JVC

SERVICE MANUAL

CASSETTE RECEIVER

KS-FX834R

Detachable
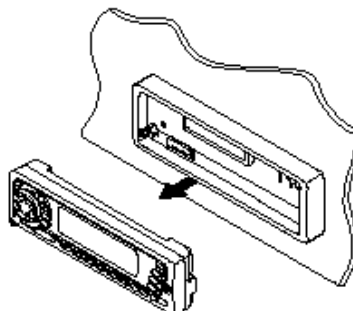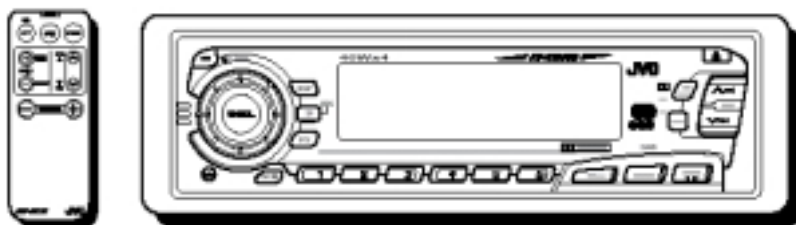
Area Suffix

E ---- Continental Europe

Contents

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 preforming repair of this system.**

Disassembly method

■ Removing the front panel unit

(See Fig.1)

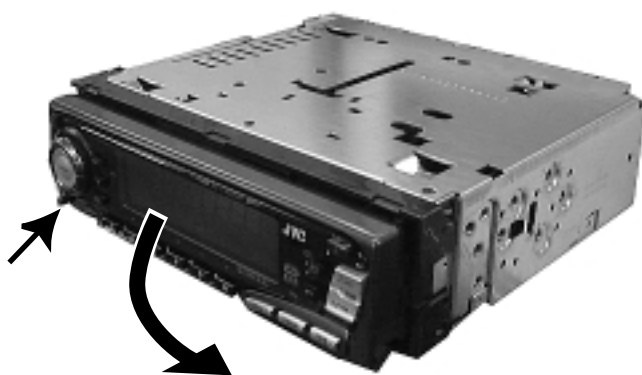1. Press the release switch and remove the front panel unit in the direction of the arrow.

Fig.1

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

1. Remove the two screws **A** attaching the front chassis.

2. Insert a screwdriver to the two joints **a** on the side of the front chassis, two joints **b** on the right side and one joint **c** from upside, then detach the front chassis toward the front side.

A

Fig.2

a   **b**
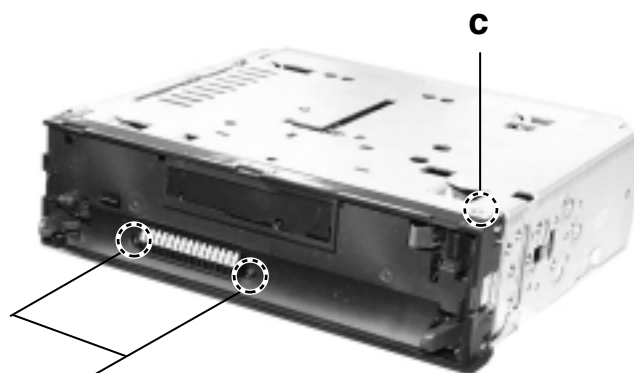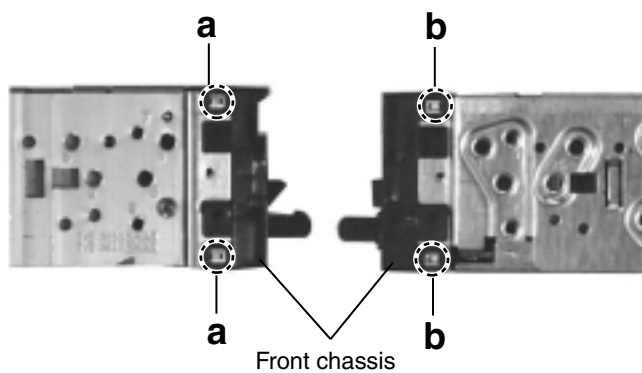
a   **b**

Front chassis

Fig. 3

■ Removing the heat sink (See Fig.4)

1. Remove the three screws **B** attaching the heat sink on the left side of the body, and remove the heat sink.
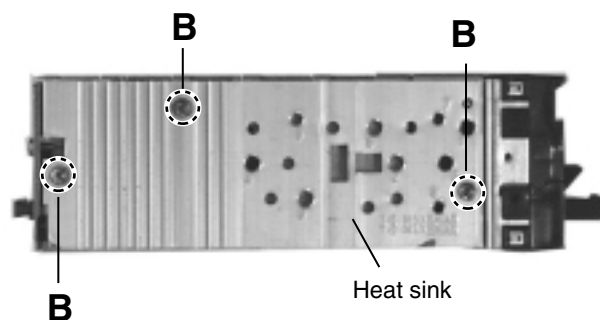
B   **B**

Heat sink

B

Fig. 4

■ Removing the bottom cover (See Fig.5)

1. Turn the body upside down.

2. Insert a screwdriver to the two joints **d** and two joints **e** on both sides of the body and the joint **f** on the back of the body, then detach the bottom cover from the body.
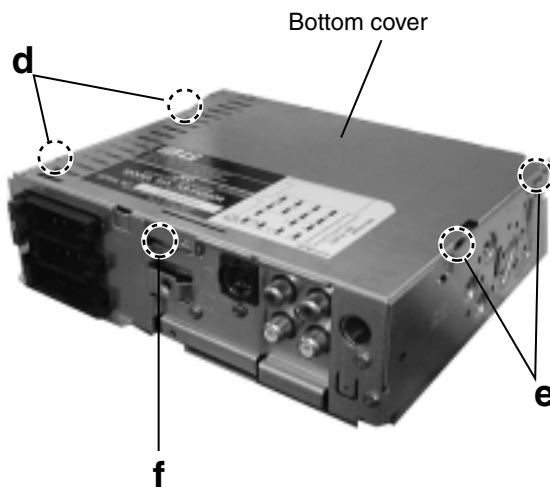
Bottom cover

d

e

f

Fig. 5

■ Removing the rear panel (See Fig.6)

1. Remove the front chassis.

2. Remove the heat sink.

3. Remove the bottom cover.

4. Remove the five screws **B** attaching the rear panel and one screw **C** attaching the pine jack on the back of the body.

C

B

B

B

Fig. 6

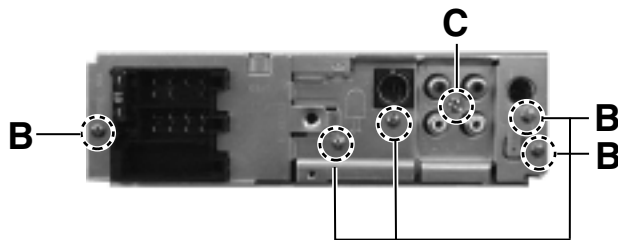## ■ Removing the main amplifier board assembly (See Fig.7)

1. Remove the front chassis.

2. Remove the bottom cover.

3. Remove the rear panel.

4. Remove the two screws **D** attaching the main amplifier board assembly on the top cover.

5. Disconnect connector CP701 on the main amplifier board assembly from the cassette mechanism assembly.

Main board assembly

D

D

CP701
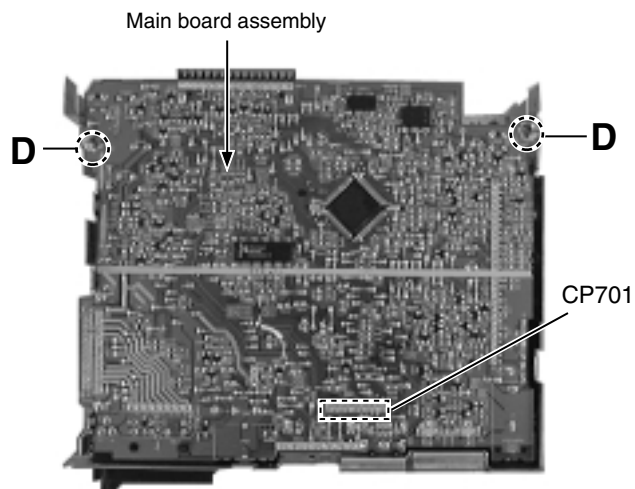
Fig. 7

■ Removing the Cassette mechanism assembly   (See Fig.8)

1. Remove the front chassis.

2. Remove the bottom cover.

3. Remove the main amplifier board assembly.

4. Remove the fore screws **F** attaching the cassette mechanism assembly from the top cover.

Cassette mechanism assembly

F   **F**

F   Fig. 8   **F** Top cover

■ Removing the control switch board
                    (See Fig.9 and 10)

