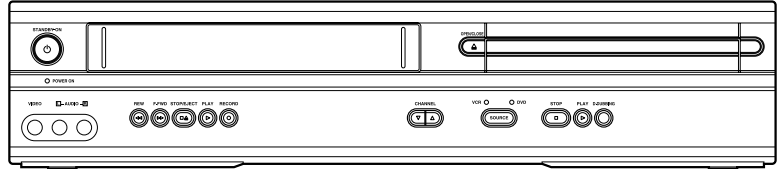


Service
Service
Service



Service Manual



Contents

Chapter

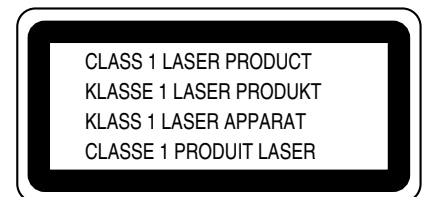
Sec. 1: Technical Specifications
Schematic Diagrams and CBA's
Exploded Views
Mechanical and Electrical Parts Lists

Sec. 2: Standard Maintenance
Mechanism Alignment Procedures
Disassembly / Assembly of Mechanism
Deck Exploded Views

Survey of versions:

/04 PAL

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MAIN SECTION

DIGITAL VIDEO DISC PLAYER & VIDEO CASSETTE RECORDER

Sec. 1: Main Section

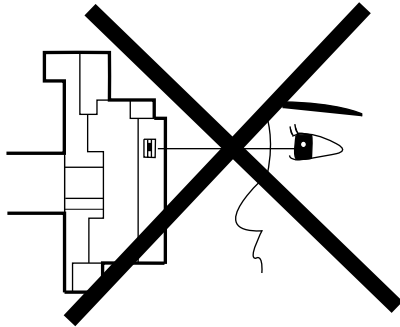
- Adjustment Procedures
- Schematic Diagrams and CBA's
- Exploded Views
- Mechanical and Electrical Parts List

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LASER BEAM SAFETY PRECAUTIONS

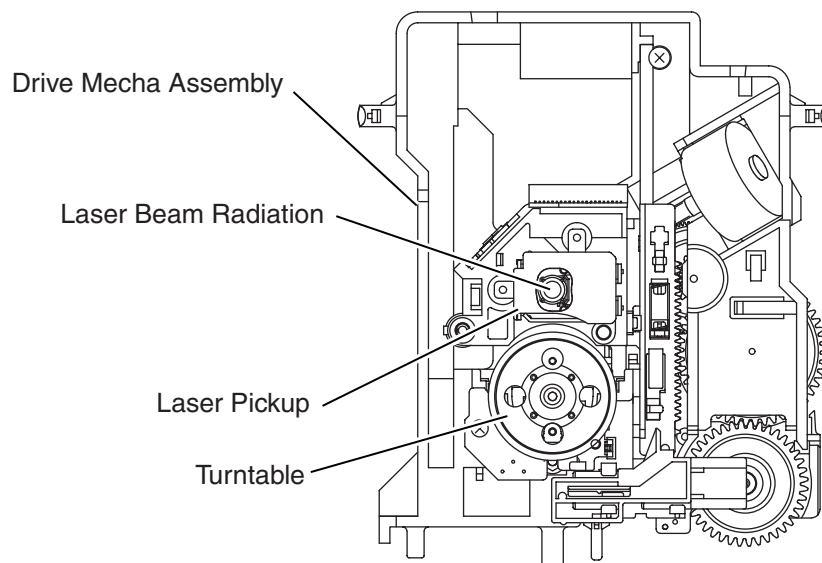
This DVD player uses a pickup that emits a laser beam.



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.



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 \triangle 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 \triangle 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. Use care 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')
220 to 240 V	$\geq 3 \text{ mm}(d)$ $\geq 6 \text{ mm}(d')$

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.

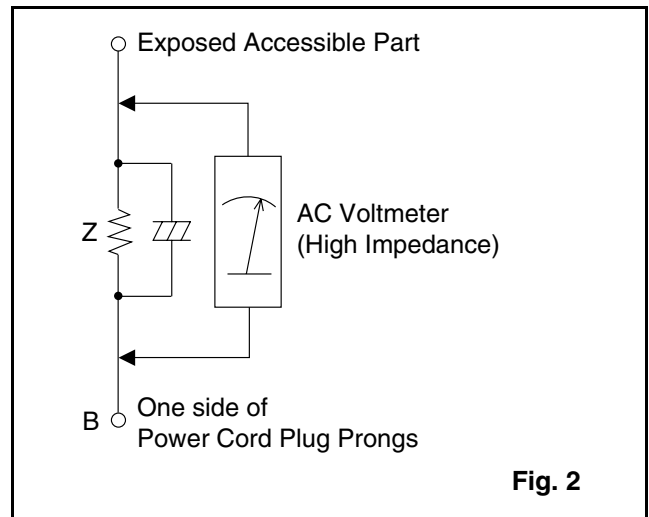
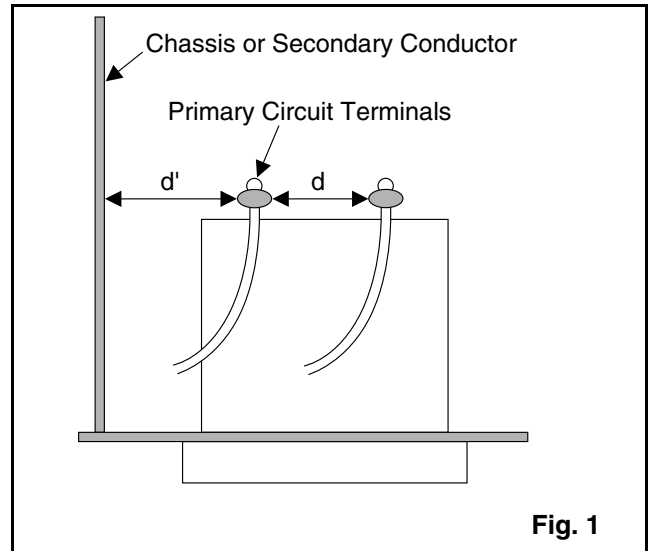


Table 2: Leakage current ratings for selected areas

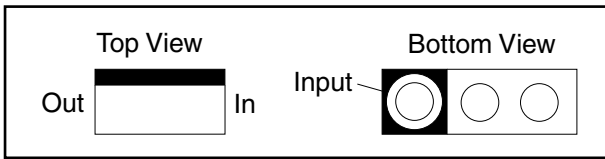
AC Line Voltage	Load Z	Leakage Current (i)	One side of power cord plug prongs (B) to:
220 to 240 V	2k Ω RES. Connected in parallel	$i \leq 0.7 \text{ mA AC Peak}$ $i \leq 2 \text{ mA DC}$	RF or Antenna terminals
	50k Ω RES. Connected in parallel	$i \leq 0.7 \text{ mA AC Peak}$ $i \leq 2 \text{ mA DC}$	A/V Input, Output

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

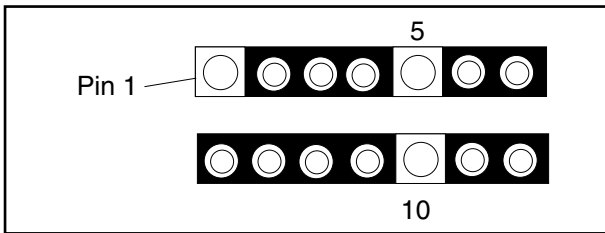
STANDARD NOTES FOR SERVICING

Circuit Board Indications

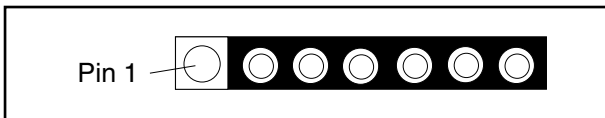
- a. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

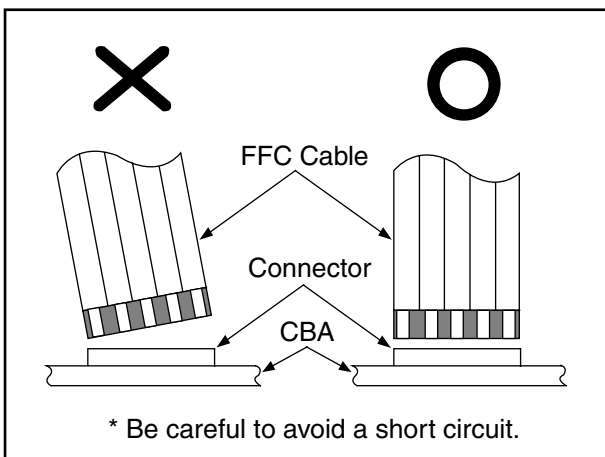


- c. The 1st pin of every male connector is indicated as shown.



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.



Pb (Lead) Free Solder

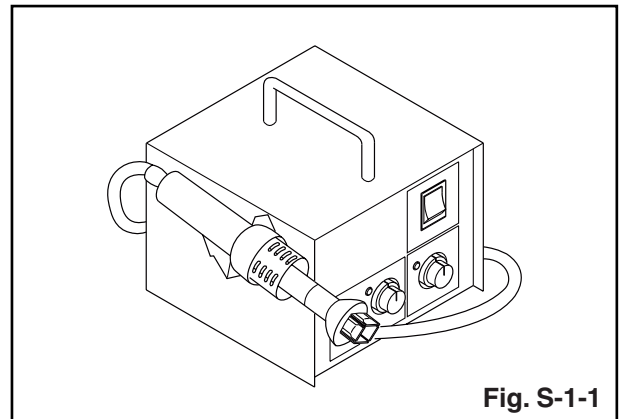
When soldering, be sure to use the Pb free solder.

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)

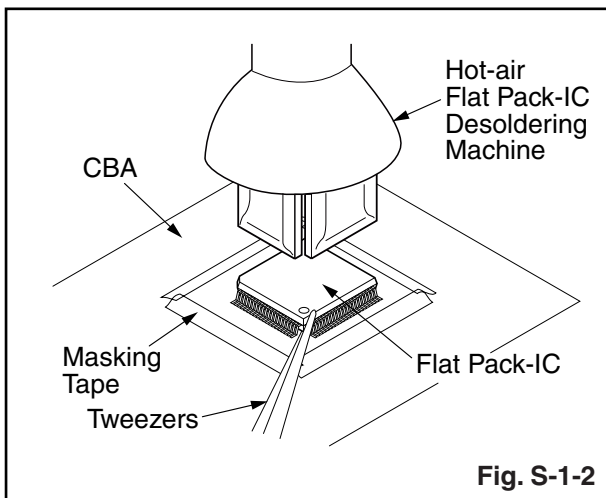


- (2) Remove the flat pack-IC with tweezers while applying the hot air.
- (3) Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
- (4) Release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

Caution:

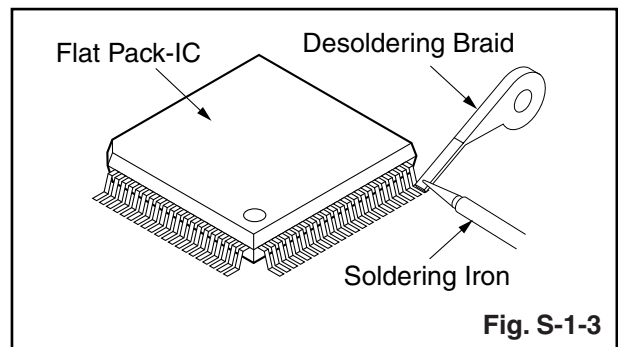
1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. 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.

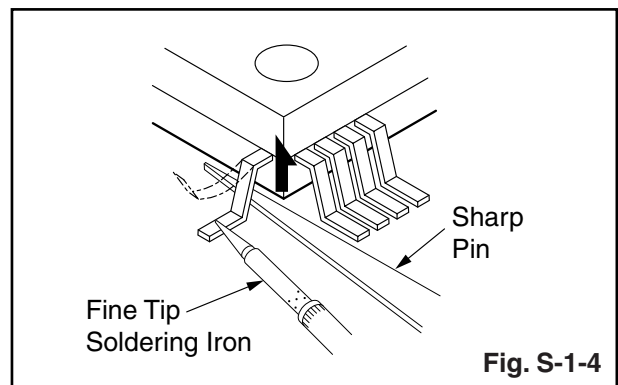


With Soldering Iron:

- (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)

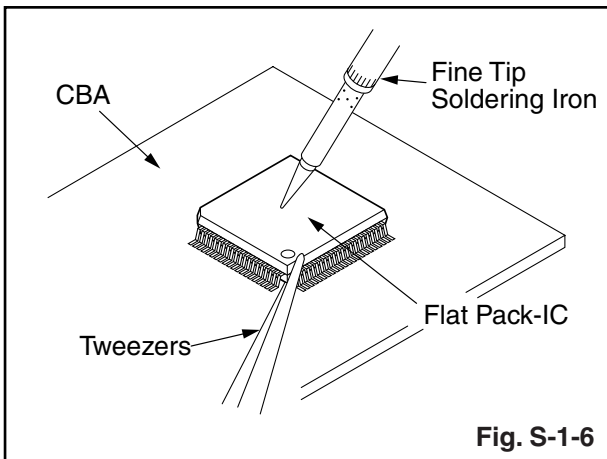
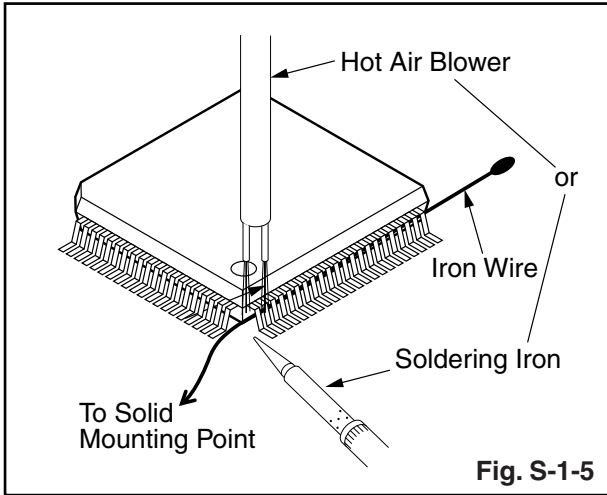
With Iron Wire:

- (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)

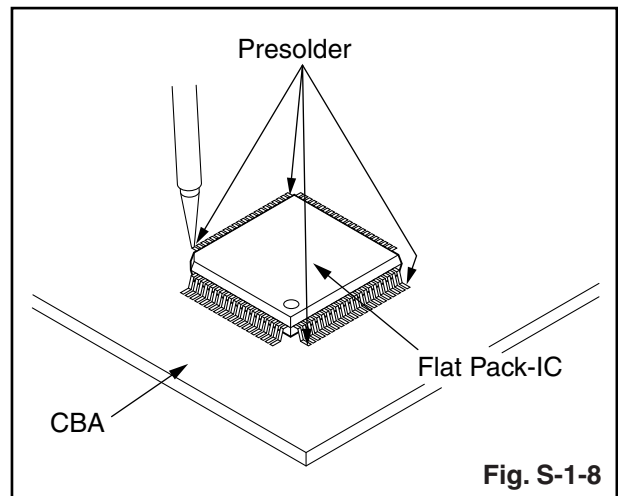
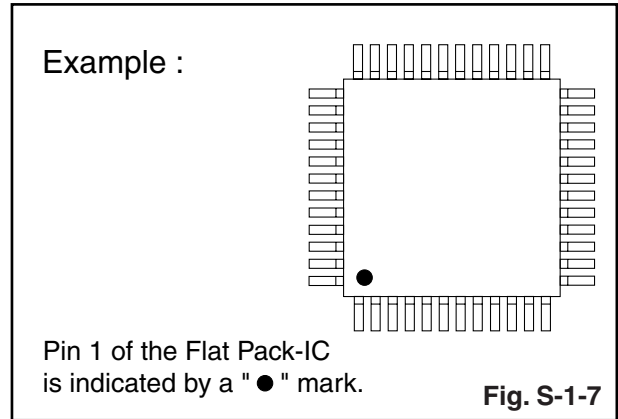
Note:

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

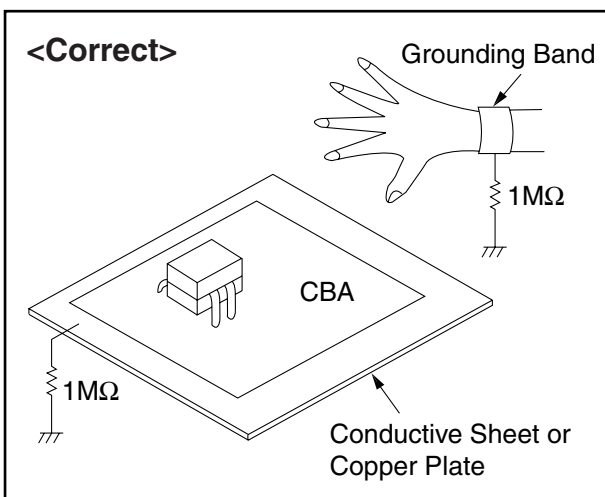
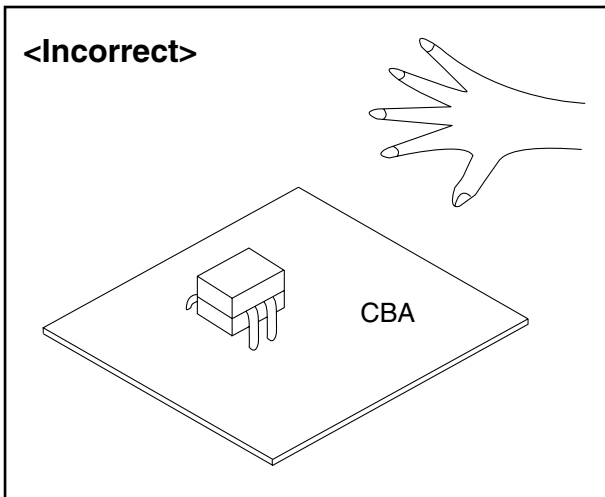
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

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

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.



FUNCTION INDICATOR SYMBOLS

Note:

If a mechanical malfunction occurs, the power is turned off. When the power comes on again after that by pressing [STANDBY-ON] button, an error message is displayed on the TV screen for 5 seconds.

MODE	INDICATOR ACTIVE
When reel or capstan mechanism is not functioning correctly	“EJECT R” is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	“EJECT T” is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	“EJECT C” is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	“EJECT D” is displayed on a TV screen. (Refer to Fig. 4.)
P-ON Power safety detection	“EJECT P” is displayed on a TV screen. (Refer to Fig. 5.)

TV screen

When reel or capstan mechanism is not functioning correctly



Fig. 1

When the drum is not working properly



Fig. 4

When tape loading mechanism is not functioning correctly



Fig. 2

P-ON Power safety detection

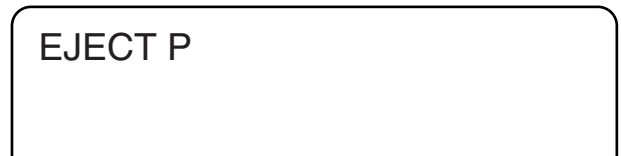


Fig. 5

When cassette loading mechanism is not functioning correctly



Fig. 3

PREPARATION FOR SERVICING

How to Enter the Service Mode

About Optical Sensors

Caution:

An optical sensor system is used for the Tape Start and End Sensors on this equipment. Carefully read and follow the instructions below. Otherwise the unit may operate erratically.

What to do for preparation

Insert a tape into the Deck Mechanism Assembly and press the PLAY button. The tape will be loaded into the Deck Mechanism Assembly. Make sure the power is on, connect TP501 (S-INH) to GND. This will stop the function of Tape Start Sensor, Tape End Sensor and Reel Sensors. (If these TPs are connected before plugging in the unit, the function of the sensors will stay valid.) See Fig. 1.

Note: Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

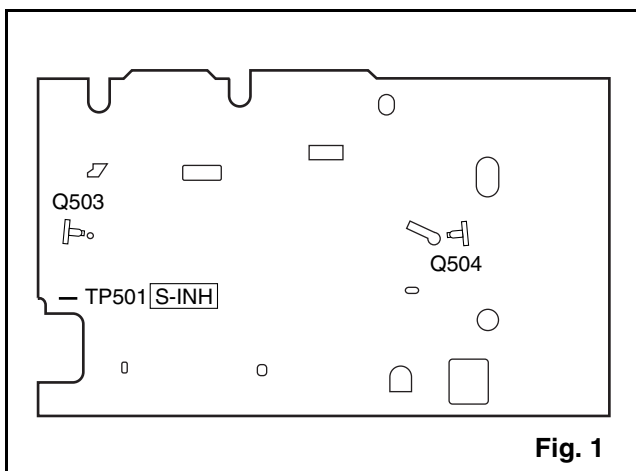
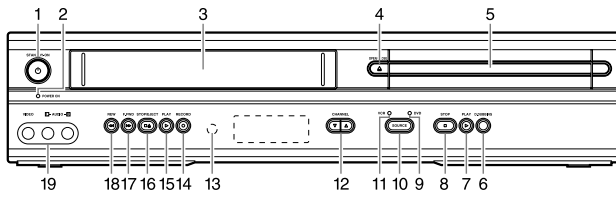


Fig. 1

OPERATING CONTROLS AND FUNCTIONS

Front Panel



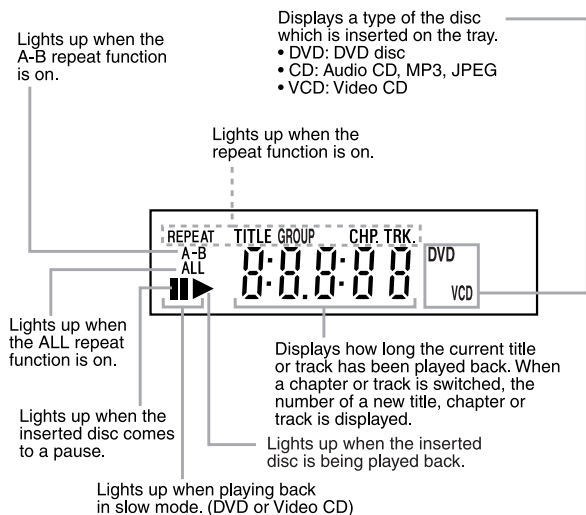
1. **STANDBY-ON button (DVD,VCR)**
to switch the DVD/VCR to ON or OFF
2. **POWER-ON light (DVD,VCR)**
light appears when DVD/VCR turns on
3. **Cassette Compartment (VCR)**
insert a tape here
4. **OPEN/CLOSE button (DVD)**
to open/close the disc tray
5. **Disc Tray (DVD)**
insert a disc here
6. **D.DUBBING button (DVD,VCR)**
to play DVD disc and record its content to video cassette tape at the same time
7. **PLAY button (DVD)**
to start, pause or resume disc playback
8. **STOP button (DVD)**
to stop playback
9. **DVD light (DVD)**
light appears when DVD/VCR in DVD mode
10. **SOURCE button (DVD,VCR)**
to select between DVD and VCR mode
11. **VCR light (VCR)**
light appears when DVD/VCR in VCR mode
12. **CHANNEL button (VCR)**
to select a programme number on the TV
13. **IR (Infrared) Remote Sensor (DVD,VCR)**
receive signals from remote control

14. **RECORD button (VCR)**
press once to start recording, repeatedly to start an One-Touch Recording
15. **PLAY button (VCR)**
to play a tape
16. **STOP/EJECT button (VCR)**
when playback is stopped, press to eject the tape
17. **F.FWD**
when tape playback is stopped, press to fast forward the tape at high speed
during playback, press to fast forward the tape while the picture stays on the screen
18. **REW**
when tape playback is stopped, press to rewind the tape at high speed
during playback, press to rewind the tape while the picture stays on the screen
19. **AUDIO/VIDEO in jacks**
connect to AUDIO and VIDEO OUT of an audio source

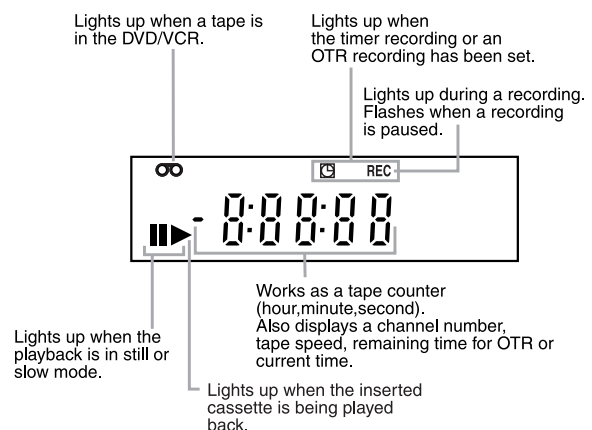
Display Message

	Appears after the disc tray closes if the tray is empty, if there is an error reading the disc, or if an unacceptable disc is installed
	Tray is opening or is open.
	Tray is closing. This also may appear as the Player tries to load a Disc.
	Loading the Disc
	Lights up when the playback control is activated

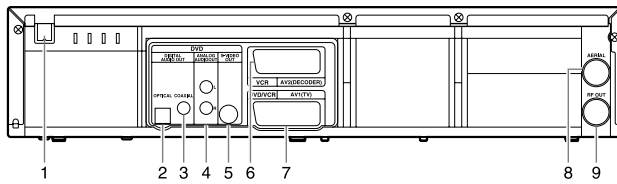
DVD



VCR



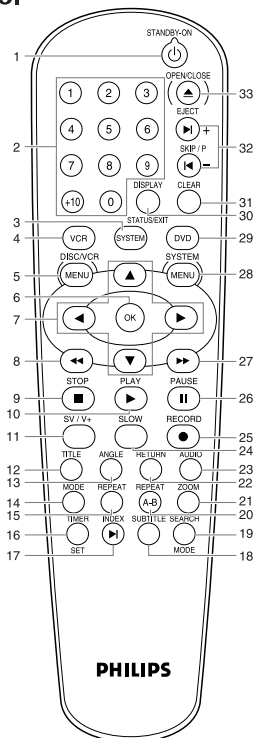
Rear Panel



1. **MAINS (AC Power Cord)**
connect to a standard AC outlet
2. **DIGITAL AUDIO OUT OPTICAL jack (DVD only)**
connect to digital (optical) audio equipment
3. **DIGITAL AUDIO OUT COAXIAL jack (DVD only)**
connect to AUDIO inputs of a digital (coaxial) audio equipment

4. **ANALOG AUDIO OUT (Left/Right) jacks (DVD only)**
connect to AUDIO inputs of an amplifier, receiver or stereo system
5. **S-VIDEO OUT jack (DVD only)**
connect to a TV with S-Video inputs
6. **AV2 (DECODER) jack (VCR only)**
connect SCART cable or RCA cable with RCA connector plug from another DVD/VCR, camcorder or an audio/video source
7. **AV1 (TV) jack**
connect SCART cable or RCA cable with RCA connector plug to a TV
8. **AERIAL jack**
connect to an antenna or cable
9. **RF OUT jack**
use supplied RF coaxial cable to connect to the ANTENNA IN on your TV, cable box or Direct Broadcast System

Remote Control



1. **STANDBY-ON**
switch DVD/VCR ON or OFF
2. **0-9 numerical key pads/+10**
select numbered items in a menu
use +10 button to enter number 10 and above (DVD)
to select TV channels in VCR mode
3. **SYSTEM**
to change the video (colour) system.
4. **VCR**
press to put the DVD/VCR in VCR mode and before using the remote control for VCR features
5. **DISC/VCR MENU**
to display the menu of the DVD disc or to access VCR menu
6. **OK**
acknowledge menu selection (DVD)
7. **◀ ▶ ▲ ▼**
(left/right/up/down) select an item in the menu
8. **◀◀**
to view DVD picture in fast reverse motion (DVD)
to rewind the tape (VCR)
9. **STOP (■)**
to stop a DVD disc playback (DVD)
to stop playback, recording (VCR)
10. **PLAY (▶)**
to start a DVD disc playback (DVD)
to start a tape playback (VCR)

11. **SV/V+**
to programme timer recording with the SHOWVIEW® system (VCR)
12. **TITLE**
to display title menu of a disc (DVD)
13. **ANGLE**
select DVD camera angle (DVD)
14. **MODE**
to set up programmed or random playback (DVD)
15. **REPEAT**
repeat chapter, track, title, group, disc (DVD)
16. **TIMER SET**
to put the DVD/VCR into standby mode for a timer recording
17. **INDEX (▶|)**
to fast forward or rewind the tape at index number (VCR)
18. **SUBTITLE**
subtitle language DVD selector (DVD)
19. **SEARCH MODE**
to access or remove search display (DVD)
20. **REPEAT (A-B)**
repeat a specific segment (DVD)
21. **ZOOM**
enlarge DVD video image (DVD)
22. **RETURN**
to return previous or remove setup menu (DVD)
23. **AUDIO**
to choose audio languages or sound modes (DVD)
to choose sound modes (VCR)
24. **SLOW**
to view tape playback in slow motion (VCR)
25. **RECORD (●)**
to record the TV channel selected at this moment or press repeatedly to start a One-Touch Recording (VCR)
26. **PAUSE (||)**
pause playback temporarily / frame-by-frame playback (DVD)
pause playback and during recording temporarily (VCR)
27. **▶▶**
to view DVD picture in fast forward motion (DVD)
to fast forward the tape (VCR)
28. **SYSTEM MENU**
to access or remove the DVD setup menu (DVD)
29. **DVD**
press to put the DVD/VCR in DVD mode and before using the remote control for DVD features
30. **DISPLAY STATUS/EXIT**
to access or remove the display screen during DVD or Audio CD playback (DVD)
to access or remove VCR's on-screen status display (VCR)
to remove VCR's menu (VCR)
31. **CLEAR**
to reset the setting (DVD)
to reset the counter (VCR)
to delete last entry/Clear programmed recording (TIMER) (VCR)
32. **SKIP/P (|◀| - |▶| +)**
to skip chapter/tracks (DVD)
to change TV channels (VCR)
33. **OPEN/CLOSE EJECT (▲)**
to insert discs into or remove them from the tray (DVD)
to remove the tape from the VCR (VCR)

SIGNAL NAME ABBREVIATIONS

Signal Name	Function
-FL	FIP Drive Power Supply
8POUT-1	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
8POUT-2	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2
A-COM	Audio Head Common
A-IN	Audio Signal Input
A-MODE	Hi-Fi Tape Detection Signal
A-MUTE	Audio Mute Output
A-MUTE-H	Audio Mute Control Signal (Mute = "H")
A-OUT	Audio Signal Output
A-PB/REC	Normal Audio Play Back/Record Signal
AE-H	Audio Erase Head
AFC	Automatic Frequency Control Signal
AGC	IF AGC Control Signal
AL+12V	Always +12V with AC Plug Connected
AL+2.8V	Always +2.8V with AC Plug Connected
AL+20.5V	Always +20.5V with AC Plug Connected
AL+20.5V/ +12V	Always +20.5V/+12V with AC Plug Connected
AL+4.0V	Always +4.0V with AC Plug Connected
AL+44V	Always +44V with AC Plug Connected
AL+5V	Always +5V with AC Plug Connected
AL+9V	Always +9V with AC Plug Connected
AL-30V	Always -30V with AC Plug Connected
AL-5V	Always -5V with AC Plug Connected
AMPC	CTL AMP Connected Terminal
AMPVcc	AMPVcc
AMPVREF in	V-Ref for CTL AMP
AMPVREF OUT	V-Ref for CTL AMP
ASPECT	DVD Aspect Signal
AUDIO+5V	+5V at Audio Signal
AVcc	A/D Converter Power Input/ Standard Voltage Input
C-CONT	Capstan Motor Control Signal

Signal Name	Function
C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/REV="H")
C-FG	Capstan Motor Rotation Detection Pulse
C-POW-SW	Capstan Power Switching Pulse
C-ROTA	Color Phase Rotary Changeover Signal
C-SYNC	Composite Synchronized Pulse
CLKSEL	Clock Select (GND)
COLOR-IN	SECAM or MESECAM Chroma Video Input Signal at Super Impose
CTL(+)	Playback/Record Control Signal (+)
CTL(-)	Playback/Record Control Signal (-)
CTLAMPout	To Monitor for CTL AMP Output
D-CONT	Drum Motor Control Signal
D-PFG	Drum Motor Phase/Frequency Generator
D-REC-H	Delayed Record Signal
D-V-SYNC	Dummy V-sync Output
DAVN-L	VPS/PDC Data Receive = "L"
DISPLAY-CLK	VFD Driver IC Control Clock
DISPLAY-DATA	VFD Driver IC Control Data
DISPLAY-STB	VFD Driver IC Chip Select Signal
DRV-CLK	VFD Driver IC Control Clock
DRV-DATA	VFD Driver IC Control Data
DRV-STB	VFD Driver IC Chip Select Signal
DUBBING-SW	Dubbing Start at high
DVD-8PIN-IN	SCART 8Pin DVD Input Control Signal
DVD-A	DVD Audio Signal
DVD-A(L)- MUTE	DVD Audio(L) Mute Control Signal
DVD-A(R)- MUTE	DVD Audio(R) Mute Control Signal
DVD-A-MUTE	DVD Audio Mute Control Signal
DVD-A-OUT(L)	DVD Audio(L) Signal Output
DVD-A- OUT(R)	DVD Audio(R) Signal Output
DVD-B-OUT	DVD Component Video Signal (blue)
DVD-G-OUT	DVD Component Video Signal (green)
DVD-LED	"DVD" LED Signal Output
DVD-OPEN/ CLOSE	DVD Open/Close at High

Signal Name	Function
DVD-P-ON+12V	+12V at DVD Power-On Signal
DVD-P-ON+3.3V	+3.3V at DVD Power-On Signal
DVD-P-ON+5V	+5V at DVD Power-On Signal
DVD-PLAY	DVD Play at High
DVD-POWER	DVD Power Control Signal
DVD-POWER-MONITOR	DVD Power Monitor Signal (P-off="L", P-on="H")
DVD-R-OUT	DVD Component Video Signal (red)
DVD-STOP	DVD Stop at High
DVD-VIDEO	DVD Video Control Signal
END-S	Tape End Position Detect Signal
EV+1.2V	+1.2V Power Supply
EV+11V	+11V Power Supply
EV+3.3V	+3.3V Power Supply
F1	Filament Power Supply 1
F2	Filament Power Supply 2
FE-H	Full Erase Head
FP-CLK	Clock Input
FP-DIN	Serial Data Input
FP-DOUT	Serial Data Output
FP-STB	Serial Interface Strobe
FSC-IN [4.43MHz]	4.43MHz Clock Input
FTV-IN	Comparator Input of Video Signal for Follow TV
H-A-COMP	Head Amp Comparator Signal
H-A-SW	Video Head Amp Switching Pulse
Hi-Fi-A	Hi-Fi Audio Head
Hi-Fi-COM	Hi-Fi Audio Head Common
Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
I/P-SW	Interlace/Progressive Switching Signal
IIC-BUS SCL	IIC BUS Control Clock
IIC-BUS SDA	IIC BUS Control Data
INPUT SELECT	Input Selector Control Signal
JK1-16PIN	Scart Jack1 16Pin Control Signal
JK1-8P-OUT	SCART 8Pin Output Control Signal
JK2-16P	Scart Jack2 16Pin Control Signal
KEY-1	Key Scan Input Signal 1
KEY-2	Key Scan Input Signal 2
LD-SW	Deck Mode Position Detector Signal
LINE-MUTE	Audio Mute Control Signal
LM-FWD/REV	Loading Motor Control Signal
LP	LP

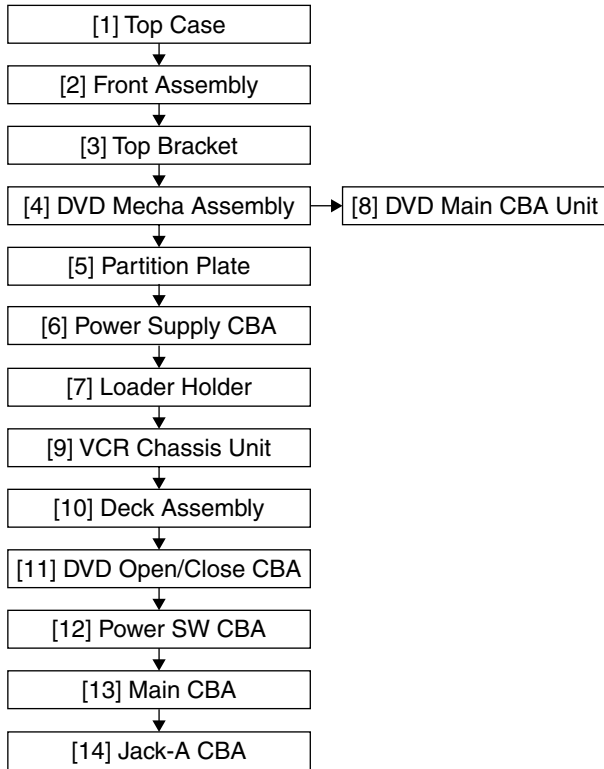
Signal Name	Function
MOD-A	Modulator Audio Output Signal
MOD-V	Modulator Video Output Signal
N-A-PB	Normal Audio Playback
N-A-REC	Normal Audio Recording
OSC	Oscillator Input
OSCIin	Clock Input for letter size
OSCOout	Clock Output for letter size
OSD-V-IN	OSD Video Signal Input
OSD-V-OUT	OSD Video Signal Output
OSDVcc	OSDVcc
OUTPUT-SELECT	Output Select
P-DOWN-L	Power Voltage Down Detector Signal
P-ON+15V	+15V at Power-On Signal
P-ON+3.3V	+3.3V at Power-On Signal
P-ON+44V	+44V at Power-On Signal
P-ON+5V	+5V at Power-On Signal
P-ON-H	Power On Signal at High
P80/C	P80/C Terminal
PB-H-OUT	Playback Signal Output at High
PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
POW-SAF	P-ON Power Detection Input Signal
POWER-LED	"POWER" LED Signal Output
PWRCON	Power Down
REC-SAF-SW	Recording Safety SW Detect (With Record tab="L"/ With out Record tab="H")
REMOTE-DVD	DVD Remote Control Sensor
REMOTE-VIDEO	Remote Control Sensor
RESET	System Reset Signal (Reset="L")
RF-SW	Video Head Switching Pulse
RGB-THROUGH	SCART 2 RGB Through Control Signal
S-REEL	Supply Reel Rotation Signal
SC2-IN	Input Signal from Pin 8 of SCART2
SIF	Source Input Format
SPDIF	Digital Audio Interface Format Signal
ST-S	Tape Start Position Detector Signal
T-REEL	Take Up Reel Rotation Signal
TIMER+5V	+5V at Timer
TU-AUDIO	Tuner Audio Input Signal
TU-VIDEO	Tuner Video Input Signal
V(L)	Video L Head
V(R)	Video R Head
V-COM	Video Head Common

Signal Name	Function
V-ENV	Video Envelope Comparator Signal
V-IN	Video Signal Input
V-IN-F	Video Signal Input (Front)
V-OUT	Video Signal Output
Vcc	Vcc
VCR-LED	"VCR" LED Signal Output
VDD	Power Supply
VEE	Pull Down Level
VIDEO-B	Component Video (blue) Signal
VIDEO-C	Composite Video (chrominance) Signal
VIDEO-G	Component Video (green) Signal
VIDEO-R	Component Video (red) Signal
VIDEO-Y	Composite Video (Luminance) Signal
Vss	Vss(GND)
XCin	Sub Clock
XCOU	Sub Clock
Xin	Main Clock Input
Xout	Main Clock Input

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.



ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[7]	Loader Holder	D3	2(S-6)	-
[8]	DVD Main CBA Unit	D4	2(S-7), *CN201, *CN301	2 2-1 2-2 3
[9]	VCR Chassis Unit	D5	5(S-8), 2(S-9), 2(S-10), (L-3)	-
[10]	Deck Assembly	D6	Desolder, 2(S-11), (S-12)	4,5
[11]	DVD Open/Close CBA	D6	Desolder	-
[12]	Power SW CBA	D6	Desolder	-
[13]	Main CBA	D6	-----	-
[14]	Jack-A CBA	D6	Desolder, 2(S-13)	-

↓ ↓ ↓ ↓ ↓
 (1) (2) (3) (4) (5)

2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	Note
[1]	Top Case	D1	8(S-1)	-
[2]	Front Assembly	D2	*3(L-1), *3(L-2)	1 1-1 1-2
[3]	Top Bracket	D2	3(S-2)	-
[4]	DVD Mecha Assembly	D3	4(S-3), *CN401, *CN601	-
[5]	Partition Plate	D3	(S-4)	-
[6]	Power Supply CBA	D3	2(S-5), CN501	-

Note:

- (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) and (L-2) are fragile. Be careful not to break them.

1-1. Release three Locking Tabs (L-1).

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

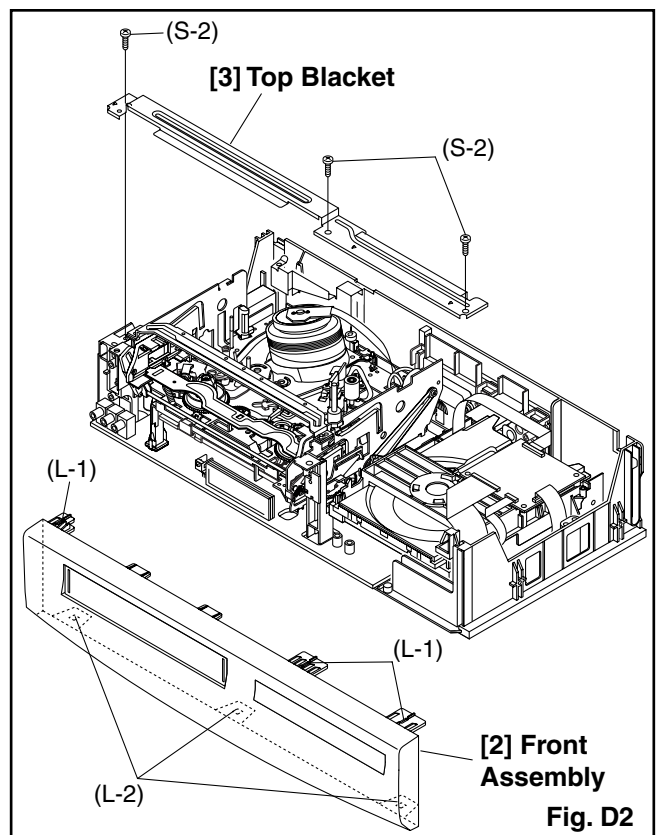
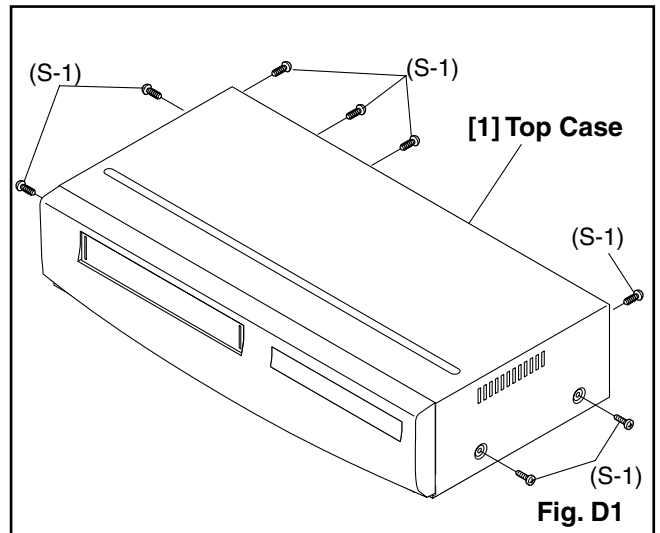
2-1. Disconnect Connector (CN301). Remove two Screws (S-7) and lift the DVD Main CBA Unit. (Fig. D4)

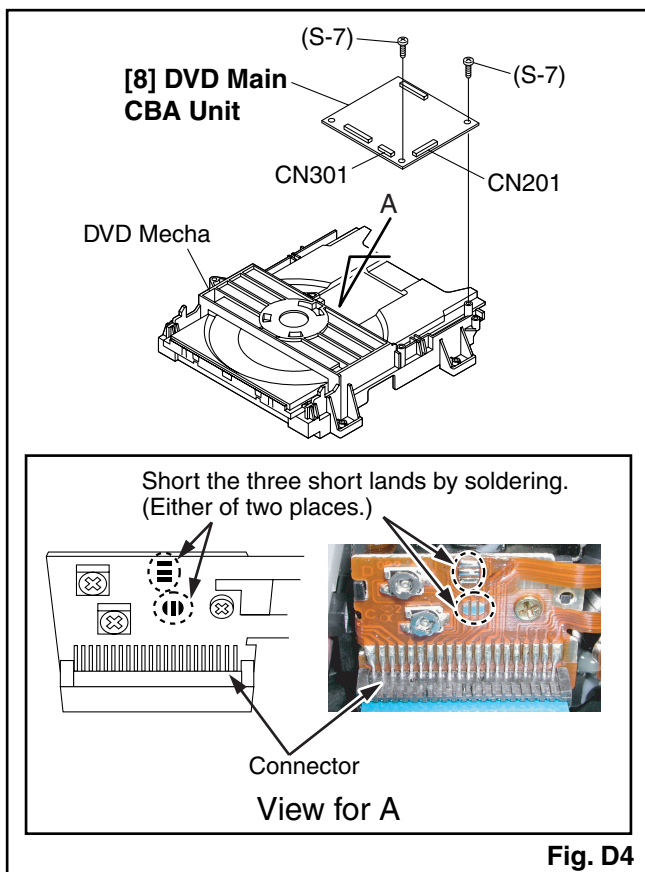
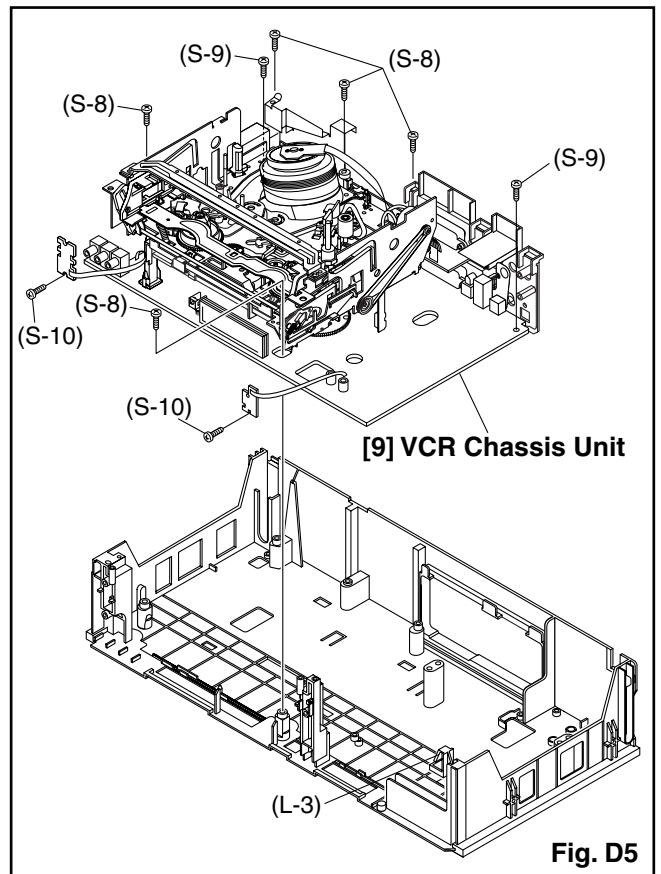
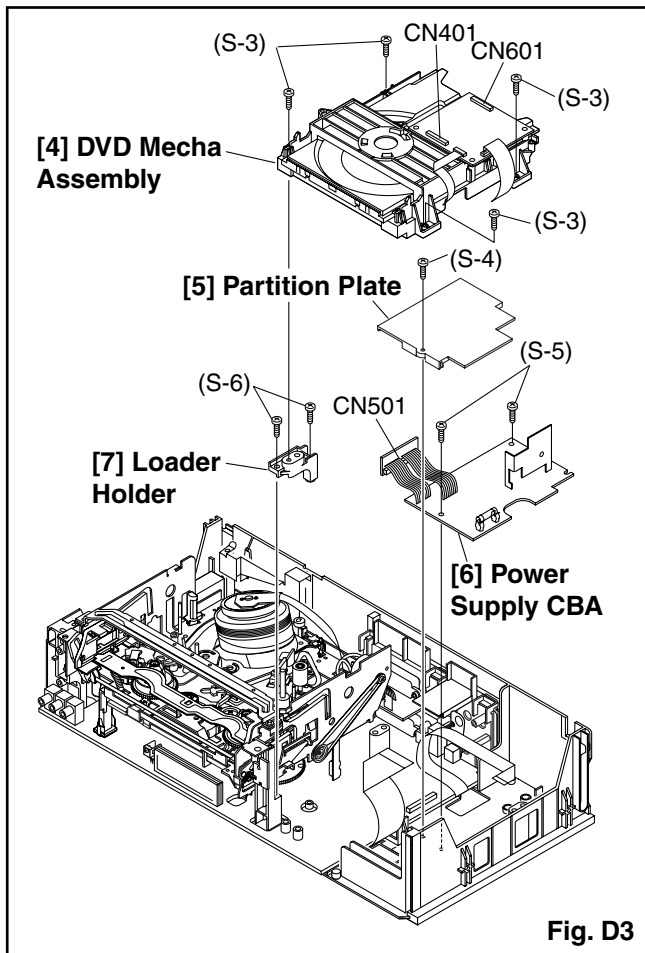
2-2. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. D4)

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)

4. When reassembling, solder wire jumpers as shown in Fig. D6.

5. Before installing the Deck Assembly, be sure to place the pin of LD-SW on Main CBA as shown in Fig. D6. Then, install the Deck Assembly while aligning the hole of Cam Gear with the pin of LD-SW, the shaft of Cam Gear with the hole of LD-SW as shown in Fig. D6.





