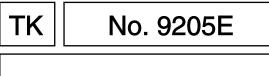
HITACHI

SERVICE MANUAL



DV-P725U

parts updated 6/12/03

POWER / STANDAY	



SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

DVD PLAYER

April

2002

Digital Media Division, Tokai

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CHAPTER 1

GENERAL INFORMATION

SPECIFICATIONS

Product type :	DVD Player
Discs :	DVD video
	Audio CD
	Video CD
Output signal format :	NTSC color
Frequency response DVD (linear sound) :	20 Hz to 22 kHz (sample rate: 48 kHz) 20 Hz to 44 kHz (sample rate: 96 kHz) 20 Hz to 20 kHz
CD :	20 Hz to 20 kHz
Signal-to-noise ratio (S/N ratio) CD :) 110 dB (EIAJ)
Dynamic range DVD (linear sound) : CD :	95 dB 94 dB (EIAJ)
Total distortion factor CD :	0.005% (EIAJ)
Wow and flutter :	Below the measurement limitation (+/-0.001% W PEAK) (EIAJ)
Connections S-Video output : Video output : Coaxial digital audio output : Analog audio output : Component video output : Optical digital audio output :	Mini DIN 4-pin jack (75 ohm) One RCA connector, 1 Vpp (75 ohm) One pin jack, 500mVpp (75 ohm) Two RCA connectors (one left channel, one right channel) 2 Vrms (47 k ohm) One pin jack (Y), 1 Vpp (75 ohm) Two pin jacks (C _B /P _B)/(C _R /P _R), 700mVpp (75 ohm) Optical connector
Power source :	120 V AC +/- 10%, 60 Hz +/- 0.5%
Power consumption :	17 W (standby: 2.2W)
Operating temperature :	5°C to 40°C
Dimensions :	W 17-1/8" (435mm)
	H 2-15/16" (75mm)
	D 8-1/2" (216mm)
Weight :	4.63 lbs (2.2kg)

• Designs and specifications are subject to change without notice.

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"DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems Inc.

COMPARISON OF MODELS

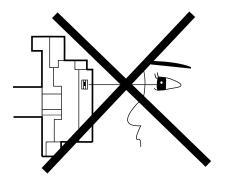
 $\leftarrow: \text{Same as on left}$

	DV-P725U	DV-P315U/P313U
Appearance	27.7200	
Dimensional	435(W) x 75(H) x 216(D) mm	430(W) x 79(H) x 240(D) mm
Weight	2.1kg	4.2kg
Tray Panel	Silver	Black
Color Front / Button	Dark Silver/Silver	Black/Black
Hot Stamp	0	
Ultra Vision Badge	0	
General	0	
Drive Speed	1x	
	2	← 1
	0/0//0	•
DVD/VCD/SVCD/CD-DA (Video Format)		0/0/0/0
CD-R/CD-RW/DVD-R (VR Format)	0/0/0	/ /
DVD-RAM		←
MP3	0	
OSD languages	3 (English, French, Spanish)	6 (English, French, Spanish, Italian, German, Dutch)
Jog Shuttle on Front	Only switch Shuttle	
Headphone Jack / Volume	0 / 0	/
Video		
PAL Disc NTSC Out		←
Video Out Mode NTSC/PAL/PAL60	O / /	←
S-Video / Component / Composite	0/0/0	←
Video D/A Converter	10bit	←
Black Level Select	0	←
Picture Control		←
Progressive Out	0	
Audio		
Audio D/A Converter	192kHz / 24bit	96kHz / 24bit
Digital Audio Out Optical / Coaxial	0 / 0	←
Dolby Digital 5.1 ch Decode		←
DTS Digital Out	0	←
Virtual Surround	0	←
Dynamic Range Compression (Dolby Digital)	0	<i>←</i>
DVD Audio		←
Power on sound		←
Trick Play		•
Search Speed (DVD: 2, 8 ,30 ,60 / VCD: 2, 8, 30 / CD: 16)	2 to 60 (FORWARD/REWIND)	2 to 128 (FORWARD/REWIND)
Slow Speed	1/16, 1/8, 1/2 (FORWARD only)	1/8, 1/4, 1/2 (FORWARD only)
IP Search (Smooth 2x Play)	0	←
2x Play with Audio		←
Step Forward / Reverse	O /	←
Still Picture Select (Frame/Field)	Auto Only	0
· /	,	

Features		
Disc Navigation		O (DV-P315U) (DV-P313U)
DVD Zoom x2 / x4 / x16	0/0/	←
Program and Random Play of DVD / VCD		0/0
A-B Repeat	0	←
Repeat	0	←
Last Play	0	←
Closed Caption for NTSC DVD	0	←
Front Panel Display Dimmer	0	←
Screen Saver	0	←
Auto Power Off	0	←
Remote Controller		
Jog Shuttle on Remote		←
TV Control	0	
Accessory		
Remote Controller	0	←
Battery	0	←
AV Cable	0	←
S Cable		←
AC Socket		←
Warranty Card	0	←

LASER BEAM SAFETY PRECAUTIONS

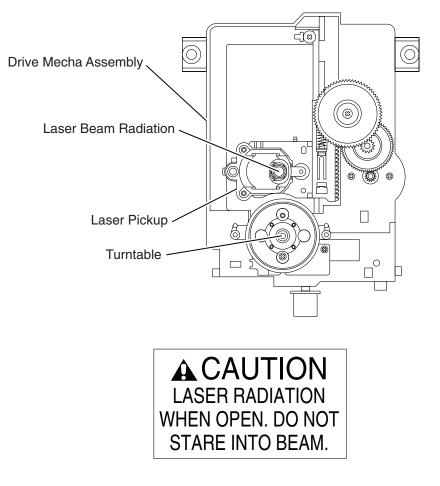
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a A on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

- A. Parts identified by the ▲ symbol are critical for safety. Replace only with part number specified.
- **B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C. Use specified internal wiring. Note especially:
 - 1)Wires covered with PVC tubing
 - 2)Double insulated wires
 - 3)High voltage leads
- **D.** Use specified insulating materials for hazardous live parts. Note especially:
 - 1)Insulation tape
 - 2)PVC tubing

3)Spacers

- 4)Insulators for transistors
- E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- **F.** Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
- **G.** Check that replaced wires do not contact sharp edges or pointed parts.
- H. When a power cord has been replaced, check that5 6 kg of force in any direction will not loosen it.

- I. Also check areas surrounding repaired locations.
- J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
- K. Crimp type wire connector

The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.

Replacement procedure

1)Remove the old connector by cutting the wires at a point close to the connector.

Important: Do not re-use a connector. (Discard it.)

- 2)Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
- 3)Align the lengths of the wires to be connected. Insert the wires fully into the connector.
- 4)Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.
- L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1 : Ratings for selected area

AC Line Voltage	Clearance Distance (d) (d')	
120 V	\geq 3.2mm (0.126 inches)	

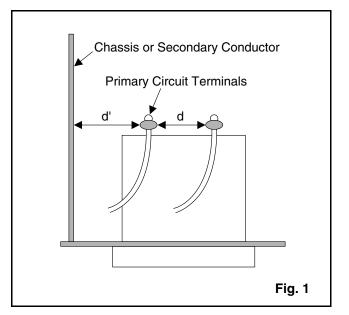
Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON) :

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.



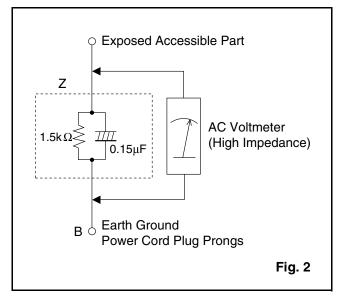


Table 2: Leakage current ratings for selected areas

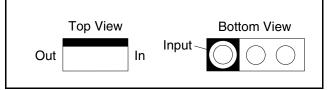
]	AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
	120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

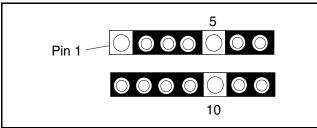
STANDARD NOTES FOR SERVICING

Circuit Board Indications

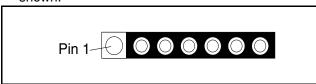
a. The output pin of the 3 pin Regulator ICs is indicated as shown.



b. For other ICs, pin 1 and every fifth pin are indicated as shown.

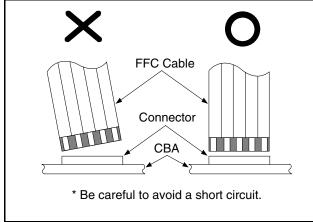


c. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

- 1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
- 2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.

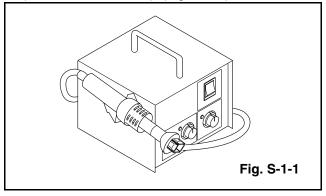


How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:.

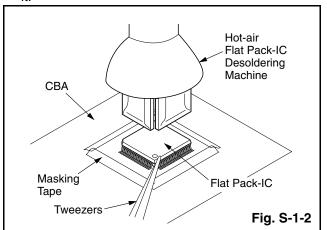
(1) Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)



- (2) Remove the flat pack-IC with tweezers while applying the hot air.
- (3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (1) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

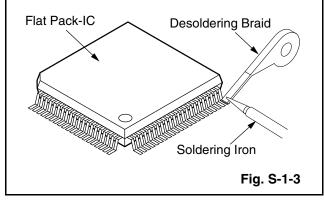
Caution:

- Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)
- 2. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

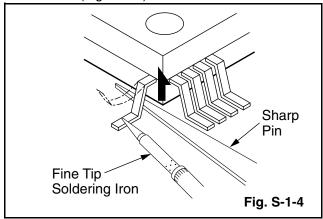


With Soldering Iron:

(1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)



(2) Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)



- (3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (4) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

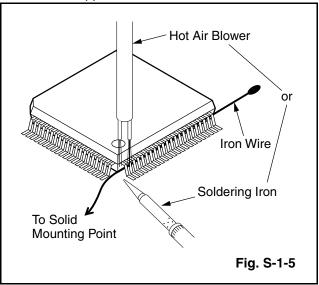
With Iron Wire:

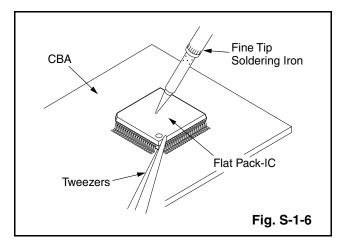
- (1) Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
- (2) Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
- (3) While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5

- (4) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (5) Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note:

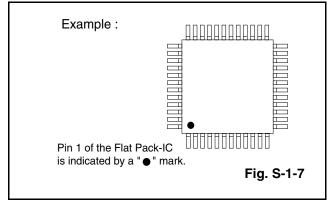
When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

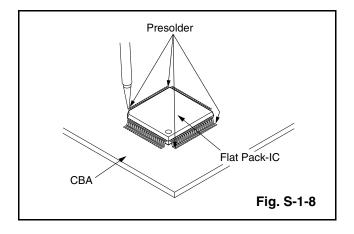




2. Installation

- (1) Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
- (2) The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
- (3) Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.





Instructions for Handling Semi-conductors

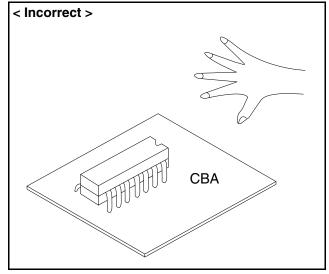
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

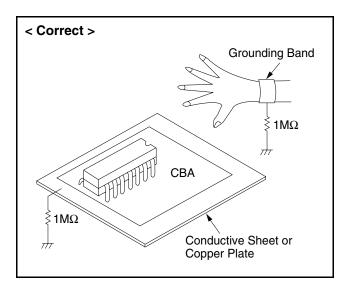
1. Ground for Human Body

Be sure to wear a grounding band $(1M\Omega)$ that is properly grounded to remove any static electricity that may be charged on the body.

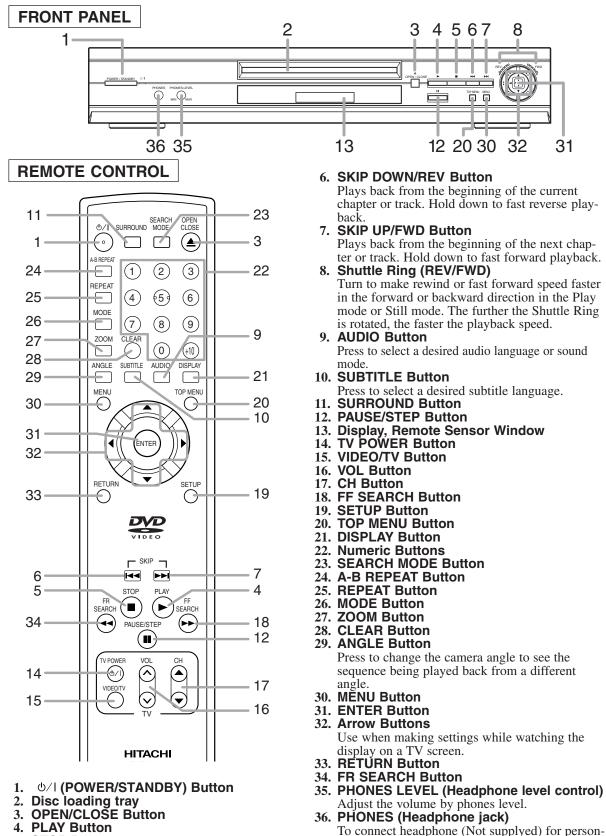
2. Ground for Workbench

(4) Be sure to place a conductive sheet or copper plate with proper grounding $(1M\Omega)$ on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.





OPERATING CONTROLS AND FUNCTIONS



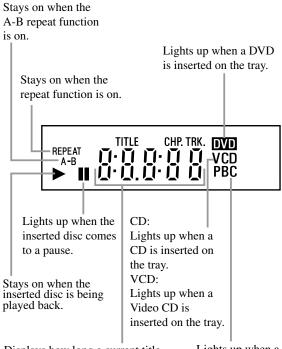
al listening.

4. PLAY Button

1-6-1

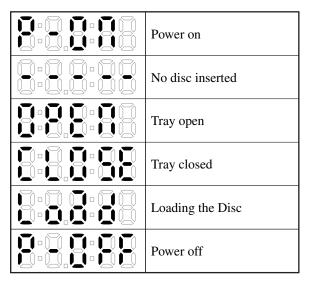
5. STOP Button

DISPLAY



Displays how long a current title or track has been played back. When a chapter or track has switched, the number of a new title, chapter or track is displayed. Lights up when a playback control is activated.

DISPLAYS DURING OPERATION

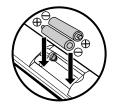


LOADING THE BATTERIES

1. Open the battery compartment cover.



2. Insert two AA batteries, with each one oriented correctly.



3. Close the cover.

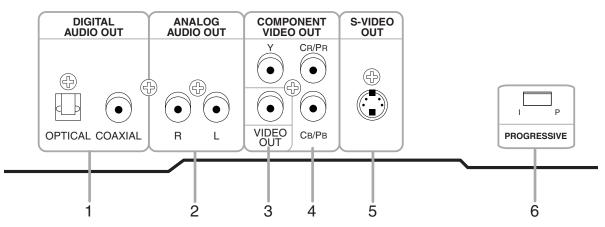


Notes

- Do not mix alkaline and manganese batteries.
- Do not mix old and new batteries.

DESCRIPTION-REAR PANEL

Ð



1. DIGITAL AUDIO OUT JACKS:

Use either an optical or coaxial digital cable to connect to a compatible Dolby Digital receiber. Use to connect to a Dolby Digital decoder or DTS decoder.

2. ANALOG AUDIO OUT JACKS

Connect to the Audio input jacks of A/V-compatible TV or wide screen TV, Stereo system.

3. VIDEO OUT JACK

Use a video cable to connect one of the jack to Video input on your A/V-compatible TV or wide screen TV, Stereo system.

4. COMPONENT VIDEO OUT JACKS

Use these jacks if you have a TV with Component Video in jacks. These jacks provide C_B/P_B , C_B/P_B and Y video. Along with S-Video, Component Video provides the best picture quality.

5. S-VIDEO OUT JACK

Use the S-Video cable to connect this jack to the S-Video jack on your A/V-compatible TV or wide screen TV for a higher quality picture.

6. PROGRESSIVE switch

The DCDi (Directional Correlational De-interlacing) system of this DVD player produces smooth and natural video images, even if really dynamic, by eliminating the jagged edges. "DCDi" is a registered trademark of Faroudja, a division of Sage Inc.

