

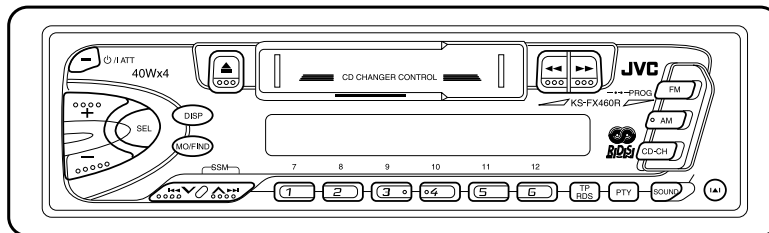
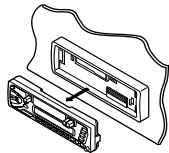
JVC

SERVICE MANUAL

CASSETTE RECEIVER

KS-FX460R / KS-FX463R

Detachable



Area Suffix
E Continental Europe

Difference point	KS-FX460R	KS-FX463R
LCD	GREEN	AMBER
LED (without power button)	GREEN	AMBER

Contents

Safety precaution	1-2
Disassembly method	1-3
Adjustment method	1-13
Description of major ICs	1-17~22

Safety precaution



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.

Disassembly method

<Main body>

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

1. Press the eject button in the lower right part of the front panel. Remove the front panel assembly from the body.

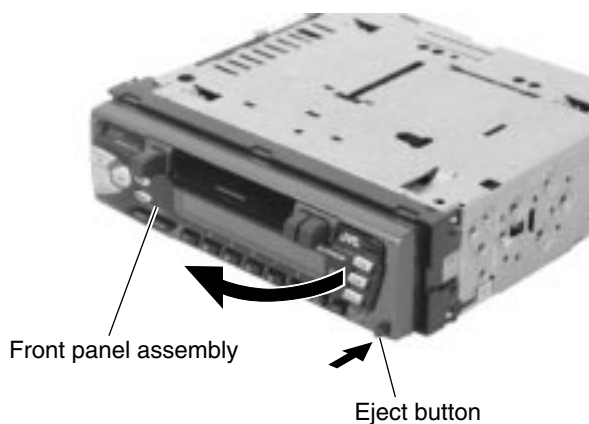


Fig.1

■ Removing the front chassis assembly (See Fig.2 and 3)

- Prior to performing the following procedure, remove the front panel assembly.
1. Release the four joint tabs **a** on both sides of the front chassis assembly and remove the front chassis assembly toward the front.

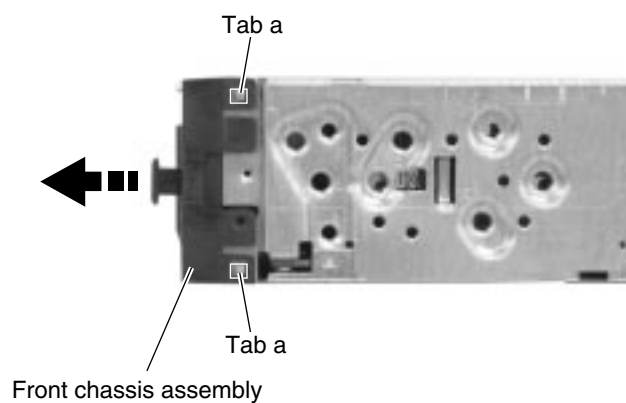


Fig.2

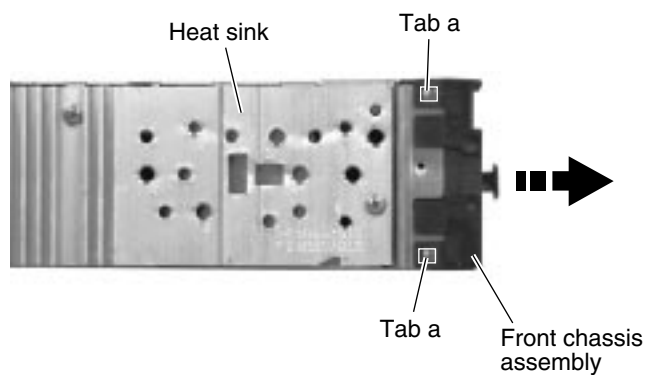


Fig.3

■ Removing the heat sink (See Fig.4)

1. Remove the three screws **A** on the left side of the body.

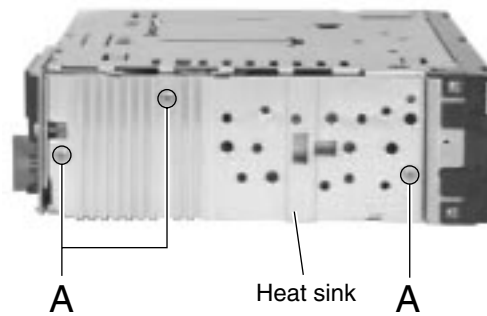


Fig.4

■ Removing the bottom cover (See Fig.5 and 6)

- Prior to performing the following procedure, remove the front panel assembly, the front chassis assembly and the heat sink.

1. Turn over the body and unjoint the five joints **b** with the bottom cover and the body using a screwdriver.

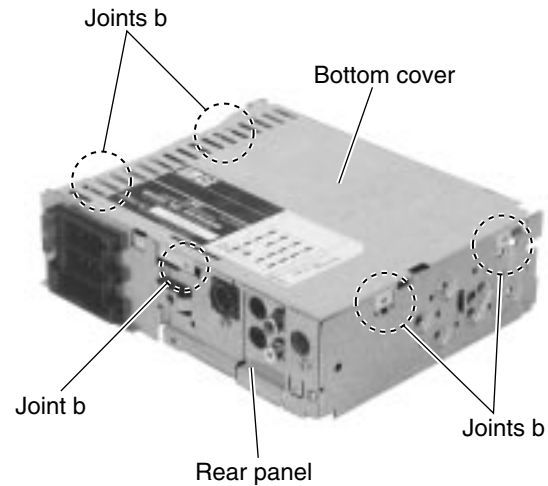


Fig.5

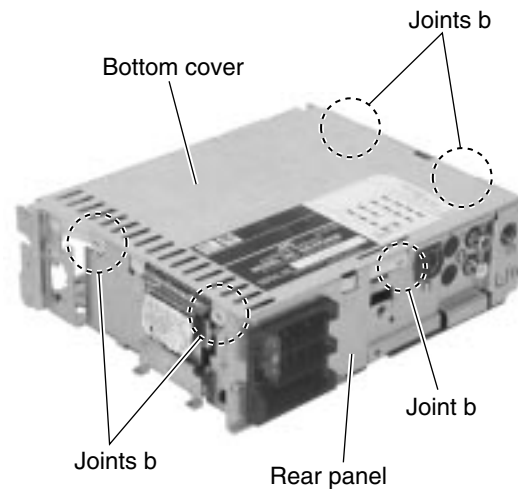


Fig.6

■ Removing the main board (See Fig.7 and 8)

· Prior to performing the following procedure, remove the front panel assembly, the front chassis assembly, the heat sink and the bottom cover.

1. Remove the screw **B**, the two screws **C** and the two screws **D** attaching the rear bracket on the back of the body. Remove the rear bracket.
2. Remove the two screws **E** attaching the main board on the bottom of the body. Disconnect connector CN901 and CN902 on the main board in the direction of the arrow.