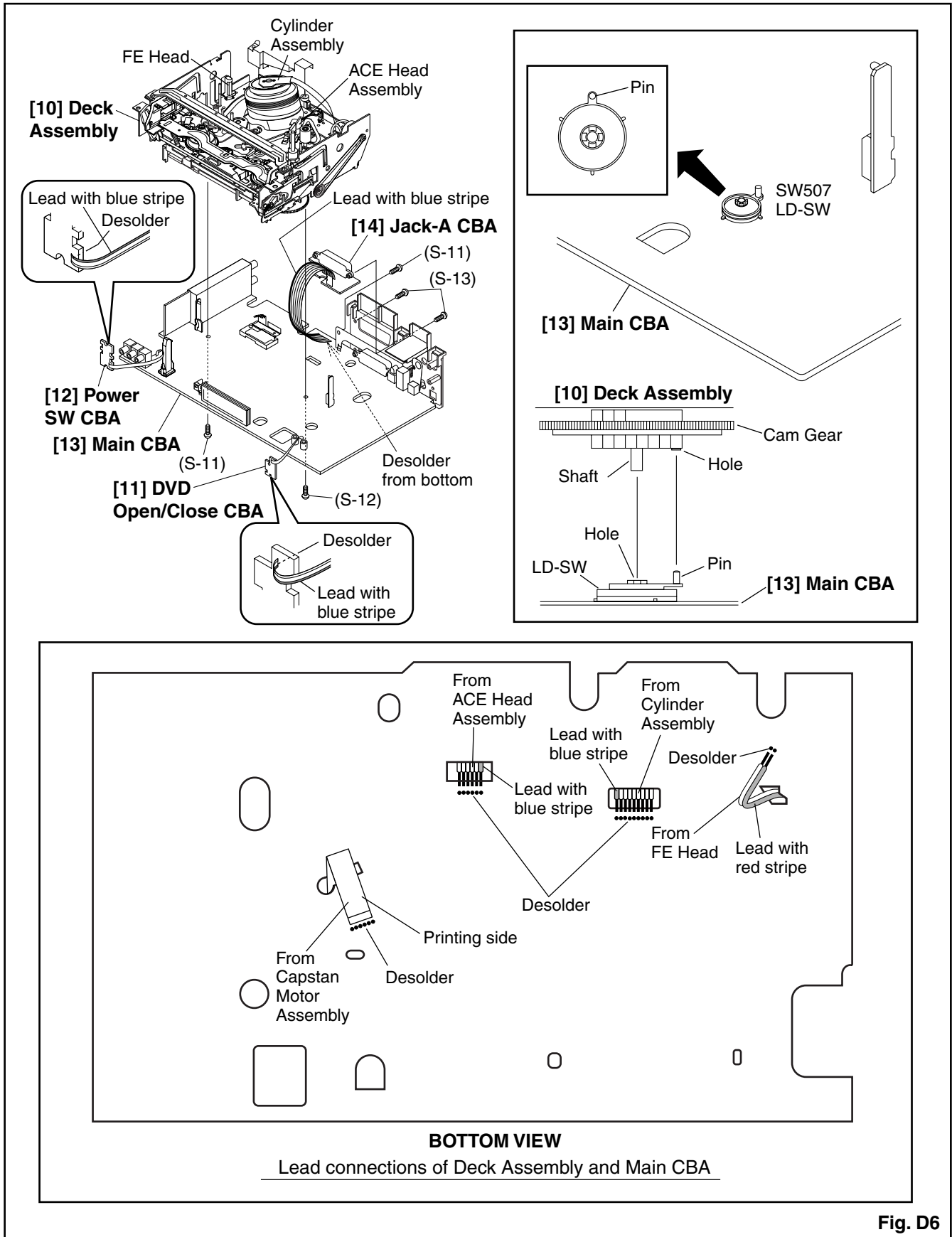
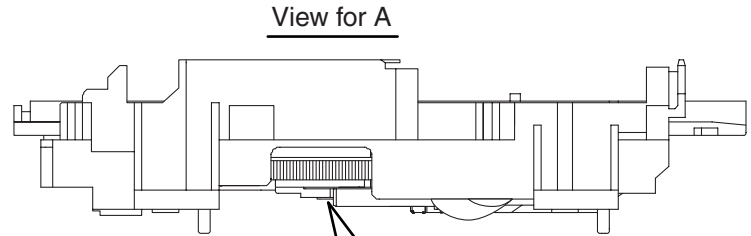
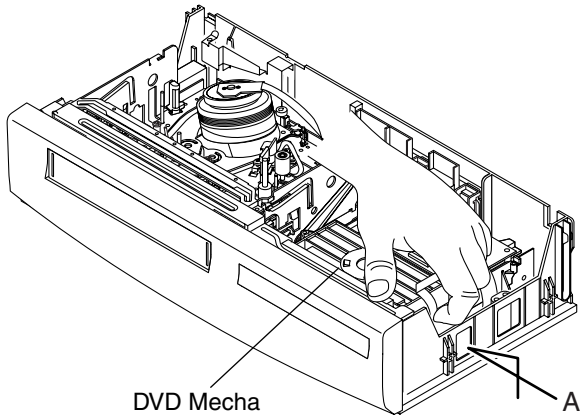


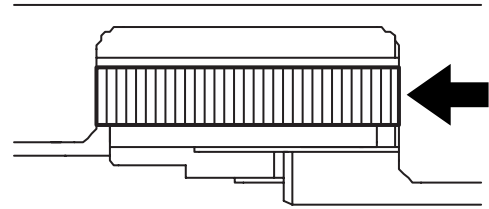
Fig. D6

HOW TO EJECT MANUALLY

1. Remove the Top Case.
2. Rotate the roulette in the direction of the arrow as shown below.
3. Pull the tray slowly with a hand.



Rotate this roulette in
the direction of the arrow



ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note: "CBA" is an abbreviation for "Circuit Board Assembly."

NOTE:

1. Electrical adjustments are required after replacing circuit components and certain mechanical parts. It is important to do these adjustments only after all repairs and replacements have been completed. Also, do not attempt these adjustments unless the proper equipment is available.
2. To perform these alignment / confirmation procedures, make sure that the tracking control is set in the center position: Press either "CHANNEL ▼" or "CHANNEL ▲" button on the front panel first, then the "PLAY" button on the front panel.

Test Equipment Required

1. Oscilloscope: Dual-trace with 10:1 probe,
V-Range: 0.001~50V/Div.,
F-Range: DC~AC-20MHz
2. Alignment Tape (9965 000 14514)

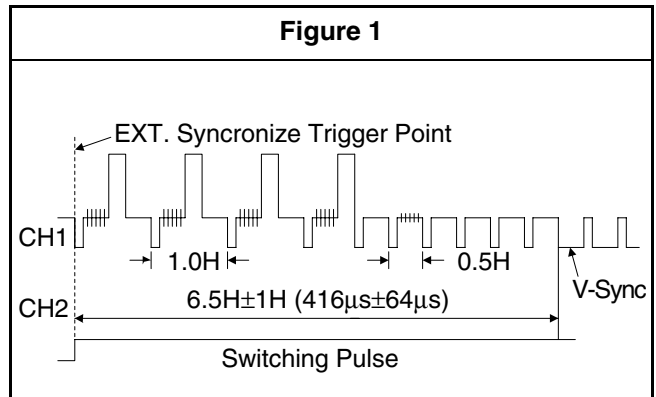
Head Switching Position Adjustment

Purpose:

To determine the Head Switching position during playback.

Symptom of Misadjustment:

May cause Head Switching noise or vertical jitter in the picture.

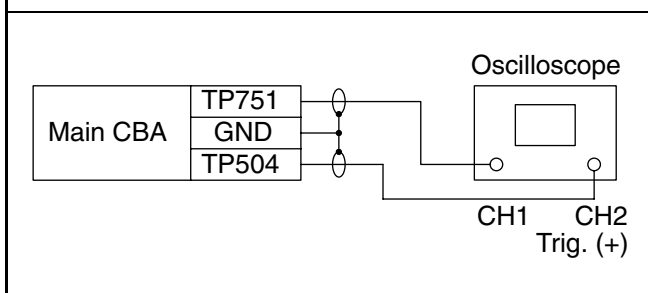


Reference Notes:

Playback the Alignment tape and adjust VR501 so that the V-sync front edge of the CH1 video output waveform is at the 6.5H±1H (416µs±64µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

Test point	Adj. Point	Mode	Input
TP751(V-OUT) TP504(RF-SW) GND	VR501 (Switching Point) (MAIN CBA)	PLAY (SP)	-----
Tape	Measurement Equipment	Spec.	
9965 000 14514	Oscilloscope	6.5H±1H (416µs±64µs)	

Connections of Measurement Equipment



FIRMWARE RENEWAL MODE

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.

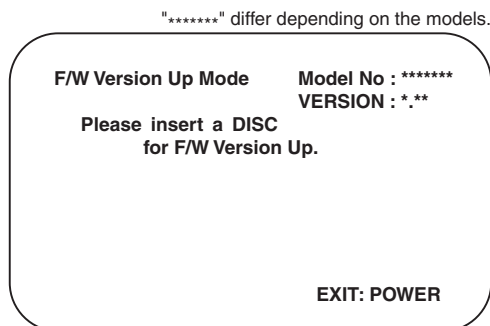


Fig. a Version Up Mode Screen

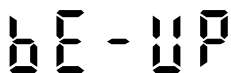


Fig. b VFD in Version Up Mode

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.
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.

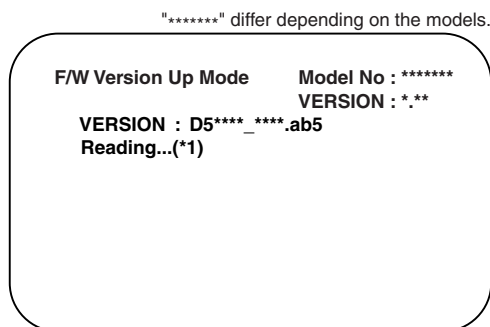


Fig. c Programming Mode Screen



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)

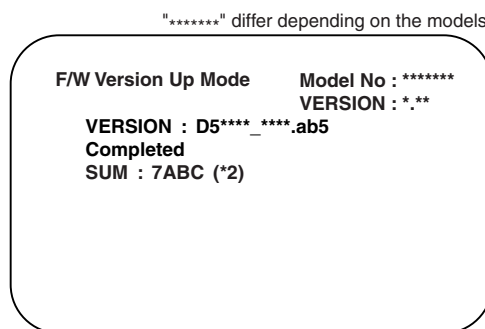


Fig. e Completed Program Mode Screen



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 [STANDBY-ON] button and the tray will close.
9. Press [1], [2], [3], [4], and [DISPLAY/STATUS] buttons on the remote control unit in that order. Fig. g appears on the screen.

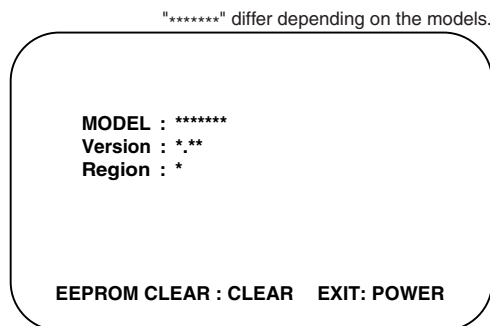


Fig. g

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

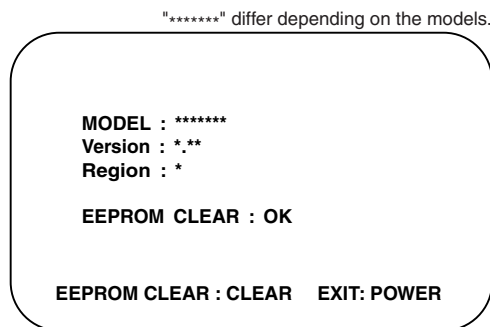


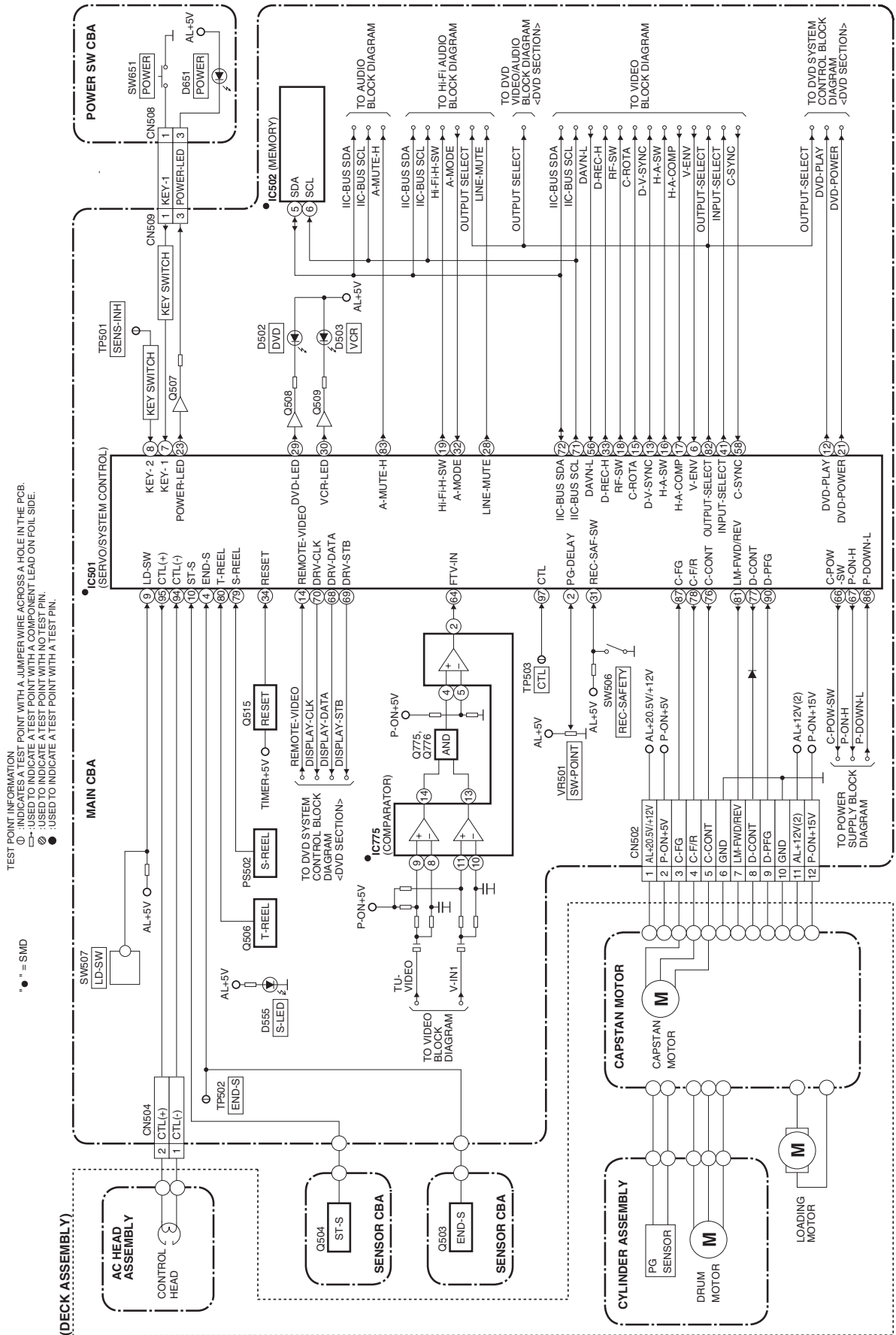
Fig. h

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

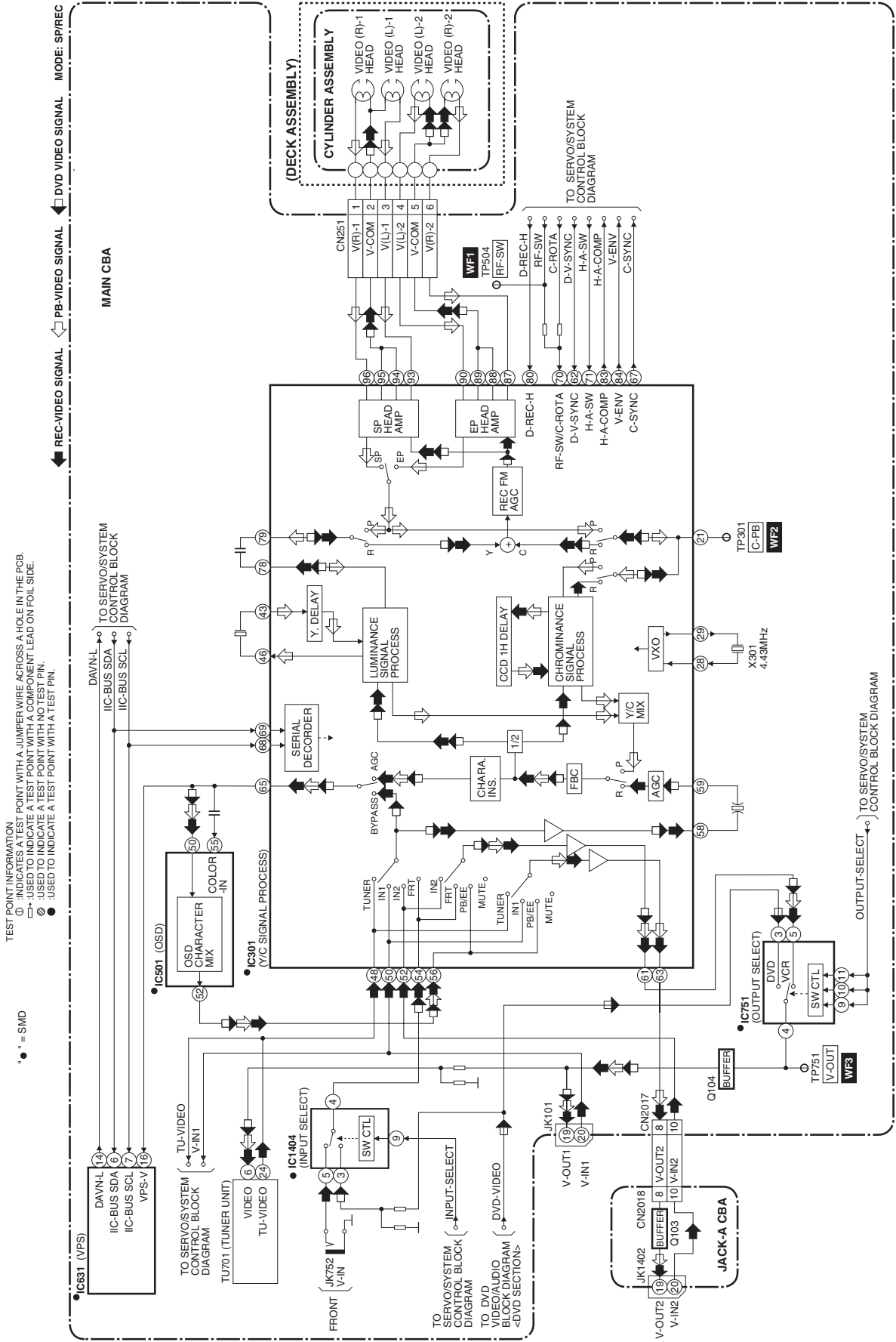
11. To exit this mode, press [STANDBY-ON] button.

BLOCK DIAGRAMS <VCR SECTION>

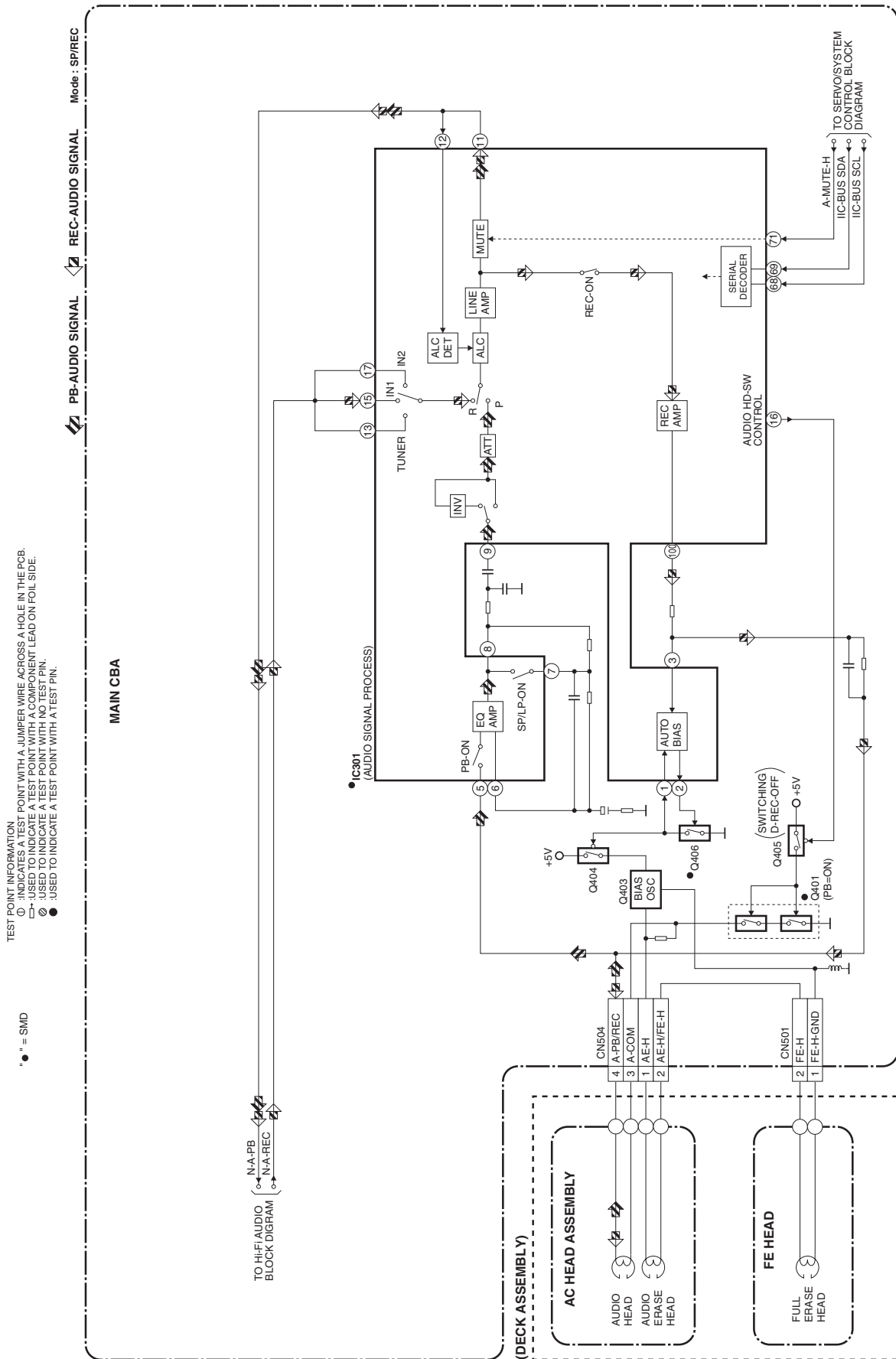
Servo/System Control Block Diagram



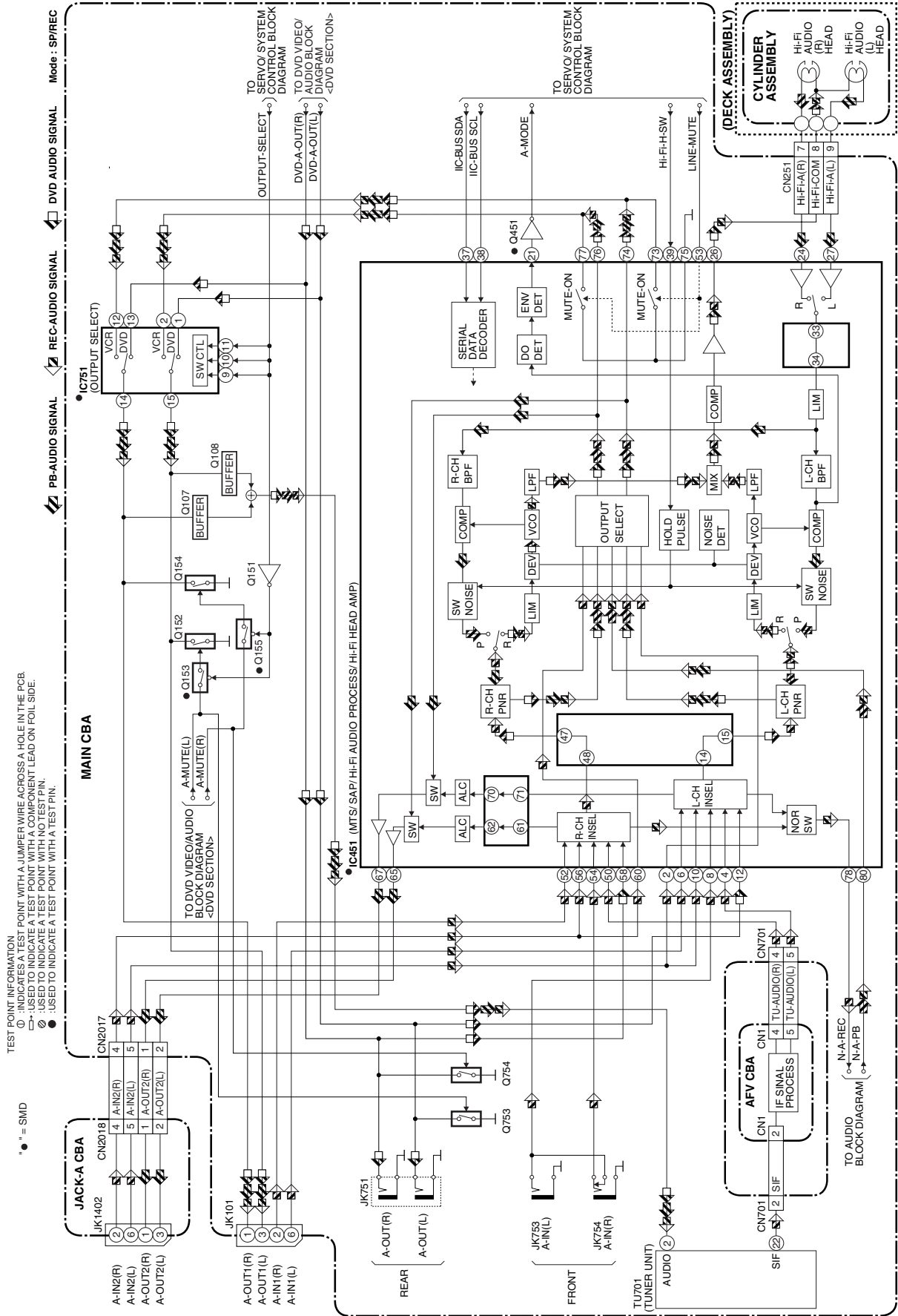
Video Block Diagram



Audio Block Diagram



Hi-Fi Audio Block Diagram

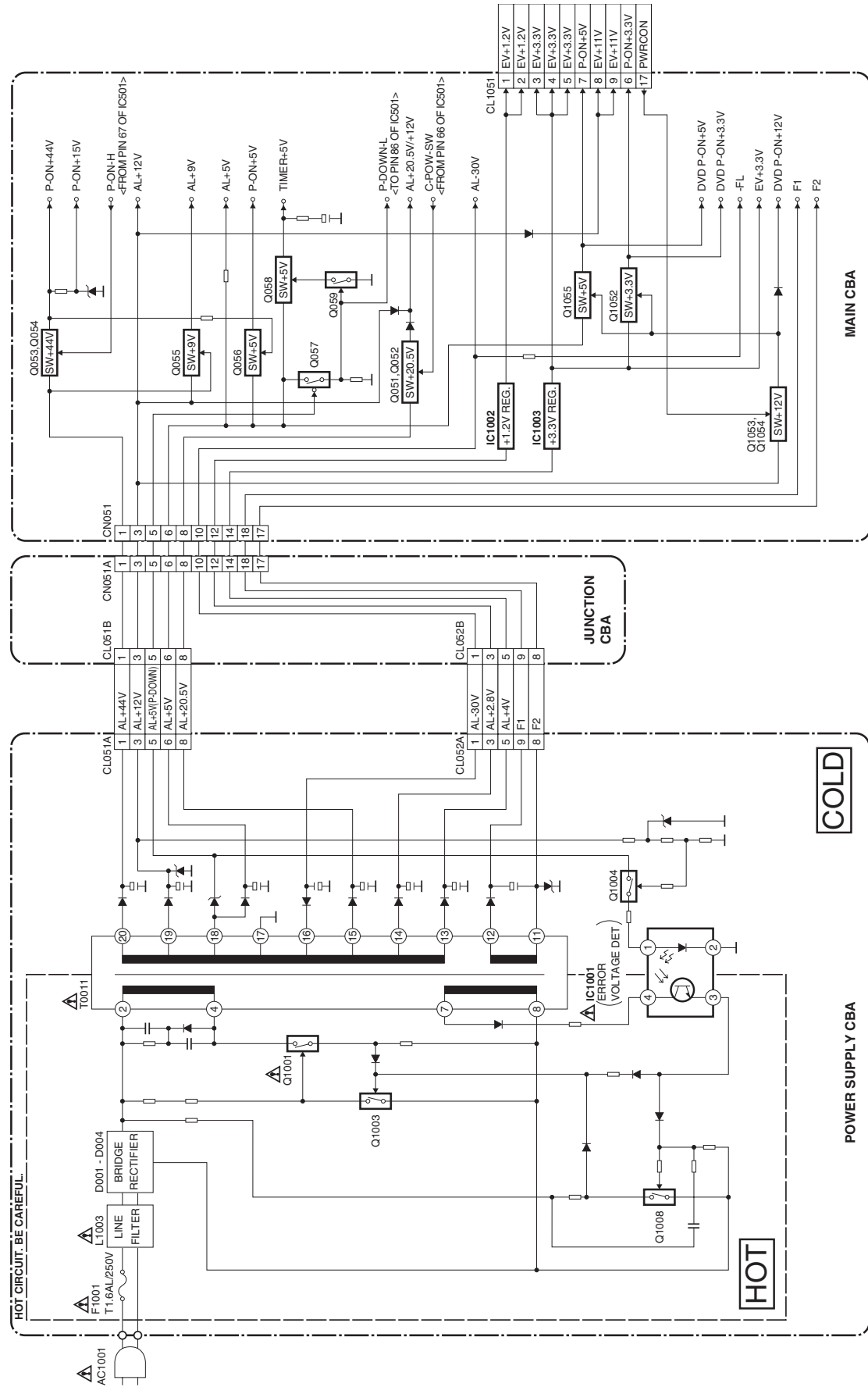


Power Supply Block Diagram

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.

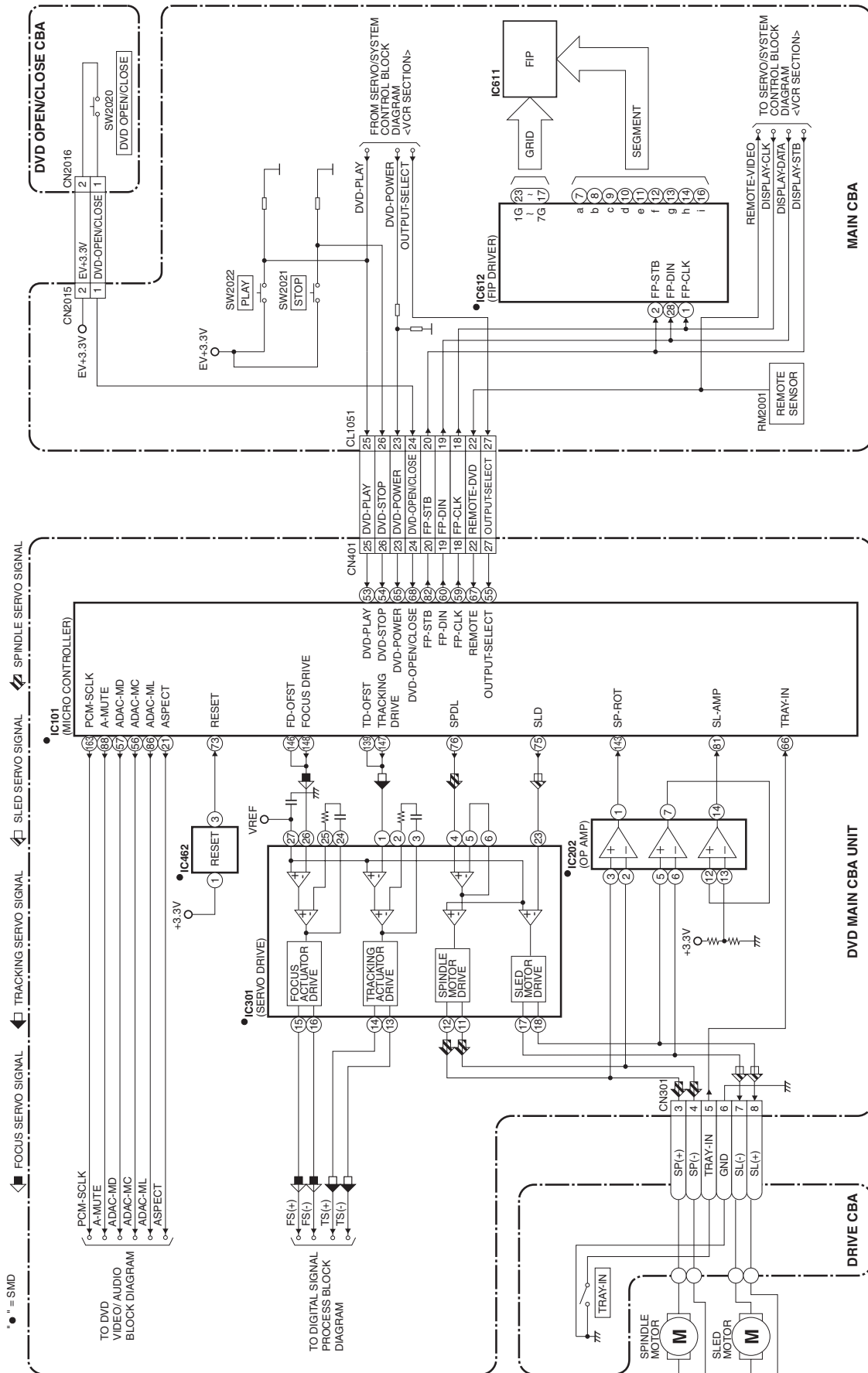
CAUTION
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE T1.6AL/250V FUSE.

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

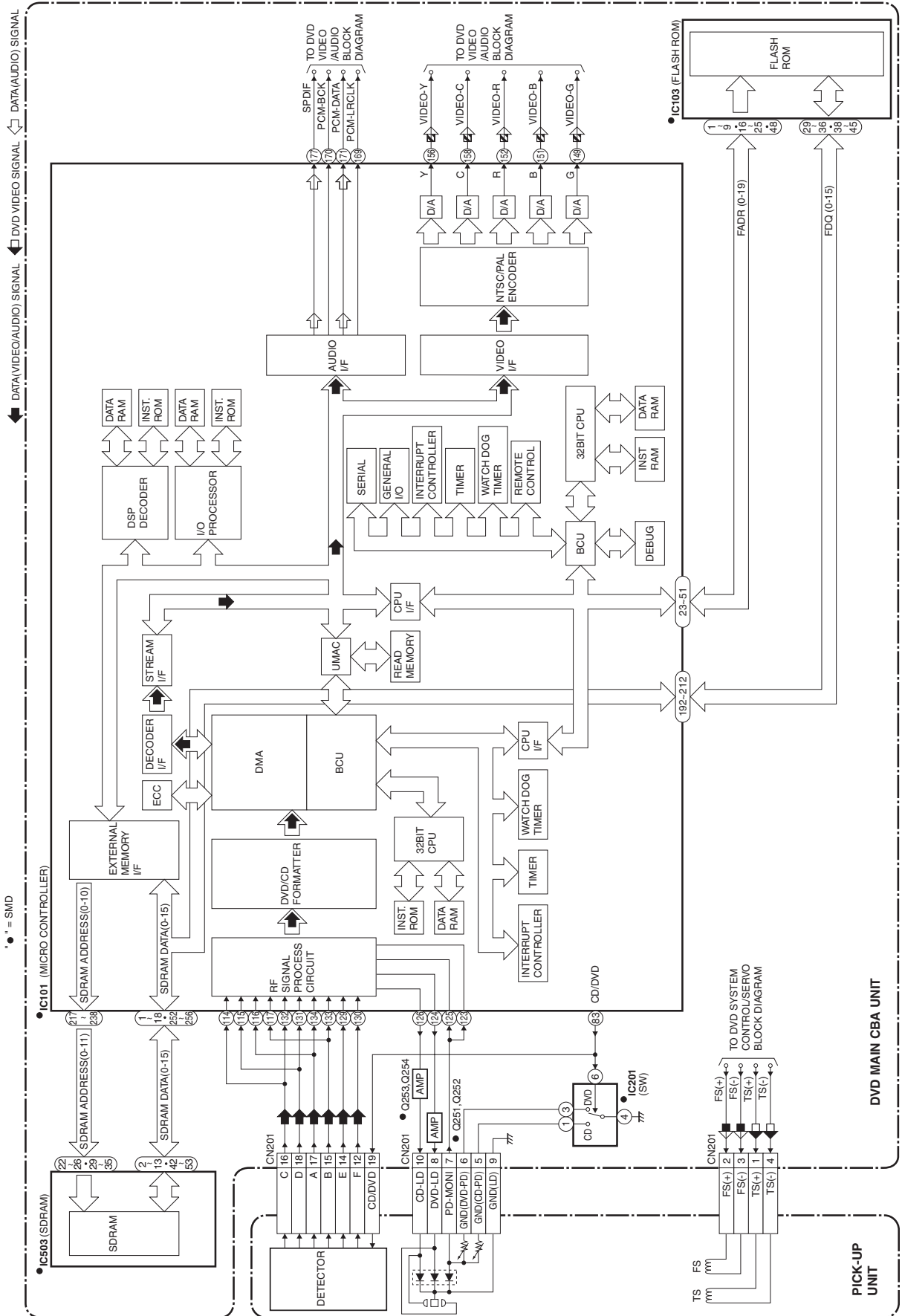


BLOCK DIAGRAMS <DVD SECTION>

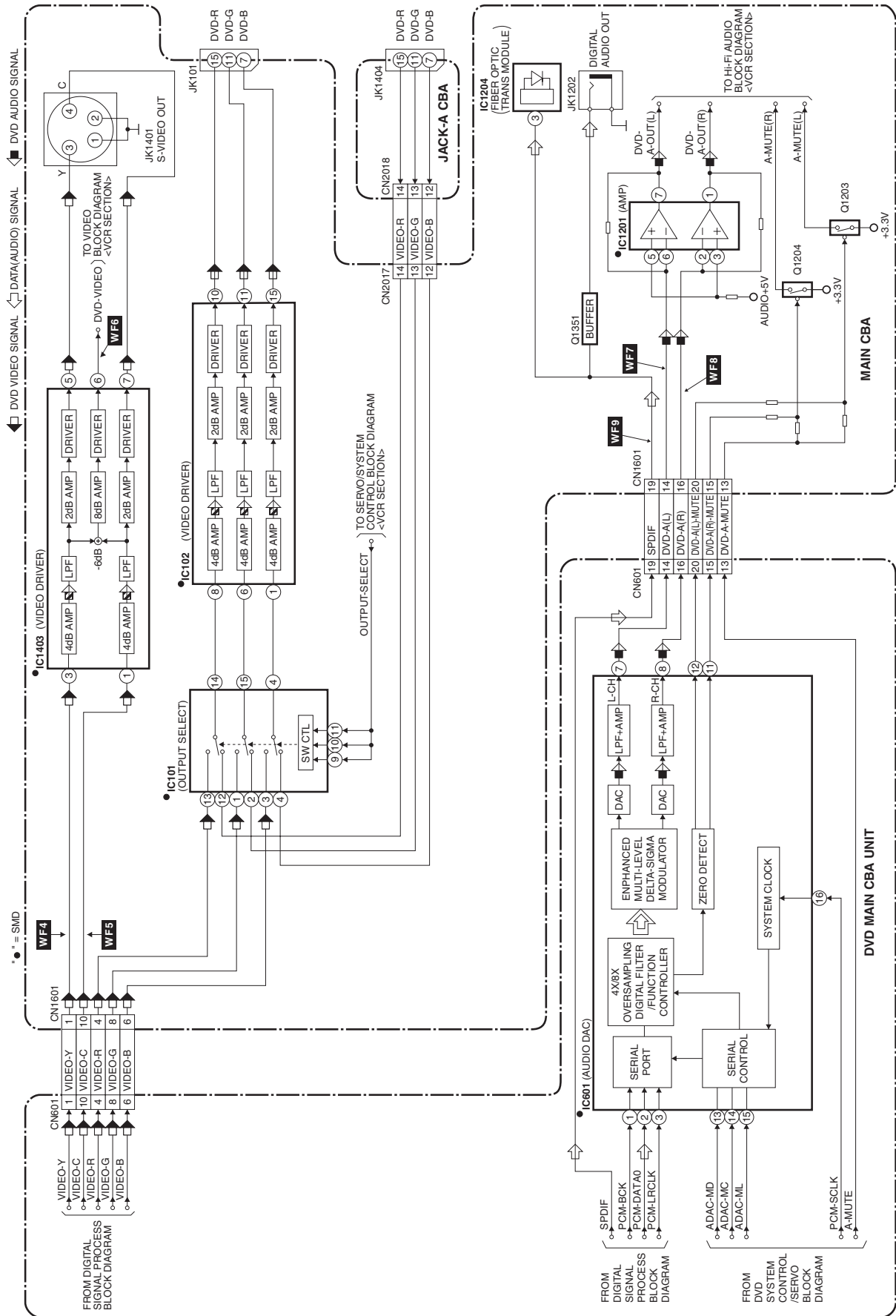
DVD System Control / Servo Block Diagram



Digital Signal Process Block Diagram



DVD Video / Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

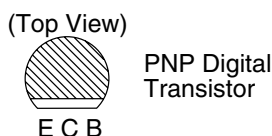
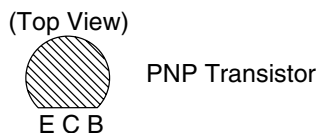
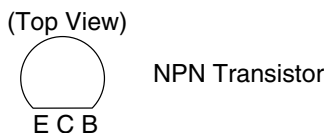
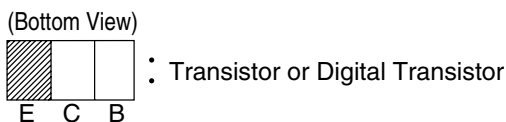
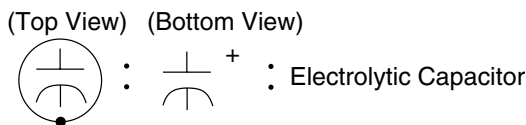
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special 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
(Y)	±22.5%	20°C	-25~+85°C

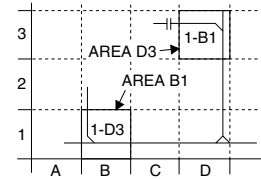
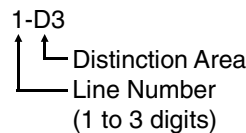
Capacitors and transistors are represented by the following symbols.

< PCB Symbols >



Notes:

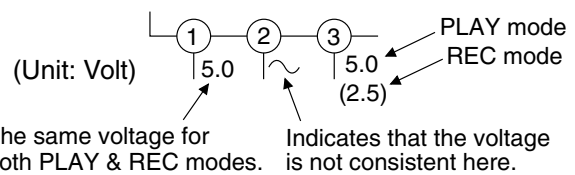
- Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
- To maintain original function and reliability of repaired units, use only original replacement parts which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



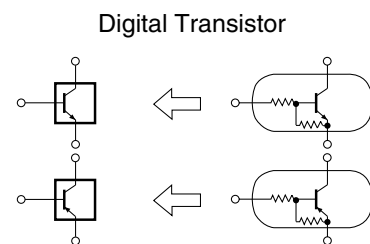
Examples:

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

- All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
- Resistor wattages are 1/4W or 1/6W unless otherwise specified.
- All capacitance values are indicated in μF ($P=10^{-6} \mu F$).
- All voltages are DC voltages unless otherwise specified.
- Voltage indications for PLAY and REC modes on the schematics are as shown below.