Manufactured under license from Dolby Laboratories. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories. "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

HOW TO UPDATE THE FIRMWARE VERSION

- 1. Turn the power on and remove the disc on the tray.
- 2. To put the DVD player into version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order. The tray will open automatically.

Fig. a appears on the screen and Fig. b appears on the VFD.

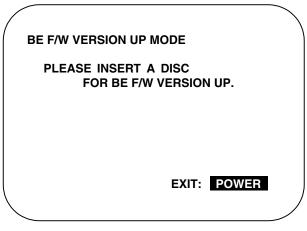


Fig. a Version Up Mode Screen

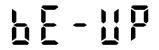


Fig. b VFD in Version Up Mode

The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.

- 3. Load the disc for version up. (For closing the tray, only the "OPEN/CLOSE" button is available.)
- 4. The DVD player enters the F/W version up mode automatically. Fig. c appears on the screen and Fig. d appears on the VFD.

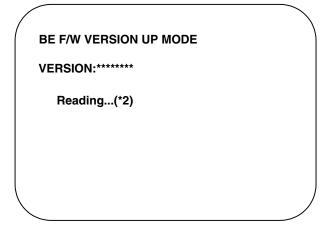


Fig. c Programming Mode Screen

[22]

Fig. d VFD in Programming Mode (Example)

The appearance shown in (*2) of Fig. c is described as follows:

No.	Appearance	State	
1	Reading	Sending files into the memory	
2	Erasing	Erasing previous version data	
3	Programming	Writing new version data	

 After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*3) of Fig. e appears on the VFD. (Fig. f)

,

Fig. e Completed Program Mode Screen

Fig. f VFD upon Finishing the Programing Mode (Example)

At this time, no buttons are available.

- 6. For tray opening, plug the AC cord into the AC outlet.
- 7. Turn the power on by pressing the power button and the tray will close.

HOW TO VERIFY THE FIRMWARE VERSION

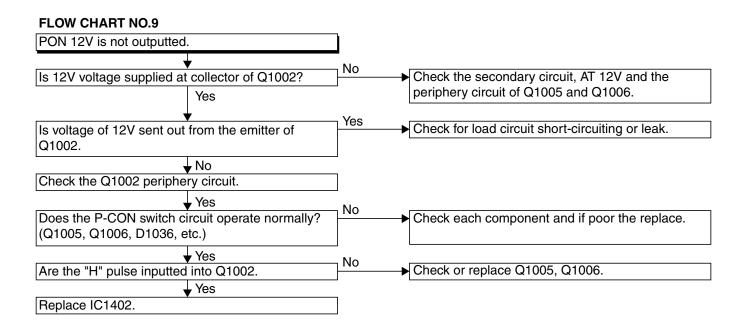
- 1. After making sure that no disc is in unit, turn the power on.
- 2. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order. The B/E version appears on the VFD, and the F/E and B/E versions appear on TV screen.

TROUBLESHOOTING

FLOW CHART NO.1		
The power cannot be turned on.(1)		
	- 1 No	
Is the fuse normal?		Replace the fuse.
Yes		No
		See FLOW CHART No.3 <the blows="" fuse="" out.=""></the>
<u>↓</u>	-	
Is normal state restored when once unplugged	No	Check for lead or shor-circuiting of primary
power cord is plugged again after several seconds.		circuit component?
¥Yes	ר No	(Q1001, Q1003, D1001, D1002, D1004, D1005, D1011, T1001, C1002, C1005, etc.)
Is the EV 5V line voltage normal?	<u> </u>	▶ D1011, T1001, C1003, C1005, etc.)
↓ Yes	ר No	
Is the voltage of EV 12V, EV -30V and filament voltage normal?		Check each rectifying circuit of secondary circuit.
FLOW CHART NO.2	٦.	
The power cannot be turned on.(2)		
	1 Yes	
Does the change from STANDBY LED indicate turn-off?		
↓ Yes	No	
Is the supply voltage of 3.3V fed to Q2021?] No	→ Check the EV 3.3V line.
Yes	- ₁ No	
Is the supply voltage of 5V fed to pin(3) of IC2001? ↓ Yes]	► Check the IC2001.
Is the "H" signal inputted at base of Q2021,	No	→ Check the SW2008 and POWER button line.
when the POWER button activated on the DVD?		
↓ Yes		
Is the "H" signal inputted at base of Q2021,	No	Check the line between the remote control
when the POWER button activated on the remote		receiver and the pin(125) of IC601.
control unit?		
↓ Yes	-	
Replace IC601.]	
The STANDBY LED indicate is flashing after 0.5 sec.		
	perating	at LED turn-off of 0.5 sec. interval.)
Are the "P-CON-H" pulse outputted from the	No	→ Replace IC601.
Pin(207) of IC601?		
Yes	₁ No	
Is the P-CON switch circuit operated normally?		Check each component and if poor the replace.
(Q1002, Q1005, Q1006, IC1002, D1036, D1046)		
FLOW CHART NO.3		
The fuse blows out.		
₩		
Is there leaking or short-circuited primary]	Check for short-circuiting of rectifying diode and
component?		circuit in each rectifying circuit of secondary side.

FLOW CHART NO.4		
When the output voltage fluctuates.]	
Does the secondary side photo coupler circuit	No	Check the circuit and replace the parts.
operate normally?		(IC1001, IC1006, D1048, D1015, etc.)
		Check the size with and vanishes the nexts
Does the primary side photo coupler circuit operate normally?	No	Check the circuit and replace the parts. (IC1001, IC1012, D1024, etc.)
↓ Yes		
Replace IC1001.	1	
FLOW CHART NO.5	7	
When buzz is heard from the vicinity of power circuit.		
¥		
Check for short-circuiting of rectifying diode and circ		
(D1003, D1030, D1008, D1009, D1013, D1016, Q1	002, 101002	, Q1007, Q1010, Q1011, Q1014, Q1004, etc.)
FLOW CHART NO.6		
The fluorescent display tube does not light.]	
·	d 	
Is the supply voltage of 5V fed to pin(6) and pin(24)	No	Check the EV 5V line.
of IC2001?		
▼ Yes	- No	
Is the supply voltage of -24V fed to pin(15) of		Check the -FL -24V line.
IC2001?		
Yes	, No	
Is there 500kHz oscillation at pin(26) of IC2001?		Check R2001, IC2001 and their periphery.
Vee		
Yes	No	
Check the signal lines of FIP DA, FIP CK, FIP CS of IC2001 and IC601?		Check or replace IC2001 and IC601.
↓ Yes		
Are the filament voltage applied between (1), (2)	No	Check the power circuit, D1017, Q2023, Q2024
and (38), (39) of the fluorescent display tube?		and Q2025.
Also negative voltage applied between these pins		
and GND?		
↓ Yes	¬ No _	
Check the fluorescent display tube and its periphery?		Check that the fluorescent display tube is free from
		damages such as crack.
FLOW CHART NO.7	7	
The key operation is disabled.		
¥	¬ No	
Is key switch contact and installation state normal?	J 	Replace key switch.
\bigvee Yes	7	
Is the control voltage normally into the pins(3), (4), (7) (8) (0) (10) (11) (12) (13) (14) of $IC20012$		
(7), (8), (9), (10), (11), (12), (13), (14) of IC2001?		

No operation is possible from the infrared remote co	ontrol.	
Operation is possible from the DVD, but no operation is possible from the infrared remote control?	No	Replace the remoter control receiver or replace the remoter control transmitter is necessary.
	No	Check EV 5V line.
	No	Replace the remote control receiver.
	Yes	 Check the line between the remote control receiver and the pin(125) of IC601. Replace IC601.



🔶 No

✓ Yes

✓ Yes

Does the P-CON switch circuit operate normally?

Are the "H" pulse inputted into base of Q1011?

Check the Q1011 periphery circuit.

(Q1005, Q1006, etc.)

Replace Q1011.

PON 5V is not outputted. (PON 12V is possible.)		
\	— — No	
Is 5V voltage supplied at collector of Q1004?		Check the AT 5V line.
✓ Yes		
Is voltage of 5V sent out from the collector of	Yes	Check for load circuit short-circuiting or leak.
Q1004?		
▼ No	_	
Check the Q1004 periphery circuit.		
Yes	No	
Is the "H" pulse inputted into the base of Q1004?	No	→ Check or replace Q1004, D1046.
▼ Yes		
Replace Q1004.		
FLOW CHART NO.11	-	
EV -19V is not outputted.		
,↓	_ No	
Is -19V voltage supplied at the cathode of D1003?		→ Check the AT -24V line.
▼ Yes	- Yes	
Is voltage of -24V sent out from the anode of D1003?		→ Check for load circuit short-circuiting or leak.
▼ No		
Check the D1003 periphery circuit.		
v Yes		
Replace D1003.		
FLOW CHART NO.12		
PON 3.3V(1), (2) is not outputted.		
	N	
Is 4V voltage supplied at emitter of Q1011?	No	Check the secondary circuit, AT 4V line.
▼ Yes		
Is voltage of 3.3V sent out from collector of Q1011	- Yes	Check for load circuit short-circuiting or leak.

No

No

► Check each component and if poor the replace.

► Check or replace Q1005, Q1006, Q1049.

FLOW CHART NO.13		
PON 1.8V is not outputted. (PC 3.3V(1), (2) is possi	ble)	
· · · · · · · · · · · · · · · · · · ·	,	
Is 5V voltage supplied at pin(1) of IC1002?	<u>η Νο</u>	Check the secondary circuit, AT 5V line.
v Yes]	
Is voltage of 1.8V sent out from the pin(2) of	ן Yes	Check for load circuit short-circuiting of leak.
]	
♦ No	1 Yes	
Check the IC1002 periphery circuit.		Replace IC1002.
FLOW CHART NO.14		
The disc tray cannot be opened and closed.]	
(For remote control is possible.)		
<u> </u>	4	
Is 0V voltage supplied at pin(25) of CN1001 when	ן No	Check the SW2014 and OPEN/CLOSE KEY line.
the OPEN/CLOSE button is activated on the DVD?		Check the Sw2014 and OF EN/CLOSE RET line.
The OF EN/CEOSE building activated on the DVD?		
∀ Yes		
Check waveform at pin 3 and pin 4 on IC2001 or re	olace it.	
FLOW CHART NO.15		
The disc tray cannot be opened and closed.		
··		
Is the signal from the pins(200, 201) of IC601	ן No	Check the TFWD/TREV signal line between IC401
inputted into the pins(1, 2) of IC401?		and IC601.
Yes		
		Replace IC401.
<u> </u>	₁ No	<u></u>
Is loading motor drive voltage output from the		→ Is 9V voltage applied to the pins (7, 8, 20) of
pins(9, 10) of IC401?		IC401?
Yes	-	Vo No
		Check PC 8V line.
Is the loading motor drive voltage applied to the	ן No	→ Check the line between the IC401 and the loading
		motor.
terminal of loading motor?		11001.
▼ Yes		
Check for mechanism and gear engagement and bi	eakage.	
FLOW CHART NO.16		
	1	
The [No Disc] indication. (In case of focus error)		
	_	Replace IC101.
Is FE signal outputted to the pin(22) of IC101]	 ▲ Yes
when the disc is set?	No	→ Is there input signal on the pins(57~60) of IC101.
¥ Yes		
· · · · · · · · · · · · · · · · · · ·	₁ No	
Is FE signal inputted into the pin(117) of IC201?		Check the connection of optical pickup cable.
¥ Yes		If it is normal, replace the optical pickup.

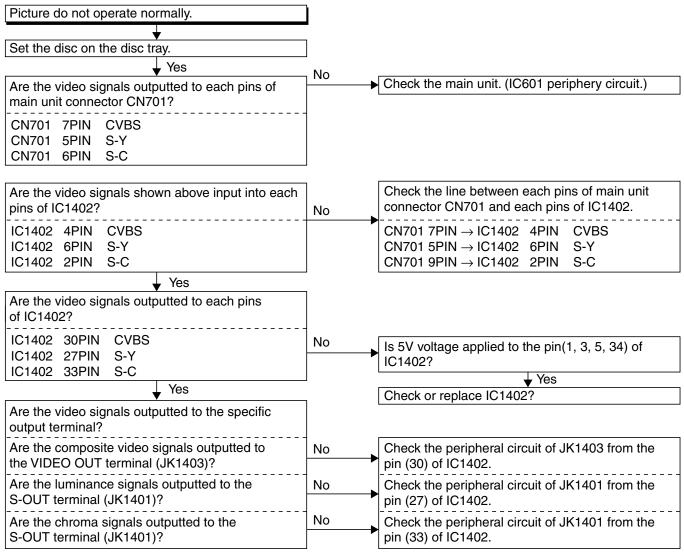
Check the line between the IC101 and IC201.

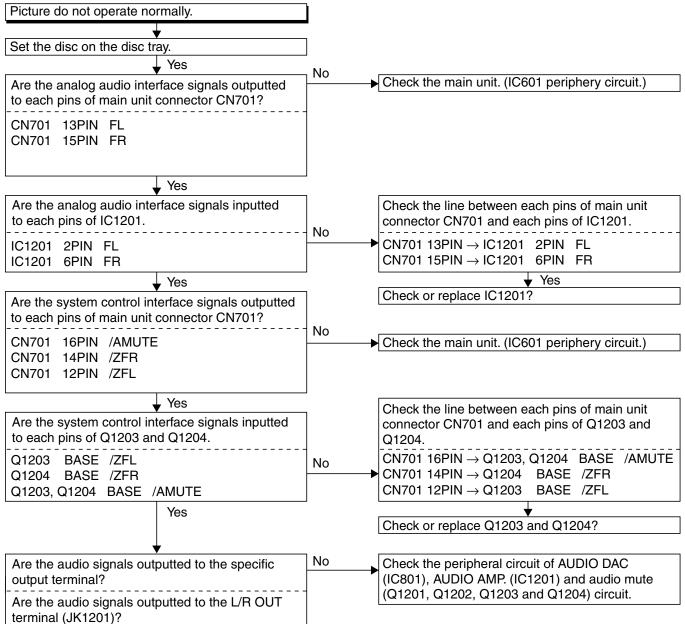
Check or replace IC201?

Yes

The [No Disc] indication. (In case focus servo does not function.) No Is the focus control signal outputted to the pin(115) Check the periphery circuit of pins(57, 78, 88, 99, 109, 116, 125, 143, 156, 162) of IC201 and power of IC201? source. If it is normal, replace IC201, Yes No Is the focus control signal from the pin(115) of Check the focus control signal (DA0) line between IC201 inputted into the pin(6) of IC401. the IC201 and IC401. Yes Check EV 9V line. 🕈 No No Is 8V voltage applied to the pins(7, 8, 20) of IC401. Is the focus control drive voltage outputted from the pins(11, 12) of IC401. Yes Replace IC401. Yes Is the focus control drive voltage applied to the Check the line between the IC401 and the focus No actuator. terminal of focus actuator? , Yes Check the connection of optical pickup cable. If it is normal, replace the optical pickup. **FLOW CHART NO.18** The [No Disc] indication. (When the laser beam does not light.) Is the Q101 and Q102(LD POWER ON) drive Check the line between the pins(2,4) of IC101 and No signal(LDCOI and LDCOZ) outputted to the the base of Q101 through Q102. pins(2,4) of IC101. (Checking of symptom.) 🖌 Yes No Check the A 5V line. Is 5V voltage applied to the emitter of Q101 and Q102. Yes Is the 5V voltage supplied to the pin(12)(DVD) and Check the line between the Q101, Q102 and No pin(20)(CD) of pickup terminal? pickup terminal. ↓ Yes Check the connection of optical pickup cable If it is normal, replace the optical pickup. **FLOW CHART NO.19** Both picture and sound do not operate normally. Set the disc on the disc tray. Yes No Is it possible to hold normally the disc with the Check the loading switch. check? Yes No Is the level of RF signal which is outputted from Check for contamination of objective lens of pin(35) of IC101, normal? optical pickup. Yes No Replace the main PWB unit. Replace the optical pickup unit. Yes

Check the video amplifier unit and the audio amplifier unit. (IC1402, IC1201)



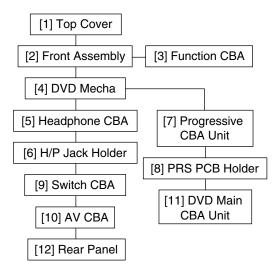


CHAPTER 2

CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/		REMOVAL		
LOC. No.	PART	Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Cover	1	1 5(S-1)	
[2]	Front Assembly	*2(L-1), Tray Panel, 2 *2(L-2), *CN2002, *5(L-3),		1-1 1-2 1-3 1-4 1-5 1-6
[3]	Function CBA	3	8(S-2), Jog Button, Cross Button	-
[4]	DVD Mecha	4,5 3(S-3), *CN101, *CN401		2 2-1 2-2 2-3 3
[5]	Head- phone CBA	4 (S-4),*4(L-4), *CN2701		-
[6]	H/P Jack Holder	4	(S-5)	-

ID/		REMOVAL				
LOC. No.	PART	Fig. No.				
[7]	Progres- sive CBA Unit	4	(S-6), *3(L-5), *CN1801, *CN1802	-		
[8]	PRS PCB Holder	4	2(S-7)	-		
[9]	Switch CBA	6	(S-8), *2(L-6)	-		
[10]	AV CBA	6	5(S-9), 3(S-10), *CN1001, *CN1601			
[11]	DVD Main CBA Unit	6	3(S-11)			
[12]	Rear Panel	7	3(S-12)			
↓ (1)	↓ (2)	↓ (3)	(4)	↓ (5)		

- (1): Identification (location) No. of parts in the figures
- (2): Name of the part
- (3): Figure Number for reference
- (4): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
 - P=Spring, L=Locking Tab, S=Screw,
 - CN=Connector
 - *=Unhook, Unlock, Release, Unplug, or Desolder e.g. 2(S-2) = two Screws (S-2),
 - 2(L-2) = two Locking Tabs (L-2)
- (5): Refer to "Reference Notes."