1. Remove the front panel unit from the main body.

2. Remove the five screws **G** attaching the rear cover on the back of the front panel unit.

3. Remove the control switch board from the front panel unit.

G   **G**

G   **G**

Fig. 9

LCD & Key control board

Fig. 10

<Removal of the cassette mechanism>
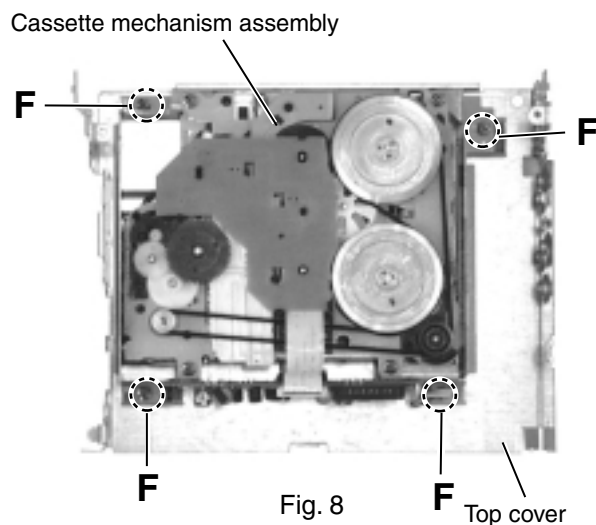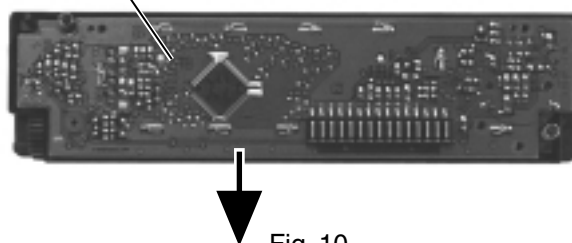
■Removing the mecha control P.W.B. (See Fig.1 and 2)

1. For the 6pin harness extending from connector CN402 on the mecha control P.W.B, disconnect it from the head relay P.W.B.

2. Disconnect the card wire from connector CN403 on the mecha control P.W.B.

3. Remove the screw A attaching the mecha control P.W.B.

4. Move the tab a as shown in Fig.2 and remove the mecha control P.W.B. while moving it in the direction of the arrow.
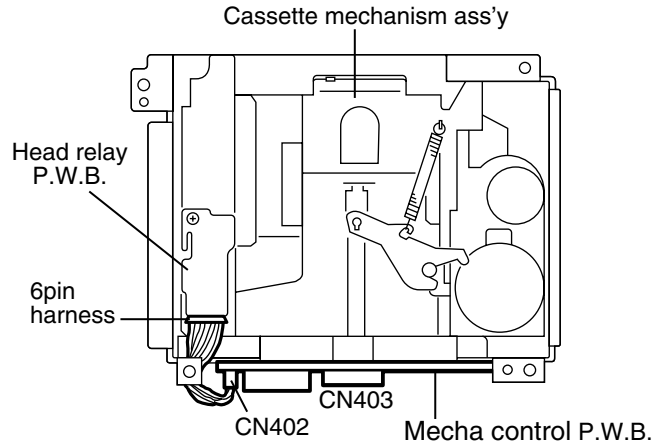
■Removing the cassette mechanism assembly (See Fig.1 to 3)

1. Disconnect the 6pin harness from connector CN402 and the card wire from CN403 on the mecha control P.W.B. (Refer to Fig.1 and 2).

2. Remove the four screws B on the bottom of the cassette mechanism.

Cassette mechanism ass'y

Head relay P.W.B.

6pin harness

CN402

CN403

Mecha control P.W.B.

Fig.1

CN402

CN403

A

Mecha control P.W.B.

Tab a

Fig.2

B

Cassette mechanism ass'y

Mecha control P.W.B.

B

Fig.3

■Removing the head relay P.W.B.
(See Fig.4)

1. Unsolder the soldering b on the head relay P.W.B.

2. Remove the screw C attaching the head relay P.W.B.

3. Remove the head relay P.W.B. in the direction of the arrow while releasing the two joints c.

Fig.4

■Removing the load arm (See Fig.5)

1. Remove the E washer attaching the load arm using a pincette or something like that and remove the spring d.

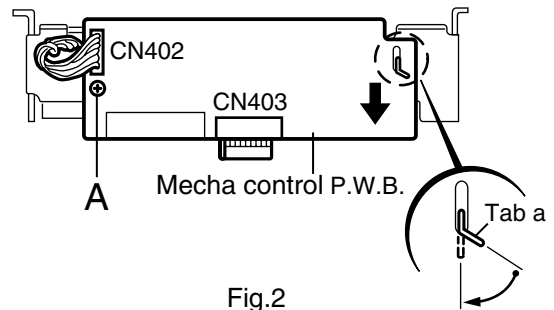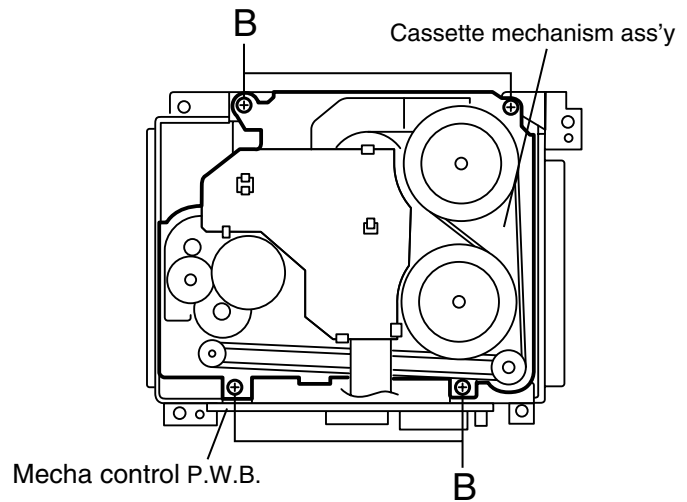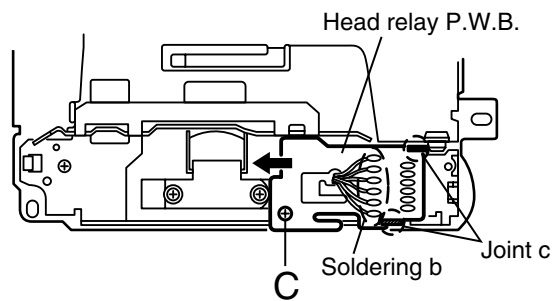2. Move the part of the load arm marked ※ upwards to release it from the axis of rotation. Then rotate the load arm in the direction of the arrow to remove it from the cach.
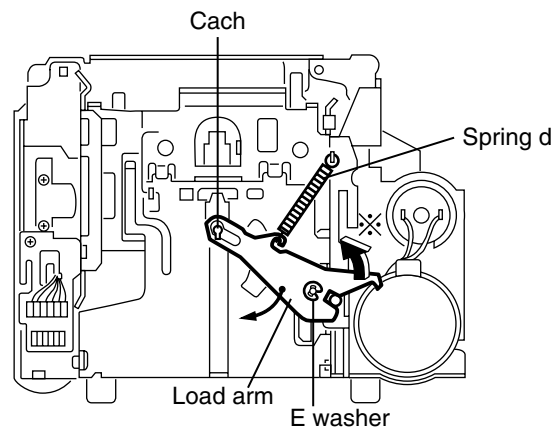
Fig.5

■Removing the sub chassis (See Fig.6)

* Prior to performing the following procedure, remove the head relay P.W.B.

1. Remove the screw D attaching the sub chassis.

2. Push the tab e in the direction of the arrow to detach the one side of the sub chassis. Then release the sub chassis from the tab f.
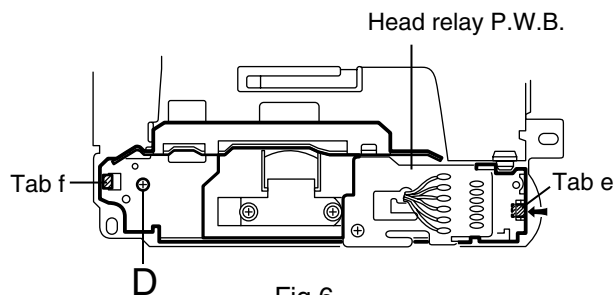
Fig.6

■Removing the cassette holder and the holder arm in the eject mode
(See Fig.7 and 8)

* Prior to performing the following procedure, remove the head relay P.W.B., the load arm and the sub chassis.