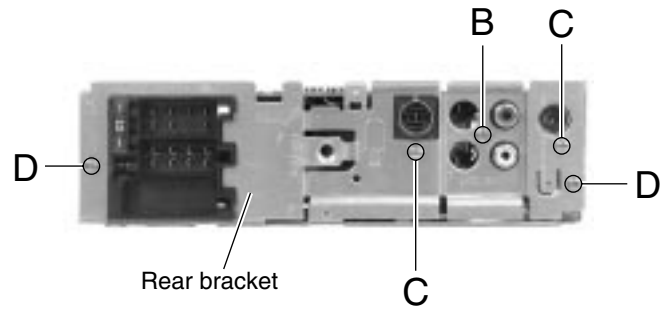


Fig.7

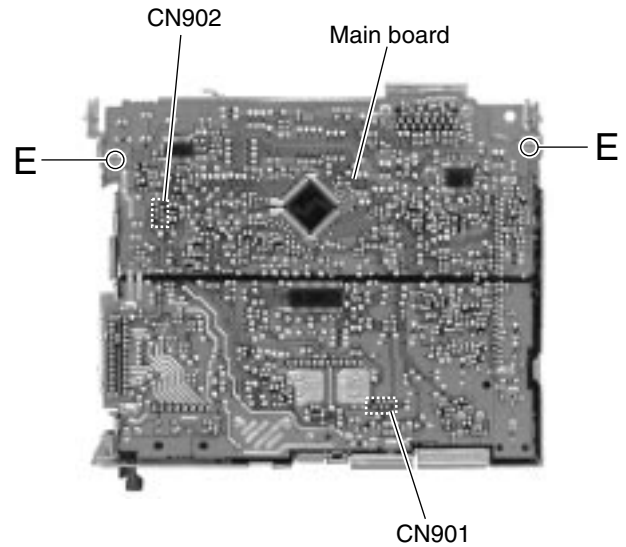


Fig.8

■ Removing the cassette mechanism section (See Fig.9)

· Prior to performing the following procedure, remove the front panel assembly, the front chassis assembly, the heat sink, the bottom cover and the main board.

1. Remove the four screws **F** attaching the cassette mechanism section on the back of the top chassis.

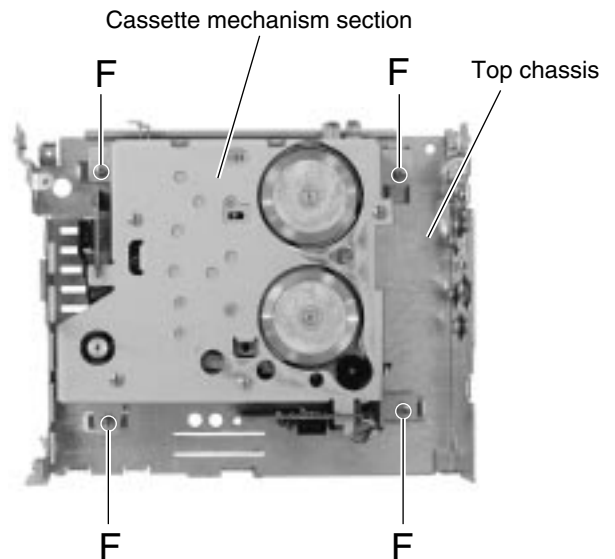


Fig.9

■ **Removing the head amplifier board**
(See Fig.10)

• Prior to performing the following procedure, remove the cassette mechanism section.

1. Disconnect the wire from connector CJ901 on the head amplifier board.
2. Remove the screw **G** and slide the head amplifier board in the direction of the arrow to unjoint the two joints **c** with the mechanism bracket.

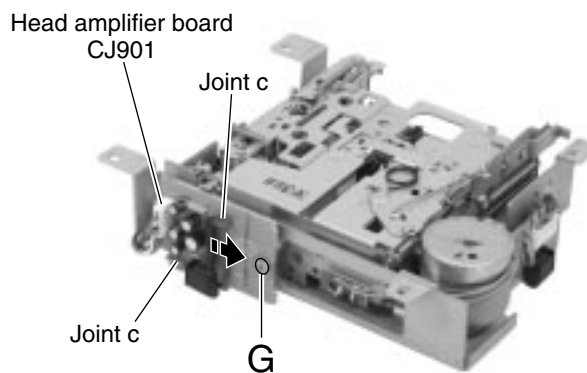


Fig.10

■ **Removing the motor board (See Fig.11)**

• Prior to performing the following procedure, remove the cassette mechanism section.

1. Disconnect the wire from connector CJ902 on the motor board.
2. Remove the screw **H** and slide the motor board in the direction of the arrow to unjoint the joint **d** with the mechanism bracket.

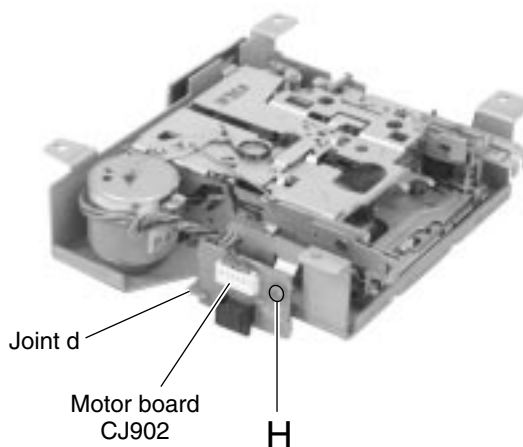


Fig.11

■ **Removing the cassette mechanism assembly**
(See Fig.12)

• Prior to performing the following procedure, remove the cassette mechanism section, the head amplifier board and the motor board.

1. Remove the four screws **I** on the bottom of the cassette mechanism section.

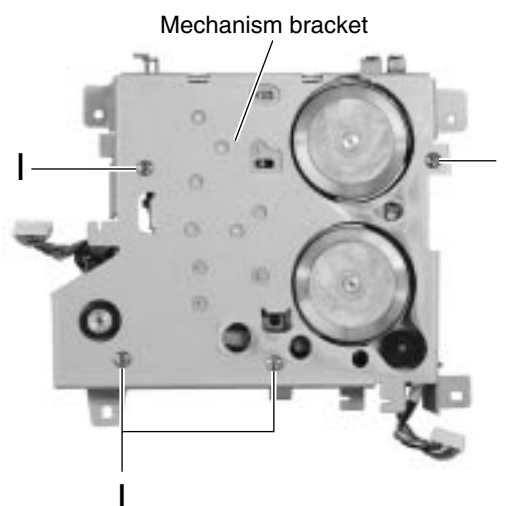


Fig.12

■ Removing the control switch board (See Fig.13 to 15)

- Prior to performing the following procedure, remove the front panel assembly.
1. Remove the four screws **J** attaching the rear cover on the back of the front panel assembly.
 2. Unjoint the six joints **e** with the front panel and the rear cover.
 3. Remove the control switch board on the back of the front panel.

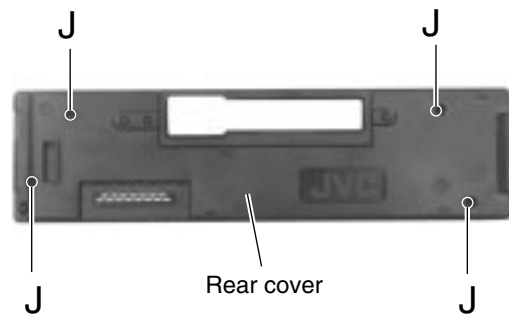


Fig.13

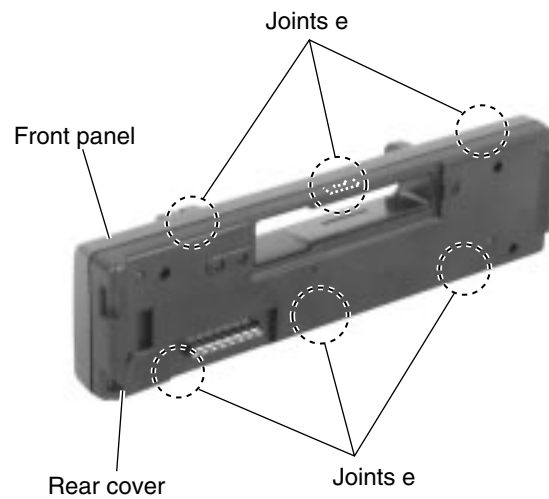


Fig.14

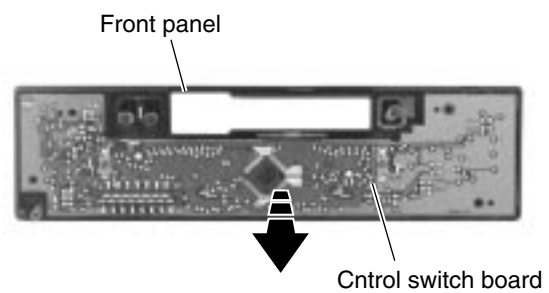


Fig.15

<Cassette mechanism assembly>

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

■ 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.

