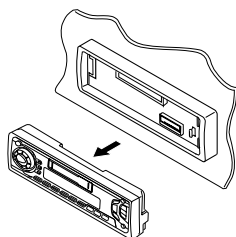
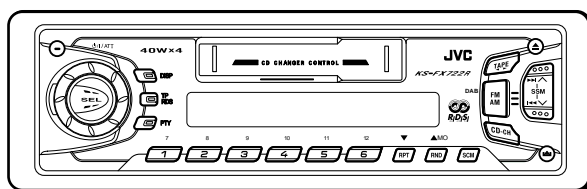


# JVC

# SERVICE MANUAL

## CASSETTE RECEIVER

### KS-FX722R




#### Area Suffix

E ---- Continental Europe

### Contents

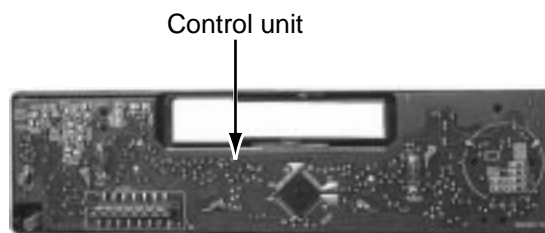
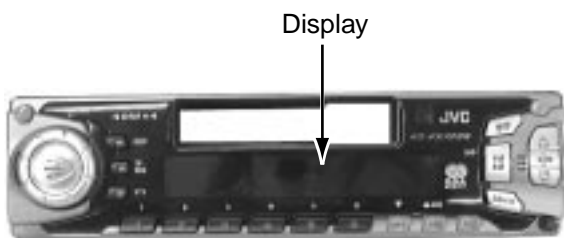
Safety precaution .....	1-2	Adjustment method .....	1-10
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## Safety precaution

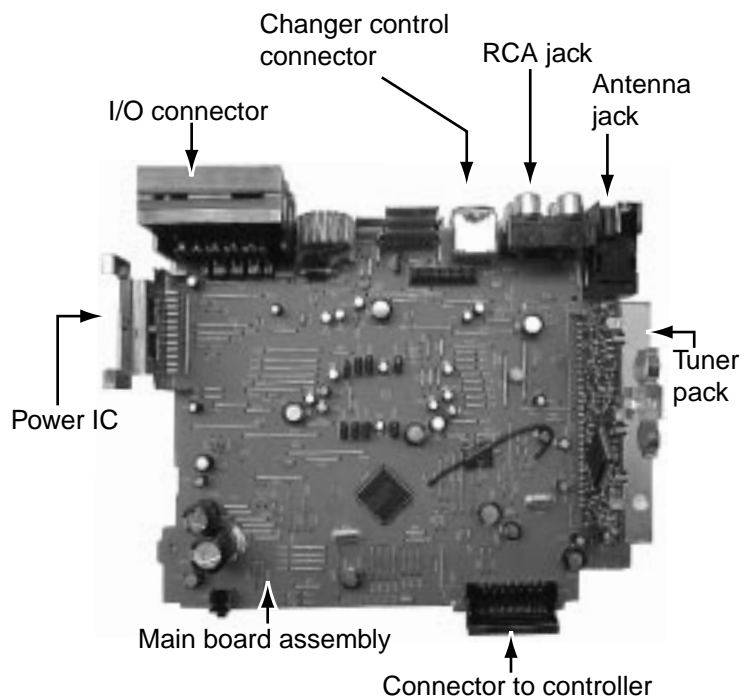
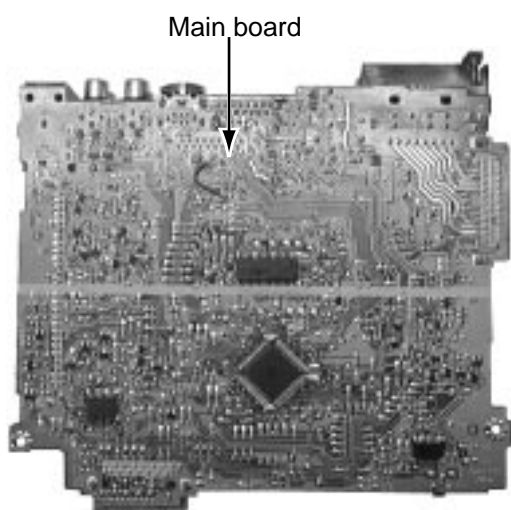
 **CAUTION** Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of performing repair of this system.

# Location of main parts

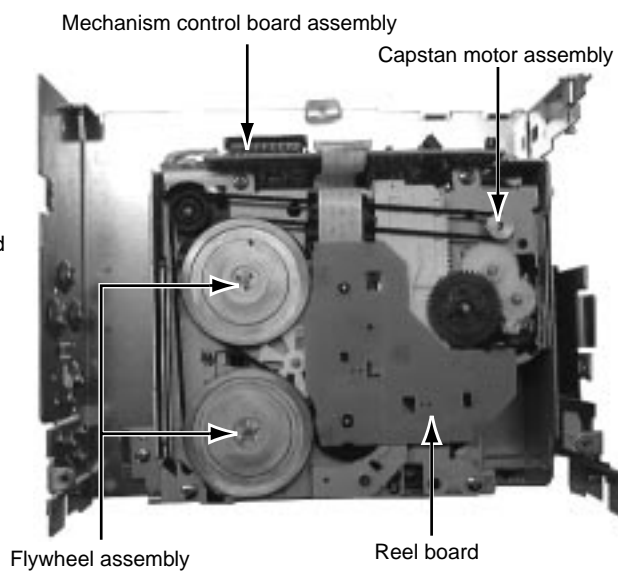
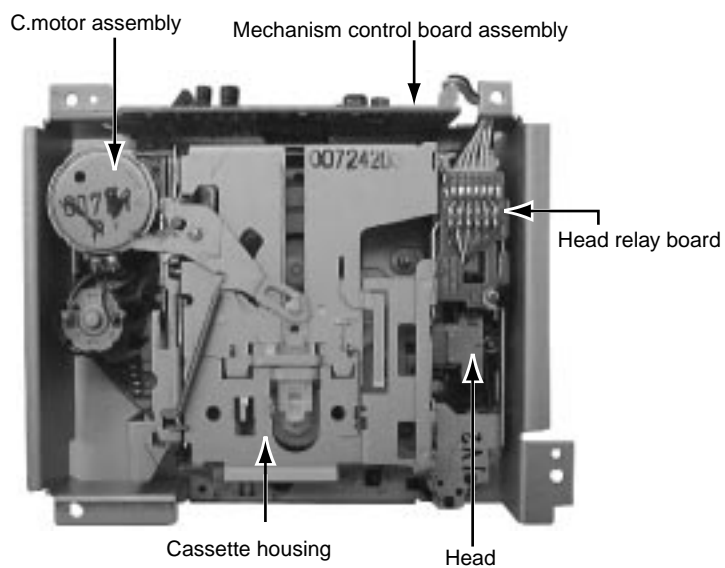
## Control unit



## Main unit



## Cassette mechanism



# Disassembly method

## Removal of main parts

### ■ Enclosure section

#### (1) Detaching the front panel unit (see Fig.2-1)

Slide the Release slide knob in the direction of arrow to detach the front panel unit.

#### (2) Removing the front chassis(see Fig.2-2)

Disengage the four tabs in the right and left sides of unit and pull the front chassis forward to remove it.

#### (3) Removing the bottom cover(see Fig.2-3.2-4)

- 1.Remove one screw 2 retaining the IC to the heat sink.
- 2.Remove two screws 1 to remove the heat sink.
- 3.Turn the upside down, then insert and turn the screwdriver to remove the bottom cover and protect sheet.

#### (4) Removing the main P.C.B.assembly

(with rear panel) (see Fig.2-5)

- 1.Remove two screws 4 retaining the rear panel to the chassis.
- 2.Remove two screws 3 retaining the amp. P.C.B. assembly.
- 3.Lift up the main P.C.B. assembly to remove it. At this time, remove the connector CP501 connecting the main P.C.B assembly and mechanism assembly.

#### (5)Removing the rear panel(see Fig.2-5)

Remove six screws retaining the jacks or the like.

Remove one screw 5 to the IC bracket.

Remove one screw 6 to remove the line-out jack.

Remove one screw 7 to remove the antenna jack.