Reference Notes

CAUTION 1: Locking Tabs (L-1), (L-2) and (L-3) are fragile. Be careful not to break them.

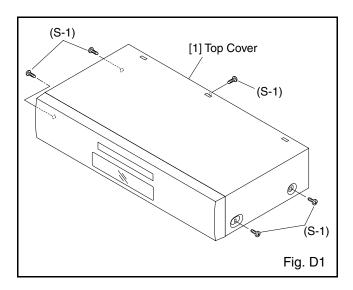
- 1-1. Connect the wall plug to an AC outlet and press the OPEN/CLOSE button to open the Tray.
- 1-2. Remove the Tray Panel by releasing two Locking Tabs (L-1).
- 1-3. Press the OPEN/CLOSE button again to close the Tray.
- 1-4. Press the POWER/STANDBY button to turn the power off and unplug an AC cord.
- 1-5. Disconnect connector CN2002.
- 1-7. Release two Locking Tabs (L-2). Then, release five Locking Tabs (L-3) (to do this, first release two Locking Tabs (A) at the side, and then three Locking Tabs (B) at the bottom.)

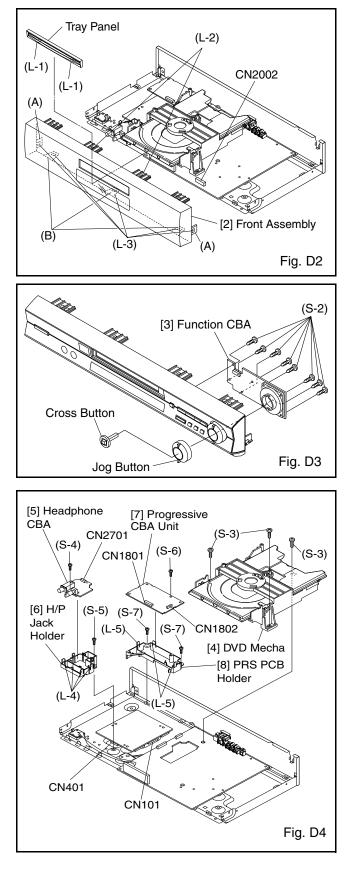
CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc, during unpacking or repair work.

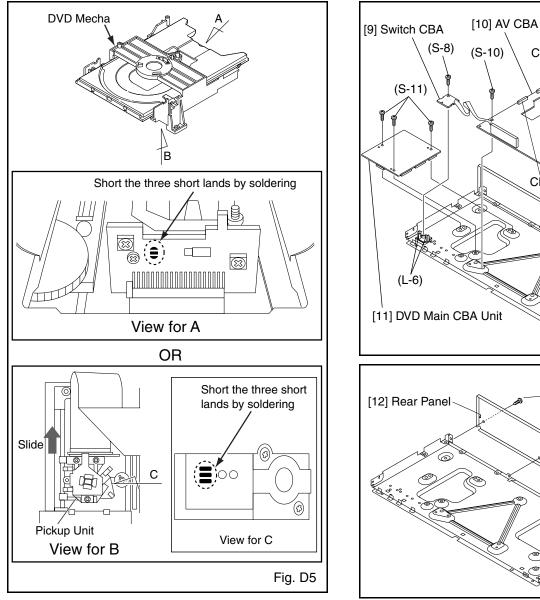
To avoid damage of pickup follow next procedures.

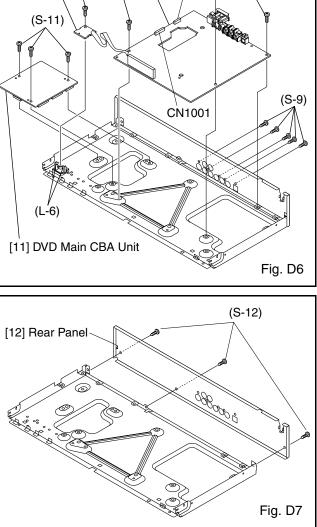
- 2-1. Slide out the pickup unit as shown in Fig. 5.
- 2-2. Short the three short lands of FPC cable with solder before removing the FFC cable (CN101) from it. If you disconnect the FFC cable (CN101), the laser diode of pickup will be destroyed. (Fig. 5)
- 2-3. Disconnect Connector (CN401). Remove three Screws (S-3) and lift the DVD Mecha. (Fig. 4)

CAUTION 3: When reassembling, confirm the FFC cable (CN101) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. 5)







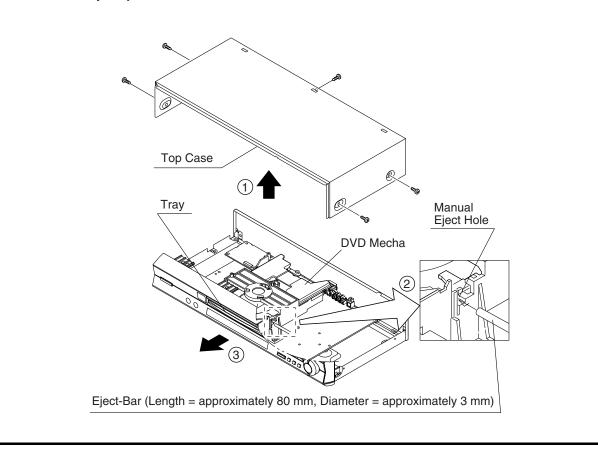


(S-10)

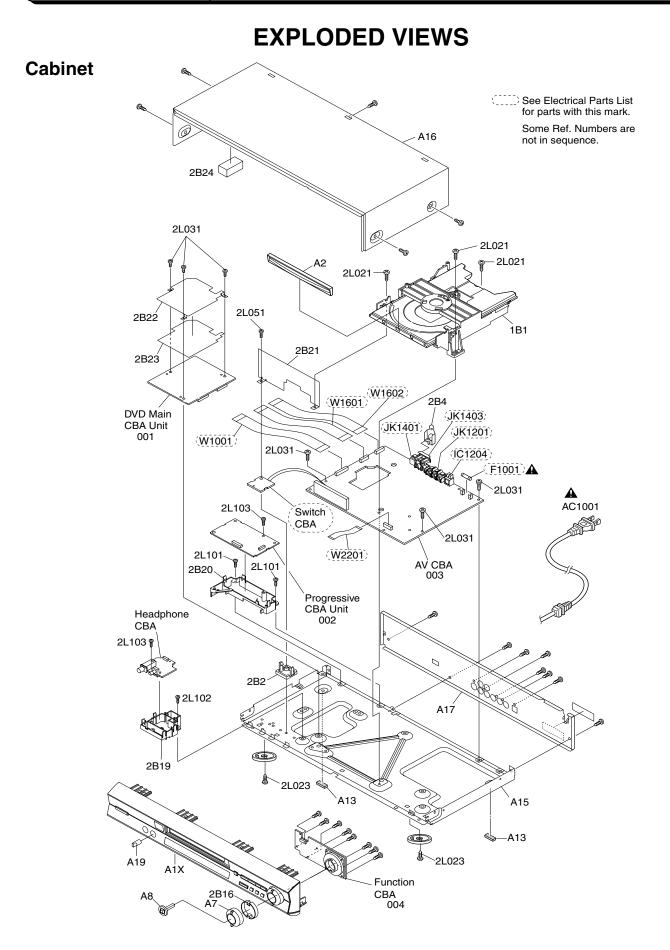
CN1601

HOW TO MANUAL EJECT

- 1. Remove the Top Case.
- 2. Insert the eject-bar (length = approximately 80 mm, diameter = approximately 3 mm) into the manual eject hole on the DVD Mecha. Then, press it until the tray is ejected.



CHAPTER 3 EXPLODED VIEWS AND PARTS LIST



REPLACEMENT PARTS LIST

Mechanical Parts List

MECHANISM SECTIONA1XTJ15841FRONT ASSEMBLYA2TJ15673TRAY ASSEMBLYA7TJ15482JOG SHUTTLE KEYA8TJ15483CROSS BUTTONA13TJ15675FOOTA15TJ15676MAIN CHASSISA16TJ15677TOP COVER SILVERA17TJ15484REAR PANEL	
A2TJ15673TRAY ASSEMBLYA7TJ15482JOG SHUTTLE KEYA8TJ15483CROSS BUTTONA13TJ15675FOOTA15TJ15676MAIN CHASSISA16TJ15677TOP COVER SILVER	
A7TJ15482JOG SHUTTLE KEYA8TJ15483CROSS BUTTONA13TJ15675FOOTA15TJ15676MAIN CHASSISA16TJ15677TOP COVER SILVER	
A8 TJ15483 CROSS BUTTON A13 TJ15675 FOOT A15 TJ15676 MAIN CHASSIS A16 TJ15677 TOP COVER SILVER	
A13 TJ15675 FOOT A15 TJ15676 MAIN CHASSIS A16 TJ15677 TOP COVER SILVER	
A15TJ15676MAIN CHASSISA16TJ15677TOP COVER SILVER	
A16 TJ15677 TOP COVER SILVER	
A17 TJ15484 REAR PANEL	
A19 TJ15485 KNOB VOLUME	
▲ AC1001 TE14761 AC CORD	
1B1 TS17001 DVD MECHA	
2B2 TJ15681 POWER PCB HOLDER	
2B4 TJ15651 EARTH PLATE	
2B16 TJ15486 JOG RING	
2B19 TJ15487 H/P JACK HOLDER 2B20 TJ15488 PRS PCB HOLDER	
2L023 TJ15683 SCREW (M3X6)	
2L031 TJ15683 SCREW (M3X6)	
2L051 TJ15682 SCREW (M3X10)	
2L101 TJ15683 SCREW (M3X6)	
2L102 TJ15683 SCREW (M3X6)	
2L103 TJ10177 SCREW (3X8)	
001 TS17171 DVD MAIN CBA UNIT	
002 TS17181 PROGRESSIVE CBA	
003 TS17191 AV CBA	
004 TS17341 FUNCTION CBA	
ACCESSORIES	
X1 TS16901 REMOTE CONTROL UNIT	
X5 TE14751 AV CORD	

Electrical Parts List

Note: Although some parts in the schematic diagrams have different names from those in the parts list, there is no problem in replacing parts.

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
	F	RESISTOR	Q1001	TC12291	TRANSISTOR 2SK3374
	•		Q1002	TC10778	TRANSISTOR KTC3199(GR)
VR2701	TA14521	ROTARY POTENTION METERS 100KOHM-B	Q1003	TC10778	TRANSISTOR KTC3199(GR)
			Q1004	TC12301	TRANSISTOR KTC3205(Y)
	SEMI-CONDUCTORS		Q1005	TC12311	TRANSISTOR KRC110M-AT
D1001	TC10752	RECTIFIER DIODE 1N4005	Q1006	TC12411	TRANSISTOR KRA110M
D1002	TC10752	RECTIFIER DIODE 1N4005	Q1007	TC12301	TRANSISTOR KTC3205(Y)
D1003	TC10791	RECTIFIER DIODE BA157	Q1008	TC10778	TRANSISTOR KTC3199(GR)
D1004	TC10752	RECTIFIER DIODE 1N4005	Q1011	TC12421	TRANSISTOR 2SA1359-Y
D1005	TC10752	RECTIFIER DIODE 1N4005	Q1014	TC10778	TRANSISTOR KTC3199(GR)
D1008	TC10877	SCHOTTKY BARRIER DIODE ERB81-004	Q1201	TC10778	TRANSISTOR KTC3199(GR)
D1009	TC10791	RECTIFIER DIODE BA157	Q1202	TC10778	TRANSISTOR KTC3199(GR)
D1011	TC10791	RECTIFIER DIODE BA157	Q1203	TC10784	TRANSISTOR KTA1266(Y)
D1012	TC10754	SWITCHING DIODE 1N4148M	Q1204	TC10784	TRANSISTOR KTA1266(Y)
D1013	TC10877	SCHOTTKY BARRIER DIODE SB140	Q1351	TC10778	TRANSISTOR KTC3199(GR)
D1015	TC12191	ZENER DIODE DZ-6.8BSBT265	Q1603	TC10778	TRANSISTOR KTC3199(GR)
D1015 D1016	TC12191 TC10791	RECTIFIER DIODE BA157	Q2021	TC10778 TC10784	TRANSISTOR KTC3199(GR)
D1010	TJ13897	ZENER DIODE MTZJT-7722B	02021		
D1017	TC10754	SWITCHING DIODE 1N4148M		TR	ANSFORMER
D1022	TC10754	SWITCHING DIODE 1N4148M	▲ T1001	TA14491	PULSE TRANS
D1024	TC10754	SWITCHING DIODE 1N4148M			
D1024 D1025	TC10754 TC10754				COILS
		SWITCHING DIODE 1N4148M	A 11001	T 115040	
D1030	TJ15128	RECTIFIER DIODE FR202	▲ L1001	TJ15243	LINE FILTER 20MH
D1036	TC12201	ZENER DIODE DZ-13BSBT265	L1007	TA14471	CHOKE COIL 22UH
D1045	TC10877	SCHOTTKY BARRIER DIODE SB140	L1009	TA14471	CHOKE COIL 22UH
D1046	TJ14689	ZENER DIODE MTZJT-775.6C	L1011	TA12554	BEAD CORE
D1047	TJ13895	ZENER DIODE MTZJT-775.6B	L1043	TA12554	BEAD CORE
D1048	TC12211	ZENER DIODE DZ-12BSBT265	L1060	TA12554	BEAD CORE
D1049	TC10754	SWITCHING DIODE 1N4148M	L1251	TA14481	INDUCTOR 0.47UH
D1050	TJ14752	ZENER DIODE MTZJT-776.2B	L2001	TA12561	INDUCTOR 100UH
D1051	TC10752	RECTIFIER DIODE 1N4005		MIS	CELLANEOUS
D1052	TC10752	RECTIFIER DIODE 1N4005	CN1001	TE14771	CONNECTOR
D2001	TC10754	SWITCHING DIODE 1N4148M	CN1601	TE14781	CONNECTOR
D2002	TC10754	SWITCHING DIODE 1N4148M	CN1602	TE14791	CONNECTOR
D2003	TC10754	SWITCHING DIODE 1N4148M	CN2002	TE14791	CONNECTOR
D2004	TC10754	SWITCHING DIODE 1N4148M	CN2201	TE14891	CONNECTOR
D2004	TJ14716	LED(RED) LT6311G-41	CN2701	TE14091	CONNECTOR
D2021	TC10754	SWITCHING DIODE 1N4148M	▲ F1001	TE13223	FUSE 1A/250V
D2201	TC10754	SWITCHING DIODE 1N4148M	FH1001	TE11084	FUSE HOLDER
D2203	TC10754	SWITCHING DIODE 1N4148M	FH1002	TE11084	FUSE HOLDER
പാാവൃ	TC10754		EL 2001	TE1/001	
D2204	TC10754	SWITCHING DIODE 1N4148M PHOTOCOUPLER LTV-817B-F	FL2001 JK1201	TE14801 TE14811	DISPLAY
▲ IC1001	TE13224		JK1201 JK1401	TE14811 TE14821	JACK JACK
▲ IC1002 IC1003	TC12231 TC12241	IC PQ018EF01SZ IC KIA431-AT	JK1401 JK1403	TE14821 TE14831	JACK JACK
IC1003 IC1006	TC12241 TC12241	IC KIA431-AT	JK1403 JK2701	TE14831 TE15001	JACK
104001	T040051		DI MAGA	T010001	
IC1201	TC12251	IC KIA4558P	RM2001	TC12331	REMOTE RECEIVER
IC1204	TC12261	TRANS.MODULE 0C-0805T-002	A SA1001	TC10891	SURGE ABSORBER PVR-10D471KB
IC1402	TC12271	IC MM1567AJ	SW2115	TE11957	TACT SWITCH
IC2001	TC12281	IC PT6315-S	SW2201	TE14901	JOG-SHUTTLE SWITCH
IC2701	TC12431	IC BH3544F-E2	SW2202	TE15011	TACT SWITCH

