HITACHI

TK | No. 0422E

SERVICE MANUAL

DV-P543U

DO NOT RESELL OR DIVERT IMPROPERLY.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

DVD PLAYER

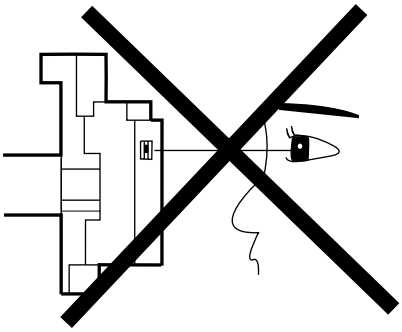
September 2004 Digital Media Division, Tokai

CONTENTS

1 CAUTION FOR SAFETY IN PERFORMING REPAIR

1-1 LASER BEAM SAFETY PRECAUTIONS

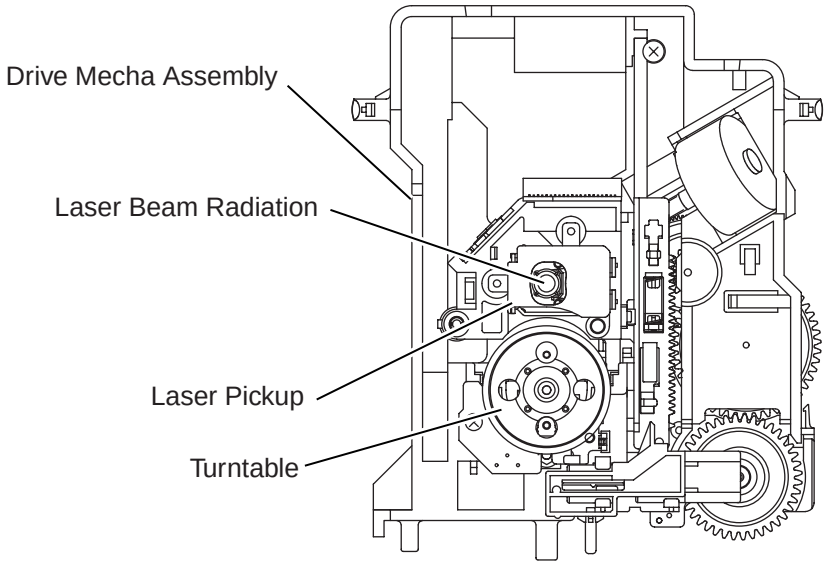
This DVD player uses a pickup that emits a laser beam.



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.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Top of DVD mechanism.

1-2 IMPORTANT SAFETY PRECAUTIONS

1-2-1 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 ⚠ 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**.**

1-2-2 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 that 5 - 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.

1-2-3 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	≥ 3.2mm (0.126 inches)

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

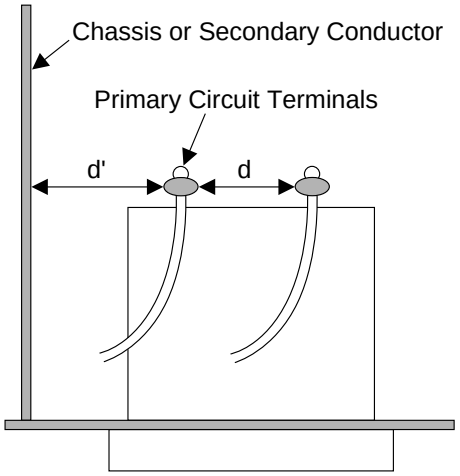


Fig. 1

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.

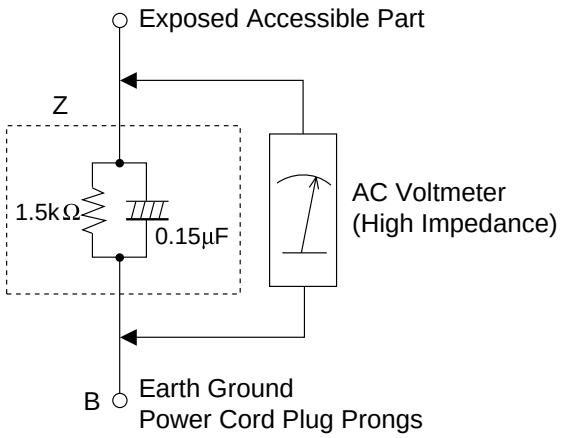


Fig. 2

Table 2: Leakage current ratings for selected areas

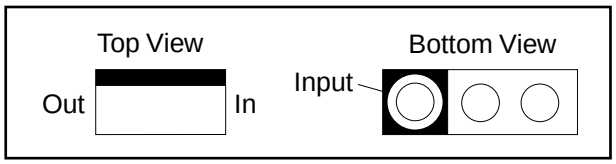
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15μF CAP. & 1.5kΩ RES. Connected in parallel	i≤0.5mA Peak	Exposed accessible parts

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

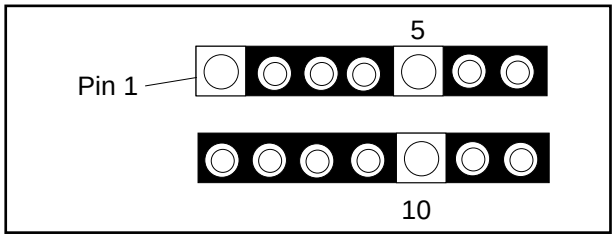
1-3 STANDARD NOTES FOR SERVICING

1-3-1 Circuit Board Indications

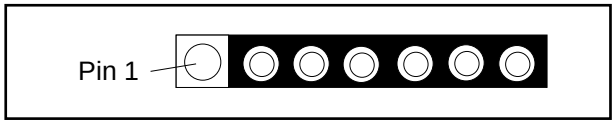
a. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

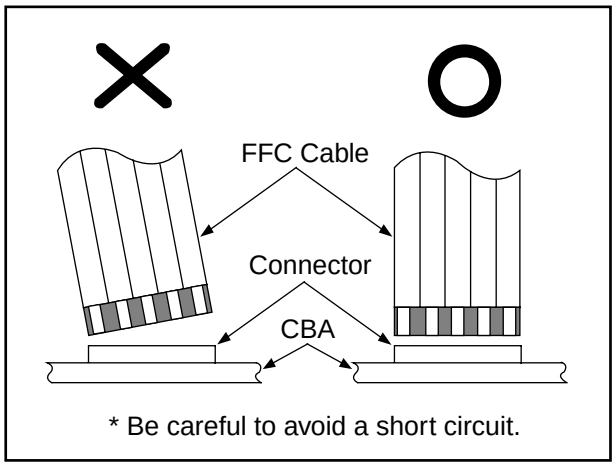


c. The 1st pin of every male connector is indicated as shown.



1-3-2 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.



1-3-3 Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

1-3-4 Instructions for Handling Semi-conductors

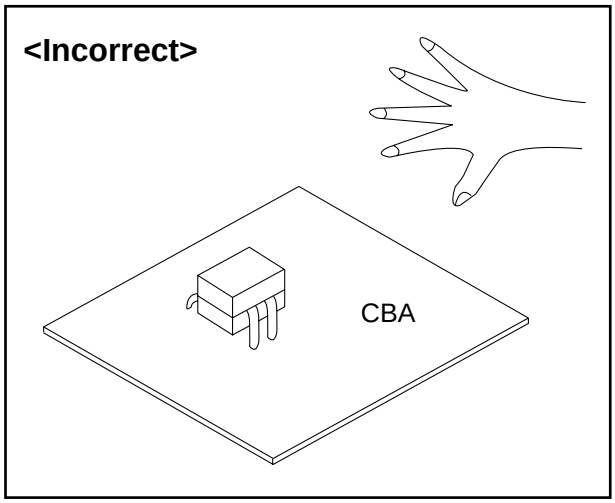
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

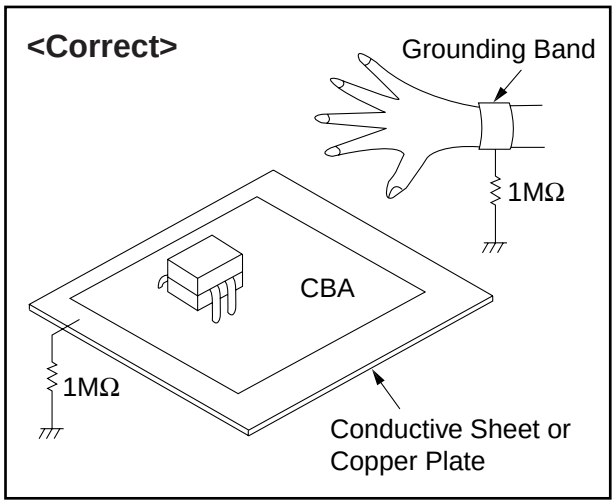
1. Ground for Human Body

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

2. Ground for Workbench

(1) Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) 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.





2 GENERAL INFORMATION

2-1 SPECIFICATIONS

ITEM		DESCRIPTION
DVD section	Output signal format	NTSC color
	Video output impedance	75 Ω
	Video output level	1.0 V P-P
	Audio output level	2.0 Vrms
	Video S/N ratio	60 dB or more
	Disc used	DVD video disc, Music CD disc
	Audio frequency characteristic	DVD (linear audio) 20 Hz - 22 kHz (48 kHz sampling frequency) 20 Hz - 44 kHz (96 kHz sampling frequency) Music CD 20 Hz - 20 kHz (JEITA)
	Signal/Noise (S/N) ratio	CD: 70 dB (JEITA)
	Dynamic range	DVD (linear audio): 70 dB, CD: 70 dB (JEITA)
	Total distortion ratio	DVD: 0.004%, CD: 0.0045%
Terminal	Video output	PIN JACK
	Audio output	PIN JACK
	Component video output	PIN JACK
	S Video output	MINI DIN 4PIN JACK (75 Ω)
	Coaxial digital audio output	PIN JACK
Others	Power supply	120 V AC +/- 10%, 60 Hz +/- 0.5%
	Power consumption	10 W (Standby: 0.8 W)
	Temperature range for operation	5 °C - 40 °C
	Dimensions	435(W) mm x 51(H) mm x 211(D) mm
	Weight	1.3 kg

2-2 COMPARISON OF MODELS

O: Yes, ---: No, ← : Same as on left

ITEM		DV-P543U	DV-P533U
APPEARANCE	Dimensional	435(W) x 50(H) x 211(D) mm	435(W) x 55(H) x 211(D) mm
	Hot Stamp	---	←
	Ultra Vision Badge	---	←
GENERAL	Drive Speed	1x	←
	Laser	2	←
	DVD/VCD/SVCD/CD-DA	O / --- / --- / O	←
	CD-R/CD-RW/DVD-R (Video Format)	O / O / O	←
	DVD-RAM/DVD-RW	--- / O (Video Mode)	--- / ---
	MP3/WMA	O / ---	←
	OSD languages	3 (English, French, Spanish)	←
	Jog Shuttle on Front	---	←
	Headphone Jack / Volume	--- / ---	←
VIDEO	PAL Disc NTSC Out	---	←
	Video Out Mode NTSC/PAL/PAL60	O / --- / ---	←
	S-Video / Component / Composite	O / O / O	←
	Video D/A Converter	10bit / 54MHz	←
	Black Level Select	O	←
	Picture Control	---	←
	Progressive Out	O	←
AUDIO	Audio D/A Converter	192kHz / 24bit	←
	Digital Audio Out Optical / Coaxial	--- / O	←
	Dolby Digital 5.1 ch Decode	---	←
	DTS Digital Out	---	←
	Virtual Surround	O	←
	Dynamic Range Compression (Dolby Digital)	O	←
	DVD Audio	---	←
TRICK PLAY	Search Speed	2 to 100 (FORWARD/REWIND) (DVD: 2, 8, 50, 100/CD: 16)	←
	Slow Speed	1/16, 1/8, 1/2 (FORWARD/REWIND)	←
	IP Search (Smooth 2x Play)	O	←
	1.5x Play with Audio	---	←
	Step Forward / Reverse	O / ---	←
	Still Picture Select (Frame/Field)	Frame / Field / Auto	Auto Only

ITEM		DV-P543U	DV-P533U
FEATURES	Disc Navigation	O	---
	DVD Zoom x2 / x4 / x16	O / O / ---	←
	Program and Random Play of DVD / VCD	---	←
	A-B Repeat	O	←
	Repeat	O	←
	Resume	O	O (can not effect after Power off)
	Closed Caption for NTSC DVD	O	←
	Front Panel Display Dimmer	O	←
	Screen Saver	O	←
	Auto Power Off	O (always on)	O
REMOTE CONTROLLER	Jog Shuttle on Remote Controller	---	←
	TV Control	---	←

2-3 COMPARISON OF MAIN CONTROL ICS

---: No, ← : Same as on left

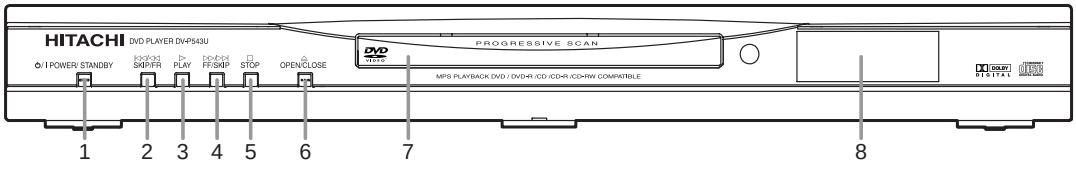
ITEM	DV-P543U	DV-P533U
SW	NC7SB3157P6X / SN74LVC1G3157DCKR (IC201)	NC7SB3157P6X (IC201)
OP AMP	LM324PWR / LM324PT (IC202)	KIA324F-EL (IC202)
SERVO DRIVE	SA5694 / FAN8024CDTF / BA5954FP-E2 / BA5888FP-E2 (IC301)	SA5694 / BA5954FP-E2 (IC301)
RESET	PST3229NR (IC461)	PST9127NR / BMR-110527 (IC461)
	BMR-110529 (IC462)	---
MICRO CONTROLLER	MN35202 (IC101)	MN35102 (IC101)
SDRAM	K4S641632H-UC75 (IC503)	K4S643232F-TC60 / HY57V643220CT-(7,55) (IC102)
FLASH ROM	MBM29LB160T / BM90TN-K / MX29LV160ABTC-90G (IC103)	MBM29LV160BE90TN-K / MBM29LV160B90PFTNSFK / HY29LV160BT-90 / MX29LV160BTC-90 / M29W160DB70N6 (IC103)
LATCH	---	74LVX573MTCX / TC74LVX573FT(EL) (IC104, IC105)
CLOCK GENERATOR	---	BU2363FV-E2 (IC451)
AUDIO D/A CONVERTER	PCM1755DBQR (IC601)	PCM1751DBQR (IC601)
ERROR VOLTAGE DET	EL817B / EL817C / LTV-817B-F / LTV-817C-F / PS2561A-1(W) / PS2561A-1(Q) (IC1001)	LTV-817B-F / LTV-817C-F (IC1001)
1.2V REG	PQ070XZ5MZP (IC1002)	PQ070XF01SZ (IC1002)
SHUNT REGULATOR	KIA431-AT / FAN431AZXA (IC1006)	KIA431-AT (IC1006)
AMP	KIA4558P / NJM4558D / RC4580IP (IC1201)	←
VIDEO DRIVER	MM1637XVBE (IC1402)	MM1622XJBE (IC1402)
	MM1636XWRE (IC1403)	---
FRONT PANEL CONTROL	PT6313-S-TP / SC16313 (IC2001)	PT6313-S-TP (IC2001)

2-4 LIST OF ABBREVIATIONS AND TERMS FOR DVD PLAYER

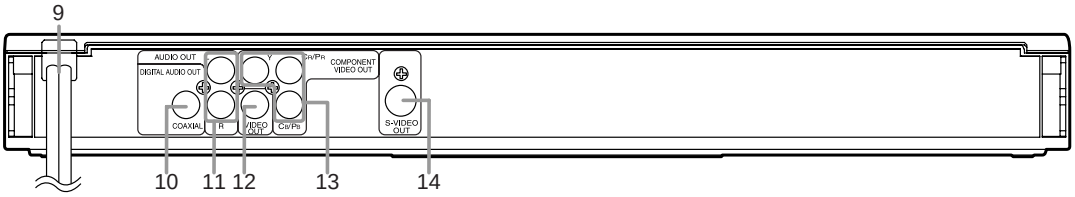
Index	Abbreviation/Term	Explanation
A	AC3	See Dolby AC3.
C	CD-R	One type of DVD standard disc, to which writing once is possible (recordable type)
	CD-RW	One type of CD standard disc, to which writing up to 1000 times is possible
	Component video output terminals	Used for outputs of HDTV video signal format. Since signals for brightness and colors are independently handled for components signals (Y: luminance signal; PR/PB: chrominance signals), degrading of image will be reduced.
D	Dolby AC3	Audio coding format developed by Dolby Laboratories in U.S, also simply referred to as AC3 format: Supports 5-channel full-range sound and one channel for sub-woofer sound playback.
	D terminal	This terminal, specified by EIAJ (currently JEITA), can automatically switch "digital hi-vision" programs of BS digital broadcast, and "digital standard broadcast" of current image quality. A tuner and TV can easily be connected to the D terminal. There are 5 types of D terminal, depending on the different format of video signal passing thorough the D terminal.
	DTS	Digital Theater System: Sound system as for movie theaters developed by US Digital Theater Systems, Inc. The number of channels provided by DTS is the same for Dolby AC3.
	DVD	Digital Versatile Disc. A huge amount of digital data for video (movie) and audio can be recorded on this disc, whose size is the same as CD.
	DVD-Audio	One type of DVD standard disc, on which high-quality audio can be recorded
	DVD-R	One type of DVD standard disc, to which writing once is possible (recordable type)
	DVD-RAM	One type of DVD standard disc, to which writing up to 100,000 times is possible
	DVD-ROM	One type of DVD standard disc, to which data for computer can be recorded
	DVD-RW	One type of DVD standard disc, to which writing up to 1000 times is possible
	DVD-Video	One type of DVD standard disc, on which high-quality video and audio can be recorded
	DVD Video Format	Video recording/playback standard that applies to DVD-Video, DVD-R and DVD-RW
	DVD Video Recording Format	Video recording/playback standard that applies to DVD-RAM and DVD-RW: This allows versatile editing functions, differing from the DVD Video Format.
	DVD Forum	International organization that formulates the technical standards of DVD
E	EIAJ	Electronic Industries Association of Japan: An organization of manufacturers of consumer electronic devices, industrial electronic devices and electronic components, established in April 1948. EIAJ merged with JEIDA (Japan Electronic Industry Development Association) in November 2000 to become JEITA (Japan Electronics and Information Technology Industries Association).
J	JPEG	Joint Photographic Expert Group: International standard format for compressing still images.
L	Linear PCM	Linear Pulse Code Modulation: LPCM is a format that digitizes analog audio signal during recording and converts it back to analog signal during playback.
M	MPEG	Moving Picture Experts Group: Standard related to compression of digital video and audio. MPEG2 is a higher standard of MPEG and is applied to video (movie) requiring higher quality.
	MPEG Audio Layer 2	One of three audio compression standards (layers 1-3) defined by MPEG
	MP3	MPEG1 Audio Layer-3: Audio data digital compression technology.
P	Progressive playback function	This function converts interlaced images to non-interlaced images and displays them. It can play back 24-frame/second images included in DVD movie software, etc.
S	SDMI	Secure Digital Music Initiative: This conference was established by hardware makers, the Recording Industry Association of America (RIAA) and music industry companies, to protect copyrights of musical compositions.
V	Virtual surround	This technology localizes sound at any position using only two front speakers, by subjecting the L and R signals to matrix operation. It uses the four transfer functions from L/R speakers located at specified positions to both ears of listener located in a specified position, taking into account the shape of head and the effect of earlobes, and the two transfer functions from any position to both ears.

