

# SLV-D910AZ/D910B/D910E/D910N/D910R/ D950B/D950E/D950GI RMT-V503A/V503B

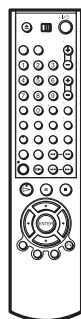
## SERVICE MANUAL

*AEP Model*  
SLV-D910B/D910E/D910N/D950B/D950E

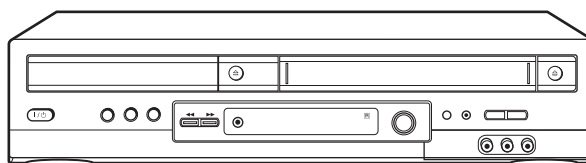
*UK Model*  
SLV-D950GI

*E Model*  
SLV-D910AZ

*Russian Model*  
SLV-D910R



RMT-V503B



SLV-D950B

TS-10 MECHANISM

Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT MANUAL VII for MECHANICAL ADJUSTMENTS. (9-921-790-11)

### SPECIFICATIONS

#### System

##### Laser

Semiconductor laser

##### Signal format system

PAL/(NTSC)

SLV-D910B/D950B:

SECAM

SLV-D910B/D910N/D910R/D950B:

MESECAM

##### Channel coverage

SLV-D910B/D910E/D950B/D950E:

PAL (B/G):

VHF E2 to E12

VHF Italian channel A to H

UHF E21 to E69

CATV S01 to S05, S1 to S20

HYPHER S21 to S41

SLV-D950GI:

PAL (I):

VHF IA to IJ, SA10 to SA13

UHF B21 to B69

CATV S01 to S05, S1 to S20

HYPHER S21 to S41

SLV-D910B/D950B:

SECAM (L):

VHF F2 to F10

UHF F21 to F69

CATV B to Q

HYPHER S21 to S41

SLV-D910N/D910R:

PAL (B/G, D/K):

VHF E2 to E12, R1-R12

UHF E21 to E69, R21-R69

CATV S01 to S05, S1 to S41

SLV-D910AZ:

B/G: VHF E2 to E12/UHF E21 to E69/

CATV S01 to S05, S1 to S41

B/B: VHF R1 to R12/UHF R21 to R69

RF output signal

SLV-D910E/D910N/D910R/D950E/D950GI:

UHF channels 21 to 69

SLV-D910AZ:

UHF channels 21 to 69 (B/G)

UHF channels 28 to 69 (B/B)

##### Aerial out

75-ohm asymmetrical aerial socket

##### Tape speed

SP: PAL 23.39 mm/s  
(recording/playback)

NTSC 33.35 mm/s  
(playback only)

SLV-D910B/D950B:

SECAM 23.39 mm/s  
(recording/playback)

MESECAM 23.39 mm/s  
(playback only)

SLV-D910N/D910R:

MESECAM 23.39 mm/s  
(recording/playback)

— Continued on next page —



Hi-Fi

SHOWVIEW®

VIDEOplus+



## VIDEO CASSETTE RECORDER

## DVD PLAYER/

# SONY®

LP: PAL 11.70 mm/s  
(recording/playback)  
NTSC 16.67 mm/s  
(playback only)  
SLV-D910B/D950B:  
SECAM 11.70 mm/s  
(recording/playback)  
MESECAM 11.70 mm/s  
(playback only)  
SLV-D910N/D910R:  
MESECAM 11.70 mm/s  
(recording/playback)  
EP: NTSC 11.12 mm/s  
(playback only)  
Maximum recording/playback time  
10 hrs. in LP mode (with E300 tape)  
Rewind time  
Approx. 1 min. (with E180 tape)

### Inputs and outputs

SLV-D910B/D910E/D910N/D910R/D950B/  
D950E/D950G1:  
LINE-1 (EURO AV)  
21-pin  
Video input: pin 20  
Audio input: pins 2 and 6  
Video output: pin 19  
Audio output: pins 1 and 3  
LINE-2 IN  $\leftarrow$  /  $\rightarrow$  L/R  
VIDEO IN, phono jack (1)  
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync  
negative  
AUDIO IN, phono jacks (2)  
Input level: 327 mVrms  
Input impedance: more than 47 kilohms  
LINE-3  
21-pin  
Video input: pin 20  
Audio input: pins 2 and 6

OUT  
VIDEO OUT, phono jack (1)  
Output signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO OUT, phono jacks (2)  
Standard output: 327 mVrms  
Load impedance: 47 kilohms  
Output impedance: less than 10 kilohms

SLV-D910AZ:  
LINE IN1/LINE-2 IN  
VIDEO IN, phono jack (1)  
Input signal: 1 Vp-p, 75 ohms, unbalanced, sync  
negative  
AUDIO IN, phono jacks (2)  
Input level: 327 mVrms  
Input impedance: more than 47 kilohms  
LINE OUT  
VIDEO OUT, phono jack (1)  
Output signal: 1 Vp-p, 75 ohms, unbalanced,  
sync negative  
AUDIO OUT, phono jacks (2)  
Standard output: 327 mVrms  
Load impedance: 47 kilohms  
Output impedance: less than 10 kilohms

DIGITAL OUT (OPTICAL)  
Optical output jack/-18 dBm  
(wave length 660 nm)

DIGITAL OUT (COAXIAL)  
Phono jack/0.5 Vp-p/75 ohms

S VIDEO OUT  
4-pin mini DIN/Y: 1.0 Vp-p, C: 0.3 Vp-p (PAL),  
0.286 Vp-p (NTSC)/75 ohms

SLV-D910AZ:  
COMPONENT VIDEO OUT (Y, Cb, Cr)  
phono jack  
Y: 1.0 Vp-p/Cb, Cr: 0.7 Vp-p, 75 ohms

### Timer section

Clock  
Quartz locked  
Timer indication  
24-hour cycle  
Timer setting  
6 programs (max.)  
SLV-D910AZ:  
Power back-up  
Back-up duration: up to 1 hour at a time

### General

Power requirements  
220 – 240 V AC, 50 Hz  
Power consumption  
25 W  
Operating temperature  
5 °C to 40 °C  
Storage temperature  
-20 °C to 60 °C  
Dimensions including projecting parts and  
controls (w/h/d)  
SLV-D910AZ/D950:  
Approx. 430 × 95 × 333 mm  
SLV-D910B/D910E/D910N/D910R:  
Approx. 430 × 95 × 325 mm  
Mass  
Approx. 4.2 kg

### Supplied accessories

Remote commander (1)  
R6 (size AA) batteries (2)  
Aerial cable (1)  
Audio cord (pinplug ×2 ↔ pinplug ×2) (1)  
Video cord (pinplug ×1 ↔ pinplug ×1) (1)

Design and specifications are subject to  
change without notice.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are “pinched” or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

### WARNING!!

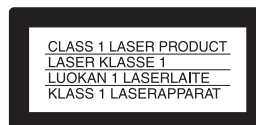
**WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION, BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 25 cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.**

### CAUTION:

The use of optical instrument with this product will increase eye hazard.

### CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



This appliance is classified as a CLASS 1 LASER product. The CLASS 1 LASER PRODUCT MARKING is located on the rear exterior.

### Unleaded solder

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead. (Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size.)



### : LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40°C higher than ordinary solder.  
Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.  
Soldering irons using a temperature regulator should be set to about 350°C.  
Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity  
Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder  
It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

### SAFETY-RELATED COMPONENT WARNING!!

**COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

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# PRECAUTIONS

## 1 SAFETY PRECAUTIONS

1) Before returning an instrument to the customer, always make a safety check of the entire instrument, including, but not limited to, the following items:

(1) Be sure that no built-in protective devices are defective or have been defeated during servicing.

(1) Protective shields are provided to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience.

(2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including, but not limited to, nonmetallic control knobs, insulating fish papers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning.

(2) Be sure that there are no cabinet openings through which adults or children might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, excessively wide cabinet ventilation slots, and an improperly fitted and/or incorrectly secured cabinet back cover.

(3) Leakage Current Hot Check-With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1270 (40.7). With the instrument's AC switch first in the ON position and then in the OFF position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinets, screwheads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis.

Any current measured must not exceed 0.5mA. Reverse the instrument power cord plug in the outlet and repeat the test. See Fig. 1.

Any measurements not within the limits specified herein indicate a potential shock hazard that must be eliminated before returning the instrument to the customer.

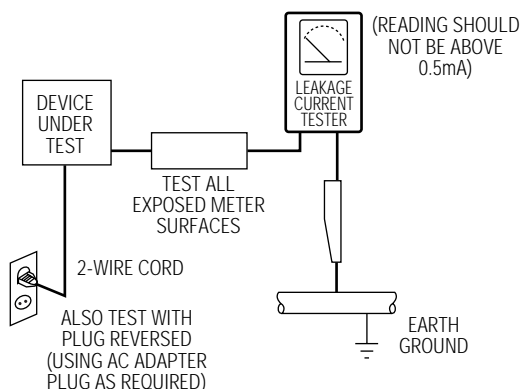


Fig. 1 AC Leakage Test

(4) Insulation Resistance Test Cold Check-(1) Unplug the power supply cord and connect a jumper wire between the two prongs of the plug. (2) Turn on the power switch of the instrument. (3) Measure the resistance with an ohmmeter between the jumpered AC plug and all exposed metallic cabinet parts on the instrument, such as screwheads, antenna, control shafts, handle brackets, etc. When an exposed metallic part has a return path to the chassis, the reading should be between 1 and 5.2 megohm. When there is no return path to the chassis, the reading must be infinite. If the reading is not within the limits specified, there is the possibility of a shock hazard, and the instrument must be repaired and rechecked before it is returned to the customer. See Fig. 2.

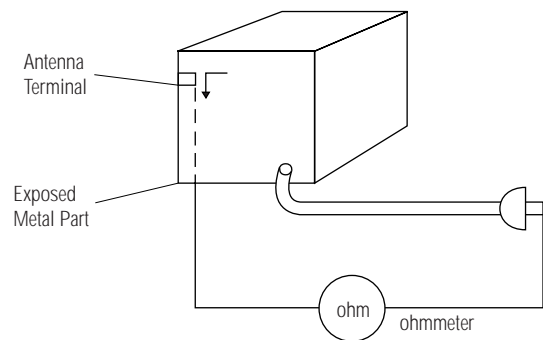


Fig. 2 Insulation Resistance Test

2) Read and comply with all caution and safety related notes on or inside the cabinet, or on the chassis.

3) Design Alteration Warning-Do not alter or add to the mechanical or electrical design of this instrument. Design alterations and additions, including but not limited to, circuit modifications and the addition of items such as auxiliary audio output connections, might alter the safety characteristics of this instrument and create a hazard to the user. Any design alterations or additions will make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4) Observe original lead dress. Take extra care to assure correct lead dress in the following areas:

(1) near sharp edges, (2) near thermally hot parts (be sure that leads and components do not touch thermally hot parts), (3) the AC supply, (4) high voltage, and (5) antenna wiring. Always inspect in all areas for pinched, out-of-place, or frayed wiring. Do not change spacing between a component and the printed-circuit board. Check the AC power cord for damage.

5) Components, parts, and/or wiring that appear to have overheated or that are otherwise damaged should be replaced with components, parts and/or wiring that meet original specifications.

Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

- 
- 6) 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 shading, an (⚠) or a (⚠) on schematics and 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. Product safety is under review continuously and new instructions are issued whenever appropriate.

## 2 SERVICING PRECAUTIONS

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**CAUTION:** Before servicing units covered by this service manual and its supplements, read and follow the Safety Precautions section of this manual.

**Note:** If unforeseen circumstances create conflict between the following servicing precautions and any of the safety precautions, always follow the safety precautions. Remember: Safety First.

### 2-1 General Servicing Precautions

- (1) a. Always unplug the instrument's AC power cord from the AC power source before (1) re-moving or reinstalling any component, circuit board, module or any other instrument assembly, (2) disconnecting any instrument electrical plug or other electrical connection, (3) connecting a test substitute in parallel with an electrolytic capacitor in the instrument.
- b. Do not defeat any plug/socket B+ voltage interlocks with which instruments covered by this service manual might be equipped.
- c. Do not apply AC power to this instrument and/or any of its electrical assemblies unless all solid-state device heat sinks are correctly installed.
- d. Always connect a test instrument's ground lead to the instrument chassis ground before connecting the test instrument positive lead. Always remove the test instrument ground lead last.

**Note:** Refer to the Safety Precautions section ground lead last.

- (2) The service precautions are indicated or printed on the cabinet, chassis or components. When servicing, follow the printed or indicated service precautions and service materials.
- (3) The components used in the unit have a specified flame resistance and dielectric strength.  
When replacing components, use components which have the same ratings. Components identified by shading, by ( $\triangle$ ) or by ( $\nabla$ ) in the circuit diagram are important for safety or for the characteristics of the unit. Always replace them with the exact replacement components.
- (4) An insulation tube or tape is sometimes used and some components are raised above the printed wiring board for safety. The internal wiring is sometimes clamped to prevent contact with heating components. Install such elements as they were.
- (5) After servicing, always check that the removed screws, components, and wiring have been installed correctly and that the portion around the serviced part has not been damaged and so on. Further, check the insulation between the blades of the attachment plug and accessible conductive parts.

### 2-2 Insulation Checking Procedure

Disconnect the attachment plug from the AC outlet and turn the power ON. Connect the insulation resistance meter (500V) to the blades of the attachment plug. The insulation resistance between each blade of the attachment plug and accessible conductive parts (see note) should be more than 1 Megohm.

**Note:** Accessible conductive parts include metal panels, input terminals, earphone jacks, etc.

## 3 ESD PRECAUTIONS

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### Electrostatically Sensitive Devices (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity.

Such components commonly are called Electrostatically Sensitive Devices (ESD). Examples of typical ESD devices are integrated circuits and some field-effect transistors and semiconductor chip components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

- (1) Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
- (2) After removing an electrical assembly equipped with ESD devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
- (3) Use only a grounded-tip soldering iron to solder or unsolder ESD devices.
- (4) Use only an anti-static solder removal devices. Some solder removal devices not classified as “anti-static” can generate electrical charges sufficient to damage ESD devices.
- (5) Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ESD devices.
- (6) Do not remove a replacement ESD device from its protective package until immediately before your are ready to install it. (Most replacement ESD devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive materials).
- (7) Immediately before removing the protective materials from the leads of a replacement ESD device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

**CAUTION:** Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

- (8) Minimize bodily motions when handling unpackaged replacement ESD devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ESD device).



## 4 HANDLING THE OPTICAL PICK-UP

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The laser diode in the optical pick up may suffer electrostatic breakdown because of potential static electricity from clothing and your body.

The following method is recommended.

- (1) Place a conductive sheet on the work bench (The black sheet used for wrapping repair parts.)
  - (2) Place the set on the conductive sheet so that the chassis is grounded to the sheet.
  - (3) Place your hands on the conductive sheet (This gives them the same ground as the sheet.)
  - (4) Remove the optical pick up block
  - (5) Perform work on top of the conductive sheet. Be careful not to let your clothes or any other static sources to touch the unit.
- ◆ Be sure to put on a wrist strap grounded to the sheet.
  - ◆ Be sure to lay a conductive sheet made of copper etc. Which is grounded to the table.

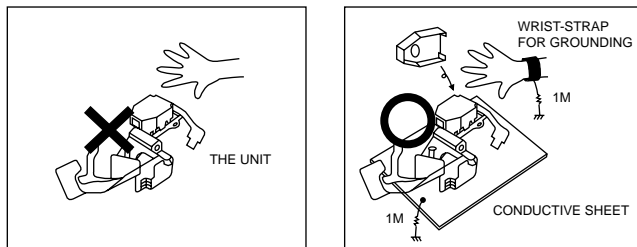


Fig.3

- (6) Short the short terminal on the PCB, which is inside the Pick-Up ASS'Y, before replacing the Pick-Up. (The short terminal is shorted when the Pick-Up Ass'y is being lifted or moved.)
- (7) After replacing the Pick-up, open the short terminal on the PCB.

## 5 PICK-UP DISASSEMBLY AND REASSEMBLY

### 5-1 Disassembly

- 1) Remove the power cord.
- 2) Disassemble the Deck-Assy.
- 3) Make solder land 2 points short on Pick-up.  
(See Fig. 4)
- 4) Disassembly the Pick-up.

### 5-2 Assembly

- 1) Replace the Pick-up.
- 2) Remove the soldering 2 points on Pick-up.
- 3) Reassemble the Deck-Assy.

**Note:** If the assembly and disassembly are not done in correct sequence, the Pick-up may be damaged.

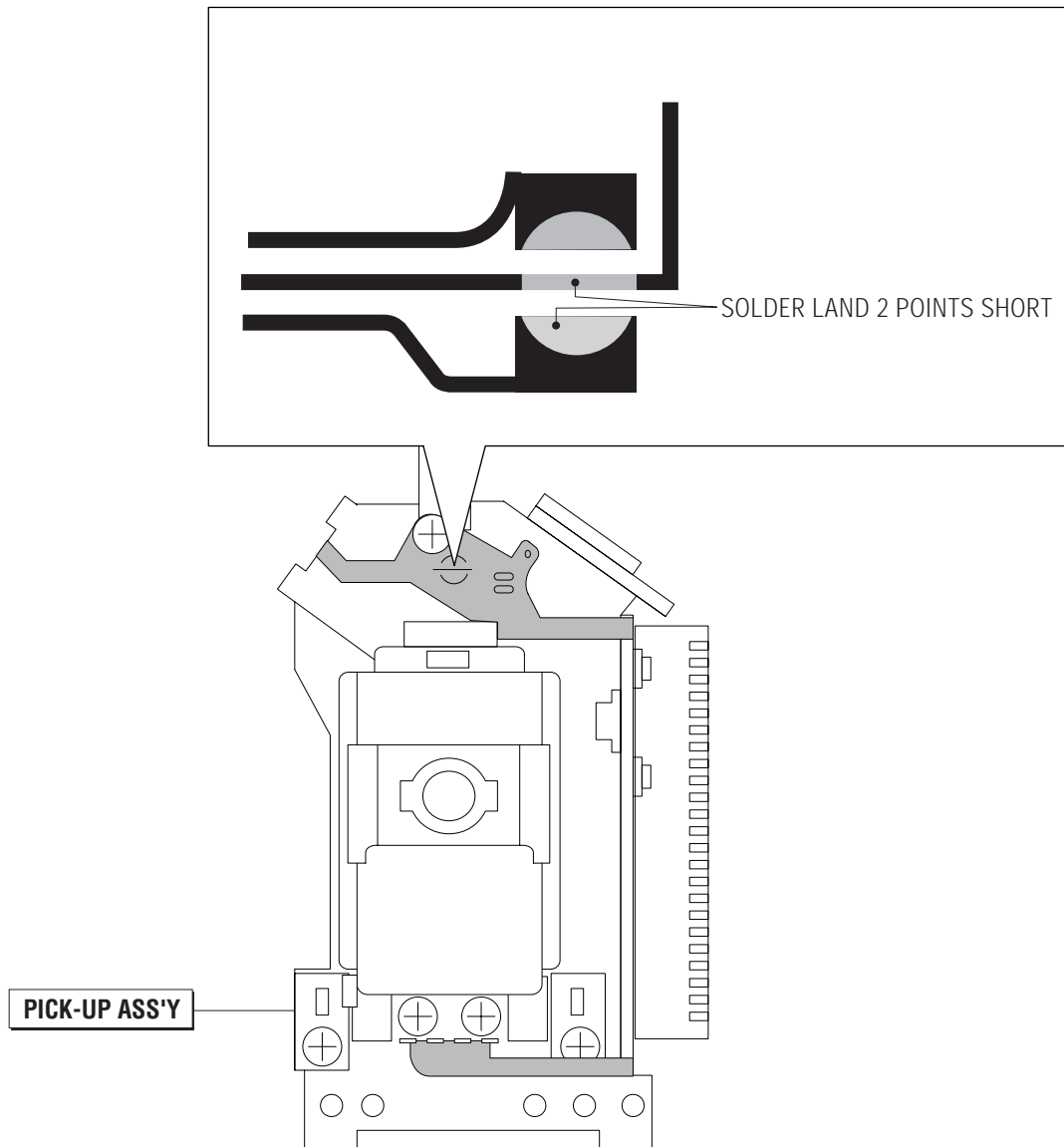


Fig. 4

# 1. GENERAL

This section is extracted from SLV-D910B/D950B instruction manual. (3-084-916-E2)

## Getting Started

### Step 1 : Unpacking

Check that you have received the following items with the DVD-VCR:

- Remote commander
- R6 (size AA) batteries
- Aerial cable
- PERITEL cable
- Audio cord (pinplug x2 ↔ pinplug x2)
- Video cord (pinplug x1 ↔ pinplug x1)

### Check your model name

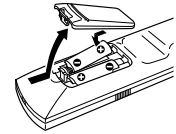
The instructions in this manual are for the 2 models: SLV-D950B and SLV-D910B. Check your model name by looking at the rear panel of your DVD-VCR. SLV-D950B is the model used for illustration purposes. Any difference in operation is clearly indicated in the text, for example, "SLV-D950B only".

### Step 2 : Setting up the remote commander

#### Inserting the batteries

Insert two size AA (R6) batteries by matching the + and - on the batteries to the diagram inside the battery compartment.

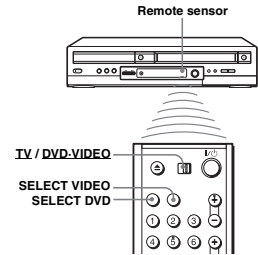
Insert the negative (-) end first, then push in and down until the positive (+) end clicks into position.



#### Using the remote commander

You can use this remote commander to operate this DVD-VCR and a Sony TV. Buttons on the remote commander marked with a dot (•) can be used to operate your Sony TV.

If the TV does not have the TV symbol near the remote sensor, this remote commander will not operate the TV.



To operate	Set TV / DVD-VIDEO to
the DVD player	DVD-VIDEO, then press SELECT DVD and point at the remote sensor at the DVD-VCR
the VCR	DVD-VIDEO, then press SELECT VIDEO and point at the remote sensor at the DVD-VCR
your TV	TV and point at the remote sensor at your TV

#### Notes

- With normal use, the batteries should last about three to six months.
- If you do not use the remote commander for an extended period of time, remove the batteries to avoid possible damage from battery leakage.
- Do not use a new battery with an old one.
- Do not use different types of batteries.
- Do not leave the remote commander in an extremely hot or humid place.
- Do not drop any foreign object into the remote casing, particularly when replacing the batteries.
- Do not expose the remote sensor to direct light from the sun or lighting apparatus. Doing so may cause a malfunction.

### Controlling other TVs with the remote commander

The remote commander is preprogrammed to control non-Sony TVs. If your TV is listed in the following table, set the appropriate manufacturer's code number.

- 1 Set TV / DVD-VIDEO at the top of the remote commander to TV.
- 2 Hold down I/⏪, and enter your TV's code number using the number buttons. Then release I/⏪.

Now you can use the I/⏪, VOL +/-, PROG +/-, MUTING\*, TV/VIDEO, 0-9 and -/→\* buttons to control your TV. You can also use the buttons marked with a dot (•) to control a Sony TV. To control the DVD-VCR, reset TV / DVD-VIDEO to DVD-VIDEO.

\* for Sony TV only

#### Code numbers of controllable TVs

If more than one code number is listed, try entering them one at a time until you find the one that works with your TV.

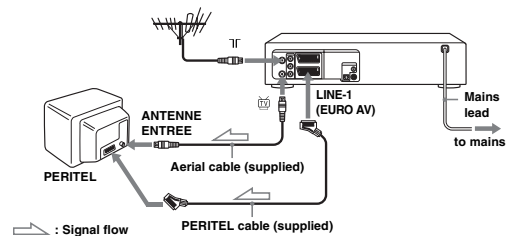
Manufacturer	Code number	Manufacturer	Code number
Sony	01, 02	Panasonic	17, 49
Akai	68	Philips	06, 07, 08
Ferguson	52	Saba	12, 13
Grundig	10, 11	Samsung	22, 23
Hitachi	24	Sanyo	25
JVC	33	Sharp	29
Loewe	45	Telefunken	36
Mivar	09, 70	Thomson	43
NEC	66	Toshiba	38
Nokia	15, 16, 69		

#### Notes

- If you enter a new code number, the code number previously entered will be erased.
- If the TV uses a different remote control system from the one programmed to work with the DVD-VCR, you cannot control your TV with the remote commander.
- When you replace the batteries of the remote commander, the code number may change. Set the appropriate code number every time you replace the batteries.

### Step 3 : Connecting the DVD-VCR

Note that "Advanced Hookups" (page 59) explains additional hookup methods that will optimize the picture and sound for a true "hometheatre" experience.

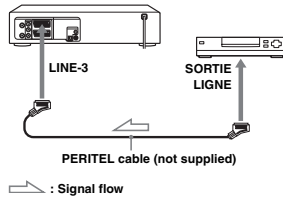


- 1 Disconnect the aerial cable from your TV and connect it to 'I' on the rear panel of the DVD-VCR.
- 2 Connect 'II' of the DVD-VCR and the aerial input of your TV using the supplied aerial cable.
- 3 Connect LINE-1 (EURO AV) on the DVD-VCR and the PERITEL connector on the TV with the supplied PERITEL cable. This connection improves picture and sound quality. Whenever you want to watch the DVD-VCR picture, press TV/VIDEO to display the VCR indicator in the display window.
- 4 Connect the mains lead to the mains.

### Additional connection

#### To a satellite or digital tuner with Line Through

Using the Line Through function, you can watch programmes from a satellite or digital tuner connected to this DVD-VCR on the TV even when the DVD-VCR is turned off. When you turn on the satellite or digital tuner, this DVD-VCR automatically sends the signal from the satellite or digital tuner to the TV without turning itself on.



- 1 Connect the satellite or digital tuner to the LINE-3 connector as shown above.
- 2 Turn off the DVD-VCR.  
To watch a programme, turn on the satellite or digital tuner and the TV.

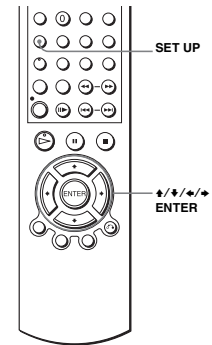
#### Notes

- This function may not work with some types of satellite or digital tuners.
- When the DVD-VCR is turned off, set the TV to the video channel.

## Step 4 : Setting up the DVD-VCR with the Auto Set Up function

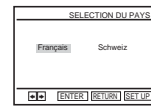
Before using the DVD-VCR for the first time, set up the DVD-VCR using the Auto Set Up function. With this function, you can set TV channels, guide channels for the ShowView system\*, and DVD-VCR clock automatically.

\* SLV-D950B only



- 1 Turn on your TV and set it to the video channel.

- 2 Connect the mains lead to the mains.  
The DVD-VCR automatically turns on and the "SELECTION DU PAYS" menu appears.



Getting Started

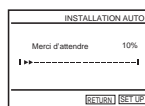
- 3 Press  $\blacktriangle/\blacklozenge$  to select your country, then press ENTER.



The DVD-VCR starts searching for all of the receivable channels and presets them (in the appropriate order for your local area).

If you want to change the order of the channels or disable unwanted programme positions, see "Changing/disabling programme positions" on page 21.

After the search is complete, the current time appears for any stations that transmit a time signal. If the time does not appear, set the clock manually. See "Setting the clock" on page 16.



#### To cancel the Auto Set Up function

Press SET UP.

#### Tip

- If you want to change the language for the on-screen display from the one preset in the Auto Set Up function, see page 15.

#### Notes

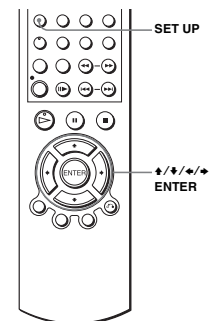
- Whenever you operate the Auto Set Up function, some of the settings (ShowView, timer, etc.) will be reset. If this happens, you have to set them again.
- Auto preset starts automatically only when you plug in the mains lead for the first time after you purchase the DVD-VCR.
- If you want to use the Auto Set Up function again, select "Installation" in the "OPTION" menu, then press  $\blacktriangle/\blacklozenge$  to select "Installation Auto", then repeat step 3.
- Auto preset can be performed by pressing  $\blacksquare$  on the unit continuously for 5 seconds or more during power off with no tape inserted.

## Step 5 : Selecting a language

If you prefer an on-screen language other than French, use the on-screen display to select another language.

#### Before you start...

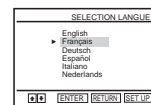
- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set TV / DVD-VIDEO to DVD-VIDEO on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



- 1 Press SET UP, then press  $\blacktriangle/\blacklozenge$  to select (OPTION) and press ENTER.



- 2 Press  $\blacktriangle/\blacklozenge$  to select "Langue", then press ENTER.  
The "SELECTION LANGUE" menu appears.



- 3 Press  $\blacktriangle/\blacklozenge$  to select the desired language, then press ENTER.



- 4 Press SET UP to exit the menu.



Getting Started

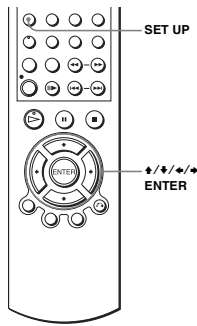
## Step 6 : Setting the clock

You must set the time and date on the DVD-VCR to use the timer features properly.


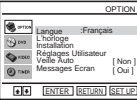
The Auto Clock Set function works only if a station in your area is broadcasting a time signal.


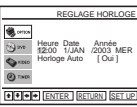
### Before you start...


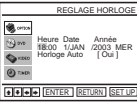
- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



- 1** SET UP Press SET UP, then press **4/5** to select (OPTION) and press ENTER.



- 2** Press **4/5** to select "L'horloge", then press ENTER.  
The "REGLAGE HORLOGE" menu appears.



- 3** Press **4/5** to set the hour.

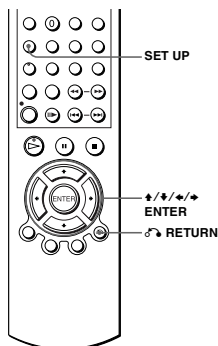
16 Setting the clock

## Step 7 : Presetting channels



If some channels could not be preset using the Auto Set Up function, you can preset them manually.


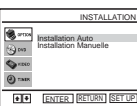
### Before you start...

- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.




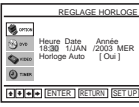
- 1** SET UP Press SET UP, then press **4/5** to select (OPTION) and press ENTER.


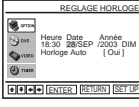


- 2** Press **4/5** to select "Installation", then press ENTER.  
The "INSTALLATION" menu appears.


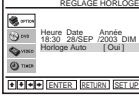




18 Presetting channels


- 4** Press **4/5** to select the minutes and set the minutes by pressing **4/5**.



- 5** Set the day, month, and year in sequence by pressing **4/5** to select the item to be set, and press **4/5** to select the digits, then press **4/5**.  
The day of the week is set automatically.



- 6** Press **4/5** to select "Oui" for the setting of the Auto Clock Set function.  
The DVD-VCR automatically sets the clock according to the time signal broadcast between the channels PR 1 to PR 5.  
If you do not need the Auto Clock Set function, select "Non".



- 7** Press ENTER to confirm the setting.


- 8** SET UP Press SET UP to exit the menu.



### Tips


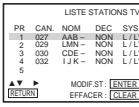
- If you set "Horloge Auto" to "Oui", the Auto Clock Set function is activated whenever the DVD-VCR is turned off. The time is adjusted automatically by making reference to the time signal from the station.
- To change the digits while setting, press **4/5** to return to the item to be changed, and select the digits by pressing **4/5**.



### Note


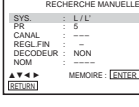
- The clock display appears when VIDEO mode is selected with no tape inserted or when the DVD-VCR is turned off.


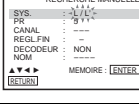
Setting the clock 17


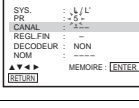
- 3** Press **4/5** to select "Installation Manuelle", then press ENTER.


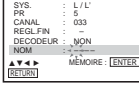


- 4** Press **4/5** to select the row which you want to preset, then press **4/5**.  
To display other pages for programme positions 6 to 80, press **4/5** repeatedly.



- 5** Press **4/5** to select "SYS:" if necessary.



- 6** Press **4/5** to set "L/L" or "B/G" if necessary.  
• To receive broadcast in France, select "L/L".  
• To receive broadcast using the PAL system (for example, in Germany or Switzerland), select "B/G".



- 7** Press **4/5** to select "CANAL", then press **4/5** repeatedly until the channel you want is displayed.



- 8** Press **4/5** to select "NOM", then press **4/5**.

continued


19 Presetting channels

**9** Enter the station name.


**1** Press **▲/▼** to select a character. Each time you press **▲/▼**, the character changes as shown below.

**A → B → ... → Z → 0 → 1 → ... → 9 → A**


**2** Press **▶** to set the next character. The next space flashes. To correct a character, press **◀/▶** until the character you want to correct flashes, then reset it. You can set up to 4 characters for the station name.



**10** Press **ENTER** to confirm the station name.



**11** Press **◀/▶** RETURN, then press **SET UP** to exit the menu.



**If the picture is not clear**

If the picture is not clear, you may use the Manual Fine Tuning (REGL.FIN) function. After step 7, press **▲/▼** to select "REGL.FIN". Press **▲/▼** to get a clear picture. Then press **ENTER**.

**Tips**

- To set the programme position for the decoder, see "Setting the Canal Plus decoder" on page 27.
- The DVD-VCR must receive channel information for station names to appear automatically.

**Note**

- When adjusting REGL.FIN, the menu may become difficult to read due to interference from the picture being received.

### Changing/disabling programme positions

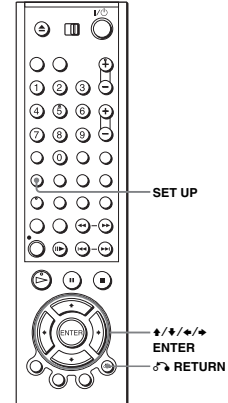
After setting the channels, you can change the programme positions as you like. If any programme positions are unused or contain unwanted channels, you can disable them.

You can also change the station names. If the station names are not displayed, you can enter them manually.


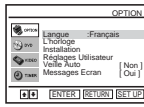
### Changing programme positions

#### Before you start...



- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



**1** Press **SET UP**, then press **▲/▼** to select (OPTION) and press **ENTER**.

**2** Press **▲/▼** to select "Installation", then press **ENTER**. The "INSTALLATION" menu appears.


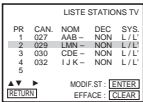



continued


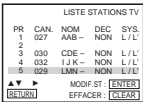
**3** Press **▲/▼** to select "Installation Manuelle", then press **ENTER**.





**4** Press **▲/▼** to select the row containing the programme position you want to change. To display other pages for programme positions 6 to 80, press **▲/▼** repeatedly.


**5** Press **ENTER**, then press **▲/▼** to move to the desired programme position.

**6** Press **ENTER** to confirm the setting. To change the programme position of another station, repeat steps 4 through 6.



**7** Press **◀/▶** RETURN, then press **SET UP** to exit the menu.

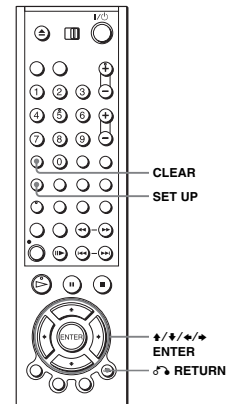


### Disabling unwanted programme positions



After presetting channels, you can disable unused programme positions. The disabled positions will be skipped later when you press the **PROG +/-** buttons.

#### Before you start...


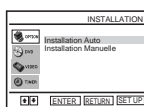
- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



**1** Press **SET UP**, then press **▲/▼** to select (OPTION) and press **ENTER**.

**2** Press **▲/▼** to select "Installation", then press **ENTER**. The "INSTALLATION" menu appears.


continued

**3** Press **▲/▼** to select "Installation Manuelle", then press **ENTER**.




PR	CAN.	NOM.	DEC.	SYS.
1	027	AAB	NON	L/L
2	029	LMN	NON	L/L
3	030	CDE	NON	L/L
4	032	IJK	NON	L/L
5				

**4** Press **▲/▼** to select the row which you want to disable.  
To display other pages for programme positions 6 to 80, press **▲/▼** repeatedly.



PR	CAN.	NOM.	DEC.	SYS.
1	027	AAB	NON	L/L
2	029	LMN	NON	L/L
3	030	CDE	NON	L/L
4	032	IJK	NON	L/L
5				



**5** Press **CLEAR**.  
The selected row will be cleared as shown on the right.



PR	CAN.	NOM.	DEC.	SYS.
1	027	AAB	NON	L/L
2				
3	030	CDE	NON	L/L
4	032	IJK	NON	L/L
5				

**6** Repeat steps 4 and 5 for any other programme positions you want to disable.

**7** Press **↵** RETURN, then press **SET UP** to exit the menu.

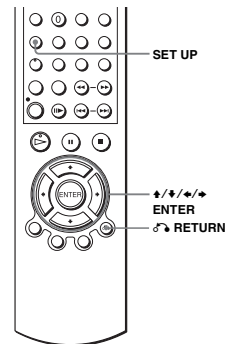
**Note**  
• Be sure to select the programme position you want to disable correctly. If you disable a programme position by mistake, you need to reset that channel manually.

### Changing the station names


You can change or enter the station names (up to 4 characters). The DVD-VCR must receive channel information for station names to appear automatically.

#### Before you start...

- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.




**1** Press **SET UP**, then press **▲/▼** to select **OPTION** and press **ENTER**.




OPTION	
Langue	Français
L'horloge	Installation
Reglages Utilisateur	[ Non ]
Voile Auto	[ Ou ]
Messages Ecran	

**2** Press **▲/▼** to select "Installation", then press **ENTER**.  
The "INSTALLATION" menu appears.



INSTALLATION	
Installation Auto	
Installation Manuelle	


**3** Press **▲/▼** to select "Installation Manuelle", then press **ENTER**.



LISTE STATIONS TV				
PR	CAN.	NOM	DEC.	SYS.
1	027	AAB	NON	L/L
2	029	LMN	NON	L/L
3	030	CDE	NON	L/L
4	032	IJK	NON	L/L
5	033	---	NON	L/L


continued

**4** Press **▲/▼** to select the row which you want to change or enter the station name, then press **▶**.  
To display other pages for programme positions 6 to 80, press **▲/▼** repeatedly.




RECHERCHE MANUELLE				
SYS.	:	L / L		
PR	:	5		
CANAL	:	033		
REGL.FIN	:			
DECODEUR	:	NON		
NOM	:	----		

**5** Press **▲/▼** to select "NOM", then press **▶**.




RECHERCHE MANUELLE				
SYS.	:	L / L		
PR	:	5		
CANAL	:	033		
REGL.FIN	:			
DECODEUR	:	NON		
NOM	:	----		



**6** Enter the station name.  
**1** Press **▲/▼** to select a character.  
Each time you press **▶**, the character changes as shown below.  
**A → B → ... → Z → 0 → 1 → ... → 9 → A**  
**2** Press **▶** to set the next character.  
The next space flashes.  
To correct a character, press **▲/▼** until the character you want to correct flashes, then reset it.  
You can set up to 4 characters for the station name.



**7** Press **ENTER** to confirm the new name.



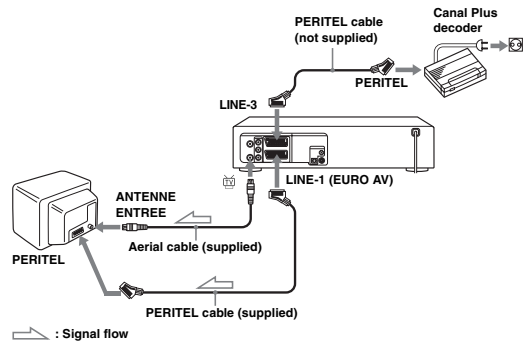
**8** Press **↵** RETURN, then press **SET UP** to exit the menu.

### Setting the Canal Plus decoder

You can watch or record Canal Plus programmes if you connect a decoder (not supplied) to the DVD-VCR.

#### Connecting a decoder



continued

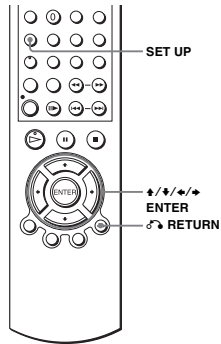
## Setting Canal Plus channels

To watch or record Canal Plus programmes, set your DVD-VCR to receive the channels using the on-screen display.

In order to set the channels correctly, be sure to follow all of the steps below.

### Before you start...

- Turn on the DVD-VCR and your TV.
- To control the DVD-VCR, set **TV / DVD-VIDEO** to **DVD-VIDEO** on the remote (page 9).
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



- 1** Press **SET UP**, then press **ENTER** to select **(OPTION)** and press **ENTER**.
- 2** Press **ENTER** to select "Installation", then press **ENTER**. The "INSATLLATION" menu appears.
- 3** Press **ENTER** to select "Installation Manuelle", then press **ENTER**.

PR	CAN.	NOM	DEC	SYS.
1	022	ANB	NON	L/L
2	029	LJMN	NON	L/L
3	030	CDK	NON	L/L
4	032	IJK	NON	L/L
5	033	---	NON	L/L

- 4** Press **ENTER** to select the row which you want to set for the decoder, then press **ENTER**. To display positions 6 to 80, press **ENTER** repeatedly.
- 5** Press **ENTER** to select "SYS." if necessary.
- 6** Press **ENTER** to set "L/L" or "B/G" if necessary. To receive broadcast in France, select "L/L". To receive broadcast using the PAL system (for example, in Germany or Switzerland), select "B/G".
- 7** Press **ENTER** to select "DECODEUR".
- 8** Press **ENTER** to set "DECODEUR" to "OUI", then press **ENTER**.
- 9** Press **RETURN**, then press **SET UP** to exit the menu.

Getting Started

continued

### Notes

- To superimpose subtitles while watching Canal Plus programmes, make both decoder-VCR and VCR-TV connections using 21-pin PERITEL cables that are compatible with the RGB signals. You cannot record subtitles on the VCR.
- When you watch Canal Plus programmes through the RFU input of the TV, press **TV/VIDEO** so that the VCR indicator appears in the display window.

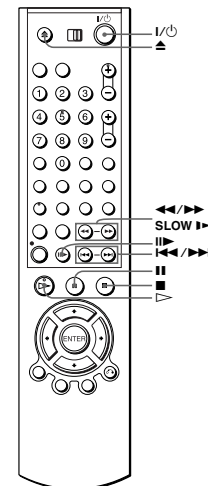
## Basic Operations

### Playing discs **DVD** **VCD** **CD** **DATA-CD**

Depending on the disc, some operations may be different or restricted. Refer to the operating instructions supplied with your disc.

### Before you start...

- Turn on the DVD-VCR and your TV.
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- Set **TV / DVD-VIDEO** to **DVD-VIDEO**, then press **SELECT DVD** to control the DVD player (page 9).



Basic Operations


- 1** Press **I/O** to open the disc tray and place a disc on the disc tray.

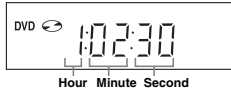


continued











## 2

Press .  
The disc tray closes and the DVD player starts playback.  
The display window shows the playback time.\*  
Depending on the disc, a menu may appear on the TV screen.  
For DVDs, see page 73. For VIDEO CDs, see page 93.




\* "-----" appears when no disc is loaded.


### Additional tasks

To	Press
Stop play	
Pause play*	
Resume play after pause	 or 
Advance by frame in pause mode	
Go to the next chapter, track, or scene in continuous play mode	 on the remote
Go back to the previous chapter, track, or scene in continuous play mode	 on the remote
Stop play and remove the disc	

\* If you pause the DVD player for more than 5 minutes, the DVD player will automatically stop.

### To Resume playback for the current disc (Resume Play)



The DVD player remembers the point where you stopped the disc even if the DVD player enters standby mode by pressing .

1 While playing a disc, press  to stop playback.

2 Press .

The DVD player starts playback from the point where you stopped the disc in step 1.

### Tip

- To begin playback from the top of the disc, press  twice then press .

### To locate a point quickly by playing a disc in fast forward or fast reverse in continuous play mode (DVD, VIDEO CD and CD only)


Press  or .

For DVD or VIDEO CD, each time you press the button, the playback speed changes as follows.




× 2 → FF1/FR1 → FF2/FR2 → FF3/FR3 → FF4/FR4 (DVD only) → FF5/FR5 (DVD only)

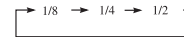
Release the button at the desired speed.


For CD, the searching speed does not change (FF2/FR2 play).

When you find the point you want, press .

### To watch slow motion in continuous play mode (DVD and VIDEO CD only)

Press , then press  SLOW . With each press, the playback speed changes cyclically as follows.



To resume normal playback, press .

### Tip

- To make a video timer reservation during DVD playback, we recommend performing the operations under "Quick Timer Recording" (page 96).

### Notes

- You can change the screen type using the "REGLAGE DE L'ECLAN" menu. (See "Screen Setup" on page 65.)
- Do not perform VIDEO playback while playing back a disc.
- If you play a DVD or VIDEO CD that has scratches, the player may stop playback at the point of the scratch or skip to the next track.
- You cannot change the MP3 or the Multi Session CD playback speed.
- VIDEO CD fast forward/reverse cannot be paused.
- During CD fast forward/reverse play, no sound is output.