■ 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**.

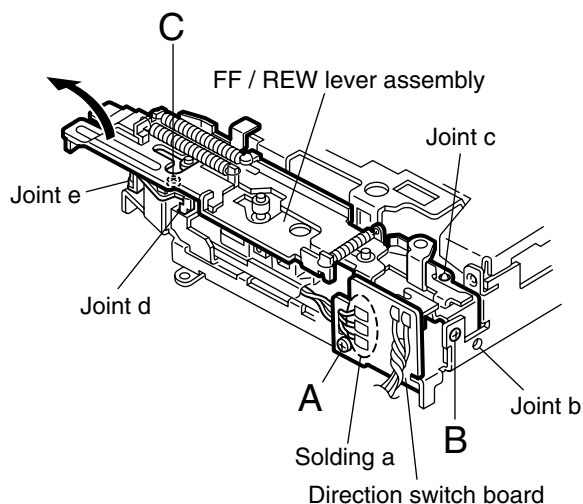


Fig.1

■ 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.

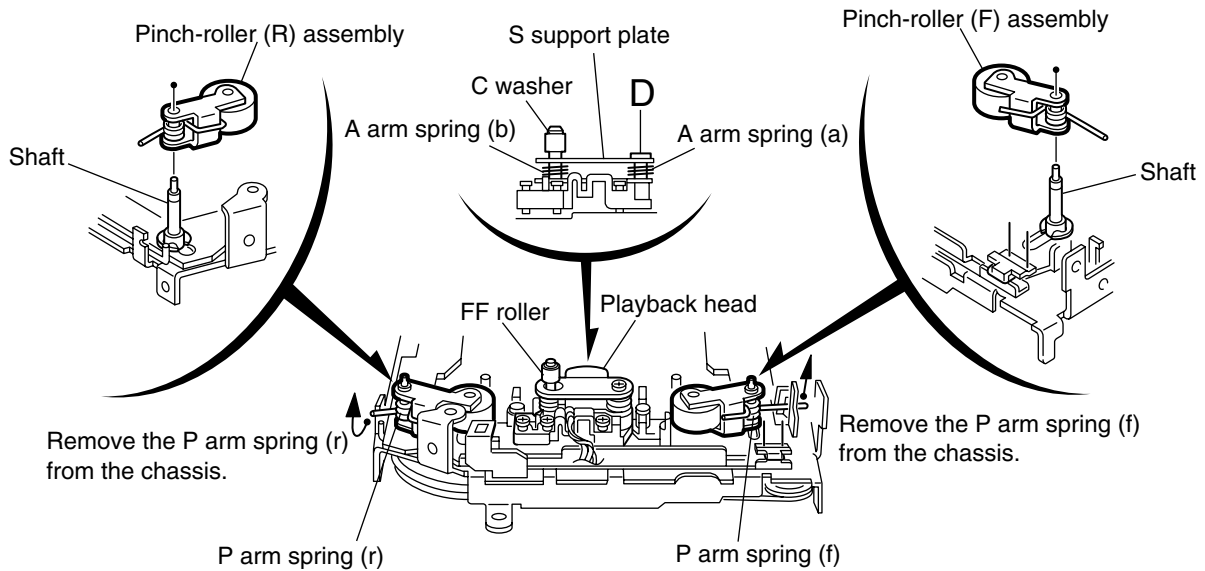


Fig.2

■ 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).

■ 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.

■ 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.

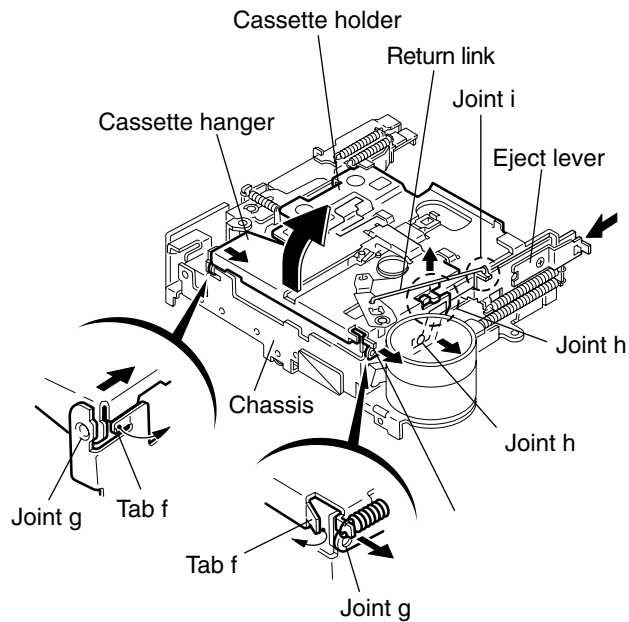


Fig.3

■ 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.

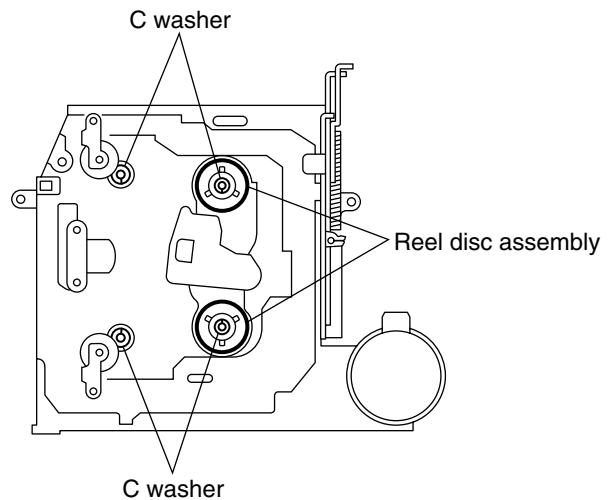


Fig.4

■ Removing the motor assembly (See Fig.5)

1. Unsolder the two wires **j** on the motor assembly.

ATTENTION: To replace the sub-belt, remove the main belt and the sub-belt from the motor pulley. Then remove the three screws **E** and one screw **F**. Replace with a new sub-belt while lifting the reel base assembly slightly.

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.

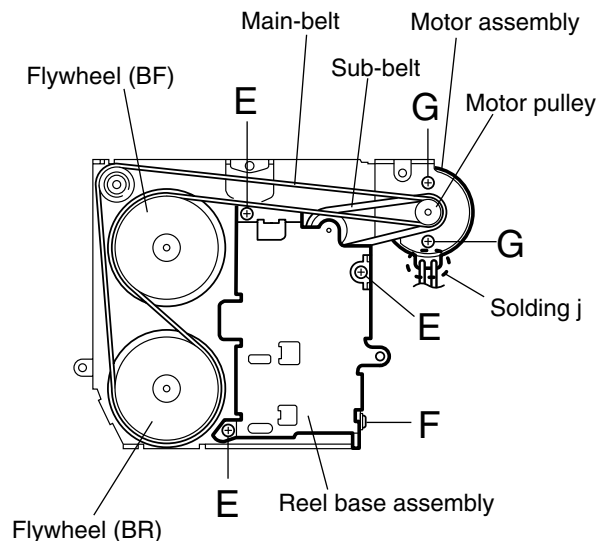


Fig.5

■ 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.