2-5 OPERATING CONTROLS AND FUNCTIONS

FRONT PANEL



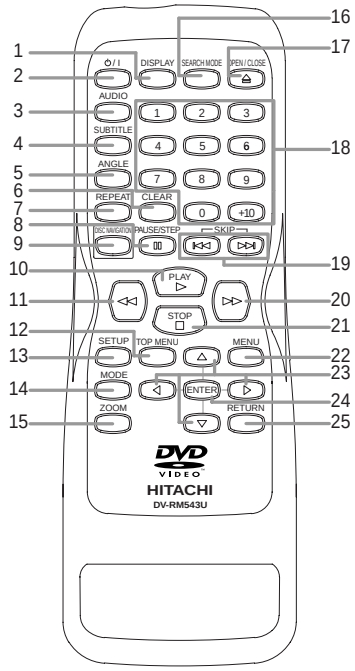
REAR VIEW



1. ⏻/I **(POWER/STANDBY)**
   Switch the player to ON or OFF
   (As to the indication of the Operate switch, "I" indicates ON and "⏻" indicates electrical power STANDBY)
2. **SKIP/FR**
   Go to previous chapter or track during playback; press and hold for 1.5 seconds for a reverse search
3. **PLAY**
   Start or resume disc playback
4. **FF/SKIP**
   Go to next chapter or track during playback; press and hold for 1.5 seconds for a forward search
5. **STOP**
   Stop playback
6. **OPEN/CLOSE**
   Open/close the disc tray
7. **Disc tray**
8. **Display**
9. **MAIN (AC Power Cord)**
   Connect to a standard AC outlet
10. **COAXIAL (Digital audio out)**
    Connect to the AUDIO inputs of a digital (coaxial) audio equipment
11. **AUDIO OUT (Left/Right)**
    Connect to the AUDIO inputs of an amplifier, receiver or stereo system
12. **VIDEO OUT**
    Connect to the Video Input of a TV.
13. **COMPONENT VIDEO OUT**
    Connect to a TV with the Component video in jacks.
14. **S-VIDEO OUT**
    Connect to a TV with the S-Video inputs

Caution: Do not touch the inner pins of the jacks on the rear panel. Electrostatic discharge may cause permanent damage to the player.

REMOTE CONTROLLER



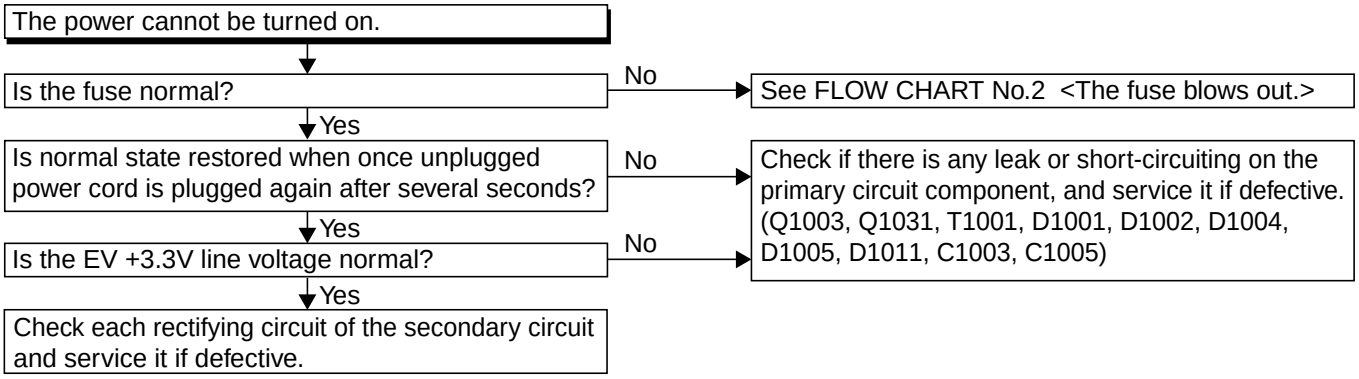
1. **DISPLAY**
   Press to access or remove the display screen during DVD or Audio CD playback.
2. **⏻/I(POWER/STANDBY)**
   Press to turn the power on and off.
   (As to the indication of the Operate switch, "I" shows ON and "⏻" shows electrical power stand-by.)
3. **AUDIO**
   Press to select a desired audio language or sound mode.
4. **SUBTITLE**
   Press to select the desired subtitle language.
5. **ANGLE**
   Press to change the camera angle to see the sequence being played back from a different angle.
6. **CLEAR**
   Press to reset the setting.
7. **REPEAT**
   Repeats playback of the current disc, title, chapter or track.
8. **PAUSE/STEP**
   Press to pause Disc playback. Press repeatedly to advance the DVD picture step by step or one frame at a time.
9. **DISC NAVIGATION**
   Press to display the first scenes of each chapter of the title being played.
10. **PLAY**
    Press to begin playback.
11. **◀◀**
    Press to view the DVD picture in fast reverse motion or to reverse playback of an Audio CD.
12. **TOP MENU**
    Press to call up the title menu.
13. **SETUP**
    Press to enter the setup mode.
14. **MODE**
    Activates program playback or random playback mode when playing CDs or MP3. Sets Black level and virtual surround.
15. **ZOOM**
    Enlarges part of a DVD-reproduced image.
16. **SEARCH MODE**
    Press to access or remove the Search display, which allows you to go directly to a specific Title/ Chapter/ Track/ Time.
17. **OPEN/CLOSE**
    Press to open or close the disc loading tray.
18. **Numerical Buttons**
    Press to directly select a Track (Audio CD or MP3) for playback.
19. **SKIP**
    Press to skip Chapters or Tracks.
20. **▶▶**
    Press to fast forward the Disc. Press PAUSE/STEP, then press this button to begin slow motion playback. Press this button repeatedly to change the forward speed of slow motion.
21. **STOP**
    Press to stop the disc motion.
22. **MENU**
    Press to display the menu of the Disc.
23. **Arrow Buttons (◀▶▼▲)**
    Move the cursor and determines its position.
24. **ENTER**
    Press to accept a setting.
25. **RETURN**
    Returns to the previous operation.

3 MAINTENANCE AND INSPECTION

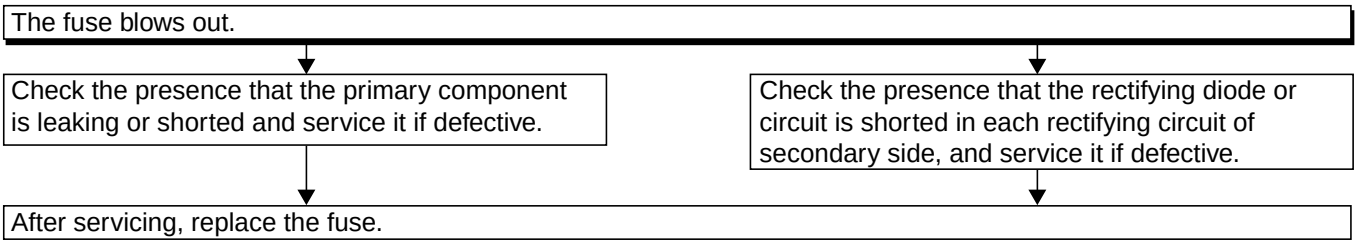
3-1 TROUBLESHOOTING

Troubleshooting is how to service for the specifying malfunction or poor parts.
Detect malfunction or poor parts and service as the following charts.

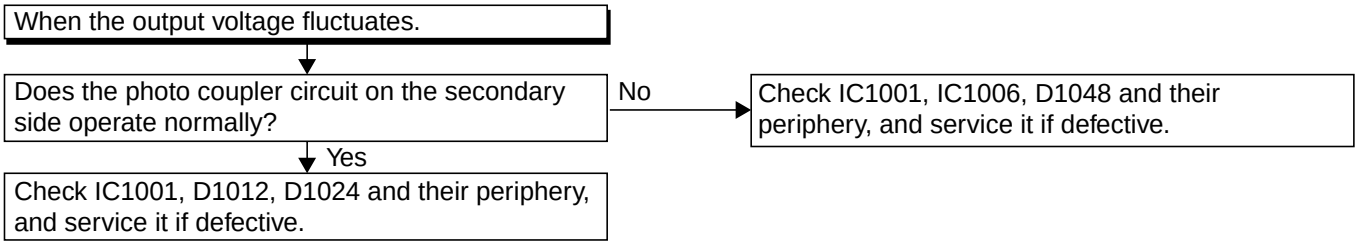
FLOW CHART NO.1



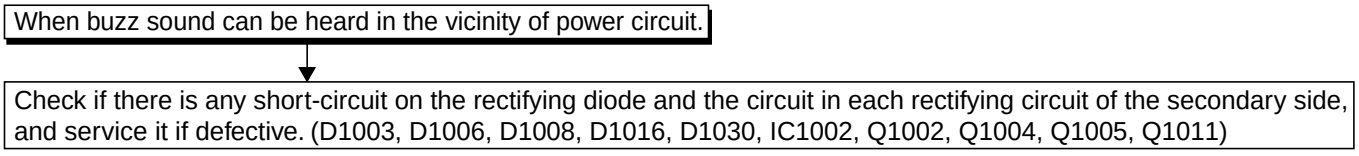
FLOW CHART NO.2



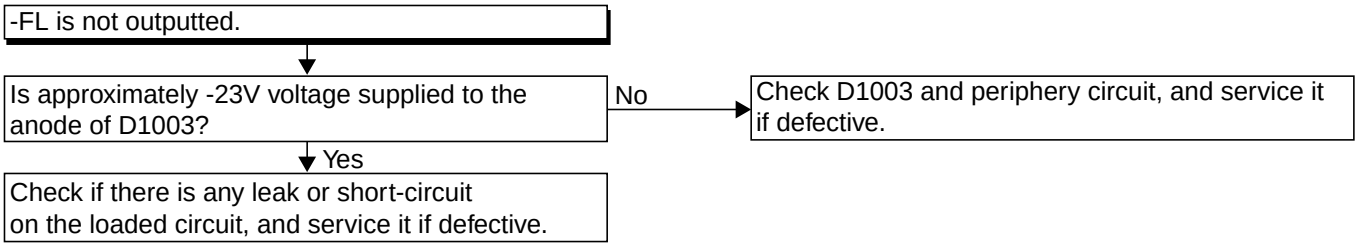
FLOW CHART NO.3



FLOW CHART NO.4



FLOW CHART NO.5



FLOW CHART NO.6

P-ON+10V (EV+11V) is not outputted.

↓

Is 11V voltage supplied to the emitter of Q1002? — No → Check D1030, D1048, C1035, C1048, L1009 and the periphery circuit, and service it if defective.

↓ Yes

Is the voltage of base on Q1002 lower than the voltage of emitter on Q1002 when turning the power on? — No → Check Q1016 and PWRCON line and service it if defective.

↓ Yes

Replace Q1002.

FLOW CHART NO.7

P-ON+5V is not outputted. (EV+11V is outputted normally.)

↓

Is the "H" signal inputted into the base of Q1004? — No → Check R1068 and D1046, and service it if defective.

↓ Yes

Replace Q1004.

FLOW CHART NO.8

P-ON+3.3V is not outputted. (P-ON+10V is outputted normally.)

↓

Is 3.3V voltage supplied to the collector of Q1011? — No → Check D1008, C1007, C1038, L1007 and the periphery circuit, and service it if defective.

↓ Yes

Replace Q1011 or R1067.

FLOW CHART NO.9

EV+5V is not outputted.

↓

Is EV+11V outputted normally? — No → Refer to "FLOW CHART NO.6" <P-ON+10V (EV+11V) is not outputted.>

↓ Yes

Check D1047 and the periphery circuit, and service it if defective.

FLOW CHART NO.10

EV+1.2V is not outputted.

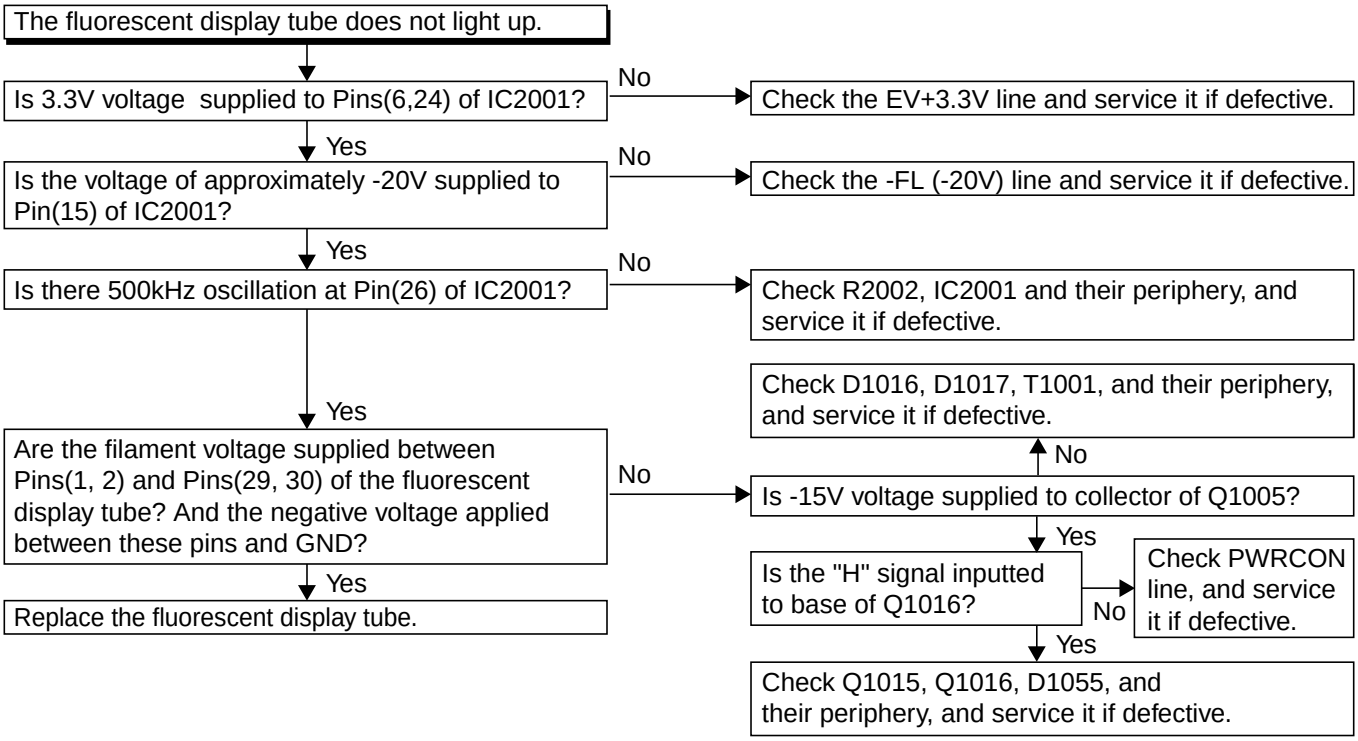
↓

Is 2.5V voltage supplied to Pin(1) of IC1002? — No → Check D1006, C1014, C1050, L1008 and the periphery circuit, and service it if defective.

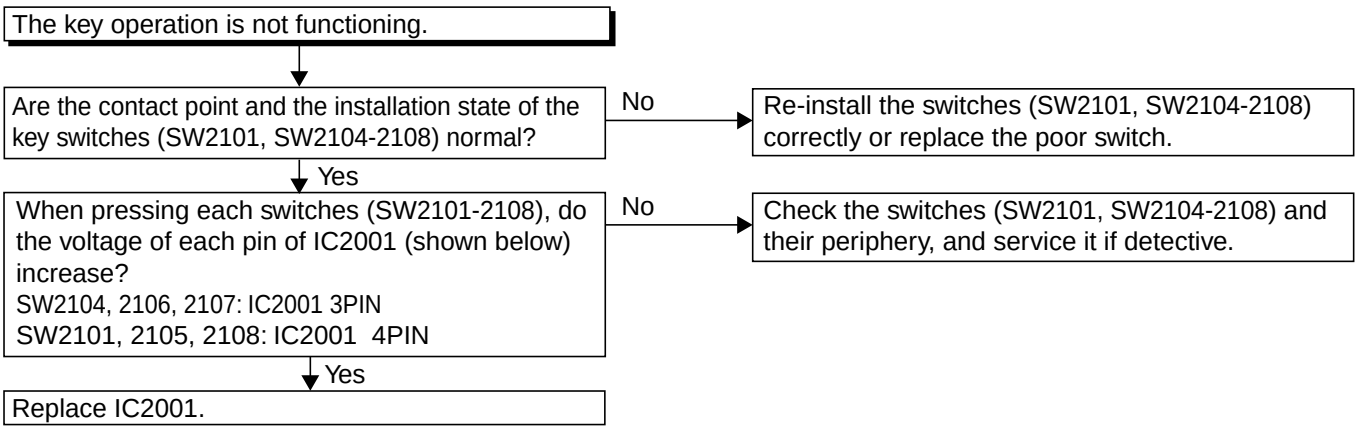
↓ Yes

Replace IC1002.