Remove one screw 8 to remove the changer controller jack. (except KS-F530R)

#### (6)Mechanism assembly(see Fig.2-6)

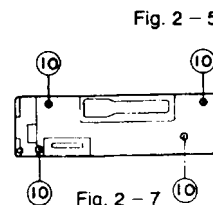
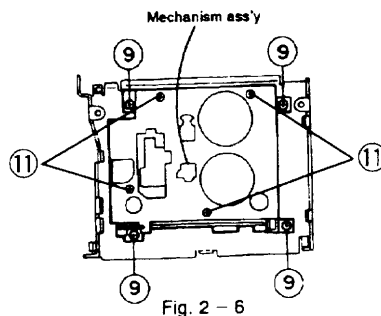
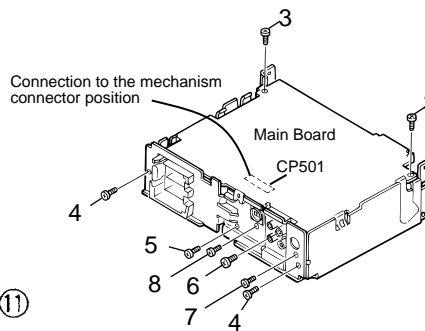
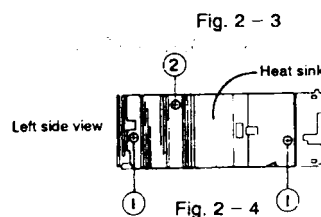
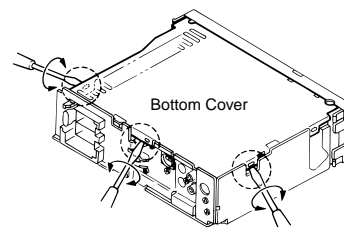
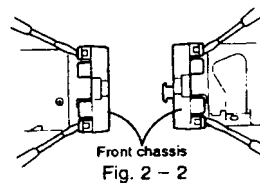
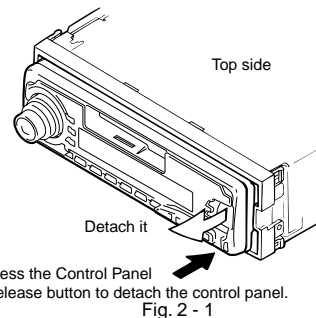
- 1.Remove four mechanism mouting screws 9 retaining the mechanism assembly.

- 2.Remove four screws B retaining the cover.

- 3.Remove one screw which is the fixation of TOP COVER and the substrate.

#### (7)Front panel unit(see Fig.7)

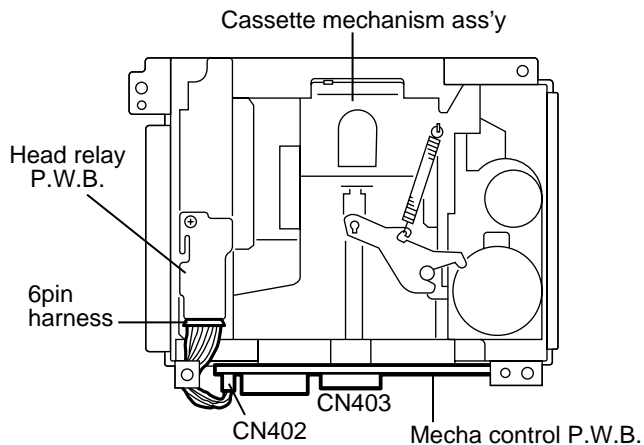
Remove four screws A retaining the rear cover.



**<Removal of the cassette mechanism>**

**■ Removing the mecha control P.W.B.**  
(See Fig.1 and 2)

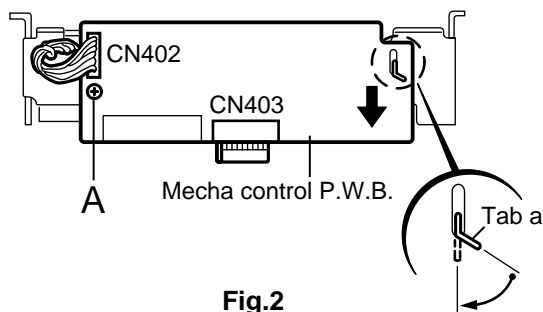
1. For the 6pin harness extending from connector CN402 on the mecha control P.W.B, disconnect it from the head relay P.W.B.
2. Disconnect the card wire from connector CN403 on the mecha control P.W.B.
3. Remove the screw A attaching the mecha control P.W.B.
4. Move the tab a as shown in Fig.2 and remove the mecha control P.W.B. while moving it in the direction of the arrow.



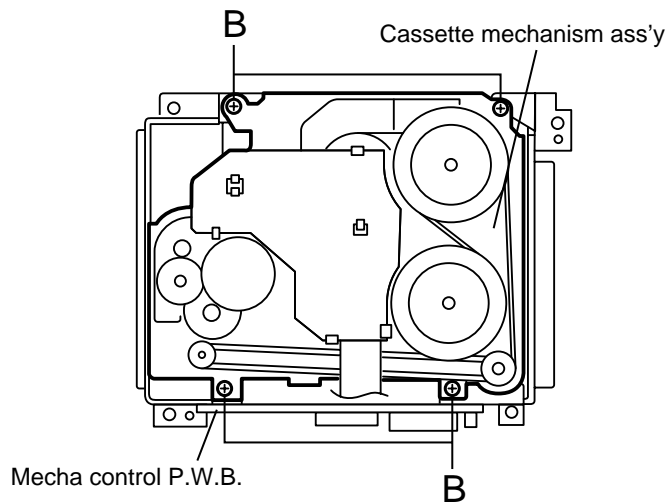
**Fig.1**

**■ 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.



**Fig.2**

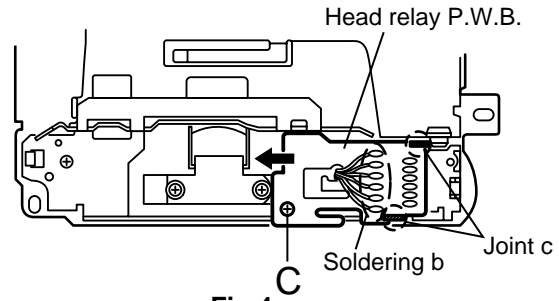


**Fig.3**

**■ Removing the head relay P.W.B.**

(See Fig.4)

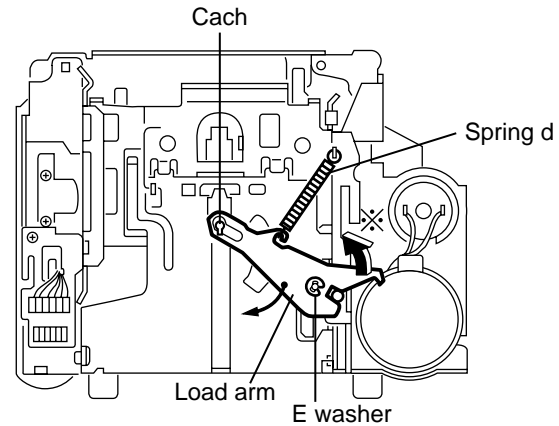
1. Unsolder the soldering b on the head relay P.W.B.
2. Remove the screw C attaching the head relay P.W.B.
3. Remove the head relay P.W.B. in the direction of the arrow while releasing the two joints c.