< Schematic Diagram Symbols >

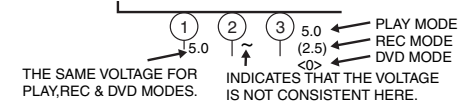


MAIN 1/9 Schematic Diagram Parts Location Guide

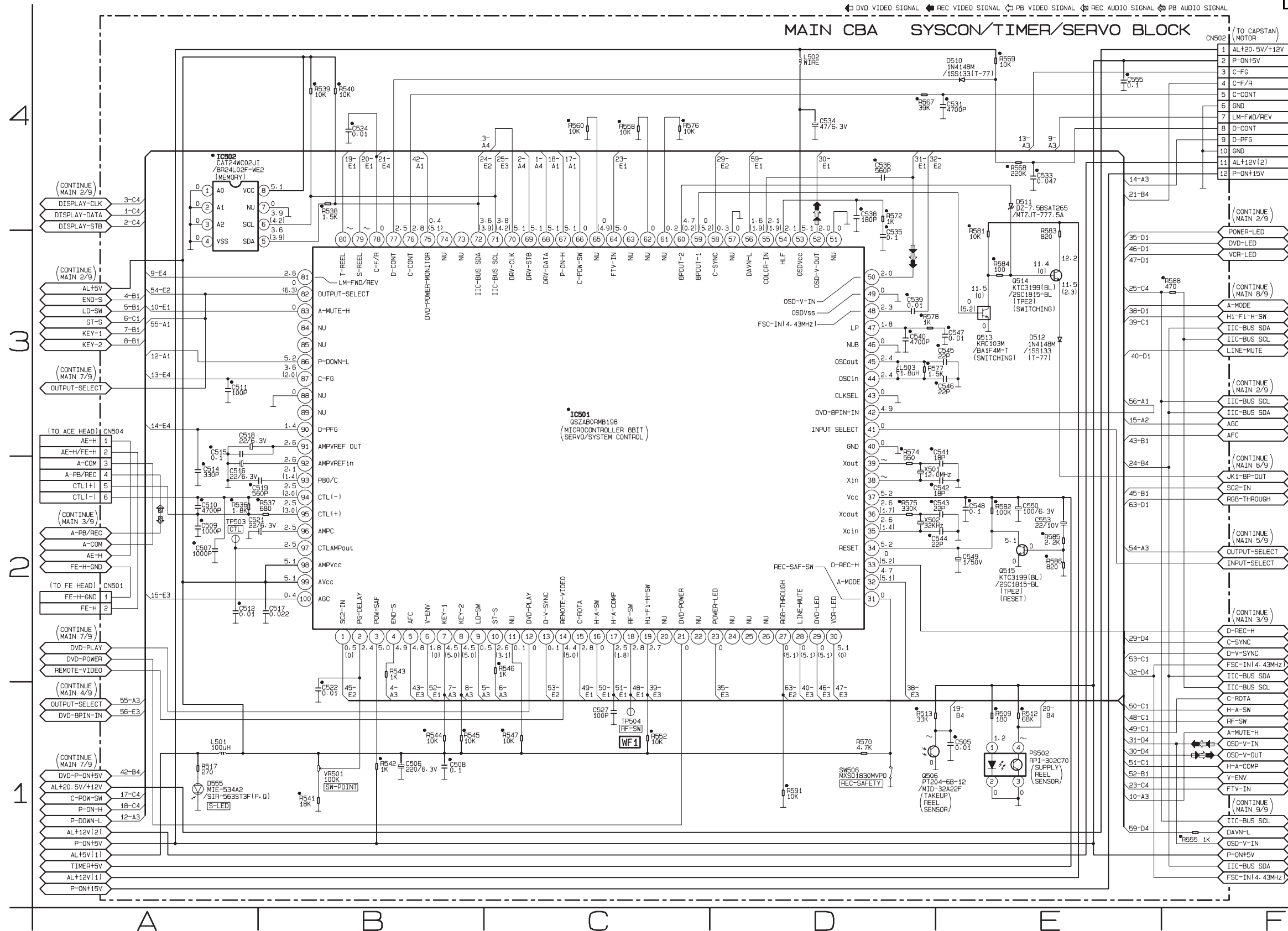
Ref No.	Position	Ref No.	Position
CAPACITORS		TRANSISTORS	
C505	E-1	Q513	E-3
C506	B-1	Q514	E-3
C507	A-2	Q515	E-2
C508	B-1	RESISTORS	
C509	A-2	R509	E-1
C510	A-2	R512	E-1
C511	A-3	R513	D-1
C512	A-2	R517	A-1
C514	A-2	R536	A-2
C515	A-3	R537	B-2
C516	A-2	R538	B-4
C517	B-2	R539	B-4
C518	A-3	R540	B-4
C519	B-2	R541	B-1
C521	B-2	R542	B-1
C522	B-1	R543	B-2
C524	B-4	R544	B-1
C527	C-1	R545	B-1
C531	E-4	R546	C-2
C533	E-4	R547	C-1
C534	D-4	R552	C-1
C535	D-3	R555	F-1
C536	D-4	R558	C-4
C538	D-4	R560	C-4
C539	D-3	R565	D-4
C540	D-3	R567	D-4
C541	E-2	R568	E-4
C542	E-2	R569	E-4
C543	E-2	R570	D-1
C544	E-2	R572	D-4
C545	E-3	R574	D-2
C546	E-3	R575	D-2
C547	E-3	R576	C-4
C548	E-2	R577	D-3
C549	E-2	R578	D-3
C550	E-2	R581	E-3
C553	E-2	R582	E-2
C555	E-4	R583	E-3
CONNECTORS		R584	E-3
CN501	A-2	R585	E-2
CN502	F-4	R586	E-2
CN504	A-3	R588	F-3
DIODES		R591	D-1
D510	E-4	SWITCH	
D511	E-4	SW506	D-1
D512	E-3	VARIABLE RESISTOR	
D555	A-1	VR501	B-1
ICS		CRYSTAL OSCILLATORS	
IC501	C-3	X501	D-2
IC502	A-4	X502	D-2
COILS		MISCELLANEOUS	
L501	A-1	PS502	E-1
L502	D-4	TEST POINTS	
L503	D-3	TP503	A-2
TRANSISTORS		TP504	C-1
Q506	D-1		

Main 1/9 Schematic Diagram < VCR Section >

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



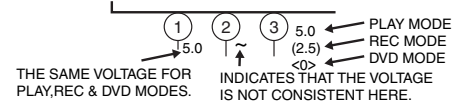
Pin No.	KEY 1 (7 PIN)	KEY 2 (8 PIN)
0.00 ~ 0.51V	REC/OTR	-----
0.51 ~ 0.92V	POWER	STOP/EJECT
0.92 ~ 1.27V	OUTPUT-SELECT	PLAY
1.27 ~ 1.61V	-----	REW
1.61 ~ 1.98V	-----	FF
1.98 ~ 2.39V	CH-UP	SENS-INH
2.39 ~ 2.90V	CH-DOWN	-----
2.90 ~ 3.60V	-----	-----
3.60 ~ 4.30V	DUBBING	-----
4.30 ~ 5.00V	KEY OFF	KEY OFF



Main 2/9, Sensor & Power SW Schematic Diagrams < VCR Section >

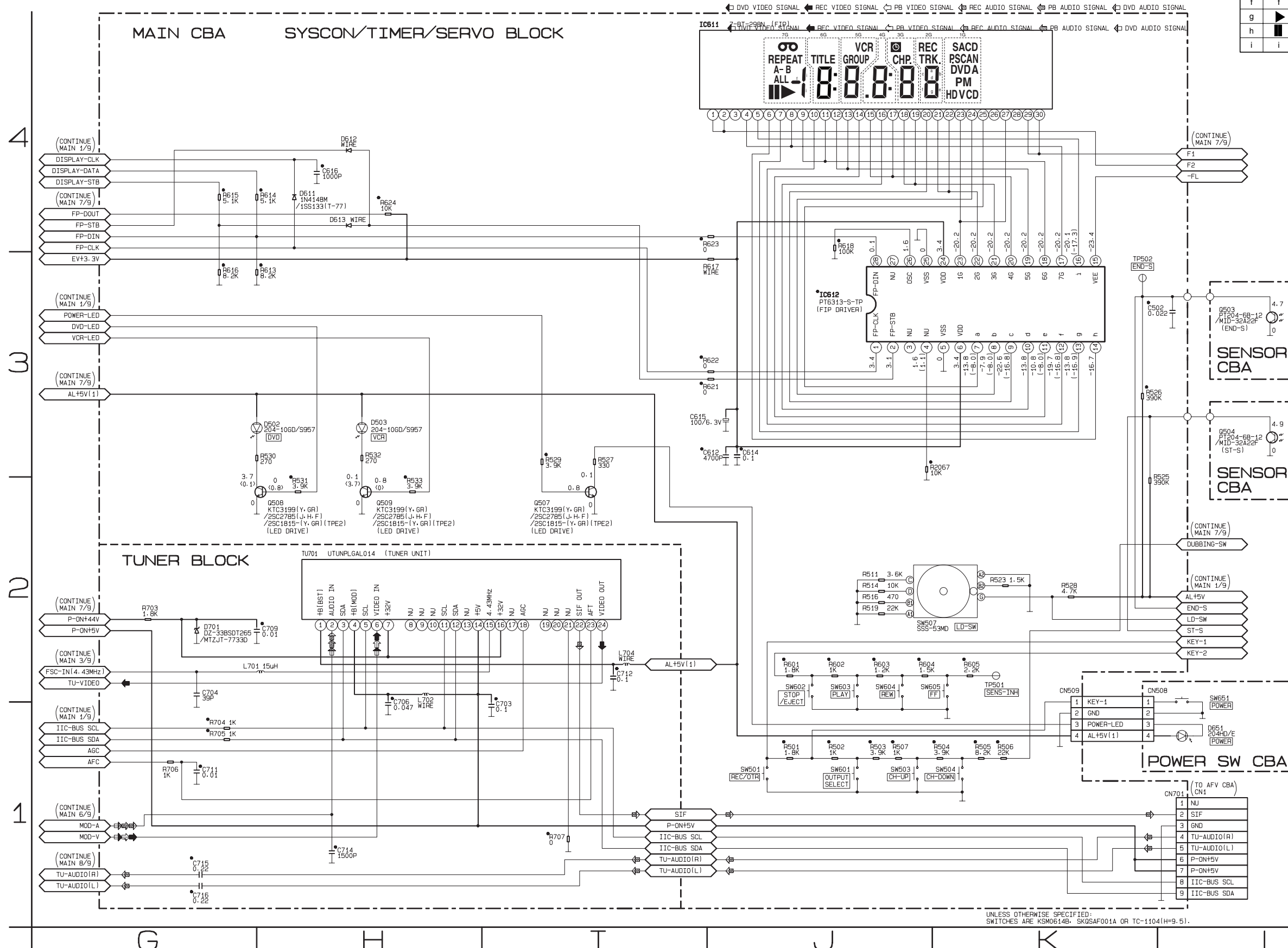
*" = SMD

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



IC611 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	REPEAT	a	a	a	a	a	SACD
b	REPEAT	b	b	b	b	b	PSCAN
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	■	■	■	■	■	■	V
i	■	■	■	■	■	■	CD
	GROUP	CHP	TRK.				
	TITLE	VCR	REC				



UNLESS OTHERWISE SPECIFIED:
SWITCHES ARE K5M0614B, SK05AF001A OR TC-11041H(9.5).

MAIN 2/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C502	L3	R523	K-2
C612	J-3	R525	K-3
C614	J-3	R526	K-2
C615	J-3	R527	I-3
C616	H-4	R528	K-2
C703	I-1	R529	I-3
C704	G-2	R530	H-3
C706	H-2	R531	H-2
C709	H-2	R532	H-3
C711	G-1	R533	H-2
C712	I-2	R601	J-2
C714	H-1	R602	J-2
C715	G-1	R603	J-2
C716	G-1	R604	K-2
CONNECTORS		R605	K-2
CN509	K-2	R613	H-3
CN701	L-1	R614	H-4
DIODES		R615	G-4
D502	H-3	R616	G-3
D503	H-3	R617	J-3
D611	H-4	R618	J-4
D612	H-4	R621	J-3
D613	H-4	R622	J-3
D701	G-2	R623	J-4
ICS		R624	H-4
IC611	I-4	R703	G-2
IC612	J-3	R704	G-1
COILS		R705	G-1
L701	H-2	R706	G-1
L702	H-2	R707	I-1
L704	I-2	R2067	J-3
TRANSISTORS		SWITCHES	
Q507	I-2	SW501	J-1
Q508	H-2	SW502	J-1
Q509	H-2	SW503	J-1
RESISTORS		SW504	K-1
R501	J-1	SW507	K-2
R502	J-1	SW601	J-1
R503	J-1	SW602	J-2
R504	K-1	SW603	J-2
R505	K-1	SW604	J-2
R506	K-1	SW605	K-2
R507	K-5	MISCELLANEOUS	
R511	J-2	TU701	H-2
R514	J-2	TEST POINTS	
R516	J-2	TP501	K-2
R519	J-2	TP502	K-3

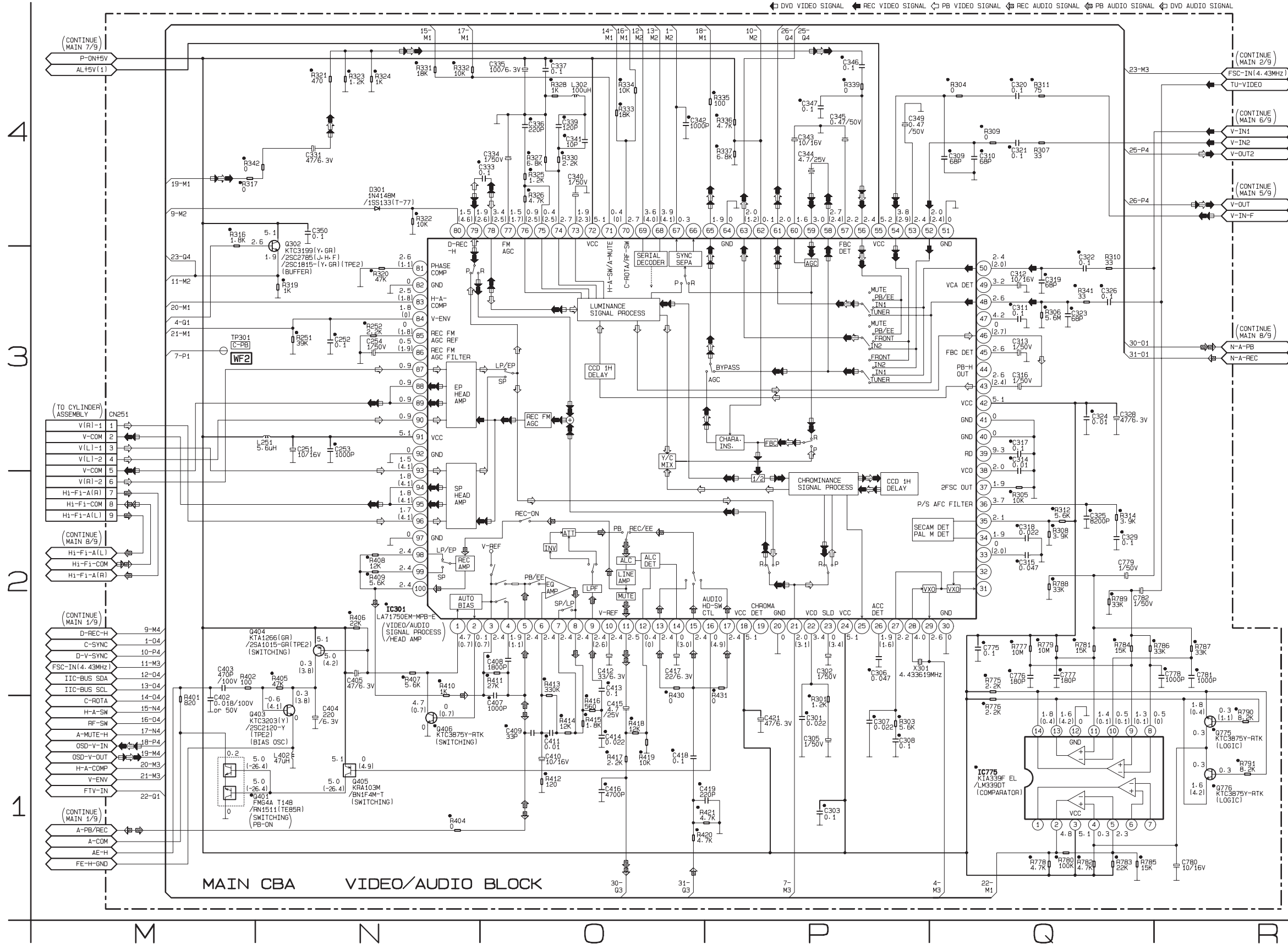
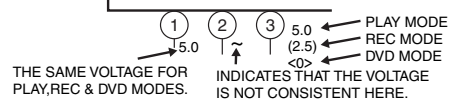
MAIN 3/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		TRANSISTORS		RESISTORS	
C251	N-3	C347	P-4	Q404	N-2	R402	M-2
C252	N-3	C349	P-4	Q405	N-1	R404	N-1
C253	N-3	C350	N-4	Q406	N-1	R405	N-2
C254	N-3	C402	M-1	Q775	Q-1	R406	N-2
C301	P-1	C403	M-2	Q776	Q-1	R407	N-2
C302	P-2	C404	N-1	RESISTORS		R408	N-2
C303	P-1	C405	N-2	R251	N-3	R409	N-2
C305	P-1	C407	O-1	R252	N-3	R410	N-2
C306	P-2	C408	O-2	R301	P-1	R411	O-2
C307	P-1	C409	O-1	R303	P-1	R412	O-1
C308	P-1	C412	Q-2	R304	Q-4	R413	O-2
C309	Q-4	C413	O-2	R305	Q-2	R414	O-1
C310	Q-4	C410	O-1	R306	Q-3	R415	O-1
C311	Q-3	C411	O-1	R307	Q-4	R416	O-1
C312	Q-3	C412	O-1	R308	Q-2	R417	O-1
C313	Q-3	C414	O-1	R309	Q-4	R418	O-1
C314	Q-3	C415	O-1	R310	Q-3	R419	O-1
C315	Q-2	C416	O-1	R311	Q-4	R420	O-1
C316	Q-3	C417	O-2	R312	Q-2	R421	O-1
C317	Q-3	C418	O-1	R314	Q-2	R430	O-2
C318	Q-2	C419	O-1	R316	M-4	R431	P-2
C319	Q-3	C421	P-1	R317	M-4	R775	Q-2
C320	Q-4	C775	Q-2	R318	N-4	R776	Q-1
C321	Q-4	C776	Q-2	R319	N-3	R777	Q-2
C322	Q-3	C777	Q-2	R320	N-3	R778	Q-1
C323	Q-3	C778	R-2	R321	N-4	R779	Q-2
C324	Q-3	C779	Q-2	R322	N-4	R780	Q-1
C325	Q-2	C780	R-1	R323	N-4	R781	Q-2
C326	Q-3	C781	R-2	R324	N-4	R782	Q-1
C328	Q-3	C782	Q-2	R325	O-4	R783	Q-1
C329	Q-2	CONNECTOR		R326	O-4	R784	Q-2
C331	N-4	CN251	M-3	R327	O-4	R785	Q-1
C333	O-4	DIODE		R328	O-4	R786	Q-2
C334	O-4	D301	N-4	R330	O-4	R787	Q-2
C335	O-4	ICS		R331	N-4	R788	Q-2
C336	O-4	IC301	N-2	R332	N-4	R789	Q-2
C337	O-4	IC775	Q-1	R333	O-4	R790	R-1
C339	O-4	COILS		R334	O-4	R791	R-1
C340	O-4	L251	N-3	R335	P-4	CRYSTAL OSCILLATOR	
C341	O-4	L302	O-4	R336	P-4	X301	P-2
C342	O-4	L402	N-1	R337	P-4	TEST POINT	
C343	P-4	TRANSISTORS		R339	P-4	TP301	M-3
C344	P-4	Q302	N-3	R341	Q-3		
C345	P-4	Q401	M-1	R342	N-4		
C346	P-4	Q403	N-1	R401	M-1		

Main 3/9 Schematic Diagram < VCR Section >

• = SMD

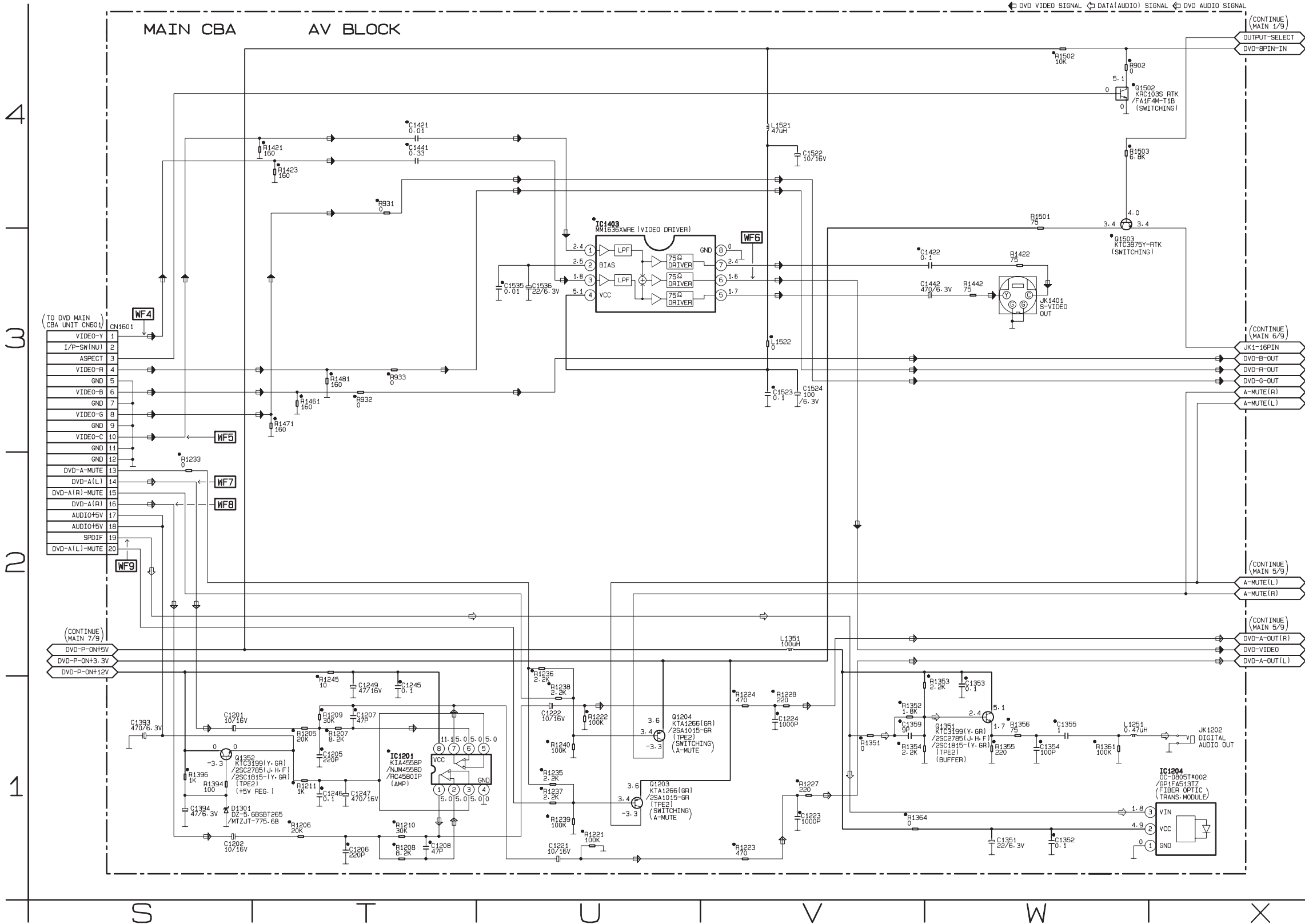
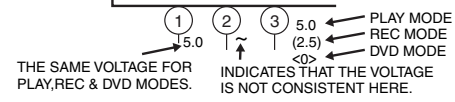
Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



Main 4/9 Schematic Diagram < VCR Section >

• = SMD

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



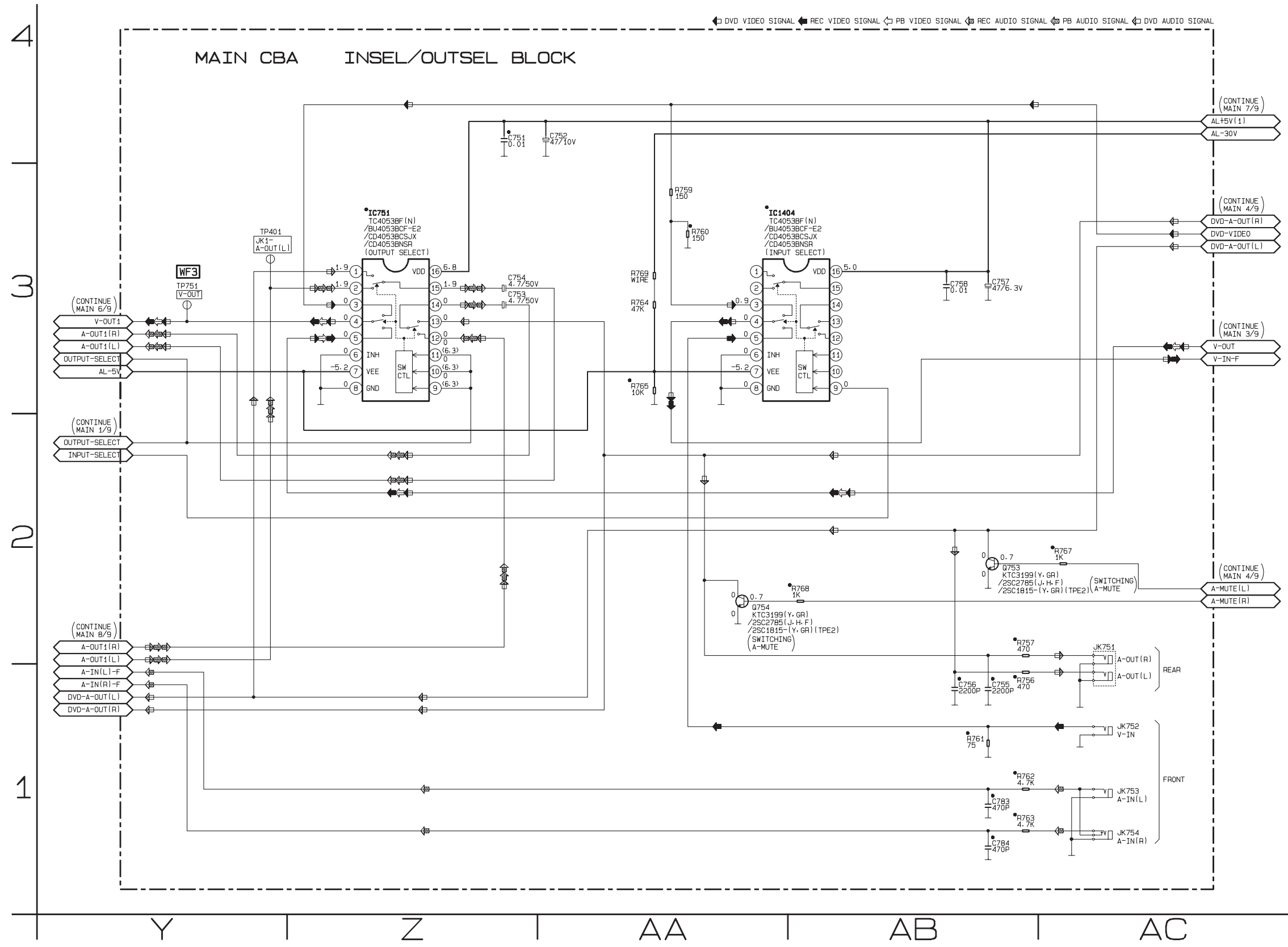
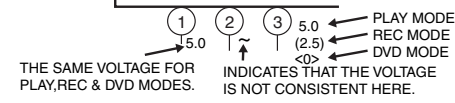
MAIN4/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		TRANSISTORS	
C1201	S-1	Q1503	W-3
C1202	S-1	RESISTORS	
C1205	T-1	R902	W-4
C1206	T-1	R931	T-4
C1207	T-1	R932	T-3
C1208	T-1	R933	T-3
C1221	U-1	R1205	T-1
C1222	U-1	R1206	T-1
C1223	V-1	R1207	T-1
C1224	V-1	R1208	T-1
C1245	T-1	R1209	T-1
C1246	T-1	R1210	T-1
C1247	T-1	R1211	T-1
C1249	T-1	R1221	U-1
C1351	W-1	R1222	U-1
C1352	W-1	R1223	V-1
C1353	W-1	R1224	V-1
C1354	W-1	R1227	V-1
C1355	W-1	R1228	V-1
C1359	V-1	R1233	U-1
C1393	S-1	1235	U-1
C1394	S-1	R1236	U-2
C1421	T-4	R1237	U-1
C1422	W-3	R1238	U-1
C1441	T-4	R1239	U-1
C1442	W-3	R1240	U-1
C1522	V-4	R1245	T-1
C1523	V-3	R1351	V-1
C1524	V-3	R1352	V-1
C1535	V-3	R1353	W-1
C1536	V-3	R1354	V-1
CONNECTOR		R1355	W-1
CN1601	S-3	R1356	W-1
DIODE		R1361	W-1
D1301	S-1	R1364	V-1
ICS		R1394	S-1
IC1201	T-1	R1396	S-1
IC1204	X-1	R1421	T-4
IC1403	U-4	R1422	W-3
COILS		R1423	T-4
L1251	W-1	R1442	W-3
L1351	V-1	R1461	T-3
L1521	V-4	R1471	T-3
L1522	V-3	R1481	T-3
TRANSISTORS		R1501	W-4
Q1203	U-1	R1502	W-4
Q1204	U-1	R1503	W-4
Q1351	W-1	MISCELLANEOUS	
Q1352	S-1	JK1202	X-1
Q1502	W-4	JK1401	W-3

Main 5/9 Schematic Diagram < VCR Section >

● = SMD

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



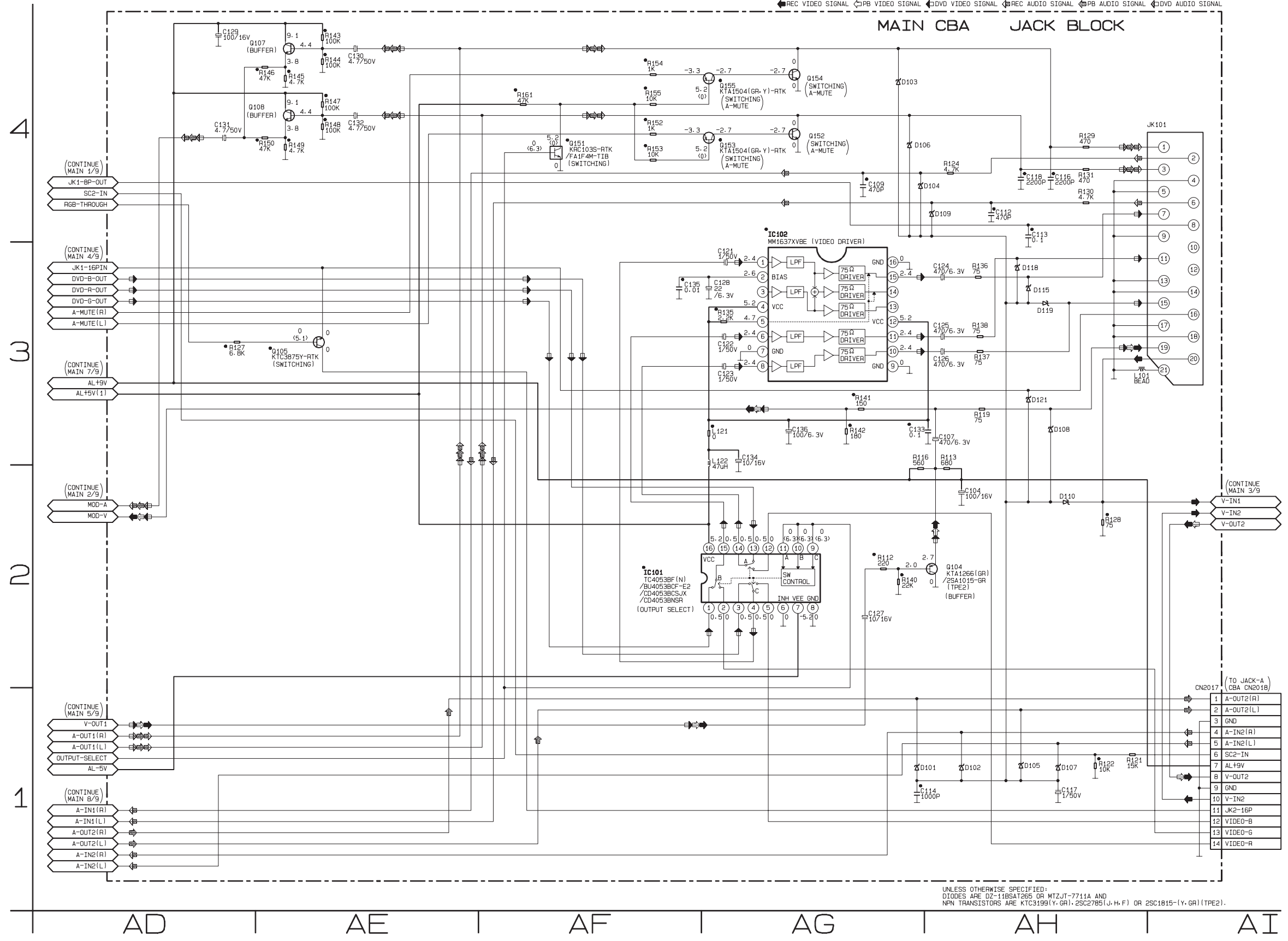
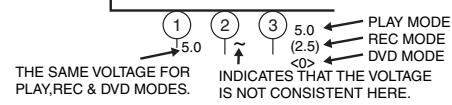
MAIN 5/9 Schematic Diagram
Parts Location Guide

Ref No.	Position
CAPACITORS	
C751	Z-4
C752	AA-4
C753	Z-3
C754	Z-3
C755	AB-1
C756	AB-1
C757	AB-3
C758	AB-3
C783	AB-1
C784	AB-1
ICS	
IC751	Z-3
IC1404	AB-3
TRANSISTORS	
Q753	AB-2
Q754	AA-2
RESISTORS	
R756	AB-1
R757	AB-2
R759	AA-3
R760	AA-3
R761	AB-1
R762	AB-1
R763	AB-1
R764	AA-3
R765	AA-3
R767	AB-2
R769	AA-3
MISCELLANEOUS	
JK751	AC-2
JK752	AC-1
JK753	AC-1
JK754	AC-1
TEST POINT	
TP401	Y-3
TP751	Y-3

Main 6/9 Schematic Diagram < VCR Section >

• = SMD

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



UNLESS OTHERWISE SPECIFIED:
 DIODES ARE DZ-118S/AT265 OR MTZJ7-7711A AND
 NPN TRANSISTORS ARE KTC3199(Y, GR), 2SC2785(J, H, F) OR 2SC1815-(Y, GR) (TPE2).

MAIN 6/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		COILS	
C104	AH-2	L121	AG-3
C107	AH-3	TRANSISTORS	
C109	AG-4	L122	AG-3
C112	AH-4	Q104	AH-2
C113	AH-4	Q105	AE-3
C114	AG-1	Q107	AE-4
C116	AH-4	Q108	AE-4
C117	AH-1	Q151	AF-4
C118	AH-4	Q152	AG-4
C121	AG-3	Q153	AG-4
C122	AG-3	Q154	AG-4
C123	AG-3	Q155	AG-4
C124	AH-3	RESISTORS	
C125	AH-3	R112	AG-2
C126	AH-3	R113	AH-2
C127	AG-2	R116	AG-2
C128	AG-3	R119	AH-3
C129	AD-4	R121	AH-1
C130	AE-4	R122	AH-1
C131	AD-4	R124	AH-4
C132	AE-4	R128	AH-2
C133	AG-3	R127	AD-3
C134	AG-3	R129	AH-4
C135	AF-3	R130	AH-4
C136	AG-3	R131	AH-4
CONNECTOR		R135	AG-3
CN2017	AI-1	R136	AH-3
DIODES		R137	AH-3
D101	AG-1	R138	AH-3
D102	AH-1	R140	AG-2
D103	AG-4	R141	AG-3
D104	AG-4	R142	AG-3
D105	AH-1	R143	AE-4
D106	AG-4	R144	AE-4
D107	AH-1	R145	AE-4
D108	AH-3	R146	AE-4
D109	AH-4	R147	AE-4
D110	AH-2	R148	AE-4
D115	AH-3	R149	AE-4
D118	AH-3	R150	AE-4
D119	AH-3	R152	AF-4
D121	AH-3	R153	AF-4
ICS		R154	AF-4
IC101	AG-2	R155	AF-4
IC102	AG-3	R161	AF-4
COILS		MISCELLANEOUS	
L101	AH-3	JK101	AI-4

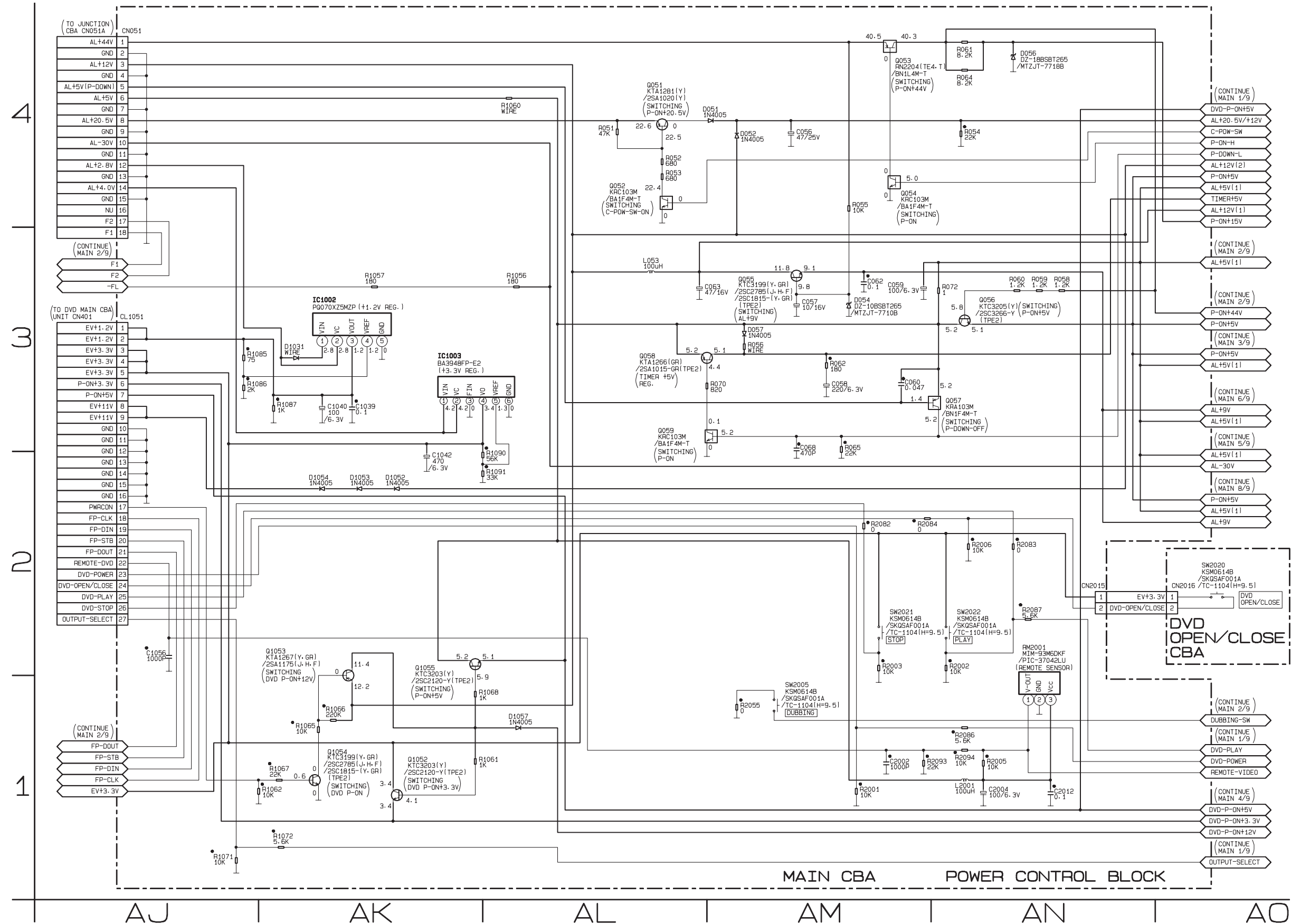
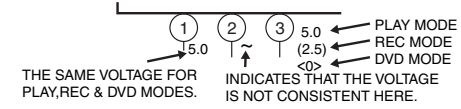
MAIN 7/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C056	AM-4	R051	AL-4
C057	AM-3	R052	AL-4
C058	AM-3	R053	AL-4
C059	AM-2	R054	AN-4
C060	AM-3	R055	AM-4
C062	AM-3	R056	AM-3
C063	AM-3	R058	AN-3
C068	AM-3	R059	AN-3
C1039	AK-3	R060	AN-3
C1040	AK-3	R061	AN-4
C1056	AJ-2	R062	AM-3
C1402	AK-2	R064	AN-4
C2002	AM-1	R065	AM-3
C2004	AN-1	R070	AM-3
C2012	AN-1	R072	AN-3
CONNECTORS		R1056	AL-3
CN051	AJ-4	R1057	AK-3
CN2015	AN-2	R1060	AL-4
CL1051	AJ-3	R1061	AK-1
DIODES		R1062	AK-1
D051	AM-4	R1065	AK-1
D052	AM-4	R1066	AK-1
D054	AM-3	R1067	AK-1
D056	AN-4	R1068	AK-1
D057	AM-3	R1071	AJ-1
D1031	AK-3	R1072	AK-1
D1052	AK-2	R1085	AJ-3
D1053	AK-2	R1086	AJ-3
D1054	AK-2	R1087	AK-3
D1057	AL-1	R1090	AL-2
ICS		R1091	AL-2
IC1002	AK-3	R2001	AM-1
IC1003	AK-3	R2002	AN-2
COILS		R2003	AM-2
L053	AL-3	R2005	AN-1
L2001	AN-1	R2006	AN-2
TRANSISTORS		R2055	AM-1
Q051	AL-4	R2082	AM-2
Q052	AL-4	R2083	AN-2
Q053	AM-4	R2084	AM-2
Q054	AM-4	R2086	AN-1
Q055	AM-3	R2087	AN-2
Q056	AN-3	R2093	AM-1
Q057	AN-3	R2094	AN-1
Q058	AL-3	SWITCHES	
Q059	AL-3	SW2005	AM-1
Q1052	AK-1	SW2021	AM-2
Q1053	AK-2	SW2022	AN-2
Q1054	AK-1	MISCELLANEOUS	
Q1055	AK-2	RM2001	AN-2

Main 7/9 & DVD Open/Close Schematic Diagrams < VCR Section >

• = SMD

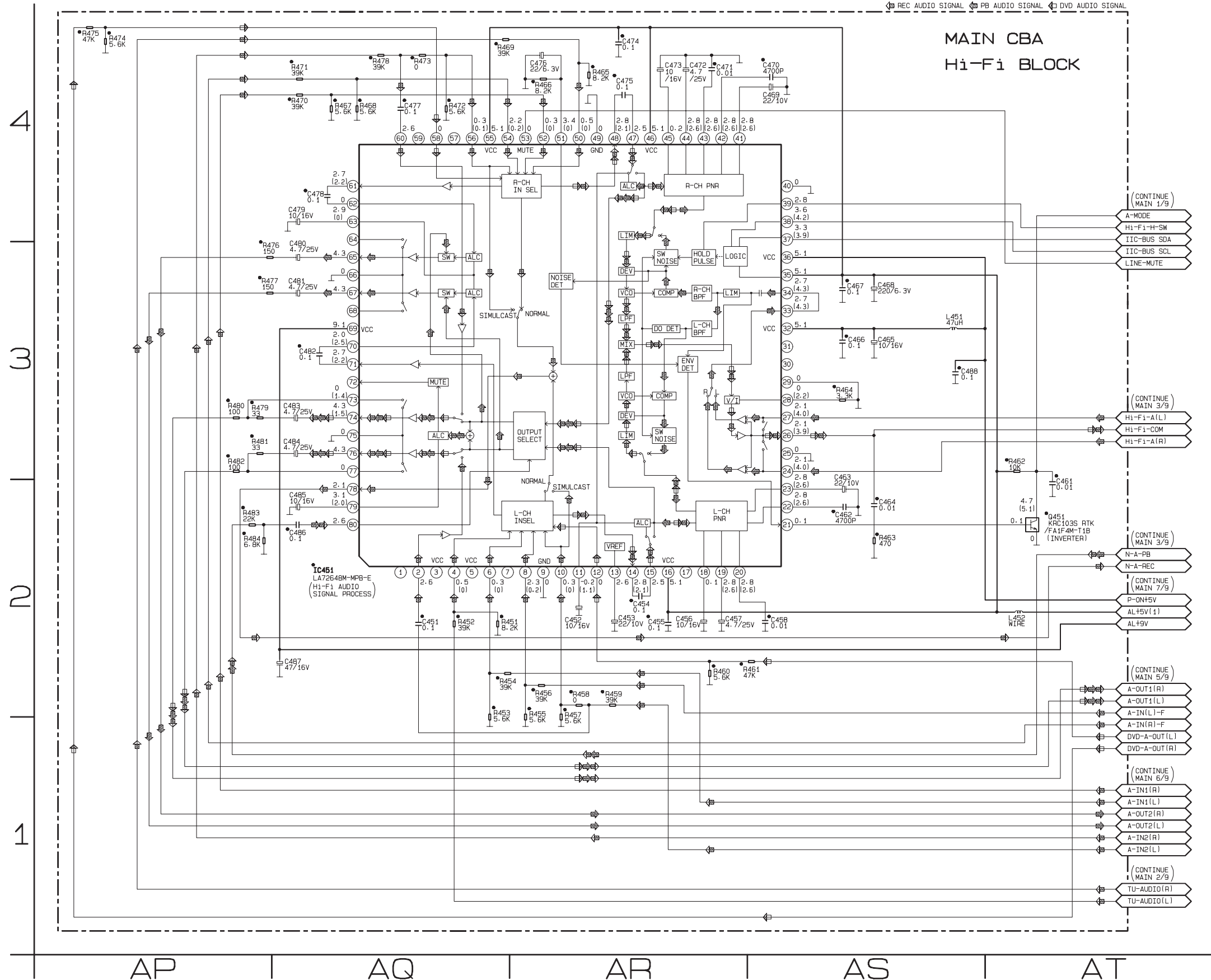
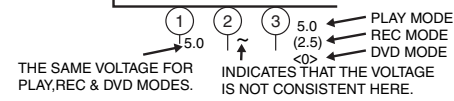
Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



Main 8/9 Schematic Diagram < VCR Section >

* = SMD

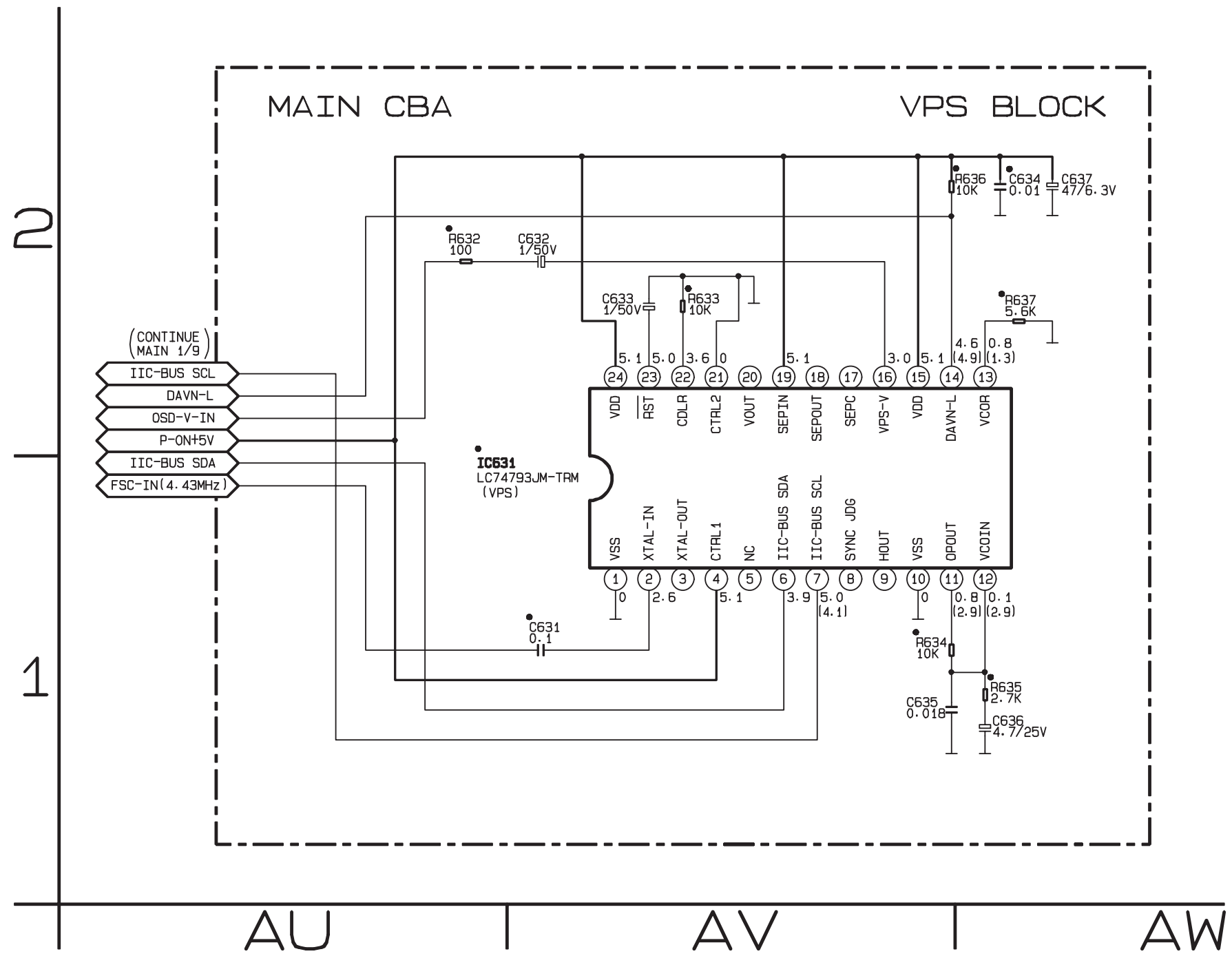
Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