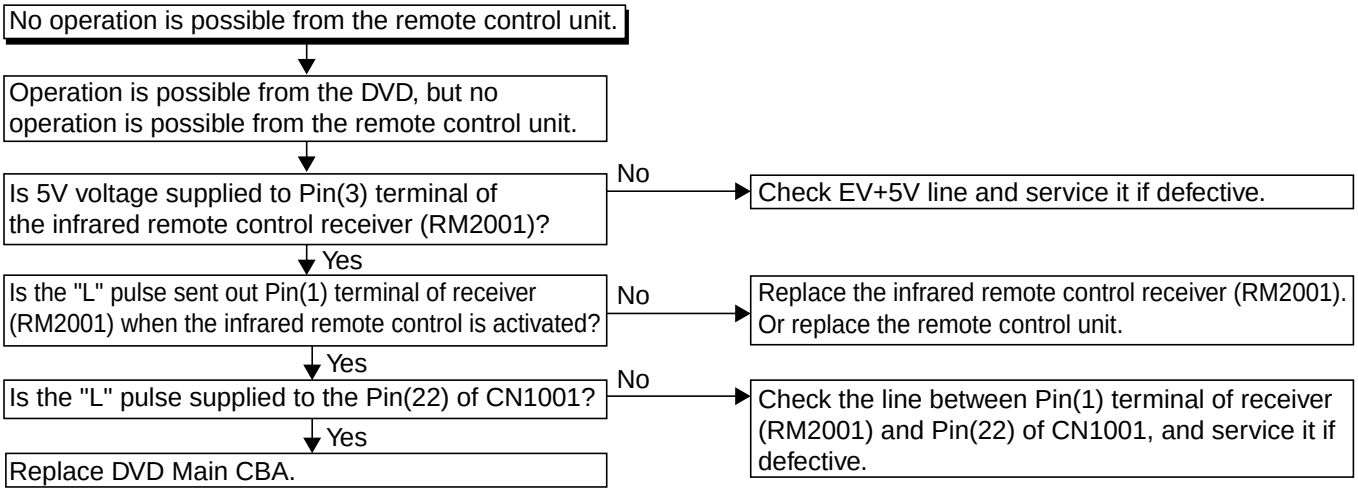
FLOW CHART NO.11



FLOW CHART NO.12



FLOW CHART NO.13



FLOW CHART NO.14

The disc tray cannot be opened and closed. (It can be done using the remote control unit.)

↓

Is the normal control voltage inputted to Pin(4) of IC2001? Refer to "FLOW CHART NO.12" <The key operation is not functioning.>

No → Replace the "OPEN/CLOSE" button (SW2108).

↓ Yes

Refer to "FLOW CHART NO.15" <The disc tray cannot be opened and closed.>

FLOW CHART NO.15

The disc tray cannot be opened and closed.

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mecha.

FLOW CHART NO.16

[No Disc] indicated. (When the focus error occurs.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mecha.

FLOW CHART NO.17

[No Disc] indicated. (When the focus servo is not functioning.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mecha.

FLOW CHART NO.18

[No Disc] indicated. (When the laser beam does not light up.)

↓

Replace the DVD Main CBA.

↓

No improvement can be found.

No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mecha.

FLOW CHART NO.19

Both functions of picture and sound do not operate normally.

↓

Replace the DVD Main CBA.

↓

No improvement can be found. — No → Original DVD Main CBA is poor.

↓ Yes

Replace the DVD Mecha.

FLOW CHART NO.20

Picture does not appear normally.

↓

Set the disc on the disc tray, and playback.

↓

Are the video signals outputted to each pin of CN1601 on the AV CBA? — No → Replace the DVD Main CBA or DVD Mecha.

CN1601	3PIN	S-Y
CN1601	4PIN	Cr/Pr
CN1601	6PIN	Cb/Pb
CN1601	8PIN	Y
CN1601	10PIN	S-C

↓ Yes

Are the video signals shown above inputted into each pin of IC1402, IC1403? — No →

IC1402	3PIN	Y
IC1402	6PIN	Cb/Pb
IC1402	8PIN	Cr/Pr
IC1403	3PIN	S-Y
IC1403	1PIN	S-C

Check the line between each pin of CN1601 and each pin of IC1402, IC1403 on the AV CBA, and service it if detective.

CN1601	8PIN →	IC1402	3PIN	Y
CN1601	6PIN →	IC1402	6PIN	Cb/Pb
CN1601	4PIN →	IC1402	8PIN	Cr/Pr
CN1601	3PIN →	IC1403	3PIN	S-Y
CN1601	10PIN →	IC1403	1PIN	S-C

↓ Yes

Are the video signals outputted to each pin of IC1402, IC1403? — No →

IC1402	13PIN	Y
IC1402	11PIN	Cb/Pb
IC1402	10PIN	Cr/Pr
IC1403	6PIN	CVBS
IC1403	5PIN	S-Y
IC1403	7PIN	S-C

Is 5V voltage applied to the pin(4, 12) of IC1402, pin(4) of IC1403?

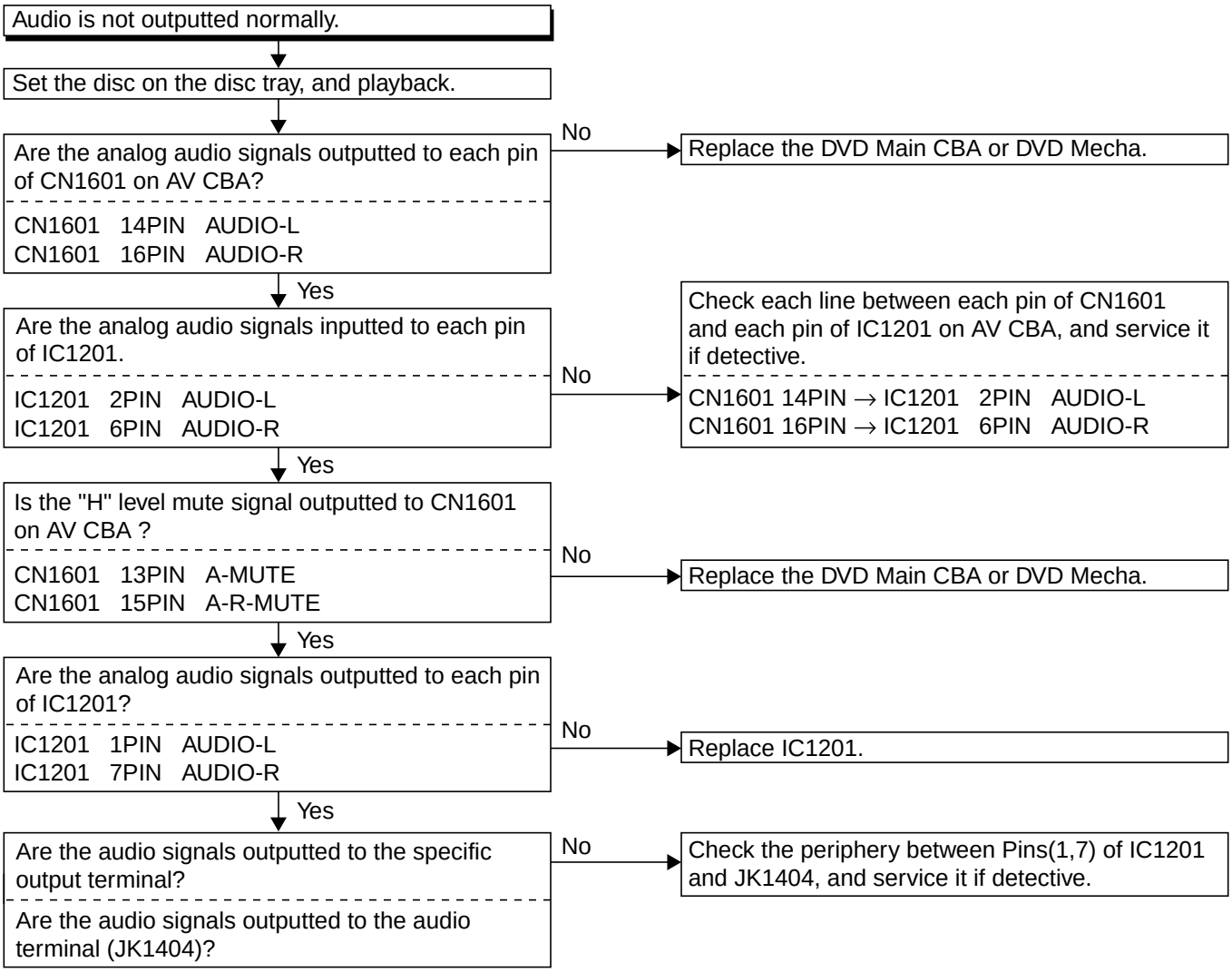
- Yes → Replace IC1402, IC1403.
- No → Check P-ON+5V line and service it if detective.

↓ Yes

Are the video signals outputted to the specific output terminal?

Are the luminance signals outputted to the S-OUT terminal (JK1401)?	No →	Check the periphery of JK1401 from Pin (5) of IC1403 and service it if detective.
Are the chroma signals outputted to the S-OUT terminal (JK1401)?	No →	Check the periphery of JK1401 from Pin (7) of IC1403 and service it if detective.
Are the Y, Cb/Pb, Cr/Pr signals outputted to the COMPONENT OUT terminal (JK1404)?	No →	Check the periphery of JK1404 from Pins (10, 11, 13) of IC1402 and service it if detective.
Are the composite video signals outputted to the VIDEO OUT terminal (JK1404)?	No →	Check the periphery of JK1404 from Pin(6) of IC1403 and service it if detective.

FLOW CHART NO.21



3-2 FIRMWARE RENEWAL MODE

3-2-1 How to Update the Firmware Version

Note:
If the firmware has been changed, etc., we will use Service News, etc. to report on how to obtain new firmware data and create an upgraded disc.

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.

"*******" differ depending on the models.

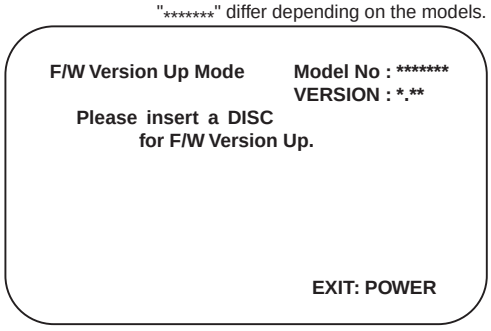


Fig. a Version Up Mode Screen

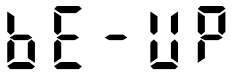


Fig. b VFD in Version Up Mode

   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.
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. If you enter the F/W for different models, “Disc Error” will appear on the screen, then the tray will open automatically.

"*******" differ depending on the models.

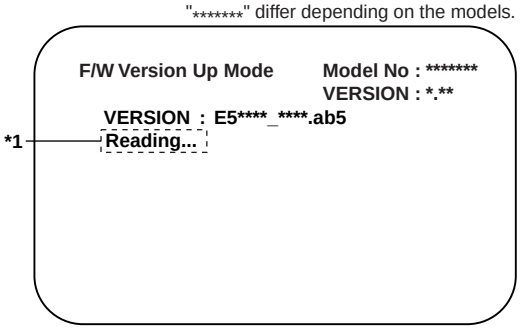


Fig. c Programming Mode Screen

Fig. d VFD in Programming Mode (Example)

   The appearance shown in (*1) 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

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*2) of Fig. e appears on the VFD. (Fig. f)

"*******" differ depending on the models.

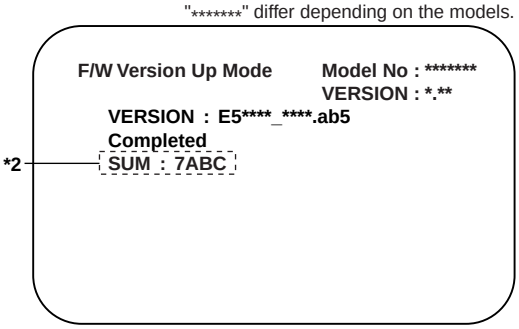


Fig. e Completed Program Mode Screen

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

   At this time, no buttons are available.
6. Remove the disc on the tray.
7. Unplug the AC cord from the AC outlet. Then plug it again.
8. Turn the power on by pressing the [⏻/I] button and the tray will close.
9. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

"*******" differ depending on the models.

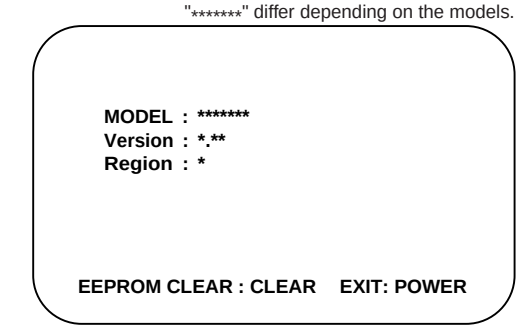


Fig. g

10.Press [CLEAR] button on the remote control unit. Fig. h appears on the screen.

"*******" differ depending on the models.

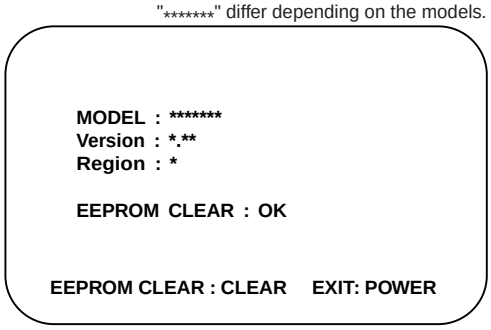


Fig. h

When “OK” appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

11.To exit this mode, press [⏻/I] button.

3-2-2 How to Verify the Firmware Version

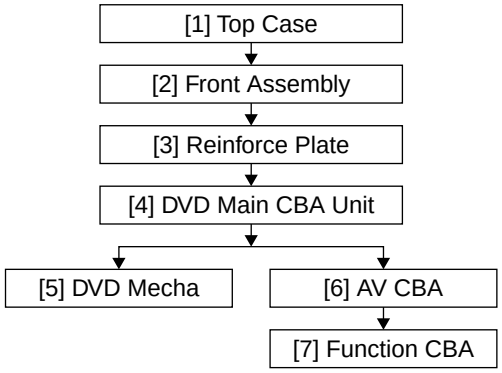
1. After making sure that no disc is in unit, turn the power on.
2. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order. The Firmware version appears on the VFD and TV screen.
3. Turn the power off to reset the unit.

4 DISASSEMBLY

4-1 CABINET DISASSEMBLY INSTRUCTIONS

4-1-1 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.



4-1-2 Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Case	D1	3(S-1)	-
[2]	Front Assembly	D2	*4(L-1), *3(L-2), *3(L-3)	1 1-1 1-2
[3]	Reinforce Plate	D3	3(S-2)	-
[4]	DVD Main CBA Unit	D4	(S-3A), (S-3B), *CN201, *CN301, *CN401, *CN601, FCC Cover	2 2-1 2-2
[5]	DVD Mecha	D4, D5	4(S-4)	2 3
[6]	AV CBA	D6	(S-5), 4(S-6), *2(L-4)	-
[7]	Function CBA	D6	*CN2001	-
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

About tightening screws

When tightening screws, tighten them with the following torque.

Screws	Torque
(S-1), (S-2), (S-3A), (S-4), (S-5), (S-6)	0.45 ± 0.05 N·m
(S-3B)	0.38 ± 0.04 N·m

Reference Notes

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

1-1. Release four Locking Tabs (L-1). Then, release three Locking Tabs (L-2).

1-2. Release three Locking Tabs (L-3). Then remove the Front Assembly.

