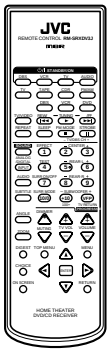
JVC

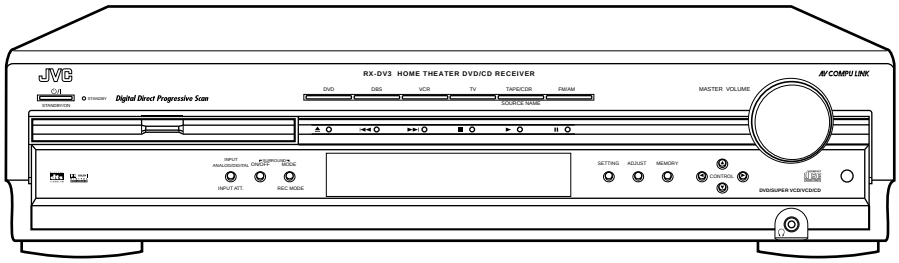
SERVICE MANUAL

HOME THEATER DVD/CD RECEIVER

RX-DV3SL

Area suffix
J ---------- U.S.A.





AV COMPU LINK
Digital Direct Progressive Scan

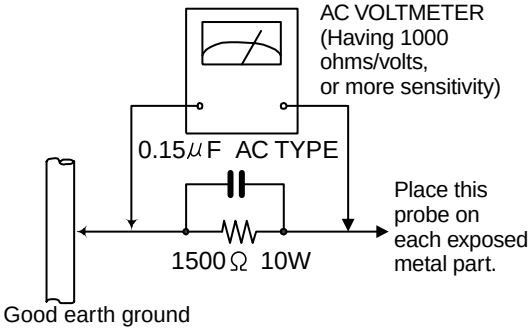
DVD VIDEO™ COMPACT disc SUPER VIDEO DOLBY DIGITAL PRO LOGIC II DIGITAL dts SURROUND

Contents

No.21124
Jul. 2002

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 (⚠) 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 currnet 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 1,500Ω 10W resistor paralleled by a 0.15μF 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 meausre 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

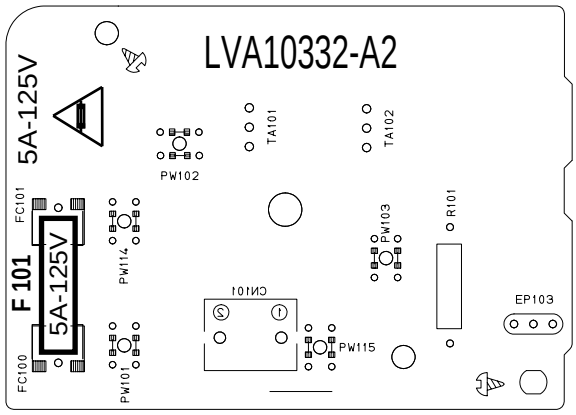
Burrs formed during molding may be left over on some parts of the chassis. Therefore, pay attention to such burrs in the case of preforming repair of this system.

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 "⚠" mark nearby are critical for safety.

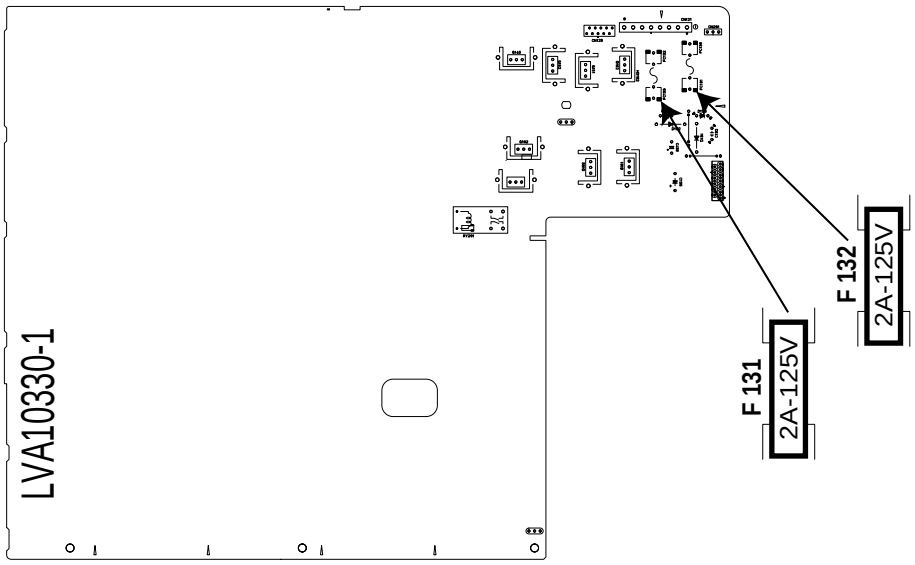
(This regulation does not correspond to J and C version.)

Importance administering point on the safety

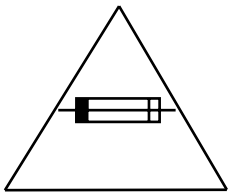
Primary part



Secondary parts



For USA and Canada / pour É tats - Unis d' Amérique et Canada



Caution: For continued protection against risk of fire, replace only with same type 5A/125V for F101, 2A/125V for F202 and F203.
This symbol specifies type of fast operating fuse.

Précaution: Pour eviter risques de feux, remplacez le fusible de sureté de F101 comme le meme type que 5A/125V, et 2A/125V pour F131 et F132.
Ce sont des fusibles sûretes qui functionnes rapide.

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.

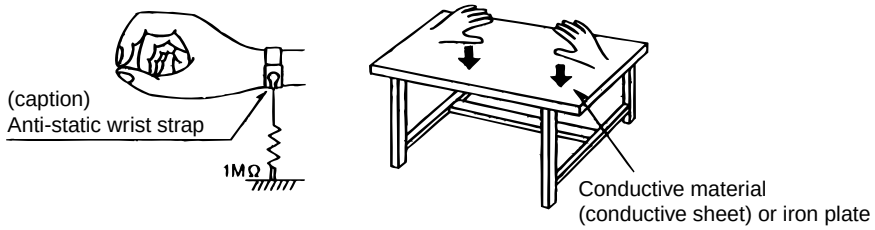
Be careful to use proper grounding in the area where repairs are being performed.

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 DVD/ CD mechanism assembly of this model is a unit component, the individual component parts consisting of the DVD / 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.

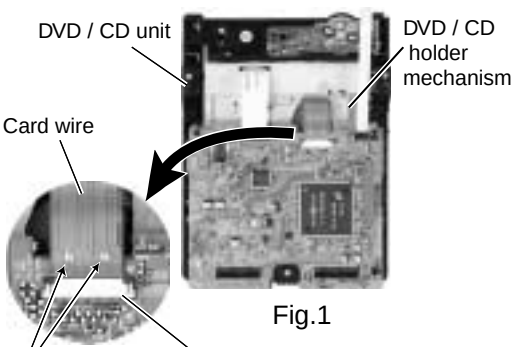


Fig.1

Fig.2

Disassembly method

■Removing the top cover (See Fig.1)

1. Remove the four screws marked A attaching the top cover on both sides of the body.

2. Remove the three screws marked **B** on the back of the body.
3. Remove the top cover from behind in the direction of

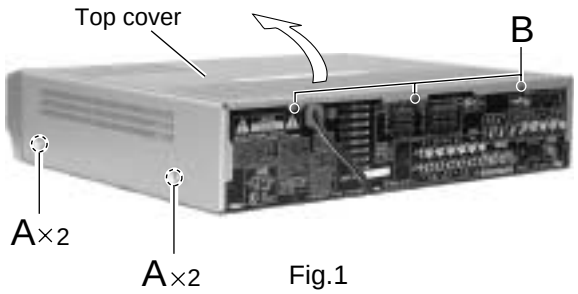


Fig.1

■Removing the front panel assembly (See Fig.2 to 4)

・ Prior to performing the following procedures, remove the top cover.

1. Disconnect the card wire from the connector CN114 on the main board.

2. Remove the five screws marked **C** attaching the front panel assembly on the bottom of the body. Detach the front panel assembly toward the front.

3. Release the two joints marked **a** on both sides on the bottom of the body using a screwdriver.

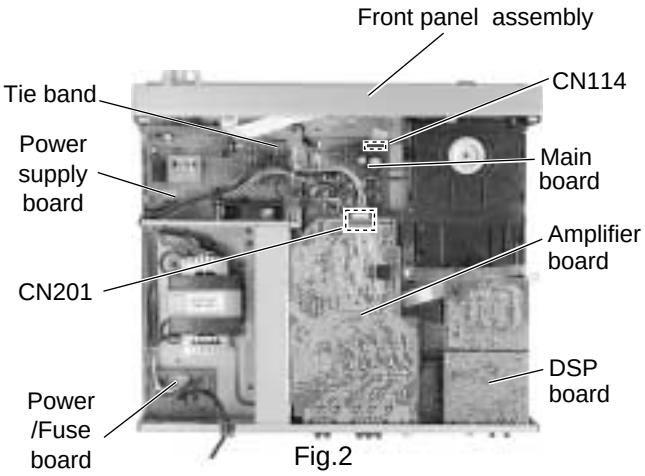


Fig.2

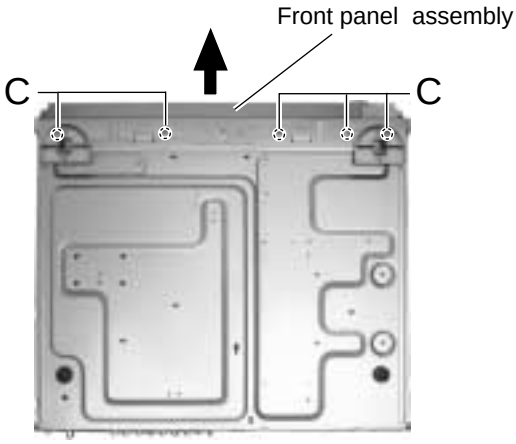


Fig.3

Fig.4

■Removing the rear panel (See Fig.5)

・ Prior to performing the following procedures, remove the top cover.