MAIN 8/9 Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		COILS	
C451	AQ-2	L451	AS-3
C452	AR-2	L452	AT-2
C453	AR-2	RESISTORS	
C454	AR-2	R451	AQ-2
C455	AR-2	R452	AQ-2
C456	AR-2	R453	AQ-2
C457	AR-2	R454	AQ-2
C458	AS-2	R455	AR-2
C461	AT-2	R456	AR-2
C462	AS-2	R457	AR-2
C463	AS-2	R458	AR-2
C464	AS-2	R459	AR-2
C465	AS-3	R460	AR-2
C466	AS-3	R461	AR-2
C467	AS-3	R462	AT-3
C468	AS-3	R463	AS-2
C469	AS-4	R464	AS-3
C470	AS-4	R465	AR-4
C471	AR-4	R466	AR-4
C472	AR-4	R467	AQ-4
C473	AR-4	R468	AQ-4
C474	AR-4	R469	AQ-4
C475	AR-4	R470	AQ-4
C476	AR-4	R471	AQ-4
C477	AQ-4	R472	AQ-4
C478	AQ-3	R473	AQ-4
C479	AQ-3	R474	AP-4
C480	AQ-3	R475	AP-4
C481	AQ-3	R476	AP-3
C482	AQ-3	R477	AP-3
C483	AQ-3	R478	AQ-4
C484	AQ-3	R479	AP-3
C485	AQ-2	R480	AP-3
C486	AQ-2	R481	AP-3
C487	AQ-2	R482	AP-3
C488	AS-3	R483	AP-2
IC		R484	AP-2
IC451	AQ-2		
TRANSISTOR			
Q451	AT-2		

Main 9/9 Schematic Diagram < VCR Section >

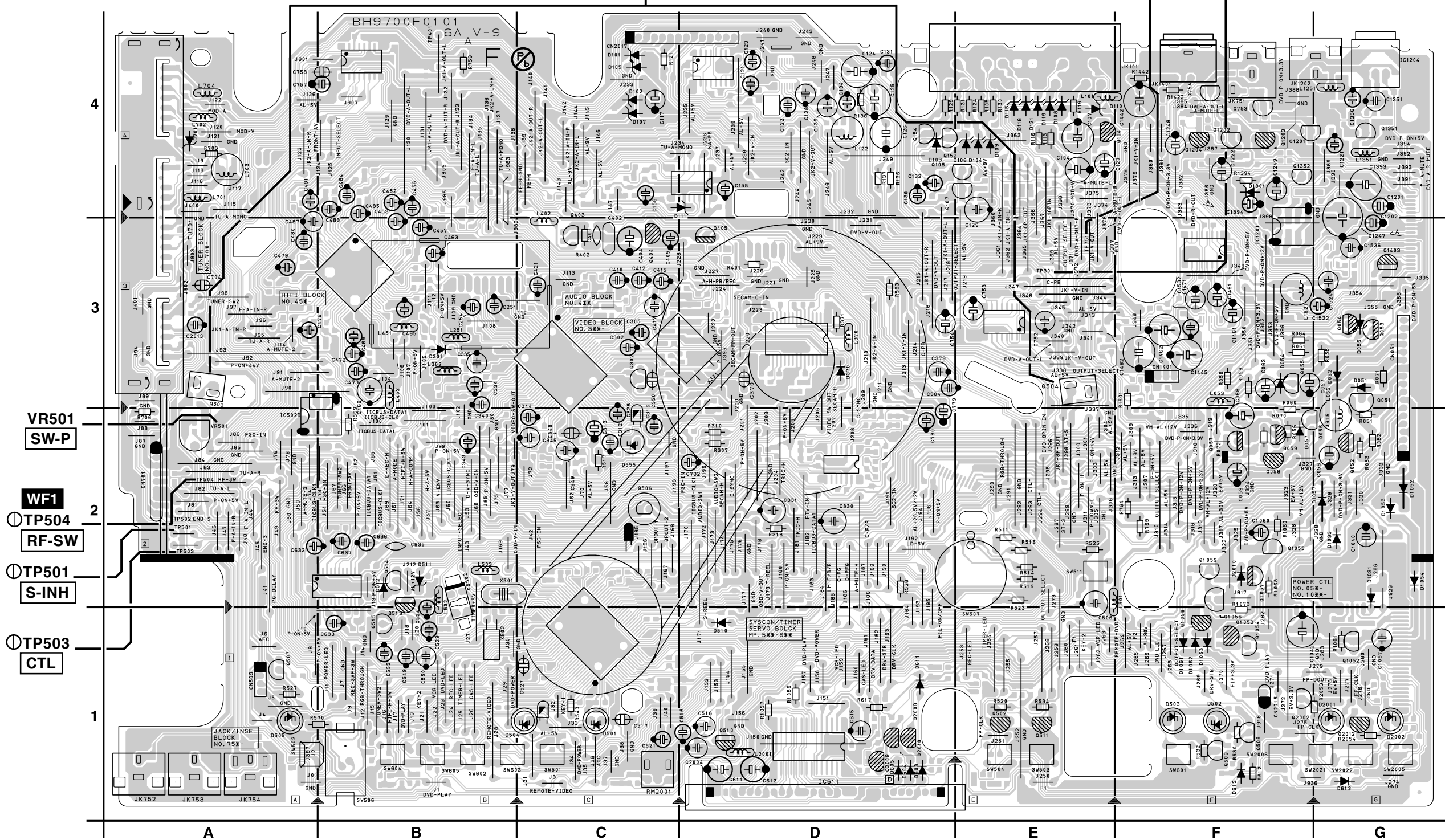
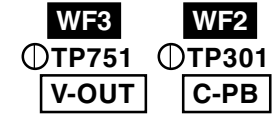
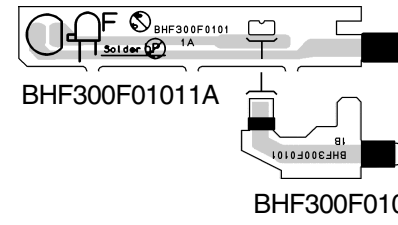


MAIN 9/9 Schematic Diagram
Parts Location Guide

Ref No.	Position
CAPACITORS	
C631	AV-1
C632	AV-2
C633	AV-2
C634	AW-2
C635	AV-1
C636	AW-1
C637	AW-2
IC	
IC631	AV-1
RESISTORS	
R632	AU-2
R633	AV-2
R634	AV-1
R635	AW-1
R636	AV-2
R637	AW-2

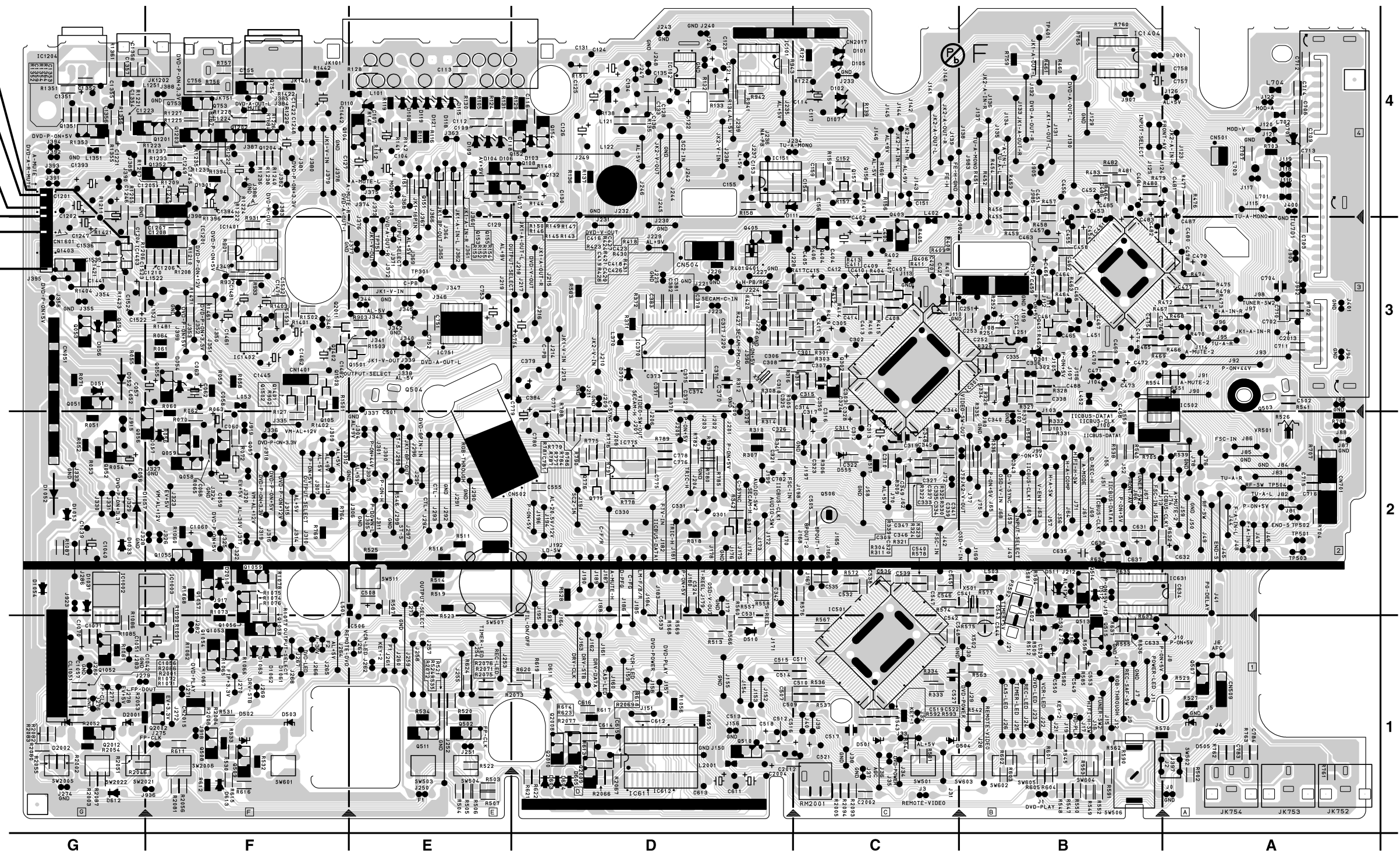
Main CBA & Sensor CBA Top View

Sensor CBA Top View



Main CBA Bottom View

- WF6**
PIN 6 OF
IC1403
- WF9**
PIN 19 OF
CN1601
- WF8**
PIN 16 OF
CN1601
- WF7**
PIN 14 OF
CN1601
- WF5**
PIN 10 OF
CN1601
- WF4**
PIN 1 OF
CN1601

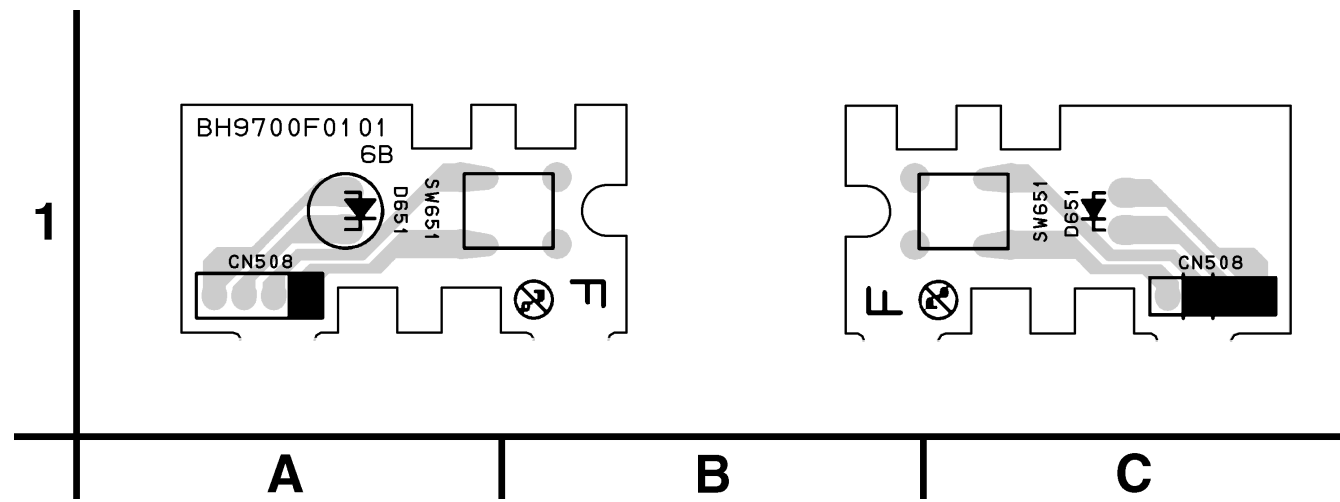


Main CBA Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		CAPACITORS		CAPACITORS		CAPACITORS		TRANSISTORS		RESISTORS		RESISTORS		RESISTORS		RESISTORS		RESISTORS	
C056	G-2	C337	C-2	C507	D-1	C780	D-2	D109	E-4	Q057	F-2	R137	D-4	R420	D-3	R542	B-1	R778	D-2	R1461	F-3
C057	G-3	C339	C-2	C508	E-2	C781	D-2	D110	E-4	Q058	F-2	R138	D-4	R421	D-3	R543	C-1	R779	D-2	R1471	F-3
C058	F-3	C340	B-2	C509	D-1	C782	D-2	D115	E-4	Q059	F-2	R140	E-4	R430	D-3	R544	C-1	R780	D-2	R1481	F-3
C059	F-2	C341	C-2	C510	C-1	C783	A-1	D118	E-4	Q104	F-4	R141	E-4	R431	D-3	R545	B-1	R781	D-2	R1501	F-3
C060	F-2	C342	D-2	C511	C-1	C784	A-1	D119	E-4	Q105	F-2	R142	E-4	R451	B-4	R546	B-1	R782	D-2	R1502	F-3
C062	F-3	C343	B-2	C512	D-1	C1039	G-2	D121	E-4	Q107	D-4	R143	D-3	R452	B-4	R547	B-1	R783	D-2	R1503	F-3
C063	F-3	C344	C-3	C514	D-1	C1040	G-2	D301	B-3	Q108	D-4	R144	D-4	R453	B-4	R552	B-1	R784	D-2	R2001	F-1
C068	F-2	C345	C-2	C515	D-1	C1042	F-1	D502	F-1	Q151	E-4	R145	D-3	R454	B-4	R555	B-1	R785	D-2	R2002	G-1
C104	E-4	C346	C-2	C516	D-1	C1056	F-1	D503	F-1	Q152	D-4	R146	D-3	R455	B-3	R558	D-2	R786	D-2	R2003	G-1
C107	E-4	C347	C-2	C517	C-1	C1201	G-4	D510	D-1	Q153	E-3	R147	D-3	R456	B-4	R560	D-2	R787	D-2	R2005	G-1
C109	E-4	C349	C-2	C518	D-1	C1202	G-4	D511	B-2	Q154	D-4	R148	D-4	R457	B-4	R567	C-1	R788	D-2	R2006	F-1
C112	E-4	C350	C-3	C519	C-1	C1205	F-4	D512	B-2	Q155	E-3	R149	D-3	R458	B-3	R568	D-1	R789	D-2	R2055	G-1
C113	E-4	C402	C-3	C521	C-1	C1206	F-3	D555	C-2	Q302	C-3	R150	D-3	R459	B-3	R569	D-1	R790	D-2	R2067	D-1
C114	C-4	C403	C-3	C522	C-1	C1207	F-3	D611	D-1	Q401	D-3	R161	E-4	R460	B-4	R570	A-1	R791	D-2	R2082	G-1
C116	D-4	C404	C-3	C524	D-1	C1208	F-3	D612	G-1	Q403	C-4	R251	D-3	R461	B-4	R572	C-2	R902	F-3	R2083	G-1
C117	C-4	C405	C-3	C527	C-1	C1221	G-4	D613	F-1	Q404	C-3	R252	B-3	R462	B-4	R574	C-2	R931	F-3	R2084	F-1
C118	E-4	C407	C-3	C531	D-2	C1222	F-4	D701	A-4	Q405	D-3	R301	C-3	R463	B-3	R575	B-1	R932	F-3	R2086	F-1
C121	D-4	C408	C-3	C533	D-1	C1223	G-4	D1031	G-2	Q406	C-3	R303	C-3	R464	B-3	R576	C-2	R933	F-3	R2087	G-1
C122	D-4	C409	C-3	C534	B-1	C1224	F-4	D1052	G-2	Q451	B-3	R304	C-2	R465	B-3	R577	B-2	R1056	D-1	R2093	C-1
C123	D-4	C410	C-3	C535	C-2	C1245	F-4	D1053	G-2	Q506	C-2	R305	D-3	R466	A-3	R578	C-2	R1057	D-1	R2094	C-1
C124	D-4	C411	C-3	C536	C-2	C1246	G-4	D1054	G-2	Q507	A-1	R306	C-2	R467	A-3	R581	B-2	R1060	F-2	SWITCHES	
C125	D-4	C412	C-3	C538	C-2	C1247	G-3	D1057	G-2	Q508	F-1	R307	D-2	R468	A-3	R582	B-1	R1061	G-1	SW501	C-1
C126	D-4	C413	C-3	C539	C-2	C1249	F-4	D1301	F-4	Q509	F-1	R308	D-3	R469	B-3	R583	B-2	R1062	F-1	SW503	E-1
C127	F-4	C414	C-3	C540	C-2	C1351	G-4	ICS		Q513	B-1	R309	C-2	R470	A-3	R584	B-2	R1065	F-1	SW504	E-1
C128	D-4	C415	C-3	C541	B-2	C1352	G-4	IC101	D-4	Q514	B-2	R310	D-2	R471	A-3	R585	B-1	R1066	F-1	SW506	A-1
C129	E-3	C416	D-3	C542	C-1	C1353	G-4	IC102	D-4	Q515	B-1	R311	C-2	R472	A-3	R586	B-1	R1067	F-1	SW507	E-1
C130	D-4	C417	C-3	C543	B-2	C1354	G-4	IC301	B-3	Q753	F-4	R312	D-3	R473	A-3	R588	B-2	R1068	F-2	SW601	F-1
C131	D-4	C418	D-3	C544	B-1	C1355	G-4	IC451	B-3	Q754	F-4	R314	D-2	R474	A-3	R591	B-1	R1071	F-1	SW602	B-1
C132	D-4	C419	D-3	C545	C-2	C1359	G-4	IC501	C-2	Q775	D-2	R316	D-3	R475	A-3	R601	B-1	R1072	F-1	SW603	B-1
C133	D-4	C421	C-3	C546	C-2	C1393	G-4	IC502	A-3	Q776	D-2	R317	D-2	R476	A-4	R602	B-1	R1085	G-1	SW604	B-1
C134	D-4	C451	B-4	C547	C-2	C1394	F-4	IC611	D-1	Q1052	G-1	R319	C-3	R477	A-4	R603	B-1	R1086	G-1	SW605	B-1
C135	D-4	C452	B-4	C548	C-1	C1421	G-3	IC612	D-1	Q1053	F-1	R320	B-2	R478	A-3	R604	B-1	R1087	G-2	SW2021	G-1
C136	D-4	C453	B-4	C549	B-1	C1422	F-4	IC631	A-1	Q1054	F-1	R321	C-2	R479	B-4	R605	B-1	R1090	F-1	SW2022	G-1
C251	B-3	C454	B-3	C550	B-1	C1441	G-3	IC751	E-1	Q1055	F-2	R322	C-2	R480	B-4	R613	D-1	R1091	F-1	VARIABLE RESISTOR	
C252	B-3	C455	B-3	C553	B-1	C1442	F-4	IC775	D-2	Q1203	F-4	R323	C-2	R481	B-4	R614	D-1	R1205	G-4	VR501	A-2
C253	B-3	C456	B-4	C555	D-2	C1522	G-3	IC1002	G-2	Q1204	F-4	R324	C-2	R482	B-4	R615	F-1	R1206	G-3	CRYSTAL OSCILLATORS	
C254	B-3	C457	B-3	C612	D-1	C1523	G-3	IC1003	F-2	Q1351	G-4	R325	C-2	R483	B-4	R616	F-1	R1207	G-4	X301	D-3
C301	C-3	C458	B-3	C614	D-1	C1524	G-3	IC1201	F-3	Q1352	F-4	R326	B-3	R484	B-4	R617	D-1	R1208	F-3	X501	B-2
C302	C-3	C461	B-3	C615	D-1	C1535	G-3	IC1204	G-4	Q1502	F-3	R327	B-3	R501	C-1	R618	D-1	R1209	F-4	X502	B-1
C303	C-3	C462	B-3	C616	D-1	C1536	G-3	IC1403	G-3	Q1503	F-3	R328	B-3	R502	A-1	R621	D-1	R1210	F-3	MISCELLANEOUS	
C305	C-3	C463	B-3	C631	B-2	C2002	C-1	IC1404	B-4	RESISTORS		R330	C-2	R503	E-1	R622	D-1	R1211	G-4	JK101	F-4
C306	D-3	C464	B-3	C632	A-2	C2004	D-1	COILS		R051	G-2	R331	B-2	R504	E-1	R623	D-1	R1221	G-4	JK751	F-4
C307	C-3	C465	B-3	C633	B-1	C2012	D-1	L053	F-3	R052	G-2	R332	B-2	R505	E-1	R624	E-1	R1222	F-4	JK752	A-1
C308	D-3	C466	B-3	C634	A-2	CONNECTORS		L101	E-4	R053	G-2	R333	C-1	R506	E-1	R632	A-2	R1223	F-4	JK753	A-1
C309	C-2	C467	B-3	C635	B-2	CN051	G-3	L121	D-4	R054	G-2	R334	C-1	R507	E-1	R633	B-1	R1224	F-4	JK754	A-1
C310	C-2	C468	B-3	C636	B-2	CN251	B-3	L122	D-4	R055	G-3	R335	B-3	R509	B-1	R634	B-2	R1227	F-4	JK1202	F-4
C311	C-2	C469	B-3	C637	B-2	CN501	A-4	L251	B-3	R056	F-2	R336	B-2	R511	E-2	R635	B-2	R1228	F-4	JK1401	F-4
C312	C-2	C470	B-3	C703	A-4	CN502	D-2	L302	B-3	R058	F-3	R337	B-2	R512	B-1	R636	B-1	R1233	F-4	PS502	B-2
C313	C-2	C471	B-3	C704	A-3	CN504	D-3	L402	C-4	R059	F-3	R339	C-2	R513	D-1	R637	B-1	R1235	F-4	TU701	A-4
C314	C-3	C472	B-3	C706	A-4	CN509	A-1	L451	B-3	R060	F-3	R341	D-2	R514	E-2	R703	A-4	R1236	F-4	RM2001	C-1
C315	C-3	C473	B-3	C709	A-4	CN701	A-2	L452	B-3	R061	F-3	R342	D-2	R516	E-2	R704	A-2	R1237	F-4	TEST POINTS	
C316	C-2	C474	B-3	C711	A-3	CN1601	G-3	L501	F-2	R062	F-3	R401	D-3	R517	C-2	R705	B-2	R1238	F-4	TP301	E-3
C317	C-3	C475	B-3	C712	A-4	CN2015	F-1	L502	B-2	R064	F-3	R402	C-3	R519	E-2	R706	A-2	R1239	F-4	TP401	B-4
C318	D-3	C476	B-3	C714	A-4	CN2017	C-4	L503	B-2	R065	F-2	R404	C-3	R523	E-2	R707	A-2	R1240	F-4	TP501	A-2
C319	C-2	C477	A-3	C715	A-1	CL1051	G-1	L701	A-4	R070	F-2	R405	C-3	R525	E-2	R756	F-4	R1245	F-4	TP502	A-2
C320	C-2	C478	A-3	C716	A-1	DIODES		L702	A-4	R072	F-2	R406	C-3	R526	A-2	R757	F-4	R1351	G-4	TP503	A-2
C321	D-2	C479	A-3	C751	E-3	D051	G-3	L704	A-4	R112	E-4	R407	C-3	R527	A-1	R759	B-4	R1352	G-4	TP504	A-2
C322	C-2	C480	A-3	C752	E-3	D052	G-3	L1251	F-4	R113	E-4	R408	C-3	R528	D-2	R760	B-4	R1353	G-4	TP751	E-5
C323	C-2	C481	A-4	C753	E-3	D054	F-3	L1351	G-4	R116	E-4	R409	C-3	R529	A-1	R761	A-1	R1354	G-4		
C324	C-3	C482	B-3	C754	D-3	D056	G-3	L1521	F-3	R119	E-4	R410	C-3	R530	F-1	R762	A-1	R1355	G-4		
C325	D-3	C483	B-4	C755	F-4	D057	F-2	L1522	F-3	R121	C-4	R411	C-3	R531	F-1	R763	A-1	R1356	G-4		
C326	D-2	C484	B-4	C756	F-4	D101	C-4	L2001	D-1	R122	C-4	R412	C-3	R532	F-1	R764	F-2	R1361	G-4		
C328	C-2	C485	B-4	C757	A-4	D102	C-4	TRANSISTORS		R124	E-4	R413	C-3	R533	F-1	R765	B-4	R1364	G-4		
C329	D-2	C486	B-4	C758	A-4	D103	D-4	Q051	G-3	R128	E-4	R414	C-3	R536	C-1	R767	F-4	R1394	F-4		
C331	D-2	C487	A-3	C775	D-2	D104	E-4	Q052	G-2	R129	D-4	R415	C-3	R537	C-1	R768	F-4	R1396	F-3		
C333	C-2	C488	B-3	C776	D-2	D105	C-4	Q053	G-3	R130	E-4	R416	C-3	R538	B-2	R769	F-2	R1421	G-3		
C334	C-2	C502	A-3	C777	D-3	D106	E-4	Q054	G-3	R131	E-4	R417	C-3	R539	A-2	R775	D-2	R1422	F-4		
C335	B-2	C505	C-2	C778	D-2	D107	C-4	Q055	G-3	R135	D-4	R418	D-3	R540	B-2	R776	D-2	R1423	G-3		
C336	B-3	C506	E-1	C779	D-2	D108	E-4	Q056	D-2	R136	D-4	R419	C-3	R541	A-3	R777	D-2	R1442	F-4		

Power SW CBA Top View

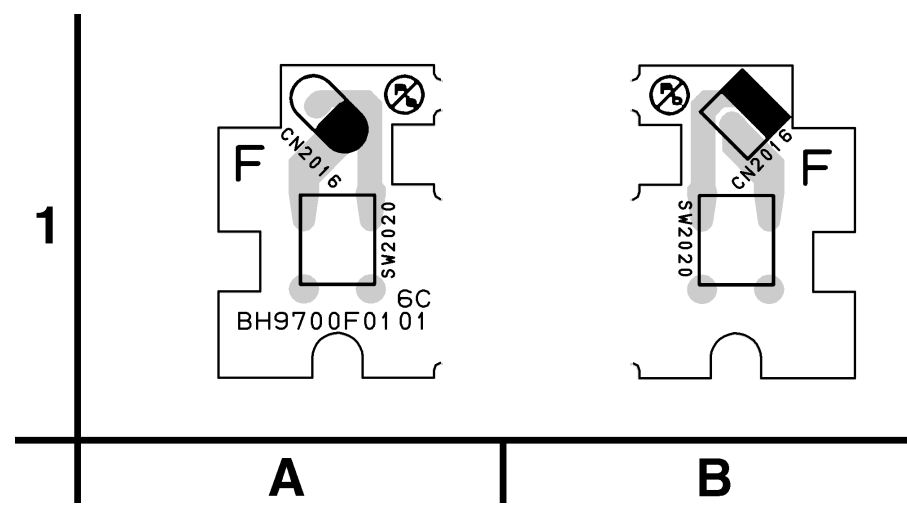
Power SW CBA Bottom View



BH9700F01016B

DVD Open/Close
CBA Top View

DVD Open /Close
CBA Bottom View



BH9700F01016C

Power Supply & Junction Schematic Diagram < VCR Section >

CAUTION !

For continued protection against fire hazard, replace only with the same type fuse.

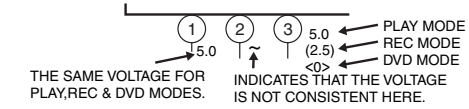
NOTE :

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

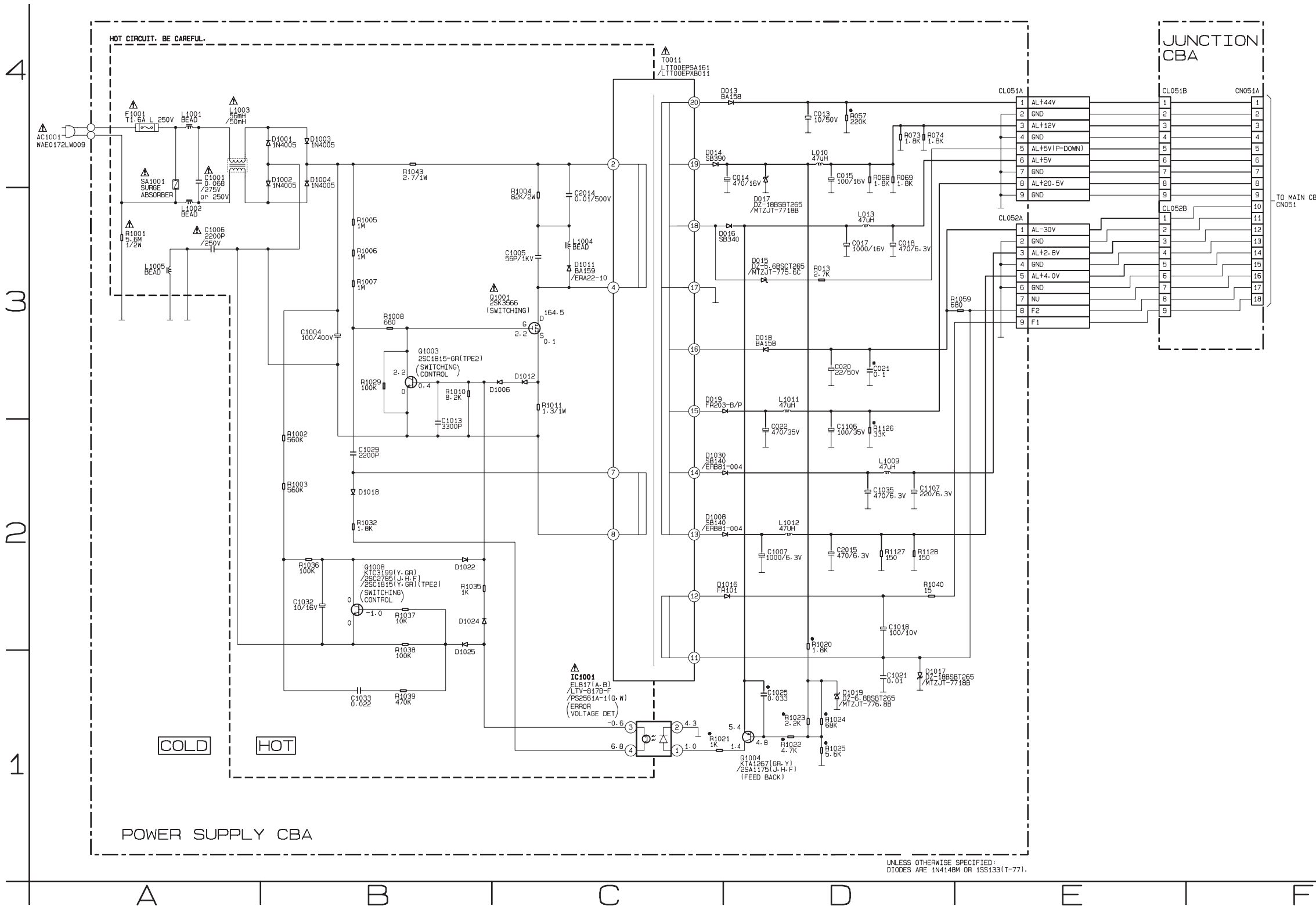
CAUTION !

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.

Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



● = SMD



POWER SUPPLY Schematic Diagram
Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		COILS	
C013	D-4	L010	D-4
C014	D-4	L013	D-3
C015	D-4	L1001	A-4
C017	D-3	L1002	A-3
C018	D-3	L1003	A-4
C020	D-3	L1004	C-3
C021	D-3	L1005	A-3
C022	D-2	L1009	D-2
C1001	A-4	L1011	D-3
C1004	B-3	L1012	D-2
C1005	C-3	TRANSISTORS	
C1006	A-3	Q1001	C-3
C1007	D-2	Q1003	B-3
C1013	B-2	Q1004	D-1
C1018	D-2	Q1008	B-2
CONNECTORS		RESISTORS	
C1021	D-1	R1013	D-3
C1022	D-1	R057	D-4
C1025	D-1	R068	D-4
C1029	B-2	R069	D-4
C1032	B-2	R073	D-4
C1033	B-1	R074	D-4
C1035	D-2	R074	D-4
C1106	D-2	R1001	A-3
C1107	D-2	R1002	B-2
C2014	C-3	R1003	B-2
C2015	D-2	R1004	C-3
DIODES		RESISTORS	
D013	D-4	R1005	B-3
D014	C-4	R1006	B-3
D015	D-3	R1007	B-3
D016	D-3	R1008	B-3
D017	D-3	R1010	B-3
D018	D-3	R1011	C-3
D019	D-3	R1020	D-2
D1001	B-4	R1021	C-1
D1002	B-4	R1022	D-1
D1003	B-4	R1023	D-1
D1004	B-4	R1024	D-1
D1006	C-3	R1025	D-1
D1008	D-2	R1029	B-3
D1011	C-3	R1032	B-2
D1012	C-3	R1035	B-2
D1016	D-2	R1036	B-2
D1017	D-1	R1037	B-2
D1018	B-2	R1038	B-2
D1019	D-1	R1039	B-1
D1022	B-2	R1040	D-2
D1024	B-2	R1043	B-4
D1025	B-2	R1059	E-3
D1026	D-1	R1127	D-2
D1030	D-2	R1128	D-2
IC		MISCELLANEOUS	
IC1001	C-1	SA1001	A-3
		T0011	C-4

Power Supply CBA Top View

CAUTION !

For continued protection against fire hazard, replace only with the same type fuse.

NOTE :

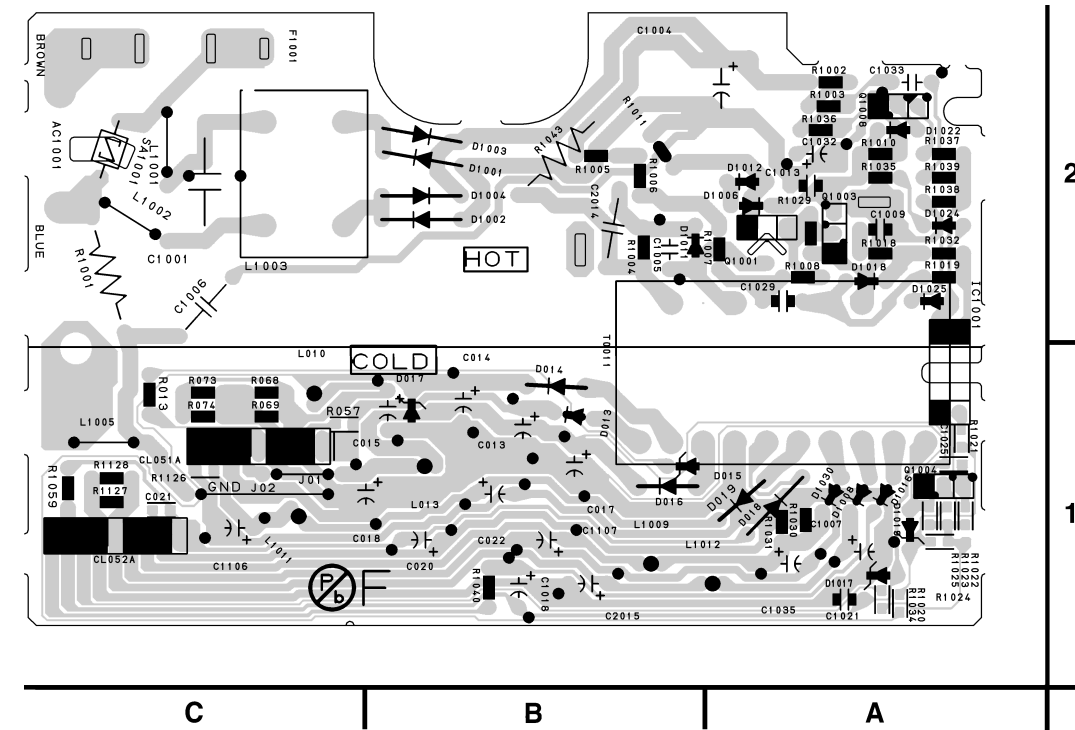
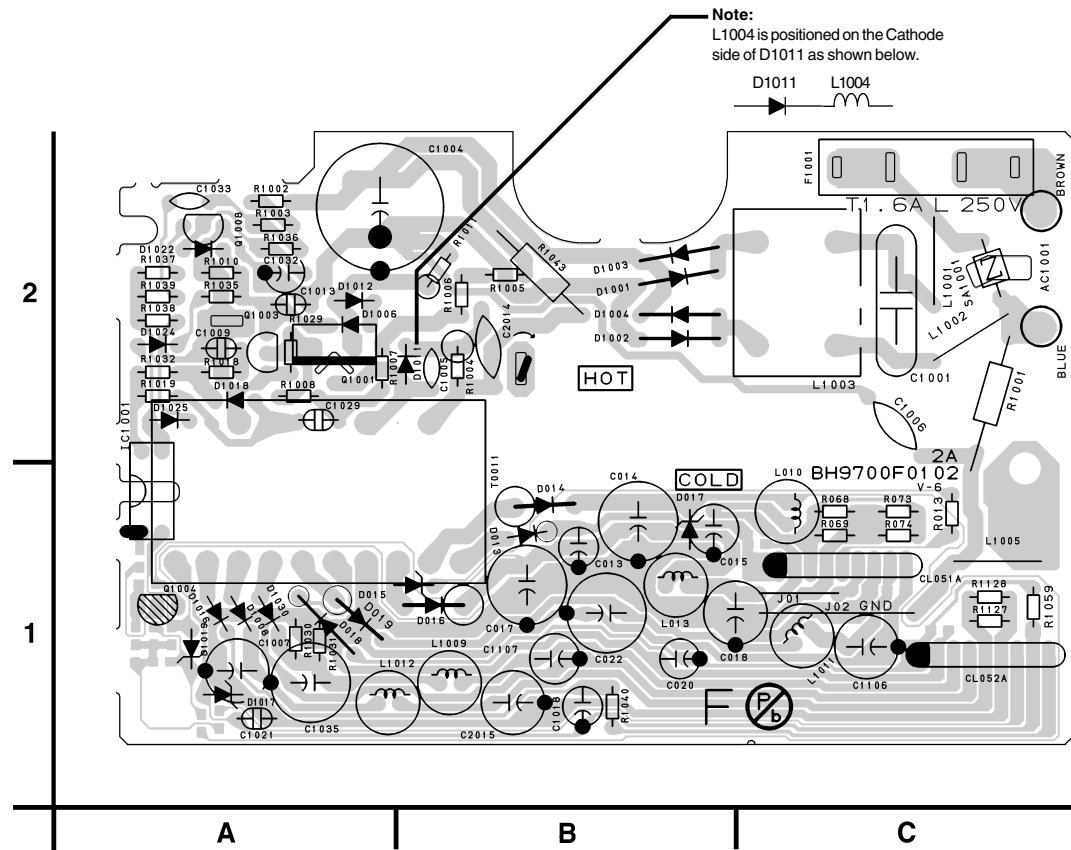
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

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.

Power Supply CBA Bottom View

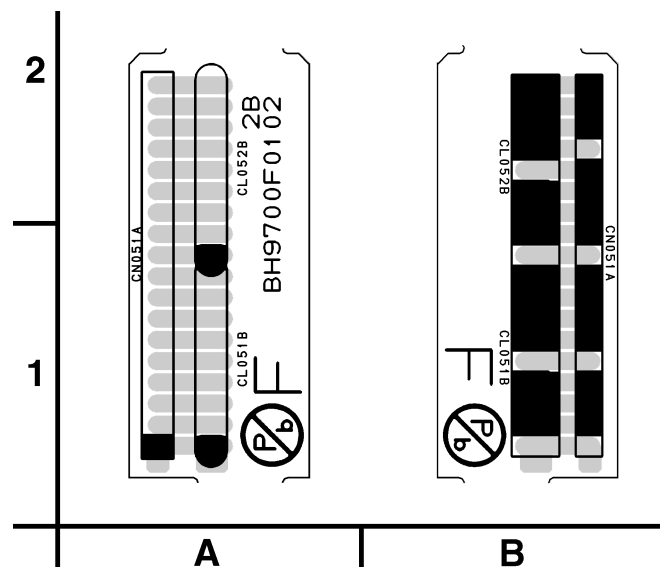
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT , AN ISOLATION TRANSFORMER MUST BE USED. ALSO , IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY , WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT , A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.