1. Remove the screw E attaching the reinforce bracket.

2. Remove the reinforce bracket.

3. Push the tab g fixing the cassette holder in the direction of the arrow and open the cassette holder and the holder arm upward until they stop at an angle of 45 degrees. Move the two joints h to the side and remove the cassette holder and the holder arm from the shaft.
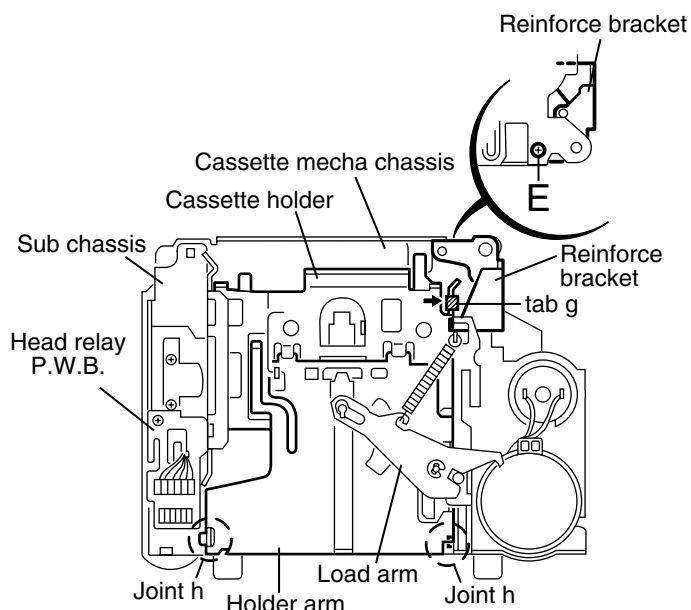
Fig.7

1-7
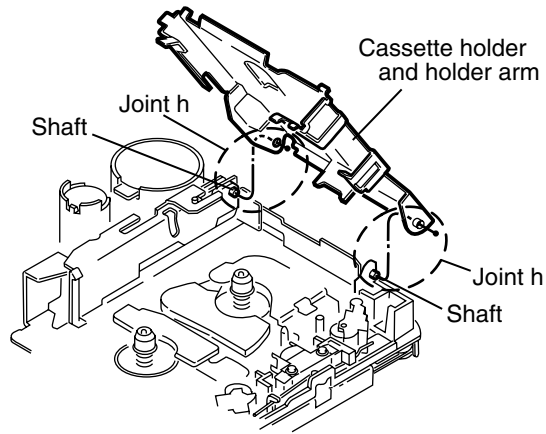
Fig.8

■Removing the play head (See Fig.9)

* Prior to performing the following procedure, remove the head relay P.W.B.and the sub chassis.

1. Remove the two screws F attaching the play head (The spring under the play head comes off at the same time).
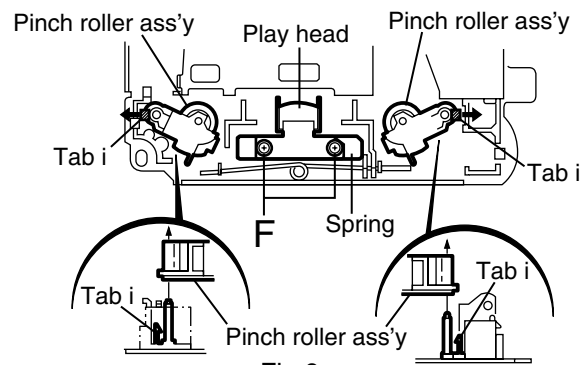
■Removing the pinch roller ass'y (See Fig.9)

* Prior to performing the following procedure, remove the head relay P.W.B. and the sub chassis.

1. Push each tab i in the direction of the arrow and pull out the pinch rollers on both sides.

Fig.9

■Removing the reel disc P.W.B. (See Fig.10)

1. Unsolder the soldering j on the reel disc P.W.B.

2. Push the seven tabs k on the bottom of the cassette mechanism assembly in the direction of the arrow.
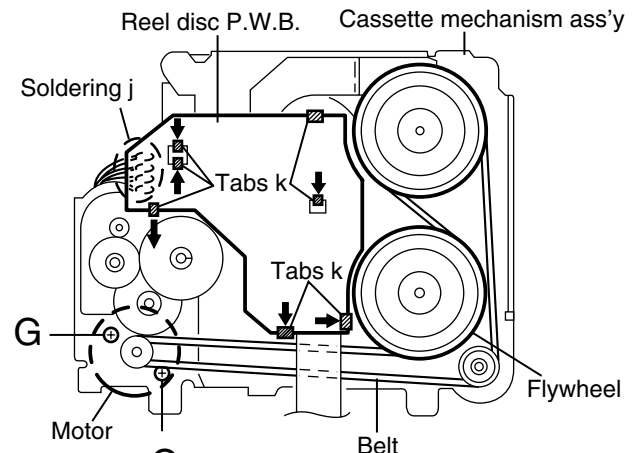
Fig.10

■Removing the motor and the sub motor (See Fig.10 and 11)

1. Unsolder the two soldering l of the motor and the sub motor.

2. Release the sub motor from the three tabs m. Push the sub motor upward and pull out it.

3. Remove the belt on the bottom of the cassette mechanism assembly and remove the two screws G attaching the motor.

　　ATTENTION: The motors can be detached before removing the load arm.
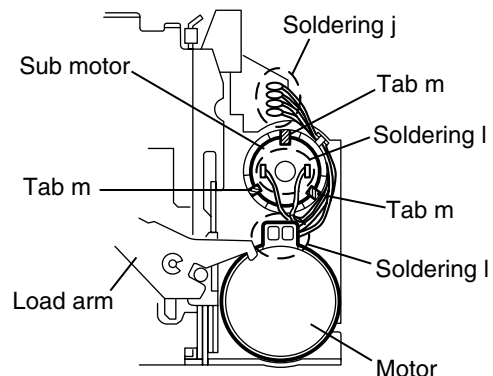
Fig.11

■ Removing the flywheel
(See Fig.10 and 12)

1. Prior to performing the following procedure, remove the head relay P.W.B, the load arm, the sub chassis, the cassette holder, the holder arm and the reel disc P.W.B.

2. Remove the belt on the bottom of the cassette mechanism ass'y.

3. Remove the slit washer attaching the flywheel on the upper side of the cassette mechanism ass'y and pull out the flywheel downward. Then remove another flywheel in the same way.

   ATTENTION: When reassembling, make sure to use a new slit washer.
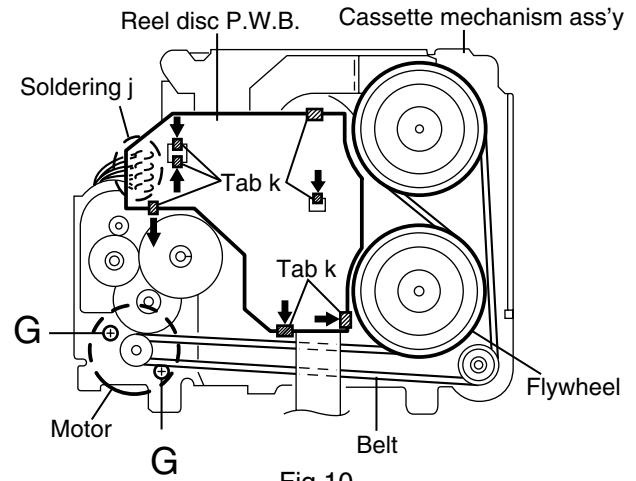
■ Removing the reel disc ass'y(I)
(See Fig.12 to 14)

* Prior to performing the following procedure, remove the head relay P.W.B, the load arm, the sub chassis, the cassette holder and the holder arm.

1. Disengage the part n inside of the reel driver which engages with the shaft, using a pincette or something like that. Then remove the reel driver from the shaft.

