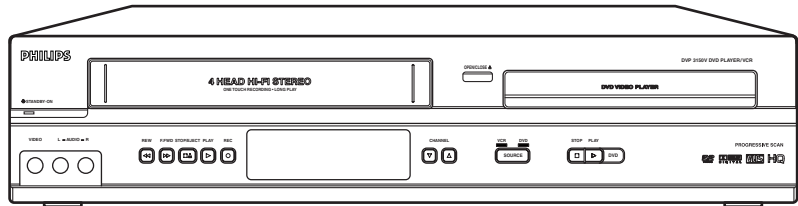


Service  
Service  
Service

Second Generation



# Service Manual

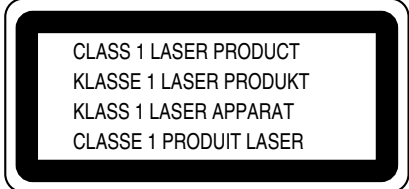


## Contents

- Chapter
- Sec. 1: Adjustment Procedures
  - 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
  - Deck Parts List

## Survey of versions:

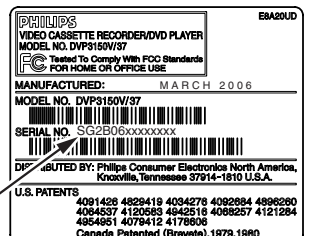
/37 NTSC



This service manual is for DVP3150V/37 Second Generation model, which is different from the previous generation DVP3150V/37 model.

For Second Generation model, the serial number begins with SG2B06xxxxxxxxx.  
Refer to the rating label illustration at right.

Rating label



Serial number

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# MAIN SECTION

## DVD PLAYER & VIDEO CASSETTE RECORDER

### Sec. 1: Main Section

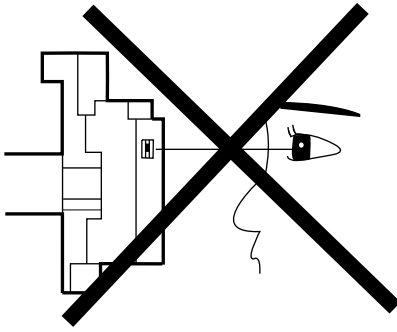
- Adjustment Procedures
- Schematic Diagrams and CBA's
- Exploded Views
- Mechanical and Electrical Parts List

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# LASER BEAM SAFETY PRECAUTIONS

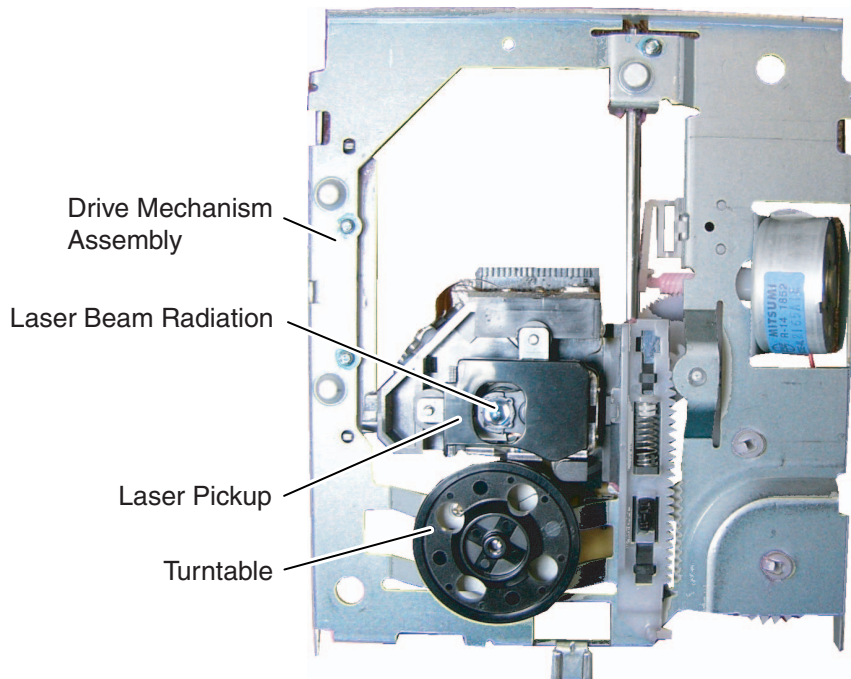
This DVD player uses a pickup that emits a laser beam.



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 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

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



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

**Location: Top of DVD mechanism.**

# 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 **▲** on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

## Precautions during Servicing

- A.** Parts identified by the **▲** symbol are critical for safety. Replace only with part number specified.
- B.** In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.
- C.** Use specified internal wiring. Note especially:
  - 1) Wires covered with PVC tubing
  - 2) Double insulated wires
  - 3) High voltage leads
- D.** Use specified insulating materials for hazardous live parts. Note especially:
  - 1) Insulation tape
  - 2) PVC tubing
  - 3) Spacers
  - 4) Insulators for transistors
- E.** When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.
- F.** Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).
- G.** Check that replaced wires do not contact sharp edges or pointed parts.
- H.** When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.
- I.** Also check areas surrounding repaired locations.
- J.** Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.
- K.** Crimp type wire connector  
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.  
Replacement procedure
  - 1) Remove the old connector by cutting the wires at a point close to the connector.  
**Important:** Do not re-use a connector. (Discard it.)
  - 2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
  - 3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
  - 4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.
- L.** When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

# Safety Check after Servicing

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

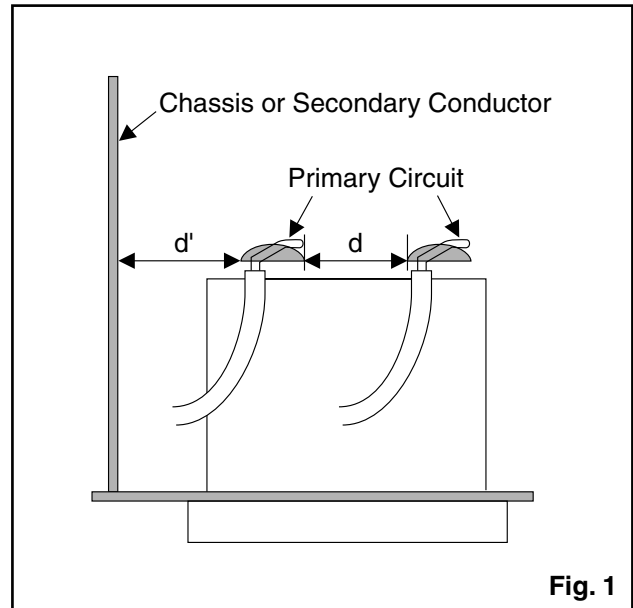
## 1. Clearance Distance

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

**Table 1: Ratings for selected area**

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2 mm (0.126 inches)

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



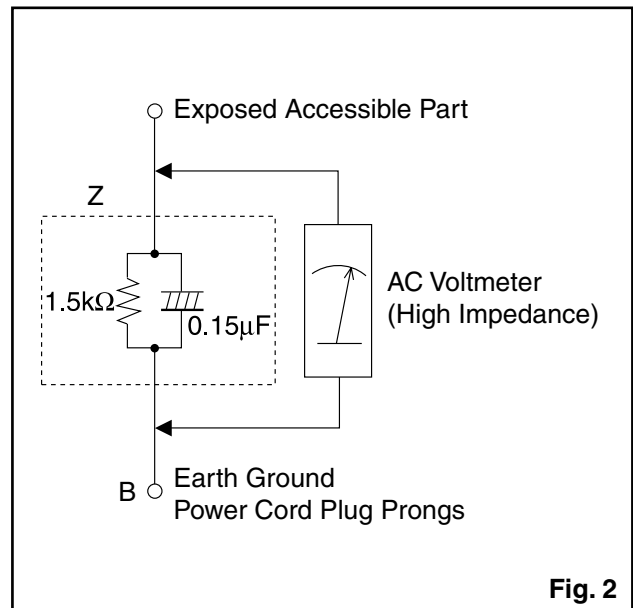
**Fig. 1**

## 2. Leakage Current Test

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

### Measuring Method (Power ON):

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



**Fig. 2**

**Table 2: Leakage current ratings for selected areas**

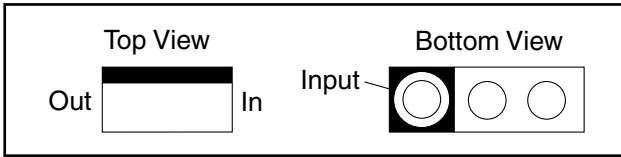
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	$i \leq 0.5 \text{ mA Peak}$	Exposed accessible parts

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

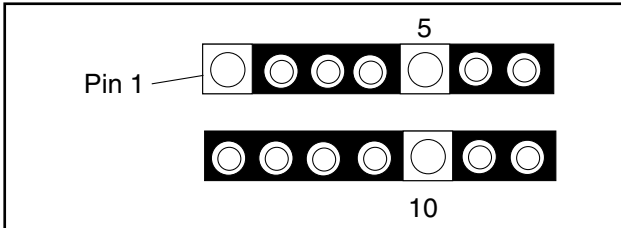
# STANDARD NOTES FOR SERVICING

## Circuit Board Indications

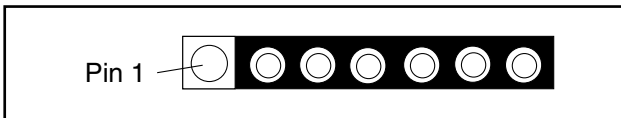
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



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

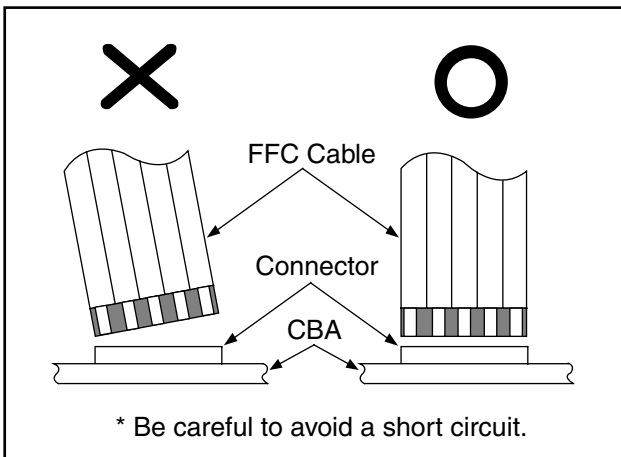


3. The 1st pin of every male connector is indicated as shown.



## 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.

### Information about lead-free soldering

Philips CE is producing lead-free sets from 1.1.2005 onwards.

### IDENTIFICATION

Regardless of special logo (not always indicated)



One must treat all sets from 1 Jan 2005

onwards, according to the next rule:

Serial Number gives a 9-digit. Digit 2&3 shows the WEEK, and digit 4 shows the YEAR.

So from 015 onwards=from 1 Jan 2005 onwards

**Important note:** In fact also products of year 2004 must be treated in this way as long as you avoid mixing solder-alloys (lead/ lead-free). So best to always use SAC305 and the higher temperatures belong to this.

Due to lead-free technology some rules have to be respected by the workshop during a repair:

- Use only lead-free solder alloy Philips SAC305 with order code 0622 149 00106. If lead-free solder-paste is required, please contact the manufacturer of your solder-equipment. In general use of solder-paste within workshops should be avoided because paste is not easy to store and to handle.
- Use only adequate solder tools applicable for lead-free solder alloy. The solder tool must be able
  - To reach at least a solder-temperature of 400°C,
  - To stabilize the adjusted temperature at the solder-tip
  - To exchange solder-tips for different applications.
- Adjust your solder tool so that a temperature around 360°C - 380°C is reached and stabilized at the solder joint. Heating-time of the solder-joint should not exceed ~ 4 sec. Avoid temperatures above 400°C otherwise wear-out of tips will rise drastically and flux-fluid will be destroyed. To avoid wear-out of tips switch off un-used equipment, or reduce heat.

- Mix of lead-free solder alloy / parts with leaded solder alloy / parts is possible but PHILIPS recommends strongly to avoid mixed solder alloy types (leaded and lead-free).  
If one cannot avoid or does not know whether product is lead-free, clean carefully the solder-joint from old solder alloy and re-solder with new solder alloy (SAC305).
- Use only original spare-parts listed in the Service-Manuals. Not listed standard-material (commodities) has to be purchased at external companies.
- **Special information for BGA-ICs:**
  - always use the 12nc-recognizable soldering temperature profile of the specific BGA (for de-soldering always use the lead-free temperature profile, in case of doubt)
  - lead free BGA-ICs will be delivered in so-called 'dry-packaging' (sealed pack including a silica gel pack) to protect the IC against moisture. After opening, dependent of MSL-level seen on indicator-label in the bag, the BGA-IC possibly still has to be baked dry. (MSL=Moisture Sensitivity Level). This will be communicated via AYS-website. Do not re-use BGAs at all.
- For sets produced before 1.1.2005 (except products of 2004), containing leaded solder-alloy and components, all needed spare-parts will be available till the end of the service-period. For repair of such sets nothing changes.
- On our website [www.atyourservice.ce.Philips.com](http://www.atyourservice.ce.Philips.com) you find more information to:
  - BGA-de-/soldering (+ baking instructions)
  - Heating-profiles of BGAs and other ICs used in Philips-sets

You will find this and more technical information within the "magazine", chapter "workshop news".

For additional questions please contact your local repair-helpdesk.

## 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)

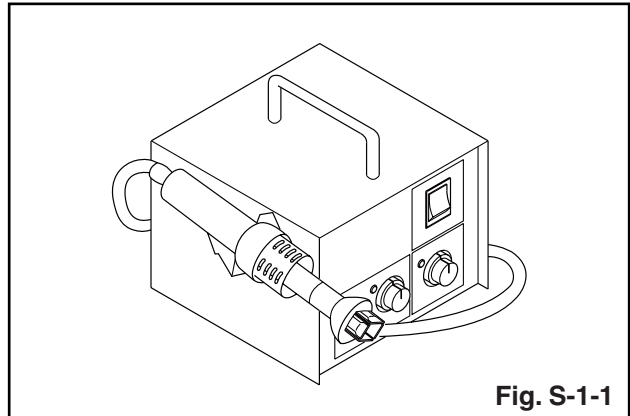


Fig. S-1-1

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.

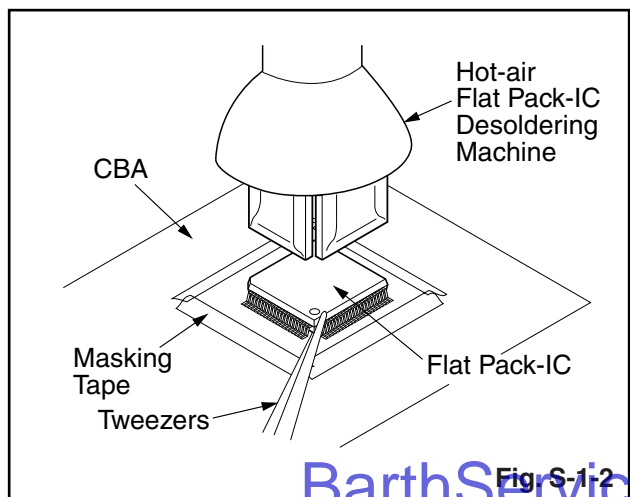
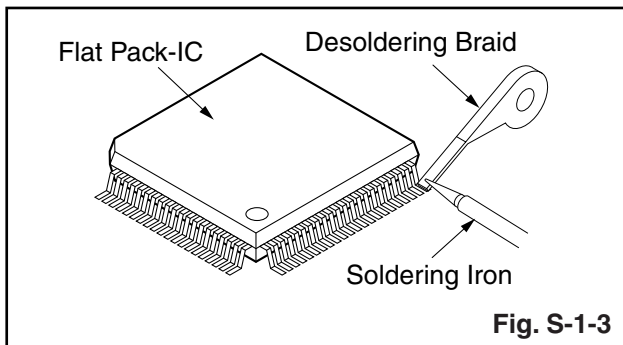


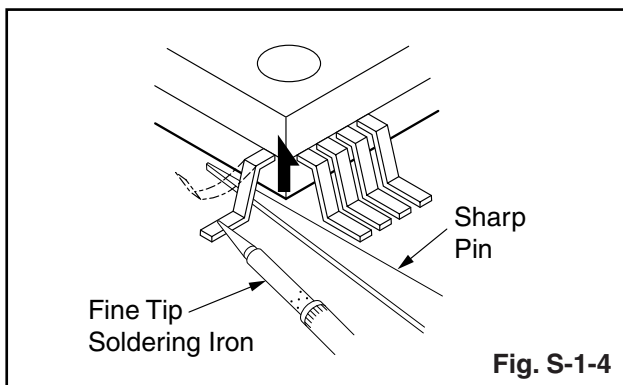
Fig. S-1-2

### 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)

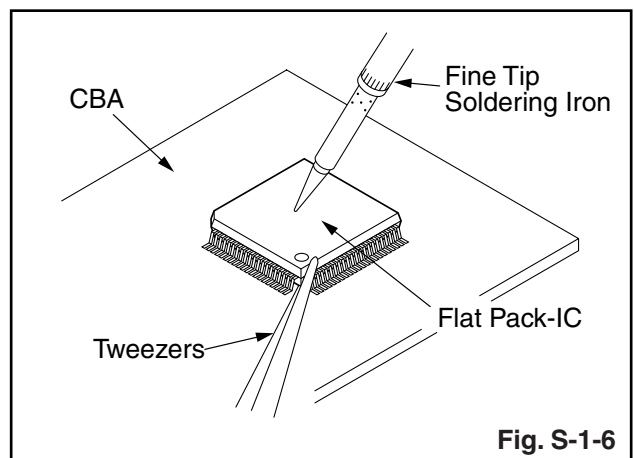
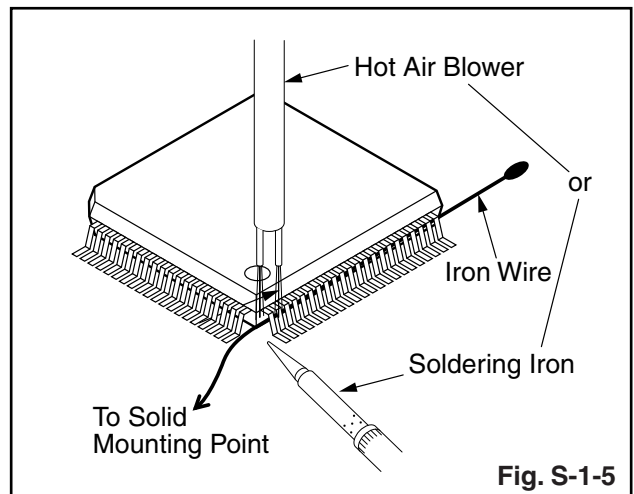


3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

### 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)

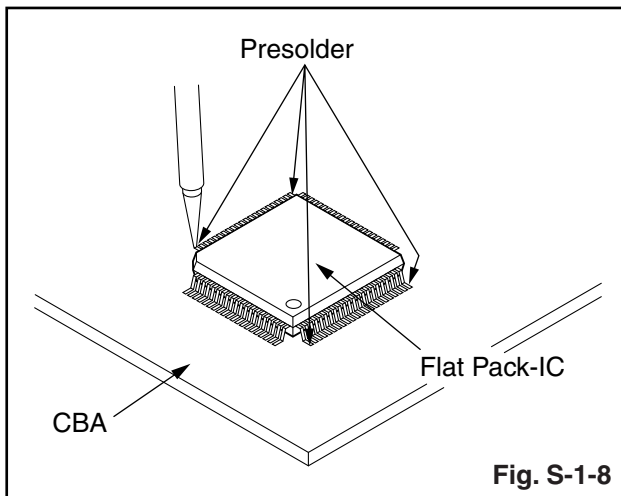
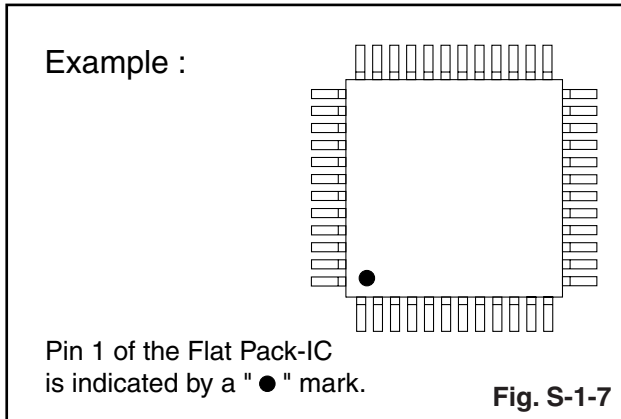
**Note:** When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.





## 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

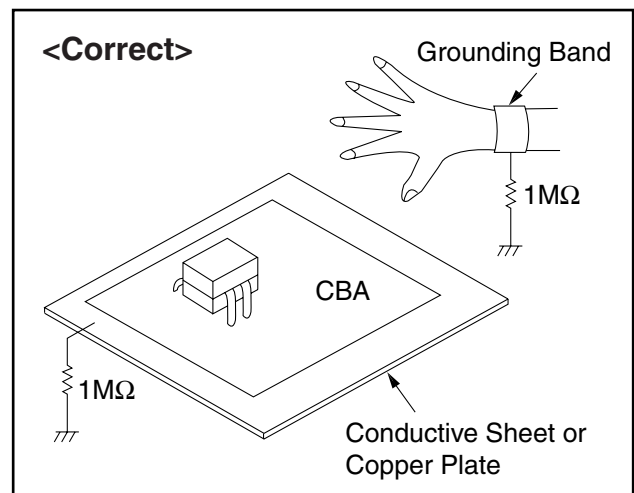
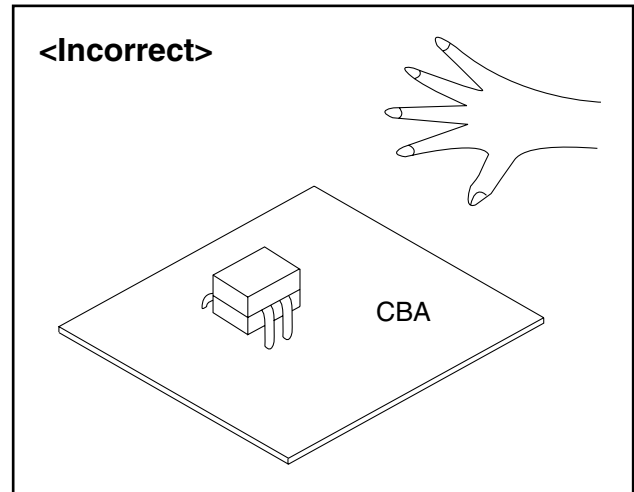
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

### 1. Ground for Human Body

Be sure to wear a grounding band (1 M $\Omega$ ) 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 (1 M $\Omega$ ) 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	“▲ R” is displayed on a TV screen. (Refer to Fig. 1.)
When tape loading mechanism is not functioning correctly	“▲ T” is displayed on a TV screen. (Refer to Fig. 2.)
When cassette loading mechanism is not functioning correctly	“▲ C” is displayed on a TV screen. (Refer to Fig. 3.)
When the drum is not working properly	“▲ D” is displayed on a TV screen. (Refer to Fig. 4.)
P-ON Power safety detection	“▲ 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

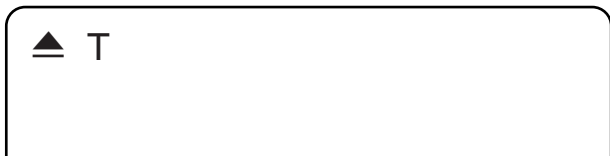


Fig. 2

P-ON Power safety detection

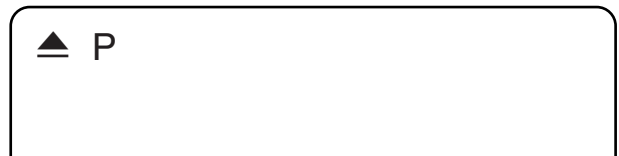


Fig. 5

When cassette loading mechanism is not functioning correctly

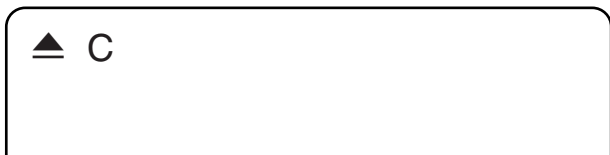


Fig. 3

# PREPARATION FOR SERVICING

## How to Enter the Service Mode

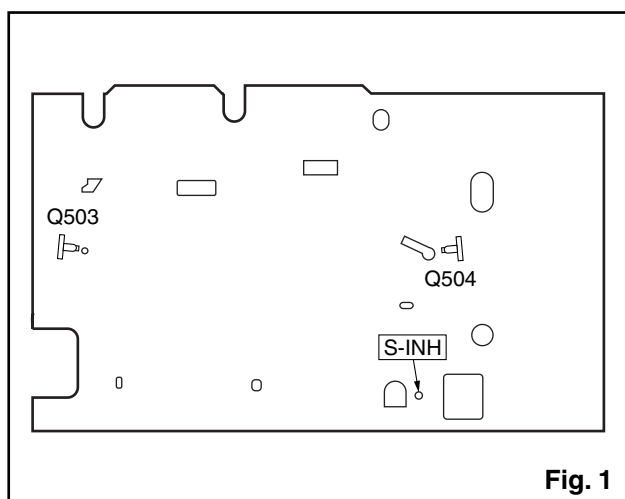
### About Optical Sensors

#### **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 TP502 (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.

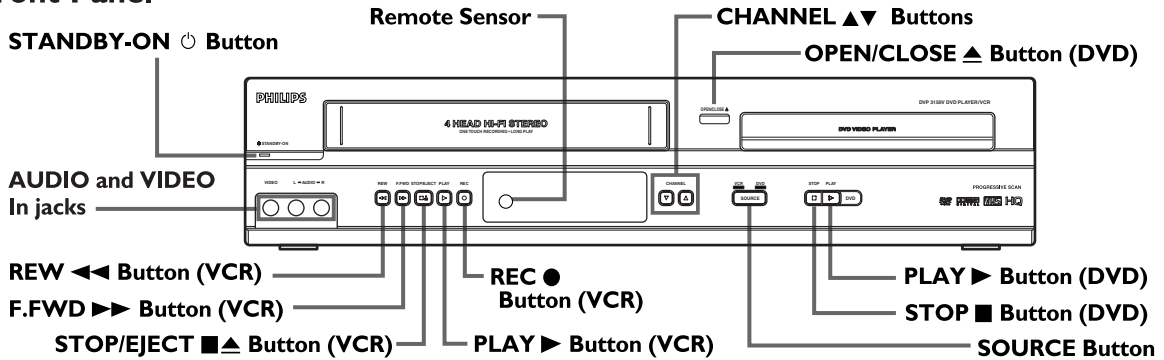


**Fig. 1**

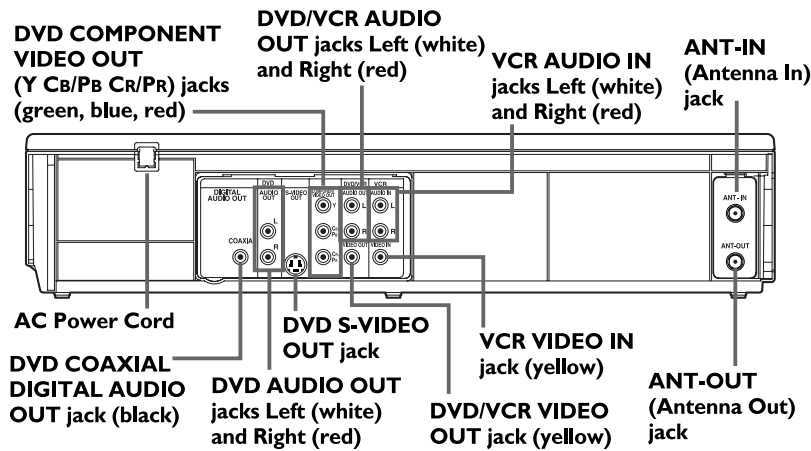
**Note:** Because the Tape End Sensors are inactive, do not run a tape all the way to the start or the end of the tape to avoid tape damage.

# OPERATING CONTROLS AND FUNCTIONS

## Front Panel

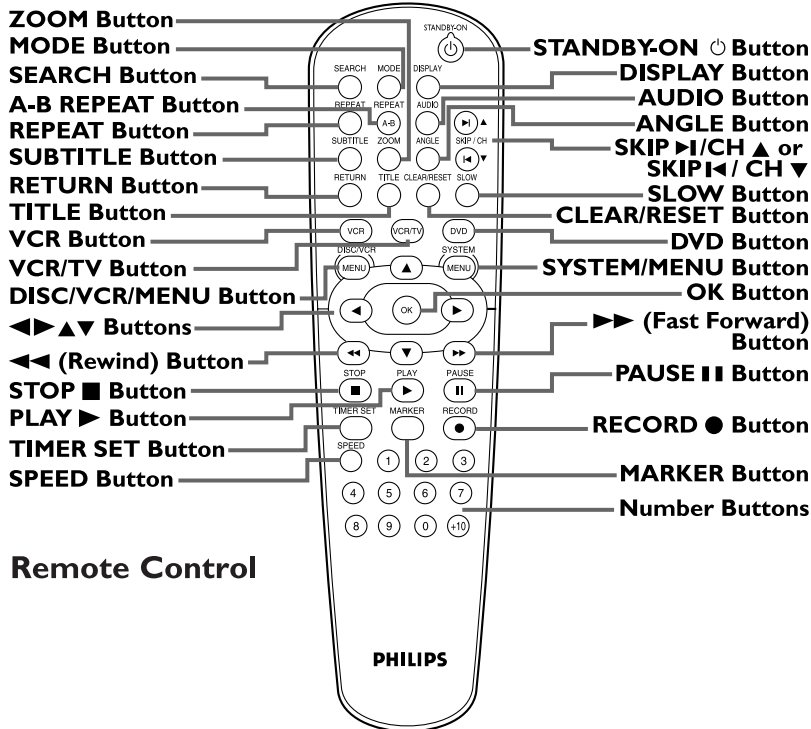


## Rear Panel



### Helpful Hint

- The DVD S-VIDEO OUT, DVD COMPONENT VIDEO OUT, DVD AUDIO OUT and DVD COAXIAL DIGITAL AUDIO OUT jacks are only useful in DVD mode. To have sound and picture in VCR mode, you must connect either the RF coaxial cable or the audio/video cables supplied.



## Remote Control

### Helpful Hints

- For DVD Player features, press DVD before pressing other buttons. To put the DVD/VCR in DVD mode, press DVD or SOURCE so DVD light appears on the front of the DVD/VCR.
- For VCR features, press VCR before pressing any other buttons. To put the DVD/VCR in VCR mode, press VCR or SOURCE so VCR light appears on the front of the DVD/VCR.

### VCR light

This light appears when the DVD/VCR is in VCR mode. You can only watch videotapes or access VCR features and TV channels when VCR light is on. To make VCR light come on, press VCR on the remote control or SOURCE on the front of the DVD/VCR.

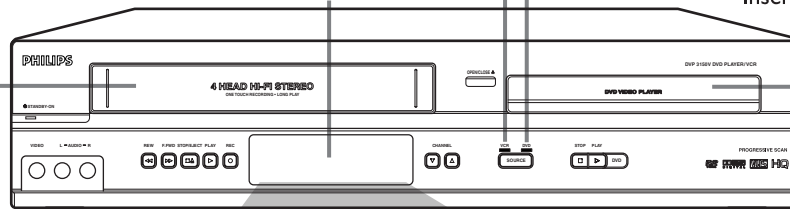
### DVD light

This light appears when the DVD/VCR is in DVD mode. You can only watch DVDs when DVD light is on. To make DVD light come on, press SOURCE on the front of the DVD/VCR or DVD on the remote.

**Cassette Compartment**  
Insert a video cassette here.

**Display**  
Messages about current Disc operations appear here. See Display Messages below.

**Disc tray**  
Insert a Disc here.



### DVD Display Panel

Appears when a repeat function is active

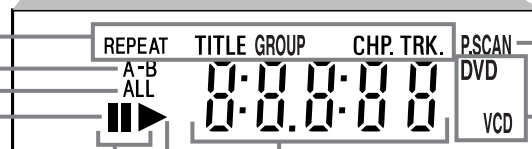
Appears when A-B Repeat is on

Appears when ALL Repeat is on

Appears when Disc playback is paused

Appears during slow motion playback (DVD, Video CD)

Appears during Disc playback



Appears when Progressive Scan is active

Displays the elapsed playing time of the current Title or Track; briefly displays a Track, Chapter, or Title number when playback begins.

Displays the current Disc type  
• DVD: DVD  
• CD: Audio CD, MP3, WMA, JPEG  
• VCD: Video CD

### VCR Display Panel

Indicates a tape is in the DVD/VCR

Appears if Repeat Playback is active

Appears if tape playback is paused or during slow motion tape playback

Appears during tape playback

Indicates VCR position

Appears when a timer recording or an OTR has been set

Appears during recording; flashes when recording is paused

Indicates current time is P.M. There is no A.M. indication.

Indicates the elapsed playing time of a tape; also displays a channel number, tape speed, remaining time for an OTR, or the current time



### Display Messages

- - - - -	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.	CLOSE	Tray is closing.
OPEN	Tray is opening or is open.	Load	Disc is loading.
		Pbc	Appears when Playback Control is active (Video CD).

# SIGNAL NAME ABBREVIATIONS

Signal Name	Function
3.58MHz	3.58MHz Clock
-FL	FIP Drive Power Supply
A-COM	Audio Head Common
A-IN	Audio Signal Input
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
AFCC	Low Path Filter Input Signal For AFC
AFCLPF	Low Path Filter Output Signal For AFC
AFG	GND
AL+12V	Always +12V with AC Plug Connected
AL+2.8V	Always +2.8V with AC Plug Connected
AL+4.0V	Always +4.0V with AC Plug Connected
AL+5V	Always +5V with AC Plug Connected
AL+33V	Always +33V with AC Plug Connected
AL+44V	Always +44V with AC Plug Connected
AL-30V	Always -30V with AC Plug Connected
AUDIO+5V	+5V at Audio Signal
AVDD	AVDD
AVss	AVSS
C-CONT	Capstan Motor Control Signal
C-F/R	Capstan Motor FWD/REV Control Signal (FWD = "L" / REV = "H")
C-FG	Capstan Motor Rotation Detection Pulse
C-ROTA	Color Phase Rotary Changeover Signal
C-SYNC	Composite Synchronized Pulse
CONV-SW	RF Conv. Output Channel Switching Signal (3ch = "Hi-z", 4ch = "L")
CTL	Amp. Output Control Signal for Test Point
CTL (+)	Playback/Record Control Signal (+)
CTL (-)	Playback/Record Control Signal (-)

Signal Name	Function
CTLA	CTL Amp. AC GND
D-CONT	Drum Motor Control Signal
D-PFG	Drum PG/FG Input Signal
D-REC-H	Delayed Record Signal
D-V-SYNC	Dummy V-sync Output
DISPLAY-CLK	7seg. Driver IC Clock Control Output Signal
DISPLAY-DATA	7seg. Driver IC Data Control Output Signal
DISPLAY-ENA	7seg. Driver IC Enable Control Output Signal
DVD-A	DVD Audio Signal
DVD-AUDIO	DVD Audio Signal
DVD-A(R)-MUTE	DVD Audio (R) Mute Control Signal
DVD-H-IND	DVD Mode LED Signal Output
DVD-L-IND	VCR Mode LED Signal Output
DVD-OPEN/CLOSE	DVD Open/Close at High
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-PC	DVD Power Supply
DVD-PLAY	DVD Play at High
DVD-POW-MONITOR	DVD Power Monitor Signal (P-off = "L", P-on = "H")
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
DOUT	Serial Data Output
END-S	Tape End Position Detect Signal
EV+1.2V	+1.2V Power Supply
EV+3.3V	+3.3V Power Supply
EV+10V	+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
H-A-COMP	Head Amp Comparator Signal

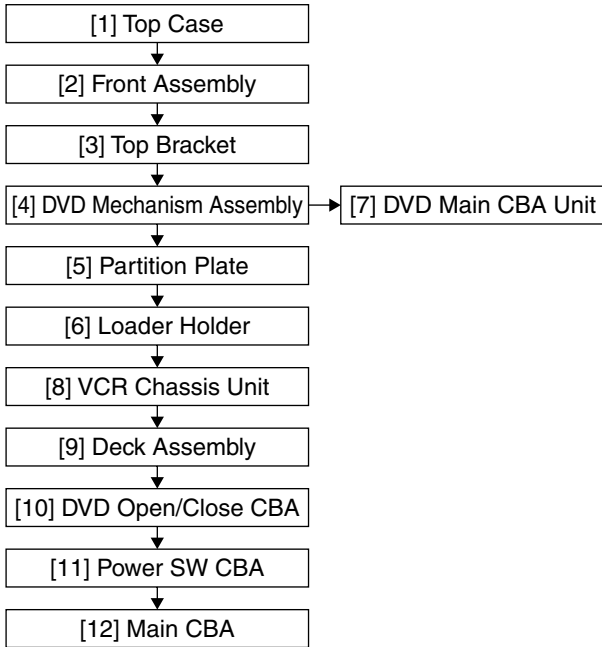
Signal Name	Function
H-A-SW	Video Head Amp Switching Pulse
Hi-Fi-A	Hi-Fi Audio Head
Hi-Fi-COM	Hi-Fi Audio Head Common
Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
HiFi/NOR-IN	Audio Mode Input (HiFi = "L" / Normal = "H")
IIC-BUS SCL	IIC BUS Control Clock
IIC-BUS SDA	IIC BUS Control Data
INPUT SELECT	Input Selector Control Signal
INSEL	Input Selector Control Signal
KEY-1	A/D Key Data Signal 1
KEY-2	Key Scan Input Signal 2
LD-SW	Deck Mode Position Detector Signal
LM-FWD/ REV	Loading Motor FWD/ REV Output
MOD-AUDIO	Modulator Audio Output Signal
MOD-VIDEO	Modulator Video Output Signal
N-A	Normal Audio
NORMAL-L	Normal Audio Control Signal (Normal = "L")
OSCI	Main Clock Input 14.31818MHz
OSCO	Main Clock Output 14.31818MHz
OUTPUT-SELECT	Output Select
P-DOWN -L	Power Voltage Down Detector Signal
P-DOWN-P	Power Voltage Down Protect
P-ON+5V	+5V at Power-On Signal
P-ON-L	Power On Signal to Low
PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage
PWRCON	Power Down
REC-SAF-SW	Recording Safety SW Detect (With Record tab = "L" / With out Record tab = "H")
REMOTE	Remote Control Sensor
REMOTE-VIDEO	Remote Control Sensor
RESET	System Reset Signal (Reset = "L")
RF-SW	Video Head Switching Pulse
SIF	Source Input Format
SPDIF	Digital Audio Interface Format Signal
ST-S	Tape Start Position Detector Signal
ST/SAP-MODE	Tuner Stereo/Sap Mode
SXI	Operation Mode Selecting Input Signal
T-REEL	Take Up Reel Rotation Signal
TIMER+5V	+5V at Timer

Signal Name	Function
TU-VIDEO	Tuner Video Input Signal
V-ENV	Video Envelope Comparator Signal
V-IN	Video Signal Input
V-IN-F	Video Signal Input (Front)
V-OUT	Video Signal Output
VCR/TV	RF Conv. ON/OFF Signal (TV = "L" / VCR = "H")
VDD	VDD
VDD2	VDD2
VIDEO	Video Signal
VIDEO-C	Composite Video (chrominance) Signal
VIDEO-COM	Composite Video (chrominance) Signal
VIDEO-IN	Composite Video Signal Input
VIDEO-OUT	Composite Video Signal Output
VIDEO-Pb/Cb	Video Component Video Signal (Pb/Cb)
VIDEO-Pr/Cr	Video Component Video Signal (Pr/Cr)
VIDEO-Y(I)	Composite Video (Luminance) Signal (Interlace)
VRI	Servo Standard Voltage Input
VRO	Servo Standard Voltage Output
VSS	VSS
Vss2	Vss2
XI	Sub Clock Input 32.768 MHz
XO	Sub Clock Output 32.768 MHz
YCA-CS	YCA IC Control Chip Select
YCA-SCL	YCA IC Control Clock
YCA-SDA	YCA IC Control Data

# CABINET DISASSEMBLY INSTRUCTIONS

## 1. Disassembly Flowchart

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



## 2. Disassembly Method

ID/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Desolder	Note
[1]	Top Case	D1	4(S-1)	---
[2]	Front Assembly	D2	*3(L-1), *3(L-2)	1
[3]	Top Bracket	D2	3(S-2)	---
[4]	DVD Mechanism Assembly	D3	4(S-3), *CN401, *CN601	---
[5]	Partition Plate	D3	2(S-4)	---
[6]	Loader Holder	D3	2(S-5)	---
[7]	DVD Main CBA Unit	D4	2(S-6), *CN201, *CN301	2, 3
[8]	VCR Chassis Unit	D5	5(S-7), 2(S-8)	---
[9]	Deck Assembly	D6	Desolder, 2(S-9), (S-10)	4,5
[10]	DVD Open/Close CBA	D6	Desolder	---
[11]	Power SW CBA	D6	Desolder	---

ID/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Desolder	Note
[12]	Main CBA	D6	-----	---
(1)	(2)	(3)	(4)	(5)

### 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) Release three Locking Tabs (L-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.
  - 1) Disconnect Connector (CN301). Remove Screws (S-6) and lift the DVD Main CBA Unit. (Fig. D4)
  - 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)
- When reassembling, solder wire jumpers as shown in Fig. D6.
- 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.