BH9700F01022A

Junction CBA Top View

Junction CBA Bottom View

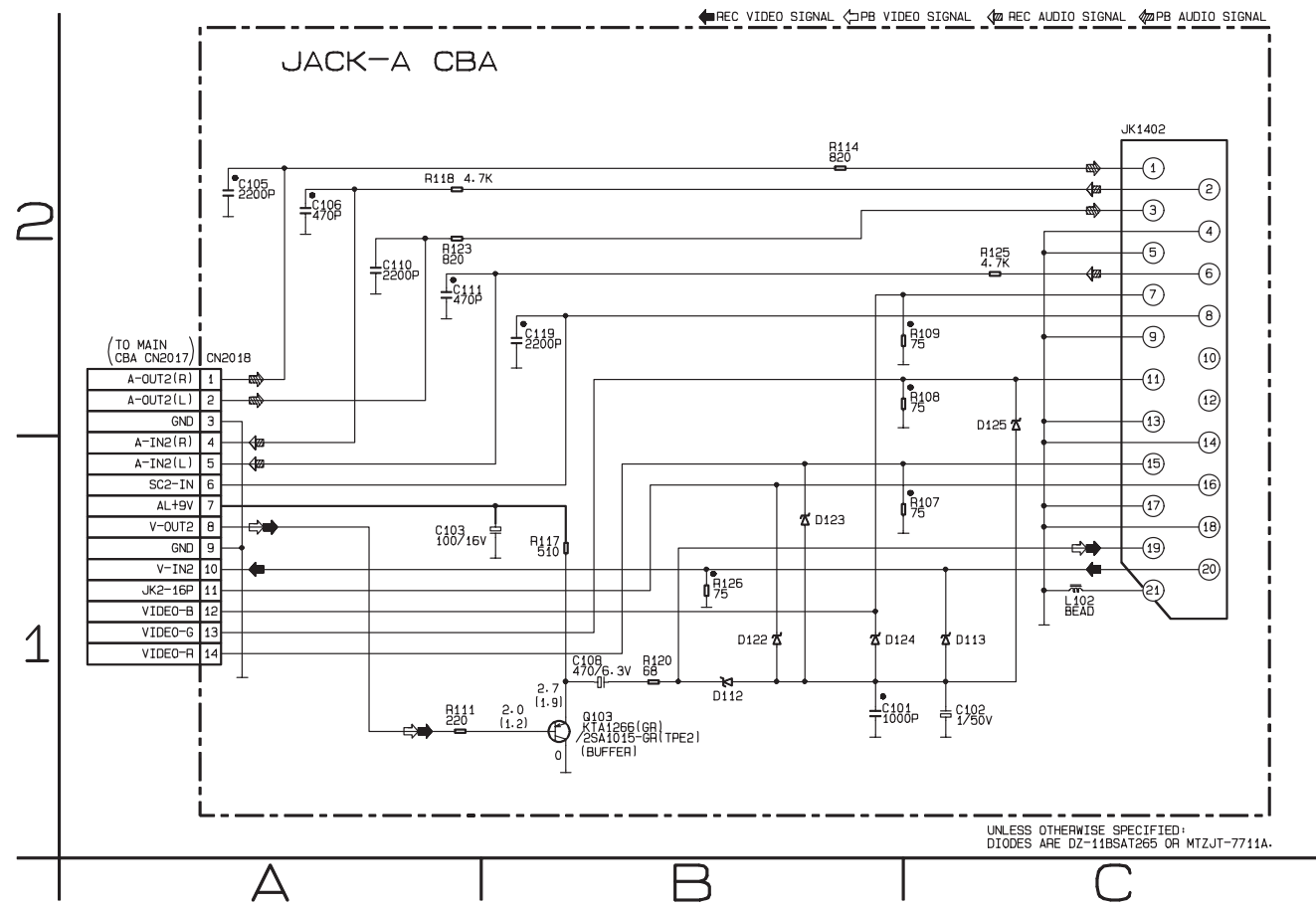


BH9700F01022B

POWER SUPPLY CBA Parts Location Guide

Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		DIODES		TRANSISTORS		RESISTORS	
C013	B-1	C2014	B-2	D1018	A-2	Q1008	A-2	R1025	A-1
C014	B-1	C2015	B-1	D1019	A-1	RESISTORS		R1029	A-2
C015	B-1	CONNECTORS		D1022	A-2	R013	C-1	R1032	A-2
C017	B-1	CL051A	C-1	D1024	A-2	R057	C-1	R1035	A-2
C018	C-1	CL052A	C-1	D1025	A-2	R068	C-1	R1036	A-2
C020	B-1	DIODES		D1030	A-1	R069	C-1	R1037	A-2
C021	C-1	D013	B-1	IC		R073	C-1	R1038	A-2
C022	B-1	D014	B-1	IC1001	A-2	R074	C-1	R1039	A-2
C1001	C-2	D015	A-1	COILS		R1001	C-2	R1040	B-1
C1004	B-2	D016	B-1	L010	C-1	R1002	A-2	R1043	B-2
C1005	B-2	D017	B-1	L013	B-1	R1003	A-2	R1059	C-1
C1006	C-2	D018	A-1	L1001	C-2	R1004	B-2	R1126	C-1
C1007	A-1	D019	A-1	L1002	C-2	R1005	B-2	R1127	C-1
C1013	A-2	D1001	B-2	L1003	C-2	R1006	B-2	R1128	C-1
C1018	B-1	D1002	B-2	L1004	B-2	R1007	A-2	MISCELLANEOUS	
C1021	A-1	D1003	B-2	L1005	C-1	R1008	A-2	AC1001	C-2
C1025	A-1	D1004	B-2	L1009	B-1	R1010	A-2	F1001	C-2
C1029	A-2	D1006	A-2	L1011	C-1	R1011	B-2	SA1001	C-2
C1032	A-2	D1008	A-1	L1012	A-1	R1020	A-1	T0011	B-2
C1033	A-2	D1011	B-2	TRANSISTORS		R1021	A-1		
C1035	A-1	D1012	A-2	Q1001	A-2	R1022	A-1		
C1106	C-1	D1016	A-1	Q1003	A-2	R1023	A-1		
C1107	B-1	D1017	A-1	Q1004	A-1	R1024	A-1		

Jack-A Schematic Diagram < VCR Section >



H9724SCJ

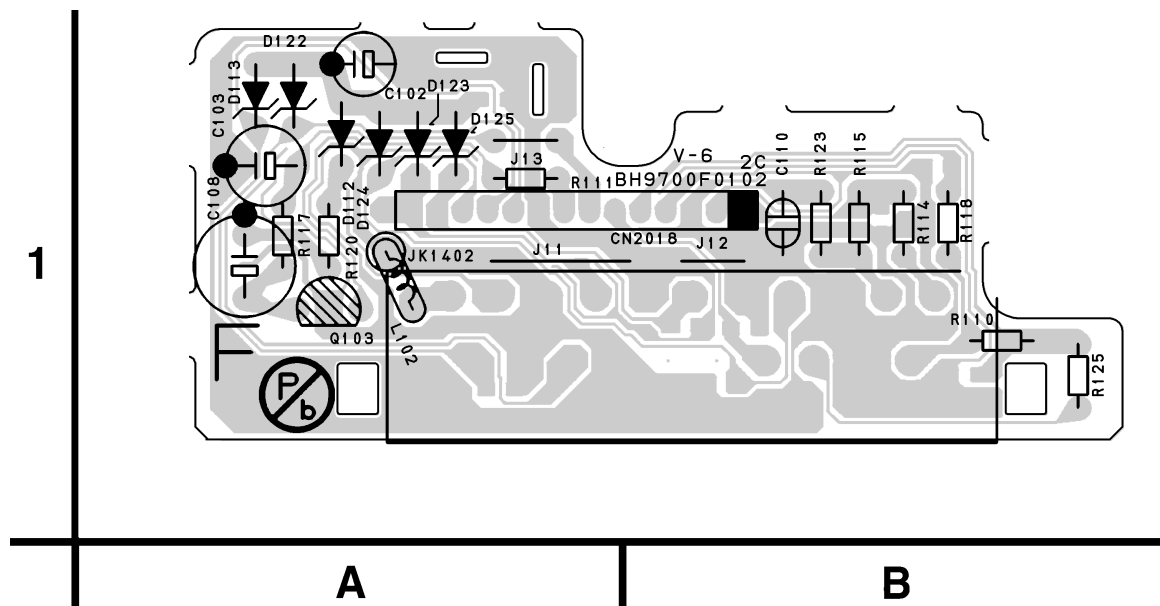
JACK-A Schematic Diagram
Parts Location Guide

Ref No.	Position
CAPACITORS	
C101	B-1
C102	C-1
C103	B-1
C105	A-2
C106	A-2
C108	B-1
C110	A-2
C111	A-2
C119	B-2
CONNECTOR	
CN2018	A-2
DIODES	
D112	B-1
D113	C-1
D122	B-1
D123	B-1
D124	B-1
D125	B-1
COIL	
L102	C-1
TRANSISTOR	
Q103	B-1
RESISTORS	
R107	C-1
R108	C-1
R109	C-1
R111	A-1
R114	B-2
R117	B-1
R118	A-2
R120	B-1
R123	A-2
R125	B-2
R126	B-1
MISCELLANEOUS	
JK1402	C-2

JACK-A CBA
Parts Location Guide

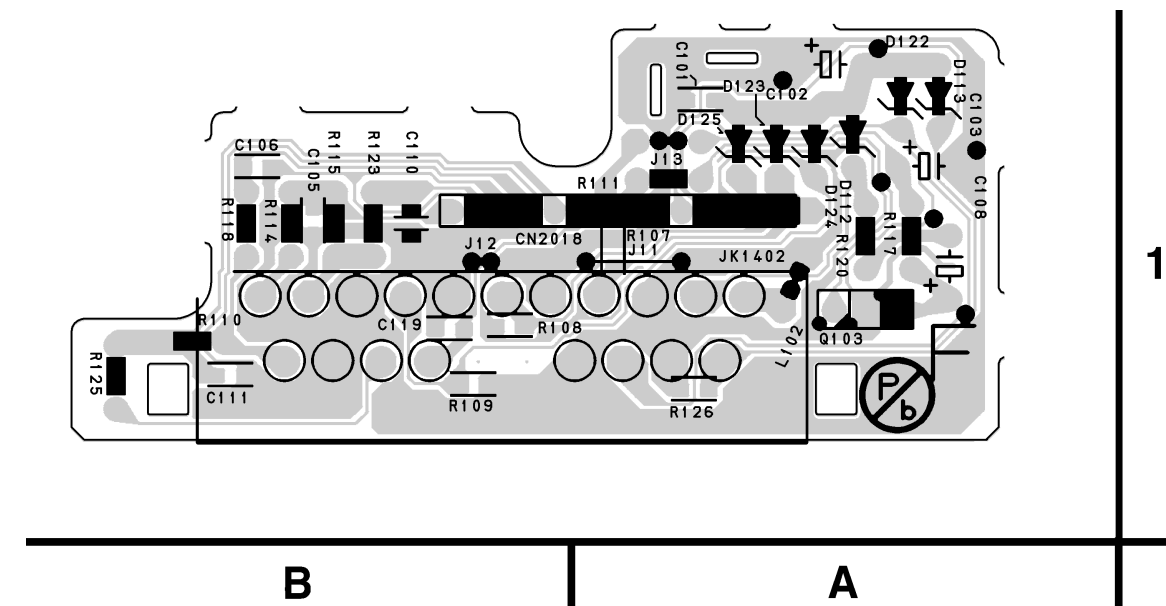
Ref No.	Position
CAPACITORS	
C101	A-1
C102	A-1
C103	A-1
C105	B-1
C106	B-1
C108	A-1
C110	B-1
C111	B-1
C119	B-1
CONNECTOR	
CN2018	B-1
DIODES	
D112	A-1
D113	A-1
COIL	
L102	A-1
TRANSISTOR	
Q103	A-1
Q122	A-1
Q123	A-1
Q124	A-1
Q125	A-1
RESISTORS	
R107	A-1
R108	B-1
R109	B-1
R111	A-1
R114	B-1
R117	A-1
R118	B-1
R120	A-1
R123	B-1
R125	B-1
R126	A-1
MISCELLANEOUS	
JK1402	A-1

Jack-A CBA Top View



1-12-37

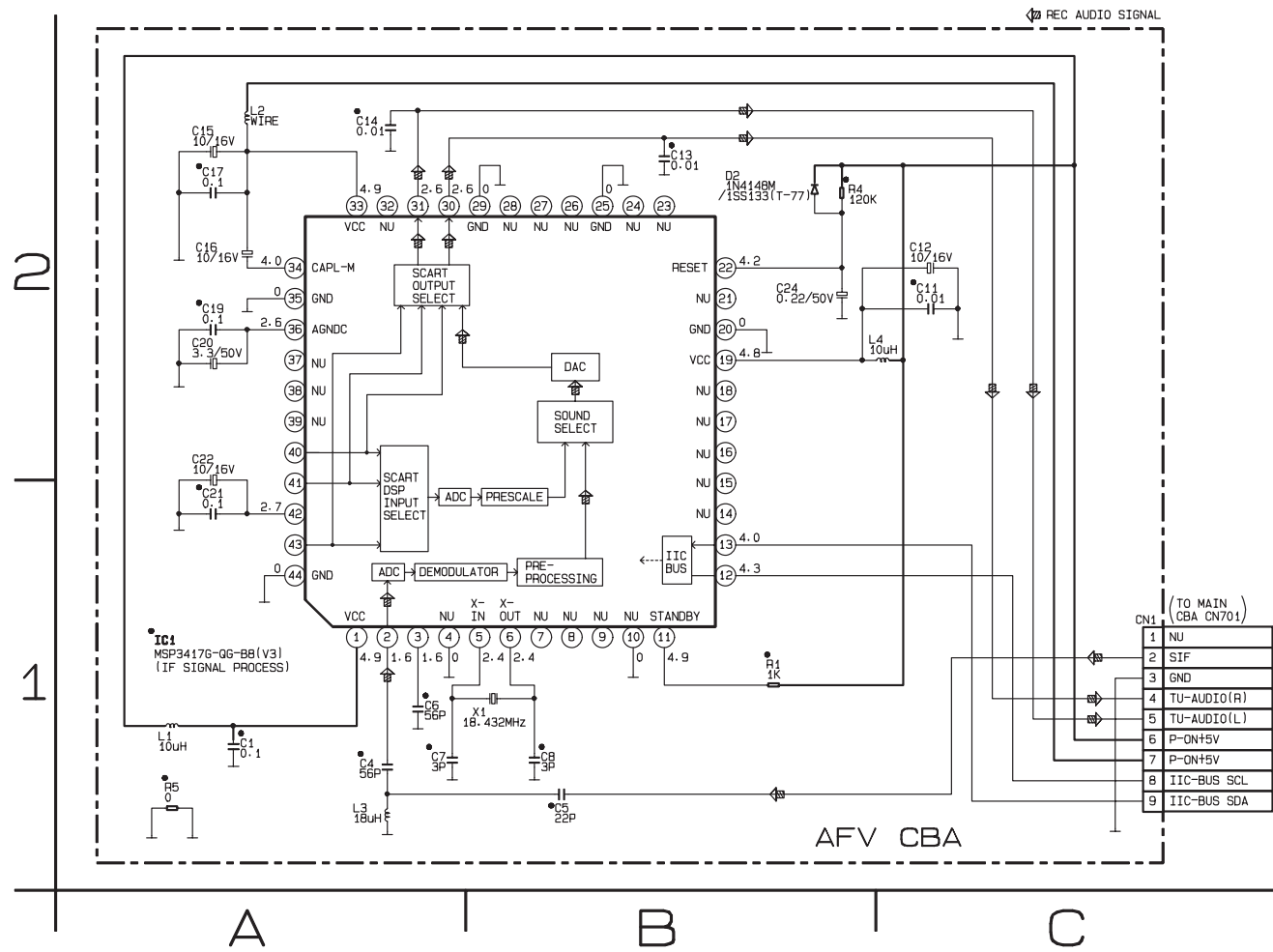
Jack-A CBA Bottom View



BH9700F01022C

1-12-38

AFV Schematic Diagram < VCR Section >

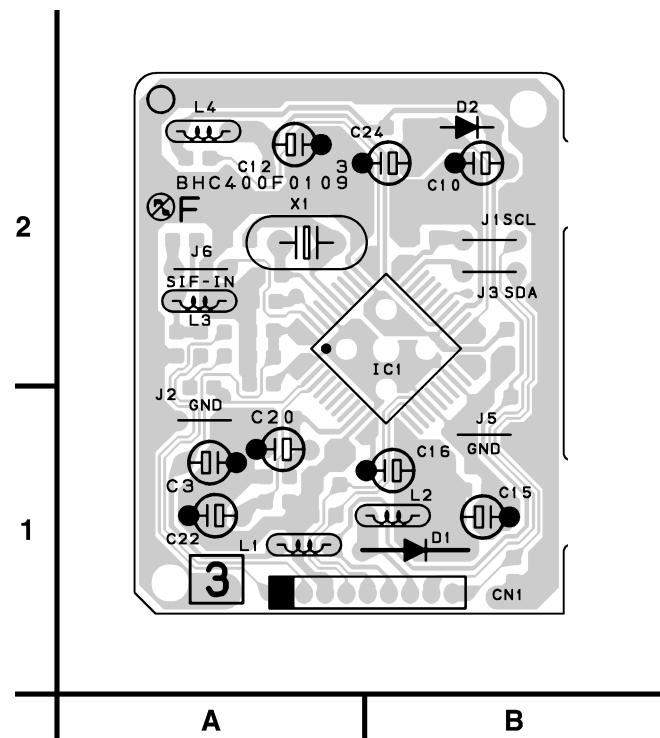


H9724SCAFV

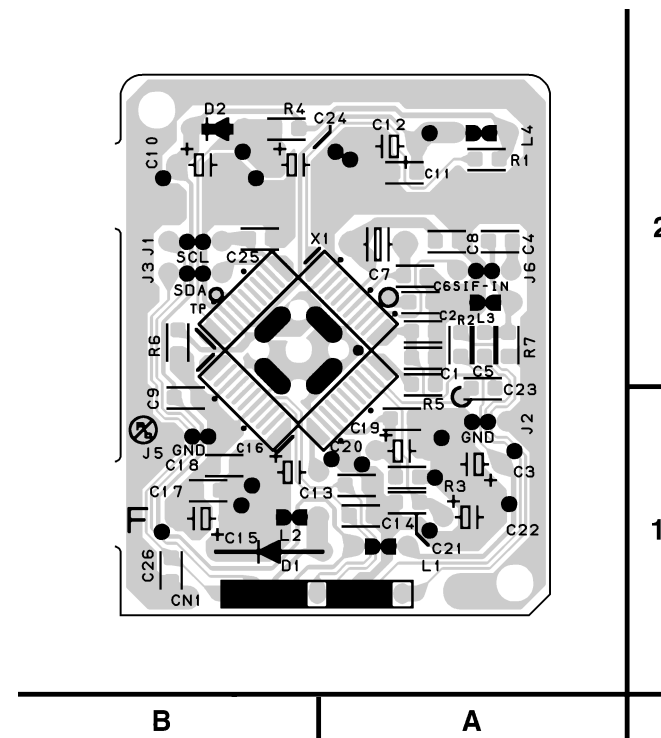
AFV Schematic Diagram Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		CONNECTOR	
C1	A-1	CN1	C-1
C4	A-1	DIODE	
C5	B-1	D2	B-2
C6	A-1	IC	
C7	A-1	IC1	A-1
C8	B-1	COILS	
C11	C-2	L1	A-1
C12	C-2	L2	A-2
C13	B-2	L3	A-1
C14	A-2	L4	C-2
C15	A-2	RESISTORS	
C16	A-2	R1	B-1
C17	A-2	R4	B-2
C19	A-2	R5	A-1
C20	A-2	CRYSTAL OSCILLATOR	
C21	A-1	X1	B-1
C22	A-2		
C24	B-2		

AFV CBA Top View



AFV CBA Bottom View



BHC400F01093

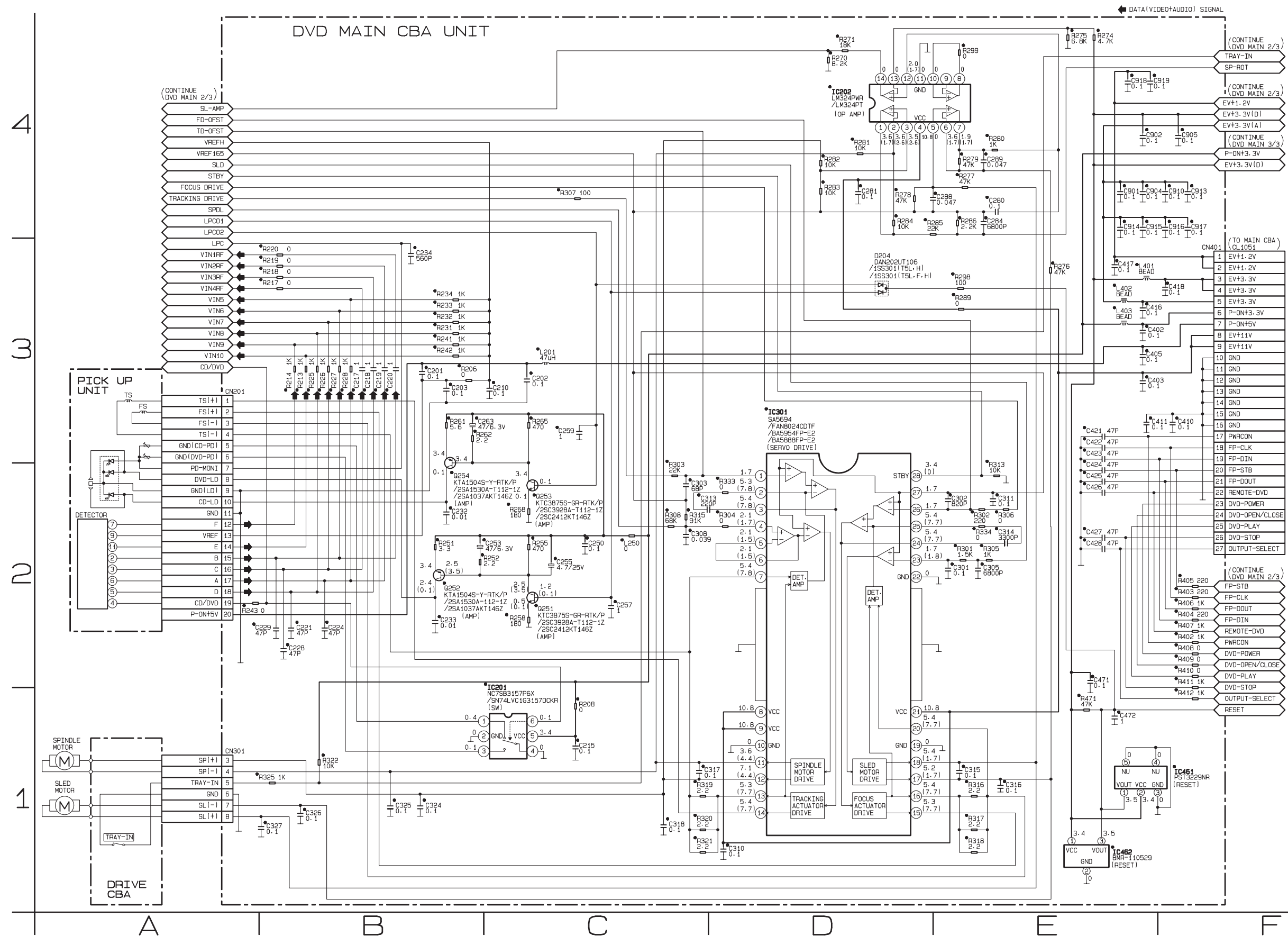
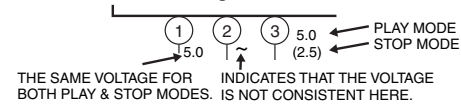
AFV CBA Parts Location Guide

Ref No.	Position	Ref No.	Position
CAPACITORS		CONNECTOR	
C1	A-2	CN1	B-1
C4	A-2	DIODE	
C5	A-2	D2	B-2
C6	A-2	IC	
C7	A-2	IC1	B-2
C8	A-2	COILS	
C11	A-2	L1	A-1
C12	A-2	L2	B-2
C13	A-1	L3	A-2
C14	A-1	L4	A-2
C15	B-1	RESISTORS	
C16	B-1	R1	A-2
C17	B-1	R4	B-2
C19	A-1	R5	A-1
C20	A-1	CRYSTAL OSCILLATOR	
C21	A-1	X1	A-2
C22	A-1		
C24	B-2		

DVD Main 1/3 Schematic Diagram < DVD Section >

* = SMD

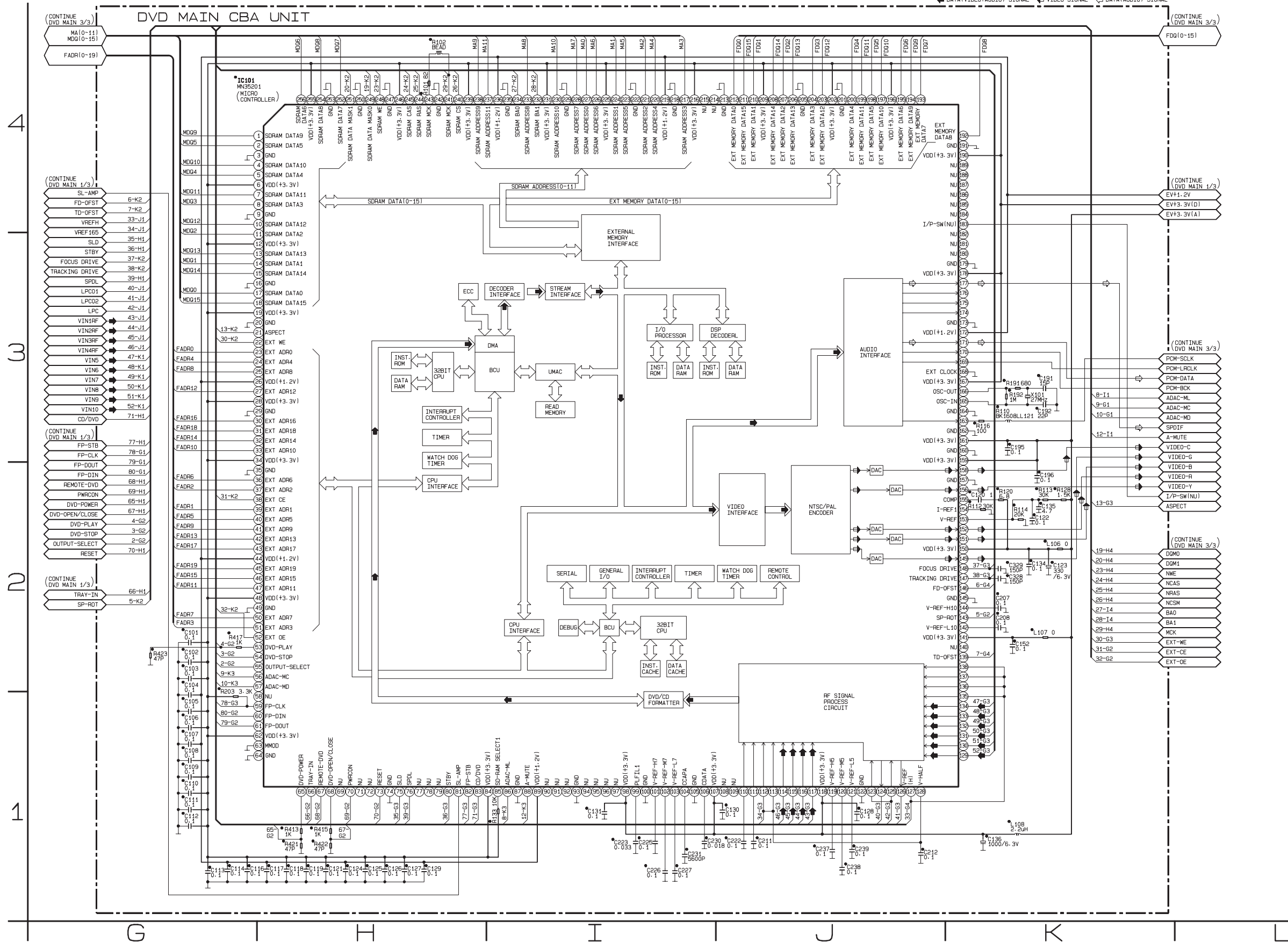
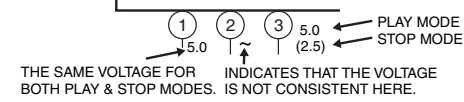
Voltage indications for PLAY and STOP modes on the Schematic Diagrams are as shown below:



DVD Main 2/3 Schematic Diagram < DVD Section >

* = SMD

Voltage indications for PLAY and STOP modes on the Schematic Diagrams are as shown below:



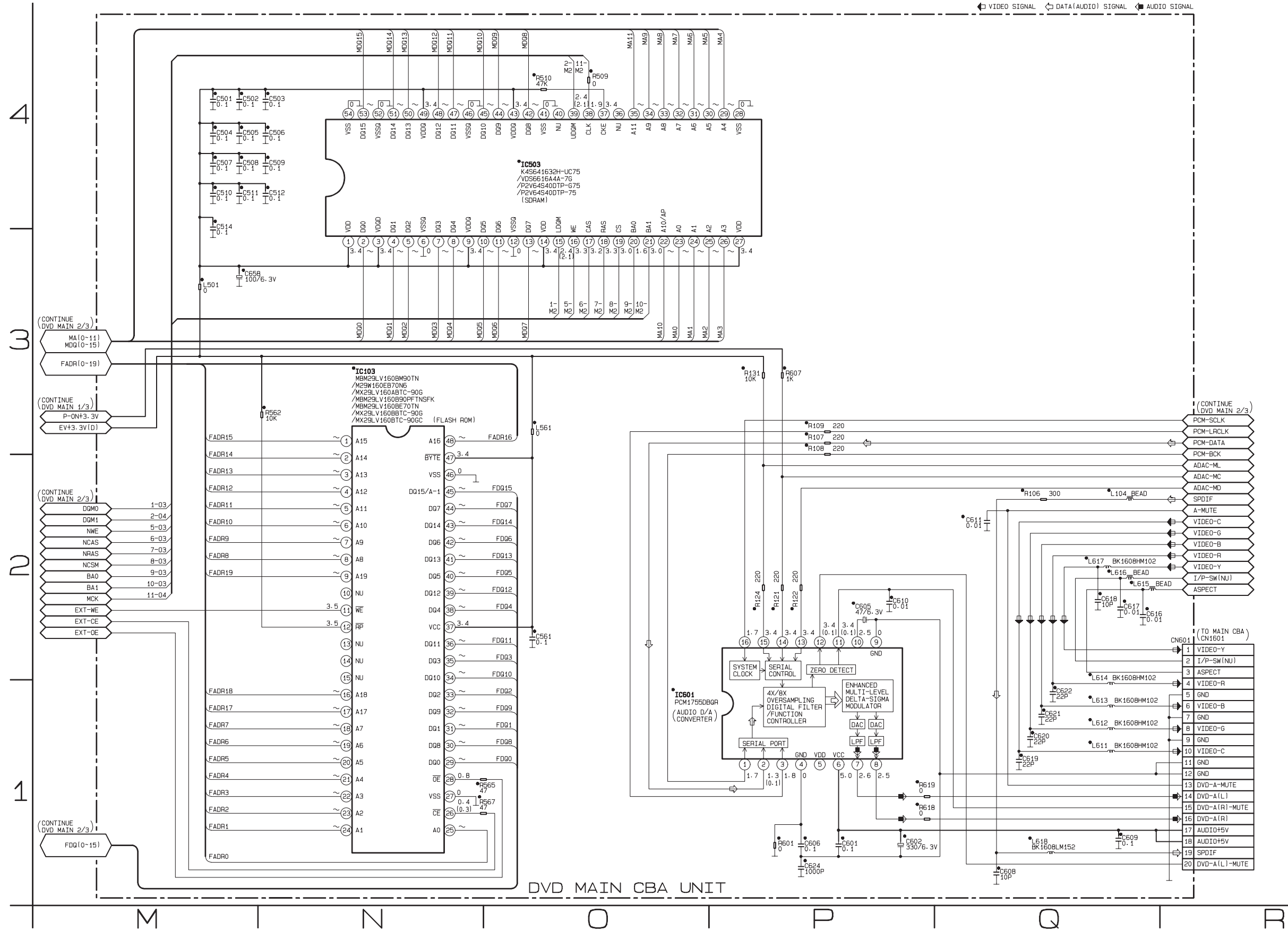
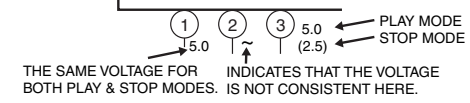
IC101 VOLTAGE CHART

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	----	----	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	0.1	0.1	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	0	0	86	3.6	3.4	118	3.4	3.4	150	3.4	3.4	182	----	----	214	----	----	246	3.4	3.4
23	~	~	55	1.4	1.4	87	0	0	119	2.0	2.0	151	0.5	0.6	183	3.5	3.5	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	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >

• = SMD

Voltage indications for PLAY and STOP modes on the Schematic Diagrams are as shown below:



WAVEFORMS

NOTE:

Input

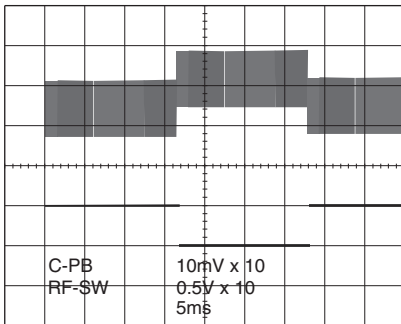
VCR: COLOR BAR SIGNAL
(WF1~WF3)

DVD: POWER ON (STOP) MODE
(WF4~WF6)

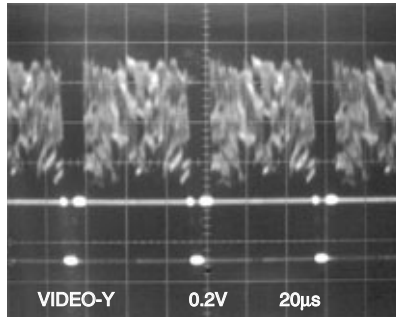
CD: 1kHz PLAY
(WF7~WF9)

WF2 UPPER TP301

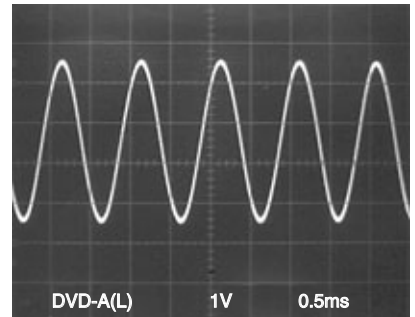
WF1 LOWER TP504



WF4 Pin 1 of CN1601

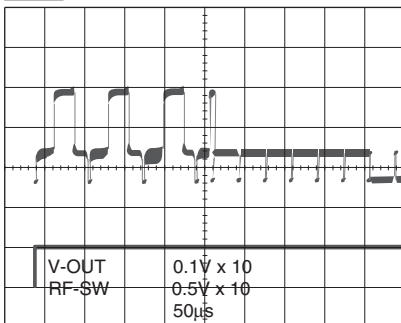


WF7 Pin 14 of CN1601

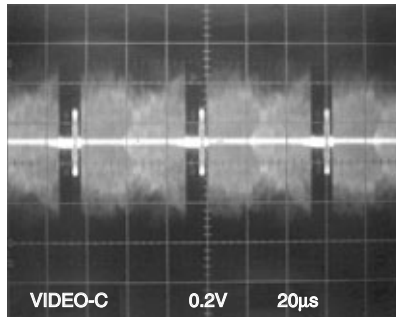


WF3 UPPER TP751

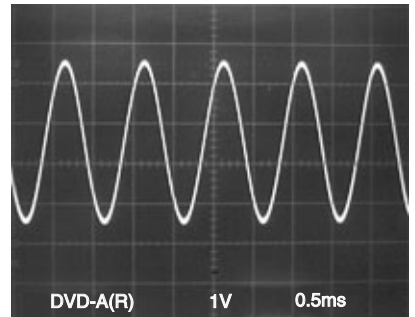
WF1 LOWER TP504



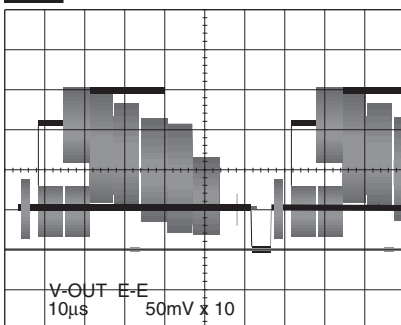
WF5 Pin 10 of CN1601



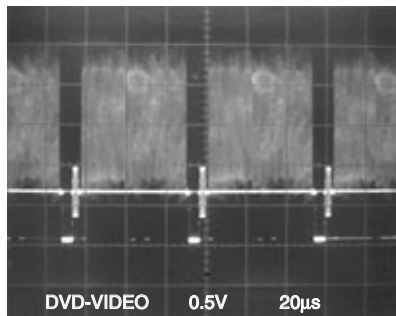
WF8 Pin 16 of CN1601



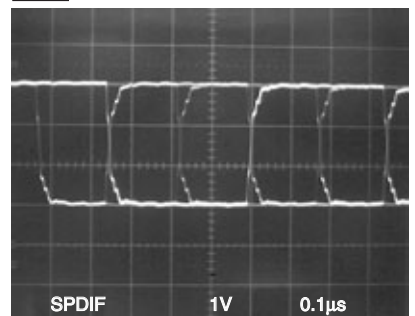
WF3 TP751



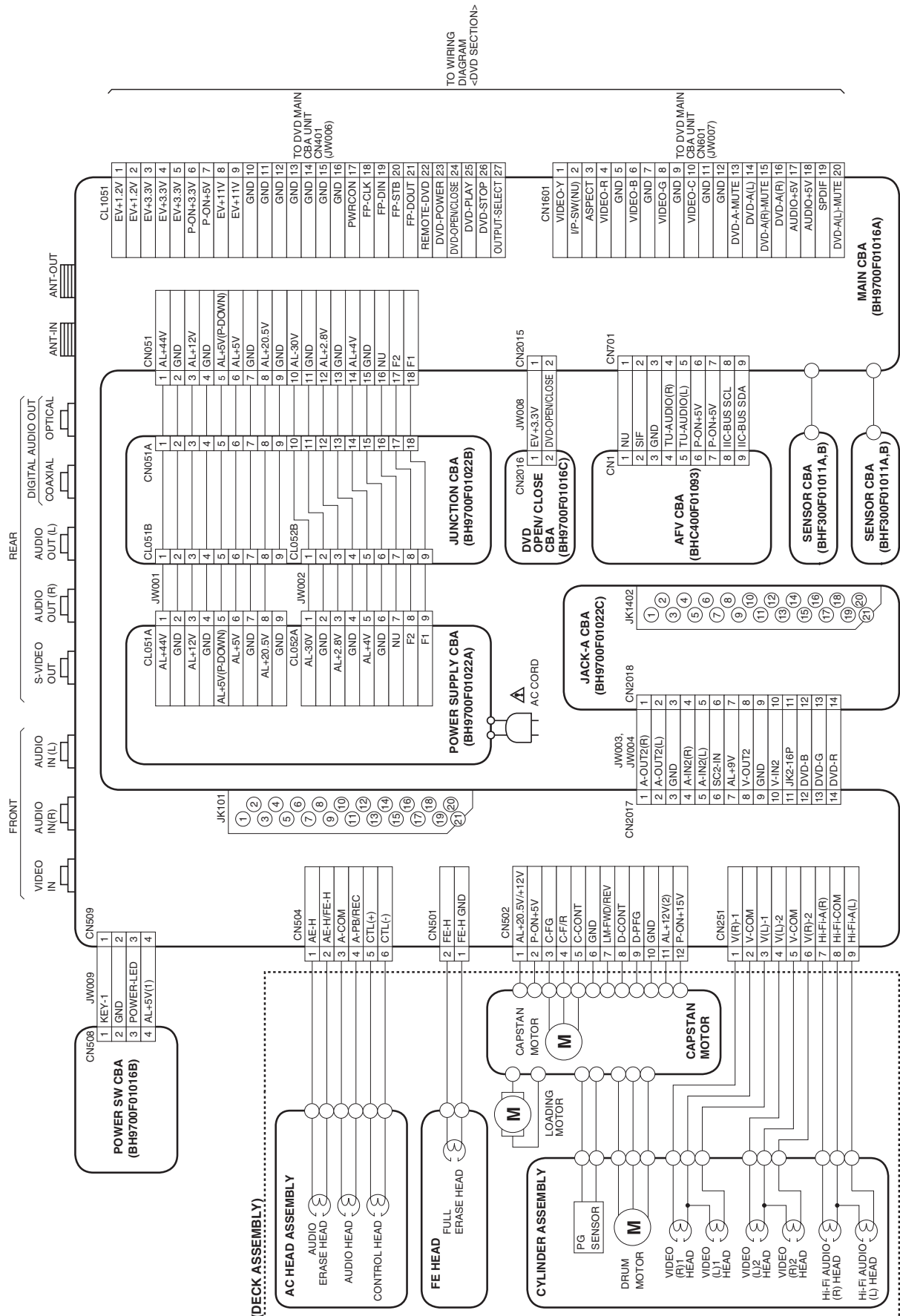
WF6 Pin 6 of IC1403



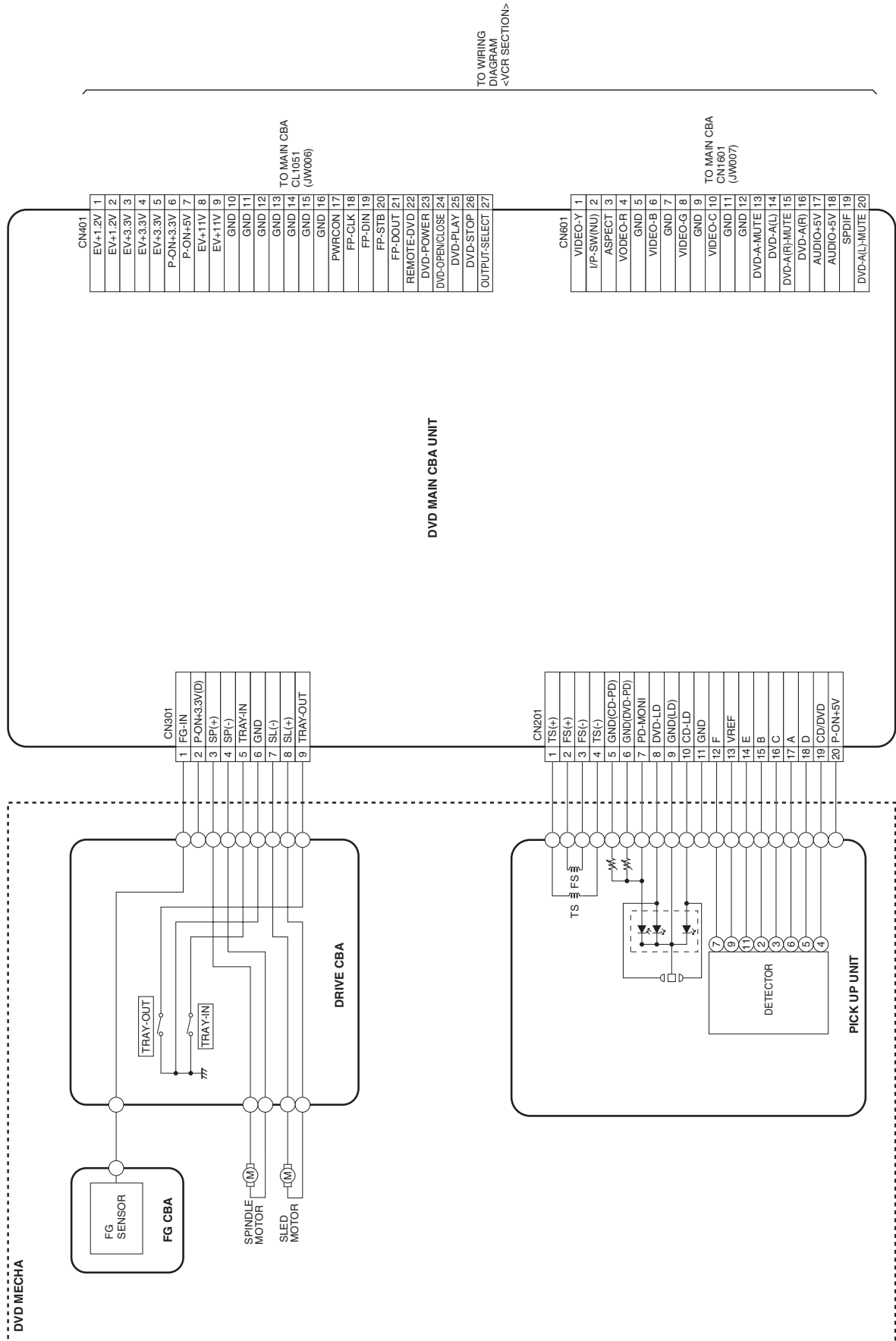
WF9 Pin 19 of CN1601



WIRING DIAGRAM < VCR SECTION >



WIRING DIAGRAM < DVD SECTION >



TO WIRING
DIAGRAM
<VCR SECTION>

DVD MAIN CBA UNIT

DVD MECHA

SYSTEM CONTROL TIMING CHARTS

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note :

↑ Note:

EJ → RS: Loading FWD (LM-FWD "H", LM-REV "L")

RS → EJ: Loading REV (LM-FWD "L", LM-REV "H")

Stop (A) = Loading

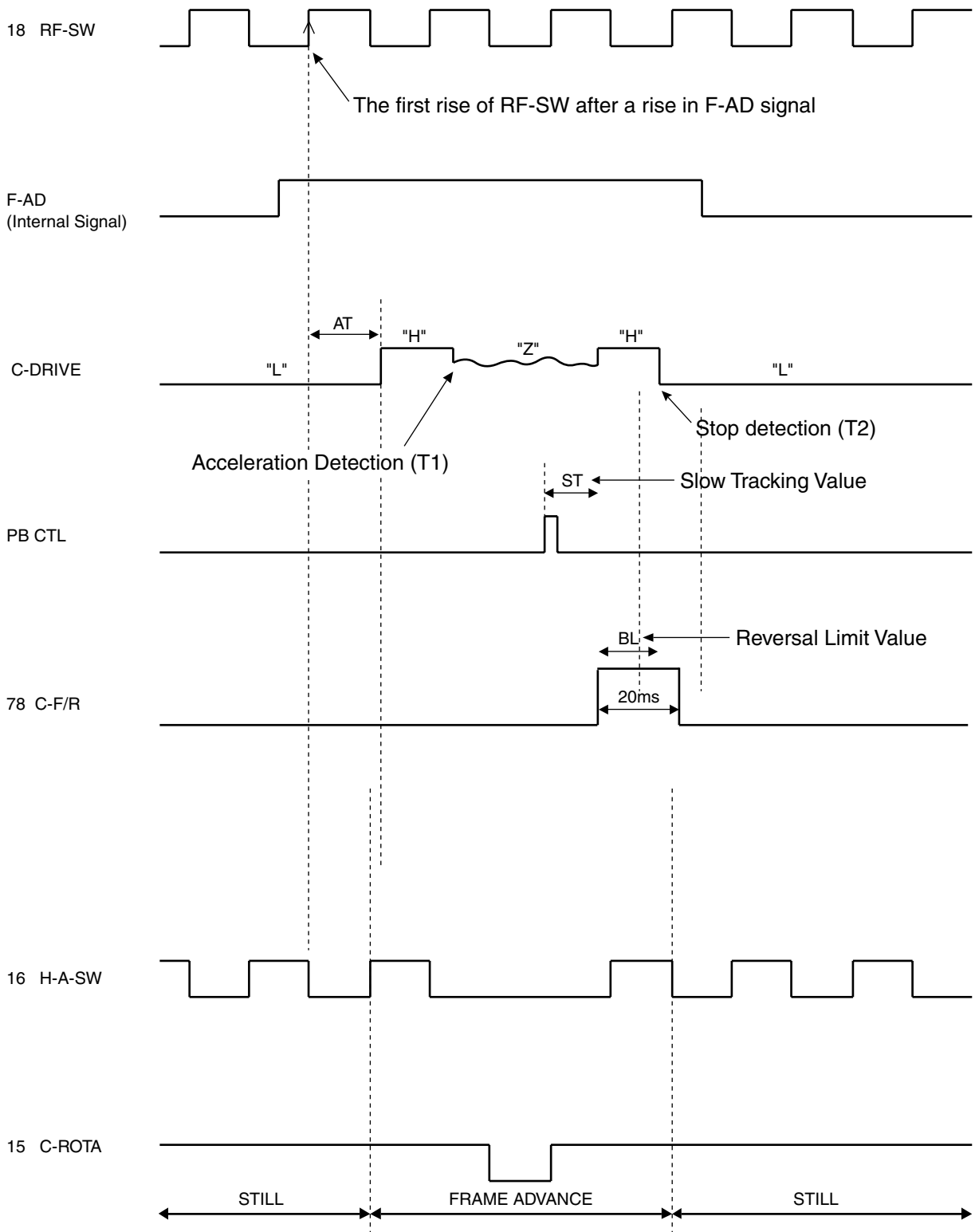
Stop (B) = Unloading

Note:

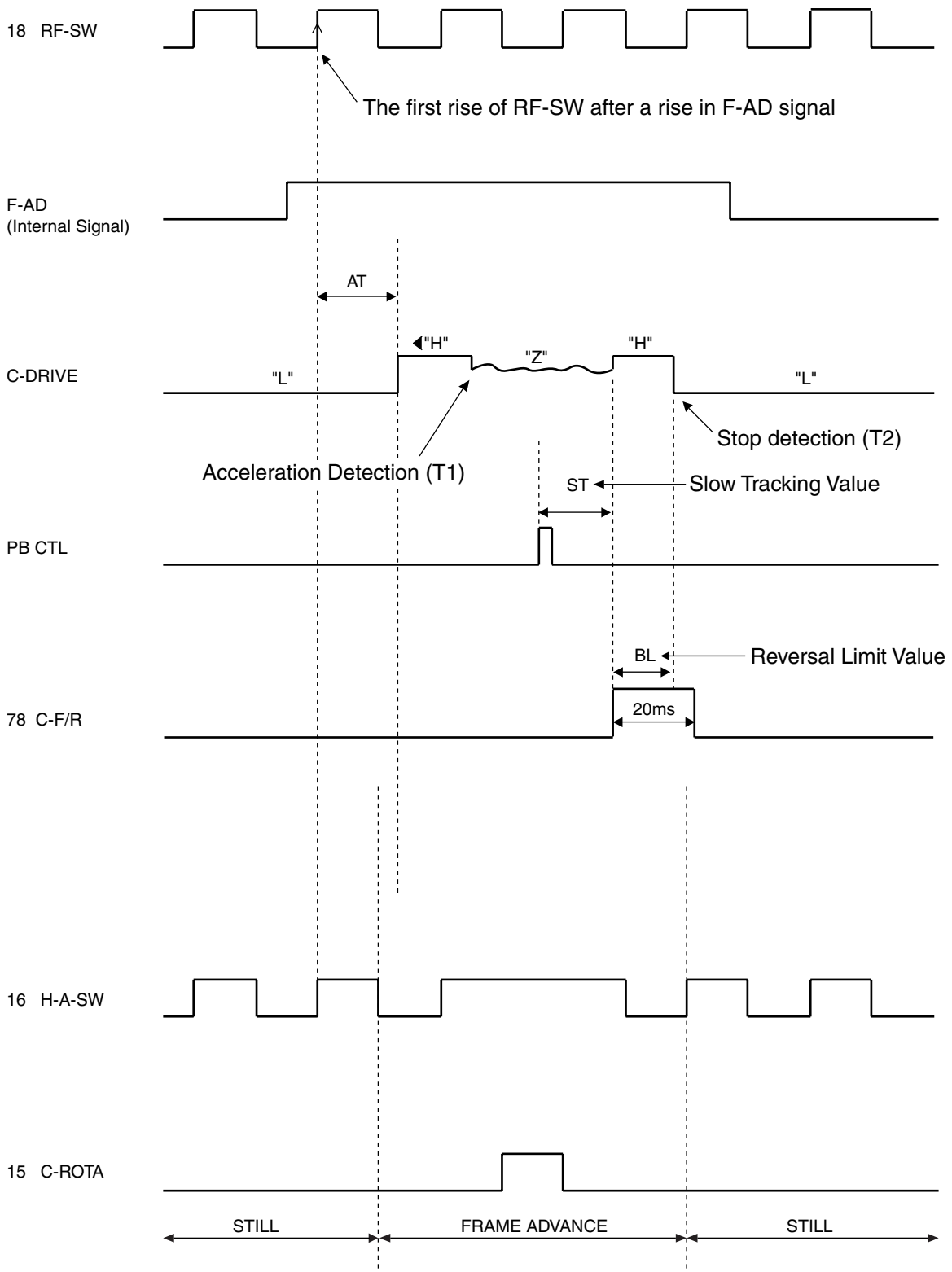
Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Still/Slow Control Frame Advance Timing Chart