1. Remove the power cord stopper from the rear panel by moving it in the direction of the arrow.

2. Remove the twenty one screws marked **D** attaching each boards to the rear panel on the back of the body.

3. Remove the three screws marked **E** attaching the rear panel on the back of the body.

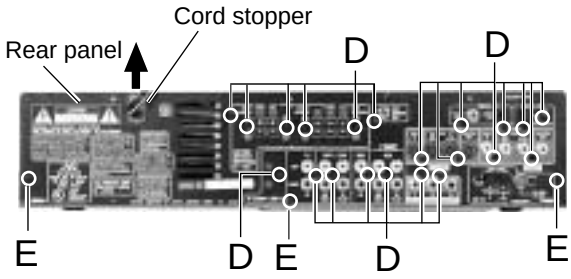


Fig.5

■Removing each board connected to the rear side of the main board

(See Fig.6 to 10)

- Prior to performing the following procedures, remove the top cover and rear panel.

1. Cut off the tie band fixing the harness.
2. Disconnect the DSP board from the connector CN612 on the main board,
3. Disconnect the card wire frome the connecter CN614 on the main board.
4. Disconnect the S-video board from the connector CN412 on the main board.

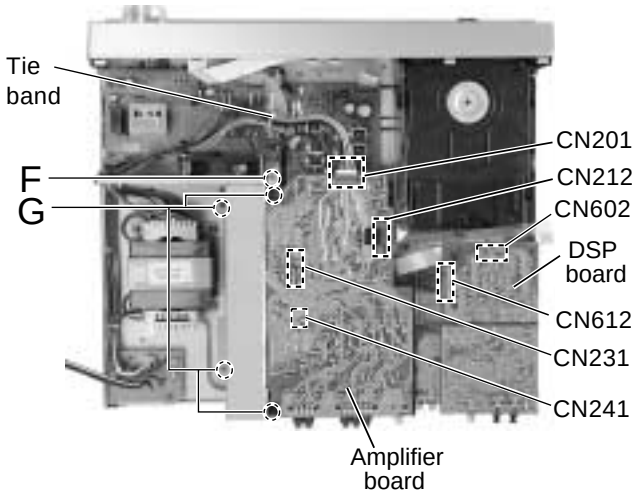


Fig.6

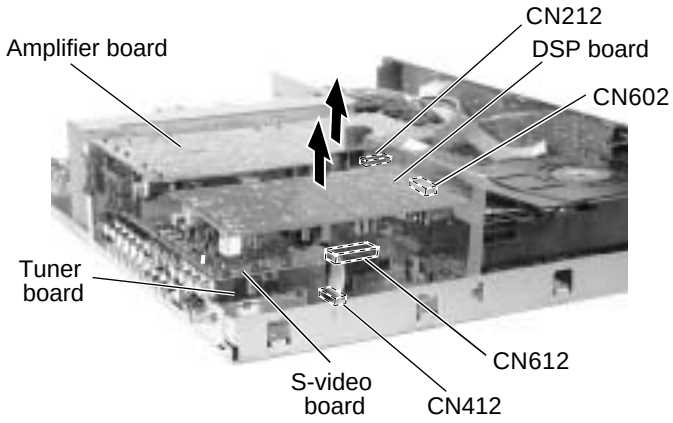


Fig.7

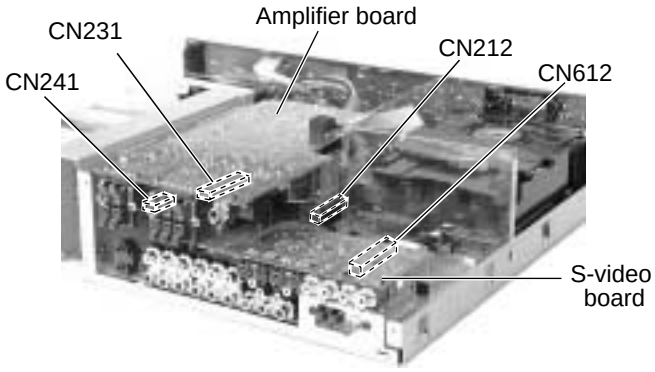


Fig.9

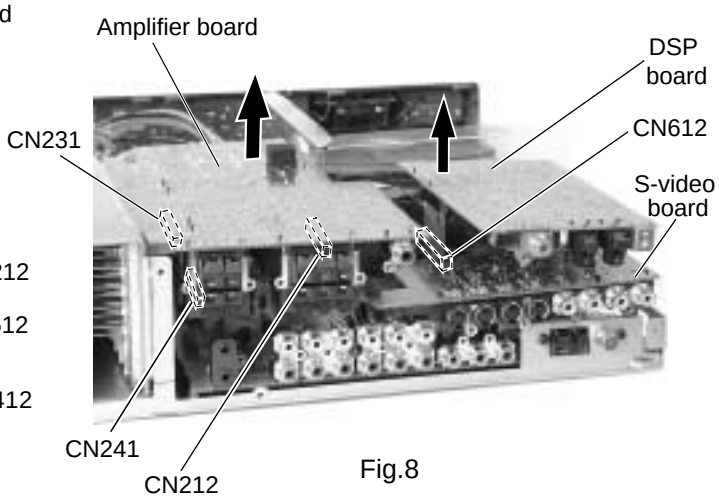


Fig.8

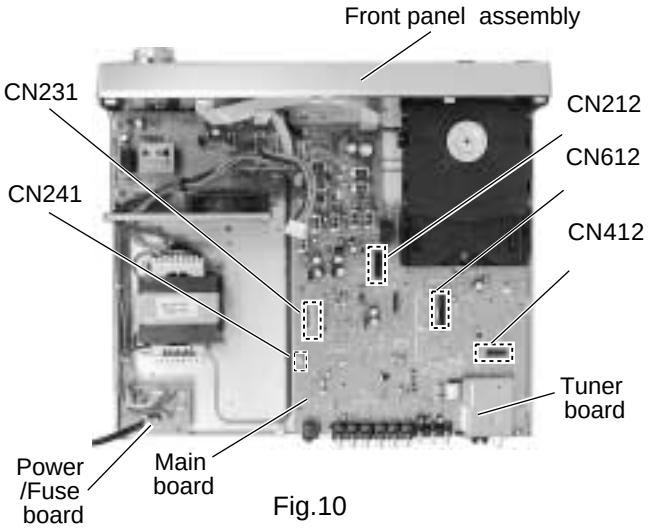


Fig.10

■Removing the amplifier board

(See Fig.11, 12)

- Prior to performing the following procedures, remove the top cover, and rear panel.

1. Disconnect the amplifier board from the connector CN201.
2. Disconnect the amplifier board from the connector CN212 on the main board.
3. Disconnect the amplifier board from the wire connected to the connector CN231 and CN241 on the main board.
4. Disconnect the screws marked **F** frome the ground wire attaching the amplifier board on the fan bracket.
5. Disconnect the four screws **G** attaching the amplifier board on the body.

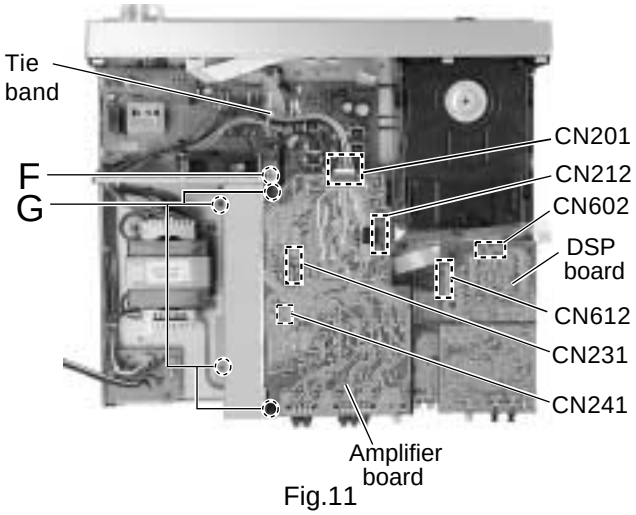


Fig.11

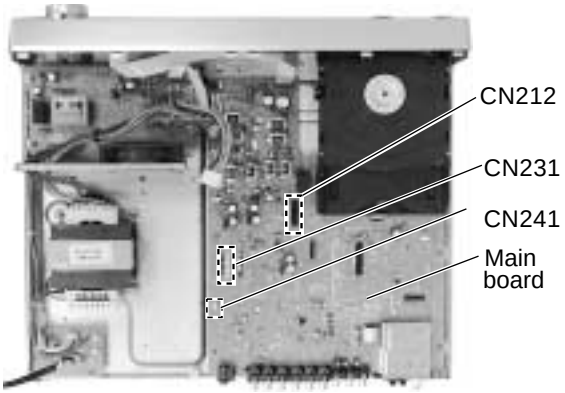


Fig.12

■Removing the power ICs

(See Fig.13, 14)

1. Remove the six screws marked **H** attaching the heat sink.
2. Unsolder the two power ICs solder points attaching the rear side of the amplifier board.
3. Pull out the amplifier board from the bracket hooks on the heat sink.

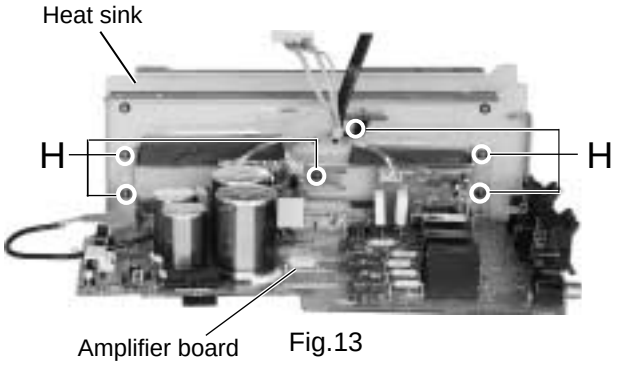


Fig.13

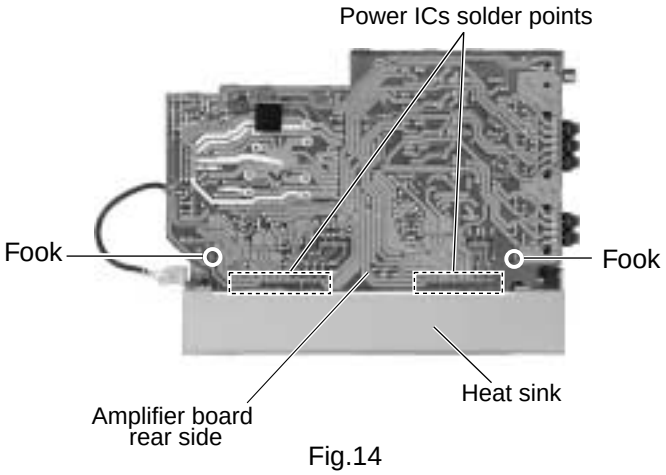


Fig.14

■Removing the DVD CD unit

(See Fig.15)

・Prior to performing the following procedures, remove the top cover, rear cover and DSP board.

