

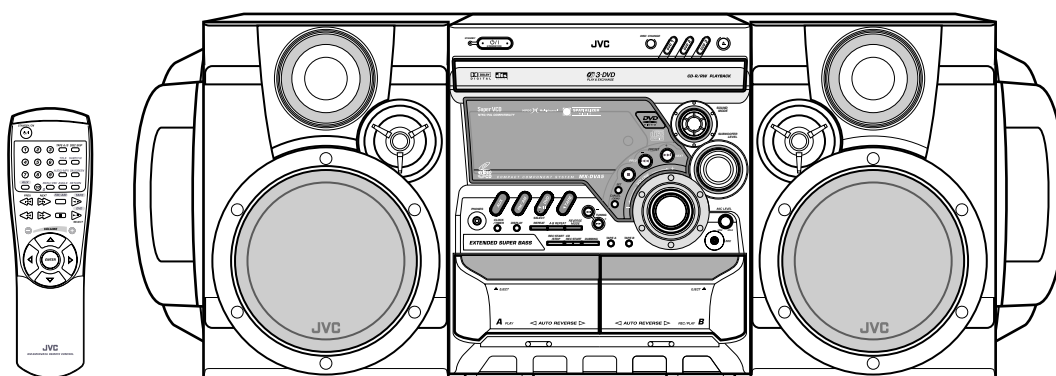
JVC

SERVICE MANUAL

COMPACT COMPONENT SYSTEM

MX-DVA5

Area Suffix	
UG	-----Turkey, South Africa, Egypt
US	-----Singapore
UW	-----Brazil, Mexico, Peru
UY	-----Argentina



SP-MXDVA5 CA-MXDVA5 SP-MXDVA5
 (No MIC jack and MIC LEVEL volume for UY ver.)



Video CD



PlayBack Control



MPEG)C Multichannel



CD/ DVD Mechanism is exchanged by a unit (contain CPC cords).



VIDEO CD

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Safety Precautions

1. This design of this product contains special hardware and many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Services should be performed by qualified personnel only.
2. Alterations of the design or circuitry of the product should not be made. Any design alterations of the product should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacture of responsibility for personal injury or property damage resulting therefrom.
3. Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the Parts List of Service Manual. Electrical components having such features are identified by shading on the schematics and by (\triangle) on the Parts List in the Service Manual. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement parts shown in the Parts List of Service Manual may create shock, fire, or other hazards.
4. The leads in the products are routed and dressed with ties, clamps, tubings, barriers and the like to be separated from live parts, high temperature parts, moving parts and/or sharp edges for the prevention of electric shock and fire hazard. When service is required, the original lead routing and dress should be observed, and it should be confirmed that they have been returned to normal, after re-assembling.

5. Leakage current check (Electrical shock hazard testing)

After re-assembling the product, always perform an isolation check on the exposed metal parts of the product (antenna terminals, knobs, metal cabinet, screw heads, headphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

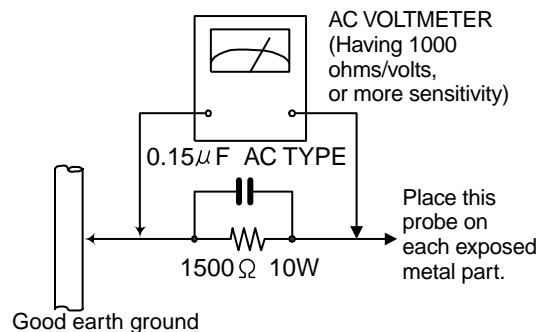
Do not use a line isolation transformer during this check.

- Plug the AC line cord directly into the AC outlet. Using a "Leakage Current Tester", measure the leakage current from each exposed metal parts of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground. Any leakage current must not exceed 0.5mA AC (r.m.s.).

- Alternate check method

Plug the AC line cord directly into the AC outlet. Use an AC voltmeter having, 1,000 ohms per volt or more sensitivity in the following manner. Connect a 1,500 Ω 10W resistor paralleled by a 0.15 μ F AC-type capacitor between an exposed metal part and a known good earth ground. Measure the AC voltage across the resistor with the AC voltmeter.

Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Voltage measured any must not exceed 0.75 V AC (r.m.s.). This corresponds to 0.5 mA AC (r.m.s.).



Warning

1. This equipment has been designed and manufactured to meet international safety standards.
2. It is the legal responsibility of the repairer to ensure that these safety standards are maintained.
3. Repairs must be made in accordance with the relevant safety standards.
4. It is essential that safety critical components are replaced by approved parts.
5. If mains voltage selector is provided, check setting for local voltage.

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.

In regard with component parts appearing on the silk-screen printed side (parts side) of the PWB diagrams, the parts that are printed over with black such as the resistor (■), diode (▣) and ICP (●) or identified by the " \triangle " mark nearby are critical for safety.

When replacing them, be sure to use the parts of the same type and rating as specified by the manufacturer. (Except the J and C version)

Important for laser products

1.CLASS 1 LASER PRODUCT


2.DANGER : Invisible laser radiation when open and inter lock failed or defeated. Avoid direct exposure to beam.

3.CAUTION : There are no serviceable parts inside the Laser Unit. Do not disassemble the Laser Unit. Replace the complete Laser Unit if it malfunctions.

4.CAUTION : The compact disc player uses invisible laserradiation and is equipped with safety switches which prevent emission of radiation when the drawer is open and the safety interlocks have failed or are defeated. It is dangerous to defeat the safety switches.

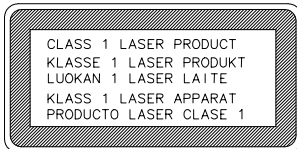
5.CAUTION : If safety switches malfunction, the laser is able to function.

6.CAUTION : Use of controls, adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

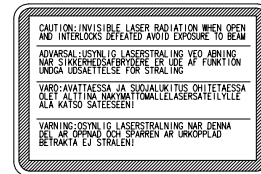
 **CAUTION** Please use enough caution not to see the beam directly or touch it in case of an adjustment or operation check.

POSITION OF LABELS

CLASS 1 LASER PRODUCT



LASER CAUTION LABEL



Preventing static electricity

1. Grounding to prevent damage by static electricity

Electrostatic discharge (ESD), which occurs when static electricity stored in the body, fabric, etc. is discharged, can destroy the laser diode in the traverse unit (optical pickup). Take care to prevent this when performing repairs.

2. About the earth processing for the destruction prevention by static electricity

In the equipment which uses optical pick-up (laser diode), optical pick-up is destroyed by the static electricity of the work environment.

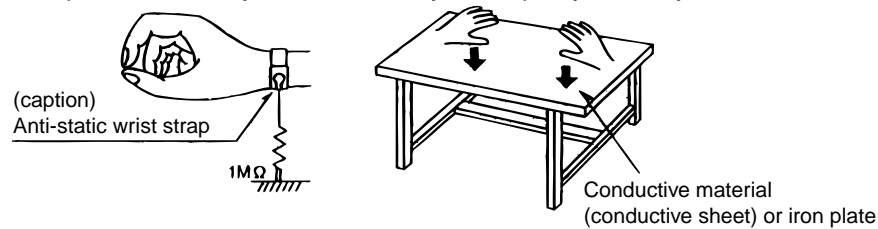
Be careful to use proper grounding in the area where repairs are being performed.

2-1 Ground the workbench

Ground the workbench by laying conductive material (such as a conductive sheet) or an iron plate over it before placing the traverse unit (optical pickup) on it.

2-2 Ground yourself

Use an anti-static wrist strap to release any static electricity built up in your body.



3. Handling the optical pickup

1. In order to maintain quality during transport and before installation, both sides of the laser diode on the replacement optical pickup are shorted. After replacement, return the shorted parts to their original condition. (Refer to the text.)

2. Do not use a tester to check the condition of the laser diode in the optical pickup. The tester's internal power source can easily destroy the laser diode.

4. Handling the traverse unit (optical pickup)

1. Do not subject the traverse unit (optical pickup) to strong shocks, as it is a sensitive, complex unit.

2. Cut off the shorted part of the flexible cable using nippers, etc. after replacing the optical pickup. For specific details, refer to the replacement procedure in the text. Remove the anti-static pin when replacing the traverse unit. Be careful not to take too long a time when attaching it to the connector.

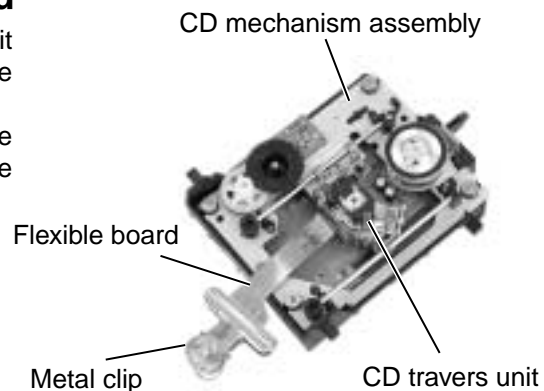
3. Handle the flexible cable carefully as it may break when subjected to strong force.

4. It is not possible to adjust the semi-fixed resistor that adjusts the laser power. Do not turn it.

Attention when traverse unit is decomposed

Because the CD mechanism assembly of this model is a unit component, the individual component parts consisting of the CD mechanism assembly are not supplied separately.

If you need to decompose the traverse unit, short-circuit the connector of the flexible board by using a metal clip and the like prior to decomposing the traverse unit.



Disassembly method

<Main body>

■ Removing the metal cover

(See Fig.1 and 2)

1. Remove the three screws **A** attaching the metal cover on the back of the body.
2. Remove the six screws **B** attaching the metal cover on both sides of the body.
3. Remove the metal cover from the body by lifting the rear part of the cover.

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

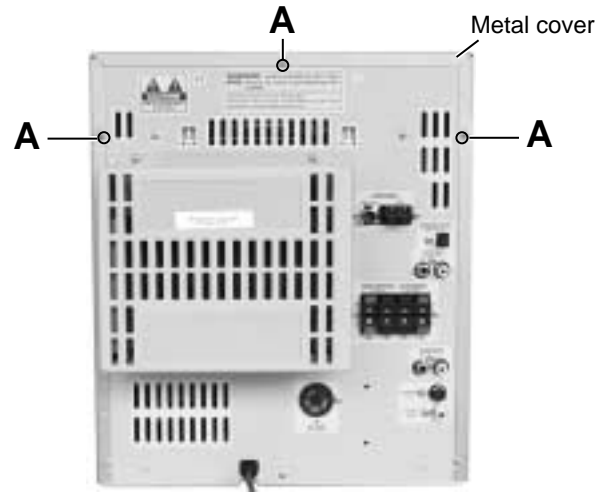


Fig.1

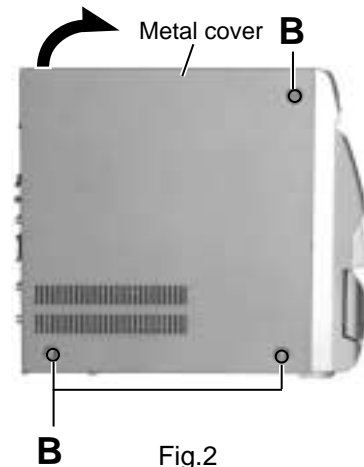


Fig.2

■ Removing the CD/ DVD changer unit

(See Fig.3 to 6)

- Prior to performing the following procedure, remove the metal cover.
1. Disconnect the card wire which is attached with adhesive to the left side of the CD/ DVD changer unit.
 2. Disconnect the harness from connector ACW4 and DCW1 of the CD/ DVD servo board on the back of the CD/ DVD changer unit.
 3. Disconnect the harness from connector LCW2 and LCW6 on the DVD power board.
 4. Disconnect the card wire from connector UCW3 on the FLdisplay & system control board.
 5. Remove the two screws **C** attaching the CD/ DVD changer unit on the back of the body.
 6. Remove the two screws **D** attaching the CD/ DVD changer unit on the both side of the body.
 7. Draw the CD changer unit upward from behind while pulling the rear panel outward.

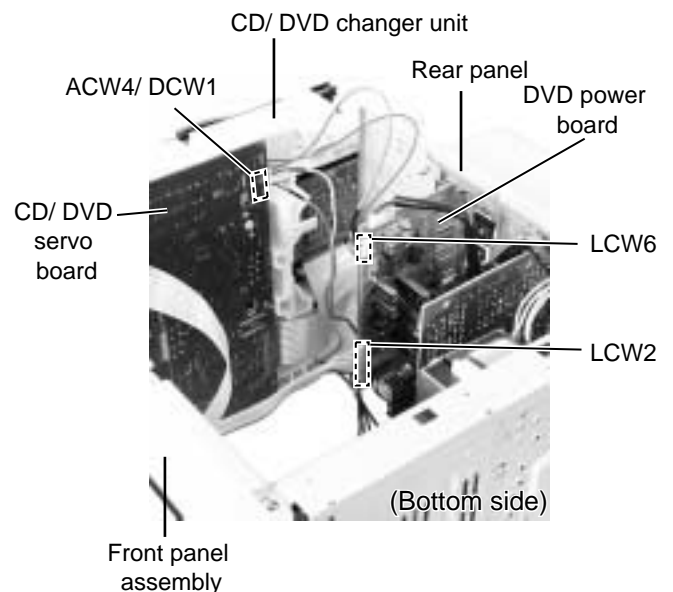


Fig.3

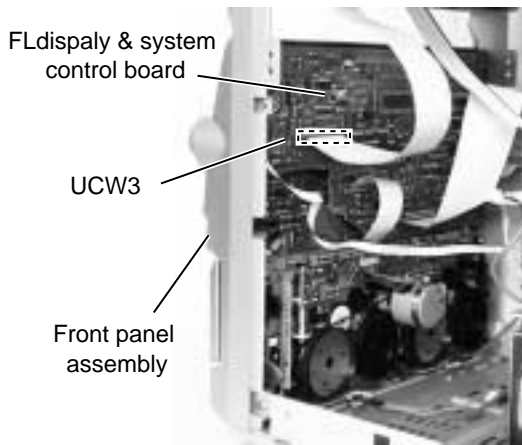


Fig.4

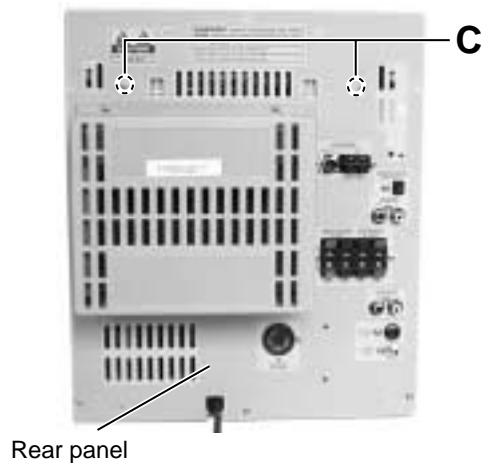


Fig.5

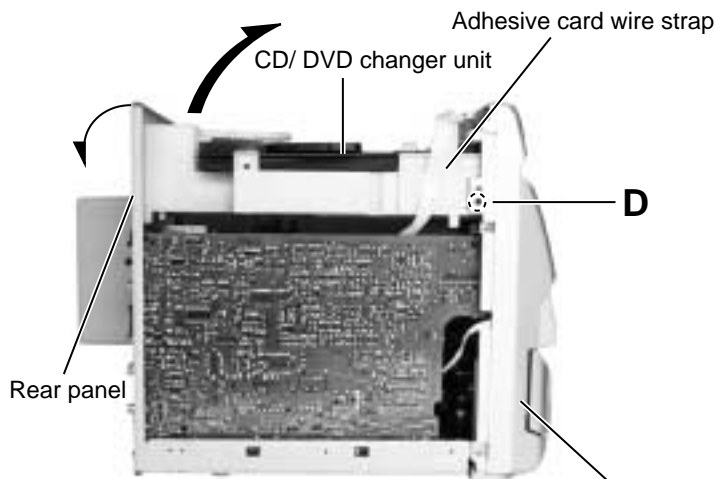


Fig.6a

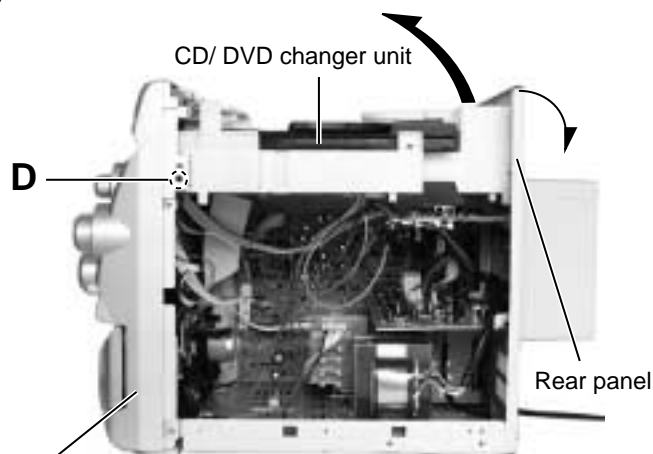


Fig.6b

Front panel assembly

■ Removing the front panel assembly
(See Fig.7 to 9)

• Prior to performing the following procedure, remove the metal cover and the CD/ DVD changer unit.