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. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. D4)

2-2. Disconnect Connectors (CN301), (CN401) and (CN601). Remove two Screws (S-3A) and (S-3B) and lift the DVD Main CBA Unit. (Fig. D4)

CAUTION 3: When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. D4)

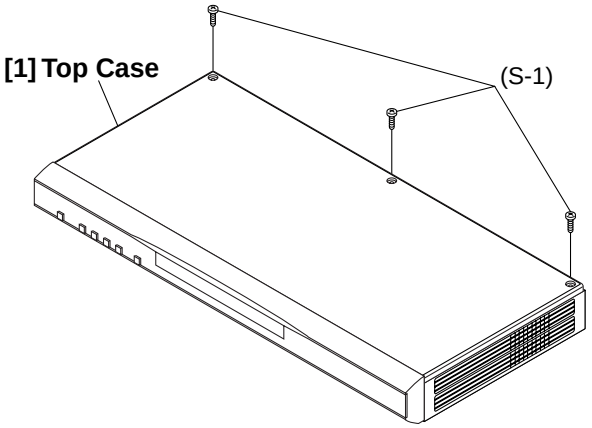


Fig. D1

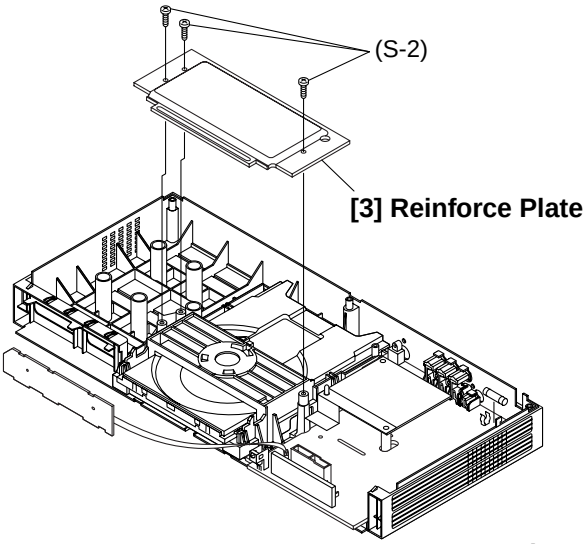


Fig. D3

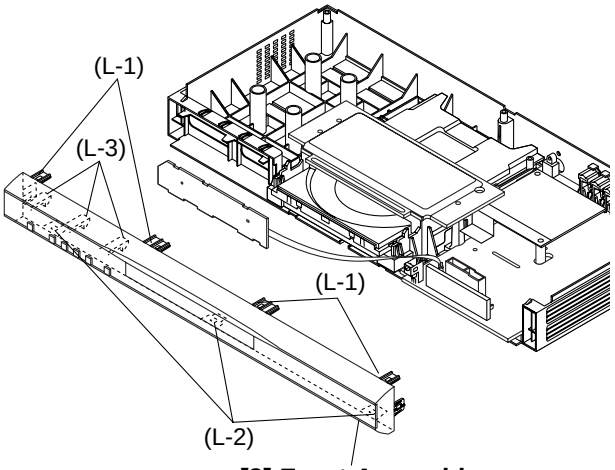
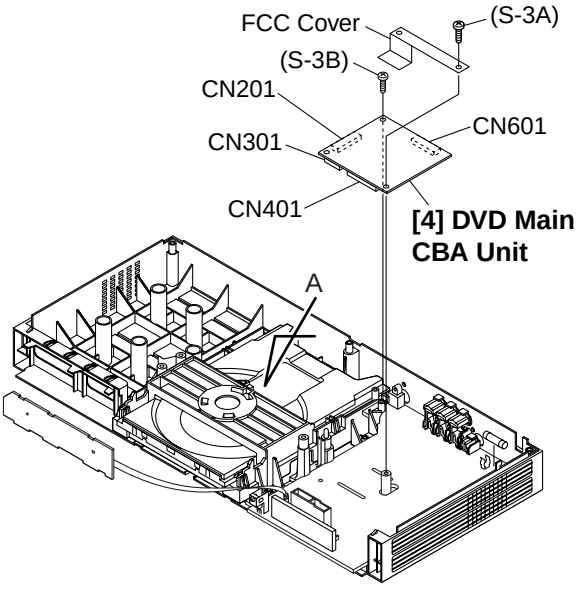


Fig. D2



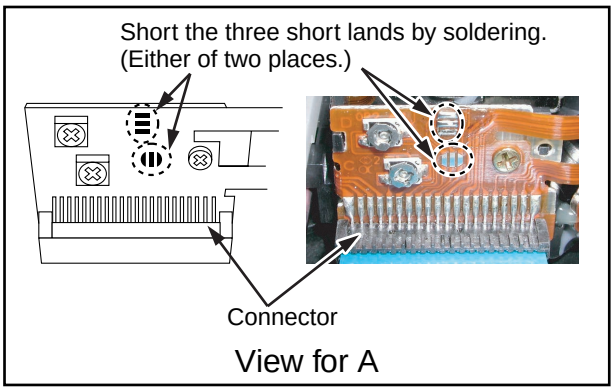


Fig. D4

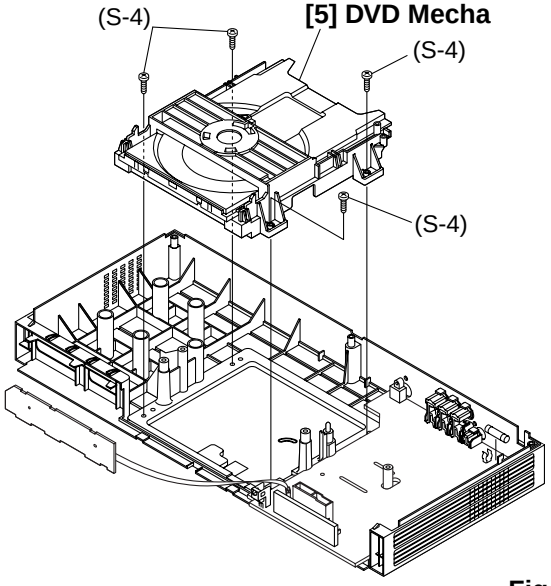


Fig. D5

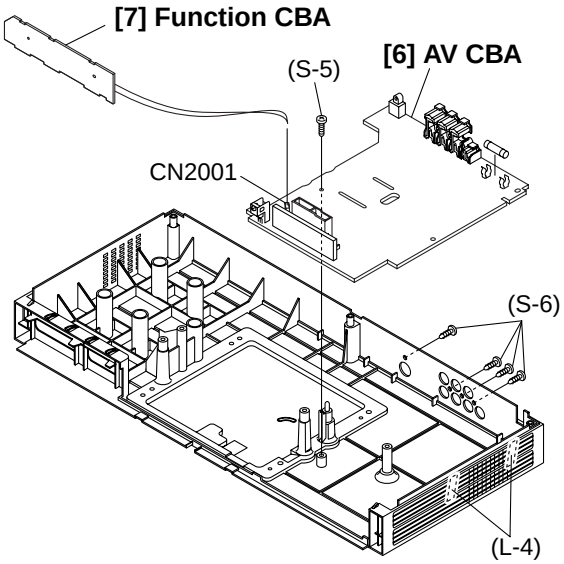
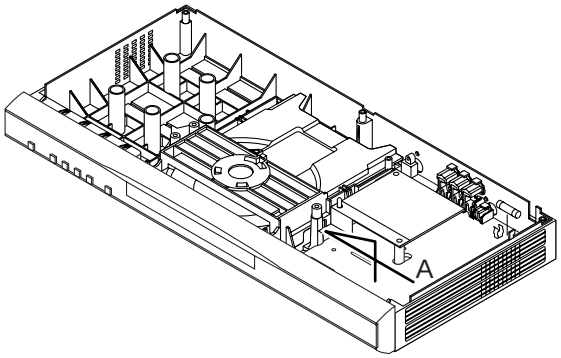


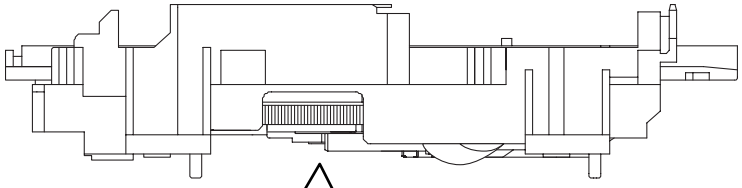
Fig. D6

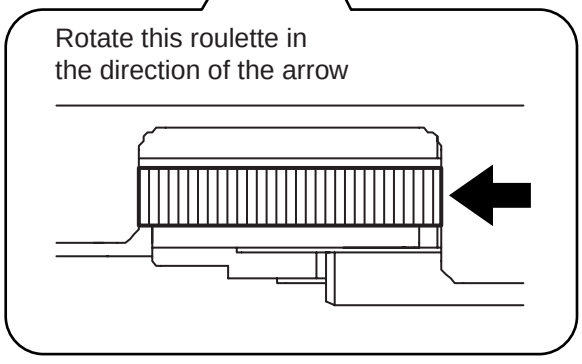
HOW TO EJECT MANUALLY (Method 1)

1. Remove the Top Case.
2. Remove the Reinforce Plate.
3. Rotate the roulette in the direction of the arrow as shown below.



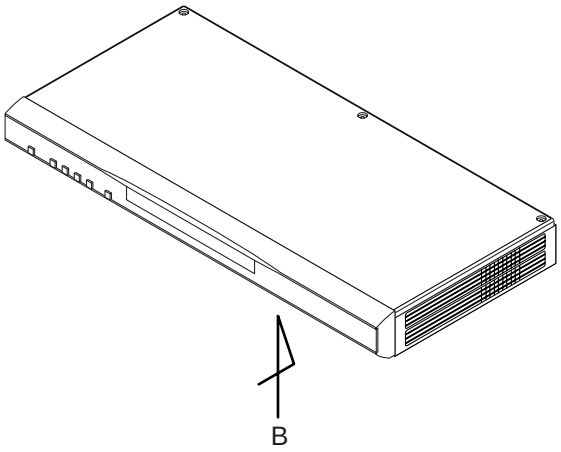
View for A



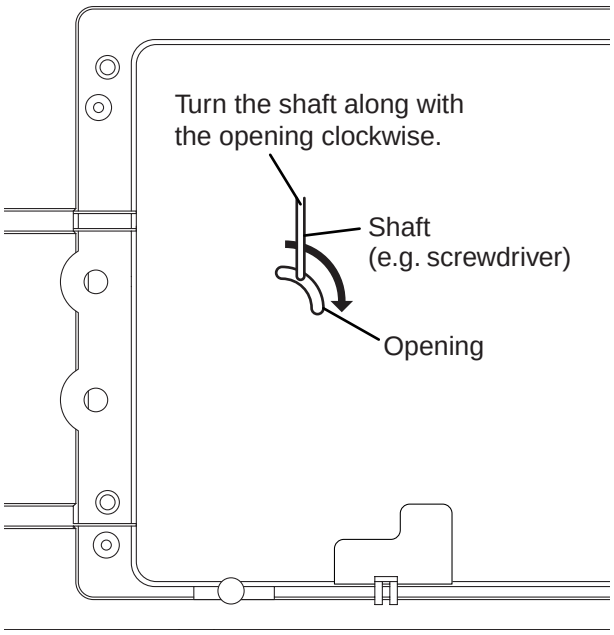


HOW TO EJECT MANUALLY (Method 2)

1. Turn the unit over.
2. Insert the shaft less than a diameter of 3 mm (e.g. screw-driver) straightly into the opening as shown.
3. Turn the shaft along with the opening clockwise.
4. Repeat steps 2 and 3 until the tray will open.
5. Pull the tray slowly with a hand.

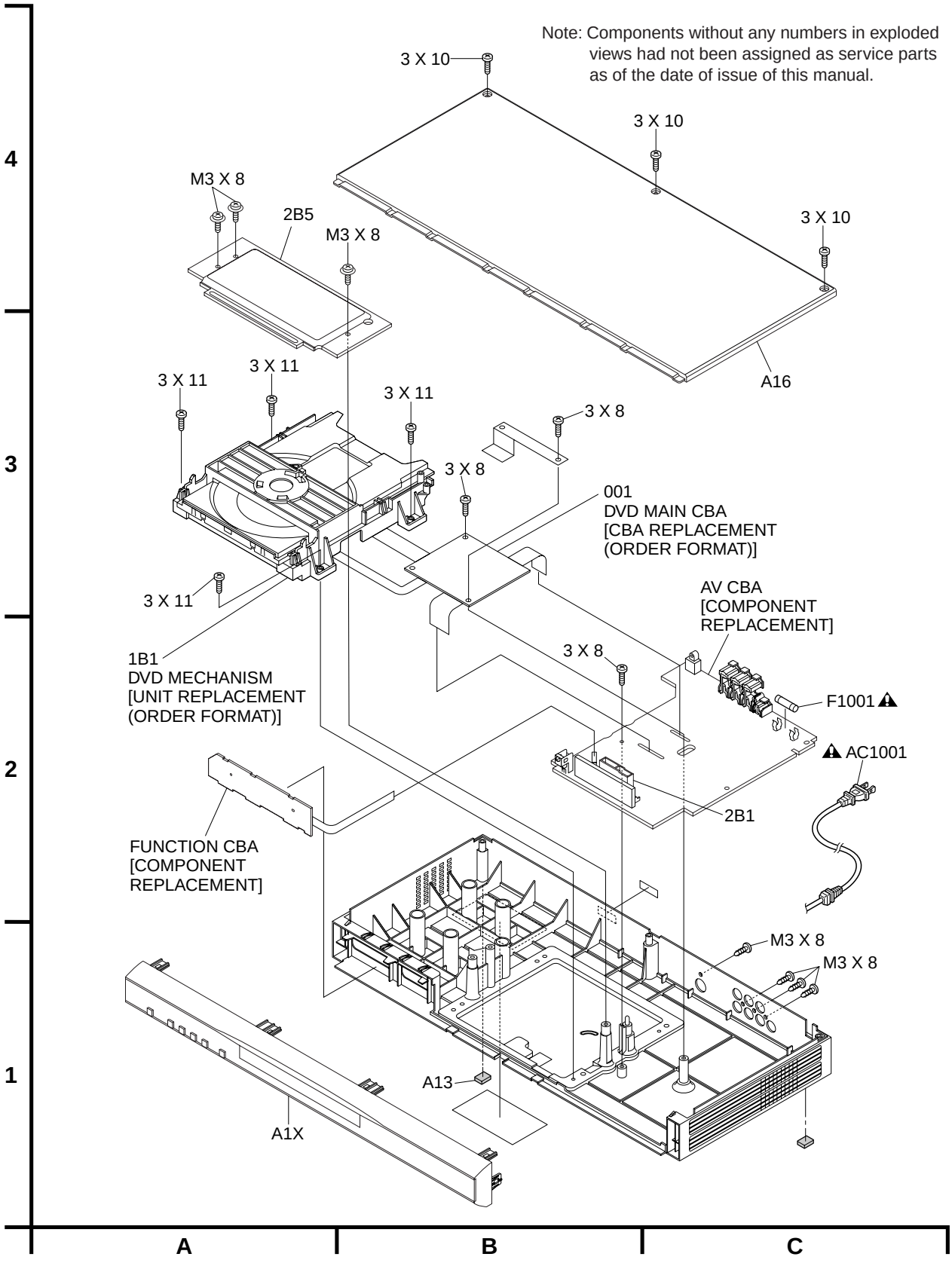


View for B



5 EXPLODED VIEW AND PARTS LIST

5-1 EXPLODED VIEW



5-2 REPLACEMENT PARTS LIST

5-2-1 Mechanical Parts List

Note: Products marked with a ⚠ have special characteristics important to safety.

SYMBOL-NO	P-NO	DESCRIPTION
	MECHANISM SECTION	
A1X	TJ17571	PANEL,FRONT
A13	TJ16981	FOOT,REAR
A16	TJ17572	CASE,TOP
⚠ AC1001	TE15463	CORD,AC
1B1	TJ17573	DVD DRIVE MECHA
2B1	TJ17579	HOLDER
2B5	TJ17574	PLATE
001	TJ17577	PWB ASSY DVD MAIN
	ACCESSORIES	
X1	TS18851	REMOTE HAND SET
X5	TJ15699	CORD,AV

SYMBOL-NO	P-NO	DESCRIPTION

5-2-2 Electrical Parts List

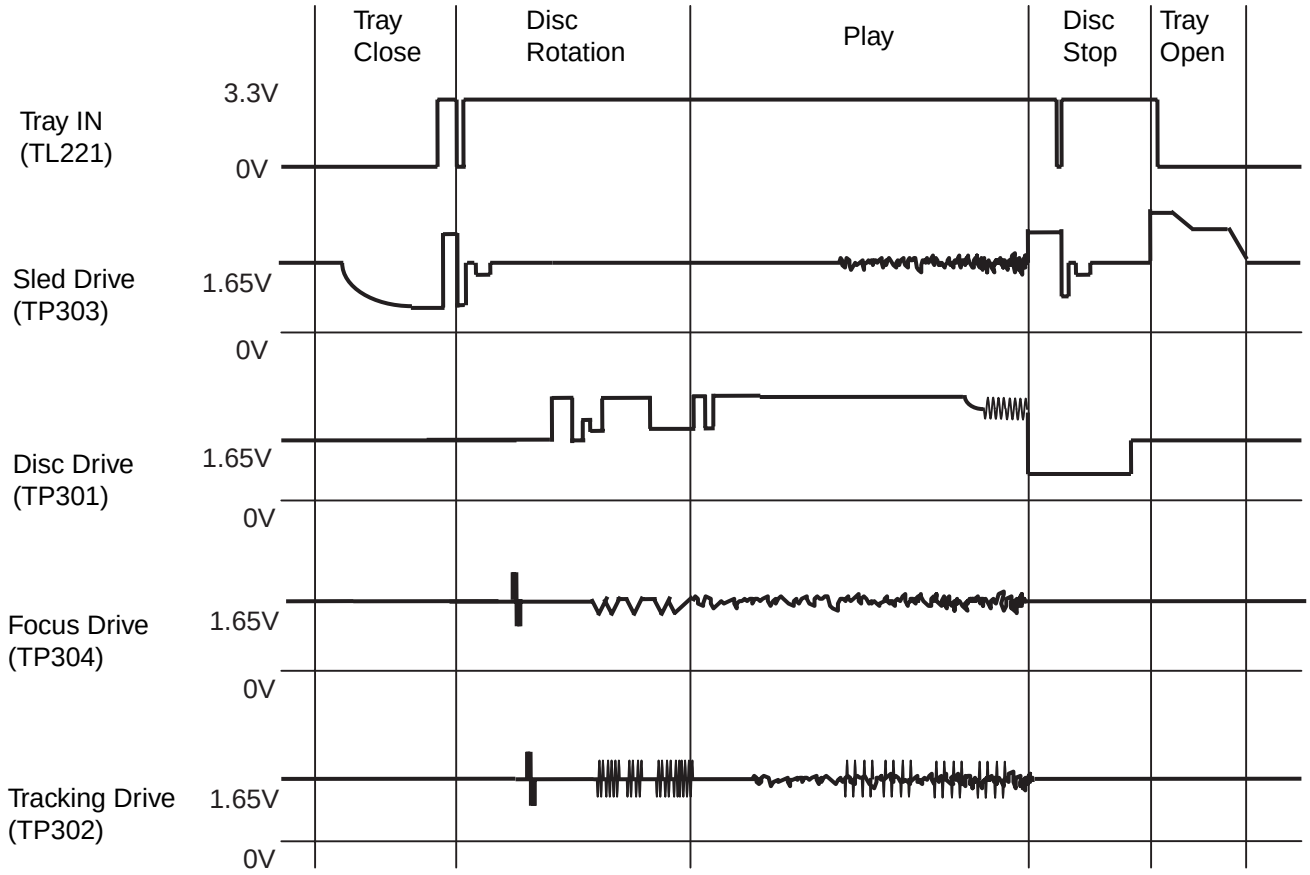
Note: Although some parts in the schematic diagrams have different names from those in the parts list, there is no problem in replacing parts.