SYMBOL-NO	P-NO	DESCRIPTION	SYMBOL-NO	P-NO	DESCRIPTION
SW2203	TE11957	TACT SWITCH			
SW2204	TE11957	TACT SWITCH			
SW2205	TE11957	TACT SWITCH			
SW2206	TE11957	TACT SWITCH			
SW2207	TE11957	TACT SWITCH			
SW2208	TE11957	TACT SWITCH			
SW2209	TE11957	TACT SWITCH			
SW2210	TE11957	TACT SWITCH			
W1001	TE14841	CABLE (26P)			
W1601	TE14851	CABLE (18P)			
W1602	TE14971	CABLE (12P)			
W1802	TE14961	CABLE (18P)			
W2201	TE14901				
		CABLE (12P)			
W2701 WJ1003	TE14991 TE14871	CABLE (4P) WIRE			
WJ1004	TE14881	WIRE			

CHAPTER 4 SCHEMATIC AND BLOCK DIAGRAMS/CBA'S

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

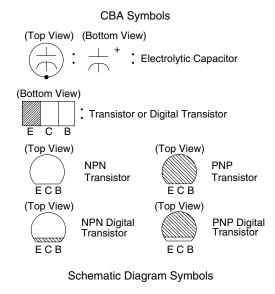
WARNING

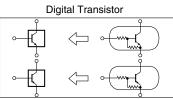
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety char-acteristics are identified in this manual and its supple-ments; electrical components having such features are identified by the mark " Λ " in the schematic diagram and the parts list. Before replacing any of these compo-nents, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 - 80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 - 80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.





Notes:

- 1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
- 2. All voltages are DC voltages unless otherwise speci-fied.

Values in schematic diagrams

The values, dielectric strength (power capacitance) and tolerances of the resistors (excluding variable resistors) and capacitors are indicated in the schematic diagrams using abbreviations.

[Resistors]

Item	Indication
Value	No indicationΩ KkΩ MMΩ
Power capacitance	No indication1/4W,1/6W All capacitances other than the above are indicated in schematic diagrams.

[Capacitors]

Item	Indication		
Value	No indicationμF PpF		
Dielectric strength	No indication50V All dielectric strengths other than 50V are indicated in schematic diagrams.		

[Coils]

Item	Indication	
Value	μμH mmH	

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE. RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse. Ce symbole reprèsente un fusible à fusion rapide.

2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.

If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

- (1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
- (2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Wire Connectors

- (1) Prefix symbol "CN" means "connector" (can disconnect and reconnect).
- (2) Prefix symbol "CL" means "wire-solder holes of the PCB" (wire is soldered directly).
- 5. Mode: SP
- 6. Voltage indications for PLAY mode on the schematics are as shown below:

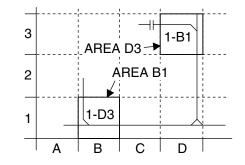
Indicates that the voltage is not consistent here.

7. How to read converged lines

1-D3 Distinction Area Line Number (1 to 3 digits)

Examples:

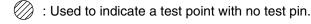
- 1. "1-D3" means that line number "1" goes to area "D3".
- 2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

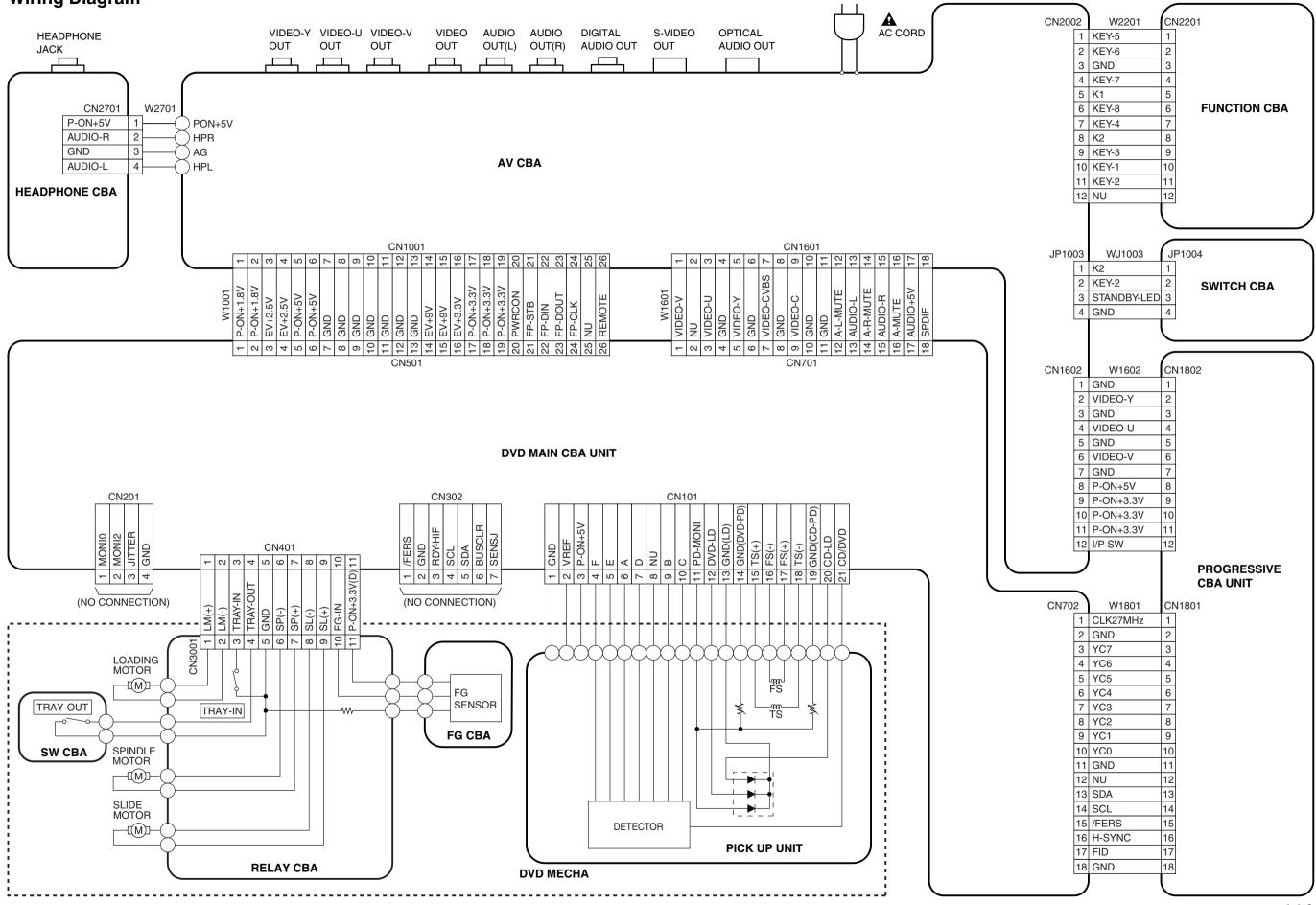


-) : Indicates a test point with a jumper wire across a hole in the PCB.
- \square : Used to indicate a test point with a component lead on foil side.



: Used to indicate a test point with a test pin.

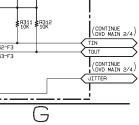
Wiring Diagram



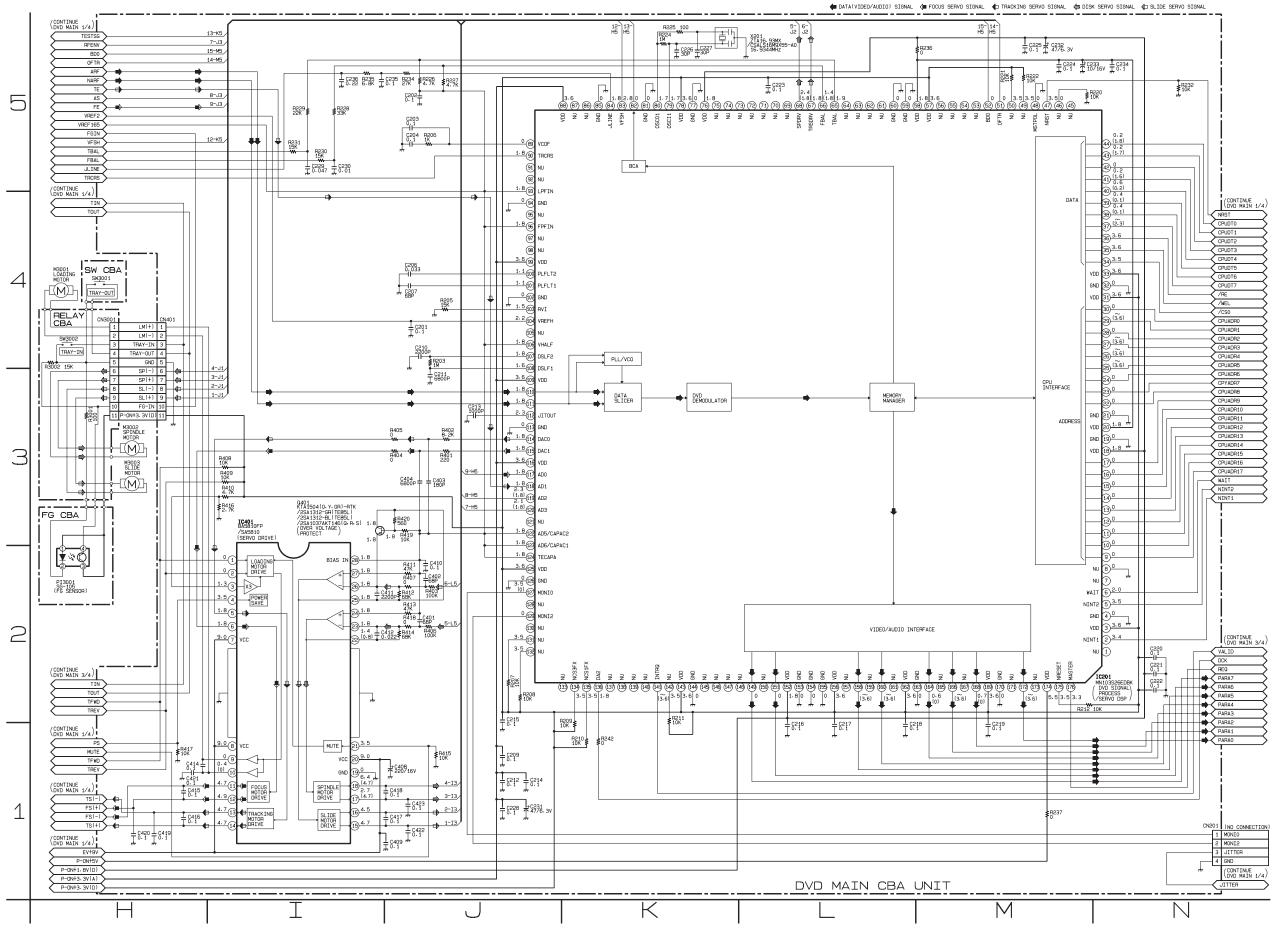
🖨 DATA(VIDEO/AUDIO) SIGNAL 🐧 FOCUS SERVO SIGNAL DVD MAIN CBA UNIT LC144 I^{0.1} Ŧ R133 ↓C137 ↓C133 ↓C133 ↓C133 ↓C133 ↓C137 1.6 2.2 (3.2)(1.4) 0 1.9 2.2 (0) (0) 0 0 2.9 3.6 0 // (38) (37) (36) (35) (34) (33) HOLD BDO DET ₹^{R240} R241 10K 10K R239 10K H313 ¥R315 51K \$510K I ≸10K 5 C130 1000P C129 0.1 # C128 C128 0.1 C240 8 1.8 1. (9)(8) 1-03 2-03 3-03 8-03 OFTR DET ģĨ L JJ101 2.2 IA324F-E VGA EQ 2.2 +C131 4776. 3V ______C132 .3 [2.3] 2.3 [5.5] 1.8 [1.8] 1.8 .8](1.8](1.8] VREF 27) 2.2 0.1 **\$**^{R171} **₹**R138 GND 26)0 20 1.8 1.8 T 0.1 2.2 \$R170 MIRROR DET $\frac{1}{\mathbf{L}}_{\mathbf{0}}^{\mathbf{2}}$ R106 I C122 T 22/6. 3V 2.4 . д163 R126 0 ₿136 R155 2.46 31.8 R128 15K W H103 R168 100 2.4 FOCUS BALANCE 22^{1.8} 21^{1.8} 21^{1.8} 21^{2.3} R164 2.4 GND 1 VREF 2 R129 15K TRACKING BALANCE TRACKING ERROR DET **__**@ GND 4 R107 6.8K B12 P-0N+5V 3 -19<u>1.8</u> C126 100P 2.2 F 4 -8108 6.8K R169 100 R130 18)<u>1.8</u> 2.26 L_{C127} E 5 ------H111 0 A 6 -07-LPC AMP SERIAL I/F C107 0.1 NU 8 C106 22/6.3v B 9 IC101 ANB703FH-V (RF SIGNAL) (PROCESS C 10 PD-MONI 11 4.2 4) (5) (6) |5.1 |2.6 |1.1 -M-DVD-LD 12 R144 10K D301 1SS355TE-17 71-D3 • • GND(LD) 13 ¥120 1 4.1 4.2 \$2... 1 2.3 101 \$2... 2.3 101 \$2... \$2... 2.3 101 \$2.5 \$2... 2.3 101 \$2.5 \$2... 2.5514241100R \$2.514241100R \$2.55 \$2.5 (AMP) 5.1 \$5.1 \$5.1 0.3 0.3 \$5.1 \$5.1 R336 10K ¥8160 61111 560PT <u>_</u>с117 Д D(DVD-PD) 1 +C116 47/6.3 TS(+) 15 LC306 R122 FS(-) 16 ₽117 2.2 FS(+) 17 -)56-)7-) G1 D3 4-D3 53-)52-61 61 TS(-) 18 TC305 T0.1 R303 **≰**R31 R119 10K CD-LD 20 CD/DVD 2 3 PICK UP UNIT 1- 2- 3-65 65 65 6- 7- /M41 /SB75 SB75 SB75 SB75 SB75 SB05 SB17 <l CLA SDA SDA (CONTINUE DVD MAIN 2/4) IC103 NC7SB3157P6X (SW) TS(-3.4/ NTNT FS(+) 71-G3 72-G2 58-G3 3.5 READY 490 FS(-) NINT2 9-63 HANG 48 +C154 3.5 1.4 (2.7) 80 FG-IN PS 47 3.5 45-G1 MUTE 46 3.5 (CONTINUE DVD MAIN 2/4) (TO AV CBA) H304 10K 3.5 3.3 ADSEP KEY I P-0N+1-8V R337 3.3, 44 3.4 KEY OUT P-0N+1.8V 2 P-0N+5V /FERS 72-D3 JJ502 43-62 P-0N+1.8V(C 3.6).2 1.8) 1.8) 0.2 430 EV+2.5V VREF (vnn EV+2.5V 4 P-0N+5V 5 P-0N+5V 6 L501 2.2uH 1_{C502} T^{0.1} P-0N+3.3V(A) CPUDTO TEW P-0N+3.3V(D) 1-G4 (CONTINUE DVD MAIN 3/4. D-ON+3.3V(D) CPUDT1 TRE 62-G4 42-63 GND 0.0 CPUDT2 CPUADR1 63-64 GND 8 41-G3 EV+3. 3V 1.61 0.6 CPUDT3 CPUADR16 GND 9 GND 10 GND 11 GND 12 64-G4 2 40-G3 0.21).40 CPUDT4 IC301 MN102H60GBA /MN102H60GBA (FRONT END) PROCESSOR) CPUADB15 65-G4 T^{C506} 39-63 0.11 89 CPUDT5 CPUADR1 66-G4 38-G3 (CONTINUE DVD MAIN 4/4 0.1) CPUDT6 CPUADR13 GND 13 EV+9V 14 67-G4 JJ504 12.31 37-G3 EV+3.3V P-0N+3.3V(D) CPUADR12 35 CPUDT7 68-G4 ÷, EV+9V 15 EV+3.3V 16 3.6 JJ505 36-G3, LC504 CPUADR11 P-0N+3.3V 17 P-0N+3.3V 18 JJ506 35-G3 CPUADR10 34-63 P-ON+3.3V 19 PWRCON 20 FP-STB 21 FP-DIN 22 FP-DOUT 23 FP-CLK 24 CPUADR 33-G4 CPUADR8 32-G4 CPUADR7 29 31-G4 CPUADR6 28 G (3.6) 30-G4 CPUADR5 NU 25 REMOTE 26 29-G4 57-MALT //RE //WEL //WEL //WEL //WEL //WEL //WEL //WES // R321 10K R322 10K R323 10K R324 10K 1 CONTINUE DVD MAIN 3/4) 1) (2) (3) (4) (5) (6) 2.0 3.6 3.6 3.6 3.6 3.6 3.6 3. REMOT 5 R320 10k OC-KEY VFD-CLK 1935 1935 VFD-DOU" 1 ± C305 X301 ZTA16.93MX /CSALS16M9X55-A0 16.9344MHz R325 10K ^{C3D3}⊥ VFD-STB ± 5304 19- 20- 69-63 64 64 23-G4 25-26-27-28-64 64 64 64 PWRCON OP/CL А В С \square F E