1. Disconnect the card wire from connector FCW3 and the harness from connector JCW1, JCW2 ECW1 and HCW3 on the inner side of the main board in the body.
2. Remove the two screws **E** attaching the front panel assembly on both sides of the body.
3. Remove the screw **F** attaching the earth terminal extending from the cassette mechanism assembly.
4. Remove the screw **G** attaching the front panel assembly and main board.
5. Remove the screw **H** attaching the front panel assembly on the bottom of the body.
6. Release the two joints **a** on both sides and two joints **b** on the bottom of the body using a screwdriver.

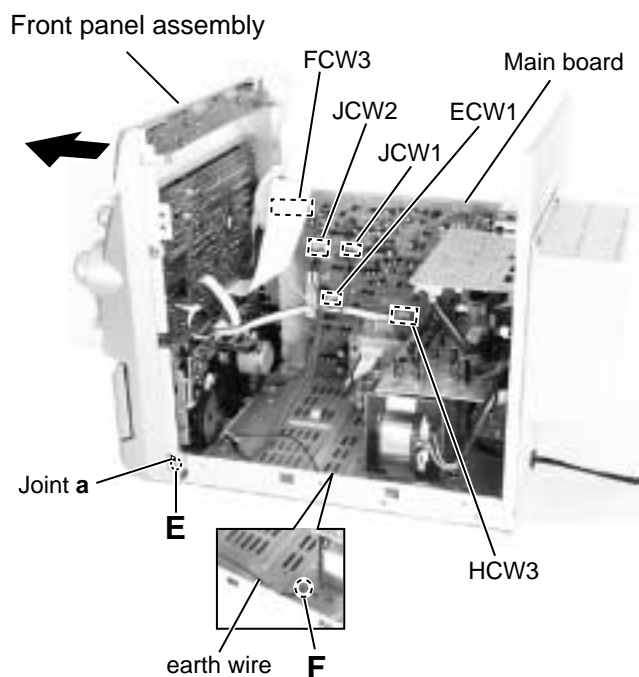


Fig.7

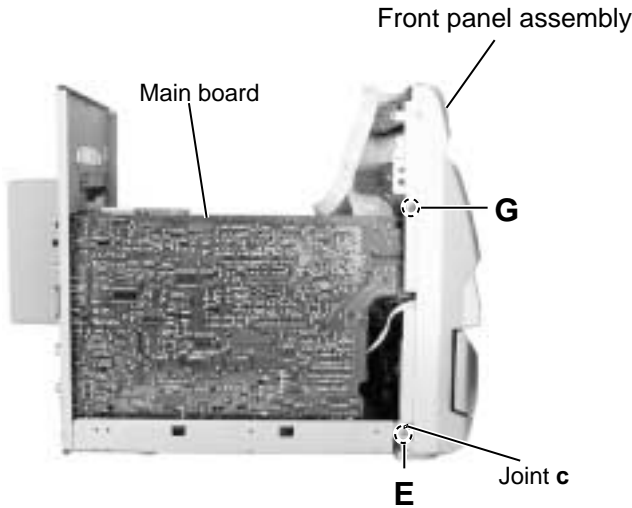


Fig.8

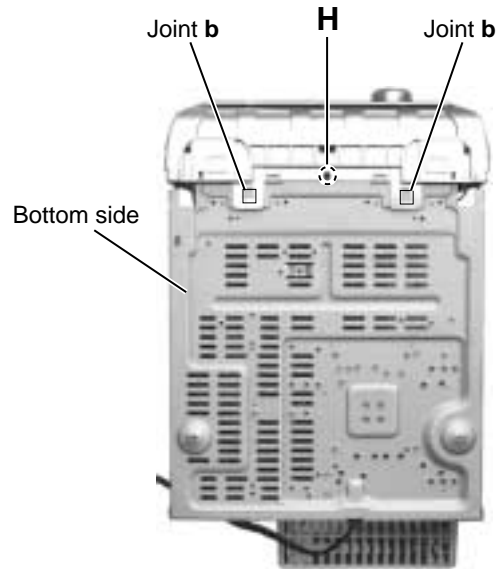


Fig.9

■ Removing the heat sink, AMP board and DVD power board (See Fig.10 to 12)

• Prior to performing the following procedure, remove the metal cover and the CD/ DVD changer unit.

1. Remove the four screws **I** attaching the heat sink cover on the back of the body. Remove the heat sink cover.
2. Remove the four screws **J** attaching the heat sink, AMP board and DVD power board to the rear panel on the back of the body.
3. Remove the two screws **K** attaching the speaker terminal to the rear panel on the back of the body.
4. Disconnect the card wire from connector ACW1 and the harness from connector ACW2 on the AMP board.
5. Disconnect the harness from connector LCW5 and LCW4 on the DVD power board.
6. After moving the heat sink upward, remove the claws. Then pull out the heat sink, AMP board and DVD power board inward.

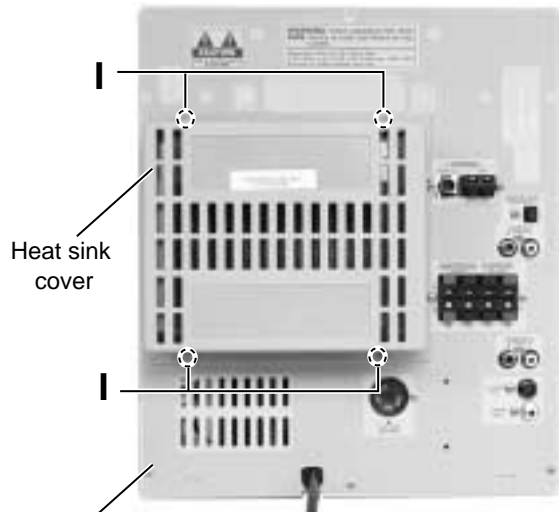


Fig.10

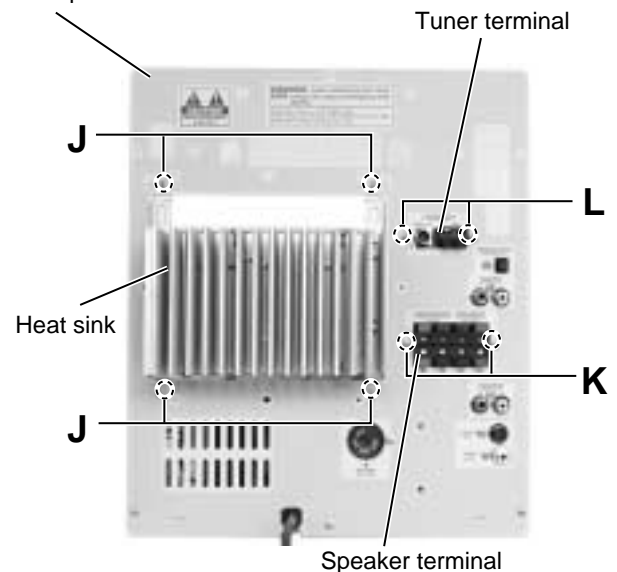


Fig.11

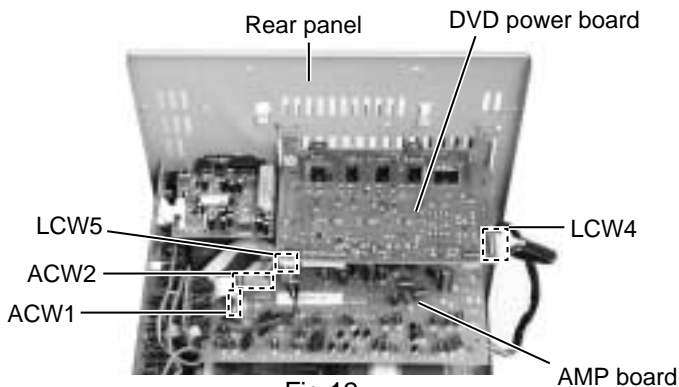


Fig.12

■ Removing the tuner board
(See Fig.11 and 13)

- Prior to performing the following procedure, remove the metal cover and CD/ DVD changer unit.
1. Disconnect the card wire from connector CON01 on the tuner board.
 2. Remove the two screws **L** attaching the tuner board.

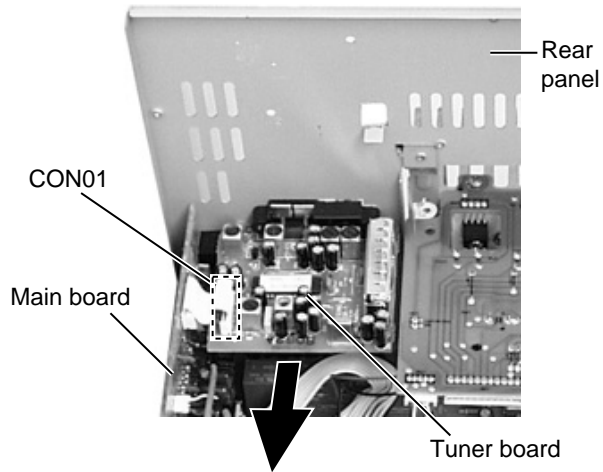


Fig.13

■ Removing the rear panel (See Fig.14)

- Prior to performing the following procedure, remove the metal cover, CD/ DVD changer unit, heat sink & AMP board and tuner pack.
1. Remove the one screw **M** (Except UY), three screws **N** and five screws **N'** attaching the rear panel.

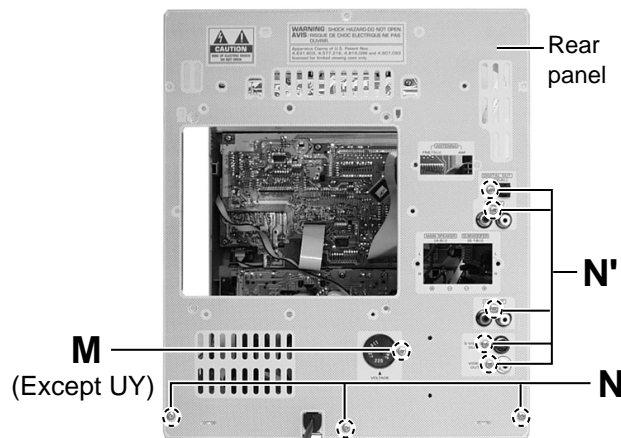


Fig.14

■ Removing the main Board
(See Fig. 15)

- Prior to performing the following procedure, remove the metal cover, CD/ DVD changer unit, heat sink & AMP board tuner pack and rear cover.
1. Disconnect the card wire from connector FCW3 and the harness from connector JCW1, JCW2, ECW1 and HCW3 on the main board.
 2. Disconnect the harness from connector PCW1 on the power transformer board.
 3. Remove the screw **G** attaching the main board holder. (See Fig.8)
 4. Remove the two screws **O** attaching the heat sink and bottom chassis.

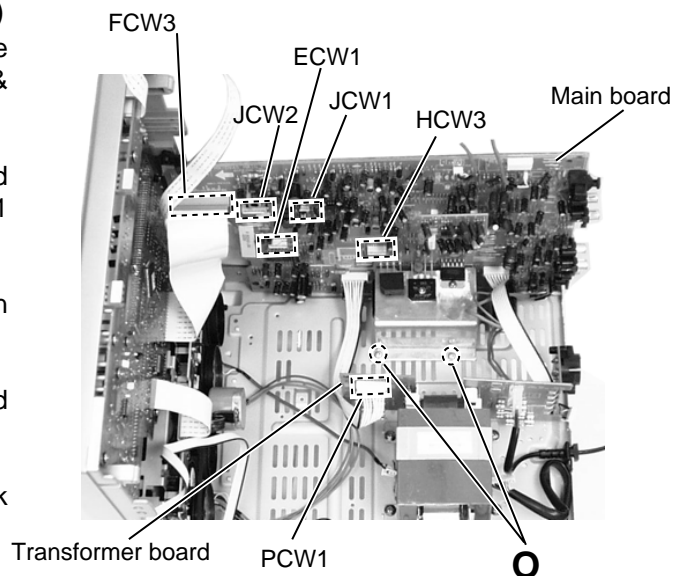


Fig.15

■Removing the power ICs and DVD power board (See Fig.16 and 17)

• Prior to performing the following procedure, remove the metal cover, CD/ DVD changer unit, heat sink, AMP board and DVD power board.

1. Remove the four screws **P** attaching the power ICs to the heat sink.
2. Unsolder the power ICs solder point.
3. Remove the three screws **Q** and three screws **R** attaching the DVD power board to the heat sink.

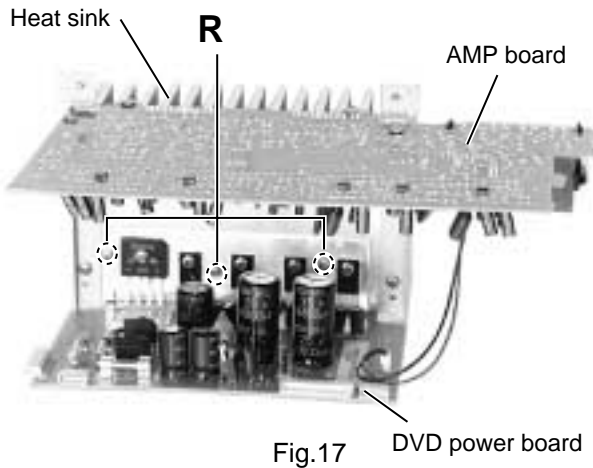
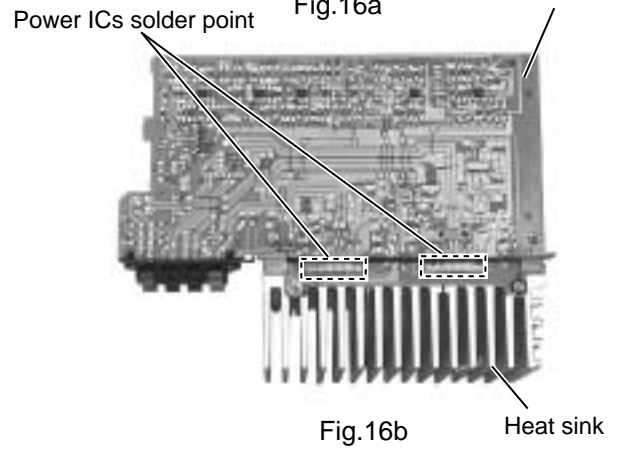
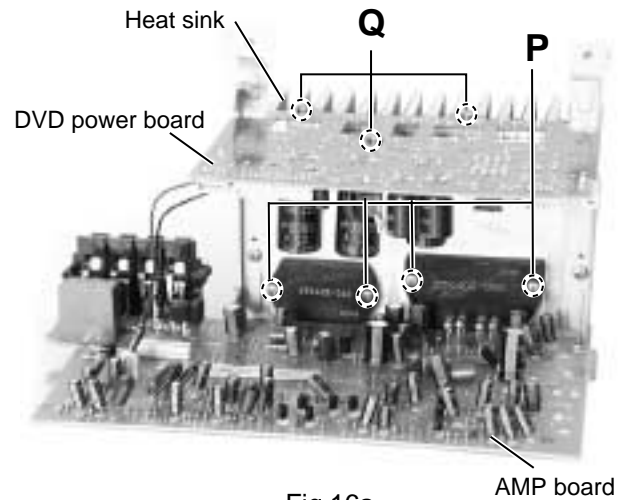


Fig.17

Fig.16b

■Removing the power transformer (See Fig .18)

• Prior to performing the following procedure, remove the metal cover, CD/ DVD changer unit, heat sink & AMP board, tuner pack and rear cover.

1. Disconnect the power cord from connector RCW2 of the power transformer board.
2. Disconnect the harness from connector PCW1 of the power transformer board.
3. Remove the four screws **S** attaching the power transformer.