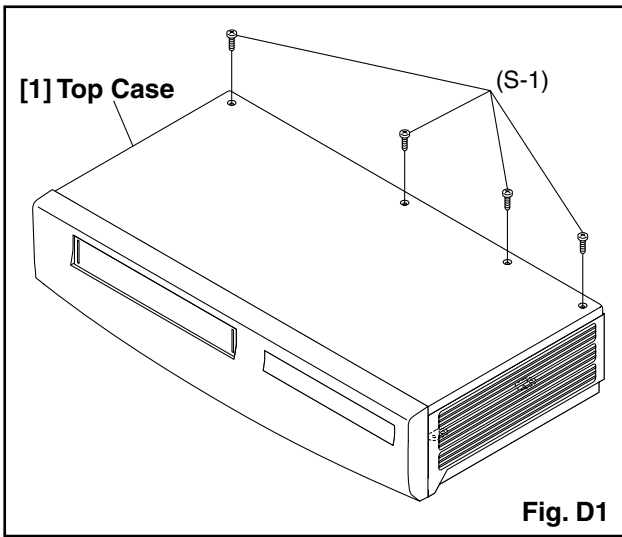


Fig. D1

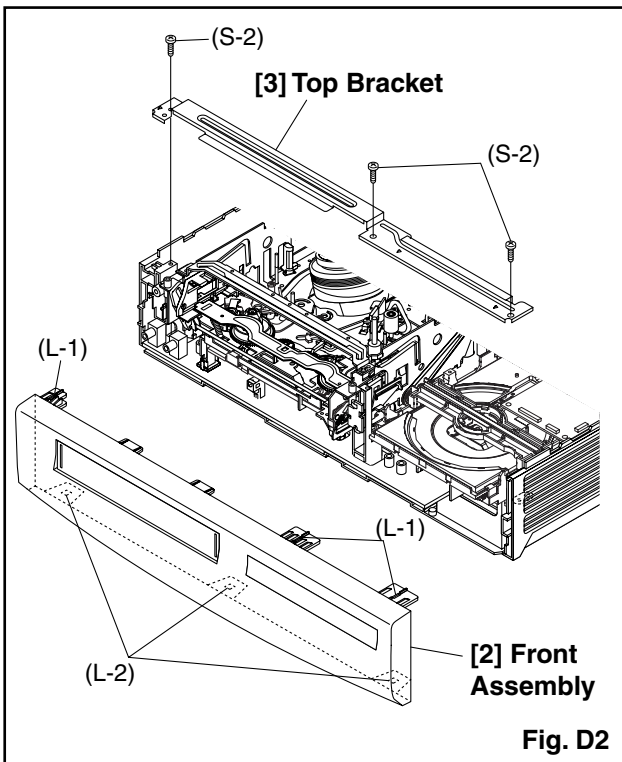


Fig. D2

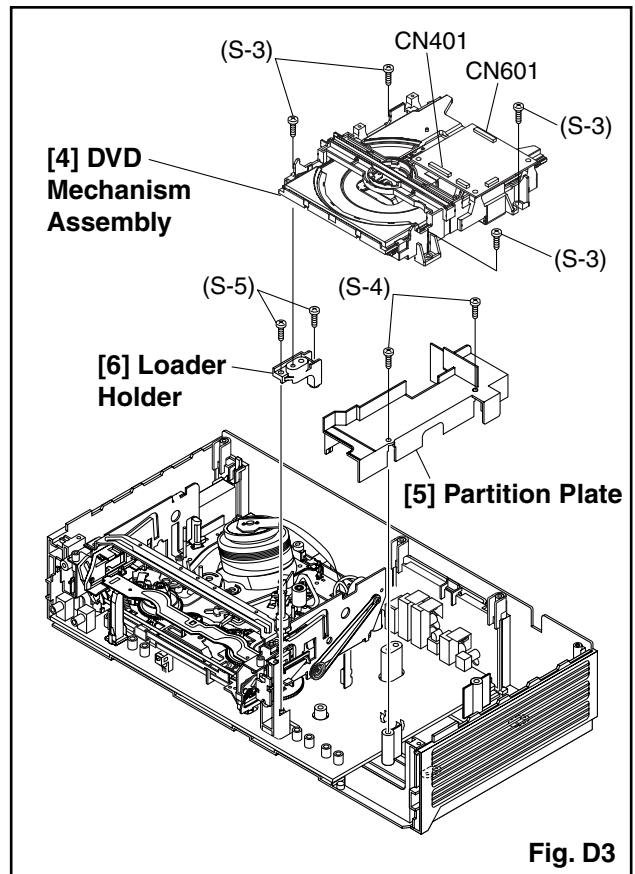


Fig. D3

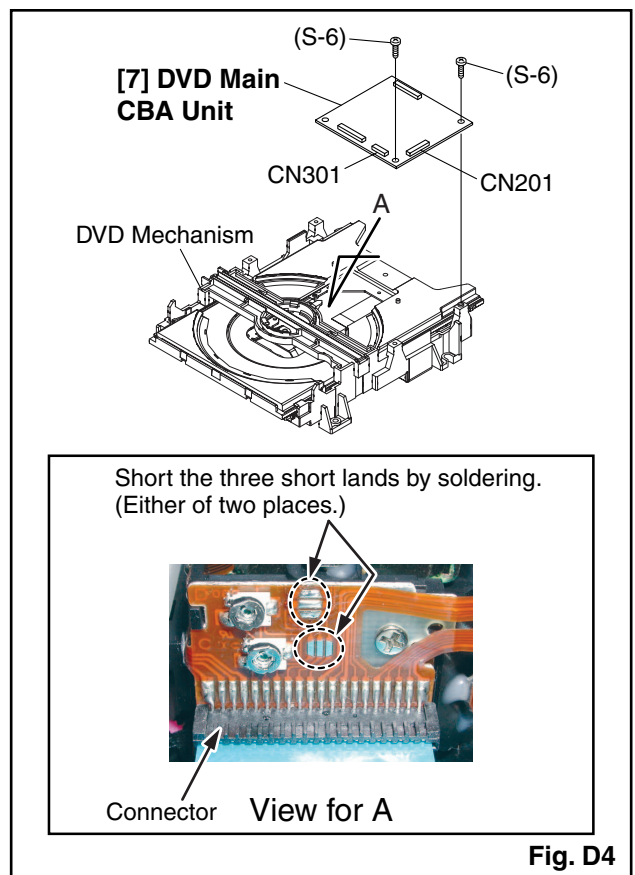
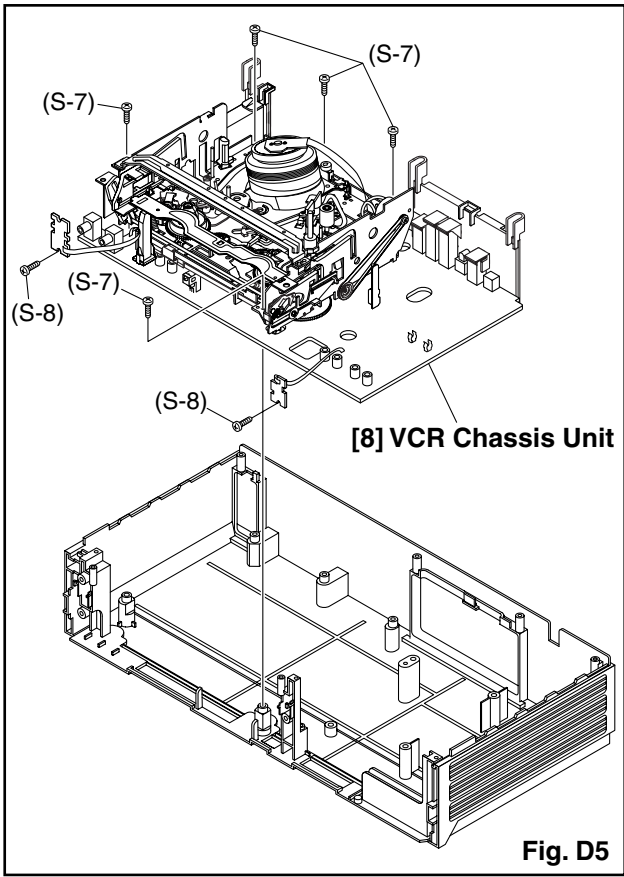


Fig. D4



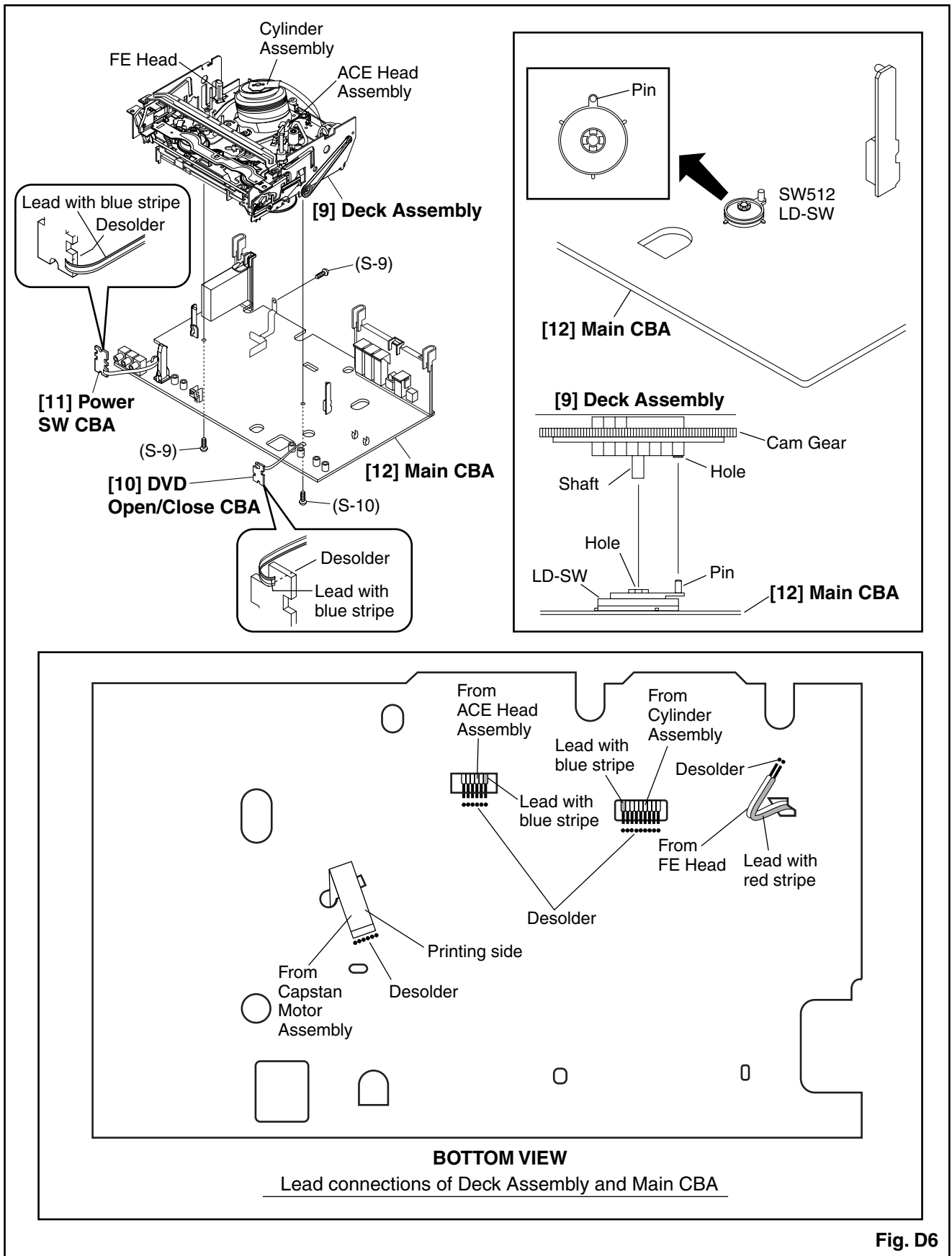
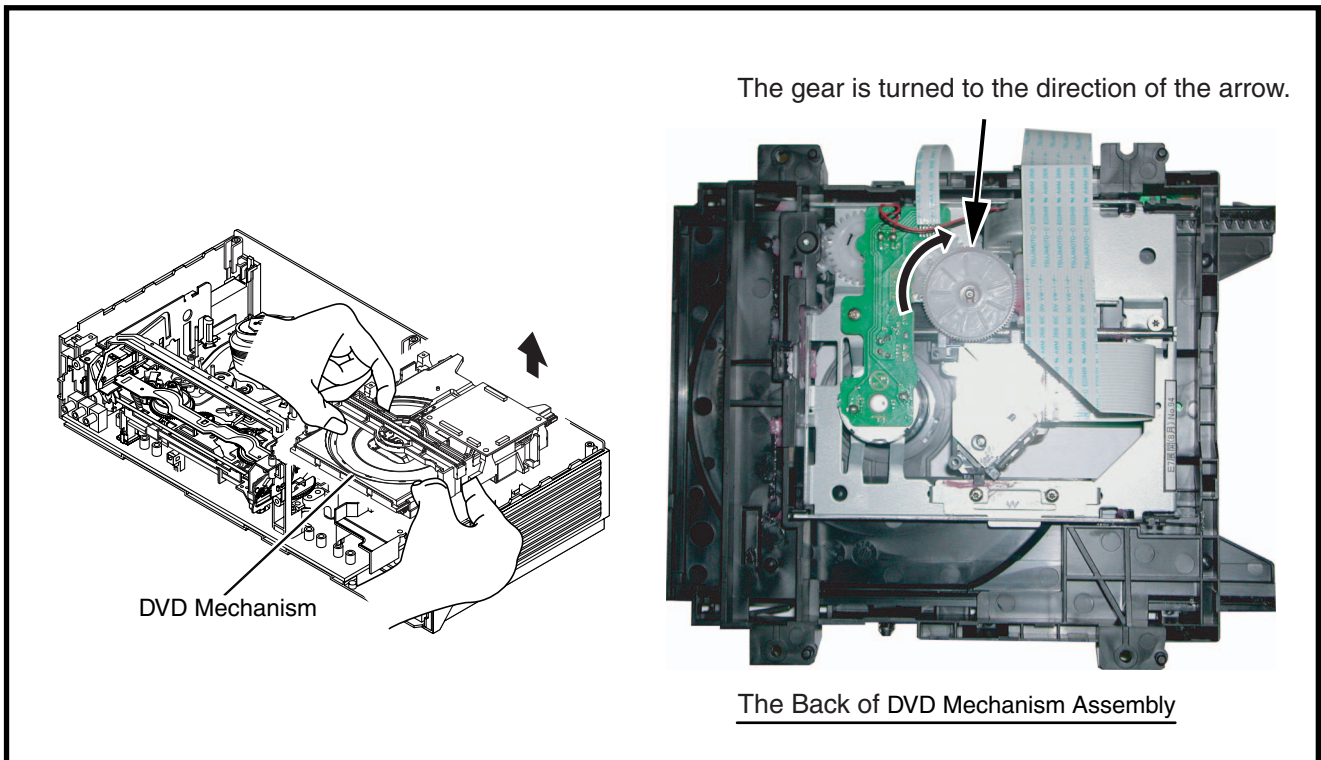


Fig. D6

### 3. HOW TO EJECT MANUALLY

1. Remove the Top Case, Front Assembly and Top Bracket.
2. Remove four Screws (S-3) in Fig. D3. Do not disconnect connectors.
3. While lifting up the DVD Mechanism, rotate the roulette in the direction of the arrow as shown below.
4. Pull the tray slowly manually.



# ELECTRICAL ADJUSTMENT INSTRUCTIONS

**General Note:** “CBA” is 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: 0.001~50 V/Div., F-Range: DC~AC-20 MHz
2. Alignment Tape (VFMS0001H6)

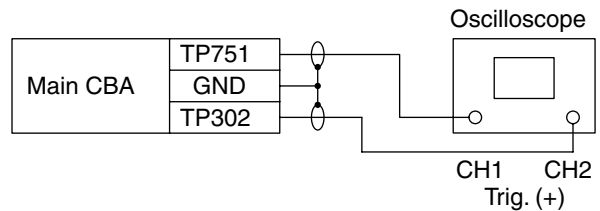
## Head Switching Position Adjustment

**Purpose:** To determine the Head Switching position during playback.

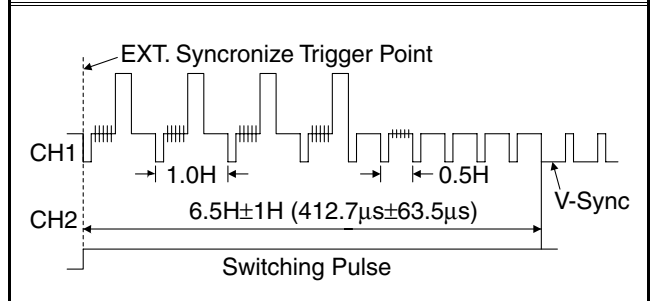
**Symptom of Misadjustment:** May cause Head Switching noise or vertical jitter in the picture.

Test point	Adj. Point	Mode	Input
TP751(V-OUT) TP302(RF-SW) GND	VR501 (Switching Point)	PLAY (SP)	----
Tape	Measurement Equipment	Spec.	
VFMS0001H6	Oscilloscope	6.5H ± 1H (412.7µs±63.5µs)	

### Connections of Measurement Equipment



**Figure 1**



**Note:** TP751(V-OUT), TP302(RF-SW), VR501(Switching Point) --- Main CBA

**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 (412.7 µs ± 63.5 µs) delayed position from the rising edge of the CH2 head switching pulse waveform.

# HOW TO INITIALIZE THE DVD PLAYER & VCR

To put the program back at the factory-default, initialize the DVD player & VCR as the following procedure.

## < DVD Section >

1. Press [DVD], [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order. Fig. a appears on the screen.

"\*\*\*\*\*" differs depending on the models.

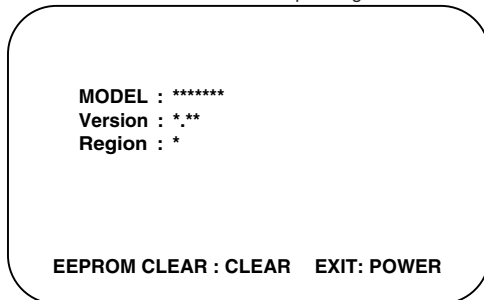


Fig. a

2. Press [CLEAR/RESET] button on the remote control unit. Fig. b appears on the screen.

"\*\*\*\*\*" differs depending on the models.

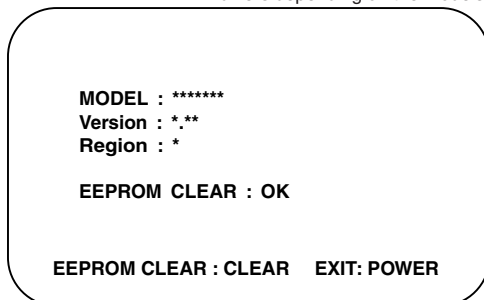


Fig. b

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

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

# 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 [DVD], [9], [8], [7], [6], and [SEARCH] 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.

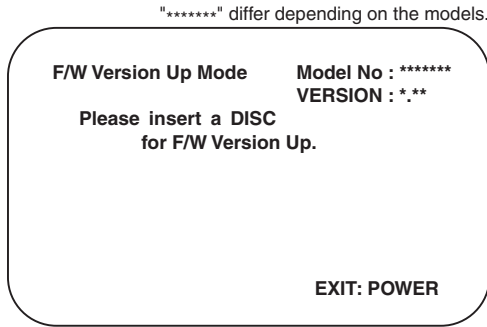


Fig. a Version Up Mode Screen

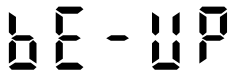


Fig. b VFD in Version Up Mode

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.

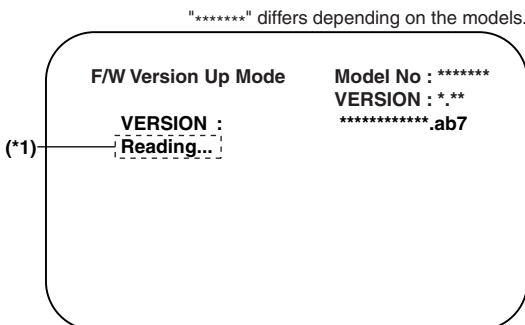


Fig. c Programming Mode Screen



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).

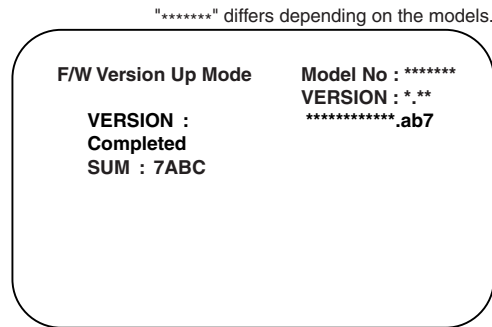


Fig. e Completed Program Mode Screen



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

At this time, no button is 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] buttons on the remote control unit in that order. Fig. g appears on the screen.

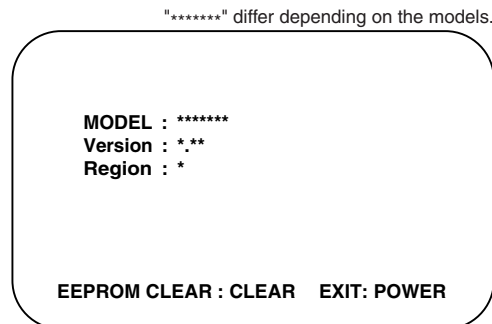


Fig. g

10. Press [CLEAR/RESET] button on the remote control unit.

Fig. h appears on the screen.

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

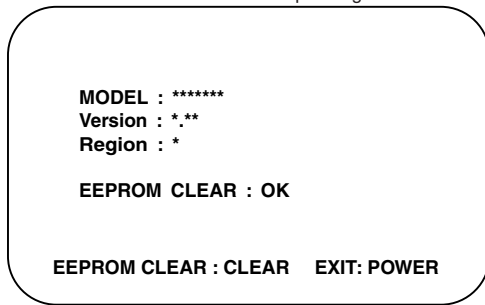


Fig. h

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

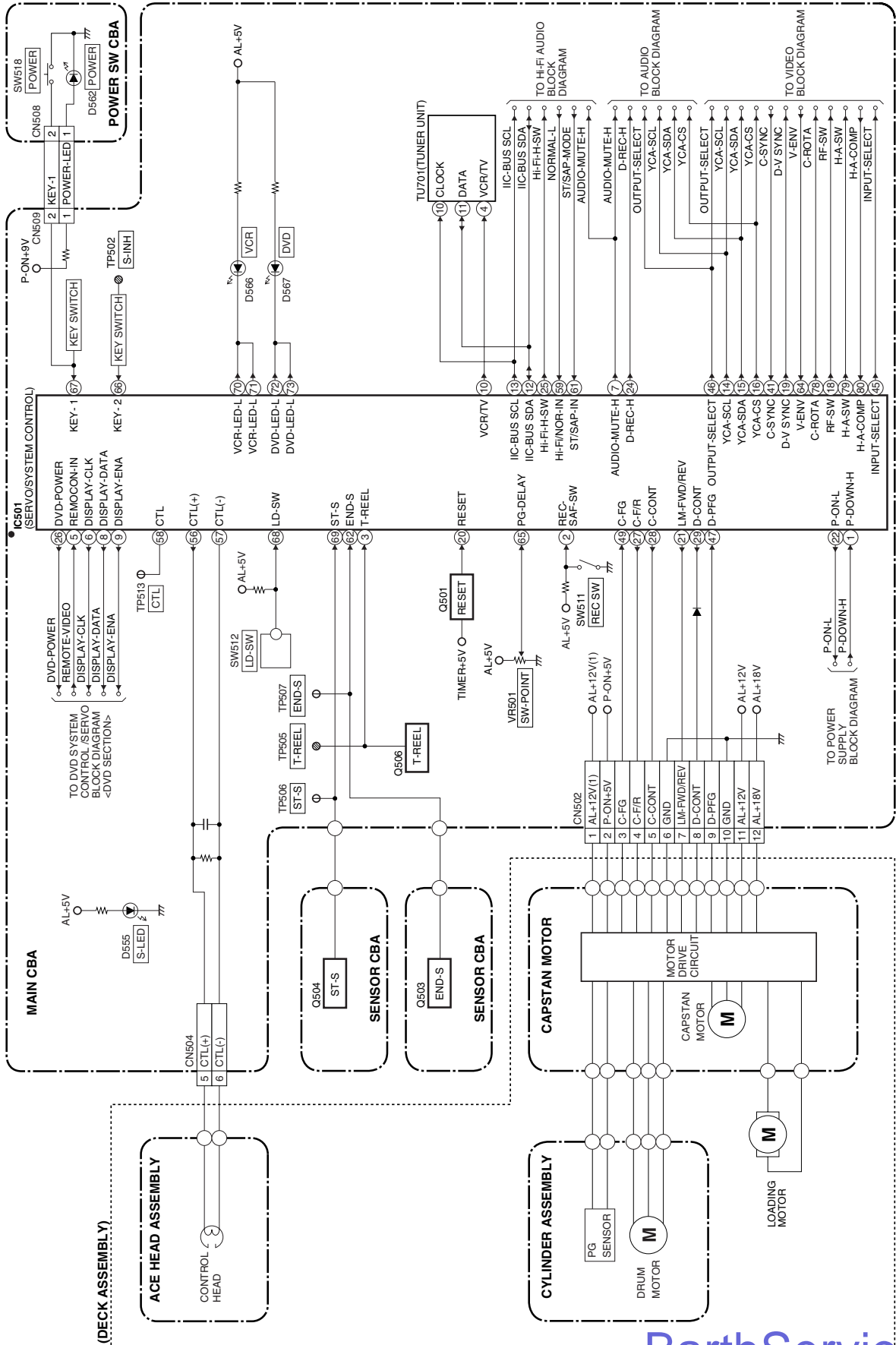
11. To exit this mode, press [STANDBY-ON] button.



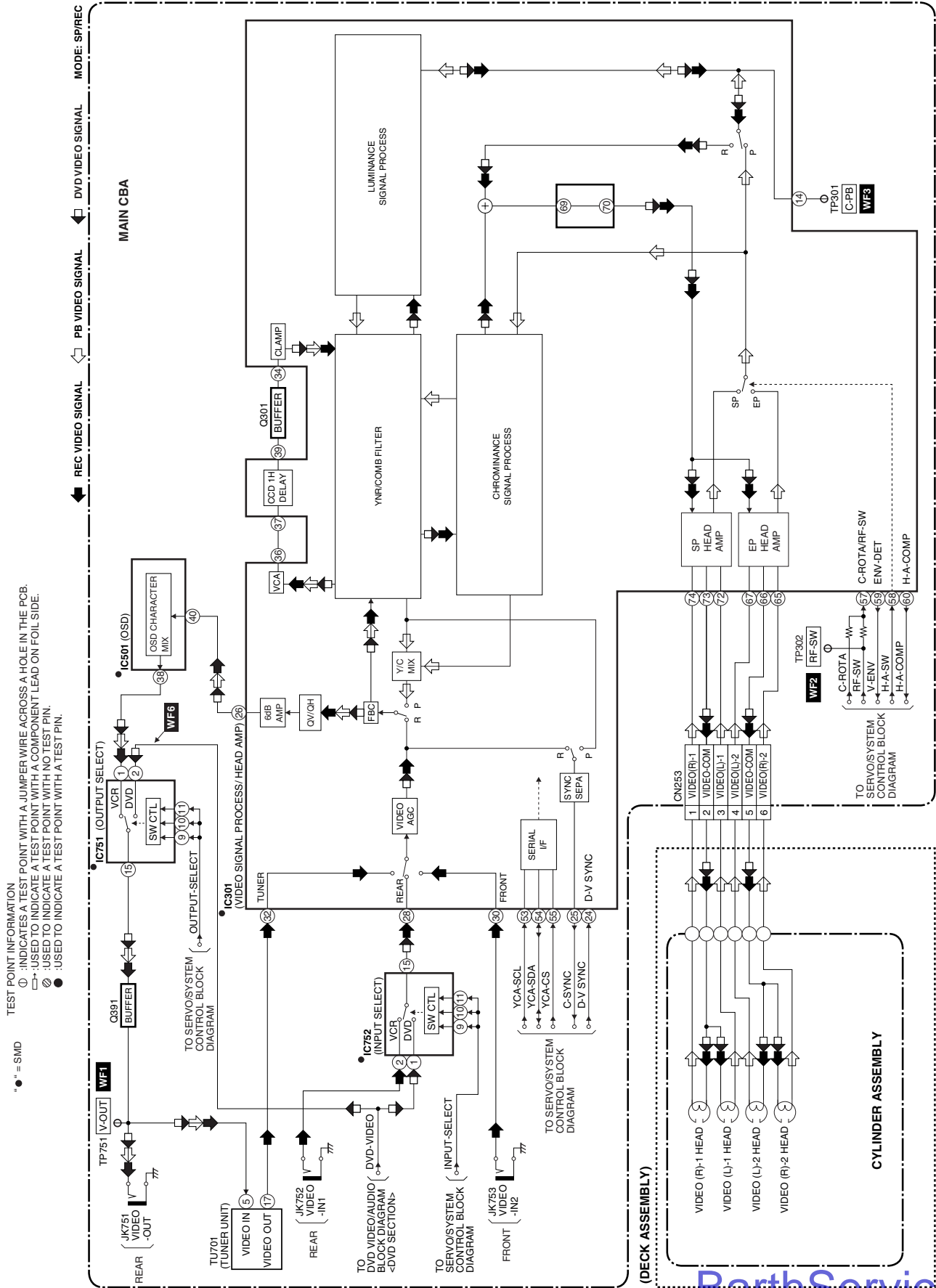
# BLOCK DIAGRAMS <VCR SECTION>

## Servo / System Control Block Diagram

\* SMD  
 ○ : TEST POINT INFORMATION  
 ○ : INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE PCB.  
 ⊕ : USED TO INDICATE A TEST POINT WITH A COMPONENT LEAD ON FOIL SIDE.  
 ⊙ : USED TO INDICATE A TEST POINT WITH NO TEST PIN.  
 ● : USED TO INDICATE A TEST POINT WITH A TEST PIN.



# Video Block Diagram

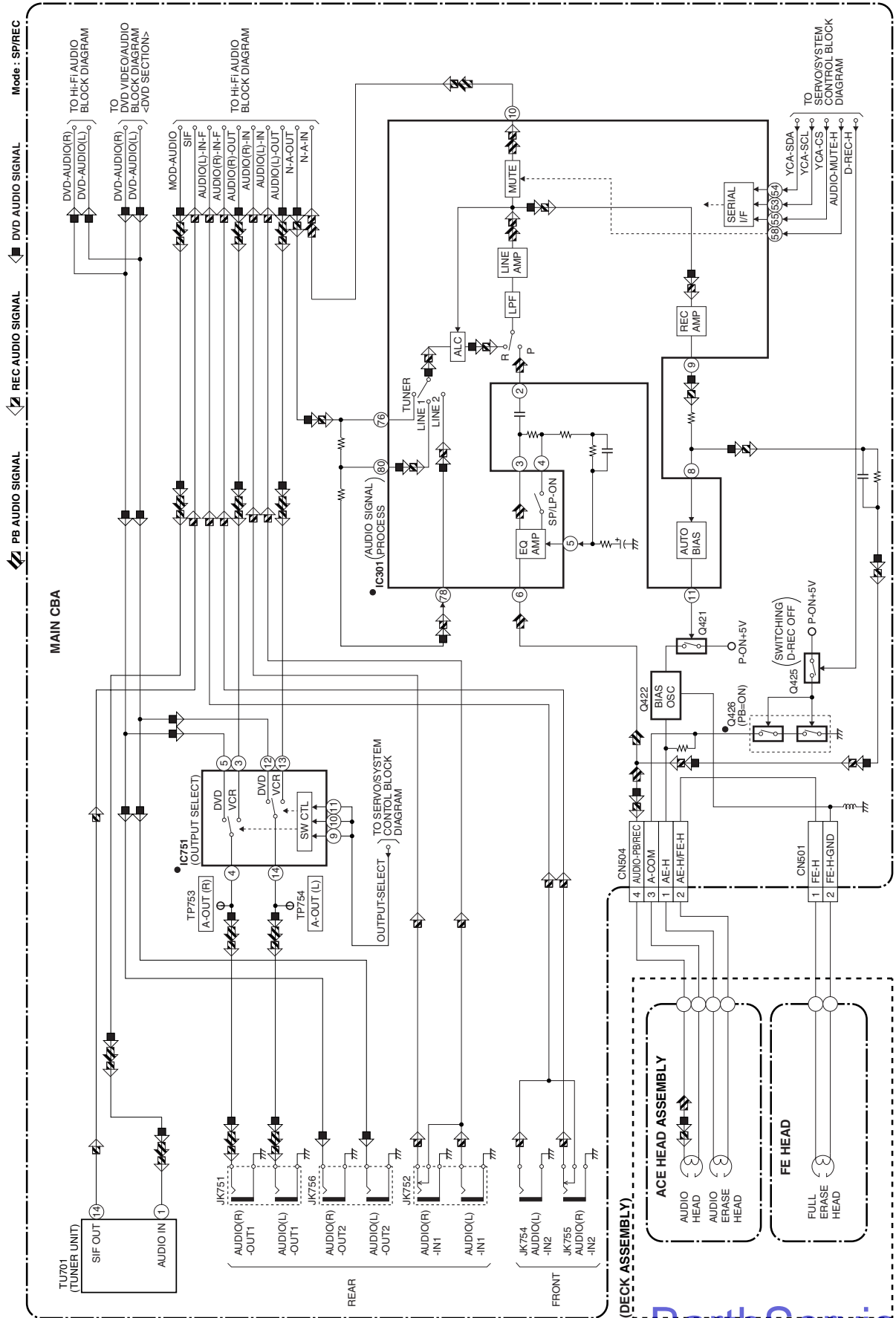


BarthService

# Audio Block Diagram

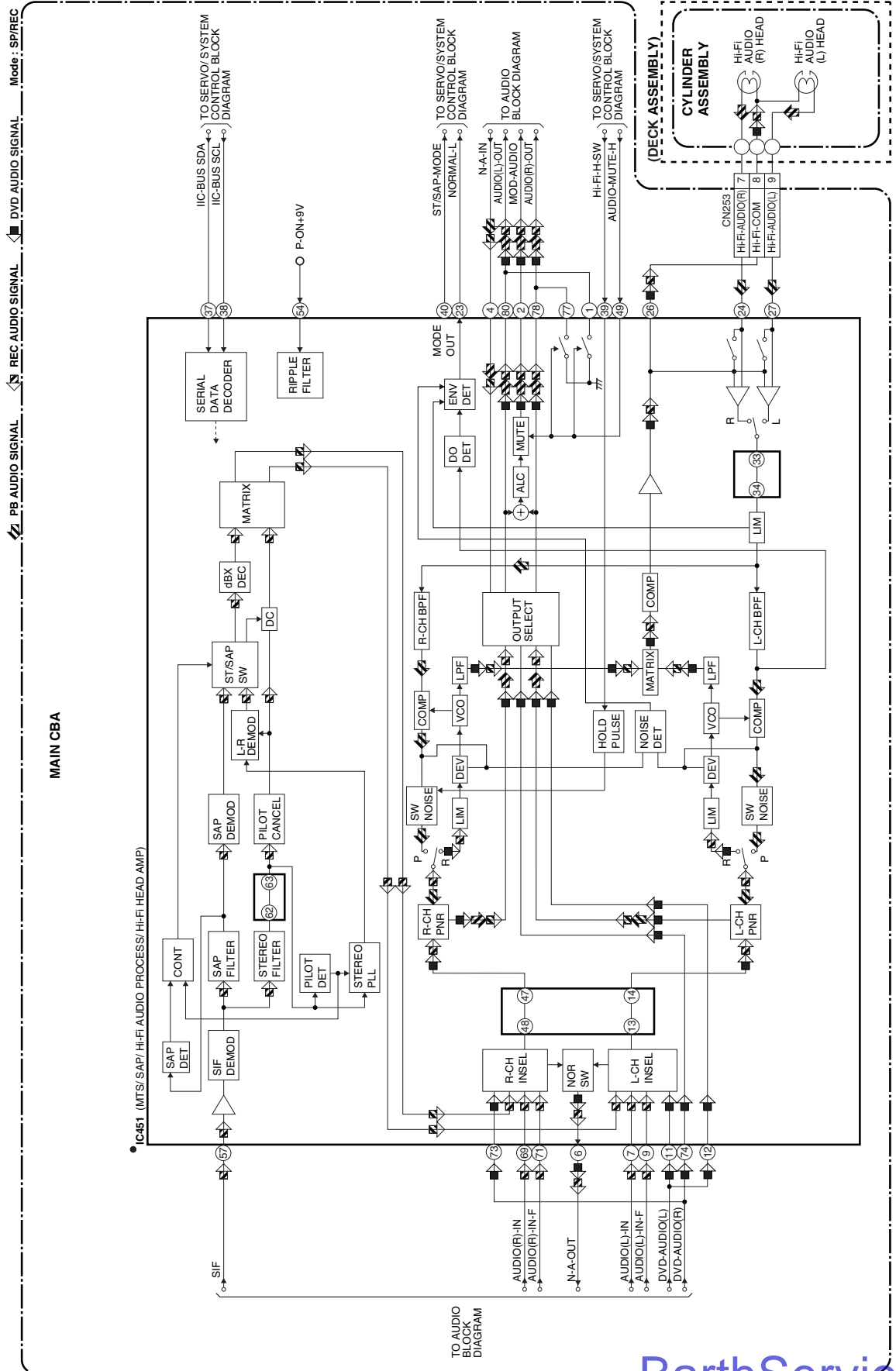
TEST POINT INFORMATION  
 ○ INDICATES A TEST POINT WITH A JUMPER WIRE ACROSS A HOLE IN THE PCB.  
 □ → USED TO INDICATE A TEST POINT WITH A COMPONENT LEAD ON FOIL SIDE.  
 ● USED TO INDICATE A TEST POINT WITH NO TEST PIN.  
 ● USED TO INDICATE A TEST POINT WITH A TEST PIN.

\*● = SMD



# Hi-Fi Audio Block Diagram

"●" = SMD



# Power Supply Block Diagram

**CAUTION !**

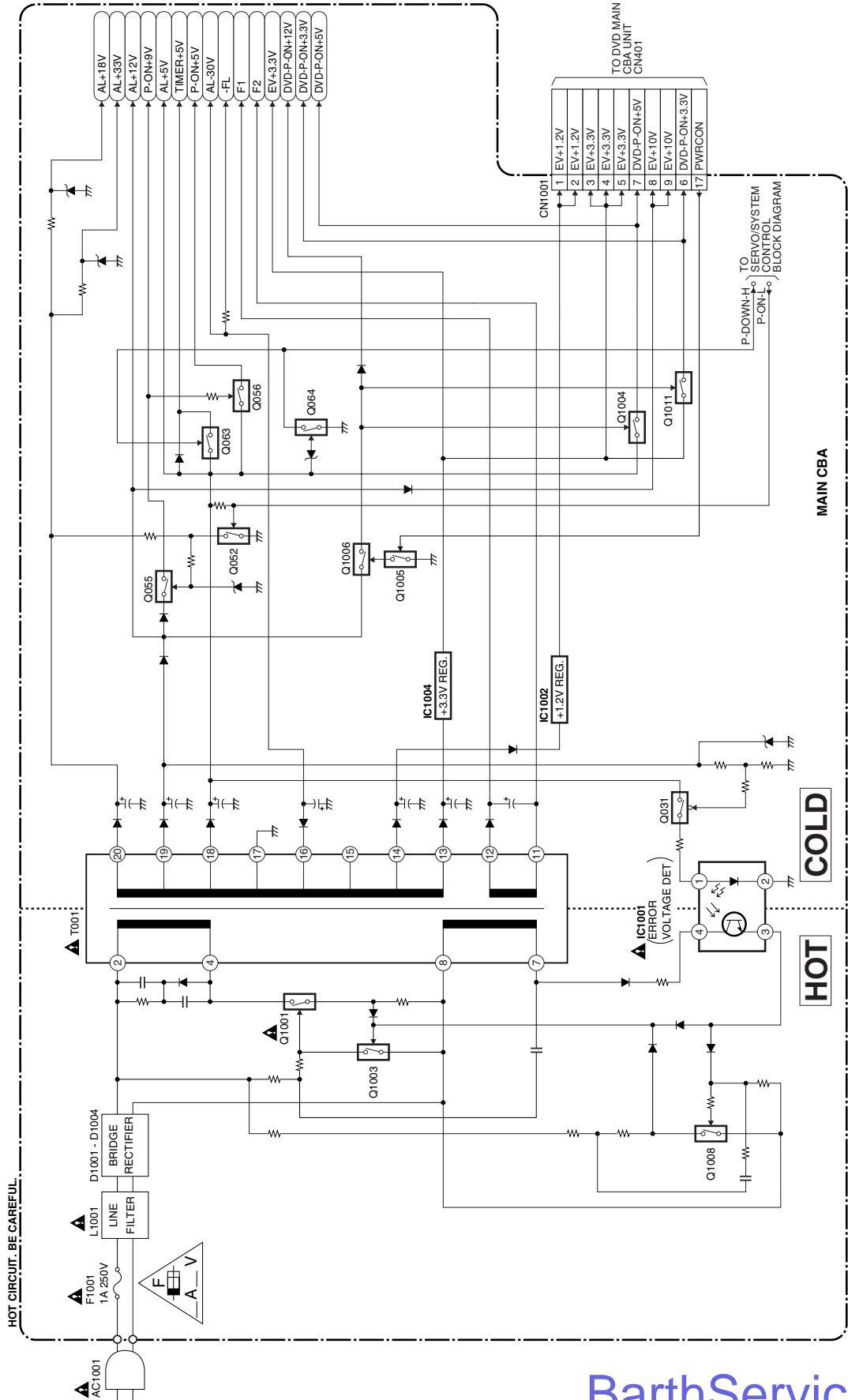
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.  
 If Main Fuse (F1001) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.  
 Otherwise it may cause some components in the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

**CAUTION !**

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

**NOTE:**

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

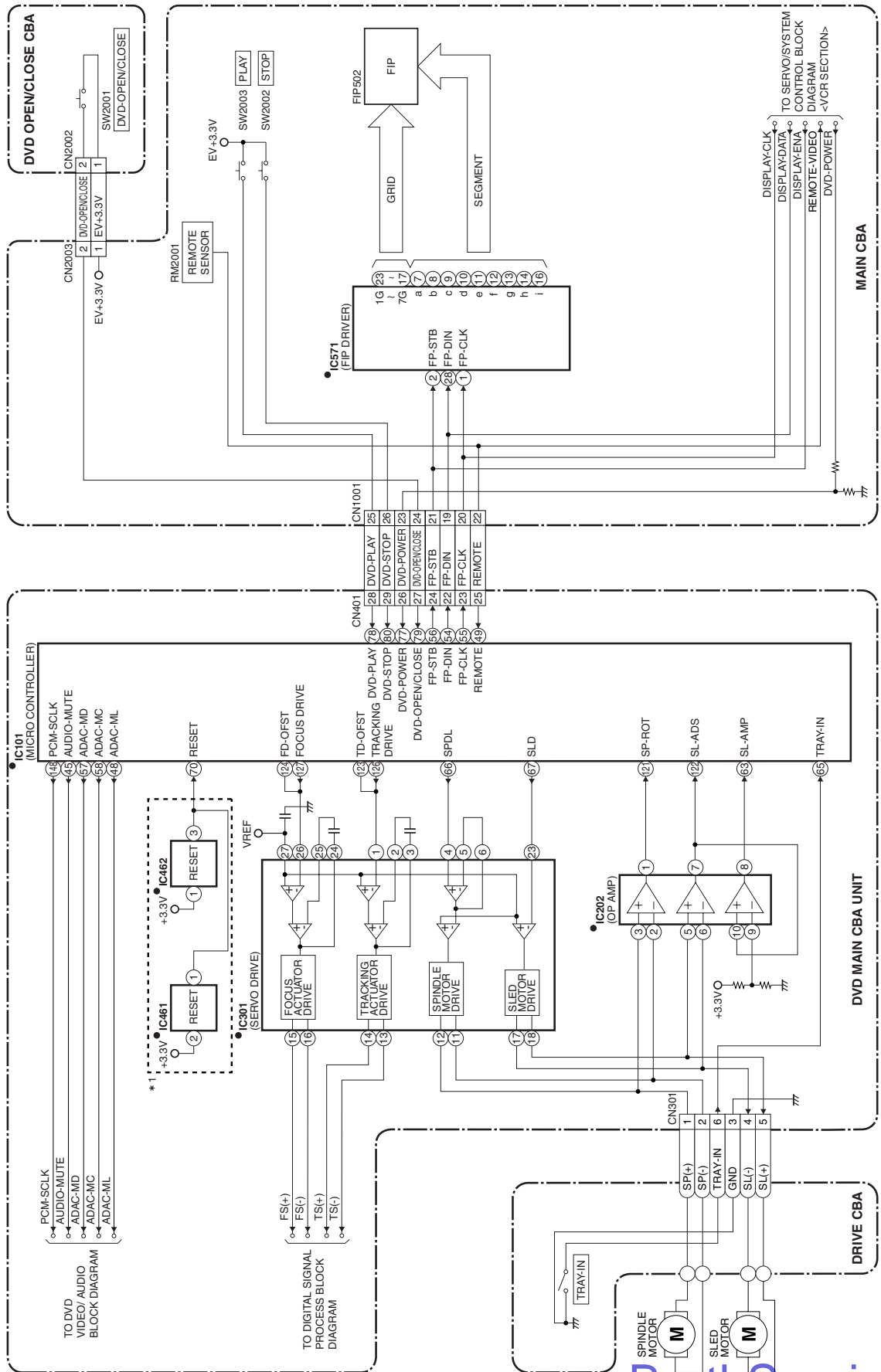


# BLOCK DIAGRAMS <DVD SECTION>

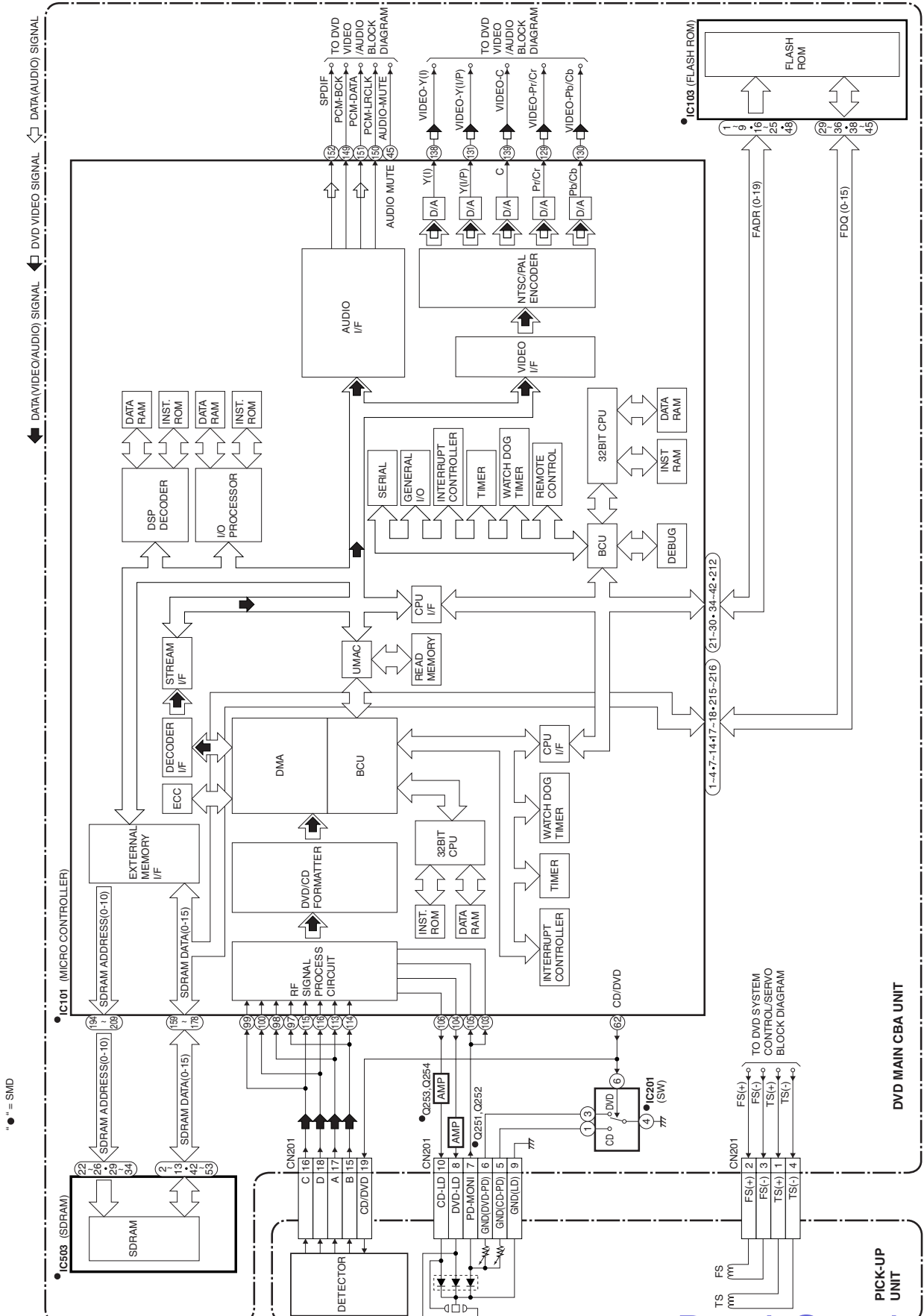
## DVD System Control / Servo Block Diagram

\*1 NOTE:  
Either IC461 or IC462 is used for DVD MAIN CBA UNIT.

\* ● = SMD

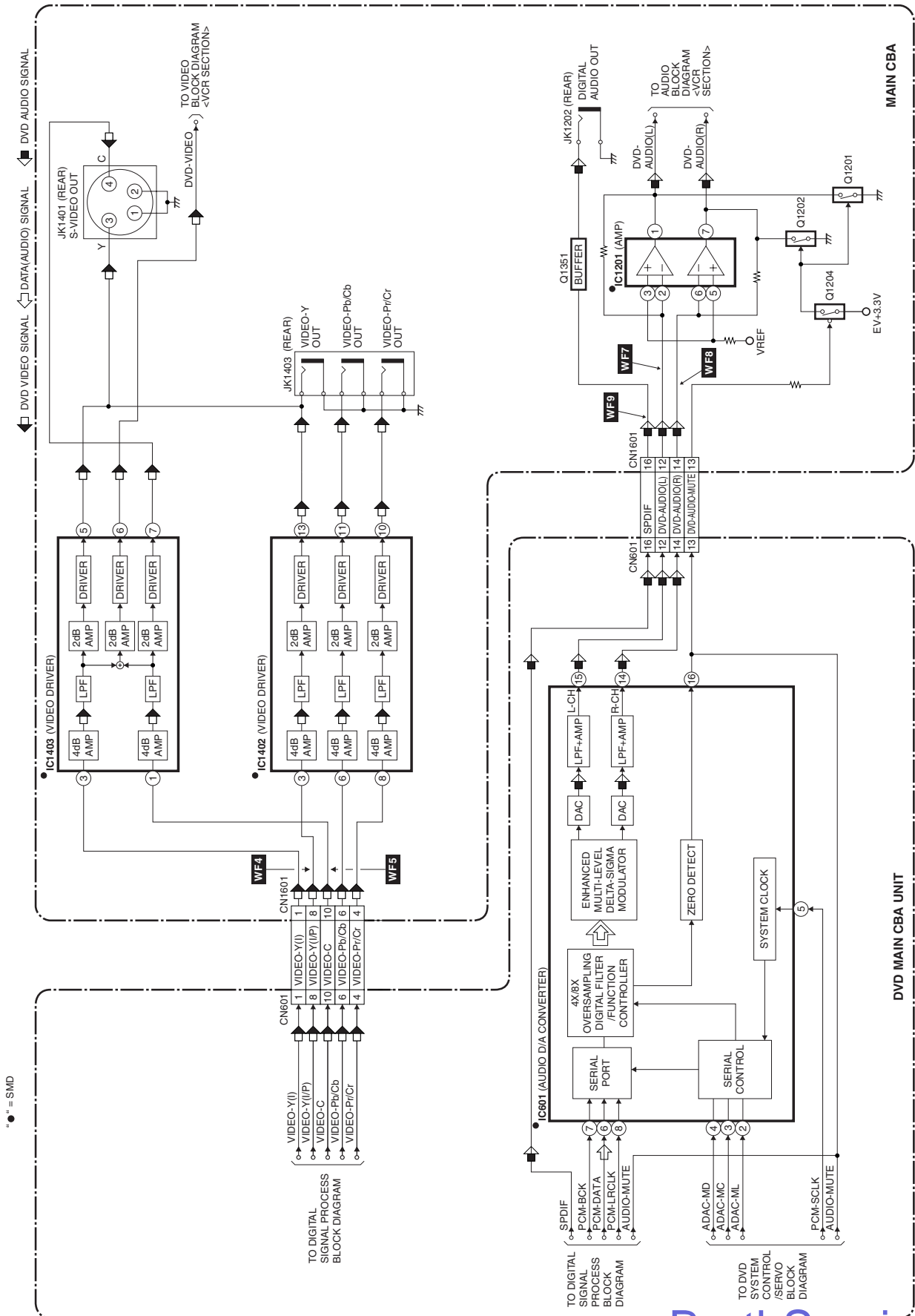


# Digital Signal Process Block Diagram



BarthService

# DVD Video / Audio Block Diagram



BarthService



# SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

## Standard Notes

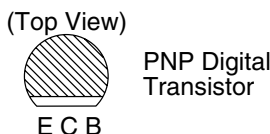
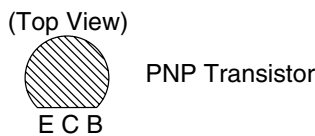
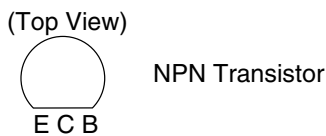
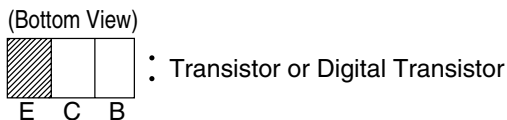
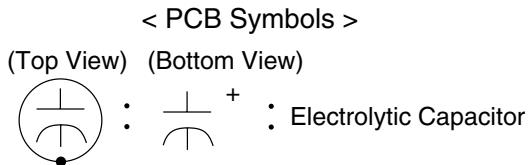
### WARNING

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

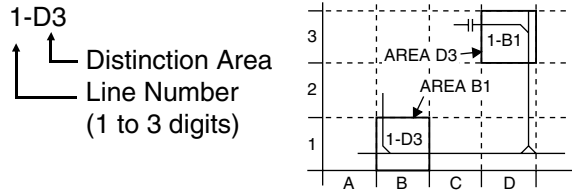
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	±30 - 80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Y)	±22.5%	20°C	-25~+85°C

Capacitors and transistors are represented by the following symbols.



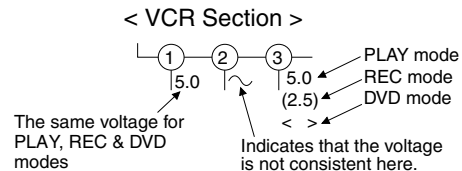
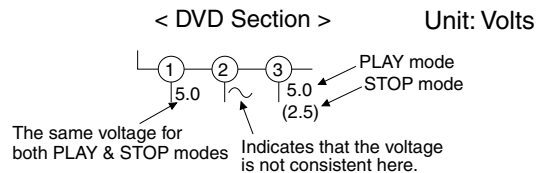
### Notes:

- 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.

