw C. (The phase difference should be 45° or more.) 4. When switching between forward and reverse modes, the difference between channels should be within 3dB. (Between FWD L and R, REV L and R.) 5. When VT721 (315Hz) is played back, the level difference between channels should be within 1.5dB.	Output level: Maximum  	
2. Tape speed and wow flutter confirmation	Test tape: VT712 (3kHz)	1. Check to see if the reading of the F, counter / wow flutter meter is within 3015Hz to 3045Hz (FWD/ REV), and less than 0.35% (JIS RMS). 2. In case of out of specification, adjust the motor with a built-in volume resistor.	Tape speed: 3015Hz to 3045Hz Wow flutter: less than 0.35%	Built-in volume resistor
3. Play back frequency response confirmation	Test tape: VT724 (1kHz) VT739 (63Hz / 1kHz / 10kHz)	1. Play test tape VT724, and set the volume position at 2V. 2. Play test tape VT739 and confirm. 1kHz / 10kHz: -1 ± 3dB, 1kHz / 63Hz: 0 ± 3dB, 3. When 10kHz is out of specification, it will be necessary to read adjust the azimuth.	Speaker out 1kHz / 63Hz : 0±3dB 1kHz / 10kHz : -1±3dB	

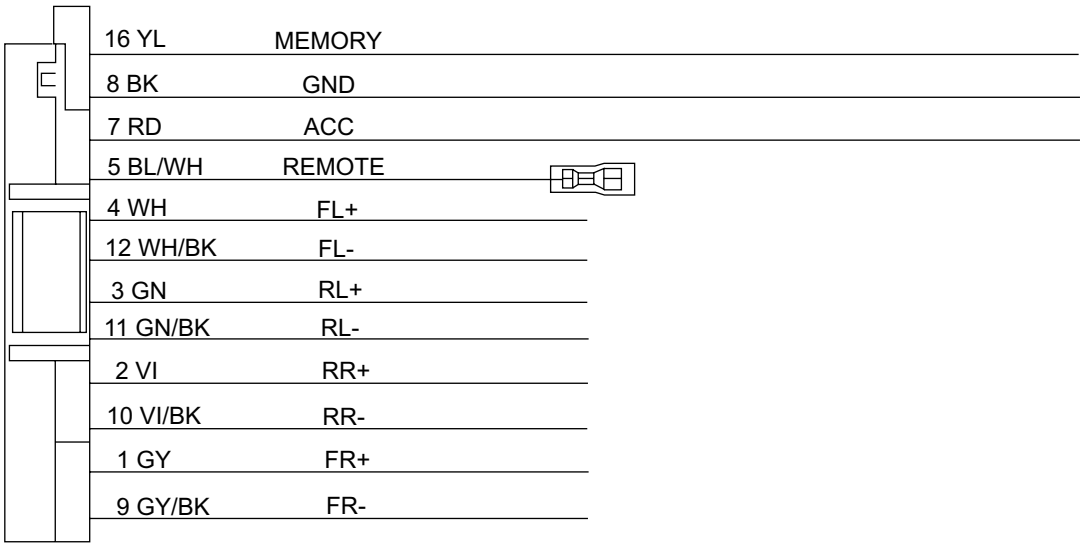
The tuner section is of an adjustment-freedesign. In case the tuner is in trouble, replace the tuner pack.

SECTION 5
TROUBLESHOOTING

5.1 16 PIN CORD DIAGRAM



BK	Black	GN	Green
RD	Red	VI	Violet
BL	Blue	GY	Gray
WH	White	YL	Yellow



RR	Rear Right	REMOTE	Remote out
FR	Front Right	ACC	ACC Line
FL	Front Left	MEMORY	Memory Backup Battery +
RL	Rear Left	GND	Ground

JVC
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