**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.

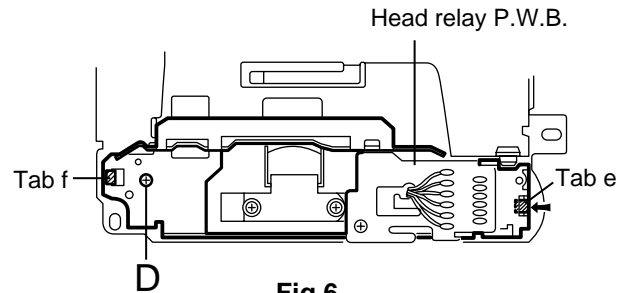


**Fig.5**

**■ 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.



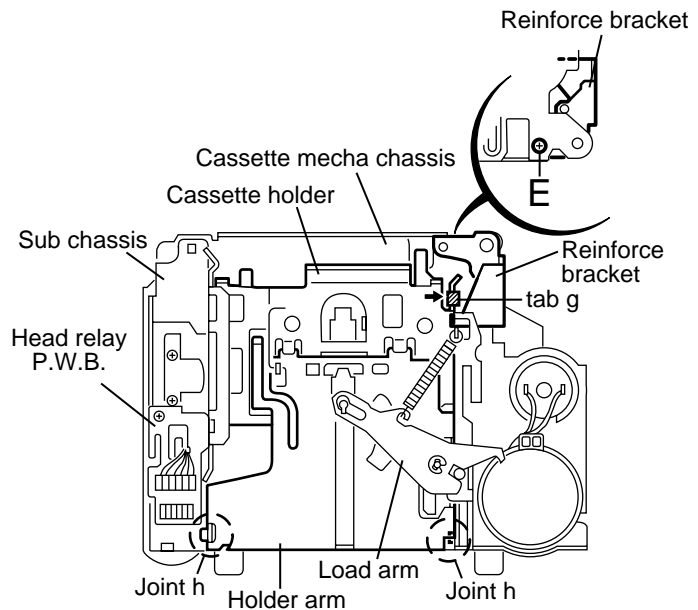
**Fig.6**

**■ 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**

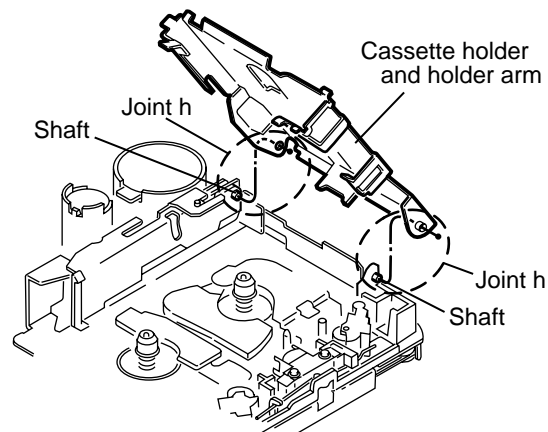


Fig.8

### ■ 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).

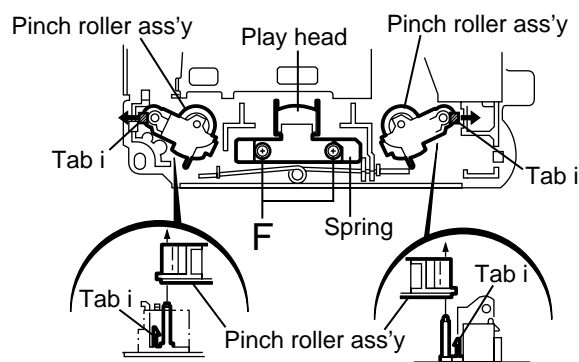


Fig.9

### ■ 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.

### ■ 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.

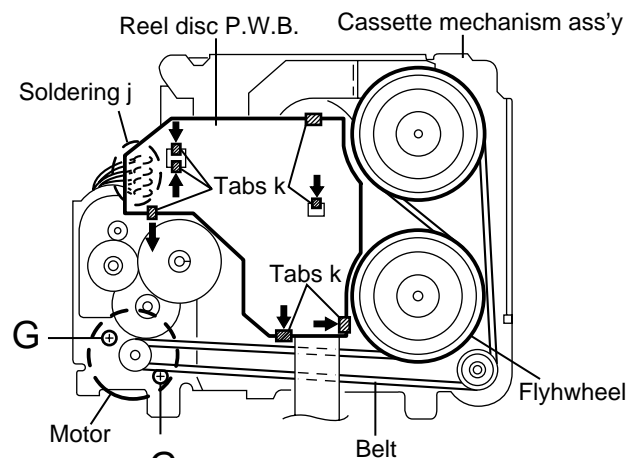


Fig.10

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

(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.

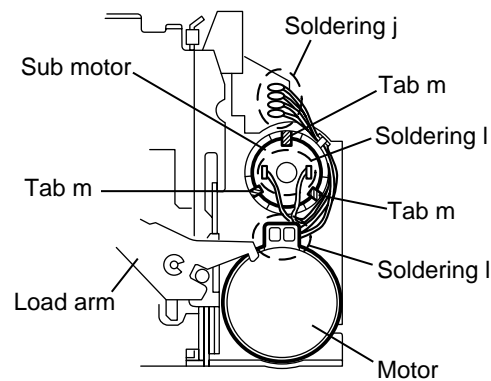


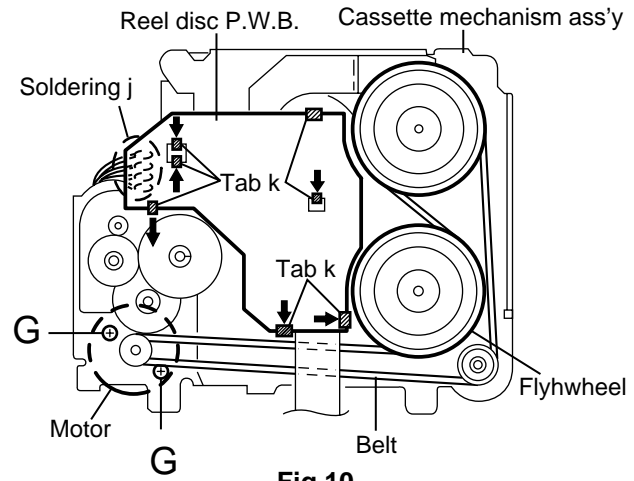
Fig.11

### ■ 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.



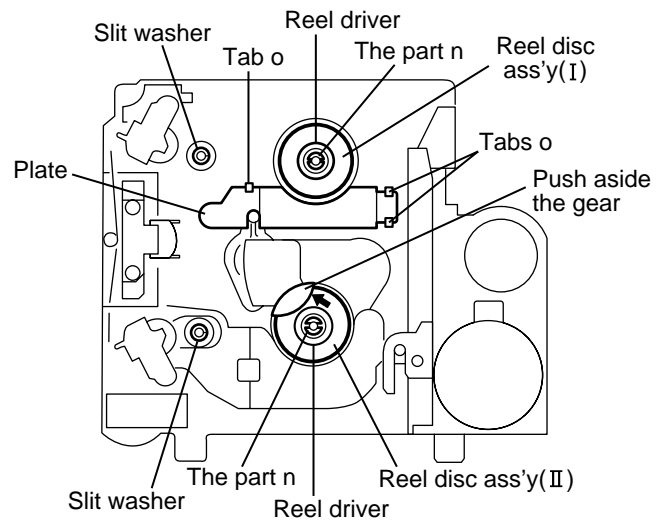
**Fig.10**

### ■ Removing the reel disc ass'y(I)

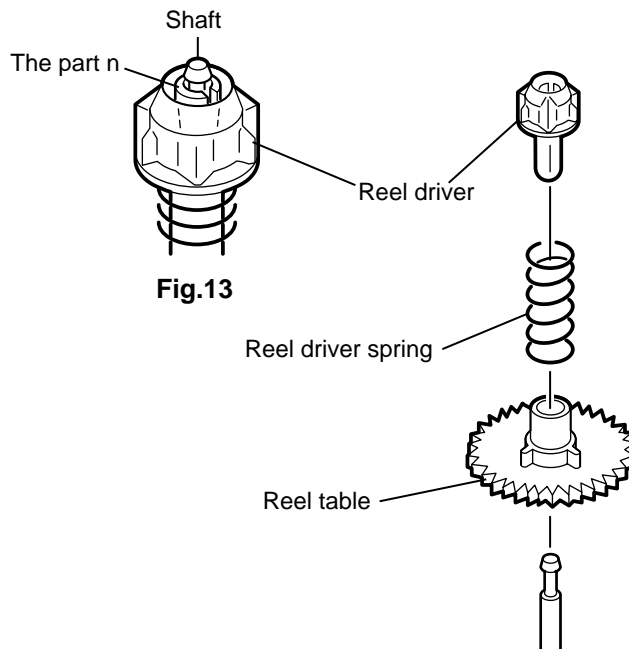
(See Fig.12 to 14)

\* 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.12**



**Fig.13**

**Fig.14**



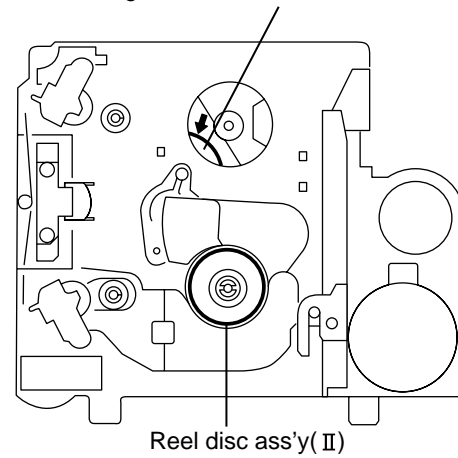
## ■ Removing the reel disc ass'y(Ⅱ) (See Fig.12 to 15)

ATTENTION: Prior to performing the following procedure, remove the reel disc (Ⅰ).

1. Release the plate from the three tabs o.
2. Push aside the gear over the reel table using a pincette or something like that.
3. Remove the reel disc ass'y (Ⅱ) as with the reel disc ass'y (Ⅰ).

ATTENTION: Do not break the front panel tab fitted to the metal cover.

Push aside the gear and reattach the reel disc Ass'y(Ⅰ).