### Notes on playing DTS\* sound tracks on a CD

- When playing DTS-encoded CDs, excessive noise will be heard from the analog stereo jacks. To avoid possible damage to the audio system, the consumer should take proper precautions when the analog stereo jacks of the DVD player are connected to an amplification system. To enjoy DTS Digital Surround™ playback, an external 5.1-channel decoder system must be connected to the digital jack of the DVD player.
- Set the sound to "STEREO" using the AUDIO button when you play DTS sound tracks on a CD (page 82).
- Do not play DTS sound tracks without first connecting the DVD player to an audio component having a built-in DTS decoder. The DVD player outputs the DTS signal via the DIGITAL AUDIO OUT (COAXIAL or OPTICAL) jack even if "DTS" is set to "Non" in "Options Audio" menu (page 63), and may affect your ears or cause your speakers to be damaged.

### Notes on playing DVDs with a DTS sound track

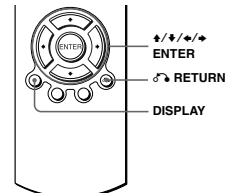
- DTS audio signals are output only through the DIGITAL AUDIO OUT (COAXIAL or OPTICAL) jack.
- When you play a DVD with DTS sound tracks, set "DTS" to "Out" in "Options Audio" menu (page 63).
- If you connect the player to audio equipment without a DTS decoder, do not set "DTS" to "Out" in "Options Audio" menu (page 63). A loud noise may come out from the speakers, affecting your ears or causing the speakers to be damaged.
- "DTS" and "DTS Digital Out" are trademarks of Digital Theater Systems, Inc.

## Guide to the on-screen display

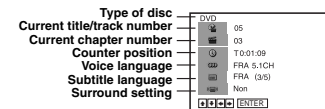
DVD VCD CD DATA-CD

You can check disc information during playback.

The displayed contents differ according to the type of disc being played.






Press DISPLAY. The following information appears; type of disc, current title/track, chapter, counter position, voice language, subtitle language and surround setting. Refer to "DVD Audio/Subtitle Language" on page 126 for the abbreviation of the language.



You can playback the desired title/track, chapter or counter position using this menu.

### To playback the desired title/track or chapter

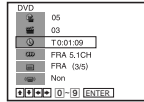
- Press  to select the desired item.
- Press  to change the item.
- Press ENTER to start playback.
- Press DISPLAY or  RETURN to turn off the menu.



The title/track or chapter icon will appear on the DVD playback screen followed by the current title/track or chapter number and the counter position.

**To playback from the desired title/track counter position**

- 1 Press **↔/↔** to select the counter position icon.
- 2 Enter the desired elapsed playing time of the current title/track using the number buttons.
- 3 Press **ENTER** to start playback.
- 4 Press **DISPLAY** or **RETURN** to turn off the menu.



**Tip**

- You can change the counter position information (playing time or remaining time) using **↔/↔** (DVD and CD only).

**DVD**

Indication	Counter information
T * : * * : * *	Elapsed playing time of the current title
T - : * * : * *	Remaining time of the current title
C * : * * : * *	Elapsed playing time of the current chapter
C - : * * : * *	Remaining time of the current chapter

**CD**

Indication	Counter information
T * : * * : * *	Elapsed playing time of the current track
T - : * * : * *	Remaining time of the current track
D * : * * : * *	Elapsed playing time of the disc
D - : * * : * *	Remaining time of the disc

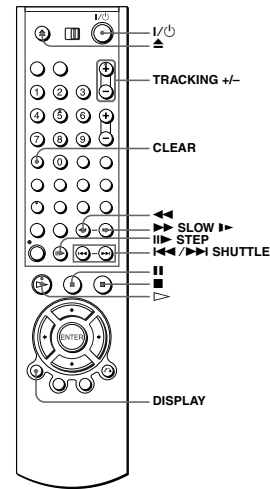
**Notes**

- The display may not change as operated depending on the disc.
- The display window continue indicating the playing time even when the counter position information on the on-screen display is being changed.

**Playing a tape VHS**

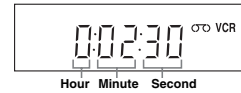
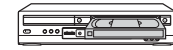
**Before you start...**

- Turn on the DVD-VCR and your TV.
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- Set **TV / DVD-VIDEO** to **DVD-VIDEO**, then press **SELECT VIDEO** to control the VCR (page 9).



Basic Operations

- 1 Insert a tape.  
The VCR starts playing automatically if you insert a tape with its safety tab removed.
- 2 Press **▷**.  
The display window shows the playback time.  
When the tape reaches the end, it will rewind automatically.



continued

**Additional tasks**

To	Press
Stop play	■
Pause play*	
Resume play after pause	or ▷
Fast-forward the tape	▶▶ during stop
Rewind the tape	◀◀ during stop
Eject the tape	▲

\* If you pause the VCR for more than 5 minutes, the VCR will automatically resume play.

**To play a recently watched scene**

You can immediately rewind and playback the scene you want to watch again.

**To skip playback**

You can skip a scene that you do not want to watch (such as a commercial) and restart playback.

During playback, press **||▶ STEP**. The VCR skips the tape 30 seconds on the counter each time the button is pressed (up to four times) and playback is resumed.

**To turn off the power while rewinding (Rewind Shut Off)**

Press **I/⏻** while the tape is rewinding. The power will turn off, but the tape will keep rewinding until it reaches the end.

**To play/search at various speeds**

Playback options	Operation
View the picture during fast-forward or rewind	During fast-forward, hold down <b>▶▶</b> . During rewind, hold down <b>◀◀</b> .
Play at high speed	<ul style="list-style-type: none"> <li>During playback, briefly press <b>▶▶</b> or <b>◀◀</b>. The tape continues to play at 5 times normal speed.</li> <li>During playback, hold down <b>▶▶</b> or <b>◀◀</b>. The tape continues to play at 5 times normal speed. When you release the button, normal playback resumes.</li> </ul>
Play in slow motion	During pause, press <b>▶▶ SLOW I▶</b> .
Play frame by frame	During pause, press <b>  ▶ STEP</b> .
Play at various speeds (Shuttle play)	During playback, press <b>◀◀</b> or <b>▶▶</b> . You can change the playback speed as follows. REVIEW*1 ↔ ×2 ↔ ×1 ↔ -SLOW ↔ STILL ↔ SLOW ↔ PLAY ↔ ×2 ↔ CUE*1

\*1 "REW" flashes in the display window.

\*2 "FF" flashes in the display window.

**To resume normal playback**

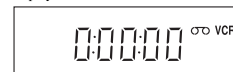
Press **▷**.

**To set the colour system**

If the playback picture has no colour, or streaks appear during playback, set the "Syst. Couleur" option in the "REGLAGES UTILISATEUR" menu to conform to the system that the tape was recorded in (see page 110) (Normally set the option to "Auto").

**To use the time counter**

Press **CLEAR** at the point on the tape that you want to find later. The counter in the display window resets to "0:00:00".



To display the counter on the TV screen, press **DISPLAY** during normal playback.

**Tip**

- Adjust the picture using the **TRACKING +/-** buttons if:
  - Streaks appear while playing in slow motion.
  - Bands appear at the top or bottom while pausing.
  - The picture shakes during pause.

**Notes**

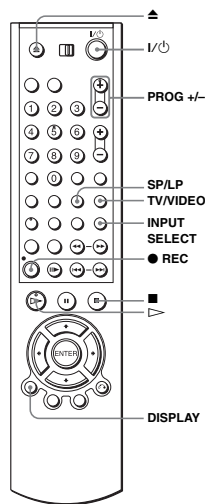
- Tapes recorded in the LP mode on other VCRs can be played back on this VCR but the picture quality cannot be guaranteed.
- The counter resets to "0:00:00" whenever a tape is reinserted.
- The counter stops counting when it comes to a portion with no recording.
- Depending on your TV, the following may occur while playing an NTSC-recorded tape:
  - The picture becomes black and white.
  - The picture shakes.
  - No picture appears on the TV screen.
  - Black streaks appear horizontally on the TV screen.
  - The colour density increases or decreases.
- When 10 hours have passed, the counter in the display window returns to "0:00:00" and the count starts over again.
- The sound is muted during playback at various speeds.
- The picture may show noise when playing at high speed in reverse.
- While playing a tape, you can display the setup menu, but the remote commander's function switches to DVD automatically. Press **SET UP** to exit the menu.
- Stop disc playback while playing back a video.
- The picture returns to normal playback from slow motion in reverse in 30 seconds.

Basic Operations

## Recording TV programmes **VHS**

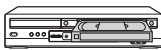
### Before you start...

- Turn on the DVD-VCR and your TV.
- Switch the input selector on your TV so that the signal from the player appears on the TV screen.
- Set TV / DVD-VIDEO to DVD-VIDEO, then press SELECT VIDEO to control the VCR (page 9).
- To record from a decoder, turn it on.
- Make sure the tape is longer than the total recording time.



**1**

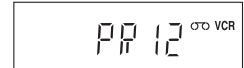
Insert a tape with its safety tab in place.



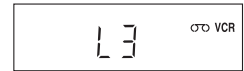
**2**



- To record a normal channel, press PROG +/- until the programme position number you want appears in the display window.



- To record from a decoder or other source connected to one or more of the LINE inputs, press INPUT SELECT until the connected line appears in the display window.



**3**



Press SP/LP to select the tape speed, SP or LP.

- LP (Long Play) provides recording time twice as long as SP. However, SP (Standard Play) produces better picture and audio quality.



**4**



Press REC to start recording.

- The recording indicator lights up red in the display window.



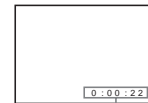
Recording indicator

### To stop recording

Press ■.

### To check the remaining time

Press DISPLAY twice. With the display on, press DISPLAY again to check the remaining time.



Time counter



Remaining tape length

continued

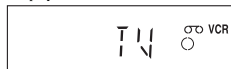
In order to get an accurate remaining time indication, be sure "Select. Cassette" in the "REGLAGE DE LA FONCTION VIDEO" menu is set according to the tape type you use (see page 105).

### Maximum Recording Time

Tape Length	SP	LP
E-180	3 hrs	6 hrs
E-240	4 hrs	8 hrs
E-260	4 hrs 20 mins	8 hrs 40 mins
E-300	5 hrs	10 hrs

### To watch another TV programme while recording

- 1 Press TV/VIDEO to display "TV" in the display window.



- 2 Select another channel on the TV.

### To watch a DVD while recording

- 1 Press SELECT DVD to control the DVD player.
- 2 Press ▲ and place the disc on the disc tray.
- 3 Press ▷.

The disc tray closes and the DVD player starts playback. The TV screen will automatically change to the DVD playback screen.

### To save a recording

To prevent accidental erasure, break off the safety tab as illustrated. To record on the tape again, cover the tab hole with adhesive tape.



### Tips

- To select a programme position, you can use the number buttons on the remote commander. For two-digit numbers, for example, press 2 and 3 to select "PR 23".
- If you connect additional equipment to a LINE connector or jack, you can select the input signal using the INPUT SELECT or PROG +/- buttons.
- The DISPLAY information appears on the TV screen indicating information about the tape, but the information will not be recorded on the tape.
- If you do not want to watch TV while recording, you can turn off the TV. When using a decoder, make sure to leave it on.

### Notes

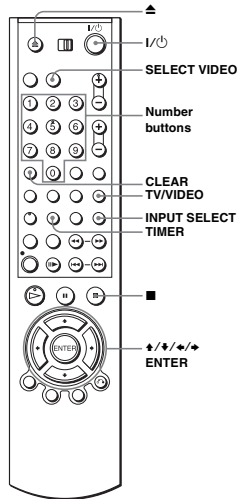
- If a tape has portions recorded in both PAL (SECAM, MESECAM) and NTSC systems, the time counter reading will not be correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- You cannot watch a Canal Plus programme while recording another Canal Plus programme.
- When you insert a non-standard commercially available tape, the remaining time may not be correct.
- The remaining time is intended for rough measurement only.
- About 30 seconds after the tape begins playback, the tape remaining time will be displayed.
- You cannot record a DVD to a VCR tape.
- To watch a TV programme during video recording, stop disc playback.

## Recording TV programmes using the ShowView® system (SLV-D950B only) **VHS**

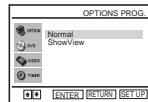
The ShowView system is the feature that simplifies programming the VCR to make timer recordings. Just enter the ShowView number listed in the TV programme guide. The date, times, and programme position of that programme are set automatically. You can preset a total of six programmes, including settings made with other timer methods.

### Before you start...

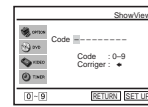
- Check that the DVD-VCR clock is set to the correct time.
- Turn on the DVD-VCR and your TV.
- Set your TV to the video channel so that the signal from the player appears on the TV screen.
- Set **TV / DVD-VIDEO** to **DVD-VIDEO**, then press **SELECT VIDEO** to control the VCR (page 9).
- When using a decoder, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.



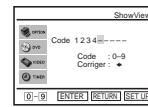
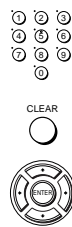
- 1** Press **TIMER**.  
The "OPTIONS PROG." menu appears.



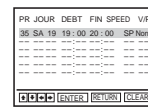
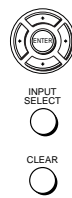
- 2** Press **▲/◆** to select "ShowView", then press **ENTER**.  
The "ShowView" menu appears.



- 3** Press the number buttons to enter the ShowView number.  
If you make a mistake, press **CLEAR** and re-enter the correct number.  
You can also press **◆** to delete the last entered number.



- 4** Press **ENTER**.  
The date, start and stop times, programme position, tape speed and VPS (Video Programme System)/PDC (Programme Delivery Control) setting appear on the TV screen.



- If "—" appears in the "PR" (programme) column (this may happen for local broadcasts), you have to set the appropriate programme position manually. Press **▲/◆** to select the desired programme position.
- To record from a decoder or other source connected to one or more of the LINE inputs, press **INPUT SELECT** to display the connected line in the "PR" position. You will only have to do this operation once for the referred channel. The VCR will then store your setting. If the information is incorrect, press **CLEAR** to cancel the setting.

continued

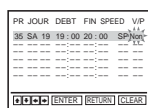
- 5** If you want to change the date, tape speed and the VPS/PDC setting:



- 1** Press **▲/◆** to select the item you want to change.

- 2** Press **▲/◆** to reset it.

- To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 46.
- To use the VPS/PDC function, set "V/P" to "Oui". For details about the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 46.



- 6** Press **ENTER** to confirm the setting.



- 7** Press **ENTER** to confirm all settings.



- 8** Press **I/O** to turn off the DVD-VCR.  
The **⊖** indicator appears in the display window and the VCR stands by for recording.  
To record from a decoder or other source, leave the connected equipment switched on.

### To stop recording

To stop the DVD-VCR while recording, press **SELECT VIDEO** and then press **■**.

### Daily/weekly recording

In step 5 above, press **◆** to select the recording pattern. Each time you press **◆**, the indication changes as shown below. Press **◆** to change the indication in reverse order.

**today** → **JOUR (Monday to Sunday)** → **S-SA (every Saturday)** ..... → **S-DI (every Sunday)** → **1 month later** → **(dates count down)** → **today**

### Timer recording with VPS/PDC signals

Some broadcast systems transmit VPS or PDC signals with their TV programmes. These signals ensure that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions.

To use the VPS/PDC function, set "V/P" to "Oui" in step 5 above. You can also use the VPS/PDC function for a source connected to one or more of the LINE inputs.

### To watch another TV programme after setting the timer

- 1** Press **TV/VIDEO** to display "TV" in the display window.



- 2** If your TV is connected to the VCR using A/V connections, set the TV to the TV's aerial input; if not, skip this step.

- 3** Select another channel on the TV.

### Tips

- To set the channel, you can also use the **▲/◆** or number buttons.
- If the **⊖** indicator appears, this means that the VCR is currently recording this programme.
- You can also do the following tasks while the VCR is recording:
  - Reset the counter (page 39).
  - Display tape information on the TV screen (page 41).

### To use the Auto Tape Speed function

In step 5 above, press **◆** to select "Auto". When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode. Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "Select. Cassette" setting in the "REGLAGE DE LA FONCTION VIDEO" menu must be accurate (see page 105).

### Tips

- To set the line input video source, you can also use the **INPUT SELECT** button.
- You can set the extended time for the ShowView setting by 10, 20, 30, 40, 50, or 60 minutes. Set "Etendre ShowView" in the "REGLAGES UTILISATEUR" menu to the desired extended time on page 110.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 56.

### Notes

- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The **⊖** indicator flashes in the display window when you press **I/O** with no tape inserted.

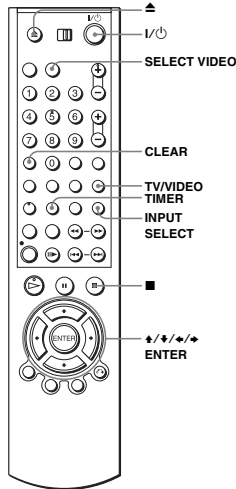
# Recording TV programmes using the timer

VHS

You can preset up to six programmes at a time.

### Before you start...

- Check that the DVD-VCR clock is set to the correct time.
- Turn on the DVD-VCR and your TV.
- Switch the input selector on your TV so that the signal from the player appears on the TV screen.
- Set TV / DVD-VIDEO to DVD-VIDEO, then press SELECT VIDEO to control the VCR (page 9).
- When using a decoder, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



- 1** SUBTITLE/TIMER

Press **TIMER**.

  - SLV-D950B  
The "OPTIONS PROG." menu appears.
  - SLV-D910B  
The timer programming menu appears. Step 2 is skipped.
- 2**

SLV-D950B only  
Press **▲/▼** to select "Normal", then press **ENTER**.

The timer programming menu appears.
- 3**

Set the date, start and stop times, programme position, tape speed and VPS/PDC function:

  - 1 Press **▲/▼** to select each item in turn.
  - 2 Press **▲/▼** to set each item.

To correct a setting, press **◀** to return to that setting and reset.

  - To record the same programme every day or the same day every week, see "Daily/weekly recording" on page 50.
  - To use the VPS/PDC function, set "V/P" to "Out." For details about the VPS/PDC function, see "Timer recording with VPS/PDC signals" on page 46.
  - To record from a decoder or other source connected to one or more of the LINE inputs, press **INPUT SELECT** to display the connected line in the "PR" position.
- 4**

Press **ENTER** to confirm the setting.

To enter another setting, press **▲/▼** to select the next row and repeat step 3.

Press **CLEAR** to cancel the setting.

Basic Operations

continued

- 5**

Press **ENTER** to confirm all settings.
- 6**

Press **I/O** to turn off the DVD-VCR.

The **⊙** indicator appears in the display window and the VCR stands by for recording.

To record from a decoder or other source, leave the connected equipment switched on.

### To stop recording

To stop the DVD-VCR while recording, press **SELECT VIDEO** and then press **■**.

### Daily/weekly recording

In step 3 above, press **▲/▼** to select the recording pattern. Each time you press **▲/▼**, the indication changes as shown below. Press **▲** to change the indication in reverse order.

today → JOUR (Monday to Sunday) → S-SA (every Saturday) ..... → S-DI (every Sunday) → 1 month later → (dates count down) → today

### To use the Auto Tape Speed function

In step 3 above, press **▲/▼** to select "Auto". When you are recording a programme in the SP mode and the remaining tape length becomes shorter than the recording time, the recording tape speed is automatically changed to the LP mode. Note that some noise will appear on the picture when the tape speed is changed. To operate this function correctly, the "Select. Cassette" setting in the "REGLAGE DE LA FONCTION VIDEO" menu must be accurate (see page 105).

### Tips

- To set the line input video source, you can also use the **INPUT SELECT** button.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 56.

### Notes

- When setting the timer with VPS/PDC signals, enter the start times exactly as indicated in the TV programme guide. Otherwise, the VPS/PDC function will not work.
- If the VPS/PDC signal is too weak or the broadcasting station failed to transmit VPS/PDC signals, the VCR will start recording at the set time without using the VPS/PDC function.
- The **⊙** indicator flashes in the display window when you press **I/O** with no tape inserted.

### To watch another TV programme after setting the timer

- 1** Press **TV/VIDEO** to display "TV" in the display window.
- 2** If your TV is connected to the VCR using A/V connections, set the TV to the TV's aerial input; if not, skip this step.
- 3** Select another channel on the TV.

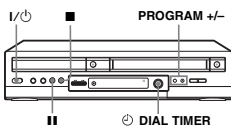
### Tips

- To set the channel, you can also use the **▲/▼** or number buttons.
- If the **⊙** indicator appears, this means that the VCR is currently recording this programme.
- You can also do the following tasks while the VCR is recording:
  - Reset the counter (page 39).
  - Display tape information on the TV screen (page 41).

Basic Operations

## Recording TV programmes using DIAL TIMER (SLV-D950B only) VHS

The Dial Timer function allows you to make timer recordings of programmes without turning on your TV. Set the recording timer to record up to six programmes that will be broadcast within a month using DIAL TIMER. The recording start time and recording stop time can be set at one minute intervals.



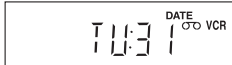
### Before you start...

- Turn on the DVD-VCR.
- When using a decoder, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- Stop the DVD-VCR.

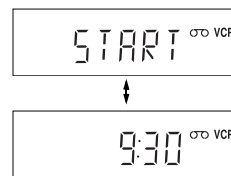
**1** Press DIAL TIMER. DATE indicator appears and the current date flashes in the display window. If the date and time are not set, DAY indicator will appear. To set the date and time, see "To set the clock" on page 55.



**2** Turn DIAL TIMER to set the recording date.



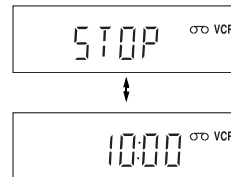
**3** Press DIAL TIMER to set the start time. "START" and the next quarter hour increment appear alternately in the display window.



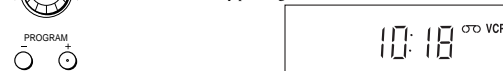
**4** Turn DIAL TIMER to set the recording start time. You can set the recording start time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/- buttons on the unit.



**5** Press DIAL TIMER to set the stop time. "STOP" and the next quarter hour increment appear alternately in the display window.



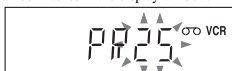
**6** Turn DIAL TIMER to set the recording stop time. You can set the recording stop time in 15 minute intervals or adjust the time in one minute intervals by pressing the PROGRAM +/- buttons on the unit.



Basic Operations

continued

**7** Press DIAL TIMER. The current programme position number flashes in the display window.



**8** Turn DIAL TIMER to set the programme position number. To record from a source connected to the LINE-1 connector, LINE-2 IN jacks or LINE-3 connector, turn DIAL TIMER or press INPUT SELECT to display "L1", "L2" or "L3".



**9** Press DIAL TIMER. The current tape speed flashes in the display window.



**10** Turn DIAL TIMER to set the tape speed.



**11** Press DIAL TIMER to complete the setting. "OK" appears in the display window for about five seconds. The timer indicator appears in the display window and the VCR stands by for recording. When using a decoder, leave it on.

### To return to the previous step

To return to the previous step, press the PROGRAM + and - buttons on the unit at the same time during any of the Dial Timer settings.

### To set the clock

- 1 Hold down DIAL TIMER so that DAY indicator appears in the display window. However, if the clock has already been set, the current setting appears.
- 2 Turn DIAL TIMER to set the day.
- 3 Press DIAL TIMER. MONTH indicator appears in the display window.
- 4 Turn and press DIAL TIMER to set the month and then the year. After you set the year, "CLOCK" appears in the display window.
- 5 Turn and press DIAL TIMER to set the hour and minute.
- 6 When you have finished setting the time, press DIAL TIMER to start the clock.

### Tips

- To cancel a Dial Timer setting, press any button other than DIAL TIMER or PROGRAM +/- on the unit or any button on the remote while you are making the setting.
- To check, change, or cancel the programme setting, see "Checking/changing/cancelling timer settings" on page 56.

### Notes

- If six programmes have already been set using the ShowView system or the manual timer setting, "FULL" appears in the display window for about five seconds.
- If you set the clock using the Auto Clock Set feature, the clock will adjust itself to the incoming time signal regardless of adjustments made with DIAL TIMER. Be sure you have set Auto Clock Set correctly.
- If you are setting the clock for the first time or "0--" appears in the display window, you cannot set the clock to February 29<sup>th</sup> using DIAL TIMER. Please use the Auto Clock Set feature to set the VCR to this day.
- The timer indicator flashes in the display window when you complete the setting in step 11 with no tape inserted.
- When the setting time is incorrect, "Error" appears in the display window in step 11. Set the timer again from step 1.

### About the Demonstration Mode

The Dial Timer function has a Demonstration Mode that allows the user, such as a salesperson, to enter more than six examples of timer settings when demonstrating the use of DIAL TIMER. It cancels the FULL notice which appears if six programmes have already been set. Do not use the Demonstration Mode for making timer recordings. Doing so may cause the settings to be inaccurate.

### To activate the Demonstration Mode

Press on the unit while turning DIAL TIMER. "DEMO" appears in the display window for a few seconds.

### To cancel the Demonstration Mode

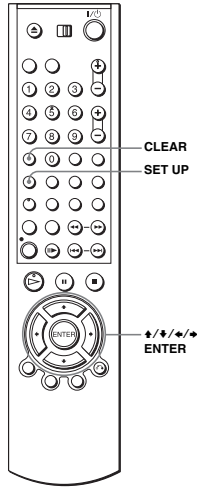
Turn the power off and unplug the mains lead. Although the Demonstration Mode is cancelled, the timer settings entered while using the Demonstration Mode will remain. Be sure to manually cancel the timer settings before you use DIAL TIMER or any other timer method after reconnecting the mains lead (page 56).

Basic Operations

## Checking/changing/cancelling timer settings **VHS**

### Before you start...

- Check that the DVD-VCR clock is set to the correct time.
- Turn on the DVD-VCR and your TV.
- Switch the input selector on your TV so that the signal from the player appears on the TV screen.
- Set TV / DVD-VIDEO to DVD-VIDEO, then press SELECT VIDEO to control the VCR (page 9).
- When using a decoder, turn it on.
- Insert a tape with its safety tab in place. Make sure the tape is longer than the total recording time.
- If the DVD player is in play mode, you cannot display the setup menu. Stop the DVD playback.



- 1** SET UP Press SET UP, then press  $\blacktriangle/\blacktriangledown$  to select (TIMER) and press ENTER.

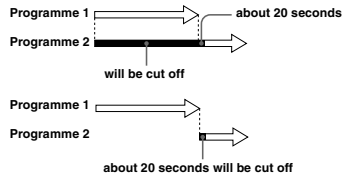
  - SLV-D950B  
The "OPTIONS PROG." menu appears.
  - SLV-D910B  
The timer programming menu appears. Step 2 is skipped.
- 2** SLV-D950B only Press  $\blacktriangle/\blacktriangledown$  to select "Normal", then press ENTER.

  - If you want to change a setting, go on to the next step.
  - If you do not need to change the settings, press SET UP to exit the menu.
- 3** Press  $\blacktriangle/\blacktriangledown$  to select setting you want to change or cancel.

  - To change the setting, press  $\blacktriangle/\blacktriangledown$  to flash the item you want to change, and press  $\blacktriangle/\blacktriangledown$  to change it.
  - To cancel the setting, press CLEAR.
- 4** Press ENTER to confirm the setting.  
If any settings remain, turn off the VCR to return to recording standby.

### When the timer settings overlap

The programme that starts first has priority and the second programme starts recording only after the first programme has finished. If the programmes start at the same time, the programme listed first in the menu has priority.



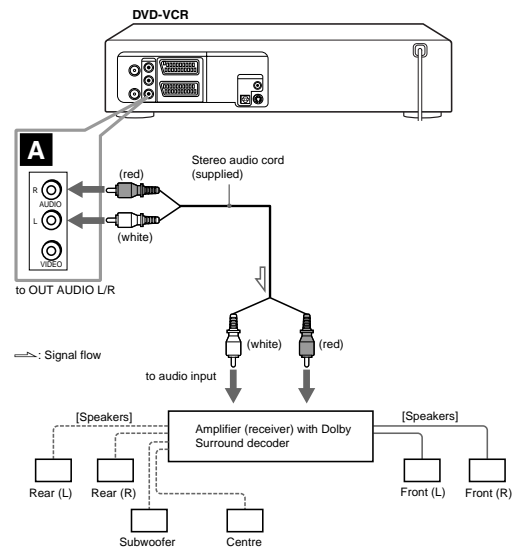
### Advanced Hookups

## A/V Receiver hookup **DVD VCD CD DATA-CD VHS**

**A** Use this hookup if your A/V receiver has a Dolby® Surround (Pro Logic) decoder and 3 to 6 speakers

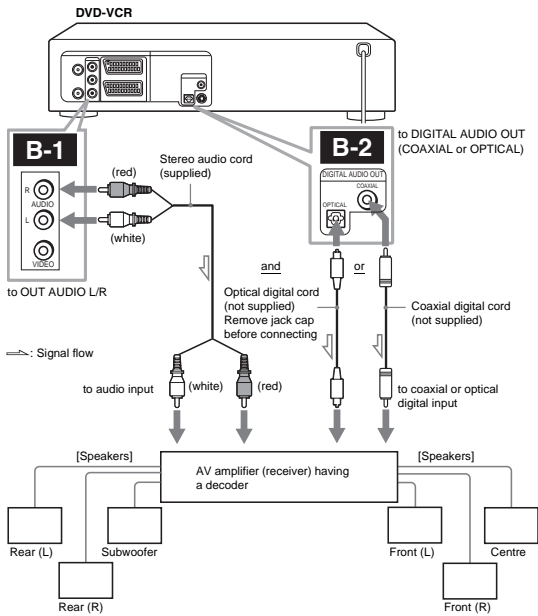
You can enjoy the Dolby Surround effects only when playing Dolby Surround audio or multi-channel audio (Dolby Digital) discs.

- Manufactured under license from Dolby Laboratories. "Dolby," "Pro Logic," and the double-D symbol are trademarks of Dolby Laboratories.



**B** Use this hookup if your AV receiver has a Dolby Digital, MPEG audio or DTS decoder, a digital input jack and 6 speakers. This connection will allow you to use the Dolby Digital, MPEG audio or DTS decoder function of your AV amplifier (receiver). You are not able to enjoy the surround sound effects of this player. You must make connections using **B-1** and **B-2**.

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



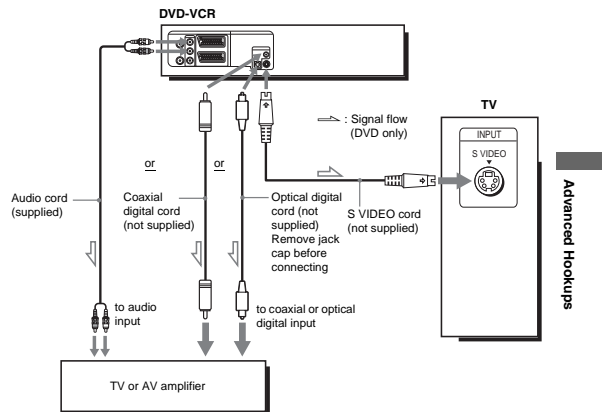
**Note**  
 • After you have completed the connection, be sure to set "Dolby Digital" to "Dolby Digital" and "DTS" to "Oui" in "OPTIONS AUDIO" menu (page 62). If your AV amplifier (receiver) has an MPEG audio decoder function, set "MPEG" to "MPEG" in "OPTIONS AUDIO" menu (page 62). Otherwise, no sound or a loud noise will come from the speakers.

## S-Video hookup **DVD** **VCD** **DATA-CD**

Make audio connections using the OUT AUDIO L/R jacks or DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jacks when you use S-VIDEO hookup.

**Use this hookup if your TV has an S VIDEO input jack**

- Connect an S VIDEO cord (not supplied). You will enjoy high quality images.

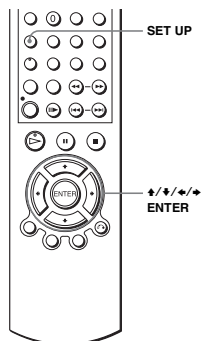


- Notes**
- Set "DVD S-Video Out" to "Oui" in the "REGLAGE DE L'ECLAN" menu (page 65) to view pictures from the S-VIDEO jack.
  - The connection using S-VIDEO OUT jack is only for the DVD player.

### DVD Settings and Adjustments

## Audio Setup **DVD**

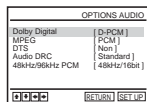
"Options Audio" allows you to set the sound according to the playback and connection conditions.



**1** Press SET UP when the DVD player is in stop mode, then press **↔/↔** to select **(DVD)** and press ENTER.



**2** Press **↔/↔** to select "Options Audio", then press ENTER.



**3** Press **↔/↔** to select the setup item from the displayed list: "Dolby Digital", "MPEG", "DTS", "Audio DRC", or "48kHz/96kHz PCM".



**4** Press **↔/↔** to select an item.



**5** Press SET UP to exit the menu.



### Menu choices

- **Dolby Digital**

Selects the type of Dolby Digital signal. The default setting is indicated in bold print.

<b>D-PCM</b>	Select this when the player is connected to an audio component lacking a built-in Dolby Digital decoder.
Dolby Digital	Select this when the player is connected to an audio component with a built-in Dolby Digital decoder.

- **MPEG**

Selects the type of MPEG audio signal. The default setting is indicated in bold print.

<b>PCM</b>	Select this when the player is connected to an audio component lacking a built-in MPEG decoder. If you play MPEG audio sound tracks, the player outputs stereo signals via the DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jack.
MPEG	Select this when the player is connected to an audio component with a built-in MPEG decoder.

- **DTS**

Selects whether or not to output DTS signals. The default setting is indicated in bold print.

<b>Non</b>	Select this when the player is connected to an audio component lacking a built-in DTS decoder.
Oui	Select this when the player is connected to an audio component with a built-in DTS decoder.




- Audio DRC (Dynamic Range Control)  
Makes the sound clear when the volume is turned down when playing a DVD that conforms to "Audio DRC". This affects the output from the following jacks:
  - OUT AUDIO L/R jacks
  - DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jack only when "Dolby Digital" is set to "D-PCM".
 The default setting is indicated in bold print.


<b>Standard</b>	Normally select this position.
TV	Makes the low sounds clear even if you turn the volume down.

- 48kHz/96kHz PCM  
Selects the sampling frequency of the audio signal.  
The default setting is indicated in bold print.

<b>48kHz/16bit</b>	The audio signals of DVD VIDEOS are always converted to 48 kHz/16 bit.
96kHz/24bit	All types of signals including 96 kHz/24 bit are output in their original format. However, if the signal is encrypted for copyright protection purposes, the signal is only output as 48 kHz/16 bit.

- Notes**
- If you select the surround setting while playing a DVD, the player does not output the following signals from the DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jack.
    - Dolby Digital signals (when you set "Dolby Digital" to "D-PCM" in "OPTIONS AUDIO" menu)
    - MPEG audio signals
  - If you connect a component that does not conform to the selected audio signal, a loud noise (or no sound) will come out from the speakers, affecting your ears or causing the speakers to be damaged.
  - Even if you set "48kHz/96kHz PCM" to "96kHz/24bit", the sampling frequency is converted to 48 kHz/16 bit when a "SURROUND" mode (page 83) is selected.
  - The analog audio signals from AUDIO OUT L/R jacks are not affected by "48kHz/96kHz PCM" setting and keep their original sampling frequency level.

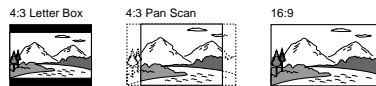
- 4**  Press **↔/↕** to select an item.

- 5**  Press SET UP to exit the menu.

**Menu choices**

- Type TV  
Selects the aspect ratio of the connected TV (4:3 standard or wide).  
The default setting is indicated in bold print.

<b>4:3 Letter Box</b>	Select this when you connect a 4:3 screen TV. Displays a wide picture with bands on the upper and lower portions of the screen.
4:3 Pan Scan	Select this when you connect a 4:3 screen TV. Automatically displays the wide picture on the entire screen and cuts off the portions that do not fit.
16:9	Select this when you connect a wide-screen TV or a TV with a wide mode function.



- DVD LINE1 RVB Out  
Selects the method of outputting video signals from the LINE-1 (EURO AV) jack on the rear panel of the player.  
The default setting is indicated in bold print.

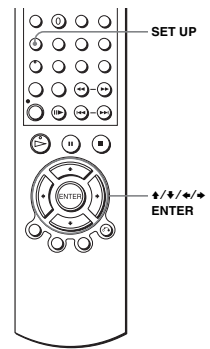
<b>Non</b>	Select this to not output RGB signals.
Oui	Select this to output RGB signals.






- DVD S-Video Out  
Selects whether or not to output S video signals from the S-VIDEO OUT jack on the rear panel of the player.  
The default setting is indicated in bold print.

<b>Oui</b>	Select this when the player is connected to a TV with S VIDEO input jack.
Non	Select this when the player is connected to a TV lacking S VIDEO input jack.

**Screen Setup DVD**

"Réglage de L'écran" allows you to set the screen according to the playback and connection conditions.



- 1**  Press SET UP when the DVD player is in stop mode, then press **↔/↕** to select **REGLAGE DU DVD** (DVD) and press ENTER. 
- 2**  Press **↔/↕** to select "Réglage de L'écran", then press ENTER. 
- 3**  Press **↔/↕** to select the setup item from the displayed list: "Type TV", "DVD LINE1 RVB Out" or "DVD S-Video Out".

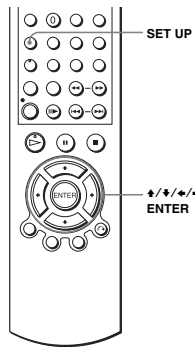
continued

**Notes**

- Playback settings stored in the disc take priority over the "REGLAGE DU DVD" menu settings and not all the functions described may work.
- Depending on the DVD, "4:3 Letter Box" may be selected automatically instead of "4:3 Pan Scan" or vice versa.
- The connection using S-VIDEO OUT jack is only for the DVD player.
- When you select "Oui" in the "DVD LINE1 RVB Out" setting, "DVD S-Video Out" is set to "Non" automatically.
- When you select "Oui" in the "DVD S-Video Out" setting, "DVD LINE1 RVB Out" is set to "Non" automatically.

## Setting the display or sound track language **DVD**

You can set various languages for the disc's menu, sound track or subtitle.



- 1** Press SET UP when the DVD player is in stop mode, then press **4/5** to select (DVD) and press ENTER.
- 2** Press **4/5** to select "Réglage de la langue", then press ENTER.  
The "REGLAGE DE LA LANGUE" menu appears.
- 3** Press **4/5** to select the language setup item from the displayed list: "Menu DVD", "Audio", or "Sous-Titre". Then press ENTER.

- 4** Press **4/5** to select the desired language, then press ENTER.

  - LANGUE DE MENU DVD**  
You can select the desired language for the disc's menu.
  - LANGUE DE LA BANDE SON**  
Switches the language of the sound track. When you select "Originale", the language given priority in the disc is selected.
  - LANGUE DES SOUS-TITRES**  
Switches the language of the subtitle recorded on the DVD.
- 5** Press SET UP to exit the menu.

**Tip**  
If you select "Autre" in step 4, an additional language menu appears. Press **4/5** to select the desired language, then press ENTER.



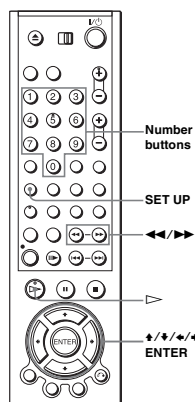
### Notes

- When you select a language that is not recorded on the DVD in step 4, one of the recorded languages will be automatically selected.
- Playback settings stored in the disc take priority over the REGLAGE DU DVD settings and not all the functions described may work.
- If you change the LANGUE DE MENU DVD setting after playing the disc, press **▲** to open and close the disc tray to activate the new setting, then play the disc again.

## Parental Control (limiting playback by children) **DVD**

**DVD**

Playback of some DVDs can be limited according to a predetermined level such as the age of the users. The parental control function allows you to set a playback limitation level.



- 1** Press SET UP when the DVD player is in stop mode, then press **4/5** to select (DVD) and press ENTER.
- 2** Press **4/5** to select "Cont. Parental", then press ENTER.

- 3** Press **4/5** to select "Oui".

  - If you have not entered a password  
The display for registering a new password appears.  
Enter a 4-digit password using the number buttons.
  - The display for confirming the password appears.  
Re-enter the password.
  - When you have already registered a password  
The display for entering the password appears.  
Enter a 4-digit password using the number buttons.
  - CONTRÔLE PARENTAL
- 4** Press **4/5** to select "Niveau de Contrôle", then press ENTER.
- 5** Press **4/5** to select the level you want, then press ENTER.  
The options are as follows.  
Level 8 (Adulte) ↔ Level 7 ↔ Level 6 ↔ Level 5 ↔ Level 4 ↔ Level 3 ↔ Level 2 ↔ Level 1 (Tout Public)  
The lower the value, the stricter the limitation.
- 6** Press SET UP to exit the menu.

**To change the password**

- 1 Select "Modif. Code Secret" in step 4 on page 71. The display for entering a new password appears.
- 2 Enter a new 4-digit password using the number buttons. The display for confirming the password appears.
- 3 Re-enter the new password.

**To turn off the Parental Control function**

Set "Utiliser le Code" to "Non" in step 3 on page 71.

**To play a disc for which Parental Control is set**

- 1 Insert the disc, then press . The display for entering your password appears.
- 2 Enter your 4-digit password using the number buttons. The player starts playback.

**If you forget your password**

- 1 Remove the disc and turn off the DVD-VCR.
- 2 Turn on the DVD-VCR again with no disc in the unit.
- 3 Hold down and on the front panel simultaneously for 5 seconds. "Reset OK" appears on the screen.
- 4 Turn off the DVD-VCR. The password is cleared.
- 5 To create a new password, follow step 3 on page 71.

**Notes**

- When you play DVDs which do not have the Parental Control function, playback cannot be limited on this player.
- All the ratings higher than the level you select will be blocked.
- Write your password down and keep it in a safe place in case you forget it.

- 3 Press ENTER.

**To turn off the DVD's menu**

Press .

**Note**

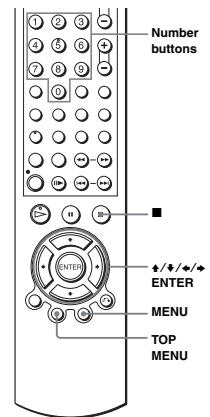
- Depending on the DVD, you may not be able to use the TOP MENU button.

**DVD Additional Operations**

**Using the DVD's menu**

A DVD is divided into long sections of a picture or a music feature called "titles". When you play a DVD which contains several titles, you can select the title you want using the TOP MENU button.

When you play DVDs that allow you to select items such as the language for the subtitles and the language for the sound, select these items using the MENU button.



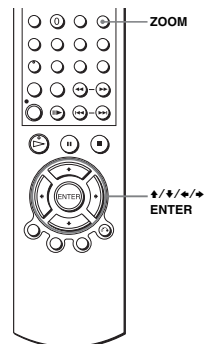
- 1 Press TOP MENU or MENU. The disc's menu appears on the TV screen. The contents of the menu vary from disc to disc.
- 2 Press /// to select the item you want to play or change. You can also use the number buttons to select the item.



continued

**Zooming into a scene**

You can zoom into a scene during playback or still mode. To zoom into a JPEG image, see "Playing JPEG image files" on page 89.



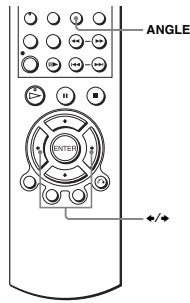
- 1 Press ZOOM. "Z" appears.
- 2 Press /// to move "Z" to the position where you want to zoom in.
- 3 Press ENTER repeatedly to change the magnification. Each time you press the button, the magnification changes as shown below. 2x → 4x → 2x → normal magnification

**Notes**


- You cannot use 4x magnification when you play VIDEO CDs.
- The zoom function may not work depending on the DVD.

## Changing the angles **DVD**

If various angles (multi-angles) for a scene are recorded on the DVD, "ANGLE" appears in the display when you press ANGLE during playback. This means that you can change the viewing angle.



**1** Press ANGLE during playback. The angle number appears on the display. The number after the slash indicates the total number of angles.



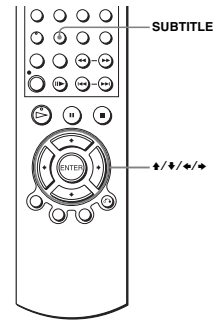
**2** Press  $\leftarrow/\rightarrow$  repeatedly to select the angle number. The scene changes to the selected angle.

**Note**


- Depending on the DVD, you may not be able to change the angles even if multi-angles are recorded on the DVD.

## Displaying the subtitle **DVD**

If subtitles are recorded on the disc, you can change the subtitles or turn them on and off whenever you want while playing a DVD.



**1** Press SUBTITLE during playback.



**2** Press  $\leftarrow/\rightarrow$  repeatedly to select the language. Depending on the DVD, the choice of language varies. Refer to "DVD Audio/Subtitle Language" on page 126 for the abbreviation of the language.

**3** Press  $\leftarrow/\rightarrow$  repeatedly to select "Oui".

**To turn off the subtitles**  
Select "Non" in step 3.

**Note**

- Depending on the DVD, you may not be able to change the subtitles even if multilingual subtitles are recorded on the DVD. You also may not be able to turn them off.