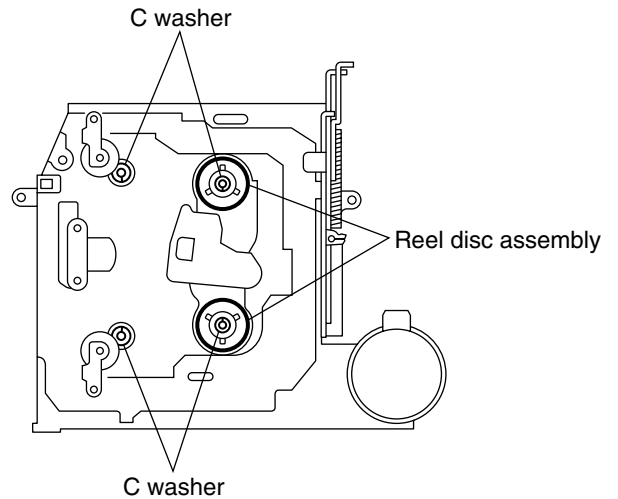


Fig.4

■ 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.10.
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.

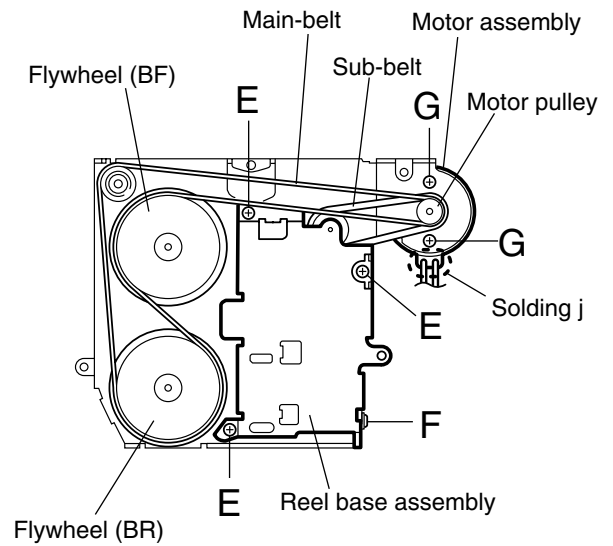


Fig.5

Inside of the reel base assembly

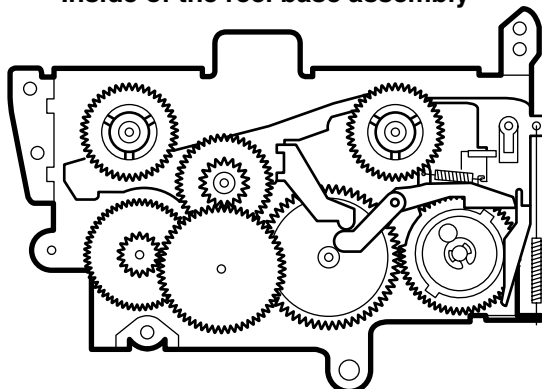


Fig.7

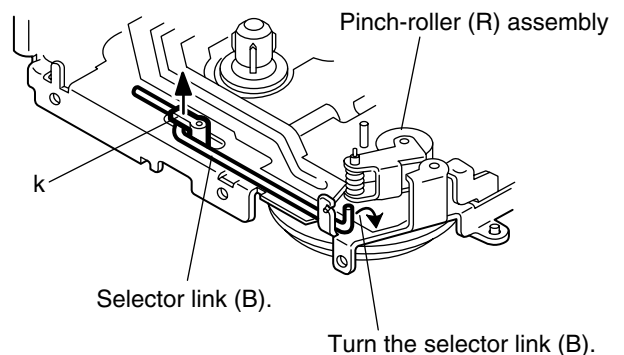


Fig.6

■ **Removing the mute switch board**
(See Fig.8)

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

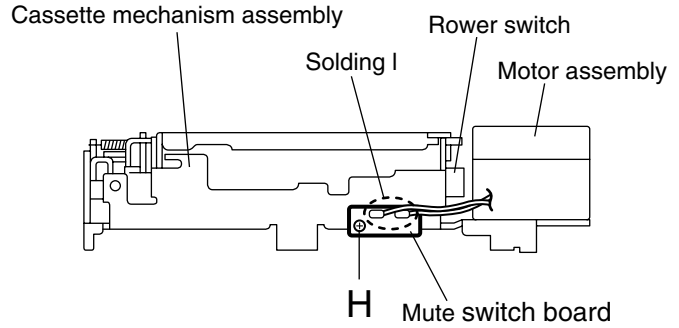


Fig.8

■ **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 **I** attaching the power switch.

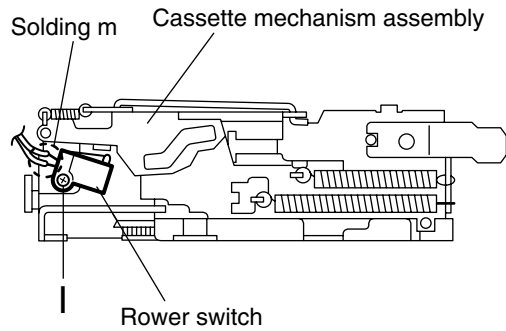


Fig.9

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)

■ Measuring conditions(Amplifier section)

Power supply voltage DC14.4V (10.5 - 16V)
 Load impedance 4 Ω (2Speakers connection)
 Line out 20k Ω

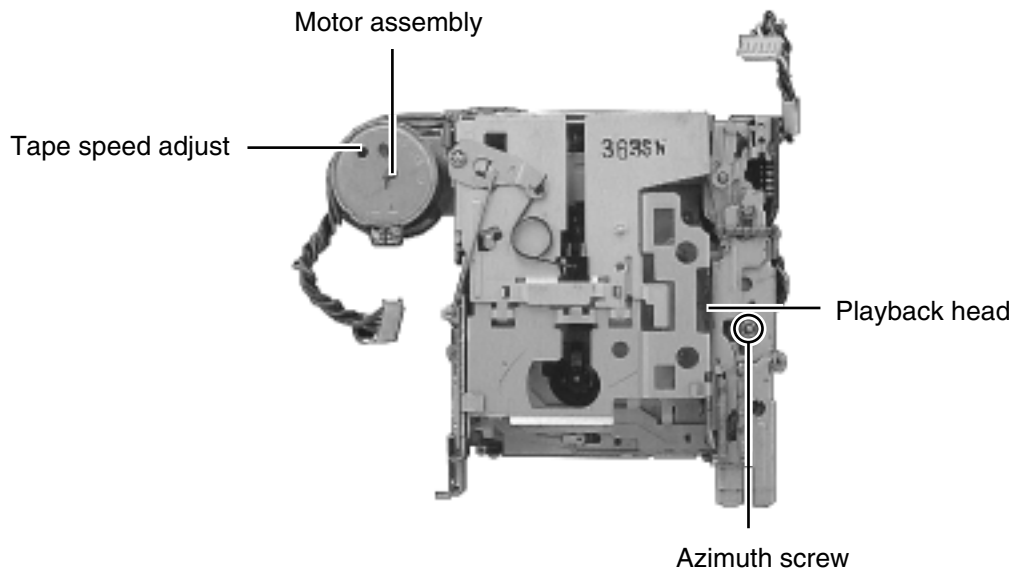
■ Standard volume position

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.