**Fig.15**

## 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 TAPA CURL confirmation  
(without Padd 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 .....  $4\ \Omega$  (2Speakers connection)  
 Line out .....  $20k\ \Omega$

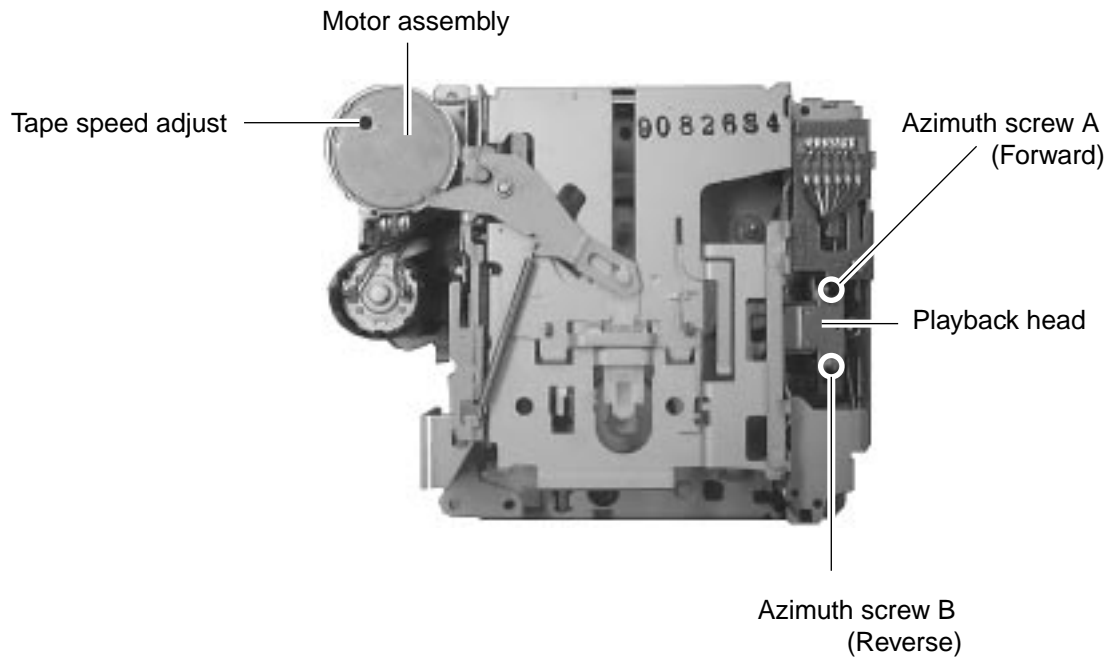
### ■ Standard volume position

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.

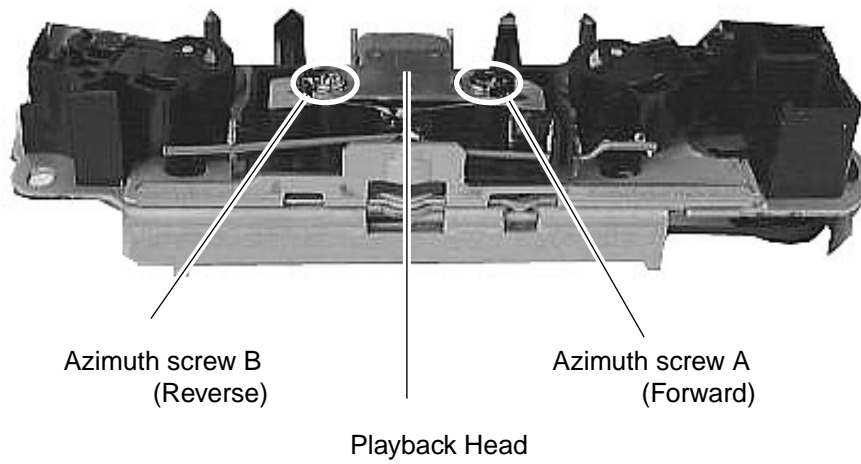
AM mode	999kHz/62dB,INT/400Hz,30% modulation signal on receiving.
FM mono mode	97.5MHz/66dB,INT/400Hz,22.5kHz deviation pilot off mono
FM stereo mode	1kHz,67.5kHz dev. pilot7.5kHz dev.
Output level	0dB( $1\ \mu\text{V}$ ,50 $\Omega$ /open terminal)

### ■ Arrangement of adjusting & test points

Cassette mechanism  
(Surface)



Head section view



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

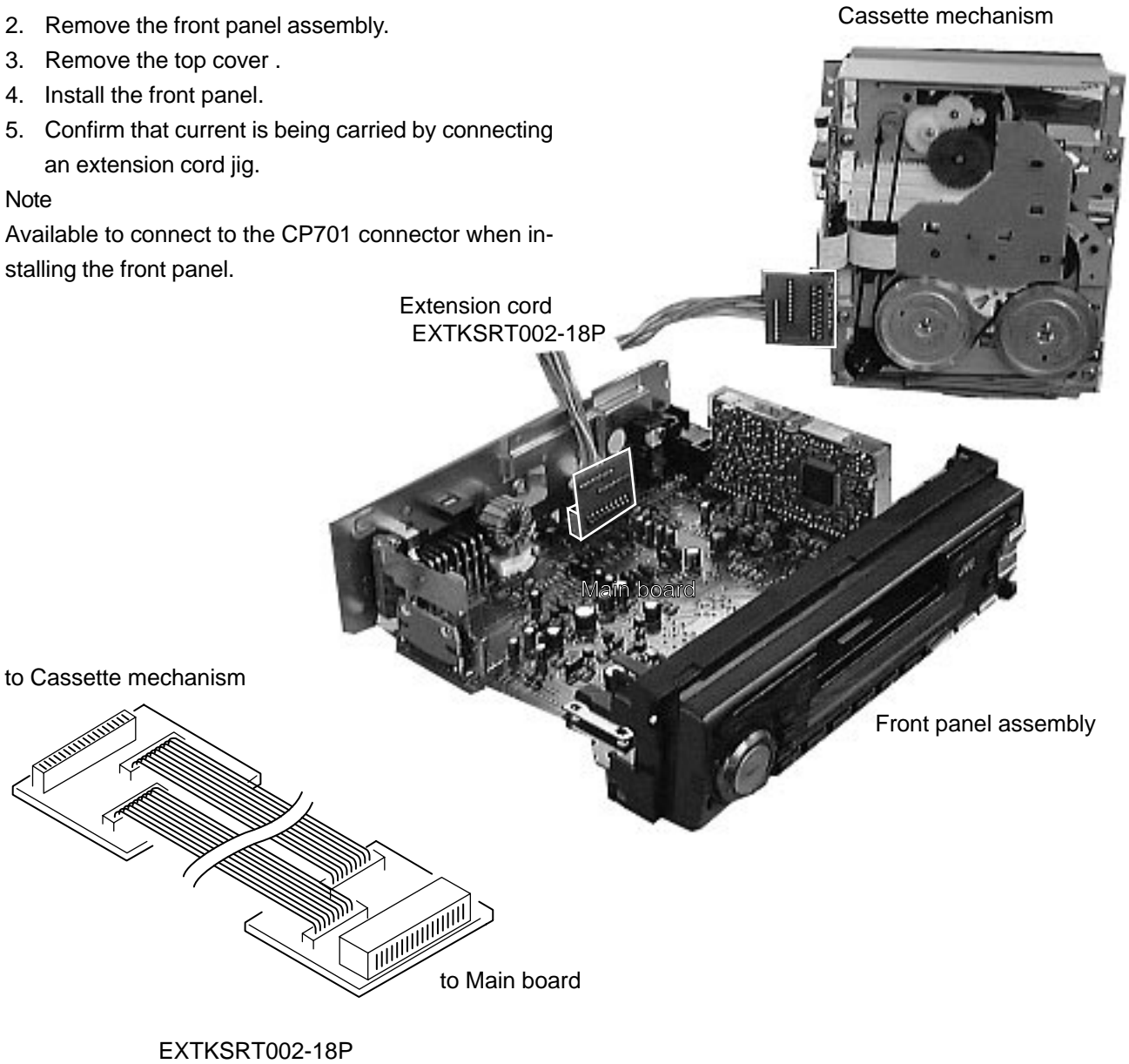
1. We're advancing efforts to make our extension cords common for all car audio products.  
Please use this type of extension cord as follows.
2. As a U-shape type top cover is employed, this type of extension cord is needed to check operation of the mechanism assembly after disassembly.
3. Extension 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**

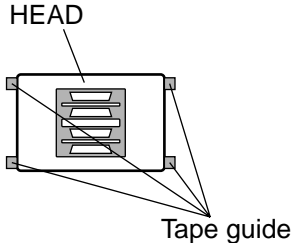
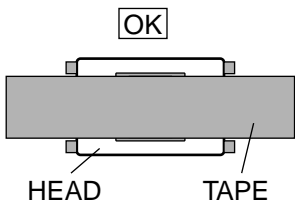
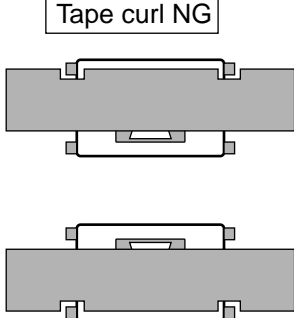
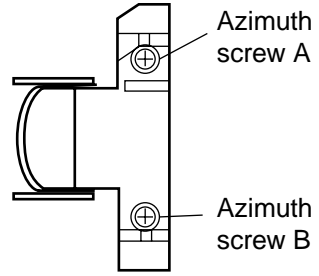
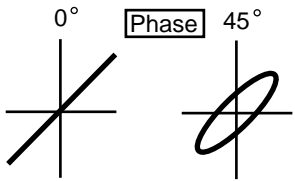
1. Remove the bottom cover.
2. Remove the front panel assembly.
3. Remove the top cover .
4. Install the front panel.
5. Confirm that current is being carried by connecting an extension cord jig.