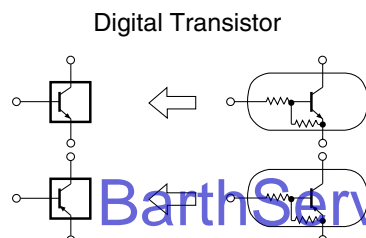


Examples:

- "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
- "1-B1" means that line number "1" goes to the line number "1" of the area "B1".
- All resistance values are indicated in ohms ( $K = 10^3$ ,  $M = 10^6$ ).
- Resistor wattages are 1/6W unless otherwise specified.
- All capacitance values are indicated in  $\mu F$  ( $P = 10^{-6} \mu F$ ).
- All voltages are DC voltages unless otherwise specified.
- Voltage indications for PLAY and STOP modes on the schematics are as shown below.



### < Schematic Diagram Symbols >



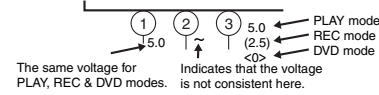
## Main 1/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position
CAPACITORS		TRANSISTORS	
C023	E-3	Q501	D-1
C501	A-1	Q506	A-2
C502	A-1	RESISTORS	
C505	D-1	R502	D-1
C507	D-1	R503	D-1
C509	E-3	R504	D-1
C510	D-3	R524	C-4
C511	E-3	R525	B-3
C512	E-3	R526	B-4
C514	D-3	R527	B-3
C515	D-3	R528	B-3
C517	D-3	R537	A-3
C521	E-4	R542	A-1
C522	E-4	R543	B-2
C523	C-4	R544	B-3
C525	F-4	R545	C-1
C527	E-4	R546	C-1
C529	D-4	R551	D-2
C530	D-4	R552	C-4
C531	C-4	R557	C-4
C532	C-4	R559	C-4
C533	C-4	R563	C-4
C534	C-4	R610	C-1
C535	C-4	R611	D-2
C536	C-4	R618	C-1
C537	B-4	R619	C-1
C541	E-3	R626	C-2
C544	E-4	SWITCH	
CONNECTORS		SW511	A-2
CN501	A-4	VARIABLE RESISTOR	
CN502	F-4	VR501	B-4
CN504	A-4	CRYSTAL OSCILLATORS	
DIODE		X501	D-3
D555	A-1	X502	D-3
IC		TEST POINTS	
IC501	C-3	TP505	B-2
COILS		TP513	B-4
L502	E-3		
L504	E-3		

# Main 1/8 Schematic Diagram < VCR Section >

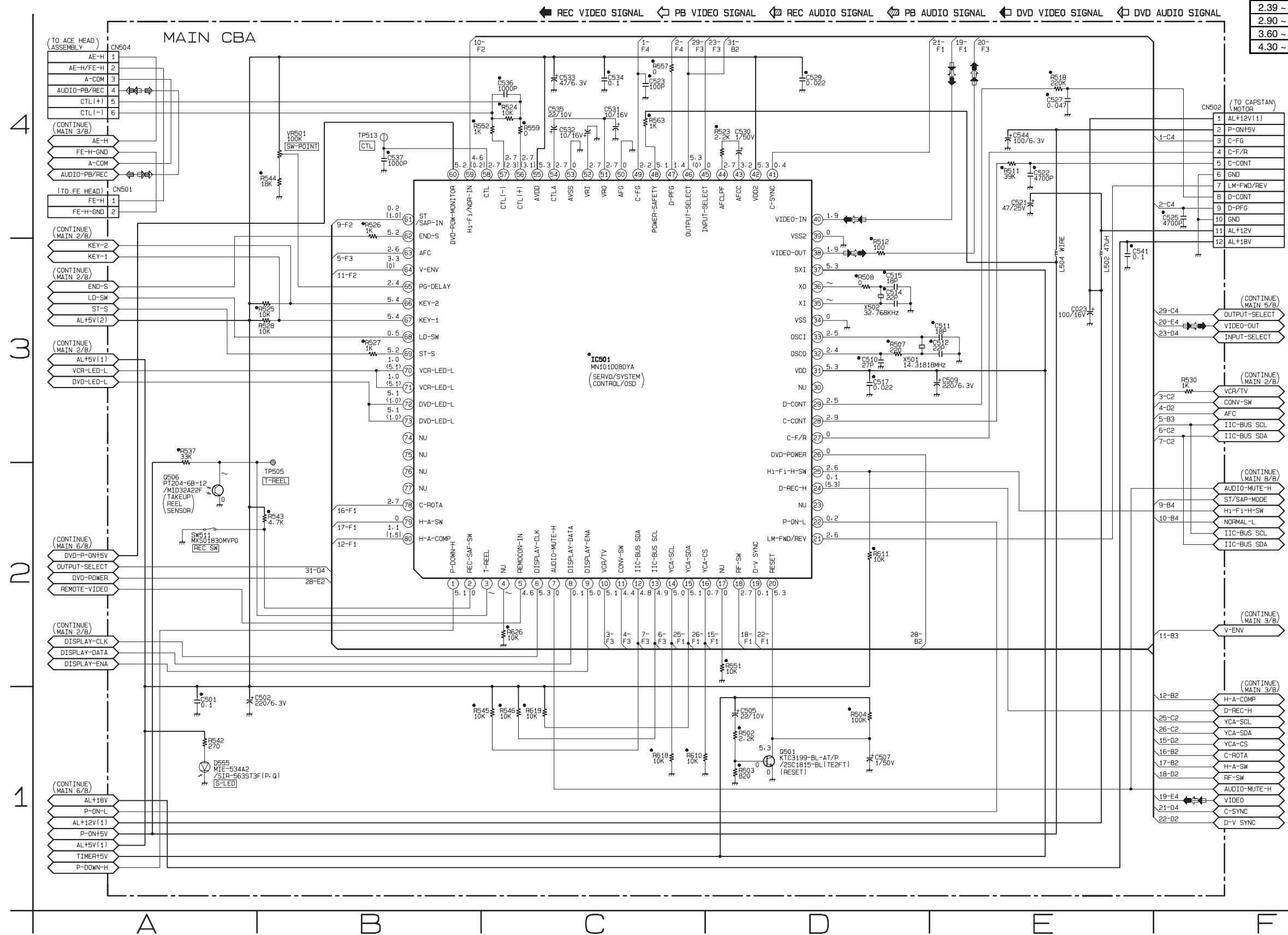
• = SMD

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



IC501 KEY VOLTAGE CHART

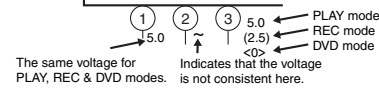
Voltage	Pin No.	KEY 1 (67 PIN)	KEY 2 (66 PIN)
0.00 ~ 0.51V		POWER	OUTPUT
0.51 ~ 0.92V		REW	CH UP
0.92 ~ 1.27V		FF	CH DOWN
1.27 ~ 1.61V		STOP/EJECT	SENS-INH
1.61 ~ 1.98V		PLAY	-----
1.98 ~ 2.39V		REC	-----
2.39 ~ 2.90V		-----	-----
2.90 ~ 3.60V		-----	-----
3.60 ~ 4.30V		-----	-----
4.30 ~ 5.00V		KEY OFF	KEY OFF



# Main 2/8, Power SW & Sensor Schematic Diagram < VCR Section >

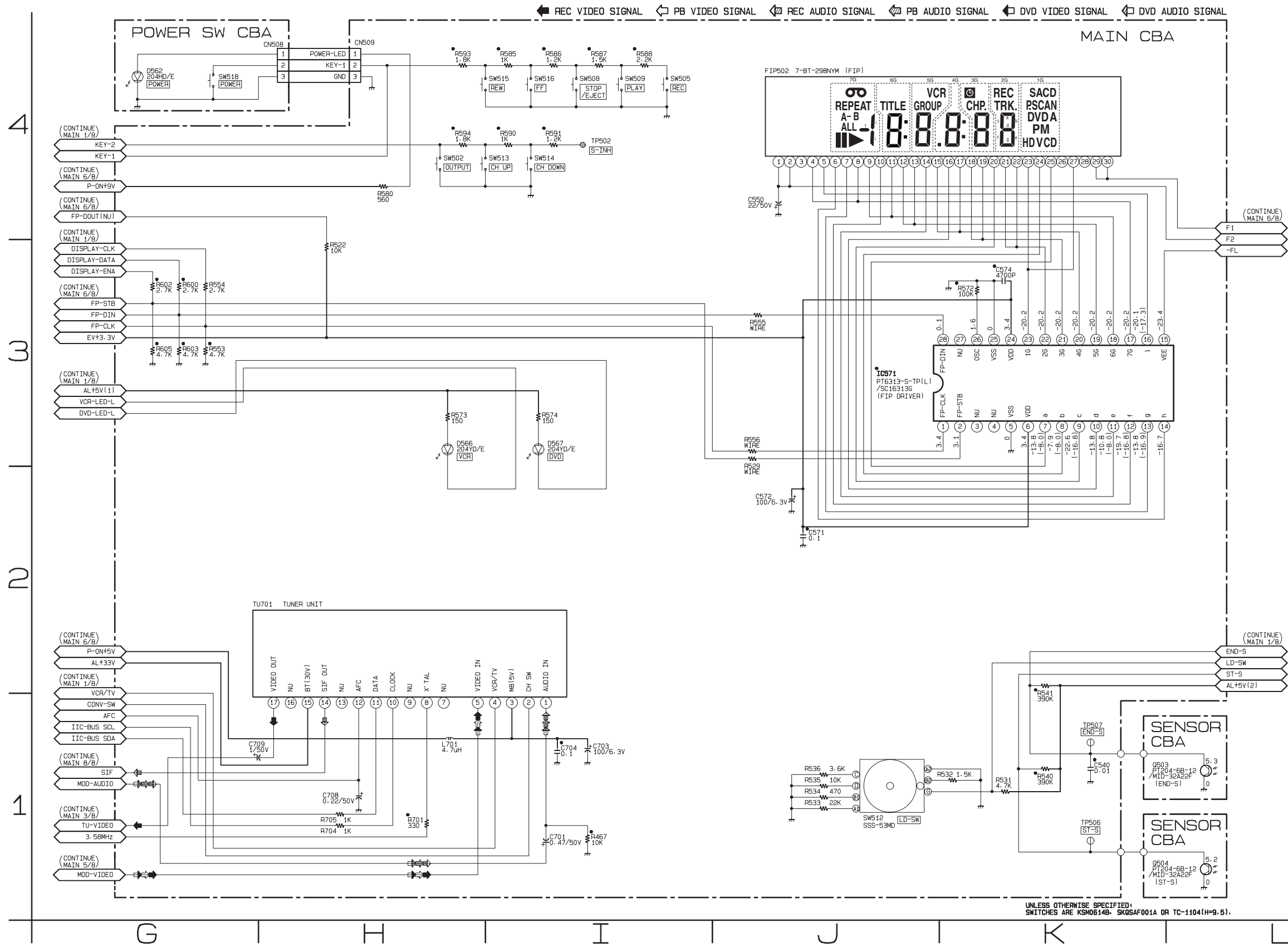
\* = SMD

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



FIP502 MATRIX CHART

	7G	6G	5G	4G	3G	2G	1G
a	OO	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	■	GROUP	CHP	TRK	V		
i	■	TITLE	VCR	■	REC	CD	



UNLESS OTHERWISE SPECIFIED: SWITCHES ARE KSM0614B, SKQSAF001A OR TC-1104(H=9.5).

## Main 2/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C540	K-1	R554	G-3
C550	J-4	R555	J-3
C571	J-2	R556	J-3
C572	J-2	R572	K-3
C574	K-4	R573	H-3
C701	I-1	R574	I-3
C703	I-1	R580	H-4
C704	I-1	R585	I-4
C708	H-1	R586	I-4
C709	G-1	R587	I-4
CONNECTOR		R588	I-4
CN509	H-4	R590	I-4
DIODES		R591	I-4
D566	H-3	R593	H-4
D567	I-3	R594	H-4
IC		R600	G-3
IC571	J-3	R602	G-3
COIL		R603	G-3
L701	H-1	R605	G-3
RESISTORS		R701	H-1
R467	I-1	R704	H-1
R507	D-3	R705	H-1
R508	D-3	SWITCHES	
R511	E-4	SW502	H-4
R512	D-3	SW505	I-4
R518	E-4	SW508	I-4
R522	H-3	SW509	I-4
R523	D-4	SW512	J-1
R529	J-3	SW513	I-4
R530	F-3	SW514	I-4
R531	K-1	SW515	I-4
R532	K-1	SW516	I-4
R533	J-1	MISCELLANEOUS	
R534	J-1	FIP502	J-4
R535	J-1	TU701	G-2
R536	J-1	TEST POINTS	
R540	K-1	TP502	I-4
R541	K-2	TP506	K-1
R553	G-3	TP507	K-1

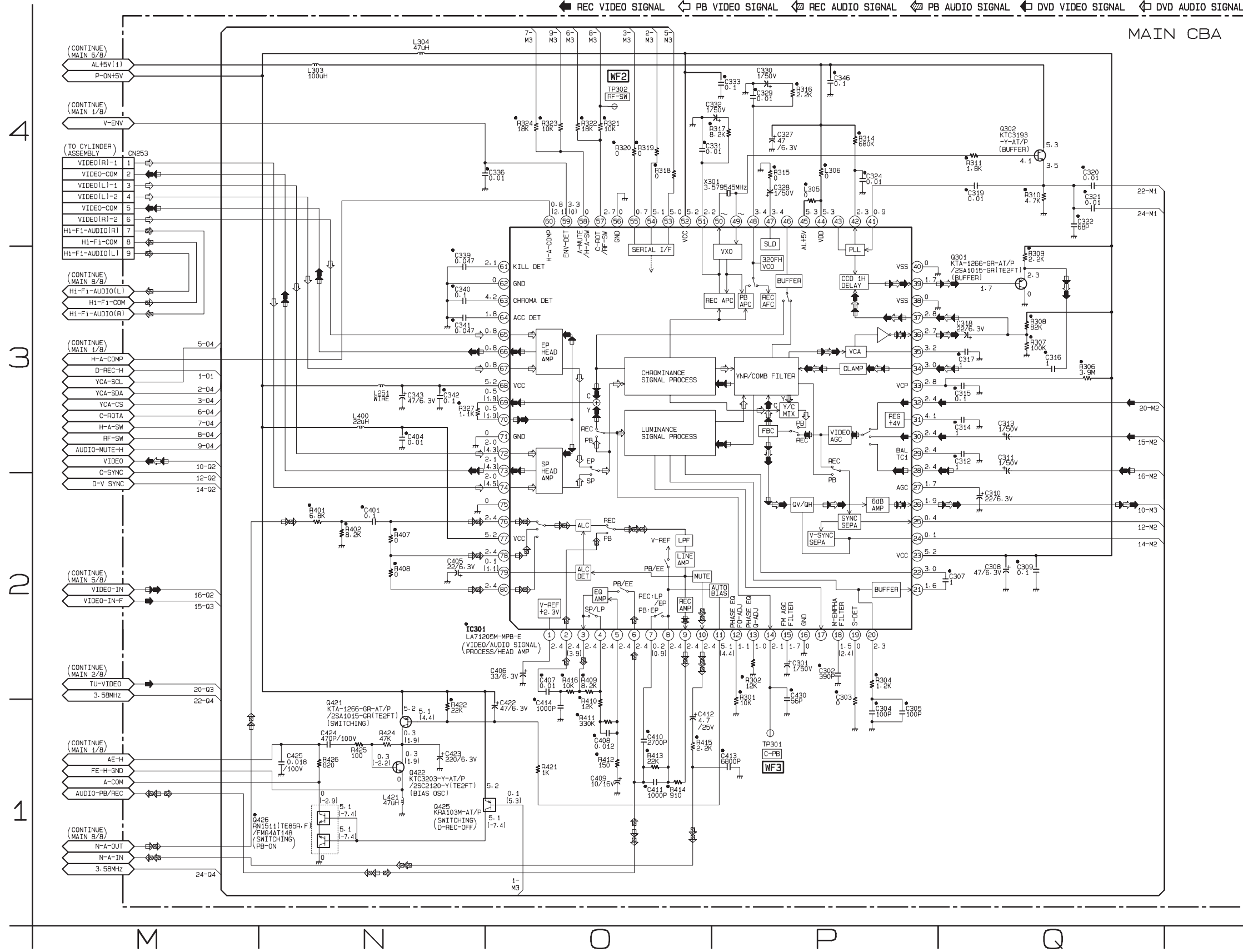
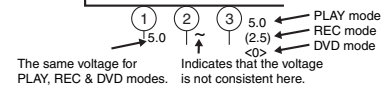
## Main 3/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		RESISTORS	
C301	P-2	C405	N-2	R306	Q-3
C302	P-2	C406	O-2	R307	Q-3
C303	P-2	C407	O-2	R308	Q-3
C304	P-1	C408	O-1	R309	Q-3
C305	P-1	C409	O-1	R310	Q-4
C307	Q-2	C410	O-1	R311	Q-4
C308	Q-2	C411	O-1	R314	P-4
C309	Q-2	C412	O-1	R315	P-4
C310	Q-2	C413	P-1	R316	P-4
C311	Q-3	C414	O-1	R317	P-4
C312	Q-3	C422	O-1	R318	O-4
C313	Q-3	C423	N-1	R319	O-4
C314	Q-3	C424	N-1	R320	O-4
C315	Q-3	C425	N-1	R321	O-4
C316	Q-3	C430	P-2	R322	O-4
C317	Q-3	CONNECTOR		R323	O-4
C318	Q-3	CN253	M-4	R324	O-4
C319	Q-4	IC		R327	N-3
C320	Q-4	IC301	N-2	R402	N-2
C321	Q-4	COILS		R407	N-2
C322	Q-4	L251	N-3	R408	N-2
C324	P-4	L303	N-4	R409	O-2
C327	P-4	L304	N-4	R410	O-1
C328	P-4	L305	P-4	R411	O-1
C329	P-4	L306	P-4	R412	O-1
C330	P-4	L400	N-3	R413	O-1
C331	O-4	L421	N-1	R414	O-1
C332	P-4	TRANSISTORS		R415	O-1
C333	P-4	Q301	Q-3	R416	O-2
C336	O-4	Q302	Q-4	R421	O-1
C339	N-3	Q421	N-1	R422	N-1
C340	N-3	Q422	N-1	R424	N-1
C341	N-3	Q425	N-1	R425	N-1
C342	N-3	Q426	N-1	R426	N-1
C343	N-3	RESISTORS		CRYSTAL OSCILLATOR	
C346	P-4	R301	P-2	X301	P-4
C401	N-2	R302	P-2		
C404	N-3	R304	P-2		

# Main 3/8 Schematic Diagram < VCR Section >

\* = SMD

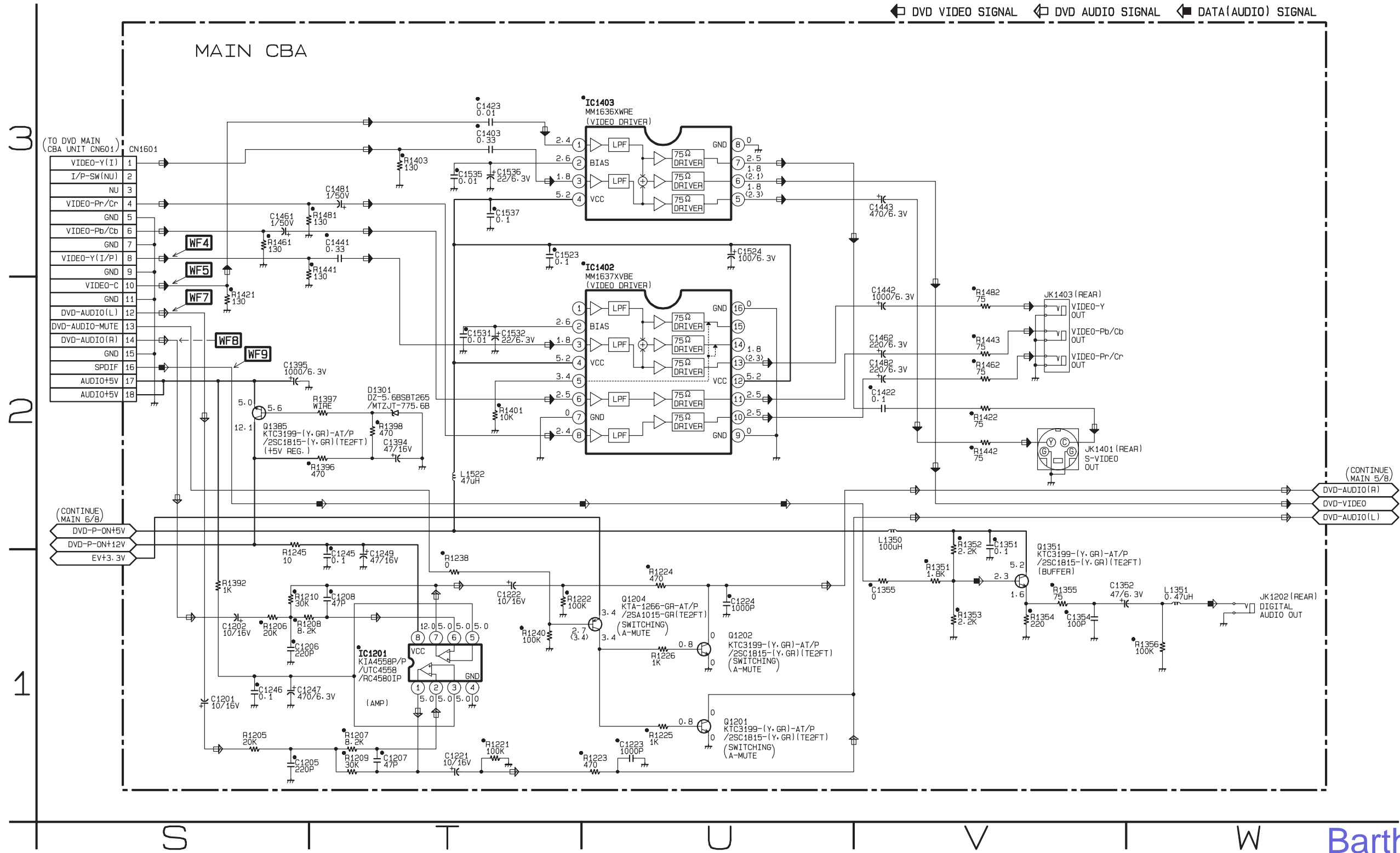
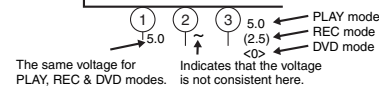
Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



# Main 4/8 Schematic Diagram < VCR Section >

\*●\* = SMD

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





## Main 4/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS		RESISTORS	
C1201	S-1	C1532	T-2	R1225	U-1
C1202	S-1	C1535	T-3	R1226	U-1
C1205	S-1	C1536	T-3	R1238	T-1
C1206	S-1	C1537	T-3	R1240	T-1
C1207	T-1	CONNECTOR		R1245	S-2
C1208	T-1	CN1601	S-3	R1351	V-1
C1221	T-1	DIODE		R1352	V-2
C1222	T-1	D1301	T-2	R1353	V-1
C1223	U-1	ICS		R1354	V-1
C1224	U-1	IC1201	T-1	R1355	V-1
C1245	T-1	IC1402	U-3	R1356	W-1
C1246	S-1	IC1403	U-3	R1392	S-2
C1247	S-1	COILS		R1396	T-2
C1249	T-1	L1350	V-2	R1397	T-2
C1351	V-2	L1351	W-1	R1398	T-2
C1352	V-1	L1522	T-2	R1401	T-2
C1354	V-1	TRANSISTORS		R1403	T-3
C1355	V-1	Q1201	U-1	R1421	S-3
C1394	T-2	Q1202	U-1	R1422	V-2
C1395	S-2	Q1204	U-1	R1441	T-3
C1403	T-3	Q1351	V-2	R1442	V-2
C1422	V-2	Q1385	S-2	R1443	V-2
C1423	T-3	RESISTORS		R1461	S-3
C1441	T-3	R1205	S-1	R1462	V-2
C1442	V-2	R1206	S-1	R1481	T-3
C1443	V-3	R1207	T-1	R1482	V-2
C1461	S-3	R1208	S-1	MISCELLANEOUS	
C1462	V-2	R1209	T-1	JK1202	W-1
C1481	T-3	R1210	S-1	JK1401	V-2
C1482	V-2	R1221	T-1	JK1403	V-2
C1523	T-3	R1222	T-1	TEST POINTS	
C1524	U-3	R1223	U-1	TP301	P-1
C1531	T-2	R1224	U-1	TP302	O-4

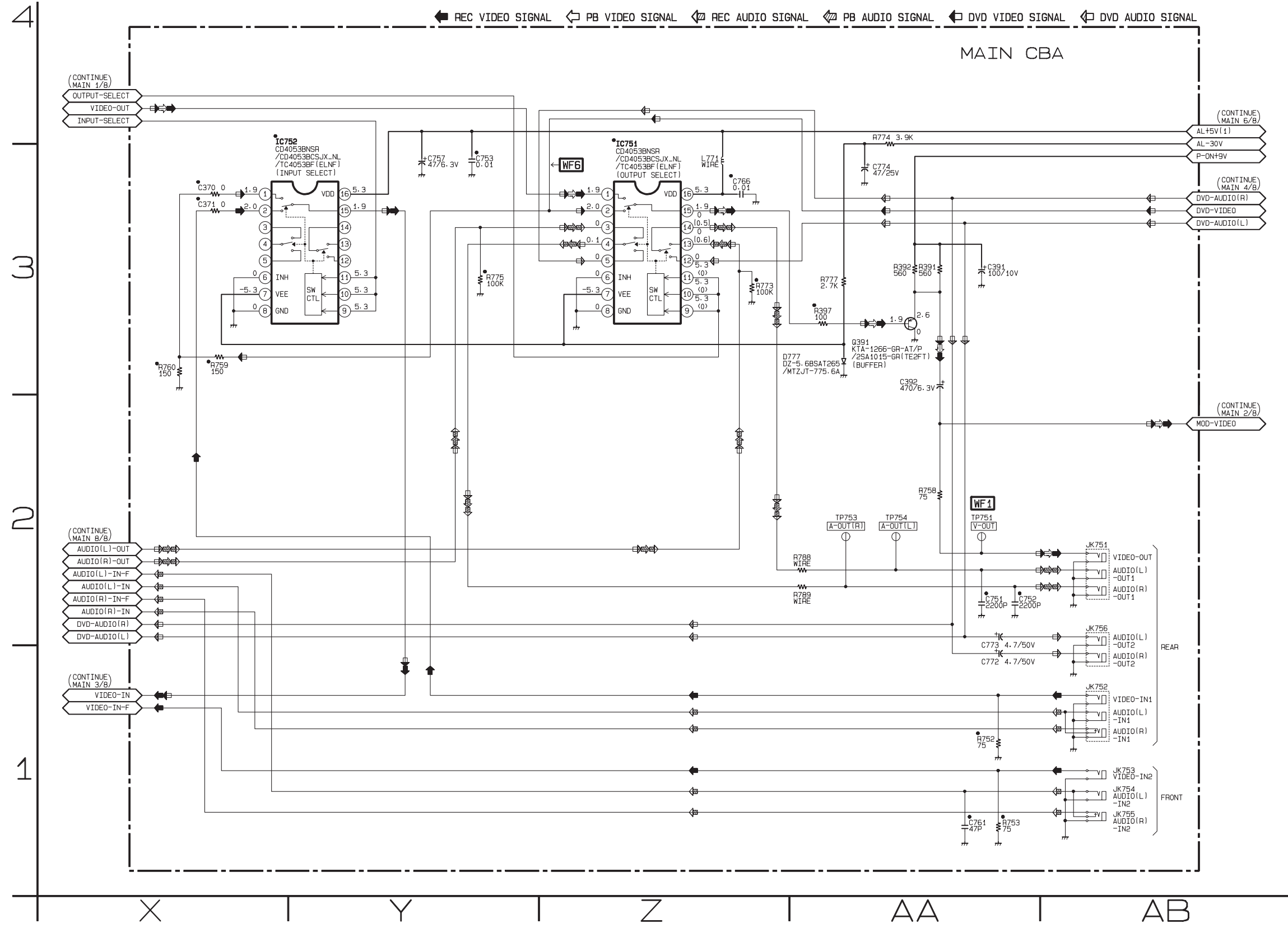
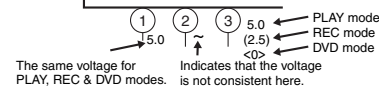
## Main 5/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C370	X-3	R392	AA-3
C371	X-3	R397	AA-3
C391	AA-3	R752	AA-1
C392	AA-3	R753	AA-1
C751	AA-2	R758	AA-2
C752	AA-2	R759	X-3
C753	Y-3	R760	X-3
C757	Y-3	R773	Z-3
C761	AA-1	R774	AA-4
C766	Z-3	R775	Y-3
C772	AA-1	R777	AA-3
C773	AA-2	R788	AA-2
C774	AA-3	R789	AA-2
DIODE		MISCELLANEOUS	
D777	AA-3	JK751	AB-2
ICS		JK752	AB-1
IC751	Z-3	JK753	AB-1
IC752	X-4	JK754	AB-1
COIL		JK755	AB-1
L771	Z-3	JK756	AB-2
TRANSISTOR		TEST POINTS	
Q391	AA-3	TP751	AA-2
RESISTORS		TP753	AA-2
R391	AA-3	TP754	AA-2

# Main 5/8 Schematic Diagram < VCR Section >

\*• = SMD

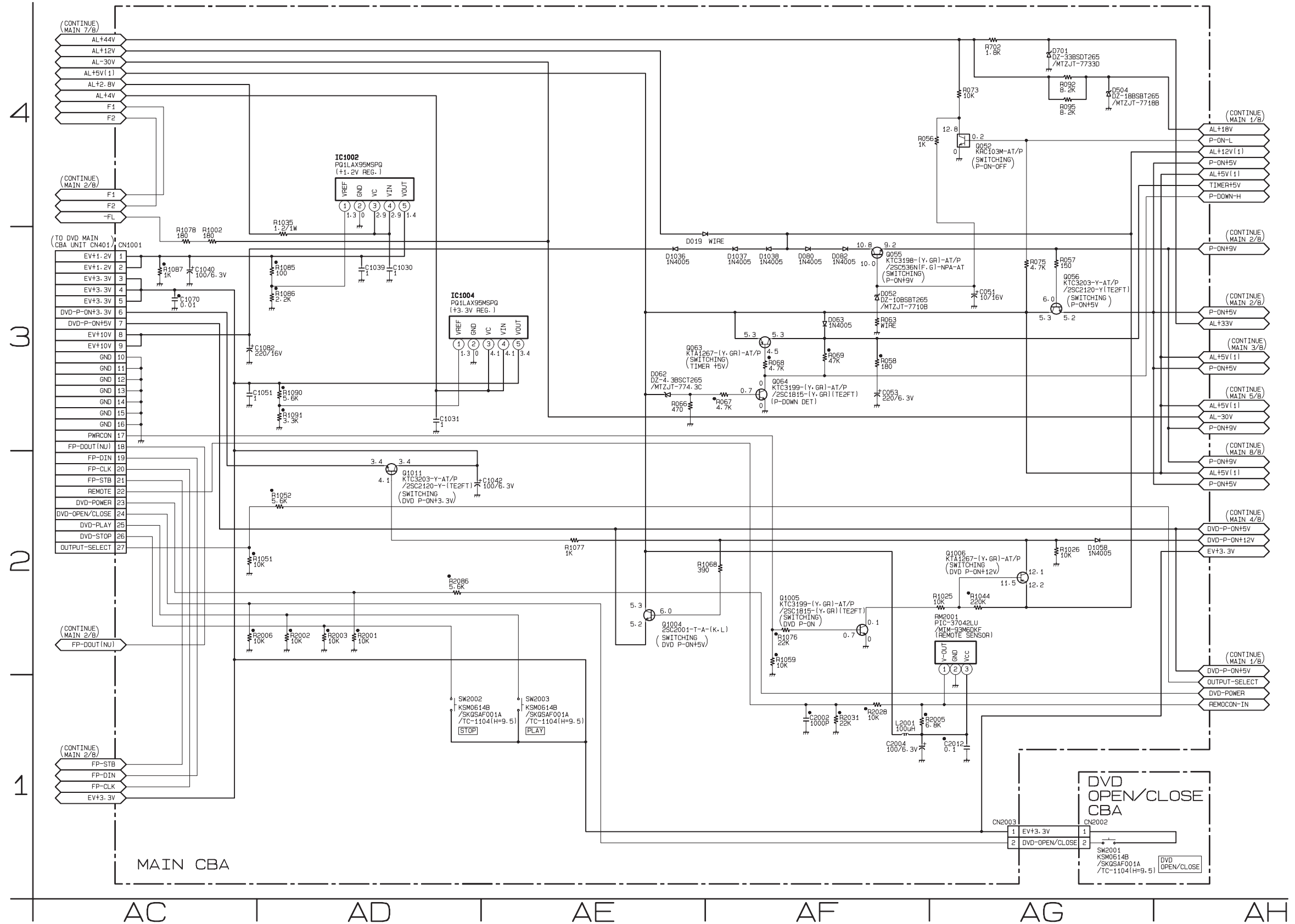
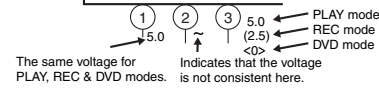
Voltage indications for PLAY, REC and DVD modes on the Schematic Diagrams are as shown below:



# Main 6/8 & DVD Open/Close Schematic Diagram < VCR Section >

\*●\* = SMD

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



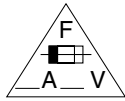
## Main 6/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position
CAPACITORS		RESISTORS	
C051	AG-3	R056	AG-4
C053	AF-3	R057	AG-3
C1030	AD-3	R058	AF-3
C1031	AD-3	R063	AF-3
C1039	AD-3	R066	AE-3
C1040	AC-3	R067	AF-3
C1042	AE-2	R068	AF-3
C1051	AC-3	R069	AF-3
C1070	AC-3	R073	AG-4
C1082	AC-3	R075	AG-3
C2002	AF-1	R092	AG-4
C2004	AF-1	R095	AG-4
C2012	AG-1	R702	AG-4
CONNECTORS		R1025	AG-2
CN1001	AC-1	R1026	AG-2
CN2003	AG-1	R1035	AD-3
DIODES		R1044	AG-2
D019	AE-3	R1051	AC-1
D052	AF-3	R1052	AD-2
D062	AE-3	R1059	AF-2
D063	AF-3	R1068	AF-2
D080	AF-3	R1076	AF-2
D082	AF-3	R1077	AE-2
D504	AG-4	R1078	AC-3
D701	AG-4	R1085	AD-3
D1036	AE-3	R1086	AD-3
D1037	AF-3	R1087	AC-3
D1038	AF-3	R1090	AD-3
D1058	AG-2	R1091	AD-3
ICS		R2001	AD-2
IC1002	AD-4	R2002	AD-2
IC1004	AD-3	R2003	AD-2
COIL		R2005	AF-1
L2001	AF-1	R2006	AC-2
TRANSISTORS		R2028	AF-1
Q052	AG-4	R2031	AF-1
Q055	AF-3	R2086	AD-2
Q056	AG-3	SWITCHES	
Q063	AE-3	SW2002	AD-1
Q064	AF-3	SW2003	AE-1
Q1004	AE-2	MISCELLANEOUS	
Q1005	AF-2	RM2001	AG-2
Q1006	AG-2		
Q1011	AD-2		

## Main 7/8 Schematic Diagram Parts Location Guide < VCR Section >

Ref No.	Position	Ref No.	Position
CAPACITORS		COILS	
C013	AL-4	L009	AL-3
C018	AL-3	L1001	AI-4
C020	AL-3	L1004	AK-3
C021	AL-3	L1007	AL-2
C030	AL-1	L1020	AL-2
C1001	AI-3	TRANSISTORS	
C1002	AL-3	Q031	AL-1
C1003	AK-3	Q1001	AK-3
C1004	AJ-3	Q1003	AJ-3
C1005	AK-3	RESISTORS	
C1006	AI-3	R031	AL-1
C1007	AL-2	R032	AL-1
C1008	AK-3	R034	AL-1
C1013	AJ-2	R039	AL-1
C1014	AL-2	R041	AL-1
C1015	AL-2	R042	AL-1
C1018	AL-1	R401	N-2
C1021	AL-1	R1002	AC-3
C1023	AL-3	R1004	AK-3
C1029	AJ-2	R1005	AJ-3
C1032	AJ-2	R1006	AJ-3
C1033	AJ-1	R1007	AJ-3
C1038	AL-2	R1008	AJ-3
DIODES		R1010	AJ-2
D013	AL-4	R1011	AK-2
D015	AL-3	R1013	AM-1
D016	AK-3	R1020	AK-2
D031	AL-3	R1029	AJ-2
D035	AL-3	R1032	AJ-2
D040	AL-1	R1034	AJ-2
D1001	AJ-4	R1036	AJ-2
D1002	AJ-3	R1037	AJ-1
D1003	AJ-4	R1038	AJ-1
D1004	AJ-3	R1039	AJ-1
D1007	AJ-2	R1042	AL-2
D1018	AJ-2	R1043	AJ-3
D1021	AJ-2	MISCELLANEOUS	
D1022	AJ-2	AC1001	AI-4
D1024	AJ-1	F1001	AI-4
D1025	AJ-1	GP1001	AI-3
IC		SA1001	AI-3
IC1001	AK-1	T001	AK-4

# Main 7/8 Schematic Diagram < VCR Section >



**CAUTION !**

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

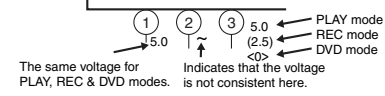
**CAUTION !**

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.

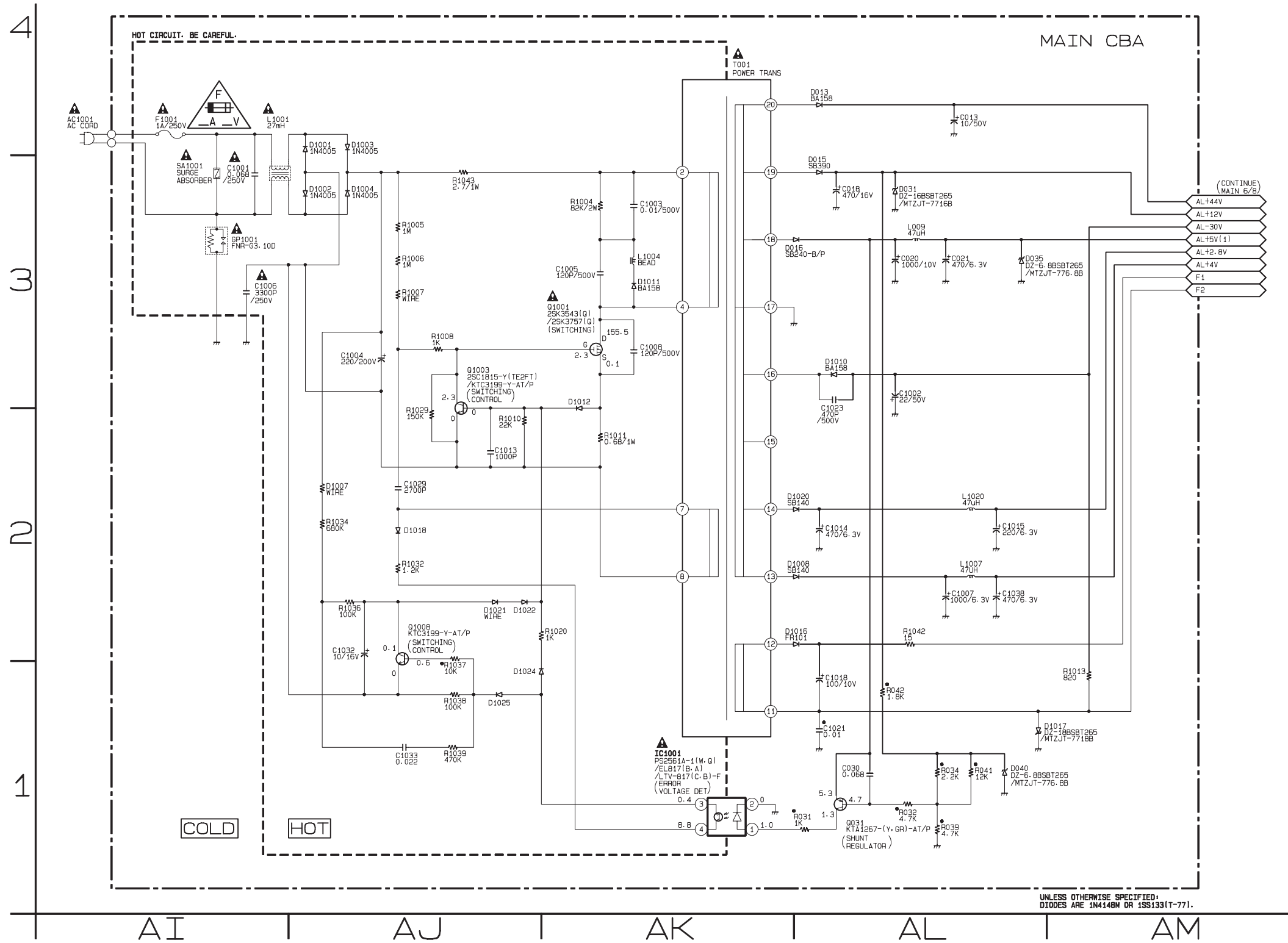
**NOTE:**

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

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



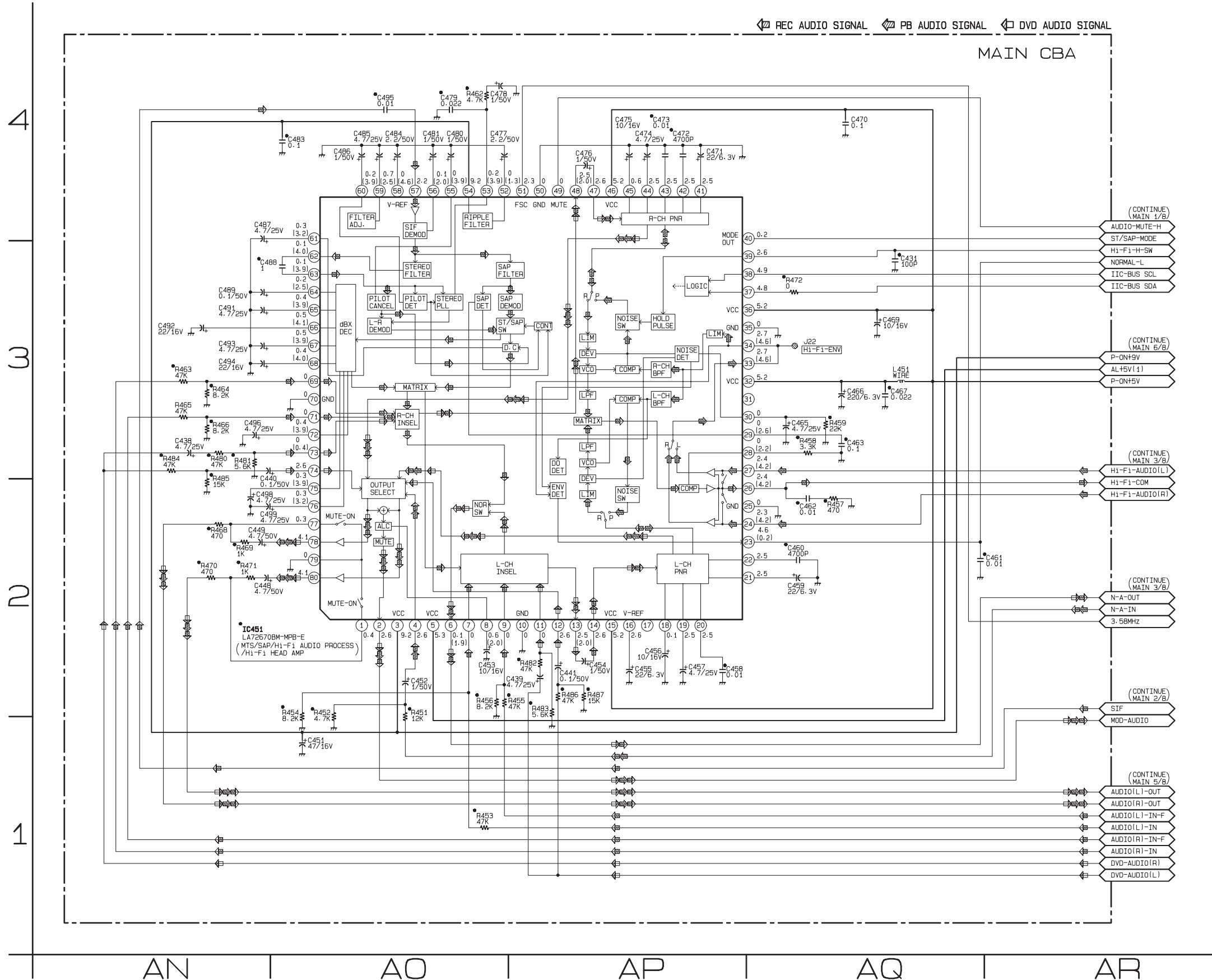
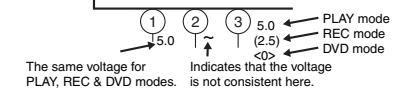
\*●\* = SMD



# Main 8/8 Schematic Diagram < VCR Section >

\* = SMD

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



MAIN 8/8 Schematic Diagram Parts Location Guide

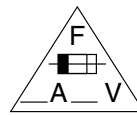
Ref No.	Position	Ref No.	Position
CAPACITORS		CAPACITORS	
C431	AQ-3	C496	AN-3
C438	AN-3	C498	AN-2
C439	AN-2	C499	AN-2
C440	AN-3	DIODES	
C441	AP-2	D1008	AK-2
C448	AN-2	D1010	AL-3
C449	AN-2	D1011	AK-3
C451	AO-1	D1012	AK-3
C452	AO-2	D1016	AK-2
C453	AO-2	D1017	AM-1
C454	AP-2	D1020	AK-2
C455	AP-2	IC	
C456	AP-2	IC451	AN-2
C457	AP-2	COIL	
C458	AP-2	L451	AQ-3
C459	AQ-2	TRANSISTOR	
C460	AQ-2	Q1008	AJ-2
C461	AR-2	RESISTORS	
C462	AQ-2	R451	AO-2
C463	AQ-3	R452	AO-2
C465	AQ-3	R453	AO-1
C466	AQ-3	R454	AO-2
C467	AQ-3	R455	AP-2
C469	AQ-3	R456	AO-2
C470	AQ-4	R457	AQ-2
C471	AP-4	R458	AQ-3
C472	AP-4	R459	AQ-3
C473	AP-4	R462	AO-4
C474	AP-4	R463	AN-3
C475	AP-4	R464	AN-3
C476	AP-4	R465	AN-3
C477	AO-4	R466	AN-3
C478	AO-4	R468	AN-2
C479	AO-4	R469	AN-2
C480	AO-4	R470	AN-2
C481	AO-4	R471	AN-2
C483	AO-4	R472	AQ-3
C484	AO-4	R480	AN-3
C485	AO-4	R481	AN-3
C486	AO-4	R482	AP-2
C487	AN-4	R483	AP-2
C488	AN-3	R484	AN-3
C489	AN-3	R485	AN-2
C491	AN-3	R486	AP-2
C492	AN-3	R487	AP-2
C493	AN-3	MISCELLANEOUS	
C494	AN-3	J22	AQ-3
C495	AO-4		



# Main CBA Top View

### CAUTION !

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



### CAUTION !

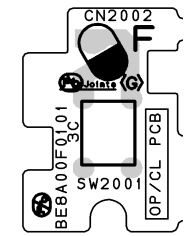
For continued protection against fire hazard, replace only with the same type fuse.  
ATTENTION : Pour une protection continue les risques d'Incele n'utiliser que des fusible de même type.  
**Risk of fire-replace fuse as marked.**  
"This symbol means fast operating fuse."  
"Ce symbole représente un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

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.