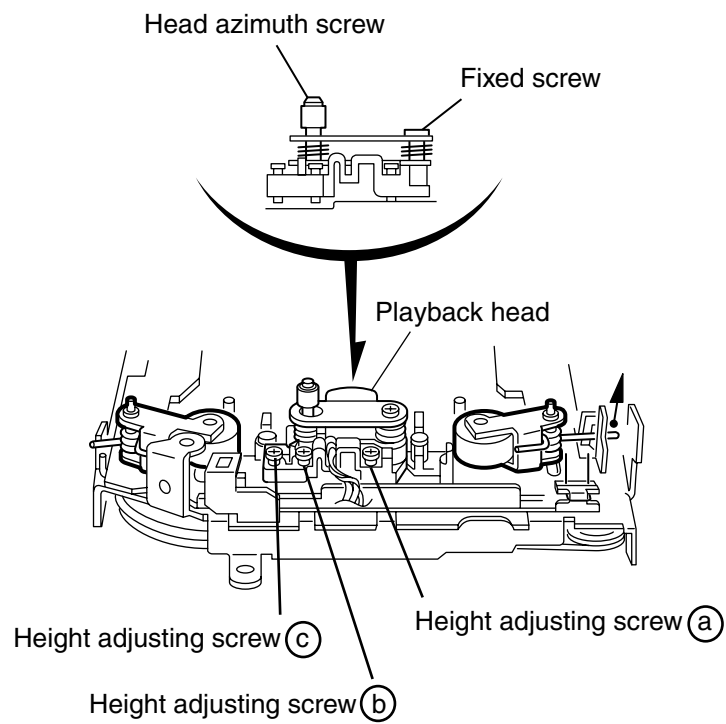
AM mode	999kHz/62dB,INT/400Hz,30% modulation signal on receiving.
FM mono mode	97.9MHz/66dB,INT/400Hz,22.5kHz deviation pilot off mono
FM stereo mode	1kHz,67.5kHz dev. pilot7.5kHz dev.
Output level	0dB(1 μ V,50 Ω /open terminal)

■Arrangement of adjusting & test points

Cassette mechanism
(Surface)



Head section view



■ Information for using a car audio service jig

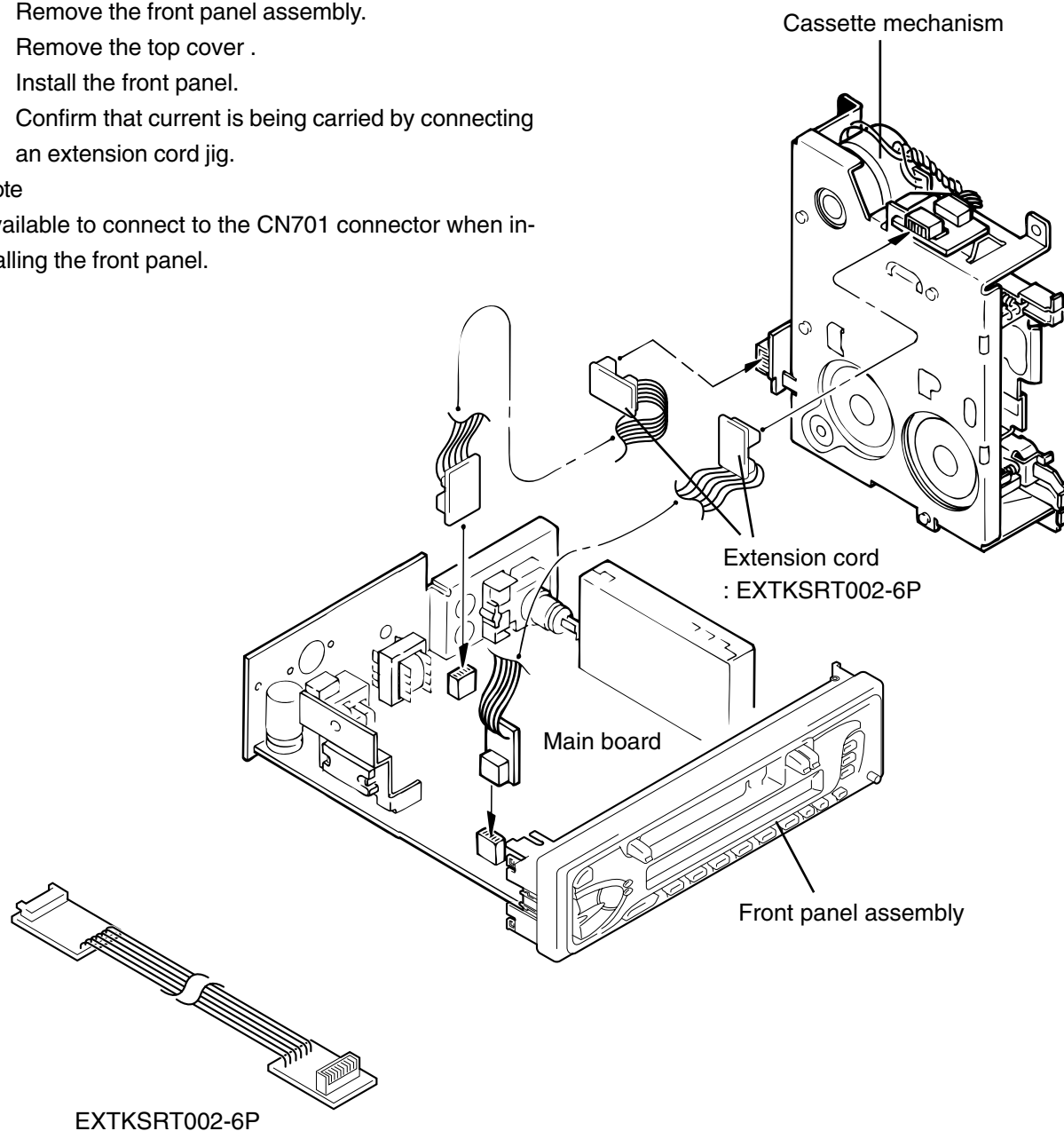
1. For 1995 and 1996, we're advancing efforts to make our extension cords common for all car audio products. Please use this type of extension cord as follows.
2. As a U-shape type top cover is employed, this type of extension cord is needed to check operation of the mechanism assembly after disassembly.
3. Extension cord : EXTKSRT002-6P (6 pin extension cord) For connection between mechanism assembly and main board assembly.
Check for mechanism driving section such as motor ,etc..

■ Disassembly method

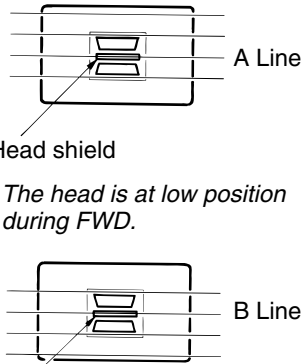
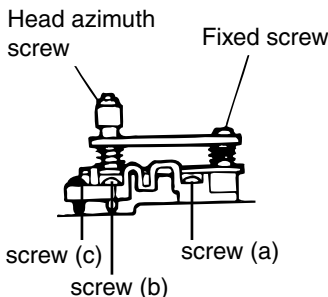
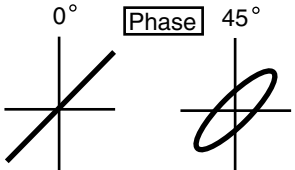
1. Remove the bottom cover.
2. Remove the front panel assembly.
3. Remove the top cover .
4. Install the front panel.
5. Confirm that current is being carried by connecting an extension cord jig.

Note

Available to connect to the CN701 connector when installing the front panel.