Note

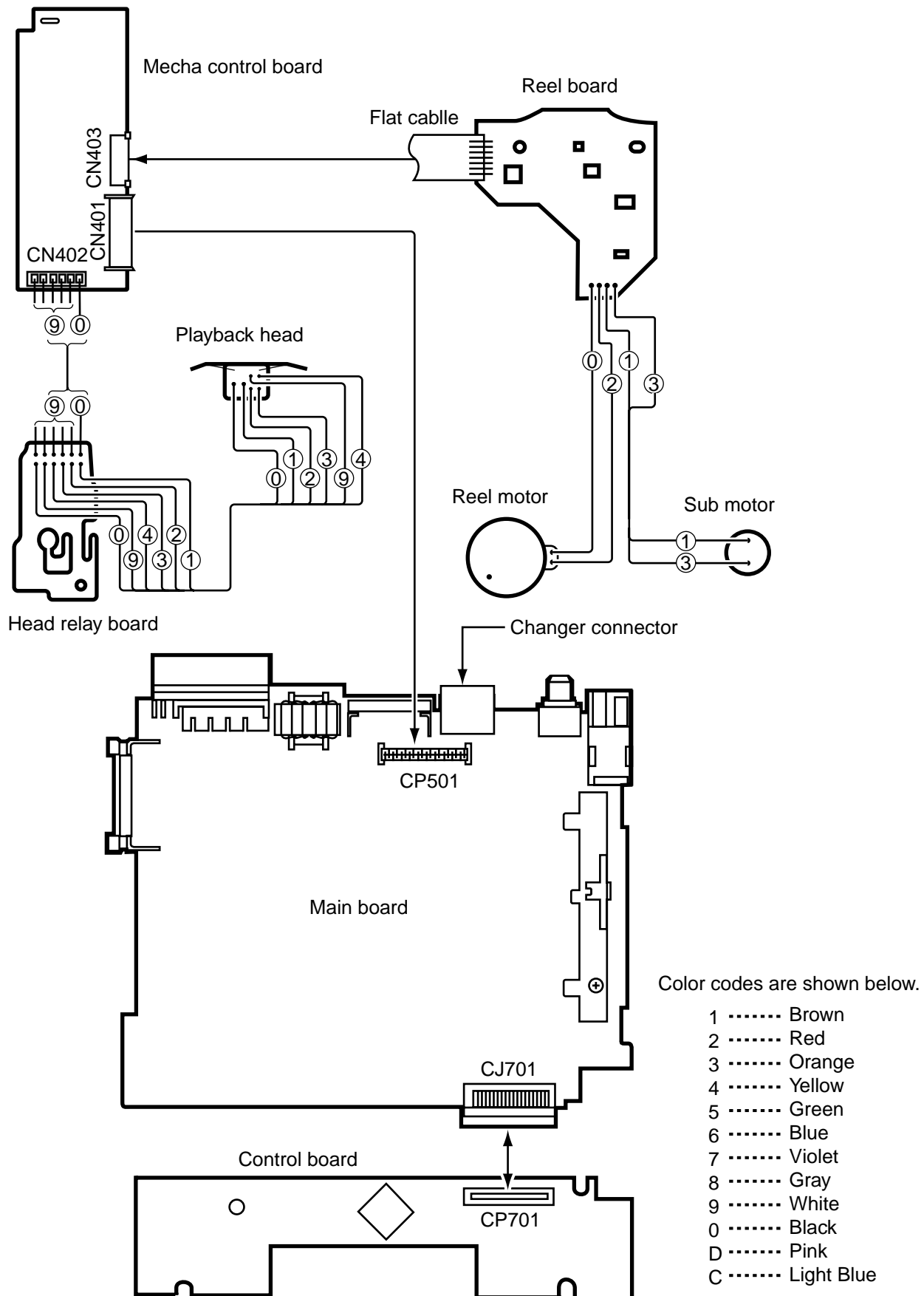
Available to connect to the CP701 connector when installing the front panel.



■ Mechanism adjustment section

Item	Adjusting & Confirmation Methods	Adjust	Std. Value				
<p>1. Tape running adjustment</p> <p>2. Azimuth adjustment confirmation</p>	<p>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.</p> <p>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.</p> <p>c) At Forward / Reverse play mode, make confirmation of no tape curl of 4 parts of head tape guide.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>d) After operation, make confirmation of Lch / Rch azimuth output being within 1.0dB from adjustment value.</p> <div style="text-align: center;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <p>OK</p>  <p>HEAD TAPE</p> </div> <div style="text-align: center;"> <p>Tape curl NG</p>  </div> </div>	<div style="text-align: right;">  </div> <div style="text-align: center; margin-top: 40px;"> <p>0° Phase 45°</p>  </div>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="1107 1562 1295 1753" style="width: 50%; vertical-align: top;"> <p>Built-in volume resistor</p> </td> <td data-bbox="1295 1562 1471 1753" style="width: 50%; vertical-align: top;"> <p>Tape Speed 2940-3090Hz Wow&amp;Flutter Less than 0.35% (JIS RMS)</p> </td> </tr> <tr> <td data-bbox="1107 1753 1295 1961" style="width: 50%;"></td> <td data-bbox="1295 1753 1471 1961" style="width: 50%; vertical-align: top;"> <p>Speaker out 1kHz/10kHz : 0dB±3dB, 63Hz/1kHz : -4dB+2dB,</p> </td> </tr> </table>	<p>Built-in volume resistor</p>	<p>Tape Speed 2940-3090Hz Wow&amp;Flutter Less than 0.35% (JIS RMS)</p>		<p>Speaker out 1kHz/10kHz : 0dB±3dB, 63Hz/1kHz : -4dB+2dB,</p>
<p>Built-in volume resistor</p>	<p>Tape Speed 2940-3090Hz Wow&amp;Flutter Less than 0.35% (JIS RMS)</p>						
	<p>Speaker out 1kHz/10kHz : 0dB±3dB, 63Hz/1kHz : -4dB+2dB,</p>						
<p>2. Tape Speed and Wow &amp; Flutter</p>	<p>1. Check to see if the reading of the frequency counter &amp; Wow flutter meter is within 2940-3090 Hz( FWD/REV ), and less than 0.35% ( JIS RMS ).</p> <p>2. In case of out of specification, adjust the motor with a built-in volume resistor .</p>						
<p>3. Playback Frequency response</p>	<p>1. Play the test tape ( VT724 : 1kHz ) back and set the volume position at 2V .</p> <p>2. Play the test tape ( VT739 )back and confirm 0±3dB at1kHz/10kHz and -4+2dB at 1kHz/63Hz.</p> <p>3. When 10kHz is out of specification, it will be necessary to read adjust the azimuth.</p>						