1. Remove the DVD / CD unit dust proof cover attaching on the main board.
2. Remove the three screws marked **I** attaching the DVD /CD unit.
3. Disconnect the connectors CN512 and CN513 on the main board.

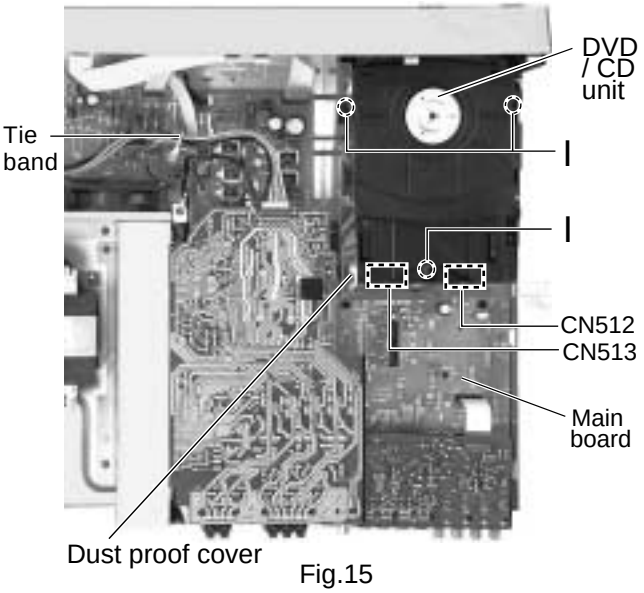


Fig.15

■Removing the fan bracket

(See Fig.16)

・Prior to performing the following procedures, remove the top cover, rear cover, DSP board, amplifier board and S-video board.

1. If necessary, cut off the tie band fixing the harness.
2. Remove the two screws marked **J** attaching the fan bracket on the body.
3. Remove the harness bands fixing the harness on the fan bracket.
4. Disconnect the connector CN111 on the power supply board.
5. Disconnect the connector CN122 on the main board.

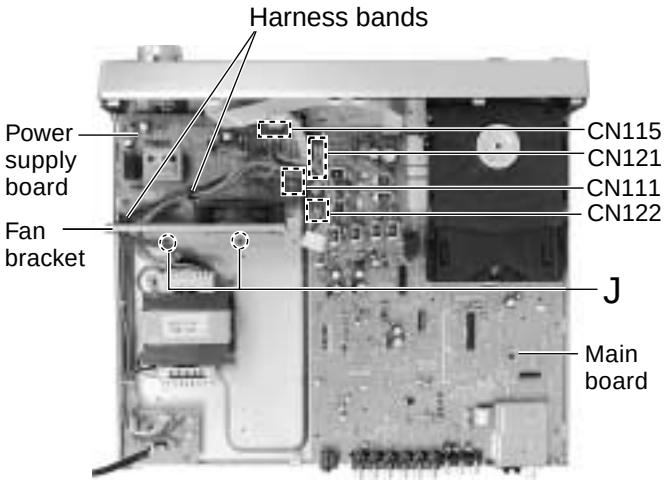


Fig.16

■Removing the power supply board

(See Fig.17)

・Prior to performing the following procedures, remove the top cover, rear cover, DSP board, amplifier board S-video board and fan bracket.

1. If necessary, cut off the tie band fixing the harness.
2. Disconnect the card wire from the connector CN115 on the power supply board.
3. Disconnect the harness connected to the connector CN111 on the power supply board.
4. Disconnect the harness connected to the connector CN121 on the main board.
5. Remove the four screws marked **K** attaching the power supply board on the body.
6. Unsolder the solder points at the three harnesses connected to the power supply board.

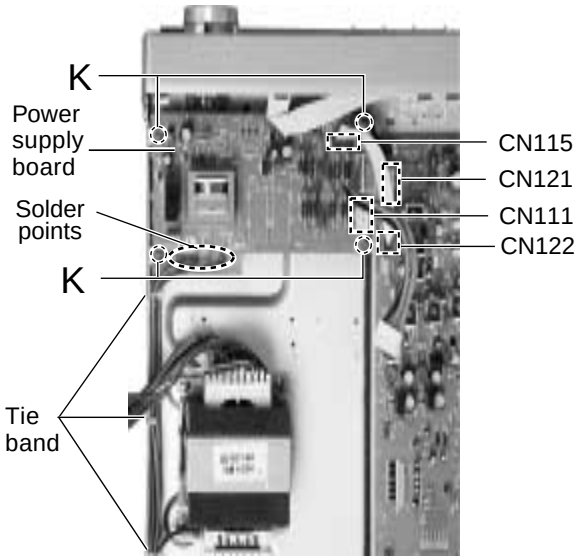


Fig.17

■Removing the power transformer (See Fig.18, 19)

- Prior to performing the following procedures, remove the top cover and rear panel.

1. If necessary, cut off the tie band fixing the harness.
2. Disconnect the harness from the connector CN101 on the power / fuse board.
3. Disconnect the harness from the connectors CN111 and CN121 on the power supply board and main board.
4. Unsolder the three harnesses connected to the power supply board.
5. Remove the four screws marked **L** attaching the power transformer on the body.

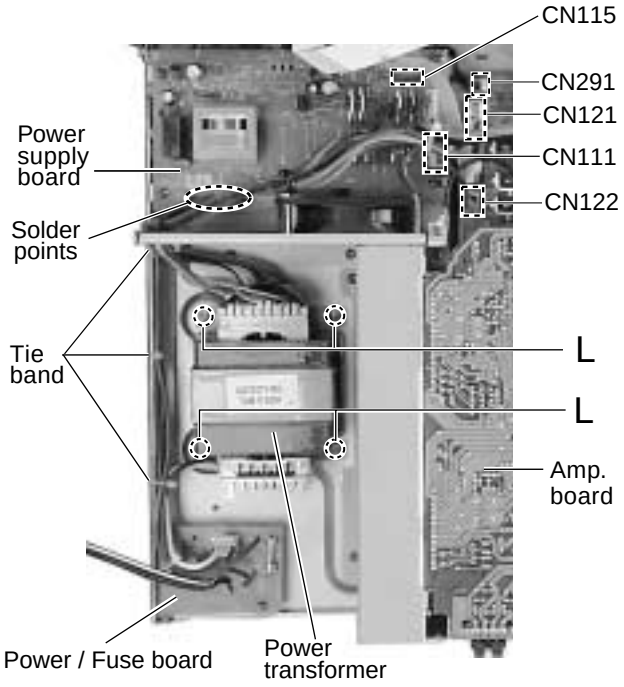


Fig.18

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

- Prior to performing the following procedure, remove the top cover and rear panel.

1. Disconnect the harness connected to the connector CN101 on the power / fuse board (If necessary, cut off the band fixing the harness on the side of the base chassis).
2. Unsolder the power cord and other harnesses connected to the power / fuse board.
3. Remove the two screws marked **M** attaching the power / fuse board on the body.

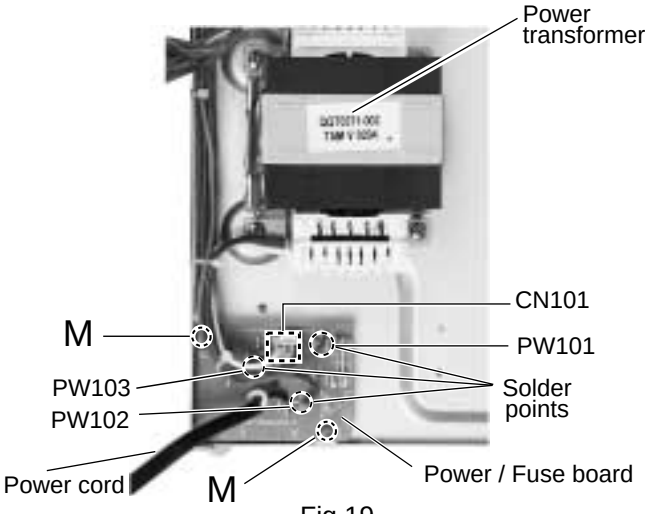


Fig.19

■Removing the headphones board (See Fig.20)

- Prior to performing the following procedures, remove the top cover, rear cover, front panel assembly and power supply board.

1. Disconnect the harness connected to the connector CN291 on the main board (If necessary, remove the amplifier board and fan bracket).
2. Remove the screw marked **N** attaching the headphones board on the body.

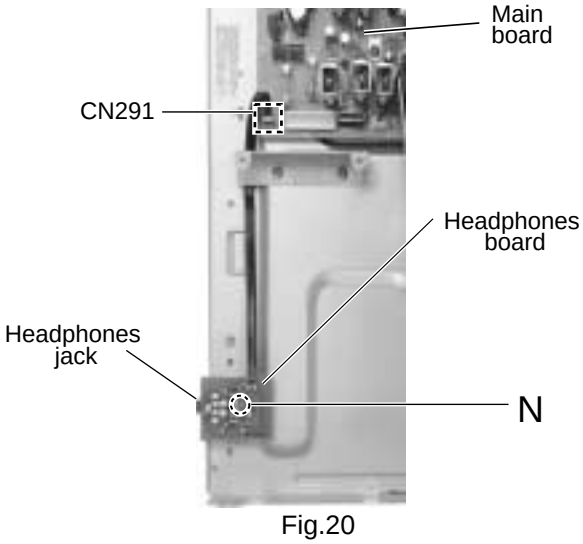


Fig.20

■Removing the tuner board

(See Fig.21)

・Prior to performing the following procedures, remove the top cover, rear panel, DSP board and S-video board.