### NOTE:

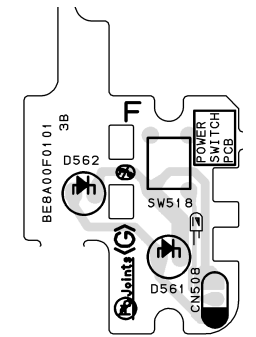
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

# DVD Open/Close CBA Top View



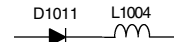
BE8A00F01013C

# Power SW CBA Top View

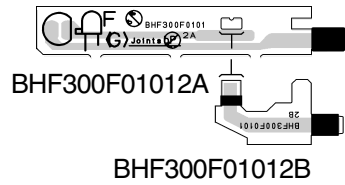


BE8A00F01013B

Note:  
L1004 is positioned on the Cathode side of D1011 as shown below.



# Sensor CBA Top View

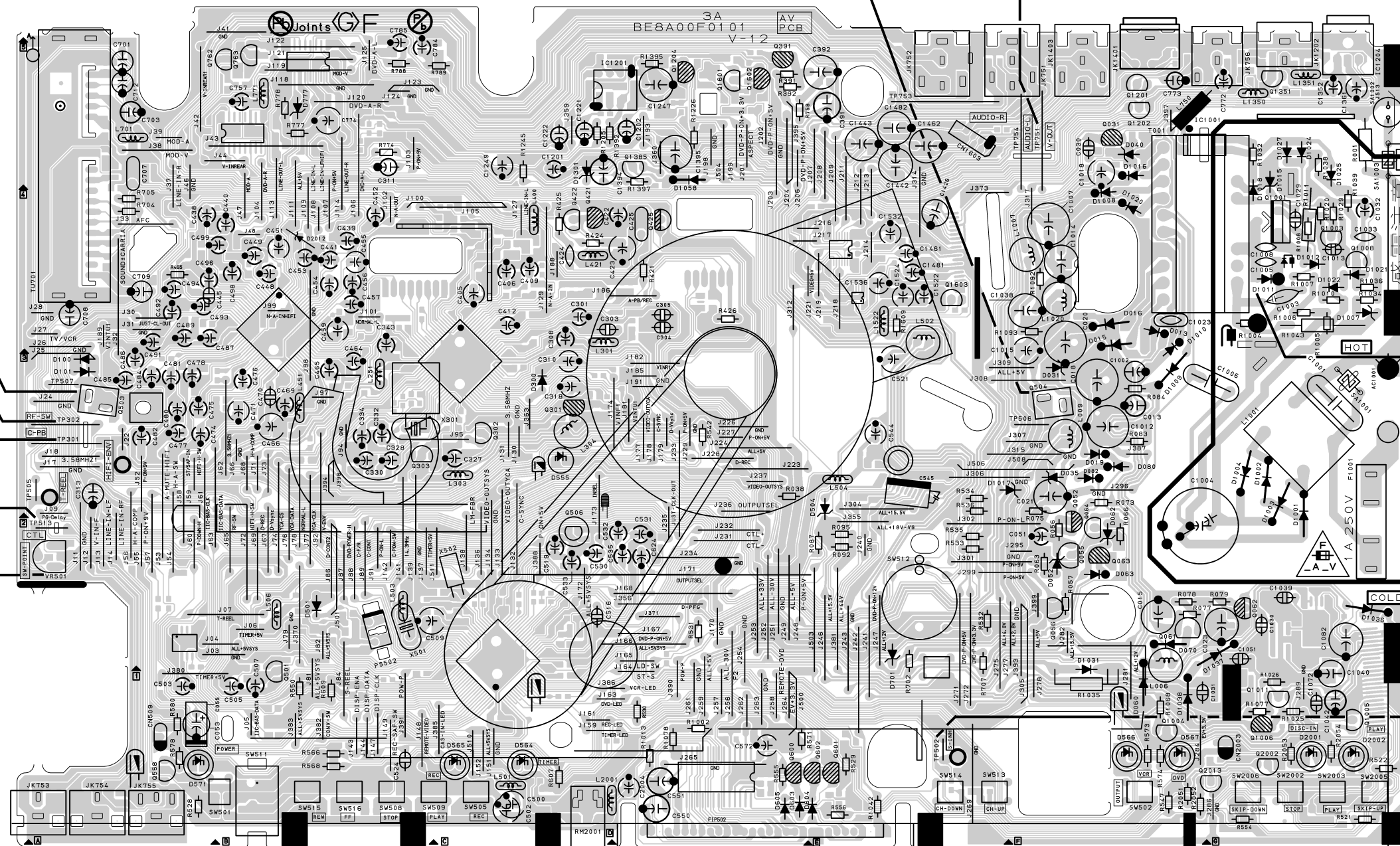


TO SENSOR CBA  
(START-SENSOR)

WF1  
TP751  
V-OUT

TO SENSOR CBA  
(END-SENSOR)

- WF2
- TP302
- RF-SW
- WF3
- TP301
- C-PB
- TP513
- CTL
- VR501
- SW-P

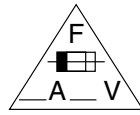


TP502  
S-INH

# Main CBA Bottom View

## CAUTION !

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



## CAUTION !

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

ATTENTION : Pour une protection continue les risques d'Incele n'utiliser que des fusible de même type.

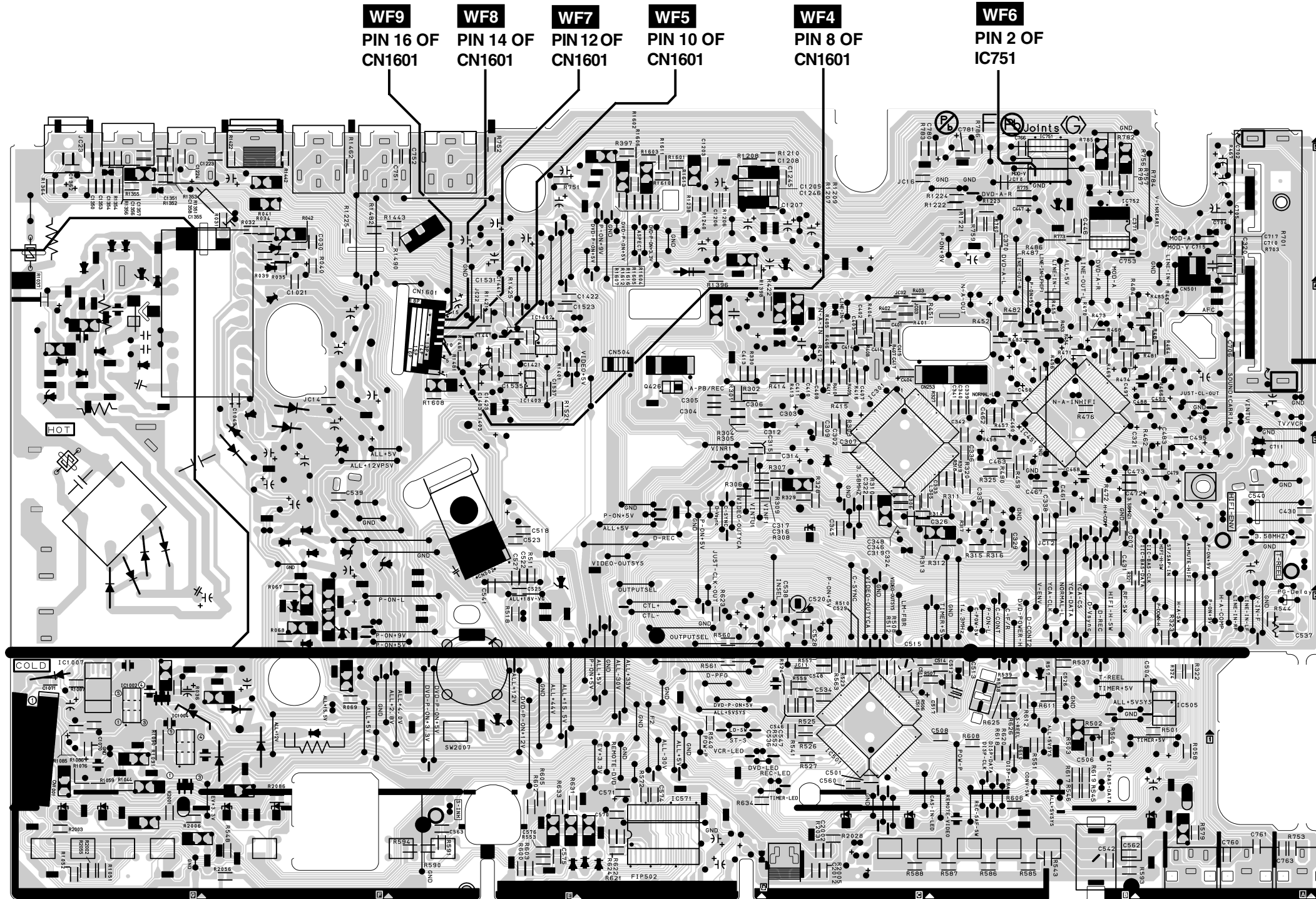
Risk of fire-replace fuse as marked.

- "This symbol means fast operating fuse."  
 "Ce symbole représente un fusible à fusion rapide."

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.

## NOTE:

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



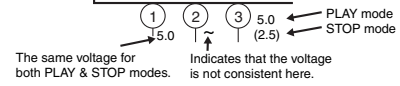
# Main CBA Parts Location Guide

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		CONNECTORS		CONNECTORS		CONNECTORS		CONNECTORS		COILS		RESISTORS		RESISTORS		RESISTORS		RESISTORS		SWITCHES	
C013	F-3	C414	C-4	C505	B-1	C1030	G-2	CN2003	G-1	L304	C-3	R068	F-2	R465	A-4	R580	A-1	R1068	F-1	SW512	E-2
C018	F-3	C422	C-4	C507	B-1	C1031	G-1	DIODES		L305	B-3	R069	F-2	R466	A-4	R585	B-1	R1076	G-1	SW513	E-1
C020	F-3	C423	C-4	C509	B-2	C1032	G-4	D013	F-4	L306	C-3	R073	F-3	R467	A-5	R586	B-1	R1077	G-1	SW514	E-1
C021	F-3	C424	C-4	C510	C-2	C1033	G-4	D015	F-4	L400	C-4	R075	F-2	R468	B-4	R587	B-1	R1078	D-1	SW515	B-1
C023	F-2	C425	D-4	C511	C-2	C1038	E-4	D016	F-4	L421	C-4	R092	E-2	R469	B-4	R588	C-1	R1085	G-1	SW516	B-1
C030	F-5	C430	A-3	C512	B-2	C1039	G-2	D019	F-3	L451	B-3	R095	E-2	R470	B-4	R590	E-1	R1086	G-1	SW2002	G-1
C051	F-2	C431	B-3	C514	B-2	C1040	G-1	D031	F-3	L502	E-4	R301	D-4	R471	B-4	R591	E-1	R1087	G-2	SW2003	G-1
C053	B-1	C438	A-4	C515	C-2	C1042	G-1	D035	F-3	L504	E-3	R302	D-4	R472	B-2	R593	A-1	R1090	G-1	VARIABLE RESISTOR	
C301	C-4	C439	B-4	C517	B-2	C1051	G-2	D040	F-5	L701	A-5	R304	D-3	R480	A-4	R594	E-1	R1091	G-1	VR501	A-2
C302	C-3	C440	B-4	C521	E-3	C1070	G-1	D052	F-2	L771	B-5	R306	D-3	R481	A-4	R600	E-1	R1205	C-5	CRYSTAL OSCILLATORS	
C303	C-4	C441	B-4	C522	E-3	C1082	G-2	D062	F-2	L1001	G-3	R307	C-3	R482	B-4	R602	E-1	R1206	D-5	X301	C-3
C304	D-4	C448	B-4	C523	E-3	C1201	C-5	D063	F-2	L1004	G-4	R308	C-3	R483	B-4	R603	E-1	R1207	C-5	X501	B-2
C305	D-4	C449	B-4	C525	E-2	C1202	D-5	D080	F-3	L1007	F-4	R309	C-3	R484	B-4	R605	E-1	R1208	D-5	X502	C-2
C307	C-3	C451	B-4	C527	E-3	C1205	C-5	D082	F-3	L1020	F-4	R310	C-3	R485	A-4	R610	B-1	R1209	C-5	MISCELLANEOUS	
C308	C-4	C452	B-4	C529	C-2	C1206	D-5	D504	E-3	L1350	G-5	R311	B-3	R486	B-5	R611	B-2	R1210	C-5	AC1001	G-3
C309	C-4	C453	B-4	C530	C-2	C1207	C-5	D555	C-3	L1351	G-5	R314	B-3	R487	B-5	R618	B-1	R1221	B-5	F1001	G-3
C310	C-3	C454	B-4	C531	D-2	C1208	C-5	D566	F-1	L1522	E-4	R315	B-3	R502	B-2	R619	B-1	R1222	B-5	FIP502	D-1
C311	B-5	C455	B-4	C532	C-2	C1221	C-5	D567	F-1	L2001	C-1	R316	B-3	R503	B-1	R626	B-2	R1223	B-5	GP1001	G-5
C312	C-3	C456	B-4	C533	C-2	C1222	C-5	D701	E-1	TRANSISTORS		R317	B-3	R504	B-1	R701	A-5	R1224	B-5	J22	A-3
C313	A-3	C457	B-4	C534	C-2	C1223	F-5	D777	B-5	Q031	F-5	R318	B-3	R507	B-2	R702	E-1	R1225	F-5	JK751	F-5
C314	C-3	C458	B-4	C535	C-2	C1224	G-5	D1001	G-2	Q052	F-3	R319	B-3	R508	C-2	R704	A-4	R1226	D-5	JK752	E-5
C315	C-3	C459	B-4	C536	C-1	C1245	C-5	D1002	G-3	Q055	F-2	R320	B-3	R511	E-3	R705	A-4	R1238	D-5	JK753	A-1
C316	C-3	C460	B-4	C537	A-2	C1246	C-5	D1003	G-2	Q056	F-2	R321	B-3	R512	C-2	R752	E-5	R1240	D-5	JK754	A-1
C317	C-3	C461	B-3	C540	A-3	C1247	D-5	D1004	G-3	Q063	F-2	R322	A-2	R518	E-2	R753	A-1	R1245	C-5	JK755	A-1
C318	C-3	C462	B-4	C541	E-2	C1249	C-5	D1007	G-4	Q064	F-2	R323	A-2	R522	G-1	R758	D-5	R1351	G-5	JK756	G-5
C319	C-3	C463	B-3	C544	E-3	C1351	G-5	D1008	F-4	Q301	C-3	R324	A-2	R523	C-2	R759	B-5	R1352	G-5	JK1202	G-5
C320	A-5	C465	B-3	C550	D-1	C1352	G-5	D1010	F-4	Q302	C-3	R327	B-4	R524	C-2	R760	B-5	R1353	G-5	JK1401	F-5
C321	B-3	C466	B-3	C571	D-1	C1354	G-5	D1011	G-4	Q391	D-5	R391	D-5	R525	C-2	R773	B-5	R1354	G-5	JK1403	F-5
C322	C-3	C467	B-3	C572	D-1	C1355	G-5	D1012	G-4	Q421	C-4	R392	D-5	R526	C-1	R774	B-5	R1355	G-5	RM2001	C-1
C324	C-3	C469	B-3	C574	D-1	C1394	D-4	D1016	F-5	Q422	C-4	R397	D-5	R527	C-1	R775	B-5	R1356	G-5	SA1001	G-3
C327	C-3	C470	B-3	C701	A-5	C1395	D-5	D1017	E-3	Q425	D-4	R401	C-4	R528	A-1	R777	B-5	R1392	D-5	T001	F-5
C328	B-3	C471	B-3	C703	A-5	C1403	E-4	D1018	G-4	Q426	D-4	R402	C-4	R529	E-1	R788	B-5	R1396	D-4	TU701	A-4
C329	B-3	C472	B-3	C704	A-5	C1422	D-4	D1020	F-4	Q501	B-1	R407	C-4	R530	D-1	R789	C-5	R1397	D-4	TEST POINTS	
C330	B-3	C473	B-3	C708	A-4	C1423	E-4	D1021	G-4	Q506	C-2	R408	C-4	R531	D-2	R1002	D-1	R1398	C-4	TP301	A-3
C331	B-3	C474	A-3	C709	A-4	C1441	E-4	D1022	G-4	Q1001	G-4	R409	C-4	R532	E-2	R1004	G-4	R1401	E-4	TP302	A-3
C332	B-3	C475	A-3	C751	E-5	C1442	E-4	D1024	G-5	Q1003	G-4	R410	C-4	R533	E-2	R1005	G-3	R1403	E-4	TP502	E-1
C333	B-3	C476	B-3	C752	E-5	C1443	E-5	D1025	G-5	Q1004	F-1	R411	C-4	R534	E-3	R1006	G-4	R1421	E-4	TP505	A-3
C336	B-3	C477	A-3	C753	B-5	C1461	E-4	D1036	G-2	Q1005	G-1	R412	C-4	R535	E-2	R1007	G-4	R1422	F-5	TP506	F-3
C339	B-4	C478	A-3	C757	B-5	C1462	E-5	D1037	F-1	Q1006	G-1	R413	C-4	R536	E-3	R1008	G-4	R1441	E-4	TP507	A-3
C340	B-4	C479	A-3	C761	A-1	C1481	E-4	D1038	F-1	Q1008	G-4	R414	C-4	R537	B-2	R1010	G-4	R1442	F-5	TP513	A-2
C341	B-4	C480	A-3	C766	B-5	C1482	E-5	D1058	D-4	Q1011	G-1	R415	C-4	R540	D-1	R1011	G-4	R1443	E-5	TP751	F-5
C342	B-4	C481	A-3	C772	G-5	C1523	E-4	D1301	C-5	Q1201	F-5	R416	C-4	R541	C-1	R1013	D-1	R1461	E-4	TP753	E-5
C343	B-4	C483	A-4	C773	F-5	C1524	E-4	ICS		Q1202	F-5	R421	D-4	R542	D-3	R1020	G-4	R1462	F-5	TP754	F-5
C346	C-3	C484	A-3	C774	B-5	C1531	E-4	IC301	C-4	Q1204	D-5	R422	C-5	R543	B-1	R1025	G-1	R1481	E-4		
C370	B-5	C485	A-3	C1001	G-3	C1532	E-4	IC451	B-4	Q1351	G-5	R424	C-4	R544	A-2	R1026	G-1	R1482	F-5		
C371	B-5	C486	A-3	C1002	F-3	C1535	E-4	IC501	C-1	Q1385	D-5	R425	C-4	R545	B-1	R1029	G-4	R2001	G-1		
C391	E-5	C487	B-4	C1003	G-4	C1536	E-4	IC571	D-1	RESISTORS		R426	D-4	R546	B-1	R1032	G-5	R2002	G-1		
C392	E-5	C488	A-4	C1004	F-3	C1537	E-4	IC751	B-5	R031	F-5	R451	B-4	R551	B-1	R1034	G-4	R2003	G-1		
C401	C-4	C489	A-4	C1005	G-4	C2002	C-1	IC752	B-5	R032	F-5	R452	B-4	R552	C-1	R1035	F-1	R2005	C-1		
C404	C-4	C491	A-3	C1006	G-3	C2004	D-1	IC1001	F-5	R034	F-5	R453	B-4	R553	E-1	R1036	G-4	R2006	G-1		
C405	C-4	C492	A-4	C1007	F-4	C2012	C-1	IC1002	G-2	R039	F-5	R454	B-4	R554	G-1	R1037	G-4	R2028	C-1		
C406	C-4	C493	A-4	C1008	G-4	CONNECTORS		IC1004	G-2	R041	F-5	R455	B-4	R555	D-1	R1038	G-5	R2031	C-1		
C407	C-4	C494	A-4	C1013	G-4	CN253	C-4	IC1201	C-5	R042	F-5	R456	B-4	R556	E-1	R1039	G-4	R2086	F-1		
C408	C-4	C495	A-3	C1014	F-4	CN501	A-4	IC1402	E-4	R056	F-2	R457	B-4	R557	C-2	R1042	E-1	SWITCHES			
C409	C-4	C496	A-4	C1015	E-3	CN502	E-3	IC1403	E-4	R057	F-2	R458	B-3	R559	C-2	R1043	G-4	SW502	F-1		
C410	C-4	C498	B-4	C1018	F-5	CN504	D-4	COILS		R058	A-1	R459	B-3	R563	C-2	R1044	G-1	SW505	C-1		
C411	C-4	C499	A-4	C1021	F-4	CN509	A-1	L009	F-3	R063	F-2	R462	A-3	R572	D-1	R1051	G-1	SW508	B-1		
C412	C-4	C501	C-2	C1023	F-4	CN1001	G-1	L251	B-3	R066	F-2	R463	A-4	R573	F-1	R1052	G-1	SW509	B-1		
C413	D-4	C502	C-1	C1029	G-4	CN1601	E-4	L303	C-3	R067	F-2	R464	A-4	R574	F-1	R1059	G-1	SW511	B-1		

# DVD Main 1/3 Schematic Diagram < DVD Section >

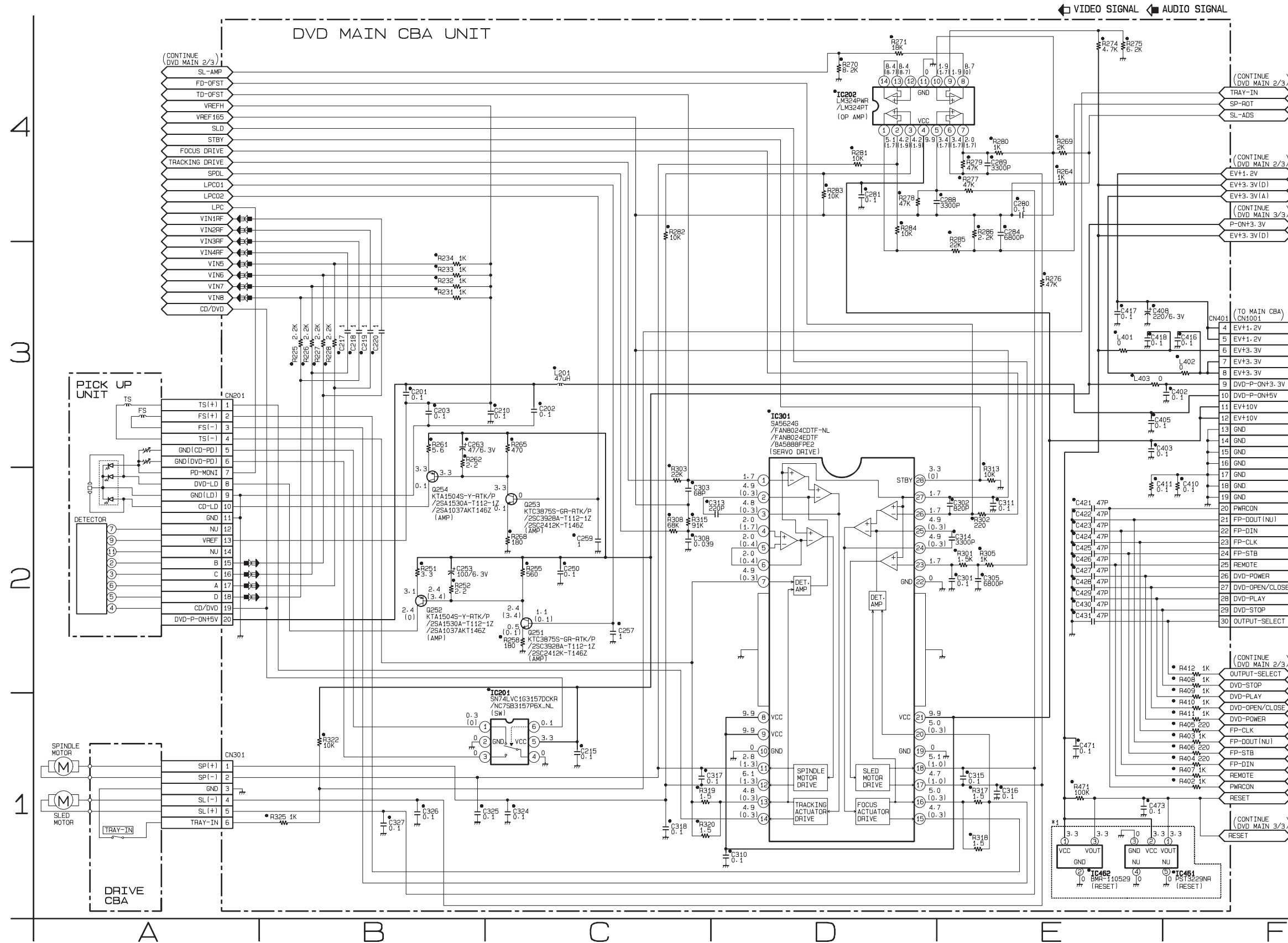
\*●\* = SMD

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



\*1 NOTE:

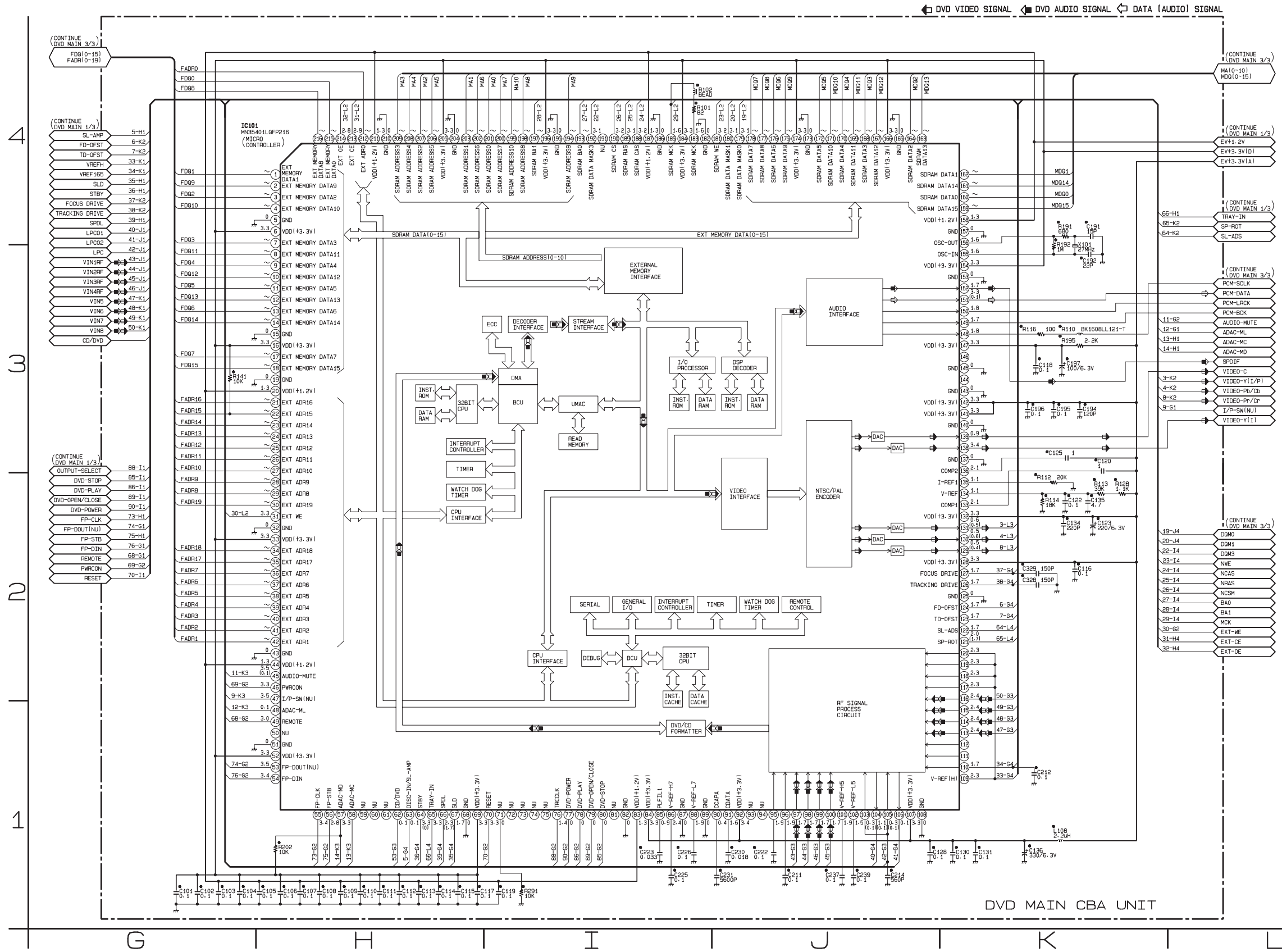
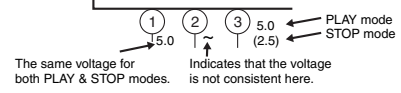
Either IC461 or IC462 is used for DVD MAIN CBA UNIT.



# DVD Main 2/3 Schematic Diagram < DVD Section >

● = SMD

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

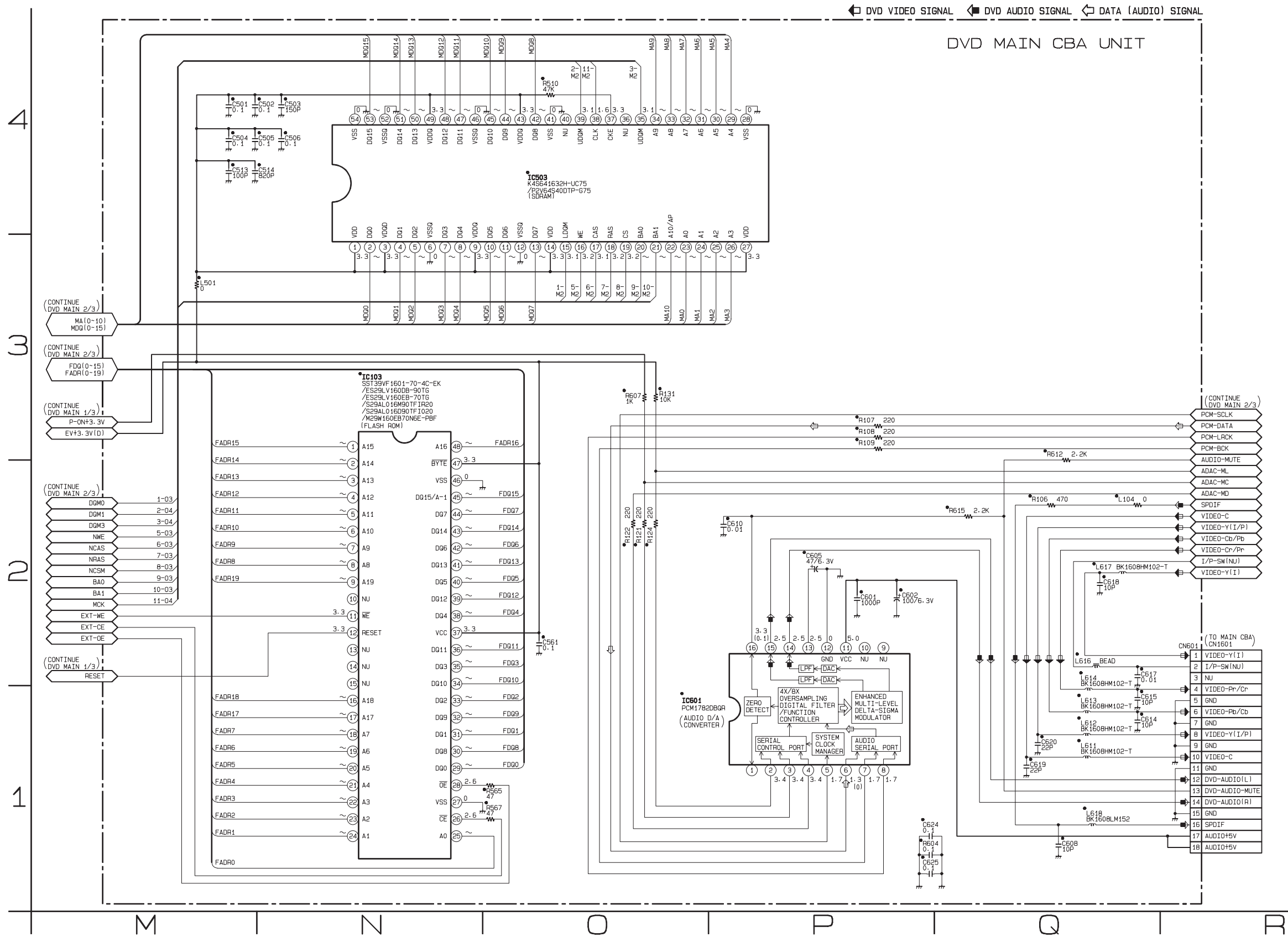
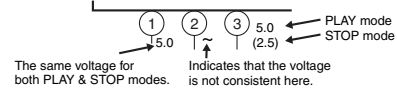


DVD MAIN CBA UNIT

# 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:**

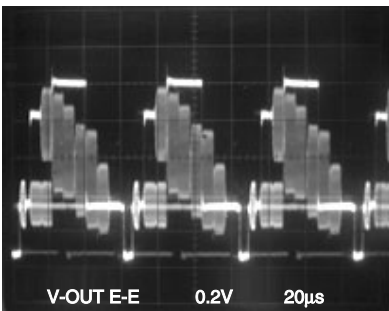
Input

VCR: COLOR BAR SIGNAL (WITH 1KHz AUDIO SIGNAL)  
(WF1~WF3)

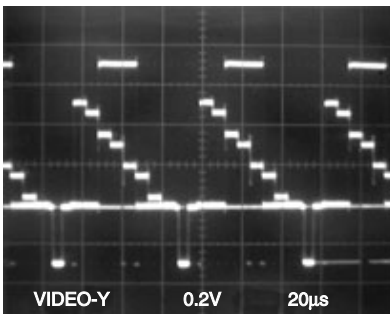
DVD: POWER ON (STOP) MODE  
(WF4~WF6)

CD: 1kHz PLAY  
(WF7~WF9)

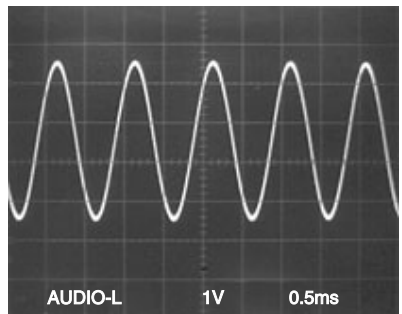
**WF1** TP751



**WF4** Pin 8 of CN1601

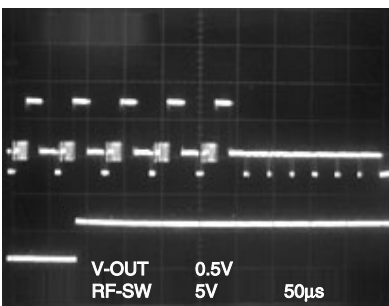


**WF7** Pin 13 of CN1601

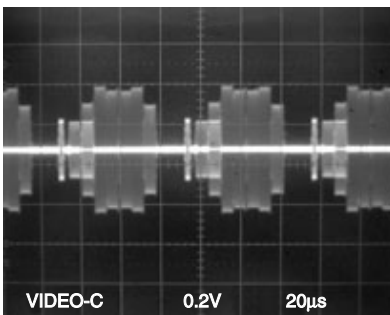


**WF1** UPPER TP751

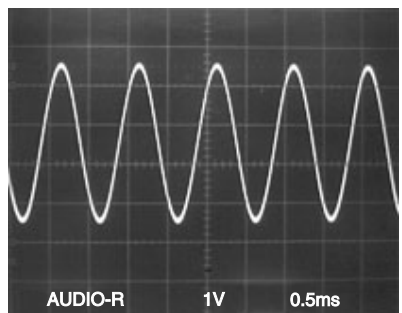
**WF2** LOWER TP302



**WF5** Pin 10 of CN1601

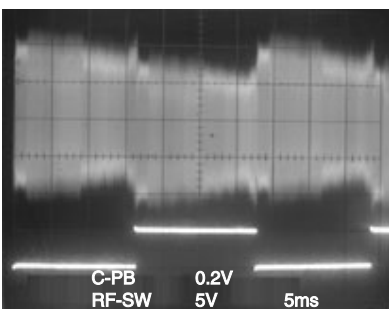


**WF8** Pin 15 of CN1601

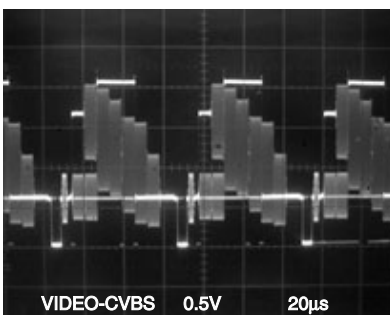


**WF3** UPPER TP301

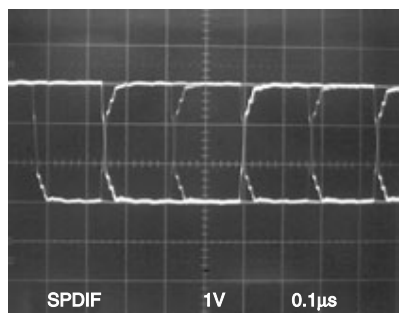
**WF2** LOWER TP302



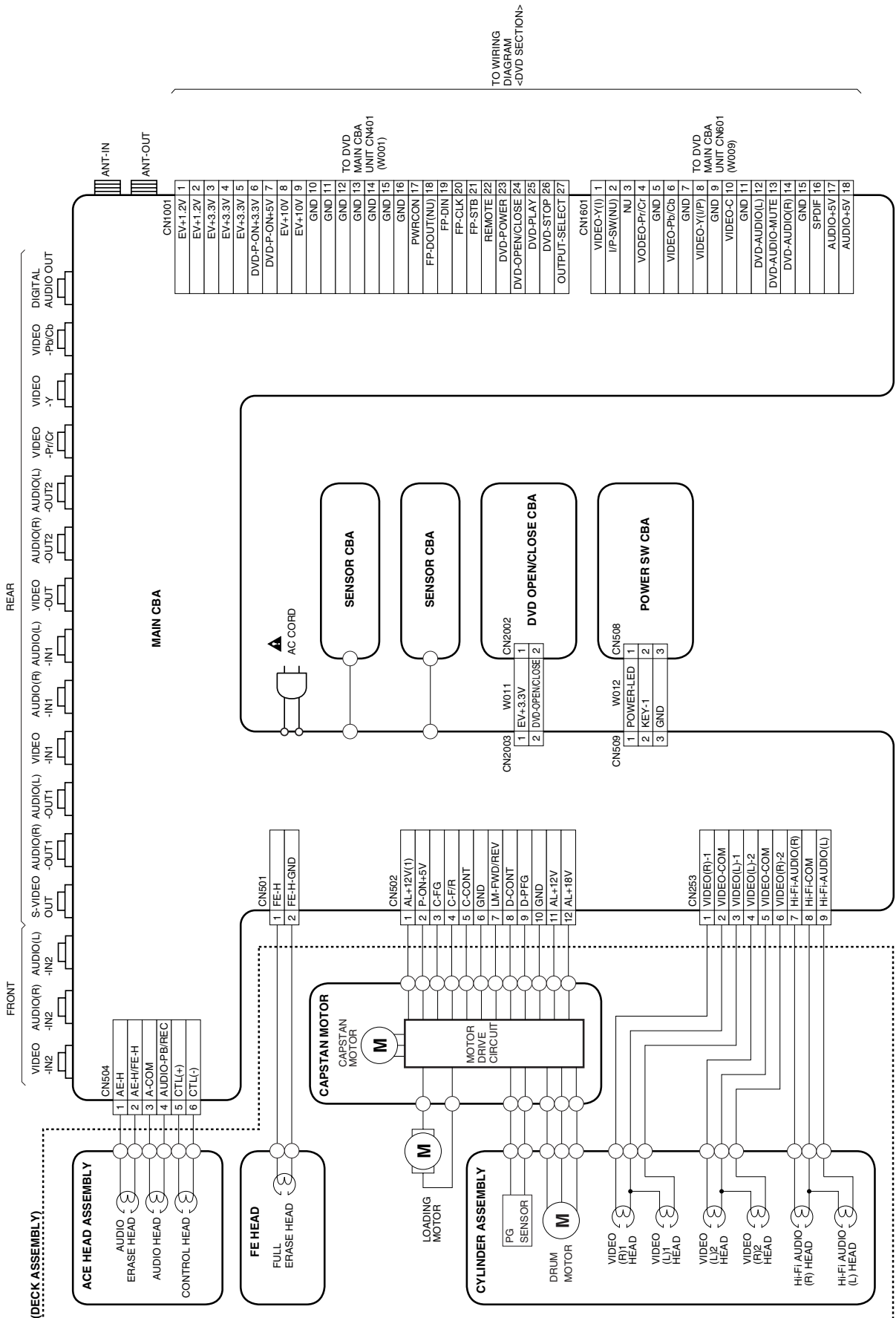
**WF6** Pin 2 of IC751



**WF9** Pin 18 of CN1601

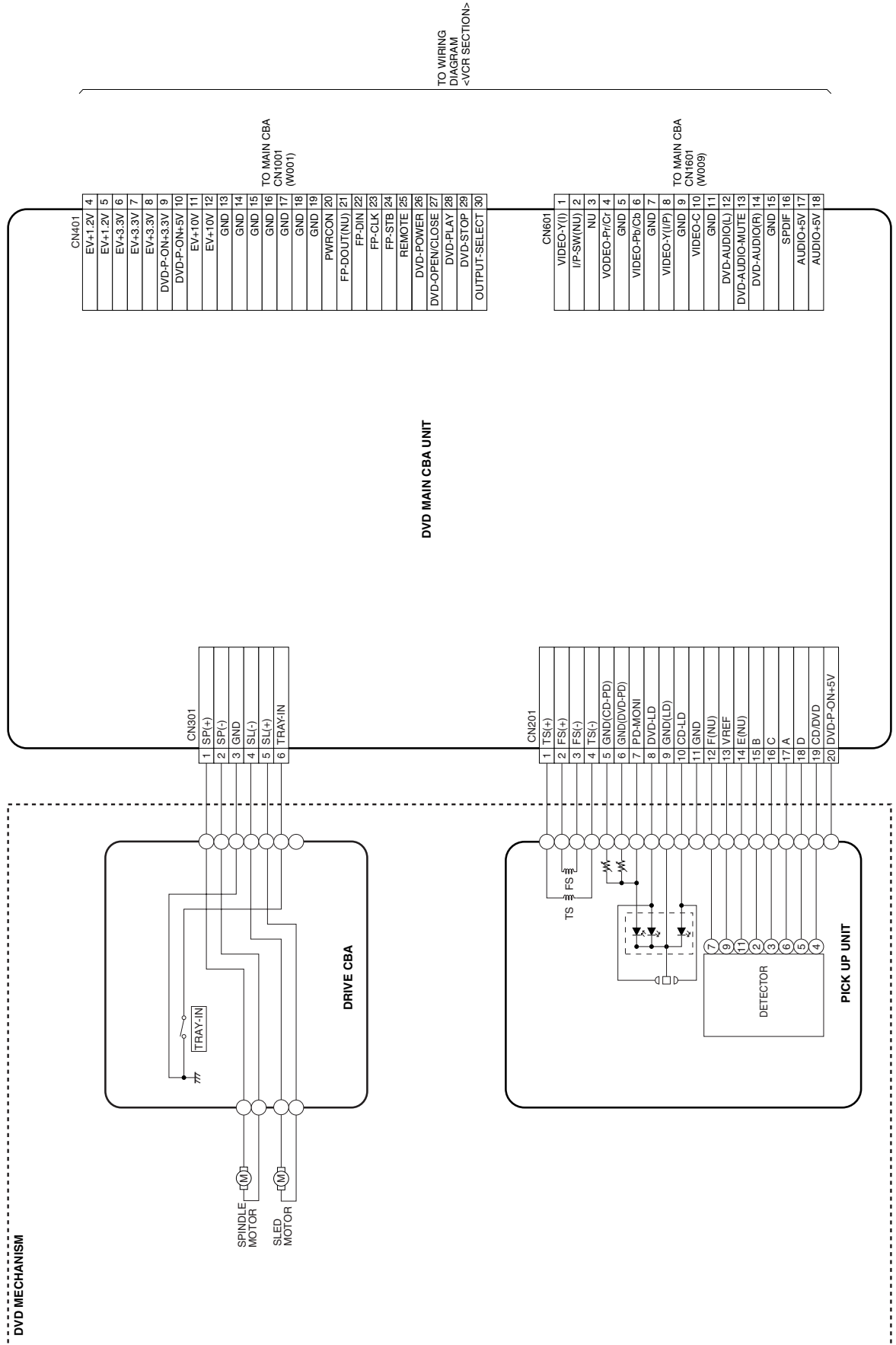


# WIRING DIAGRAM < VCR SECTION >





# WIRING DIAGRAM < DVD SECTION >



# SYSTEM CONTROL TIMING CHARTS

## < VCR Section >

### Mode SW: LD-SW

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

↑  
**Note:**

**Note:** EJ → RS: Loading FWD (LM-FWD / REV "H")  
 RS → EJ: Loading REV (LM-FWD / REV "L")  
 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