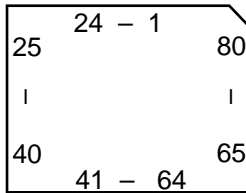
# Wiring connections



# Description of major ICs

## ■UPD178018AGC584(IC701) : System controller micon

### 1.Terminal Layout

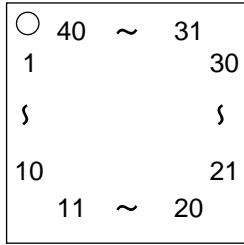


### 2.Description

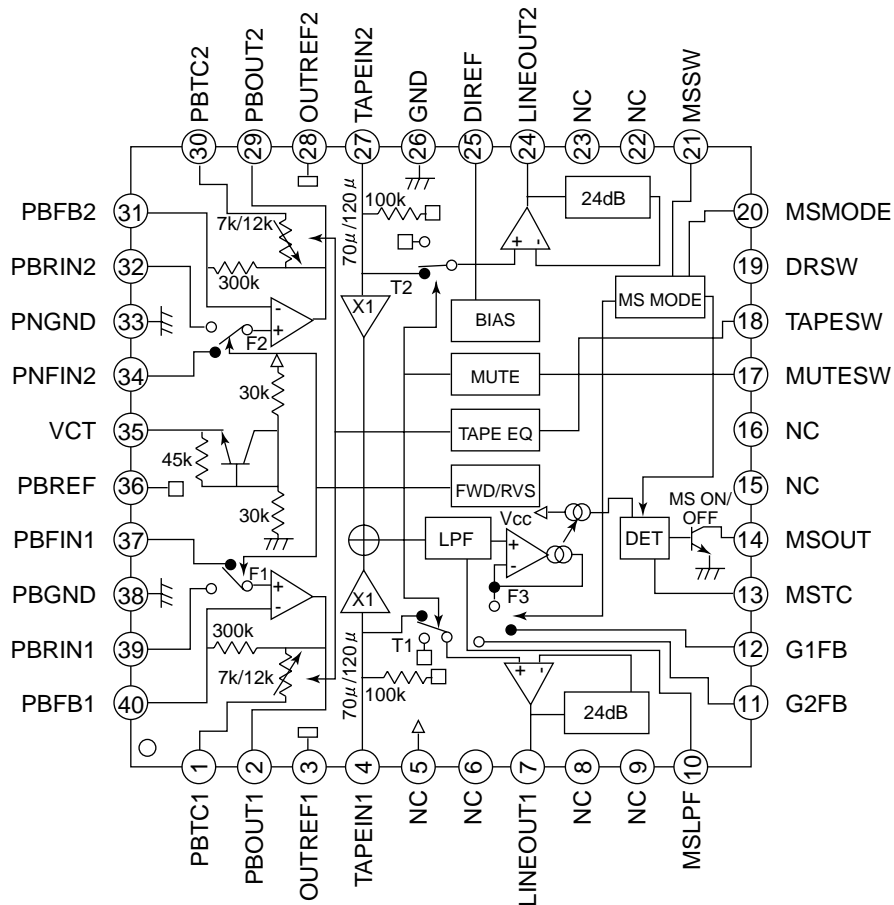
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	KEY0	I	Key input 0	43	DOLBY	O	Dolby NR output H:Dolby NR ON
2	KEY1	I	Key input 1	44	MS IN	I	Between tunes signal input H:Between tunes
3	KEY2	I	Key input 2				
4	LEVEL	I	Level meter input	45	I2CSCK	I/O	E-VOL IC control clock I/O
5	SM	I	Signal meter input	46	I2CDAO	O	E-VOL IC control data output
6	SQ	I	Signal quality input	47	I2CDAI	I	E-VOL IC control data input
7	LCDCE	O	Chip enable output to LCD driver	48	REEL	I	Reel rotation detect signal input
8	LCDDA	O	Data output to LCD driver	49	SUBMO-	O	Sub motor output -
9	LCDSCCK	O	Clock output to LCD driver	50	SUBMO+	O	Sub motor output +
10	BUSI/O	O	J-BUS I/O switch output	51	MODE	I	Mode position detection input H:Non-mode L:Mode position
11	UNLOCK	O	PLL unlock output L:unlock H:lock				
12	BUSSI	I	J-BUS data input	52	TAPEIN	I	Cassette in detect input H:IN L:OUT
13	BUSSO	O	J-BUS data output	53	STBY	I	Standby detect input H:Eject side L:Operation side
14	BUSSCK	O	J-BUS clock output				
15 - 20	NC	-	Non connect	53	T-END	I	Tape end detect input 200ms L:tape end
21	GNDPORT	-	GND for port	54-59	NC	-	Non connect
22	VDDPORT	-	VDD for port	60	MUTE	O	L:Mute ON H:Mute OFF
23	NC	-	Non connect	61	POWER	O	Power supply output H:power ON
24	AFCK	O	AF check output L:AF check	62	TEL-MUTE	I	TEL-MUTE input
25	MONO	O	Monastral ON/OFF output H:Monastral ON	63, 64	NC	-	Non connect
26	FM/AM	O	Output for FM power supply H:FM Mode	65	ENC1	I	Encoder signal input
27	SEEK/STOP	O	Auto seek/Stop output H:Aut seek L:Stop	66	ENC2	I	Encoder signal input
28	NC	I	Non connect	67	ON	I	H:Operation mode L:Power save mode
29	IFC	I	FM middle frequency counter input	68	STOP	I	Stop mode input
30	VDDPLL	-	VDD for PLL	69	RDSCCK	I	RDS clock input
31	OSC	I	FM/AM oscillation input	70	RDSDA	I	RDS data input
32	NC	-	Non connect	71	REMOCON	I	Remocon signal input (Not used)
33	GNDPLL	-	GND for PLL	72	DETACH	I	Detach input It is "L" of 200ms or more and an operation mode H:power save mode
34	EO0	O	Error out output from change pump				
35	EO1	O	Error out output from change pump	73	JBUS INT	I	J-BUS Interruption input
36	IC	-	Connect to Ground	74	REGCPU	-	Connects GND through the capacitor of 0.1 F
37	SD/ST	I	Seek/Stop port H:SD input Seek/Stop port L:Stereo input				
38	STAGE	I	H:It is CD mode and there is REPEAT L:Does not exist	75	GND	-	To ground
				76	X2	-	Crystal oscillator connection for system clock oscillation
39	NC	-	Non connect	77	X1	-	Crystal oscillator connection for system clock oscillation
40	MOTOR	O	Main motor output H:At rotation	78	REGOSC	-	Connects GND through the capacitor of 0.1 F
41	FF/REW	O	MS IC sensitivity switch output L:FF/REW	80	NC	-	Non connect
42	F/R	O	FWD/REV change input H:FWD L:REV				