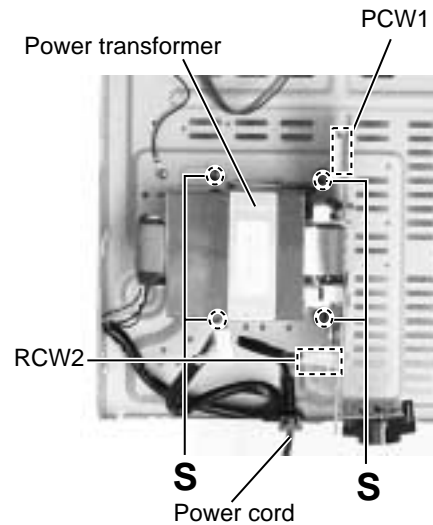


Fig.18

<Front panel assembly>

• Prior to performing the following procedure, remove the metal cover, the CD/ DVD changer unit and the front panel assembly.

■Removing the power / DVD switch board (See Fig.19)

1. Disconnect the card wire from connector UCW1 of the power / DVD switch board.
2. Remove the five screws **T** attaching the power / DVD switch board and release the tab **c** outward.

■Removing the FL display & system control board (See Fig.19)

1. Disconnect the card wire from the connector UCW3, UCW4, UCW5 and UCW6 on the FL & system control board.
2. Remove the five screws **U** attaching the FL & system board.
3. Disconnect the card wire from the connector UCW2 on the FL & system control board.

■Removing the headphone board (See Fig.20)

• Prior to performing the following procedure remove the FLdisplay & system control board.

1. You can pull out the headphone board.

■Removing the front board / MIC board (See Fig. 20 and 21)

• Prior to performing the following procedure, remove the FL display & system control board.
 • No MIC board for UY version.

1. Pull out the volume knob, subwoofer level knob and sound mode nob from front side.
2. Remove the eleven screws **V** attaching the front board and release the two tabs **d** outward.

Release the two tabs **e** outward and remove the mic board.

■Removing the cassette mechanism assembly (See Fig.20)

1. Disconnect the card wire **f** from the mechanism board on the cassette mechanism assembly.
2. Remove the six screws **W** attaching the cassette mechanism assembly.

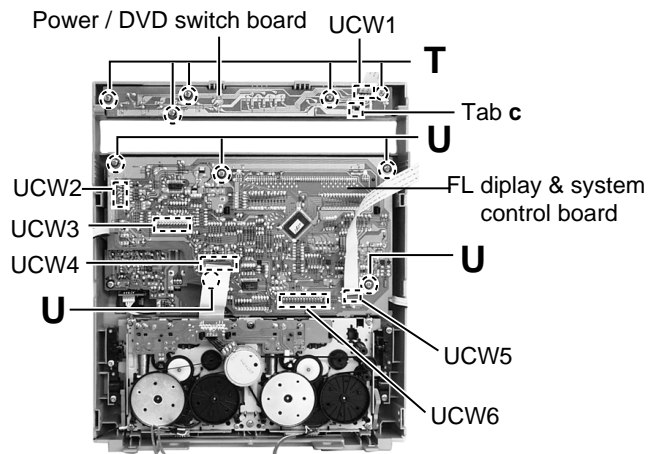


Fig.19

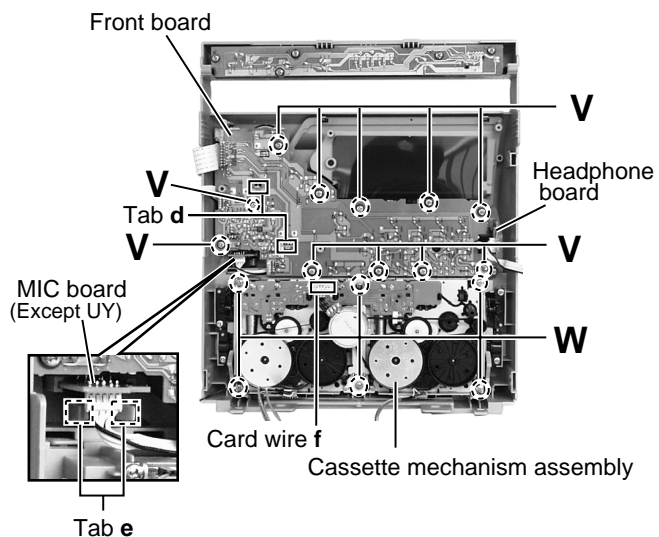


Fig.20

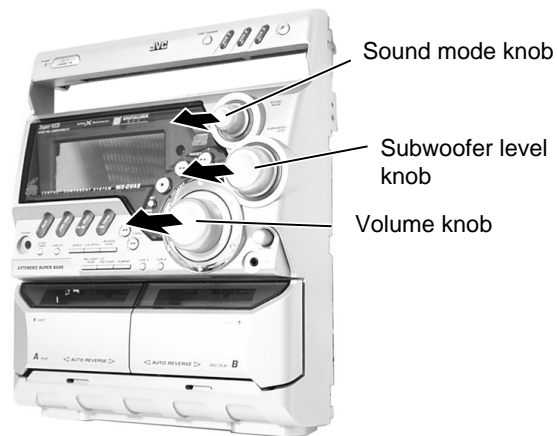


Fig.21

<CD/ DVD changer unit>

- Prior to performing the following procedure, remove the CD/ DVD changer unit.

■ Removing the DVD tray (See Fig.1 to 3)

1. Disconnect the card wire from connector SCW1 of the CD servo board.
2. Turn the black loading pulley gear on the under side of the CD/ DVD changer unit in the direction of the arrow and draw the DVD tray toward the front until it stops.
3. Disconnect the card wire from connector LCW1 of the CD/ DVD servo board on the upper side of the CD/ DVD changer unit.
4. Push down the two tray stoppers marked **a** and pull out the DVD tray.

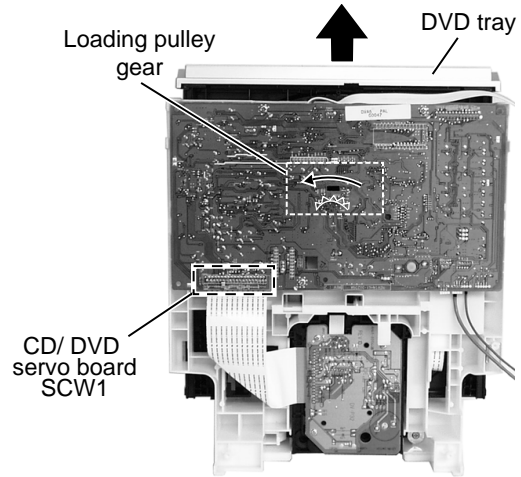


Fig.1

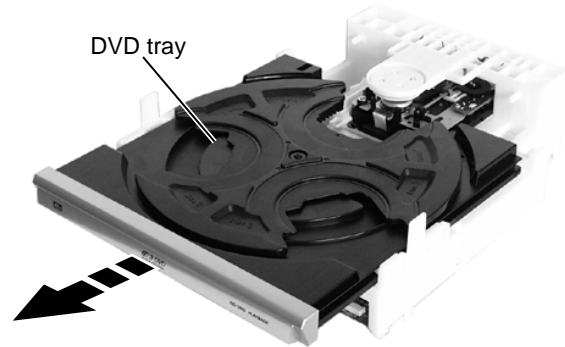


Fig.2

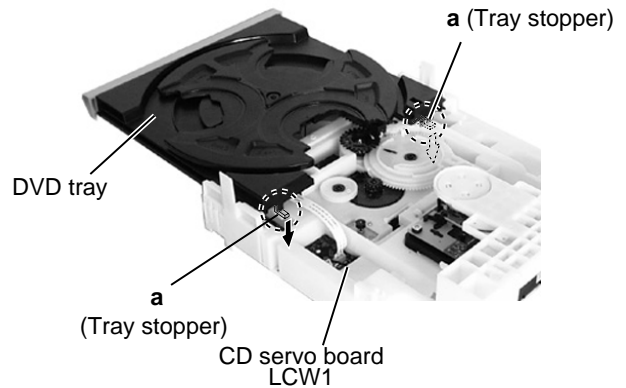


Fig.3

■ Reinstall the DVD tray (See Fig.4 and 5)

1. Align the gear-cam with the gear-tray as shown fig.3, then mount the DVD tray.
2. When assembling the DVD tray, take extreme care not engage with gear - synchro.

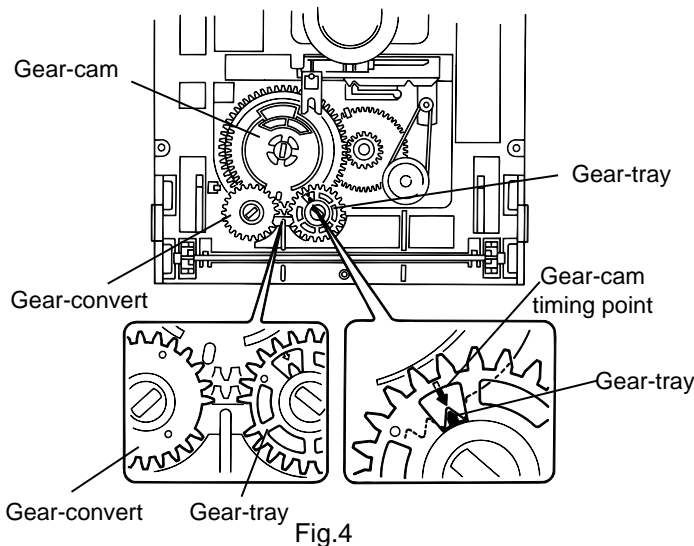


Fig.4

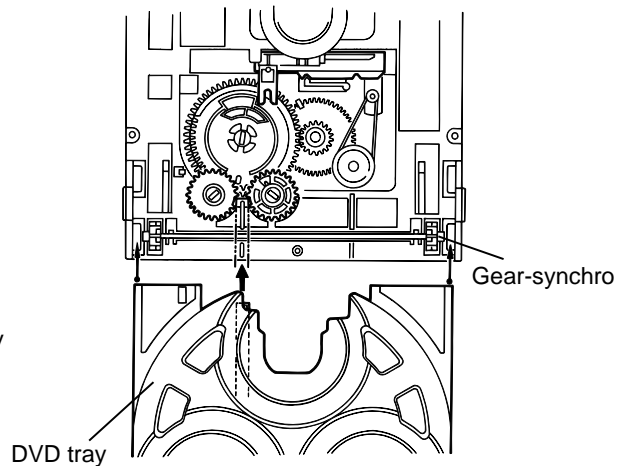


Fig.5

■Removing the sensor board / the turn table motor assembly (See Fig.6 to 8)

- Prior to performing the following procedure, remove the CD tray.
1. Remove the screw **A** attaching the sensor board and release the two tabs **b** attaching the sensor board on the under side of the DVD tray.
 2. Disconnect the harness from connector CW1 on the sensor board and release the harness from the two hooks **c**. Remove the sensor board.
 3. Remove the screw **B** attaching the turn table. Detach the turn table from the tray.
 4. Pull outward the tab marked **d** attaching the turn table motor assembly on the upper side of the tray and detach the turn table motor assembly from the tray.

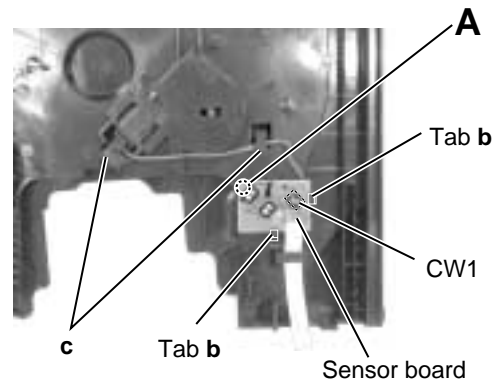


Fig.6

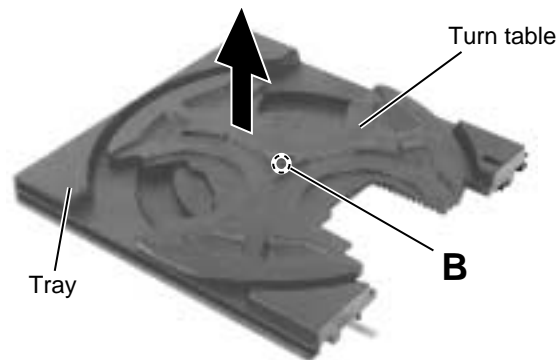


Fig.7

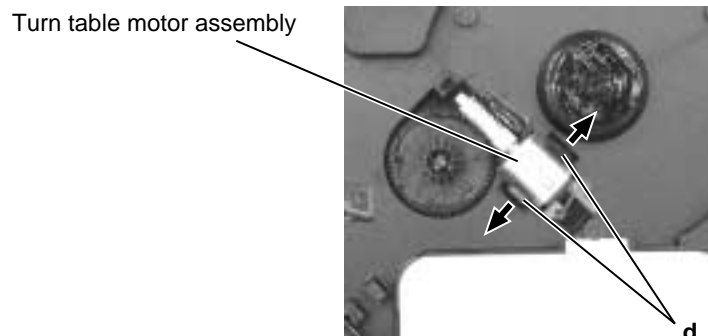
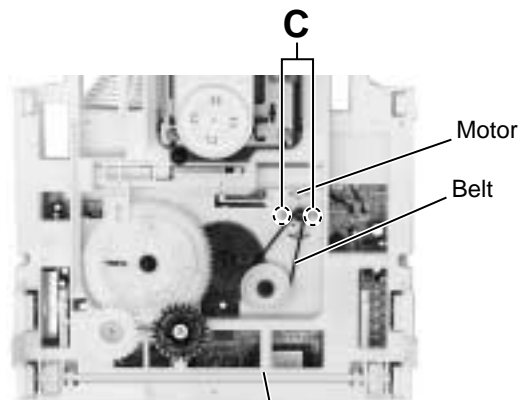


Fig.8

■Removing the belt, the CD/ DVD servo board and the switch board (See Fig.9 and 10)

- Prior to performing the following procedure, remove the DVD tray.
1. Detach the belt from the pulley on the upper side of the CD/ DVD changer unit (Do not stain the belt with grease).
 2. Remove the two screws **C** attaching the motor.
 3. Disconnect the card wire from the connector SCW1 on the CD/ DVD servo board.
 4. Remove the three screws **D** attaching the CD/ DVD servo board .



CD/ DVD changer unit
Fig.9

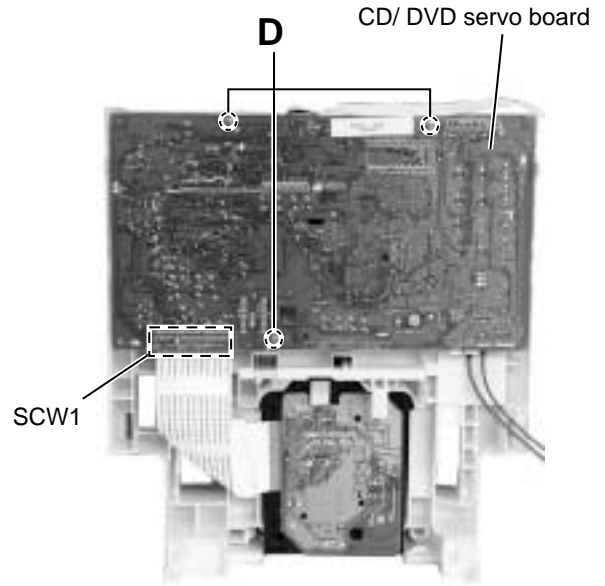


Fig.10

**■ Removing the CD/ DVD mechanism holder assembly (mechanism included)
(See Fig.11 to 13)**

1. Disconnect the card wire from connector CN5 on the motor board in the CD mechanism holder assembly on the under side of the CD changer unit.
2. Remove the screw **E** attaching the shaft on the right side of the CD mechanism holder assembly.
3. Pull outward the stopper fixing the shaft on the left side and remove the CD/ DVD mechanism holder assembly from behind in the direction of the arrow ★.
4. Pull out the CD/ DVD mechanism holder assembly.