DVD Main 1/4 Schematic Diagram

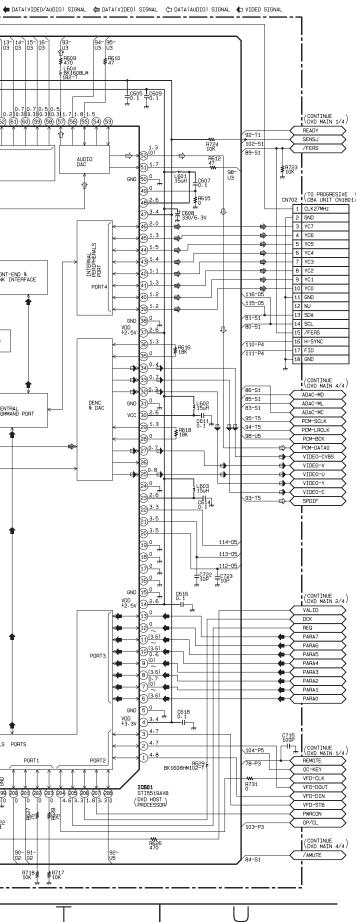
Image: Construct of the second seco			C143 0.1	R143 1K		(CONTINUE DVD MAIN 2/4
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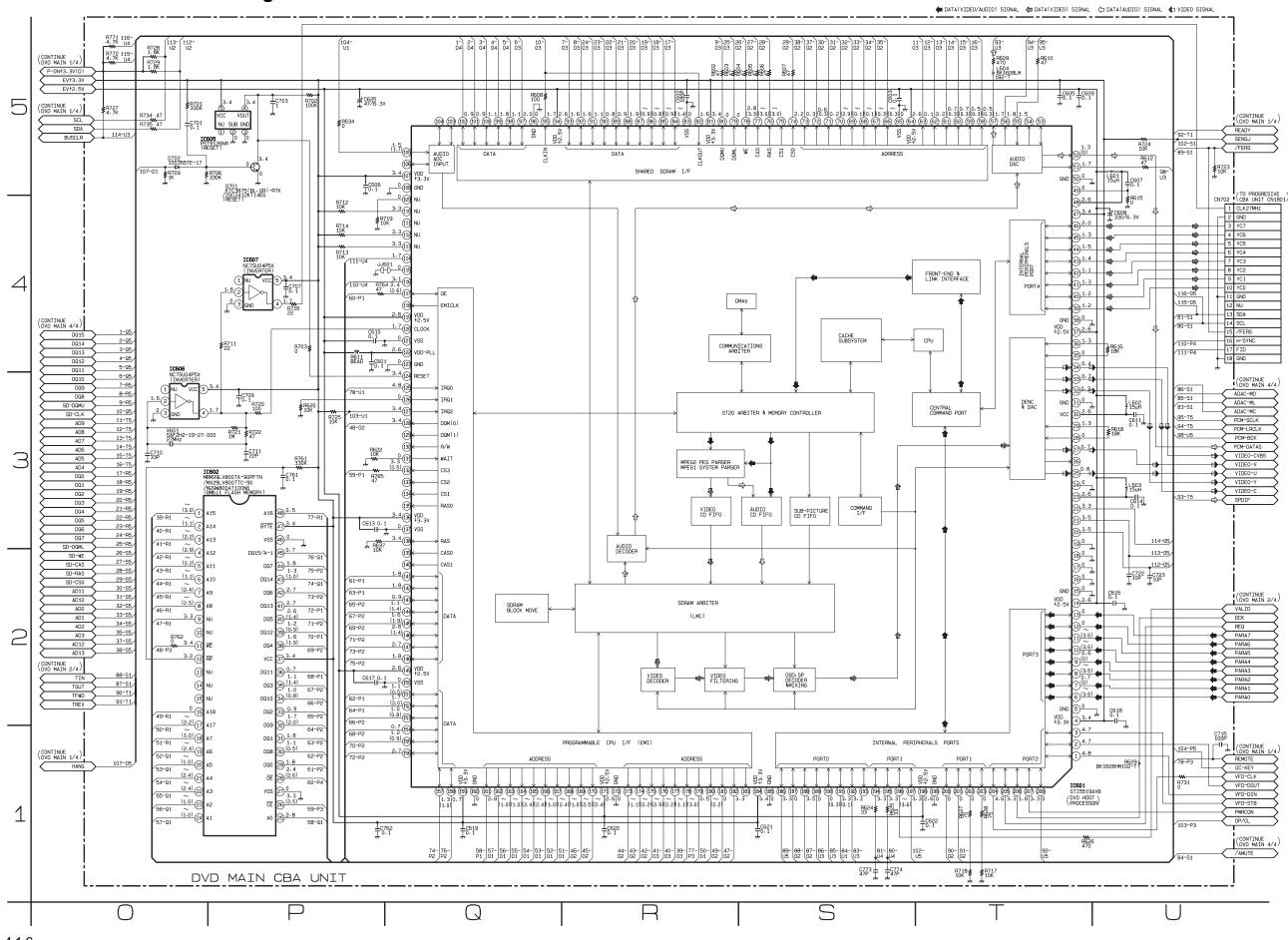


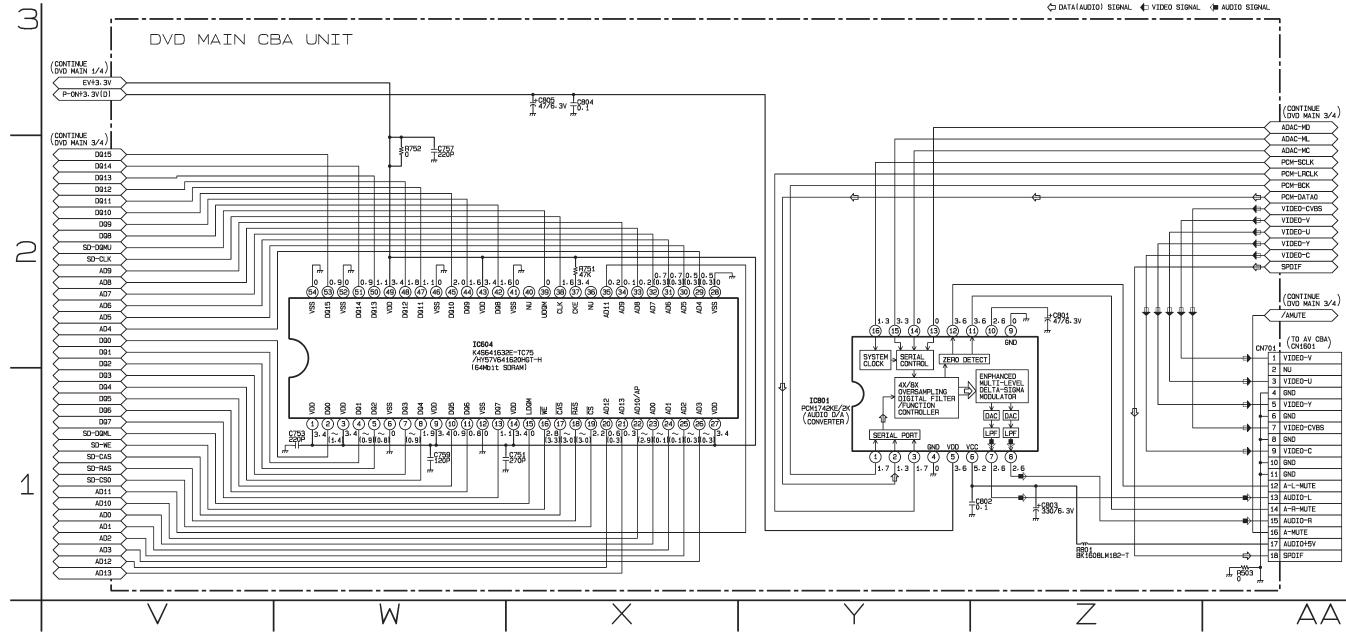
DVD Main 2/4 Schematic Diagram



DVD Main 3/4 Schematic Diagram







AV 1/3 Schematic Diagram

CAUTION !

Fixed voltage power supply circuit is used in this unit.

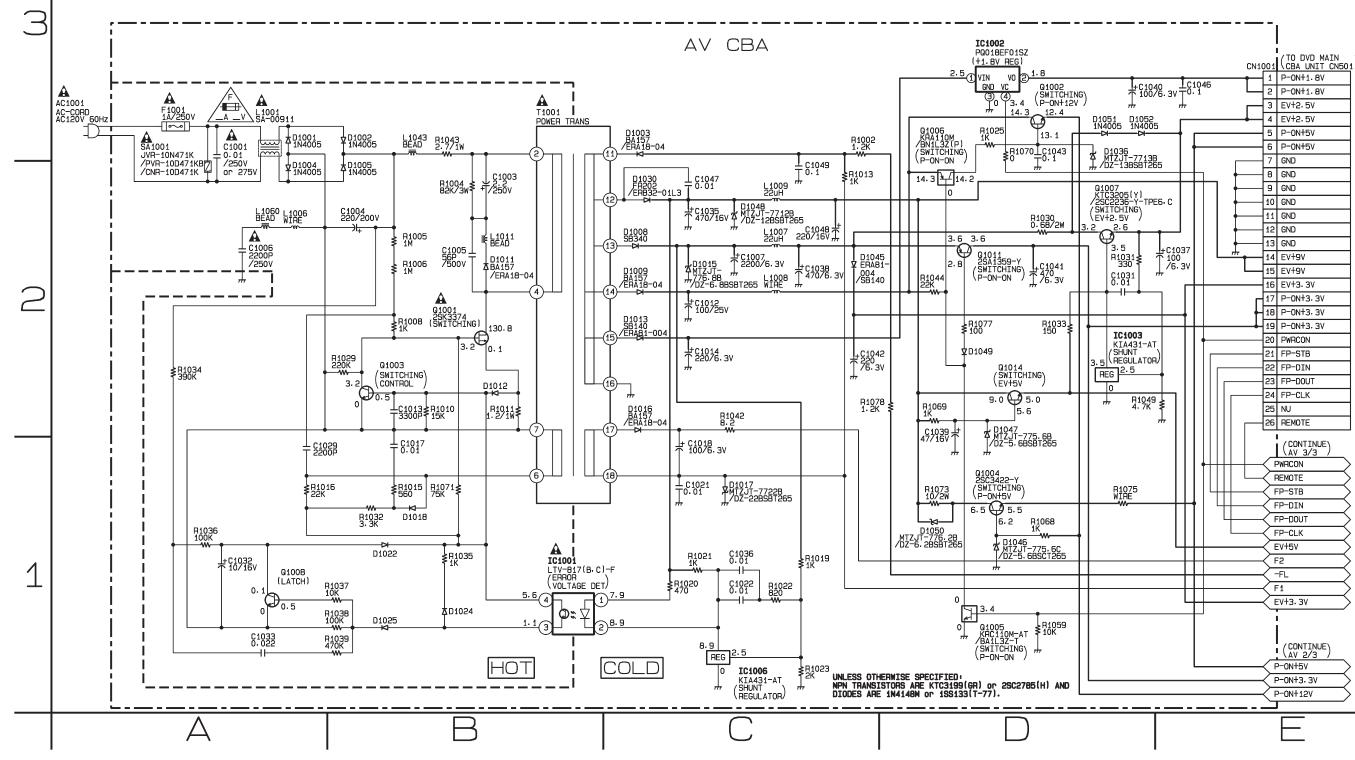
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



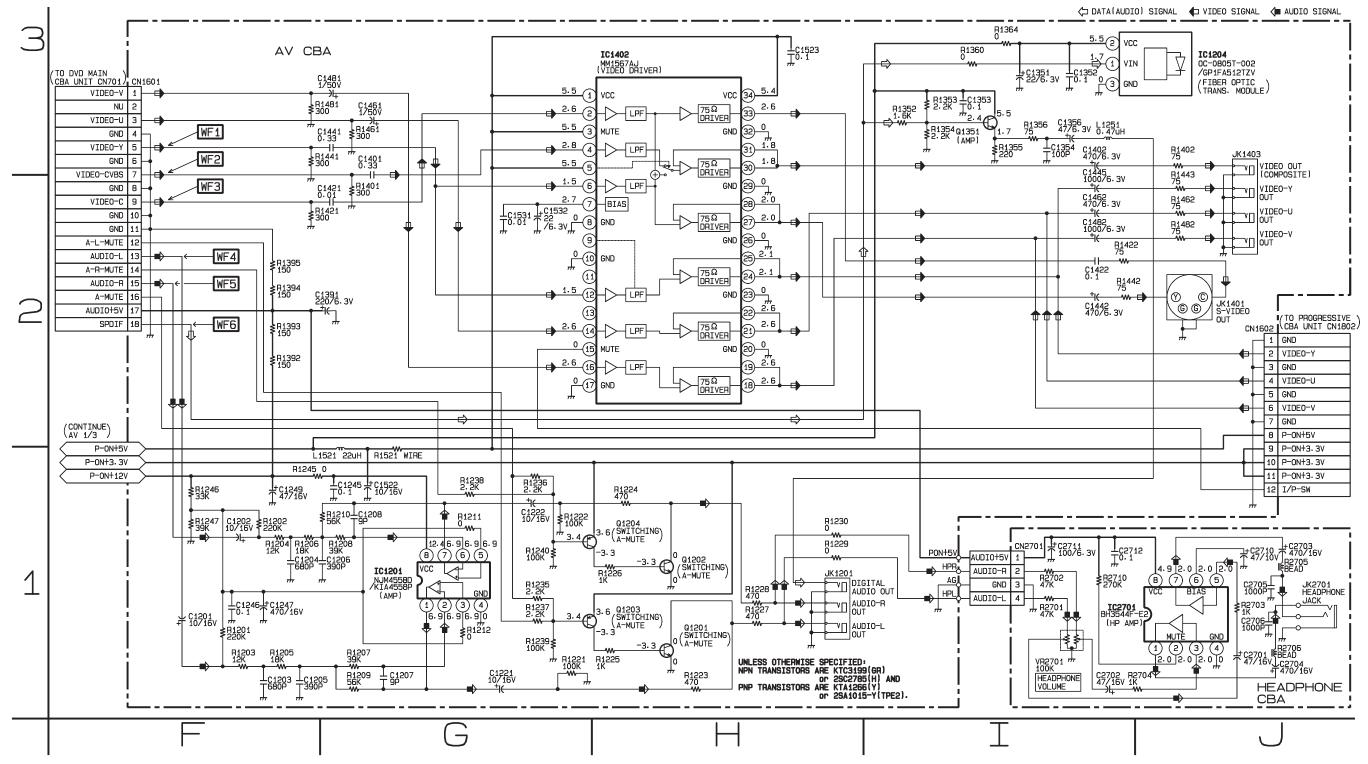
CAUTION

FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE. **RISK OF FIRE-**REPLACE FUSE AS MARKED. "This symbol means fast operating fuse." "Ce symbole reprèsente un fusible à fusion rapide."