■ CXA2559Q(IC401):Playback equalizer amplifier with music sensor

1.Pin layout



2.Blockdiagram





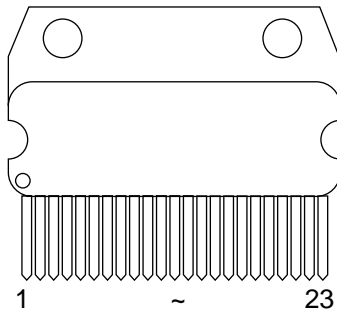
## 3.Pin function

CXA2559Q 2/2

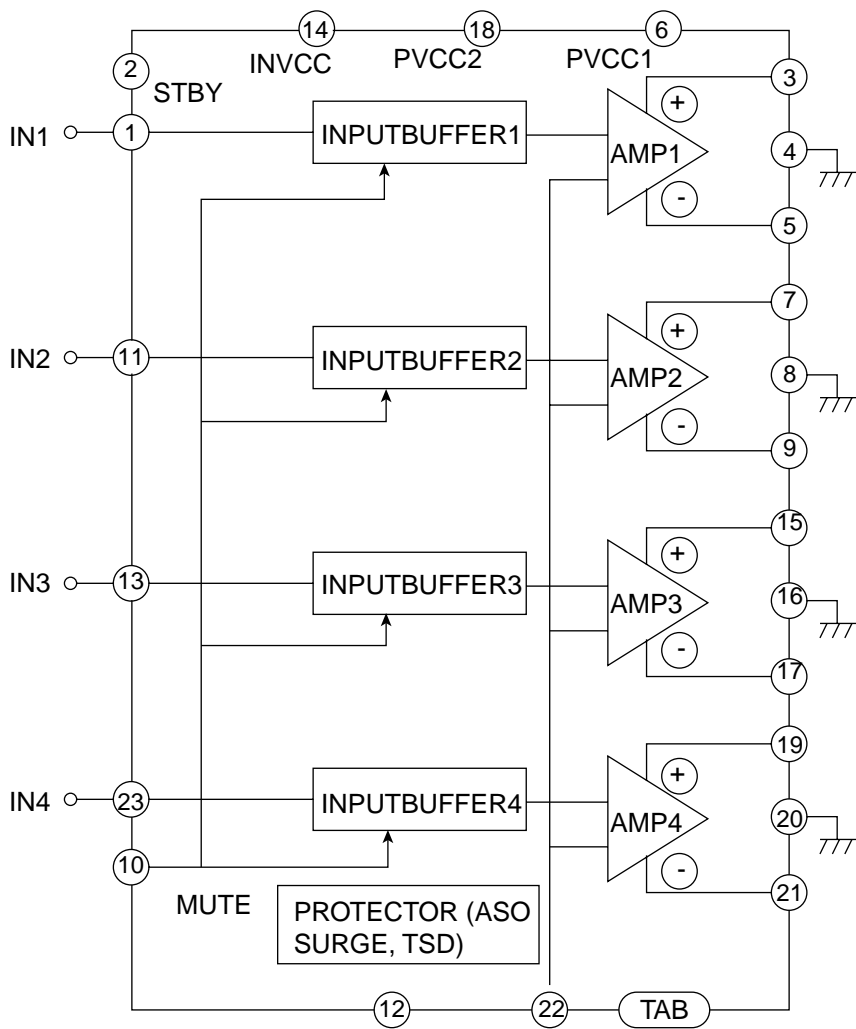
Pin No.	Symbol	I/O	Function
1	PBTC1	-	Terminal of capacity of reproduction equalizer reproduction
2	PBOUT1	O	Equalizer output terminal
3	OUTREF1	O	Output standard terminal
4	TAPEIN1	I	Tape input terminal
5	Vcc	-	Power supply terminal
6	NC	-	Non connection
7	LINEOUT1	O	Line-out output terminal
8	NC	-	Non connection
9	NC	-	Non connection
10	MSLPF	-	Detection LPF terminal between tunes
11	G2FB	-	Detection level set terminal between tunes
12	G1FB	-	Detection level set terminal between tunes
13	MSTC	-	Time constant connection terminal for the detection between tunes
14	MSOUT	O	Detection output terminal between tunes
15	NC	-	Non connection
16	NC	-	Non connection
17	MUTESW	I	Mute function control terminal
18	TAPESW	I	Reproduction equalizer control terminal
19	DRSW	I	Head change control terminal
20	MSMODE	I	Detection mode control terminal between tunes
21	MSSW	I	Detection function control terminal between tunes
22	NC	-	Non connection
23	NC	-	Non connection
24	LINEOUT2	O	Line-out output terminal
25	DIREF	-	Resistance connection terminal for standard current setting
26	GND	-	Earth terminal
27	TAPEIN2	I	Tape input terminal
28	OUTREF2	O	Output standard terminal
29	PBOUT2	O	Reproduction equalizer output terminal
30	PBTC2	-	Terminal of capacity of reproduction equalizer
31	PBFB2	I	Reproduction equalizer return terminal
32	PNRIN2	I	Reproduction equalizer input terminal
33	PBGND	-	Reproduction equalizer system earth terminal
34	PBFIN2	I	Reproduction equalizer input terminal
35	VCT	O	Middle point terminal
36	PBREF	O	Reproduction equalizer standard terminal
37	PBFIN1	I	Reproduction equalizer input terminal
38	PBGND	-	Reproduction equalizer system earth terminal
39	PBRIN1	I	Reproduction equalizer input terminal
40	PBFB1	I	Reproduction equalizer return terminal

■ HA13158A (IC941) : Power amp

1. Pin layout

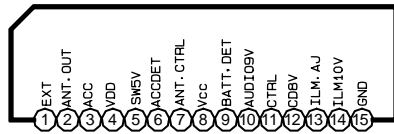


2. Block diagram

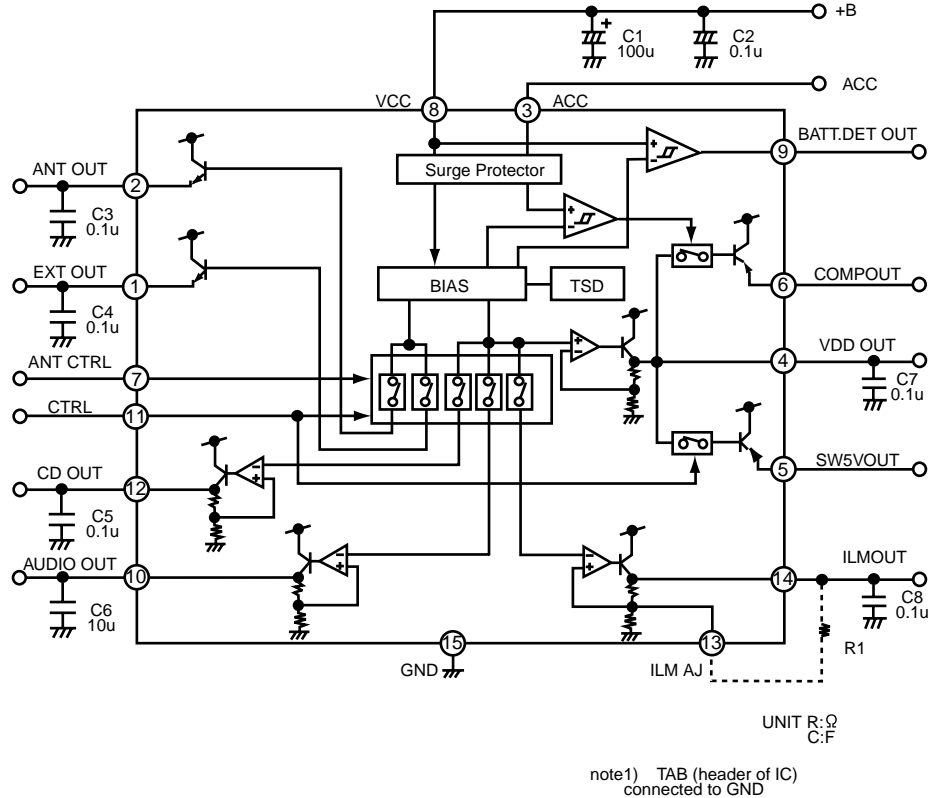


## HA13164(IC961):REGULATOR

### 1.Terminal layout



### 2.Block diagram

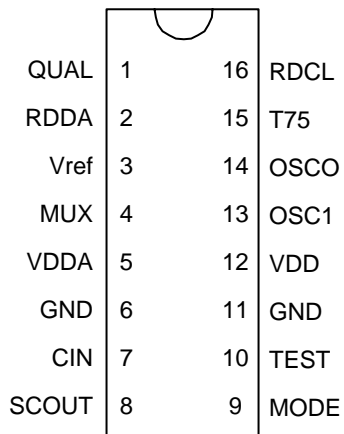


### 3.Pin function

Pin No.	Symbol	Function
1	EXTOUT	Output voltage is VCC-1 V when M or H level applied to CTRL pin.
2	ANTOUT	Output voltage is VCC-1 V when M or H level to CTRL pin and H level to ANT-CTRL.
3	ACCIN	Connected to ACC.
4	VDDOUT	Regular 5.7V.
5	SW5VOUT	Output voltage is 5V when M or H level applies to CTRL pin.
6	COMPOUT	Output for ACC detector.
7	ANT CTRL	L:ANT output OFF , H:ANT output ON
8	VCC	Connected to VCC.
9	BATT DET	Low battery detect.
10	AUDIO OUT	Output voltage is 9V when M or H level applied to CTRL pin.
11	CTRL	L:BIAS OFF, M:BIAS ON, H:CD ON
12	CD OUT	Output voltage is 8V when H level applied to CTRL pin.
13	ILM AJ	Adjustment pin for ILM output voltage.
14	ILM OUT	Output voltage is 10V when M or H level applies to CTRL pin.
15	GND	Connected to GND.