SYMBOL-NO	P-NO	DESCRIPTION
		SEMI-CONDUCTORS
D1001	TC10752	DIODE 1A5
D1002	TC10752	DIODE 1A5
D1003	TC10791	RECTIFIER DIODE BA157
D1004	TC10752	DIODE 1A5
D1005	TC10752	DIODE 1A5
D1006	TC10877	DIODE SB140
D1008	TC10877	DIODE SB140
D1011	TC10791	RECTIFIER DIODE BA157
D1012	TC10754	SWITCHING DIODE 1N4148M
D1016	TC10791	RECTIFIER DIODE BA157
D1017	TJ17586	ZENER DIODE DZ-18BSBT265
D1018	TC10754	SWITCHING DIODE 1N4148M
D1022	TC10754	SWITCHING DIODE 1N4148M
D1024	TC10754	SWITCHING DIODE 1N4148M
D1025	TC10754	SWITCHING DIODE 1N4148M
D1030	TJ15128	CONNECTOR
D1046	TJ14689	ZENER DIODE MTZJT-775.6C
D1047	TJ14689	ZENER DIODE MTZJT-775.6C
D1048	TC12681	ZENNER DIODE DZ-15BSAT265
D1051	TJ14752	ZENER DIODE MTZJT-776.2B
D1055	TC10754	SWITCHING DIODE 1N4148M
D1058	TC10877	DIODE SB140
D1070	TJ17587	ZENER DIODE DZ-33BSDT265
D1301	TJ13895	ZENER DIODE MTZJT-775.6B
D2041	TC10754	SWITCHING DIODE 1N4148M
D2042	TC10754	SWITCHING DIODE 1N4148M
D2043	TC10754	SWITCHING DIODE 1N4148M
D2044	TC10754	SWITCHING DIODE 1N4148M
⚠ IC1001	TE13224	IC LTV-817B-F
IC1002	TJ17589	IC PQ070XZ5MZP
IC1006	TC12241	IC KIA431-AT
IC1201	TC12251	IC KIA4558P
IC1402	TJ17591	IC MM1637XVBE
IC1403	TJ17592	IC MM1636XWRE
IC2001	TC12684	IC PT6313-S-TP
Q1002	TC10782	TRANSISTOR KTA1267
Q1003	TC10778	TRANSISTOR KTC3199
Q1004	TJ17492	TRANSISTOR KTC3198(Y)
Q1005	TC10778	TRANSISTOR KTC3199
Q1008	TC10778	TRANSISTOR KTC3199
Q1011	TC12634	TRANSISTOR 2SC2120-Y
Q1015	TC12411	TRANSISTOR KRA110M
Q1016	TC10778	TRANSISTOR KTC3199
⚠ Q1031	TJ17593	TRANSISTOR 2SK3498
Q1201	TC10778	TRANSISTOR KTC3199
Q1202	TC10778	TRANSISTOR KTC3199
Q1204	TC10784	TRANSISTOR KTA1266
Q1351	TC10778	TRANSISTOR KTC3199
Q1352	TC10778	TRANSISTOR KTC3199
		TRANSFORMER
⚠ T1001	TJ17594	TRANS,PULS
		COILS
⚠ L1001	TJ15243	FILTER,LINE
L1011	TA12554	CORE
L1350	TA12561	COIL 100UH
L1351	TA14481	COIL
L1521	TA14471	COIL
L2031	TA12561	COIL 100UH
		MISCELLANEOUS
CN1001	TJ17583	CONNECTOR,22PIN
CN1601	TJ17584	CONNECTOR,17PIN
CN2001	TJ17585	CONNECTOR,6PIN
CN2101	TJ17596	CONNECTOR,6PIN
⚠ C1001	TJ17581	CAPACITOR 0.022UF 250V
⚠ C1006	TJ17582	CAPACITOR 2200PF 250V
RM2001	TC12331	SENSOR UNIT
FH1001	TE11084	HOLDER
FL2001	TJ17588	DISPLAY
⚠ F1001	TE13223	FUSE 1A/250V
JK1202	TE15465	JACK
JK1401	TE14821	JACK
JK1404	TE15466	JACK
SA1001	TC10891	SURGE ABSORBER ENC471D-10AC
SW2101	TE11957	SWITCH
SW2104	TE11957	SWITCH
SW2105	TE11957	SWITCH
SW2106	TE11957	SWITCH
SW2107	TE11957	SWITCH
SW2108	TE11957	SWITCH
W1006	TJ17595	WIRE

6 APPENDIX

6-1 SYSTEM CONTROL TIMING CHARTS

Tray Close ~ Play / Play ~ Tray Open

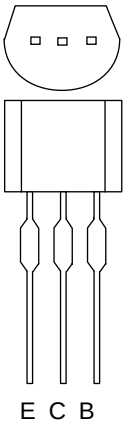


6-2 IC PIN FUNCTION DESCRIPTIONS

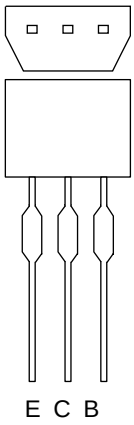
IC2001 [FIP DRIVER]

Pin No.	IN/ OUT	Signal Name	Name Function
1	IN	FP-CLK	Clock Input
2	IN	FP-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	Segment Output
12	IN	f	
13	IN	g	
14	OUT	h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	OUT	FP-DOUT	Serial Data Output
28	IN	FP-DIN	Serial Data Input

6-3 LEAD IDENTIFICATIONS

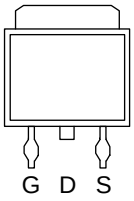


2SA1015-Y(TPE2)
2SC2120-Y(TPE2)
KTA1266(Y)
KTC3198(Y)
KTC3203(Y)

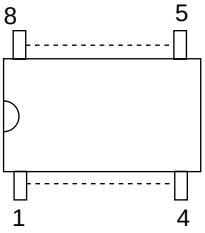


2SC2785(H)
BN1L3Z(P)
KRA110M
KTA1267(Y)
KTC3199(GR)

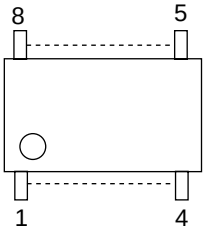
2SK3498



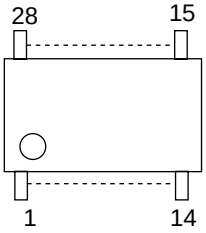
KIA4558P
MM1636XWRE
RC4580IP



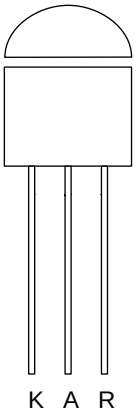
NJM4558D



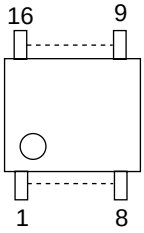
PT6313-S-TP
SC16313



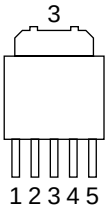
FAN431AZXA
KIA431-AT



MM1637XVBE



PQ070XZ5MZP



1: Vin
2: Vc
3: Vo
4: Vadj
5: GND

EL817B
EL817C
LTV-817B-F
LTV-817C-F
PS2561A-1(Q,W)

Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
G: Gate
D: Drain
S: Source

S SCHEMATIC, WIRING DIAGRAMS

S-1 Schematic Diagrams / CBA's and Test Points

Standard Notes

WARNING

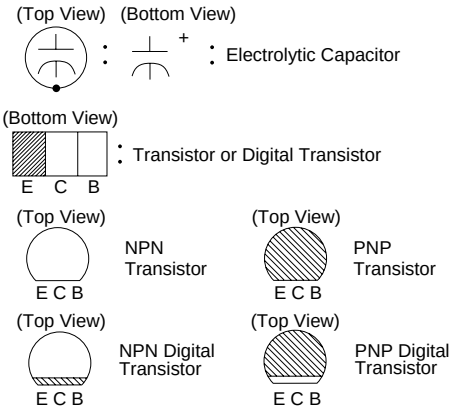
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, 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

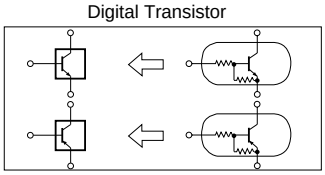
Capacitors and transistors are represented by the following symbols.

CBA Symbols



Schematic Diagram Symbols

Digital Transistor



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 specified.

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 indication.....Ω K.....kΩ M.....MΩ
Power capacitance	No indication.....1/4W,1/6W All capacitances other than the above are indicated in schematic diagrams.

[Capacitors]

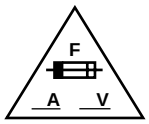
Item	Indication
Value	No indication.....μF P.....pF
Dielectric strength	No indication.....50V All dielectric strengths other than 50V are indicated in schematic diagrams.

[Coils]

Item	Indication
Value	μ.....μH m.....mH

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 même type.
Risk of fire-replace fuse as marked.

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

2. CAUTION:

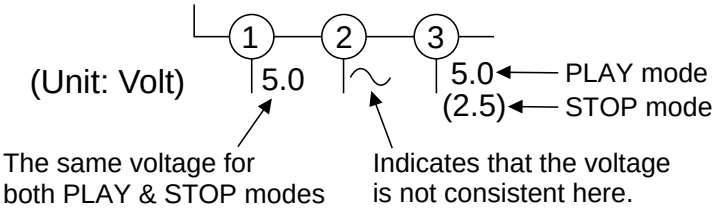
Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the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

3. Note:

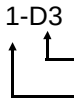
(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

(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. Voltage indications for PLAY and STOP mode on the schematics are as shown below:

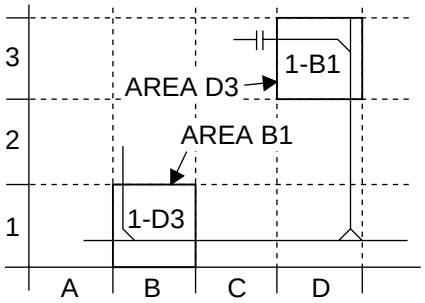


5. How to read converged lines



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".



6. Test Point Information

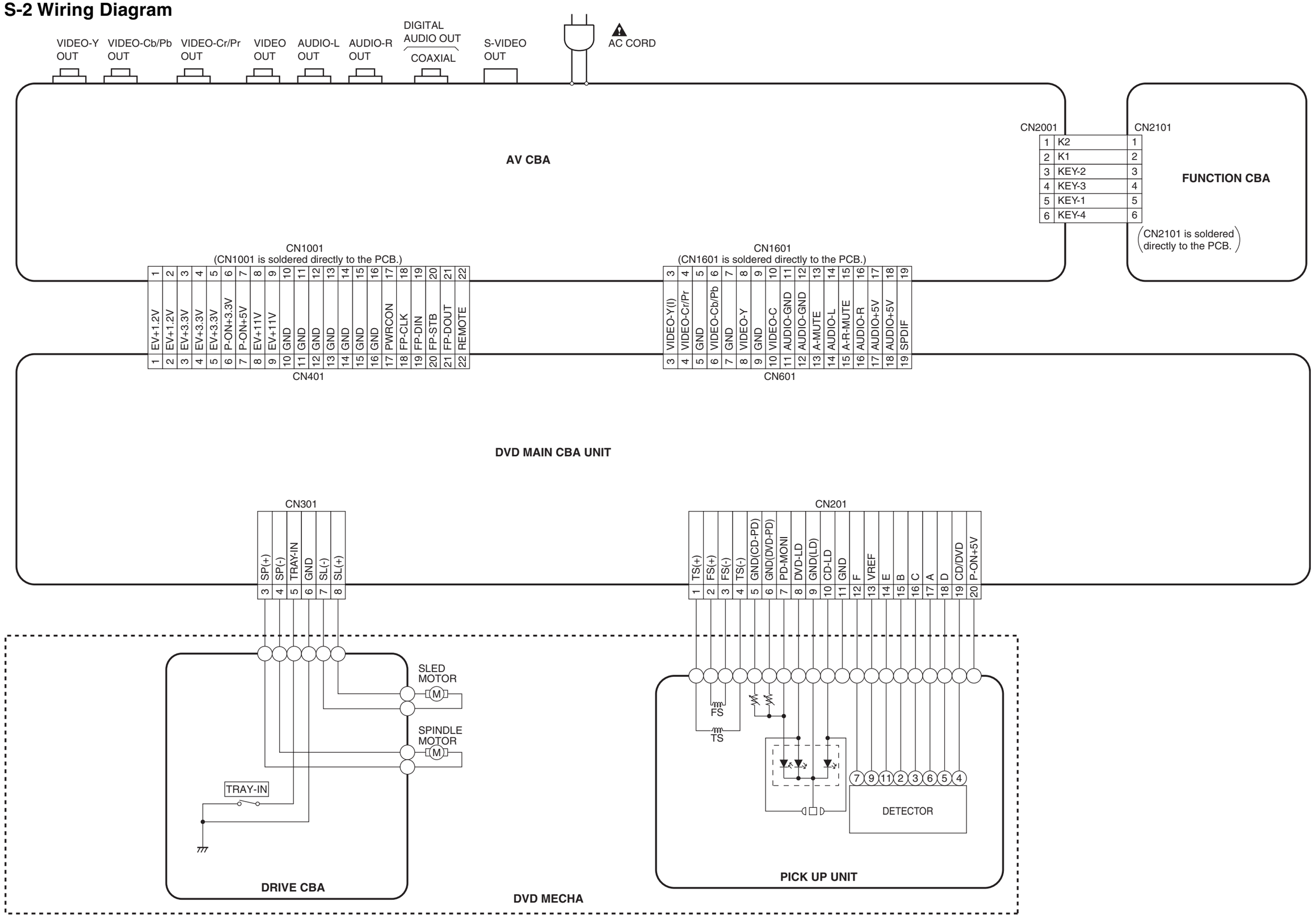
 : Indicates a test point with a jumper wire across a hole in the PCB.

 : Used to indicate a test point with a component lead on foil side.

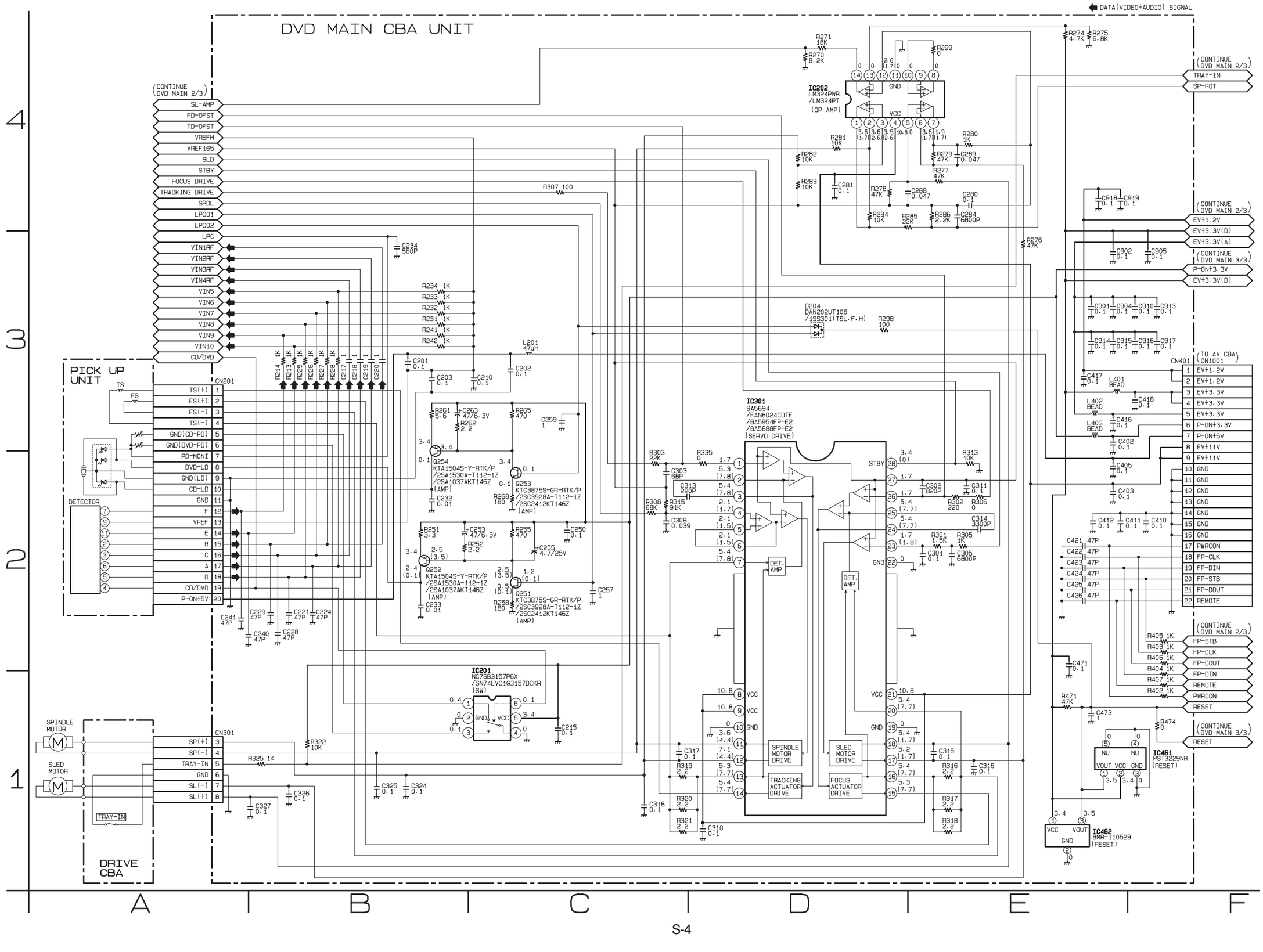
 : Used to indicate a test point with no test pin.