NOTE :



The voltage for parts in hot circuit is measured using hot GND as a common terminal.



4-1-9

WAVEFORM

WF1 Pin 5 of CN1601

WF5 Pin 15 of CN1601

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WF2 Pin 7 of CN1601 VIDEO-CVBS 0.5V 20usec

WF6 Pin 18 of CN1601

DIF			0.20	

WF3 Pin 9 of CN1601

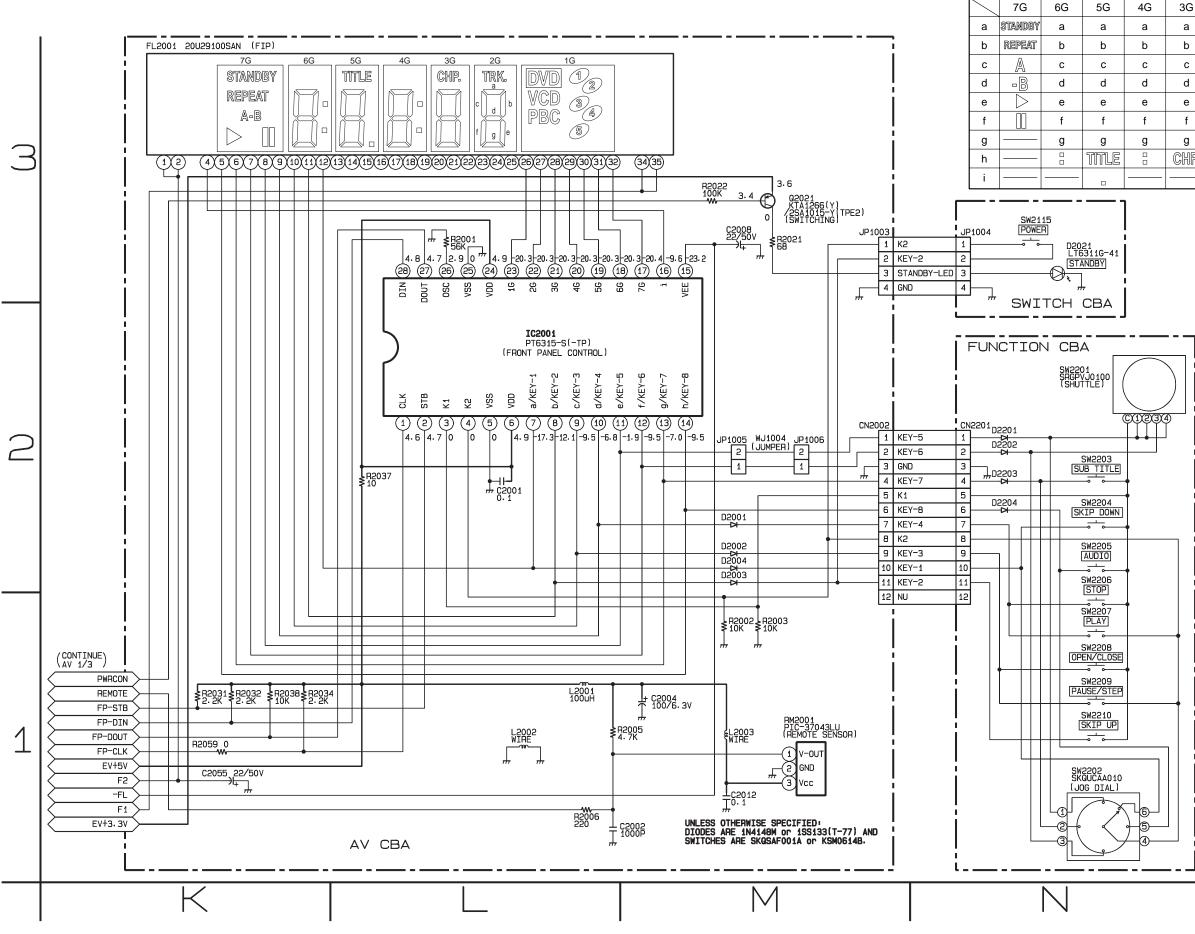
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NOTE:

Input CD: 1kHz PLAY (WF4~WF6) DVD: POWER ON (STOP) MODE (WF1~WF3)

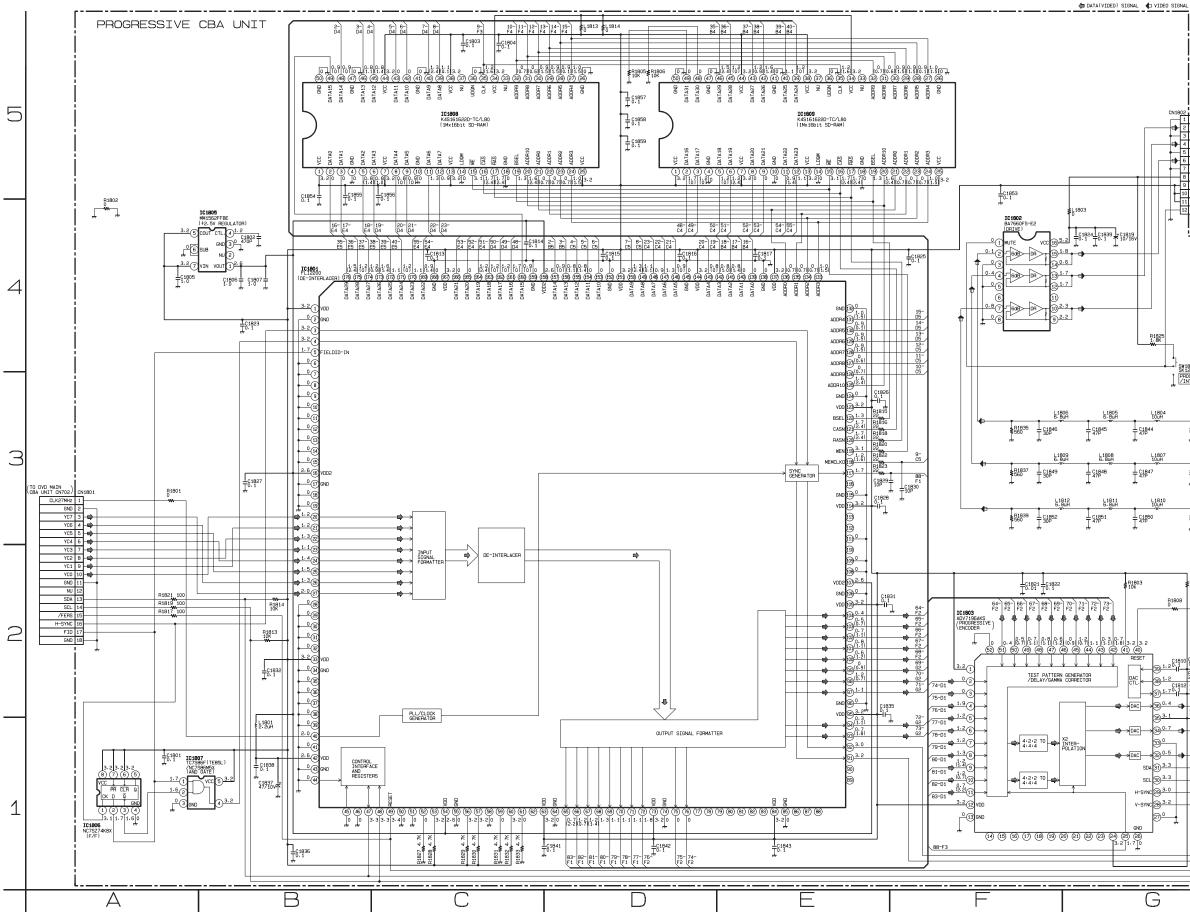
WF	4	Pi	in 13 of CN1601						
	\wedge		\wedge		\wedge		\wedge		\wedge
<i> </i>	[\	/	\	/	\	/	\	/	\
			1)		
\sim		\sim		$\mathbf{\vee}$		\sim		\sim	
	AUD	O-L	1	V			0.5n	nsec	

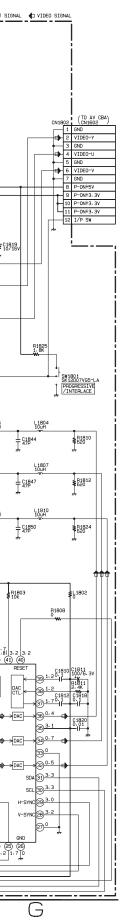
FL2001 MATRIX CHART

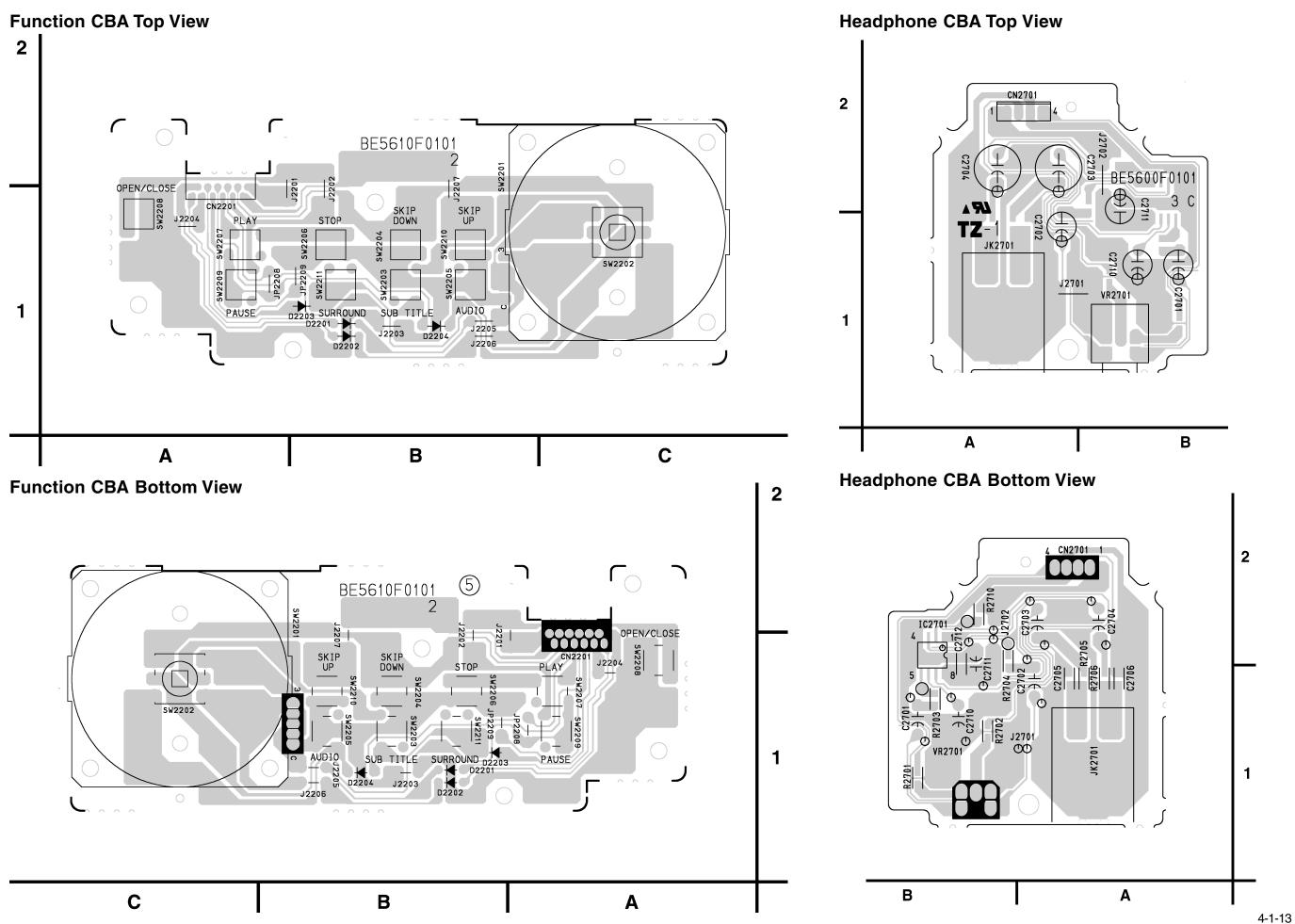


5G	4G	3G	2G	1G
а	а	а	а	J
b	b	b	b	2
С	С	С	С	3
d	d	d	d	Þ
е	е	е	е	5
f	f	f	f	DVD
g	g	g	g	PBC
TITLE		CHP.	TRK.	CD
				V

Progressive Schematic Diagram

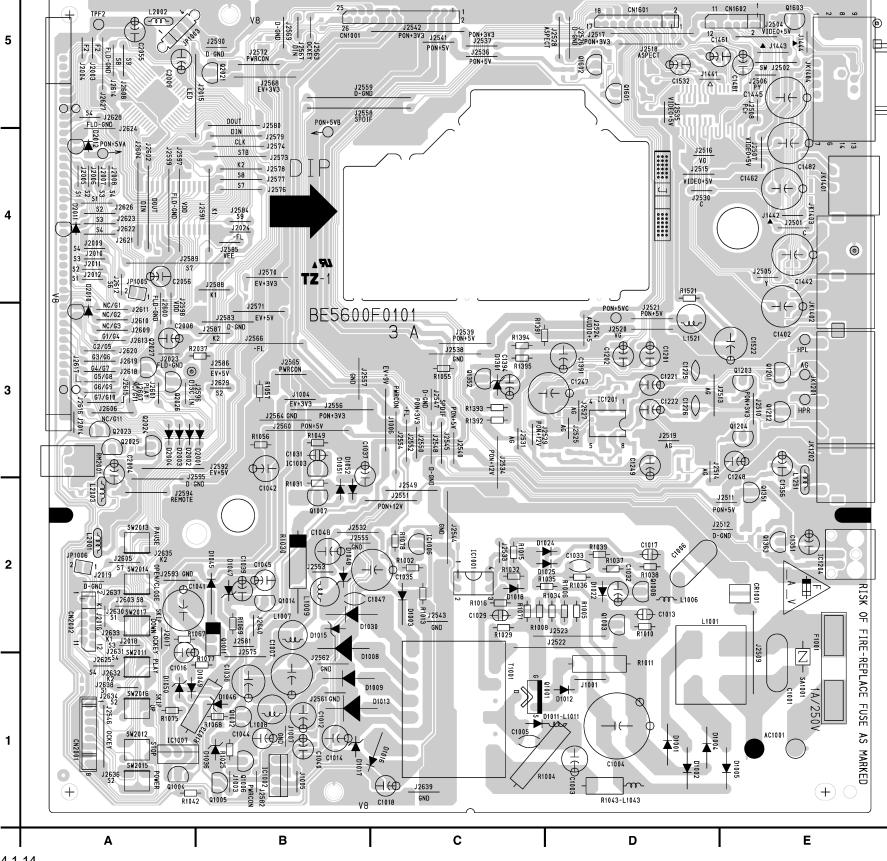






AV CBA Top View

5



CAUTION !