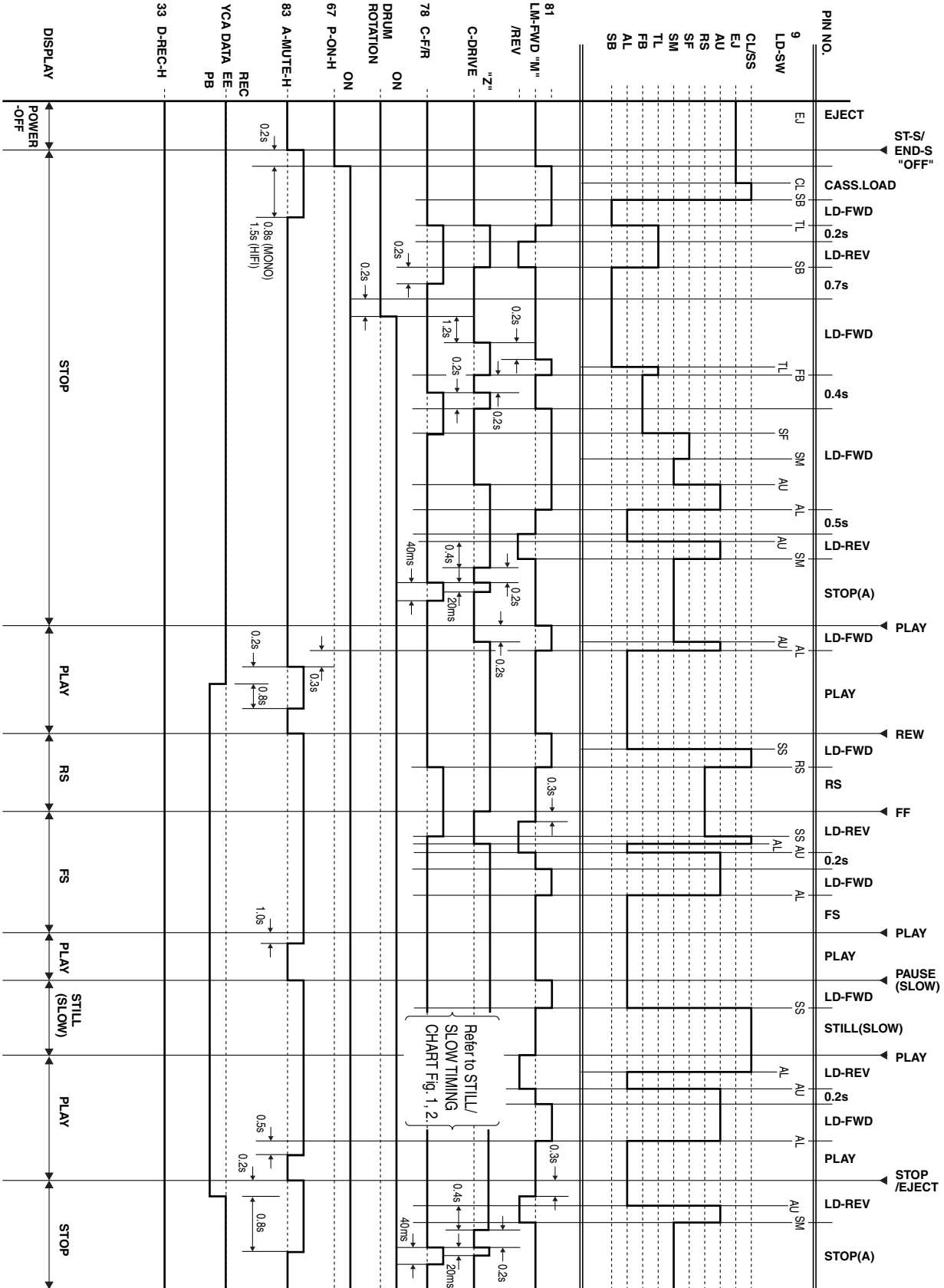
1) SP Mode



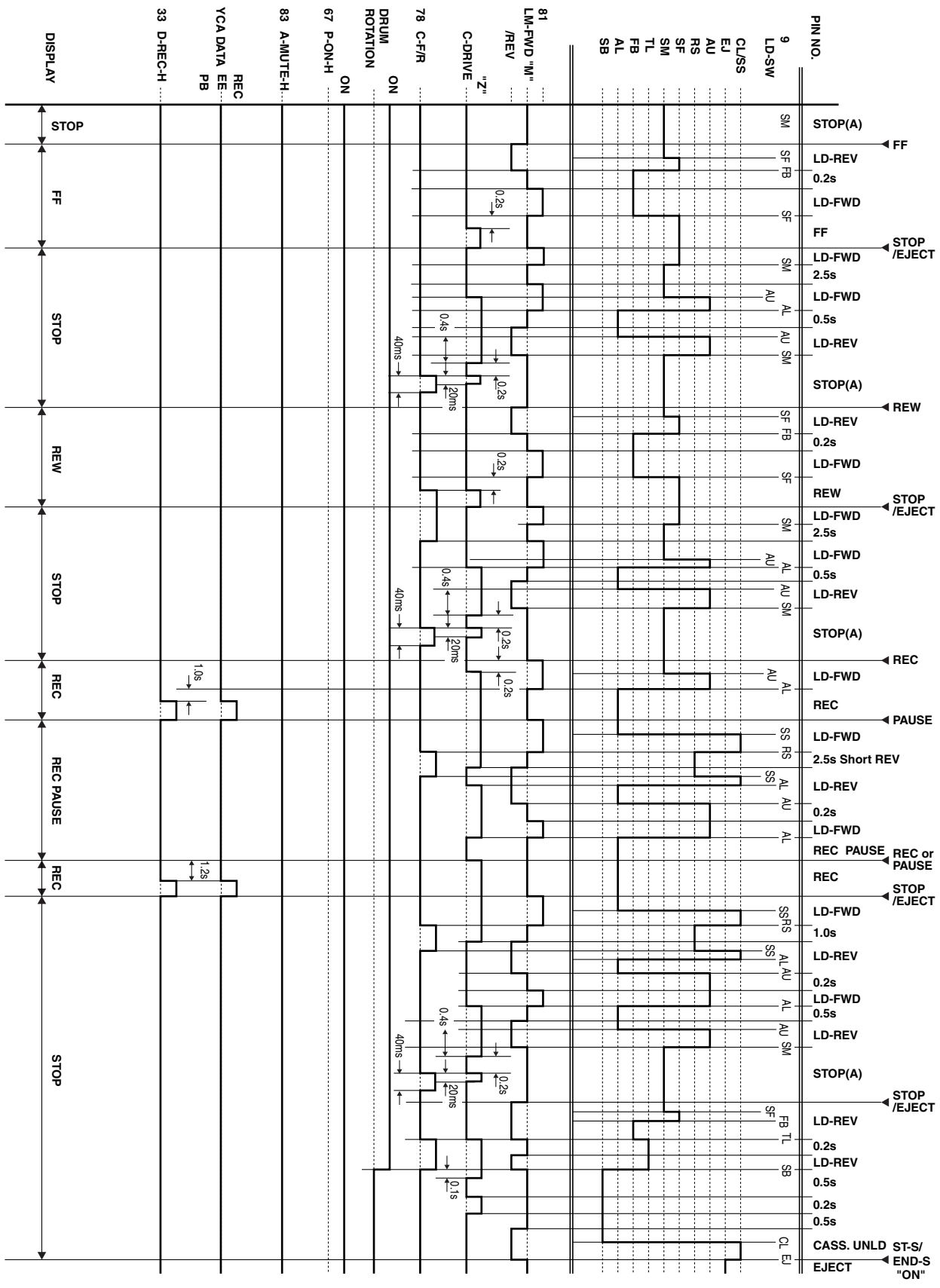
2) LP/SLP Mode



1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL -> PLAY -> STOP(A)



2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT



IC PIN FUNCTION DESCRIPTIONS

[VCR Section]

IC501(SERVO / SYSTEM CONTROL IC)

“H” > 4.5V, “L” ≤ 1.0V

Pin No.	IN/OUT	Signal Name	Function	Active Level
1	IN	SC2-IN	Input Signal from Pin 8 of SCART2	A/D
2	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
3	IN	POW-SAF	P-ON Power Detection Input Signal	A/D
4	IN	END-S	Tape End Position Detect Signal	A/D
5	IN	AFC	Automatic Frequency Control Signal	A/D
6	IN	V-ENV	Video Envelope Comparator Signal	A/D
7	IN	KEY-1	Key Scan Input Signal 1	A/D
8	IN	KEY-2	Key Scan Input Signal 2	A/D
9	IN	LD-SW	Deck Mode Position Detector Signal	A/D
10	IN	ST-S	Tape Start Position Detector Signal	A/D
11	-	NU	Not Used	-
12	OUT	DVD-PLAY	DVD Play at High	H
13	OUT	D-V-SYNC	Dummy V-sync Output	H/Hi-z
14	IN	REMOTE-VIDEO	Remote Control Sensor	L
15	OUT	C-ROTA	Color Phase Rotary Changeover Signal	H/L
16	OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
17	IN	H-A-COMP	Head Amp Comparator Signal	H/L
18	OUT	RF-SW	Video Head Switching Pulse	H/L
19	OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse	H/L
20	-	NU	Not Used	-
21	OUT	DVD-POWER	DVD Power Control Signal	H
22	-	NU	Not Used	-
23	OUT	POWER-LED	“POWER” LED Signal Output	H/L

Pin No.	IN/OUT	Signal Name	Function	Active Level
24	-	NU	Not Used	-
25	-	NU	Not Used	-
26	-	NU	Not Used	-
27	OUT	RGB-THROUGH	SCART 2 RGB Through Control Signal	L/H
28	OUT	LINE-MUTE	Audio Mute Control Signal	H
29	OUT	DVD-LED	“DVD” LED Signal Output	H/L
30	OUT	VCR-LED	“VCR” LED Signal Output	H/L
31	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab=”L”/ With out Record tab=”H”)	H/L
32	IN	A-MODE	Hi-Fi Tape Detection Signal	L
33	OUT	D-REC-H	Delayed Record Signal	H
34	IN	RESET	System Reset Signal (Reset=”L”)	L
35	IN	XCin	Sub Clock	-
36	OUT	XCOU	Sub Clock	-
37	-	Vcc	Vcc	-
38	IN	Xin	Main Clock Input	-
39	OUT	Xout	Main Clock Input	-
40	-	GND	Vss(GND)	-
41	OUT	INPUT SELECT	Input Selector Control Signal	H/L
42	IN	DVD-8PIN-IN	SCART 8Pin DVD Input Control Signal	H/L
43	IN	CLKSEL	Clock Select (GND)	L
44	IN	OSCin	Clock Input for letter size	-
45	OUT	OSCout	Clock Output for letter size	-
46	-	NUB	Not Used	-
47	IN	LP	LP	-
48	IN	FSC-IN [4.43MHz]	4.43MHz Clock Input	-
49	-	OSDVss	OSDVss	-
50	IN	OSD-V-IN	OSD Video Signal Input	-
51	-	NU	Not Used	-
52	OUT	OSD-V-OUT	OSD Video Signal Output	-

Pin No.	IN/OUT	Signal Name	Function	Active Level
53	-	OSDVcc	OSDVcc	-
54	-	HLF	LPF Connected Terminal (Slicer)	-
55	IN	COLOR-IN	SECAM or MESECAM Chroma Video Input Signal at Super Impose	-
56	IN	DAVN-L	VPS/PDC Data Receive = "L"	L
57	-	NU	Not Used	-
58	IN	C-SYNC	Composite Synchronized Pulse	PULSE
59	OUT	8POUT-1	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2	H/L
60	OUT	8POUT-2	Control SCART 1 8Pin Level by using 8POUT-1 and 8POUT-2	Hi-z/L
61	-	NU	Not Used	-
62	-	NU	Not Used	-
63	-	NU	Not Used	-
64	IN	FTV-IN	Comparator Input of Video Signal for Follow TV	H/L
65	-	NU	Not Used	-
66	OUT	C-POW-SW	Capstan Power Switching Signal	H/L
67	OUT	P-ON-H	Power On Signal at High	H
68	OUT	DRV-DATA	VFD Driver IC Control Data	H/L
69	OUT	DRV-STB	VFD Driver IC Chip Select Signal	H/L
70	OUT	DRV-CLK	VFD Driver IC Control Clock	H/L
71	OUT	IIC-BUS-SCL	IIC BUS Control Clock	H/L
72	IN/OUT	IIC-BUS-SDA	IIC BUS Control Data	H/L
73	-	NU	Not Used	-
74	-	NU	Not Used	-
75	IN	DVD-POWER-MONITOR	DVD Power Monitor Signal (P-off="L", P-on="H")	H/L
76	OUT	C-CONT	Capstan Motor Control Signal	PWM
77	OUT	D-CONT	Drum Motor Control Signal	PWM

Pin No.	IN/OUT	Signal Name	Function	Active Level
78	OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD="L"/REV="H")	H/L
79	IN	S-REEL	Supply Reel Rotation Signal	PULSE
80	IN	T-REEL	Take Up Reel Rotation Signal	PULSE
81	OUT	LM-FWD/REV	Loading Motor Control Signal	H/L/Hi-z
82	OUT	OUTPUT-SELECT	Output Select	H/L
83	OUT	A-MUTE-H	Audio Mute Control Signal (Mute = "H")	H
84	-	NU	Not Used	-
85	-	NU	Not Used	-
86	IN	P-DOWN-L	Power Voltage Down Detector Signal	L
87	IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
88	-	NU	Not Used	-
89	-	NU	Not Used	-
90	IN	D-PFG	Drum Motor Phase/Frequency Generator	PULSE
91	-	AMPVREF OUT	V-Ref for CTL AMP	-
92	-	AMPVREF in	V-Ref for CTL AMP	-
93	-	P80/C	P80/C Terminal	-
94	IN/OUT	CTL(-)	Playback/Record Control Signal (-)	H/L
95	IN/OUT	CTL(+)	Playback/Record Control Signal (+)	H/L
96	-	AMPC	CTL AMP Connected Terminal	-
97	-	CTLAMPout	To Monitor for CTL AMP Output	PULSE
98	-	AMPVcc	AMPVcc	-
99	-	AVcc	A/D Converter Power Input/Standard Voltage Input	-
100	IN	AGC	IF AGC Comparator Signal	A/D

Notes:

Abbreviation for Active Level:

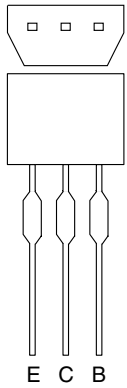
PWM -----Pulse Wide Modulation

A/D-----Analog - Digital Converter

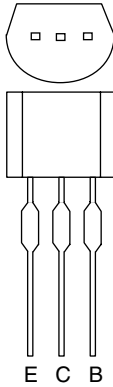
IC612 (FIP DRIVER)

Pin No.	IN/ OUT	Signal Name	Name Function
1	IN	FP-CLK	Clock Input
2	IN	FP-STB	Serial Interface Strobe
3	-	NU	Not Used
4	-	NU	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8		b	
9		c	
10		d	
11		e	
12		f	
13		g	
14		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	-	NU	Not Used
28	IN	FP-DIN	Serial Data Input

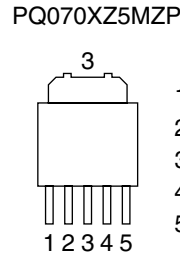
LEAD IDENTIFICATIONS



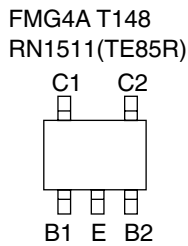
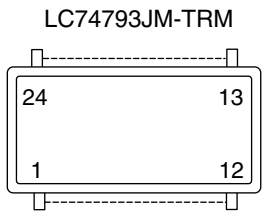
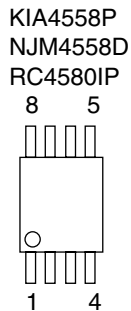
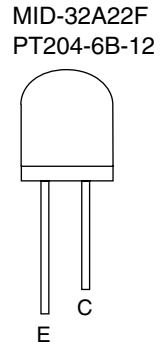
2SA1175(F,H,J)
2SC2785(F,H,J)
BA1F4M-T
BN1F4M-T
BN1L4M-T
KRA103M
KRC103M
KTA1266(GR)
KTA1267(GR,Y)
KTC3199(BL,GR,Y)
RN2204(TE4,T)



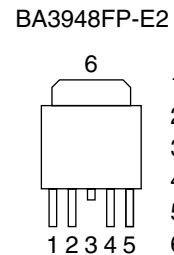
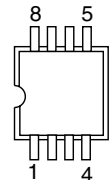
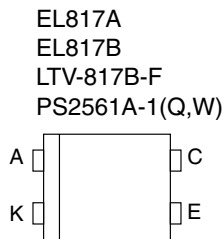
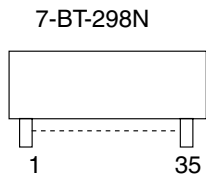
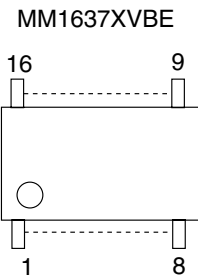
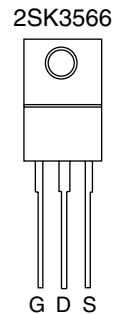
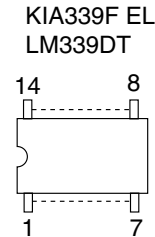
2SA1015-GR(TPE2)
2SA1020(Y)
2SC1815-BL(TPE2)
2SC1815-GR(TPE2)
2SC1815-Y(TPE2)
2SC2120-Y(TPE2)
2SC3266-Y(TPE2)
KTA1281(Y)
KTC3203(Y)
KTC3205(Y)



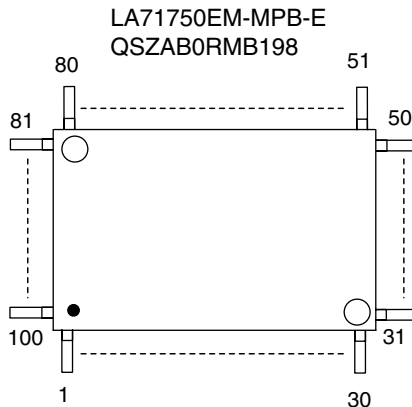
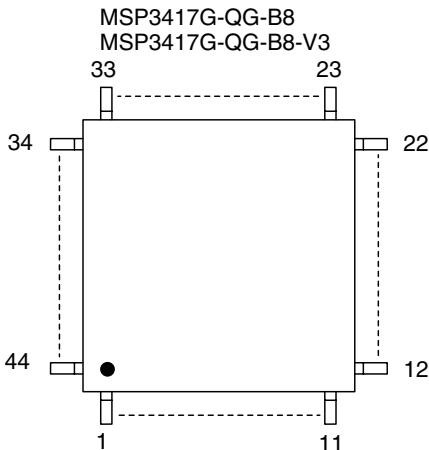
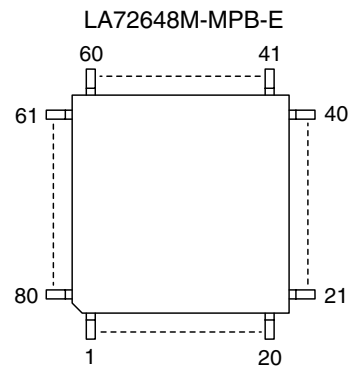
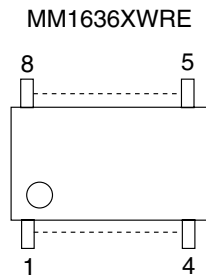
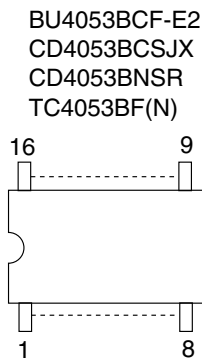
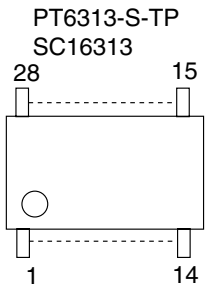
1: Vin
2: Vc
3: Vo
4: Vadj
5: GND



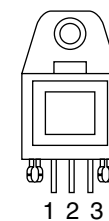
FA1F4M-T1B
KRC103S RTK
KTA1504GR-RTK
KTA1504Y-RTK
KTC3875Y-RTK



1: CTL
2: Vcc
3: N.C.
4: OUT
5: C
6: GND



0C-0805T*002
GP1FA513TZ



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

ELECTRICAL PARTS LIST**MISCELLANEOUS**

9965 000 25718	DVD MAIN CBA UNIT
9965 000 23969	PSV CBA (PSU, JUNCTION & JACK)
9965 000 25719	MCV CBA (MAIN, SENSOR, POWER SW, DVD OPEN/CLOSE & AFV PCB ASSY)
9965 000 24118	SENSOR CBA
9965 000 23977	AFV PCB ASSEMBLY CPD0500/9701

MCV CBA UNIT

MCV CBA UNIT consists of MAIN CBA, POWER SW CBA, DVD OPEN/CLOSE CBA, SENSOR CBA AND AFV PCB ASSEMBLY

MAIN CBA**MISCELLANEOUS**

CN051	9965 000 20908	CONN BASE 18P TUC-P18P-B1
JK101	9965 000 20716	RGB CONNECTOR MRC-021V-03
JK751	9965 000 13039	RCA JACK 0.01282V-12 PBSN
JK752	4822 265 11659	RCA JACK(YELLOW) MSP-281V4-B
JK753	4822 265 11661	RCA JACK(WHITE) MSP-281V1-B
JK754	9965 000 00423	MSP-281V3-A RCA JACK(RED)
JK1202	9965 000 15322	RCA JACK(BLACK) MSP-281V2-B
JK1401	9965 000 15323	S TYPE JACK MDC-050V-2.4
JW006	9965 000 23991	CABLE, 27P FFC/P1.00/260
JW007	9965 000 23992	CABLE, 20P FFC/P1.00/170
PS502	9965 000 12189	PHOTO INTERRUPTER RPI-302C70
RM2001	9965 000 10857	REMOTE RECEIVER
SW501	4822 276 13954	TACT SWITCH KSM0614B
SW501 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW503	4822 276 13954	TACT SWITCH KSM0614B
SW504	4822 276 13954	TACT SWITCH KSM0614B
SW504 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW506	9965 000 16625	LEAF SWITCH MXS01830MVP0
SW507	9965 000 23359	ROTARY MODE SWITCH SSS-53MD
SW601	4822 276 13954	TACT SWITCH KSM0614B
SW601 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW602	4822 276 13954	TACT SWITCH KSM0614B
SW602 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW603	4822 276 13954	TACT SWITCH KSM0614B
SW603 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW604	4822 276 13954	TACT SWITCH KSM0614B
SW604 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW605	4822 276 13954	TACT SWITCH KSM0614B
SW605 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW2005	4822 276 13954	TACT SWITCH KSM0614B
SW2005 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW2021	4822 276 13954	TACT SWITCH KSM0614B
SW2021 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
SW2022	4822 276 13954	TACT SWITCH KSM0614B
SW2022 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)
TU701	9965 000 23391	TUNER UNIT TMDG2-861A
X301	9965 000 05629	X'TAL 4.433619MHZ
X501	9965 000 12194	X'TAL 12.000MHZ

X502	9965 000 12288	X'TAL 32.768KHZ(20PPM)
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CAPACITORS

C402	9965 000 23975	FILM CAP 0.018UF /100V J
C403	9965 000 06523	CERAMIC CAP. B K 470PF/100V

RESISTORS

R066	9965 000 25725	CEMENT RESISTOR 5W J 4.7 OHM
VR501	9965 000 05260	CARBON P.O.T. 100K OHM B

COILS & FILTERS

L053	4822 157 10649	100UH
L101	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3
L122	9965 000 05627	CHOKE COIL 47UH-K
L122 *	9965 000 23990	CHOKE COIL 47UH-K
L251	9965 000 08652	INDUCTOR 5.6UH-K-26T
L302	4822 157 10649	100UH
L402	9965 000 05705	INDUCTOR 47UH-K-5FT
L451	9965 000 05705	INDUCTOR 47UH-K-5FT
L501	4822 157 10649	100UH
L503	9965 000 08629	INDUCTOR 1.8UH-K-26T
L701	4822 157 11511	15UH-K-26T
L1251	9965 000 15331	INDUCTOR 0.47UH-K-26T
L1351	4822 157 10649	100UH
L1521	9965 000 05627	CHOKE COIL 47UH-K
L1521 *	9965 000 23990	CHOKE COIL 47UH-K
L2001	4822 157 10649	100UH

DIODES

D051	4822 130 31933	1N5061
D052	4822 130 31933	1N5061
D054	9965 000 09283	ZENER DIODE DZ-10BSBT265
D056	9965 000 23356	ZENER DIODE DZ-18BSBT265
D057	4822 130 31933	1N5061
D101	9965 000 12178	ZENER DIODE DZ-11BSAT265
D102	9965 000 12178	ZENER DIODE DZ-11BSAT265
D103	9965 000 12178	ZENER DIODE DZ-11BSAT265
D104	9965 000 12178	ZENER DIODE DZ-11BSAT265
D105	9965 000 12178	ZENER DIODE DZ-11BSAT265
D106	9965 000 12178	ZENER DIODE DZ-11BSAT265
D107	9965 000 12178	ZENER DIODE DZ-11BSAT265
D108	9965 000 12178	ZENER DIODE DZ-11BSAT265
D109	9965 000 12178	ZENER DIODE DZ-11BSAT265
D110	9965 000 12178	ZENER DIODE DZ-11BSAT265
D115	9965 000 12178	ZENER DIODE DZ-11BSAT265
D118	9965 000 12178	ZENER DIODE DZ-11BSAT265
D119	9965 000 12178	ZENER DIODE DZ-11BSAT265
D121	9965 000 12178	ZENER DIODE DZ-11BSAT265
D301	4822 130 30621	1N4148
D502	9965 000 08623	LED(GREEN) 204-10GD/S957
D503	9965 000 08623	LED(GREEN) 204-10GD/S957
D510	4822 130 30621	1N4148

ELECTRICAL PARTS LIST

DIODES

D511	9965 000 15309	ZENER DIODE DZ-7.5BSAT265
D512	4822 130 30621	1N4148
D555	9965 000 19572	LED MIE-534A2
D555 *	9965 000 05648	LED SIR-563ST3F Q
D611	4822 130 30621	1N4148
D701	9965 000 09183	ZENER DIODE DZ-33BSDT265
D1052	4822 130 31933	1N5061
D1053	4822 130 31933	1N5061
D1054	4822 130 31933	1N5061
D1057	4822 130 31933	1N5061
D1301	9965 000 08622	ZENER DIODE DZ-5.6BSBT265

TRANSISTORS

Q051	9965 000 12190	TRANSISTOR KTA1281(Y)	Q302 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q051 *	4822 130 42371	2SA1020Y	Q401	9965 000 16623	CHIP TRANSISTOR FMG4A T148
Q052	9965 000 23377	RES. BUILT-IN TRANSISTOR KRC103M	Q401 *	9965 000 12361	CHIP TRANSISTOR RN1511(TE85R)
Q052 *	9965 000 05389	TRANSISTOR BA1F4M-T	Q403	9965 000 21660	TOSHIBA 2SC2120-Y
Q053	9965 000 25355	TRANSISTOR RN2204(TE4,T)	Q404	4822 130 42959	2SA1015Y
Q053 *	9965 000 09287	TRANSISTOR 2SC536NG-NPA-AT	Q404 *	4822 130 11101	2SA1015GR
Q054	9965 000 23377	RES. BUILT-IN TRANSISTOR KRC103M	Q405	4822 130 10145	KRA103M
Q054 *	9965 000 05389	TRANSISTOR BA1F4M-T	Q405 *	9965 000 05388	TRANSISTOR BN1F4M-T
Q055	4822 130 10103	KTC3199Y	Q406	9965 000 13683	CHIP TRANSISTOR KTC3875Y-RTK
Q055 *	4822 130 11647	2SC2785J	Q451	9965 000 16624	CHIP TRANSISTOR KRC103S RTK
Q055 *	9965 000 09882	TRANSISTOR BN1L4M-T	Q451 *	9965 000 12361	CHIP TRANSISTOR RN1511(TE85R)
Q056	9965 000 11122	KTC3205Y	Q506	9965 000 08630	PHOTO TRANSISTOR PT204-6B-12
Q057	4822 130 10145	KRA103M	Q506 *	9965 000 20922	PHOTO TRANSISTOR MID-32A22F
Q057 *	9965 000 05388	TRANSISTOR BN1F4M-T	Q507	4822 130 10103	KTC3199Y
Q058	4822 130 42959	2SA1015Y	Q507 *	4822 130 11647	2SC2785J
Q058 *	4822 130 11101	2SA1015GR	Q507 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q059	9965 000 23377	RES. BUILT-IN TRANSISTOR KRC103M	Q508	4822 130 10103	KTC3199Y
Q059 *	9965 000 05389	TRANSISTOR BA1F4M-T	Q508 *	4822 130 11647	2SC2785J
Q104	4822 130 42959	2SA1015Y	Q508 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q104 *	4822 130 11101	2SA1015GR	Q509	4822 130 10103	KTC3199Y
Q105	9965 000 13683	CHIP TRANSISTOR KTC3875Y-RTK	Q509 *	4822 130 11647	2SC2785J
Q107	4822 130 10103	KTC3199Y	Q509 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q107 *	4822 130 11647	2SC2785J	Q513	9965 000 23377	RES. BUILT-IN TRANSISTOR KRC103M
Q107 *	9965 000 09882	TRANSISTOR BN1L4M-T	Q513 *	9965 000 05389	TRANSISTOR BA1F4M-T
Q108	4822 130 10103	KTC3199Y	Q514	4822 130 10923	KTC3199(BL)
Q108 *	4822 130 11647	2SC2785J	Q514 *	4822 130 41319	2SC1815BL
Q108 *	9965 000 09882	TRANSISTOR BN1L4M-T	Q515	4822 130 10923	KTC3199(BL)
Q151	9965 000 16624	CHIP TRANSISTOR KRC103S RTK	Q515 *	4822 130 41319	2SC1815BL
Q151 *	9965 000 12361	CHIP TRANSISTOR RN1511(TE85R)	Q753	4822 130 10103	KTC3199Y
Q152	4822 130 10103	KTC3199Y	Q753 *	4822 130 11647	2SC2785J
Q152 *	4822 130 11647	2SC2785J	Q753 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q152 *	9965 000 09882	TRANSISTOR BN1L4M-T	Q754	4822 130 10103	KTC3199Y
Q153	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK	Q754 *	4822 130 11647	2SC2785J
Q154	4822 130 10103	KTC3199Y	Q754 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q154 *	4822 130 11647	2SC2785J	Q775	9965 000 13683	CHIP TRANSISTOR KTC3875Y-RTK
Q154 *	9965 000 09882	TRANSISTOR BN1L4M-T	Q776	9965 000 13683	CHIP TRANSISTOR KTC3875Y-RTK
Q155	9965 000 16622	CHIP TRANSISTOR KTA1504GR-RTK	Q1052	9965 000 21660	TOSHIBA 2SC2120-Y
Q302	4822 130 10103	KTC3199Y	Q1053	4822 130 63144	2SA1267(YG)
Q302 *	4822 130 11647	2SC2785J	Q1053 *	4822 130 11646	2SA1175J
			Q1054	4822 130 10103	KTC3199Y
			Q1054 *	4822 130 11647	2SC2785J
			Q1054 *	9965 000 09882	TRANSISTOR BN1L4M-T
			Q1055	9965 000 21660	TOSHIBA 2SC2120-Y
			Q1203	4822 130 42959	2SA1015Y
			Q1203 *	4822 130 11101	2SA1015GR
			Q1204	4822 130 42959	2SA1015Y
			Q1204 *	4822 130 11101	2SA1015GR
			Q1351	4822 130 10103	KTC3199Y
			Q1351 *	4822 130 11647	2SC2785J
			Q1351 *	9965 000 09882	TRANSISTOR BN1L4M-T
			Q1352	4822 130 10103	KTC3199Y
			Q1352 *	4822 130 11647	2SC2785J

ELECTRICAL PARTS LIST**TRANSISTORS**

Q1352 *	9965 000 09882	TRANSISTOR BN1L4M-T	L3	4822 157 11318	18UH 10%
Q1502	9965 000 16624	CHIP TRANSISTOR KRC103S RTK	L4	4822 157 10889	10UH
Q1502 *	9965 000 12361	CHIP TRANSISTOR RN1511(TE85R)	X1	9965 000 12200	X'TAL 18.432MHZ
Q1503	9965 000 13683	CHIP TRANSISTOR KTC3875Y-RTK			

INTEGRATED CIRCUITS

IC101	9965 000 13852	IC:SWITCH TC4053BF(N) OR
IC101 *	9965 000 23979	MULTIPLEXERS CD4053BCSJX
IC102	9965 000 23981	DRIVER FOR DVD MM1637XVBE
IC301	9965 000 12180	IC:Y/C/A LA71750AM-MTB
IC451	9965 000 16618	IC:HIFI LA72648M
IC501	9965 000 25724	SYSCON IC M3776AMFA-AC4GP
IC502	9965 000 16620	IC:EEPROM CAT24WC02JI
IC611	9965 000 23984	V.F.D. 7-BT-298N
IC612	9965 000 19575	FL DRIVER IC PT6313-S-TP
IC631	9965 000 12198	IC:VPS/PDC SLICER LC74793JM-TRM
IC751	9965 000 13852	IC:SWITCH TC4053BF(N) OR
IC751 *	9965 000 23979	MULTIPLEXERS CD4053BCSJX
IC775	9965 000 12184	IC:COMPARATOR KIA339F EL
IC1002	9965 000 23986	VOLTAGE REG PQ070XZ5MZP
IC1003	9965 000 23987	VOLTAGE REG BA3948FP-E2
IC1201	9965 000 15314	IC:OP AMP KIA4558P
IC1201 *	9965 000 25723	IC:OP AMP RC4580IP
IC1204	9965 000 15318	FIBER OPTIC TRANS.MODULE OC-0805
IC1403 *	9965 000 23989	DRIVER FOR DVD MM1636XWRE
IC1404	9965 000 13852	IC:SWITCH TC4053BF(N) OR
IC1404 *	9965 000 23979	MULTIPLEXERS CD4053BCSJX

POWER SW CBA

D651	9965 000 08621	LED(RED) 204HD/E
SW651	4822 276 13954	KSM0614B
SW651 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)

DVD OPEN/CLOSE CBA

SW2020	4822 276 13954	TACT SWITCH KSM0614B
SW2020 *	9965 000 19590	TACT SWITCH TC-1104(H=9.5)

SENSOR CBA

Q503	9965 000 08630	PHOTO TRANSISTOR PT204-6B-12
Q503 *	9965 000 20922	PHOTO TRANSISTOR MID-32A22F
Q504	9965 000 08630	PHOTO TRANSISTOR PT204-6B-12
Q504 *	9965 000 20922	PHOTO TRANSISTOR MID-32A22F

AFV PCB ASSEMBLY CPD0500/9701

D2	4822 130 30621	1N4148
D2 *	4822 130 32778	1SS133
IC1	9965 000 14760	AUD UP MSP3417G-QG-B8-V3
L1	4822 157 10889	10UH

Note: Only the parts mentioned in this list are normal service spare parts.

PSV CBA UNIT

PSV CBA UNIT consists of POWER SUPPLY CBA, JUNCTION and JACK CBA

POWER SUPPLY CBA**MISCELLANEOUS**

AC1001!	9965 000 20940	△	MAINS CORD
F1001!	4822 070 31602	△	FUSE 1.6A 250V
SA1001	9965 000 20946	△	SURGE ABSORBER PVR-10D471KB
SA1001	4822 252 11373	△	JVR-10N471K
T0011!	9965 000 24005	△	SWITCHING TRANSFORMER

CAPACITORS

C013	9965 000 14852	ELCAP. 10UF /50V M
C013 *	9965 000 19661	ELCAP. 10UF /50V M
C014	9965 000 14853	ELCAP. 470UF /16V M
C014 *	9965 000 19567	ELCAP. 470UF /16V M
C015	9965 000 15246	ELCAP. 100UF /16V M
C015 *	9965 000 09789	CHIP CAP CG J 68PF/50V
C017	9965 000 14857	ELCAP. 1000UF /16V M
C018	4822 124 42027	470UF 20% 6.3V
C018 *	9965 000 19558	ELCAP. 470UF /6.3V M
C020	4822 124 81151	22UF 50V
C020 *	9965 000 19549	ELCAP. 22UF /50V M
C022	9965 000 19663	ELCAP. 470UF /35V M
C022 *	9965 000 19655	ELCAP. 470UF /35V M
C1001!	9965 000 14854	△ MET FILM CAP. 0.068UF /275V K
C1001! *	9965 000 06521	△ METALLIZED FILM CAP. 0.068UF /250
C1001! *	9965 000 23998	△ MET FILM 0.068UF /250V K
C1001! *	9965 000 09743	△ METALLIZED FILM CAP. 0.068UF /250
C1004	4822 124 12446	1000UF 20% 400V
C1005	4822 126 14141	56PF 1KV
C1005 *	9965 000 06567	CERAMIC CAP. SL J 56PF/1KV
C1006!	9965 000 23354	△ SAFTY CAP. 2200PF/250V
C1007	9965 000 19664	ELCAP. 1000UF /6.3V M
C1018	4822 124 41584	100UF 20% 10V
C1018 *	9965 000 19666	ELCAP. 100UF /10V M
C1032	9965 000 09762	ELCAP 220UF /6.3V M H7
C1032 *	9965 000 19554	ELCAP. 10UF /16V M
C1035	4822 124 42027	470UF 20% 6.3V
C1035 *	9965 000 19558	ELCAP. 470UF /6.3V M
C1106	9965 000 19667	ELCAP. 100UF /35V M
C1106 *	9965 000 19656	ELCAP. 100UF /35V M
C1107	9965 000 09827	CHIP CAP CH J 100PF/50V

ELECTRICAL PARTS LIST**CAPACITORS**

C1107 *	9965 000 19660	ELCAP. 220UF /6.3V M
C2014	4822 126 14142	0.01UF 500V
C2015	4822 124 42027	470UF 20% 6,3V
C2015 *	9965 000 19558	ELCAP. 470UF /6.3V M

RESISTORS

R1001	9965 000 20944	△ GL GLAZE RES. 1/2W J 5.6MOHM
R1001 *	9965 000 24001	△ POWER ANTI-S1/2W J 5.6M OHM
R1004	4822 053 11823	82K 5% 2W
R1004 *	9965 000 24002	METAL OXIDE 2W J 82K OHM
R1011	9965 000 24003	METAL OXIDE 1W J 1.3 OHM
R1043	9965 000 09861	METAL OXIDE FILM RES. 1W J 150K
R1043 *	4822 117 12744	2.7R 5% 1W
R1043 *	9965 000 24004	METAL OXIDE 1W J 2.7 OHM

COILS & FILTERS

L010	9965 000 05627	CHOKE COIL 47UH-K
L010 *	9965 000 05702	CHOKE COIL 47UH-K
L010 *	9965 000 23990	CHOKE COIL 47UH-K
L013	9965 000 05627	CHOKE COIL 47UH-K
L013 *	9965 000 05702	CHOKE COIL 47UH-K
L013 *	9965 000 23990	CHOKE COIL 47UH-K
L1001	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3
L1002	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3
L1003!	9965 000 13005	△ LINE FILTER 50MH LF-4D-E503 OR
L1004	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3
L1005	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3
L1009	9965 000 05627	CHOKE COIL 47UH-K
L1009 *	9965 000 05702	CHOKE COIL 47UH-K
L1009 *	9965 000 23990	CHOKE COIL 47UH-K
L1011	9965 000 05627	CHOKE COIL 47UH-K
L1011 *	9965 000 05702	CHOKE COIL 47UH-K
L1011 *	9965 000 23990	CHOKE COIL 47UH-K
L1012	9965 000 05627	CHOKE COIL 47UH-K
L1012 *	9965 000 05702	CHOKE COIL 47UH-K
L1012 *	9965 000 23990	CHOKE COIL 47UH-K

DIODES

D013	4822 130 11654	BA158
D014	9965 000 19668	SCHOTTKY BARRIER DIODE SB390
D015	9965 000 08649	ZENER DIODE DZ-5.6BSCT265
D015 *	4822 130 10926	UZ5.6BSC
D016	4822 130 32715	SB340
D017	9965 000 23356	ZENER DIODE DZ-18BSBT265
D017 *	9965 000 13882	ZENER DIODE MTZJT-7718B OR
D018	4822 130 11654	BA158
D019	9965 000 19669	RECTIFIER DIODE FR203
D1001	4822 130 31933	1N5061
D1001 *	9965 000 23978	1N4005
D1002	4822 130 31933	1N5061
D1002 *	9965 000 23978	1N4005
D1003	4822 130 31933	1N5061

D1003 *	9965 000 23978	1N4005
D1004	4822 130 31933	1N5061
D1004 *	9965 000 23978	1N4005
D1006	4822 130 30621	1N4148
D1006 *	4822 130 32778	1SS133
D1008	5322 130 81917	SB140
D1011	5322 130 34979	BYV96E
D1011 *	9965 000 23999	BA159
D1011 *	4822 130 81244	ERA22-10
D1012	4822 130 30621	1N4148
D1012 *	4822 130 32778	1SS133
D1016	9965 000 14882	RECTIFIER DIODE FR101
D1017	9965 000 23356	ZENER DIODE DZ-18BSBT265
D1017 *	9965 000 13882	ZENER DIODE MTZJT-7718B OR
D1018	4822 130 30621	1N4148
D1018 *	4822 130 32778	1SS133
D1019	9965 000 14881	ZENER DIODE DZ-6.8BSBT265
D1019 *	9965 000 23556	ZENER DIODE MTZJT-776.8B
D1022	4822 130 30621	1N4148
D1022 *	4822 130 32778	1SS133
D1024	4822 130 30621	1N4148
D1024 *	4822 130 32778	1SS133
D1025	4822 130 30621	1N4148
D1025 *	4822 130 32778	1SS133
D1030	5322 130 81917	SB140

TRANSISTORS

Q1001	9965 000 17186	△ FET 2SK3566
Q1003	4822 130 41306	2SC1815GR
Q1004	4822 130 10462	KTA1267-GR
Q1004 *	4822 130 11482	KTA1267(Y)
Q1004 *	4822 130 11646	2SA1175J
Q1004 *	9965 000 19587	TRANSISTOR 2SA1175(H)
Q1004 *	9965 000 05644	TRANSISTOR 2SA1175(F)
Q1008	4822 130 10103	KTC3199Y
Q1008 *	9965 000 10994	2SC3199-GR/KTC3199-GR
Q1008 *	4822 130 11647	2SC2785J
Q1008 *	9965 000 19583	TRANSISTOR 2SC2785(H)
Q1008 *	9965 000 05643	TRANSISTOR 2SC2785(F)
Q1008 *	9965 000 09882	TRANSISTOR BN1L4M-T
Q1008 *	4822 130 41306	2SC1815GR

INTEGRATED CIRCUITS

IC1001!	9965 000 19672	△ PHOTOCOUPLER EL817A
IC1001!	9965 000 24000	△ PHOTOCOUPLER PS2561A-1(Q)

JUNCTION CBA

CN051A	9965 000 20932	CONNECTOR, 18P TUC-P18X-B1
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ELECTRICAL PARTS LIST

JACK CBA**MISCELLANEOUS**

JK1402	9965 000 20716	RGB CONNECTOR MRC-021V-03
L102	4822 526 10685	BEAD CORE B16 RH 3.5X10X1.3

CAPACITORS

C102	9965 000 15289	ELCAP. 1UF /50V M
C102 *	9965 000 19559	ELCAP. 1UF /50V M
C103	9965 000 15246	ELCAP. 100UF /16V M
C103 *	9965 000 09789	CHIP CAP CG J 68PF/50V
C108	4822 124 42027	470UF 20% 6,3V
C108 *	9965 000 19558	ELCAP. 470UF /6.3V M

DIODES

D112	9965 000 12178	ZENER DIODE DZ-11BSAT265
D112 *	9965 000 19571	ZENER DIODE MTZJT-7711A
D113	9965 000 12178	ZENER DIODE DZ-11BSAT265
D113 *	9965 000 19571	ZENER DIODE MTZJT-7711A
D122	9965 000 12178	ZENER DIODE DZ-11BSAT265
D122 *	9965 000 19571	ZENER DIODE MTZJT-7711A
D123	9965 000 12178	ZENER DIODE DZ-11BSAT265
D123 *	9965 000 19571	ZENER DIODE MTZJT-7711A
D124	9965 000 12178	ZENER DIODE DZ-11BSAT265
D124 *	9965 000 19571	ZENER DIODE MTZJT-7711A
D125	9965 000 12178	ZENER DIODE DZ-11BSAT265
D125 *	9965 000 19571	ZENER DIODE MTZJT-7711A

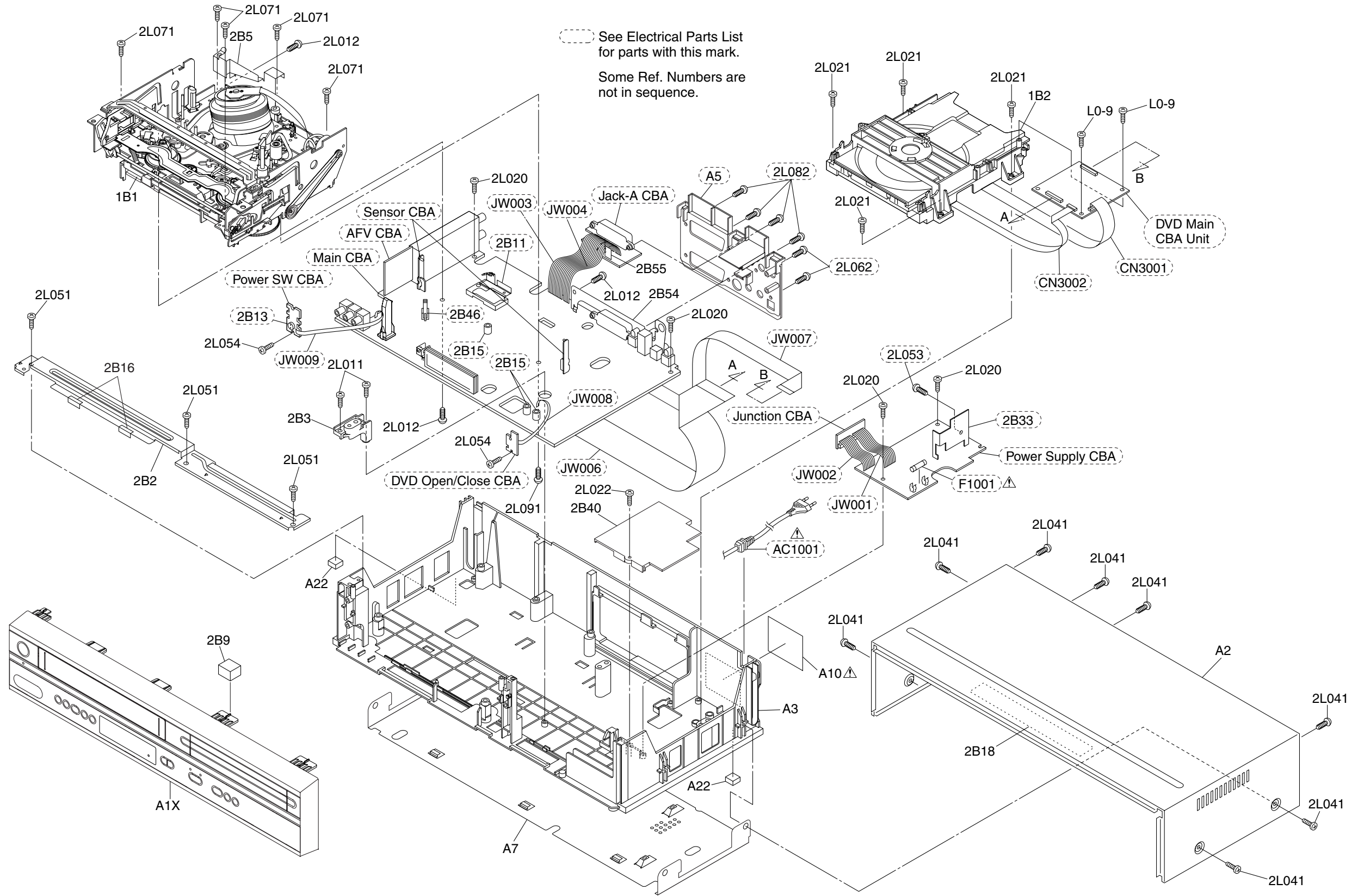
TRANSISTORS

Q103	4822 130 42959	2SA1015Y
Q103 *	4822 130 11101	2SA1015GR

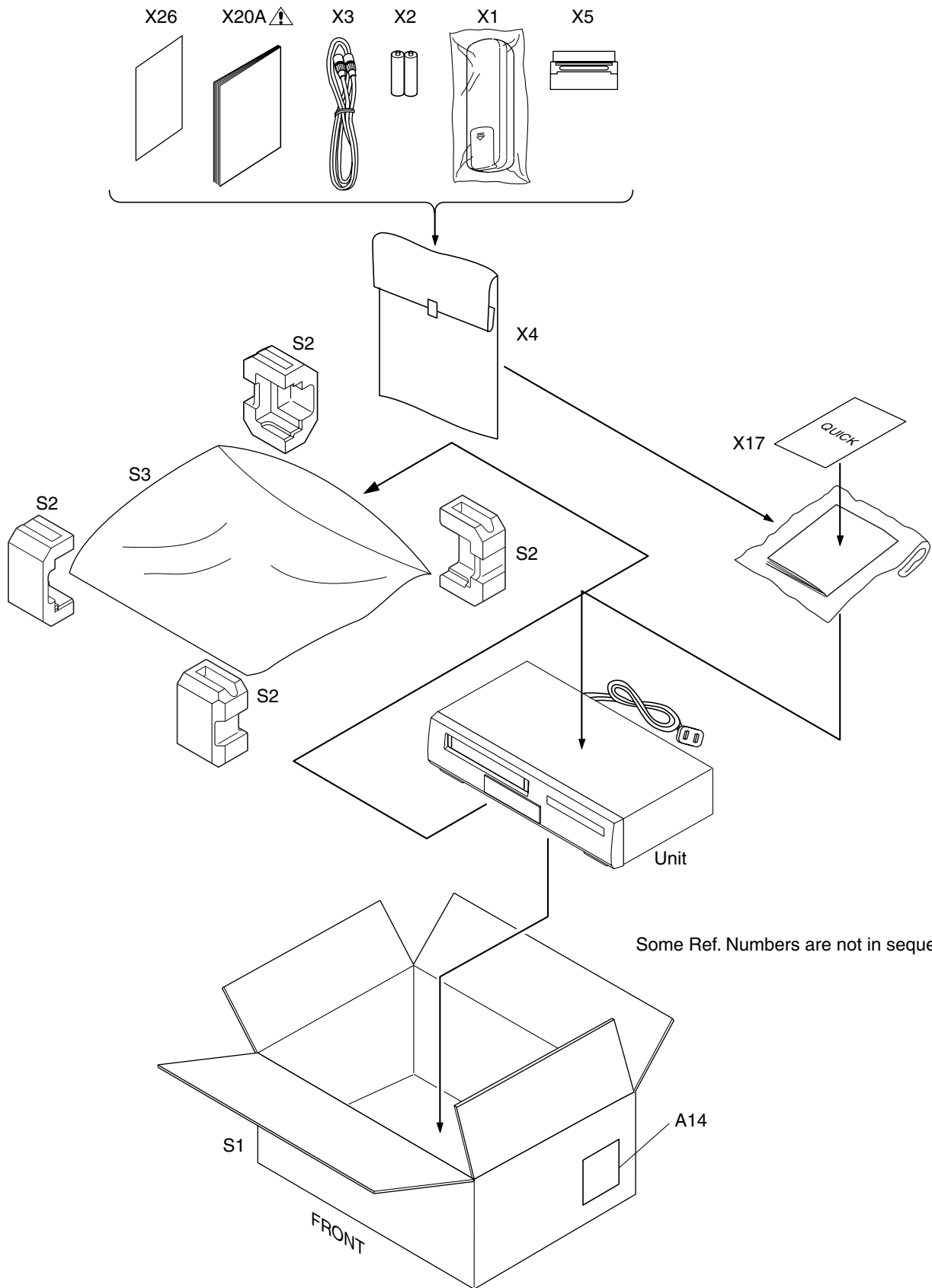
Note: Only the parts mentioned in this list are normal service spare parts.