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

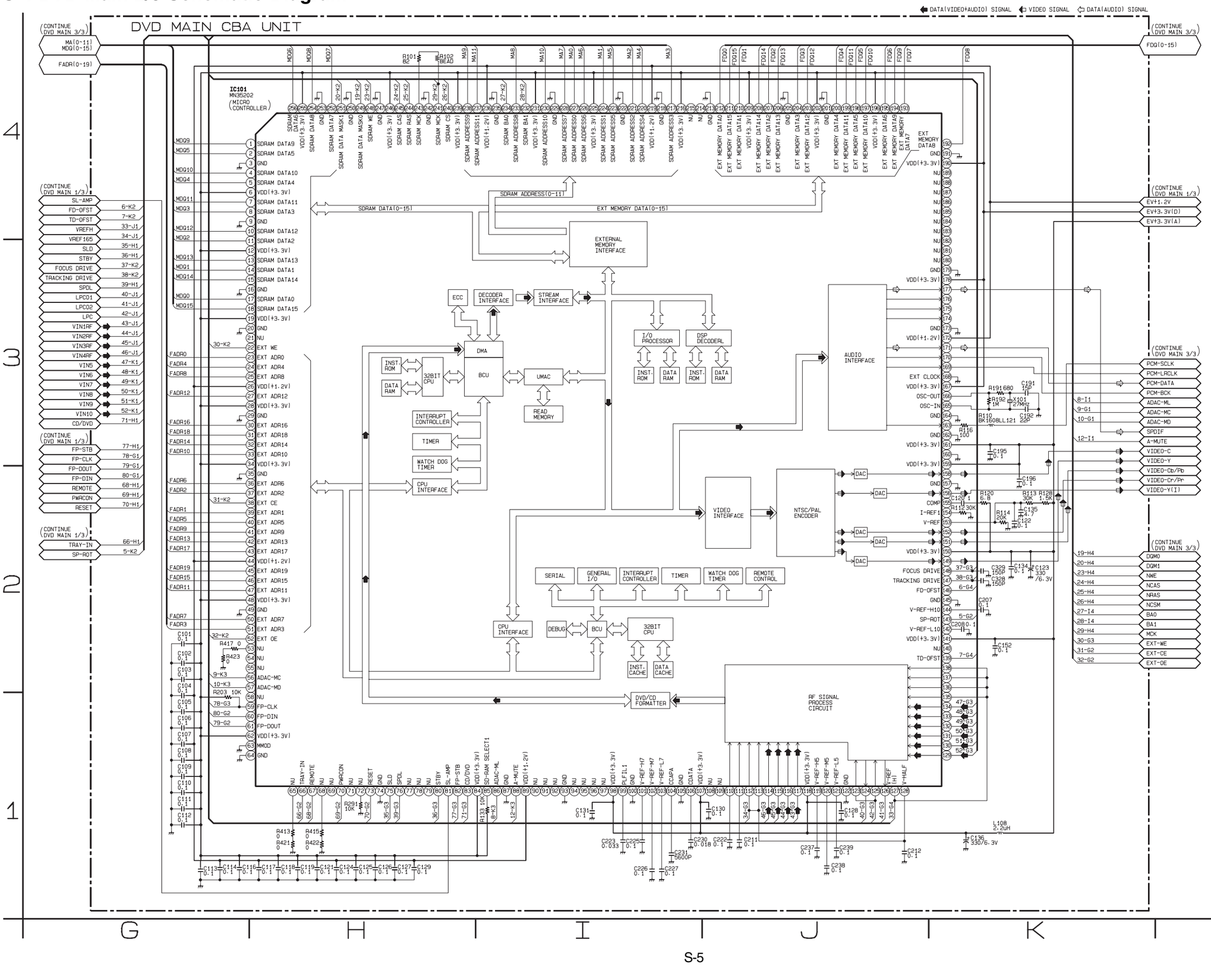
S-2 Wiring Diagram



S-3 DVD Main 1/3 Schematic Diagram



S-4 DVD Main 2/3 Schematic Diagram

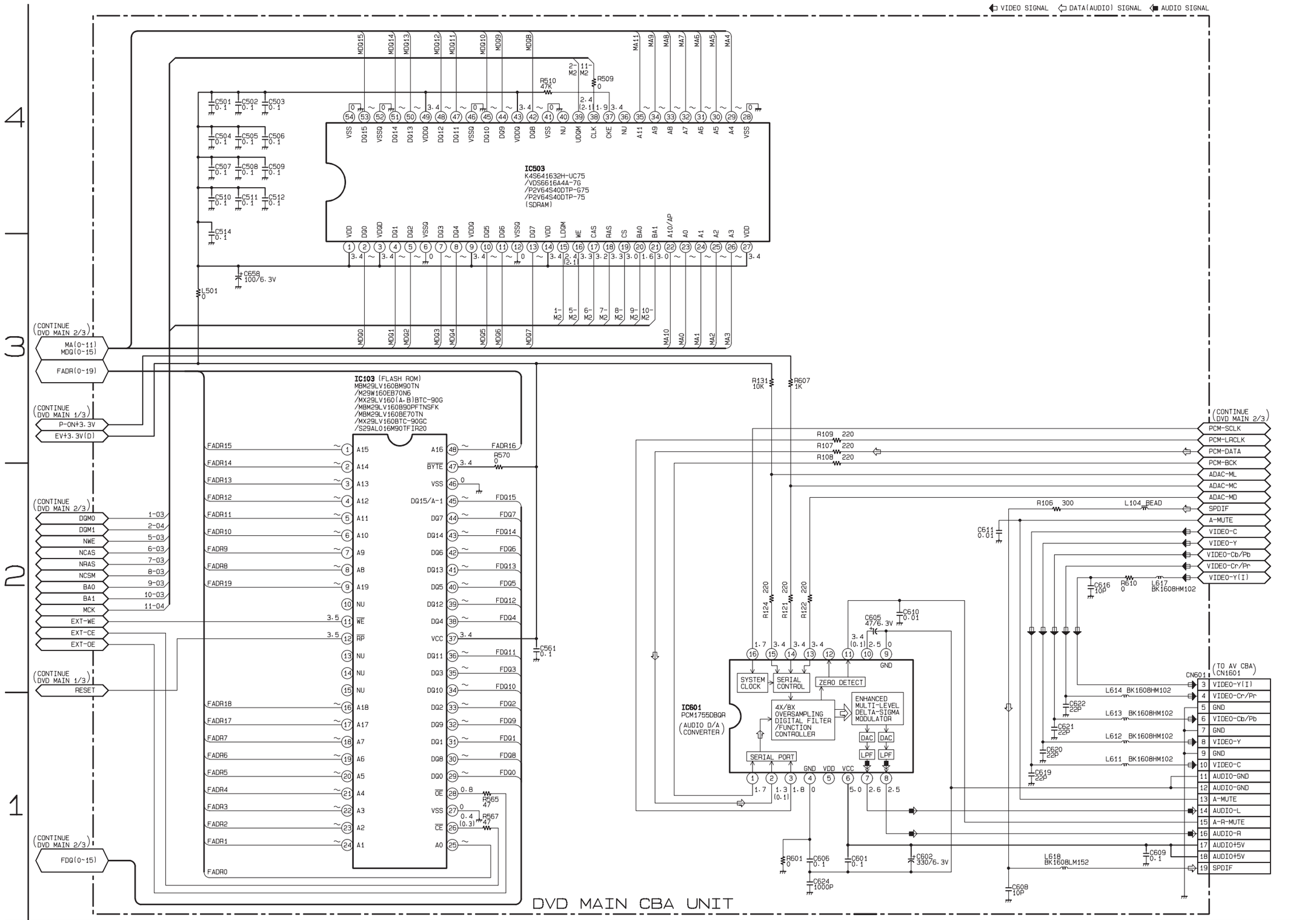


IC101 VOLTAGE CHART

~ : Voltage is not consistent ----- : Not used Unit : Volts

PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	0	0	97	-----	-----	129	2.3	2.3	161	3.4	3.4	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.5	98	3.4	3.4	130	2.3	2.3	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.2	3.2	99	0.9	0.8	131	2.3	2.3	163	1.8	1.8	195	~	~	227	~	~
4	~	~	36	~	~	68	0	0	100	0	0	132	2.4	2.3	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	-----	-----	101	2.4	2.4	133	2.4	2.4	165	1.7	1.8	197	~	~	229	0	0
6	3.4	3.4	38	0.4	0.3	70	3.4	3.4	102	2.2	2.2	134	2.4	2.4	166	1.7	1.7	198	~	~	230	~	~
7	~	~	39	~	~	71	-----	-----	103	1.9	1.9	135	2.3	2.3	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.4	2.7	104	0.4	0.3	136	2.3	2.3	168	0	0	200	~	~	232	1.3	1.6
9	0	0	41	~	~	73	3.4	3.4	105	0	0	137	2.3	2.3	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.7	1.7	138	2.3	2.3	170	1.7	1.7	202	3.4	3.4	234	1.9	2.3
11	~	~	43	~	~	75	1.7	1.8	107	3.4	3.4	139	1.7	1.7	171	1.3	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.3	1.8	108	-----	-----	140	-----	-----	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	~	~	77	-----	-----	109	-----	-----	141	3.4	3.4	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	1.3	1.3	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	2.1	1.7	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	0.1	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.4	3.3
17	~	~	49	0	0	81	0.1	0.1	113	1.7	1.7	145	0	0	177	1.8	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	2.8	2.8	114	1.7	1.7	146	1.7	1.7	178	3.4	3.5	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	1.7	1.7	147	1.8	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	0.8	0.8	84	3.4	3.4	116	1.7	1.7	148	1.7	1.7	180	-----	-----	212	~	~	244	3.4	3.3
21	-----	-----	53	0	0	85	0.1	0.1	117	1.7	1.7	149	0.6	0.5	181	-----	-----	213	0	0	245	3.4	3.4
22	3.5	3.5	54	-----	-----	86	3.6	3.4	118	3.4	3.4	150	3.4	3.4	182	-----	-----	214	-----	-----	246	3.4	3.4
23	~	~	55	-----	-----	87	0	0	119	2.0	2.0	151	0.5	0.6	183	-----	-----	215	-----	-----	247	0	0
24	~	~	56	3.4	3.4	88	3.5	0.1	120	1.7	1.7	152	0.5	0.4	184	-----	-----	216	3.4	3.4	248	3.3	3.4
25	~	~	57	3.5	3.5	89	1.3	1.3	121	1.5	1.5	153	1.4	1.3	185	-----	-----	217	~	~	249	3.2	3
26	1.3	1.3	58	-----	-----	90	-----	-----	122	0	0	154	1.4	1.3	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.3	0.1	155	2.4	2.4	187	-----	-----	219	1.3	1.3	251	3.2	3.0
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.2	0.1	156	3.4	3.4	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.5	3.5	93	0	0	125	0.3	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	~	~	62	3.4	3.4	94	-----	-----	126	0.1	0.1	158	0.9	0.9	190	3.4	3.5	222	0	0	254	~	~
31	~	~	63	0	0	95	-----	-----	127	2.3	2.3	159	3.4	3.4	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

S-5 DVD Main 3/3 Schematic Diagram

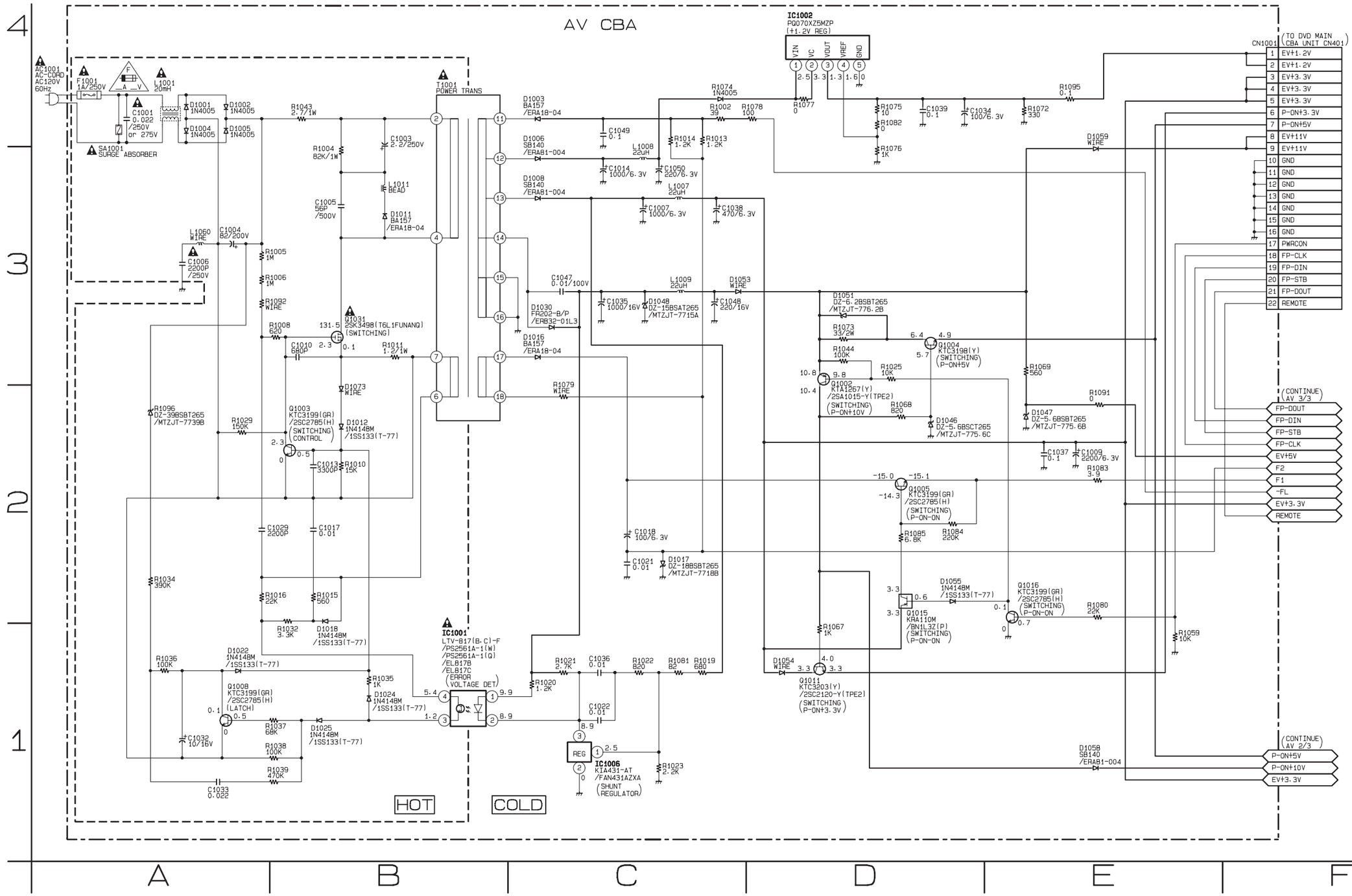


S-6 AV 1/3 Schematic Diagram

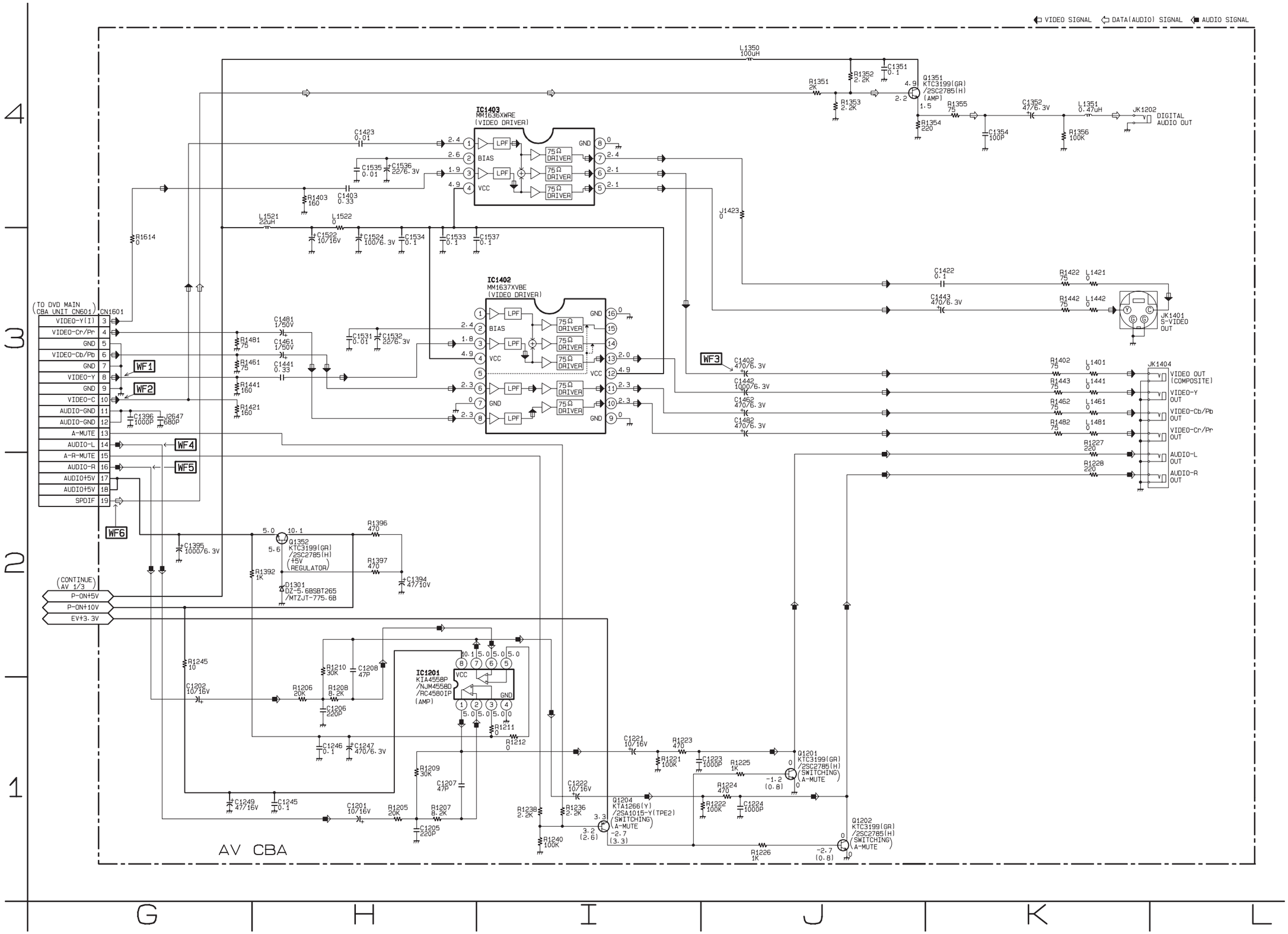
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in 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 même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