1. Disconnect the card wire from the connector CN301 on the main board.
2. Remove the two screws marked **O** attaching the tuner board on the rear of the side body.

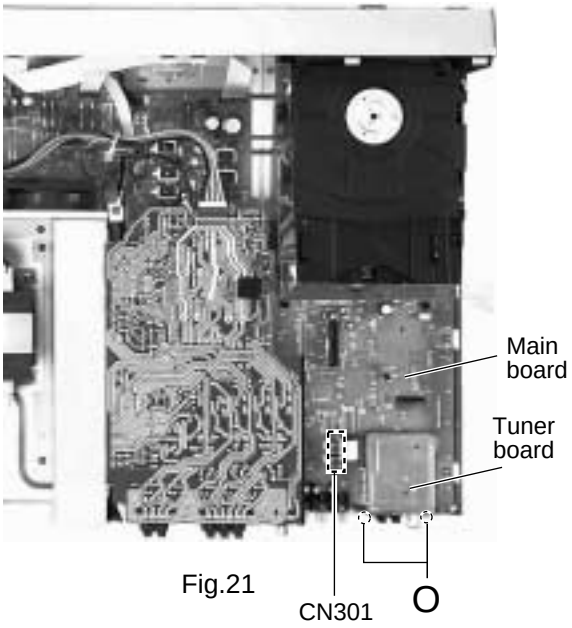


Fig.21

■Removing the main board

(See Fig.22)

・Prior to performing the following procedures, remove the top cover, rear panel, DSP board, S-video board, amplifier board, DVD / CD unit and tuner board.

1. Disconnect the card wire from the connectors CN114 CN125 on the main board.
2. Disconnect the wire from the connectors CN121, CN122 and CN291 on the main board.
3. Remove the five screws marked **P** attaching the main board on the body.

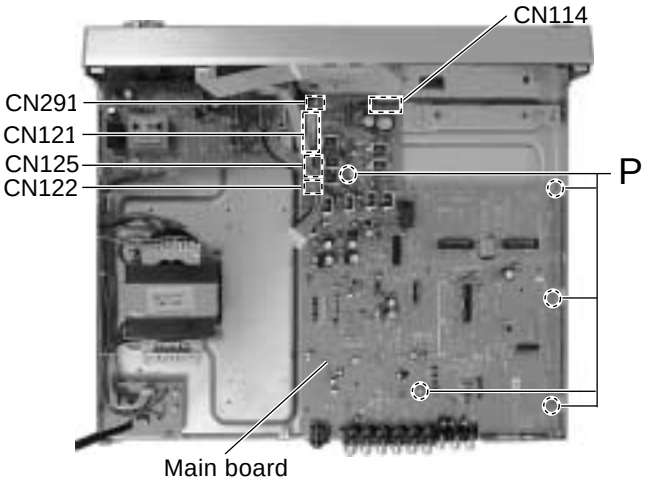


Fig.22

■Removing each board connected to the rear side of the front panel

(See Fig.23)

・Prior to performing the following procedures, remove the top cover and front panel assembly.

1. Remove the two screws marked **O** attaching the power switch board.
2. Remove the seven screws marked **R** attaching the system control board.
3. Remove the two screws marked **S** attaching the indicator board.
4. Remove the four screws marked **T** attaching the select board.
5. Remove the three screws marked **U** attaching the control board.

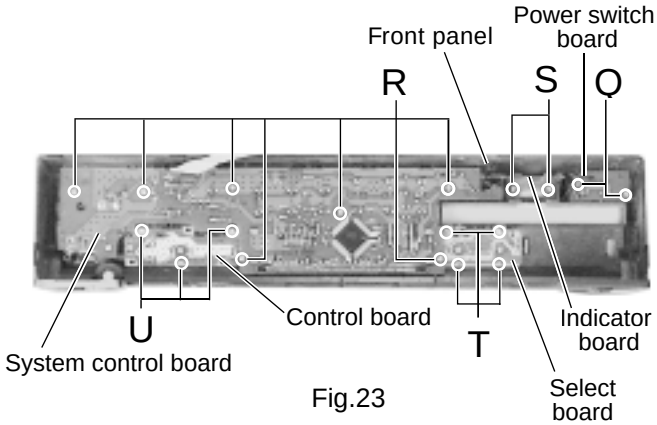


Fig.23

<DVD / CD unit>

・ Prior to performing the following procedures, remove the DVD / CD unit.

■Removing the DVD / CD tray (See Fig.1, 2)

1. Push the cam lever toward the center side of the DVD / CD unit in the direction of the arrow and draw the DVD / CD tray toward the front.

2. Push the two tray stoppers marked **a** on the DVD / CD tray in the direction of the arrow and draw the DVD / CD tray toward the front.

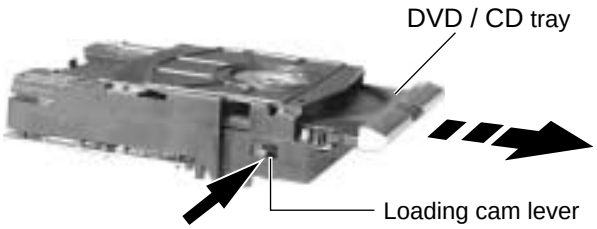


Fig.1

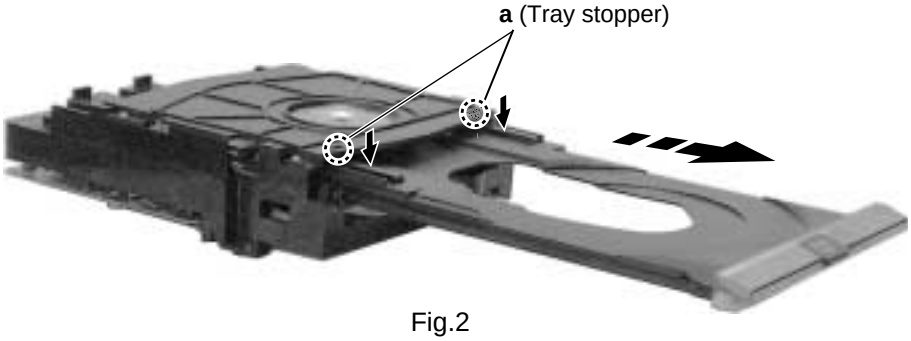


Fig.2

■Reinstall the DVD / CD tray (See Fig. 1, 2)

1. Align the rail with the DVD / CD tray as shown fig.2, then mount the DVD / CD tray.

■Removing the DVD / CD servo board (See Fig.3)

1. Disconnect the card wire from the connectors CN101, CN201 and CN202 on the DVD / CD servo board.

2. Push the two DVD / CD servo board hooks marked **b** and pull out the DVD / CD servo board.

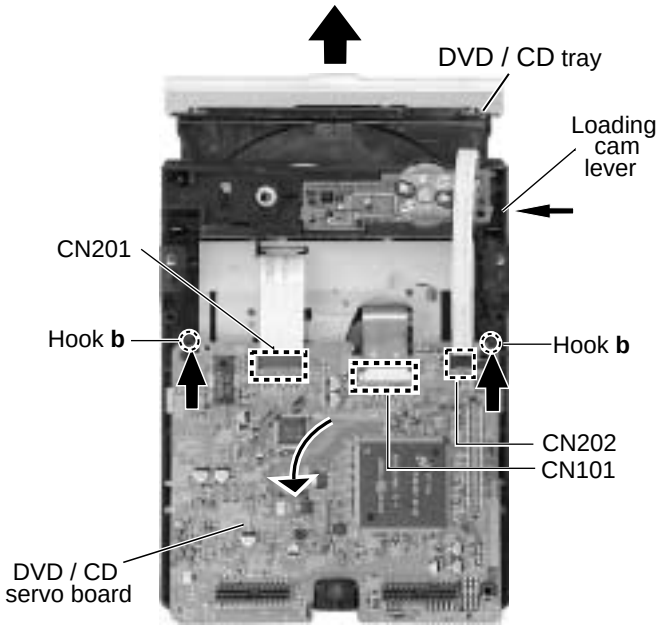


Fig.3

■Removing the the top cover

(See Fig.4)

- Prior to performing the following procedures, remove the DVD / CD tray.

1. Remove the four screws marked **A** attaching the top cover on the DVD / CD unit.
2. Pull the top cover toward the direction of the arrow and draw the top cover toward the upper side.

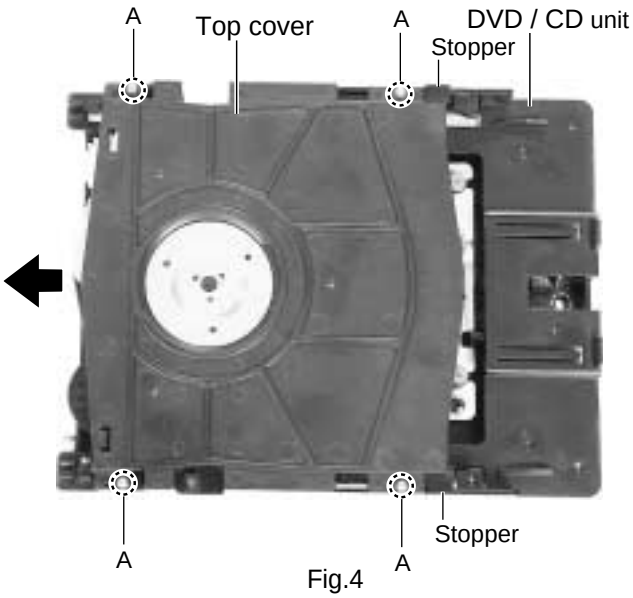


Fig.4

■Removing the tray drive motor board

(See Fig.5, 6)

- Prior to performing the following procedures, remove the DVD / CD tray, top cover, servo board and DVD / CD unit.