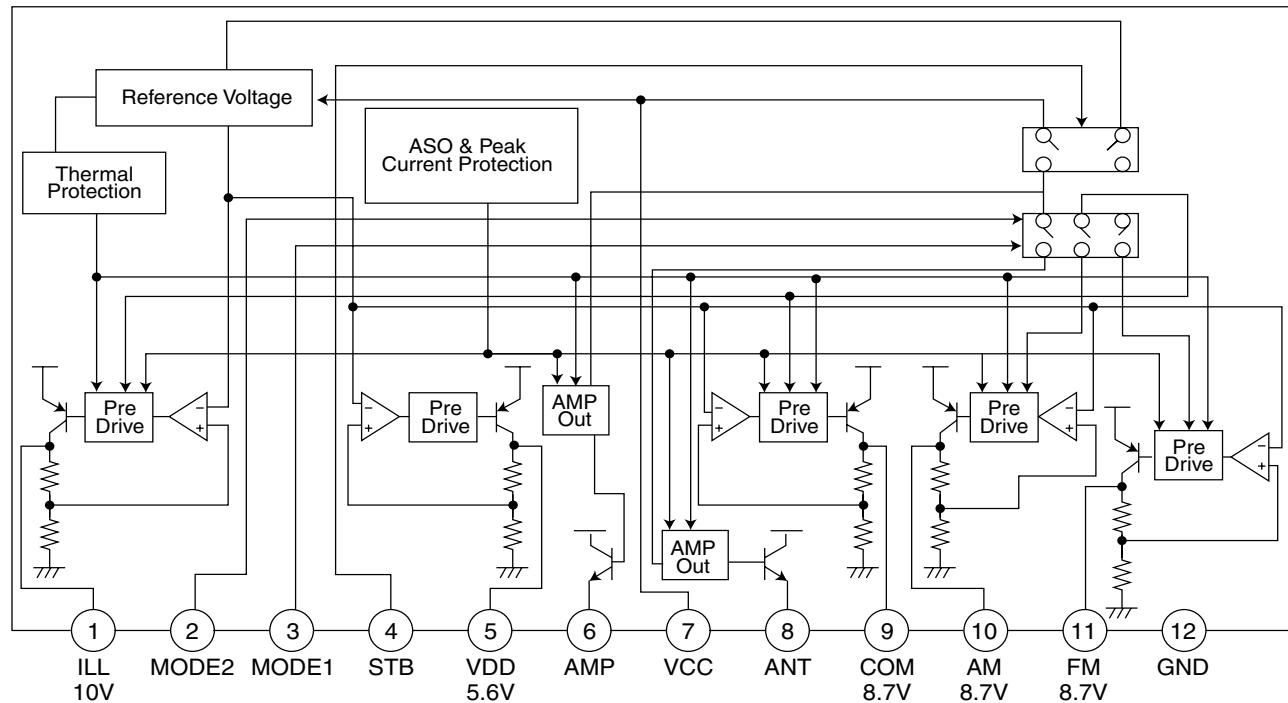
■Mechanism adjustment section

Item	Adjusting & Confirmation Methods	Adjust	Std. Value
<p>1.Head azimuth</p>	<p>"Head Height Adjustment"</p> <p>Note Adjust the azimuth directly. When you adjust the height using a mirror tape, remove the cassette housing from the mechanism chassis. After installing the cassette housing, perform the azimuth adjustment.</p> <ol style="list-style-type: none"> load the mirror tape (SCC-1659). Adjust with height adjustmentscrew (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. 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. Adjust the azimuth screw (b) so that line "B" of the mirror tape runs in the center between Lch and Rch in the forward play mode. <p>"Head Azimuth Adjustment"</p> <ol style="list-style-type: none"> Load the test tape (VT724: 1kHz) and play it back in the reverse play mode. set the Rch output level to maximum. Load the test tape (VT703: 10kHz) and play it back in the forward play mode. Adjust the Rch and Lch output levels to maximum, with azimuth adjustment screw (b). In this case, the phase difference should be within 45° . Engage the reverse mode and adjust the output level to maximum, with azimuth adjustment screw (c). *The phase difference should be 45_Kor more. When switching between forward and reverse modes, the difference between channels should be within 3dB. *Between FWD Lch and Rch, REV Lch and Rch. When the test tape (VT721 : 315Hz) is played back, the level difference between channels should be within 1.5dB. 	<p>Adjust Std. Value</p>  <p>Head shield</p> <p>The head is at low position during FWD.</p> <p>Head shield</p> <p>The head is at height position during REV.</p>  <p>Head azimuth screw</p> <p>Fixed screw</p> <p>screw (c)</p> <p>screw (a)</p> <p>screw (b)</p>  <p>0° Phase 45°</p>	
<p>2.Tape Speed and Wow & Flutter</p>	<ol style="list-style-type: none"> Check to see if the reading of the frequency counter & Wow flutter meter is within 2940-3090 Hz(FWD/REV), and less than 0.35% (JIS RMS). In case of out of specification, adjust the motor with a built-in volume resistor. 	<p>Built-in volume resistor</p>	<p>Tape Speed 2940-3090Hz Wow&Flutter Less than 0.35% (JIS RMS)</p>
<p>3.Playback Frequency response</p>	<ol style="list-style-type: none"> Play the test tape (VT724 : 1kHz) back and set the volume position at 2V. Play the test tape (VT739)back and confirm $0 \pm 3\text{dB}$ at 1kHz/ 8kHz and $-4+2\text{dB}$ at 1kHz/125Hz. When 8kHz is out of specification, it will be necessary to read adjust the azimuth. 		<p>Speaker out 1kHz/8kHz : $0\text{dB}_-3\text{dB}$, 125Hz/1kHz : $-4\text{dB}+2\text{dB}$,</p>

Description of major ICs

■ AN80T05LF (IC961) : Regulator

1. Terminal layout & Block diagram

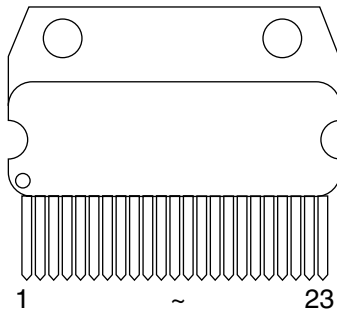


2. Pin function

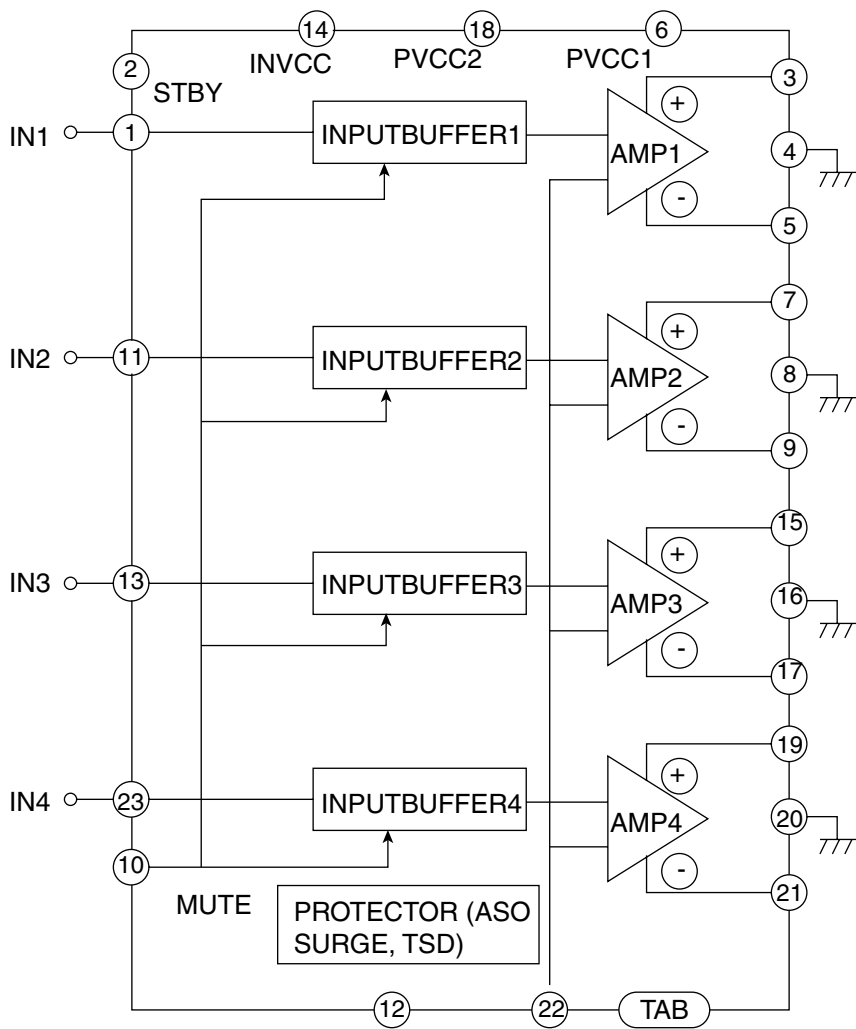
Pin No.	Symbol	Function
1	ILL	10V power supply for illumination.
2	MODE2	When 5V is input, becomes AM. and the antenna output is turned on.
3	MODE1	When 5V is input, becomes AM. and the output of FM is switched.
4	STB	When 5V is input, outputs to ILL, COM, and AMP. It is 0V usually.
5	VDD	5.6V power supply.
6	AMP	Power supply supply to remote amplifier
7	VCC	Back up. connects with ACC with it.
8	ANT	Power supply supply to auto antenna.
9	COM	8.7V power supply.
10	AM	The power supply of 8.7V to AM.
11	FM	The power supply of 8.7V to FM.
12	GND	Ground