Cabinet

EXPLODED VIEWS



Packing



MECHANICAL & ACCESSORY PARTS LIST

ELECTRICAL PCBAS

9965 000 25718	DVD MAIN CBA UNIT
9965 000 23969	PSV CBA (PSU, JUNCTION & JACK)
9965 000 25719	MCV CBA (MAIN, SENSOR, POWER SW & DVD OPEN/CLOSE)
9965 000 24118	SENSOR CBA
9965 000 23977	AFV PCB ASSEMBLY CPD0500/9701

MECHANICAL PARTS

1B1	9965 000 23961	VCR DECK ASSEMBLY CZD013/VM23ED
1B2	9965 000 23962	DVD LOADER ASSY
A1X	9965 000 25716	FRONT ASSEMBLY H9720ED
A3	9965 000 23959	CHASSIS(D5 PAL FTZ) H9700ED
A22	9965 000 17140	CHASSIS FOOT H79P9JD
X1	9965 000 23967	REM CONTROL UNIT 364/GZF05DD
X3	4822 320 50377	CONNECT. CABLE PAL
X5	9965 000 25717	RCA PIN JACK(OUT) RJ-1135B*15-03

Note: Only the parts mentioned in this list are normal service spare parts.

DECK MECHANISM SECTION

DIGITAL VIDEO DISC PLAYER & VIDEO CASSETTE RECORDER

- | |
|---|
| <p>Sec. 2: Deck Mechanism Section</p> <ul style="list-style-type: none">● Standard Maintenance● Mechanism Alignment Procedures● Disassembly / Assembly of Mechanism● Deck Exploded Views● Deck Parts List |
|---|

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STANDARD MAINTENANCE

Service Schedule of Components

This maintenance chart shows you the standard of replacement and cleaning time for each part. Because those may replace depending on environment and purpose for use, use the chart for reference.

h: Hours ○: Cleaning ●: Replace

Deck		Periodic Service Schedule			
Ref.No.	Part Name	1,000 h	2,000 h	3,000 h	4,000 h
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel S, Reel T			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
*B73	FE Head			●	
*B86	F Brake Assembly (HI)		●		●
B133	Idler Assembly (HI)		●		●
B410	Pinch Arm Assembly		●		●
B414	M Brake (SP) Assembly (HI)		●		●
B416	M Brake (TU) Assembly (HI)		●		●
B525	LDG Belt		●		●

Notes:

- Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% Isopropyl Alcohol.
- After cleaning the parts, do all DECK ADJUSTMENTS.
- For the reference numbers listed above, refer to Deck Exploded Views.
 - * B73 ----- Recording model only
 - * B86 ----- Not used in 2 head model.

Cleaning

Cleaning of Video Head

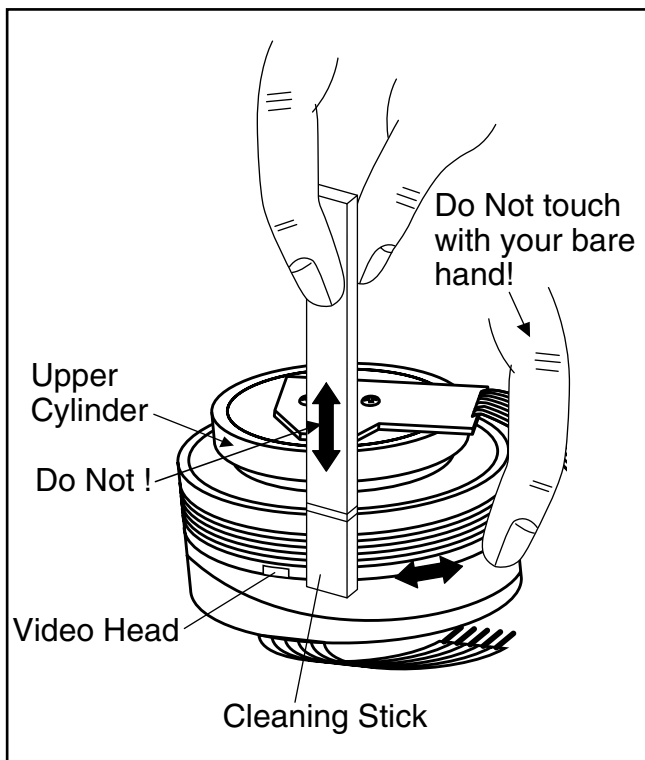
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

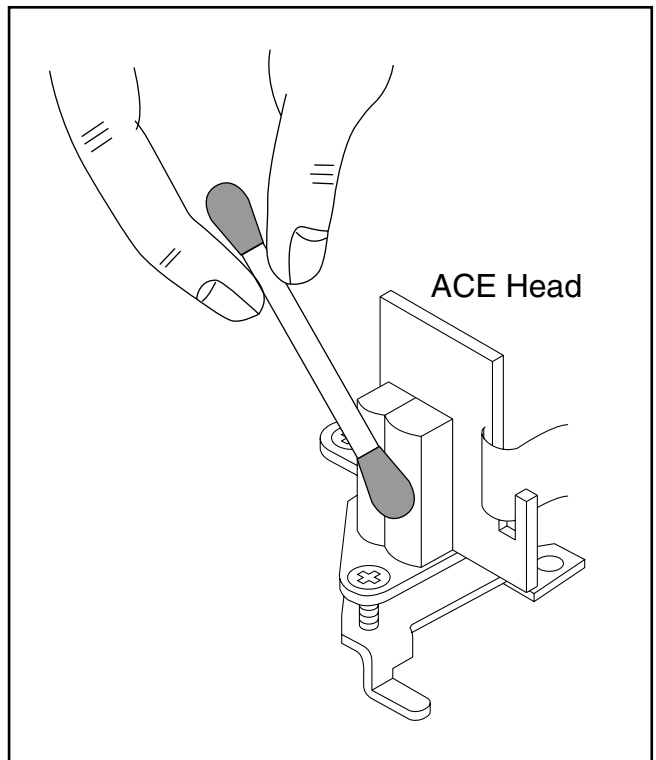
Clean the head with a cotton swab.

Procedure

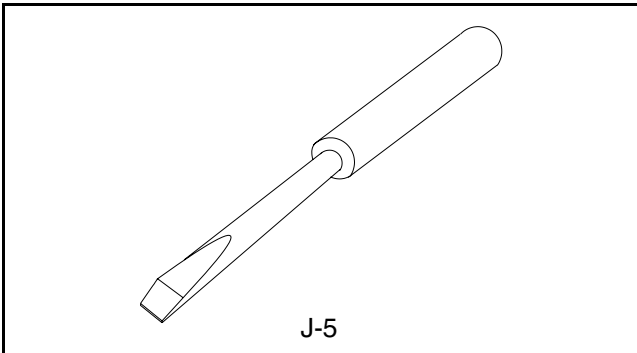
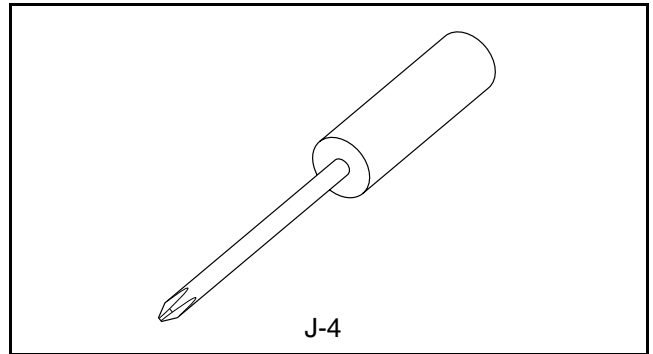
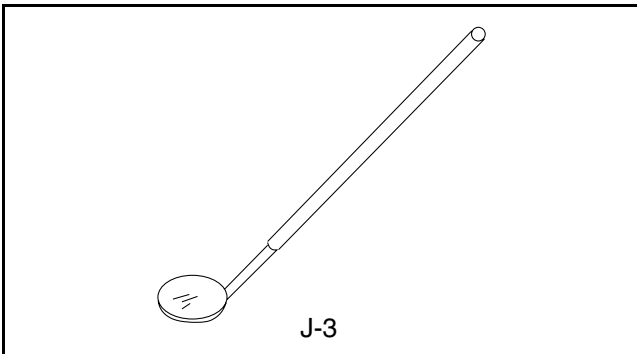
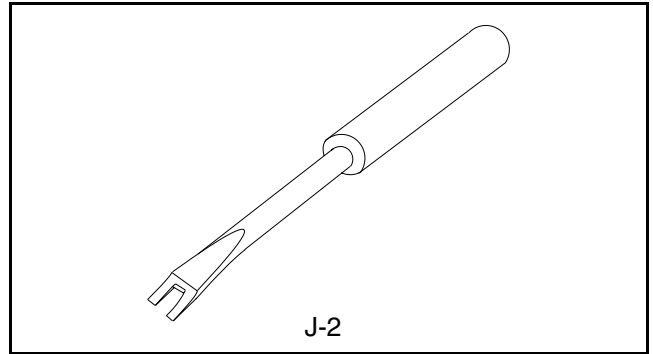
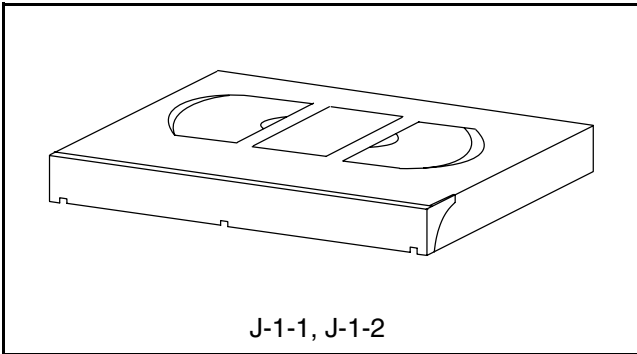
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



SERVICE FIXTURE AND TOOLS



Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	9965 000 14514	Head Adjustment of ACE Head
J-1-2	Alignment Tape	9965 000 14516 (2 Head model) 9965 000 14515 (4 Head model)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

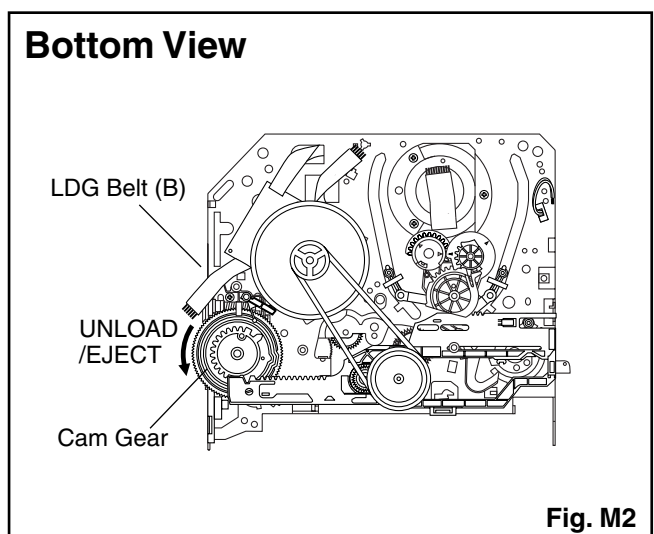
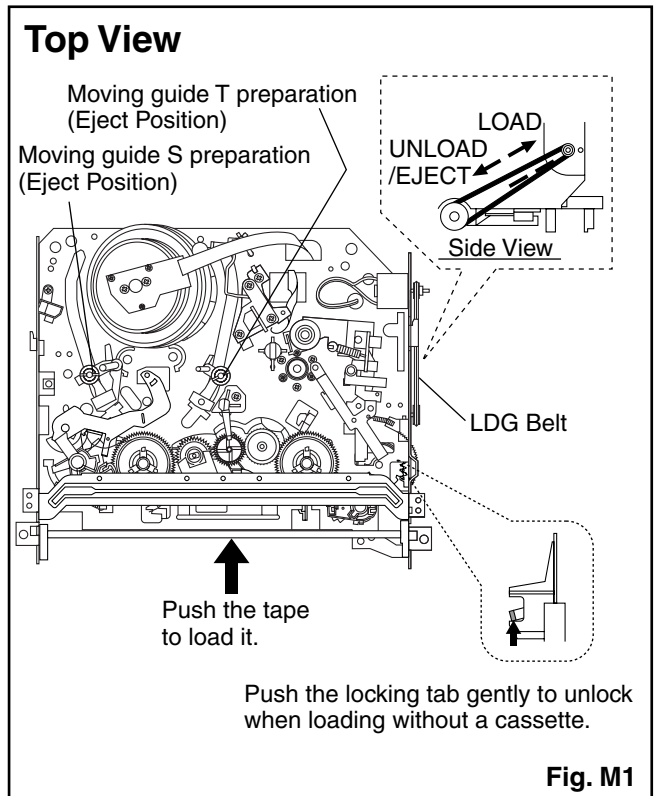
1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.



1. Tape Interchangeability Alignment

Note:

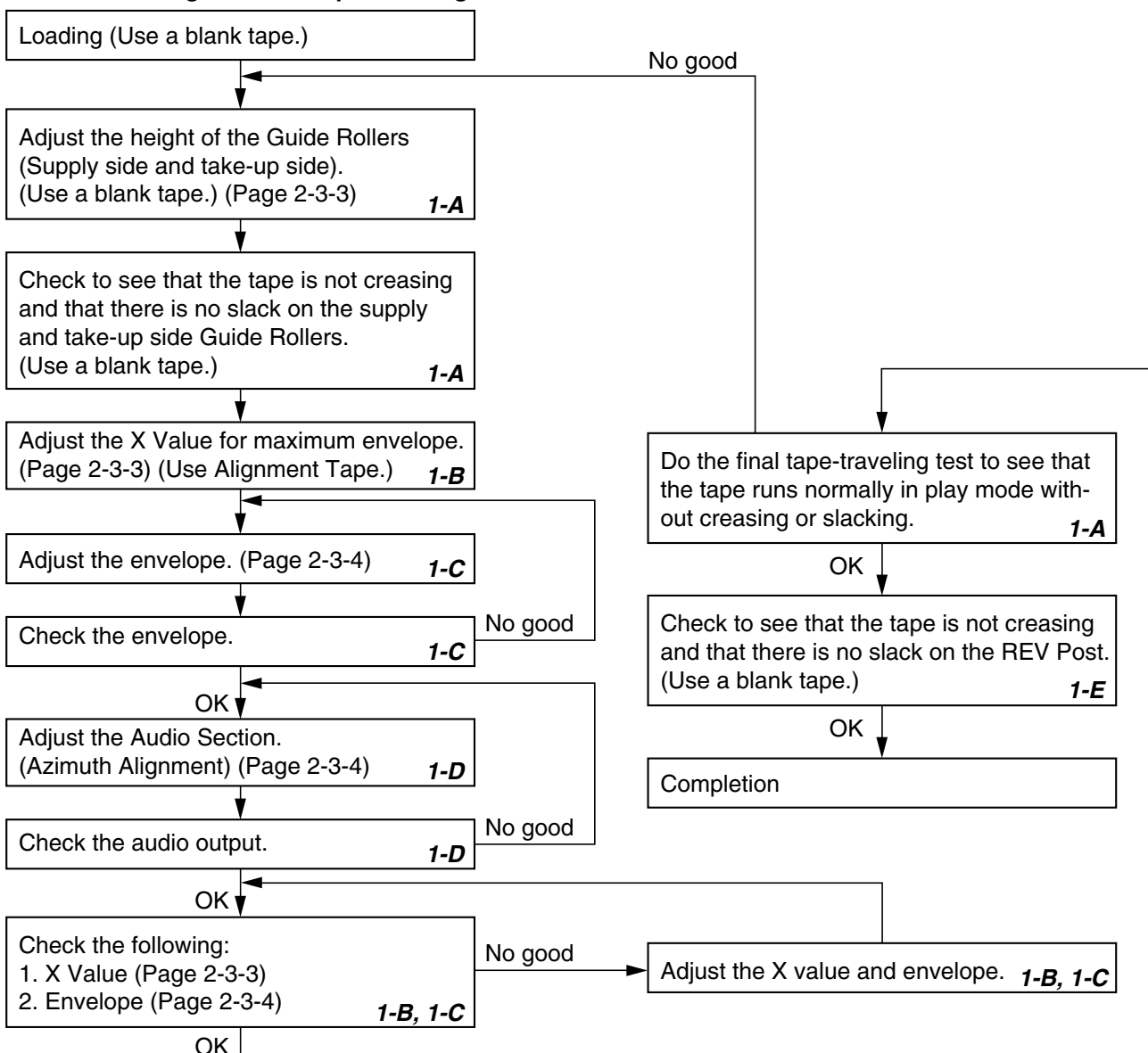
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

- Dual Trace Oscilloscope
- VHS Alignment Tape (9965 000 14515)
- Guide Roller Adj. Screwdriver
- Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling



1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

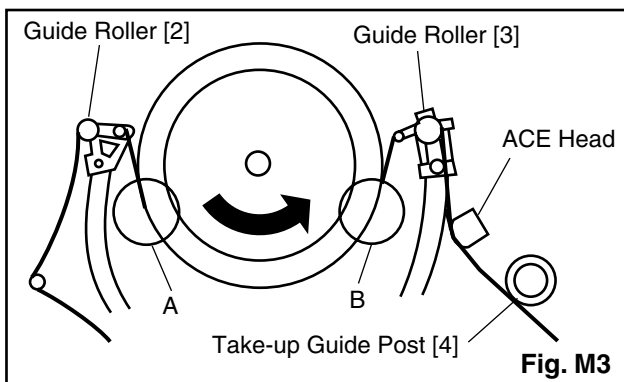


Fig. M3

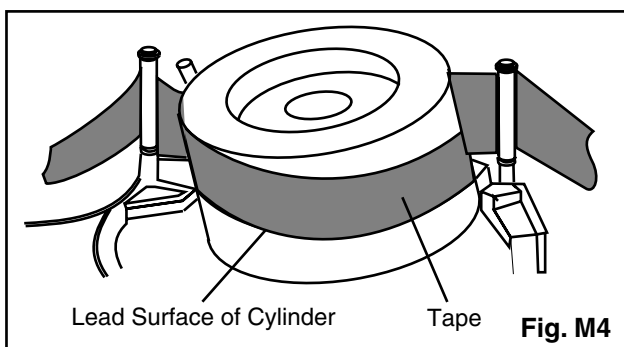


Fig. M4

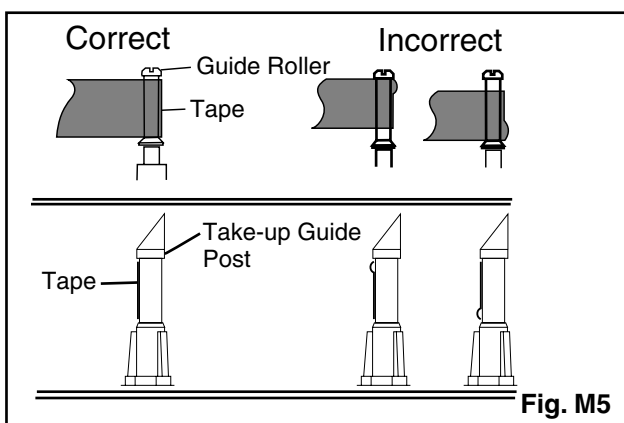


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)

4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

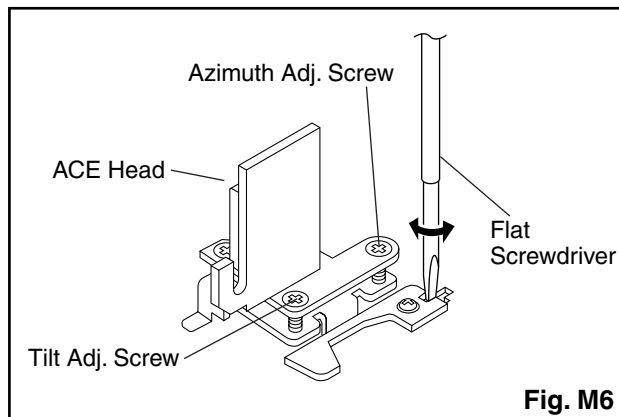


Fig. M6

1-B. X Value Alignment

Purpose:

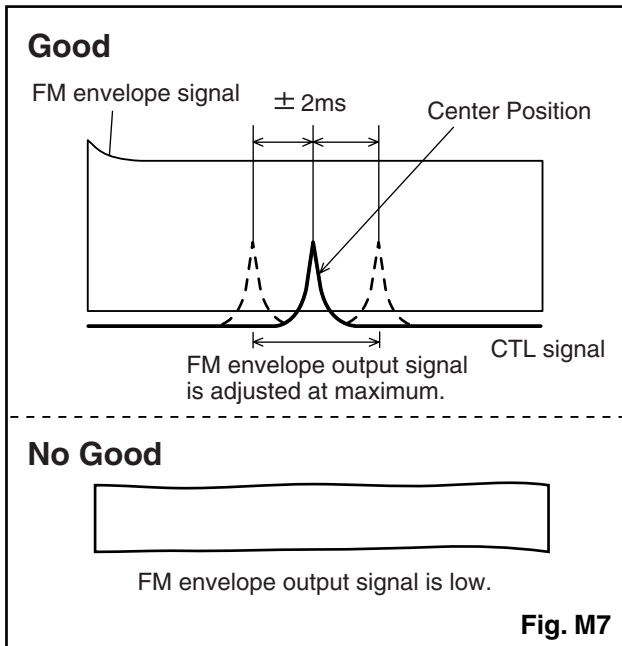
To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP301 (C-PB) and TP503 (CTL) on the Main CBA. Use TP504 (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (9965 000 14515) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit then "PLAY" button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP301 (C-PB) is maximum. (Fig. M6)

- To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal become within $\pm 2\text{ms}$ from pre-set position.



- Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit. and then "PLAY" button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

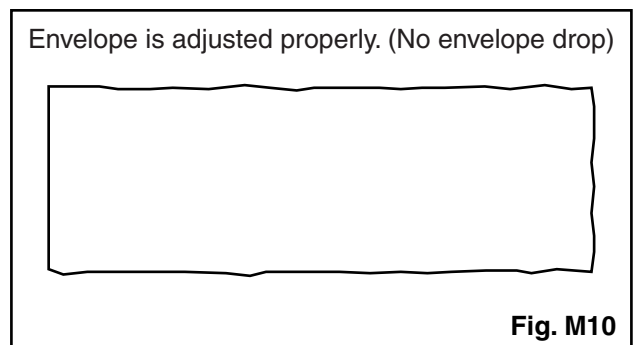
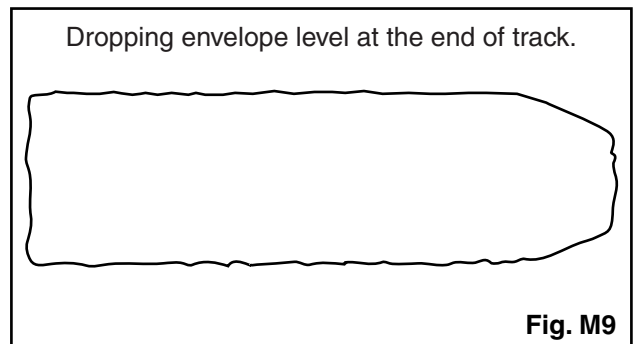
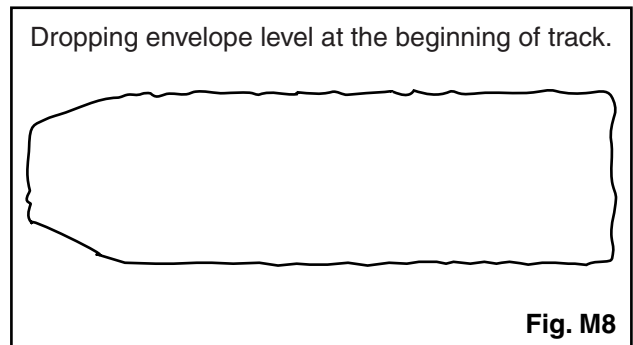
To achieve a satisfactory picture, adjust the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

- Connect the oscilloscope to TP301 (C-PB) on the Main CBA. Use TP504 (RF-SW) as a trigger.
- Playback the Gray Scale on the Alignment Tape (9965 000 14515). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then "PLAY" button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
- If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
- If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.

- When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.



Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (9965 000 14515) and confirm that the audio signal output level is 6kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

Note: Upon completion of the adjustment of Azimuth Adj. Screw, check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the "X Value Alignment."

1-E. Checking and Alignment of Tape Path during reversing

Purpose:

To make sure that the tape path is well stabilized during reversing.

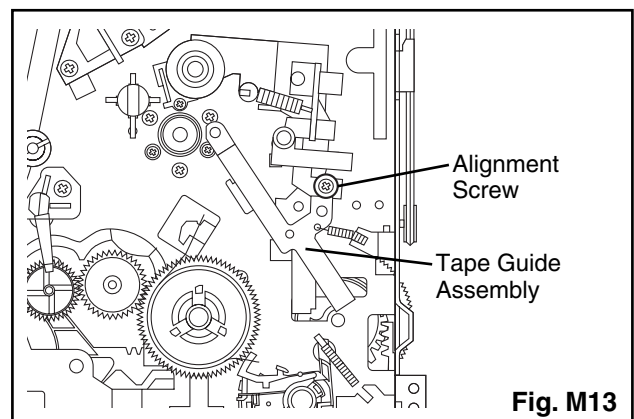
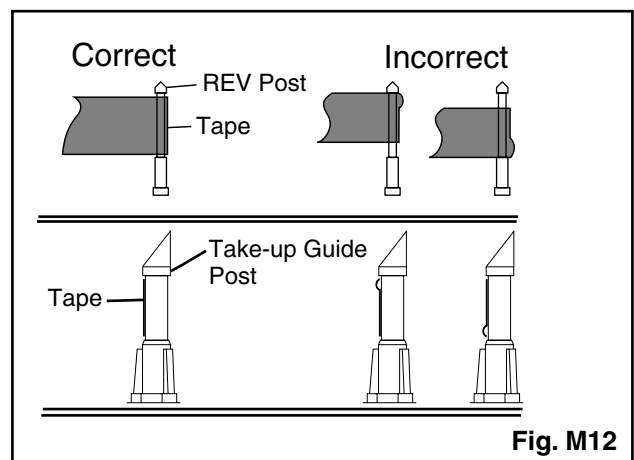
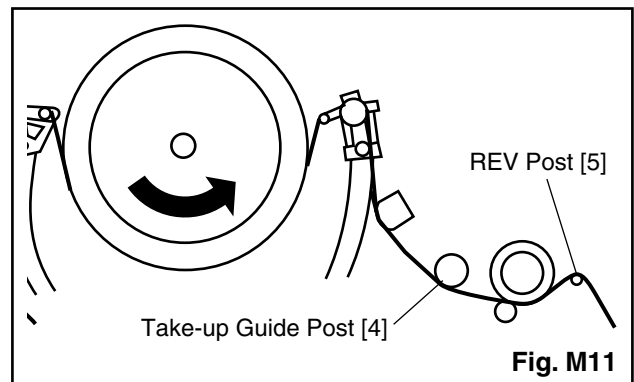
Symptom of Misalignment:

If the tape path is unstable during reversing, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Insert a black cassette tape into the tray and set the unit to REV. Then confirm if the tape has been curled up or bent at the Take-up Guide Post[4] or REV Post[5]. (Refer to Fig. M11 and M12.)

2. When the tape has been curled up or bent, turn the alignment screw to adjust the height of REV Post. (Refer to Fig. M11 and M13.)



DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS.)

All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [44] and [45] in Fig. DM1H on page 2-4-3. When reassembling, follow the steps in reverse order.

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3H	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4H		
[3]	[2]	Slider (SP)	T	DM5H	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5H	*(L-2)	
[5]	[4]	Lock Lever	T	DM5H	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5H		
[7]	[7]	Cylinder Assembly	T	DM1H, DM6H	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1H, DM7H	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1H, DM7H	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1H, DM8H-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1H, DM8H-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1H, DM8H-1, DM8H-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1H, DM8H-1, DM8H-2		
[14]	[14]	FE Head	T	DM1H, DM9H	(S-5)	
[15]	[15]	Prism	T	DM1H, DM9H	(S-6)	
[16]	[2]	Slider Shaft	T	DM10H	*(L-5)	
[17]	[16]	C Drive Lever (SP)	T	DM10H		
[18]	[16]	C Drive Lever (TU)	T	DM10H	(S-7), *(P-4)	
[19]	[19]	Capstan Motor	B	DM2H, DM11H	3(S-8), Cap Belt	
[20]	[20]	Clutch Assembly (HI)	B	DM2H, DM12H	(C-1)	
[21]	[20]	Center Gear	B	DM12H		
*[22]	[22]	F Brake Assembly (HI)	B	DM2H, DM12H	*(L-6)	
[23]	[22]	Worm Holder	B	DM2H, DM13H-1	(S-9), *(L-7), *(L-8)	
[24]	[22]	Pulley Assembly (HI)	B	DM2H, DM13H-1		
[25]	[25]	Mode Gear (LM)	B	DM2H, DM13H-1	(C-2)	
[26]	[20],[25]	Mode Lever (HI)	B	DM2H, DM13H-1, DM13H-2	(C-3)	
[27]	[22],[23],[26]	Cam Gear (A) (HI)	B	DM2H, DM13H-1, DM13H-2	(C-4)	(+)Refer to Alignment Sec. Page 2-5-1
[28]	[26]	TR Gear C	B	DM2H, DM13H-1	(C-5)	
[29]	[28]	TR Gear Spring	B	DM13H-1		
[30]	[29]	TR Gear A/B	B	DM13H-1		
[31]	[31]	FF Arm (HI)	B	DM1H, DM14H		
[32]	[26]	Idler Assembly (HI)	B	DM1H, DM14H	*(L-9)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[33]	[26]	BT Arm	B	DM2H, DM14H	*(P-5)	
[34]	[26]	Loading Arm (SP) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[35]	[34]	Loading Arm (TU) Assembly	B	DM2H, DM14H		(+)Refer to Alignment Sec.Page 2-5-1
[36]	[16],[26]	M Brake (TU) Assembly (HI)	T	DM1H, DM15H		
[37]	[2],[26]	M Brake (SP) Assembly (HI)	T	DM1H, DM15H	*(P-6)	
[38]	[37]	Tension Lever Assembly	T	DM1H, DM15H		
[39]	[38]	T Lever Holder	T	DM15H	*(L-10)	
[40]	[40]	M Gear (HI)	T	DM1H, DM15H	(C-6)	
[41]	[15],[40]	Sensor Gear (HI)	T	DM1H, DM15H	(C-7)	
[42]	[36],[40]	Reel T	T	DM1H, DM15H		
[43]	[38]	Reel S	T	DM1H, DM15H		
[44]	[34],[38]	Moving Guide S Preparation	T	DM1H, DM16H	(S-11), Slide Plate	
[45]	[35]	Moving Guide T Preparation	T	DM1H, DM16H		
[46]	[19]	TG Post Assembly	T	DM1H, DM16H	*(L-11)	
[47]	[27]	Rack Assembly	R	DM17H		(+)Refer to Alignment Sec.Page 2-5-1
[48]	[47]	F Door Opener	R	DM17H		
[49]	[49]	Cleaner Assembly	T	DM1H, DM6H		
[50]	[49]	CL Post	T	DM6H	*(L-12)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.

These numbers are also used as identification (location) No. of parts in the figures.

(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).

(3): Name of the part

(4): Location of the part: T=Top B=Bottom R=Right L=Left

(5): Figure Number

(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.

P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder

e.g., 2(L-2) = two Locking Tabs (L-2).

(7): Adjustment Information for Installation

(+):Refer to Deck Exploded Views for lubrication.

*** [22] F Brake Assembly (HI) is not used in 2 head model.**

Top View

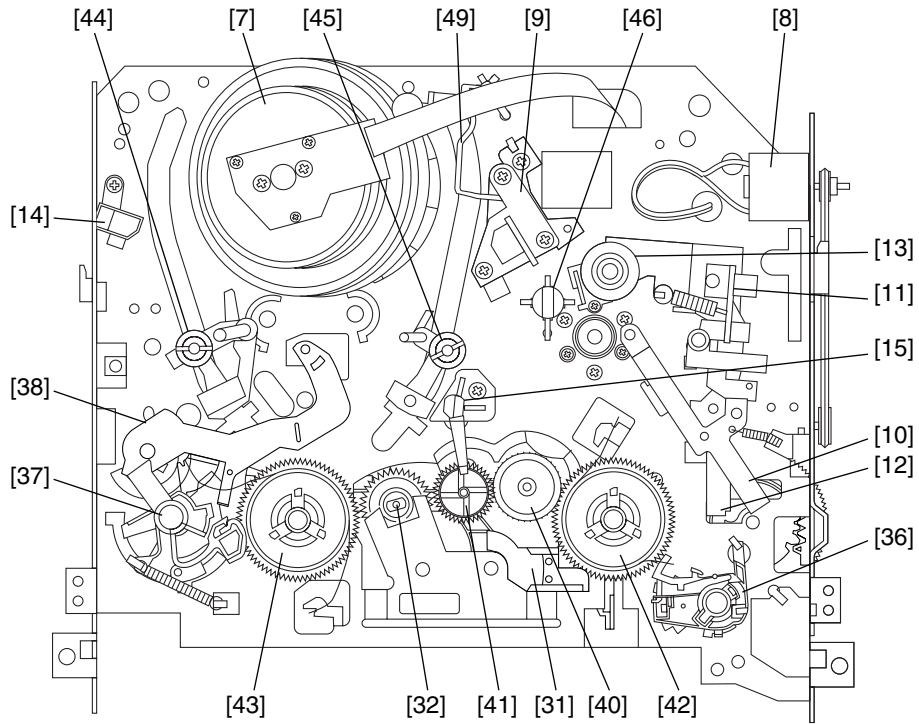


Fig. DM1H

Bottom View

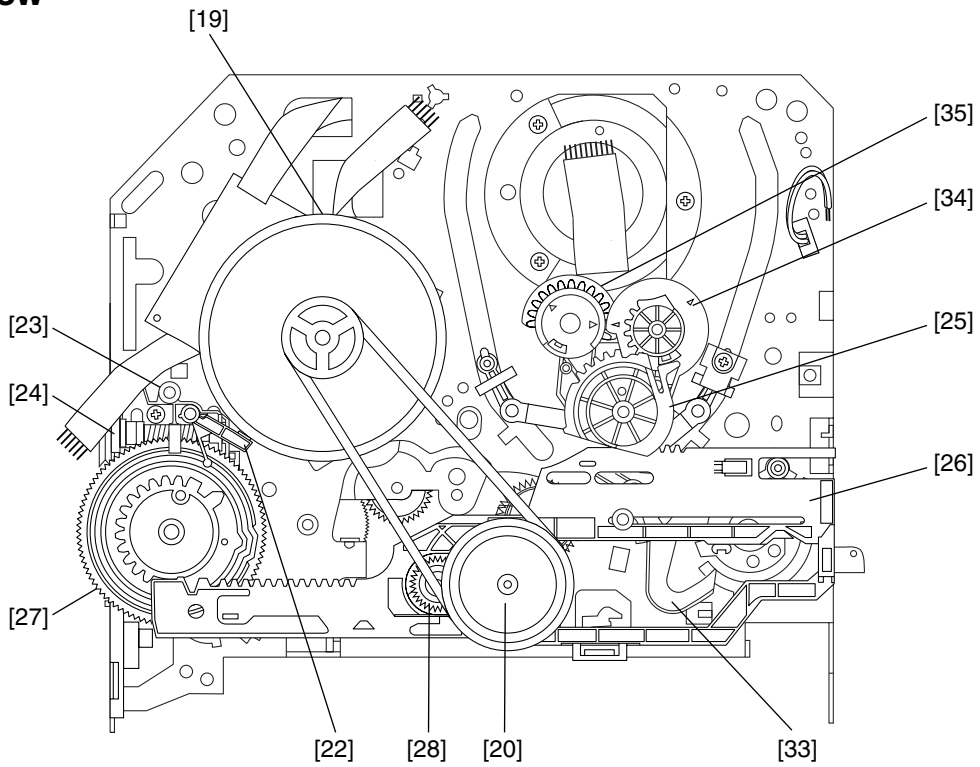


Fig. DM2H

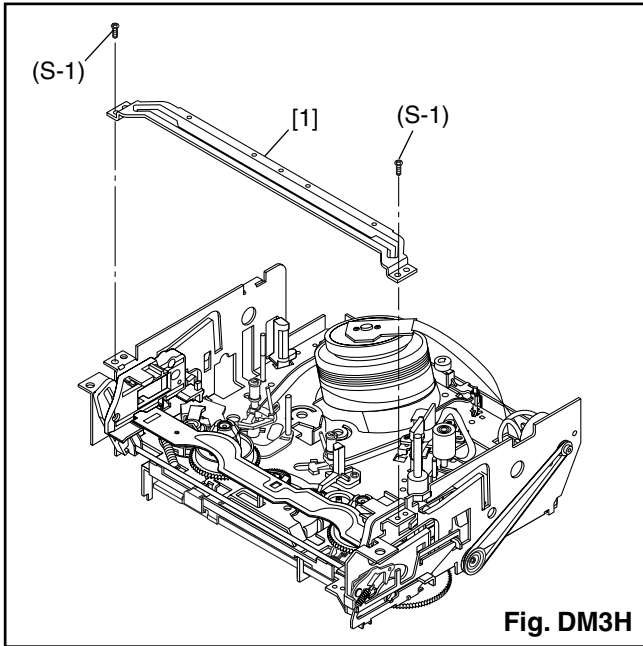
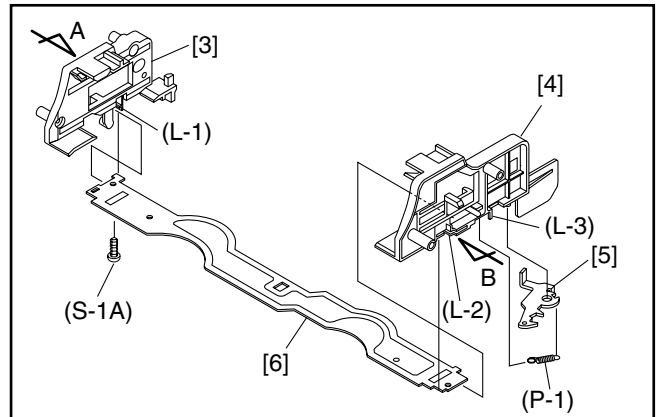
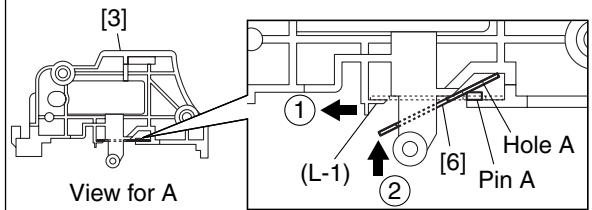


Fig. DM3H



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in a direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in a direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

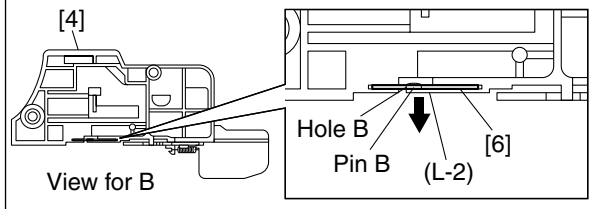
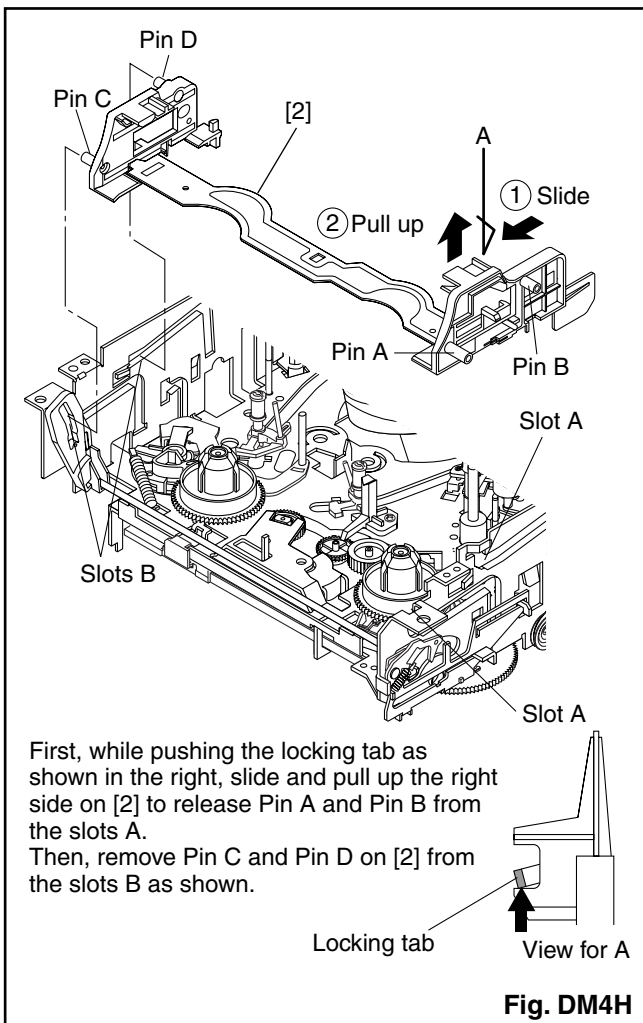


Fig. DM5H



First, while pushing the locking tab as shown in the right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

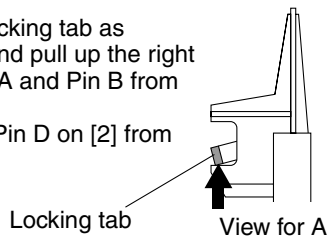
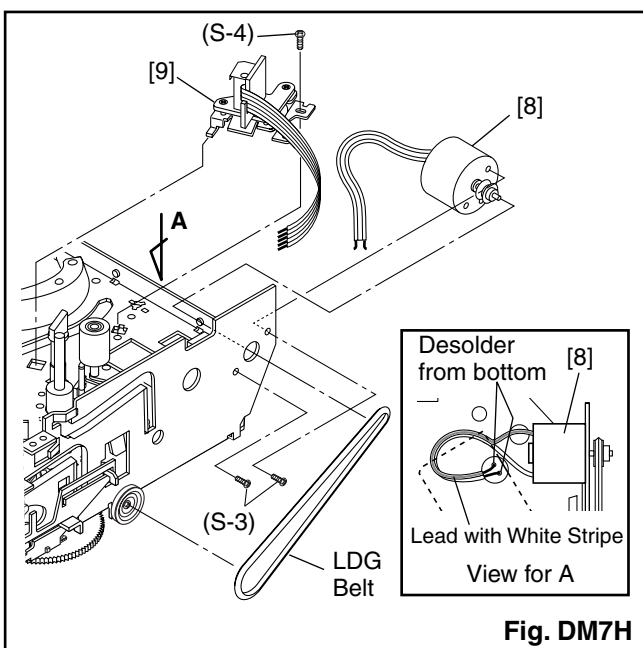
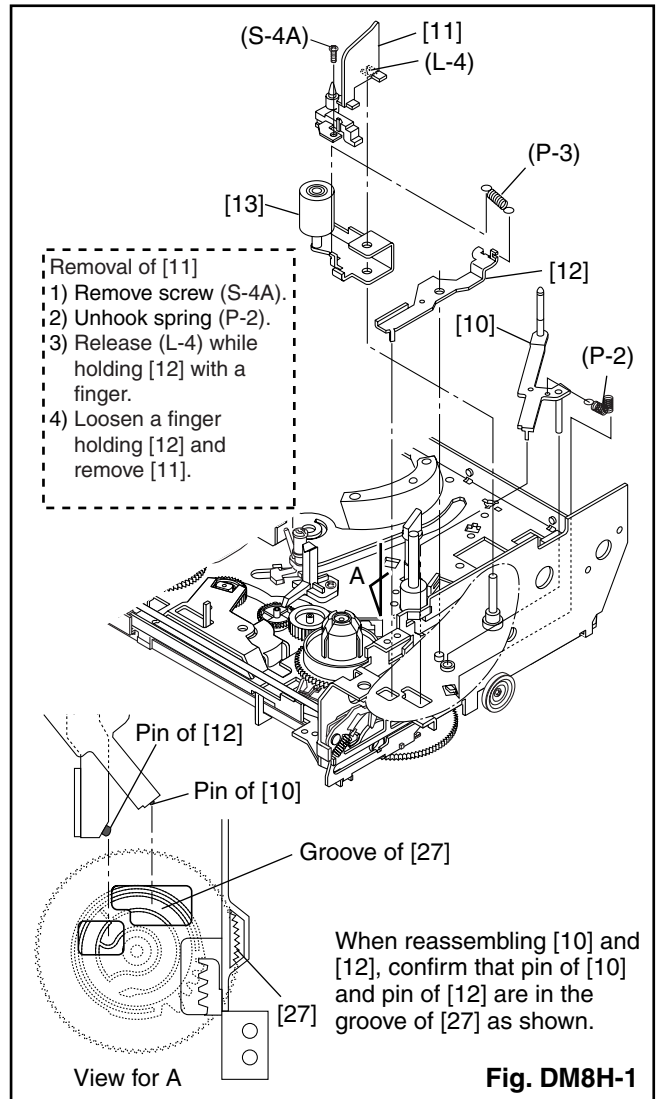
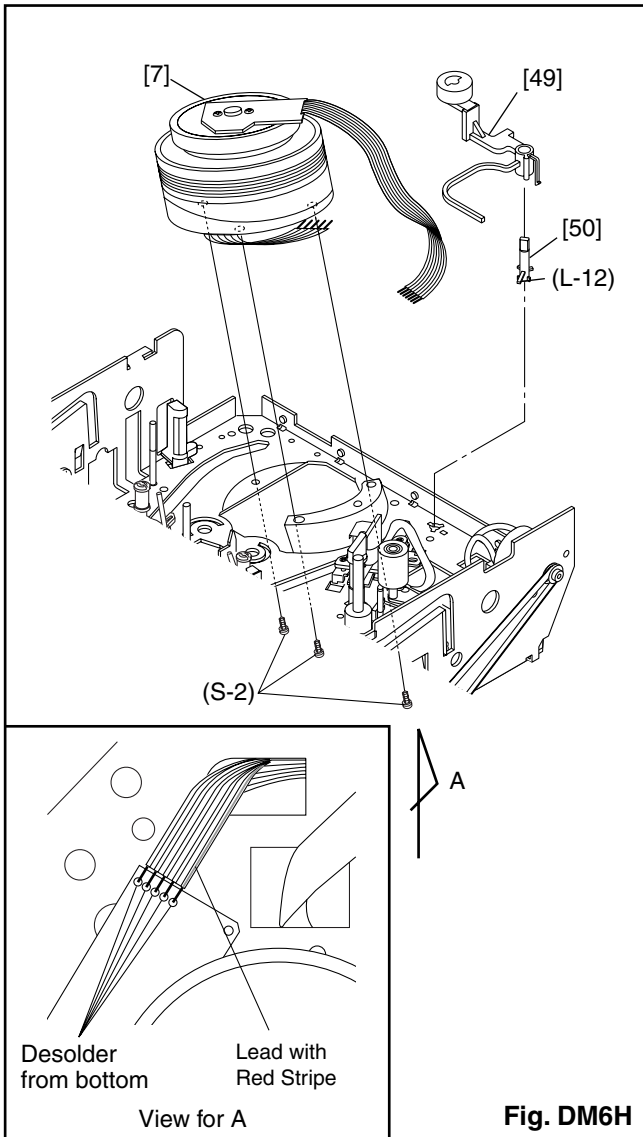


Fig. DM4H



Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install them to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

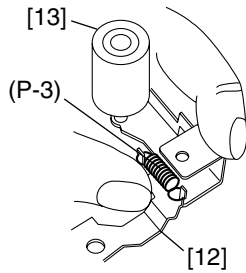


Fig. A

Install pin of [12] in groove of [27]. (Refer to Fig. B.)