1. Unsolder the solder points at the tray drive motor board.
2. Detach the belt from the pulley on the bottom of the DVD / CD unit. (Do not stain the belt with grease).
3. Remove the screws marked **B** attaching the tray drive motor on the DVD / CD unit.
4. Remove the screws marked **C** attaching the tray drive motor board on the DVD / CD unit.

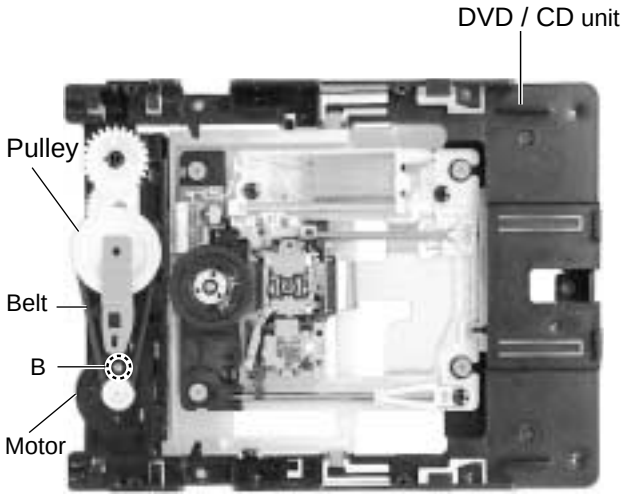


Fig.5

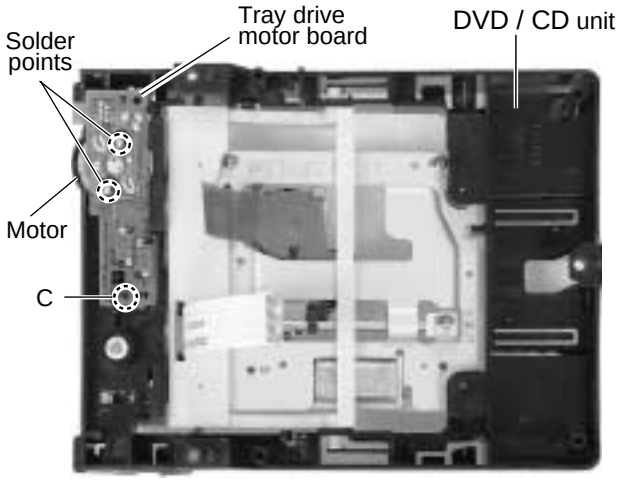


Fig.6

■Removing the DVD / CD the mechanism holder assembly (mechanism included) (See Fig. 7, 8)

- Prior to performing the following procedures, remove the DVD / CD tray, the servo board and top cover.

1. Remove the four screws marked **D** attaching the DVD / CD mechanism holder assembly on the DVD / CD unit.

2. Pull out the DVD / CD mechanism holder assembly.

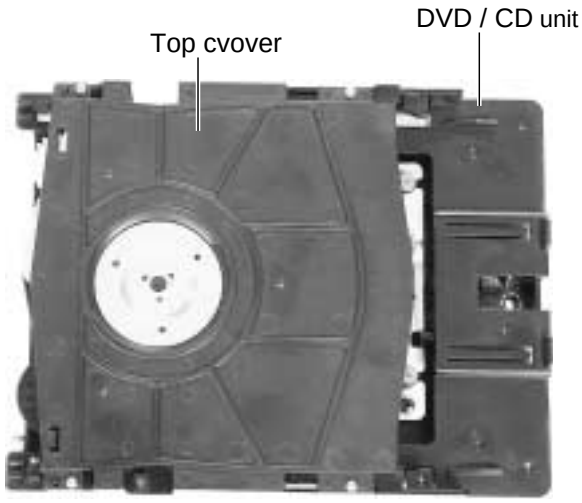


Fig.7

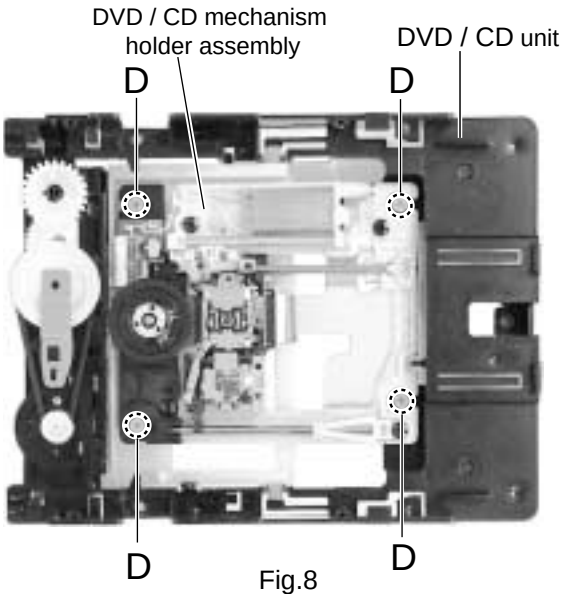


Fig.8

Adjustment method

Measurement instruments required for adjustment

1. Low frequency oscillator,
   This oscillator should have a capacity to output 0dBs to 600ohm at an oscillation frequency of 50Hz-20kHz.
2. Attenuator impedance : 600ohm
3. Electronic voltmeter
4. Frequency counter
5. Wow flutter meter
6. Test tape
   VT712 : For Tape speed and wow flutter (3kHz)
   VT724 : For Reference level (1kHz)
   VT703L : For Head angle (10kHz)

   Because of frequency-mixed tape with 63,1k,10k and 14kHz(250nWb/m -24dB).
   Use this tape together with a filter.
7. Blank tape
   TAPE : AC-225
8. Torque gauge : For play and back tension
   Forward ; TW2111A, Reverse ; TW2121A
   Fast Forward and Rewind ; TW2231A
9. Test disc
   : VT-501(12cm)
10. Jitter meter

Measurement conditions

Power supply voltage
AC120V(50Hz)

Measurement
output terminal : Speaker out
:TP101 (Measuring for TUNER/DECK/CD)
:Dummy load 6ohm

Radio input signal
AM modulation frequency : 400Hz
Modulation factor : 30%
FM modulation frequency : 400Hz
Frequency displacement : 22.5kHz

Frequency Range
AM 530kHz~1600kHz (10kHz step)
FM 87.5MHz~108MHz

Standard measurement positions of volume and switch
Power : Standby (Light STANDBY Indicator)
Sub woofer VOL. : Minimum
Sound mode : OFF
Main VOL. : 0 Minimum
Traverse mecha set position : Disc 1
Mic MIX VOL : MAX
ECHO : OFF

Precautions for measurement
1. Apply 30pF and 33kohm to the IF sweeper output side and 0.082μF and 100kohm in series to the sweeper input side.
2. The IF sweeper output level should be made as low as possible within the adjustable range.
3. Since the IF sweeper is a fixed device, there is no need to adjust this sweeper.
4. Since a ceramic oscillator is used, there is no need to perform any MPX adjustment.
5. Since a fixed coil is used, there is no need to adjust the FM tracking.
6. The input and output earth systems are separated. In case of simultaneously measuring the voltage in both of the input and output systems with an electronic voltmeter for two channels, therefore, the earth should be connected particularly.
7. In the case of BTL connection amplifier, the minus terminal of speaker is not for earthing. Therefore, be sure not to connect any other earth terminal to this terminal. This system is of an OTL system.

■ Initialization method of DVD section

When microprocessor ICs or pick-up has been replaces, initialize the DVD player in the following manner.

1. If tray is not completely close up, make power to standby frome on to close up the tray.
   After confirming that tray is completely close up, pull off the power plug.

2. Insert the power plug to the outlet while pressing "STOP" and "DVD" Button at the same time to be TEST Mode.
   FL display indicates "TEST **" and "** (Area code)" is indicated at the upper left of the display.

   ** : Area code

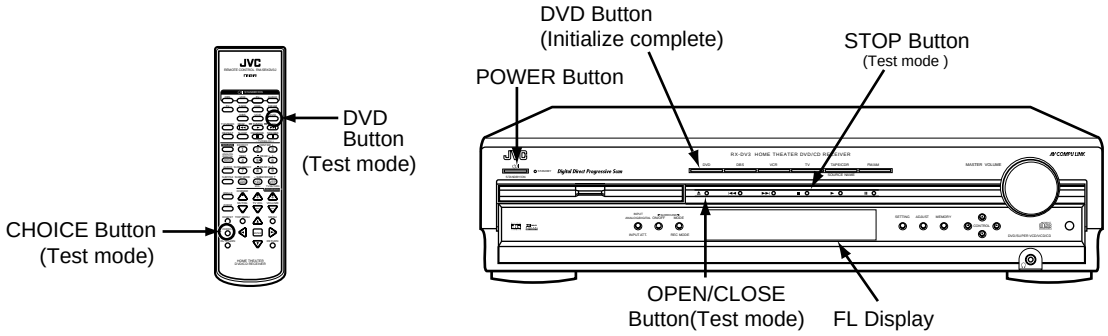
3. Press "PAUSE" button to initialize.
   When an indication of "ATT" is displayed, initialization finishes.

4. Push the POWER SW to be standby.

■ About TEST MODE

Before implementing the TESE Mode please do the change to the mode of remote control the DVD Mode.
The operation of the remote control is because it is not produced

This player has a TEST MODE for product QC, service or repair. Contents are given as follows.
TEST MODE has the 4 different states. These are changed with the CHOICE key on the remote controller. TEST MODE is canceled by the POWER key.
Insert the power plug to the outlet while pressing "STOP" and "DVD" buttons at the same time.
" (Area code)" is indicated at the upper left of the display.**
FL Display indicates " TEST ** ".
**** : Area code .... Refer to (Fig, 1)**



1. The first: FL display shows the player firmware version.

   Contents: [System firm] [Front End firm] [Back End firm]

2. The second: Indicator check mode. All FL segment and all LED light.

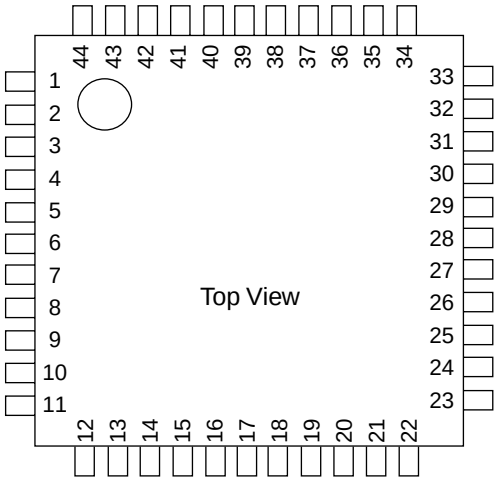
3. The third: Mechanism check mode. In this mode the player displays "CHECK".