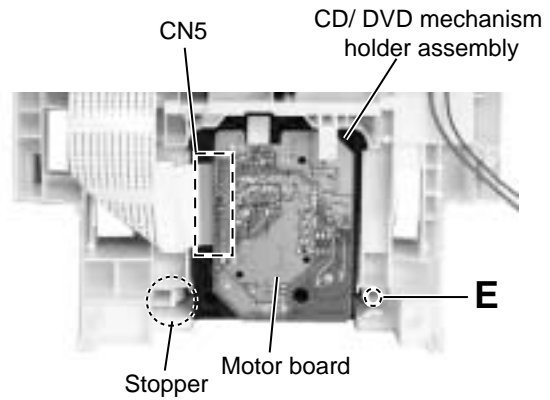


Fig.11

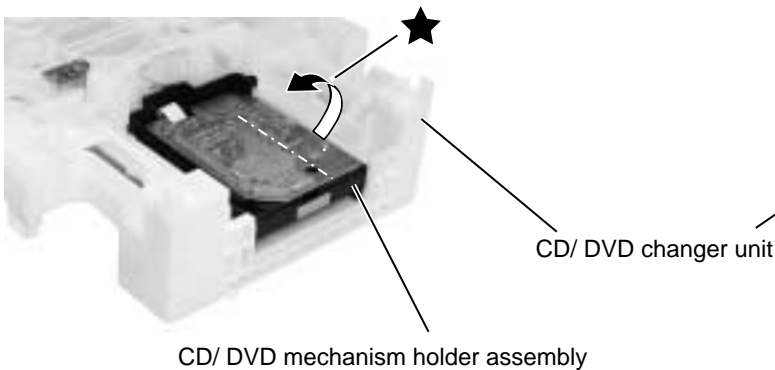


Fig.12



Fig.13

<Cassette mechanism section>

- Removing the record/playback mechanism.

■ Removing the R/P head.

1. Remove the screw **A** on the right side of the R/P head.(Fig.1)
2. Remove the screw **B** on the left side of the R/P head.(Fig.1)

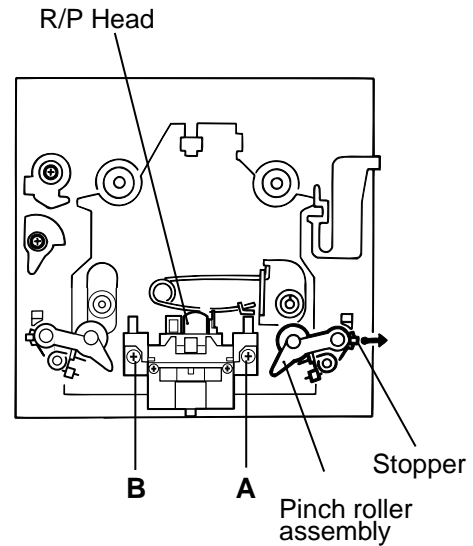


Fig.1

■ Removing the pinch roller.

1. Pull out the pinch roller by opening the pinch roller stopper outward to unlock .(Fig.2)
2. When reassembling the pinch roller, refer to fig. 3 to hook up the spring.

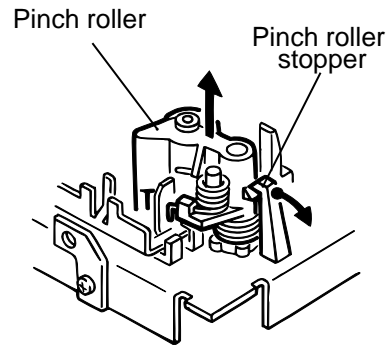


Fig.2

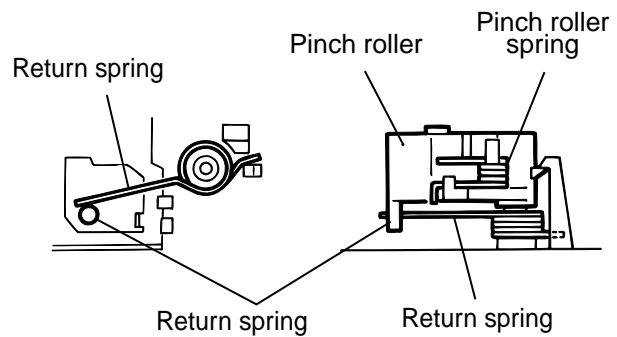


Fig.3

■ **Removing the motor.**

1. Remove the two screws **C** fixing the motor.
Be careful to grease's splash when the drive belt comes off.(Fig.4, Fig.5)
2. Unsolder the motor terminal.(Fig.4)

■ **Removing the mechanism board.**

1. Unsolder the four parts **a** on the solenoid coil terminal.(Fig.4)
2. Remove the two screws **D** fixing the board.(Fig.4)
3. Unhook the three parts **b** from the board.(Fig.4)
4. Remove the mechanism board.(Fig.4)

■ **Removing the flywheel.**

Remove the cut-washers at **c** and **d** from the capstan shaft, then remove the flywheel.
When reassembling the flywheel, be sure to use new washers as they cannot be reused. (Fig.7, Fig.8)

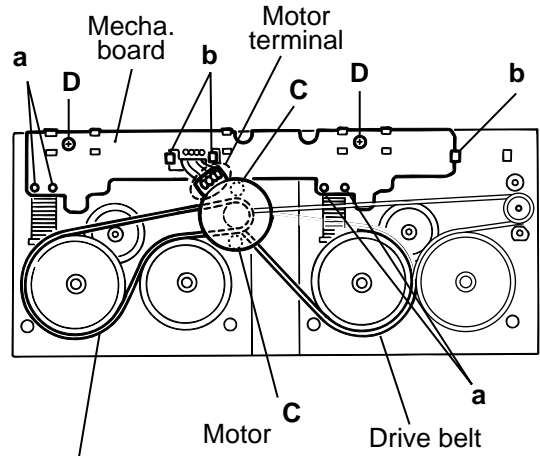


Fig.4

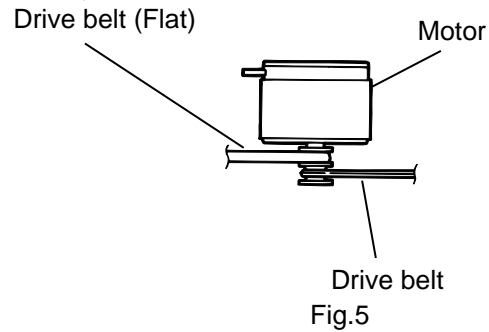


Fig.5

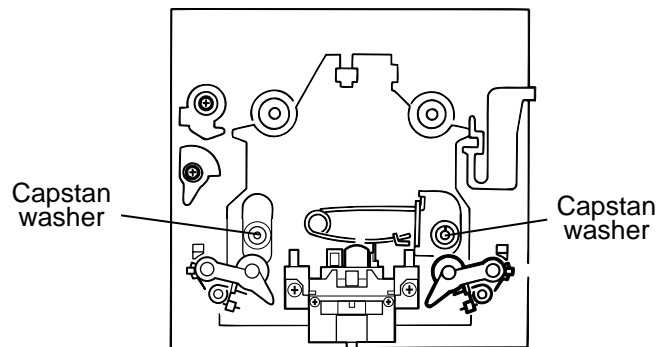


Fig.6

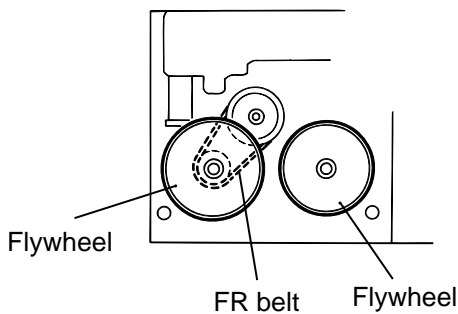


Fig.7

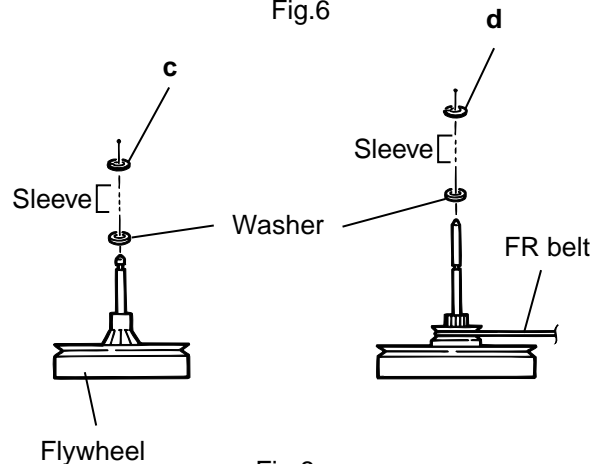


Fig.8

< Speaker section >

■ Removing the side panel (See Fig. 1)

1. Remove the five screws **A** and **B** attaching the side panel, then remove the side panel.

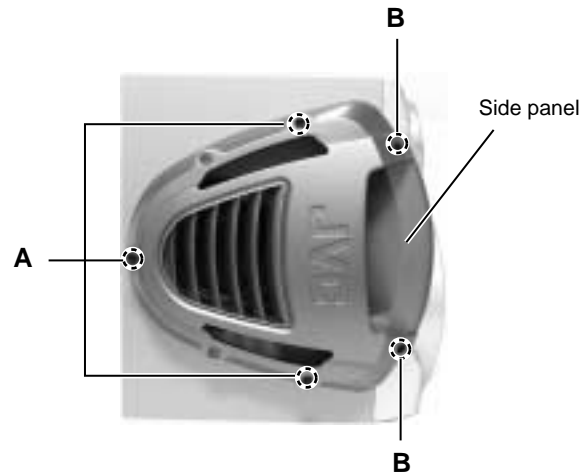


Fig.1

■ Removing the side speaker (See Fig. 2 and 3)

Prior to performing the following procedure, remove the side panel.

1. Remove the fore screws **C** attaching the side speaker.
2. Pull out the side speaker and remove the speaker cord from the speaker terminal.

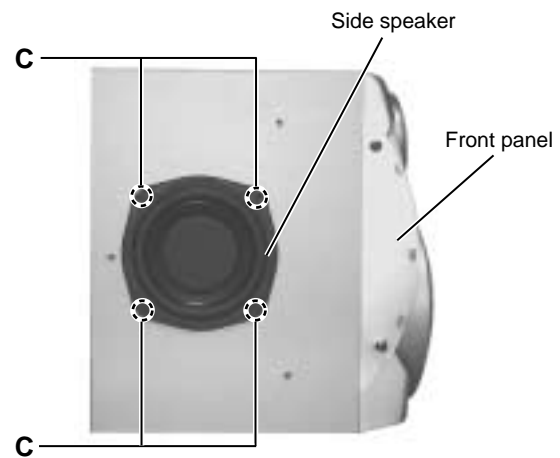


Fig.2

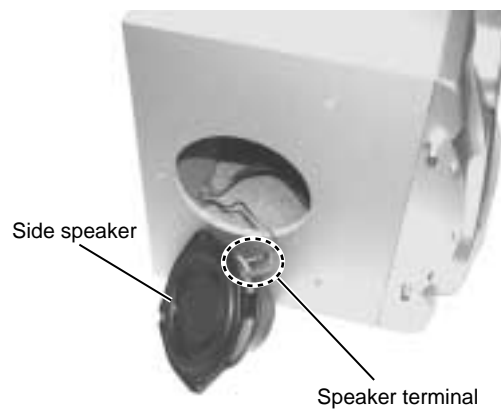
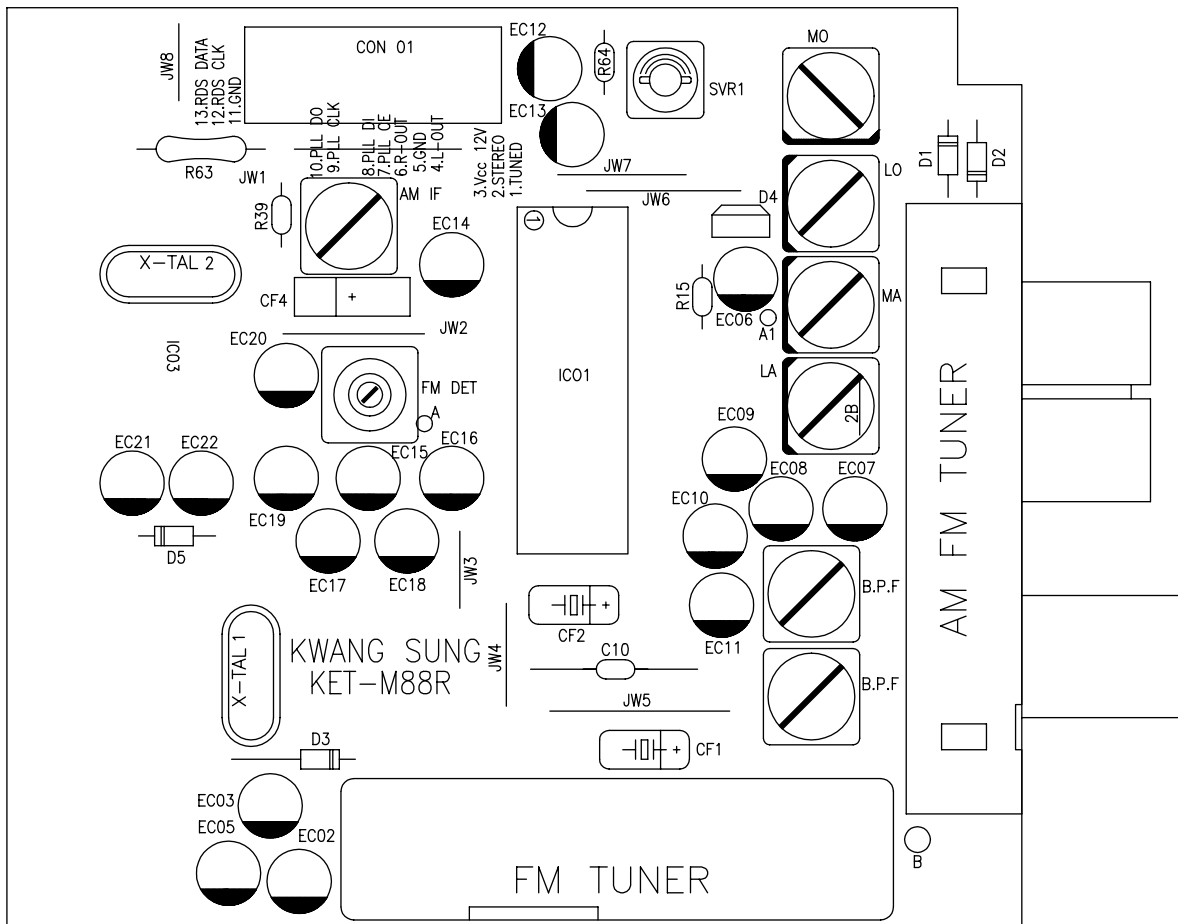


Fig.3

Adjustment method

1. Tuner



* Adjustment Location of Tuner PCB

ITEAM	AM(MW) OSC Adjustment	AM(MW) RF Adjustment	LW OSC Adjustment	AM(MW) RF Adjustment
Received FREQ.	522~1611 KHz	594 KHz	146~290 KHz	150 KHz
Adjustment point	MO	MA	LO	LA
Output	1~7.0 V	Maximum Output(Fig1-4)	2~7.0 V	Maximum Output(Fig1-4)

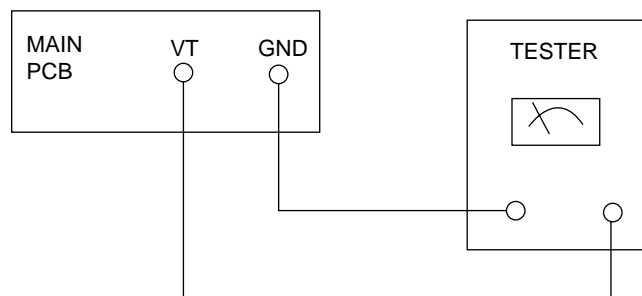


Fig 1-4 OSC Voltage

FM THD Adjustment	
SSG FREQ.	98 MHz
Adjustment point (FM DET)	FM DETECTOR COIL
Output	60 dB
Minimum Distortion (0.4% below) (Figure 1-1)	

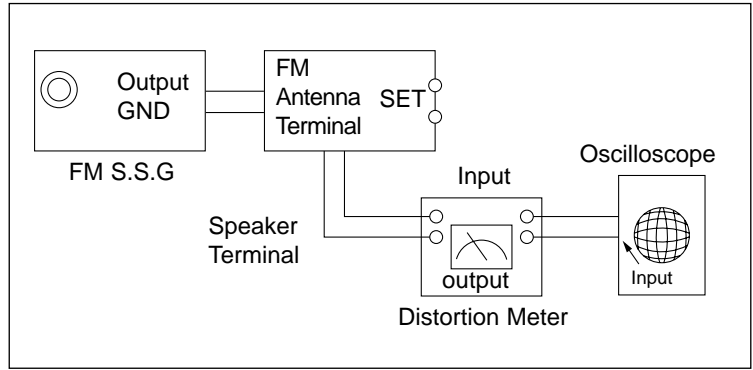


Figure1-1 IF CENTER and THD Adjustment

FM Search Level Adjustment	
SSG FREQ.	98 MHz
Adjustment point (SVR1)	BEACON SENSITIVITY SEMI-VR(20K)
Output	28 dB
Adjust SVR1 so that "TUNED" of FL T is lighted (Figure 1-2)	
*Adjust FM S.S.G level to 28dB	