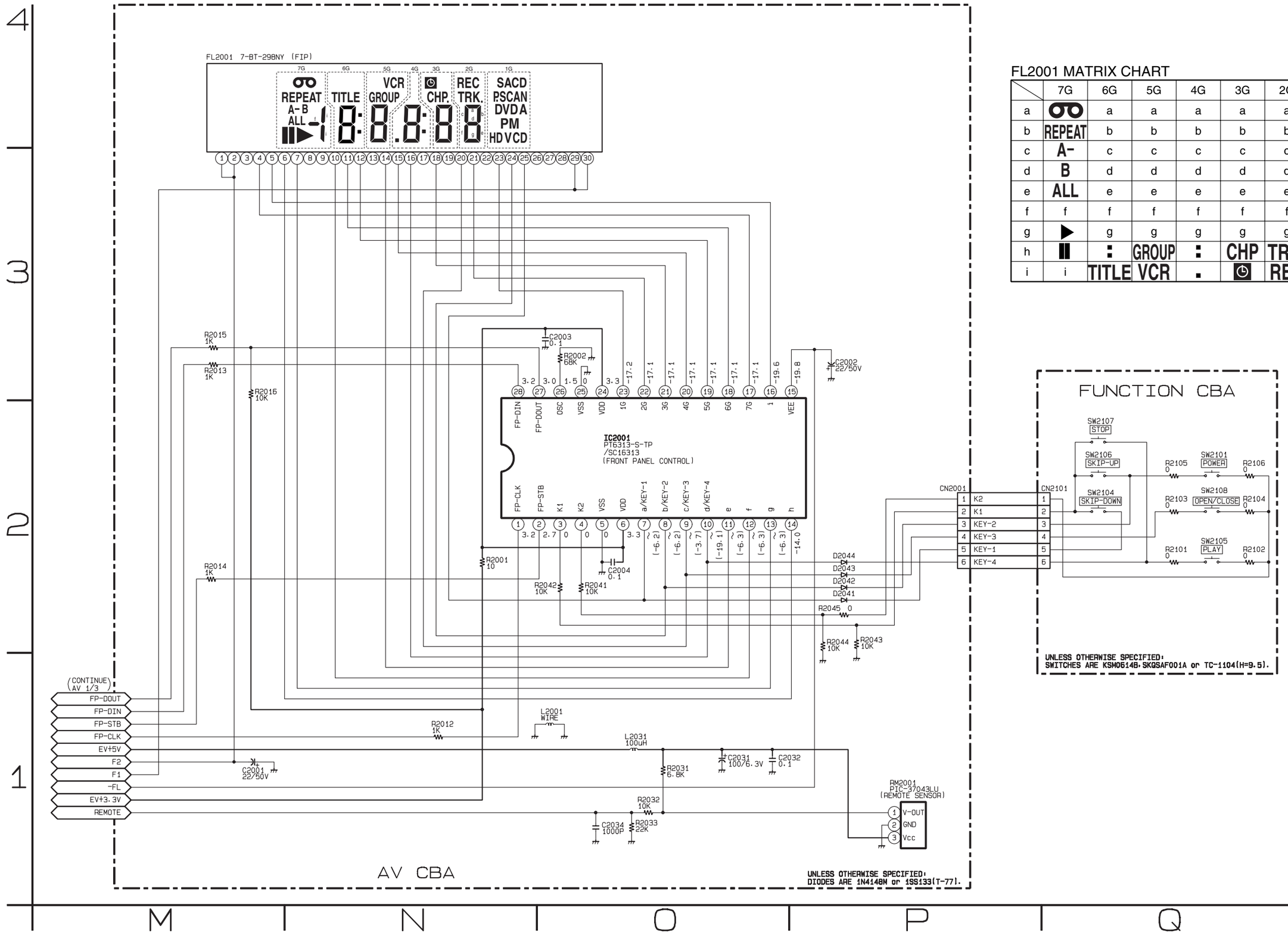
NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.



S-7 AV 2/3 Schematic Diagram



S-8 AV 3/3 & Function Schematic Diagram

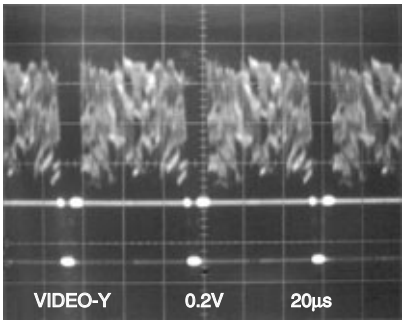


FL2001 MATRIX CHART

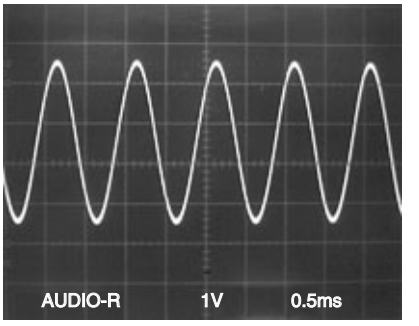
	7G	6G	5G	4G	3G	2G	1G
a	∞	a	a	a	a	a	SACD
b	REPEAT	b	b	b	b	b	P.SCAN
c	A-	c	c	c	c	c	DVD
d	B	d	d	d	d	d	A
e	ALL	e	e	e	e	e	P
f	f	f	f	f	f	f	M
g	▶	g	g	g	g	g	HD
h	▮▮	:	GROUP	:	CHP	TRK.	V
i	i	TITLE	VCR	.	◷	REC	CD

S-9 Waveforms

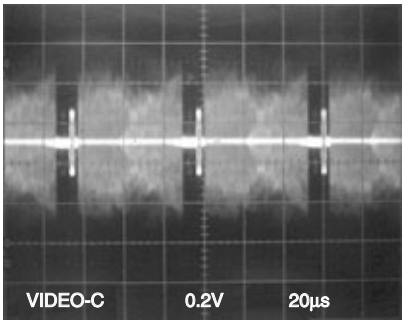
WF1 Pin 8 of CN1601



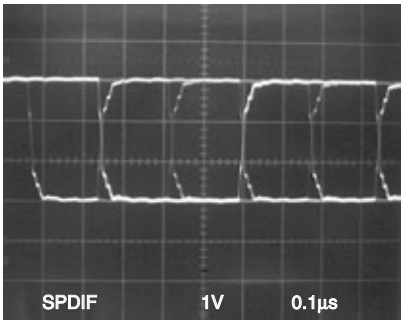
WF5 Pin 16 of CN1601



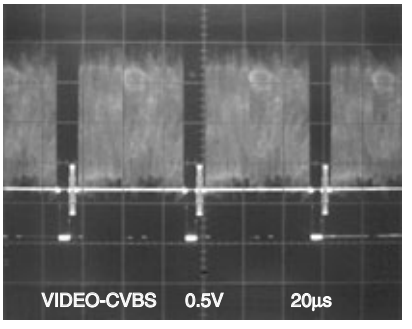
WF2 Pin 10 of CN1601



WF6 Pin 19 of CN1601



WF3 C1402 PLUS LEAD



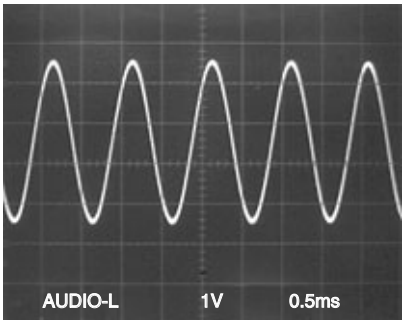
NOTE:

Input

CD: 1kHz PLAY
(WF4~WF6)

DVD: POWER ON (STOP) MODE
(WF1~WF3)

WF4 Pin 14 of CN1601

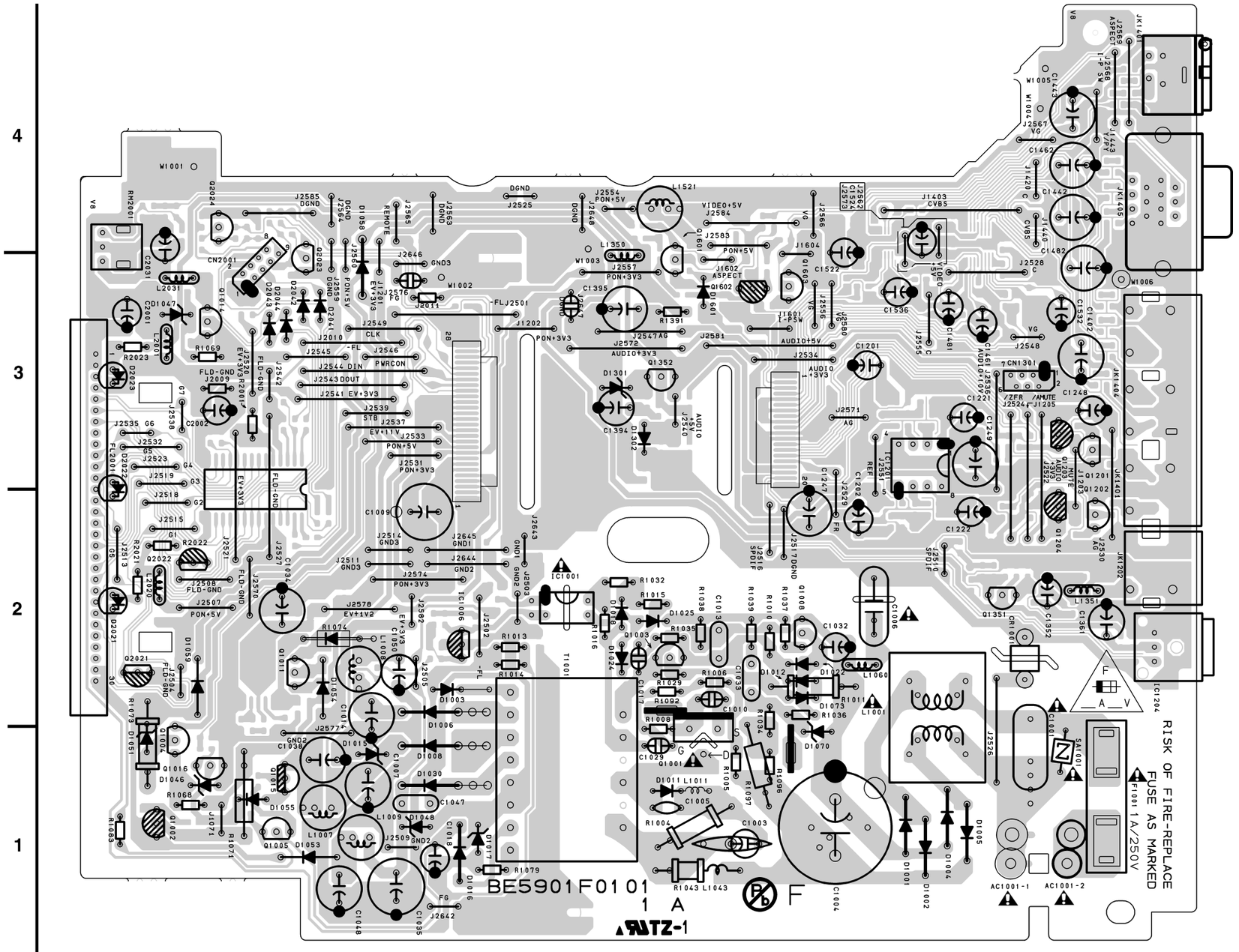


C CIRCUIT BOARD DIAGRAMS
C-1 AV CBA Top View

CAUTION !
Fixed voltage (or Auto voltage selectable) 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 même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

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

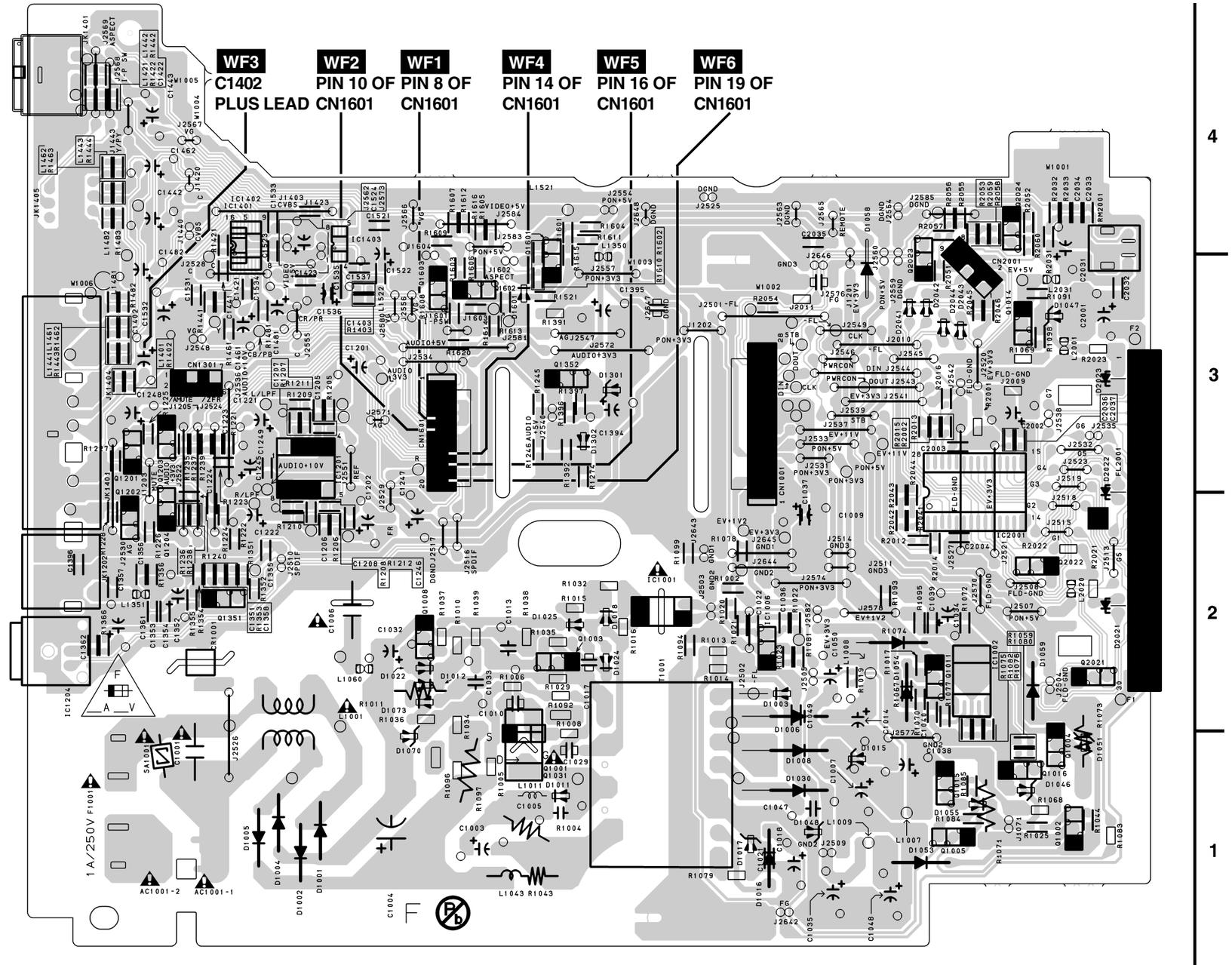


C-2 AV CBA Bottom View

CAUTION !
Fixed voltage (or Auto voltage selectable) 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.