## Various play mode functions (Programme play, Shuffle play, Repeat play) **DVD VCD CD DATA-CD**

You can set the following play modes:

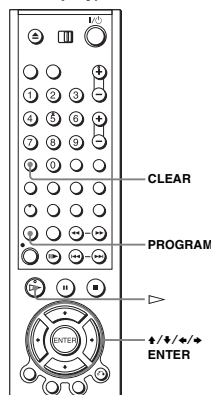
- Programme play (page 78)
- Shuffle play (page 80)
- Repeat play (page 81)

**Note**

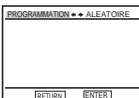
- The play mode is cancelled when:
  - you open the disc tray
  - the player enters standby mode by pressing  $\text{I/O}$ .

### Creating your own programme (Programme play) **CD**

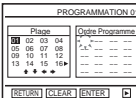
You can play the contents of a disc in the order you want by arranging the order of the tracks on the disc to create your own programme. You can programme up to 20 tracks.



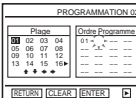
**1** Press PROGRAM when the DVD player is in stop mode.



**2** Press  $\leftarrow/\rightarrow$  to select "PROGRAMMATION", then press ENTER.



**3** Press  $\leftarrow/\rightarrow/\rightarrow/\rightarrow$  to select the track number you want to programme, then press ENTER.



**4** To programme other tracks, repeat step 3. The programmed track numbers are displayed in the selected order.

**5** Press  $\blacktriangleright$  to start programme play. Programme play starts. When the programme ends, you can restart the same programme again by pressing  $\blacktriangleright$ .

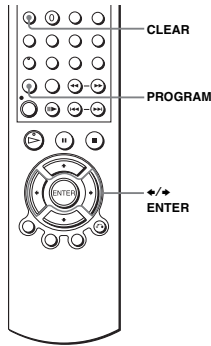
**To stop programme play**  
Press CLEAR during programme play.

**To change or cancel a programme**


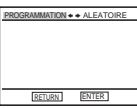
- Follow steps 1 and 2 of "Creating your own programme (Programme play)".
- Press CLEAR. The last programmed number is cancelled.
- Follow step 3 for new programming.


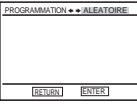
### Playing in random order (Shuffle play) **CD**

You can shuffle the playback order of tracks. Subsequent "shuffling" may produce a different playing order.



- 1** **REPEAT/PROGRAM** Press PROGRAM when the DVD player is in stop mode.

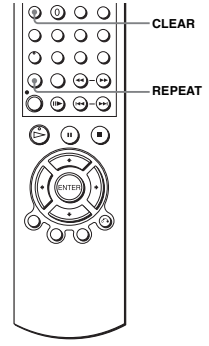


- 2** Press **↔** to select "ALEATOIRE", then press **ENTER**.


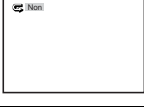
**To return to normal play**  
Press CLEAR during shuffle play.

### Playing repeatedly (Repeat play) **DVD VCD CD DATA-CD**

You can play all of the titles or tracks on a disc or a single title, chapter, or track repeatedly.



- 1** **REPEAT/PROGRAM** Press REPEAT during playback.



- 2** **REPEAT/PROGRAM** Press REPEAT to select the item to be repeated.

  - When playing a DVD**
    - Chapter: repeats the current chapter.
    - Title: repeats the current title on a disc.
  - When playing a VIDEO CD or CD**
    - Track: repeats the current track.
    - Disc: repeats all of the tracks.
  - When playing a DATA CD (MP3 audio)**
    - Track: repeats the current track.

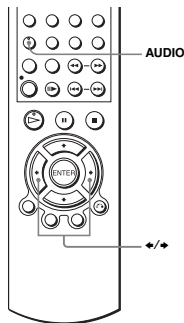
**To return to normal play**  
Select "Non" in step 2 or press CLEAR during repeat play.

**Tip**  
• When playing a DATA CD, press REPEAT again to cancel repeat play.


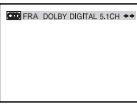
### Changing the sound **DVD VCD CD**

When playing a DVD recorded in multiple audio formats (PCM, Dolby Digital, MPEG or DTS), you can change the audio format. If the DVD is recorded with multilingual tracks, you can also change the language.

With CDs, DATA CDs, or VIDEO CDs, you can select the sound from the right or left channel and listen to the sound of the selected channel through both the right and left speakers. For example, when playing a disc containing a song with the vocals on the right channel and the instruments on the left channel, you can hear the instruments from both speakers by selecting the left channel.



- 1** **AUDIO** Press AUDIO during playback.



- 2** Press **↔** repeatedly to select the desired language/audio setting.

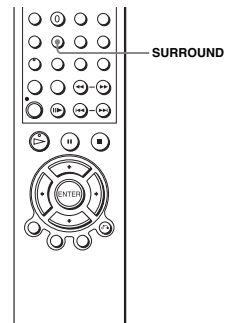
  - When playing a DVD  
Depending on the DVD, the choice of language varies. Refer to "DVD Audio/Subtitle Language" on page 126 for the abbreviation of the language.
  - When playing a VIDEO CD or CD  
The default setting is indicated in bold print.

<b>Stereo</b>	The standard stereo sound
Gauche	The sound of the left channel (monaural)
Droite	The sound of the right channel (monaural)



### Virtual surround setting **DVD**


When you connect a stereo TV or 2 front speakers, SURROUND lets you enjoy surround sound effects by using sound imaging to create virtual rear speakers from the sound of the front speakers without using actual rear speakers.

This function is designed to work with the OUT AUDIO L/R jacks.



- 1** **SURROUND** Press SURROUND during playback.



  - 2** **SURROUND** Press SURROUND repeatedly to select "Oui".

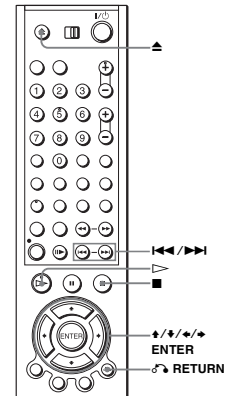

- To cancel the setting**  
Select "Non" in step 2.

**Notes**

- Surround effects cannot be obtained for DTS or linear PCM.
- When the playing signal does not contain a signal for the rear speakers, the surround effects will be difficult to hear.
- When you activate the surround effect, turn off the surround setting of the connected TV or amplifier (receiver).
- Make sure that your listening position is between and at an equal distance from your speakers, and that the speakers are located in similar surroundings.
- If you use the DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jack and set "Dolby Digital" to "Dolby Digital" or "DTS" to "On" in "OPTIONS AUDIO" menu, sound will come from your speakers but it will not have the surround effect.
- Certain audio features of this product manufactured under a license from Desper Products, Inc. Spatializer®, VBX™ and the circle-in-square device are trademarks owned by Desper Products, Inc.

**Playing an MP3 audio track DATA-CD**

You can play back DATA CDs (CD-ROMs/ CD-Rs/CD-RWs) recorded in MP3 (MPEG1 Audio Layer 3) format.



- Press and place a DATA CD on the disc tray, then press to close the tray.  
When you load a DATA CD which contains MP3 audio tracks and JPEG image files, "Sélectionnez le type de media" menu appears.  
If you load a DATA CD which contains only MP3 audio files, the MP3 display appears.  
Then you can skip step 2.
- Press to select "MP3", then press ENTER.

DVD Additional Operations

continued

- Press then press ENTER, or press to select the desired track.  
The selected track starts playing.  
When a track or album is being played, its title is shaded. The playing track number appears on the display window.
- To change the album, press RETURN.
- Press to select an album, then press ENTER.  
The list of tracks contained in the album appears.  
To select a track, repeat step 2.

**To go to the next or previous page**

Press or .

**To return to the previous display**

Press RETURN.

**To turn off the display**

Press then press RETURN repeatedly.

**Notes**

- Only the letters in the alphabet and numbers can be used for album or track names. Anything else is displayed as an asterisk.
- Up to 8 alphanumeric characters can be displayed for album or track names.
- ID3 tags cannot be displayed.

**About MP3 audio tracks**

You can play MP3 audio tracks on CD-ROMs, CD-Rs, or CD-RWs. However, the discs must be recorded according to ISO9660 level 1, level 2, or Joliet format for the player to recognize the tracks.  
You can also play discs recorded in Multi Session.  
See the instructions of the CD-R/RW device or recording software (not supplied) for details on the recording format.

**To play a Multi Session CD**

This player can play Multi Session CDs when an MP3 audio track is located in the first session. Any subsequent MP3 audio tracks, recorded in the later sessions, can also be played back. When audio tracks and images in music CD format or video CD format are recorded in the first session, only the first session will be played back.

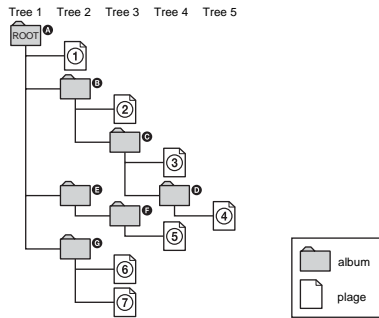
**Notes**

- If you put the extension ".MP3" to data not in MP3 format, the player cannot recognize the data properly and will generate a loud noise which could damage your speaker system.
- The player cannot play audio tracks in MP3PRO format.
- This player supports MP3 audio tracks recorded with a bit rate of 128 kbps and a sampling frequency of 44.1 kHz. Attempting to play MP3 audio tracks recorded with different specifications may result in loud noise, sound skipping or speaker damage.
- Depending on the disc, playback may take some time to start.

**The Playback order of MP3 audio tracks**

The playback order of albums and tracks recorded on a DATA CD is as follows.

- Structure of disc contents



When you insert a DATA CD and press , the numbered tracks are played sequentially, from ① through ⑩. Any sub-albums/tracks contained within a currently selected album take priority over the next album in the same tree. (Example: ② contains ③ so ③ is played before ④.)

When you press RETURN and the list of MP3 albums appears (page 86), the albums are arranged in the following order: ① → ② → ③ → ④ → ⑤ → ⑥. Albums that do not contain tracks (such as album ⑤) do not appear in the list.

DVD Additional Operations

continued

**Tips**

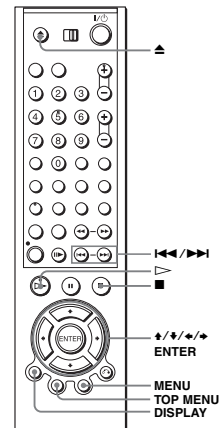
- If you add numbers (01, 02, 03, etc.) to the front of the track file names, the tracks will be played in that order.
- A disc with many trees takes longer to start playback. Some discs with many trees cannot be played back.

**Notes**

- Depending on the software you use to create the DATA CD, the playback order may differ from the illustration above.
- The playback order above may not be applicable if there are more than a total of 200 albums and tracks in the DATA CD.
- The player can recognize up to 100 albums (the player will count just albums, including albums that do not contain MP3 audio tracks). The player will not play any albums beyond the first 100 albums. Of the first 100 albums, the player will play no more than a combined total of 200 albums and tracks.

**Playing JPEG image files** DATA-CD

You can play JPEG image files on DATA CDs (CD-ROMs/CD-Rs/CD-RWs).



DVD Additional Operations

**1** Press and place a DATA CD on the disc tray, then press to close the tray.

When you load a DATA CD which contains MP3 audio tracks and JPEG image files, "Sélectionnez le type de media" menu appears.

If you load a DATA CD which contains only JPEG image files, the "Album" display appears. Then you can skip step 2.

**2** Press / to select "JPEG", then press ENTER.

The "Album" display will appear.

If you do not press ENTER after selecting a media type, the selected media will be automatically played.

**3** Press / to select the next/previous album page, then press / to select an image in the "Album" display.

**To display the selected image**

- 1 Press ENTER. The selected image number appears in the display window.
- 2 To display the next/previous image, press / .

**To play the Slide show**

- 1 Press . You can also play the Slide show using the menu on the selected image. For details, see "To enjoy the Slide show" on page 91.
- 2 Press / to select the desired playing speed on the "Intervalle" menu, then press ENTER. Slide show starts from the selected image.

**To rotate an image**

- 1 Press / / / to select an image in the "Album" display, then press ENTER.
- 2 Press / to select "R", then press ENTER. Each time you press ENTER, the image turns clockwise by 90°.

**To zoom in an image**

- 1 Press / / / to select an image in the "Album" display, then press ENTER.
- 2 Press / to select "M", then press ENTER. "M" appears.
- 3 Press / / / to move "M" to the position where you want to zoom in.
- 4 Press ENTER repeatedly to change the magnification. Each time you press ENTER, the magnification changes as shown below. 2x → normal magnification

**To enjoy the Slide show**

- 1 Press / / / to select an image in the "Album" display, then press ENTER.
- 2 Press / to select "S", then press ENTER. The "Intervalle" menu appears.
- 3 Press / to select the desired playing speed, then press ENTER. Slide show starts.

**To turn on/off the menu in the single image display**

Press DISPLAY in the single image display.

**To return to the "Album" display**

Press DISPLAY to turn on the menu and press / to select "R", then press ENTER. You can also use MENU button to return to the "Album" display. Press repeatedly to return to the first "Album" page.

**To return to the "Sélectionnez le type de media" menu**

Press twice, then press TOP MENU.

**Notes**

- Slide show can play in only one direction.
- You cannot rotate or zoom in the image during Slide show.
- If you select "R" in the rotated image display, the images in the "Album" display will also be rotated. Correct the rotation in the single image display.

**About JPEG image files**

You can play JPEG image files on CD-ROMs, CD-Rs, or CD-RWs. However, the discs must be recorded according to ISO9660 level 1, level 2, or Joliet format for the player to recognize the files. You can also play discs recorded in Multi Session. See the instructions of the CD-R/RW device or recording software (not supplied) for details on the recording format.

**To play a Multi Session CD**

This player can play Multi Session CDs when a JPEG image file is located in the first session. Any subsequent JPEG image files, recorded in the later sessions, can also be played back. When audio tracks and images in music CD format or video CD format are recorded in the first session, only the first session will be played back.

DVD Additional Operations

continued

**Tip**

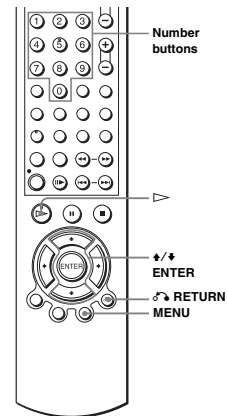
- If you add numbers (01, 02, 03, etc.) to the front of the file names, the files will be played in that order.

**Notes**



- The system can play the extension “.JPG” or “.JPEG”.
- Some CD-Rs or CD-RWs cannot be played on this system depending on file format.
- If you add the extension “.JPG” or “.JPEG” to data not in JPEG format, the display will be blank.
- Depending on the disc or the size of image files, playback may take some time to start.

## Playing VIDEO CDs with “MENU OUI/NON” functions VCD


The PBC (Playback control) function allows you to search and perform other operations interactively. PBC playback follows a selection menu displayed on your TV screen. The “MENU OUT” function is the PBC function.



DVD Additional Operations


- 1 Start playing a VIDEO CD with “MENU OUT”.  
The menu for your selection appears.
- 2  Press  to select the item number you want.  
You can also use the number buttons to select the item number and track.

continued

- 3  Press ENTER.

- 4 Follow the instructions in the menu for interactive operations.  
Refer to the instructions supplied with the disc, as the operating procedure may differ depending on the VIDEO CD.

**To return to the menu**

Press  RETURN.


**To play using “MENU NON”**

Press MENU to select “MENU NON”.

When “MENU NON” is selected, the DVD player starts continuous play. You cannot play still pictures such as a menu.

To return to “MENU OUT”, press MENU to select “MENU OUT”.

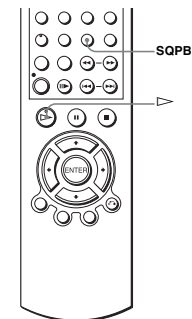
**Tip**

- Depending on the VIDEO CD, “Press ENTER” in step 3 may appear as “Press SELECT” in the instructions supplied with the disc. In this case, press .




**VCR Additional Operations**

## Playing a tape with SQPB function VHS

The SQPB (Super VHS Quasi Playback) function is only for playing a Super VHS format tape.



VCR Additional Operations

- 1 Insert a Super VHS format tape.
- 2  Press .
- 3  Press ANGLE/SQPB to start SQPB.

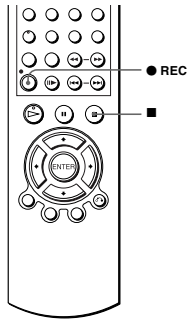
**Notes**

- You cannot use the SQPB function for recording.
- The playback display will be distorted if you use the SQPB function with a normal VHS format tape.
- When you eject the tape, the VCR automatically returns to normal mode.
- Playback of tapes recorded in EP (Extended Play) mode on an NTSC system is not guaranteed.



## Quick Timer Recording VHS

After you have started recording, you can have the VCR stop recording automatically after a specified duration.



- 1 While recording, press REC.
  - 2 Press REC repeatedly to set the duration time.
    - In SP mode  
Each press advances the time in increments of 30 minutes.
    - 0:30 → 1:00 → 1:30 → 2:00 → 2:30 → 3:00 → 3:30 → 4:00 → 4:30 → Normal recording
    - In LP mode  
Each press advances the time as shown below.
    - 0:30 → 1:00 → 1:30 → 2:00 → 2:30 → 3:00 → 3:30 → 4:00 → 4:30 → Normal recording
- The tape counter decreases minute by minute to 0:00, then the VCR stops recording.

### To extend the duration

Press REC repeatedly to set a new duration time.

### To cancel the duration

Press REC repeatedly until the indicator disappears and the VCR returns to normal recording mode.

### To stop while recording

Press .

### Note

- You cannot display the current tape time in the display window when setting the recording duration time.

## Recording stereo and bilingual programmes VHS

### In the ZWEITON (German stereo) system

This VCR automatically receives and records stereo and bilingual programmes based on the ZWEITON system. When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

#### To select bilingual sound while recording

Press AUDIO to select the sound you want.

To listen to	On-screen display	Display window
Main	PRINCIPALE	STEREO
Sub	SECONDAIRE	STEREO
Main and sub	PRINCIP/SEC.	STEREO
Standard sound*	MONO	STEREO

\* Usually the main channel heard from both the left and right in bilingual programmes

#### To select stereo programme while recording

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Left channel	CANAL G	STEREO
Right channel	CANAL D	STEREO
Standard sound*	CANAL G + CANAL D	STEREO

\* Usually the mixed sound of left and right channels in stereo programmes

### In the NICAM system

This VCR receives and records stereo and bilingual programmes based on the NICAM system (NICAM appears on the TV screen). When a stereo or bilingual programme is received, the STEREO indicator appears in the display window.

To record a NICAM programme, "NICAM" in the "REGLAGES UTILISATEUR" menu should be set to "Oui" (initial setting). To check the menu setting, see page 110 for details.

### To select the sound while recording

Press AUDIO to select the sound you want.

#### Stereo programmes

To listen to	On-screen display	Display window
Stereo	NICAM, STEREO	STEREO
Left channel	NICAM, CANAL G	STEREO
Right channel	NICAM, CANAL D	STEREO
Left and right channels*	NICAM, CANAL G + CANAL D	STEREO

\* Usually the mixed sound of left and right channels

#### Bilingual programmes

To listen to	On-screen display	Display window
Main	NICAM, PRINCIPALE	STEREO
Sub	NICAM, SECONDAIRE	STEREO
Main and sub	NICAM, PRINCIP/SEC.	STEREO
Standard sound*	NICAM, MONO	STEREO

\* Usually the main sound (monaural)

### Selecting the sound during Hi-fi playback

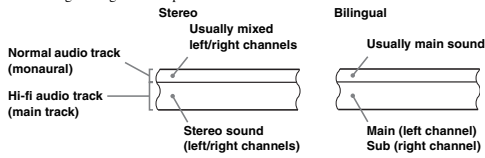
Press AUDIO to select the sound you want.

To listen to	On-screen display	Display window
Stereo	STEREO	STEREO
Left channel	CANAL G	STEREO
Right channel	CANAL D	STEREO
Mix sound*	MIX	STEREO
Mono sound	MONO	No indicator

\* The mixed sound of left and right channels, and the normal mono audio track

### How sound is recorded on a video tape

The VCR records sound onto two separate tracks. Hi-fi audio is recorded onto the main track along with the picture. Monaural sound is recorded onto the normal audio track along the edge of the tape.

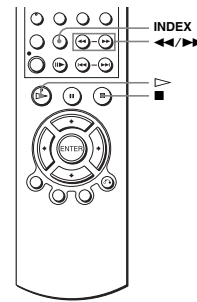


#### Notes

- To listen to playback sounds in stereo, you must use the PERITEL or AUDIO OUT connections.
- When you play a tape recorded in monaural, the sound is heard in monaural regardless of the AUDIO setting.

## Searching using index function VHS

The VCR automatically marks the tape with an index signal at the point where each recording begins. Use these signals as references to find a specific recording.



### To find a specific recording by scanning (Index scan)

**1** Insert an indexed tape into the tape compartment.

**2** Press INDEX, then press  $\leftarrow/\rightarrow$ . The VCR starts scanning each recording for five seconds in the corresponding direction.



**3** Press  $\triangleright$  to start playback when you find the desired point.



VCR Additional Operations

continued

### To search a specific recording (Index search)

**1** Insert an indexed tape into the VCR.

**2** Press INDEX, then press  $\leftarrow/\rightarrow$  twice.

- To search ahead, press  $\rightarrow$  twice.
- To search backwards, press  $\leftarrow$  twice.



**3** Press  $\leftarrow/\rightarrow$  depending on the direction where your desired programme is located.

- Each time you press the button, the number increases or decreases up to  $\pm 20$ , respectively.

**4** The VCR starts searching, and playback starts automatically from that point.

#### To stop searching

Press  $\blacksquare$ .

#### Note

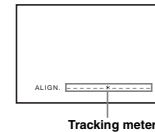
- No index signal will be added when recording starts from recording pause. However, an index signal will be marked if you change the programme position during recording pause.

## Adjusting the picture (tracking) VHS

### Adjusting the tracking

Although the VCR automatically adjusts the tracking when playing a tape, distortion may occur if the recording is in poor condition. In this case, manually adjust the tracking.

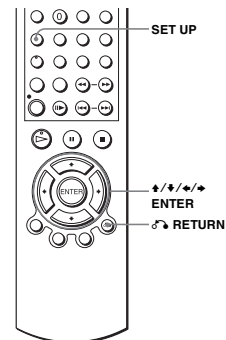
During playback, press TRACKING +/- to display the tracking meter. The distortion should disappear as you press one of the two buttons. To resume automatic tracking adjustments, eject the tape and re-insert it.



Tracking meter

### Adjusting the picture sharpness (Smart trilogic)

You can automatically adjust the sharpness of the picture.

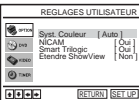
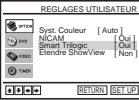
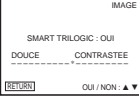



**1** During playback, press SET UP, then press  $\blacklozenge/\blacklozenge$  to select (OPTION) and press ENTER.

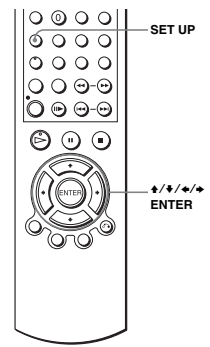


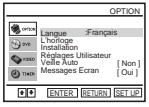
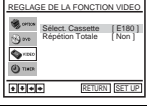
VCR Additional Operations



continued

- 2** Press **▲/▼** to select "Réglages Utilisateur", then press **ENTER**.
- 
- 3** Press **▲/▼** to select "Smart Trilogic", then press **▶**.
- 
- 4** Press **▲/▼** to set "SMART TRILOGIC" to "OUI" or "NON".
- OUI: Picture sharpness is automatically adjusted.
  - NON: Adjust the picture sharpness manually.
- To soften the picture, press **◀**.  
To sharpen the picture, press **▶**.
- 
- 5** Press **↵** RETURN to return to the original screen.
- 

## Changing menu options **VHS**



- 1** Press **SET UP** when the DVD player is in stop mode, then press **▲/▼** to select (OPTION) or (VIDEO) and press **ENTER**.
- 
- 2** Press **▲/▼** to select the option to change.
- 

- 3** Press **▲/▼** to change the setting.
- 
- 4** Press **SET UP** to exit the menu.
- 

### Menu choices

The default settings are indicated in bold print.

#### OPTION

Menu option	Set this option to
Veille Auto	<ul style="list-style-type: none"> <li>• <b>"Non"</b> to deactivate the Auto Power Off function.</li> <li>• "HHeures"/"2Heures"/"3Heures" to turn the DVD-VCR off automatically if no signal is received and you do not press any of the buttons during this time.</li> </ul>
Messages Ecran	<ul style="list-style-type: none"> <li>• <b>"Oui"</b> to display the menu on the TV screen.</li> <li>• "Non" to disappear the menu from the TV screen.</li> </ul>

#### VIDEO SETUP

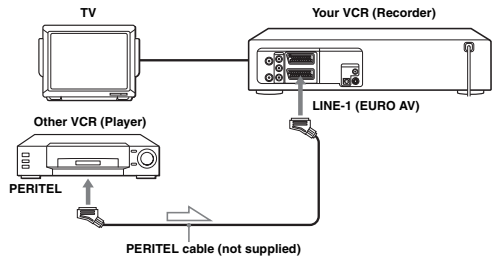
Menu option	Set this option to
Select. Cassette	<ul style="list-style-type: none"> <li>• <b>"E180"</b> to use an E-180 or shorter type tape.</li> <li>• "E240" to use an E-240 type tape.</li> <li>• "E260" to use an E-260 type tape.</li> <li>• "E300" to use an E-300 type tape.</li> </ul>
Répétition Totale	<ul style="list-style-type: none"> <li>• <b>"Oui"</b> to play back a tape repeatedly. The VCR rewinds a tape to the beginning and restarts playback automatically.</li> <li>• <b>"Non"</b> to turn off Auto repeat.</li> </ul>

## Editing **VHS**

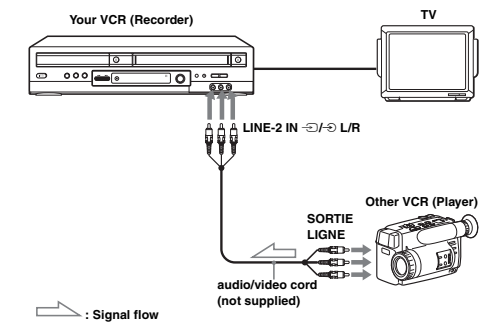
### How to connect to record on this VCR

Connect the line outputs of the other VCR to the input connector of this VCR. Refer to the examples A through C and choose the connection that best suits your VCR.

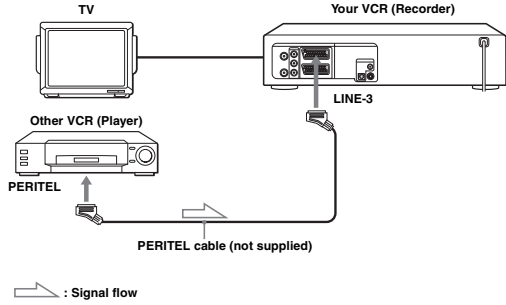
#### Example A



#### Example B



Example C



How to connect to a stereo system

Connect the LINE-2 IN L/R jacks on this DVD-VCR to the audio output jacks on the stereo system, using an audio cable (not supplied).

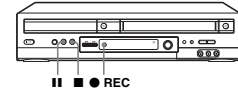
Notes

- Make sure you connect the plugs to jacks of the same colour.
- If the other VCR is a monaural type, leave the red plugs unconnected.
- If you connect this VCR to both the LINE IN and LINE OUT jacks of the other VCR, select the input correctly to prevent a humming noise.
- When you connect another VCR to the LINE-3 or LINE-2 connector, press INPUT SELECT to display "L3" or "L2" in the display window.

Operation (when recording on this VCR)

Before you start editing

- Turn on your TV and set it to the video channel.
- Press INPUT SELECT to display the connected line in the display window.
- Press SP/LP to select the tape speed, SP or LP.
- Press SELECT VIDEO to control the VCR.



- 1 Insert a source tape with its safety tab removed into the other (playback) VCR. Search for the point to start playback and set it to playback pause.
- 2 Insert a tape with its safety tab in place into this (recording) VCR. Search for the point to start recording and press to set it to playback pause.
- 3 Press REC on this VCR to set it to recording pause.
- 4 To start editing, press the (pause) buttons on both VCRs at the same time.

To stop editing

Press the (stop) buttons on both VCRs.

Tip

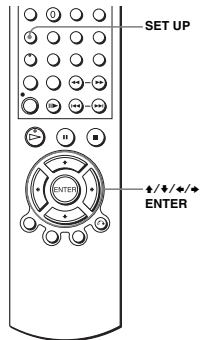
- To cut out unwanted scenes while editing, press on this VCR when an unwanted scene begins. When it ends, press again to resume recording.

VCR Additional Operations

Additional Information

General setup information

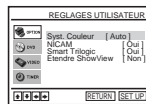
Changing setup options



- 1 Press SET UP when the DVD player is in stop mode, then press to select (OPTION) and press ENTER.



- 2 Press to select "Réglages Utilisateur", then press ENTER. The "REGLAGES UTILISATEUR" menu appears.



- 3 Press to select the option to change.



- 4 Press to change the setting.

- 5 Press SET UP to exit the menu.

Menu choices

Initial settings are indicated in bold print.

Menu option	Set this option to
Syst. Couleur	<ul style="list-style-type: none"> <li>• <b>"Auto"</b> to select the colour system automatically.</li> <li>• "PAL" to use the tape recorded in the PAL colour system.</li> <li>• "SECAM" to use the tape recorded in the SECAM colour system.</li> <li>• "MESECAM" to use the tape recorded in the MESECAM colour system.</li> <li>• "B/W" to use the tape recorded in black and white.</li> </ul> <p>When using the tape recorded NTSC colour signals:</p> <ul style="list-style-type: none"> <li>• <b>"NTPB"</b> to play back an NTSC-recorded tape on PAL TV.</li> <li>• "NT4.43" to play back an NTSC-recorded tape on Multi TV.</li> </ul>
NICAM	<ul style="list-style-type: none"> <li>• <b>"Oui"</b> to record NICAM broadcasts on the hi-fi audio track.</li> <li>• "Non" to record standard sound on the hi-fi audio track. For details, see page 98.</li> </ul>
Smart Trilogic	<ul style="list-style-type: none"> <li>• <b>"Oui"</b> to automatically adjust the sharpness of the picture.</li> <li>• "Non" to manually adjust the sharpness of the picture.</li> </ul>
Etendre ShowView	<ul style="list-style-type: none"> <li>• <b>"Non"</b> to deactivate the ShowView Extend function.</li> <li>• 10/20/30/.../60 (minutes) to extend the time of the ShowView setting by the selected amount of time.</li> </ul>

Additional Information

## Troubleshooting

If you have any questions or problems not covered below, please consult your nearest Sony service facility.

### General Troubleshooting

	Symptom	Remedy
Power	The I/⏻ (on/standby) switch does not function.	• Connect the mains lead to the mains securely.
	The power is turned on but the DVD-VCR does not operate.	• Moisture condensation has occurred. Turn the power off, unplug the mains lead and leave the DVD-VCR to dry for over three hours.
Clock	The clock has stopped and ":-:--" appears in the display window.	• The clock stops if the DVD-VCR is disconnected from the mains. Reset the clock (and timer).
Others	The remote commander does not function.	• Make sure you are pointing the remote commander at the remote sensor on the DVD-VCR. • Replace all the batteries in the remote commander with new ones if they are weak. • Make sure the TV / DVD-VIDEO switch is set correctly. • Select correctly VIDEO or DVD with the SELECT DVD/VIDEO button.
	The tracking meter does not appear on the screen.	• The recording condition of the tape is very poor and tracking cannot be adjusted.
	You cannot control other TVs.	• Set your TV's code number. The code number may change when you replace the batteries of the remote commander.

### DVD Troubleshooting

	Symptom	Remedy
Picture	There is no picture/picture noise appears.	• Re-connect the connecting cord securely. • The connecting cords are damaged. • Check the connection to your TV (page 11) and switch the input selector on your TV so that the signal from the player appears on the TV screen. • The disc is dirty or flawed. • If the picture output from your player goes through your VCR to get to your TV or if you are connected to a combination TV/VIDEO player, the copy-protection signal applied to some DVD programmes could affect picture quality. If you still experience problems even when you connect your player directly to your TV, please try connecting your player to your TV's S VIDEO input (page 61).

	Symptom	Remedy
Picture	Even though you set the aspect ratio in "Type TV" of the "REGLAGE DE L'ECLAN" menu the picture does not fill the screen.	• The aspect ratio of the disc is fixed on your DVD.
	There is no picture from your VCR connected to the LINE IN jacks.	• The DVD player must be in standby mode to view pictures from your VCR.
Sound	There is no sound.	• Re-connect the connecting cord securely. • The connecting cord is damaged. • The player is connected to the wrong input jack on the amplifier (receiver) (page 59). • The amplifier (receiver) input is not correctly set. • The player is in pause mode or in Slow-motion Play mode. • The player is in fast forward or fast reverse mode. • If the audio signal does not come through the DIGITAL AUDIO OUT (OPTICAL or COAXIAL) jack, check the audio settings (page 62).
	Sound is noisy.	• When playing a CD with DTS sound tracks, noise will come from the OUT AUDIO L/R jacks (page 33) or DIGITAL OUT (OPTICAL or COAXIAL) jack.
	The sound volume is low.	• The sound volume is low on some DVDs. The sound volume may improve if you set "Audio DRC" to "TV" (page 64).
Operation	The disc does not play.	• The disc is turned over. • Insert the disc with the playback side facing down on the disc tray. • The disc is skewed. • The player cannot play certain discs (page 6). • The region code on the DVD does not match the player. • Moisture has condensed inside the player. • The player cannot play CD-Rs, CD-RWs, DVD-Rs or DVD-RWs that are not finalized (page 7). • Make sure the TV / DVD-VIDEO switch is set correctly. • Select correctly VIDEO or DVD with SELECT DVD/VIDEO button.
	The MP3 audio track cannot be played (page 85).	• The DATA CD is not recorded in the MP3 format that conforms to ISO9660 Level 1/Level 2 or Joliet. • The MP3 audio track does not have the extension ".MP3". • The data is not formatted in MP3 even though it has the extension ".MP3". • The data is not MPEG1 Audio Layer 3 data. • The player cannot play audio tracks in MP3PRO format.
	The JPEG image file cannot be played.	• The DATA CD is not recorded in JPEG format that conforms to ISO9660 Level 1/Level 2 or Joliet. • The JPEG image file does not have the extension ".JPG" or ".JPEG". • The data is not formatted in JPEG even though it has the extension ".JPG" or ".JPEG". • Length or width of the image is more than 4720 dots.

Additional Information

continued

112 Troubleshooting

Troubleshooting 113

	Symptom	Remedy
Operation	The title of the MP3 audio album or track is not correctly displayed.	• The player can only display numbers and alphabet. Other characters are displayed as asterisks.
	The disc does not start playing from the beginning.	• Programme play, shuffle play, or repeat play, has been selected (pages 78, 80, 81). • Resume play has taken effect (page 32).
	The player starts playing the disc automatically.	• The disc features an auto playback function.
	Playback stops automatically.	• While playing discs with an auto pause signal, the player stops playback at the auto pause signal.
	You cannot perform some functions such as stop, search, slow-motion play, repeat play, shuffle play, or programme play.	• Depending on the disc, you may not be able to do some operations. See the operating manual that comes with the disc.
	The language for the sound track cannot be changed.	• Try using the DVD's menu instead of the direct selection button on the remote (page 73). • Multilingual tracks are not recorded on the DVD being played. • The DVD prohibits the changing of the language for the sound track.
	The subtitle language cannot be changed or turned off.	• Try using the DVD's menu instead of the direct selection button on the remote (page 73). • Multilingual subtitles are not recorded on the DVD being played. • The DVD prohibits the changing of the subtitles.
	The angles cannot be changed.	• Try using the DVD's menu instead of the direct selection button on the remote (page 73). • Multi-angles are not recorded on the DVD being played. • The DVD prohibits changing of the angles.
	The player does not operate properly.	• When static electricity, etc., causes the player to operate abnormally, unplug the player.

### VCR Troubleshooting

	Symptom	Remedy
Playback	The playback picture does not appear on the TV screen.	• Make sure the TV is set to the channel for the VCR. If you are using a monitor, set it to video input. • If the VCR is connected to the TV with the PERITEL cable, make sure the VCR indicator is lit in the display window. Use the TV/VIDEO button on the remote commander to light up the VCR indicator.
	The picture is not clear.	• Adjust the tracking with the TRACKING +/- buttons. • The video heads are dirty (see the last page of Troubleshooting). Clean the video heads using a Sony video head cleaning cassette. If a Sony cleaning cassette is not available in your area, have the heads cleaned at your nearest Sony service facility (a standard service charge will be required). Do not use a commercially available liquid type cleaning cassette other than Sony's, as it may damage the video heads. • The video heads may have to be replaced. Consult your local Sony service facility for more information.
	The picture has no colour	• The "Syst. Couleur" option in the "REGLAGES UTILISATEUR" menu is set to the wrong position. Set the option to conform to the system that the tape was recorded in.
	The picture rolls vertically during picture search.	• Adjust the vertical hold control on the TV or monitor.
	The picture has no sound.	• The tape is defective. • If you made A/V connections, check the audio cord connection.
	The sound from a tape recorded with the VCR is not in stereo or the STEREO indicator in the display window is flashing.	• Adjust the tracking. • The video heads are dirty. Clean the video heads using a Sony video head cleaning cassette as explained above.
	No TV programme appears on the TV screen.	• Make sure the TV is set to the video channel. If you are using a monitor, set it to video input. • Select the correct source with the INPUT SELECT button. Select a programme position when recording TV programmes; select a line input when recording from other equipment.
Recording	TV reception is poor.	• Make sure the aerial cable is connected securely. • Adjust the TV aerial. • Make sure "SYS. (L/L/ or B/G)" in the "RECHERCHE MANUELLE" menu is set to the same system in your local area.
	The tape starts playing as soon as it is inserted.	• The safety tab has been removed. To record on this tape, cover the tab hole.
	The tape is ejected when you press ● REC.	• The safety tab has been removed. To record on this tape, cover the tab hole.
	Nothing happens when you press ● REC.	• Make sure the tape is not at its end.

Additional Information

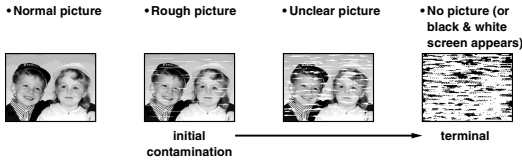
continued

114 Troubleshooting

Troubleshooting 115

Symptom	Remedy
<b>Timer recording</b>	
The timer does not operate.	<ul style="list-style-type: none"> <li>• Check that the clock is set.</li> <li>• Make sure a tape has been inserted.</li> <li>• Check that the safety tab has not been removed.</li> <li>• Make sure the tape is not at its end.</li> <li>• Make sure a programme has been set for timer recording.</li> <li>• Make sure your timer settings are past the current time.</li> <li>• Check that the decoder is turned on.</li> <li>• Check that the satellite tuner is turned on.</li> <li>• The clock stops if the DVD-VCR is disconnected from the mains for more than one minute. Reset the clock and timer.</li> <li>• Turn the power off and unplug the mains lead.</li> </ul>
The VPS/PDC function does not operate properly.	<ul style="list-style-type: none"> <li>• Check that the clock and the date are set correctly.</li> <li>• Check that the VPS/PDC time you set is the correct one (there might be a mistake in the TV programme guide). If the broadcast you wanted to record did not send the good VPS/PDC information, the VCR will not start recording.</li> <li>• If the reception is poor, the VPS/PDC signal might be altered and the VCR might not start recording.</li> </ul>
<b>Canal Plus</b>	
You cannot watch Canal Plus programmes when the VCR is in standby mode.	<ul style="list-style-type: none"> <li>• Check that "DEC" is set to "OUI" for this channel in the "LISTE STATIONS TV" menu.</li> <li>• Make sure the Canal Plus PERITEL cable is plugged securely.</li> </ul>
A Canal Plus programme is always recorded scrambled.	<ul style="list-style-type: none"> <li>• Make sure the Canal Plus PERITEL cable is plugged securely.</li> <li>• Check that "DEC" is set to "OUI" for this channel in the "LISTE STATIONS TV" menu.</li> </ul>
A tape cannot be inserted.	<ul style="list-style-type: none"> <li>• Check that a tape is not already in the tape compartment.</li> </ul>
<b>Others</b>	
The selected input line connector number does not appear in the display window.	<ul style="list-style-type: none"> <li>• Press INPUT SELECT to display the connected line.</li> </ul>
The VCR mechanism needs to be cleaned.	<ul style="list-style-type: none"> <li>• Clean the cabinet, panel and controls with a dry, soft cloth, or a soft cloth slightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzene.</li> </ul>

#### Symptoms caused by contaminated video heads



## Glossary

### Chapter (page 35)

Sections of a picture or a music feature that are smaller than titles. A title is composed of several chapters. Depending on the disc, no chapters may be recorded.

### Dolby Digital (pages 60 and 63)

Digital audio compression technology developed by Dolby Laboratories. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. Dolby Digital provides the same 5.1 discrete channels of high quality digital audio found in Dolby Digital cinema audio systems. Good channel separation is realized because all of the channel data are recorded discretely and little deterioration is realized because all channel data processing is digital.

### Dolby Surround (Pro Logic) (page 59)

Audio signal processing technology that Dolby Laboratories developed for surround sound. When the input signal contains a surround component, the Pro Logic process outputs the front, centre and rear signals. The rear channel is monaural.

### DTS (page 63)

Digital audio compression technology that Digital Theater Systems, Inc. developed. This technology conforms to 5.1-channel surround sound. The rear channel is stereo and there is a discrete subwoofer channel in this format. DTS provides the same 5.1 discrete channels of high quality digital audio.

Good channel separation is realized because all of the channel data is recorded discretely and little deterioration is realized because all channel data processing is digital.

### DVD (page 6)

A disc that contains up to 8 hours of moving pictures even though its diameter is the same as a CD.

The data capacity of a single-layer and single-sided DVD is 4.7 GB (Giga Byte), which is 7 times that of a CD. The data capacity of a double-layer and single-sided DVD is 8.5 GB, a single-layer and double-sided DVD is 9.4 GB, and double-layer and double-sided DVD is 17 GB.

The picture data uses the MPEG 2 format, one of the worldwide standards of digital compression technology. The picture data is compressed to about 1/40 (average) of its original size. The DVD also uses a variable rate coding technology that changes the data to be allocated according to the status of the picture. Audio information is recorded in a multi-channel format, such as Dolby Digital, allowing you to enjoy a more real audio presence.

Furthermore, various advanced functions such as the multi-angle, multilingual, and Parental Control functions are provided with the DVD.

### DVD-RW (page 6)

A DVD-RW is a recordable and rewritable disc that is the same size as a DVD VIDEO. The DVD-RW has two different modes: VR mode and Video mode. DVD-RWs created in Video mode have the same format as a DVD VIDEO, while discs created in VR (Video Recording) mode allow the contents to be programmed or edited.

### DVD+RW (page 6)

A DVD+RW (plus RW) is a recordable and rewritable disc. DVD+RWs use a recording format that is comparable to the DVD VIDEO format.

Additional Information

### Title (page 35)

The longest section of a picture or music feature on a DVD, movie, etc., in video software, or the entire album in audio software.

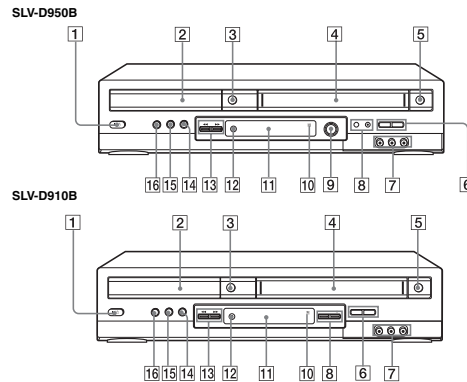
### Track (page 35)

Sections of a picture or a music feature on a CD or VIDEO CD (the length of a song).

## Index to parts and controls

Refer to the pages indicated in parentheses ( ) for details.