■ HA13158A (IC941) : Power amp

1. Pin layout

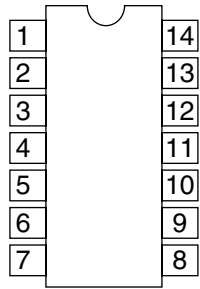


2. Block diagram



■ HD74HC126FP-X (IC751) : Buffer

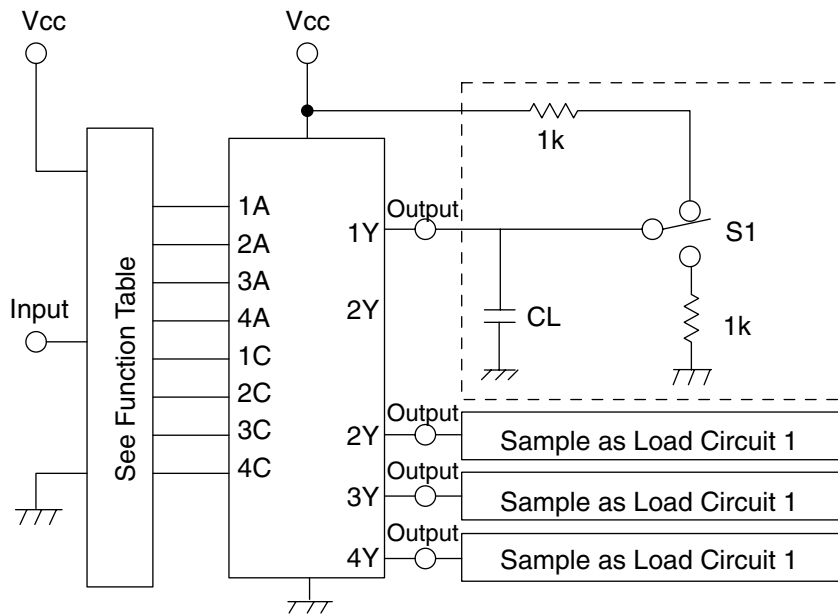
1. Terminal layout



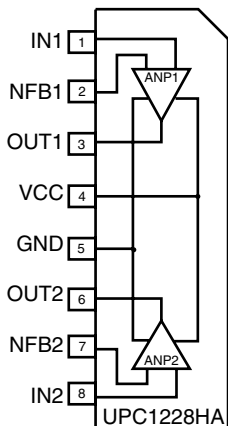
3. Pin function

Input		Outout
C	A	Y
L	X	Z
H	L	H
H	H	L

2. Block diagram

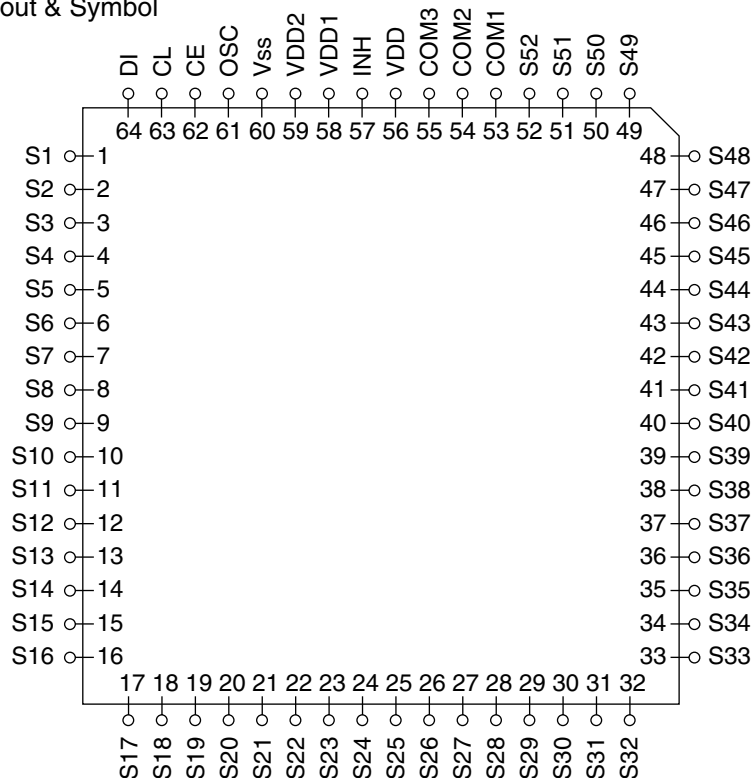


■ UPC1228HA(IC901):Head amp



■ LC75823W (IC651) : LCD driver

1. Pin Layout & Symbol

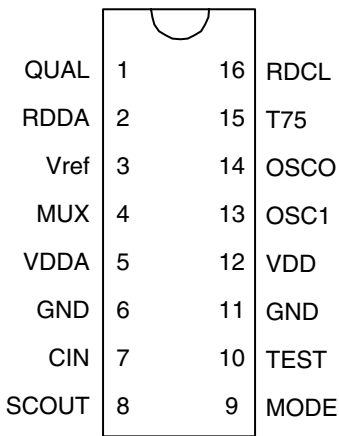


2. Pin Function

Pin No.	Symbol	I/O	Function
1 to 52	S1 to S52	O	Segment output pins used to display data transferred by serial data input.
53 to 55	COM1 to COM3	O	Common driver output pins. The frame frequency is given by : $t_0 = (f_{osc}/384)\text{Hz}$.
56	VDD	--	Power supply connection. Provide a voltage of between 4.5 and 6.0V.
57	$\overline{\text{INH}}$	I	Display turning off input pin. $\overline{\text{INT}} = \text{"L"}$ (Vss) ----- off (S1 to S52, COM1 to COM3 = "L") $\overline{\text{INT}} = \text{"H"}$ (VDD) ----- on Serial data can be transferred in display off mode.
58	VDDD1	I	Used for applying the LCD drive 2/3 bias voltage externally. Must be connected to VDD2 when a 1/2 bias drive scheme is used.
59	VDD2	I	Used for applying the LCD drive 1/3 bias voltage externally. Must be connected to VDD1 when a 1/2 bias drive scheme is used.
60	Vss	--	Power supply connection. Connect to GND.
61	OSC	I/O	Oscillator connection. An oscillator circuit is formed by connecting an external resistor and capacitor at this pin.
62	CE		Serial data interface connection CE : Chip enable
63	CL	I	to the controller. CL : Sync clock
64	DI		DI : Transfer data