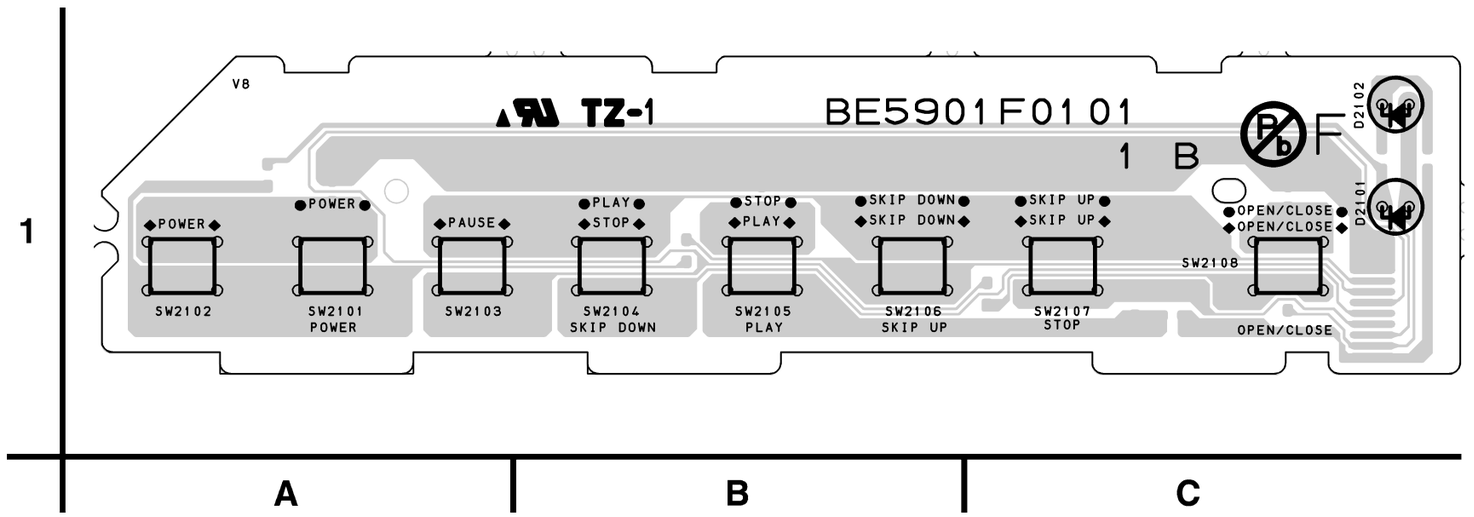
CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

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

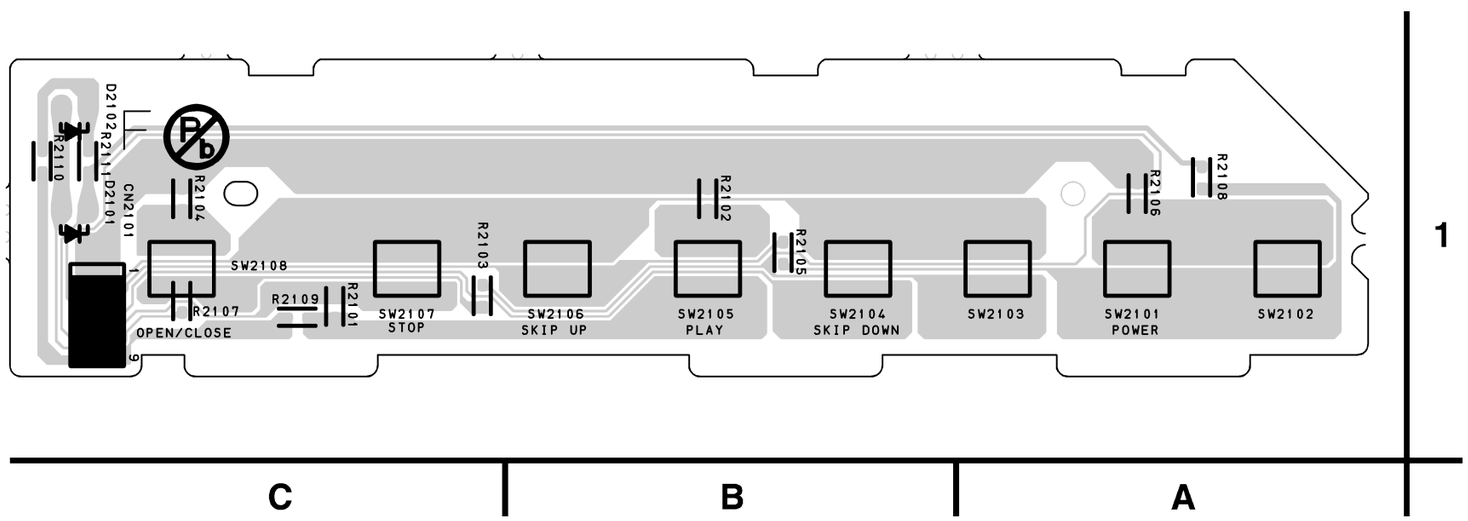


C-3 Function CBA Top/Bottom View

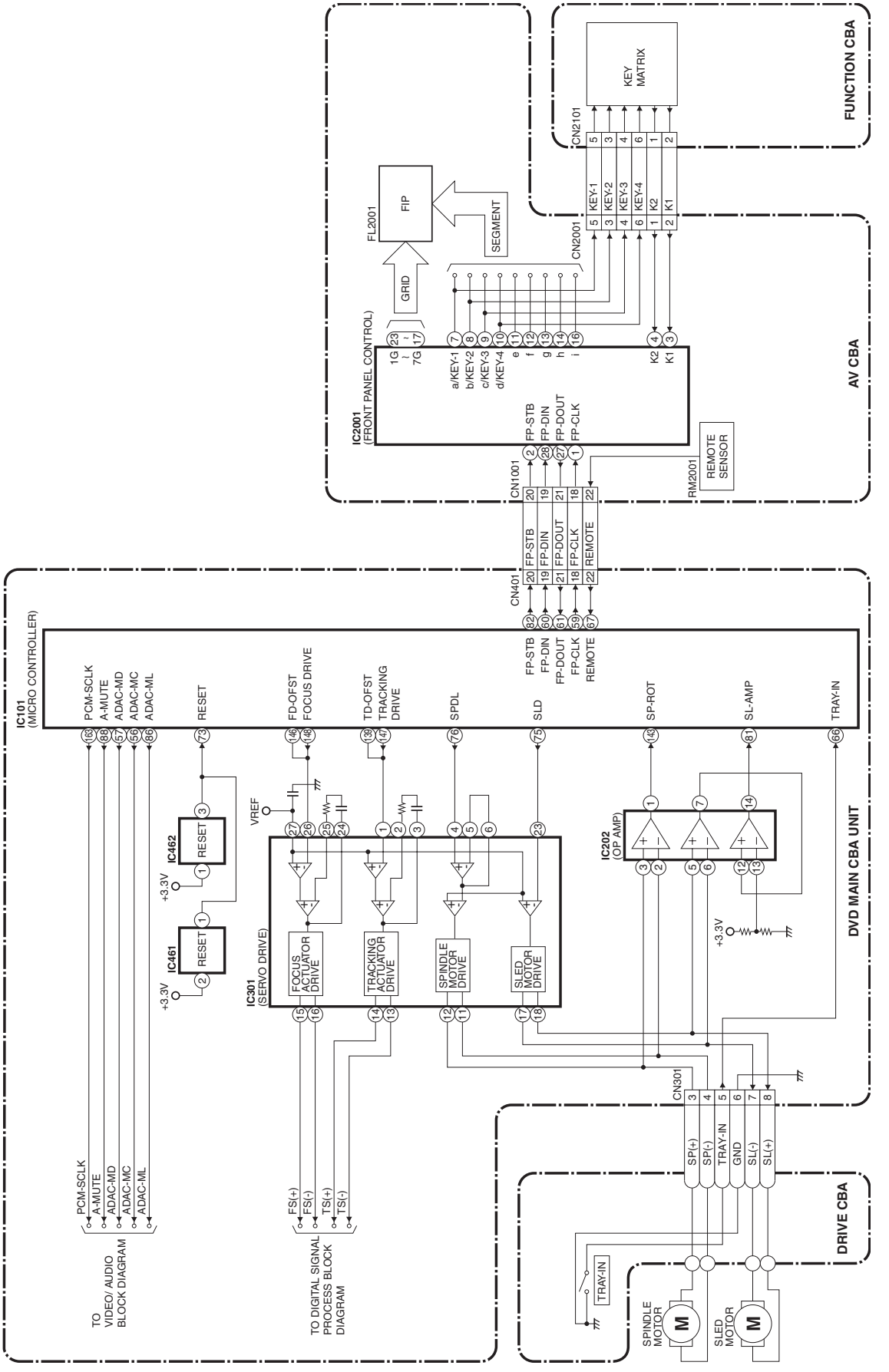
FUNCTION CBA Top View



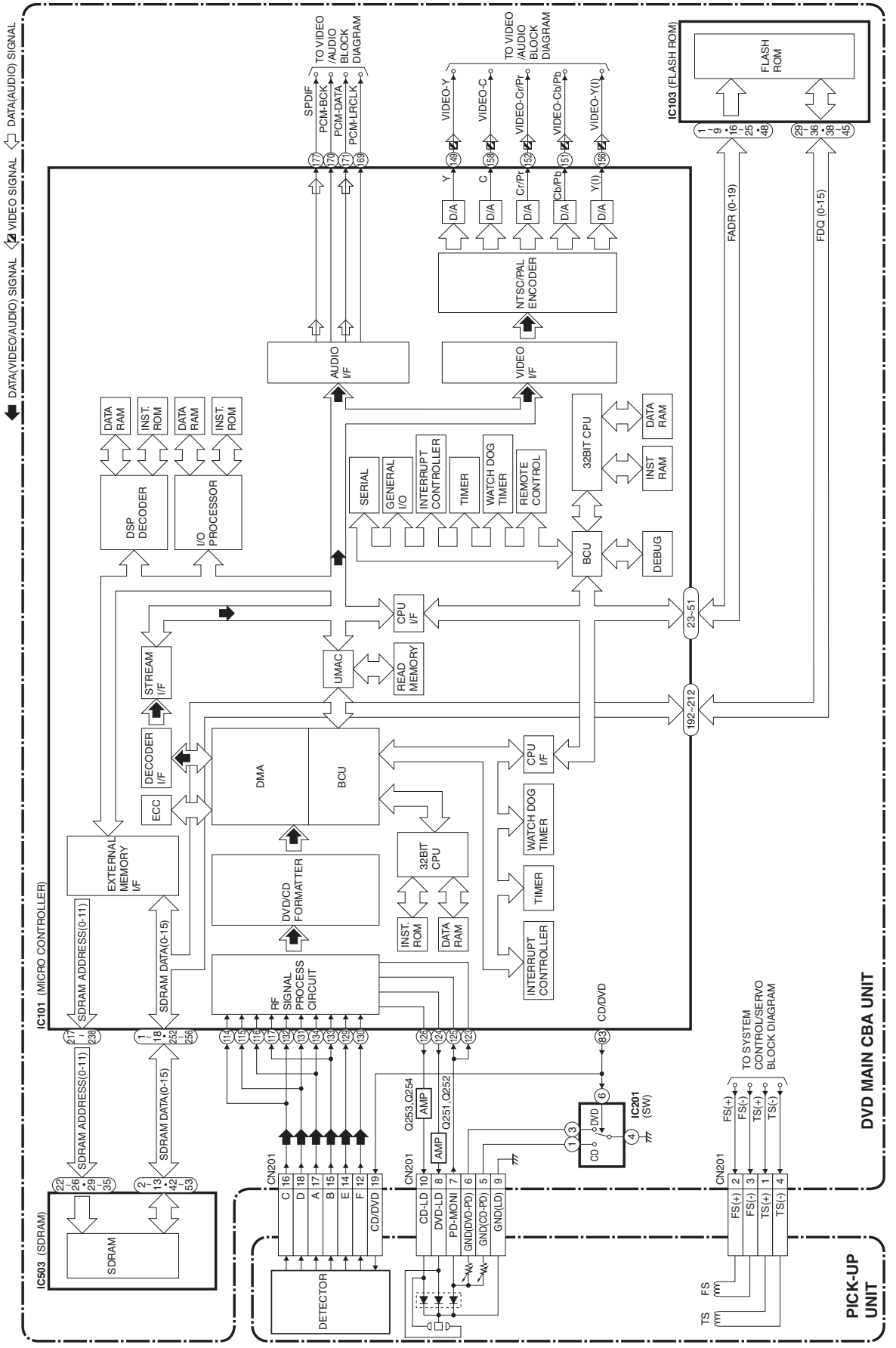
FUNCTION CBA Bottom View



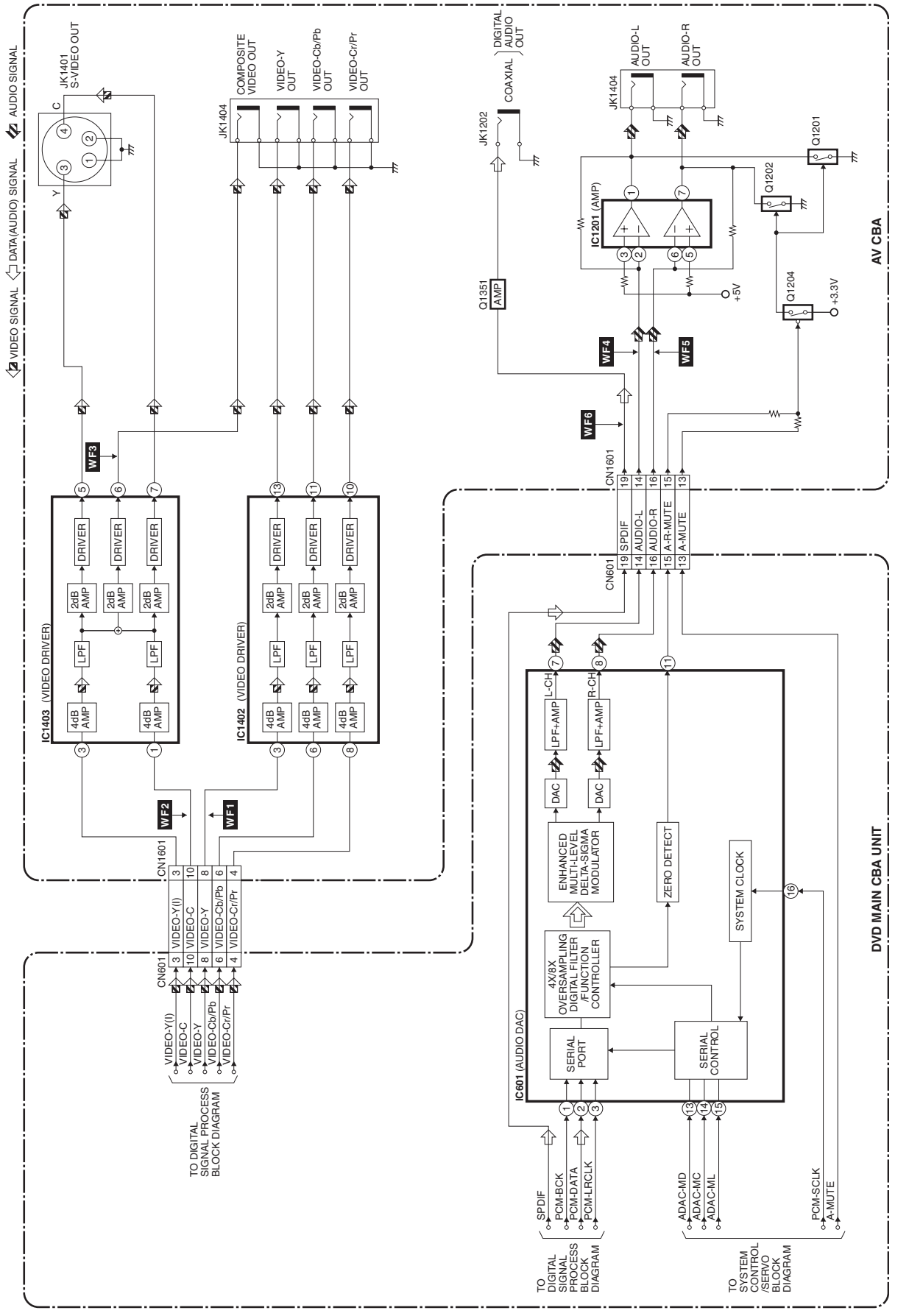
B BLOCK DIAGRAMS
B-1 System Control / Servo Block Diagram



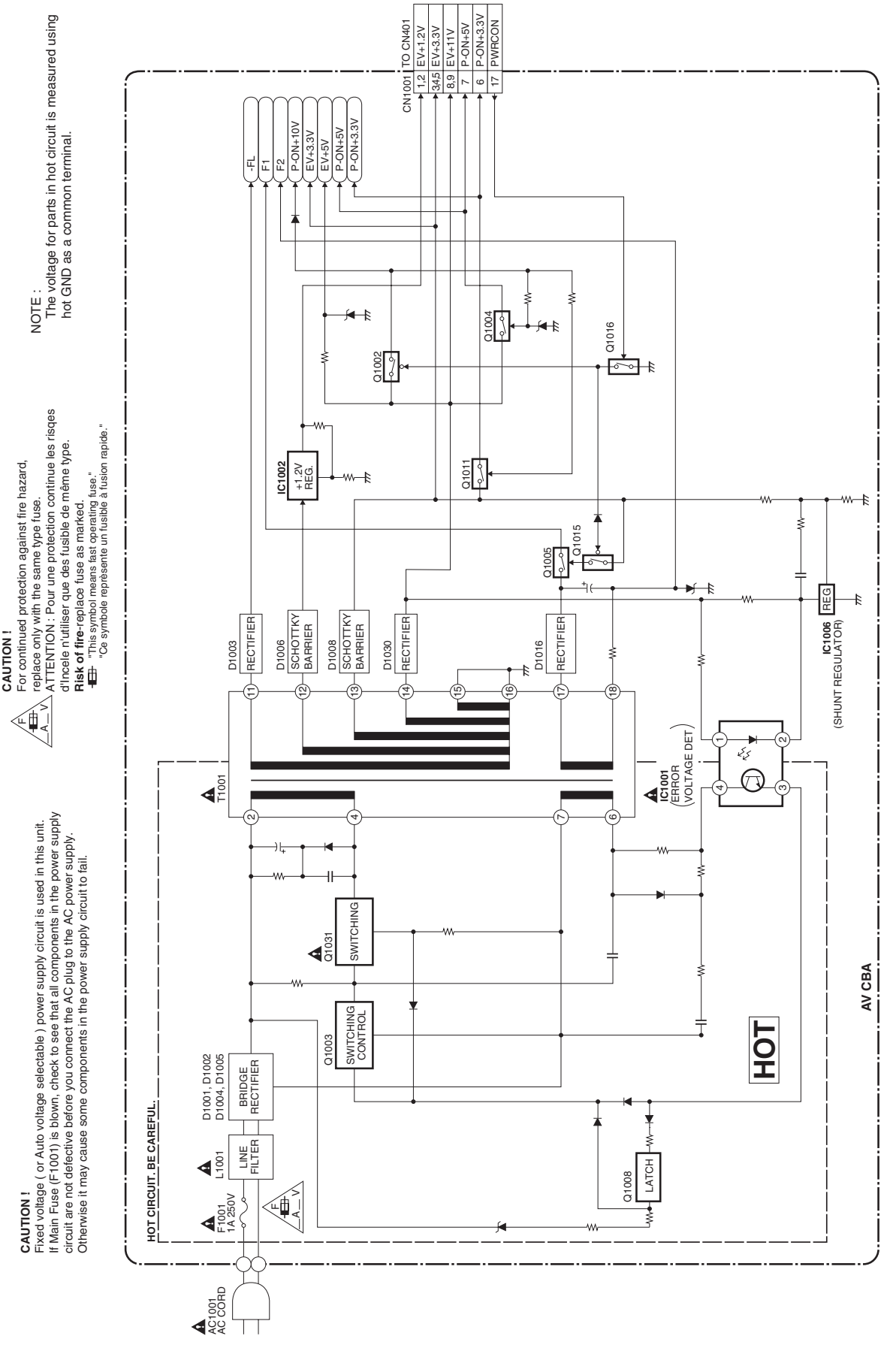
B-2 Digital Signal Process Block Diagram



B-3 Video / Audio Block Diagram



B-4 Power Supply Block Diagram



HITACHI

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