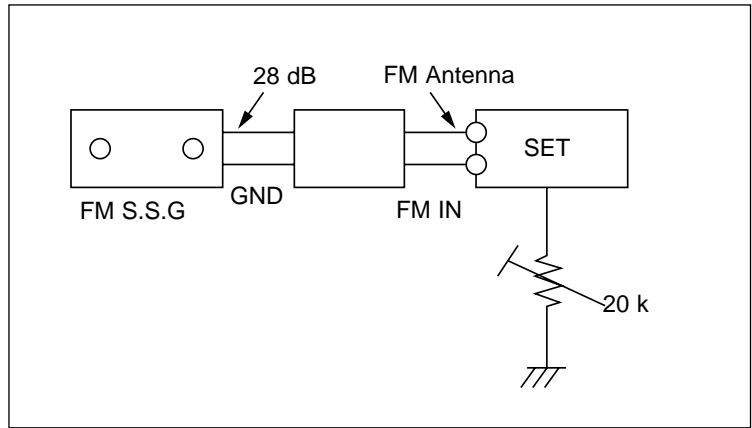


Figure1-2 FM Auto Search Level Adjustment

AM(MW) I.F Adjustment	
SSG FREQ.	450 kHz
Frequency	522 kHz
Adjustment point	AM IF
Maximum output (Figure 1-3)	

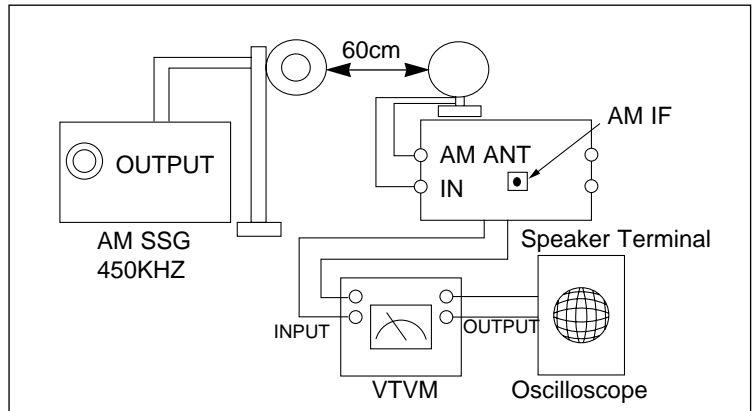


Figure1-3 AM I.F Adjustment

2 Cassette Deck

2-1 To Adjust Tape Speed

Notes

- 1) Measuring tape : VT712(or equivalent)
(Tapes recorded with 3kHz)
- 2) Connect the cassette deck to the frequency counter as in figure 1-5.

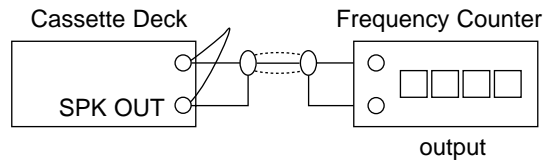


Figure 1-5

Step	Item	Pre-Setup Condition	Pre-Setup	To Adjust	Standard	Remark
1	TAPE SPEED Control	OUT (connected to the frequency counter)	1) Deck 1:VT712 2) Press PLAY SW button 3) Deck 2:Same as above	Turn VSR1 to left and right (FRONT PCB)	3KHz ±30Hz	

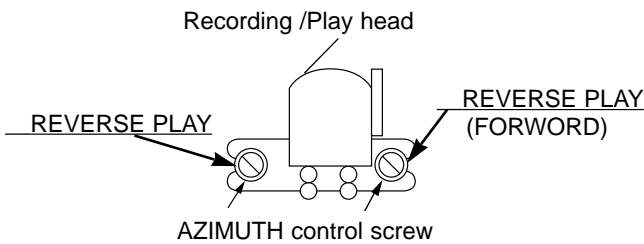


Figure 1-6

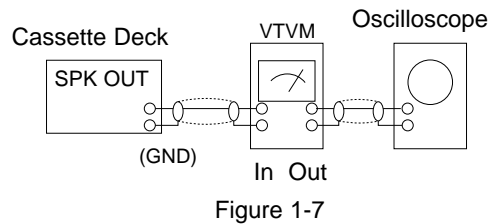


Figure 1-7

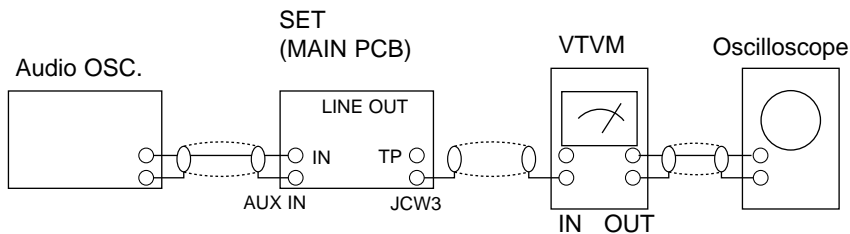


Figure 1-8

2-2 T o Adjust PlayBack Level/REC

Notes

- 1) Before the actual adjustment, clean the play/recording head.
- 2) Measuring tape :
 - i) VT-703 (or equivalent 10kHz AZIMUTH control)
 - ii) AC-225
- 3) The cassette deck is connections as shown in figure 1-7.

1. Adjust Deck A Play Level

Step	Item	Pre-Setup Condition	Pre-Setup	To Adjust	Standard	Remark
1	AZIMUTH	SPK OUT (VTVM is connected to the scope)	After putting VT-703 into Deck A 1) Press FWD PLYA button. 2) Press RVS PLAY button.	- Turn the control screw to as shown in Figure 1-6.	Max output and same phase (both channels)	After adjustment secure it with REGION LOCK. Adjust AZIMUTH when you exchange the head.

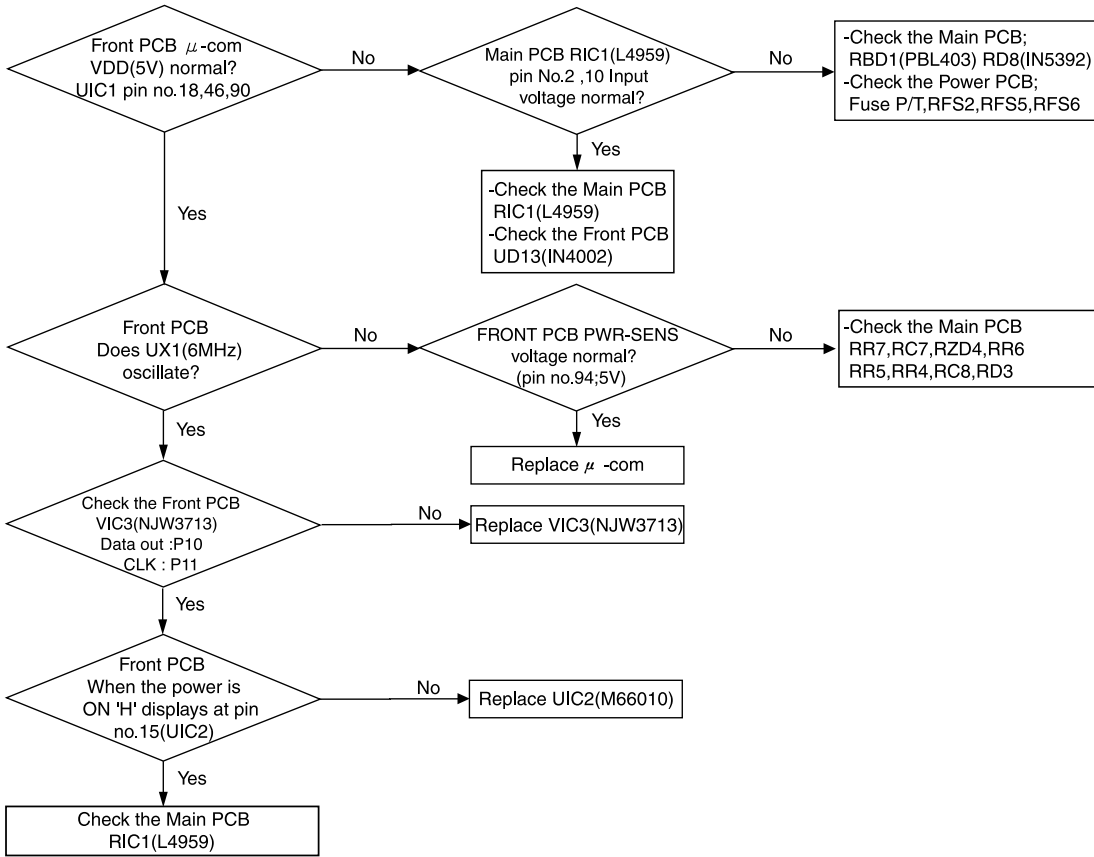
2. Adjust Deck B Play Level/REC BIAS

Step	Item	Pre-Setup Condition	Pre-Setup	To Adjust	Standard	Remark
1	AZIMUTH	SPK OUT (VTVM is connected to the scope)	After putting VT-703 into Deck B 1) Press FWD PLAY button. 2) Press RVS PLAY button.	- Turn the control screw to as shown in Figure 1-6.	Max output and same phase (both channels)	After adjustment secure it with REGION LOCK. Adjust AZIMUTH when you exchange the head.
2	Recording Bias Voltage	Fig 1-8	After putting AC-225 into Deck B 1) Press REC PLYA button. 2) MAIN PCB JCW3, connected to VTVM	Turn JSR2L, JSR2R to the right and left	7mV	