2. Remove the reel driver spring and the reel table.

Fig.10
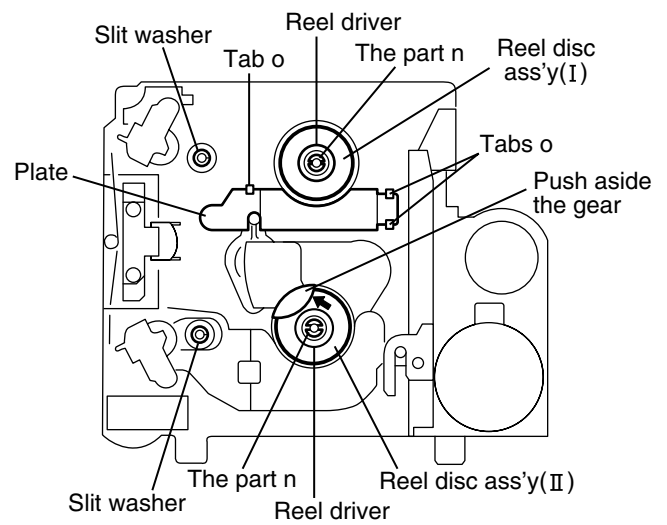
Fig.12
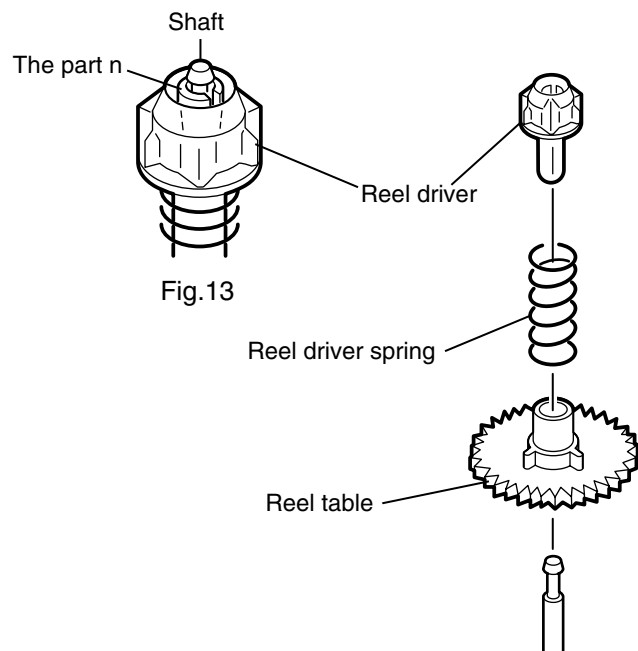
Fig.13

Fig.14

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

   MC-109C .... For TAPE CURL confirmation
                            (without Pad type)
   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 .... $4\,\Omega$ (2 Speakers connection)
Line out .... 20k Ω

■Standard volume position

Balance and Bass,Treble volume .Fader
:Center(Indication"0")
Loudness,Dolby NR,Sound,Cruise:Off

following conditions. Playback the test tape VT721.

AM mode   999kHz/62dB,INT/400Hz,30%
                     modulation signal on receiving.

FM mono mode 97.5MHz/66dB,INT/400Hz,22.5kHz
                     deviation pilot off mono

FM stereo mode 1kHz,67.5kHz dev. pilot7.5kHz dev.

Output level   0dB(1 μV ,50 Ω/open terminal)

■ Arrangement of adjusting & test points

Cassette mechanism
(Surface)

Motor assembly

Tape speed adjust

Azimuth screw A
(Forward)

90826S4

Playback head

Azimuth screw B
(Reverse)

Head section view

Azimuth screw B
(Reverse)

Azimuth screw A
(Forward)

Playback Head
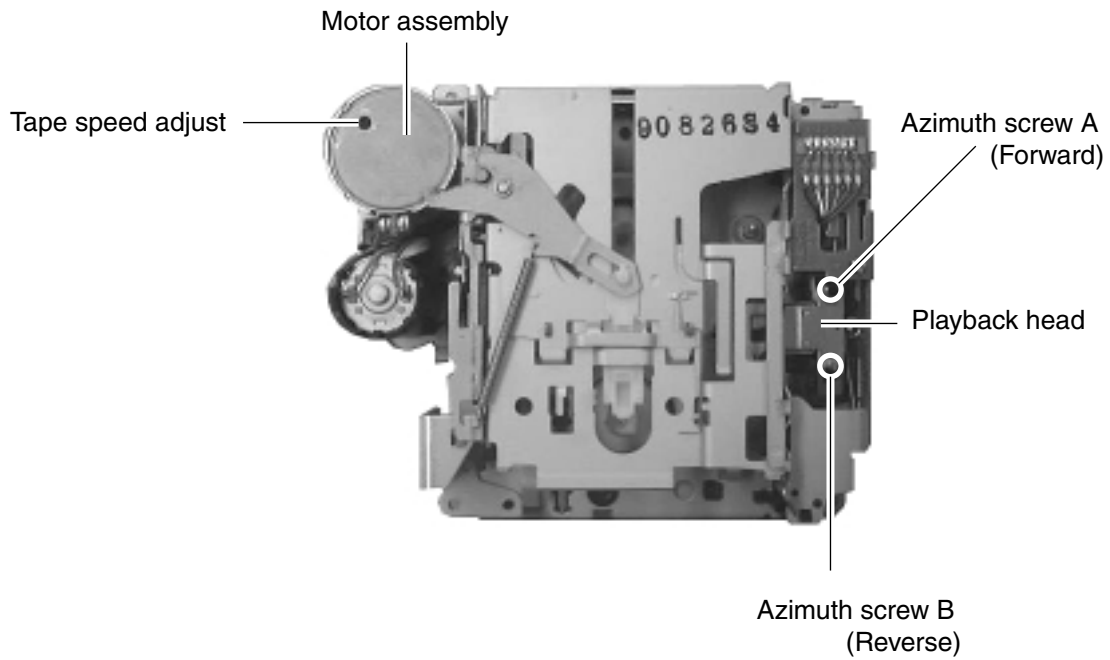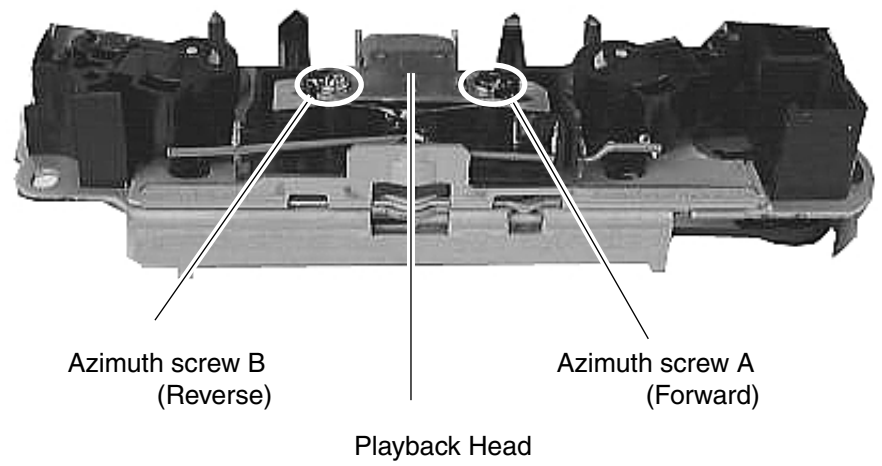
■Information for using a car audio service jig

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 : EXTKSRT002-18P (18 pin extension cord) For connection between mechanism assembly and main board assembly.
   Check for mechanism driving section such as motor ,etc..

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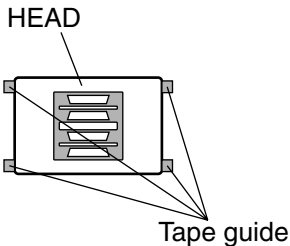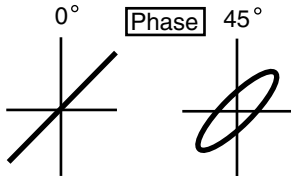
1. Remove the bottom cover.
2. Remove the front panel assembly.
3. Remove the top cover .
4. Install the front panel.
5. Confirm that current is being carried by connecting an extension cord jig.

Note

Available to connect to the CP701 connector when installing the front panel.