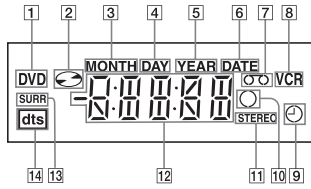
### Front panel



- 1 I/⏻ (on/standby) switch (10) (38)
  - 2 Disc tray (31)
  - 3 ≡ (open/close) button (31) (32)
  - 4 Tape compartment (37)
  - 5 ≡ (eject) button (38)
  - 6 SELECT DVD/VIDEO (9)
  - 7 LINE-2 IN L/R jacks\*1 (107)
  - 8 PROGRAM +/- buttons\*2 (41)
  - 9 ⌚ DIAL TIMER\*3 (52)
  - 10 □ Remote sensor (9)
  - 11 Display window (32) (37)
  - 12 ● REC (record) button (41)
  - 13 ◀▶ (rewind)/▶▶ (fast-forward) buttons (33) (38)
  - 14 ■ (stop) button (32) (38)
  - 15 || (pause) button (32) (38)
  - 16 ▶▶ (play) button (32) (37)
- \*1 Covered  
 \*2 PROGRAM + button has a tactile dot.  
 Use the tactile dot as a reference when operating the DVD-VCR.  
 \*3 SLV-D950B only

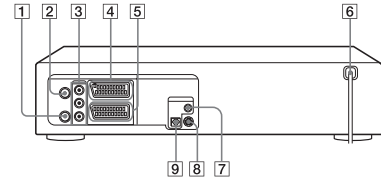
Additional Information

## Display window



- |                         |   |
|-------------------------|---|
| 1 DVD indicator (32)    | 9 Timer indicator (46)                              |
| 2 Disc indicator (32)   | 10 Recording indicator (41)                         |
| 3 MONTH indicator* (52) | 11 STEREO indicator (98)                            |
| 4 DAY indicator* (52)   | 12 Playing time/clock/current status indicator (32) |
| 5 YEAR indicator* (52)  | 13 SURR (surround) indicator (83)                   |
| 6 DATE indicator* (52)  | 14 DTS indicator (63)                               |
| 7 Tape indicator (37)   |   |
| 8 VCR indicator (37)    |   |
- \* SLV-D950B only

## Rear panel



### DVD player and VCR

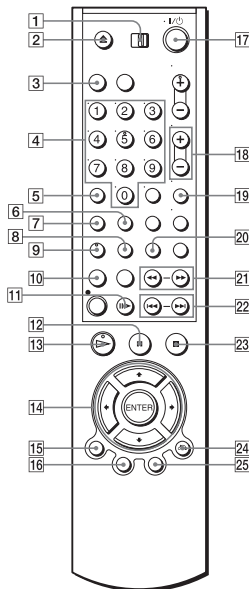
- 1 (out to tv) connector (11)
- 2 (in from antenna) connector (11)
- 3 OUT VIDEO/AUDIO L/R jacks (11) (59)
- 4 LINE-3 connector (12)
- 5 LINE-1 (EURO AV) connector (11)

### DVD player only

- 6 Mains lead (11)
- 7 DIGITAL AUDIO OUT jack (COAXIAL) (60)
- 8 S-VIDEO OUT jack (61)
- 9 DIGITAL AUDIO OUT jack (OPTICAL) (60)

continued

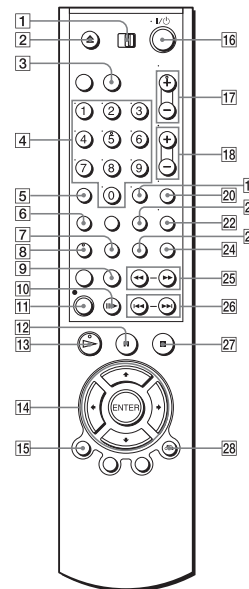
## Remote commander for DVD



- 1 TV / DVD-VIDEO switch (9)
- 2 (open/close) button (31) (32)
- 3 SELECT DVD button (9)
- 4 Number buttons\* (10) (71)
- 5 CLEAR button (79)
- 6 SURROUND button (83)
- 7 SET UP button (14)
- 8 SUBTITLE button (77)
- 9 AUDIO button\* (82)
- 10 REPEAT/PROGRAM button (78) (81)
- 11 STEP button (32)
- 12 (pause) button (32)
- 13 (play) button\* (32)
- 14 (stop) buttons ENTER button (14)
- 15 DISPLAY button (35) (41)
- 16 TOP MENU button (73)
- 17 I/O (on/standby) switch (10)
- 18 VOL (volume) +/- buttons (10)
- 19 ZOOM button (75)
- 20 ANGLE button (76)
- 21 (SCAN/SLOW) buttons (32)
- 22 (PREV/NEXT) buttons (32)
- 23 (stop) button (32)
- 24 RETURN button (20)
- 25 MENU button (73)

\* Number 5, AUDIO and (play) buttons have a tactile dot. Use the tactile dot as a reference when operating the DVD-VCR.

## Remote commander for VCR



- 1 TV / DVD-VIDEO switch (9)
- 2 (eject) button (38)
- 3 SELECT VIDEO button (9)
- 4 Number buttons\* (10)
- 5 CLEAR button (24)
- 6 SET UP button (14)
- 7 TIMER button (49)
- 8 AUDIO button\* (98)
- 9 INDEX button (101)
- 10 STEP button (38)
- 11 REC (record) button (41)
- 12 (pause) button (38)
- 13 (play) button\* (37)
- 14 (stop) buttons ENTER button (14)
- 15 DISPLAY button (41)
- 16 I/O (on/standby) switch (10) (38)
- 17 PROG (programme)/TRACKING +/- buttons\* (39) (41)
- 18 VOL (volume) +/- buttons (10)
- 19 (ten's digit) button (10)
- 20 MUTE button (10)
- 21 SP (Standard Play)/LP (Long Play) button (41)
- 22 TV/VIDEO button (42)
- 23 SQPB button (95)
- 24 INPUT SELECT button (41)
- 25 (rewind)/ (fast-forward) buttons SLOW (play) button (38)
- 26 SHUTTLE buttons (38)
- 27 (stop) button (38)
- 28 RETURN button (20)

\* Number 5, AUDIO, (play) and PROG/TRACKING +/- buttons have a tactile dot. Use the tactile dot as a reference when operating the DVD-VCR.

## DVD Audio/Subtitle Language

Abbreviation	Language
ARA	Arabic
CHI	Chinese
CRO	Croatian
CZK	Czech
DAN	Danish
DEU	German
ENG	English
ESP	Spanish
FIN	Finish
FRA	French
GRE	Greek
HUN	Hungarian
IDN	Indonesian
IND	Hindi
ISL	Icelandic
ITA	Italian
IWR	Hebrew
JPN	Japanese
KOR	Korean
MAL	Malay
NLD	Dutch
NOR	Norwegian
POL	Polish
POR	Portuguese
RUS	Russian
SVE	Swedish
THA	Thai
TUR	Turkish
VIE	Vietnamese
ZAF	Afrikaans

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## 2. DISASSEMBLY AND REASSEMBLY

### 2-1 CABINET AND PCB

#### 2-1-1 Cabinet Top Removal

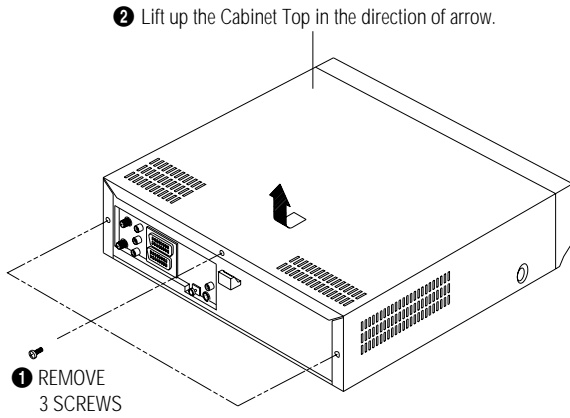


Fig. 2-1 Cabinet Top Removal

#### 2-1-2 Bottom Cover Removal

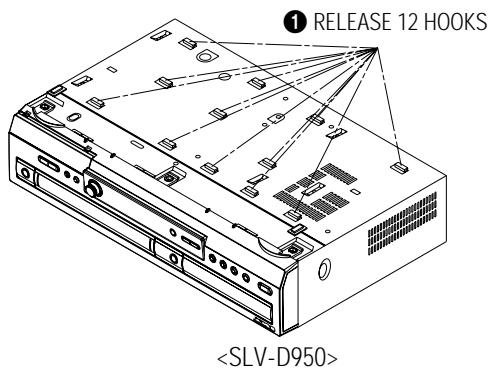
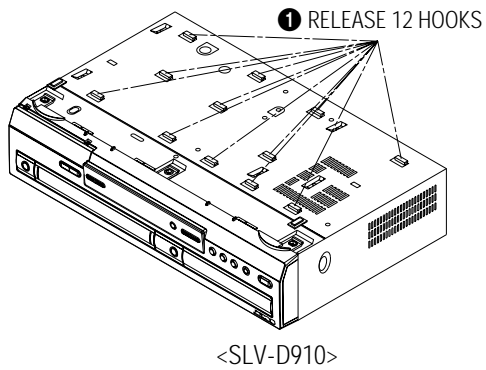


Fig. 2-2 Bottom Cover Removal

#### 2-1-3 Ass'y Front Panel Removal

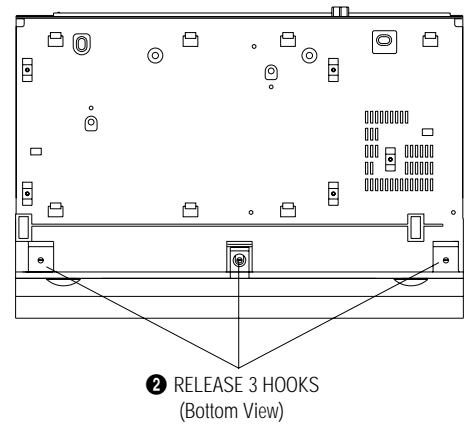
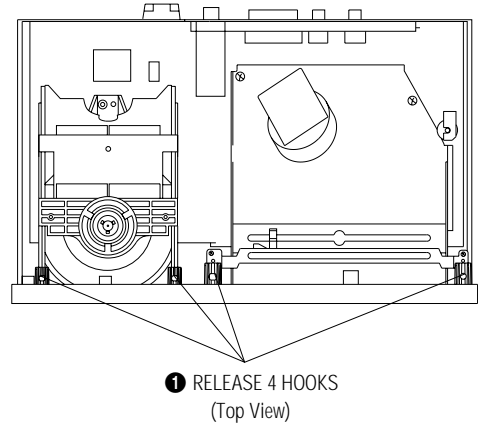


Fig. 2-3 Ass'y Front Panel Removal

#### 2-1-4 Function PCB Removal

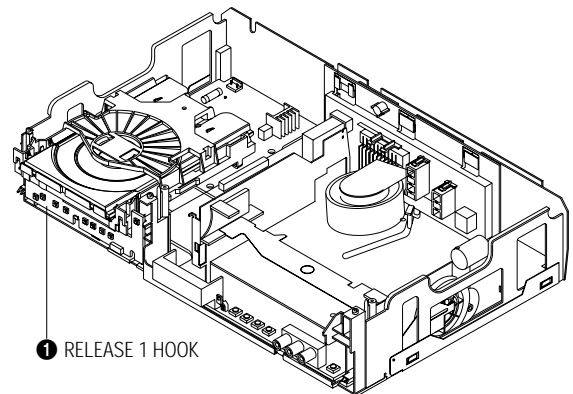


Fig. 2-4 Function PCB Removal

## 2-1-5 Chassis Removal

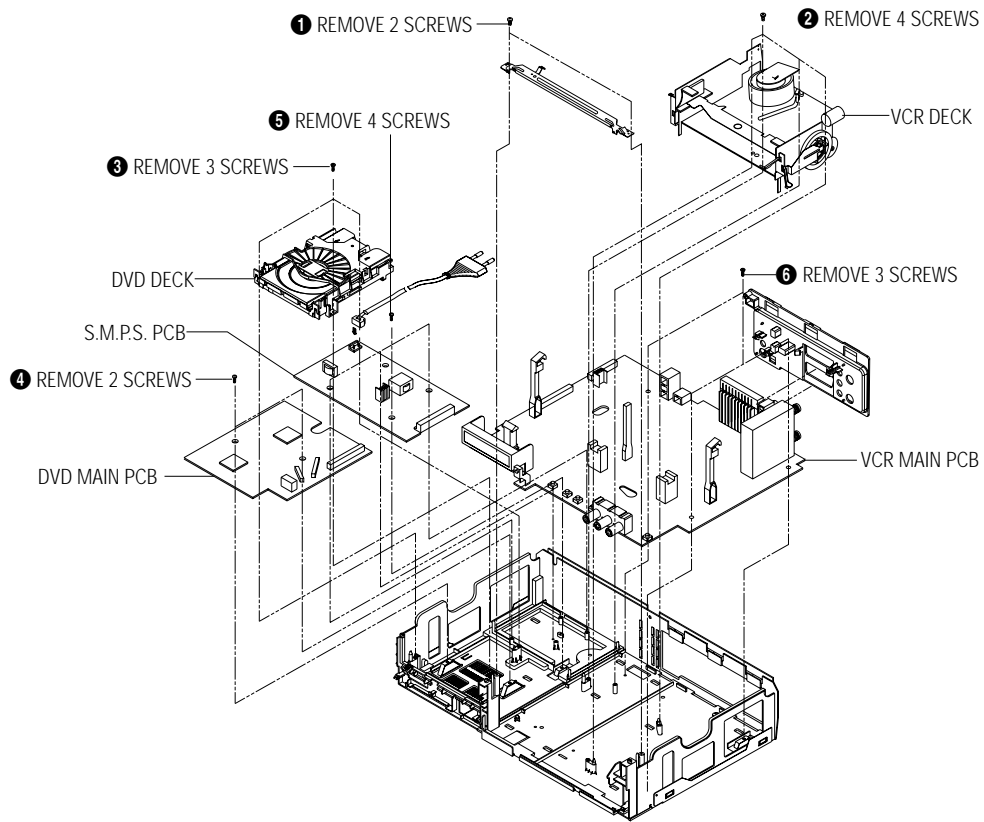


Fig. 2-5 Chassis Removal

## 2-1-6 VCR Main PCB Removal

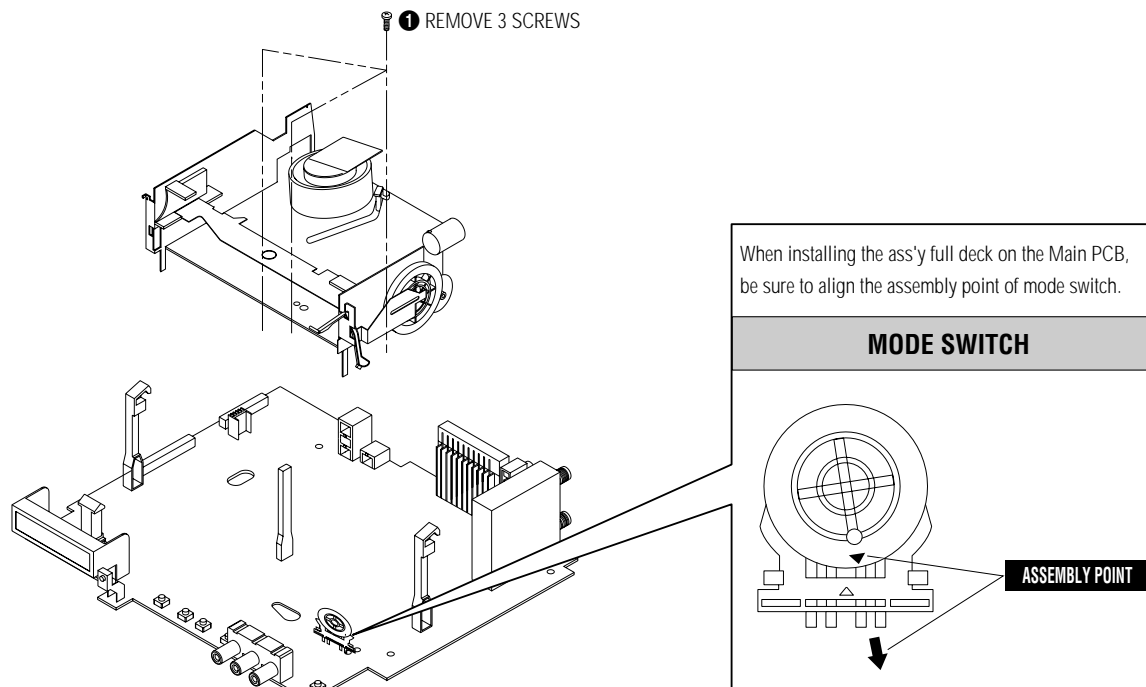


Fig. 2-6 VCR Main PCB Removal

## 2-2 CIRCUIT BOARD LOCATIONS

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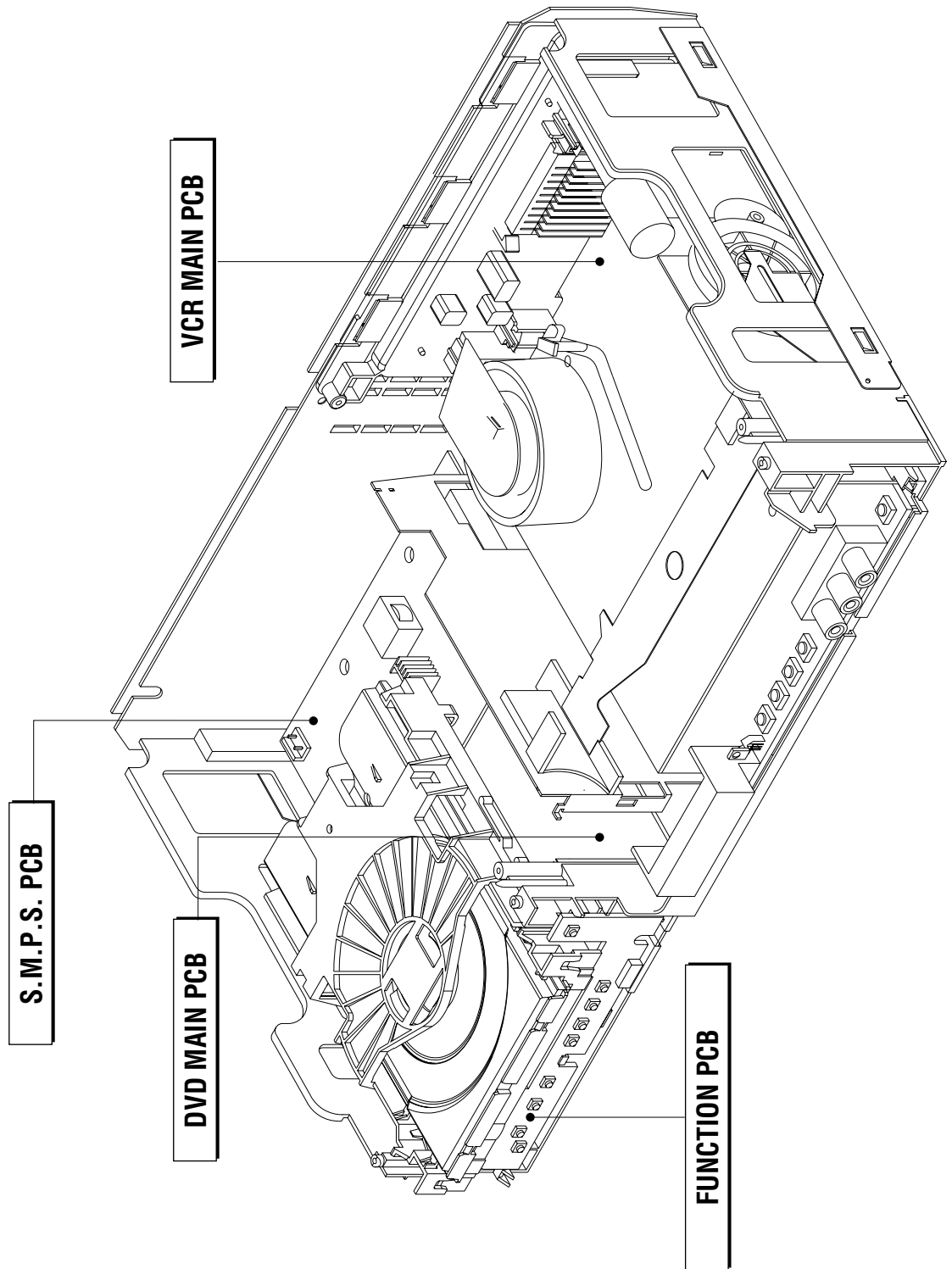


Fig. 2-7 Circuit Board Locations

## 2-3 VCR DECK PARTS LOCATIONS

### 2-3-1 Top View

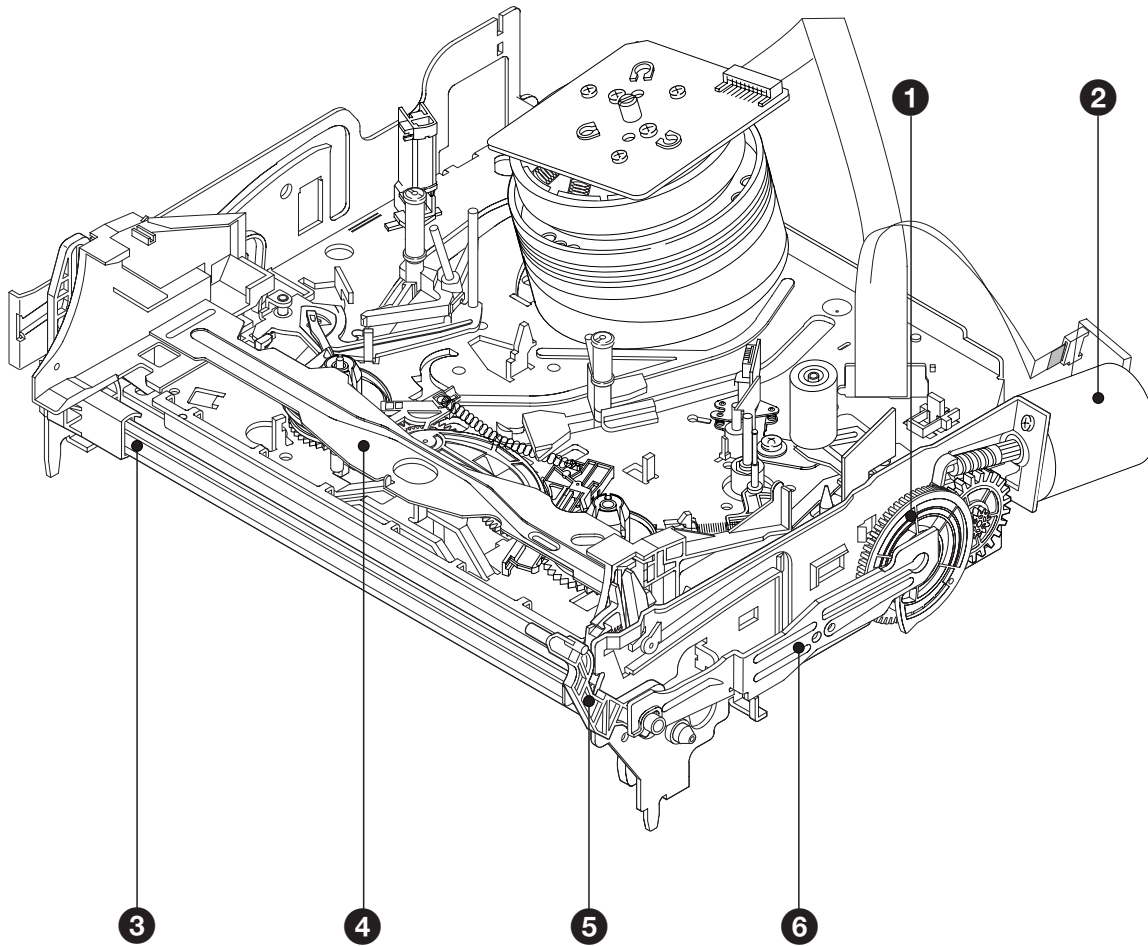


Fig. 2-8 Top parts Location-1

- ① GEAR FL CAM
- ② MOTOR LOADING ASS'Y
- ③ LEVER FL ARM ASS'Y
- ④ HOLDER FL CASSETTE ASS'Y
- ⑤ LEVER FL DOOR
- ⑥ SLIDER DRIVE

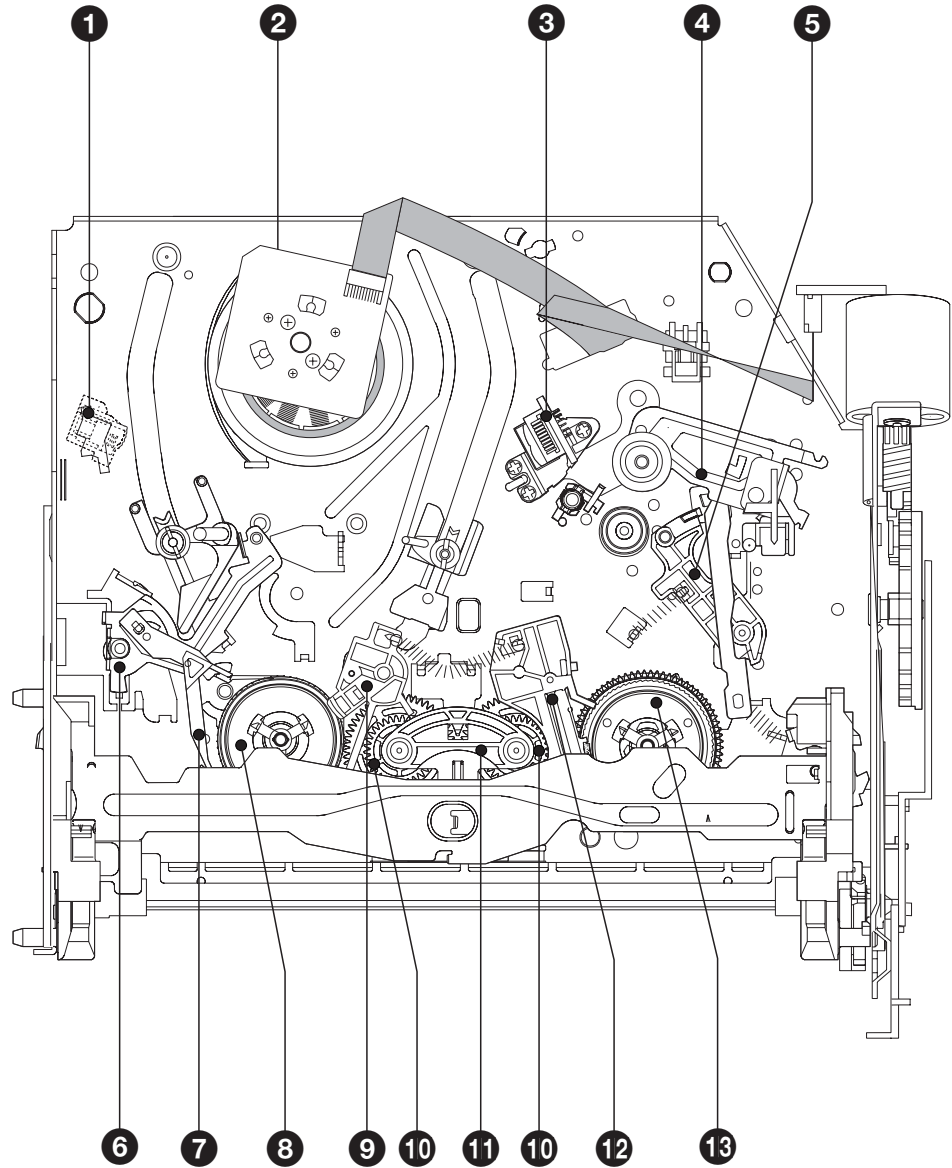


Fig. 2-9 Top Parts Location-2

- |                          |                        |
|--------------------------|------------------------|
| 1 FE HEAD                | 8 DISK S REEL          |
| 2 CYLINDER ASS'Y         | 9 LEVER S BRAKE ASS'Y  |
| 3 ACE HEAD ASS'Y         | 10 GEAR IDLE           |
| 4 LEVER UNIT PINCH ASS'Y | 11 LEVER IDLE          |
| 5 LEVER #9 GUIDE ASS'Y   | 12 LEVER T BRAKE ASS'Y |
| 6 LEVER TENSION ASS'Y    | 13 DISK T REEL         |
| 7 BAND BRAKE ASS'Y       |                        |

## 2-3-2 Bottom View

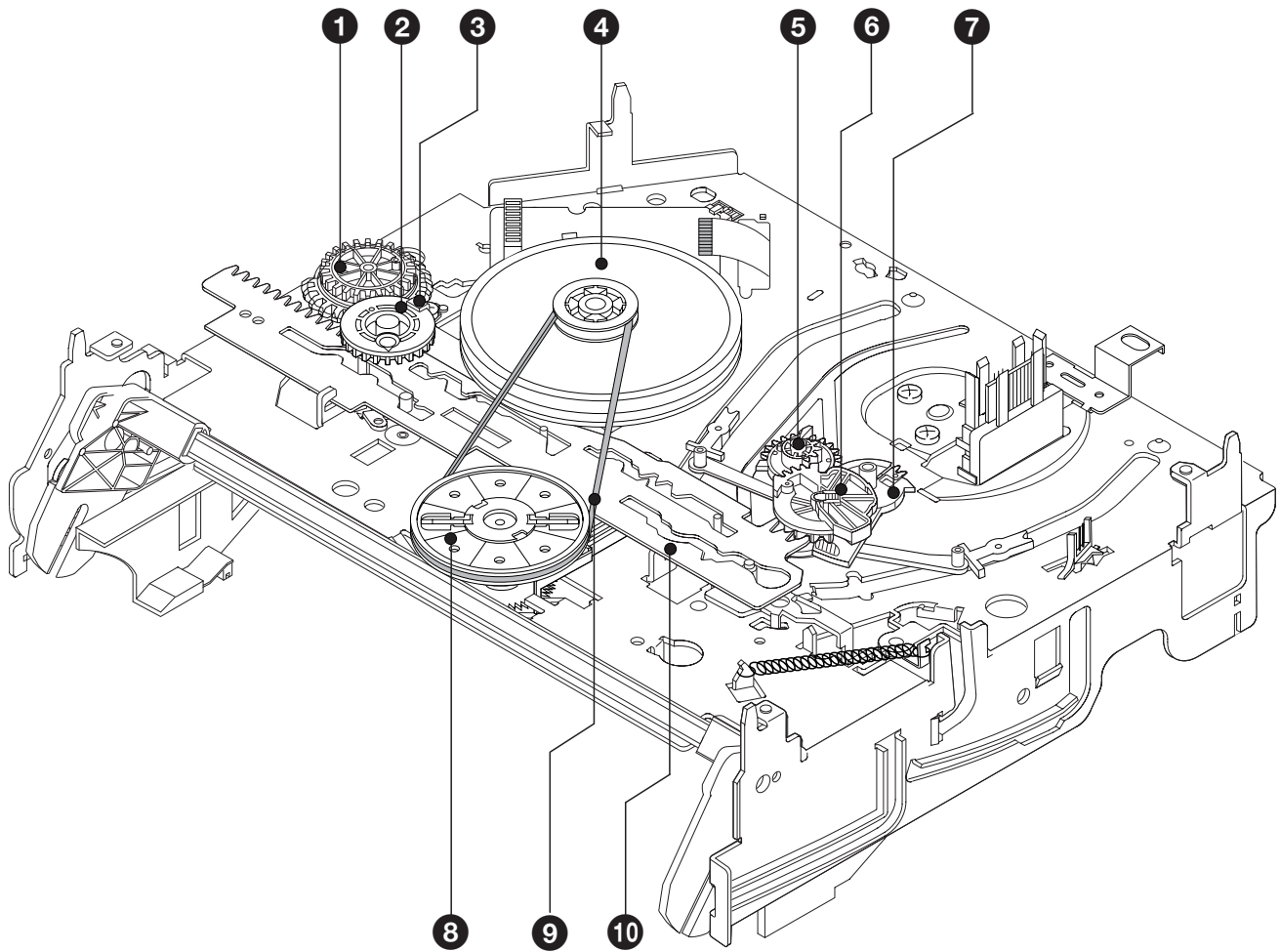


Fig. 2-10 Bottom Parts Location

- ❶ GEAR JOINT 1
- ❷ GEAR JOINT 2
- ❸ BRACKET GEAR
- ❹ MOTOR CAPSTAN ASS'Y
- ❺ LEVER T LOAD ASS'Y
- ❻ GEAR LOADING DRIVE
- ❼ LEVER S LOAD ASS'Y
- ❽ HOLDER CLUTCH ASS'Y
- ❾ BELT PULLEY
- ❿ SLIDER CAM

## 2-4 VCR DECK

### 2-4-1 Holder FL Cassette Ass'y Removal

- 1) Pull the Holder FL Cassette Ass'y ❶ to the eject position.
- 2) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [B].
- 3) Lift the Holder FL Cassette Ass'y ❶, in this time, you have to grasp the Lever FL Cassette-R ❷ continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

**Note:** Be sure to insert Lever FL Cassette-R ❷ in the direction of "A" to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

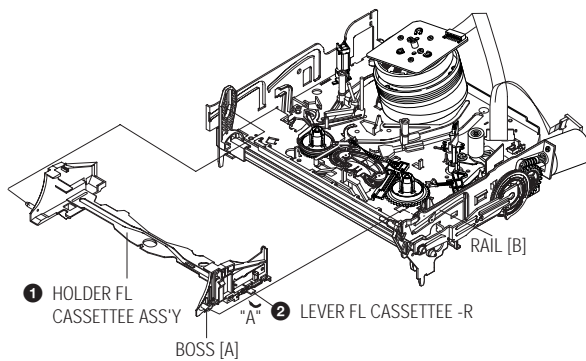


Fig. 2-11 Holder FL Cassette Ass'y Removal

### 2-4-2 Lever FL Door Removal

- 1) Release the Hook ❷ and Remove the Lever FL Door ❶ in the direction of arrow "A".

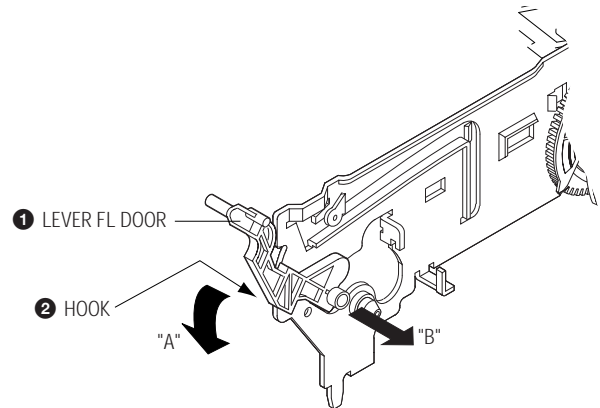


Fig. 2-12 Lever FL Door Removal

## 2-4-3 Slider FL Drive, Gear FL Cam Removal

- 1) Pull the Slider FL Drive ❶ to the front direction.
- 2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 2-13)
- 3) Remove the Gear FL cam ❷.

**Note:** When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever FL ARM-R in Groove of Slider FL drive ❶.

**Assembly:** Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing. (Refer to Timing point)

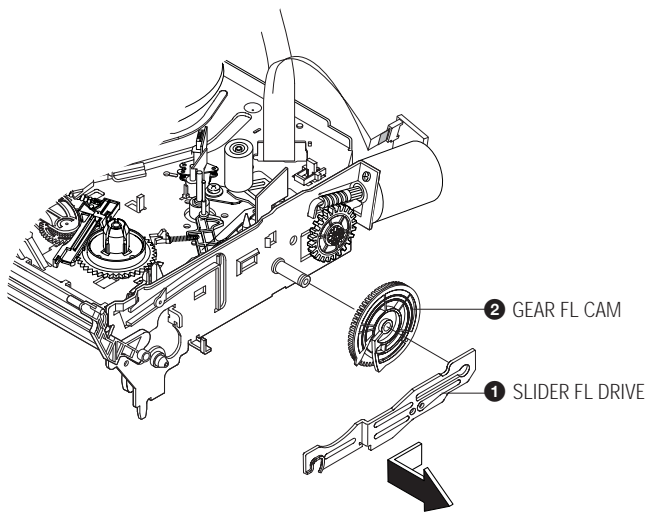


Fig. 2-13 Slider FL Drive Removal

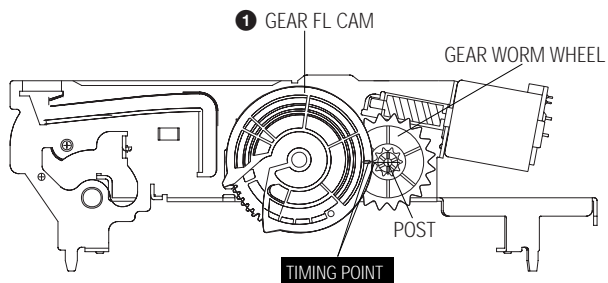


Fig. 2-14 Gear FL Cam, Gear Worm

## 2-4-4 Lever FL Arm Ass'y Removal

- 1) Push the hole "A" in the direction of arrow "B" use the pin.(about Dia. 2.5)
- 2) Pull out the Lever FL Arm Ass'y ❶ from the Boss of Main Base.
- 3) Remove the Lever FL Arm Ass'y ❶ in the direction of arrow "C".

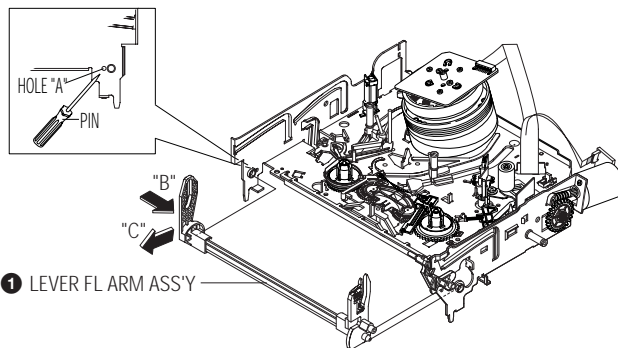


Fig. 2-15 Lever FL Arm Ass'y Removal



## 2-4-5 Gear Worm Wheel Removal

- 1) Remove the Gear Worm wheel ❶.

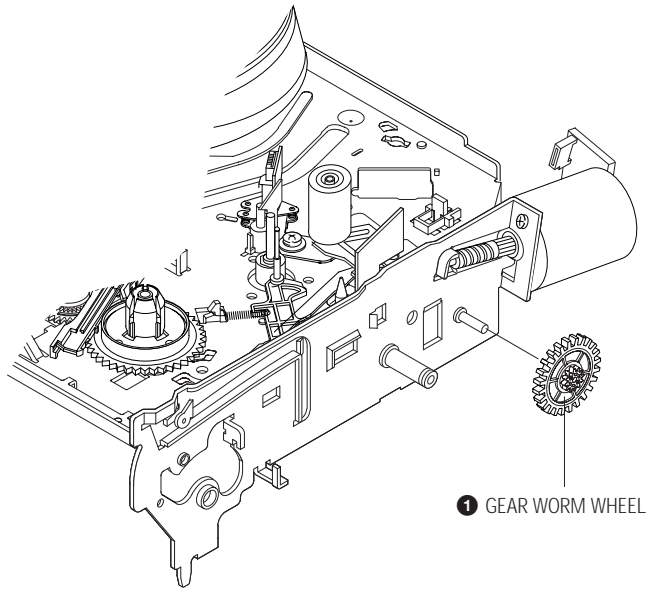


Fig. 2-16 Gear Worm Wheel Removal

## 2-4-6 Cable Flat Removal

- 1) Remove the Drum connecting part of Cable Flat ❶ from Connector Waffer ❷.
- 2) Remove the Loading Motor connecting part of Cable Flat ❶ from Connector Waffer ❸.

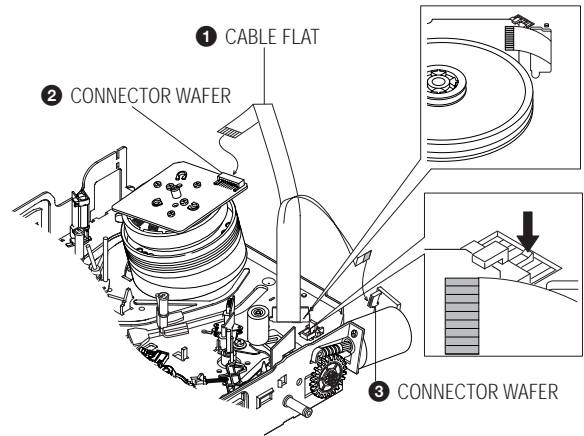


Fig. 2-17 Cable Flat Removal

## 2-4-7 Motor Loading Ass'y Removal

- 1) Remove the screw ❶.
- 2) Remove the Motor Loading Ass'y ❷.

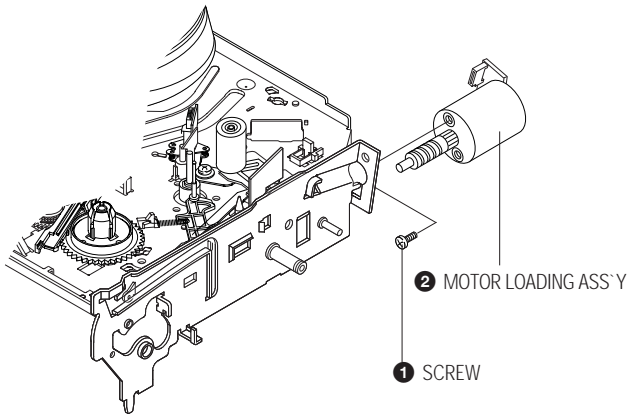


Fig.2-18 Motor Loading Ass'y Removal

## 2-4-8 Bracket Gear, Gear Joint 2, 1 Removal

- 1) Remove the SCREW ❶.
- 2) Remove the Bracket Gear ❷.
- 3) Remove the Gear Joint 2 ❸.
- 4) Remove the Gear Joint 1 ❹.

### Assembly:

- 1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 2-20.  
(Refer to Timing point1)
- 2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

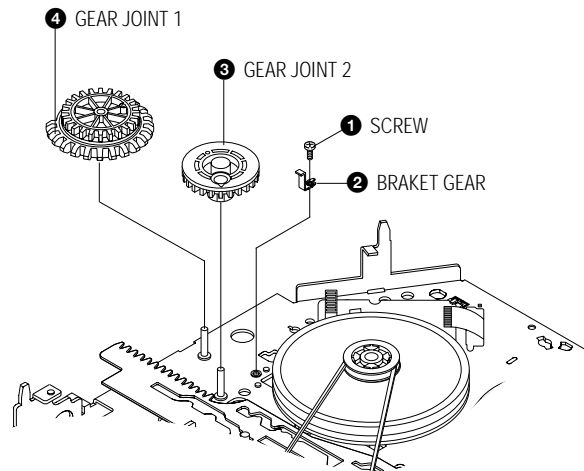


Fig. 2-19 Bracket Gear, Gear Joint 1,2 Removal

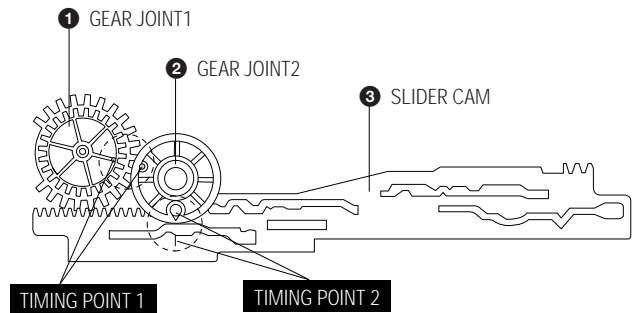


Fig. 2-20 Gear Joint 1,2 Assembly

## 2-4-9 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal

- 1) Remove the Belt Pulley. (Refer to Fig. 2-38)
- 2) Remove the Gear Loading Drive **1** after releasing Hook [A] in the direction arrow as shown in detail drawing.
- 3) Remove the Slider Cam **2**.
- 4) Remove the Lever Load **3**, Link Load **5** & Lever Load **4**, Link Load **6**.

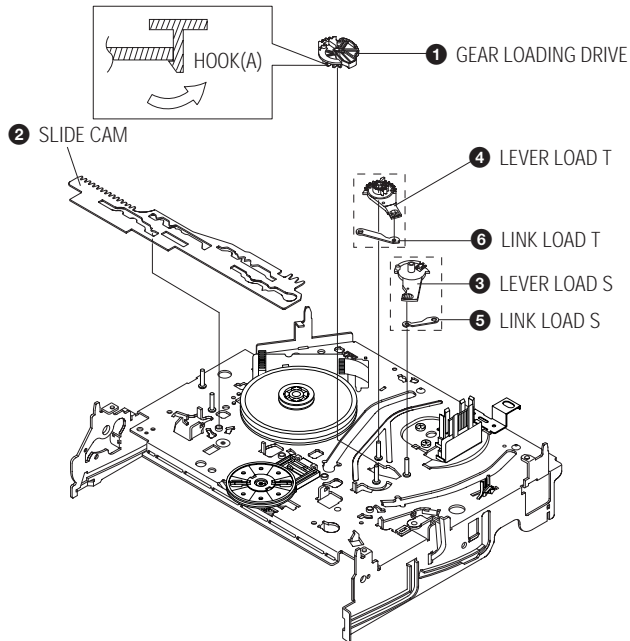


Fig. 2-21 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal

## 2-4-10 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

- 1) When reinstalling, be sure to align dot of Lever Load T Ass'y **1** with dot of Lever Load S Ass'y **2** as shown in drawing, (Refer to Timing Point 1).
- 2) Insert the Pin A,B,C,D into the Slider Cam **3** hole,
- 3) Be sure to align dot of Lever Load T **1** and dot of Gear Loading Drive **4**, (Refer to Timing Point 2).
- 4) Aline dot of Gear Loading drive **4** with mark of Slider Cam **3** as shown in drawing (Refer to Timing Point 3).