Switching power supply circuit is used in this unit. If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

CAUTION

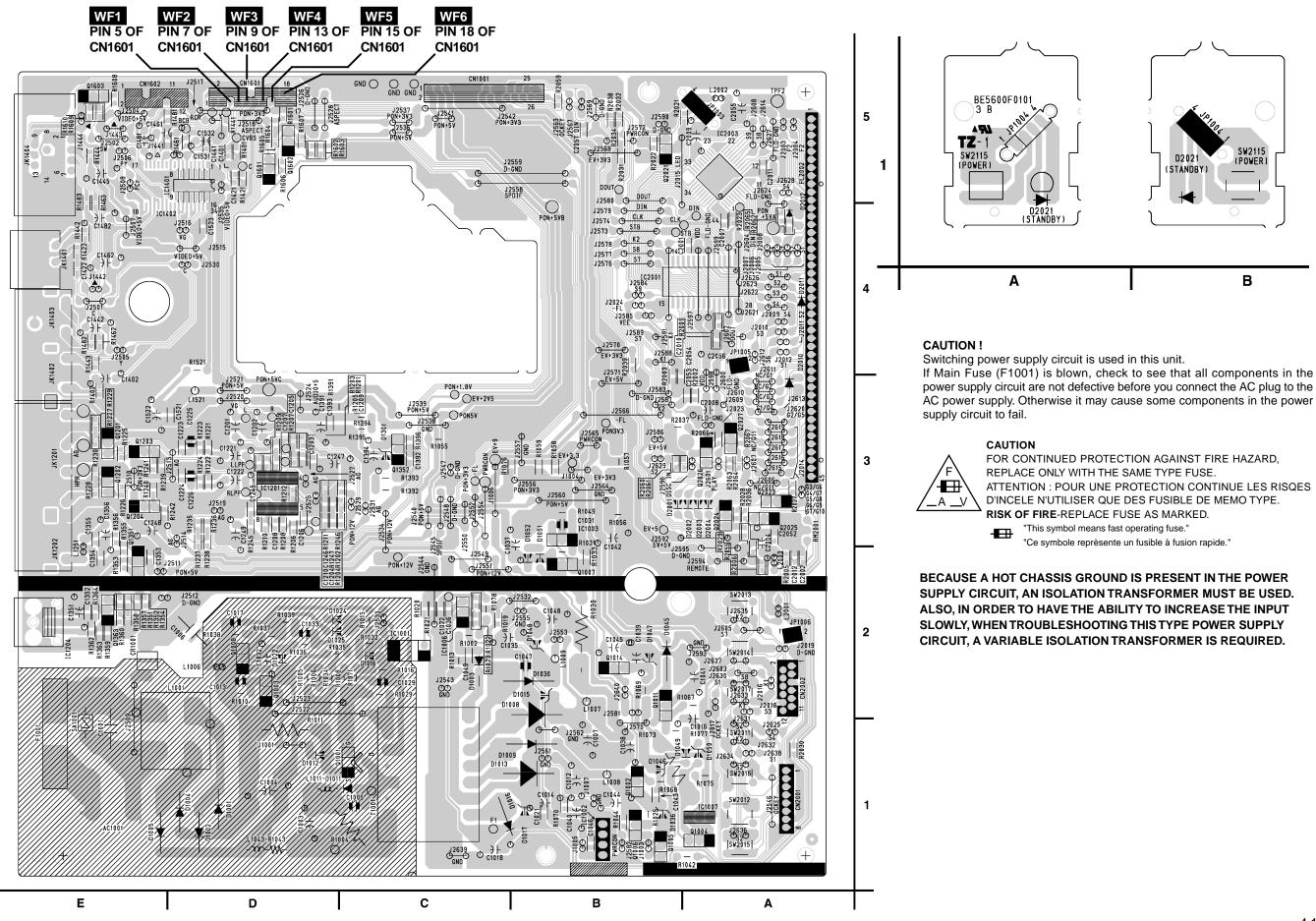
-∎=+` _A __V -

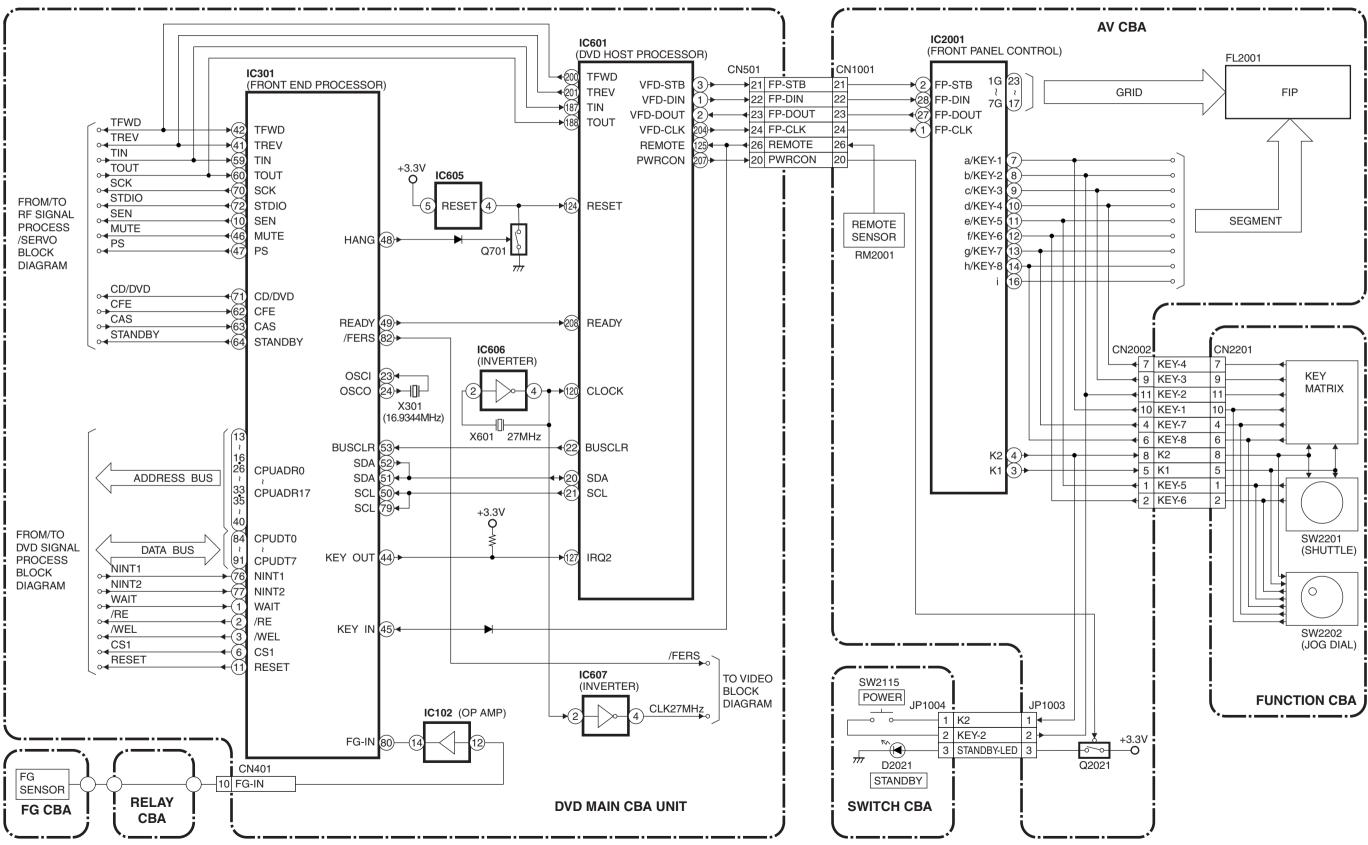
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE. **RISK OF FIRE-**REPLACE FUSE AS MARKED. "This symbol means fast operating fuse." "Ce symbole reprèsente un fusible à fusion rapide."

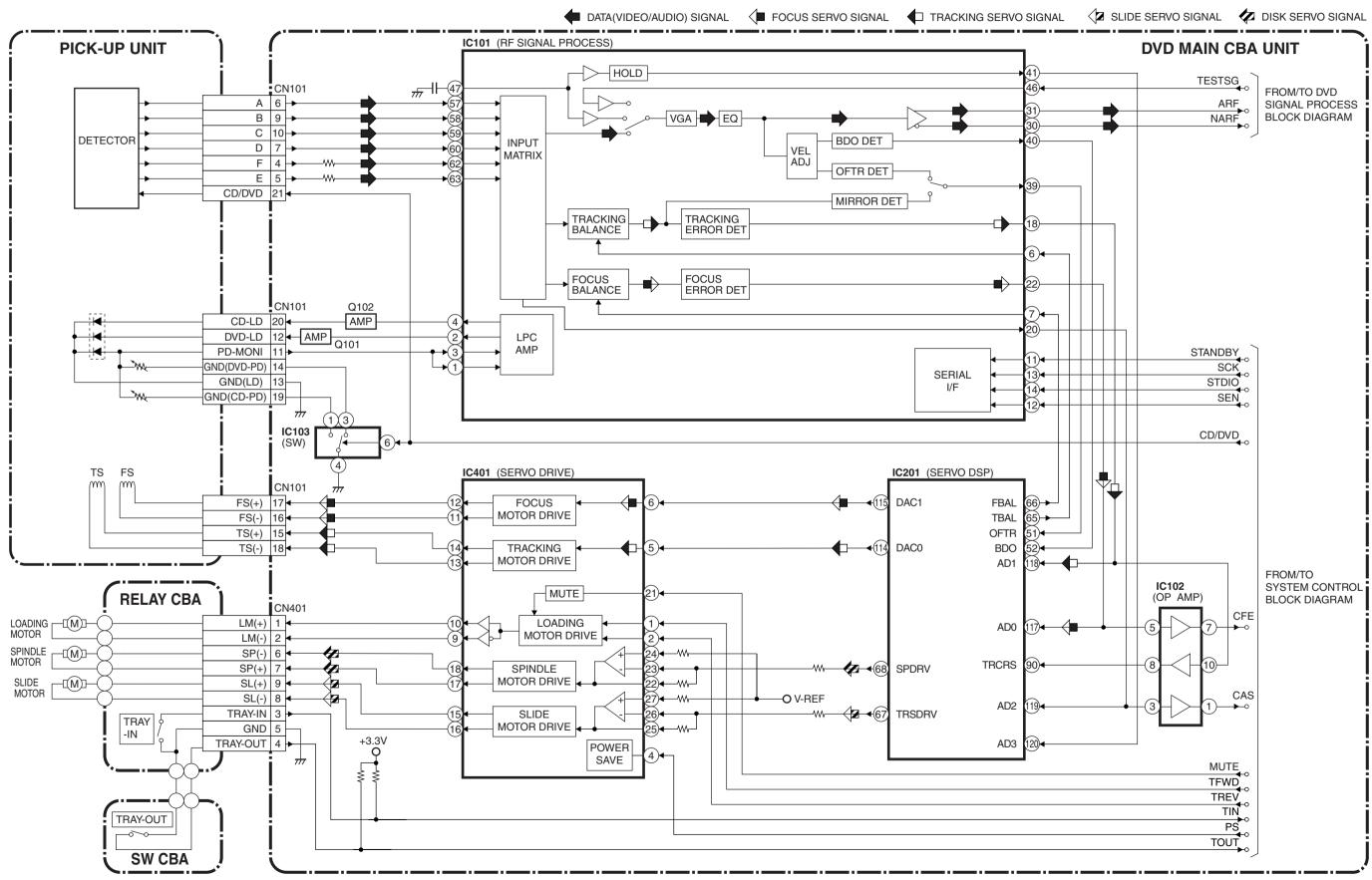
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