4. The fourth: Front-end check mode. In this mode the FL displays "EXPERT".

Description of major ICs

■ AK4527BVQP (IC601) : A/D,D/A converter

1. Pin layout



2. Pin function (1/2)

No.	Symbol	I/O	Function
1	SDOS	I	SDTO Source Select Pin (Note 1) "L" : Internal ADC output, "H" : DAUX input
2	OSKS	I	Control Mode Select Pin "L" : 3-wire Serial, "H" : I2C Bus
3	MIS	-	Soft Mute Pin (Note 1), Connect to GND When this pin goes to "H", soft mute cycle is initialized. When returning to "L", the output mute releases.
4	BICK	I	Audio Serial Data Clock Pin
5	LRCK	I/O	Input Channel Clock Pin
6	SDTI1	I	DAC1 Audio Serial Data Input Pin
7	SDTI2	I	DAC2 Audio Serial Data Input Pin
8	SDTI3	I	DAC3 Audio Serial Data Input Pin
9	SDTO	O	Audio Serial Data Output Pin
10	D,AUX	-	Sub Audio Serial Data Input Pin, Connect to GND
11	DFS	-	Double Speed Sampling Mode Pin (Note 1) "L" : Normal Speed, "H" : Double Speed
12	DEMI	-	Connect to GND No internal bonding.
13	DEMO	- - -	Zero Input Detect Enable Pin, Connect to GND "L" : mode 7 (disable) at parallel mode, zero detect mode is selectable by DZFM2-0 bits at serial mode. "H" : mode 0 (DZF is AND of all six channels)
14	MCKO	-	Output Buffer Power supply Pin, 2.7V~5.5V
15	DVDD	I	Digital Power Supply Pin, 4.5V~5.5V
16	DVSS	-	De-emphasis Pin, 0V
17	$\overline{PD}$	I	Power-Down & Reset Pin When "L", the AK4527B is powered-down and the control registers are reset to default state. If the state of P/S or CAD0-1 changes, then the AK4527B must be reset by PDN.
18	XTS	-	Test Pin, Connect to GND This pin should be connected to DVSS.

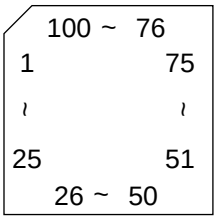
Pin function (2/2) AK4527

No.	Symbol	I/O	Function
19	ICKS	-	Connect to GND No internal bonding.
20	ADIF	-	Analog Input Format Select Pin, Digital Power Supply "H" : Full-differential input, "L" : Single-ended input
21	CAD1	-	Chip Address 1 Pin, Connect to GND
22	CAD0	-	Chip Address 0 Pin, Connect to GND
23	LOUT3	O	DAC3 Lch Analog Output Pin
24	ROUT3	O	DAC3 Rch Analog Output Pin
25	LOUT2	O	DAC2 Lch Analog Output Pin
26	ROUT2	O	DAC2 Rch Analog Output Pin
27	LOUT1	O	DAC1 Lch Analog Output Pin
28	ROUT1	O	DAC1 Rch Analog Output Pin
29	LIN-	I	Lch Analog Negative Input Pin
30	LIN+	I	Lch Analog Positive Input Pin
31	RIN-	I	Rch Analog Negative Input Pin
32	RIN+	I	Rch Analog Positive Input Pin
33	VREFL	-	Zero Input Detect 2 Pin (Note 2), Non Connect When the input data of the group 1 follow total 8192LRCK cycles with "0" input data, this pin goes to "H".
	OVF	O	Analog Input Overflow Detect Pin (Note 3) This pin goes to "H" if the analog input of Lch or Rch is overflows.
34	VCOM	O	Common Voltage Output Pin,AVDD/2 Large external capacitor around 2.2uF is used to reduce power-supply noise.
35	VREFH	-	Positive Voltage Reference Input Pin,AVDD
36	AVDD	-	Analog Power Supply Pin,4.5V~5.5V
37	AVSS	-	Analog Ground Pin,0V
38	XTI	-	Zero Input Detect 1 Pin (Note 2), Non connect When the input data of the group 1 follow total 8192 LRCK cycles with "0" input data, this pin goes to "H".
39	XTO	I	Master Clock Input Pin
40	P1S	-	Parallel / Serial Select Pin "L" : Serial control mode, "H" : Parallel control mode
41	$\overline{CS}$	I	Audio Data Interface Format 0 Pin in parallel mode
	CSN	I	Chip select pin in 3-wire serial control mode This pin should be connected to DVDD at I2C bus control mode
42	DIF1	I	Audio Data Interface Format 1 Pin in parallel mode
	SCL/CCLK	I	Control Data Clock Pin in serial control mode I2C = "L" : CCLK(3-wire Serial), I2C = "H" : SCL(I2CBus)
43	LOOP0	I	Loopback Mode 0 Pin in parallel control mode Enables digital loop-back from ADC to 3 DACs.
	SAD/CDTI	I/O	Control Data Input Pin in serial control mode I2C = "L" : CDTI(3-wire Serial), I2C = "H" : SDA(I2CBus)
44	CDTD	I	Loopback Mode 1 Pin (Note 1) Enable all 3 DAC channels to be input from SDTII.

Notes : 1. SDOS, SMUTE, DFS, and LOOP1 pins are ORed with register data if P/S = "L".
2. The group 1 and 2 can be selected by DZFM2-0 bit if P/S = "L" and DZFME = "L".
3. This pin becomes OVF pin if OVFE bit is set to "1" at serial control mode.
4. All input pins should not be left floating.

■ MN101C35DKF (IC701) : Panel MICOM

1. Pin layout



2. Pin function

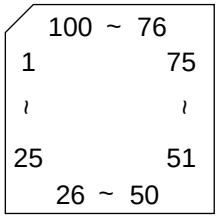
Pin No.	Symbol	I/O	Function
1	TXD/SBO0/P00	O	No connect
2	RXO/SBI0/P01	O	No connect
3	SBT0/P02	O	No connect
4	SBO1/P03	O	No connect
5	SBI1/P04	O	No connect
6	SBT1/P05	O	No connect
7	BUZZER/P06	O	No connect
8	VDD	-	Power supply
9	OSC2	O	External terminal for main clock
10	OSC1	I	External terminal for main clock
11	VSS	-	Connect to GND
12	XI	-	Connect to GND
13	XO	O	No connect
14	MMOD	-	Connect to GND
15	VREF-	-	Connect to GND
16	KEY1	I	Key input terminal 1
17	KEY2	I	Key input terminal 2
18	KEY3	I	Key input terminal 3
19	KEY4	I	Key input terminal 4
20	KEY5	I	Key input terminal 5
21	KEY6	I	Key input terminal 6
22	VERSION1	I	Chip select 1
23	VERSION2	I	Chip select 2
24	VREF+	-	Reference voltage terminal
25	LED DIMMER	O	LED DIMER
26	RESET	I	Reset input
27	LED BLUE	O	LDE (BLUE)
28	LED VCR	O	LED (VCR)
29	LED STB	O	LED (STB)
30	LED AUDIO	O	LED (DVD audio)
31	LED DVD	O	LED (DVD)
32	DI BUSY	O	Micom communication BUSY
33	DI CS	I	Micom communication CS
34	REMO	I	Remote control signal input
35	VOL IN1	I	VOL JOG IN1
36	VOL IN2	I	VOL JOG IN2
37	IRQ4	O	No connect
38	P25	O	No connect
39	DI PS2	O	Micom communication status output
40	DI S2P	I	Micom communication status input
41	DI CK	I	Micom communication CLK
42		O	No connect
43		O	No connect

MN101C35DKF

Pin No	Symbol	I/O	Function
44	P52	O	No connect
45	P53	O	No connect
46	P54	O	No connect
47	DGT17/P67	O	No connect
48	DGT16/P66	O	No connect
49	DGT15/P65	O	No connect
50	DGT14/P64	O	No connect
51	DGT13/P63	O	GRID1
52	DGT12/P62	O	GRID2
53	DGT11/P61	O	GRID3
54	DGT10/P60	O	GRID4
55	DGT9/P41	O	GRID5
56	DGT8/P40	O	GRID6
57	SEG0/DGT7/P77	O	GRID7
58	SEG1/DGT6/P76	O	GRID8
59	SEG2/DGT5/P75	O	GRID9
60	SEG3/DGT4/P74	O	GRID10
61	SEG4/DGT3/P73	O	GRID11
62	SEG5/DGT2/P72	O	GRID12
63	SEG6/DGT1/P71	O	GRID13
64	SEG7/DGT0/P70	O	SEGMENT36
65	SEG8/P87	O	SEGMENT35
66	SEG9/P86	O	SEGMENT34
67	SEG10/P85	O	SEGMENT33
68	SEG11/P84	O	SEGMENT32
69	SEG12/P83	O	SEGMENT31
70	SEG13/P82	O	SEGMENT30
71	SEG14/P81	O	SEGMENT29
72	SEG15/P80	O	SEGMENT28
73	SEG16/P97	O	SEGMENT27
74	SEG17/P96	O	SEGMENT26
75	SEG18/P95	O	SEGMENT25
76	SEG19/P94	O	SEGMENT24
77	SEG20/P93	O	SEGMENT23
78	SEG21/P92	O	SEGMENT22
79	SEG22/P91	O	SEGMENT21
80	SEG23/P90	O	SEGMENT20
81	SEG24/PC2	O	SEGMENT19
82	SEG25/PC1	O	SEGMENT18
83	SEG26/PC0	O	SEGMENT17
84	SEG27/PB7	O	SEGMENT16
85	SEG28/PB6	O	SEGMENT15
86	SEG29/PB5	O	SEGMENT14
87	SEG30/PB4	O	SEGMENT13
88	SEG31/PB3	O	SEGMENT12
89	SEG32/PB2	O	SEGMENT11
90	SEG33/PB1	O	SEGMENT10
91	SEG34/PB0	O	SEGMENT9
92	SEG35/PD7	O	SEGMENT8
93	SEG36/PD6	O	SEGMENT7
94	SEG37/PD5	O	SEGMENT6
95	SEG38/PD4	O	SEGMENT5
96	SEG39/PD3	O	SEGMENT4
97	SEG40/PD2	O	SEGMENT3
98	SEG41/PD1	O	SEGMENT2
99	SEG42/PD0	O	SEGMENT1
100	VPP	-	VPP