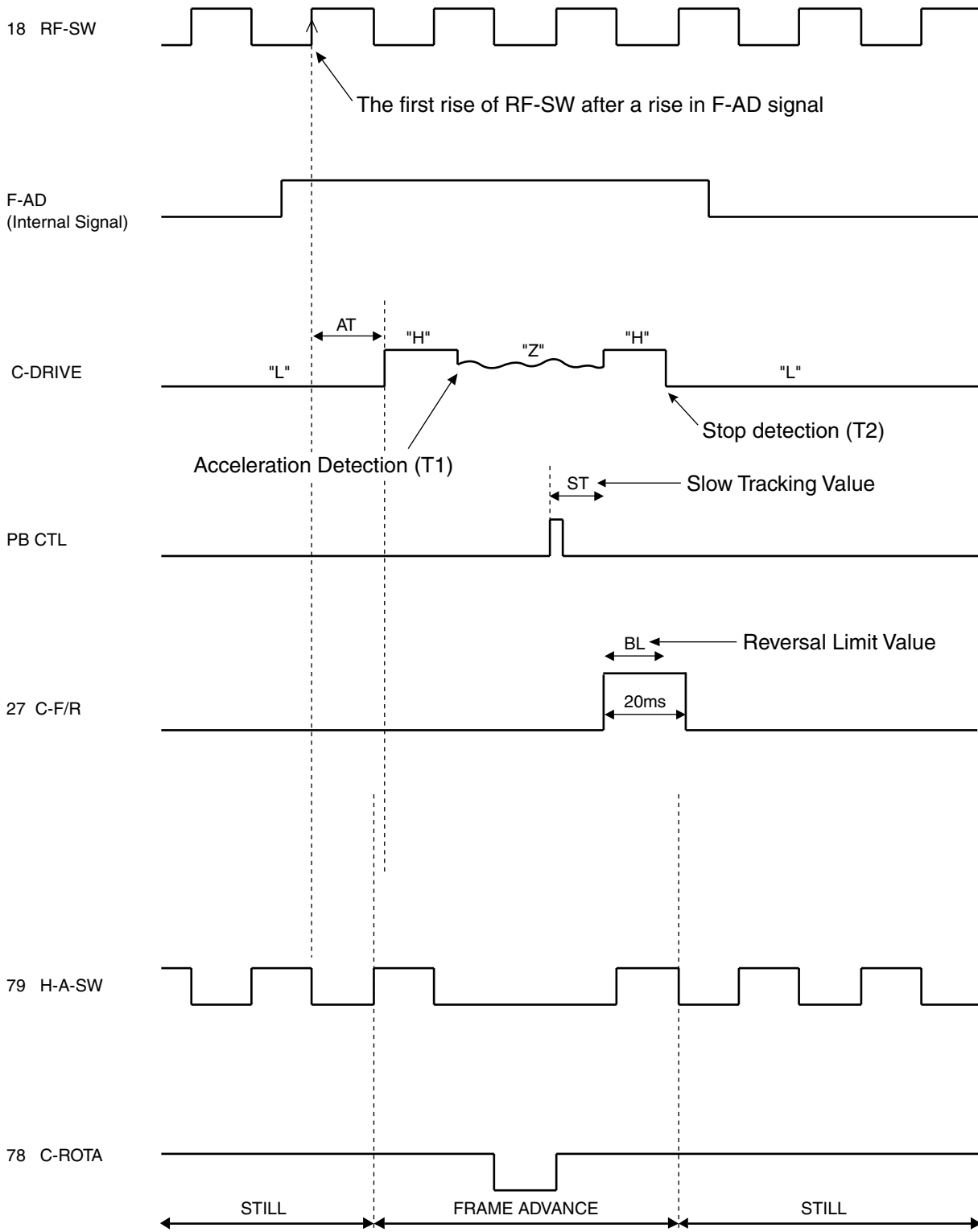


Fig. 1

## 2) LP/SLP Mode

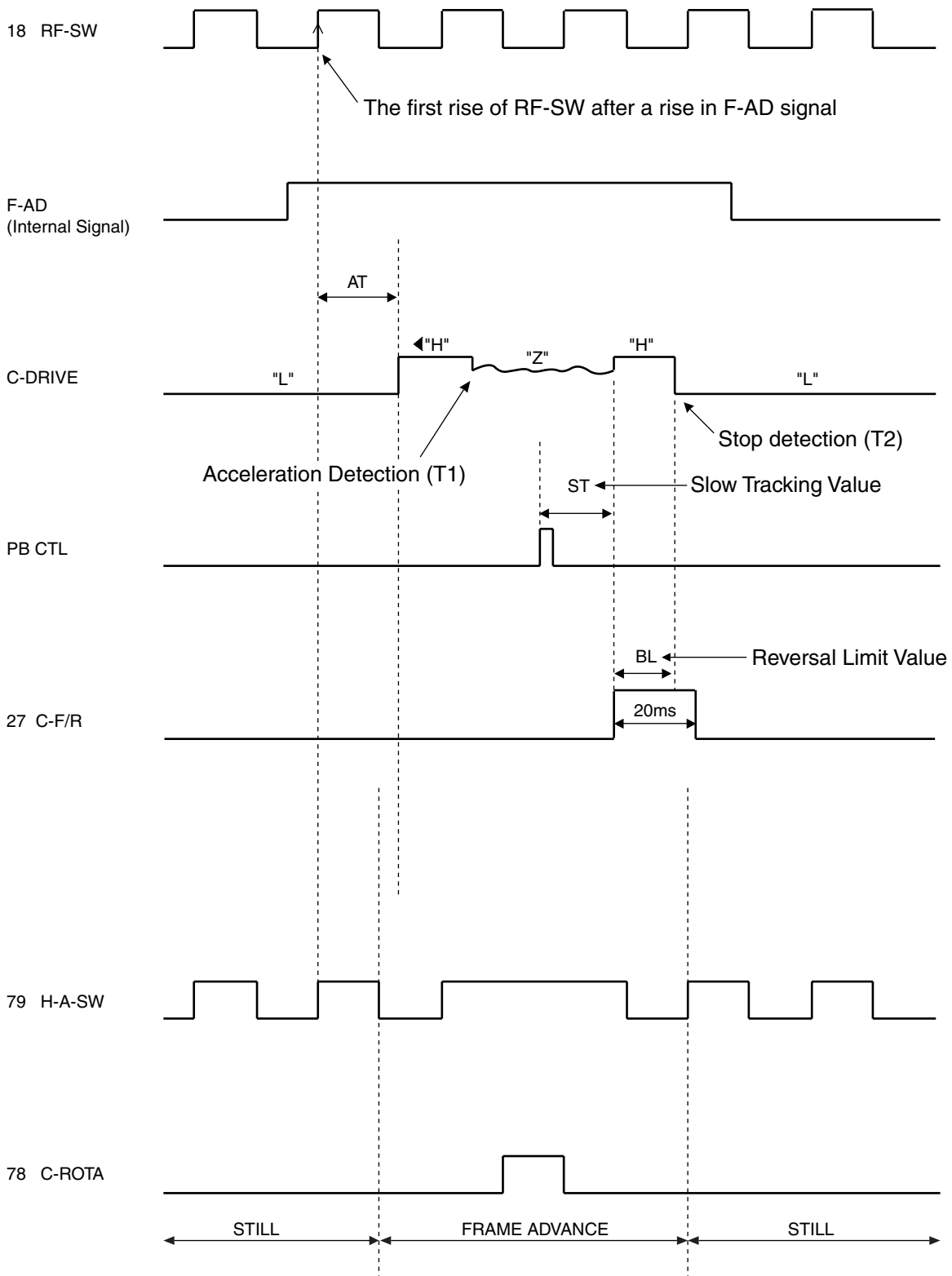


Fig. 2

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

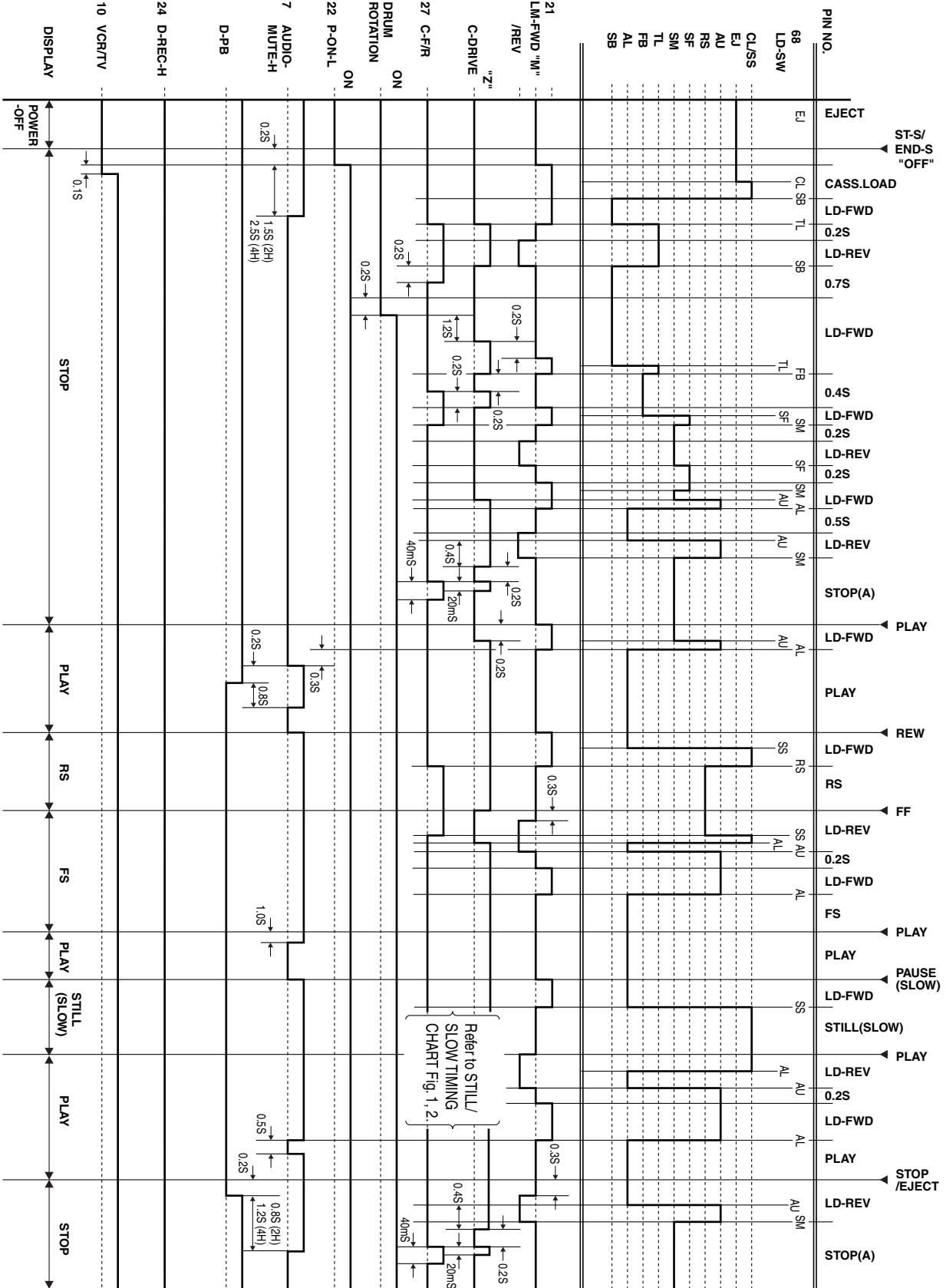


Fig. 3

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

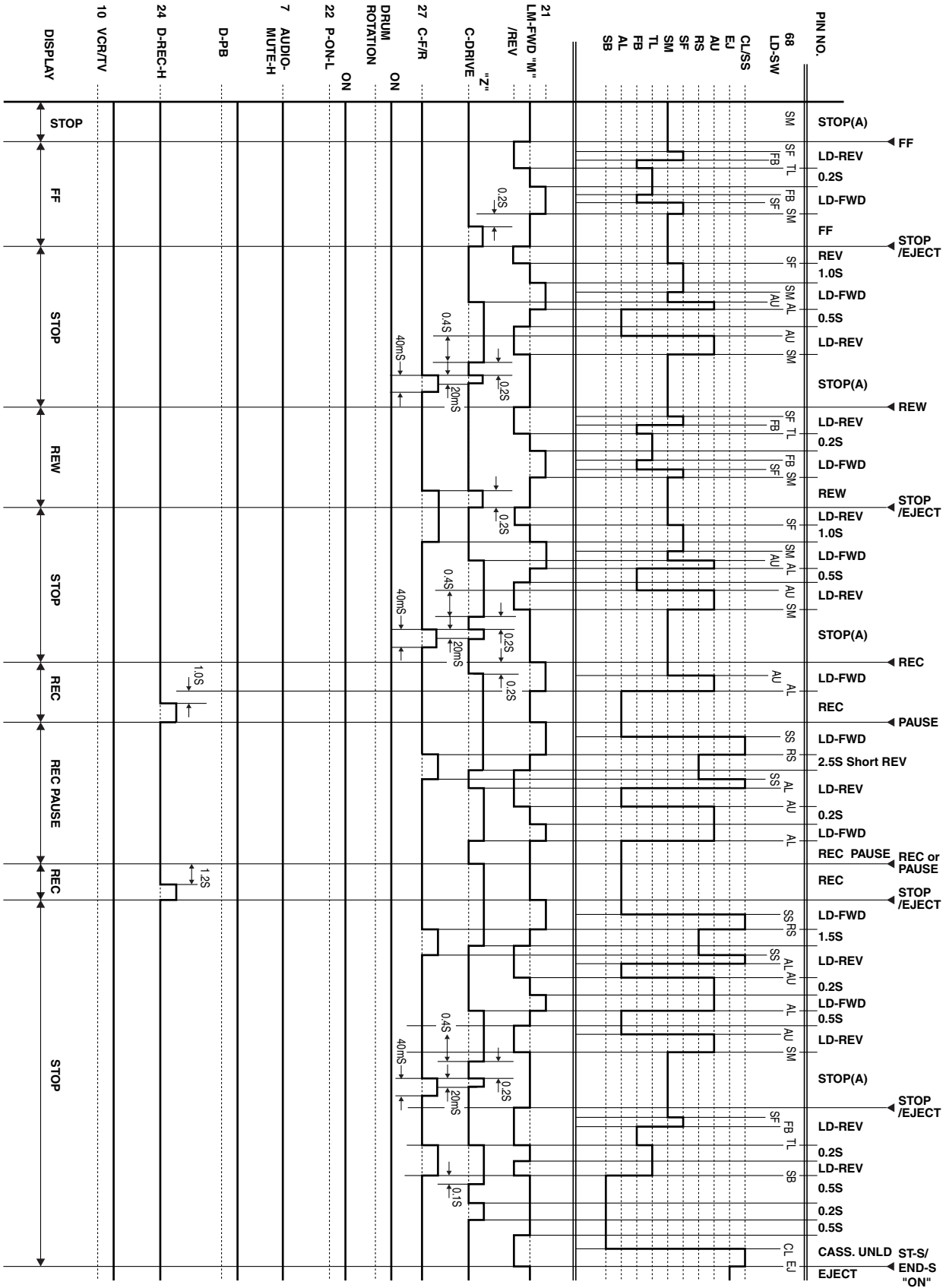
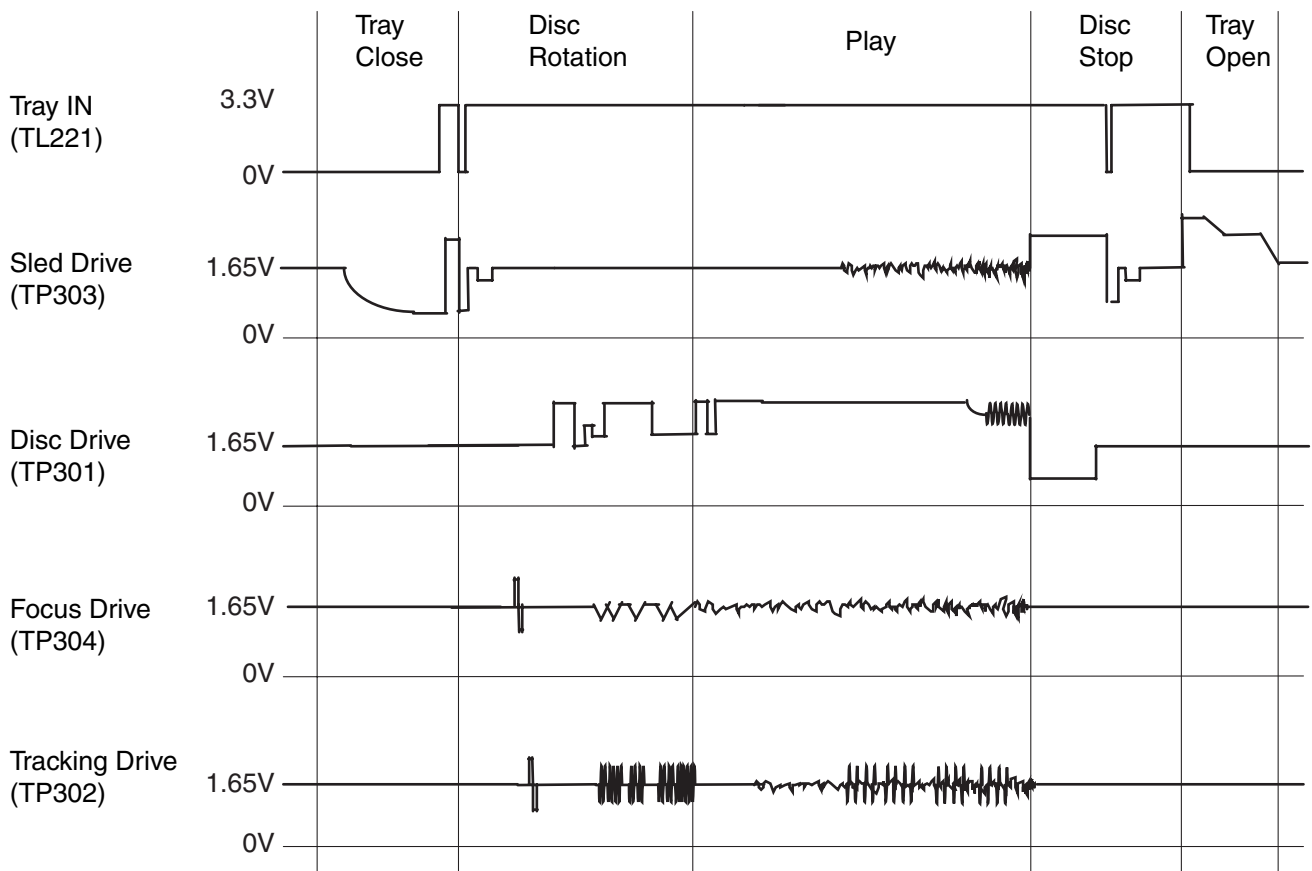


Fig. 4

# < DVD Section >

Tray Close ~ Play / Play ~ Tray Open



# IC PIN FUNCTION DESCRIPTIONS

## < VCR Section >

### IC501 (SERVO/SYSTEM CONTROL/OSD)

“H” ≥ 4.5 V, “L” ≤ 1.0 V

Pin No.	IN/OUT	Signal Name	Function	Active Level
1	IN	P-DOWN-H	Power Voltage Down Detector Signal	H
2	IN	REC-SAF-SW	Recording Safety SW Detect (With Record tab = “L” / With out Record tab = “H”)	H/L
3	IN	T-REEL	Take Up Reel Rotation Signal	PULSE
4	-	N.U.	Not Used	-
5	IN	REMOCON-IN	Remote Control Sensor	H/L
6	OUT	DISPLAY-CLK	FIP. Driver IC Clock Control Output Signal	H/L
7	OUT	AUDIO-MUTE-H	Audio Mute Control Signal (Mute = “H”)	H
8	OUT	DISPLAY-DATA	FIP. Driver IC Data Control Output Signal	H/L
9	OUT	DISPLAY-ENA	FIP. Driver IC Enable Control Output Signal	L
10	OUT	VCR/TV	RF Conv. ON/OFF Signal (VCR = “H” / TV = “L”)	H/L
11	OUT	CONV-SW	RF Conv. Output Channel Switching Signal (3ch =”Hi-z”, 4ch =”L”)	Hi-z/L
12	IN/OUT	IIC-BUS SDA	IIC BUS Control Data	H/L
13	OUT	IIC-BUS SCL	IIC BUS Control Clock	H/L
14	OUT	YCA-SCL	YCA IC Control Clock	H/L
15	OUT	YCA-SDA	YCA IC Control Data	H/L
16	OUT	YCA-CS	YCA IC Control Chip Select	H/L
17	-	N.U.	Not Used	-
18	OUT	RF-SW	Video Head Switching Pulse	H/L
19	OUT	D-V SYNC	Dummy V-sync Output	H/Hi-z
20	IN	RESET	System Reset Signal (Reset = “L”)	L
21	OUT	LM-FWD/REV	Loading Motor FWD/REV Output	H/Z/L
22	OUT	P-ON-L	Power On Signal to Low	L
23	-	N.U.	Not Used	-

Pin No.	IN/OUT	Signal Name	Function	Active Level
24	OUT	D-REC-H	Delayed Record Signal	H
25	OUT	HiFi-H-SW	HiFi Audio Head Switching Pulse	H/L
26	OUT	DVD-POWER	DVD Power Control Signal	H
27	OUT	C-F/R	Capstan Motor FWD/REV Control Signal (FWD = “L” / REV = “H”)	H/L
28	OUT	C-CONT	Capstan Motor Control Signal	PWM
29	OUT	D-CONT	Drum Motor Control Signal	PWM
30	-	N.U.	Not Used	-
31	-	VDD	VDD	-
32	OUT	OSCO	Main Clock Output 14.31818MHz	-
33	IN	OSCI	Main Clock Input 14.31818MHz	-
34	-	VSS	VSS	-
35	IN	XI	Sub Clock Input 32.768 MHz	-
36	OUT	XO	Sub Clock Output 32.768 MHz	-
37	IN	SXI	Operation Mode Selecting Input Signal	-
38	OUT	VIDEO-OUT	Composite Video Signal Output	-
39	-	Vss2	Vss2	-
40	IN	VIDEO-IN	Composite Video Signal Input	-
41	IN	C-SYNC	Composite Synchronized Pulse	PULSE
42	-	VDD2	VDD2	-
43	IN	AFCC	Low Path Filter Input Signal For AFC	-
44	OUT	AFCLPF	Low Path Filter Output Signal For AFC	-
45	OUT	INPUT-SELECT	Input Selector Control Signal	H/L
46	OUT	OUTPUT-SELECT	Output Select	H/L
47	IN	D-PFG	Drum PG/FG Input Signal	PULSE
48	IN	POWER-SAFETY	P-ON Power Supply Abnormal Detection Input	L

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Pin No.	IN/OUT	Signal Name	Function	Active Level
49	IN	C-FG	Capstan Motor Rotation Detection Pulse	PULSE
50	-	AFG	GND	-
51	OUT	VRO	Servo Standard Voltage Output	-
52	IN	VRI	Servo Standard Voltage Input	-
53	-	AVSS	AVSS	-
54	IN	CTLA	CTL Amp. AC GND	-
55	-	AVDD	AVDD	-
56	IN/OUT	CTL (+)	Playback/Record Control Signal (+)	-
57	IN/OUT	CTL (-)	Playback/Record Control Signal (-)	-
58	OUT	CTL	Amp. Output Control Signal for Test Point	-
59	IN	HiFi/NOR-IN	Audio Mode Input (HiFi = "L" / Normal = "H")	A/D
60	IN	DVD-POW-MONITOR	DVD Power Monitor Signal (P-off = "L", P-on = "H")	H/L
61	IN	ST/SAP-IN	Tuner Stereo/Sap Detector Signal Input	A/D
62	IN	END-S	Tape End Position Detect Signal	A/D
63	IN	AFC	Automatic Frequency Control Signal	A/D
64	IN	V-ENV	Video Envelope Comparator Signal	A/D
65	IN	PG-DELAY	Video Head Switching Pulse Signal Adjusted Voltage	A/D
66	IN	KEY-2	A/D Key Data Signal 2	A/D
67	IN	KEY-1	A/D Key Data Signal 1	A/D
68	IN	LD-SW	Deck Mode Position Detector Signal	A/D
69	IN	ST-S	Tape Start Position Detector Signal	A/D
70	OUT	VCR-LED-L	VCR Mode LED Signal Output	L
71	OUT	VCR-LED-L	VCR Mode LED Signal Output	L
72	OUT	DVD-LED-L	DVD Mode LED Signal Output	L
73	OUT	DVD-LED-L	DVD Mode LED Signal Output	L
74	-	N.U.	Not Used	-
75	-	N.U.	Not Used	-
76	-	N.U.	Not Used	-
77	-	N.U.	Not Used	-

Pin No.	IN/OUT	Signal Name	Function	Active Level
78	OUT	C-ROTA	Color Phase Rotary Changeover Signal	H/L
79	OUT	H-A-SW	Video Head Amp Switching Pulse	H/L
80	IN	H-A-COMP	Head Amp Comparator Signal	H/L

**Notes:**

Abbreviation for Active Level:

PWM ----- Pulse Wide Modulation

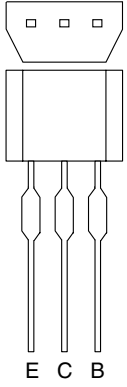
A/D ----- Analog - Digital Converter

< DVD Section >

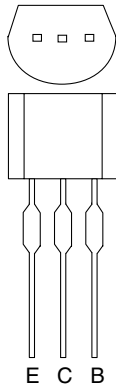
IC571 (FIP DRIVER IC)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	FP-CLK	Clock Input
2	IN	FP-STB	Serial Interface Strobe
3	-	N.U.	Not Used
4	-	N.U.	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	-	N.U.	Not Used
28	IN	FP-DIN	Serial Data Input

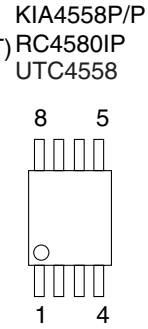
# LEAD IDENTIFICATIONS



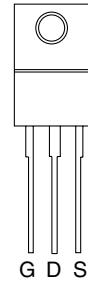
KRA103M-AT/P  
KRC103M-AT/P  
KTA1266-GR-AT/P  
KTC3193-Y-AT/P  
KTC3199-(BL,GR,Y)-AT/P



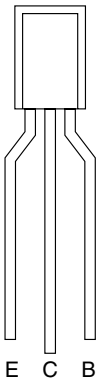
2SA1015-GR(Te2 F T)  
2SC1815-(BL,GR,Y)(Te2 F T)  
2SC2001-T-A-(K,L)  
2SC2120-Y(Te2 F T)  
KTC3198-(Y,GR)-AT/P  
KTC3203-Y-AT/P



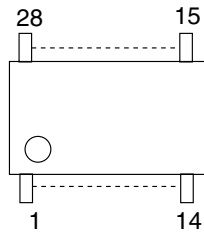
KIA4558P/P  
RC4580IP  
UTC4558



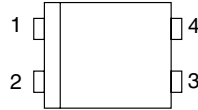
2SC536NF-NPA-AT  
2SC536NG-NPA-AT



PT6313-S-TP(L)  
SC16313G

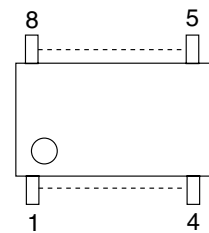


EL817A  
EL817B  
EL817C  
LTV-817B-F  
LTV-817C-F  
PS2561A-1(Q,W)

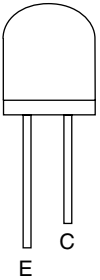


1: Anode  
2: Cathode  
3: Emitter  
4: Collector

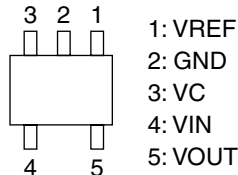
MM1636XWRE



MID-32A22F  
PT204-6B-12

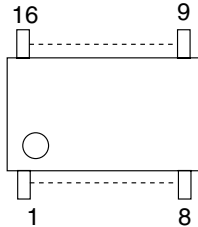


PQ1LAX95MSPQ

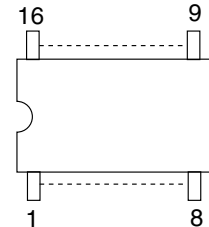


1: VREF  
2: GND  
3: VC  
4: VIN  
5: VOUT

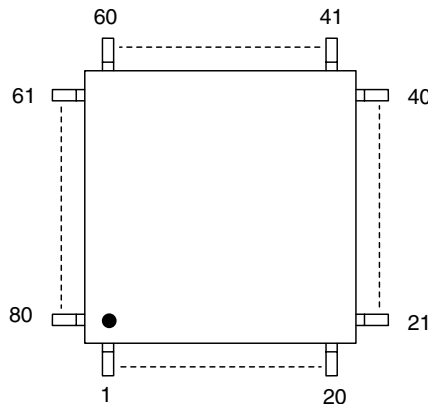
MM1637XVBE



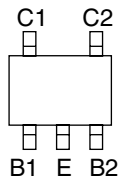
CD4053BNSR  
CD4053BCSJX\_NL  
TC4053BF(EL N F)



LA71205M-MPB-E  
LA72670BM-MPB-E  
MN101D08DYA



FMG4A T148  
RN1511(Te85R.F)



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

# ELECTRICAL PARTS LIST

**PRODUCT SAFETY NOTE:** Products marked with a **▲** have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

**NOTES:**

Parts that are not assigned part numbers (-----) are not available.  
Tolerance of Capacitors and Resistors are noted with the following symbols.

- |              |             |                |
|--------------|-------------|----------------|
| C.....±0.25% | D.....±0.5% | F.....±1%      |
| G.....±2%    | J.....±5%   | K.....±10%     |
| M.....±20%   | N.....±30%  | Z.....+80/-20% |

<b>ELECTRICAL PARTS LIST</b>				DVP3150V/37
Pos.No.	▲	12 NC	Description	
			<b>DVD MAIN CBA UNIT</b>	<b>1</b>
			<b>MCV CBA</b>	<b>1</b>
			<b>Consists of the following:</b>	
			<b>MAIN CBA</b>	<b>1</b>
			<b>POWER SW CBA</b>	<b>1</b>
			<b>DVD OPEN/CLOSE CBA</b>	<b>1</b>
			<b>SENSOR CBA</b>	<b>1</b>
			<b>MAIN CBA</b>	
2B11			HEAD SHIELD H9600UD	1
2B15			BUSH LED(F) H3700UD	1
2L062			SCREW B-TIGHT M3X8 BIND HEAD+	1
2L082			SCREW S-TIGHT M3*5 BIND+ 3*5 BIND+	1
A4			JACK BOARD(TUNER) H9600UD	1
A5			JACK BOARD(RCA) H9600UD	1
AC1001	▲		AC CORD W/O A GND WIRE UL/CSA 1770 BLACK	1
AC1001	▲		AC CORD W/O A GND WIRE UL/CSA 1770 BLACK	1
F1001	▲		FUSE TIME RAG SIC 1A 250V UC PSE	1
F1001	▲		FUSE CURRENT PEG20C0NG001	1
FH1001			FUSE HOLDER MSF-015 LF (B110)	1
FH1001			FUSE HOLDER DFH-001	1
FH1002			FUSE HOLDER MSF-015 LF (B110)	1
FH1002			FUSE HOLDER DFH-001	1
FIP502			V.F.D. 7-BT-298NYM	1
GP1001	▲		GAP FNR-G3.10D	1
JK751			RCA JACK MSP-283V-B-324NILF01	1
JK751			JACK RCA 3PIN 04 RCA-355-02	1
JK752			RCA JACK MSP-293V3-324NILF(B1	1
JK753			RCA JACK MSP-281V42-B(B110)	1
JK753			JACK RCA(YELLOW) 01 RCA-120-03	1
JK754			RCA JACK MSP-281V40-B(B110)	1
JK754			JACK RCA (WHITE) 01 RCA-120-02	1
JK755			RCA JACK 1P MSP-281V31-A(B110)	1
JK756			RCA JACK 2P MSP-282V-12 NILF(B11	1
JK756			JACK RCA 2PIN 03 RCA-235-01	1
JK1202			RCA JACK MSP-281V41-B(B110)	1
JK1202			JACK RCA (BLACK) 01 RCA-120-05	1
JK1401			S TYPE JACK MDC-050V-2.4 LF(B110	1
JK1401			S TYPE JACK DIN-425-01	1
JK1403			RCA JACK MSP-283V-B-752 NI LF	1
JK1403			JACK RCA 3PIN 04 RCA-355-01	1
RM2001			REMOTE RECEIVER PIC-37042LU	1
RM2001			REMOTE RECEIVER MIM-93M6DKF	1
SA1001	▲		SURGE ABSORBER 470V+-10PER	1
SA1001	▲		SURGE ABSORBER CNR-10D471K	1
T001	▲		SWITCHING TRANSFOMER BCK-28-0550	1
T001	▲		SWITCHING TRANSFORMER CGS-SW0085A	1
TP301			PCB JUMPER D0.6-P16.5	1

# ELECTRICAL PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
TP302			PCB JUMPER D0.6-P16.0	1
TP506			PCB JUMPER D0.6-P8.0	1
TP507			PCB JUMPER D0.6-P7.0	1
TP513			PCB JUMPER D0.6-P7.5	1
TP751			PCB JUMPER D0.6-P23.5	1
TP753			PCB JUMPER D0.6-P25.5	1
TP754			PCB JUMPER D0.6-P22.5	1
TU701			TUNER UNIT VH025AFE	1
TU701			TUNER UNIT TMZH2X022A	1
TU701			TUNER UNIT VH045AFE	1
TU701			TUNER UNIT TMZH2-037A	1
VR501			CARBON P.O.T. VZ067TL1 B104 PB(F)	1
W001			FFC CABLE 27P FFC/P1.00/230	1
W009			WIRE ASSEMBLY FFC 18P 18 193 WHITE	1
X301			XTAL 3.579545MHZ(20PPM)	1
X301			XTAL 3.579545MHZ(20PPM)	1
X301			XTAL HC-49/U 3.579545MHZ	1
X501			XTAL 14.31818MHZ	1
X502			XTAL 32.768KHZ(+10/-20PPM)	1
X502			RESONATOR XTAL 32.768KHZ 32.768KHZ (10PPM)12.5	1
X502			RESONATOR XTAL 32.768KHZ QTF38-32.768K125P15L	1
<b>CAPACITORS</b>				
C013			ELECTROLYTIC CAP. 10UF/50V M H7	1
C013			ALUMINUM ELECTROLYTIC CAP 10UF/50V H7	1
C018			ELECTROLYTIC CAP. 470UF/16V M	1
C018			ELECTROLYTIC CAP. 470UF/16V M	1
C020			ELECTROLYTIC CAP. 1000UF/10V M	1
C021			ELECTROLYTIC CAP. 470UF/6.3V M	1
C021			ELECTROLYTIC CAP. 470UF/6.3V M	1
C023			ELECTROLYTIC CAP. 100UF/16V M	1
C023			ELECTROLYTIC CAP. 100UF/16V M	1
C030			CERAMIC CAP.(AX) B K 0.068UF/50V	1
C051			ELECTROLYTIC CAP. 10UF/16V M H7	1
C051			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C053			ELECTROLYTIC CAP. 220UF/6.3V M	1
C053			ELECTROLYTIC CAP. 220UF/6.3V M	1
C301			ELECTROLYTIC CAP. 1UF/50V M H7	1
C301			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C302			CHIP CERAMIC CAP. CH J 390PF/50V	1
C302			CHIP CERAMIC CAP.(1608) CH J 390PF/50V	1
C303			CHIP RES.(1608) 1/10W 0 OHM	1
C303			CHIP RES.(1608) 1/10W 0 OHM	1
C304			CHIP CERAMIC CAP. CH J 100PF/50V	1
C304			CHIP CERAMIC CAP.(1608) CH J 100PF/50V	1
C305			CHIP CERAMIC CAP. CH J 100PF/50V	1
C305			CHIP CERAMIC CAP.(1608) CH J 100PF/50V	1
C307			CHIP CERAMIC CAP. F Z 1UF/10V	1
C307			CHIP CERAMIC CAP. F Z 1UF/10V	1
C308			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C308			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C309			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C309			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C309			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C309			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C310			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C310			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C311			ELECTROLYTIC CAP. 1UF/50V M H7	1
C311			ELECTROLYTIC CAP. 1UF/50V M H7	1
C312			CHIP CERAMIC CAP. F Z 1UF/10V	1
C312			CHIP CERAMIC CAP. F Z 1UF/10V	1
C313			ELECTROLYTIC CAP. 1UF/50V M H7	1
C313			ELECTROLYTIC CAP. 1UF/50V M H7	1
C314			CHIP CERAMIC CAP. F Z 1UF/10V	1
C314			CHIP CERAMIC CAP. F Z 1UF/10V	1
C315			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C315			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C315			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C315			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1

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## ELECTRICAL PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
C316			CHIP CERAMIC CAP. F Z 1UF/10V	1
C316			CHIP CERAMIC CAP. F Z 1UF/10V	1
C317			CHIP CERAMIC CAP. F Z 1UF/10V	1
C317			CHIP CERAMIC CAP. F Z 1UF/10V	1
C318			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C318			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C319			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C319			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C320			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C320			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C321			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C321			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C322			CHIP CERAMIC CAP. CH J 68PF/50V	1
C322			CHIP CERAMIC CAP.(1608) CH J 68PF/50V	1
C324			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C324			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C327			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C327			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C328			ELECTROLYTIC CAP. 1UF/50V M H7	1
C328			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C329			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C329			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C330			ELECTROLYTIC CAP. 1UF/50V M H7	1
C330			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C331			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C331			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C332			ELECTROLYTIC CAP. 1UF/50V M H7	1
C332			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C333			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C333			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C333			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C333			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C336			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C336			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C339			CHIP CERAMIC CAP. B K 0.047UF/50V	1
C339			CHIP CERAMIC CAP. B K 0.047UF/25V	1
C339			CHIP CERAMIC CAP.(1608) B K 0.047UF/50V	1
C339			CHIP CERAMIC CAP.(1608) B K 0.047UF/25V	1
C340			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C340			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C340			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C340			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C341			CHIP CERAMIC CAP. B K 0.047UF/50V	1
C341			CHIP CERAMIC CAP. B K 0.047UF/25V	1
C341			CHIP CERAMIC CAP.(1608) B K 0.047UF/50V	1
C341			CHIP CERAMIC CAP.(1608) B K 0.047UF/25V	1
C342			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C342			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C342			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C342			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C343			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C343			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C346			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C346			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C346			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C346			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C370			CHIP RES.(1608) 1/10W 0 OHM	1
C370			CHIP RES.(1608) 1/10W 0 OHM	1
C371			CHIP RES.(1608) 1/10W 0 OHM	1
C371			CHIP RES.(1608) 1/10W 0 OHM	1
C391			ELECTROLYTIC CAP. 100UF/10V M H7	1
C391			ELECTROLYTIC CAP. 100UF/10V M H7	1
C392			ELECTROLYTIC CAP. 470UF/6.3V M	1
C392			ELECTROLYTIC CAP. 470UF/6.3V M	1
C401			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C401			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C401			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C401			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1

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Pos.No.	▲	12 NC	Description	
C404			CHIP CERAMIC CAP B K 0.01UF/50V	1
C404			CHIP CERAMIC CAP:(1608) B K 0.01UF/50V	1
C405			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C405			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C406			ELECTROLYTIC CAP. 33UF/6.3V M H7	1
C406			ALUMINUM ELECTROLYTIC CAP 33UF/6.3V H7	1
C407			CHIP CERAMIC CAP B K 0.01UF/50V	1
C407			CHIP CERAMIC CAP:(1608) B K 0.01UF/50V	1
C408			CHIP CERAMIC CAP. B K 0.012UF/50V	1
C408			CHIP CERAMIC CAP:(1608) B K 0.012UF/50V	1
C409			ELECTROLYTIC CAP. 10UF/16V M H7	1
C409			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C410			CHIP CERAMIC CAP B K 2700PF/50V	1
C410			CHIP CERAMIC CAP:(1608) B K 2700PF/50V	1
C411			CHIP CERAMIC CAP. B K 1000PF/50V	1
C411			CHIP CERAMIC CAP:(1608) B K 1000PF/50V	1
C412			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C413			CHIP CERAMIC CAP. B K 6800PF/50V	1
C413			CHIP CERAMIC CAP:(1608) B K 6800PF/50V	1
C414			CHIP CERAMIC CAP. B K 1000PF/50V	1
C414			CHIP CERAMIC CAP:(1608) B K 1000PF/50V	1
C422			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C422			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C423			ELECTROLYTIC CAP. 220UF/6.3V M H7	1
C423			ALUMINUM ELECTROLYTIC CAP 220UF/6.3V H7	1
C424			CERAMIC CAP. B K 470PF/100V	1
C425			FILM CAP.(P) 0.018UF/100V J	1
C425			FILM CAP.(P) 0.018UF/50V J	1
C425			POLYESTER FILM CAP. (PB FREE) 0.018UF/100V J	1
C430			CHIP CERAMIC CAP. CH J 56PF/50V	1
C430			CHIP CERAMIC CAP. CH J 56PF/50V	1
C431			CHIP CERAMIC CAP. CH J 100PF/50V	1
C431			CHIP CERAMIC CAP:(1608) CH J 100PF/50V	1
C438			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C439			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C440			ELECTROLYTIC CAP. 0.1UF/50V M H7	1
C440			ALUMINUM ELECTROLYTIC CAP 0.1UF/50V H7	1
C441			ELECTROLYTIC CAP. 0.1UF/50V M H7	1
C441			ALUMINUM ELECTROLYTIC CAP 0.1UF/50V H7	1
C448			ELECTROLYTIC CAP. 4.7UF/50V M H7	1
C448			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V H7	1
C449			ELECTROLYTIC CAP. 4.7UF/50V M H7	1
C449			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V H7	1
C451			ELECTROLYTIC CAP. 47UF/16V M H7	1
C451			ALUMINUM ELECTROLYTIC CAP 47UF/16V H7	1
C452			ELECTROLYTIC CAP. 1UF/50V M H7	1
C452			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C453			ELECTROLYTIC CAP. 10UF/16V M H7	1
C453			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C454			ELECTROLYTIC CAP. 1UF/50V M H7	1
C454			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C455			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C455			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C456			ELECTROLYTIC CAP. 10UF/16V M H7	1
C456			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C457			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C458			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C458			CHIP CERAMIC CAP:(1608) B K 0.01UF/50V	1
C459			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C459			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C460			CHIP CERAMIC CAP. B K 4700PF/50V	1
C460			CHIP CERAMIC CAP:(1608) B K 4700PF/50V	1
C461			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C461			CHIP CERAMIC CAP:(1608) B K 0.01UF/50V	1
C462			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C462			CHIP CERAMIC CAP:(1608) B K 0.01UF/50V	1
C463			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C463			CHIP CERAMIC CAP. B K 0.1UF/16V	1

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Pos.No.	▲	12 NC	Description	
C463			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C463			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C465			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C466			ELECTROLYTIC CAP. 220UF/6.3V M H7	1
C466			ALUMINUM ELECTROLYTIC CAP 220UF/6.3V H7	1
C467			CHIP CERAMIC CAP. B K 0.022UF/50V	1
C467			CHIP CERAMIC CAP. B K 0.022UF/25V	1
C467			CHIP CERAMIC CAP.(1608) B K 0.022UF/50V	1
C467			CHIP CERAMIC CAP.(1608) B K 0.022UF/25V	1
C469			ELECTROLYTIC CAP. 10UF/16V M H7	1
C469			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C470			CERAMIC CAP.(AX) F Z 0.1UF/50V	1
C471			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C471			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C472			CHIP CERAMIC CAP. B K 4700PF/50V	1
C472			CHIP CERAMIC CAP.(1608) B K 4700PF/50V	1
C473			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C473			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C474			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C475			ELECTROLYTIC CAP. 10UF/16V M H7	1
C475			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C476			ELECTROLYTIC CAP. 1UF/50V M H7	1
C476			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C477			ELECTROLYTIC CAP. 2.2UF/50V M H7	1
C477			ALUMINUM ELECTROLYTIC CAP 2.2UF/50V H7	1
C478			ELECTROLYTIC CAP. 1UF/50V M H7	1
C478			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C479			CHIP CERAMIC CAP. B K 0.022UF/50V	1
C479			CHIP CERAMIC CAP. B K 0.022UF/25V	1
C479			CHIP CERAMIC CAP.(1608) B K 0.022UF/50V	1
C479			CHIP CERAMIC CAP.(1608) B K 0.022UF/25V	1
C480			ELECTROLYTIC CAP. 1UF/50V M H7	1
C480			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C481			ELECTROLYTIC CAP. 1UF/50V M H7	1
C481			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C483			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C483			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C483			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C483			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C484			ELECTROLYTIC CAP. 2.2UF/50V M H7	1
C484			ALUMINUM ELECTROLYTIC CAP 2.2UF/50V H7	1
C485			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C486			ELECTROLYTIC CAP. 1UF/50V M H7	1
C486			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C487			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C488			CHIP CERAMIC CAP. F Z 1UF/10V	1
C488			CHIP CERAMIC CAP. F Z 1UF/10V	1
C489			ELECTROLYTIC CAP. 1UF/50V M H7	1
C489			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C491			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C492			ELECTROLYTIC CAP. 22UF/16V M H7	1
C492			CAP ELE H7-85 22UF/16V H7	1
C493			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C494			ELECTROLYTIC CAP. 22UF/16V M H7	1
C494			CAP ELE H7-85 22UF/16V H7	1
C495			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C495			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C496			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C498			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C499			ELECTROLYTIC CAP. 4.7UF/25V M H7	1
C501			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C501			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C501			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C501			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C502			ELECTROLYTIC CAP. 220UF/6.3V M H7	1
C502			ALUMINUM ELECTROLYTIC CAP 220UF/6.3V H7	1
C505			ELECTROLYTIC CAP. 22UF/10V M H7	1
C505			ALUMINUM ELECTROLYTIC CAP 22UF/10V H7	1

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Pos.No.	▲	12 NC	Description	
C507			ELECTROLYTIC CAP. 1UF/50V M H7	1
C507			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C509			ELECTROLYTIC CAP. 220UF/6.3V M H7	1
C509			ALUMINUM ELECTROLYTIC CAP 220UF/6.3V H7	1
C510			CHIP CERAMIC CAP. CH J 27PF/50V	1
C510			CHIP CERAMIC CAP. CH J 27PF/50V	1
C511			CHIP CERAMIC CAP. CH J 18PF/50V	1
C511			CHIP CERAMIC CAP. CH J 18PF/50V	1
C512			CHIP CERAMIC CAP. CH J 22PF/50V	1
C512			CHIP CERAMIC CAP.(1608) CH J 22PF/50V	1
C514			CHIP CERAMIC CAP. CH J 22PF/50V	1
C514			CHIP CERAMIC CAP.(1608) CH J 22PF/50V	1
C515			CHIP CERAMIC CAP. CH J 18PF/50V	1
C515			CHIP CERAMIC CAP. CH J 18PF/50V	1
C517			CHIP CERAMIC CAP. B K 0.022UF/50V	1
C517			CHIP CERAMIC CAP. B K 0.022UF/25V	1
C517			CHIP CERAMIC CAP.(1608) B K 0.022UF/50V	1
C517			CHIP CERAMIC CAP.(1608) B K 0.022UF/25V	1
C521			ELECTROLYTIC CAP. 47UF/25V M H7	1
C521			ALUMINUM ELECTROLYTIC CAP 47UF/25V H7	1
C522			CHIP CERAMIC CAP. B K 4700PF/50V	1
C522			CHIP CERAMIC CAP.(1608) B K 4700PF/50V	1
C523			CHIP CERAMIC CAP. CH J 100PF/50V	1
C523			CHIP CERAMIC CAP.(1608) CH J 100PF/50V	1
C525			CHIP CERAMIC CAP. B K 4700PF/50V	1
C525			CHIP CERAMIC CAP.(1608) B K 4700PF/50V	1
C527			CHIP CERAMIC CAP. B K 0.047UF/50V	1
C527			CHIP CERAMIC CAP. B K 0.047UF/25V	1
C527			CHIP CERAMIC CAP.(1608) B K 0.047UF/50V	1
C527			CHIP CERAMIC CAP.(1608) B K 0.047UF/25V	1
C529			CHIP CERAMIC CAP. B K 0.022UF/50V	1
C529			CHIP CERAMIC CAP. B K 0.022UF/25V	1
C529			CHIP CERAMIC CAP.(1608) B K 0.022UF/50V	1
C529			CHIP CERAMIC CAP.(1608) B K 0.022UF/25V	1
C530			ELECTROLYTIC CAP. 1UF/50V M H7	1
C530			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C531			ELECTROLYTIC CAP. 10UF/16V M H7	1
C531			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C532			ELECTROLYTIC CAP. 10UF/16V M H7	1
C532			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C533			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C533			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C534			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C534			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C534			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C534			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C535			ELECTROLYTIC CAP. 22UF/10V M H7	1
C535			ALUMINUM ELECTROLYTIC CAP 22UF/10V H7	1
C536			CHIP CERAMIC CAP. B K 1000PF/50V	1
C536			CHIP CERAMIC CAP.(1608) B K 1000PF/50V	1
C537			CHIP CERAMIC CAP. B K 1000PF/50V	1
C537			CHIP CERAMIC CAP.(1608) B K 1000PF/50V	1
C540			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C540			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C541			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C541			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C541			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C541			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C544			ELECTROLYTIC CAP. 100UF/6.3V H7	1
C544			ALUMINUM ELECTROLYTIC CAP 100UF/6.3V H7	1
C550			ELECTROLYTIC CAP. 22UF/50V M H7	1
C550			ALUMINUM ELECTROLYTIC CAP 22UF/50V H7	1
C571			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C571			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C571			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C571			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C572			ELECTROLYTIC CAP. 100UF/6.3V H7	1
C572			ALUMINUM ELECTROLYTIC CAP 100UF/6.3V H7	1

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Pos.No.	▲	12 NC	Description	
C574			CHIP CERAMIC CAP B K 4700PF/50V	1
C574			CHIP CERAMIC CAP.(1608) B K 4700PF/50V	1
C701			ELECTROLYTIC CAP. 0.47UF/50V M	1
C701			ELECTROLYTIC CAP. 0.47UF/50V M	1
C703			ELECTROLYTIC CAP. 100UF/6.3V M H7	1
C703			ELECTROLYTIC CAP. 100UF/6.3V M H7	1
C704			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C704			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C704			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C704			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C708			ELECTROLYTIC CAP. 0.22UF/50V M	1
C708			ELECTROLYTIC CAP. 0.22UF/50V M	1
C709			ELECTROLYTIC CAP. 1UF/50V M	1
C709			ELECTROLYTIC CAP 1UF/50V M	1
C751			CHIP CERAMIC CAP. B K 2200PF/50V	1
C751			CHIP CERAMIC CAP. B K 2200PF/50V	1
C752			CHIP CERAMIC CAP. B K 2200PF/50V	1
C752			CHIP CERAMIC CAP. B K 2200PF/50V	1
C753			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C753			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C757			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C757			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C761			CHIP CERAMIC CAP. CH J 47PF/50V	1
C761			CHIP CERAMIC CAP.(1608) CH J 47PF/50V	1
C766			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C766			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C772			ELECTROLYTIC CAP. 4.7UF/50V M H7	1
C772			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V H7	1
C773			ELECTROLYTIC CAP. 4.7UF/50V M H7	1
C773			ALUMINUM ELECTROLYTIC CAP 4.7UF/50V H7	1
C774			ELECTROLYTIC CAP. 47UF/25V M H7	1
C774			ALUMINUM ELECTROLYTIC CAP 47UF/25V H7	1
C1001	▲		ACROSS THE LINE CAP. 0.068UF/250V	1
C1001	▲		METALIZED FILM CAP. 0.068UF/250V M	1
C1002			ELECTROLYTIC CAP. 22UF/50V M	1
C1002			ELECTROLYTIC CAP 22UF/50V M	1
C1003			CERAMIC CAP. B K 0.01UF/500V	1
C1004			ELECTROLYTIC CAP. 220UF/200V M	1
C1004			ELECTROLYTIC CAPACITOR ZR200TA221K18EB	1
C1005			CERAMIC CAP. B K 120PF/500V	1
C1006	▲		SAFETY CAP. 3300PF/250V	1
C1006	▲		SAFETY CAP. 3300PF/250V	1
C1007			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1007			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1008			CERAMIC CAP. B K 120PF/500V	1
C1013			CERAMIC CAP.(AX) B K 1000PF/50V	1
C1014			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1014			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1015			ELECTROLYTIC CAP. 220UF/6.3V M H7	1
C1015			ALUMINUM ELECTROLYTIC CAP 220UF/6.3V H7	1
C1018			ELECTROLYTIC CAP. 100UF/10V M H7	1
C1018			ALUMINUM ELECTROLYTIC CAP 100UF/10V H7	1
C1021			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C1021			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1023			CERAMIC CAP. B K 470PF/500V	1
C1029			CERAMIC CAP.(AX) X K 2700PF/16V	1
C1030			CERAMIC CAP.(AX) F Z 1UF/50V	1
C1031			CERAMIC CAP.(AX) F Z 1UF/50V	1
C1032			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1032			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C1033			CERAMIC CAP. YV Z 0.022UF/50V	1
C1038			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1038			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1039			CERAMIC CAP.(AX) F Z 1UF/50V	1
C1040			ELECTROLYTIC CAP. 100UF/6.3V M	1
C1040			ELECTROLYTIC CAP. 100UF/6.3V M	1
C1042			ELECTROLYTIC CAP. 100UF/6.3V M H7	1
C1042			ELECTROLYTIC CAP. 100UF/6.3V M H7	1