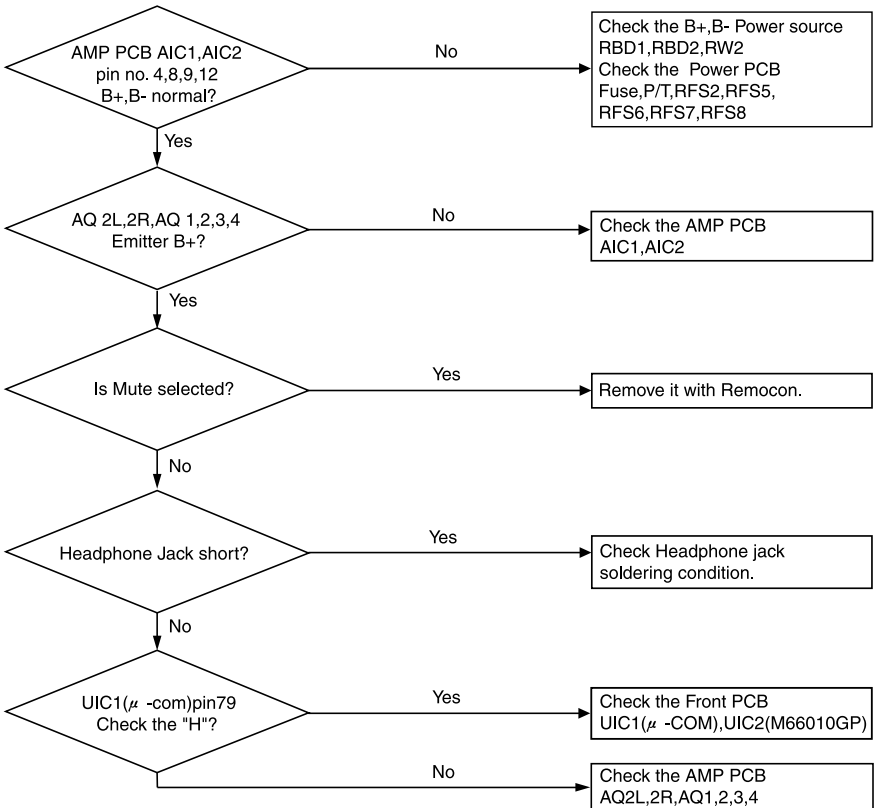
Troubleshooting

1. Amplifier

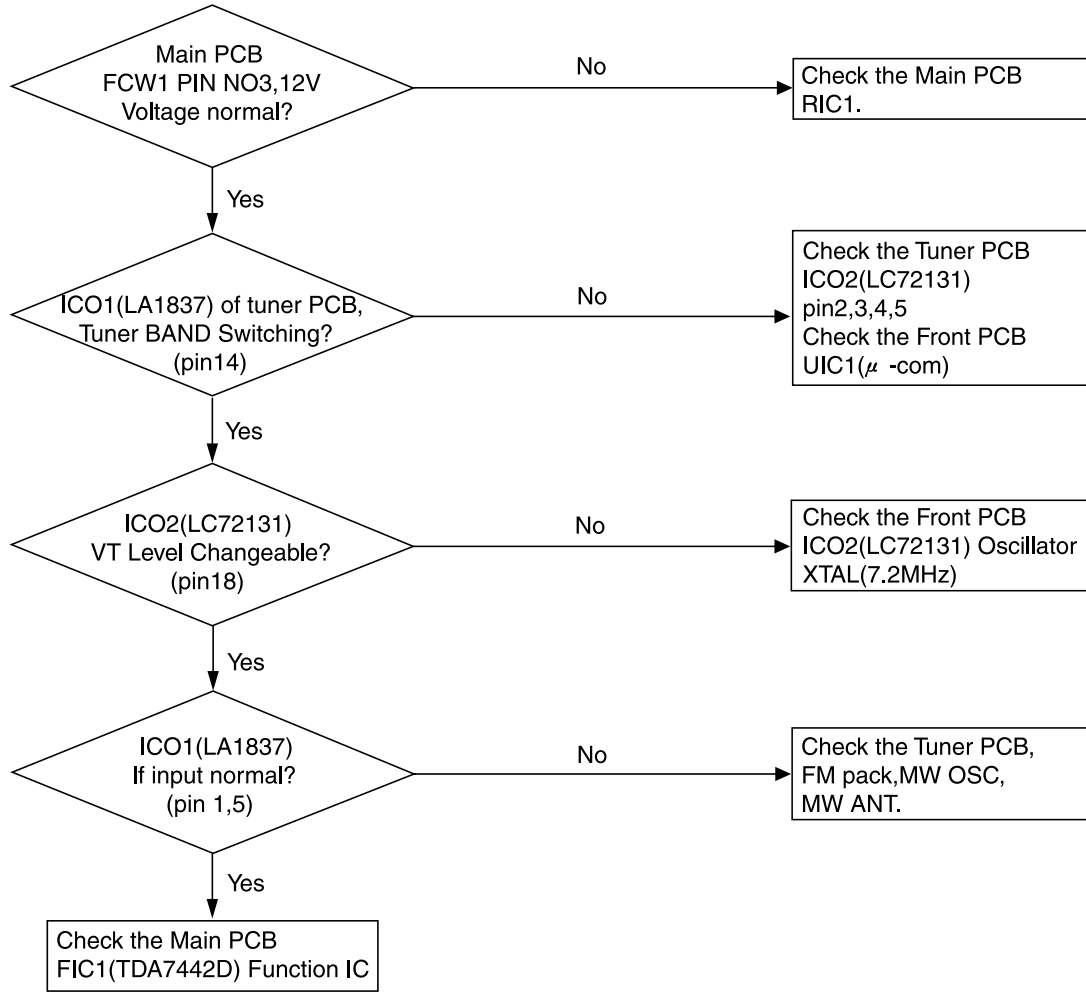
Power Malfunction



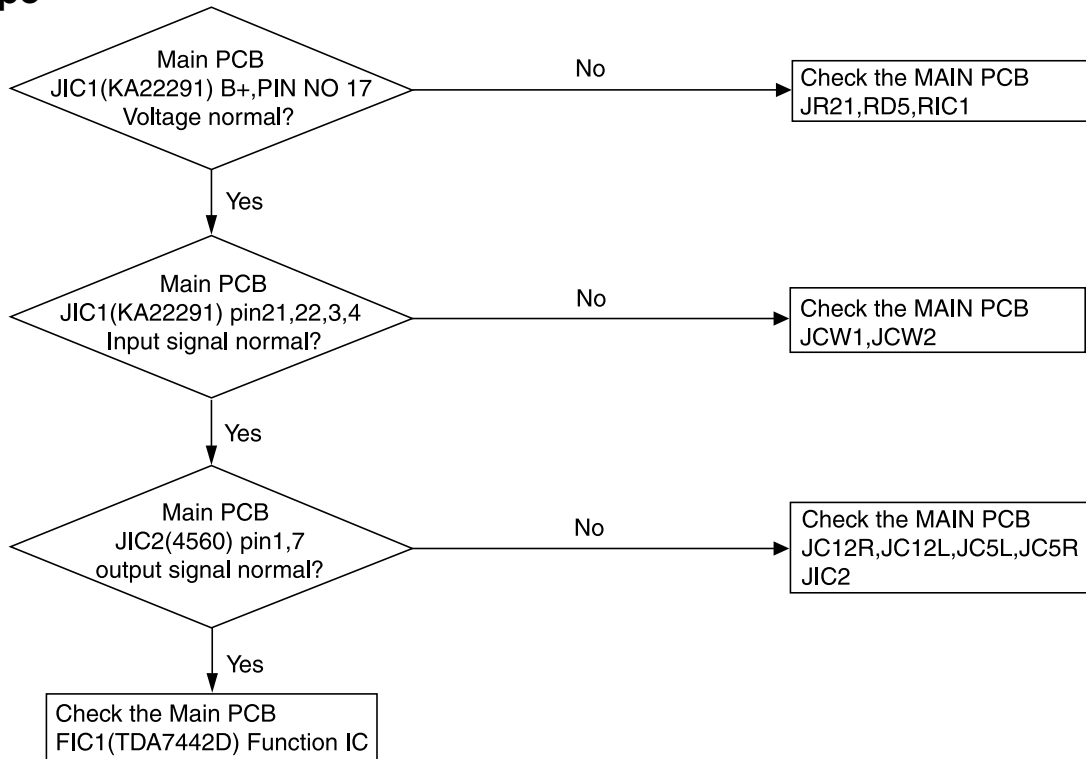
No Output



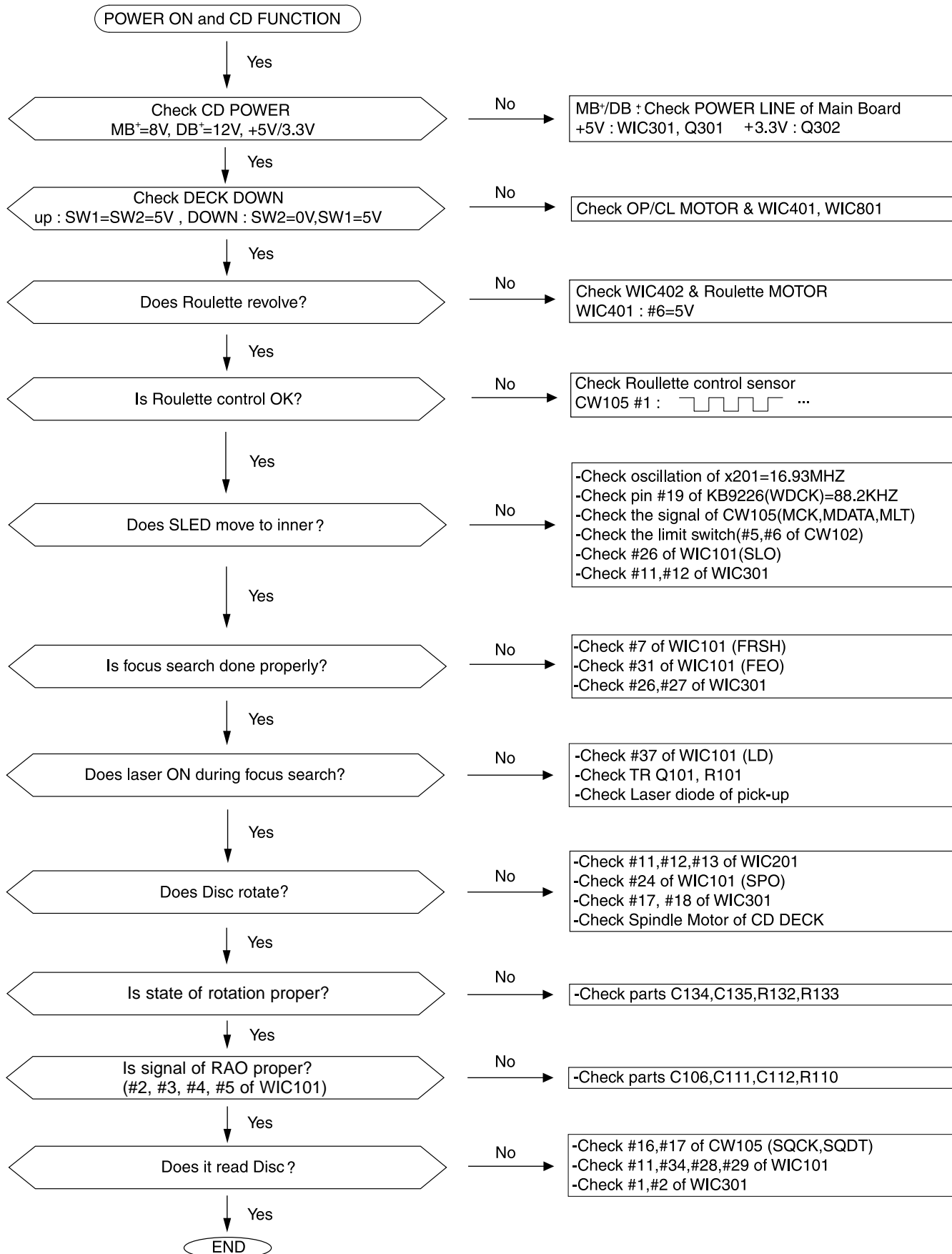
2.Tuner Malfunction(FM/AM)



3.Tape



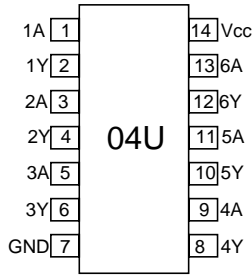
4.CD



Description of major ICs

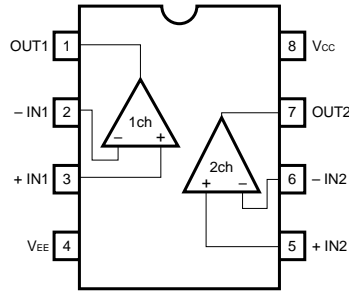
■ 74HCU04 (VIC6) : Optical

1. Pin configuration.



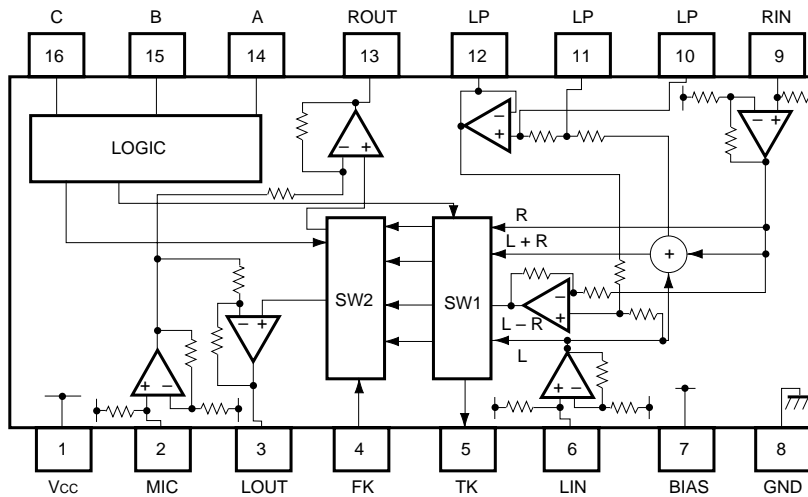
■ BA4560 (FIC2, FIC4, FIC5, HIC1, JIC2) : OP amp.

1. Pin layout



■ BA3837(IC301): MIC Mixer

1. Block diagram

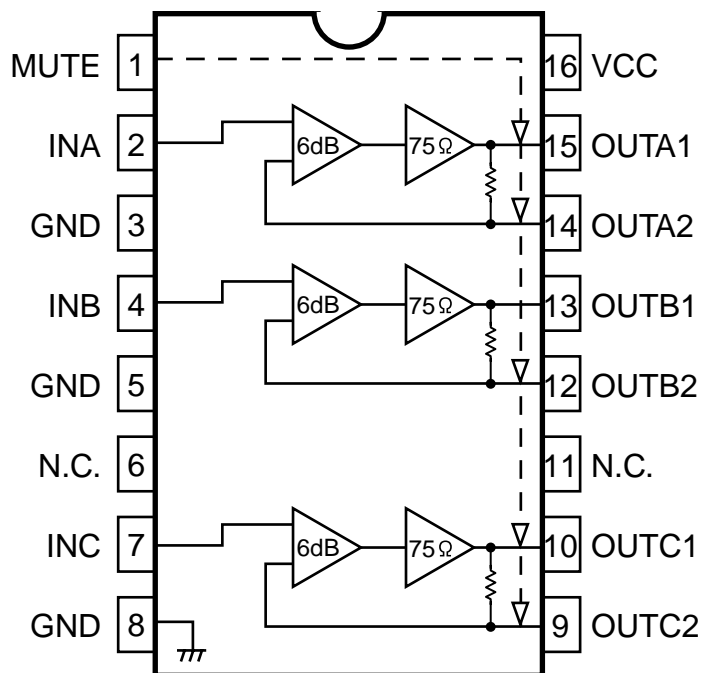


2. Pin function

Pin No.	Symbol	I/O	Description
1	VCC	-	Power supply
2	MIC IN	I	Microphone mixing input
3	LOUT	O	Channel L output
4	FK	-	Non connect
5	TK	-	Non connect
6	LIN	I	Channel L input
7	BIAS	I	Signal bias
8	GND	-	Connect to GND
9	RIN	I	Channel R input
10	LPF1	O	Connects to LPF time constant element
11	LPF2	O	Connects to LPF time constant element
12	LPF3	O	LPF output
13	ROUT	O	Channel R output
14	CONTA	I	Mode select input A
15	CONTB	I	Mode select input B
16	CONTC	I	Mode select input C

■ BA7660FS (VIC8) : 3 channel 75Ω driver

1. Block diagram

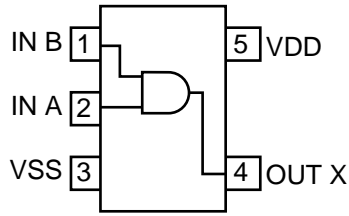


2. Pin function

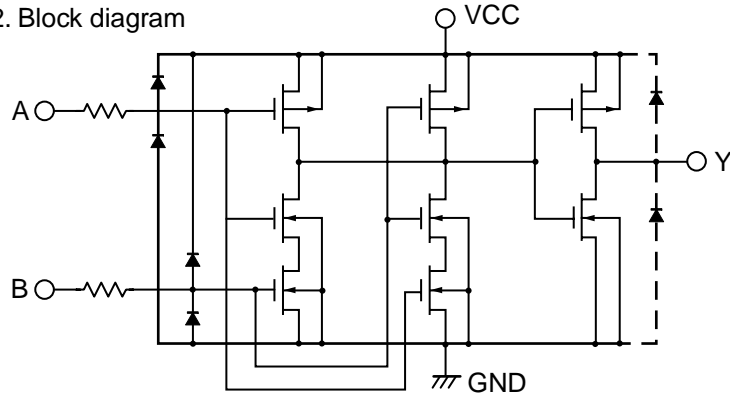
Pin No.	Pin Name	I/O	Comment
1	MUTE	I	Mute Control Terminal This pin supplying "H" voltage 3 channel mute operate.
2	INA	I	Signal Input Terminal
4	INB	I	Input signal is composite Video, Y, chroma, RGB and so on.
7	INC	I	Input level range is from 0v to 1.5v (Typ.) 1.3v (Min) DC.
3	GND	-	Ground Terminal
5			
8			
14	OUTA2	O	Signal Output Terminal
12	OUTB2	O	Output level is $(0.9+2 \text{ input voltage})$. 9pin, 12pin and 14pin are sag compensator terminals.
9	OUTC2	O	Output level is $(0.9+2 \text{ input voltage})$. 9pin, 12pin and 14pin are sag compensator terminals.
15	OUTA1	O	Making 10pin, 13pin or 15pin under 0.2v is respectively power save mode each channel.
13	OUTB1	O	Making 10pin, 13pin or 15pin under 0.2v is respectively power save mode each channel.
10	OUTC1	O	Making 10pin, 13pin or 15pin under 0.2v is respectively power save mode each channel.
16	VCC	-	Power Supply Terminal

■ TC7S08F (DIC7, VIC3) : 2 Input and gate

1. Pin layout

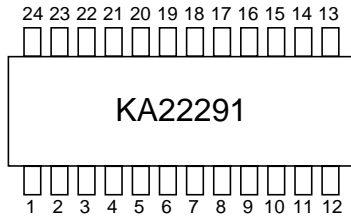


2. Block diagram

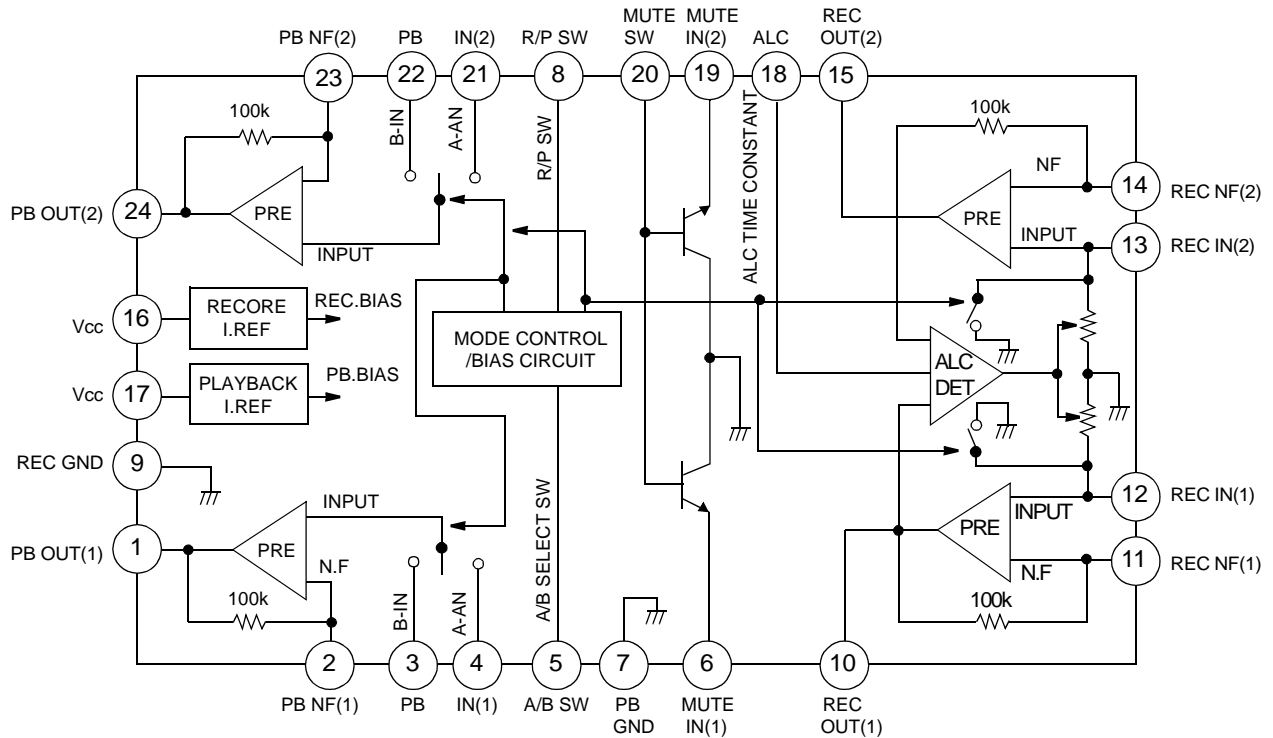


■ KA22291(JIC1) : RB/REC PRE amp.