■ MN101C49GKG (IC761) : System MICOM

1. Pin layout



2. Pin function

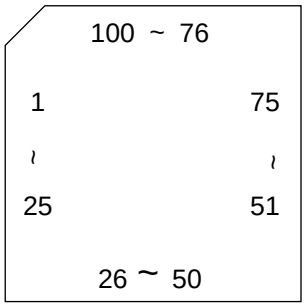
Pin No.	Symbol	I/O	Function
1	VREF	-	Connect to GND
2	PA0	I	NTSTEL(RGBESL)
3	PA1	I	VCR S/C SW
4	PA2	I	DBS S/C SW
5	PA3	I	SAFETY
6	PA4	I	SHORT&TH DET (A/D)
7	PA5	I	OUTLEVEL DETECT (A/D)
8	PA6	I	VCR IN (A/D)
9	PA7	I	STB IN (A/D)
10	VREF+	-	Reference voltage
11	VDD	-	VDD
12	OSC2	O	External terminal for connected oscirator
13	OSC1	I	External terminal for connected oscirator
14	VSS	-	Connect to GND
15	XI	I	Connect to GND
16	XO	O	No connect
17	MMO0	I	Connect to GND
18	SBO0	O	DI DO
19	SBI0	I	DI DI
20	SBT0	O	DI CK
21	SBO2	O	S2UDT
22	SBI2	I	U2SDT
23	SBT2	I	SCLK
24	NDK	O	INTP
25	SYSCLK	O	CPURST
26	IRQ0	I	CS
27	IRQ1	I	
28	IRQ2	I	PROTECT
29	IRQ3	I	RDS SET
30	IRQ4	I	DI BUSY
31	IRQ5	I	HAEADPHONE
32	GND	I	Connect to GND
33	NSRT	I	RESET IN
34	TM0IO	O	DSP RST
35	TM1IO	O	DSP RDY
36	TM2IO	O	AVC OUT
37	TM3IO	I	AVC IN
38	TM7IO	O	VIDEO MUTE1
39	P15	O	VIDEO MUTE2
40	TM4IO	O	VIDEO YCMIX
41	P17	O	VIDEO RGB
42	SBO1	O	DSP COM
43	SBI1	I	DSP STAT

MN101C49GKG

Pin No.	Symbol	I/O	Function
44	SBT1	O	DSP CLK
45	CBO3	O	VOL DATA
46	SBI3	O	VOL LATCH
47	SBT3	O	VOL CLK
48	MP3	O	D.O.MUTE
49	INT/PROG	O	INT/PROG
50	KEY0	O	HEADPHONE RELAY
51	KEY1	O	EEDO
52	KEY2	O	EEDI
53	KEY3	O	EECK
54	KEY4	O	EECS
55	KEY5	O	FRONT SPK RELAY
56	KEY6	O	CENTER SPK RELAY
57	KEY7	O	REAR SPK RELAY
58	NEW	O	S1RELAY
59	NRE	I	INH
60	NCS	O	SLOW L
61	A16	O	SLOW M
62	A17	O	SYSTEM P.ON
63	A0	O	FAN ON/OFF
64	A1	O	DVD P.ON
65	A2	O	TUNER P.ON
66	A3	O	MECHA.ON
67	A4	I/O	RDS DATA
68	A5	O	RDS CLK
69	A6	O	STEREO
70	A7	I	TUNER DATAI
71	A8	O	TUNER MUTE
72	A9	O	TUNER DATA0
73	A10	O	TUNER CLK
74	A11	O	TUNER CE
75	A12	O	S1OUT
76	A13	O	SMUTE
77	A14	O	DSP ON
78	A15	O	VS3
79	LED0	O	STBY LED
80	LED1	O	FAN ON/OFF1-LOW
81	LED2	O	FAN ON/OFF2-MID
82	LED3	O	DISC SET
83	LED4	I	DISC STOP
84	LED5	O	FAN ON/OFF3-HIGH
85	LED6	O	No connect
86	LED7	O	SW MUTE
87	SDO0	O	VIDEO SW1
88	SDO1	O	VIDEO SW2
89	SDO2	O	VIDEO SW3
90	SDO3	O	VIDEO SW4
91	SDO4	O	DI RST
92	SDO5	O	DI CS
93	SDO6	O	No connect
94	SDO7	O	LMUTE
95	DAVSS	-	SW OPEN
96	DA0	I	OCDAT
97	DA1	I	DWDET
98	DA2	O	LOPEN
99	DA3	O	LCLOSE
100	DAVDD	-	Reference voltage

■ UPD784215AGC167 (IC681) : Dital signal controller

1. Pin layout



2. Pin function (1/2)

Pin No.	Symbol	I/O	Function
1~8		-	Non connect
9	VDD	-	Power supply terminal
10	X2	O	Connecting the crystal oscillator for system main clock
11	X1	I	Connecting the crystal oscillator for system main clock
12	VSS	-	Connect to GND
13	XT2	O	Connecting the crystal oscillator for system sub clock
14	XT1	I	Connecting the crystal oscillator for system sub clock
15	$\overline{\text{RESET}}$	I	System reset signal input
16	$\overline{\text{AUTODATA}}$	I	Output of DSP to general-purpose port
17	LOCK	I	Output of DSP to general-purpose port
18	DIGITAL0	I	Output of DSP to general-purpose port
19	FORMAT	I	Output of DSP to general-purpose port
20	CHANNEL	I	Output of DSP to general-purpose port
21	ERR	I	Output of DSP to general-purpose port
22	$\overline{\text{REST IN}}$	I	Reset signal input
23	AVDD	-	Power supply terminal
24	AVREF0	-	Connect to GND
25		-	Connect to GND
26		-	Connect to GND
27		-	Connect to GND
28		-	Connect to GND
29		-	Connect to GND
30		-	Connect to GND
31		-	Connect to GND
32		-	Connect to GND
33	AVSS	-	Connect to GND
34,35		-	Non connect
36	AV REF1	-	Power supply terminal
37	RX	-	Not use
38	TX	-	Not use
39		-	Non connect
40	$\overline{\text{DSPCOM}}$	I	Communication port from IC701
41	DSPSTS	O	Status communication port to IC701
42	$\overline{\text{DSPCLK}}$	I	Clock input from IC701
43	DSPRDY	I	Ready signal input from IC701
44		-	Non connect
45	MIDIO IN	I/O	Interface I/O terminal with microcomputer
46	MIDIO OUT	I/O	Interface I/O terminal with microcomputer
47	$\overline{\text{MICK}}$	O	Interface I/O terminal with microcomputer of clock signal
48	$\overline{\text{MICS}}$	O	Interface I/O terminal with microcomputer of chip select

Pin function (2/2)

UPD784215AGC167

Pin No.	Symbol	I/O	Function
49	$\overline{\text{MILP}}$	O	Interface I/O terminal with microcomputer
50	$\overline{\text{MIACK}}$	O	Interface I/O terminal with microcomputer
51		-	Non connect
52		-	Non connect
53	$\overline{\text{DSPRST}}$	O	Reset signal output of DSP
54~63		-	Non connect
64	CODEC OUT	I/O	Interface I/O terminal with microcomputer
65	CODEC IN	I/O	Interface I/O terminal with microcomputer
66	$\overline{\text{CODEC CLK}}$	O	Interface I/O terminal with microcomputer of clock signal
67	$\overline{\text{CODEC CS}}$	O	Interface I/O terminal with microcomputer of chip select
68	CODEC XTS	-	Non connect
69		-	Non connect
70		-	Non connect
71	$\overline{\text{PD}}$	O	Reset signal output
72	GND	-	Connect to GND
73		-	Non connect
74		-	Non connect
75		-	Non connect
76		-	Non connect
77		-	Non connect
78		-	Non connect
79		-	Non connect
80		-	Non connect
81	VDD	-	Power supply
82		-	Non connect
83		-	Non connect
84	ANA/T-TONE	O	Test tone control
85	LEF-MIX	O	Control at output destination of LFE channel
86		-	Non connect
87	D.MUTE	O	Mute of the digital out terminal is controlled
88	$\overline{\text{S.MUTE}}$	O	Mute of the audio signal is controlled
89		-	Non connect
90	ASW1	O	Selection of digital input selector
91	ASW2	O	Selection of digital input selector
92	ASW3	O	Selection of digital input selector
93	ASW4	O	Selection of digital input selector
94	TEST	-	Test terminal
95		-	Non connect
96		-	Non connect
97		-	Non connect
98		-	Non connect
99		-	Non connect
100		-	Non connect

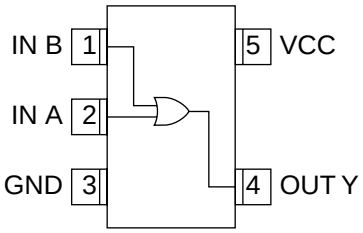
■ TC9446F-025 (IC631) : Digital signal processor for dolby digital (AC-3) / DTS audio decode