## ■ SAA6579T-X(IC761):RDS Detector

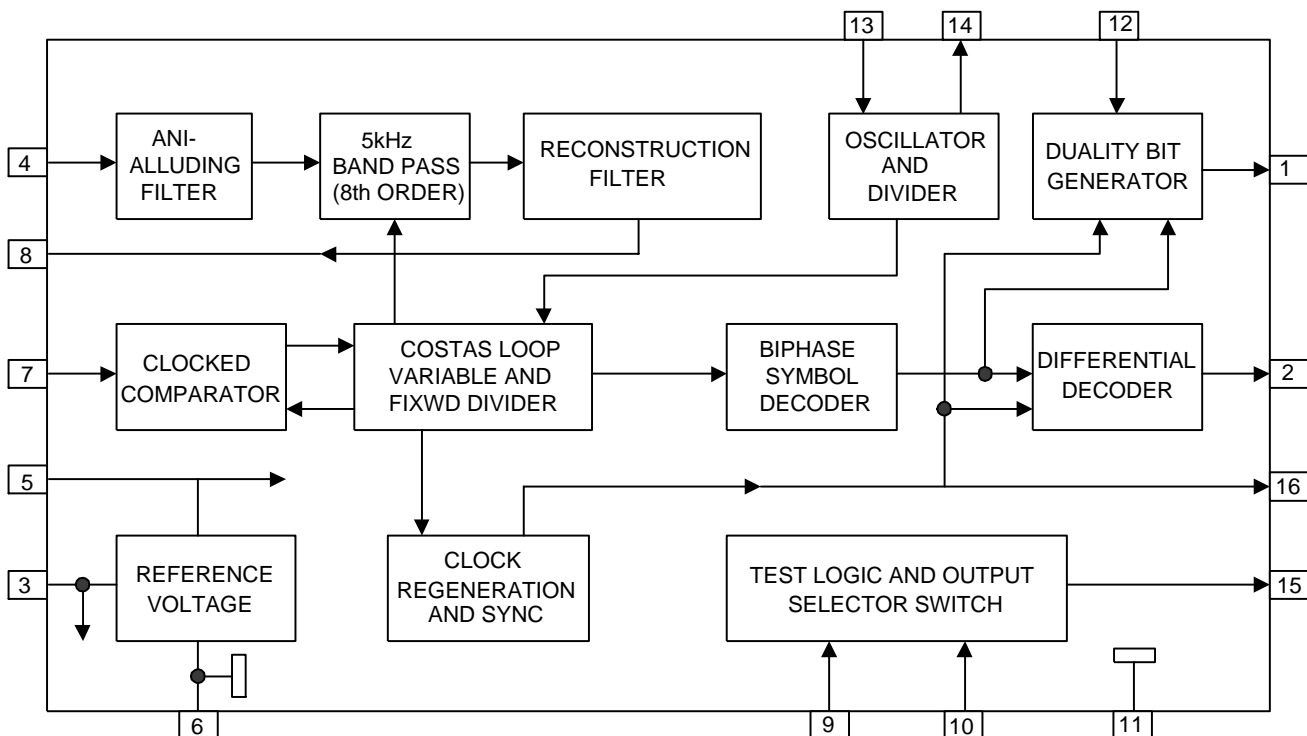
### 1. Terminal Layout



### 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

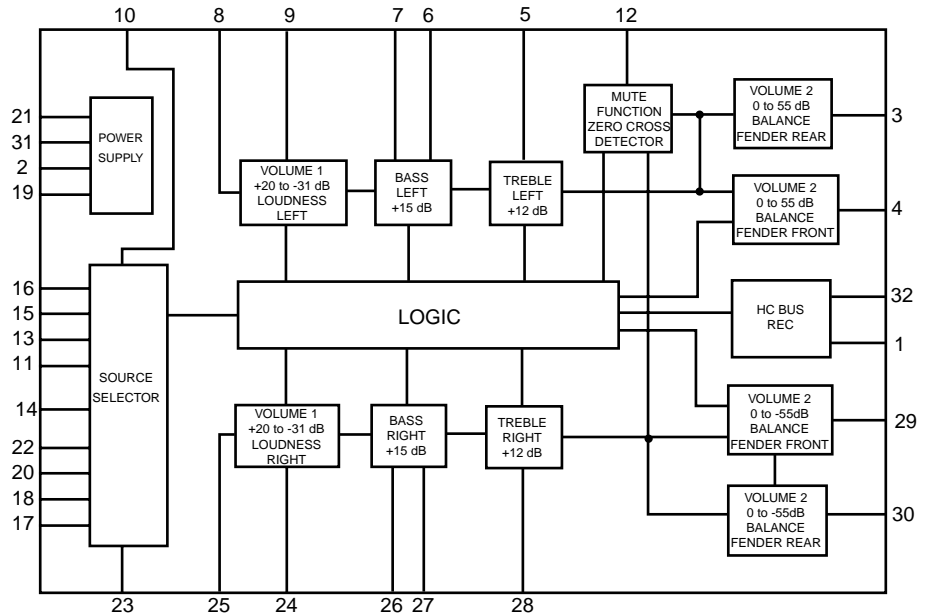


**TEA6320T-X (IC911) : E.volume**

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
			TAPE
			TUNER

2.Block diagram

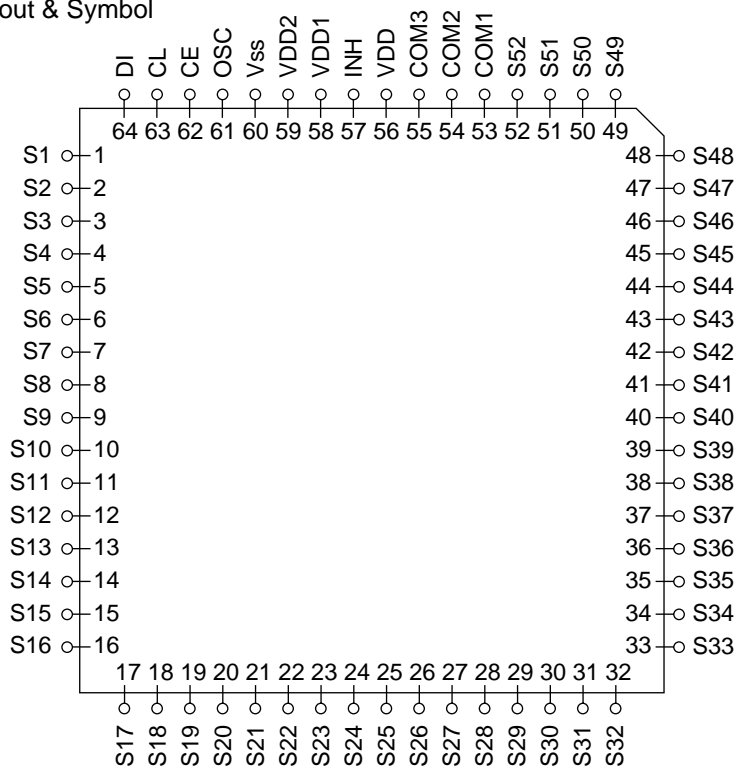


3.Pin functions

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.

## ■LC75823E (IC651) : LCD Driver

### 1. Pin Layout & Symbol

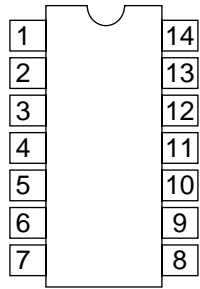


### 2. Pin Function

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 : $t_0 = (f_{osc}/384)Hz$ .
56	VDD	--	Power supply connection. Provide a voltage of between 4.5 and 6.0V.
57	$\overline{INH}$	I	Display turning off input pin. $\overline{INT}="L"$ (Vss) ----- off (S1 to S52, COM1 to COM3="L" $\overline{INT}="H"$ (VDD)----- on Serial data can be transferred in display off mode.
58	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 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	CL : Sync clock
64	DI		DI : Transfer data

■ HD74HC126FP-X (IC751) : Buffer

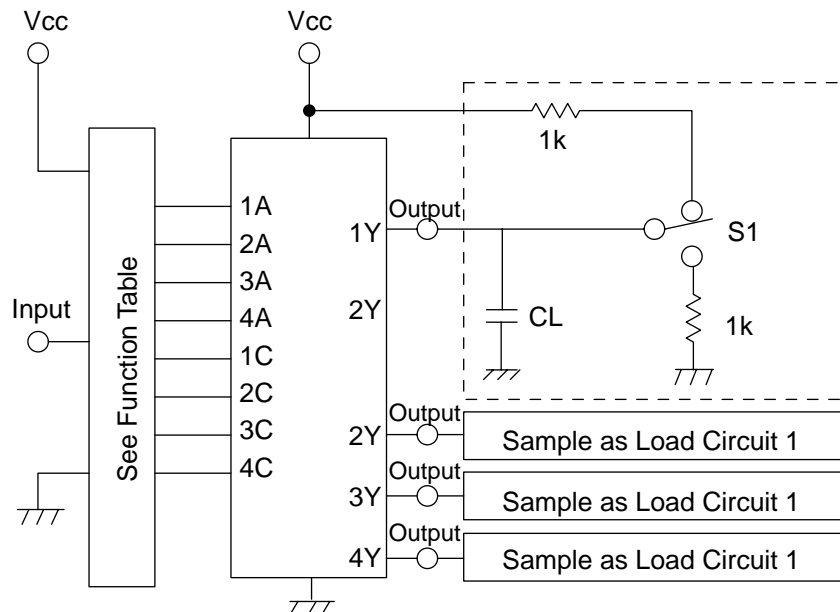
1. Terminal layout



3. Pin function

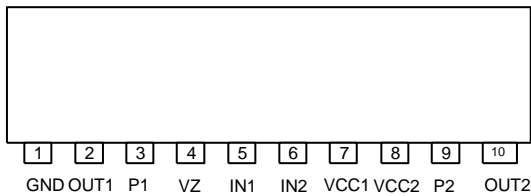
Input		Output
C	A	Y
L	X	Z
H	L	H
H	H	L

2. Block diagram



■ LB1641 (IC402) : DC motor driver

1. Pin layout



2. Pin function

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

**JVC**

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