AV CBA Bottom View

Switch CBA Top View Switch CBA Bottom View



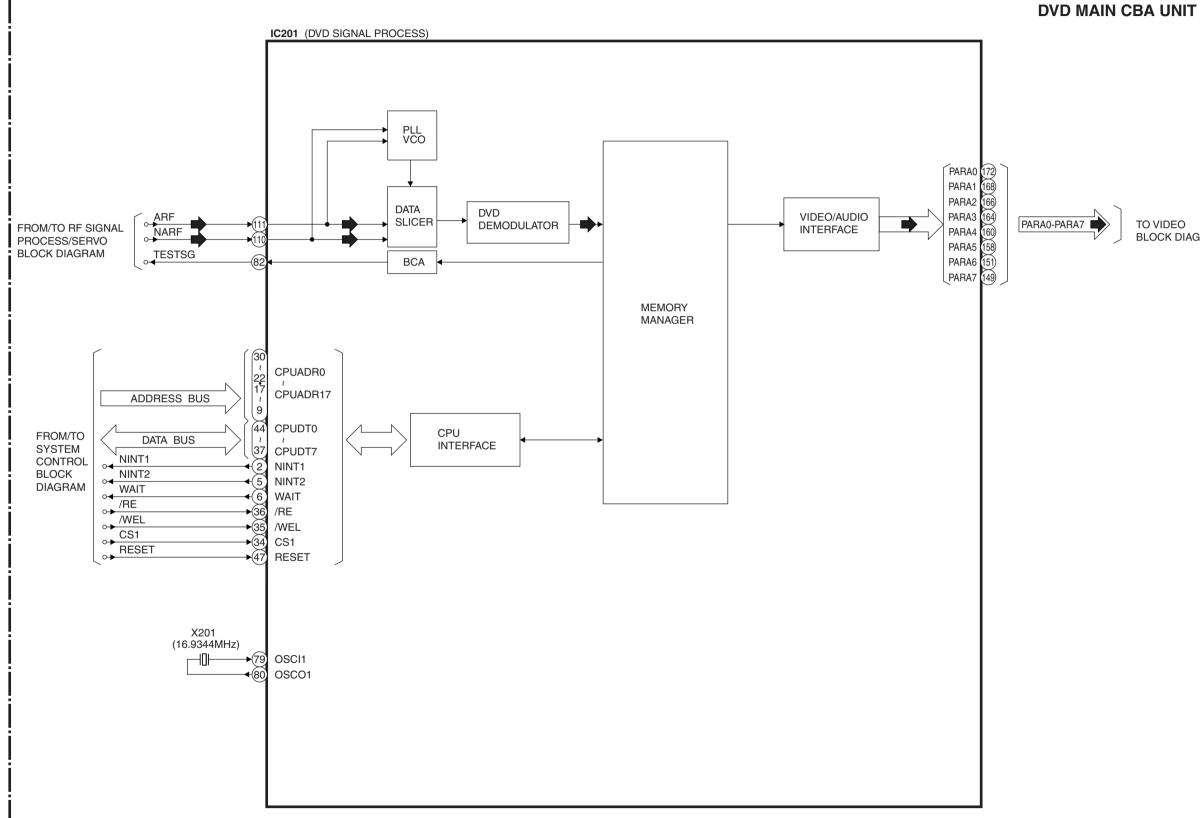




DVD Signal Process Block Diagram

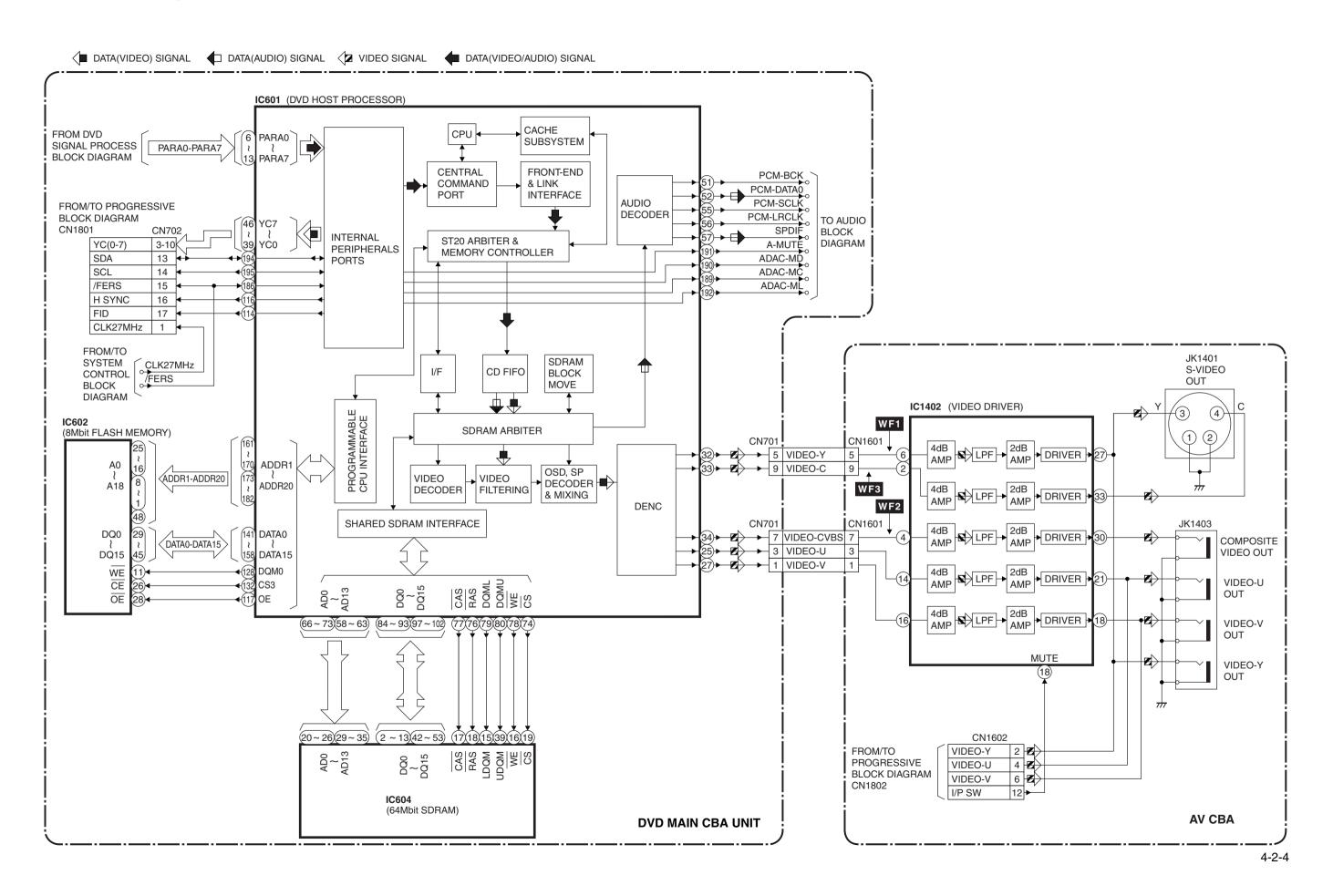




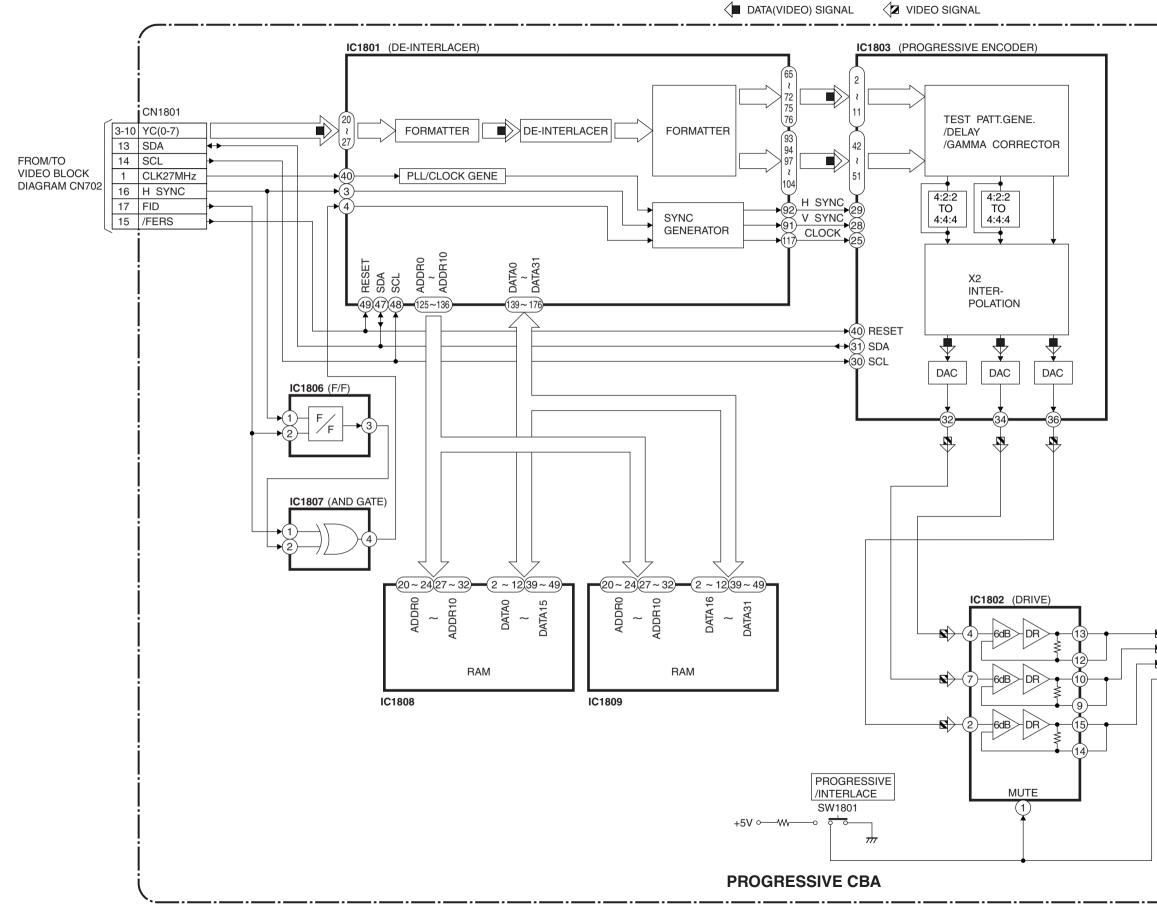


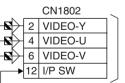
TO VIDEO BLOCK DIAGRAM

Video Block Diagram

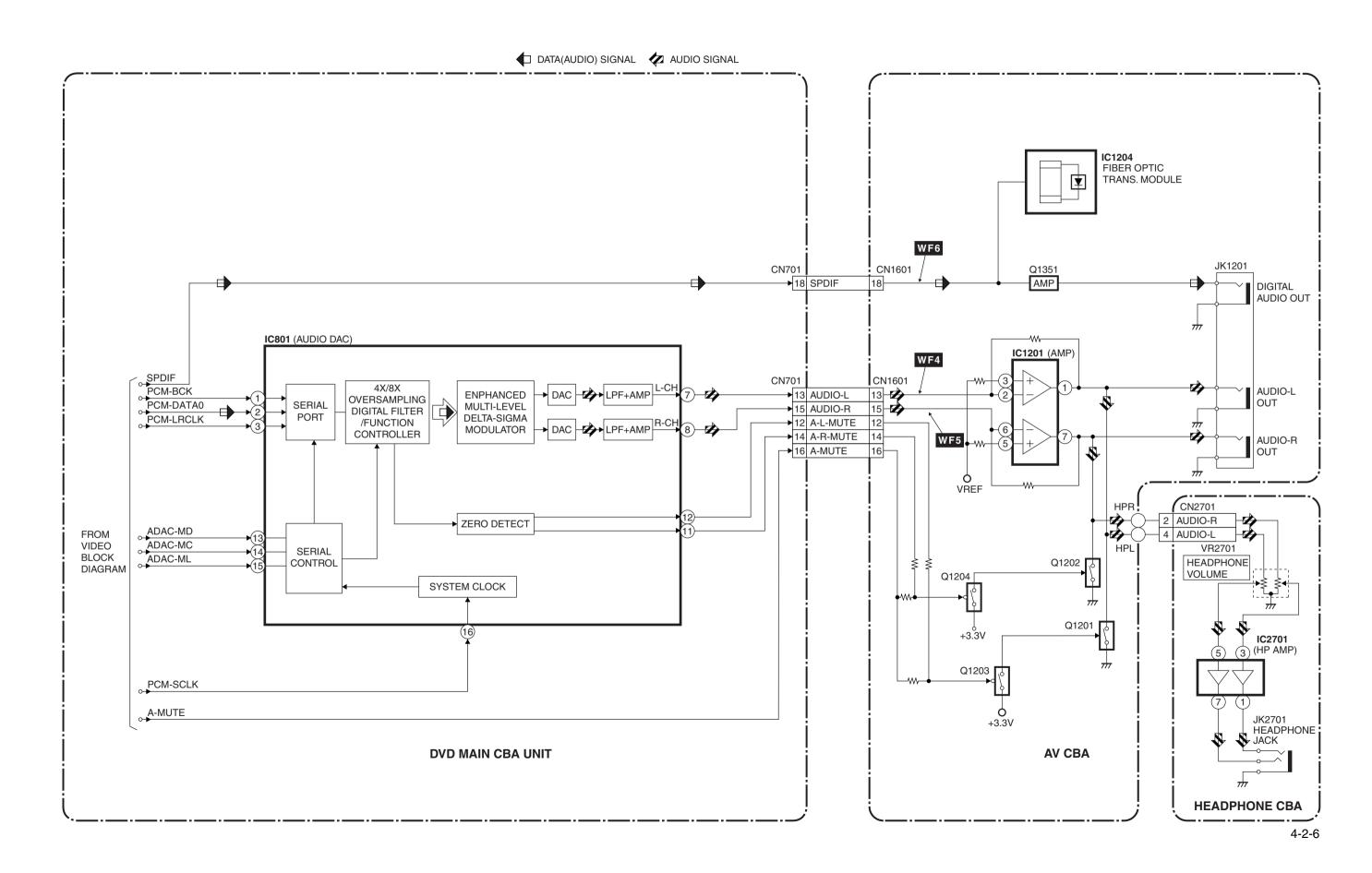


Progressive Block Diagram





TO VIDEO BLOCK DIAGRAM CN1602



Power Supply Block Diagram

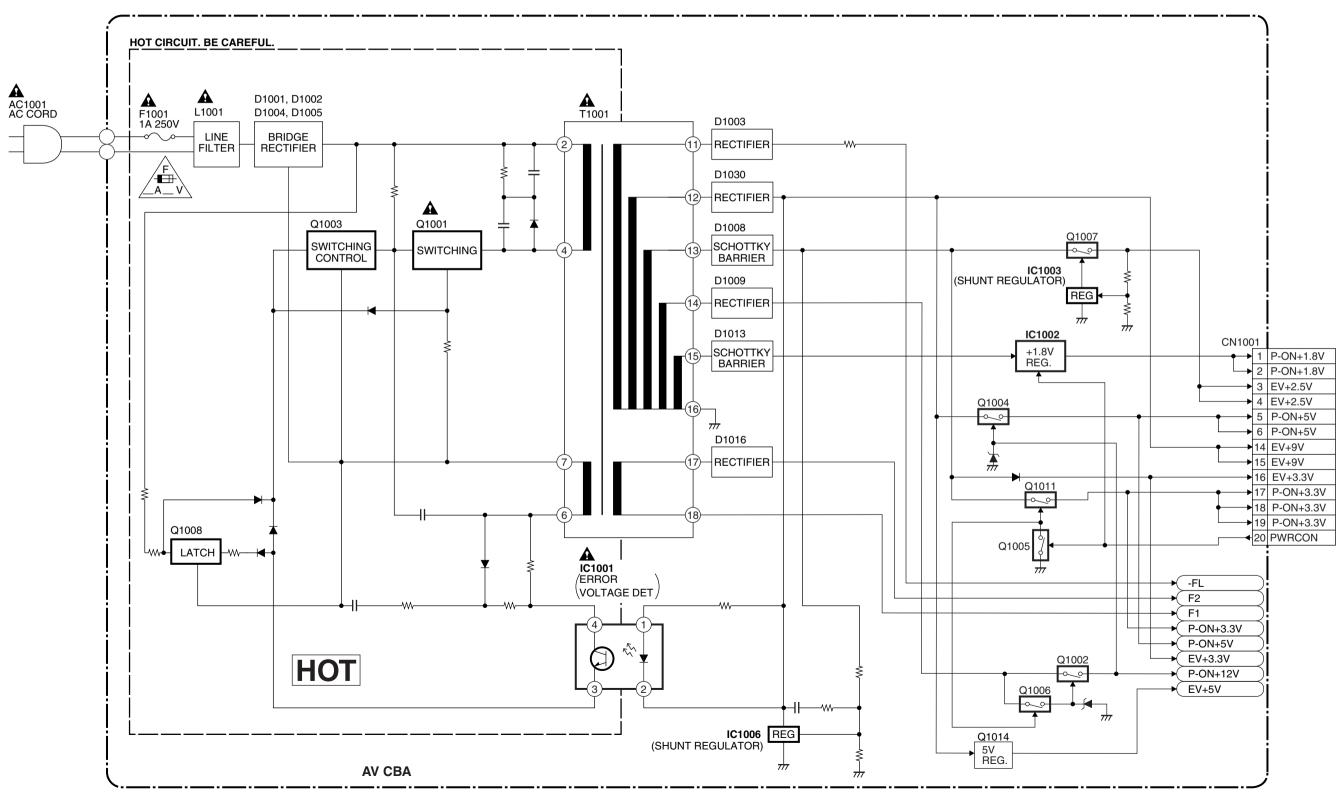
CAUTION !

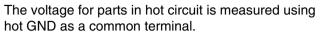
Switching power supply circuit is used in this unit. If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.



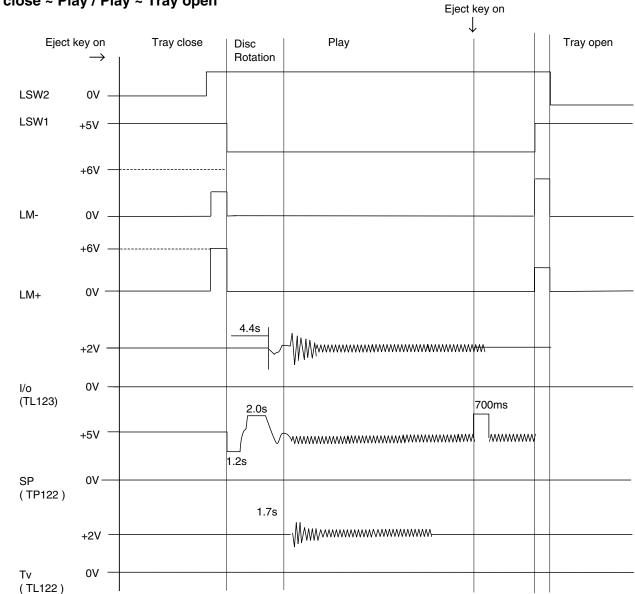
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE. ATTENTION : POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MEMO TYPE. **RISK OF FIRE** - REPLACE FUSE AS MARKED. - This symbol means fast operating fuse." "Ce symbole reprèsente un fusible à fusion rapide."

NOTE : hot GND as a common terminal.





SYSTEM CONTROL TIMING CHARTS



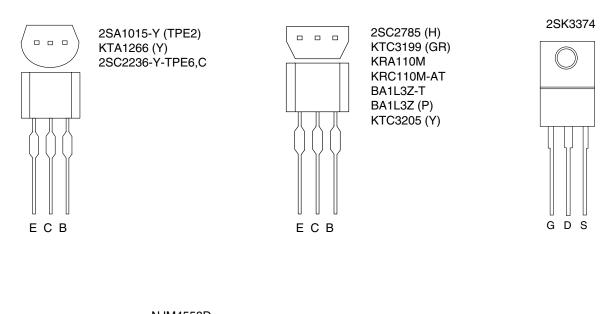
Tray close ~ Play / Play ~ Tray open

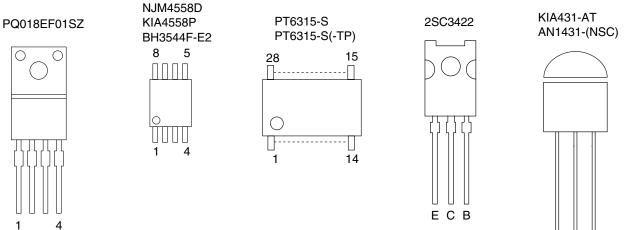
IC PIN FUNCTION DESCRIPTIONS

IC2001 [PT6315-S (-TP)]

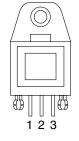
Pin No.	In/Out	Signal Name	Name Function
1	In	CLK	Clock Input
2	In	STB	Serial Interface Strobe
3	In	K1	Key Data 1 Input
4	In	K2	Key Data 2 Input
5	-	VSS	GND
6	-	VDD	Power Supply
7	Out	a / Key-1	Segment Output / Key Source-1
8	Out	b / Key-2	Segment Output / Key Source-2
9	Out	c / Key-3	Segment Output / Key Source-3
10	Out	d / Key-4	Segment Output/ Key Source-4
11	Out	e / Key-5	Segment Output / Key Source-5
12	Out	f / Key-6	Segment Output / Key Source-6
13	Out	g / Key-7	Segment Output / Key Source-7
14	Out	h / Key-8	Segment Output/ Key Source-8
15	-	VEE	Pull Down Level
16	Out	i	Segment Output
17		7G	
18		6G	
19		5G	
20	Out	4G	Grid Output
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	In	OSC	Oscillator Input
27	Out	DOUT	Serial Data Output
28	In	DIN	Serial Data Input

LEAD IDENTIFICATIONS

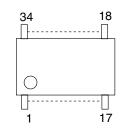


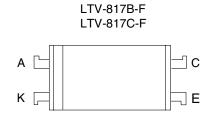






MM1567AJ





Note:

RAK

A: Anode

- K: Cathode E: Emitter
- C: Collector
- B: Base
- R: Reference
- 1 VCC 2 GND
- 3 OUT

HITACHI

DV-P725U

TK No. 9205E

Digital Media Division, Tokai

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