Cassette mechanism

Extension cord
EXTKSRT002-18P

Main board

Front panel assembly

to Cassette mechanism

to Main board

EXTKSRT002-18P
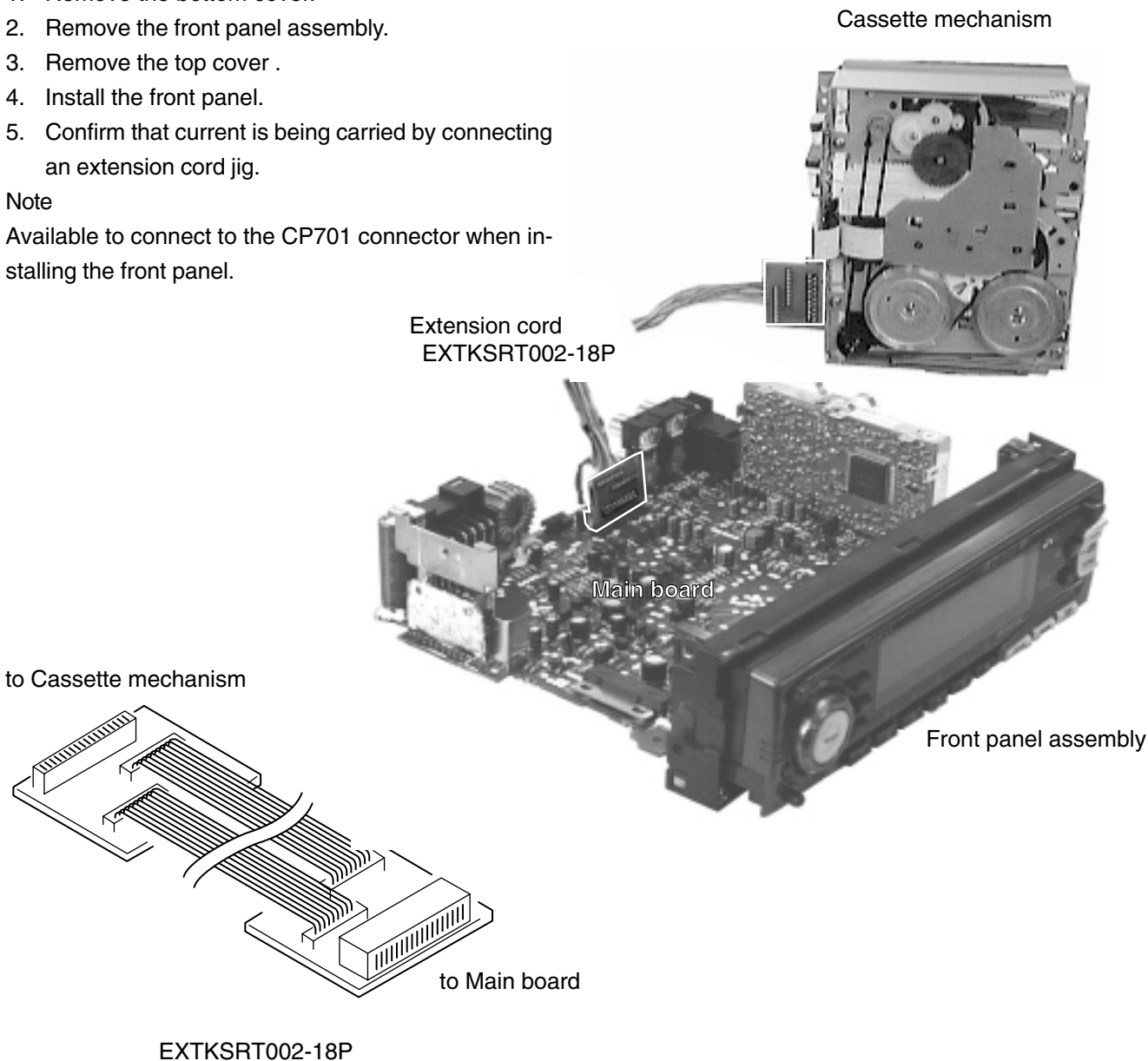
■Mechanism adjustment section

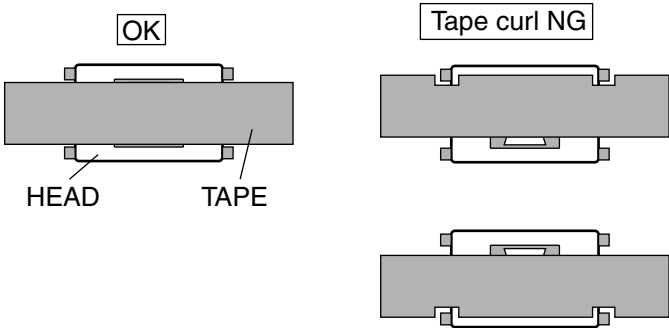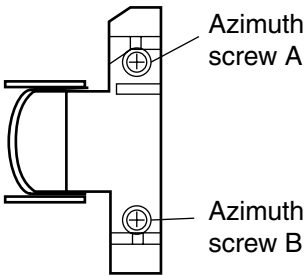| Item	Adjusting & Confirmation Methods	Adjust	Std. Value
1. Tape running adjustment	a) At Forward playmode, using mirror tape, make adjustment with Azimuth screw A and Azimuth screw B, without curl of 4 parts of head tape guide. b) At Reverse play mode, using mirror tape, make adjustment with Azimuth screw A and Azimuth screw B, without tape curl of 4 parts of head guide. c) At Forward / Reverse play mode, make confirmation of no tape curl of 4 parts of head tape guide.		Azimuth screw A Azimuth screw B
2. Azimuth adjustment confirmation	a) At forward play mode, make adjustment of peak of Lch / Rch output with Azimuth screw A. * For Oscilloscope litharge corrugation, set 45° as standard. b) At Reverse play mode, make adjustment of peak of Lch / Rch output with Azimuth screw B. * For Oscilloscope litharge corrugation, set 45 as standard. c) With AC volt meter confirm the difference of output for 4ch between Lch / Rch at forward play mode and Lch / Rch Reverse play mode being within 3.0dB. d) After operation, make confirmation of Lch / Rch azimuth output being within 1.0dB from adjustment value. HEAD Tape guide OK Tape curl NG HEAD TAPE		0° Phase 45°
2. Tape Speed and Wow & Flutter	1. 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). 2. In case of out of specification, adjust the motor with a built-in volume resistor .	Built-in volume resistor	Tape Speed 2940-3090Hz Wow&Flutter Less than 0.35% (JIS RMS)
3. Playback Frequency response	1. Play the test tape (VT724 : 1kHz) back and set the volume position at 2V . 2. Play the test tape (VT739)back and confirm 0±3dB at1kHz/ 10kHz and -4+2dB at 1kHz/63Hz. 3. When 10kHz is out of specification, it will be necessary to read adjust the azimuth.		Speaker out 1kHz/10kHz : 0dB±3dB, 63Hz/1kHz : -4dB+2dB,

Description of major ICs

■ **CXA2560Q (IC401) : Dolby B type noise reduction system with play back equalizer amp.**

1.Pin layout & block diagram
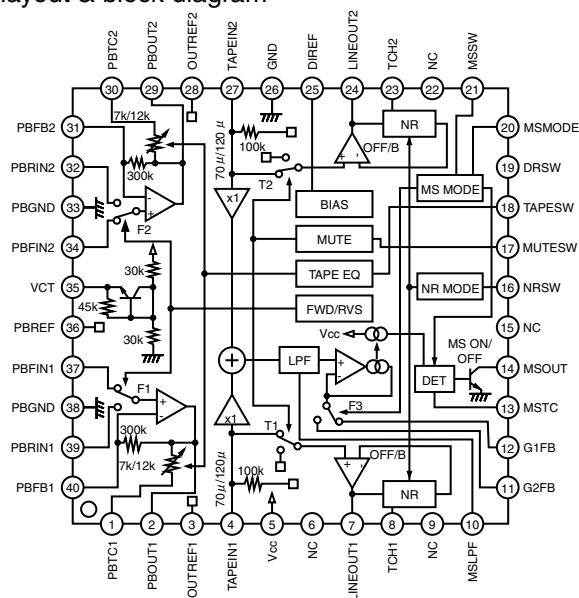
2. Pin function

Pin No.	Symbol	I/O	Function
1	PBTC1	-	Playback equalizer amplifier capacitance
2	PBOUT1	O	Playback equalizer amplifier output
3	OUTREF1	O	Output reference
4	TAPEIN1	I	TAPE input
5	Vcc	-	Power supply
6	NC	-	
7	LINEOUT1	O	Line output
8	TCH1	-	Time constant for the HLS
9	NC	-	
10	MSLPF	-	Cut-off frequency adjustment of the music sensor LPF
11	G2FB	-	Music signal interval detection
12	G1FB	-	Music signal interval detection
13	MSTC	-	Time constant for detecting music signal interval
14	MSOUT	O	Music sensor out
15	NC	-	No use
16	NRSW	I	Dolby NR control
17	MUTESW	I	Mute function control
18	TAPESW	I	Playback equalizer amplifier control
19	DRSW	I	Head select control
20	MSMODE	I	Music sensor mode control
21	MSSW	I	Music sensor control
22	NC	-	
23	TCH2	-	Time constant for the HLS
24	LINEOUT2	O	Line output

Pin No.	Symbol	I/O	Function
25	DIREF	-	Resistance for setting the reference
26	GND	-	Ground
27	TAPEIN2	I	TAPE input
28	OUTREF2	O	Output reference
29	PBOUT2	O	Playback equalizer amplifier output
30	PBTC2	-	Playback equalizer amplifier capacitance
31	PBFB2	I	Playback equalizer amplifier feedback
32	PBRIN2	I	Playback equalizer amplifier input
33	PBGND	-	Playback equalizer amplifier ground
34	PBFIN2	I	Playback equalizer amplifier input
35	VCT	O	Center
36	PBREF	O	Playback equalizer amplifier reference
37	PBFIN1	I	Playback equalizer amplifier input
38	PBGND	-	Playback equalizer amplifier ground
39	PBRIN1	I	Playback equalizer amplifier input
40	PBFB1	I	Playback equalizer amplifier feedback