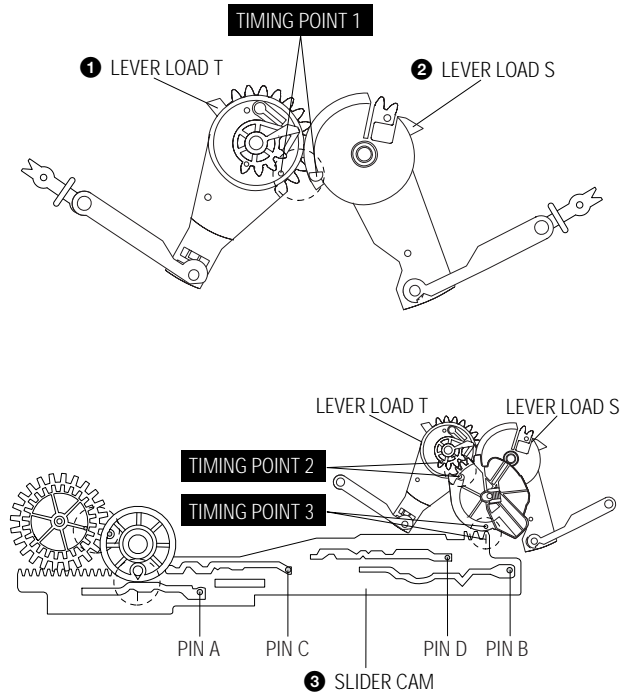


Fig. 2-22 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Assembly

## 2-4-11 Lever Pinch Drive, Lever Tension Drive Removal

- 1) Remove the Lever Pinch Drive ❶, Lever Tension Drive ❷.

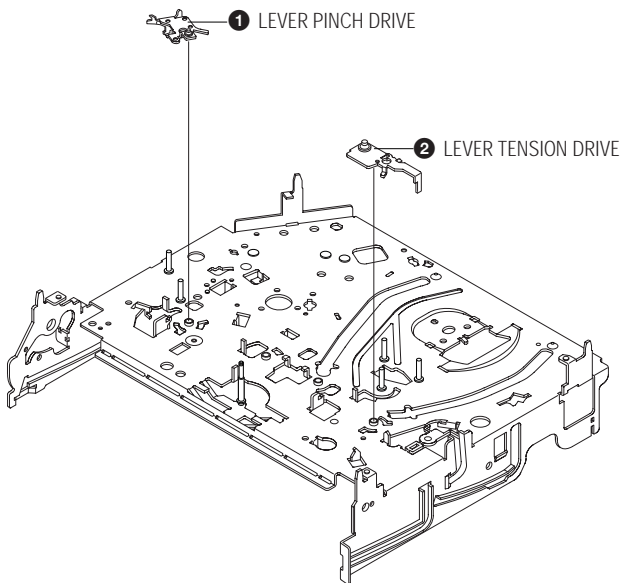


Fig. 2-23 Lever Pinch Drive,  
Lever Tension Drive Removal

## 2-4-12 Lever Tension Ass'y, Band Brake Ass'y Removal

- 1) Remove the Lever Brake S Ass'y (Refer to Fig 2-25).
- 2) Remove the Spring Tension Lever ❶.
- 3) Rotate stopper of Main Base in the direction of arrow "A".
- 4) Lift the Lever Tension Ass'y ❷ & Band brake Ass'y ❸.

### Note:

- 1) When replacing the Lever Tension Ass'y ❷, be sure to apply Grease on the post,
- 2) Take care not to touch stain on the felt side, and not to be folder and broken Band brake Ass'y
- 3) After Lever Tension Ass'y seated, Rotate stopper of Main Base to the Mark[B].

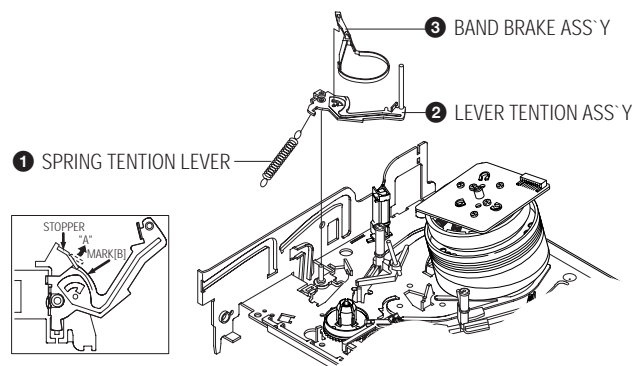


Fig. 2-24 Lever Tension Ass'y,  
Band Brake Ass'y Removal

## 2-4-13 Lever Brake S, T Ass'y Removal

- 1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 2-25.
- 2) Lift the Lever S, T Brake Ass'y ❶, ❷ with spring brake ❸.

### Assembly:

- 1) Assembly the Lever S Brake Ass'y ❶ on the Main Base.
- 2) Assembly the Lever T Brake Ass'y ❷ with spring brake ❸.

**Note:** Take extreme care not to be folded and transformed Spring Brake at removing or reinstalling.

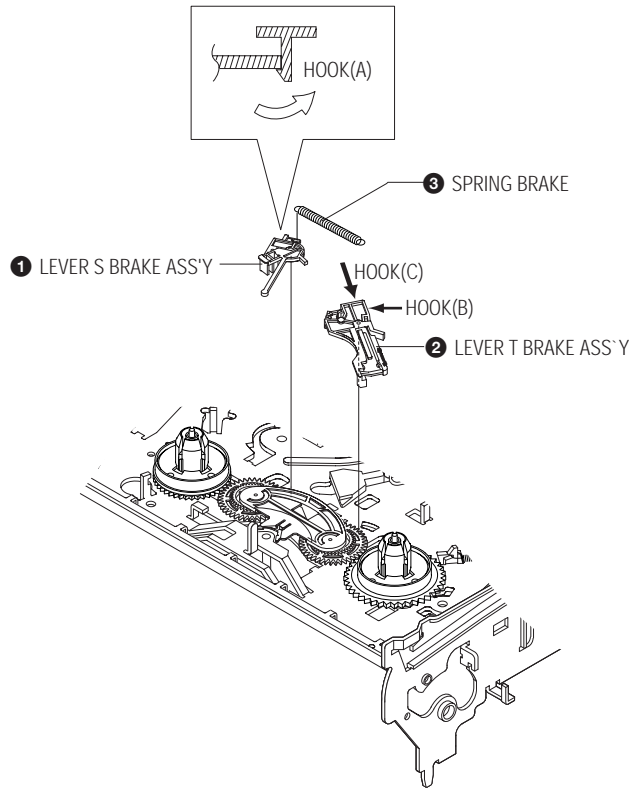


Fig. 2-25 Lever Brake S, T Ass'y Removal

## 2-4-14 Gear Idle Ass'y Removal

- 1) Push the Lever Idle ❶ in the direction of arrow "A", "B".
- 2) Lift the Lever Idle ❶.

### Assembly:

- 1) Apply oil in two Bosses of Lever Idle ❶.
- 2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

**Note:** When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

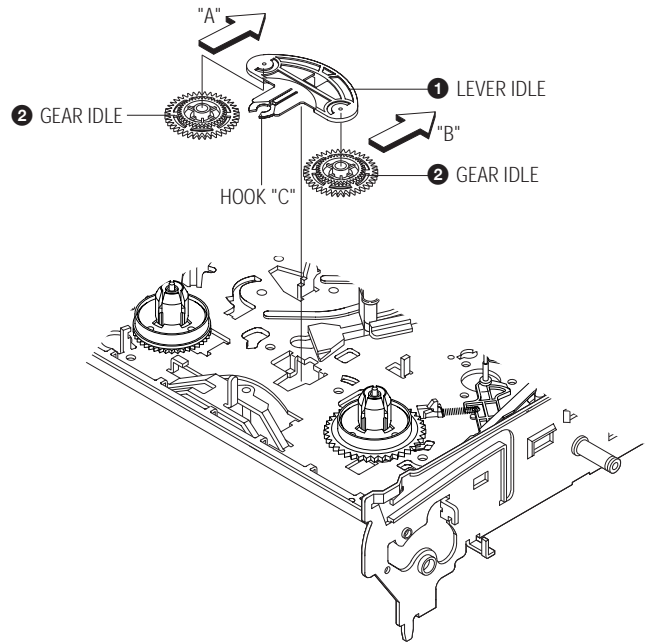


Fig. 2-26 Gear Idle Ass'y Removal

## 2-4-15 Disk S, T Reel Removal

- 1) Lift the Disk S, T Reel ❶, ❷.

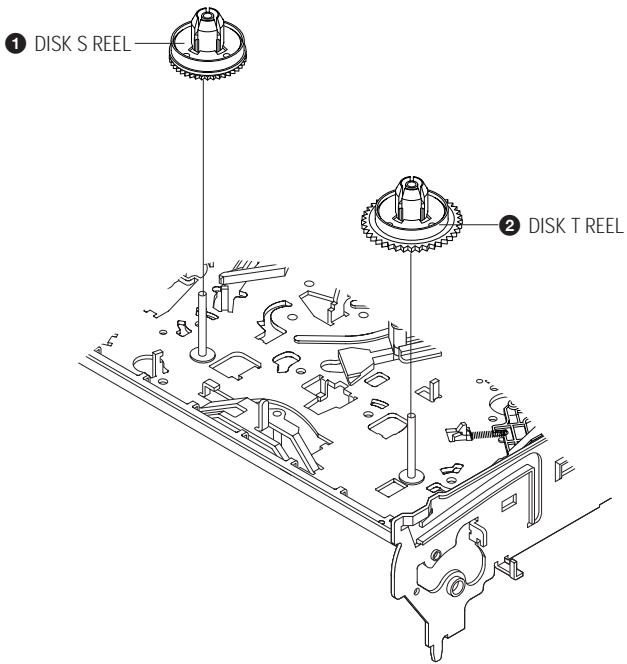


Fig. 2-27 Disk S, T Reel Removal

## 2-4-16 Holder Clutch Ass'y Removal

- 1) Remove the Washer Slit ❶.
- 2) Lift the Holder Clutch Ass'y ❷.

**Note:** When you reinstall Holder Clutch Ass'y

- 1) Check the condition of spring as shown in detail A.
- 2) Don't push Holder Clutch Ass'y down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly.

Be sure to confirm that spring is in the slit of Gear Center Ass'y as shown in detail B.

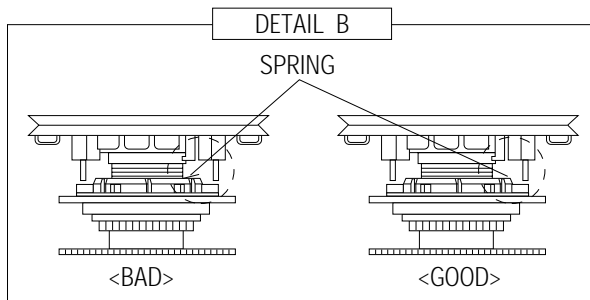
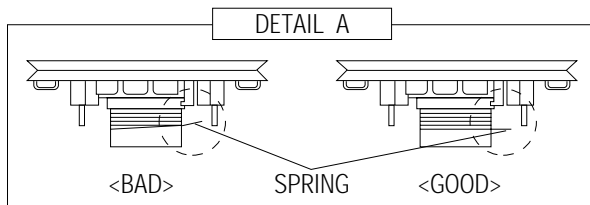
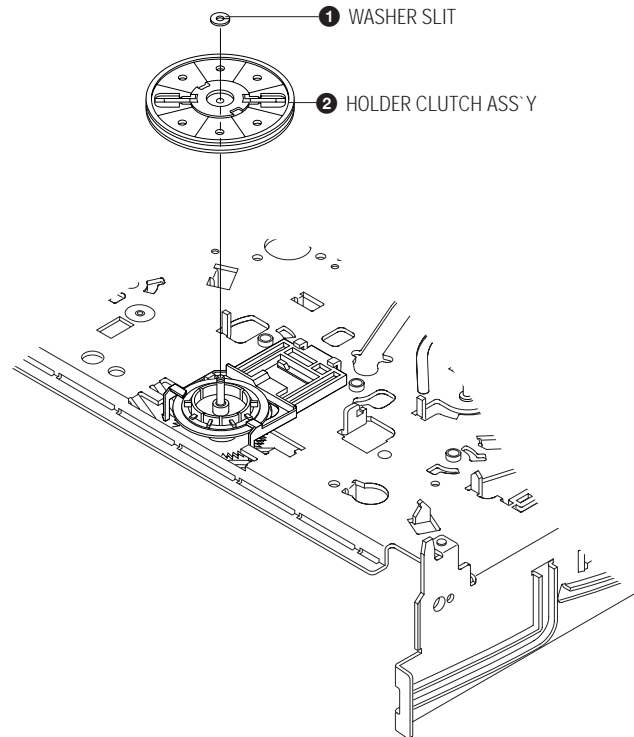


Fig. 2-28 Holder Clutch Ass'y Removal

## 2-4-17 Lever Up Down Ass'y, Gear Center Ass'y Removal

- 1) Remove the 2 hooks in the direction of arrow as shown Fig. 2-29 and lift the Lever Up Down Ass'y ❶.
- 2) Lift the Gear Center Ass'y ❷.

### Assembly:

- 1) Insert the Lever Up Down Ass'y ❶ in the rectangular holes on Main Base as shown in Fig 2-30.
- 2) Lift the Lever Up Down Ass'y ❶ about 35°.  
(Refer to Fig 2-30)
- 3) Insert Ring of the Gear Center Ass'y ❷ in the Guide of the Lever Up Down Ass'y ❶.
- 4) Insert the Gear Center Ass'y ❷ in the post on Main Base.
- 5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook.

### Note:

- 1) Take care not to separate and sentence does not mark sense.
- 2) Be sure to confirm that Ring of the Gear Center Ass'y ❷ is in the Guide of the Lever Up Down Ass'y ❶ after finishing assembly of Lever Up Down Ass'y ❶ and Gear Center Ass'y ❷.

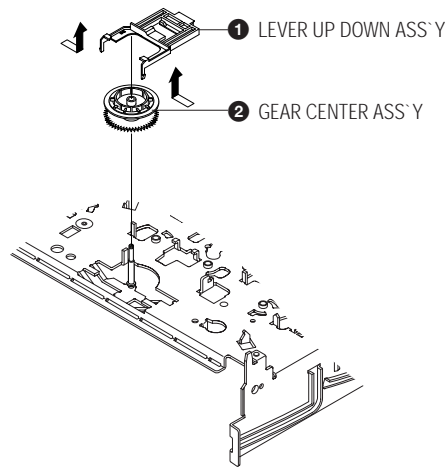


Fig. 2-29 Lever Up Down Ass'y Removal

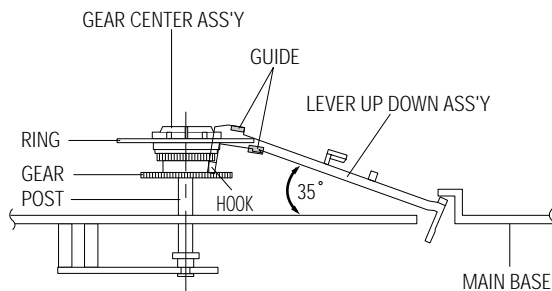


Fig. 2-30 Lever Up Down Ass'y Removal

## 2-4-18 Guide Cassette Door Removal

- 1) Lift the Hook [A].
- 2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

**Note:** After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

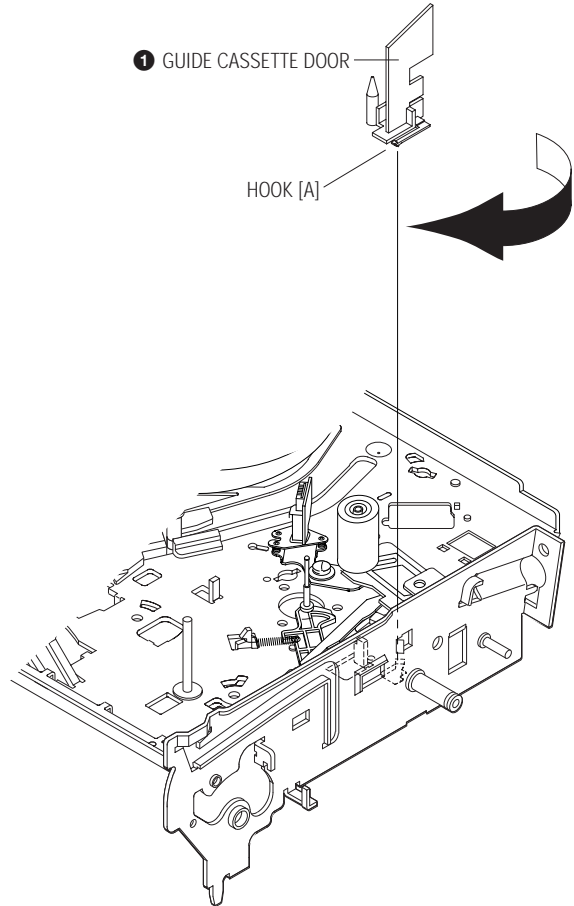


Fig. 2-31 Guide Cassette Door Removal

## 2-4-19 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

- 1) Lift the Unit Pinch Ass'y ①.
- 2) Remove the Plate Joint ② from Lever Pinch Drive.
- 3) Remove the Spring Pinch Drive ③.

### Note:

- 1) Take extreme care not to touch the grease on the Roller Pinch.
- 2) When reinstalling, be sure to apply grease on the post pinch roller.

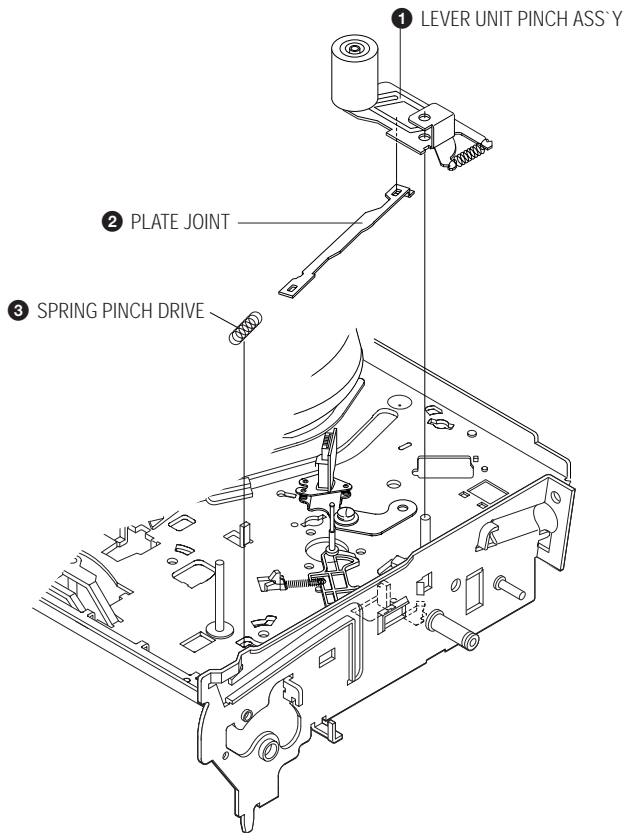


Fig. 2-32 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

## 2-4-20 Lever #9 Guide Ass'y Removal

- 1) Remove the Spring #9 Guide ①.
- 2) Lift the Spring #9 Guide Ass'y ② in the direction of arrow "A".

### Note:

- 1) Take extreme care not to get grease on the tape Guide Post.
- 2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

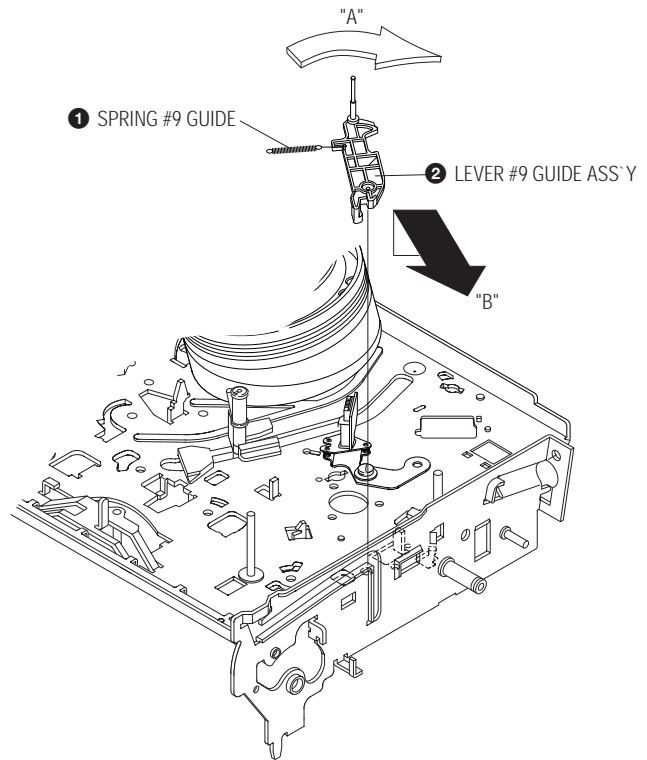


Fig. 2-33 Lever #9 Guide Ass'y Removal



## 2-4-21 FE Head Removal

- 1) Remove the screw ❶.
- 2) Lift the FE Head ❷.

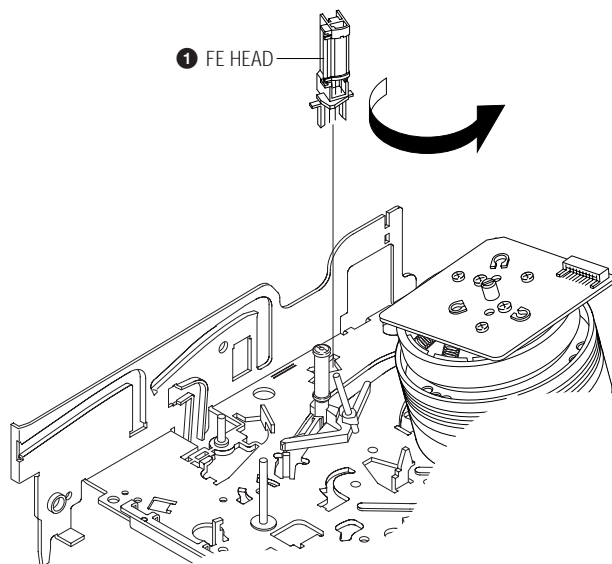


Fig. 2-34 FE Head Removal

## 2-4-22 ACE Head Removal

- 1) Pull out the FPC from connector of ACE Head Ass'y ❷.
- 2) Remove the screw ❶.
- 3) Lift the ACE Head Ass'y ❸.

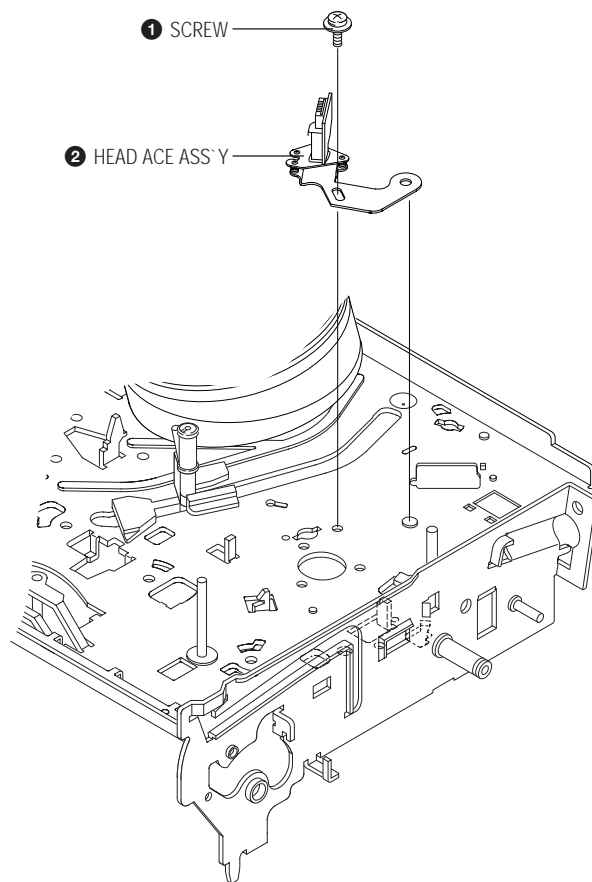


Fig. 2-35 ACE Head Removal

## 2-4-23 Slider S, T Ass'y Removal

- 1) Move the Slider S, T Ass'y ❶, ❷ to slot, and then lift it to remove. (Refer to arrow)

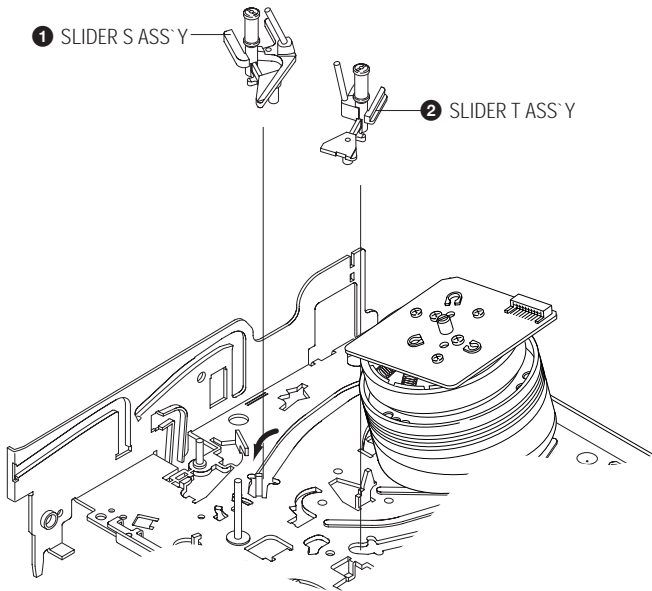


Fig. 2-36 Slider S, T Ass'y Removal

## 2-4-24 Plate Ground Deck, Cylinder Ass'y Removal

- 1) Remove the 3 Screws ❶.
- 2) Lift the Plate Ground Deck ❷.
- 3) Lift the Cylinder Ass'y ❸.

### Assembly:

- 1) Match the 3 holes in the bottom of Cylinder Ass'y ❸ to the 3 holes of Main Base as attending not to drop or knock the Cylinder Ass'y ❸.
- 2) Tighten the 1 Screw ❶.
- 3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
- 4) Tighten the other 2 Screws ❶.

### Note:

- 1) Take care not to touch the Cylinder Ass'y ❸ and the tape guide post at reinstalling.
- 2) When reinstalling, Don't push down too much on Screw Driver.

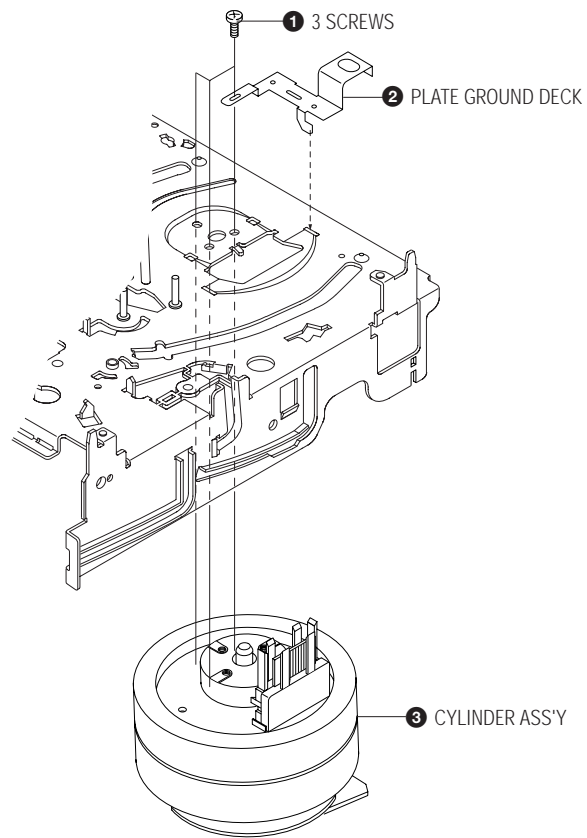


Fig. 2-37 Plate Ground Deck, Cylinder Ass'y Removal

## 2-4-25 Belt Pulley Removal

- 1) Remove the Belt Pulley ❶.

**Note:** Take extreme care not to get grease on Belt Pulley ❶ at assembling or reassembling.

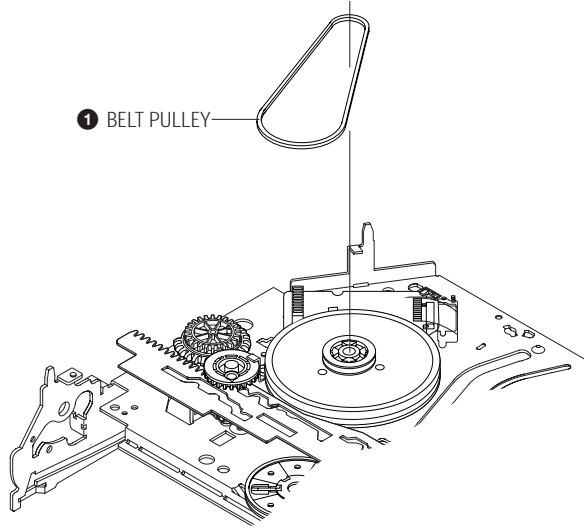


Fig. 2-38 Belt Pulley Removal

## 2-4-26 Motor Capstan Ass'y Removal

- 1) Remove the Damper Capstan ❶ in the direction of arrow.
- 2) Remove the 3 Screws ❷.
- 3) Remove the Motor Capstan Ass'y ❸.

### Assembly:

- 1) Match the 3 holes of Motor Capstan Ass'y ❸ to the 3 holes of Main Base. Be careful not to drop or knock the Motor Capstan Ass'y ❸.
- 2) Tighten the 3 Screws ❷ in the direction of arrow as shown detail drawing.
- 3) Assemble the Damper Capstan ❶.

**Note:** After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base. After reinstalling, adjusting the tape transport system again.

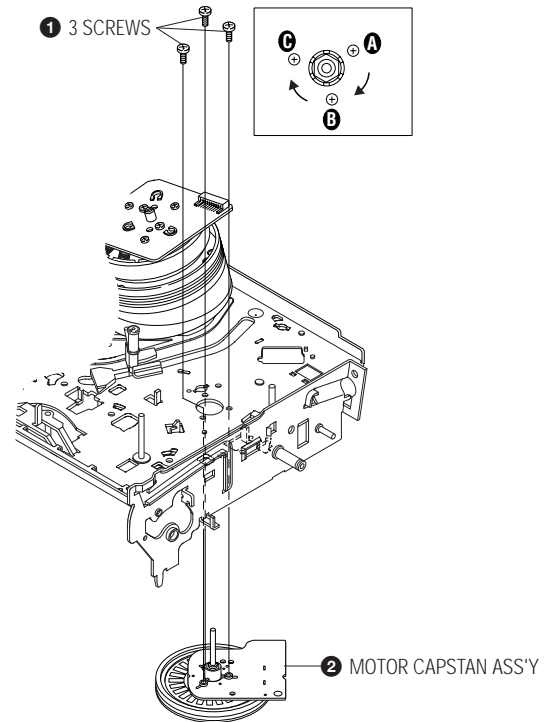


Fig. 2-39 Motor Capstan Ass'y Removal

## 2-4-27 Post #8 Guide Ass'y Removal

- 1) Rotate the Post #8 Guide Ass'y **1** in the direction of arrow to lift up.

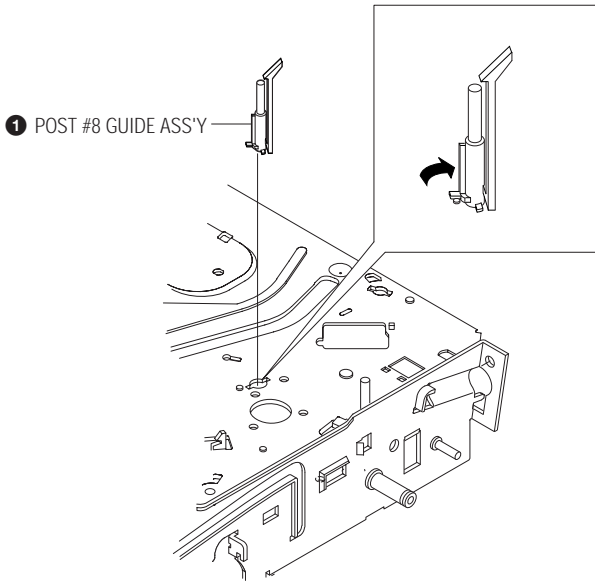


Fig. 2-40 Post #8 Guide Ass'y Removal

## 2-4-29 How to Eject the Cassette Tape (If the unit does not operate on condition that is inserted into housing Ass'y)

- 1) Turn the Gear worm **1** clockwise with screw driver. (Refer to arrow)  
(Other method: Remove the Screw of Motor Load Ass'y, Separate the Motor Load Ass'y)

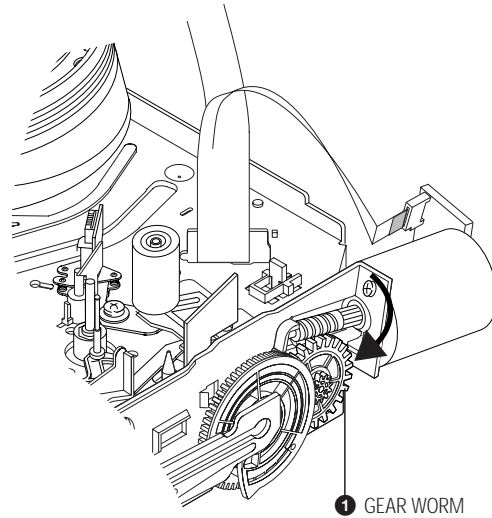


Fig. 2-42

## 2-4-28 Level Head Cleaner Ass'y Removal (Optional)

- 1) Release the Hook **1**.
- 2) Lift the Lever Head Cleaner Ass'y **2**.

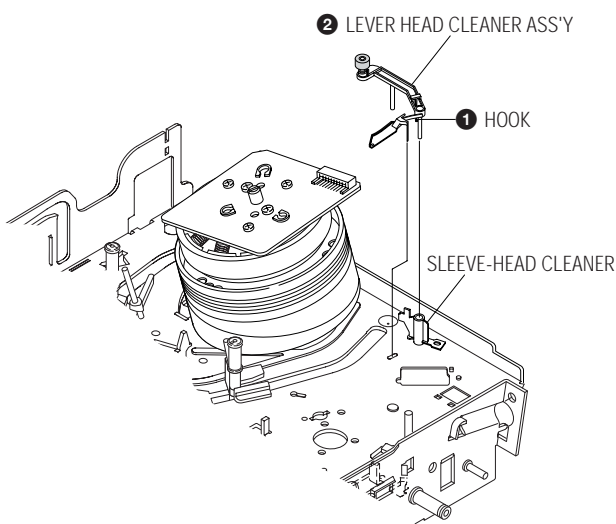


Fig. 2-41 Lever Head Cleaner Ass'y Removal

- 2) When Slider S,T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape.  
(Refer to Fig.2-43)  
(If you rotate Gear Worm **1** continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage.  
Be sure to wind the unwinded tape in the state of set horizontally.)
- 3) Rotate Gear Worm **1** clockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig.2-42)

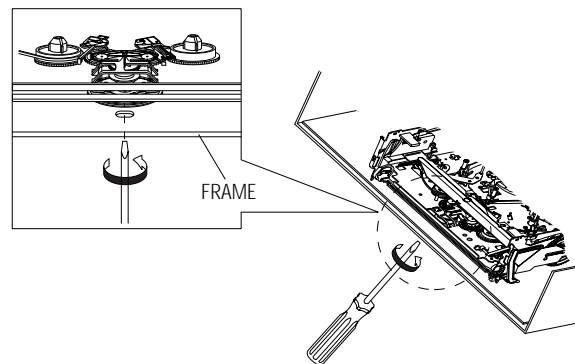


Fig. 2-43

## 2-5 THE TABLE OF CLEANING, LUBRICATION AND REPLACEMENT TIME ABOUT PRINCIPAL PARTS

- 1) The replacement time of parts is not life of parts.
- 2) The table 2-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).  
The checking period may be changed owing to the condition of use, runtime and environmental conditions.
- 3) Life of the Cylinder Ass'y is depend on the condition of use.
- 4) See exploded view for location of each parts.

<Table 2-1>

*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
T A P E  P A T H  S Y S T E M	POST TENSION	△	△	△	△	△	△	△	△	△	△	- To clean the parts, use patch and alcohol (solvent).  - After cleaning, use the video tape after alcohol is gone away completely.  - We recommend to use oil [EP-50] or solvent.
	SLANT POST S, T	△	△	△	△	△	△	△	△	△	△	
	#8 GUIDE SHAFT	△	△	△	△	△	△	△	△	△	△	
	CAPSTAN SHAFT	△	△	△	△	△	△	△	△	△	△	
	#9 GUIDE POST	△	△	△	△	△	△	△	△	△	△	
	#3 GUIDE POST	△	△	△	△	△	△	△	△	△	△	
	GUIDE ROLLER S, T	△	△	△	0	0	0	0	0	0	0	
	CYLINDER ASS'Y	△	0	0	0	0	0	0	0	0	0	- One or two drops of oil should be applied after cleaning with alcohol.
	FE HEAD	△	△	△	0	0	0	0	0	0	0	
	ACE HEAD	△	0	0	0	0	0	0	0	0	0	
	PINCH ROLLER	△	0	0	0	0	0	0	0	0	0	- Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	POST REEL S, T		◆		◆		◆		◆		◆	
	SLEEVE TENSION		◆		◆		◆		◆		◆	
	POST CENTER		◆		◆		◆		◆		◆	
LEVER IDLE BOSS (2Point)		◆		◆		◆		◆		◆		
D R I V I N G	CAPSTAN MOTOR PULLEY	△	△	△	△	△	0	0	0	0	0	
	BELT PULLEY				0	0	0	0	0	0	0	
	HOLDER CLUTCH ASS'Y	△	0	0	0	0	0	0	0	0	0	
	GEAR CENTER ASS'Y		0	0	0	0	0	0	0	0	0	
	GEAR IDLE (2Point)		0	0	0	0	0	0	0	0	0	
	LOADING MOTOR		0	0	0	0	0	0	0	0	0	
B R A K E	BAND BRAKE ASS'Y		0	0	0	0	0	0	0	0	0	
	BRAKE T ASS'Y		0	0	0	0	0	0	0	0	0	

△ : Cleaning      0 : Check and replacement in necessary      ◆ : Add Oil

## 2-6-2 Ass'y P/U Deck Removal

- 1) Disconnect DCN2 **1**, DCN3 **2**.
- 2) Lift down the Assy P/U Deck **3** while simultaneously pushing 2 Hooks **4**, **5** in the direction of arrow "A", "B".

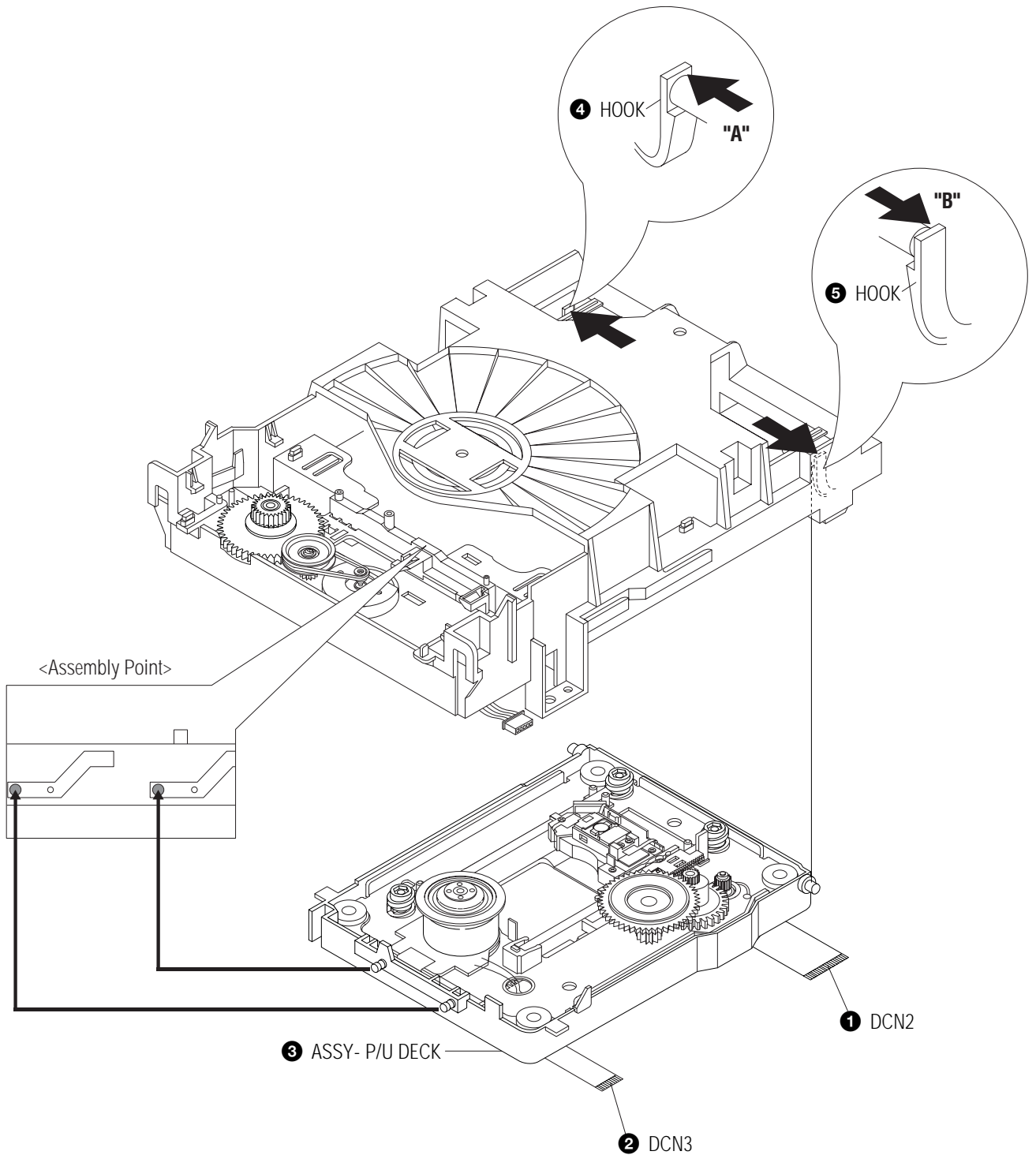


Fig. 2-45 Assy P/U Deck Removal

## 2-6-2 Assy P/U Deck Removal

- 1) Disconnect DCN2 **1**, DCN3 **2**.
- 2) Lift down the Assy P/U Deck **3** while simultaneously pushing 2 Hooks **4**, **5** in the direction of arrow "A", "B".

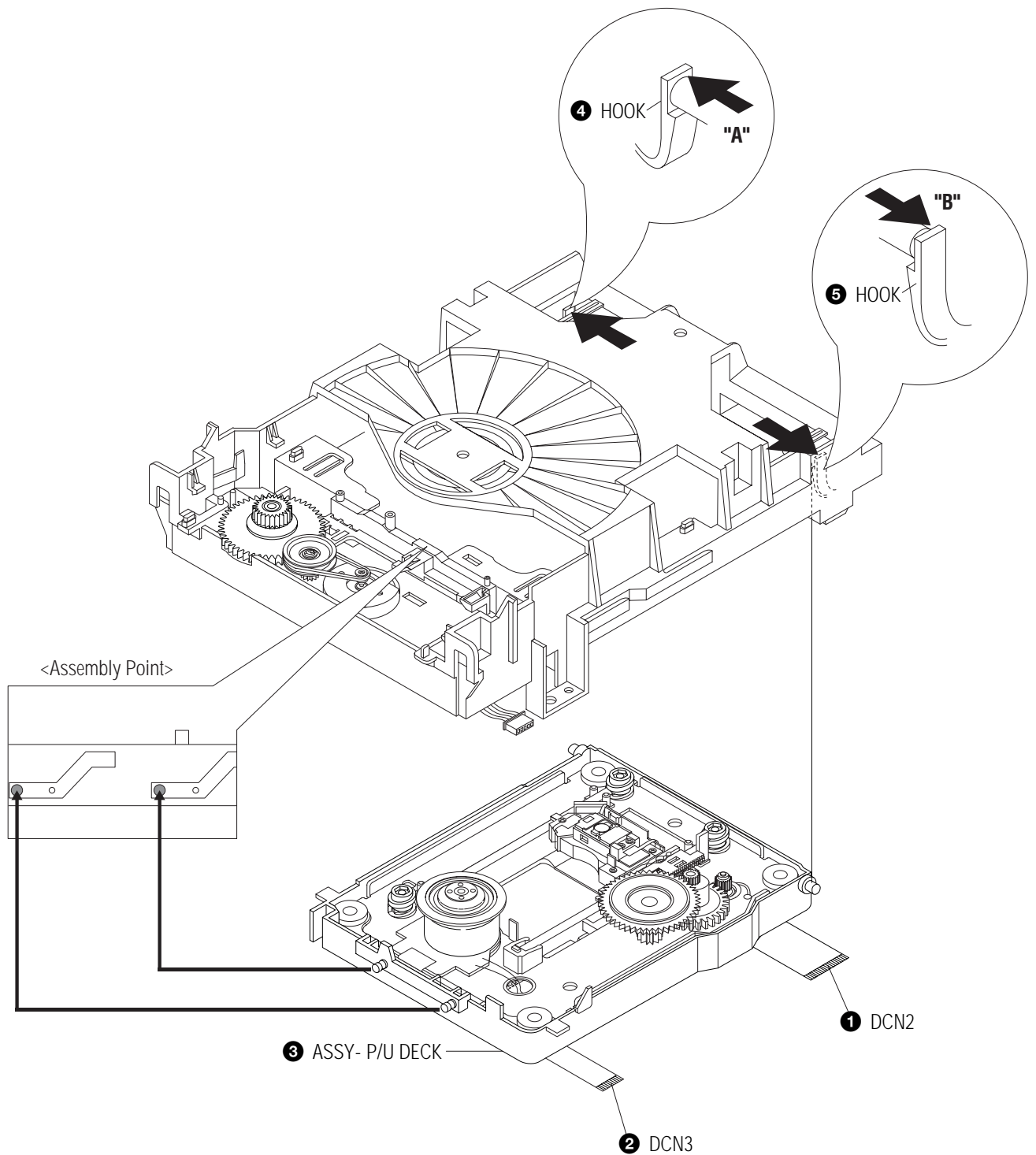


Fig. 2-45 Assy P/U Deck Removal

## 2-6-3 Housing Ass'y Removal

- 1) Remove Belt **1**.
- 2) Push the Hook **2** in the direction arrow "A" and lift up Pulley Gear **3**.
- 3) Push the Slider Housing **5** in the direction arrow "B" and lift up the Gear Tray **4**.
- 4) Lift up the Slider Housing **5**.
- 5) Remove 2 Screws **6** and lift down the Motor Load Assy **7**.
- 6) Remove Clamper Ass'y **8**.