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Pos.No.	▲	12 NC	Description	
C1051			CERAMIC CAP.(AX) F Z 1UF/50V	1
C1070			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C1070			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1082			ELECTROLYTIC CAP. 220UF/16V M H7	1
C1082			ELECTROLYTIC CAP. 220UF/16V M H7	1
C1201			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1201			ALUMINUM ELECTROLYTIC CAP 10UF/16V H7	1
C1202			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1202			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1205			CHIP CERAMIC CAP. CH J 220PF/50V	1
C1205			CHIP CERAMIC CAP. CH J 220PF/50V	1
C1206			CHIP CERAMIC CAP. CH J 220PF/50V	1
C1206			CHIP CERAMIC CAP. CH J 220PF/50V	1
C1207			CHIP CERAMIC CAP. CH J 47PF/50V	1
C1207			CHIP CERAMIC CAP.(1608) CH J 47PF/50V	1
C1208			CHIP CERAMIC CAP. CH J 47PF/50V	1
C1208			CHIP CERAMIC CAP.(1608) CH J 47PF/50V	1
C1221			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1221			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1222			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1222			ELECTROLYTIC CAP. 10UF/16V M H7	1
C1223			CHIP CERAMIC CAP. B K 1000PF/50V	1
C1223			CHIP CERAMIC CAP.(1608) B K 1000PF/50V	1
C1224			CHIP CERAMIC CAP. B K 1000PF/50V	1
C1224			CHIP CERAMIC CAP.(1608) B K 1000PF/50V	1
C1245			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C1245			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C1245			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C1245			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C1246			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C1246			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C1246			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C1246			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C1247			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1247			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1249			ELECTROLYTIC CAP. 47UF/16V M H7	1
C1249			ALUMINUM ELECTROLYTIC CAP 47UF/16V H7	1
C1351			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C1351			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C1351			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C1351			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C1352			ELECTROLYTIC CAP. 47UF/6.3V M H7	1
C1352			ALUMINUM ELECTROLYTIC CAP 47UF/6.3V H7	1
C1354			CHIP CERAMIC CAP. CH J 100PF/50V	1
C1354			CHIP CERAMIC CAP.(1608) CH J 100PF/50V	1
C1355			CHIP RES.(1608) 1/10W 0 OHM	1
C1355			CHIP RES.(1608) 1/10W 0 OHM	1
C1394			ELECTROLYTIC CAP. 47UF/16V M H7	1
C1395			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1395			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1403			CHIP CERAMIC CAP. B K 0.33UF/10V	1
C1403			CHIP CERAMIC CAP.(1608) B K 0.33UF/10V	1
C1422			CHIP CERAMIC CAP. B K 0.1UF/25V	1
C1422			CHIP CERAMIC CAP. B K 0.1UF/16V	1
C1422			CHIP CERAMIC CAP.(1608) B K 0.1UF/25V	1
C1422			CHIP CERAMIC CAP.(1608) B K 0.1UF/16V	1
C1423			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C1423			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1441			CHIP CERAMIC CAP. B K 0.33UF/10V	1
C1441			CHIP CERAMIC CAP.(1608) B K 0.33UF/10V	1
C1442			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1442			ELECTROLYTIC CAP. 1000UF/6.3V M	1
C1443			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1443			ELECTROLYTIC CAP. 470UF/6.3V M	1
C1461			ELECTROLYTIC CAP. 1UF/50V M H7	1
C1461			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C1462			ELECTROLYTIC CAP. 220UF/6.3V M	1
C1462			ELECTROLYTIC CAP. 220UF/6.3V M	1

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Pos.No.	▲	12 NC	Description	
C1481			ELECTROLYTIC CAP. 1UF/50V M H7	1
C1481			ALUMINUM ELECTROLYTIC CAP 1UF/50V H7	1
C1482			ELECTROLYTIC CAP. 220UF/6.3V M	1
C1482			ELECTROLYTIC CAP. 220UF/6.3V M	1
C1523			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C1523			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C1523			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C1523			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C1524			ELECTROLYTIC CAP. 100UF/6.3V H7	1
C1524			ALUMINUM ELECTROLYTIC CAP 100UF/6.3V H7	1
C1531			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C1531			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1532			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C1532			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C1535			CHIP CERAMIC CAP. B K 0.01UF/50V	1
C1535			CHIP CERAMIC CAP.(1608) B K 0.01UF/50V	1
C1536			ELECTROLYTIC CAP. 22UF/6.3V M H7	1
C1536			ALUMINUM ELECTROLYTIC CAP 22UF/6.3V H7	1
C1537			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C1537			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C1537			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C1537			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
C2002			CHIP CERAMIC CAP. B K 1000PF/50V	1
C2002			CHIP CERAMIC CAP.(1608) B K 1000PF/50V	1
C2004			ELECTROLYTIC CAP. 100UF/6.3V H7	1
C2004			ALUMINUM ELECTROLYTIC CAP 100UF/6.3V H7	1
C2012			CHIP CERAMIC CAP. F Z 0.1UF/50V	1
C2012			CHIP CERAMIC CAP. F Z 0.1UF/25V	1
C2012			CHIP CERAMIC CAP.(1608) F Z 0.1UF/50V	1
C2012			CHIP CERAMIC CAP.(1608) F Z 0.1UF/25V	1
<b>DIODES</b>				
D013			RECTIFIER DIODE BA158	1
D013			RECTIFIER DIODE BA158	1
D015			SCHOTTKY BARRIER DIODE SB390	1
D016			SCHOTTKY BARRIER DIODE SB240-B/P	1
D019			PCB JUMPER D0.6-P5.0	1
D031			ZENER DIODE DZ-16BSBT265	1
D031			ZENER DIODE MTZJT-7716B	1
D035			ZENER DIODE DZ-6.8BSBT265	1
D035			ZENER DIODE MTZJT-776.8B	1
D040			ZENER DIODE DZ-6.8BSBT265	1
D040			ZENER DIODE MTZJT-776.8B	1
D052			ZENER DIODE DZ-10BSBT265	1
D052			ZENER DIODE MTZJT-7710B	1
D062			ZENER DIODE DZ-4.3BSCT265	1
D062			ZENER DIODE MTZJT-774.3C	1
D063			RECTIFIER DIODE 1N4005	1
D063			RECTIFIER DIODE 1N4005	1
D080			RECTIFIER DIODE 1N4005	1
D080			RECTIFIER DIODE 1N4005	1
D082			RECTIFIER DIODE 1N4005	1
D082			RECTIFIER DIODE 1N4005	1
D504			ZENER DIODE DZ-18BSBT265	1
D504			ZENER DIODE MTZJT-7718B	1
D555			LED MIE-534A2	1
D555			LED SIR-563ST3F P	1
D555			LED SIR-563ST3F Q	1
D566			LED(YELLOW) 204YD/E	1
D567			LED(YELLOW) 204YD/E	1
D701			ZENER DIODE DZ-33BSDT265	1
D701			ZENER DIODE MTZJT-7733D	1
D777			ZENER DIODE DZ-5.6BSAT265	1
D777			ZENER DIODE MTZJT-775.6A	1
D1001			RECTIFIER DIODE 1N4005	1
D1001			RECTIFIER DIODE 1N4005	1
D1002			RECTIFIER DIODE 1N4005	1
D1002			RECTIFIER DIODE 1N4005	1
D1003			RECTIFIER DIODE 1N4005	1

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Pos.No.	▲	12 NC	Description	
D1003			RECTIFIER DIODE 1N4005	1
D1004			RECTIFIER DIODE 1N4005	1
D1004			RECTIFIER DIODE 1N4005	1
D1007			PCB JUMPER D0.6-P5.0	1
D1008			SCHOTTKY BARRIER DIODE SB140	1
D1008			SCHOTTKY BARRIER DIODE SB140	1
D1010			RECTIFIER DIODE BA158	1
D1010			RECTIFIER DIODE BA158	1
D1011			RECTIFIER DIODE BA158	1
D1011			RECTIFIER DIODE BA158	1
D1012			SWITCHING DIODE 1N4148M	1
D1012			SWITCHING DIODE 1SS133(T-77)	1
D1016			RECTIFIER DIODE FR101	1
D1017			ZENER DIODE DZ-18BSBT265	1
D1017			ZENER DIODE MTZJT-7718B	1
D1018			SWITCHING DIODE 1N4148M	1
D1018			SWITCHING DIODE 1SS133(T-77)	1
D1020			SCHOTTKY BARRIER DIODE SB140	1
D1020			SCHOTTKY BARRIER DIODE SB140	1
D1021			PCB JUMPER D0.6-P5.0	1
D1022			SWITCHING DIODE 1N4148M	1
D1022			SWITCHING DIODE 1SS133(T-77)	1
D1024			SWITCHING DIODE 1N4148M	1
D1024			SWITCHING DIODE 1SS133(T-77)	1
D1025			SWITCHING DIODE 1N4148M	1
D1025			SWITCHING DIODE 1SS133(T-77)	1
D1036			RECTIFIER DIODE 1N4005	1
D1036			RECTIFIER DIODE 1N4005	1
D1037			RECTIFIER DIODE 1N4005	1
D1037			RECTIFIER DIODE 1N4005	1
D1038			RECTIFIER DIODE 1N4005	1
D1038			RECTIFIER DIODE 1N4005	1
D1058			RECTIFIER DIODE 1N4005	1
D1058			RECTIFIER DIODE 1N4005	1
D1301			ZENER DIODE DZ-5.6BSBT265	1
D1301			ZENER DIODE MTZJT-775.6B	1
<b>ICS</b>				
IC301			IC Y/C/A LA71205M-MPB-E	1
IC451			IC HIFI LA72670BM-MPB-E	1
IC501			IC SYSCON 80PIN	1
IC571			VFD DRIVER/CONTROLLER IC PT6313-S-TP(L)	1
IC571			VFD DRIVER IC SC16313G	1
IC751			IC ANALOG MULTIPLEXER CD4053BNSR	1
IC751			IC ANALOG MULTIPLEXERS CD4053BCSJX_NL	1
IC751			IC SWITCH TC4053BF(EL N F)	1
IC752			IC ANALOG MULTIPLEXER CD4053BNSR	1
IC752			IC ANALOG MULTIPLEXERS CD4053BCSJX_NL	1
IC752			IC SWITCH TC4053BF(EL N F)	1
IC1001	▲		PHOTOCOUPLER PS2561A-1(W)	1
IC1001	▲		PHOTOCOUPLER PS2561A-1(Q)	1
IC1001	▲		PHOTOCOUPLER EL817B	1
IC1001	▲		PHOTOCOUPLER EL817A	1
IC1001	▲		PHOTOCOUPLER LTV-817C-F	1
IC1001	▲		PHOTOCOUPLER LTV-817B-F	1
IC1002			VOLTAGE REGULATOR PQ1LAX95MSPQ	1
IC1004			VOLTAGE REGULATOR PQ1LAX95MSPQ	1
IC1201			IC OP AMP KIA4558P/P	1
IC1201			IC OP AMP UTC4558	1
IC1201			IC OP AMP RC4580IP	1
IC1402			DRIVER FOR DVD MM1637XVBE	1
IC1403			DRIVER FOR DVD MM1636XWRE	1
<b>COILS</b>				
L009			RADIAL TYPE CHOKE COIL CW68-470K-841040NP	1
L009			CHOKE COIL 47UH	1
L009			FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	1
L009			CHOKE COIL 47UH-K	1
L251			PCB JUMPER D0.6-P5.0	1
L303			INDUCTOR(100UH K) LAP02TA101K	1

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Pos.No.	▲	12 NC	Description	
L304			RADIAL TYPE CHOKE COIL CW68-470K-841040NP	1
L304			CHOKE COIL 47UH	1
L304			FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	1
L304			CHOKE COIL 47UH-K	1
L305			CHIP RES.(1608) 1/10W 0 OHM	1
L305			CHIP RES.(1608) 1/10W 0 OHM	1
L306			CHIP RES.(1608) 1/10W 0 OHM	1
L306			CHIP RES.(1608) 1/10W 0 OHM	1
L400			INDUCTOR 22UH-K-26T	1
L421			INDUCTOR 47UH-K-5FT	1
L451			PCB JUMPER D0.6-P5.0	1
L502			RADIAL TYPE CHOKE COIL CW68-470K-841040NP	1
L502			CHOKE COIL 47UH	1
L502			FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	1
L502			CHOKE COIL 47UH-K	1
L504			PCB JUMPER D0.6-P5.0	1
L701			INDUCTOR 4.7UH-K-5FT	1
L771			PCB JUMPER D0.6-P5.0	1
L1001	▲		LINE FILTER 27MH TLF14CB2730R4	1
L1001	▲		LINE FILTER 27MH CSA-LF199A-NP	1
L1001	▲		COIL LINE FILTER LF199A 27MH	1
L1004			BEAD CORE B16 RH 3.5X10X1.3	1
L1007			RADIAL TYPE CHOKE COIL CW68-470K-841040NP	1
L1007			CHOKE COIL 47UH	1
L1007			FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	1
L1007			CHOKE COIL 47UH-K	1
L1020			RADIAL TYPE CHOKE COIL CW68-470K-841040NP	1
L1020			CHOKE COIL 47UH	1
L1020			FIXED INDUCTORS(PB FREE) LGB0810TLF-470K	1
L1020			CHOKE COIL 47UH-K	1
L1350			INDUCTOR(100UH K) LAP02TA101K	1
L1351			INDUCTOR(0.47UH K) LAP02TAR47K	1
L1522			INDUCTOR 47UH-K-5FT	1
L2001			INDUCTOR(100UH K) LAP02TA101K	1
<b>TRANSISTORS</b>				
Q031			TRANSISTOR KTA1267-Y-AT/P	1
Q031			TRANSISTOR KTA1267-GR-AT/P	1
Q052			NPN TRANSISTOR KRC103M-AT/P	1
Q055			TRANSISTOR KTC3198-Y-AT/P	1
Q055			TRANSISTOR KTC3198-GR-AT/P	1
Q055			TRANSISTOR 2SC536NF-NPA-AT	1
Q055			TRANSISTOR 2SC536NG-NPA-AT	1
Q056			TRANSISTOR KTC3203-Y-AT/P	1
Q056			TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q063			TRANSISTOR KTA1267-Y-AT/P	1
Q063			TRANSISTOR KTA1267-GR-AT/P	1
Q064			TRANSISTOR KTC3199-Y-AT/P	1
Q064			TRANSISTOR KTC3199-GR-AT/P	1
Q064			TRANSISTOR 2SC1815-Y(TE2 F T)	1
Q064			TRANSISTOR 2SC1815-GR(TE2 F T)	1
Q301			TRANSISTOR KTA-1266-GR-AT/P	1
Q301			TRANSISTOR 2SA1015-GR(TE2 F T)	1
Q302			TRANSISTOR KTC3193-Y-AT/P	1
Q391			TRANSISTOR KTA-1266-GR-AT/P	1
Q391			TRANSISTOR 2SA1015-GR(TE2 F T)	1
Q421			TRANSISTOR KTA-1266-GR-AT/P	1
Q421			TRANSISTOR 2SA1015-GR(TE2 F T)	1
Q422			TRANSISTOR KTC3203-Y-AT/P	1
Q422			TRANSISTOR 2SC2120-Y(TE2 F T)	1
Q425			RES. BUILT-IN TRANSISTOR KRA103M-AT/P	1
Q426			CHIP TRANSISTOR RN1511(TE85R.F)	1
Q426			CHIP TRANSISTOR FMG4A T148	1
Q501			TRANSISTOR KTC3199-BL-AT/P	1
Q501			TRANSISTOR 2SC1815-BL(TE2 F T)	1
Q506			PHOTO TRANSISTOR PT204-6B-12	1
Q506			PHOTO TRANSISTOR MID-32A22F	1
Q1001	▲		FET 2SK3543(Q)	1
Q1001	▲		FET 2SK3757(Q)	1

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Pos.No.	▲	12 NC	Description	
Q1003			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1003			TRANSISTOR KTC3199-Y-AT/P	1
Q1004			TRANSISTOR 2SC2001-T-A-K	1
Q1004			TRANSISTOR 2SC2001-T-A-L	1
Q1005			TRANSISTOR KTC3199-Y-AT/P	1
Q1005			TRANSISTOR KTC3199-GR-AT/P	1
Q1005			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1005			TRANSISTOR 2SC1815-GR(T E2 F T)	1
Q1006			TRANSISTOR KTA1267-Y-AT/P	1
Q1006			TRANSISTOR KTA1267-GR-AT/P	1
Q1008			TRANSISTOR KTC3199-Y-AT/P	1
Q1011			TRANSISTOR KTC3203-Y-AT/P	1
Q1011			TRANSISTOR 2SC2120-Y(T E2 F T)	1
Q1201			TRANSISTOR KTC3199-Y-AT/P	1
Q1201			TRANSISTOR KTC3199-GR-AT/P	1
Q1201			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1201			TRANSISTOR 2SC1815-GR(T E2 F T)	1
Q1202			TRANSISTOR KTC3199-Y-AT/P	1
Q1202			TRANSISTOR KTC3199-GR-AT/P	1
Q1202			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1202			TRANSISTOR 2SC1815-GR(T E2 F T)	1
Q1204			TRANSISTOR KTA-1266-GR-AT/P	1
Q1204			TRANSISTOR 2SA1015-GR(T E2 F T)	1
Q1351			TRANSISTOR KTC3199-Y-AT/P	1
Q1351			TRANSISTOR KTC3199-GR-AT/P	1
Q1351			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1351			TRANSISTOR 2SC1815-GR(T E2 F T)	1
Q1385			TRANSISTOR KTC3199-Y-AT/P	1
Q1385			TRANSISTOR KTC3199-GR-AT/P	1
Q1385			TRANSISTOR 2SC1815-Y(T E2 F T)	1
Q1385			TRANSISTOR 2SC1815-GR(T E2 F T)	1
<b>RESISTORS</b>				
R031			CHIP RES. 1/10W J 1K OHM	1
R031			CHIP RES. 1/10W J 1K OHM	1
R032			CHIP RES. 1/10W J 4.7K OHM	1
R032			CHIP RES. 1/10W J 4.7K OHM	1
R034			CHIP RES. 1/10W F 2.2K OHM	1
R034			CHIP RES.(1608) 1/10W F 2.2K OHM	1
R034			CHIP RES. 1/10W F 2.2K OHM	1
R034			CHIP RES.(1608) 1/10W F 2.2K OHM	1
R039			CHIP RES. 1/10W F 4.7K OHM	1
R039			CHIP RES. 1/10W F 4.7K OHM	1
R039			CHIP RES. 1/10W F 4.7K OHM	1
R039			CHIP RES.(1608) 1/10W F 4.7K OHM	1
R041			CHIP RES. 1/10W J 12K OHM	1
R041			CHIP RES. 1/10W J 12K OHM	1
R042			CHIP RES. 1/10W J 1.8K OHM	1
R042			CHIP RES. 1/10W J 1.8K OHM	1
R056			CARBON RES. 1/4W J 1K OHM	1
R057			CARBON RES. 1/4W J 150 OHM	1
R058			CHIP RES. 1/10W J 180 OHM	1
R058			CHIP RES. 1/10W J 180 OHM	1
R063			PCB JUMPER D0.6-P5.0	1
R066			CARBON RES. 1/6W J 470 OHM	1
R066			CARBON RES. 1/4W J 470 OHM	1
R067			CHIP RES. 1/10W J 4.7K OHM	1
R067			CHIP RES. 1/10W J 4.7K OHM	1
R068			CHIP RES. 1/10W J 4.7K OHM	1
R068			CHIP RES. 1/10W J 4.7K OHM	1
R069			CHIP RES. 1/10W J 47K OHM	1
R069			CHIP RES. 1/10W J 47K OHM	1
R073			CARBON RES. 1/4W J 10K OHM	1
R075			CARBON RES. 1/6W J 4.7K OHM	1
R075			CARBON RES. 1/4W J 4.7K OHM	1
R092			CARBON RES. 1/4W J 8.2K OHM	1
R095			CARBON RES. 1/4W J 8.2K OHM	1
R301			CHIP RES. 1/10W J 10K OHM	1
R301			CHIP RES. 1/10W J 10K OHM	1

## ELECTRICAL PARTS LIST

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Pos.No.	▲	12 NC	Description	
R302			CHIP RES. 1/10W J 12K OHM	1
R302			CHIP RES. 1/10W J 12K OHM	1
R304			CHIP RES. 1/10W J 1.2K OHM	1
R304			CHIP RES. 1/10W J 1.2K OHM	1
R306			CHIP RES. 1/10W J 3.9M OHM	1
R306			CHIP RES. 1/10W J 3.9M OHM	1
R307			CHIP RES. 1/10W J 100K OHM	1
R307			CHIP RES. 1/10W J 100K OHM	1
R308			CHIP RES. 1/10W J 82K OHM	1
R308			CHIP RES. 1/10W J 82K OHM	1
R309			CHIP RES. 1/10W J 2.2K OHM	1
R309			CHIP RES. 1/10W J 2.2K OHM	1
R310			CHIP RES. 1/10W J 4.7K OHM	1
R310			CHIP RES. 1/10W J 4.7K OHM	1
R311			CHIP RES. 1/10W J 1.8K OHM	1
R311			CHIP RES. 1/10W J 1.8K OHM	1
R314			CHIP RES. 1/10W J 680K OHM	1
R314			CHIP RES. 1/10W J 680K OHM	1
R315			CHIP RES.(1608) 1/10W 0 OHM	1
R315			CHIP RES.(1608) 1/10W 0 OHM	1
R316			CHIP RES. 1/10W J 2.2K OHM	1
R316			CHIP RES. 1/10W J 2.2K OHM	1
R317			CHIP RES. 1/10W J 8.2K OHM	1
R317			CHIP RES. 1/10W J 8.2K OHM	1
R318			CHIP RES.(1608) 1/10W 0 OHM	1
R318			CHIP RES.(1608) 1/10W 0 OHM	1
R319			CHIP RES.(1608) 1/10W 0 OHM	1
R319			CHIP RES.(1608) 1/10W 0 OHM	1
R320			CHIP RES.(1608) 1/10W 0 OHM	1
R320			CHIP RES.(1608) 1/10W 0 OHM	1
R321			CHIP RES. 1/10W J 10K OHM	1
R321			CHIP RES. 1/10W J 10K OHM	1
R322			CHIP RES. 1/10W J 18K OHM	1
R322			CHIP RES. 1/10W J 18K OHM	1
R323			CHIP RES. 1/10W J 10K OHM	1
R323			CHIP RES. 1/10W J 10K OHM	1
R324			CHIP RES. 1/10W J 18K OHM	1
R324			CHIP RES. 1/10W J 18K OHM	1
R327			CHIP RES. 1/10W F 1.1K OHM	1
R327			CHIP RES. 1/10W F 1.1K OHM	1
R327			CHIP RES. 1/10W F 1.1K OHM	1
R327			CHIP RES. 1/10W F 1.1K OHM	1
R391			CARBON RES. 1/4W J 560 OHM	1
R392			CARBON RES. 1/4W J 560 OHM	1
R397			CHIP RES. 1/10W J 100 OHM	1
R397			CHIP RES. 1/10W J 100 OHM	1
R401			CHIP RES. 1/10W J 6.8K OHM	1
R401			CHIP RES. 1/10W J 6.8K OHM	1
R402			CHIP RES. 1/10W J 8.2K OHM	1
R402			CHIP RES. 1/10W J 8.2K OHM	1
R407			CHIP RES.(1608) 1/10W 0 OHM	1
R407			CHIP RES.(1608) 1/10W 0 OHM	1
R408			CHIP RES.(1608) 1/10W 0 OHM	1
R408			CHIP RES.(1608) 1/10W 0 OHM	1
R409			CHIP RES. 1/10W J 8.2K OHM	1
R409			CHIP RES. 1/10W J 8.2K OHM	1
R410			CHIP RES. 1/10W J 12K OHM	1
R410			CHIP RES. 1/10W J 12K OHM	1
R411			CHIP RES. 1/10W J 330K OHM	1
R411			CHIP RES. 1/10W J 330K OHM	1
R412			CHIP RES. 1/10W J 150 OHM	1
R412			CHIP RES. 1/10W J 150 OHM	1
R413			CHIP RES. 1/10W J 22K OHM	1
R413			CHIP RES. 1/10W J 22K OHM	1
R414			CHIP RES. 1/10W J 910 OHM	1
R414			CHIP RES. 1/10W J 910 OHM	1
R415			CHIP RES. 1/10W J 2.2K OHM	1
R415			CHIP RES. 1/10W J 2.2K OHM	1

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## ELECTRICAL PARTS LIST

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Pos.No.	▲	12 NC	Description	
R416			CHIP RES. 1/10W J 10K OHM	1
R416			CHIP RES. 1/10W J 10K OHM	1
R421			CARBON RES. 1/4W J 1K OHM	1
R422			CHIP RES. 1/10W J 22K OHM	1
R422			CHIP RES. 1/10W J 22K OHM	1
R424			CARBON RES. 1/6W J 47K OHM	1
R424			CARBON RES. 1/4W J 47K OHM	1
R425			CARBON RES. 1/6W J 100 OHM	1
R425			CARBON RES. 1/4W J 100 OHM	1
R426			CARBON RES. 1/6W J 820 OHM	1
R426			CARBON RES. 1/4W J 820 OHM	1
R451			CHIP RES. 1/10W J 12K OHM	1
R451			CHIP RES. 1/10W J 12K OHM	1
R452			CHIP RES. 1/10W J 4.7K OHM	1
R452			CHIP RES. 1/10W J 4.7K OHM	1
R453			CHIP RES. 1/10W J 47K OHM	1
R453			CHIP RES. 1/10W J 47K OHM	1
R454			CHIP RES. 1/10W J 8.2K OHM	1
R454			CHIP RES. 1/10W J 8.2K OHM	1
R455			CHIP RES. 1/10W J 47K OHM	1
R455			CHIP RES. 1/10W J 47K OHM	1
R456			CHIP RES. 1/10W J 8.2K OHM	1
R456			CHIP RES. 1/10W J 8.2K OHM	1
R457			CHIP RES. 1/10W J 470 OHM	1
R457			CHIP RES. 1/10W J 470 OHM	1
R458			CHIP RES. 1/10W J 3.3K OHM	1
R458			CHIP RES. 1/10W J 3.3K OHM	1
R459			CHIP RES. 1/10W J 22K OHM	1
R459			CHIP RES. 1/10W J 22K OHM	1
R462			CHIP RES. 1/10W J 4.7K OHM	1
R462			CHIP RES. 1/10W J 4.7K OHM	1
R463			CHIP RES. 1/10W J 47K OHM	1
R463			CHIP RES. 1/10W J 47K OHM	1
R464			CHIP RES. 1/10W J 8.2K OHM	1
R464			CHIP RES. 1/10W J 8.2K OHM	1
R465			CARBON RES. 1/6W J 47K OHM	1
R465			CARBON RES. 1/4W J 47K OHM	1
R466			CHIP RES. 1/10W J 8.2K OHM	1
R466			CHIP RES. 1/10W J 8.2K OHM	1
R467			CHIP RES. 1/10W J 10K OHM	1
R467			CHIP RES. 1/10W J 10K OHM	1
R468			CHIP RES. 1/10W J 470 OHM	1
R468			CHIP RES. 1/10W J 470 OHM	1
R469			CHIP RES. 1/10W J 1K OHM	1
R469			CHIP RES. 1/10W J 1K OHM	1
R470			CHIP RES. 1/10W J 470 OHM	1
R470			CHIP RES. 1/10W J 470 OHM	1
R471			CHIP RES. 1/10W J 1K OHM	1
R471			CHIP RES. 1/10W J 1K OHM	1
R472			CHIP RES.(1608) 1/10W 0 OHM	1
R472			CHIP RES.(1608) 1/10W 0 OHM	1
R480			CHIP RES. 1/10W J 47K OHM	1
R480			CHIP RES. 1/10W J 47K OHM	1
R481			CHIP RES. 1/10W J 5.6K OHM	1
R481			CHIP RES. 1/10W J 5.6K OHM	1
R482			CHIP RES. 1/10W J 47K OHM	1
R482			CHIP RES. 1/10W J 47K OHM	1
R483			CHIP RES. 1/10W J 5.6K OHM	1
R483			CHIP RES. 1/10W J 5.6K OHM	1
R484			CHIP RES. 1/10W J 47K OHM	1
R484			CHIP RES. 1/10W J 47K OHM	1
R485			CHIP RES. 1/10W J 15K OHM	1
R485			CHIP RES. 1/10W J 15K OHM	1
R486			CHIP RES. 1/10W J 47K OHM	1
R486			CHIP RES. 1/10W J 47K OHM	1
R487			CHIP RES. 1/10W J 15K OHM	1
R487			CHIP RES. 1/10W J 15K OHM	1
R502			CHIP RES. 1/10W J 2.2K OHM	1

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## ELECTRICAL PARTS LIST

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Pos.No.	▲	12 NC	Description	
R502			CHIP RES. 1/10W J 2.2K OHM	1
R503			CHIP RES. 1/10W J 820 OHM	1
R503			CHIP RES. 1/10W J 820 OHM	1
R504			CHIP RES. 1/10W J 100K OHM	1
R504			CHIP RES. 1/10W J 100K OHM	1
R507			CHIP RES. 1/10W J 220 OHM	1
R507			CHIP RES. 1/10W J 220 OHM	1
R508			CHIP RES.(1608) 1/10W 0 OHM	1
R508			CHIP RES.(1608) 1/10W 0 OHM	1
R511			CHIP RES. 1/10W J 39K OHM	1
R511			CHIP RES. 1/10W J 39K OHM	1
R512			CHIP RES. 1/10W J 100 OHM	1
R512			CHIP RES. 1/10W J 100 OHM	1
R518			CHIP RES. 1/10W J 220K OHM	1
R518			CHIP RES. 1/10W J 220K OHM	1
R522			CARBON RES. 1/4W J 10K OHM	1
R523			CHIP RES. 1/10W J 2.2K OHM	1
R523			CHIP RES. 1/10W J 2.2K OHM	1
R524			CHIP RES. 1/10W J 10K OHM	1
R524			CHIP RES. 1/10W J 10K OHM	1
R525			CHIP RES. 1/10W J 10K OHM	1
R525			CHIP RES. 1/10W J 10K OHM	1
R526			CHIP RES. 1/10W J 1K OHM	1
R526			CHIP RES. 1/10W J 1K OHM	1
R527			CHIP RES. 1/10W J 1K OHM	1
R527			CHIP RES. 1/10W J 1K OHM	1
R528			CARBON RES. 1/4W J 10K OHM	1
R529			PCB JUMPER D0.6-P5.0	1
R530			CARBON RES. 1/4W J 1K OHM	1
R531			CARBON RES. 1/6W G 4.7K OHM	1
R531			CARBON RES. 1/4W G 4.7K OHM	1
R532			CARBON RES. 1/6W G 1.5K OHM	1
R532			CARBON RES. 1/4W G 1.5K OHM	1
R533			CARBON RES. 1/6W G 22K OHM	1
R533			CARBON RES. 1/4W G 22K OHM	1
R534			CARBON RES. 1/6W G 470 OHM	1
R534			CARBON RES. 1/4W G 470 OHM	1
R535			CARBON RES. 1/6W G 10K OHM	1
R535			CARBON RES. 1/4W G 10K OHM	1
R536			CARBON RES. 1/6W G 3.6K OHM	1
R536			CARBON RES. 1/4W G 3.6K OHM	1
R537			CHIP RES. 1/10W J 33K OHM	1
R537			CHIP RES. 1/10W J 33K OHM	1
R540			CHIP RES. 1/10W J 390K OHM	1
R540			CHIP RES. 1/10W J 390K OHM	1
R541			CHIP RES. 1/10W J 390K OHM	1
R541			CHIP RES. 1/10W J 390K OHM	1
R542			CARBON RES. 1/4W J 270 OHM	1
R543			CHIP RES. 1/10W J 4.7K OHM	1
R543			CHIP RES. 1/10W J 4.7K OHM	1
R544			CHIP RES. 1/10W J 18K OHM	1
R544			CHIP RES. 1/10W J 18K OHM	1
R545			CHIP RES. 1/10W J 10K OHM	1
R545			CHIP RES. 1/10W J 10K OHM	1
R546			CHIP RES. 1/10W J 10K OHM	1
R546			CHIP RES. 1/10W J 10K OHM	1
R551			CHIP RES. 1/10W J 10K OHM	1
R551			CHIP RES. 1/10W J 10K OHM	1
R552			CHIP RES. 1/10W J 1K OHM	1
R552			CHIP RES. 1/10W J 1K OHM	1
R553			CHIP RES. 1/10W J 4.7K OHM	1
R553			CHIP RES. 1/10W J 4.7K OHM	1
R554			CARBON RES. 1/4W J 2.7K OHM	1
R555			PCB JUMPER D0.6-P5.0	1
R555			PCB JUMPER D0.6-P5.0	1
R557			CHIP RES.(1608) 1/10W 0 OHM	1
R557			CHIP RES.(1608) 1/10W 0 OHM	1
R559			CHIP RES.(1608) 1/10W 0 OHM	1

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## ELECTRICAL PARTS LIST

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Pos.No.	▲	12 NC	Description	
R559			CHIP RES.(1608) 1/10W 0 OHM	1
R563			CHIP RES. 1/10W J 1K OHM	1
R563			CHIP RES. 1/10W J 1K OHM	1
R572			CHIP RES. 1/10W J 100K OHM	1
R572			CHIP RES. 1/10W J 100K OHM	1
R573			CARBON RES. 1/4W J 150 OHM	1
R574			CARBON RES. 1/4W J 150 OHM	1
R580			CARBON RES. 1/4W J 560 OHM	1
R585			CHIP RES. 1/10W J 1K OHM	1
R585			CHIP RES. 1/10W J 1K OHM	1
R586			CHIP RES. 1/10W J 1.2K OHM	1
R586			CHIP RES. 1/10W J 1.2K OHM	1
R587			CHIP RES. 1/10W J 1.5K OHM	1
R587			CHIP RES. 1/10W J 1.5K OHM	1
R588			CHIP RES. 1/10W J 2.2K OHM	1
R588			CHIP RES. 1/10W J 2.2K OHM	1
R590			CHIP RES. 1/10W J 1K OHM	1
R590			CHIP RES. 1/10W J 1K OHM	1
R591			CHIP RES. 1/10W J 1.2K OHM	1
R591			CHIP RES. 1/10W J 1.2K OHM	1
R593			CHIP RES. 1/10W J 1.8K OHM	1
R593			CHIP RES. 1/10W J 1.8K OHM	1
R594			CHIP RES. 1/10W J 1.8K OHM	1
R594			CHIP RES. 1/10W J 1.8K OHM	1
R600			CHIP RES. 1/10W J 2.7K OHM	1
R600			CHIP RES. 1/10W J 2.7K OHM	1
R602			CHIP RES. 1/10W J 2.7K OHM	1
R602			CHIP RES. 1/10W J 2.7K OHM	1
R603			CHIP RES. 1/10W J 4.7K OHM	1
R603			CHIP RES. 1/10W J 4.7K OHM	1
R605			CHIP RES. 1/10W J 4.7K OHM	1
R605			CHIP RES. 1/10W J 4.7K OHM	1
R610			CHIP RES. 1/10W J 10K OHM	1
R610			CHIP RES. 1/10W J 10K OHM	1
R611			CHIP RES. 1/10W J 10K OHM	1
R611			CHIP RES. 1/10W J 10K OHM	1
R618			CHIP RES. 1/10W J 10K OHM	1
R618			CHIP RES. 1/10W J 10K OHM	1
R619			CHIP RES. 1/10W J 10K OHM	1
R619			CHIP RES. 1/10W J 10K OHM	1
R626			CHIP RES. 1/10W J 10K OHM	1
R626			CHIP RES. 1/10W J 10K OHM	1
R701			CHIP RES. 1/10W J 330 OHM	1
R701			CHIP RES. 1/10W J 330 OHM	1
R702			CARBON RES. 1/4W J 1.8K OHM	1
R704			CARBON RES. 1/4W J 1K OHM	1
R705			CARBON RES. 1/4W J 1K OHM	1
R752			CHIP RES. 1/10W J 75 OHM	1
R752			CHIP RES. 1/10W J 75 OHM	1
R753			CHIP RES. 1/10W J 75 OHM	1
R753			CHIP RES. 1/10W J 75 OHM	1
R758			CARBON RES. 1/6W J 75 OHM	1
R758			CARBON RES. 1/4W J 75 OHM	1
R759			CHIP RES. 1/10W J 150 OHM	1
R759			CHIP RES. 1/10W J 150 OHM	1
R760			CHIP RES. 1/10W J 150 OHM	1
R760			CHIP RES. 1/10W J 150 OHM	1
R773			CHIP RES. 1/10W J 100K OHM	1
R773			CHIP RES. 1/10W J 100K OHM	1
R774			CARBON RES. 1/4W J 3.9K OHM	1
R775			CHIP RES. 1/10W J 100K OHM	1
R775			CHIP RES. 1/10W J 100K OHM	1
R777			CARBON RES. 1/4W J 2.7K OHM	1
R788			PCB JUMPER D0.6-P5.0	1
R789			PCB JUMPER D0.6-P5.0	1
R1002			CARBON RES. 1/4W J 180 OHM	1
R1004			METAL OXIDE FILM RES. 2W J 82K OHM	1
R1004			METAL OXIDE FILM RES. 2W J 82K OHM	1

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# ELECTRICAL PARTS LIST

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Pos.No.	▲	12 NC	Description	
R1005			CARBON RES. 1/4W J 1M OHM	1
R1006			CARBON RES. 1/4W J 1M OHM	1
R1007			PCB JUMPER D0.6-P5.0	1
R1008			CARBON RES. 1/6W G 1K OHM	1
R1008			CARBON RES. 1/4W G 1K OHM	1
R1010			CARBON RES. 1/6W J 22K OHM	1
R1010			CARBON RES. 1/4W J 22K OHM	1
R1011			METAL OXIDE FILM RES. 1W J 0.68 OHM	1
R1011			METAL OXIDE FILM RES. 1W J 0.68 OHM	1
R1011			METAL OXIDE FILM RES. 1W J 0.68 OHM	1
R1013			CARBON RES. 1/6W J 820 OHM	1
R1013			CARBON RES. 1/4W J 820 OHM	1
R1020			CARBON RES. 1/4W J 1K OHM	1
R1025			CARBON RES. 1/4W J 10K OHM	1
R1026			CARBON RES. 1/4W J 10K OHM	1
R1029			CARBON RES. 1/6W J 150K OHM	1
R1029			CARBON RES. 1/4W J 150K OHM	1
R1032			CARBON RES. 1/4W J 1.2K OHM	1
R1034			CARBON RES. 1/4W J 680K OHM	1
R1035			METAL OXIDE FILM RES.(STRAIGHT 2W J 1.2 OHM	1
R1035			METAL OXIDE FILM RES. 2W J 1.2 OHM	1
R1036			CARBON RES. 1/6W J 100K OHM	1
R1036			CARBON RES. 1/4W J 100K OHM	1
R1037			CHIP RES. 1/10W J 10K OHM	1
R1037			CHIP RES. 1/10W J 10K OHM	1
R1038			CARBON RES. 1/6W J 100K OHM	1
R1038			CARBON RES. 1/4W J 100K OHM	1
R1039			CARBON RES. 1/6W J 470K OHM	1
R1039			CARBON RES. 1/4W J 470K OHM	1
R1042			CARBON RES. 1/4W J 15 OHM	1
R1043			METAL OXIDE FILM RES. 1W J 2.7 OHM	1
R1043			METAL OXIDE FILM RES. 1W J 2.7 OHM	1
R1043			METAL OXIDE FILM RES. 1W J 2.7 OHM	1
R1044			CHIP RES. 1/10W J 220K OHM	1
R1044			CHIP RES. 1/10W J 220K OHM	1
R1051			CHIP RES. 1/10W J 10K OHM	1
R1051			CHIP RES. 1/10W J 10K OHM	1
R1052			CHIP RES. 1/10W J 5.6K OHM	1
R1052			CHIP RES. 1/10W J 5.6K OHM	1
R1059			CHIP RES. 1/10W J 10K OHM	1
R1059			CHIP RES. 1/10W J 10K OHM	1
R1068			CARBON RES. 1/4W J 390 OHM	1
R1076			CHIP RES. 1/10W J 22K OHM	1
R1076			CHIP RES. 1/10W J 22K OHM	1
R1077			CARBON RES. 1/4W J 1K OHM	1
R1078			CARBON RES. 1/4W J 180 OHM	1
R1085			CHIP RES. 1/10W J 100 OHM	1
R1085			CHIP RES. 1/10W J 100 OHM	1
R1086			CHIP RES. 1/10W J 2.2K OHM	1
R1086			CHIP RES. 1/10W J 2.2K OHM	1
R1087			CHIP RES. 1/10W J 1K OHM	1
R1087			CHIP RES. 1/10W J 1K OHM	1
R1090			CHIP RES. 1/10W J 5.6K OHM	1
R1090			CHIP RES. 1/10W J 5.6K OHM	1
R1091			CHIP RES. 1/10W J 3.3K OHM	1
R1091			CHIP RES. 1/10W J 3.3K OHM	1
R1205			CARBON RES. 1/6W G 20K OHM	1
R1205			CARBON RES. 1/4W G 20K OHM	1
R1206			CHIP RES.(1608) 1/10W F 20K OHM	1
R1206			CHIP RES. 1/10W F 20K OHM	1
R1206			CHIP RES. 1/10W F 20K OHM	1
R1207			CHIP RES. 1/10W J 8.2K OHM	1
R1207			CHIP RES. 1/10W J 8.2K OHM	1
R1208			CHIP RES. 1/10W J 8.2K OHM	1
R1208			CHIP RES. 1/10W J 8.2K OHM	1
R1209			CHIP RES. 1/10W F 30K OHM	1
R1209			CHIP RES.(1608) 1/10W F 30K OHM	1
R1209			CHIP RES. 1/10W F 30K OHM	1

BarthService

## ELECTRICAL PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
R1209			CHIP RES.(1608) 1/10W F 30K OHM	1
R1210			CHIP RES. 1/10W F 30K OHM	1
R1210			CHIP RES.(1608) 1/10W F 30K OHM	1
R1210			CHIP RES. 1/10W F 30K OHM	1
R1210			CHIP RES.(1608) 1/10W F 30K OHM	1
R1221			CHIP RES. 1/10W J 100K OHM	1
R1221			CHIP RES. 1/10W J 100K OHM	1
R1222			CHIP RES. 1/10W J 100K OHM	1
R1222			CHIP RES. 1/10W J 100K OHM	1
R1223			CHIP RES. 1/10W J 470 OHM	1
R1223			CHIP RES. 1/10W J 470 OHM	1
R1224			CHIP RES. 1/10W J 470 OHM	1
R1224			CHIP RES. 1/10W J 470 OHM	1
R1225			CHIP RES. 1/10W J 1K OHM	1
R1225			CHIP RES. 1/10W J 1K OHM	1
R1226			CARBON RES. 1/4W J 1K OHM	1
R1238			CHIP RES.(1608) 1/10W 0 OHM	1
R1238			CHIP RES.(1608) 1/10W 0 OHM	1
R1240			CHIP RES. 1/10W J 100K OHM	1
R1240			CHIP RES. 1/10W J 100K OHM	1
R1245			CARBON RES. 1/6W J 10 OHM	1
R1245			CARBON RES. 1/4W J 10 OHM	1
R1351			CHIP RES. 1/10W J 1.8K OHM	1
R1351			CHIP RES. 1/10W J 1.8K OHM	1
R1352			CHIP RES. 1/10W J 2.2K OHM	1
R1352			CHIP RES. 1/10W J 2.2K OHM	1
R1353			CHIP RES. 1/10W J 2.2K OHM	1
R1353			CHIP RES. 1/10W J 2.2K OHM	1
R1354			CHIP RES. 1/10W J 220 OHM	1
R1354			CHIP RES. 1/10W J 220 OHM	1
R1355			CHIP RES. 1/10W J 75 OHM	1
R1355			CHIP RES. 1/10W J 75 OHM	1
R1356			CHIP RES. 1/10W J 100K OHM	1
R1356			CHIP RES. 1/10W J 100K OHM	1
R1392			CARBON RES. 1/4W J 1K OHM	1
R1396			CHIP RES. 1/10W J 470 OHM	1
R1396			CHIP RES. 1/10W J 470 OHM	1
R1397			PCB JUMPER D0.6-P5.0	1
R1398			CHIP RES. 1/10W J 470 OHM	1
R1398			CHIP RES. 1/10W J 470 OHM	1
R1401			CHIP RES. 1/10W J 10K OHM	1
R1401			CHIP RES. 1/10W J 10K OHM	1
R1403			CHIP RES. 1/10W F 130 OHM	1
R1403			CHIP RES. 1/10W F 130 OHM	1
R1403			CHIP RES. 1/10W F 130 OHM	1
R1403			CHIP RES. 1/10W F 130 OHM	1
R1421			CHIP RES. 1/10W F 130 OHM	1
R1421			CHIP RES. 1/10W F 130 OHM	1
R1421			CHIP RES. 1/10W F 130 OHM	1
R1421			CHIP RES. 1/10W F 130 OHM	1
R1422			CHIP RES. 1/10W J 75 OHM	1
R1422			CHIP RES. 1/10W J 75 OHM	1
R1441			CHIP RES. 1/10W F 130 OHM	1
R1441			CHIP RES. 1/10W F 130 OHM	1
R1441			CHIP RES. 1/10W F 130 OHM	1
R1441			CHIP RES. 1/10W F 130 OHM	1
R1442			CHIP RES. 1/10W J 75 OHM	1
R1442			CHIP RES. 1/10W J 75 OHM	1
R1443			CHIP RES. 1/10W J 75 OHM	1
R1443			CHIP RES. 1/10W J 75 OHM	1
R1461			CHIP RES. 1/10W F 130 OHM	1
R1461			CHIP RES. 1/10W F 130 OHM	1
R1461			CHIP RES. 1/10W F 130 OHM	1
R1461			CHIP RES. 1/10W F 130 OHM	1
R1462			CHIP RES. 1/10W J 75 OHM	1
R1462			CHIP RES. 1/10W J 75 OHM	1
R1481			CHIP RES. 1/10W F 130 OHM	1
R1481			CHIP RES. 1/10W F 130 OHM	1