■ BA4905-V3 (IC901) : Regulator

1.Terminal layout

2.Block diagram

1	2	3	4	5	6	7	8	9	10	11	12
RESET		COMP		VDD 5.7V		CD 8V		VCC		AJ	
	EXT		ACC		AUDIO 9V		CTRL		ILM 10V		GND
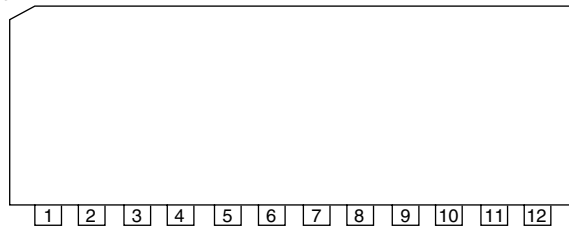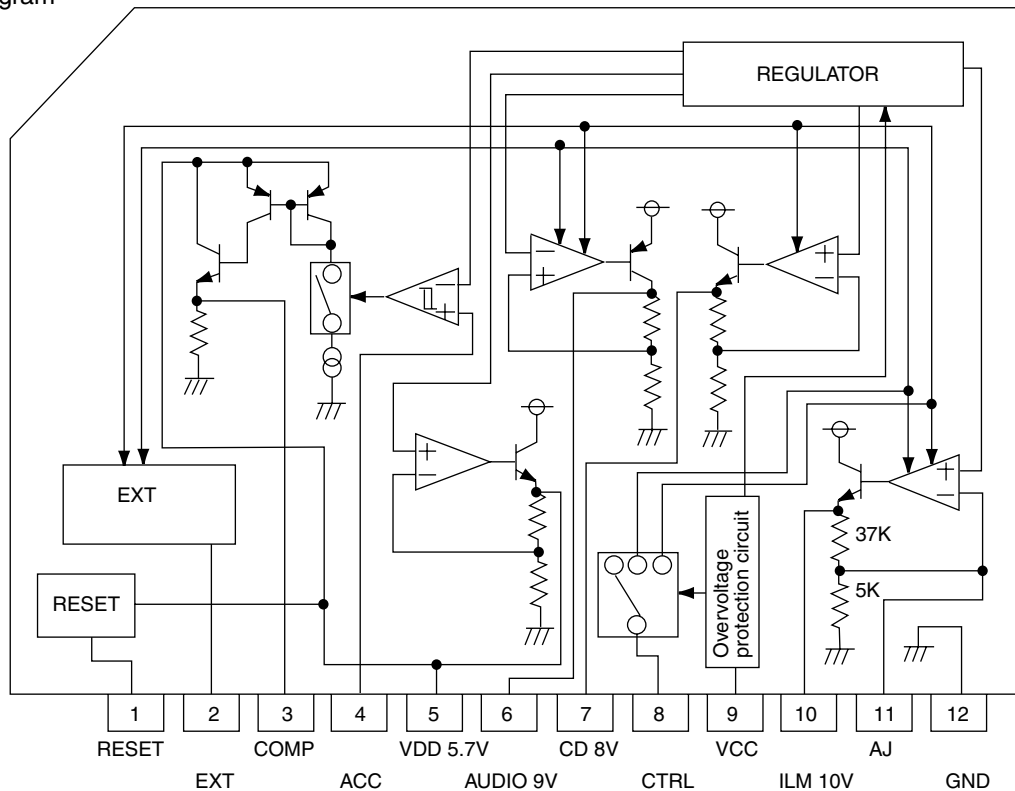
3.Pin function

Pin no.	Symbol	Function
1	RESET	If VDD voltage becomes 4V or less.RESET output becomes low level.
2	EXT output	This output voltage is approximately 0.5V lower than VCC. and max output current is 300mA.
3	COMP output	A voltage supply for ACC block. This output voltage is approximately 0.7V lower than VDD'S. The max output current is 100mA.
4	ACC	Control of the COMP output by inputting voltage.
5	VDD output	This output voltage is 5.7V, and max output current is 100mA. This voltage supply is for microcomputer. Whenever back up voltage supply is connected, the output keeps on running.
6	AUDIO output	This output voltage is 9.0v, and max output current is 500mA. This voltage supply for AUDIO.
7	CD output	This output voltage is 8.0V, and max output current is 1A. This voltage supply for CD.
8	CTRL	Output selector of CD. AUDIO, ILM and EXT.
9	VCC	To be connected with the BACK UP of car.
10	ILM output	This output voltage is 10V, and max output current is 500mA. Output voltage is adjustable.
11	AJ	Putting a resistance between ILM and AJ or between AJ and GND makes ILM output voltage adjustable.
12	GND	Ground.

■UPD178018AGC-551 (IC701) : Main system control CPU

1. Pin layout

```
     80  ~  61
  1            60

  ↕            ↕

 20            41
   21  ~  40
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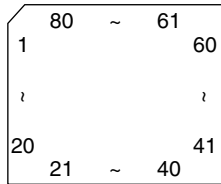
2. Pin function

| Pin No.	Port Name	I/O	Descriptions
1	KEY 0	I	Key input 0
2	KEY 1	I	Key input 1
3	KEY 2	I	Key input 2
4	LEVEL	I	Level meter input
5	SM	I	S.meter level input
6	SQ	I	S.Quality level input
7	LCDCE	O	CE output to LCD driver
8	LCDDA	O	Data output to LCD driver
9	LCDSCK	O	Clock output to LCD driver
10	BUSI/O	I	I/O selector output for J-BUS, H : OUT, L: INPUT
11	OPEN	I	Door open detect input
12	BUSSI	I	J-BUS Data input
13	BUSSO	O	J-BUS Data output
14	BUSSCK	I/O	J-BUS Clock in/output
15	NC	-	Non connect
16	NC	-	Non connect
17	NC	-	Non connect
18	NC	-	Non connect
19	INLOCK	-	Non connect
20	NC	-	Non connect
21	GNDPORT	-	Port GND
22	VDDPORT	-	Port Vdd
23	NC	O	Non connect
24	AFCK	O	AF check output, L: AF check
25	MONO	O	Monaural on /off selecting output, H:mono on
26	FM/AM	O	FM/AM switching output L : FM H : AM
27	SEEK/STP	O	Auto seek /stop selecting output, H: Seek, L:Stop
28	NC	I	Pulse signal input port for Cruise control
29	IFC	I	FM/AM midle frequency counter input
30	VDDPLL	-	PLL Vdd
31	FMOSC	I	FM/AM limited generator frequency input
32	NC	-	None connect
33	GNDPLL	-	PLL GND
34	AMEO	O	AM error out output
35	FMEO	O	FM error out output
36	IC	-	GND
37	SD/ST	I	Station detector, Stereo signal input, H:Find Station, L:Stereo
38	STAGE0	I	Pull up
39	NC	-	Non connect
40	MOTOR	O	Main motor output

Pin No.	Port Name	I/O	Descriptions
41	FF/REW	I	Output for input signal level switching for MS L : FF,REW H : PLAY
42	F/R	O	FWD,REV running direction switch signal input
43	DOLBY	O	Dolby on "H" output
44	MSIN	I	MS input
45	I2CCLK	O	I2C information clock output
46	I2CDAO	O	I2C information data output
47	I2CDAI	I	I2C information clock input
48	REEL	O	Switch for detecting tape end position
49	SUBMO1	I	Sub motor clock direction input
50	SUBMO2	O	Sub motor clock opposite detection drive output
51	MODE	O	Mechanism mode position detection input
52	TAPEIN	O	Cassette in detection input H : cassette in L : cassette out
53	STANDBY	I	Standby position detection input H : eject side L : operation side
54	NC	-	Non connect
55	NC	-	Non connect
56	NC	-	Non connect
57	NC	-	Non connect
58	NC	-	Non connect
59	BEEP	O	Touch tone output
60	MUTE	O	Mute output , L : mute on
61	PCNT	O	Power ON /OFF switching output , H : power on
62	TELMUTE	I	Telephone mute signal detection input
63	DIMIN	I	Dimmer signal detection input L : dimmer
64	DIMOUT	O	Dimmer control output , Dimmer off L output
65	ENC1	I	Rotary volume signal 1 input Power save : L
66	ENC2	I	Rotary volume signal 2 input
67	ACCDET	I	Power save 1 Working together ACC Power save : L
68	POWER	O	Power save 2, Working together Back up by H input, stop mode
69	RDSSCK	I	Clock input for RDS
70	RDSDA	I	RDS data input
71	REMOCON	I	Remocom input
72	DETACH	I	Detach signal input H : Power save
73	J-BUSINT	I	Cut-in input for J-BUS signal
74	REGCPU	-	Regulator for CPU power supply, Connect the GND with0.1 μ F.
75	GND	-	Ground
76	X2	-	Connecting the crystal oscillator for system clock
77	X1	I	Connecting the crystal oscillator for system clock
78	REGOSC	-	Regulator for oscillator circuit.Connect the GND with 0.1 μF.
79	VDD	-	Vdd
80	RESET	-	Pull up

■ HA13158A (IC301) : Power amp

1. Pin layout

1　～　23
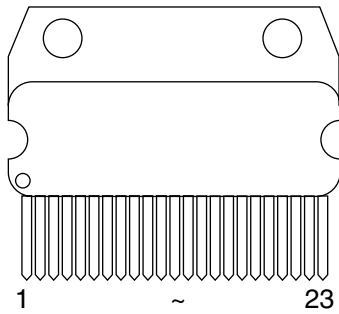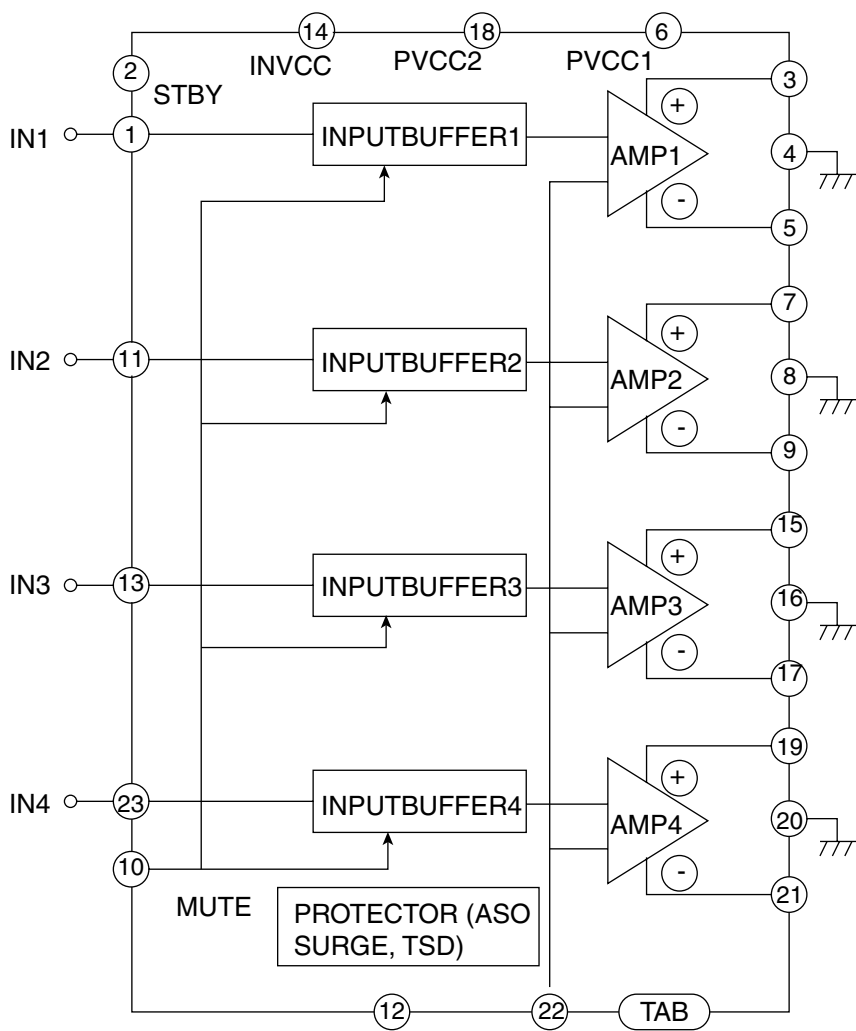
2. Block diagram

■HD74HC126FP-X (IC801) : Buffer

1. Pin layout