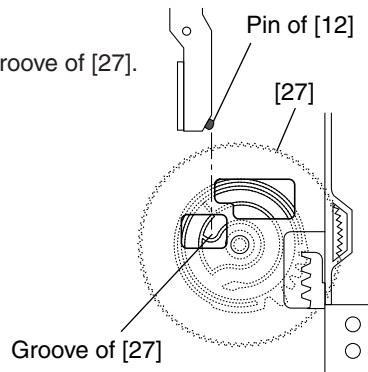


Fig. B (Top view)

Hold [12] and [13] till groove of pin of chassis looks and fit [13] in notch of chassis. Then, turn a few [13] while holding [12]. (Refer to Fig. C.)

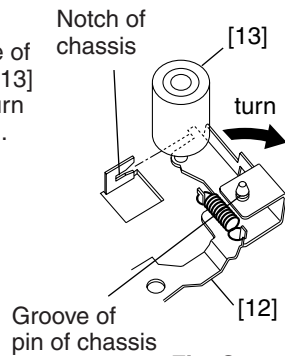


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8H-1.)

Fig. DM8H-2

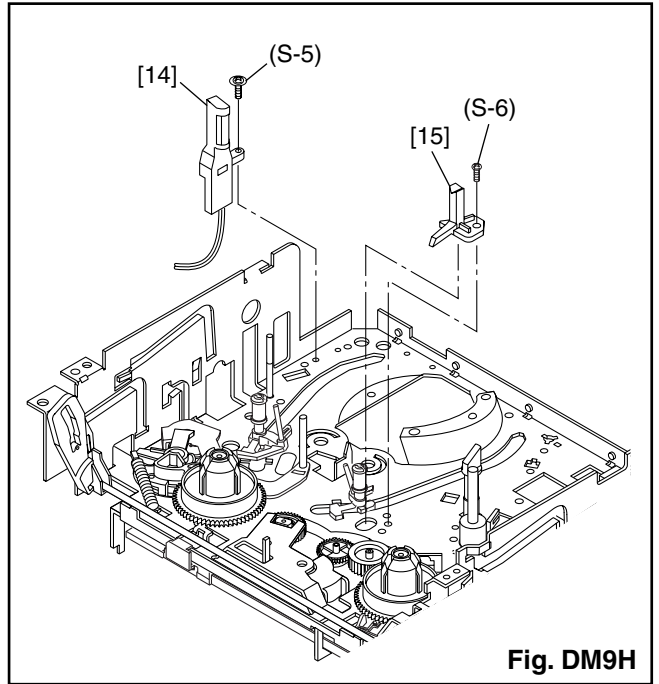


Fig. DM9H

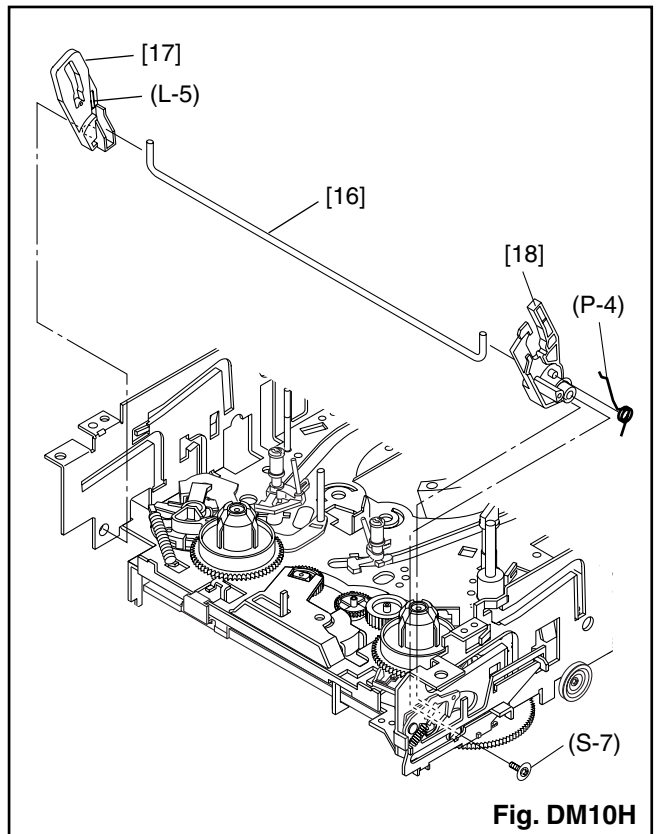
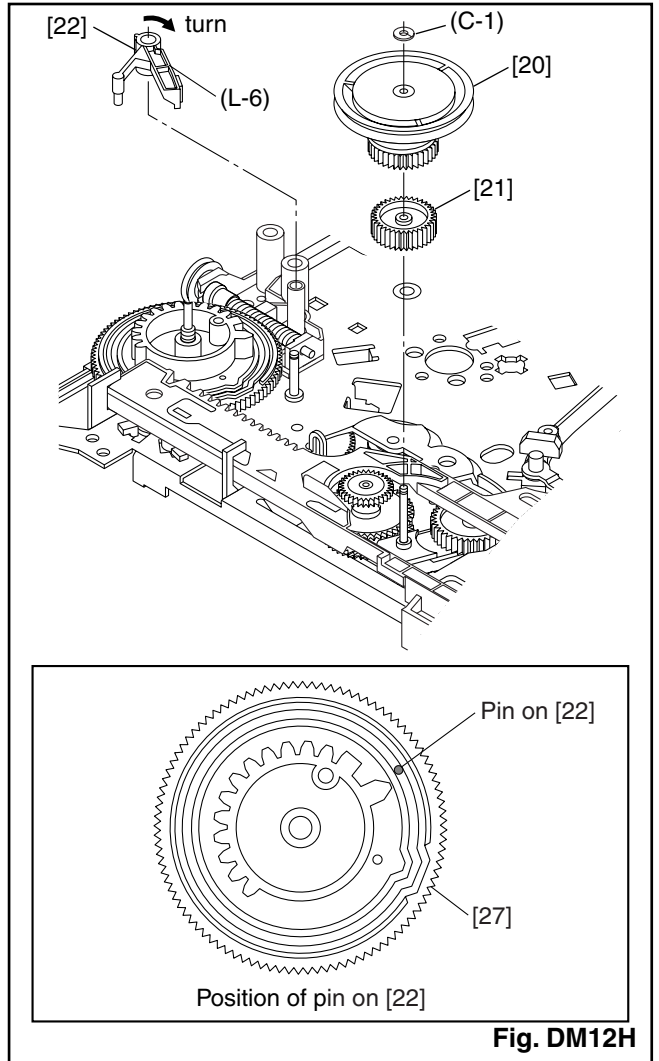
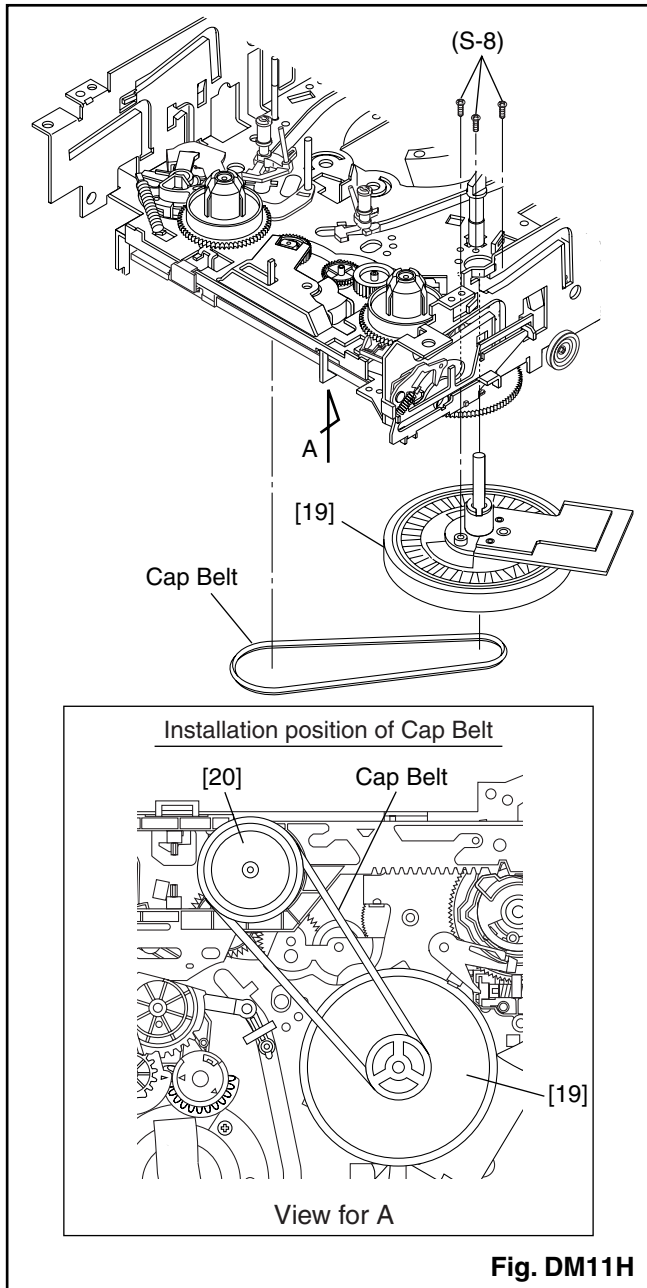


Fig. DM10H



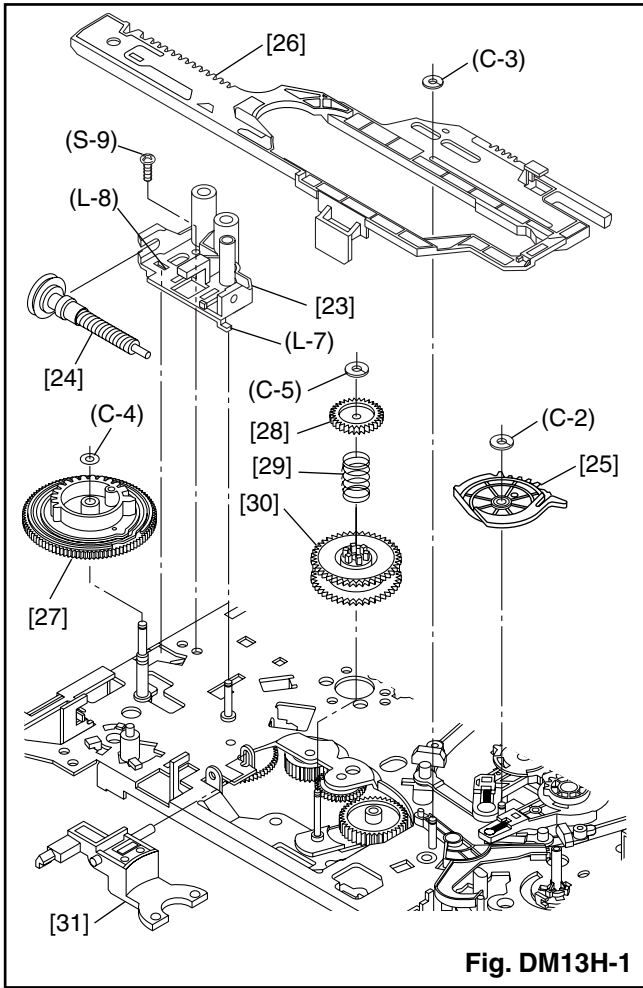


Fig. DM13H-1

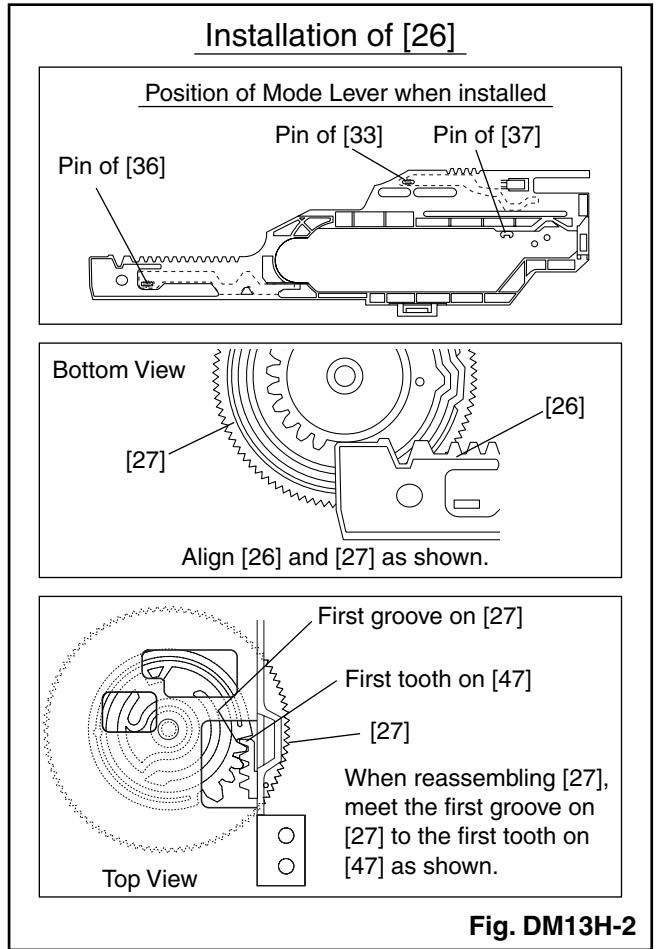


Fig. DM13H-2

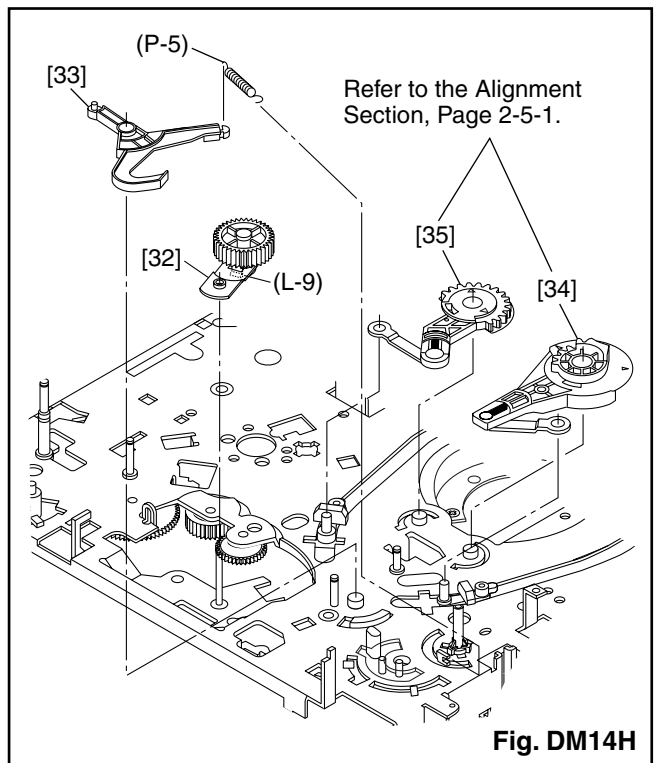
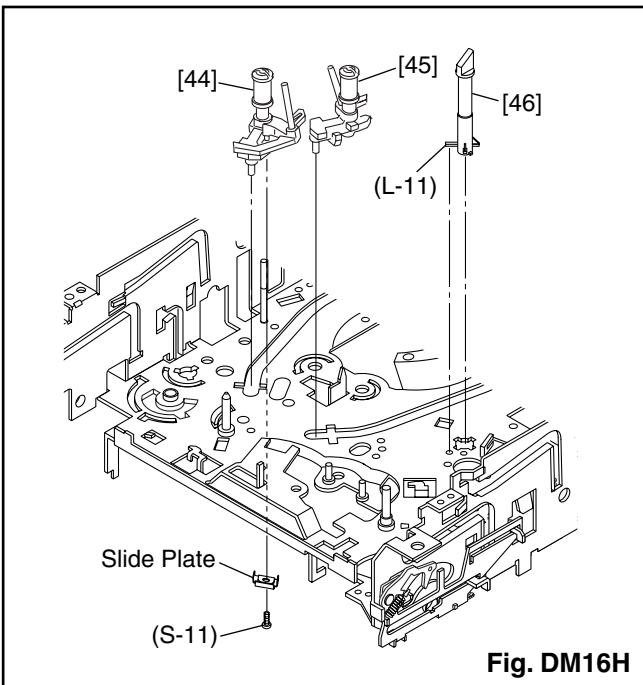
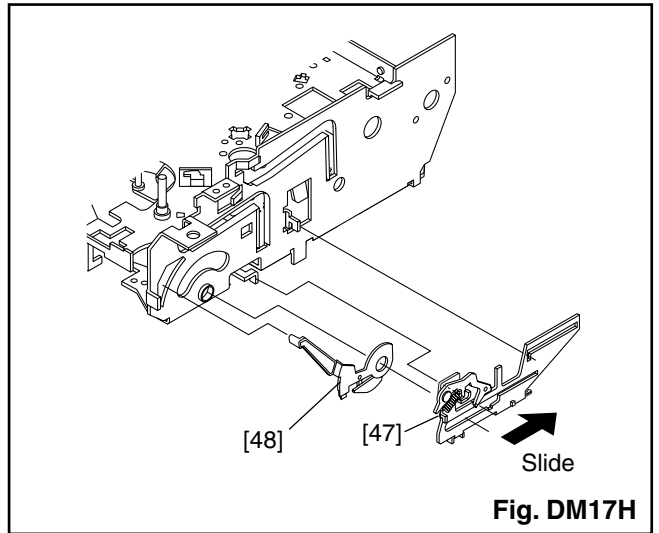
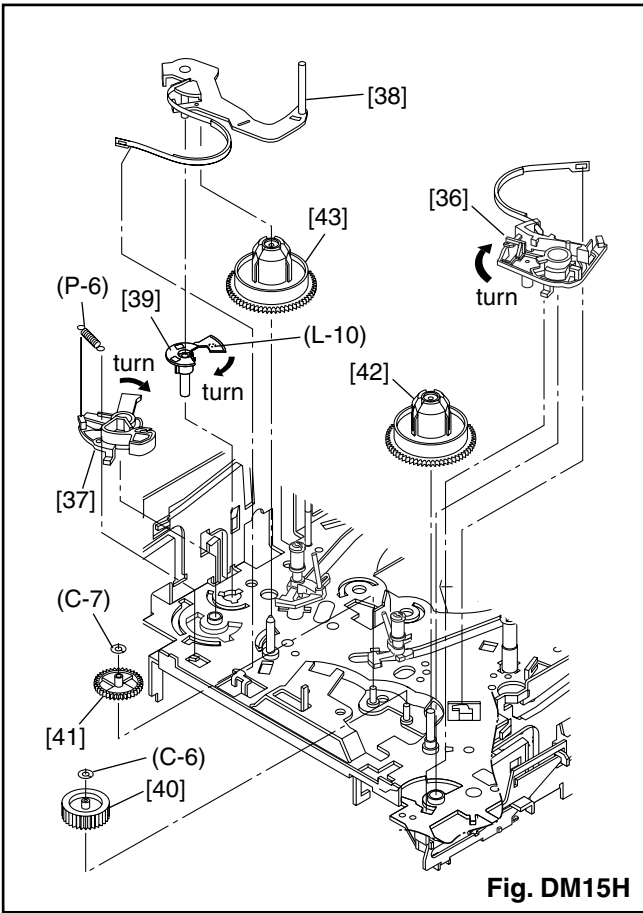


Fig. DM14H



ALIGNMENT PROCEDURES OF MECHANISM

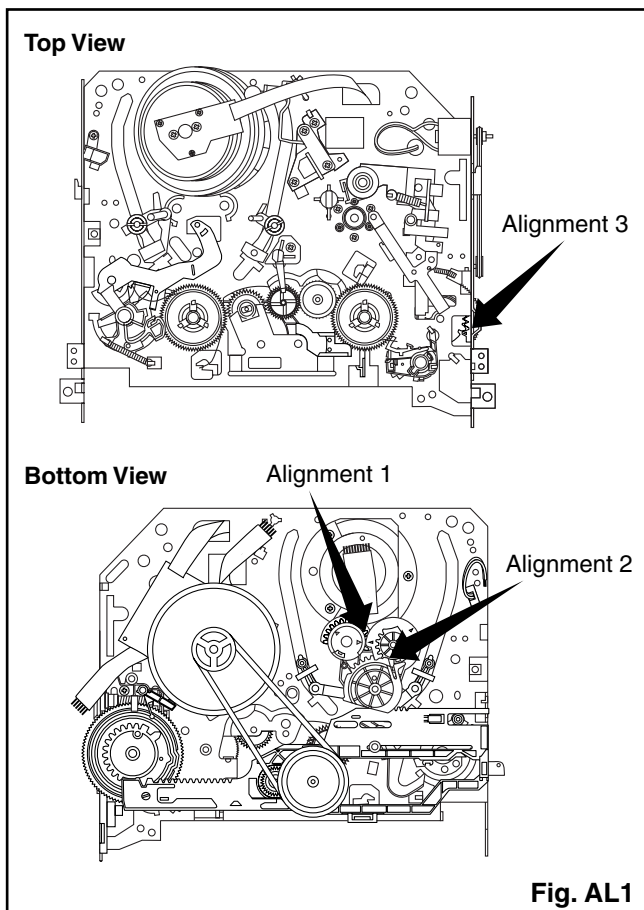
The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position



Alignment 1

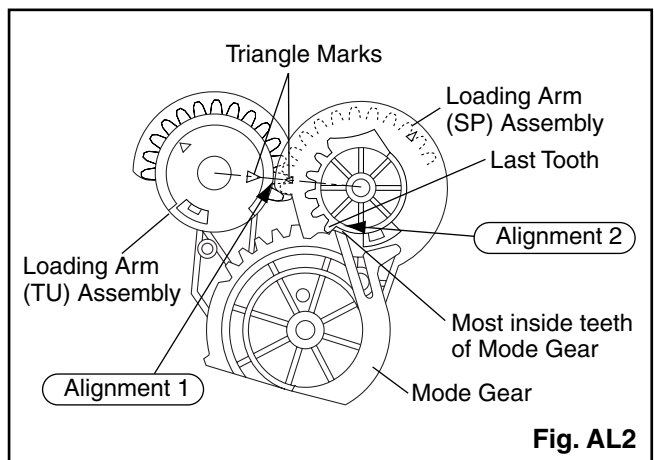
Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

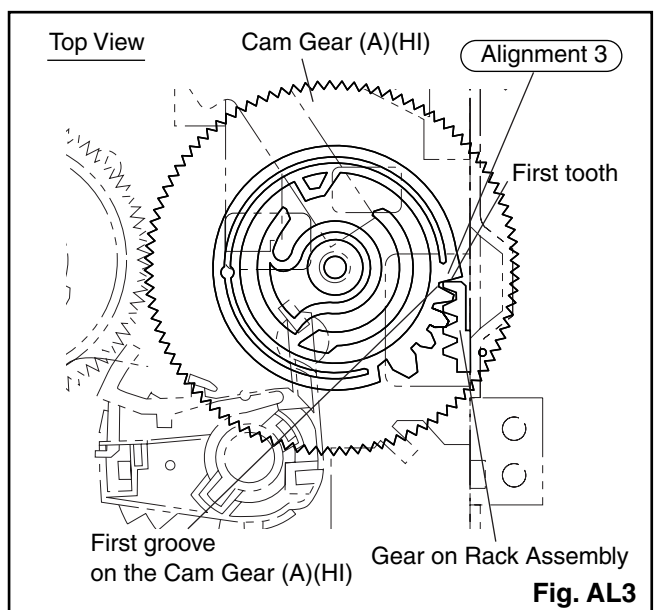
Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.



Alignment 3

Cam Gear (A) (HI), Rack Assembly

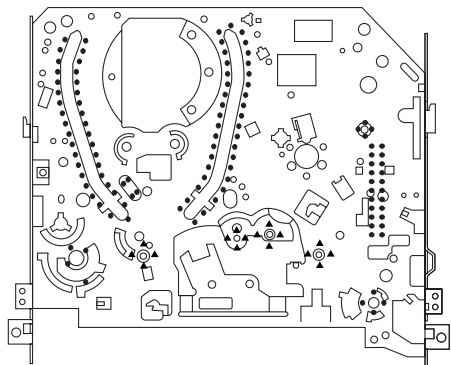
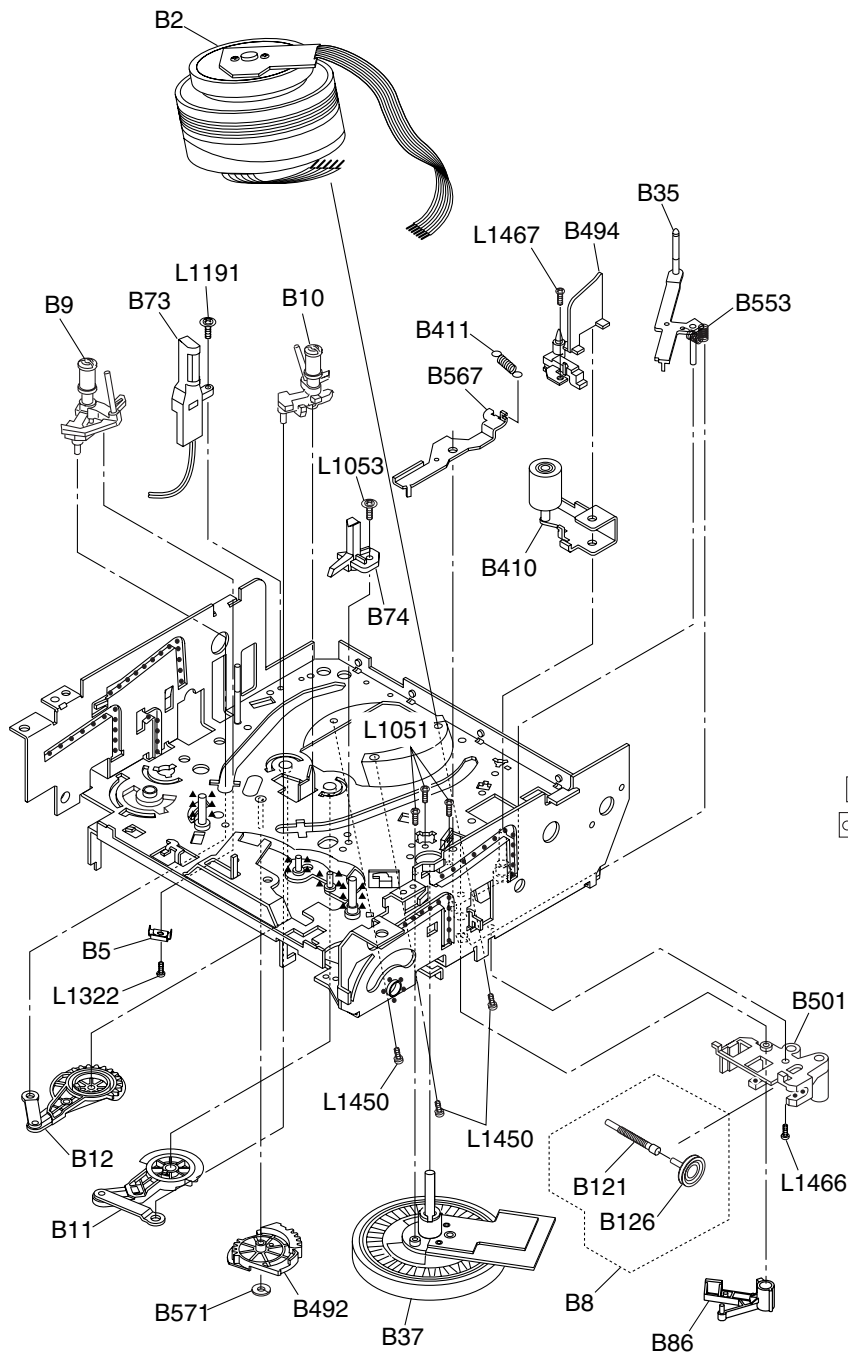
Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) (HI) as shown in Fig. AL3.



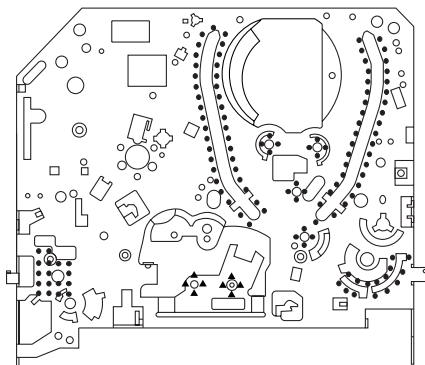
DECK EXPLODED VIEWS

Deck Mechanism View 1

Mark	Description
•••••	Foil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



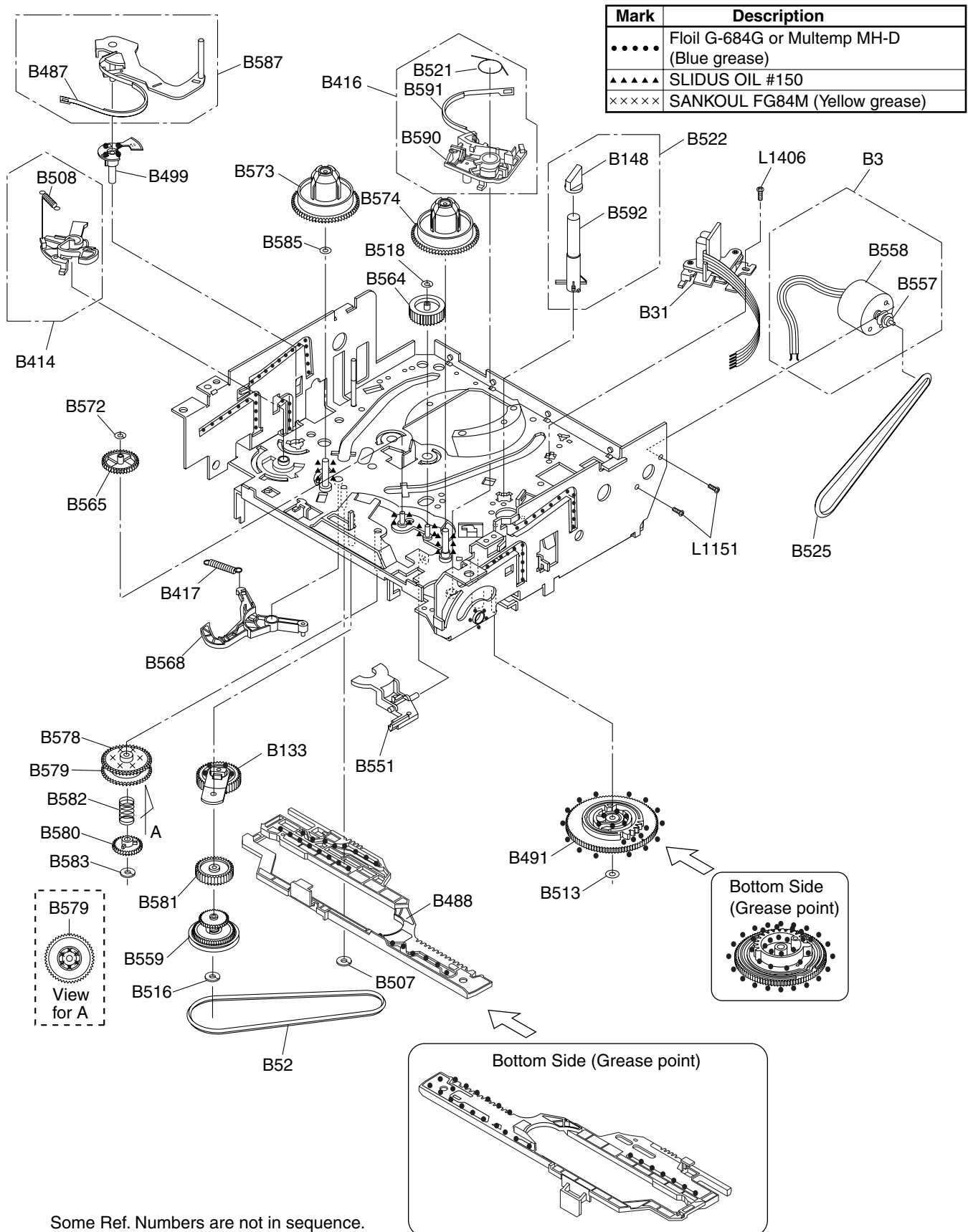
Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

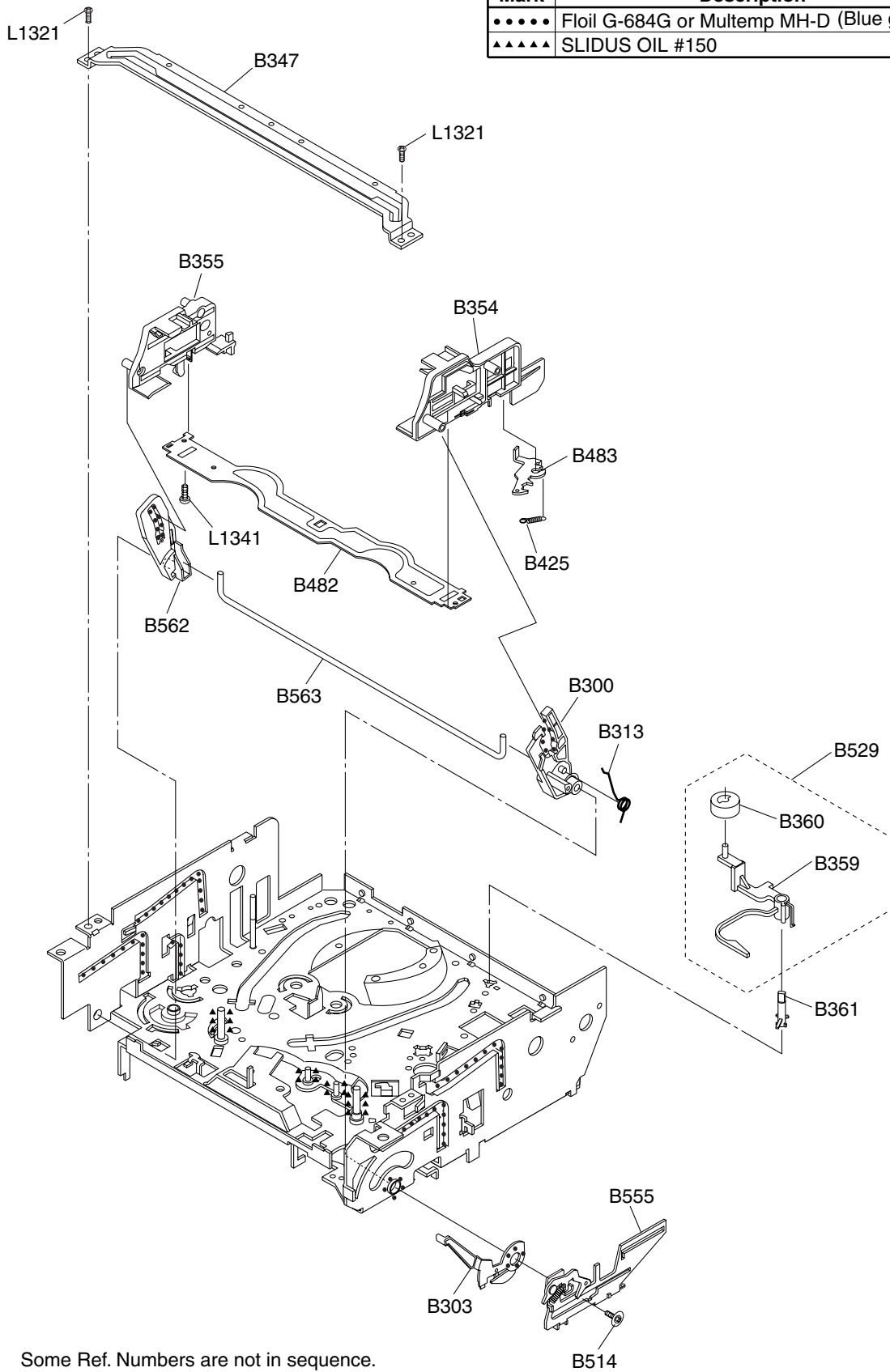
Deck Mechanism View 2



Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

MECHANICAL PARTS LIST - VCR MECHANISM

B2	9965 000 23381	CYLINDER ASSEMBLY MK12.5 PAL 6HD	B516	9965 000 05342	REEL WASHER MK9 5*2.1*0.5
B2	9965 000 24006	CYLINDER ASY MK12.5 PAL 6HD(V)	B518	4822 532 13159	P.S.W. 1.6X4.0X0.5T
B3	9965 000 23363	LOADING MOTOR ASSEMBLY MK12.5	B521	9965 000 17220	REV BRAKE SPG(HI) MK12
B5	9965 000 24007	SLIDE PLATE MK12.5	B522	9965 000 08483	TG POST ASSEMBLY MK10
B8	9965 000 16631	PULLEY ASSEMBLY(HI) MK12	B525	9965 000 12230	LDG BELT MK11
B9	9965 000 23364	MOVING GUIDE S P.P MK12.5	B529	9965 000 08504	CLEANER ASSEMBLY MK10
B10	9965 000 23365	MOVING GUIDE T P.P MK12.5	B551	9965 000 17221	FF ARM(HI) MK12
B11	9965 000 16634	LOADING ARM(TU) ASSEMBLY MK12	B553	9965 000 12233	REV SPRING MK11
B12	9965 000 16635	LOADING ARM(SP) ASSEMBLY MK12	B555	9965 000 16663	RACK ASSEMBLY MK12
B31	9965 000 23366	AC HEAD ASSEMBLY MK12.5	B557	9965 000 08519	MOTOR PULLEY U5
B35	9965 000 23382	TAPE GUIDE ARM ASSEMBLY MK12.5	B558	9965 000 23373	LOADING MOTOR M31E-1 R-14 7401
B37	9965 000 23367	CAPSTAN MOTOR 288/VCZC1301	B559	9965 000 16664	CLUTCH ASSEMBLY(HI) MK12
B52	9965 000 08593	CAP BELT MK10	B562	9965 000 16665	C DRIVE LEVER(SP) MK12
B73	9965 000 12210	FE HEAD ASSEMBLY MK11	B563	9965 000 16666	SLIDER SHAFT MK12
B73	9965 000 19627	FE HEAD(MK12) VTR-1X2ERS11-155	B564	9965 000 16667	M GEAR(HI) MK12
B73	9965 000 12210	FE HEAD ASSEMBLY MK11	B565	9965 000 16668	SENSOR GEAR(HI) MK12
B74	9965 000 08555	PRISM MK10	B567	9965 000 16669	PINCH ARM(B) MK12
B86	9965 000 16639	F BRAKE ASSEMBLY(HI) MK12	B568	9965 000 16670	BT ARM MK12
B121	9965 000 16640	WORM MK12	B571	4822 532 13159	P.S.W. 1.6X4.0X0.5T
B126	9965 000 18128	PULLEY MK12	B572	4822 532 13159	P.S.W. 1.6X4.0X0.5T
B133	9965 000 23368	IDLER ASSEMBLY(HI) MK12.5	B573	9965 000 12241	REEL S MK11
B148	4822 462 11189	TG CAP	B574	9965 000 12376	REEL T MK10
B300	9965 000 16643	C DRIVE LEVER(TU) MK12	B578	9965 000 12243	TR GEAR A MK10
B303	9965 000 18129	F DOOR OPENER MK12	B579	9965 000 16671	TR GEAR B MK12
B313	9965 000 16645	C DRIVE SPRING MK12	B580	9965 000 19638	TR GEAR C MK12
B347	9965 000 08445	GUIDE HOLDER MK10	B581	9965 000 16673	CENTER GEAR MK11
B354	9965 000 18130	SLIDER(TU) MK12	B582	9965 000 23374	TR GEAR SPRING MK10
B355	9965 000 19630	SLIDER(SP) MK12	B583	9965 000 17201	CAM WASHER MK12
B359	9965 000 08449	CLEANER LEVER MK10	B585	9965 000 13687	PSW(317505) MK11
B360	9965 000 06561	CLEANER ROLLER MK9	B587	9965 000 16674	TENSION LEVER ASSEMBLY MK12
B361	9965 000 08450	CL POST MK10	B590	9965 000 18132	BRAKE ARM(TU) MK12
B410	9965 000 23370	PINCH ARM(A) ASSEMBLY(6) MK12.5	B591	9965 000 17210	BAND BRAKE(TU) MK12
B410	9965 000 16648	PINCH ARM(A) ASSEMBLY(4) MK12	B592	9965 000 16678	TG POST MK10
B411	9965 000 16649	PINCH SPRING MK12	L1051	9965 000 05359	SCREW, M2.6X6 PAN HEAD+
B414	9965 000 17218	M BRAKE(SP) ASSEMBLY(HI) MK12	L1053	9965 000 05375	SCREW, M2.6X8 WASHER HEAD+
B416	9965 000 16651	M BRAKE(TU) ASSEMBLY(HI) MK12	L1151	9965 000 08642	SCREW, SEMS M2.6X4 PAN +
B417	9965 000 24008	TENSION SPG(3002645) MK12.5	L1191	9965 000 05375	SCREW, M2.6X8 WASHER HEAD+
B425	9965 000 08457	LOCK LEVER SPRING MK10	L1321	4822 502 14009	M 3 X 6
B482	9965 000 16653	CASSETTE PLATE MK12	L1322	9965 000 08645	SCREW, B-TIGHT M2.3X4 BIND HEAD+
B483	9965 000 16654	LOCK LEVER MK12	L1341	9965 000 23375	SCREW, P-TIGHT M2X6 PAN HEAD+
B487	9965 000 16655	BAND BRAKE(SP) MK12	L1406	9965 000 08643	AC HEAD SCREW MK9
B488	9965 000 18145	MODE LEVER(HI) MK12	L1450	4822 502 14671	SCREW M2.6X5
B488	9965 000 24009	MODE LEVER(HI) MK12.5	L1466	9965 000 05364	SCREW, M2.6X6 BIND HEAD+
B491	9965 000 16657	CAM GEAR(A)(HI) MK12	L1467	9965 000 23376	SCREW M2.6X5 WASHER HEAD+
B492	9965 000 19636	MODE GEAR(LM) MK12			
B494	9965 000 16659	C DOOR OPENER MK12	Note:	Only the parts mentioned in this list are normal service spare parts.	
B499	9965 000 16660	T LEVER HOLDER MK12			
B501	9965 000 16661	WORM HOLDER MK12			
B501	9965 000 24010	WORM HOLDER(R) MK12			
B507	9965 000 05342	REEL WASHER MK9 5*2.1*0.5			
B508	9965 000 17219	S BRAKE SPRING(HI) MK12			
B513	4822 532 13158	P.S.W. F			
B514	9965 000 08641	SCREW RACK MK10			