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# ELECTRICAL PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
R1481			CHIP RES. 1/10W F 130 OHM	1
R1481			CHIP RES. 1/10W F 130 OHM	1
R1482			CHIP RES. 1/10W J 75 OHM	1
R1482			CHIP RES. 1/10W J 75 OHM	1
R2001			CHIP RES. 1/10W J 10K OHM	1
R2001			CHIP RES. 1/10W J 10K OHM	1
R2002			CHIP RES. 1/10W J 10K OHM	1
R2002			CHIP RES. 1/10W J 10K OHM	1
R2003			CHIP RES. 1/10W J 10K OHM	1
R2003			CHIP RES. 1/10W J 10K OHM	1
R2005			CHIP RES. 1/10W J 6.8K OHM	1
R2005			CHIP RES. 1/10W J 6.8K OHM	1
R2006			CHIP RES. 1/10W J 10K OHM	1
R2006			CHIP RES. 1/10W J 10K OHM	1
R2028			CHIP RES. 1/10W J 10K OHM	1
R2028			CHIP RES. 1/10W J 10K OHM	1
R2031			CHIP RES. 1/10W J 22K OHM	1
R2031			CHIP RES. 1/10W J 22K OHM	1
R2086			CHIP RES. 1/10W J 5.6K OHM	1
R2086			CHIP RES. 1/10W J 5.6K OHM	1
<b>SWITCHES</b>				
SW502			TACT SWITCH KSM0614B	1
SW502			TACT SWITCH SKQSAF001A	1
SW502			TACT SWITCH TC-1104(H=9.5)	1
SW505			TACT SWITCH KSM0614B	1
SW505			TACT SWITCH SKQSAF001A	1
SW505			TACT SWITCH TC-1104(H=9.5)	1
SW508			TACT SWITCH KSM0614B	1
SW508			TACT SWITCH SKQSAF001A	1
SW508			TACT SWITCH TC-1104(H=9.5)	1
SW509			TACT SWITCH KSM0614B	1
SW509			TACT SWITCH SKQSAF001A	1
SW509			TACT SWITCH TC-1104(H=9.5)	1
SW511			LEAF SWITCH MXS01830MVPO	1
SW512			ROTARY MODE SWITCH SSS-53MD	1
SW513			TACT SWITCH KSM0614B	1
SW513			TACT SWITCH SKQSAF001A	1
SW513			TACT SWITCH TC-1104(H=9.5)	1
SW514			TACT SWITCH KSM0614B	1
SW514			TACT SWITCH SKQSAF001A	1
SW514			TACT SWITCH TC-1104(H=9.5)	1
SW515			TACT SWITCH KSM0614B	1
SW515			TACT SWITCH SKQSAF001A	1
SW515			TACT SWITCH TC-1104(H=9.5)	1
SW516			TACT SWITCH KSM0614B	1
SW516			TACT SWITCH SKQSAF001A	1
SW516			TACT SWITCH TC-1104(H=9.5)	1
SW2002			TACT SWITCH KSM0614B	1
SW2002			TACT SWITCH SKQSAF001A	1
SW2002			TACT SWITCH TC-1104(H=9.5)	1
SW2003			TACT SWITCH KSM0614B	1
SW2003			TACT SWITCH SKQSAF001A	1
SW2003			TACT SWITCH TC-1104(H=9.5)	1
<b>POWER SW CBA</b>				
W012			WIRE ASSEMBLY 03 60 GRAY	1
<b>DIODE</b>				
D562			LED(RE D) 204HD/E	1
<b>SWITCHES</b>				
SW518			TACT SWITCH KSM0614B	1
SW518			TACT SWITCH SKQSAF001A	1
SW518			TACT SWITCH TC-1104(H=9.5)	1
<b>DVD OPEN/CLOSE CBA</b>				
W011			WIRE ASSEMBLY 02 130 GRAY	1
<b>SWITCHES</b>				
SW2001			TACT SWITCH KSM0614B	1
SW2001			TACT SWITCH SKQSAF001A	1
SW2001			TACT SWITCH TC-1104(H=9.5)	1

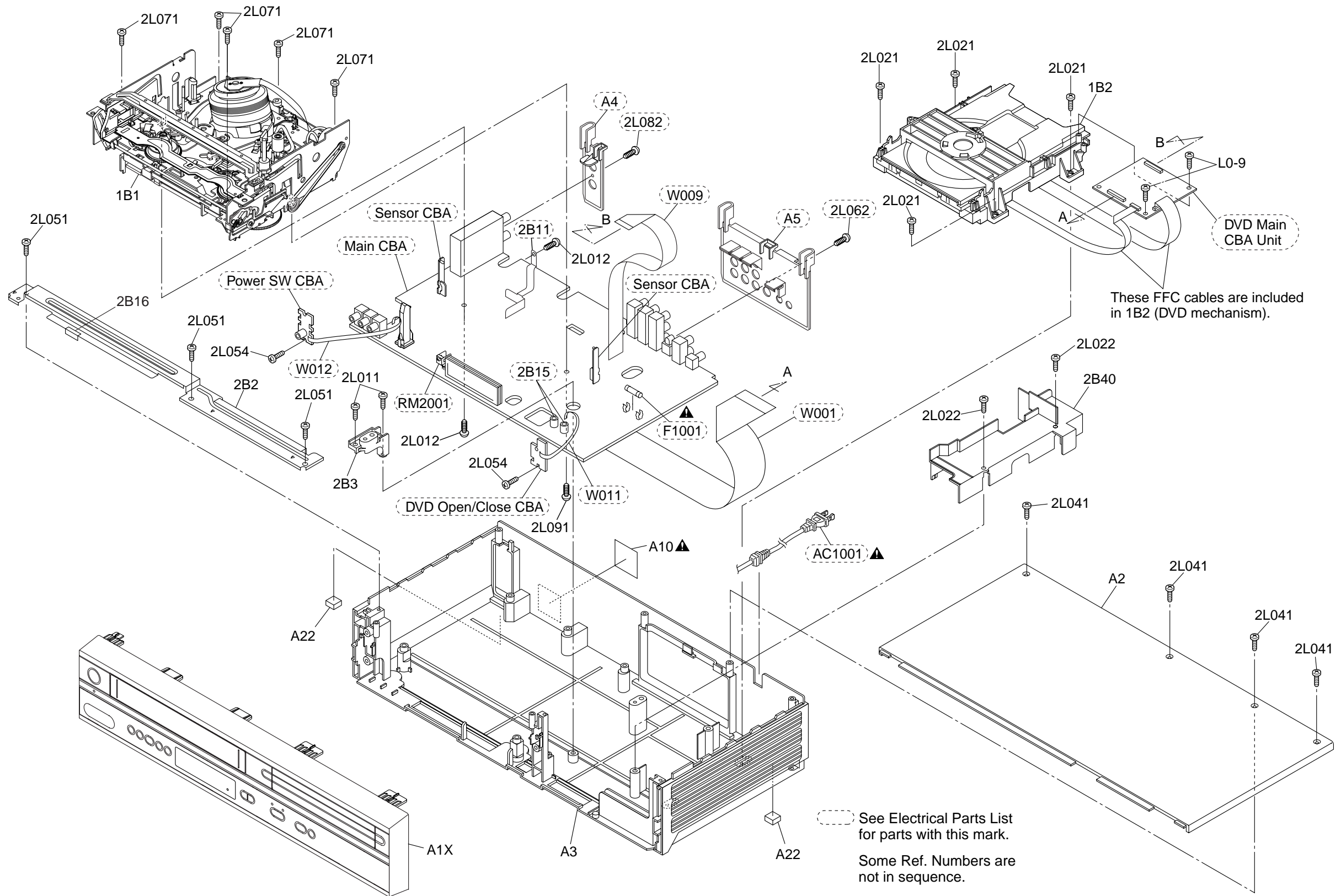
# ELECTRICAL PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
<b>SENSOR CBA</b>				
<b>TRANSISTORS</b>				
Q503			PHOTO TRANSISTOR PT204-6B-12	1
Q503			PHOTO TRANSISTOR MID-32A22F	1
Q504			PHOTO TRANSISTOR PT204-6B-12	1
Q504			PHOTO TRANSISTOR MID-32A22F	1

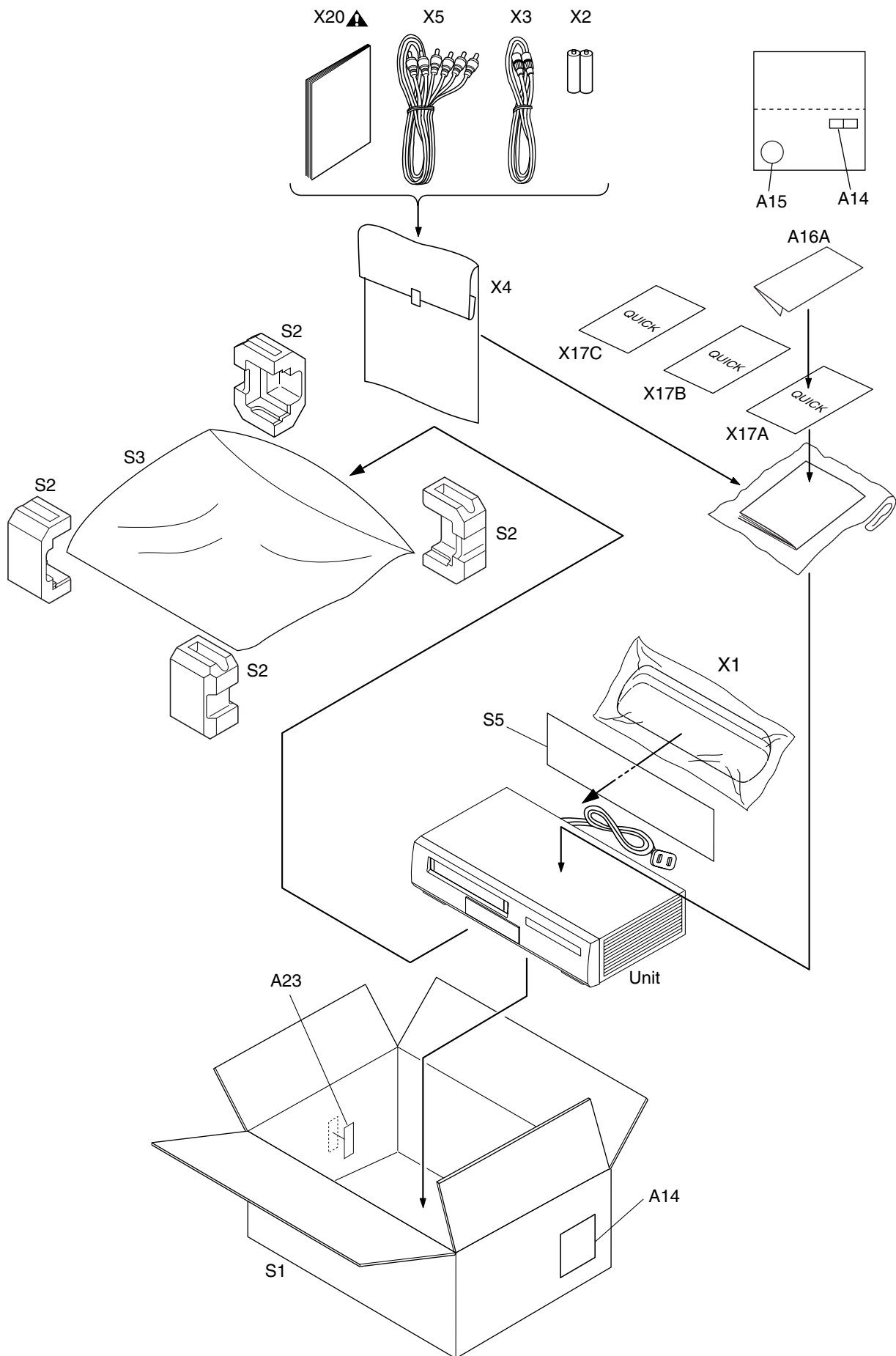
# EXPLODED VIEWS

## Cabinet









# Packing



# MECHANICAL PARTS LIST

**PRODUCT SAFETY NOTE:** Products marked with a  have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

MECHANICAL PARTS LIST				DVP3150V/37
Pos.No.		12 NC	Description	
<b>MECHANICAL PARTS LIST</b>				
A1X			FRONT ASSEMBLY E8A20UD	1
A2			TOP CASE H9600UD	1
A3			CHASSIS E8A00UD	1
A10			RATING LABEL E8A20UD	1
A14			BAR CODE LABEL E8A20UD	1
A15			LABEL IMPORTANT V3370UA	1
A16A			REGISTRATION CARD H9620UD	1
A22			CHASSIS FOOT H79P9JD	1
A23			LABEL EAS L0951UB	1
1B1			DECK ASSEMBLY CZD014\M2460	1
1B2			DVD MECHA E7 N79F0KVM	1
2B2			TOP BRACKET H9600UD	1
2B3			LOADER HOLDER H9600UD	1
2B16			TAPE HIMELON H9206JD	1
2B40			PARTITION PLATE E8A00UD	1
2L011			SCREW P-TIGHT M3X8 BIND HEAD+	1
2L012			SCREW S-TIGHT M3X6 BIND HEAD+	1
2L021			SCREW P-TIGHT M3*12 BIND+	1
2L022			SCREW P-TIGHT M3X8 BIND HEAD+	1
2L041			SCREW P-TIGHT 3X10 BIND HEAD+	1
2L051			SCREW P-TIGHT M3X6 BIND HEAD+	1
2L054			SCREW P-TIGHT M3X6 BIND HEAD+	1
2L071			SCREW P-TIGHT M3*10 WASHERHEAD+	1
2L091			SCREW P-TIGHT M3X8 BIND HEAD+	1
L0-9			SCREW P-TIGHT M3X8 BIND HEAD+	1
<b>PACKING</b>				
S1			GIFT BOX CARTON E8A20UD	1
S2			STYROFOAM H9600UD	1
S3			UNIT BAG E5500UD	1
S5			REMOCON PAD H9645JD	1
<b>ACCESSORIES</b>				
X1		9965 000 27557	REMOTE CONTROL UNIT NA725UD	1
X2			DRY BATTERY 2PACK R6-B500/01S	1
X3		9965 000 09209	RF CABLE 2.5C-2V	1
X4			ACCESSORY BAG E5700UD	1
X5			AV CORD WPZ0102TM015	1
X5			AV CORD RCA(M*2)TO RCA(M*2)	1
X17A			QUICK GUIDE(EN) E8A20UD	1
X17B			QUICK GUIDE(FR) E8A20UD	1
X17C			QUICKGUIDE(SP) E8A20UD	1
X20			OWNERS MANUAL E8A20UD	1

# DECK MECHANISM SECTION

## DVD PLAYER & VIDEO CASSETTE RECORDER

### Sec. 2: Deck Mechanism Section

- 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.

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 (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
B73	FE Head			●	
B133, B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm (A) Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder(F)		●		●
B593 (4 head, 4 head Hi-Fi only)	Cam Holder Assembly		●		●

### Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% ethyl alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

## Cleaning

### Cleaning of Video Head

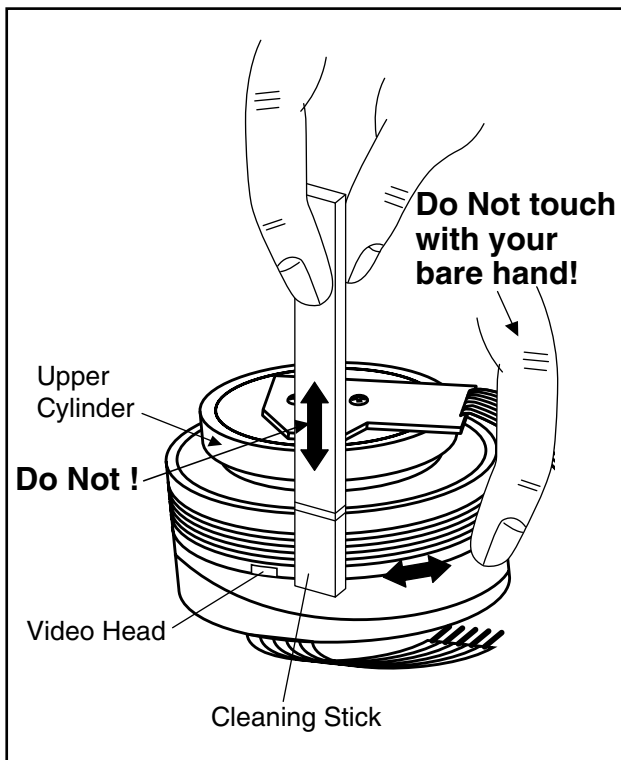
Clean the head with a head cleaning stick or chamois cloth.

#### 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% ethyl 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

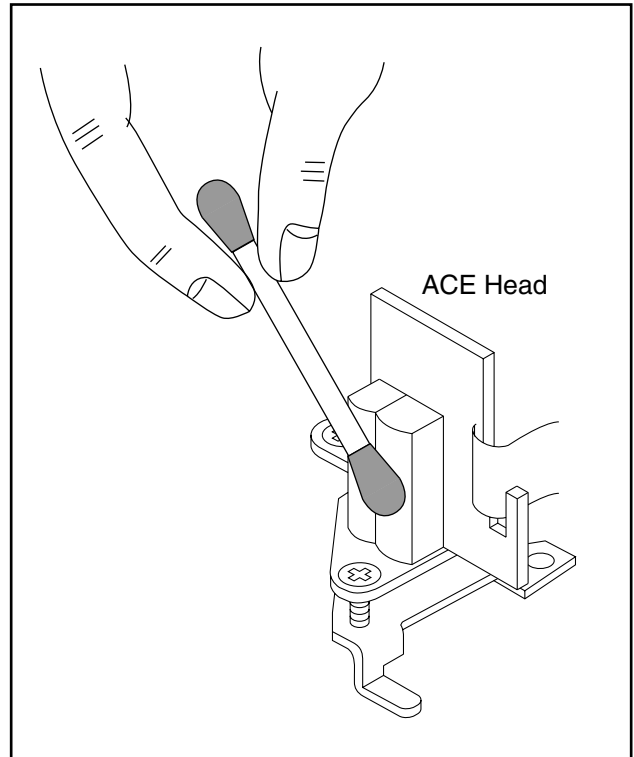
Clean the head with a cotton swab.

#### Procedure

1. Remove the top cabinet.
2. Dip the cotton swab in 90% ethyl 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.



# 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:

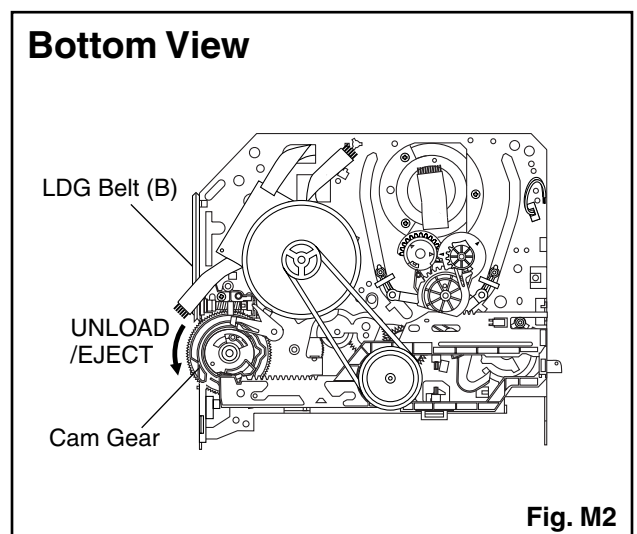
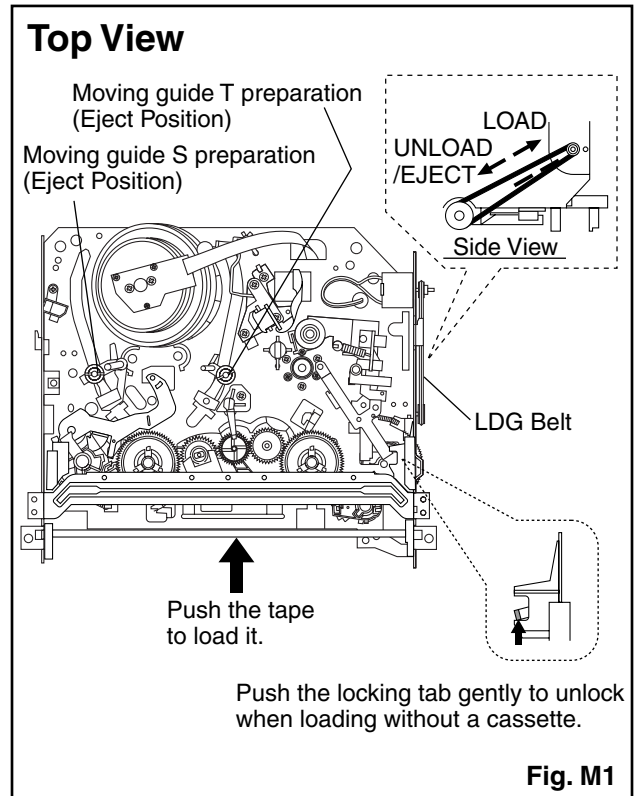
1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see 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

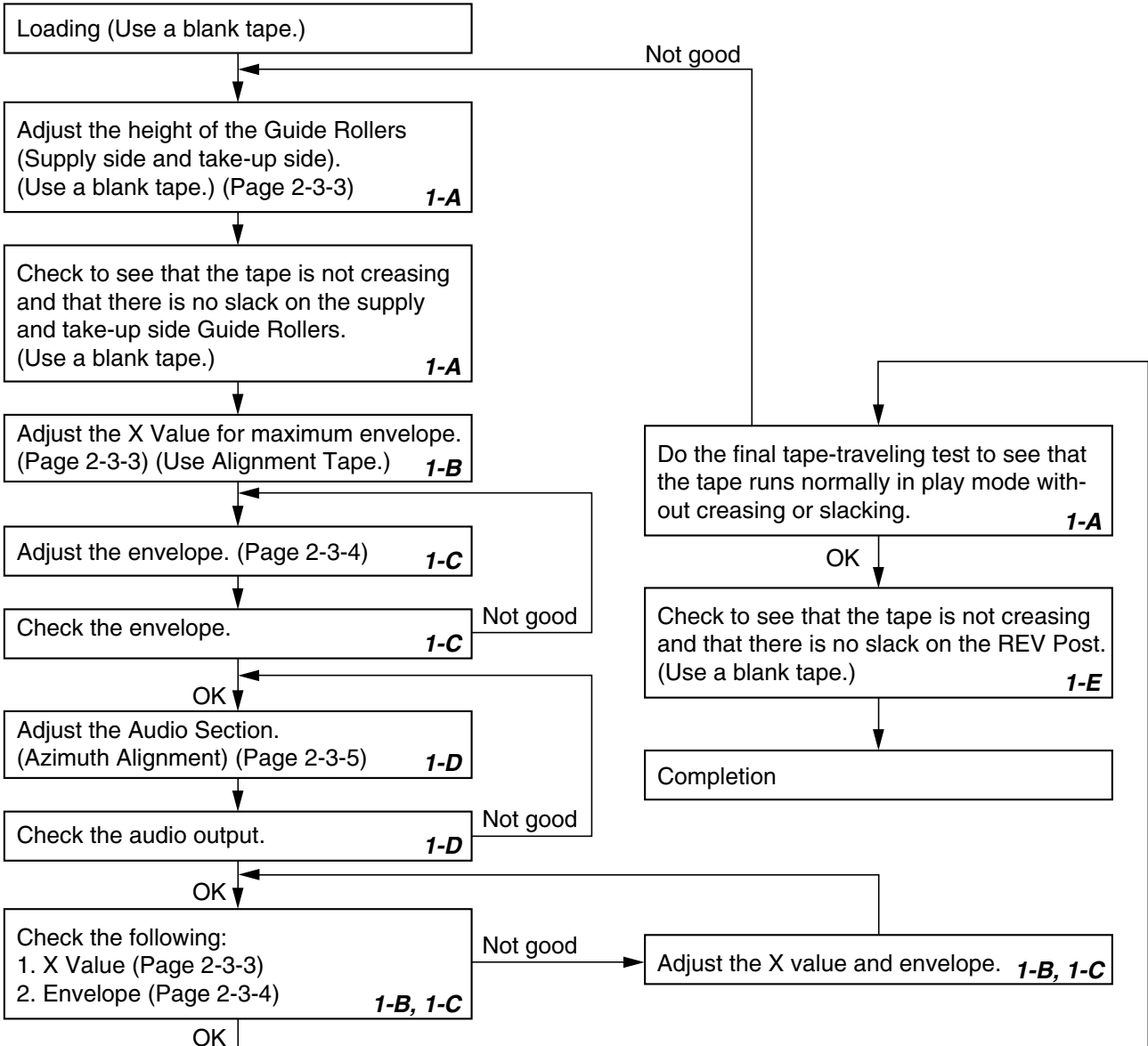
**Note:** To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

**Equipment required:**

- Dual Trace Oscilloscope
- VHS Alignment Tape (VFMS0001H6)
- 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**



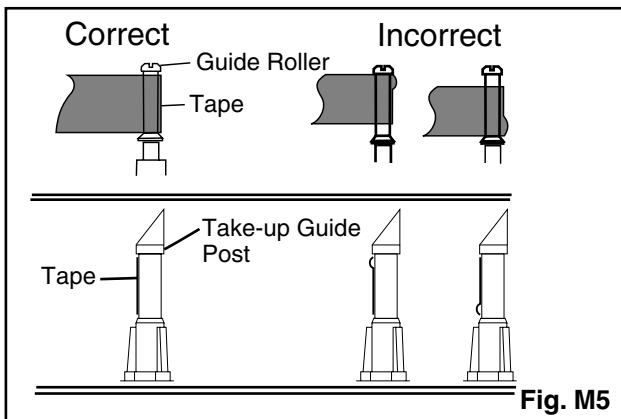
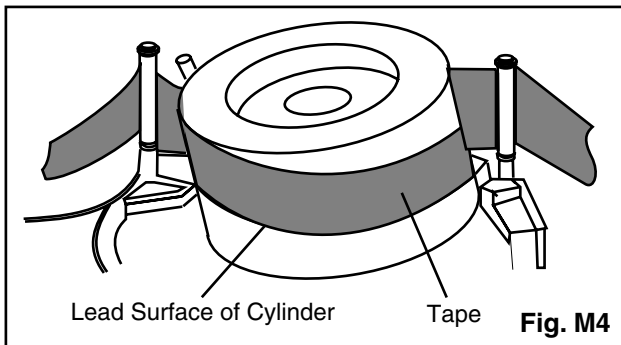
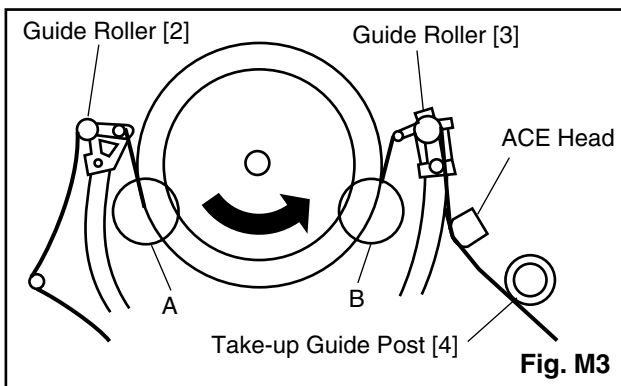
## 1-A. Preliminary/Final Checking and Alignment of Tape Path

**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.

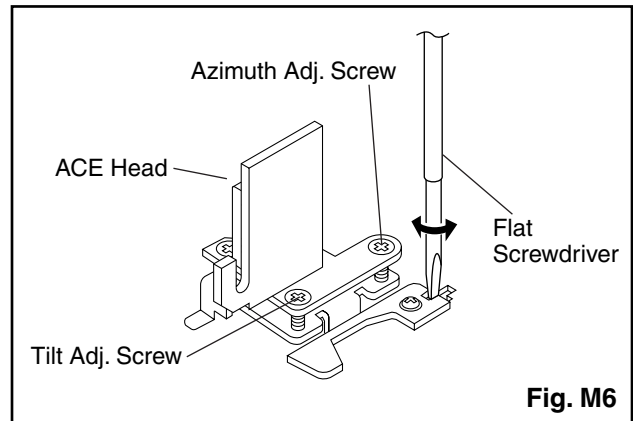
**Note:** Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

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.)



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)



## 1-B. X Value Alignment

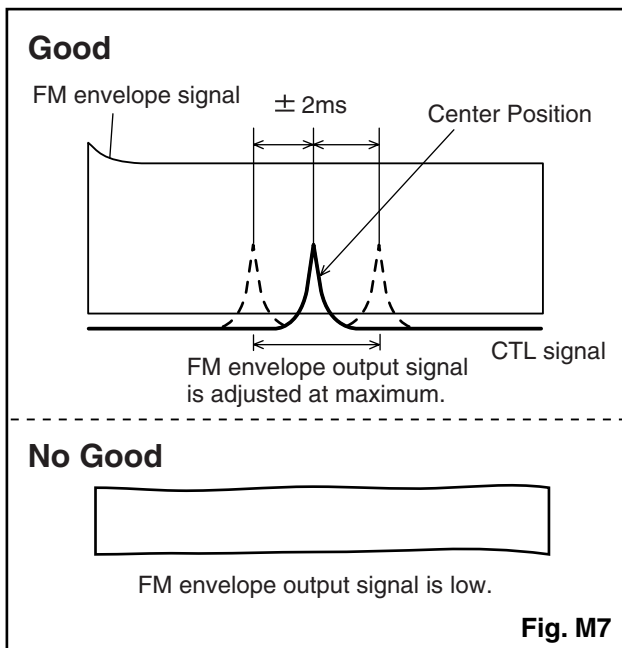
**Purpose:** To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

**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 TP (C-PB and CTL) on the Main CBA. Use TP (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (VFMS0001H6) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing [CHANNEL ▲] button 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 TP (C-PB) is maximum. (Fig. M6)



- To shift the CTL waveform, press [CHANNEL ▲] or [CHANNEL ▼] buttons on the unit. Then make sure that the maximum output position of PB FM envelope signal becomes within  $\pm 2\text{ms}$  from preset position.



- Set the Tracking Control Circuit to the preset position by pressing [CHANNEL ▲] button and then [PLAY] button on the unit.

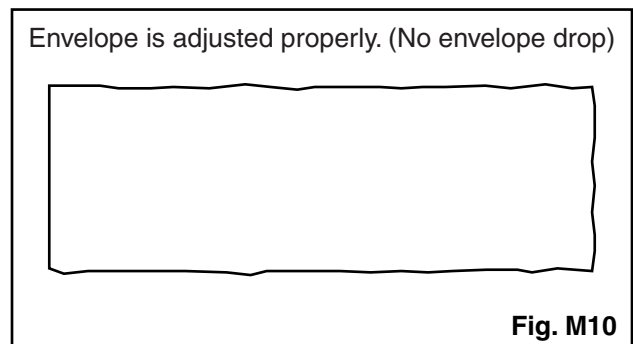
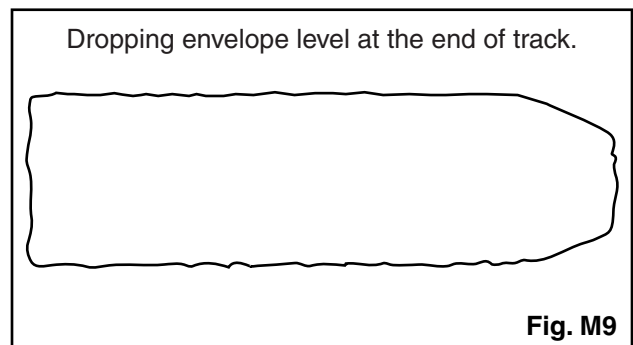
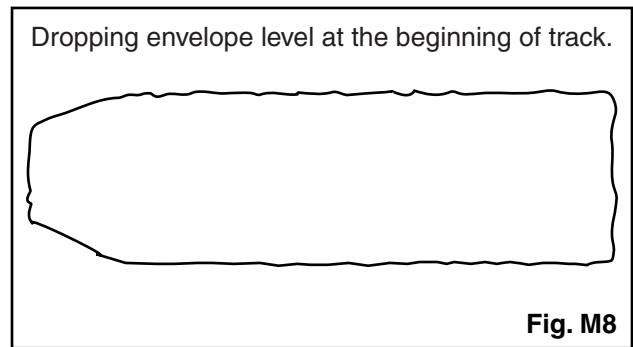
### 1-C. Checking/Adjustment of Envelope Waveform

**Purpose:** To achieve a satisfactory picture, adjust the Guide Rollers so that 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 TP (C-PB) on the Main CBA. Use TP (RF-SW) as a trigger.
- Playback the Gray Scale on the Alignment Tape (VFMS0001H6). Set the Tracking Control Circuit to the preset position by pressing [CHANNEL ▲] 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 [CHANNEL ▲] or [CHANNEL ▼] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [CHANNEL ▲] button on the unit to achieve 1/2 level of envelope should match the number of pushes of the [CHANNEL ▼] button on the unit 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 (VFMS0001H6) and confirm that the audio signal output level is 8kHz.
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 [CHANNEL ▲] or [CHANNEL ▼] buttons on the unit alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes of the [CHANNEL ▲] button to achieve 1/2 level of envelope should match the number of pushes of the [CHANNEL ▼] button from center. If required, redo the "X Value Alignment."

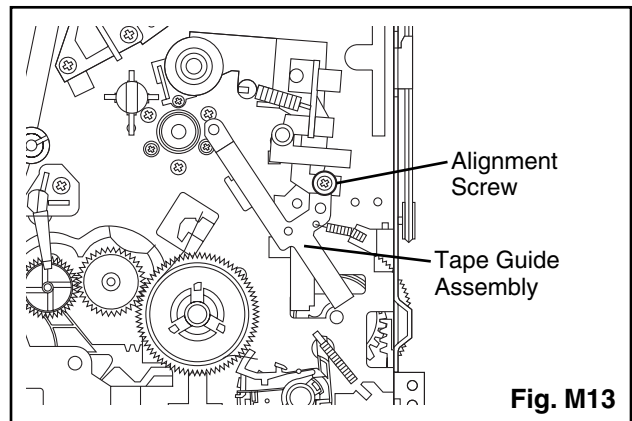
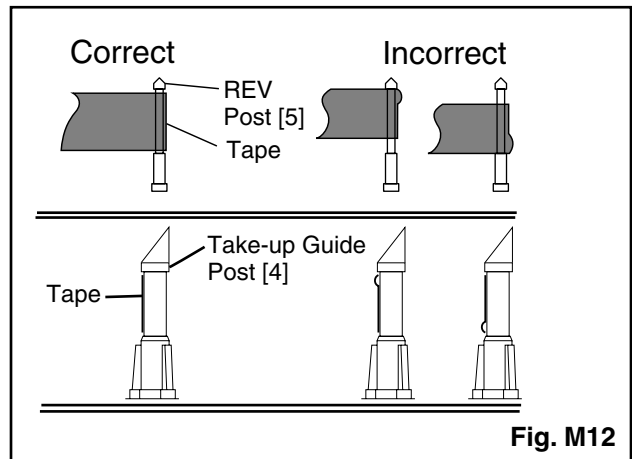
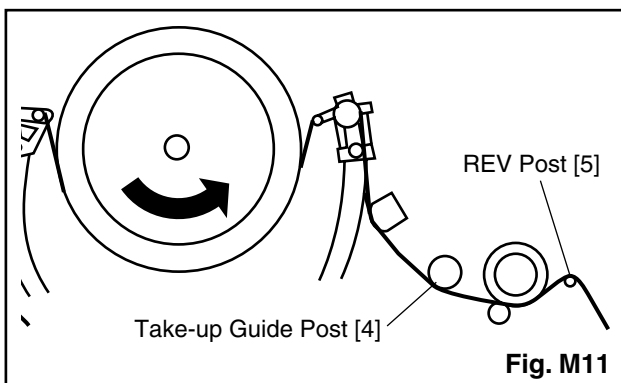
## 1-E. Checking and Alignment of Tape Path during reversing

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

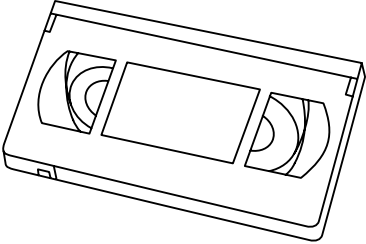
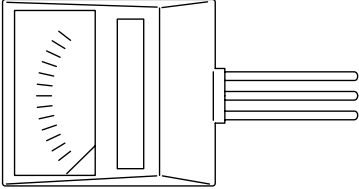
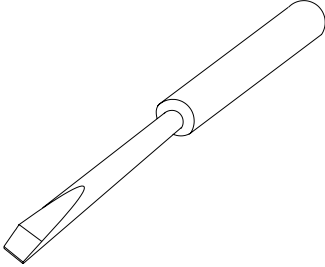
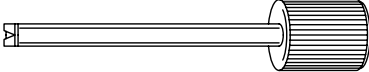
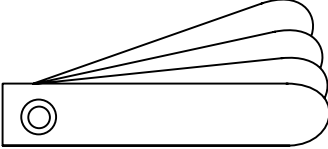

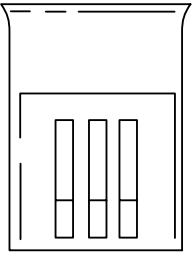
**Symptom of Misalignment:** If the tape path is unstable during reversing, the tape will be damaged.

**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 blank 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.)



# SERVICE FIXTURE AND TOOLS

<p><b>VFMS0001H6 Alignment Tape</b></p> 	<p><b>Back Tension Meter (Made in USA)</b></p> 	<p><b>Flat Screw Driver (Purchase Locally)</b></p> 
<p><b>Post Adjustment Screwdriver</b></p> 	<p><b>Metric Thickness Gauges (Purchase Locally)</b></p> 	<p><b>Lock Screw Driver (Purchase Locally)</b></p> 
<p><b>Head Cleaning Stick</b></p> 		

# 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 of Main Section.)

All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig. DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

Step /Loc. No.	Starting No.	Part		Removal		Installation
				Fig. No.	Remove/*Unhook/Unlock/Release/Unplug/Desolder	Adjustment Condition
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4		
[3]	[2]	Slider (SP)	T	DM5	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1, DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1, DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1, DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1, DM8-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1, DM8-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1, DM8-1, DM8-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1, DM8-1, DM8-2		
[14]	[14]	FE Head	T	DM1, DM9	(S-5)	
[15]	[15]	Prism	T	DM1, DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1, DM9		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7), *(P-4)	
[20]	[7],[8],[10]	Capstan Motor	B	DM2, DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2, DM12	(C-1)	
[22]	[22]	Cam Holder Assembly	B	DM2, DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2, DM12	(C-2), *(P-5)	
[24]	[24]	Mode Gear	B	DM2, DM13-1	(C-3)	
[25]	[21],[23],[24]	Mode Lever	B	DM2, DM13-1, DM13-2	(C-4), *(L-8)	
[26]	[22]	Worm Holder	B	DM2, DM13-1	(S-9), *(L-9), *(L-10)	
[27]	[26]	Pulley Assembly	B	DM2, DM13-1		
[28]	[25], [26]	Cam Gear (A)	B	DM2, DM13-1, DM13-2		
[29]	[25]	Idler Gear	B	DM1, DM14		
[30]	[29]	Idler Arm	B	DM1, DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2, DM14	*(P-6)	

BarthService

Step /Loc. No.	Starting No.	Part		Removal		Installation
				Fig. No.	Remove/*Unhook/Unlock/Release/Unplug/Desolder	Adjustment Condition
[32]	[25]	Loading Arm (SP) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[33]	[32]	Loading Arm (TU) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[34]	[2], [25]	M Brake (TU) Assembly	T	DM1, DM15	*(P-7), Brake Belt	
[35]	[2], [25]	M Brake (SP) Assembly	T	DM1, DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1, DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1, DM15		
[39]	[38]	M Gear	T	DM1, DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1, DM15		
[41]	[32], [36]	Moving Guide S Preparation	T	DM1, DM16	(S-11), Slide Plate	
[42]	[33]	Moving Guide T Preparation	T	DM1, DM16		
[43]	[19]	TG Post Assembly	T	DM1, DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17		(+)Refer to Alignment Sec.Page 2-5-1
[45]	[44]	F Door Opener	R	DM17		
[46]	[46]	Cleaner Assembly	T	DM1, DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	

↓                      ↓    ↓    ↓    ↓    ↓    ↓  
 (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.

### Top View

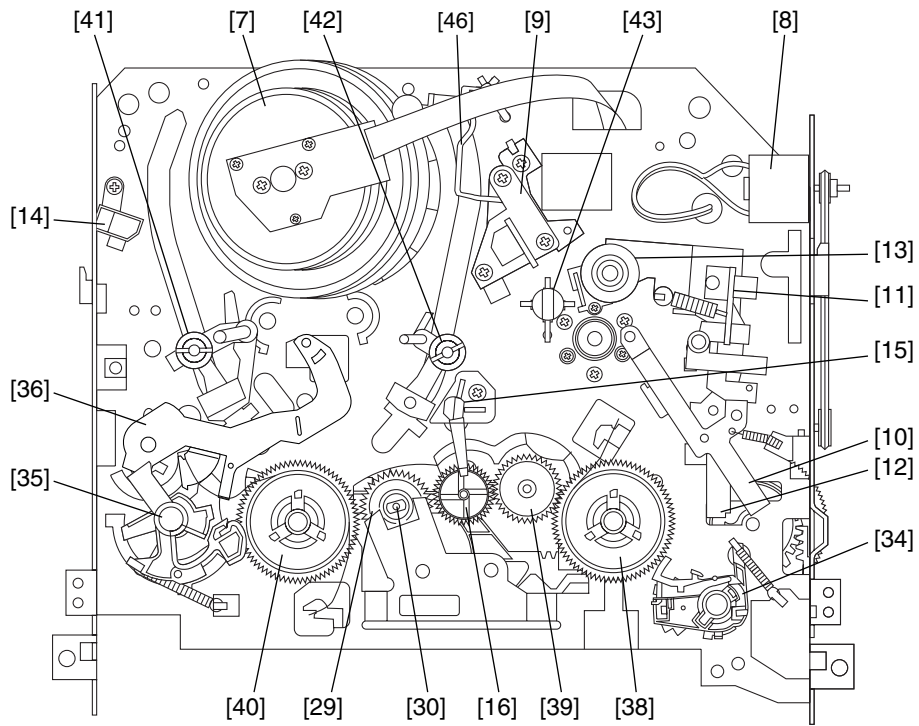


Fig. DM1

### Bottom View

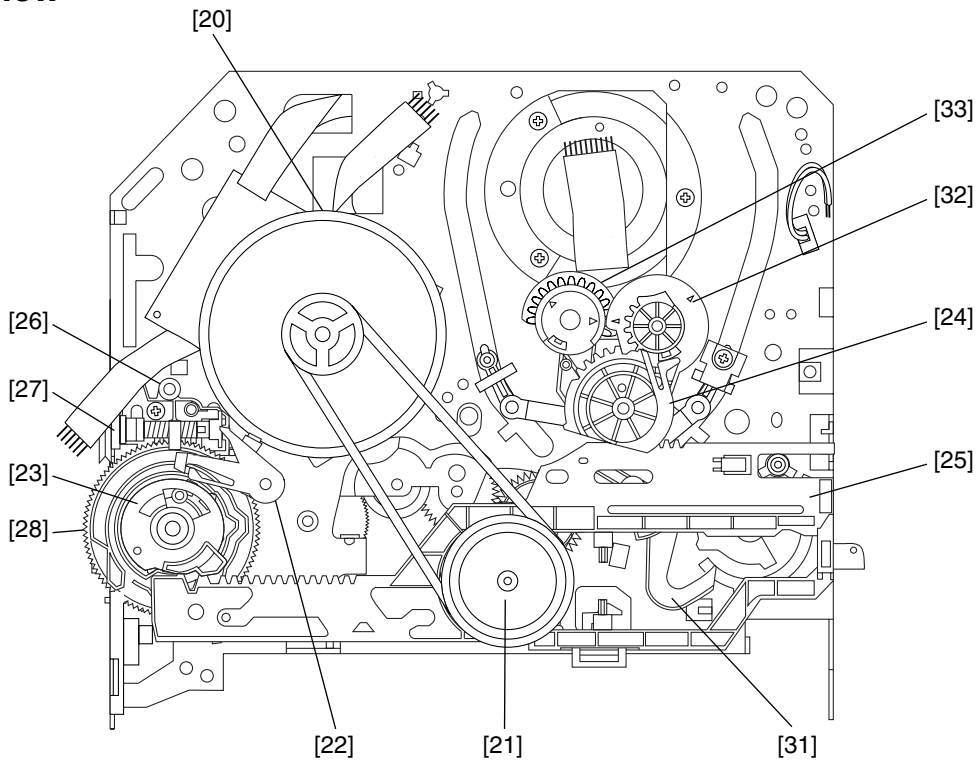
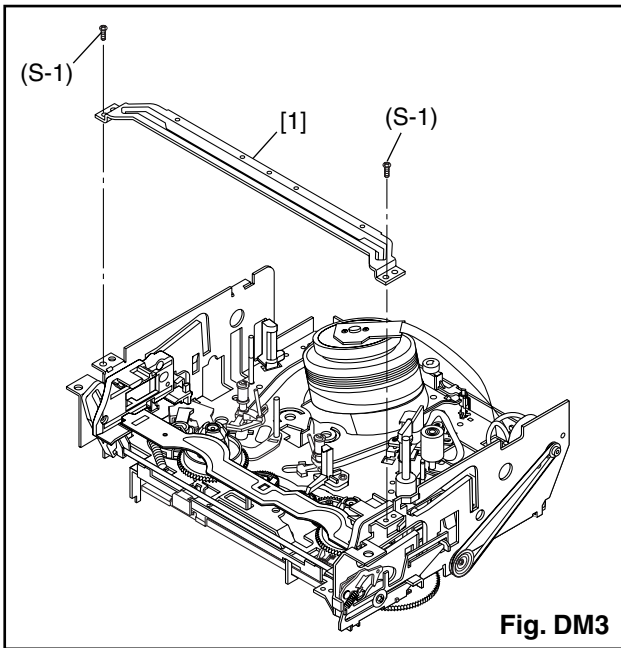
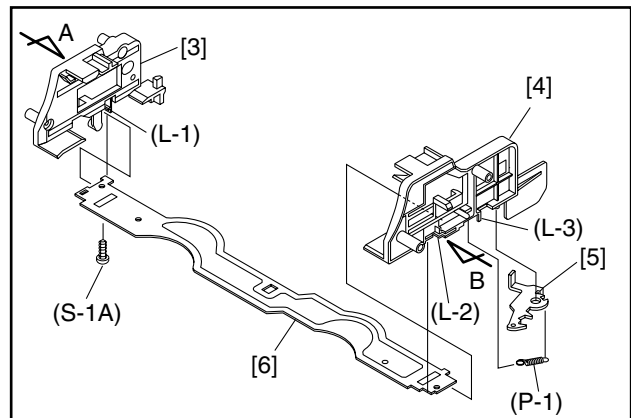


Fig. DM2

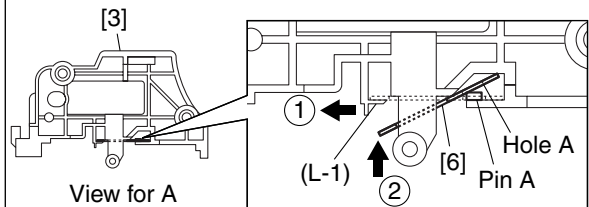


**Fig. DM3**



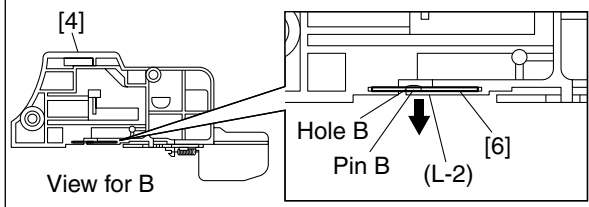
**Installation of [3] and [6]**

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.

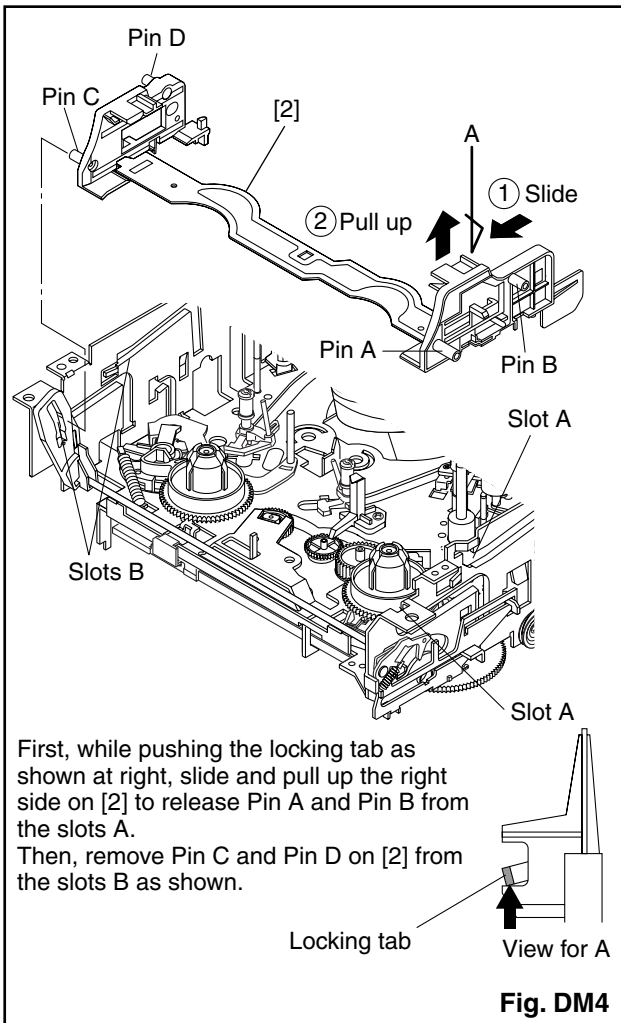


**Installation of [4] and [6]**

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.