```
 ┌──┐ ┌──┐
 │1 │ │14│
 │2 │ │13│
 │3 │ │12│
 │4 │ │11│
 │5 │ │10│
 │6 │ │ 9│
 │7 │ │ 8│
 └──┘ └──┘
```
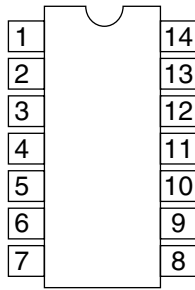
2. Function

Inputs		Outputs
C	A	Y
L	X	Z
H	L	H
H	H	L

3. Block diagram

Vcc

Vcc

See Function Table

Input

1A
2A
3A
4A
1C
2C
3C
4C

1Y   Output
2Y

1k

S1

CL

1k

2Y   Output   Sample as Load Circuit 1
3Y   Output   Sample as Load Circuit 1
4Y   Output   Sample as Load Circuit 1
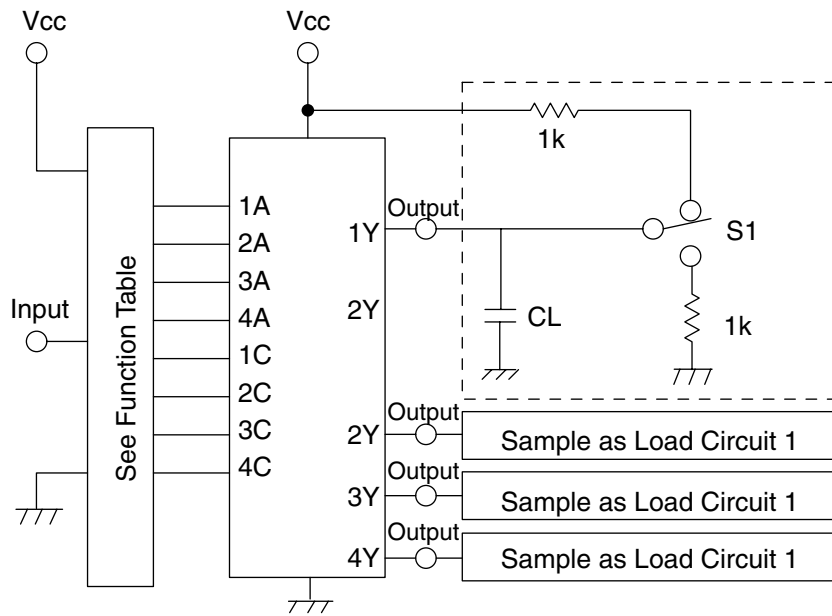
■ RPM6938-SV4 (IC602) : Remote control receiver
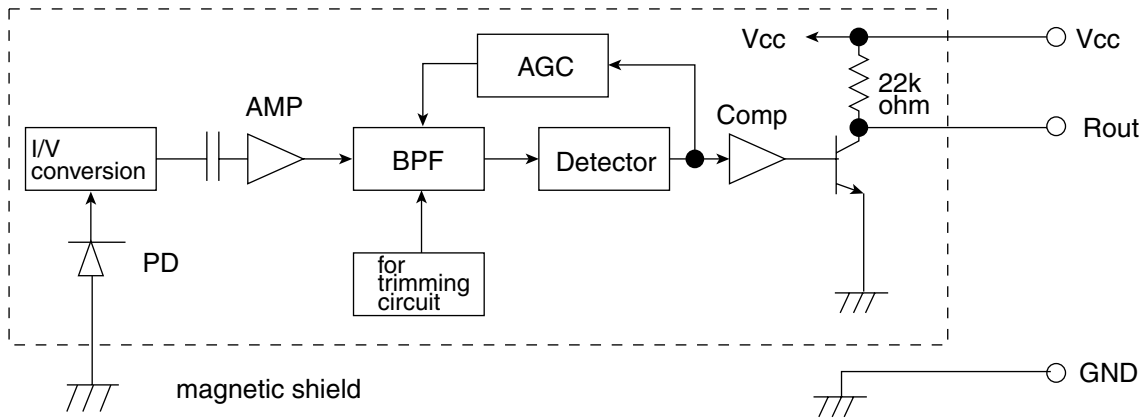
■ LB1641 (IC402) : DC Motor Driver

1. Pin Layout

1	2	3	4	5	6	7	8	9	10
GND	OUT1	P1	VZ	IN1	IN2	VCC1	VCC2	P2	OUT2
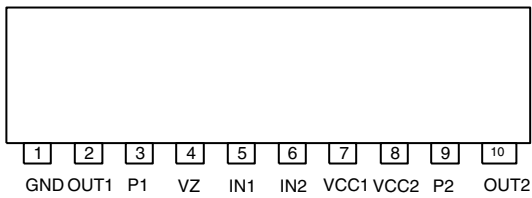
2. Pin Functions

Input		Output		Mode
IN1	IN2	OUT1	OUT2	
0	0	0	0	Brake
1	0	1	0	CLOCKWISE
0	1	0	1	COUNTER-CLOCKWISE
1	1	0	0	Brake

■ LC75873NW (IC601) : LCD Driver

1.Block Diagram
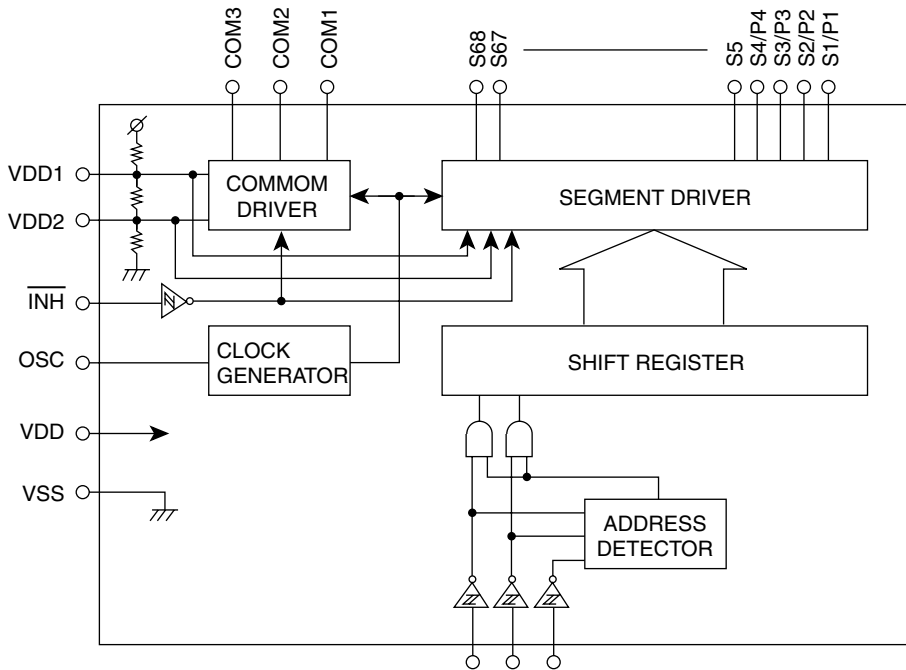
2.Pin Functions

Pin No.	Symbol	I/O	Description
1~66	S3~S68	O	Segment Output.
67~69	COM1~3	O	Common Driver Output.
70	VDD	-	Power Supply Connection.
71	VDD1	I	Used for applying the LCD drive 2/3 bias voltage externally. Must be connected to VDD2 when a 1/2 bias drive scheme in used.
72	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 in used.
73	VSS	-	Power supply connection.