■ SAA6579T-X(IC761):RDS Detector

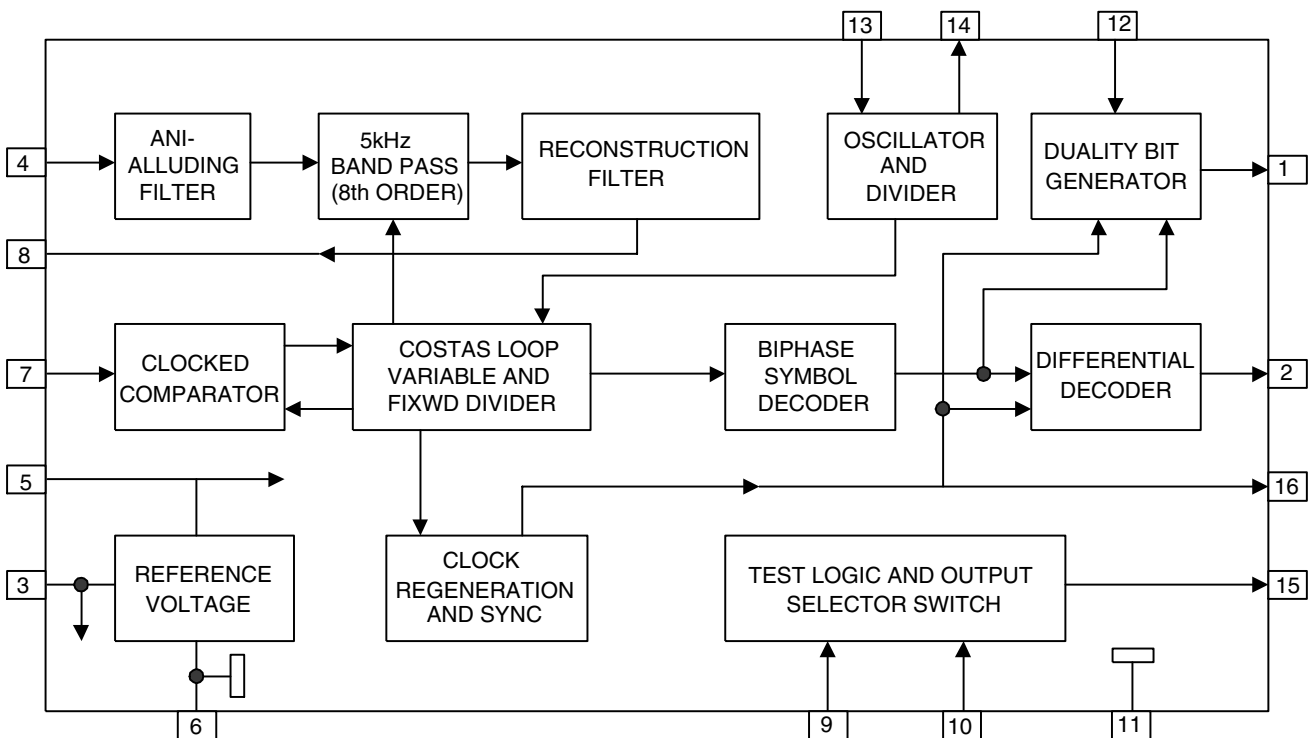
1.Terminal Layout



2.Pin Function

Pin No.	Symbol	I/O	Function
1	QUAL	-	Non connect
2	RDDA	O	RDS data output
3	Vref	O	Reference voltage output
4	MUX	I	Multiplex signal input
5	VDDA	-	+5V Supply voltage for analog
6	GND	-	Ground for analog part (0V)
7	CIN	I	Sub carrier output of reconstruction filter
8	SCOUT	O	Ground for digital part (0V)
9	MODE	-	Ground for digital part (0V)
10	TEST	-	Ground for digital part (0V)
11	GND	-	Ground for digital part (0V)
12	VDD	-	+5V supply voltage for digital part
13	OSC1	I	Oscillator input
14	OSC0	O	Oscillator output
15	T75	-	Non connect
16	RDCL	O	RDS clock output

3.Block Diagram

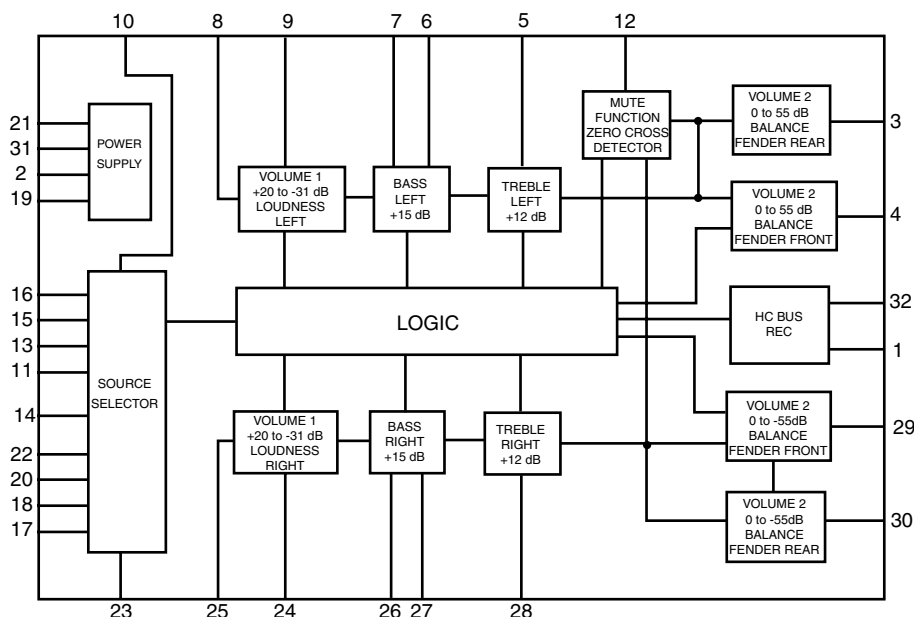


■ TEA6320T-X (IC911) : E.volume

1.Pin layout

SDA	1	32	SCL
GND	2	31	VCC
OUTLR	3	30	OUTRR
OUTLF	4	29	OUTRF
TL	5	28	TR
B2L	6	27	B2R
B1L	7	26	B1R
IVL	8	25	IVR
ILL	9	24	ILR
QSL	10	23	QSR
IDL	11	22	IDR
MUTE	12	21	Vref
ICL	13	20	ICR
IMD	14	19	CAP
IBL	15	18	IBR
IAL	16	17	IAR
			CD-CH
			TUNER

2.Block diagram



3.Pin functions

Pin No.	Symbol	I/O	Functions	Pin No.	Symbol	I/O	Functions
1	SDA	I/O	Serial data input/output.	17	IAR	I	Input A right source.
2	GND	-	Ground.	18	IBR	I	Input B right source.
3	OUTLR	O	output left rear.	19	CAP	-	Electronic filtering for supply.
4	OUTLF	O	output left front.	20	ICR	I	Input C right source.
5	TL	I	Treble control capacitor left channel or input from an external equalizer.	21	Vref	-	Reference voltage (0.5Vcc)
6	B2L	-	Bass control capacitor left channel or output to an external equalizer.	22	IDR	-	Not used
7	B1L	-	Bass control capacitor left channel.	23	QSR	O	Output source selector right channel.
8	IVL	I	Input volume 1. left control part.	24	ILR	I	Input loudness right channel.
9	ILL	I	Input loudness. left control part.	25	IVR	I	Input volume 1. right control part.
10	QSL	O	Output source selector. left channel.	26	B1R	-	Bass control capacitor right channel
11	IDL	-	Not used	27	B2R	O	Bass control capacitor right channel or output to an external equalizer.
12	MUTE	-	Not used	28	TR	I	Treble control capacitor right channel or input from an external equalizer.
13	ICL	I	Input C left source.	29	OUTRF	O	Output right front.
14	IMO	-	Not used	30	OUTRR	O	Output right rear.
15	IBL	I	Input B left source.	31	Vcc	-	Supply voltage.
16	IAL	I	Input A left source.	32	SCL	I	Serial clock input.

< MEMO >

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