Pin No.	Symbol	I/O	Function
1	$\overline{RST}$	I	Reset signal input terminal (L:reset H: normal operation)
2	MIMD	I	Microcomputer interface mode selection input terminal (L:serial H:IC bus)
3	$\overline{MICS}$	I	Microcomputer interface chip select input terminal
4	$\overline{MILP}$	I	Microcomputer interface latch pulse input
5	MIDIO	I/O	Microcomputer interface data I/O terminal
6	$\overline{MICK}$	I	Microcomputer interface clock input terminal
7	MIACK	O	Microcomputer interface acknowledge output terminal
8~11	FI0~3	I	Flag input terminal 0~3
12	IRQ	I	Interrupt input terminal
13	VSS	-	Digital ground terminal
14	LRCKA	I	Audio interface LR clock input terminal A
15	BCKA	I	Audio interface bit clock input terminal A
16~18	SDO0~2	O	Audio interface data output terminal 0
19	SD03	-	Non connect
20	LRCKB	I	Audio interface LR clock input terminal B
21	BCKB	I	Audio interface bit clock input terminal B
22	SDT0	I	Audio interface data input terminal 0
23	SDT1	I	Audio interface data input terminal 1
24	VDD	-	Power supply for digital circuit
25	LRCKOA	O	Audio interface LR clock output terminal A
26	BCKOA	O	Audio interface bit clock output terminal A
27,28	$\overline{TEST0,1}$	I	Test input terminal 0/1 (L:test H: normal operation)
29~30	LRCKOB,BCKOB	-	Non connect
31	TXO	O	SPDIF Output
32,33	$\overline{TEST2,3}$	I	Test input terminal (L:test H: normal operation)
34	RX	I	SPDIF input terminal
35	VSS	-	Ground terminal for digital circuit
36	$\overline{TSTSUB0}$	I	Test sub input terminal 0 (L:test H: normal operation)
37	FCONT	O	VCO Frequency control output terminal
38,39	$\overline{TSTSUB1,TSTSUB2}$	I	Test sub input terminal 1,2 (L:test H: normal operation)
40	PDO	O	Phase detect signal output terminal
41	VDDA	-	Power supply for analog circuit
42	PLON	I	Clock selection input terminal (L:external clock H:VCO clock)
43	AMPI	I	amplifier input terminal for LPF
44	AMPO	O	amplifier output terminal for LPF
45	CKI	I	External clock input terminal
46	VSSA	-	Ground terminal for analog circuit
47	CKO	O	DIR Clock output terminal
48	LOCK	O	VCO Lock output terminal
49	$\overline{VSS}$	-	Ground terminal for digital circuit
50	$\overline{WR}$	O	External SRAM writing signal output terminal
51	$\overline{OE}$	O	External SRAM output enable signal output terminal
52	CE	O	External SRAM chip enable signal output terminal
53	VDD	-	Power supply terminal for digital circuit
54~61	IO7~0	I/O	External SRAM data I/O terminal 7~0
62	VSS	-	Ground terminal for digital circuit
63~70	AD0~7	O	External SRAM address output terminal 0~7
71	VDD	-	Power supply terminal for digital circuit
72~80	AD8~16	O	External SRAM address output terminal 8~16
81	VSS	-	Ground terminal for digital circuit
82~89	PO0~7	O	General purpose output terminal 0~7
90	VDDDL	-	Power supply terminal for DLL
91	LPFO	O	LPF output terminal for DLL
92,93	DLON,DLCKS	I	Refer to the undermentioned table
94	SCKO	-	Non connect
95	VSSDL	-	Ground terminal for DLL
96	SCKI	I	External system clock input terminal
97	VSSX	-	Ground termonal for oscillation circuit
98,99	XO,XI	I/O	Oscillation I/O terminal
100	VDDX	-	Power supply terminal for oscillation circuit

DLCKS terminal	DLONterminal	DLL clock setting
L	L	SCKI input (DLL circuit OFF)
L	H	Four times XI clock
H	L	Three times XI clock
H	H	Six times XI clock

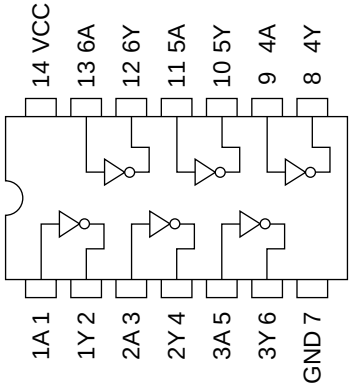
■ TC7SET32FU (IC683) : Z-Input or gate

1. Pin layout / Block diagram



■ TC74HCU04AF (IC621) : Inverter

1. Pin layout

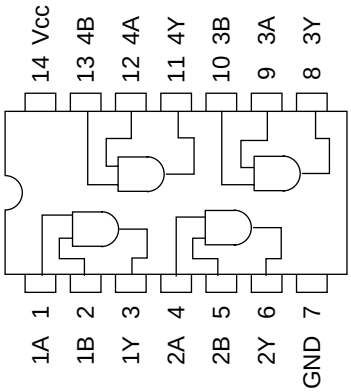


2. Truth value

A	Y
L	H
H	L

■ TC74HCU08AF (IC612) : Inverter

1. Pin layout / Block diagram

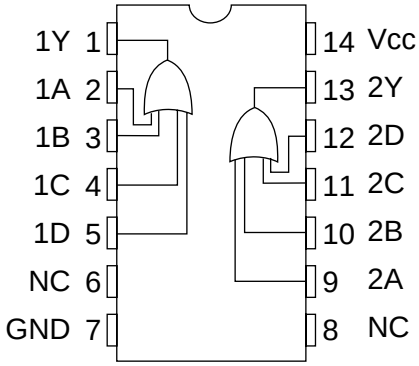


2.The truth value table

A	B	Y
L	L	L
L	H	L
H	L	L
H	H	H

■ TC74HC4072AF (IC611) : 4-Input gate

1. Pin layout & block diagram

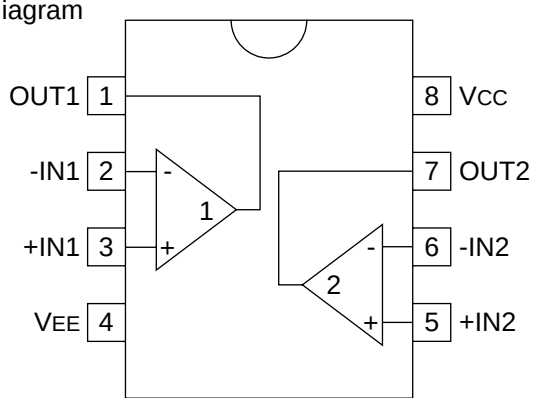


2. Truth table

A	B	C	D	Y
H	X	X	X	H
X	H	X	X	H
X	X	H	X	H
X	X	X	H	H
L	L	L	L	L

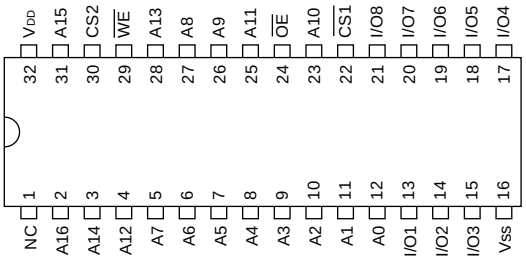
■ BA15218F (IC303, 602, 603, 651, 652, 661, 671, 672) : Ope. amp.

1. Pin layout / Block diagram

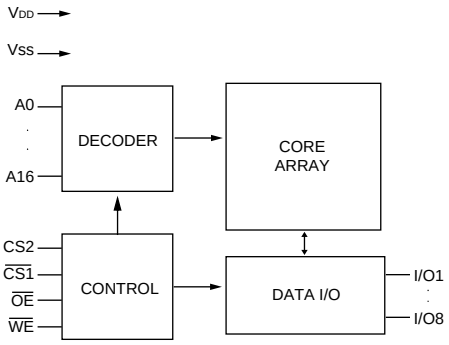


■W24L010AJ-12 (IC641) : SRAM

1. Pin layout



2. Block diaglam

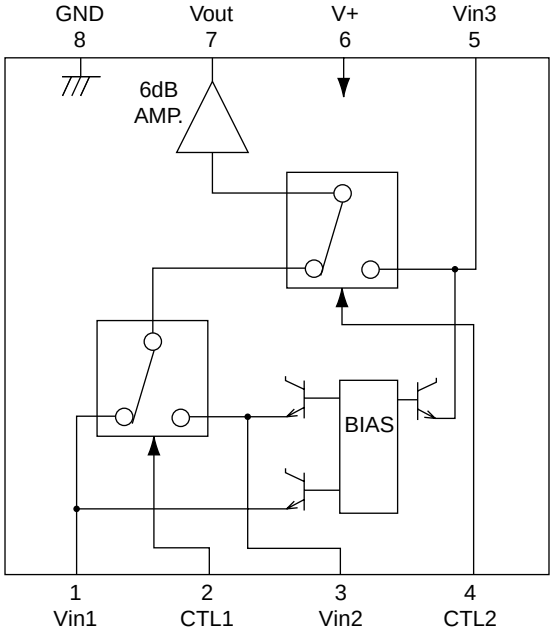


3. Pin function

Pin No.	Symbol	Function	Pin No.	Symbol	Function
1	NC	No Connection	17	I/O4	Data Input/Output
2	A16	Address Input	18	I/O5	Data Input/Output
3	A14	Address Input	19	I/O6	Data Input/Output
4	A12	Address Input	20	I/O7	Data Input/Output
5	A7	Address Input	21	I/O8	Data Input/Output
6	A6	Address Input	22	$\overline{CS1}$	Chip Select Inputs
7	A5	Address Input	23	A10	Address Input
8	A4	Address Input	24	$\overline{OE}$	Output Enable Input
9	A3	Address Input	25	A11	Address Input
10	A2	Address Input	26	A9	Address Input
11	A1	Address Input	27	A8	Address Input
12	A0	Address Input	28	A13	Address Input
13	I/O1	Data Input/Output	29	$\overline{WE}$	Write Enable Input
14	I/O2	Data Input/Output	30	CS2	Chip Select Inputs
15	I/O3	Data Input/Output	31	A15	Address Input
16	Vss	Ground	32	VDD	Power Supply

■ NJM2246M (IC402, 403, 404) : Video switch

1. Pin layout / Block diaglam



Control input - output signal

CTL 1	CTL 2	Output
L	L	VIN 1
H	L	VIN 2
L/H	H	VIN 3

< MEMO >

RX-DV3SL

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