74	OSC	I/O	Oscillator connection. An oscillator circuit is formed by connecting an external resistor and capacitor to this pin.
75	INH	I	Display off control input.
76	CE	I	Chip enable input.
77	CLOCK	I	Synchronization clock input.
78	DI	I	Serial data input.
79	DIMMER	O	DIMMER Control signal output.
80	NC	-	Non connect.

■ SAA6579T-X (IC71) : RDS demodulator

1. Pin layout
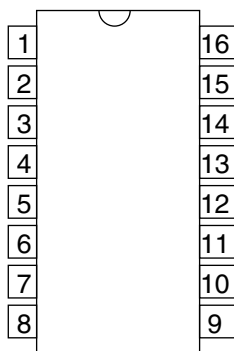
2. Pin function

Pin No.	Symbol	Function
1	QUAL	Quality indication output
2	RDDA	RDS data output
3	Vref	Reference voltage output (0.5VDDA)
4	MUX	Multiplex signal input
5	VDDA	+5V supply voltage for analog part
6	VSSA	Ground for analog part (0V)
7	CIN	Sub carrier input to comparator
8	SCOUT	Sub carrier output of reconstruction filter
9	MODE	Oscillator mode / test control input
10	TEST	Test enable input
11	VSSD	Ground for digital part (0V)
12	VDDD	+5V supply voltage for digital part
13	OSCI	Oscillator input
14	OSCO	Oscillator output
15	T57	57kHz clock signal output
16	RDCL	RDS clock output

3. Block diagram
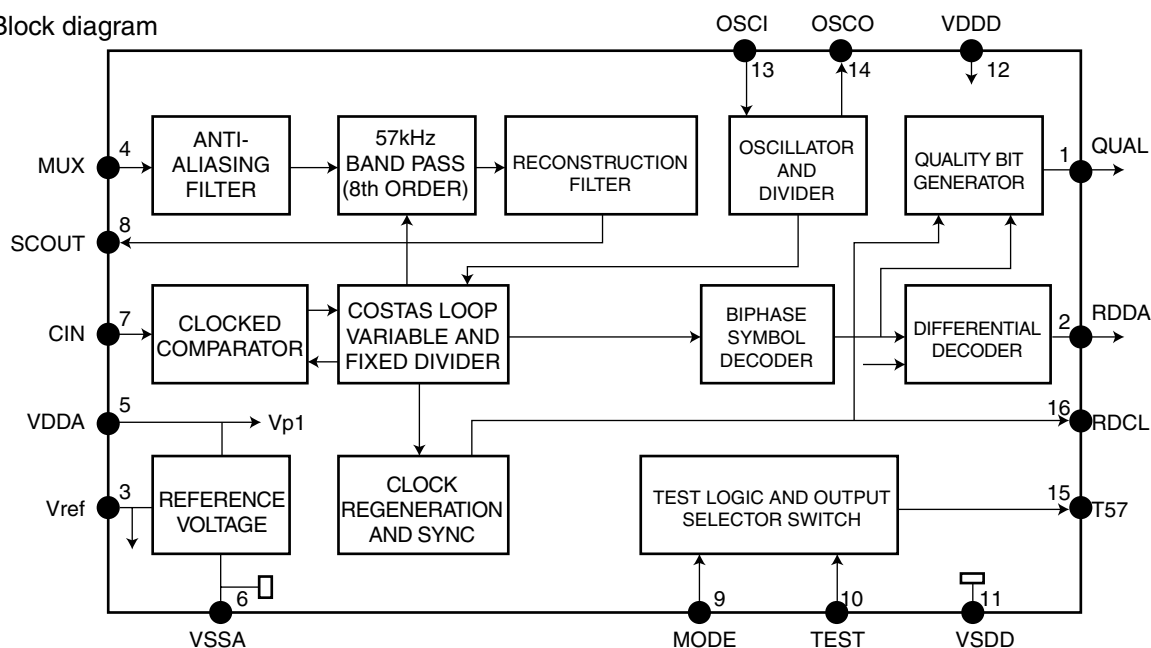
■ TEA6320T-X (IC161) : E.volume

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  CD-CH  21   Vref
ICL    13         20   ICR
IMD    14         19   CAP
IBL    15  TAPE   18   IBR
IAL    16  TUNER  17   IAR
```
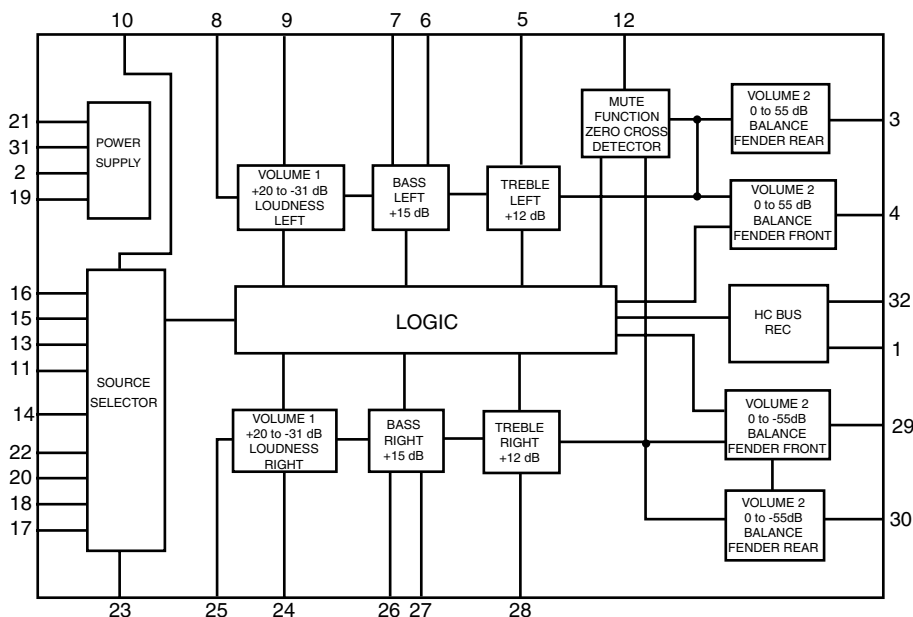
2.Block Diagram

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.

KS-FX834R