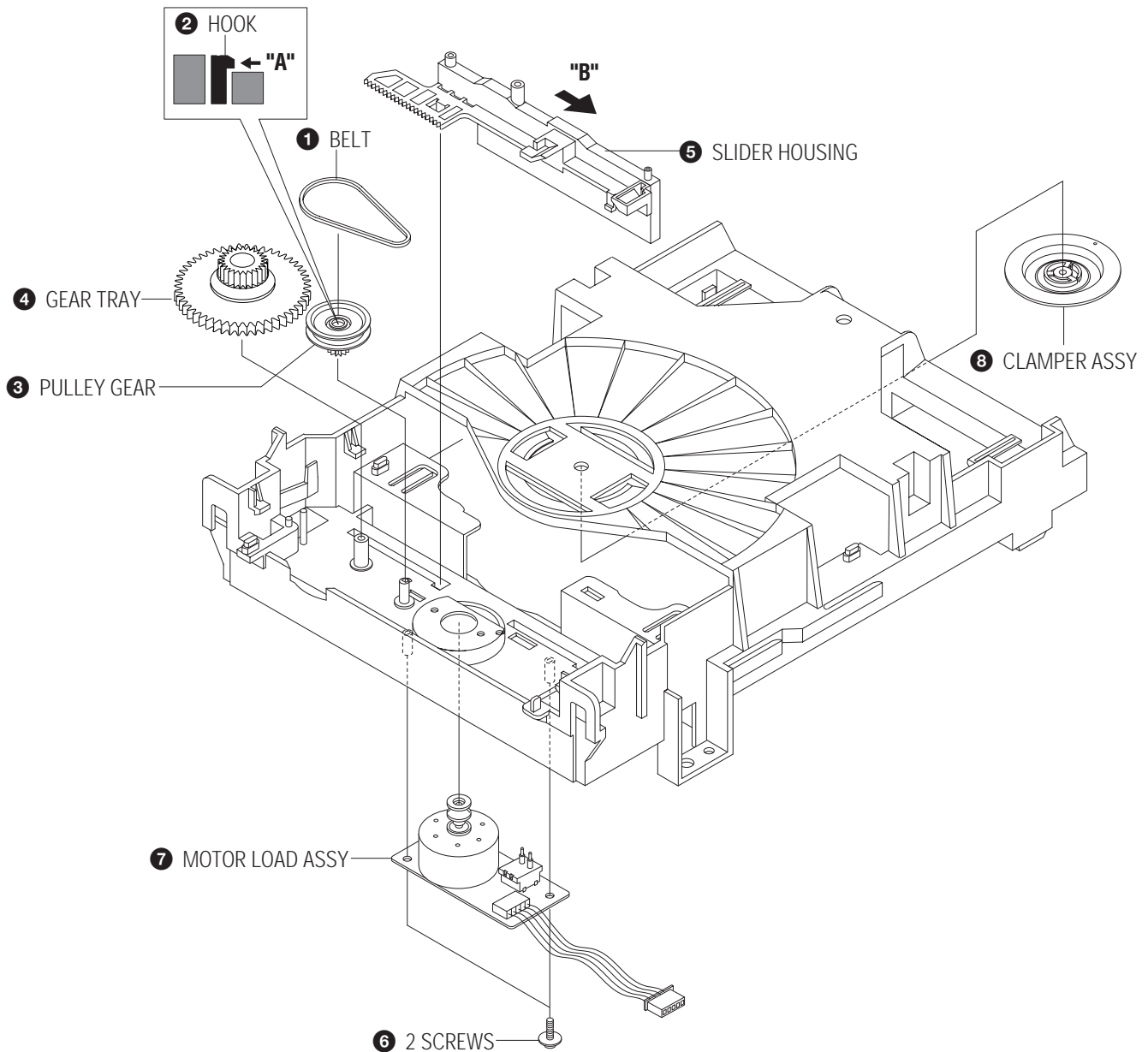


Fig. 2-46 Housing Ass'y Removal



### 2-6-4 Sub Chassis Removal

- 1) Remove the Soldering of Motor Feed (+, - wire) ❶.
- 2) Remove the 4 Screws ❷.
- 3) Lift up the Ass'y Brkt Deck ❸.

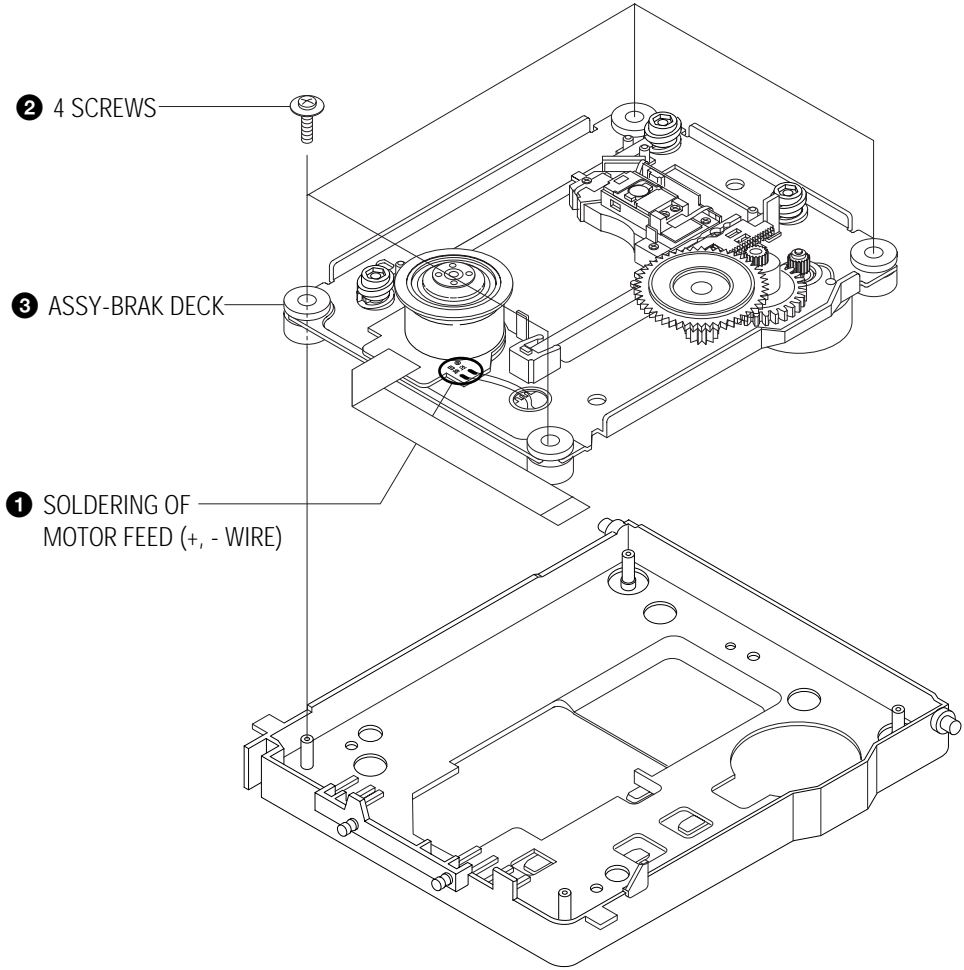


Fig. 2-47 Sub Chassis Removal

## 2-6-5 Ass'y Brkt Deck Removal

- 1) Push the Hook **1** in the direction arrow "A" and lift up Gear Feed B **2**.
- 2) Remove 3 Screws **3** and 3 Holder Cam Skew **4**.
- 3) Remove Shaft Pick-Up **5** and Pick-Up Assy **6**.
- 4) Remove Gear Feed A **7**.
- 5) Remove 2 Screws **8**.
- 6) Remove Motor Feed Ass'y **9**.
- 7) Remove 3 Screws **10**.
- 8) Remove Motor Spindle **11**.

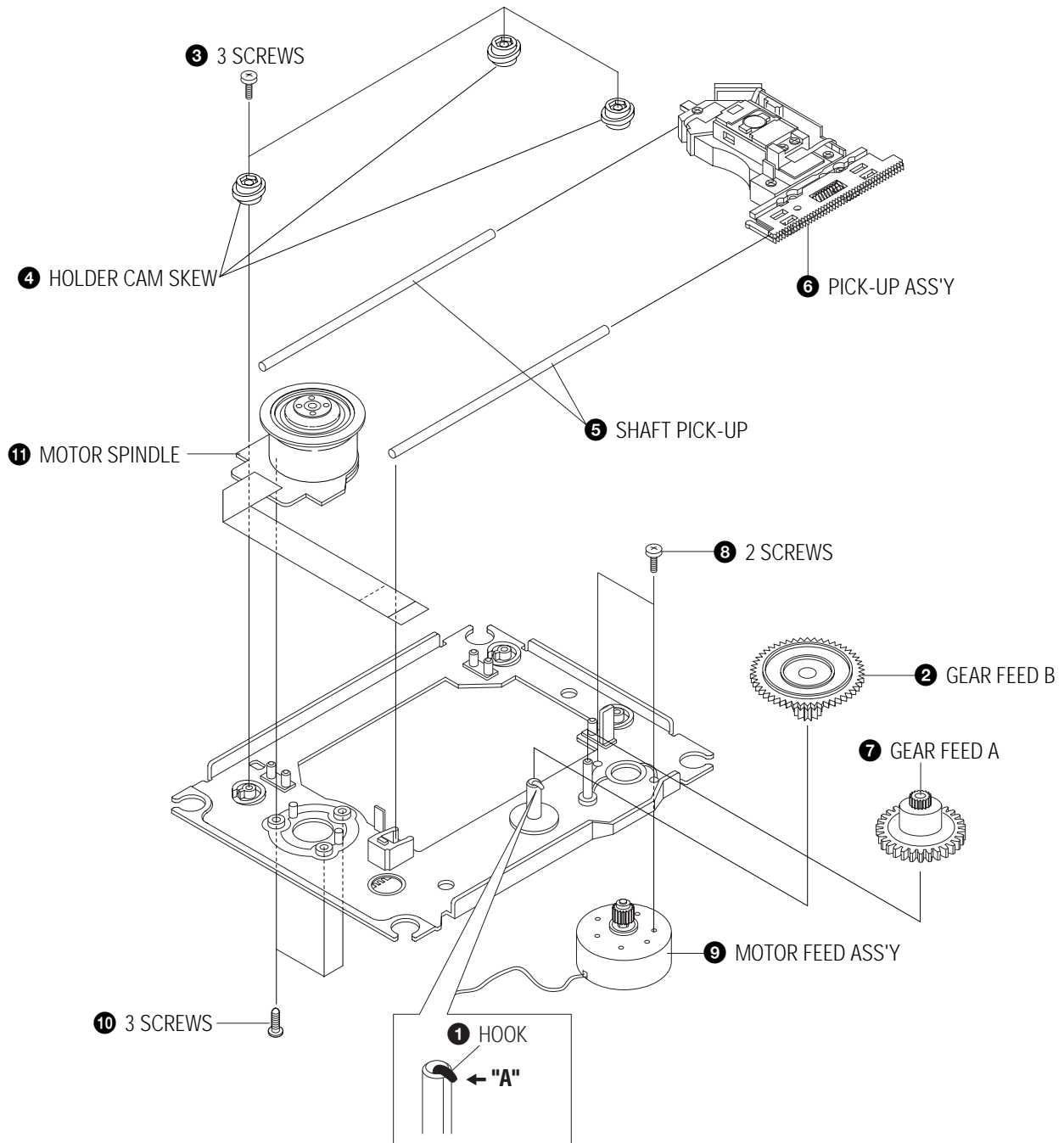
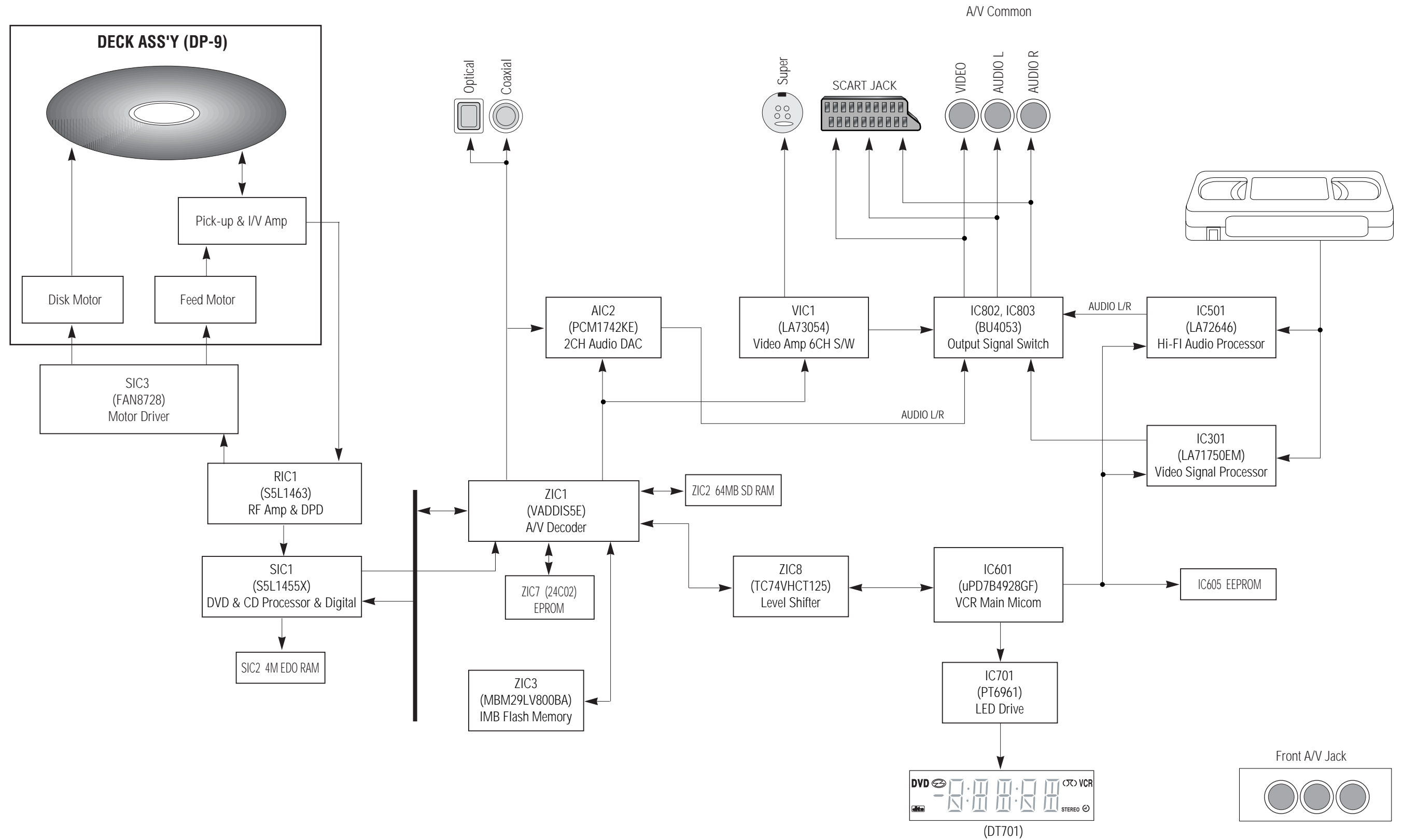


Fig. 2-48 Ass'y Brkt Deck Removal

### 3. BLOCK DIAGRAM



MEMO

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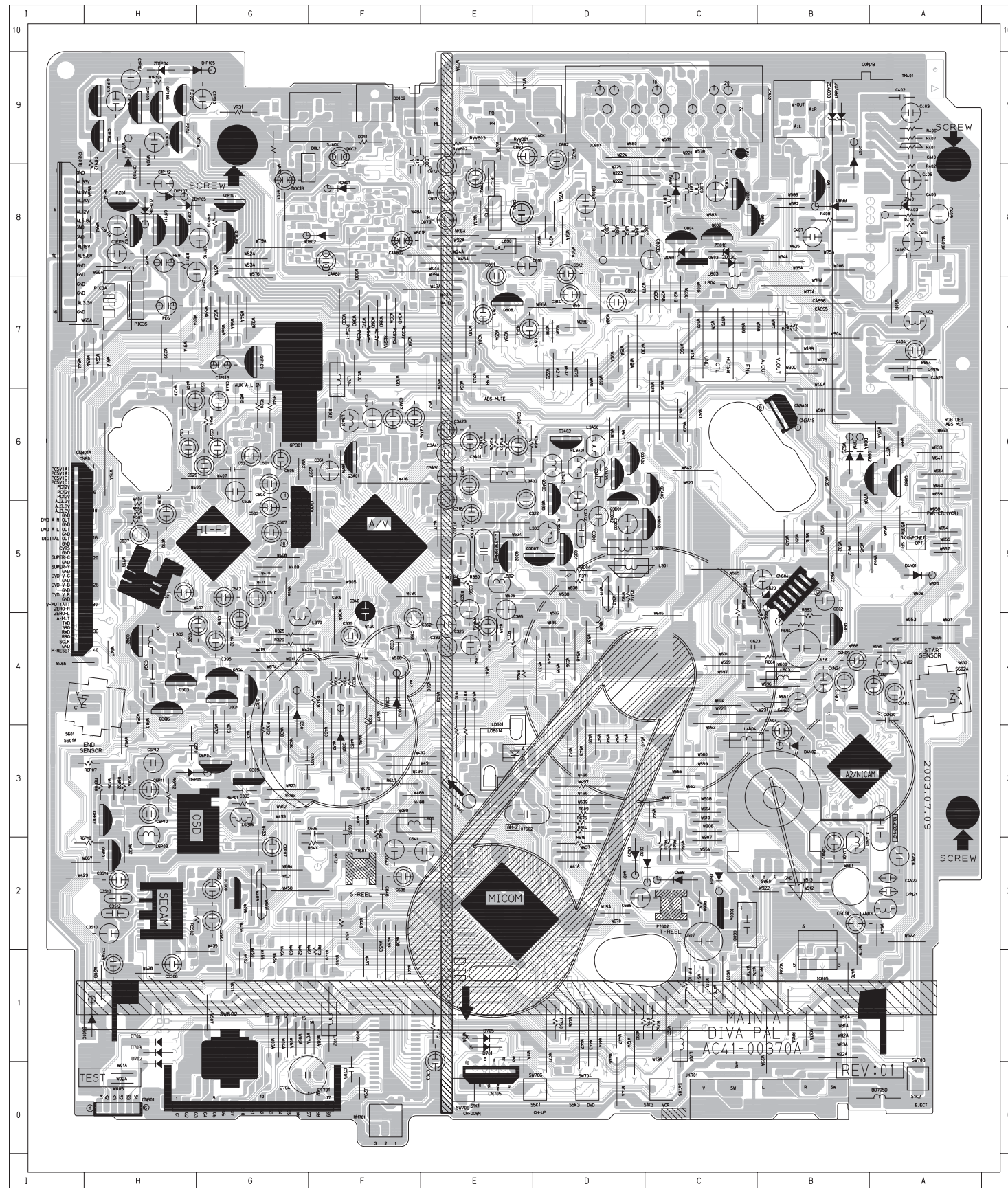
## 4. PCB DIAGRAMS

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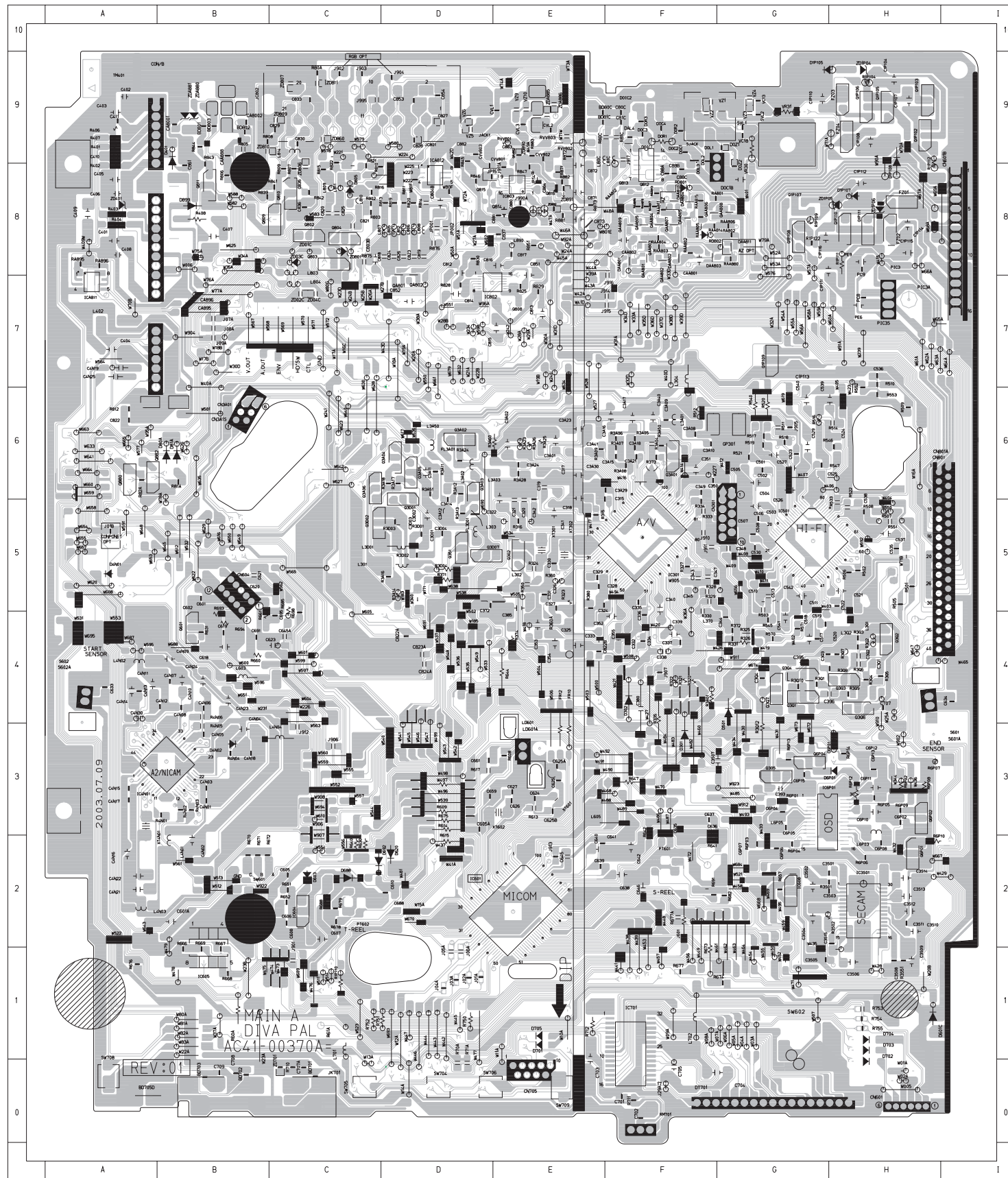
4-1	VCR Main .....	4-3
4-2	DVD Main .....	4-7
4-3	S.M.P.S. ....	4-11
4-4	Function .....	4-13
4-5	Dial-Timer (SLV-D950B/D950E/D950GI/D910AZ Only) .....	4-13

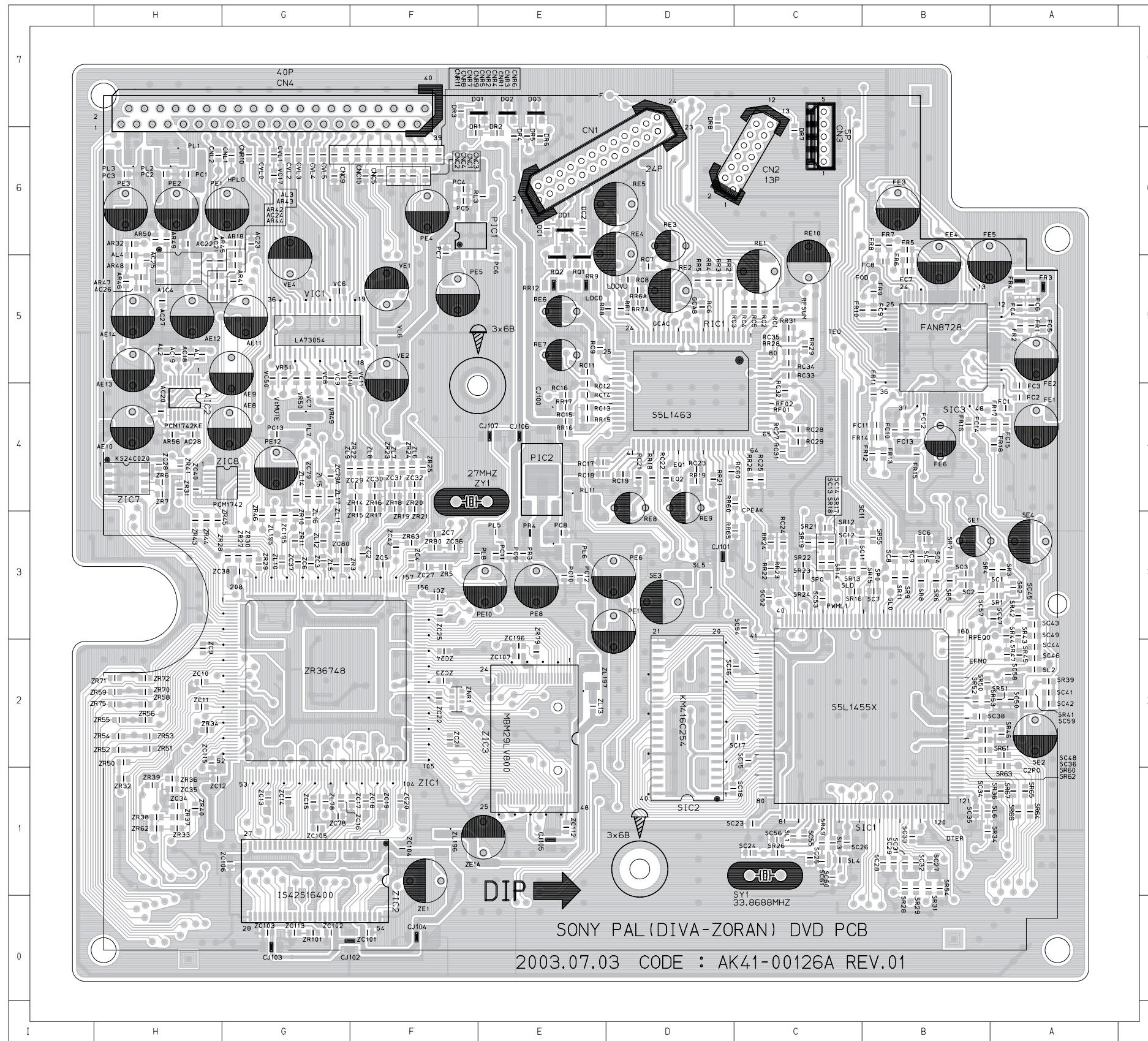
# 4-1 VCR MAIN

## COMPONENT SIDE



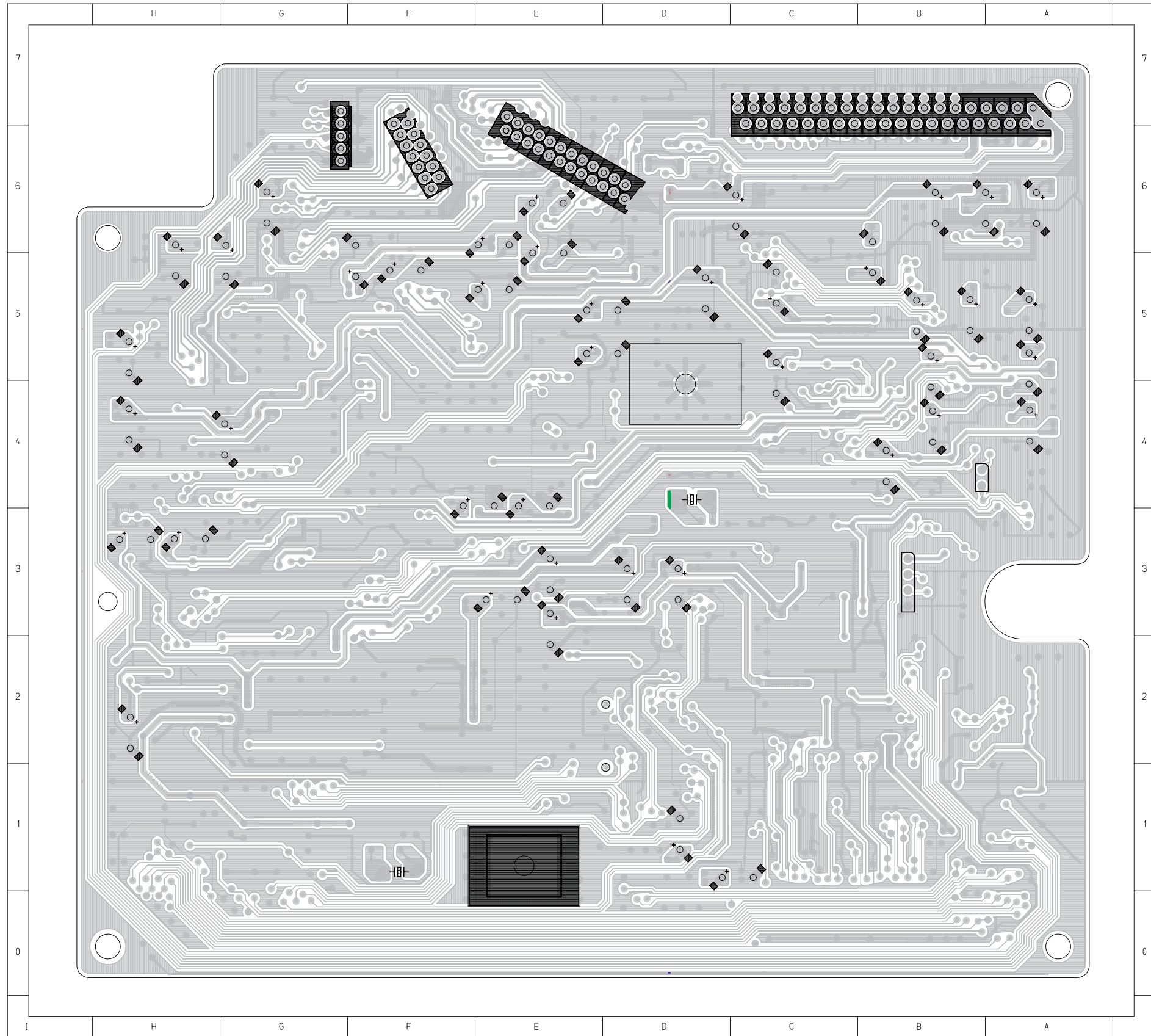
**CONDUCTOR SIDE**



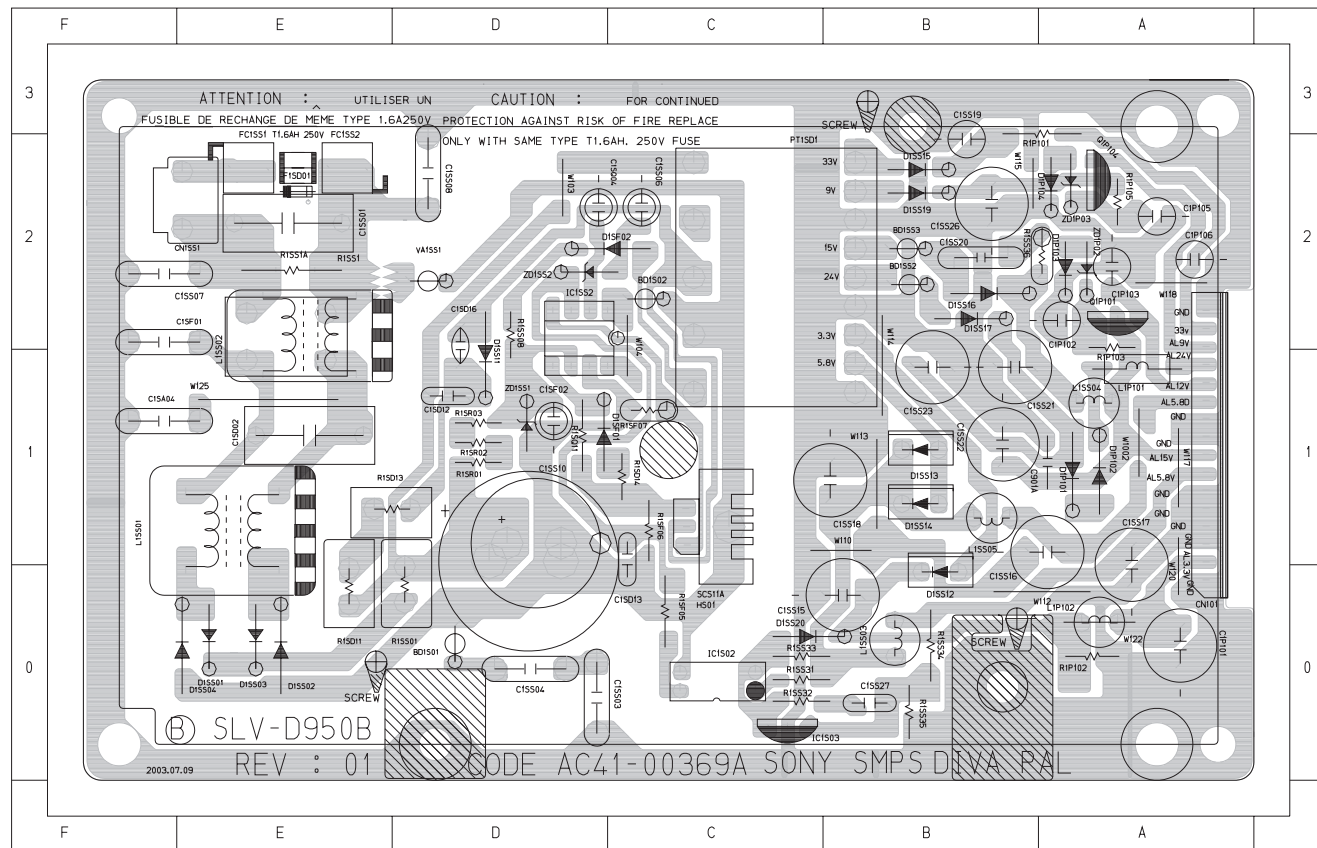




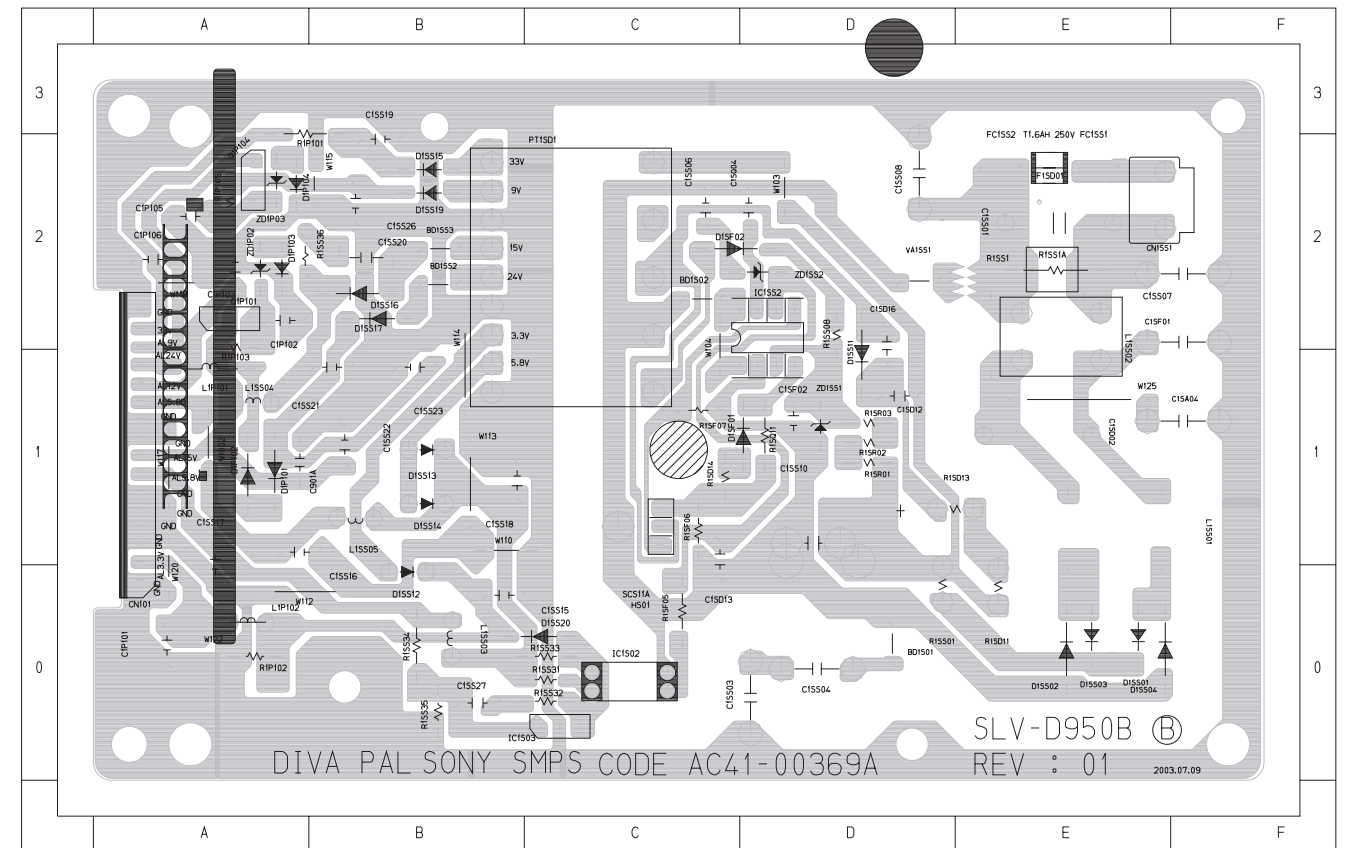
**CONDUCTOR SIDE**



COMPONENT SIDE

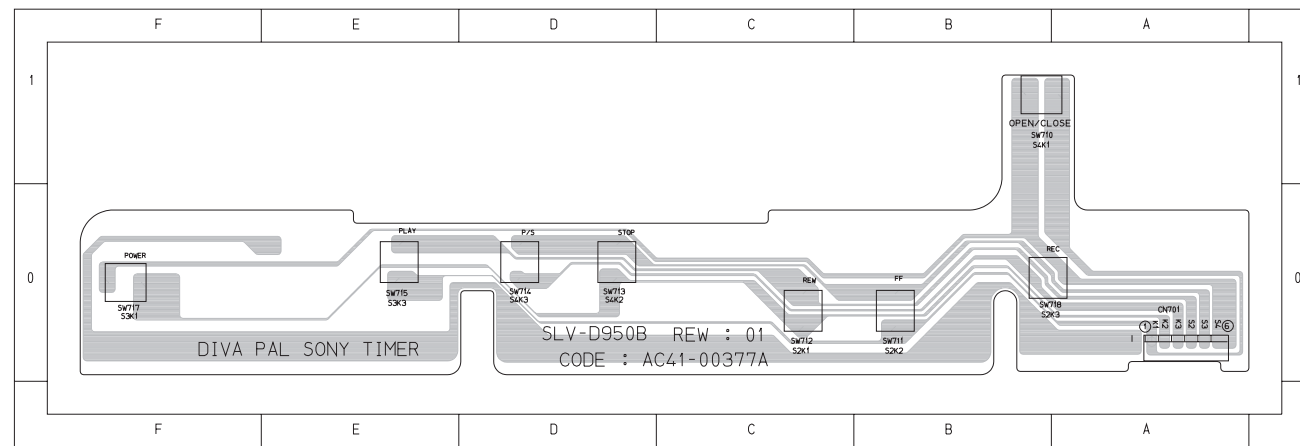


CONDUCTOR SIDE

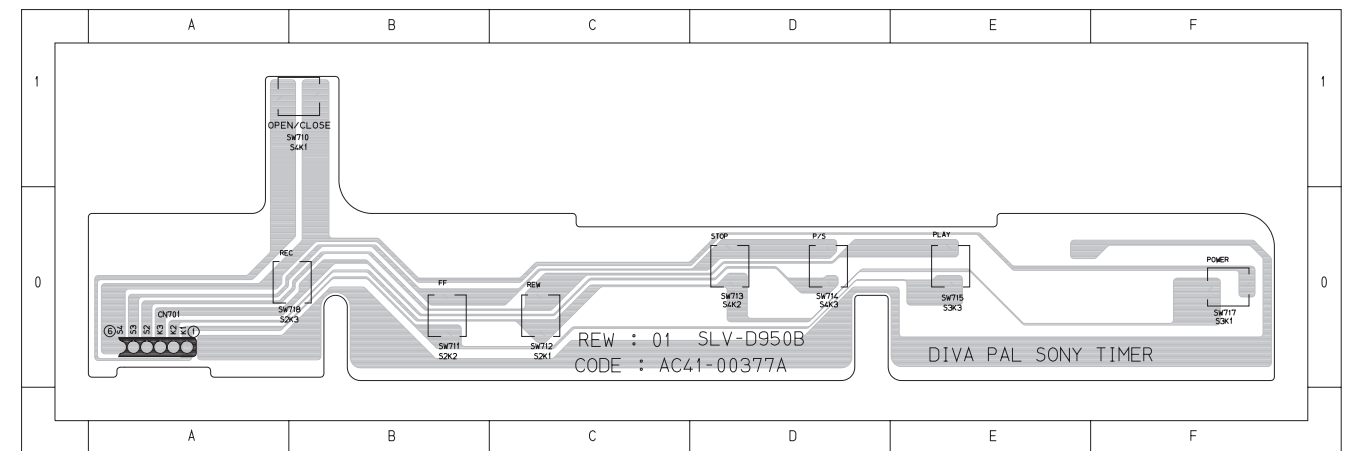


## 4-4 FUNCTION

### COMPONENT SIDE

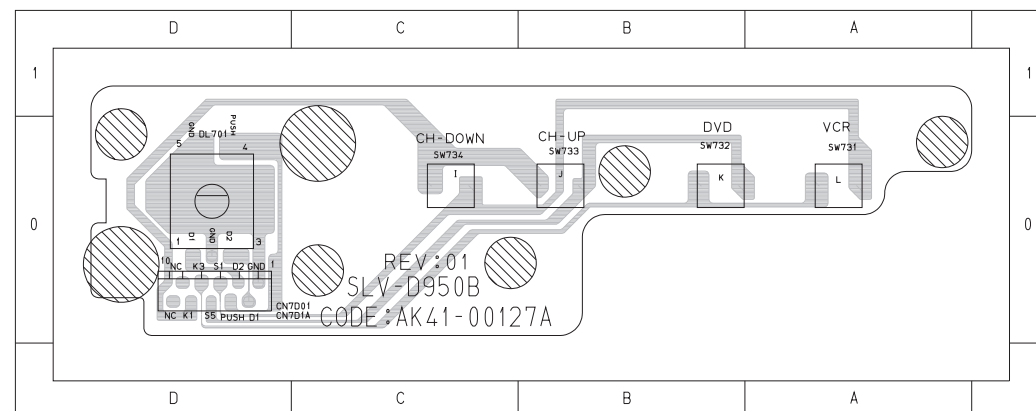


### CONDUCTOR SIDE

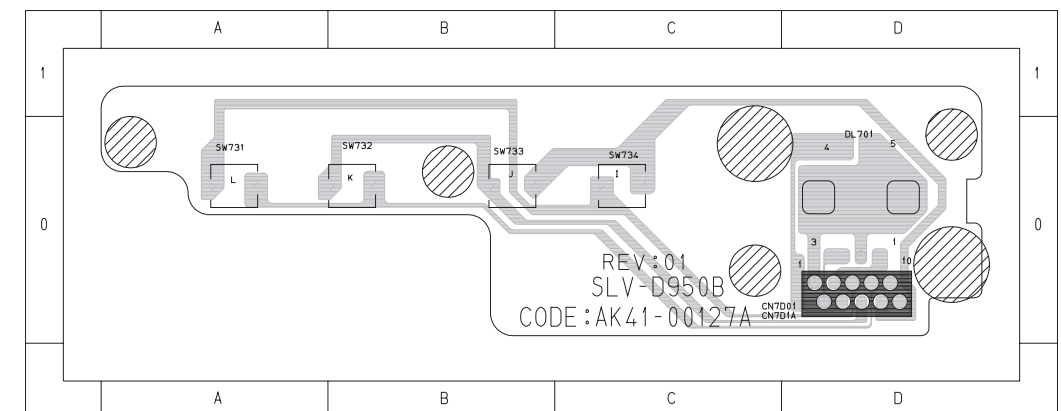


## 4-5 DIAL-TIMER (SLV-D950B/D950E/D950GI/D910AZ Only)

### COMPONENT SIDE



### CONDUCTOR SIDE



MEMO

## 5. SCHEMATIC DIAGRAMS

### ◆ Block Identification of Main PCB - - - - - 5-3

#### VCR Main PCB

5-1	S.M.P.S. - - - - -	5-5
5-2	Power Drive - - - - -	5-7
5-3	OSD/VPS/PDS - - - - -	5-9
5-4	A2/NICAM - - - - -	5-11
5-5	Audio/Video - - - - -	5-13
5-6	Hi-Fi - - - - -	5-15
5-7	Input-Output - - - - -	5-17
5-8	TM - - - - -	5-19
5-9	Syscon - - - - -	5-21
5-10	Logic/Function - - - - -	5-23
5-11	SECAM (SLV-D950B/D910B/D910R Only) - - - - -	5-25

#### DVD Main PCB

5-12	DVD Main-Micom/AV Decoder - - - - -	5-27
5-13	DVD Servo - - - - -	5-29
5-14	DVD Audio/Video - - - - -	5-31

#### Note

For schematic Diagram  
- Resistors are in ohms, 1/8W unless otherwise noted.