1.Pin layout

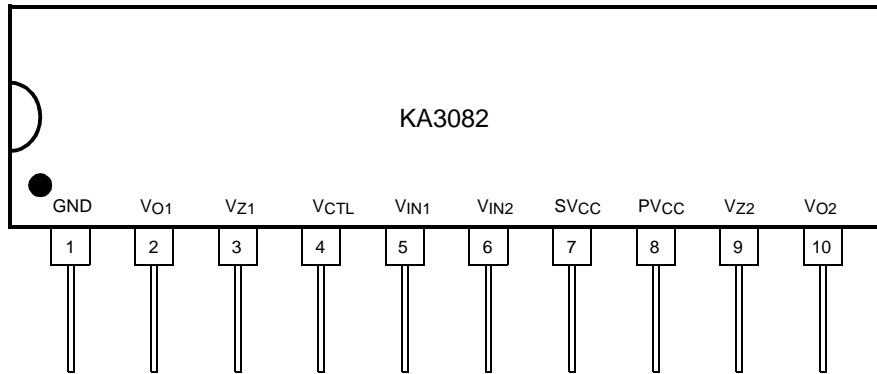


2.Block diagram



■ KA3082 (LIC1, LIC2) : Bi-directional DC motor driver

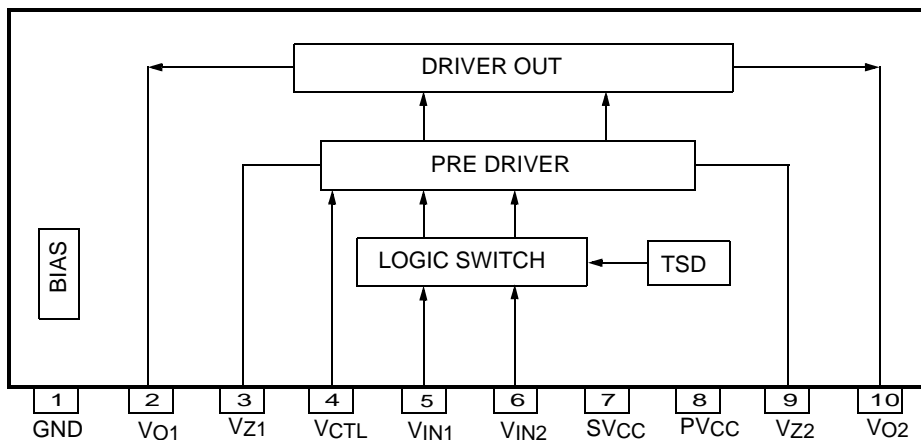
1.Pin layout



2.Pin function

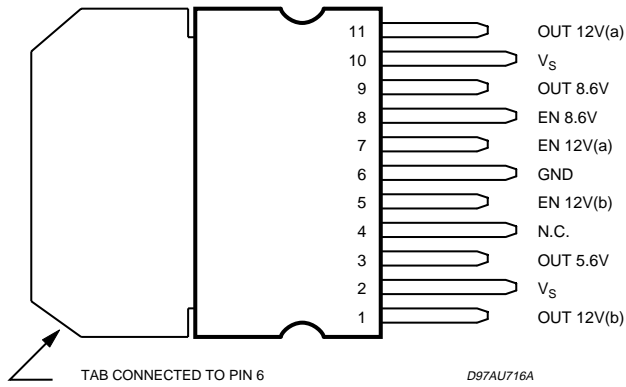
Pin Number	Pin Name	I/O	Pin Function Description
1	GND	-	Ground
2	VO1	O	Output 1
3	VZ1	-	Phase compensation
4	VCTL	I	Motor speed control
5	VIN1	I	Input 1
6	VIN2	I	Input 2
7	SVCC	-	Supply voltage (Signal)
8	PVCC	-	Supply voltage (Power)
9	VZ2	-	Phase compensation
10	VO2	O	Output 2

3.Block Diagram

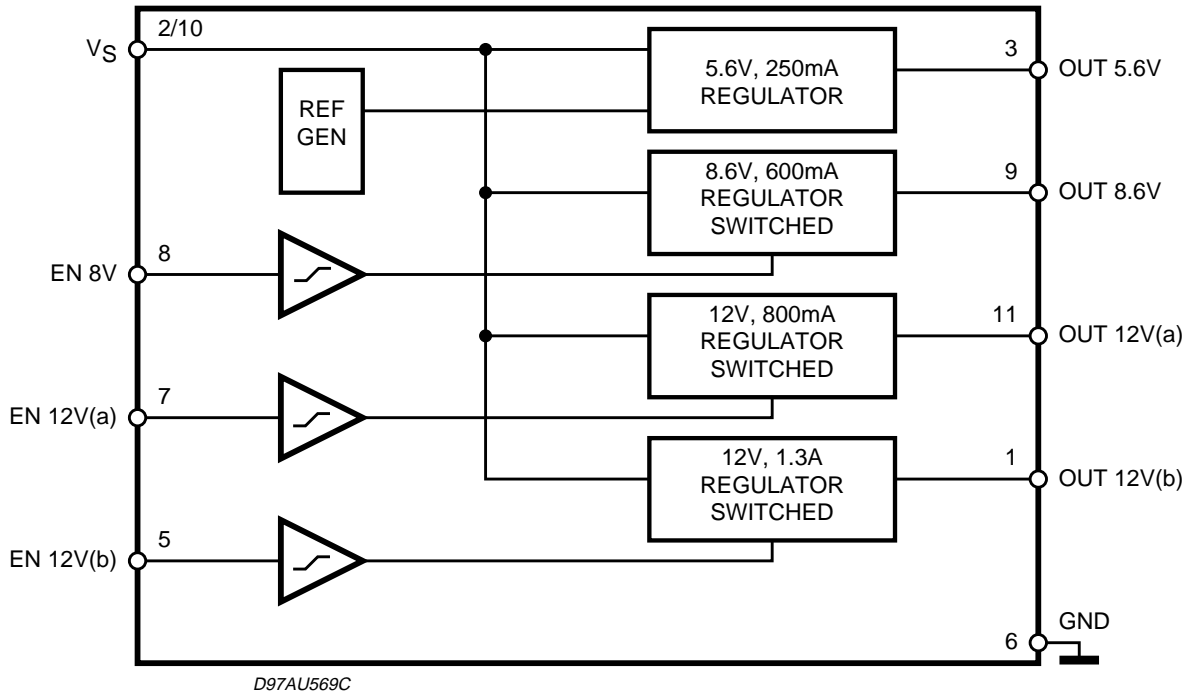


■ L4959 (RIC1) : Voltage regulator

1.Pin layout



2.Block diagram

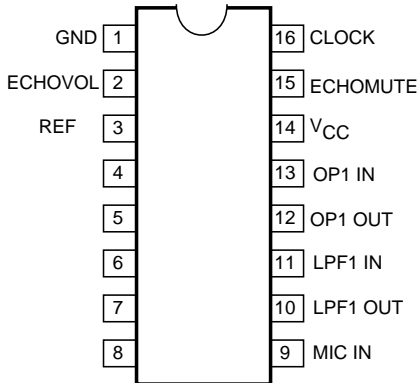


3.Pin function

Pin	Pins	Description
1	OUT 12V (b)	12V/1.3A SWITCHED OUTPUT VOLTAGE
2	V _s	Supply Voltage
3	OUT 5.6V	5.6V/250mA OUTPUT VOLTAGE
4	N.C.	not connected
5	EN 12V (b)	Enable 12V/1.3A SWITCHED OUTPUT VOLTAGE
6	GND	Ground
7	EN 12V (a)	Enable 12V/0.8A SWITCHED OUTPUT VOLTAGE
8	EN 8.6V	Enable 8.6V/0.6A SWITCHED OUTPUT VOLTAGE
9	OUT 8.6	8.6V/0.6A SWITCHED OUTPUT VOLTAGE
10	V _s	Supply Voltage
11	OUT 12V (a)	12V/0.8A SWITCHED OUTPUT VOLTAGE

■ M65855FP(EIC1) : Sound processor

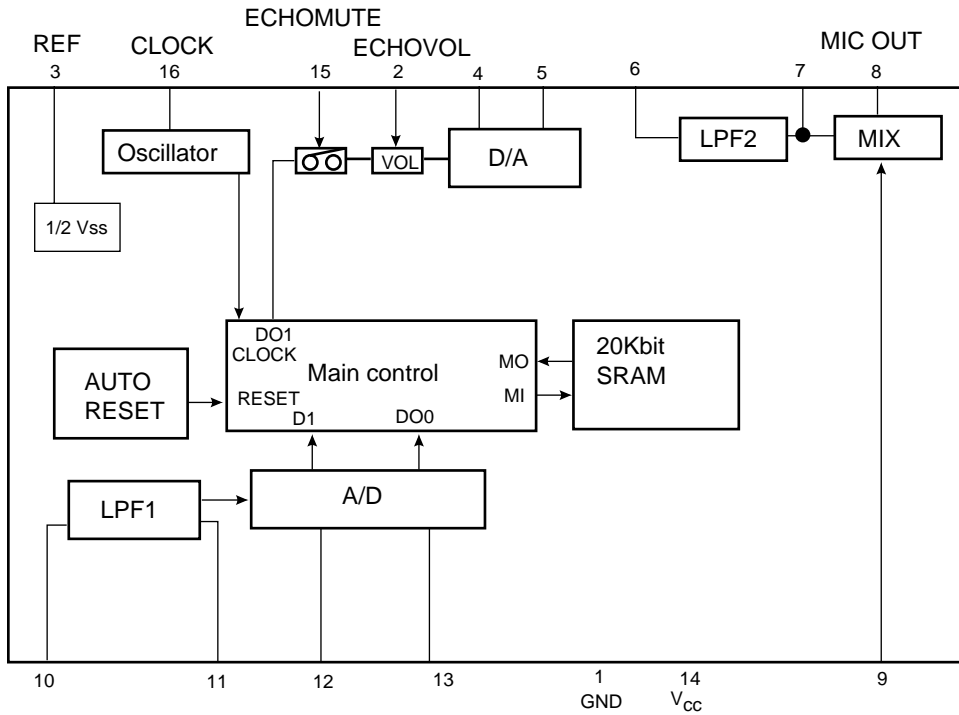
1. Pin layout



2. Pin function

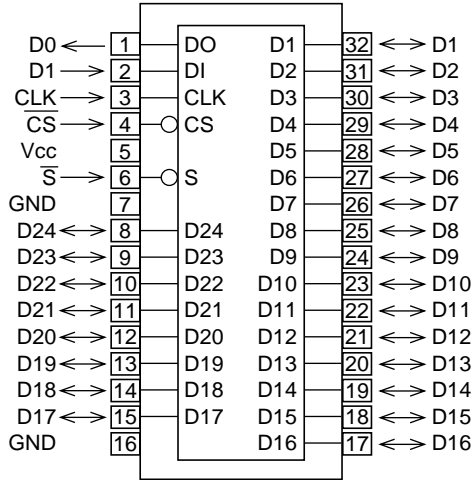
Pin No.	Symbol	DESCRIPTION
1	GND	
2	ECHOVOL	Echo level control with external DC voltage
3	REF	To connect 1/2 V _{cc} output and filter capacitor
4	OP2 IN	Uses external C to form an D/A conversion integrator
5	OP2 OUT	
6	LPF2 IN	Uses external CR to form a low pass filter at the input side
7	LPF2 OUT	
8	MIC OUT	Mixing output echo output and microphone
9	MIC IN	Microphone input
10	LPF1 OUT	Uses external CR to form a low pass filter at the input side
11	LPF1 IN	
12	OP1 OUT	Uses external C to form an D/A conversion integrator
13	OP1 IN	
14	V _{CC}	Applies a voltage of 3.5V to 5.5V(Rated5V)
15	ECHOMUTE	Echo mute control and clock stop control with external DC voltage
16	CLOCK	Controls a built -in clock generation circuit with external R

3. Block diagram.

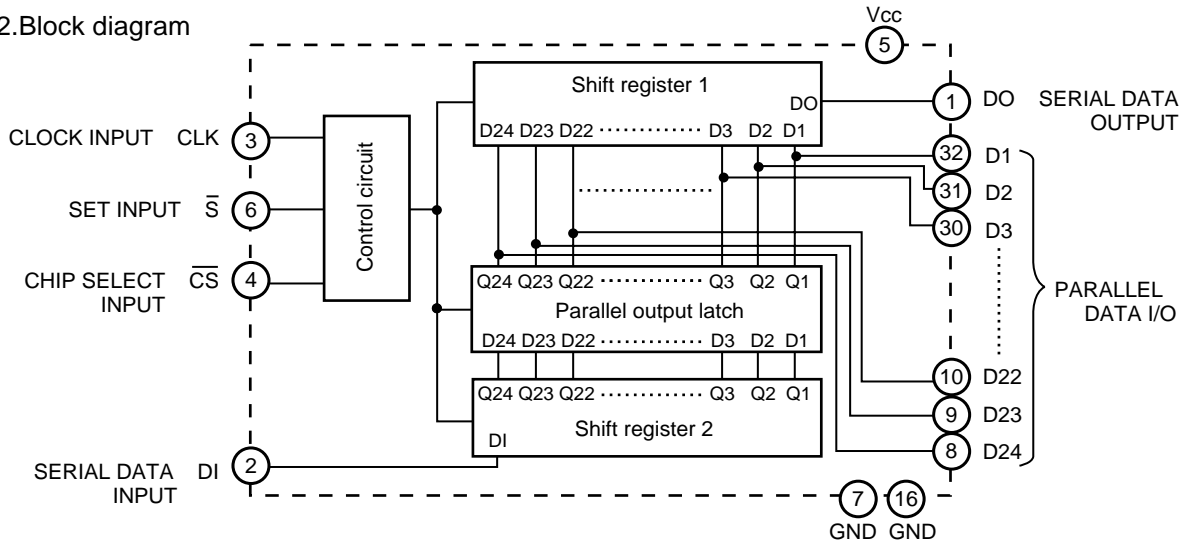


■ M66010 (UIC2) : I/O control

1.Pin layout

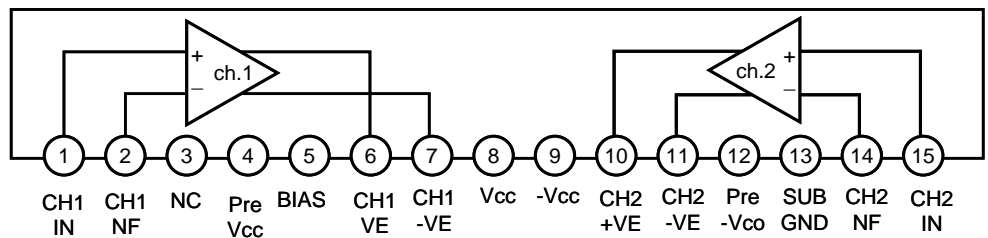
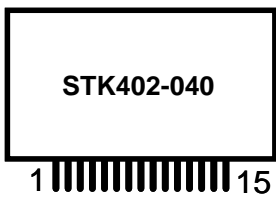


2.Block diagram



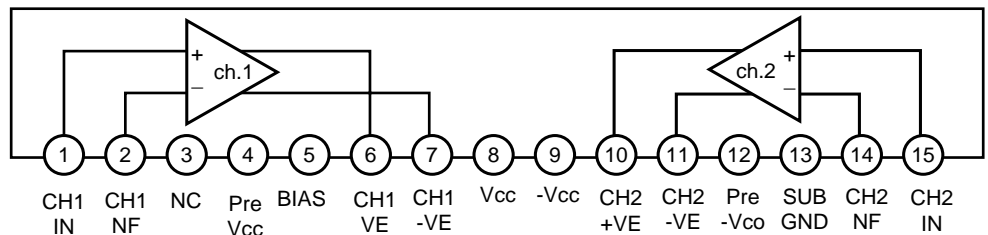
■ STK402-040 (AIC1) : 2channel AF power amp.

1.Pin layout



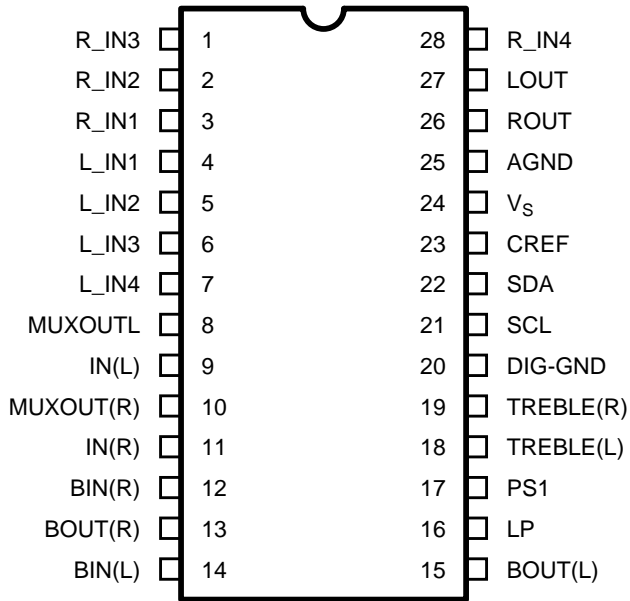
■ STK402-090 (AIC2) : 2channel AF power amp.