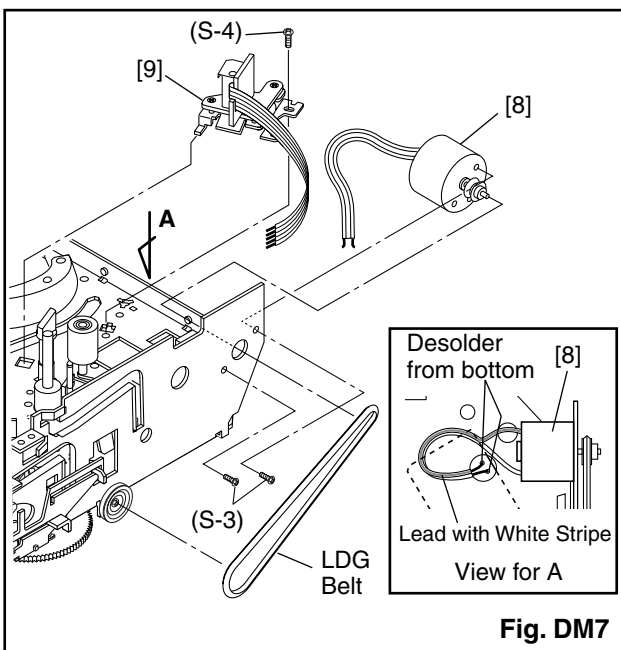
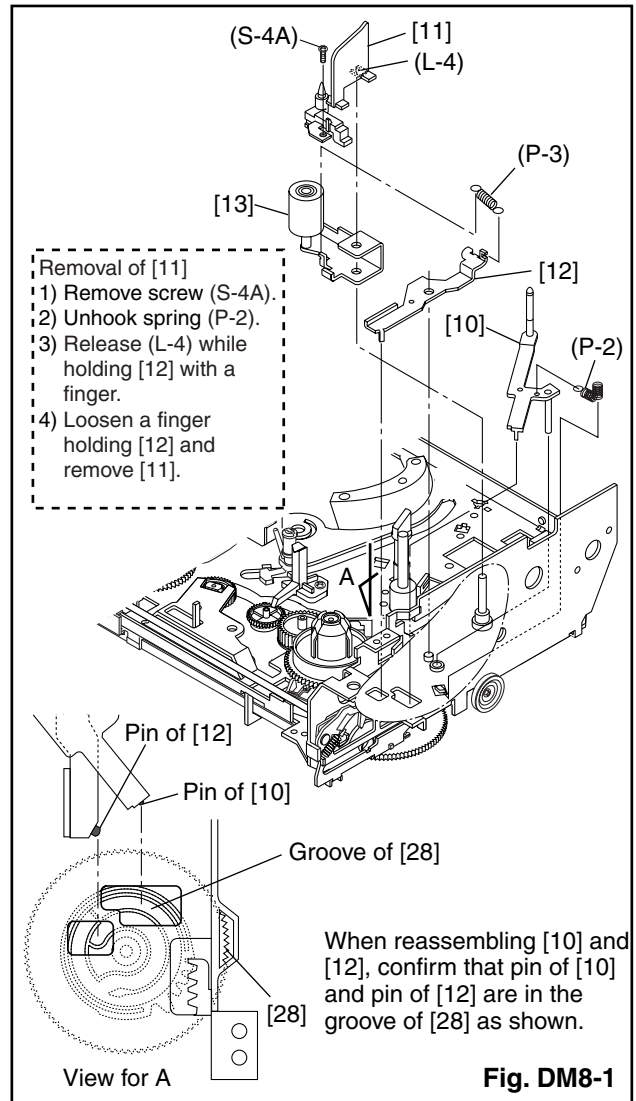
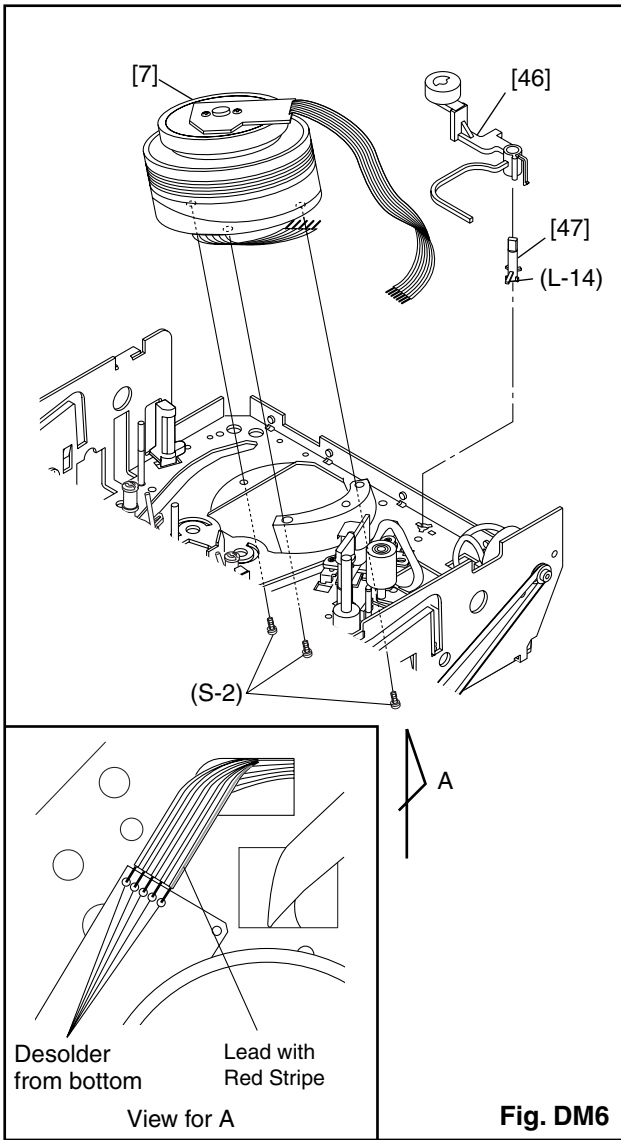
**Fig. DM5**



First, while pushing the locking tab as shown at 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.

Locking tab View for A

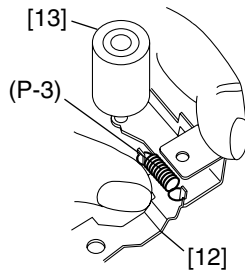
**Fig. DM4**





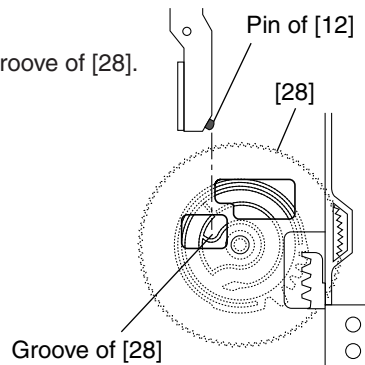
## Installation of [13] and [12]

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.)



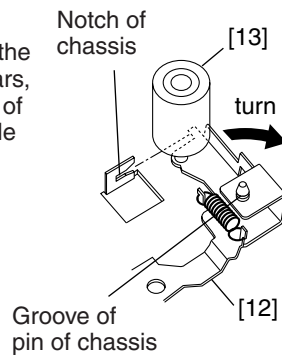
**Fig. A**

Install pin of [12] in groove of [28]. (Refer to Fig. B.)



**Fig. B (Top view)**

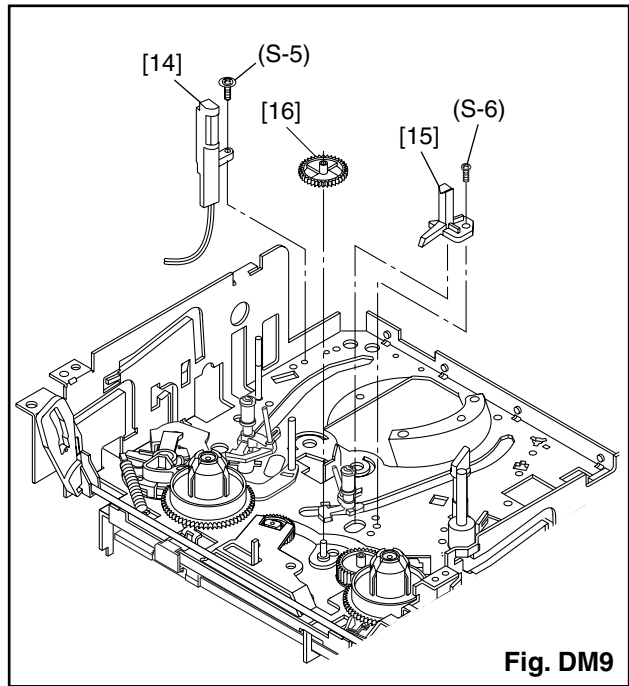
Press both [12] and [13] till the groove of chassis pin appears, and adjust [13] to the notch of chassis. Then turn [13] a little in the direction of the arrow while pressing [12]. (Refer to Fig. C.)



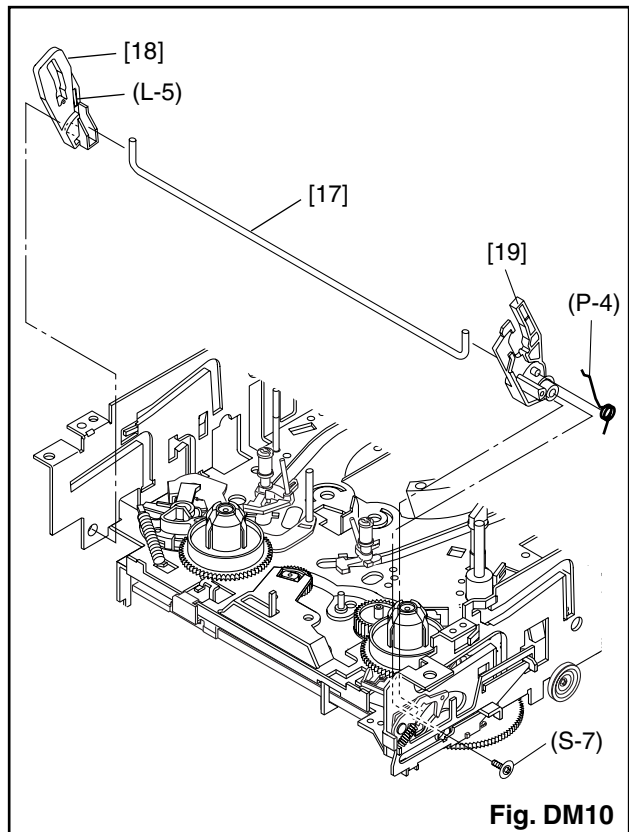
**Fig. C**

Install [11] and [10] while holding [12]. (Refer to Fig. DM8-1.)

**Fig. DM8-2**



**Fig. DM9**



**Fig. DM10**

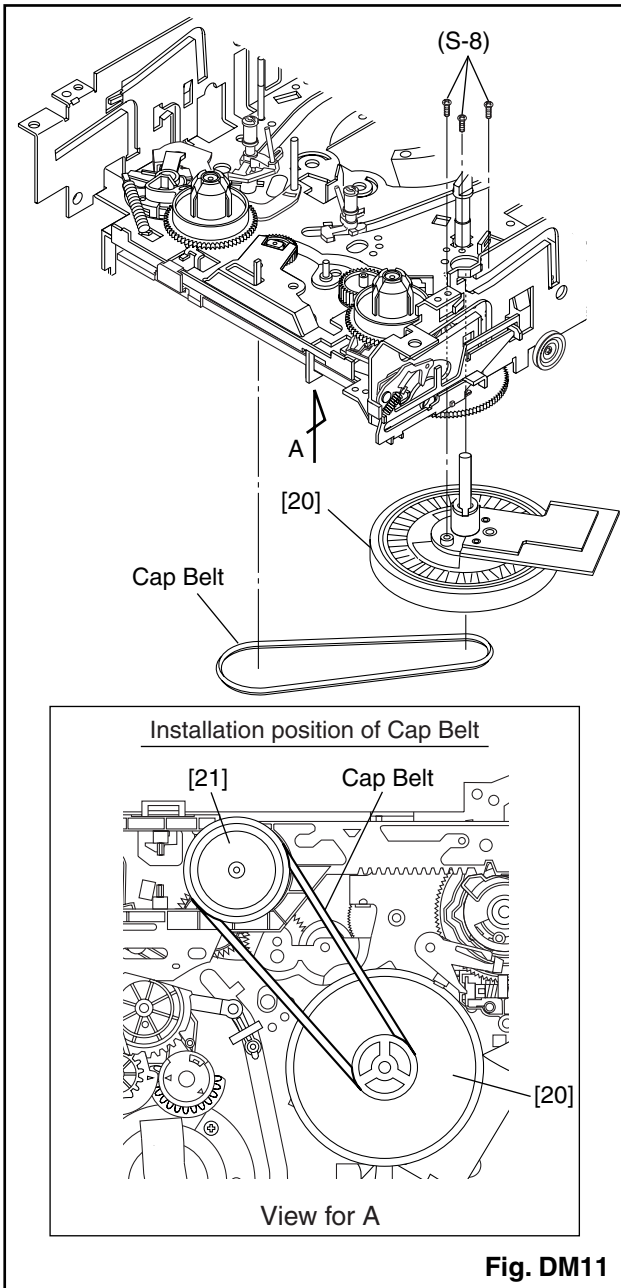


Fig. DM11

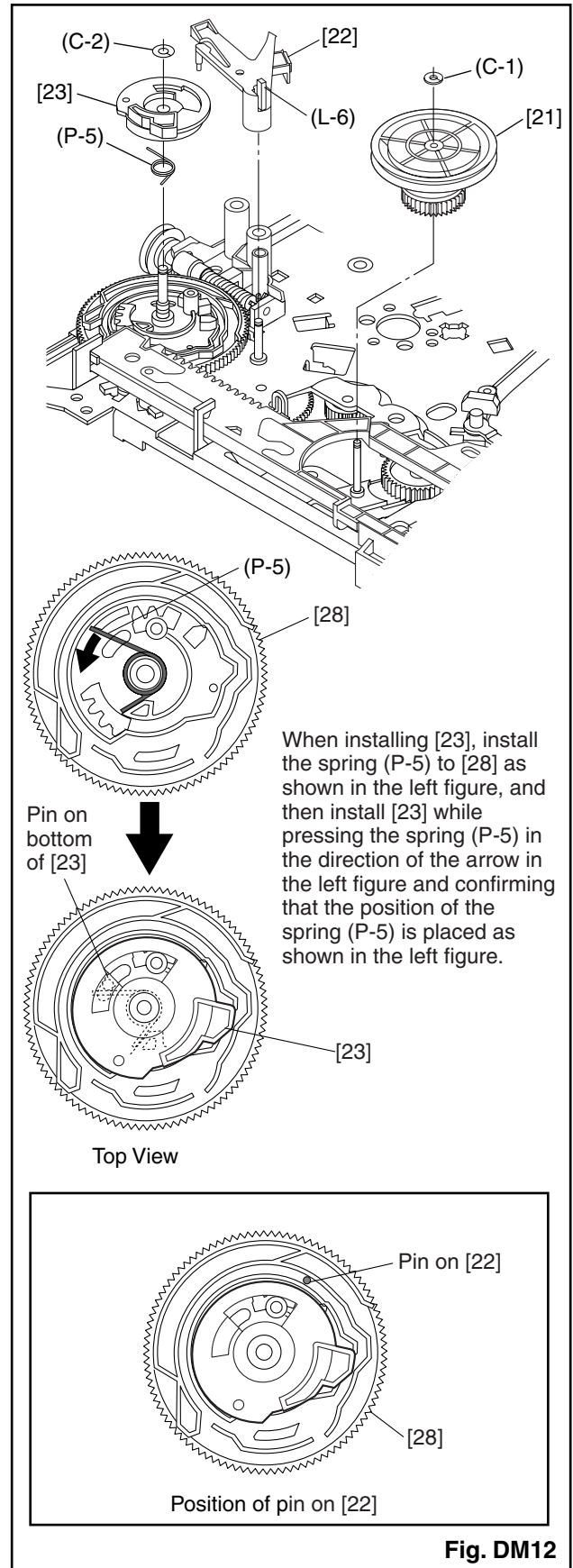


Fig. DM12

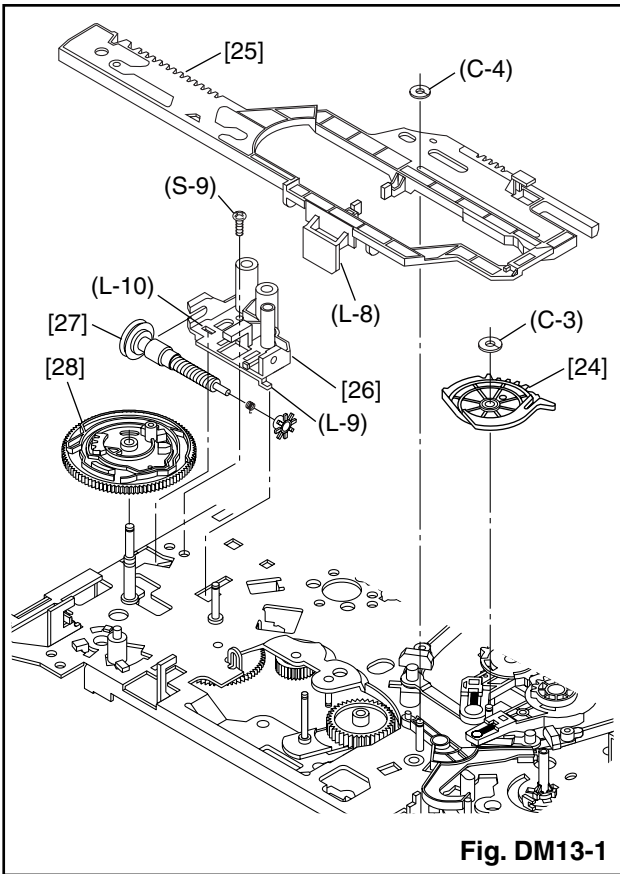


Fig. DM13-1

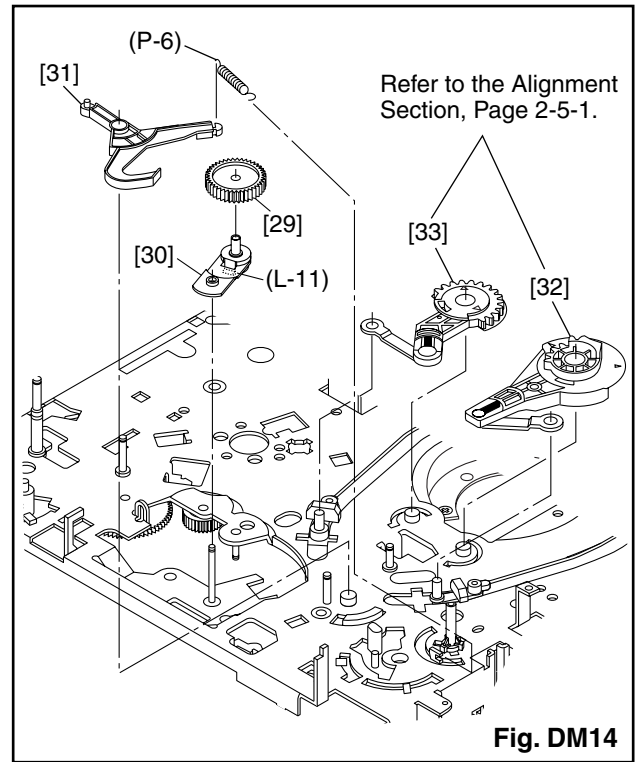


Fig. DM14

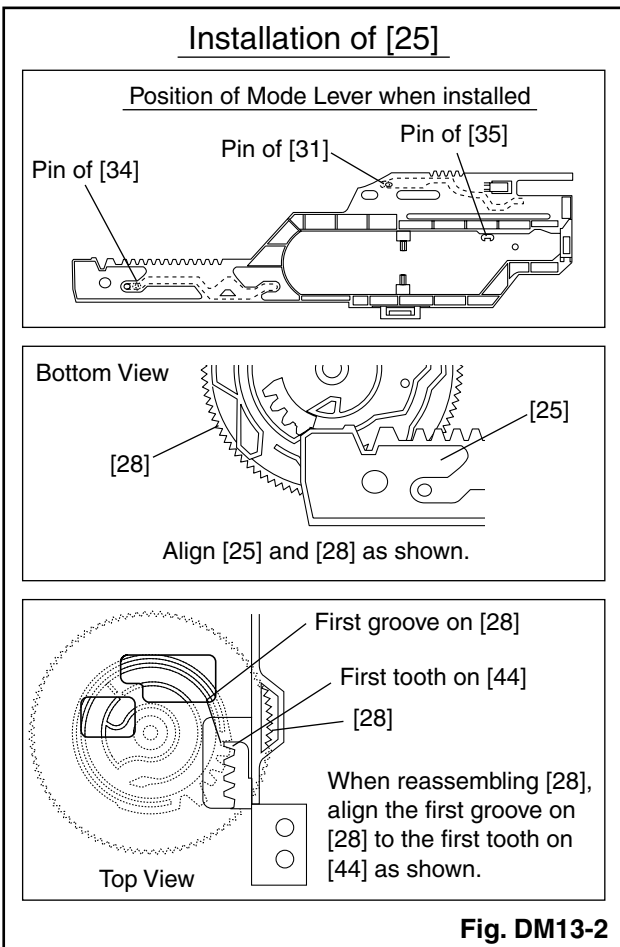


Fig. DM13-2

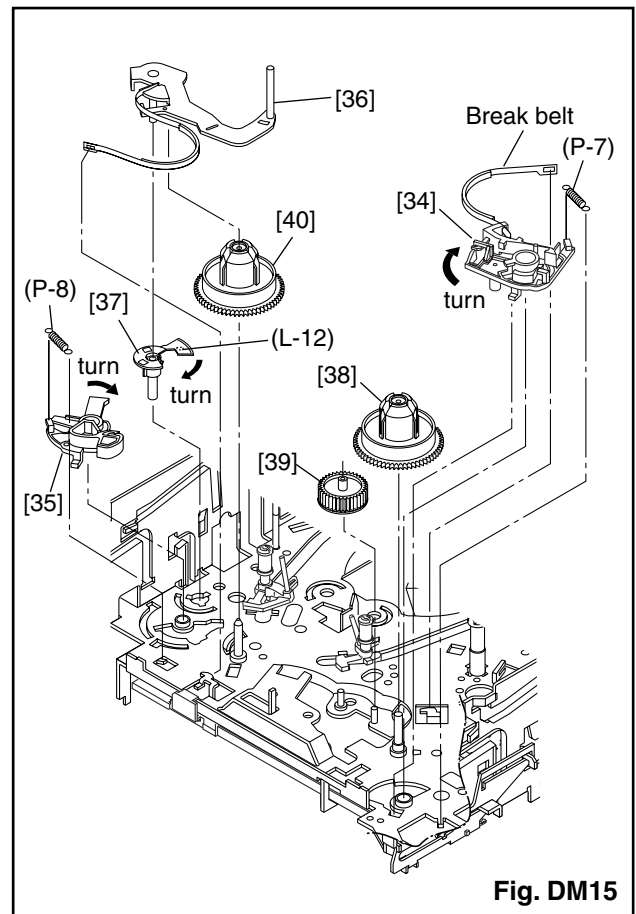
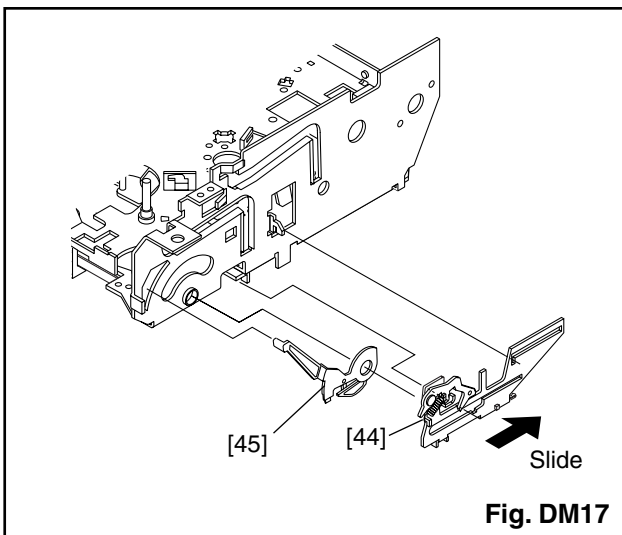
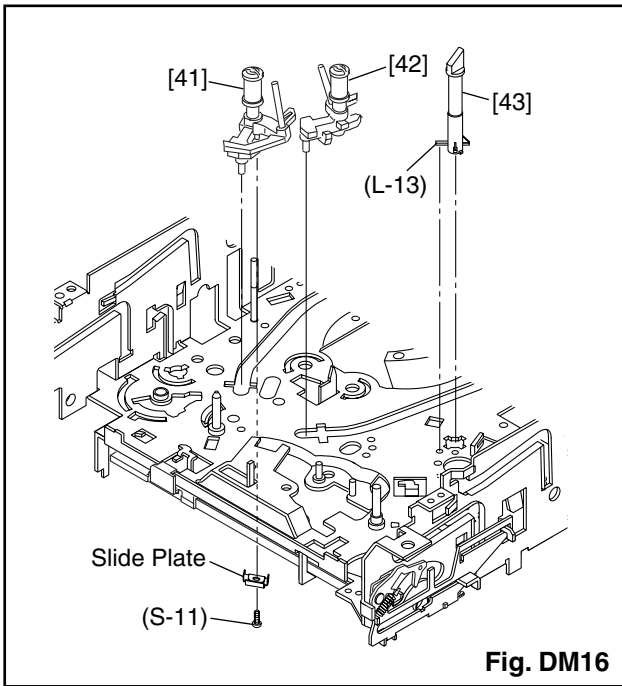


Fig. DM15



# ALIGNMENT PROCEDURES OF MECHANISM

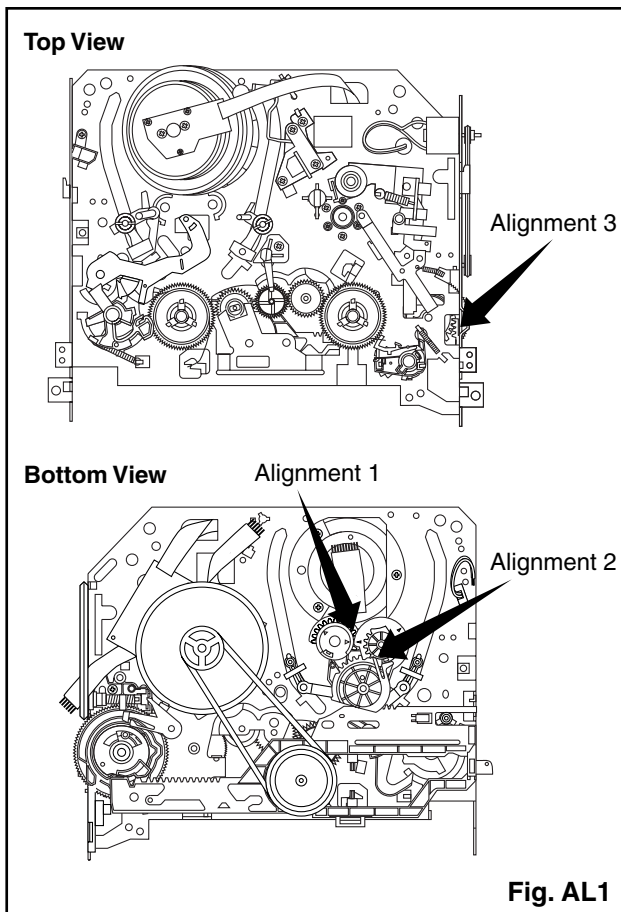
The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between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

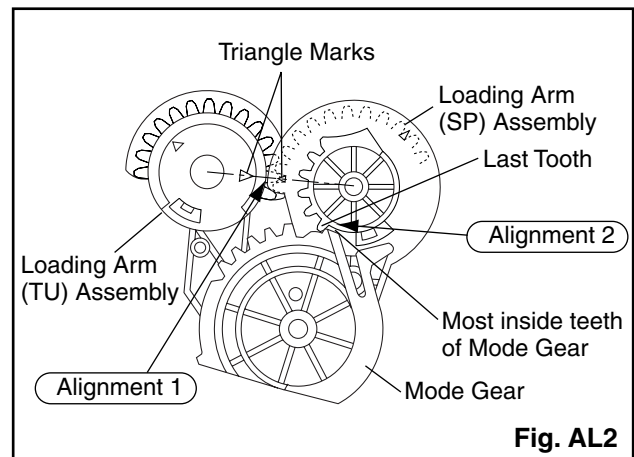
### Loading Arm (SP) and (TU) Assembly

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

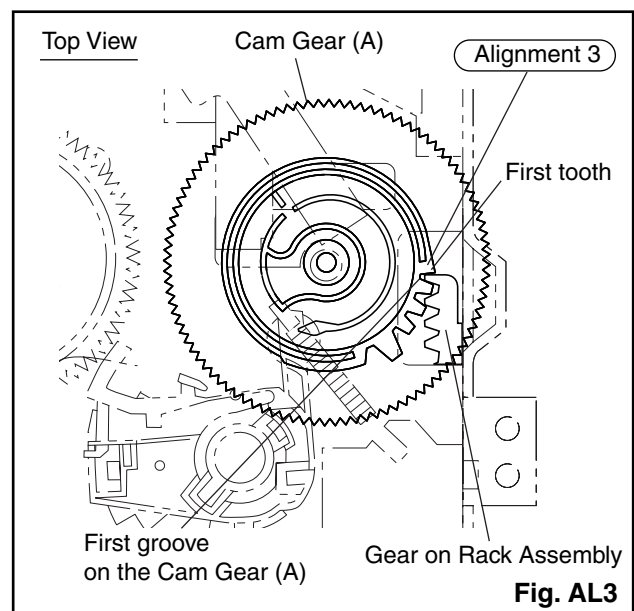
Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.



## Alignment 3

### Cam Gear (A), Rack Assembly

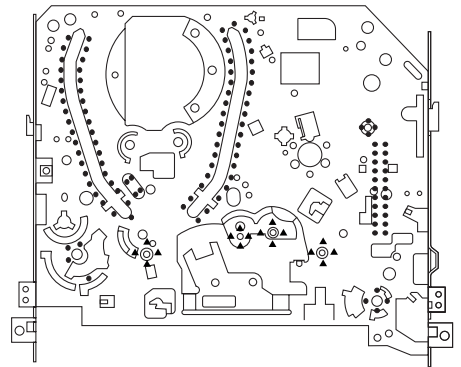
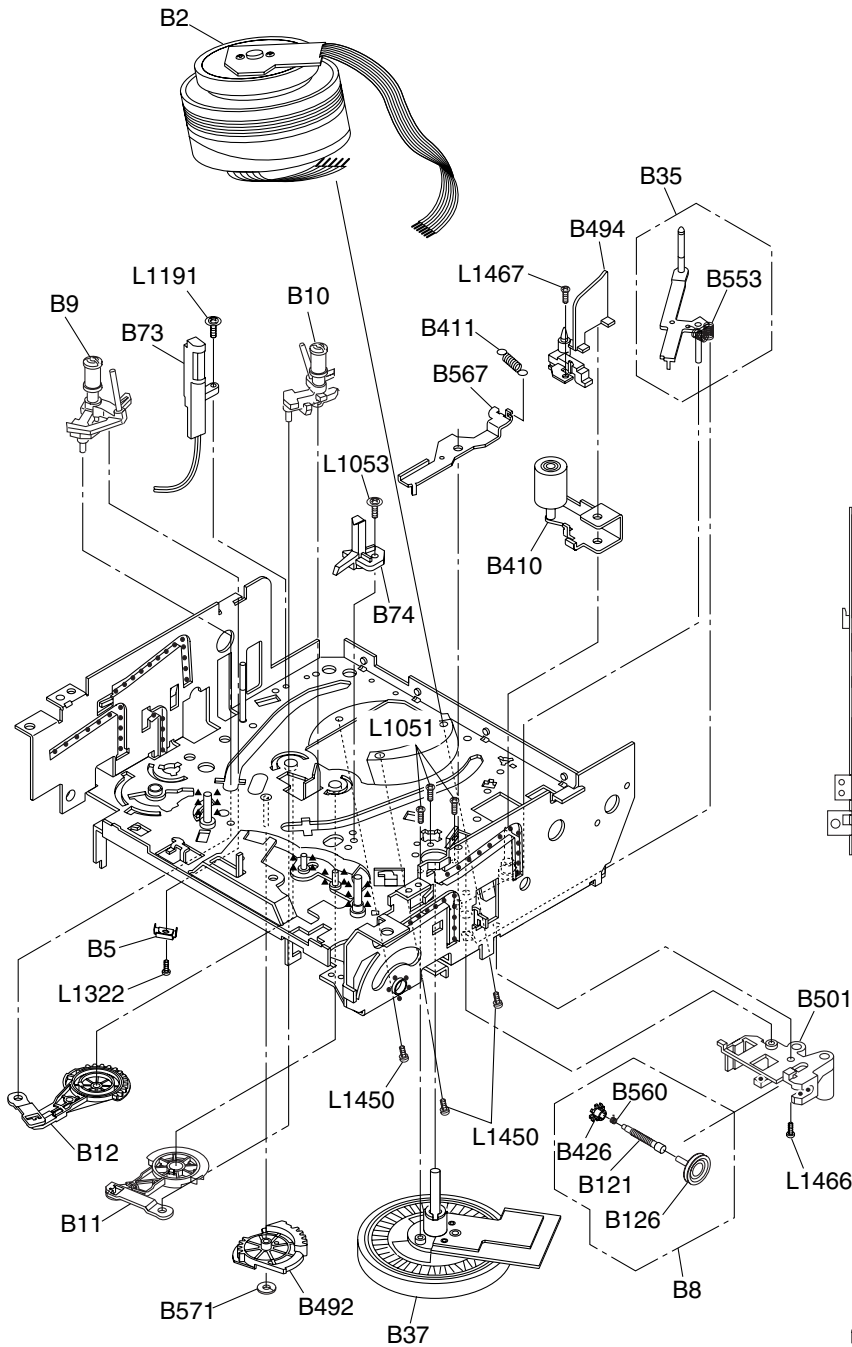
Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.



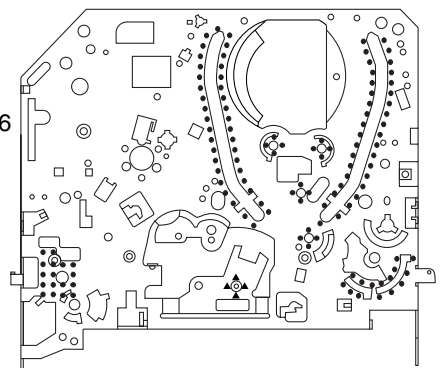
# DECK EXPLODED VIEWS

## Deck Mechanism View 1

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



Chassis Assembly  
Top View (Lubricating Point)

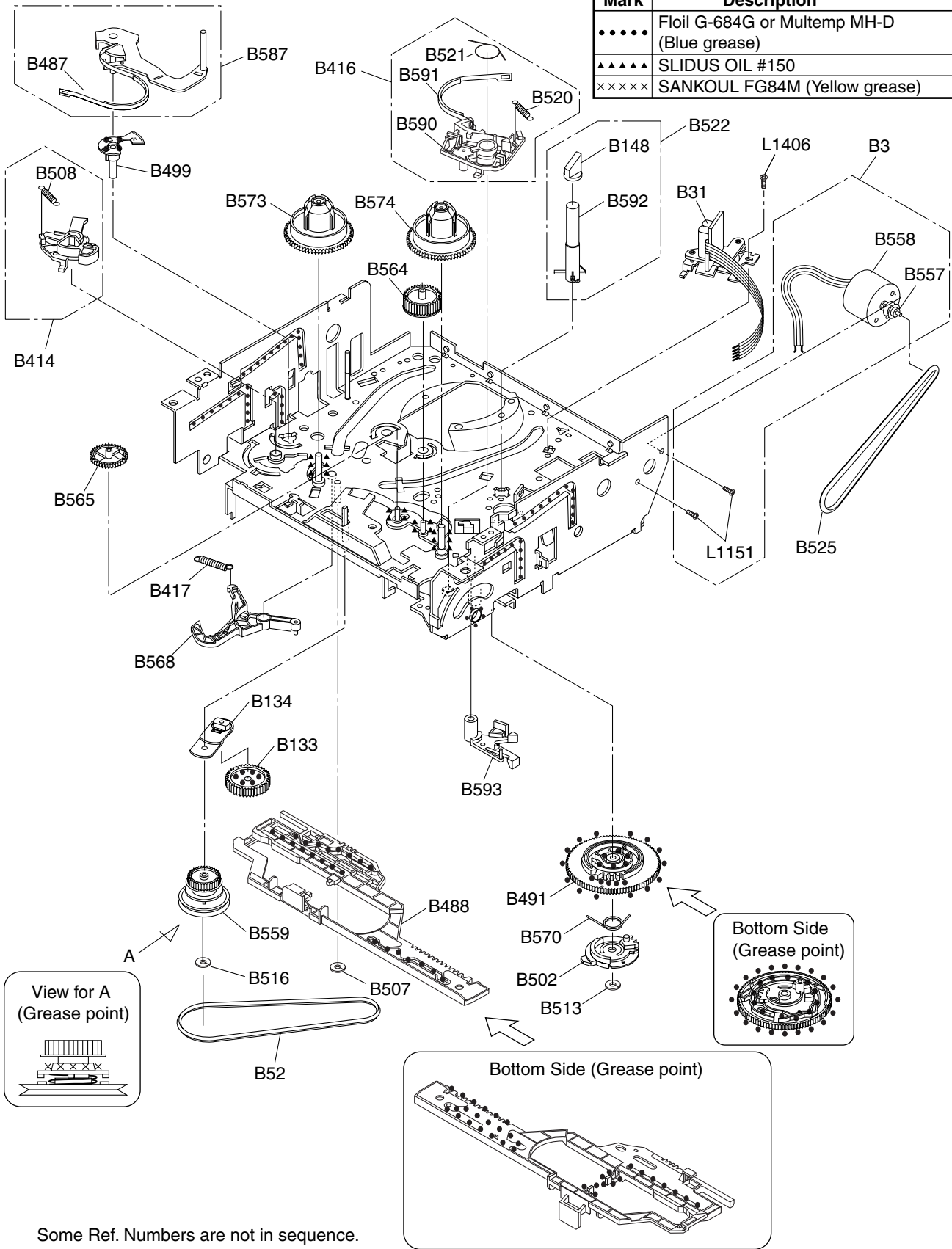


Chassis Assembly  
Bottom View (Lubricating Point)

Some Ref. Numbers are not in sequence.

# Deck Mechanism View 2

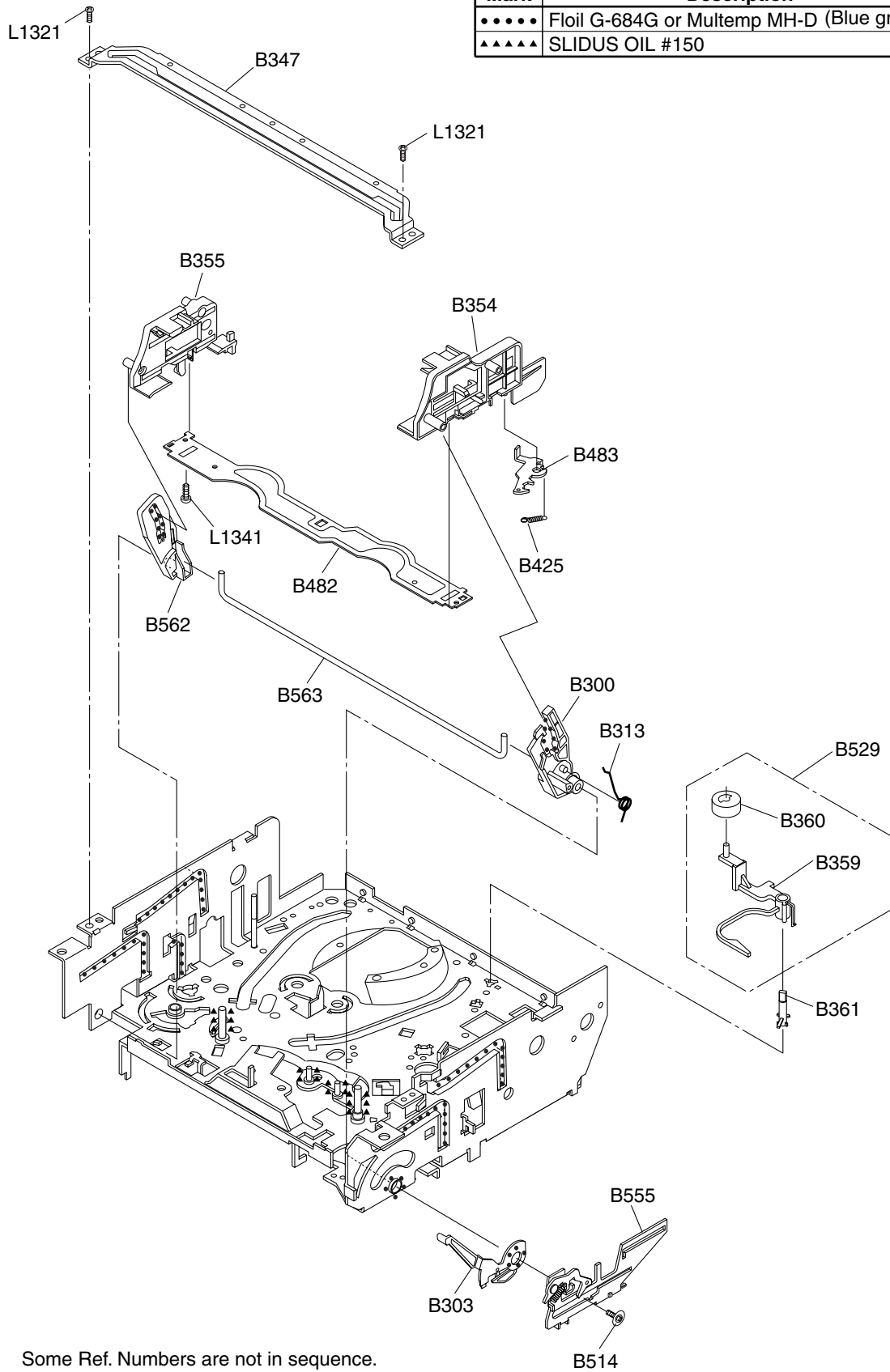
Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)



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.



# DECK PARTS LIST

DECK PARTS LIST				DVP3150V/37
Pos.No.	▲	12 NC	Description	
B2			CYLINDER ASSEMBLY MK14 NTSC 6HD	1
B2			CYLINDER ASSEMBLY MK14 NTSC 6HD	1
B3			LOADING MOTOR ASSEMBLY MK14	1
B5			SLIDE PLATE MK12.5	1
B8			PULLEY ASSEMBLY MK12	1
B9			MOVING GUIDE S.P.P MK12.5	1
B10			MOVING GUIDE T.P.P MK12.5	1
B11			LOADING ARM(TU) ASSEMBLY MK12	1
B12			LOADING ARM(SP) ASSEMBLY MK12	1
B31			AC HEAD ASSEMBLY MK12.5	1
B35			TAPE GUIDE ARM ASSEMBLY MK12.5	1
B37			CAPSTAN MOTOR R 288/VZC1300	1
B52			CAP BELT MK10	1
B73			FE HEAD(MK12) HVFHP0047A	1
B73			FE HEAD(MK12) VTR-1X2ERS11-155	1
B73			HEAD FE VTR-1X2ERS11-167	1
B74			PRISM MK10	1
B121			WORM MK12	1
B126			PULLEY MK12	1
B133			IDLER GEAR MK12	1
B134			IDLER ARM MK12	1
B148			TG CAP MK11	1
B300			C DRIVE LEVER(TU) MK12	1
B303			F DOOR OPENER MK12	1
B313			C DRIVE SPRING MK12	1
B347			GUIDE HOLDER A MK10	1
B354			SLIDER(TU) MK12	1
B355			SLIDER(SP) MK12	1
B359			CLEANER LEVER MK10	1
B360			CLEANER ROLLER MK9	1
B361			CL POST MK10	1
B410			PINCH ARM(A) ASSEMBLY(5) MK12	1
B411			PINCH SPRING MK12	1
B414			M BRAKE(SP) ASSEMBLY MK12.5	1
B416			M BRAKE(TU) ASSEMBLY MK12	1
B417			TENSION SPG(3002645) MK12.5	1
B425			LOCK LEVER SPRING MK10	1
B426			KICK PULLEY MK10	1
B482			CASSETTE PLATE	1
B483			LOCK LEVER MK12	1
B487			BAND BRAKE(SP) MK12.5	1
B488			MODE LEVER MK12.5	1
B491			CAM GEAR(A) MK12	1
B492			MODE GEAR MK12	1
B494			C DOOR OPENER MK12	1
B499			T LEVER HOLDER MK12	1
B501			WORM HOLDER MK12	1
B501			WORM HOLDER(R) MK12	1
B502			CAM GEAR(B) MK12	1
B507			REEL WASHER MK9 5*2.1*0.5	1
B508			S BRAKE SPRING MK10	1
B513			CAM WASHER MK12	1
B514			SCREW RACK MK14	1
B516			REEL WASHER MK9 5*2.1*0.5	1
B520			TU BRAKE SPRING MK12	1
B521			REV BRAKE SPRING MK12	1

## DECK PARTS LIST

DVP3150V/37

Pos.No.	▲	12 NC	Description	
B522			TG POST ASSEMBLY MK11	1
B525			LDG BELT MK11	1
B529			CLEANER ASSEMBLY MK10	1
B553			REV SPRING MK11	1
B555			RACK ASSEMBLY MK14	1
B557			MOTOR PULLEY U5	1
B558			LOADING MOTOR RF-500TB-12560	1
B558			LOADING MOTOR M31E-1 R-14 7441	1
B559			CLUTCH ASSEMBLY MK12	1
B559			CLUTCH ASSEMBLY(64) MK12	1
B560			KICK SPRING MK10	1
B562			C DRIVE LEVER(SP) MK12	1
B563			SLIDER SHAFT MK12	1
B564			M GEAR MK14	1
B564			M GEAR MK12	1
B565			SENSOR GEAR MK12	1
B567			PINCH ARM(B) ASSEMBLY MK12.5	1
B568			BT ARM MK12	1
B570			CAM RACK SPRING(HI) MK11	1
B571			P.S.W CUT 1.6X4.0X0.5T	1
B573			REEL(SP)(D2) MK12	1
B574			REEL(TU)(D2) MK12	1
B587			TENSION LEVER ASSEMBLY MK12	1
B590			BRAKE ARM(TU) MK12	1
B591			BAND BRAKE(TU) MK12	1
B592			TG POST MK11	1
B593			CAM HOLDER ASSEMBLY MK12.5	1
L1051			SCREW B-TIGHT M2.6X6 PAN HEAD+	1
L1053			SCREW S-TIGHT M2.6X8 WASHER HEAD+	1
L1151			SCREW SEMS M2.6X4 PAN HEAD+	1
L1191			SCREW S-TIGHT M2.6X8 WASHER HEAD+	1
L1321			SCREW S-TIGHT M3X6 BIND HEAD+	1
L1322			SCREW B-TIGHT M2.3X4 BIND HEAD+	1
L1341			SCREW P-TIGHT M2X6 PAN HEAD+	1
L1406			AC HEAD SCREW MK14	1
L1450			SCREW SEMS M2.6X5 PAN HEAD+	1
L1466			SCREW S-TIGHT M2.6X6 BIND HEAD+	1
L1467			SCREW M2.6X5 WASHER HEAD+	1