#### Special note :

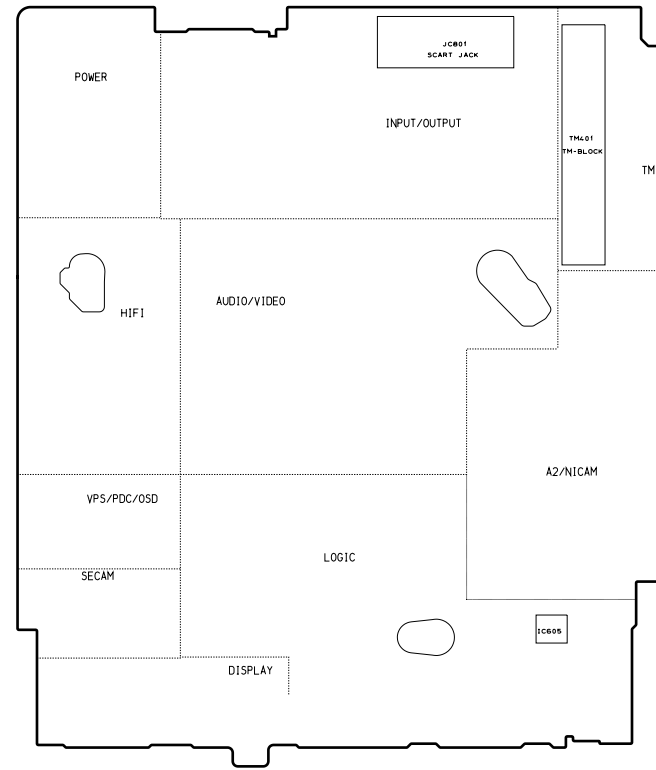
Most semiconductor devices are electrostatically sensitive and therefore require the special handling techniques described under the "electrostatically sensitive (ES) devices" section of this service manual.

#### Important safety notices :

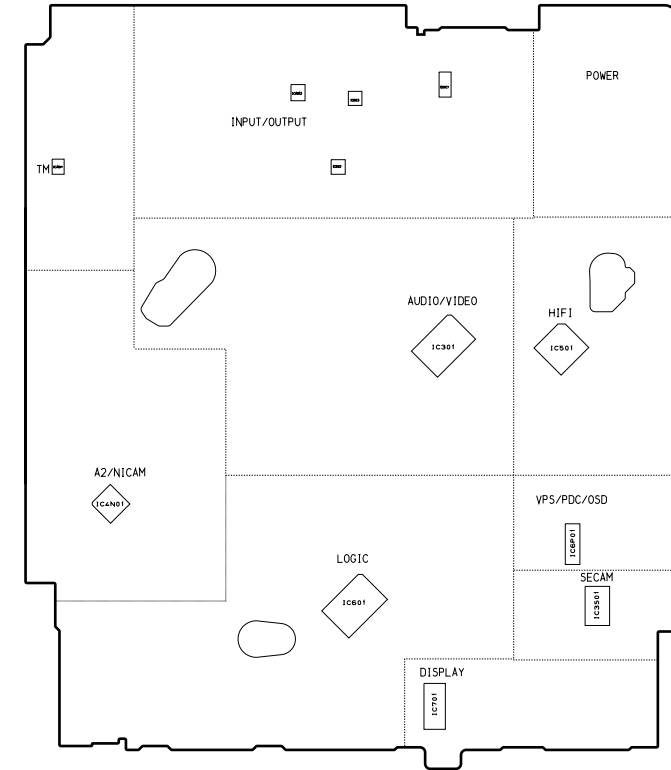
Components identified with the mark  $\triangle$  have the special characteristics for safety. When replacing any of these components. Use only the same type.

◆ BLOCK IDENTIFICATION OF MAIN PCB

VCR MAIN PCB

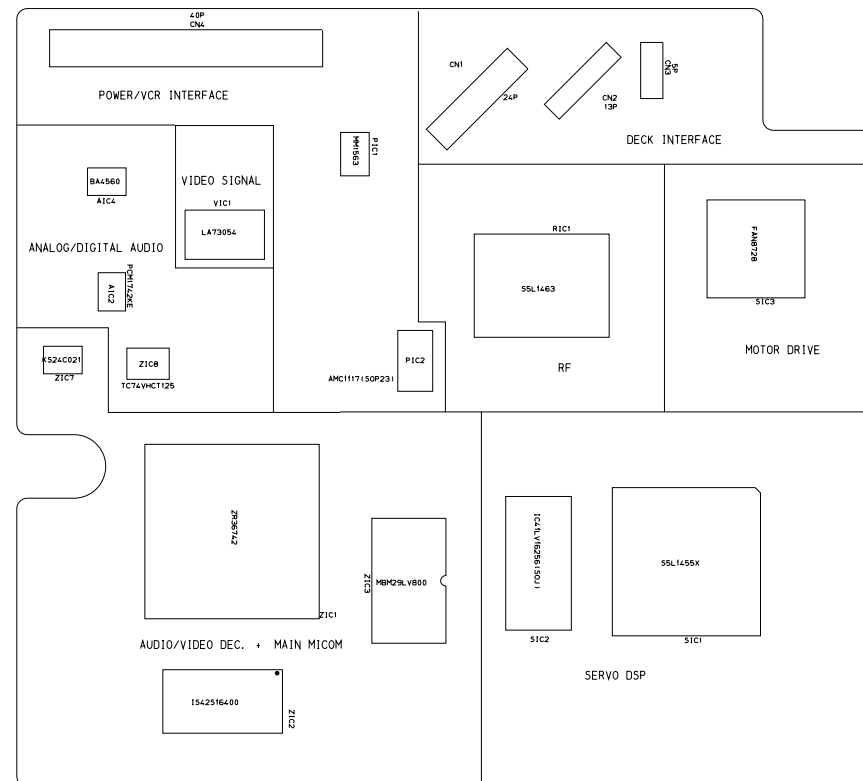


<Component Side>

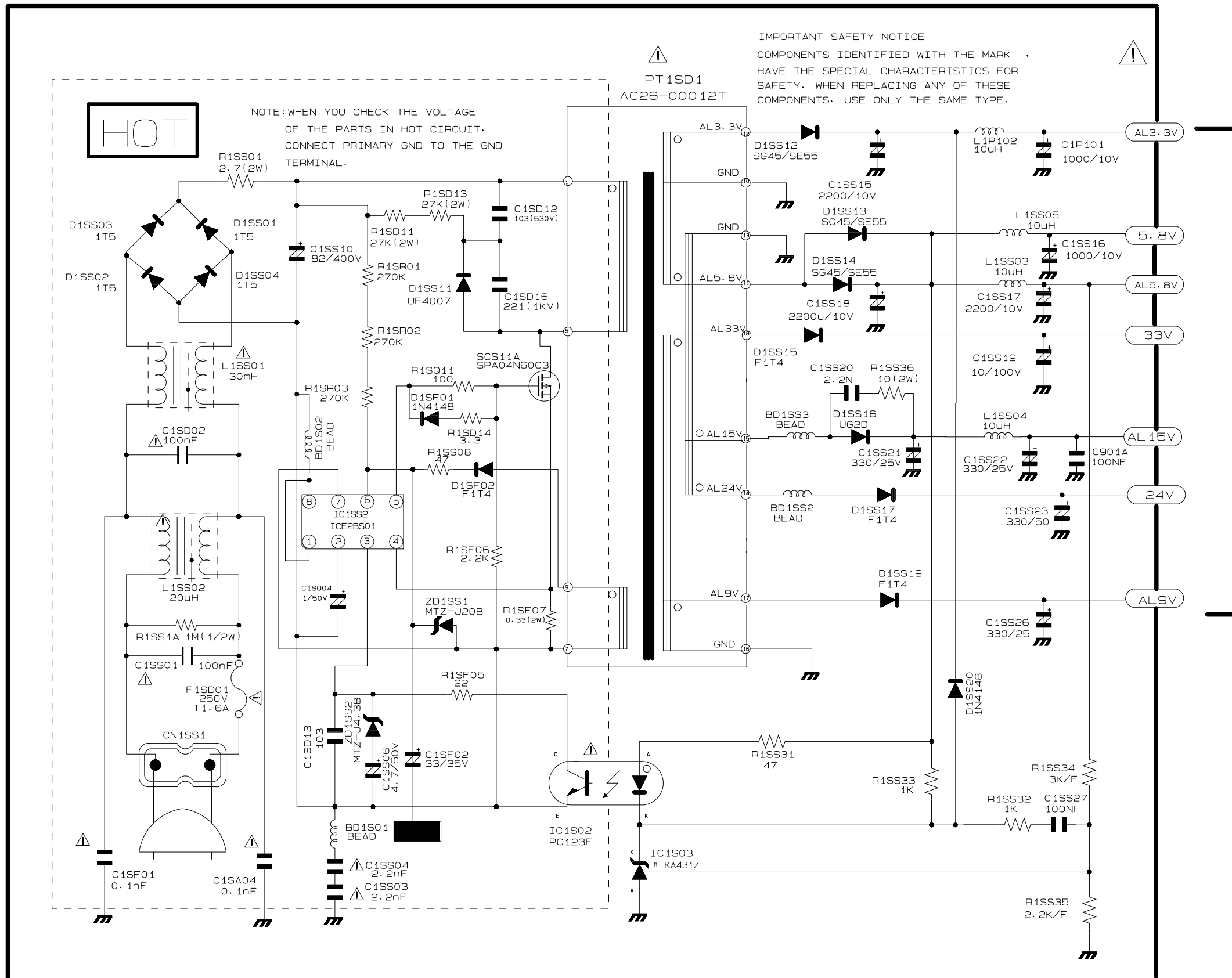


<Conductor Side>

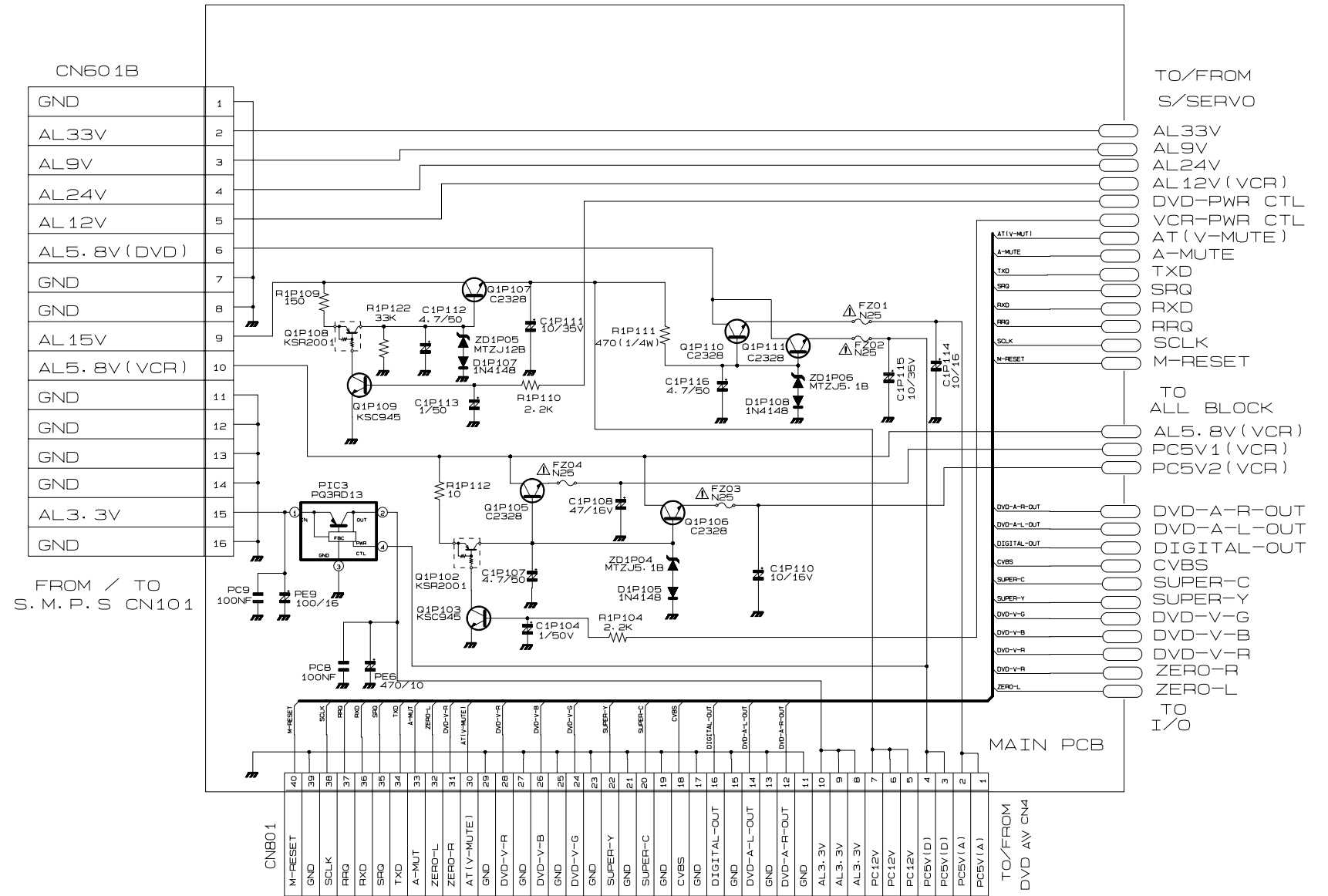
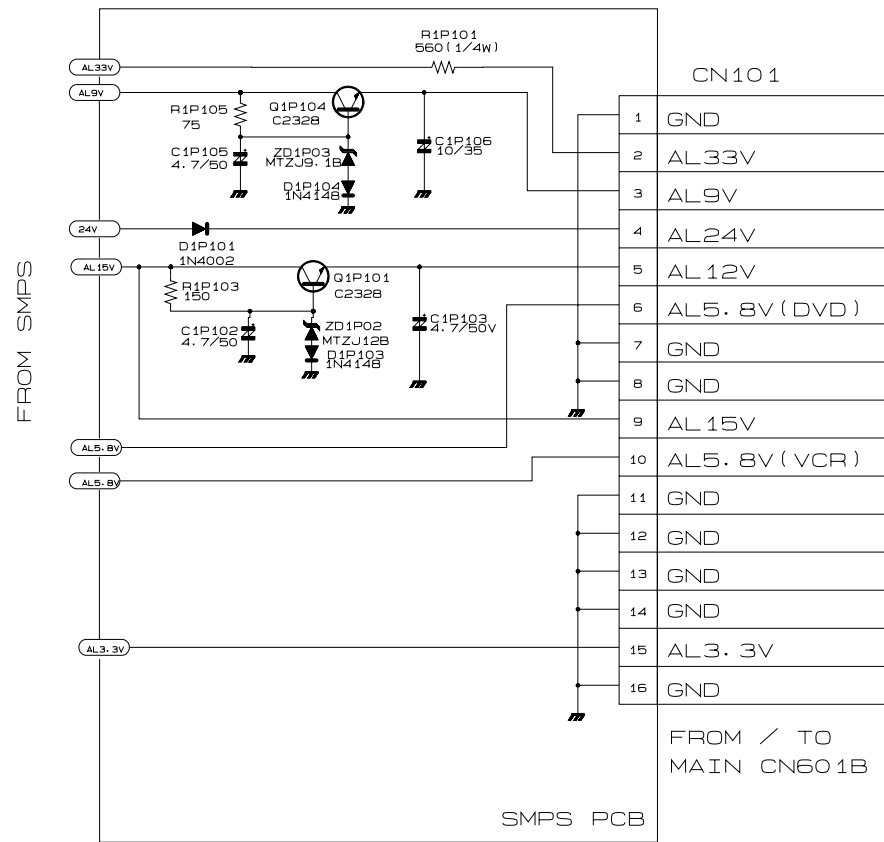
DVD MAIN PCB