1.Pin layout

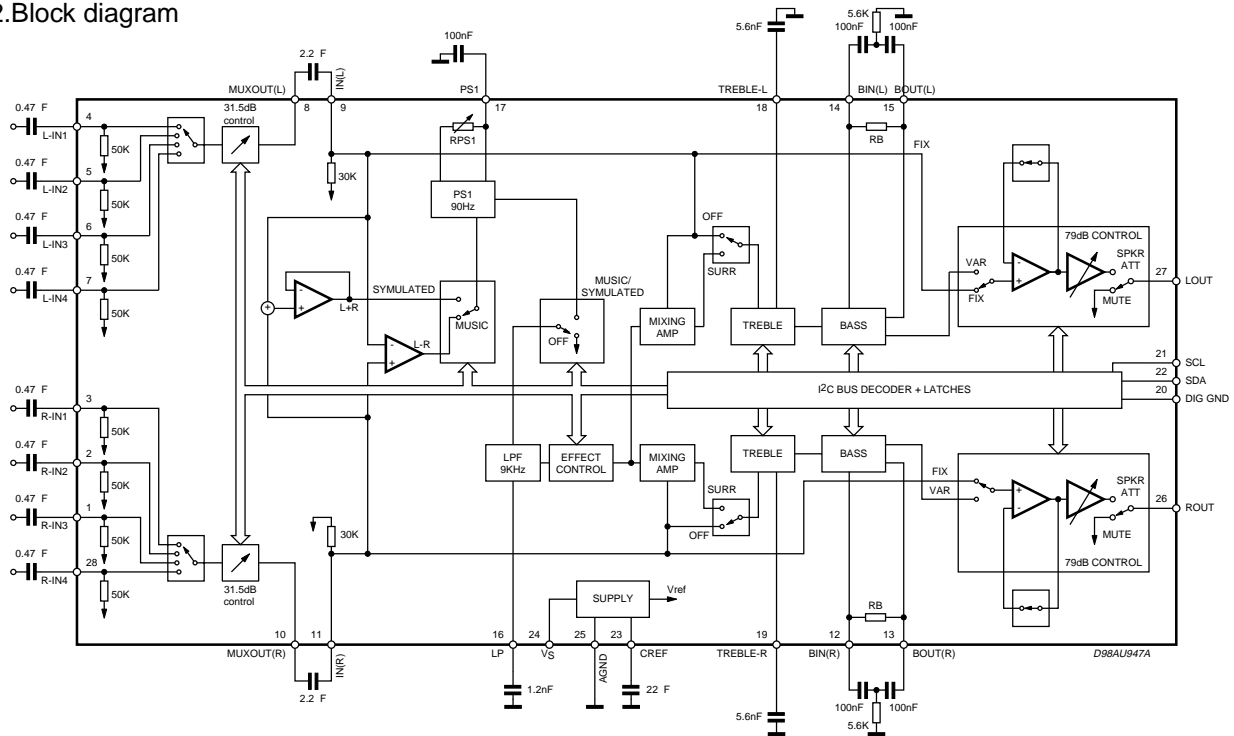


■ TDA7442D (FIC1) : Audio processor

1.Pin layout

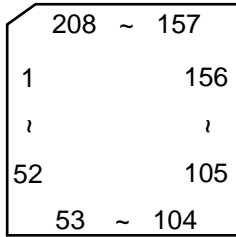


2.Block diagram

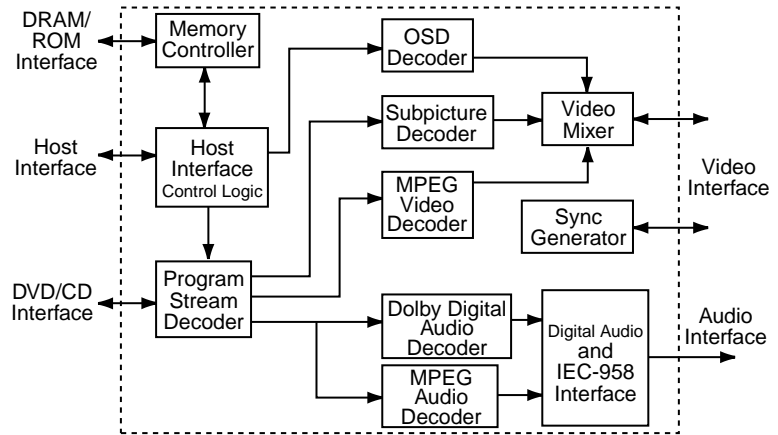


■ ZIVA-3 (VIC1) : AV Decoder

1. Terminal Layout



2. Block Diagrams



3. Pin Function (1/3)

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
1	TEST PIN0	-	Test pin	26	ARAM-DATA5	I/O	Non used
2	HDATA0	I/O	System control data I/O (IC301)	27	E-VDD	-	Power supply
3	HDATA1	I/O	System control data I/O (IC301)	28	ARAM-DATA6	I/O	Non used
4	HDATA2	I/O	System control data I/O (IC301)	29	E-VSS	-	Connect to GND
5	E-VDD	-	Power supply	30	ARAM-DATA7	I/O	Non used
6	HDATA3	I/O	System control data I/O (IC301)	31	ARAM-ADDR0	-	Connect to TP550
7	E-VSS	-	Connect to GND	32	ARAM-ADDR1	-	Connect to TP551
8	HDATA4	I/O	System control data I/O (IC301)	33	ARAM-ADDR2	-	Connect to TP552
9	HDATA5	I/O	System control data I/O (IC301)	34	ARAM-ADDR3	-	Connect to TP553
10	HDATA6	I/O	System control data I/O (IC301)	35	ARAM-ADDR4	-	Connect to TP554
11	HDATA7	I/O	System control data I/O (IC301)	36	E-VDD	-	Power supply
12	I-VDD	-	Power supply	37	ARAM-ADDR5	-	Connect to TP555
13	RST	I	Reset signal input	38	E-VSS	-	Connect to GND
14	I-VSS	-	Connect to GND	39	ARAM-ADDR6	-	Connect to TP556
15	WAIT	I	Wait control for IC509	40	I-VDD	-	Power supply
16	INT	O	Host interrupt output for ATAPI	41	ARAM-ADDR7	-	Connect to TP557
17	E-VDD	-	Power supply	42	I-VSS	-	Connect to GND
18	ARAM-OE	-	Connect to TP540	43	ARAM-ADDR8	-	Connect to TP558
19	E-VSS	-	Connect to GND	44	ARAM-ADDR9	-	Connect to TP559
20	ARAM-WE	-	Connect to TP541	45	ARAM-ADDR10	-	Connect to TP560
21	ARAM-DATA0	I/O	Non used	46	ARAM-ADDR11	-	Connect to TP561
22	ARAM-DATA1	I/O	Non used	47	E-VDD	-	Power supply
23	ARAM-DATA2	I/O	Non used	48	ARAM-ADDR12	-	Connect to TP562
24	ARAM-DATA3	I/O	Non used	49	E-VSS	-	Connect to GND
25	ARAM-DATA4	I/O	Non used	50	ARAM-ADDR13	-	Connect to TP563

Pin Function (2/3)

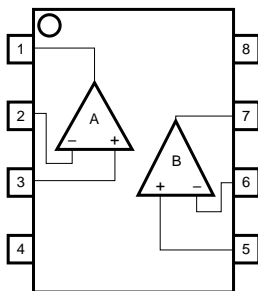
Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
51	ARAM-ADDR14	-	Connect to TP564	97	E-VSS	-	Connect to GND
52	TEST-PIN1	-	Test pin	98	M-ADDR11	O	Address output to IC508,504
53	M-DATA15	I/O	Data bus I/O to IC508,IC504	99	M-ADDR8	O	Address output to IC508,504
54	M-DATA0	I/O	Data bus I/O to IC508,IC504	100	M-ADDR10	O	Address output to IC508,504
55	E-VDD	-	Power supply	101	E-VDD	-	Power supply
56	M-DATA14	I/O	Data bus I/O to IC508,IC504	102	M-ADDR7	O	Address output to IC508,504
57	E-VSS	-	Connect to GND	103	E-VSS	-	Connect to GND
58	M-DATA1	I/O	Data bus I/O to IC508,IC504	104	M-ADDR0	O	Address output to IC508,504
59	M-DATA13	I/O	Data bus I/O to IC508,IC504	105	M-ADDR6	O	Address output to IC508,504
60	M-DATA2	I/O	Data bus I/O to IC508,IC504	106	M-ADDR1	O	Address output to IC508,504
61	E-VDD	-	Power supply	107	E-VDD	-	Power supply
62	M-DATA12	I/O	Data bus I/O to IC508,IC504	108	M-ADDR5	O	Address output to IC508,504
63	E-VSS	-	Connect to GND	109	E-VSS	-	Connect to GND
64	M-DATA3	I/O	Data bus I/O to IC508,IC504	110	M-ADDR2	O	Address output to IC508,504
65	I-VDD	-	Power supply	111	M-ADDR4	O	Address output to IC508,504
66	M-DATA11	I/O	Data bus I/O to IC508,IC504	112	M-ADDR3	O	Address output to IC508,504
67	I-VSS	-	Connect to GND	113	E-VDD	-	Power supply
68	M-DATA14	I/O	Data bus I/O to IC508,IC504	114	M-ADDR12	-	Connect to TP513
69	E-VDD	-	Power supply	115	E-VSS	-	Connect to GND
70	M-DATA10	I/O	Data bus I/O to IC508,IC504	116	M-ADDR13	-	Connect to TP514
71	E-VSS	-	Connect to GND	117	I-VDD	-	Power supply
72	M-DATA5	I/O	Data bus I/O to IC508,IC504	118	M-ADDR14	-	Connect to TP515
73	M-DATA9	I/O	Data bus I/O to IC508,IC504	119	I-VSS	-	Connect to GND
74	M-DATA6	I/O	Data bus I/O to IC508,IC504	120	M-ADDR15	-	Connect to TP516
75	E-VDD	-	Power supply	121	M-ADDR16	-	Connect to TP517
76	M-DATA8	I/O	Data bus I/O to IC508,IC504	122	M-ADDR17	-	Connect to TP518
77	E-VSS	-	Connect to GND	123	E-VDD	-	Power supply
78	M-DATA7	I/O	Data bus I/O to IC508,IC504	124	M-ADDR18	-	Connect to TP519
79	LDQM	O	Lower DQ mask enable	125	E-VSS	-	Connect to GND
80	UDQM	O	Upper DQ mask enable	126	M-ADDR19	-	Connect to TP520
81	E-VDD	-	Power supply	127	M-ADDR20	-	Connect to TP521
82	MWE	O	Write enable	128	ROM-CS	-	Connect to TP522
83	E-VSS	-	Connect to GND	129	TEST-PIN2	-	Test pin
84	SD-CLK	O	System clock signal output	130	OSD-CLK	-	Connect to TP523
85	SD-CAS	O	column address strobe	131	OSD-DATA0	-	Connect to TP525
86	SD-RAS	O	Row address strobe	132	OSD-DATA1	-	Connect to TP526
87	E-VDD	-	Power supply	133	TEST-PIN3	-	Test pin
88	SD-CS1	O	Chip select output to IC508	134	E-VDD	-	Power supply
89	E-VSS	-	Connect to GND	135	OSD-DATA2	-	Connect to TP528
90	SD-CS0	O	Chip select output to IC504	136	E-VSS	-	Connect to GND
91	I-VDD	-	Power supply	137	OSD-DATA3	-	Connect to TP529
92	EDO-CAS	-	Connect to TP511	138	TEST-PIN4	-	Test pin
93	I-VSS	-	Connect to GND	139	OSD-BLK1	-	Connect to TP531
94	EDO-RAS	-	Connect to TP512	140	OSDVC1	-	Connect to TP532
95	E-VDD	-	Power supply	141	TEST-PIN5	-	Test pin
96	M-ADDR9	O	Address output to IC508,504	142	VDATA0	O	DVD image signal output

Pin Function (3/3)

Pin No.	Symbol	I/O	Function	Pin No.	Symbol	I/O	Function
143	VDATA1	O	DVD image signal output	176	A-VDD	-	Connect to TP507
144	I-VDD	-	Power supply	177	VCLK	I/O	Dot clock signal output (27MHz)
145	VDATA2	O	DVD image signal output	178	SYSCLK	-	Connect to TP505
146	I-VSS	-	Connect to GND	179	A-VSS	-	Connect to GND
147	TEST-PIN6	-	Test pin	180	DVD-DATA0	I	ATAPI data I/O to IC301
148	VDATA3	O	DVD image signal output	181	E-VDD	-	Power supply
149	E-VDD	-	Power supply	182	DVD-DATA1	I	ATAPI data I/O to IC301
150	VDATA4	O	DVD image signal output	183	E-VSS	-	Connect to GND
151	E-VSS	-	Connect to GND	184	DVD-DATA2	I	ATAPI data I/O to IC301
152	VDATA5	O	DVD image signal output	185	DVD-DATA3	I	ATAPI data I/O to IC301
153	TEST-PIN7	-	Test pin	186	DVD-DATA4	I	ATAPI data I/O to IC301
154	VDATA6	O	DVD image signal output	187	DVD-DATA5	I	ATAPI data I/O to IC301
155	VDATA7	O	DVD image signal output	188	DVD-DATA6	I	ATAPI data I/O to IC301
156	TEST-PIN8	-	Test pin	189	DVD-DATA7	I/O	ATAPI data I/O to IC301
157	HSYNC	I/O	Horizontal synchronous signal output	190	TEST-PIN10	-	Test pin
158	VS $\overline{\text{Y}}\text{NC}$	I/O	Vertical synchronous signal output	191	V-REQUEST	O	Master/Slave Selection for ATAPI
159	IEC-958	O	Digital audio data output	192	V-STROBE	I	Host address for ATAPI
160	E-VDD	-	Power supply	193	I-VDD	-	Power supply
161	DA-DATA0	O	Data output to IC702	194	A-REQUEST	-	Connect to TP539
162	E-VSS	-	Connect to GND	195	I-VSS	-	Connect to GND
163	DA-DATA1	O	Data output to IC702	196	V-DACK	I	Host interrupt input for ATAPI
164	DA-DATA2	O	Data output to IC702	197	E-VDD	-	Power supply
165	DA-DATA3	O	Data output to IC702	198	SECT-SYNC	I	Host write for ATAPI
166	DA-LRCK	O	L/R clock output to IC702	199	E-VSS	-	Connect to GND
167	DA-BCK	O	Bit clock output to IC702	200	ERROR	-	Connect to GND
168	I-VDD	-	Power supply	201	HOST-SEL	-	Connect to GND
169	DA-XCK	-	Non connect	202	HADDR0	I	System control address input
170	I-VSS	-	Connect to GND	203	HADDR1	I	System control address input
171	DAI-DATA	-	Connect to TP501	204	HADDR2	I	System control address input
172	DAI-LRCK	I	L/R clock input from IC702	205	DTACK-SEL	-	Connect to GND
173	DAI-BCK	I	Bit clock input from IC702	206	$\overline{\text{CS}}$	I	Chip select for ZIVA
174	TEST-PIN9	-	Test pin	207	$\overline{\text{R/W}}$	I	Write enable
175	CLK-SEL	-	Connect to GND	208	$\overline{\text{RD}}$	I	Read enable

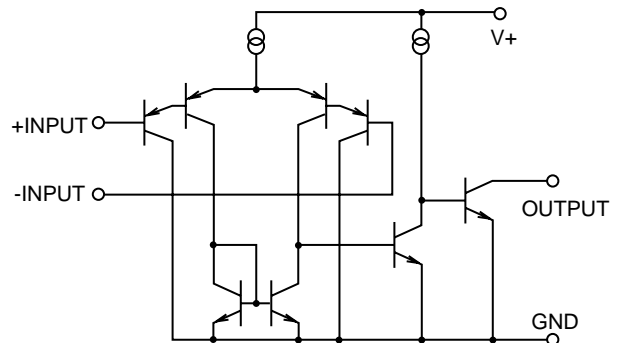
■ NJM2903 (RIC3, SIC8) : Signal -supply dual comparator

1. Pin layout



- Pin function
1. A OUTPUT
 2. A-INPUT
 3. A+INPUT
 4. GND
 5. B+INPUT
 6. B-INPUT
 7. B OUTPUT
 8. V+

2. Block diagram





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