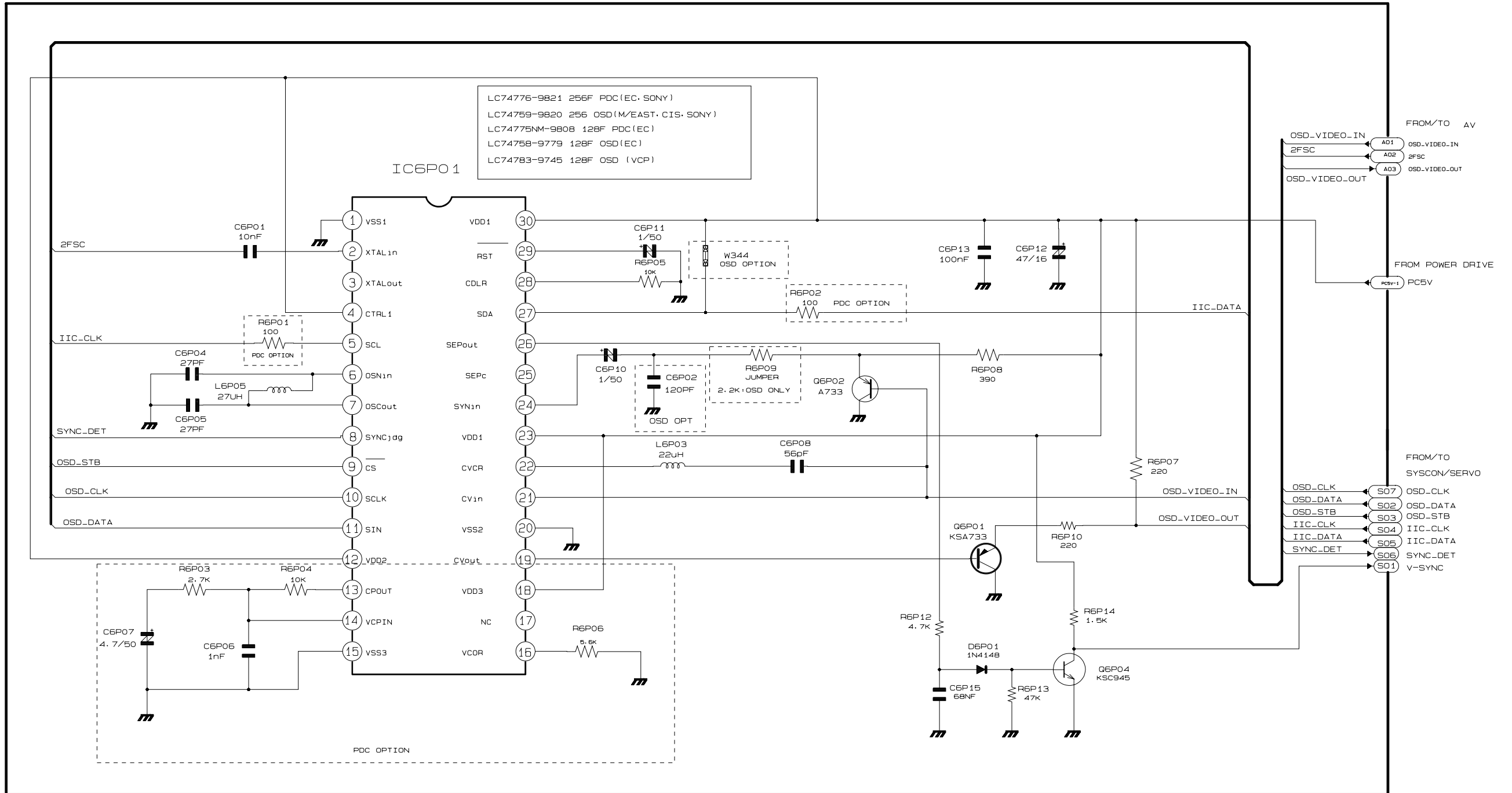
<Component Side>

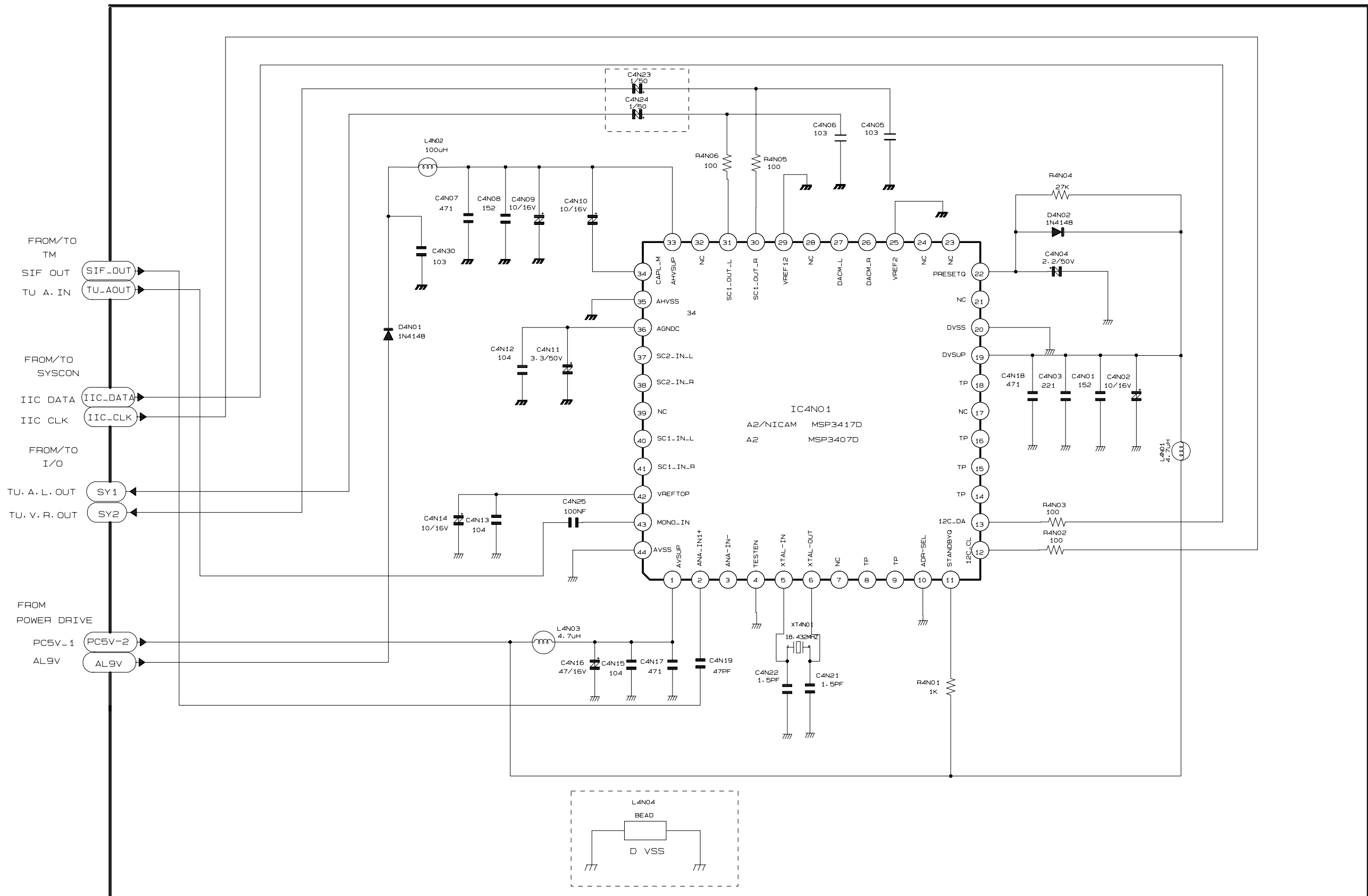


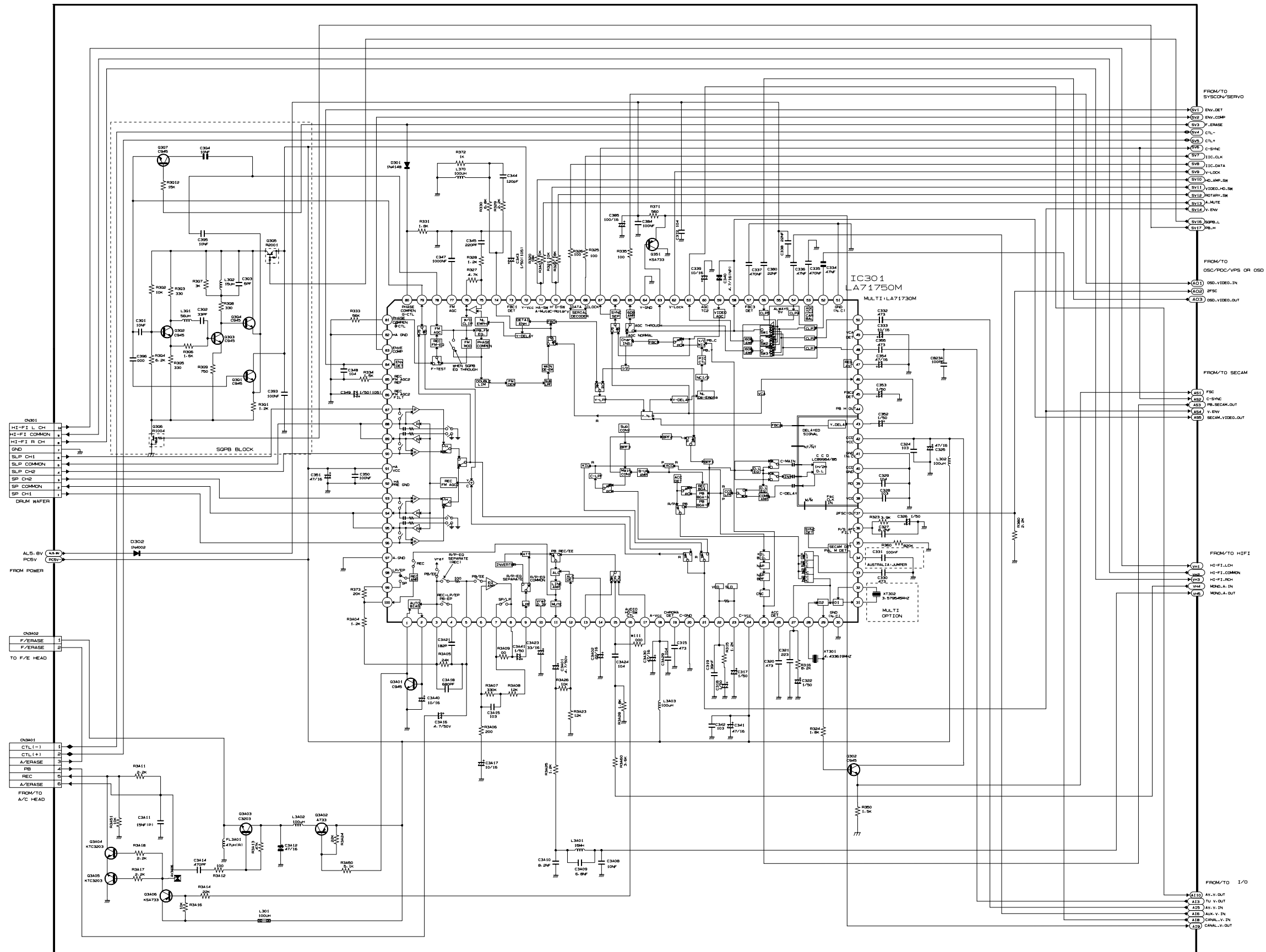
# 5-2 POWER DRIVE

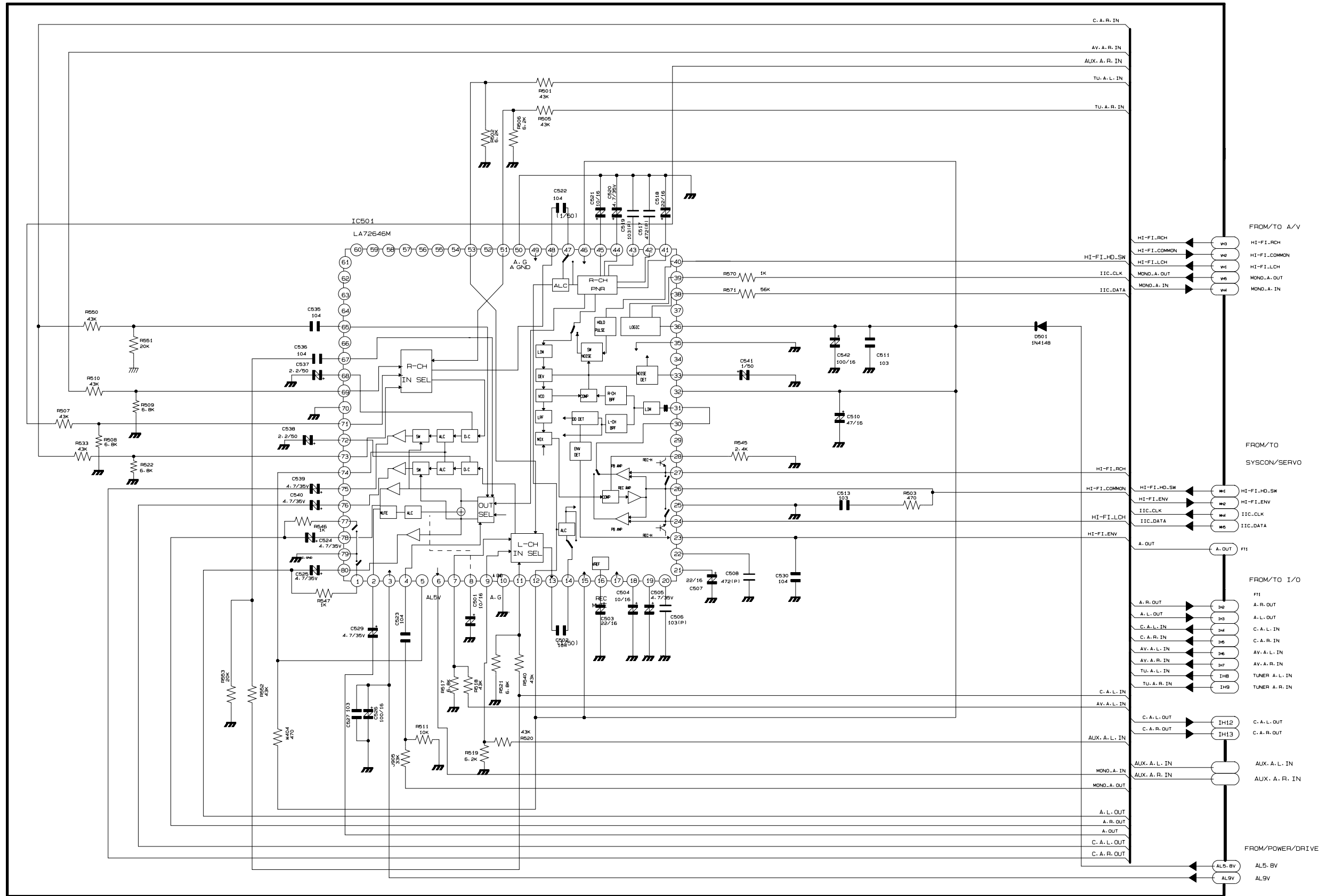




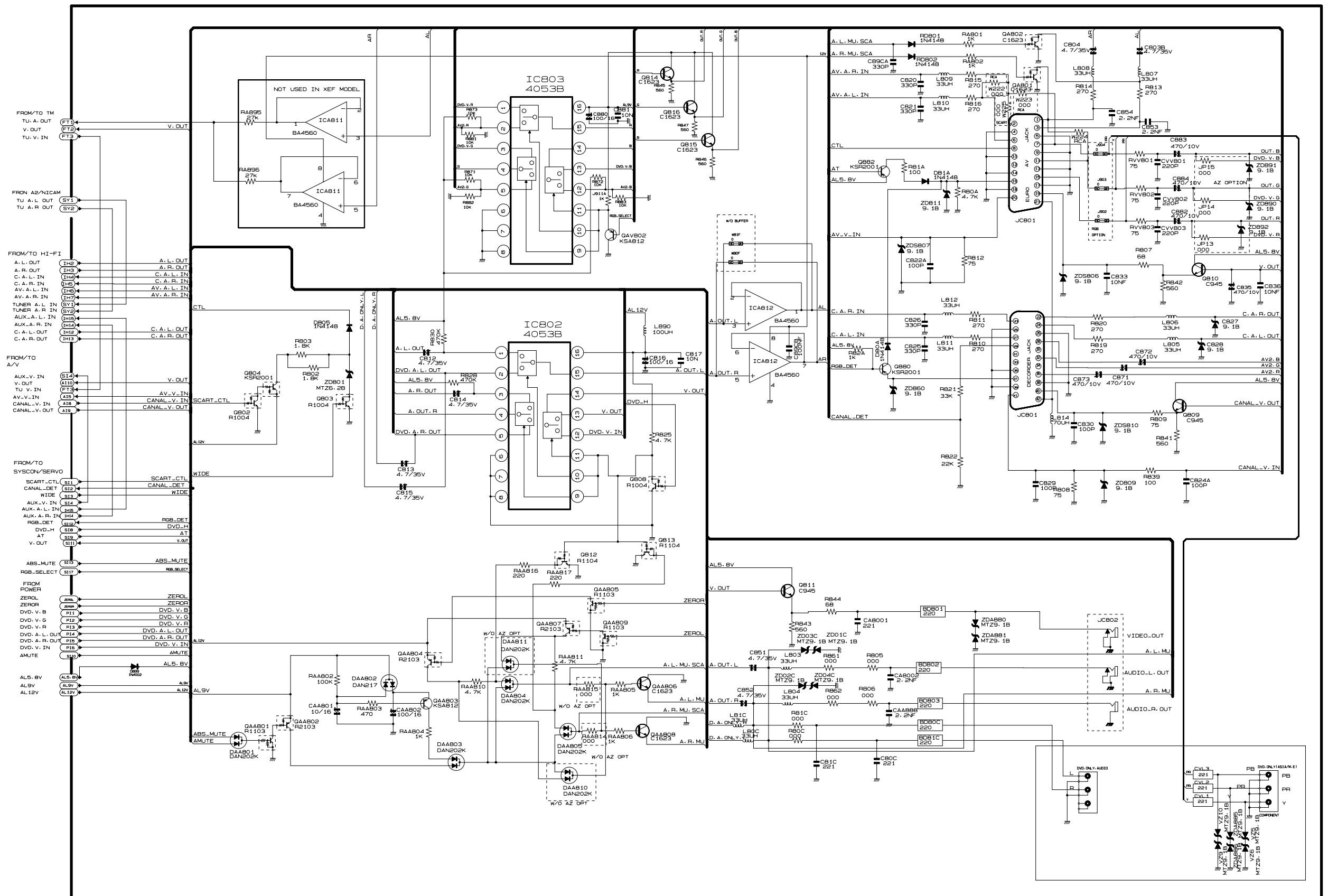


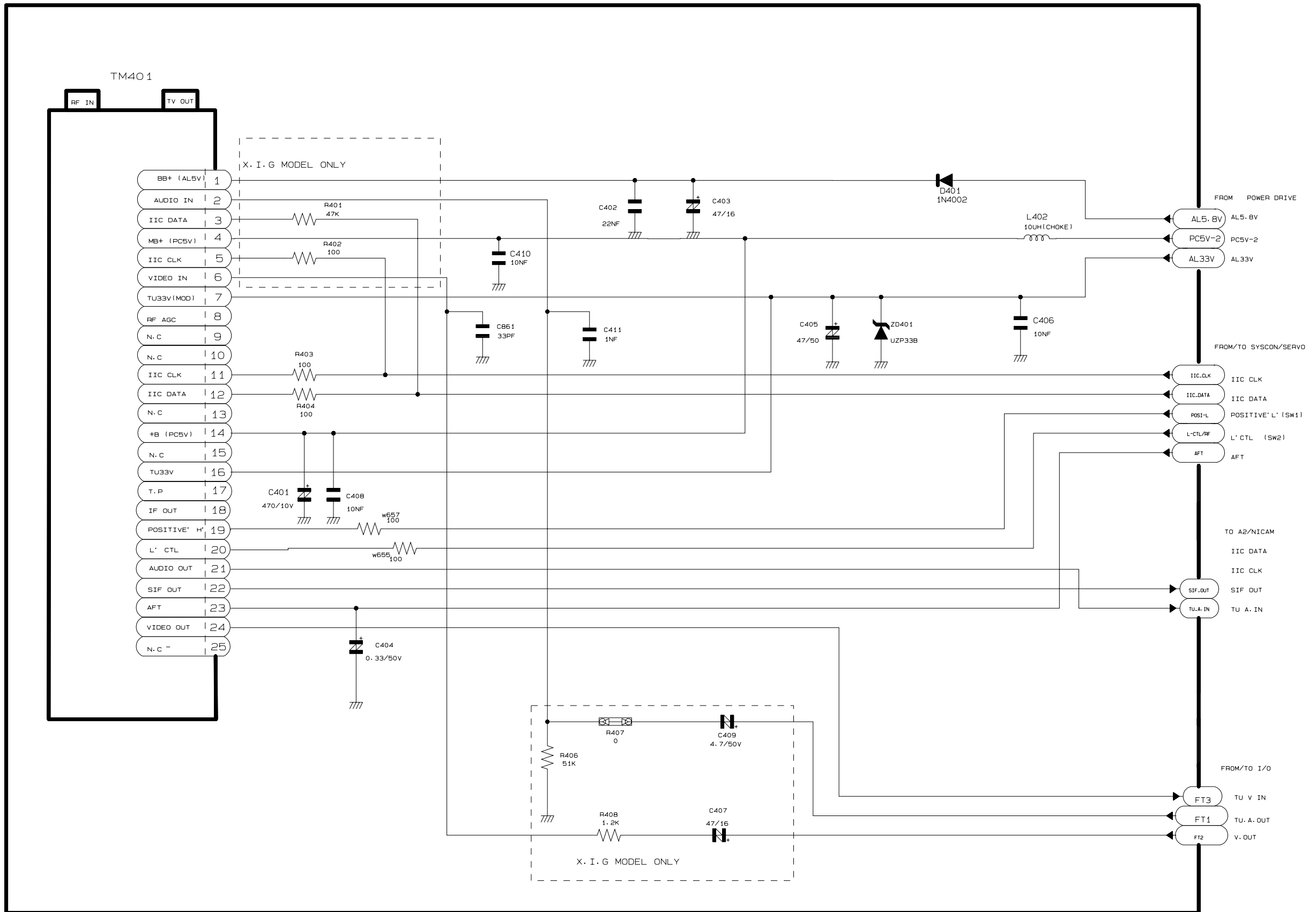


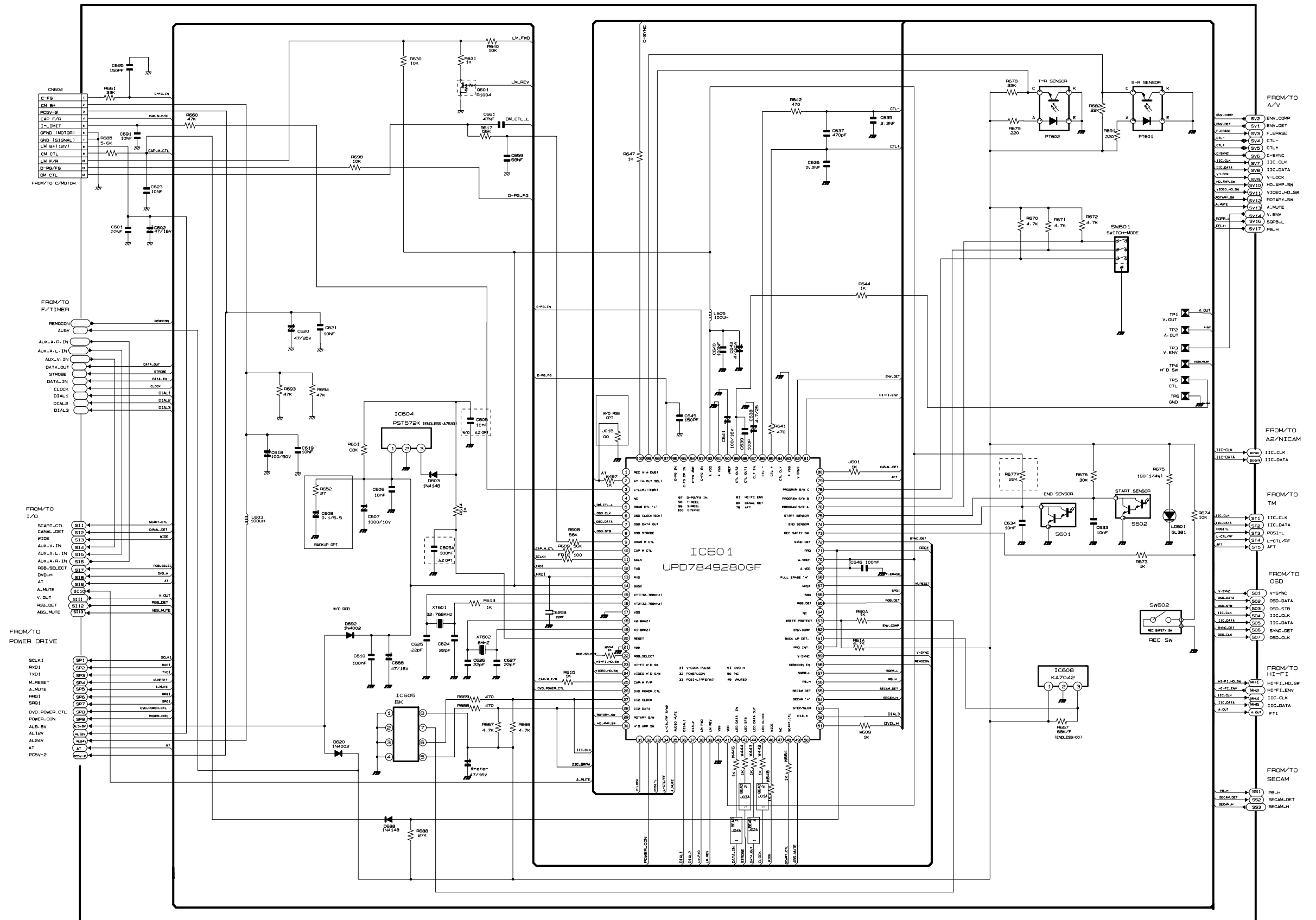


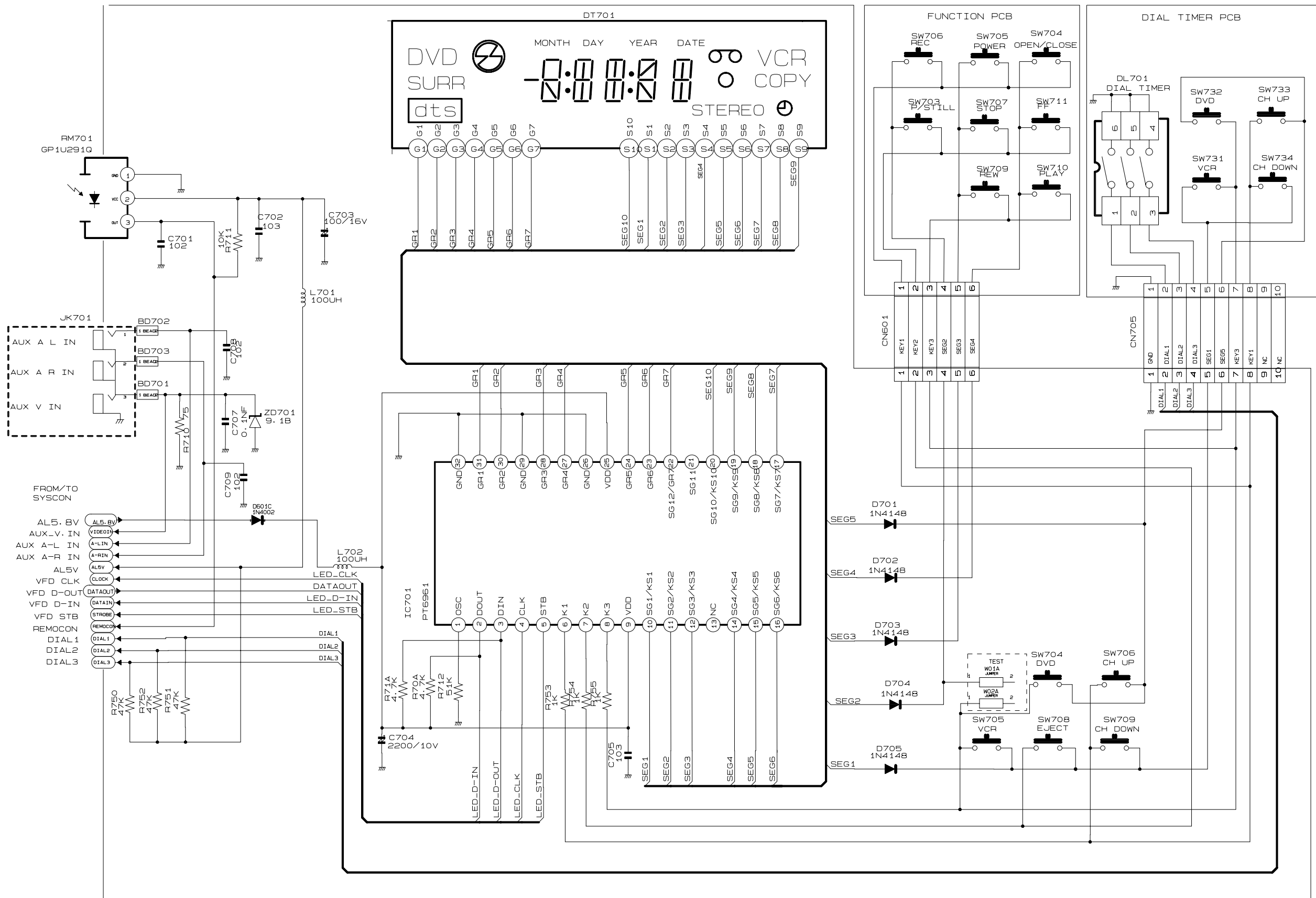


# 5-7 INPUT-OUTPUT



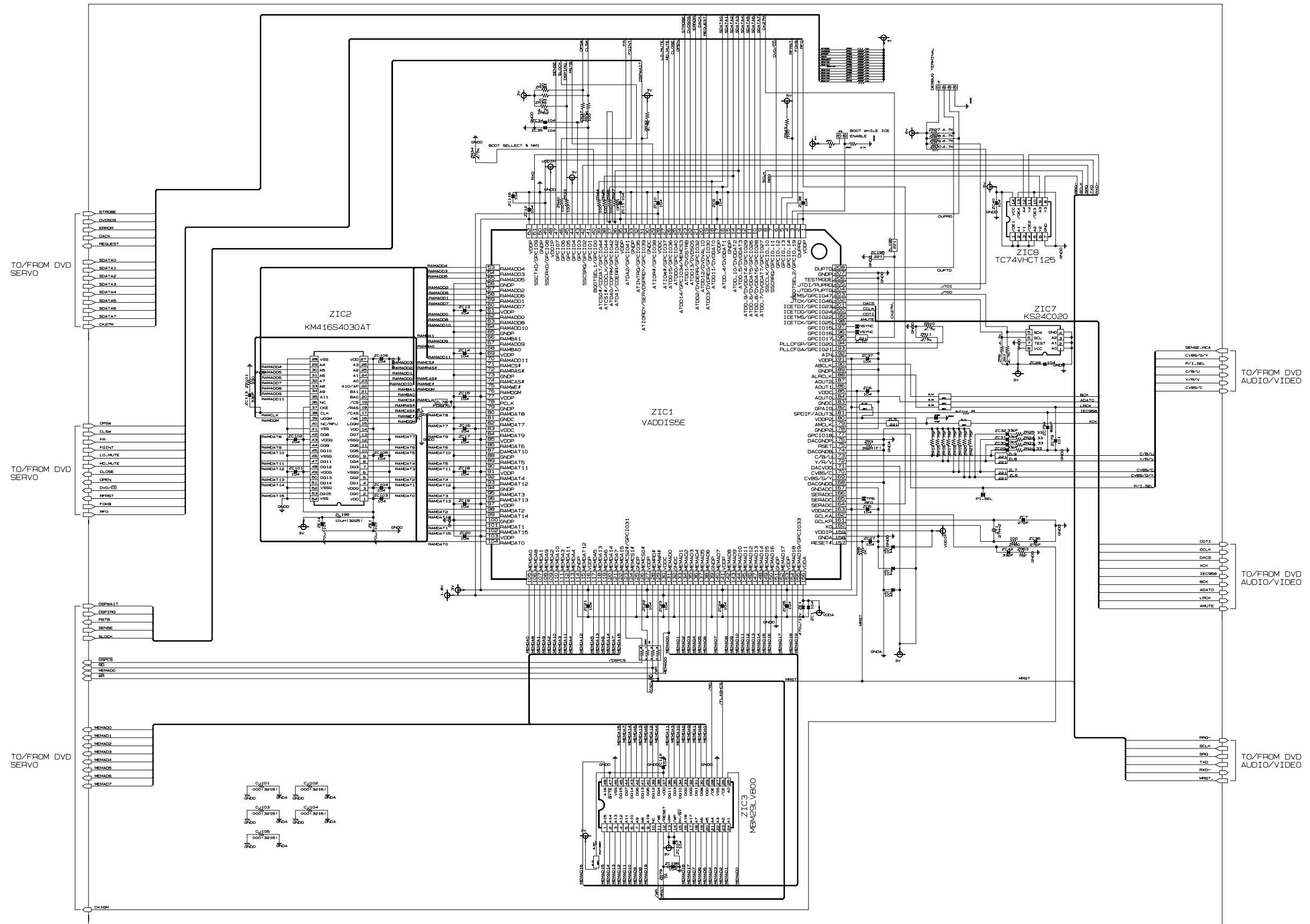


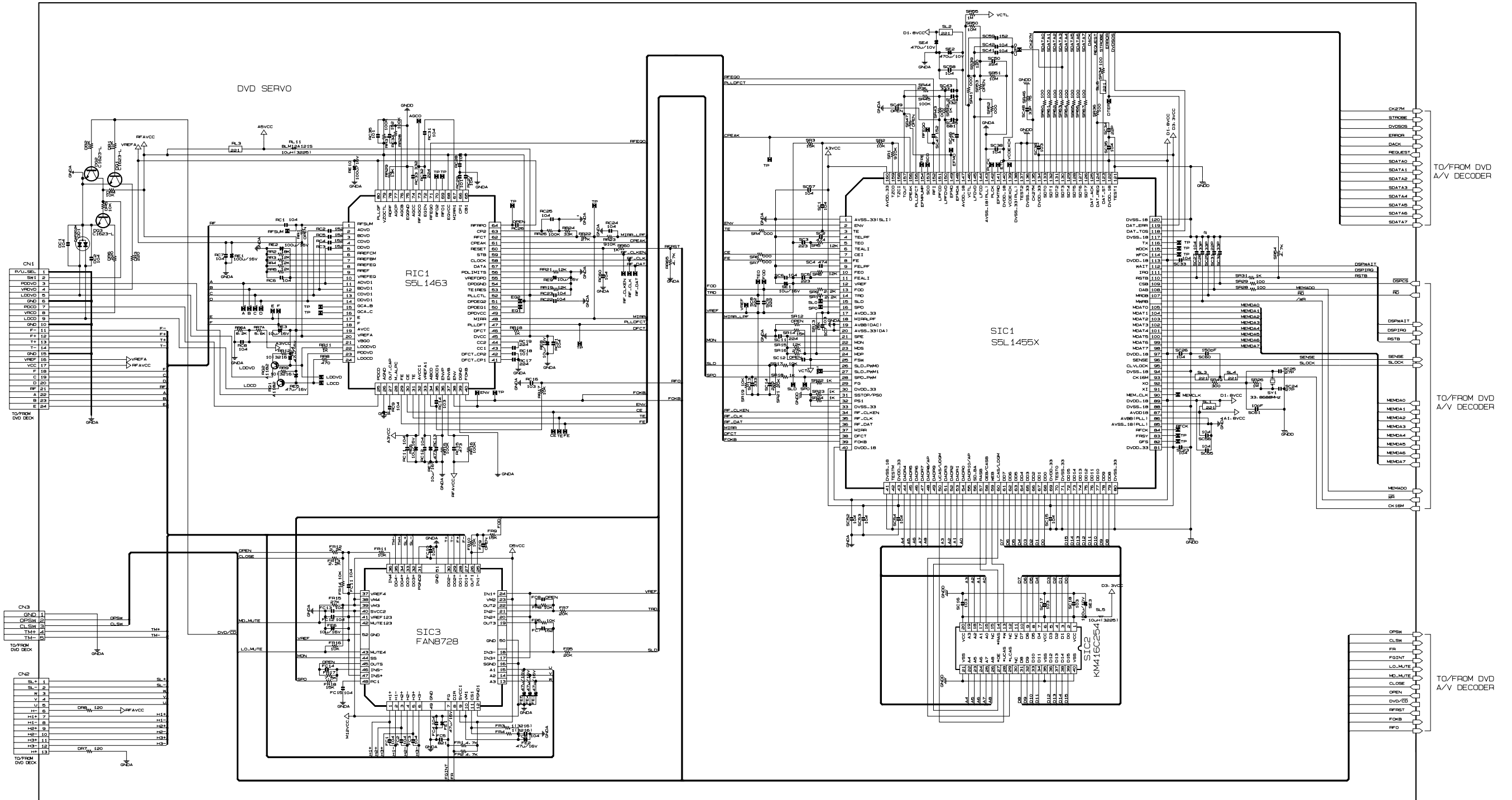


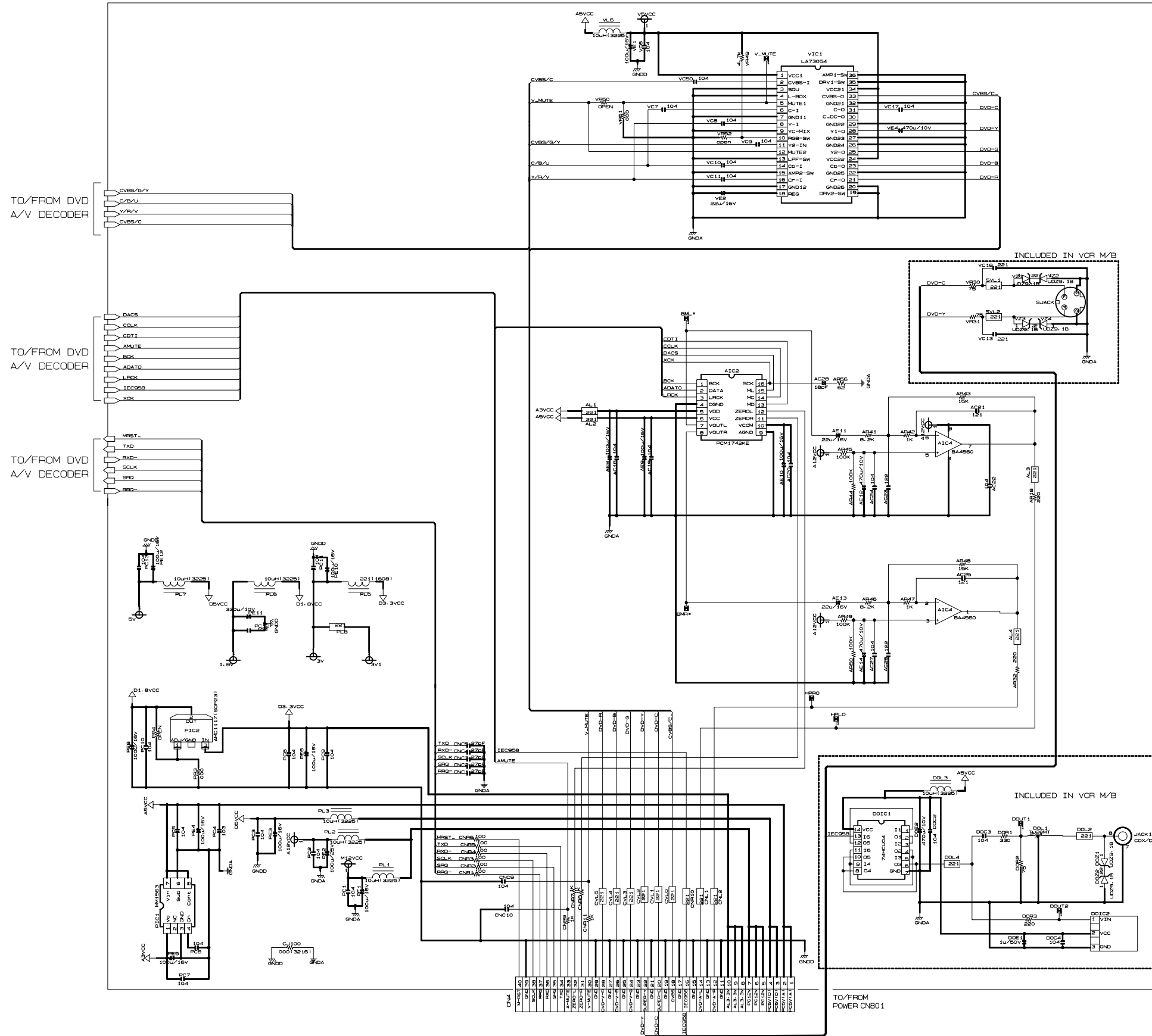












## 6. ALIGNMENT AND ADJUSTMENTS

### 6-1 VCR ADJUSTMENT

#### 6-1-1 Reference

- 1) X-Point (Tracking center) adjustment, "Head switching adjustment" and "NVRAM option setting" can be adjusted with remote control.
- 2) When replacing the Main PCB Micom (IC601) and NVRAM (IC605; EEPROM) be sure to adjust the "Head switching adjustment" and "NVRAM option setting".
- 3) When replacing the cylinder ass'y, be sure to adjust the "X-Point" and "Head switching adjustment".
- 4) How to adjustment.
  - Intermittently short-circuit the Test Point on Main PCB with pincers to the adjustment mode.
  - If the corresponding adjustment button is pressed, the adjustment is performed automatically.
  - If the adjustment is completed, be sure to turn the power off.

#### 6-1-1(a) Location of adjustment button of remote control

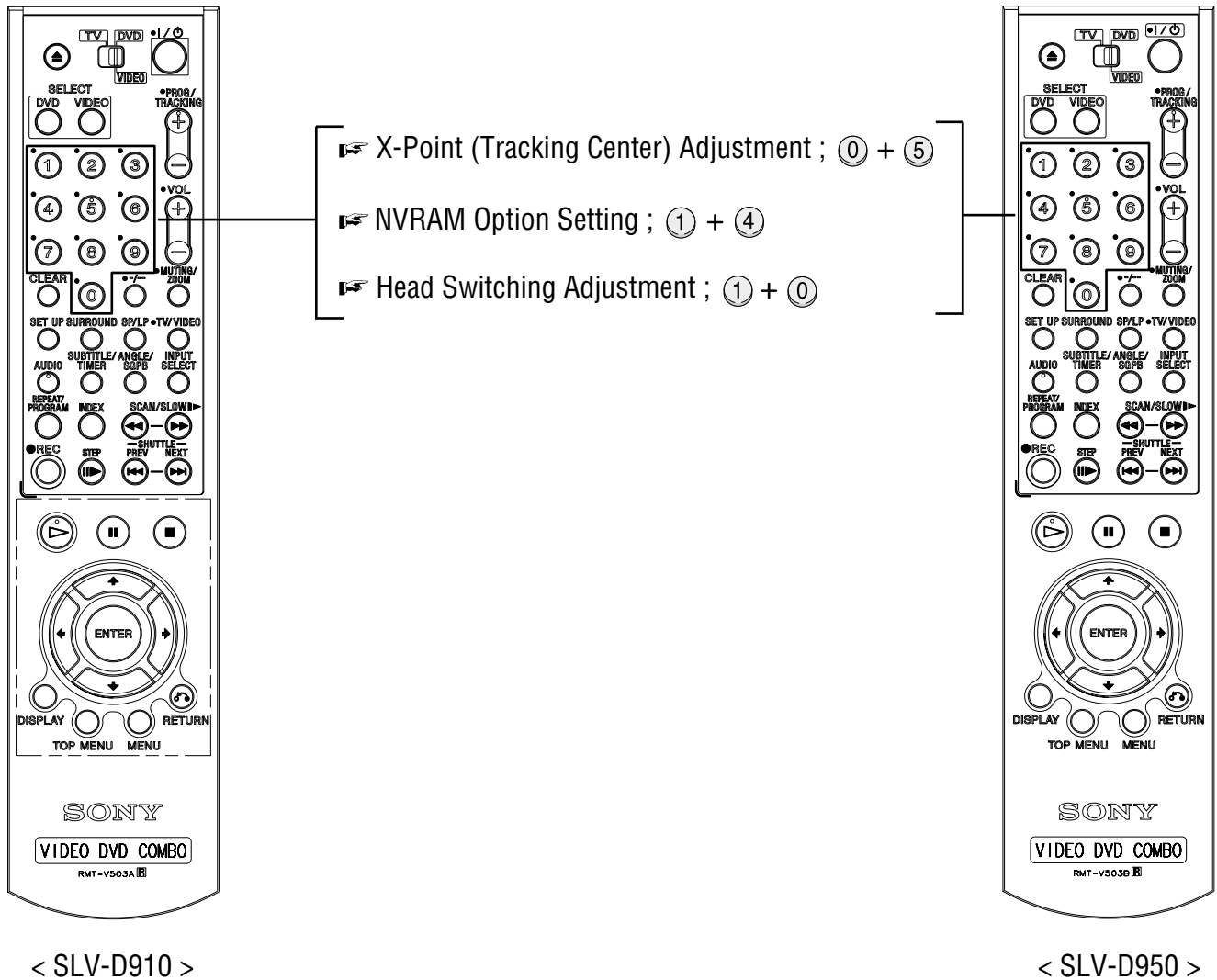


Fig. 6-1

6-1-1(b) TEST location for adjustment mode setting

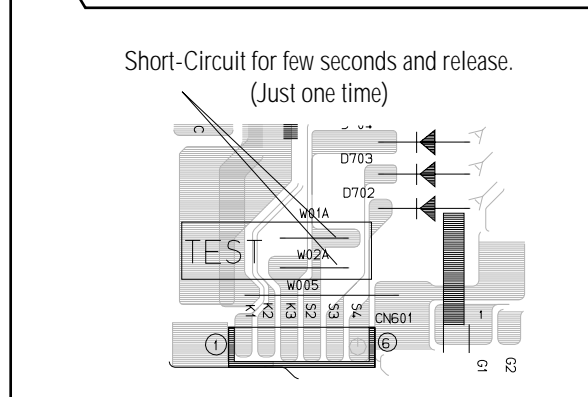
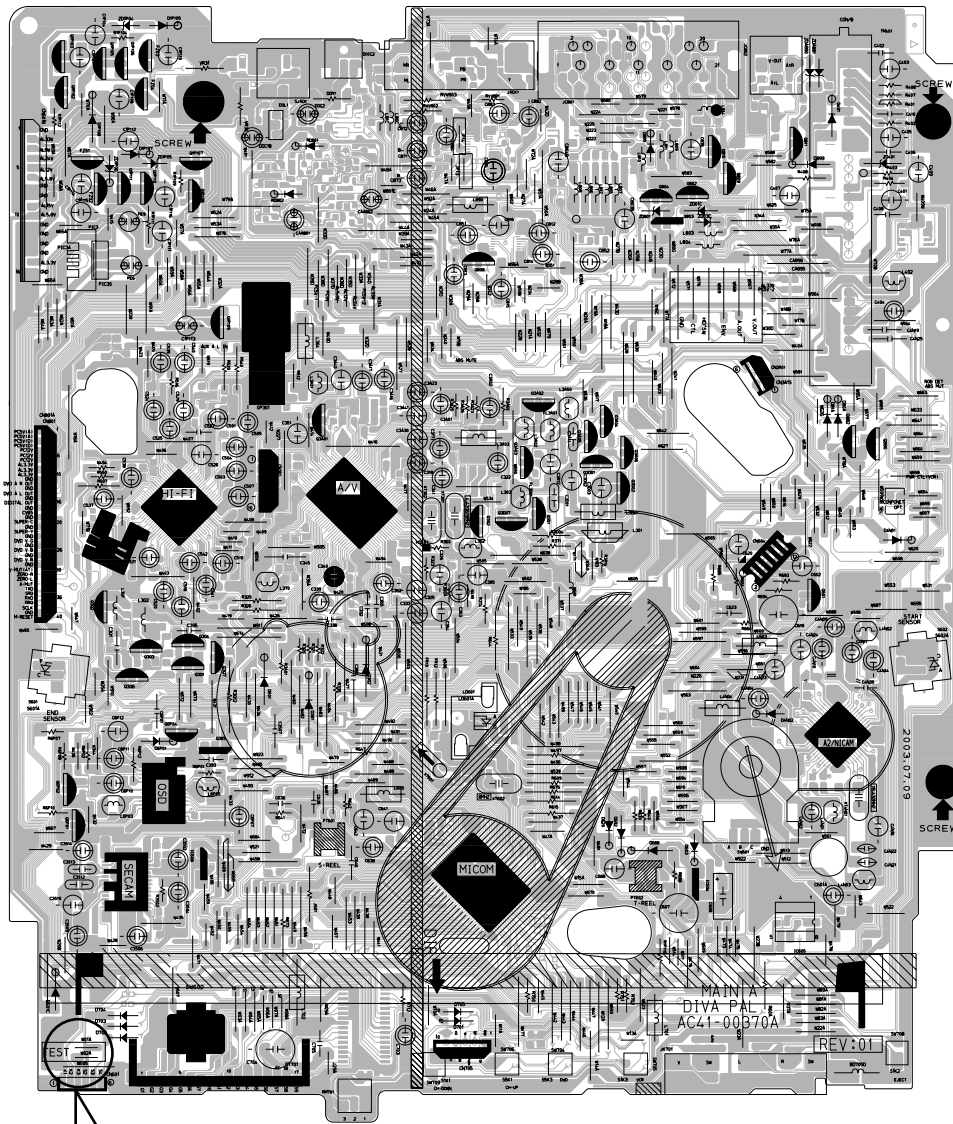


Fig. 6-2 VCR Main PCB (Top View)

## 6-1-2 Head Switching Point Adjustment

- 1) Playback the alignment tape.
- 2) Intermittently short-circuit the two Test Points on VCR Main PCB while setting the adjustment mode. (See Fig. 6-2)
- 3) Press the “1, 0” buttons ; remote control adjustment operates automatically. (See Fig. 6-1)

## 6-1-3 NVRAM Option Setting

- 1) NVRAM Option is adjusted in the factory.
- 2) In case Main PCB Micom (IC601) and NVRAM (IC605 ; EEPROM) are replaced, be sure to set the corresponding option number of the required model. (If the option is not set, the unit will operate.)

- 1) Intermittently short-circuit the two Test Points on VCR Main PCB. (See Fig. 6-2)
- 2) Press the “1, 4” buttons on the remote control. The option setting is appears. (See Fig. 6-3)
- 3) Select the option number (See table 6-1) of corresponding model with “◀, ▶, ▲, ▼” buttons on the remote control.
- 4) After selecting the option number is completed, press the “ENTER” button of remote control.  
(If “ENTER” button is pressed, the selected number is changescolor. ; See Fig. 6-4)
- 5) Press the “RETURN” button of remote control again to store the option number.
- 6) Turn the Power off.

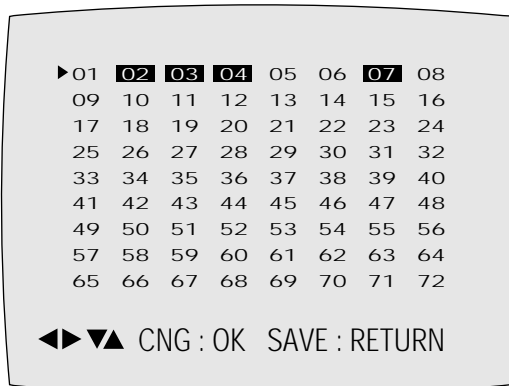


Fig. 6-3

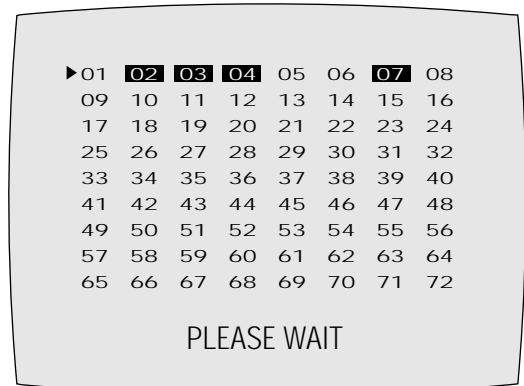


Fig. 6-4

<Table 6-1 NVRAM Option Table>

MODEL	OPTION NUMBERS
SLV-D950E	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 32, 34, 35, 38, 40, 42, 45, 47, 60, 61, 63, 64, 69, 70, 72
SLV-D910E	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 32, 34, 35, 38, 40, 42, 45, 47, 60, 61, 63, 69, 70, 72
SLV-D950B	2, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 20, 21, 26, 32, 33, 34, 35, 36, 38, 40, 45, 47, 60, 61, 63, 64, 69, 70, 72
SLV-D910B	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 20, 21, 26, 32, 33, 34, 35, 36, 38, 40, 45, 47, 60, 61, 63, 69, 70, 72
SLV-D950GI	3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 15, 25, 26, 32, 33, 34, 35, 38, 40, 41, 45, 47, 60, 61, 63, 64, 69, 70
SLV-D910N	4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 20, 32, 36, 38, 42, 45, 47, 60, 61, 63, 69, 70, 72
SLV-D910R	6, 7, 8, 9, 10, 11, 12, 13, 15, 20, 32, 36, 37, 39, 42, 45, 47, 60, 61, 63, 69, 70
SLV-D910AZ	6, 7, 8, 9, 10, 12, 15, 25, 26, 27, 32, 33, 35, 36, 39, 42, 45, 47, 53, 60, 61, 63, 64, 70

## 6-2 DVD ADJUSTMENT

### 6-2-1 Location of Test Point

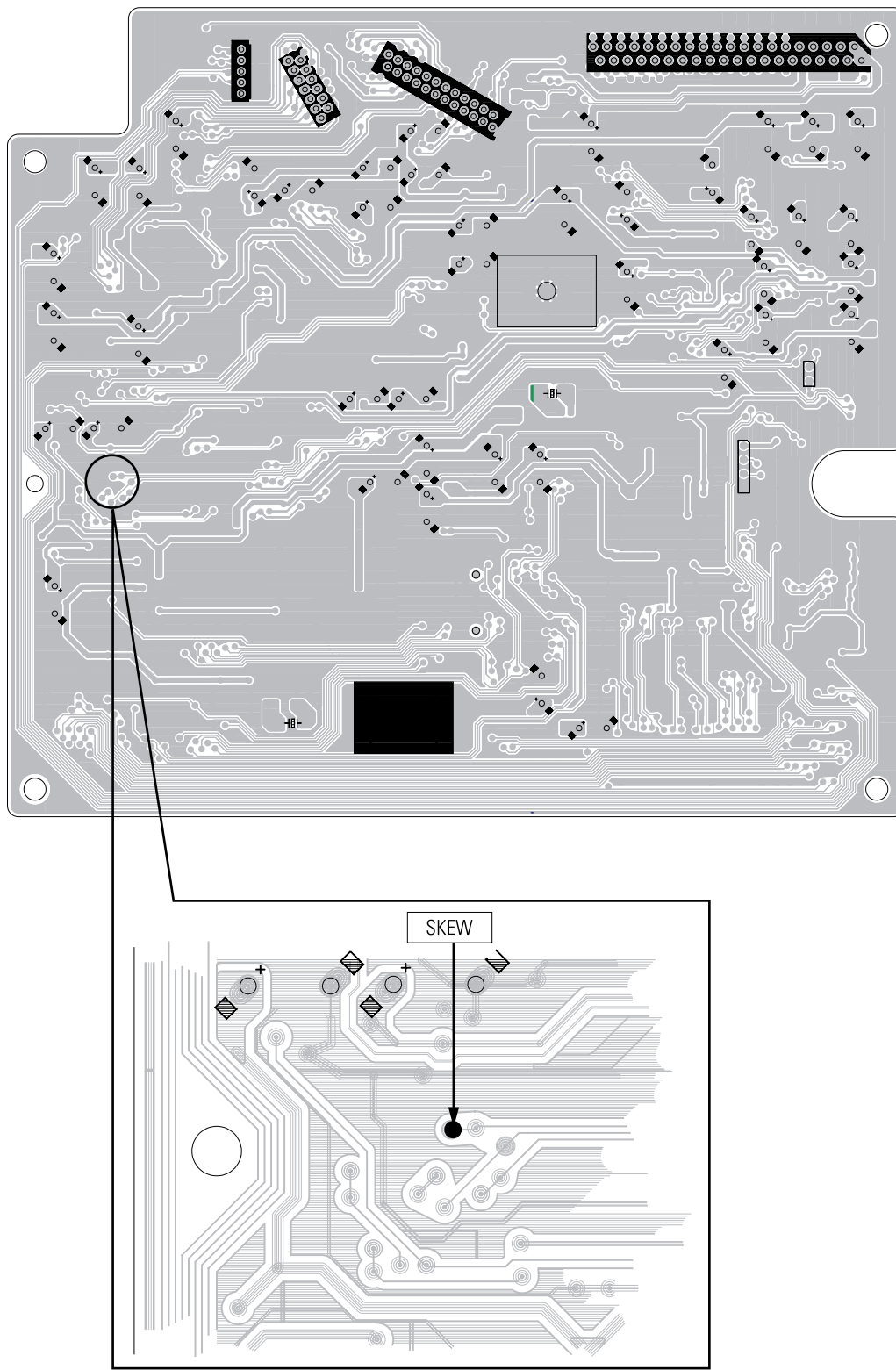


Fig. 6-5 Location of test Point (DVD Main PCB - Bottom Side)



## 6-2-2 Skew Adjustment

### 6-2-2(a) Adjustment Spec. and Test Point

< Table 6-2 >

Test Disc	Adjustment Spec.	Test Point	Adjustment Location
TDV-533 Chapter 14 (P/N: J-6090-135-A)	Flat Waveform	"SKEW" (DVD Main PCB - Bottom Side) (See Fig. 6-5)	Ass'y Deck - Top Side (See Fig. 6-6)

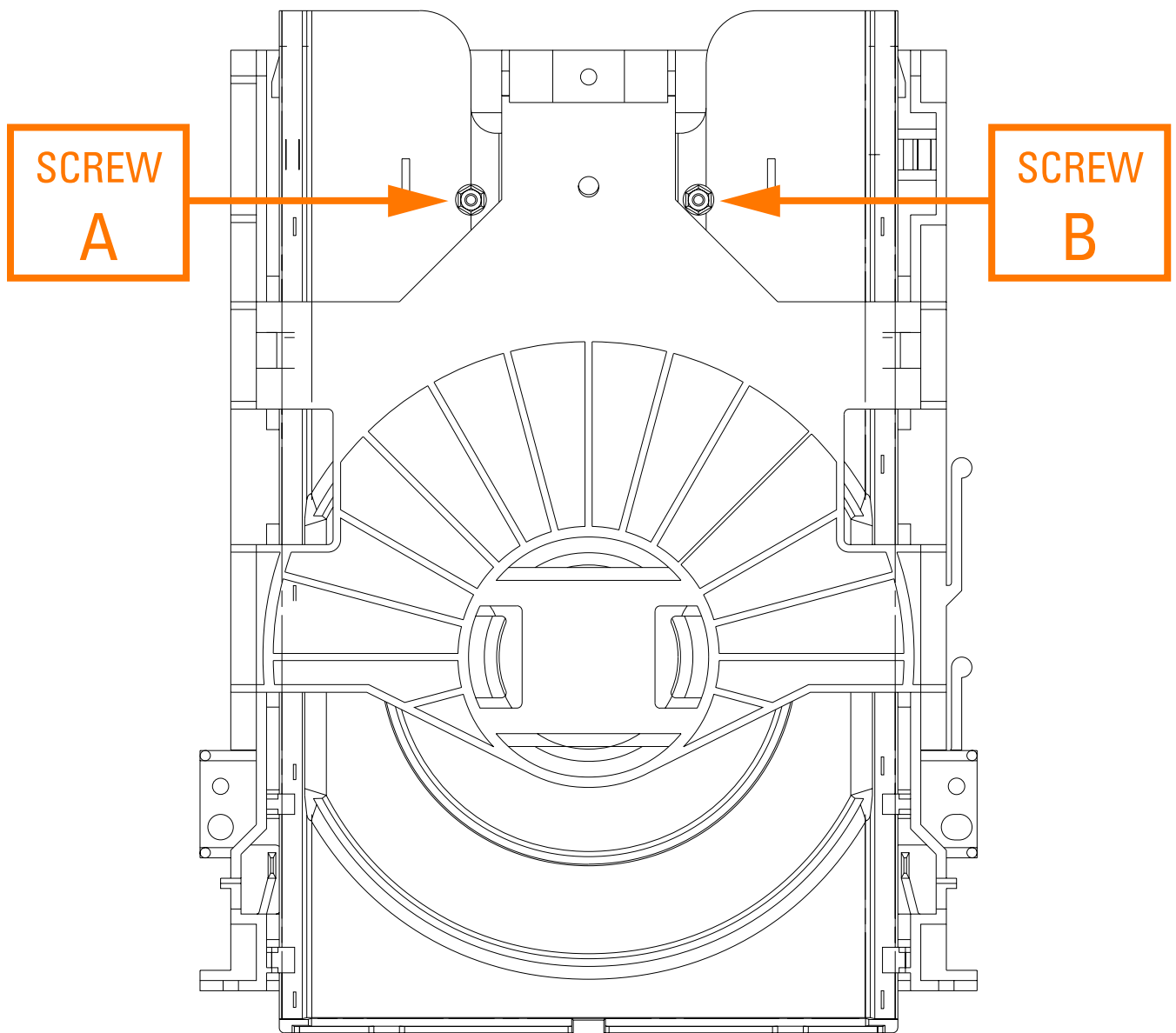


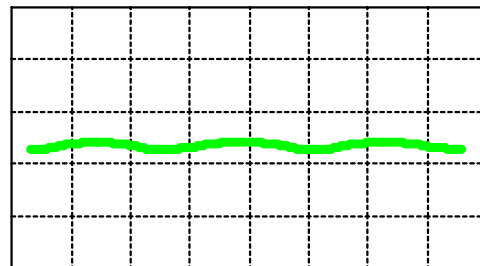
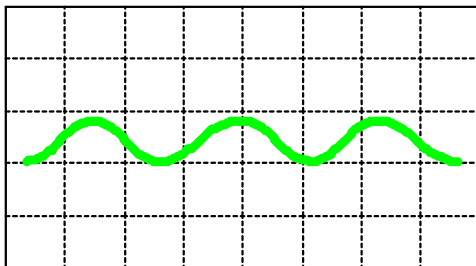
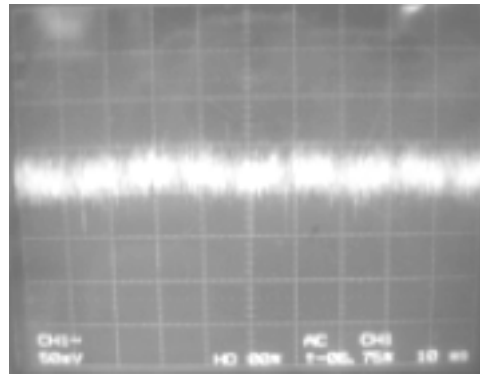
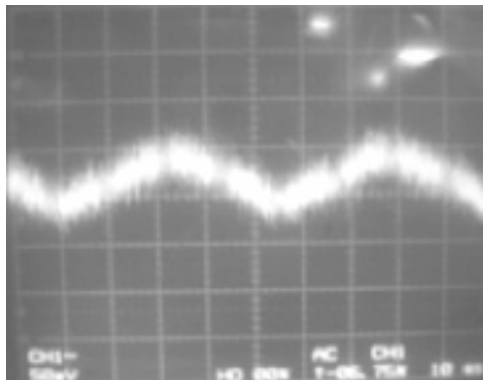
Fig. 6-6 Ass'y Deck (Top Side)

### 6-2-2(b) SKEW Adjustment Method

Needed to minimize the variations in Skew of the Pickup unit and to provide optimum match with the recorded signal on the Disc.

- 1) Connect an Oscilloscope to the "SKEW" Test Point (See Fig. 6-5).
- 2) Connect Power, Open the Tray and Play the TDV-533 Disc, Chapter 14.
  - ◆ Set the Oscilloscope Range as follows :  
(Voltage ; 50mV/Div., Frequency ; 10m Sec.)
- 3) Adjust the Screws "A" and "B" (See Fig. 6-6) using a Hex screwdriver until you obtain a Flat Waveform and the picture is stable.  
Then, go to Chapter 1 and make sure the Waveform is Flat here as well.  
If not, you have to go back to Chapter 14 and adjust again.  
If you cannot obtain a Flat waveform, then the unit is defective.

**Note:** The Deck must be in a horizontal position. Use both "A" and "B" screws to adjust.



Typical Waveform before Adjustment

Waveform after Correct Adjustment

Fig. 6-7 Envelope Waveform

## 6-3 VCR MECHANICAL ADJUSTMENT

### 6-3-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :

- 1) Noise observed on the screen.
- 2) Tape damage.
- 3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.

To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

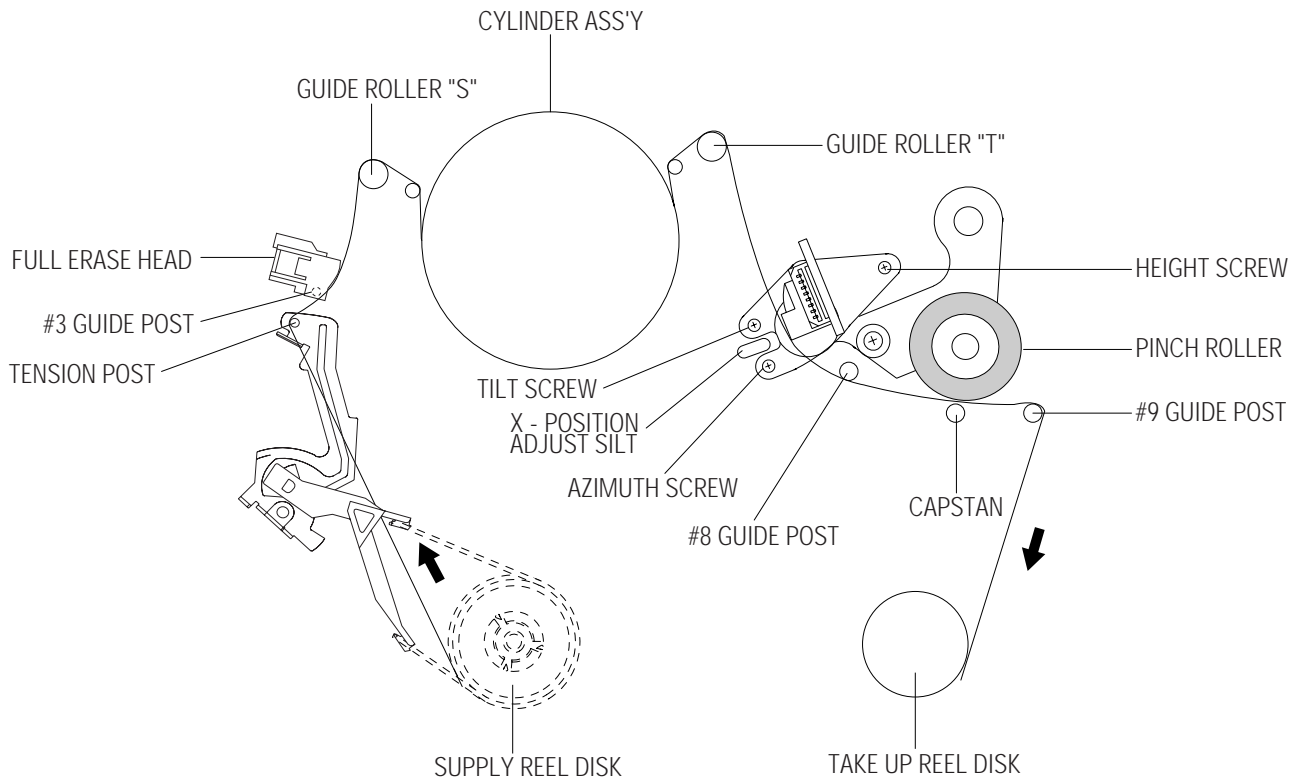


Fig. 6-8 Location of Tape Transport Adjustment

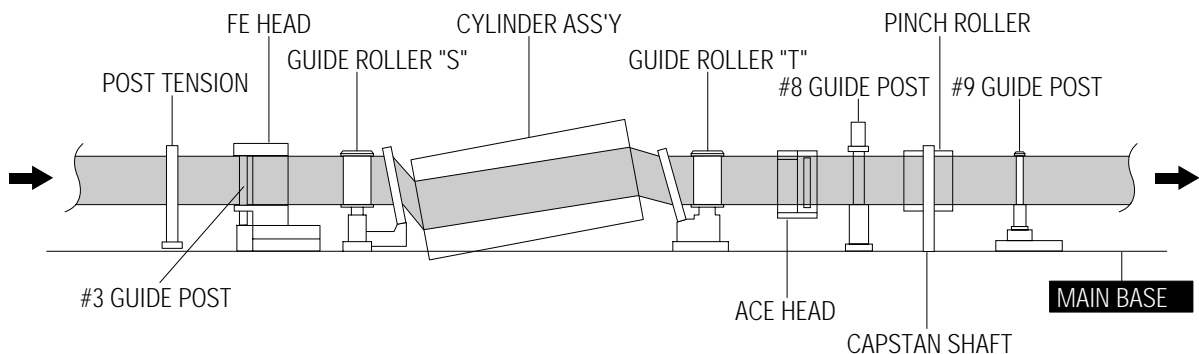


Fig. 6-9 Tape Travel Diagram

## 6-3-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

- ◆ If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
- ◆ If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head.

### (1) ACE Head Assembly Adjustment

#### a. ACE HEAD HEIGHT ADJUSTMENT

- 1) Run the alignment tape (Color bar) in the playback mode.
- 2) Observe surface of the audio head using a dental mirror.
- 3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 6-10 and 6-11)

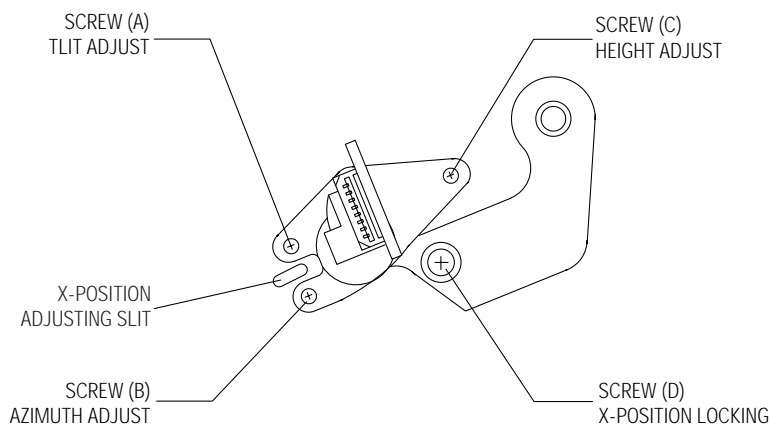


Fig. 6-10 Location of ACE Head Adjustment Screw

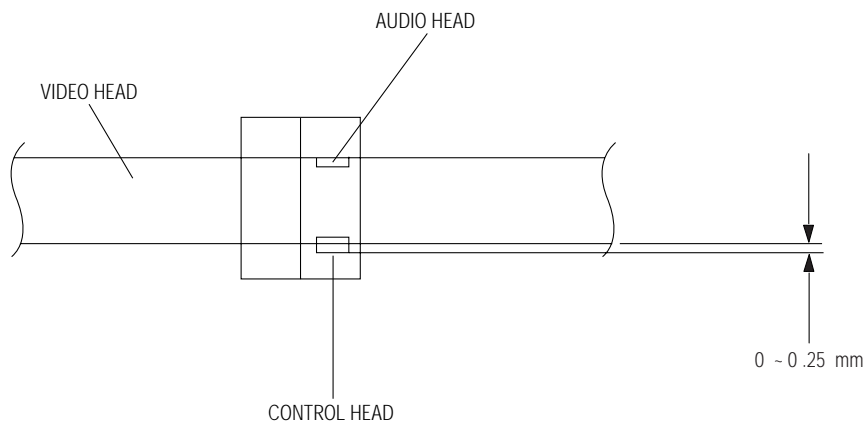


Fig. 6-11 ACE Head Height Adjustment

b. ACE HEAD TILT ADJUSTMENT

- 1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
- 2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 6-12 (B).
- 3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
- 4) Reconfirm the ACE head height.

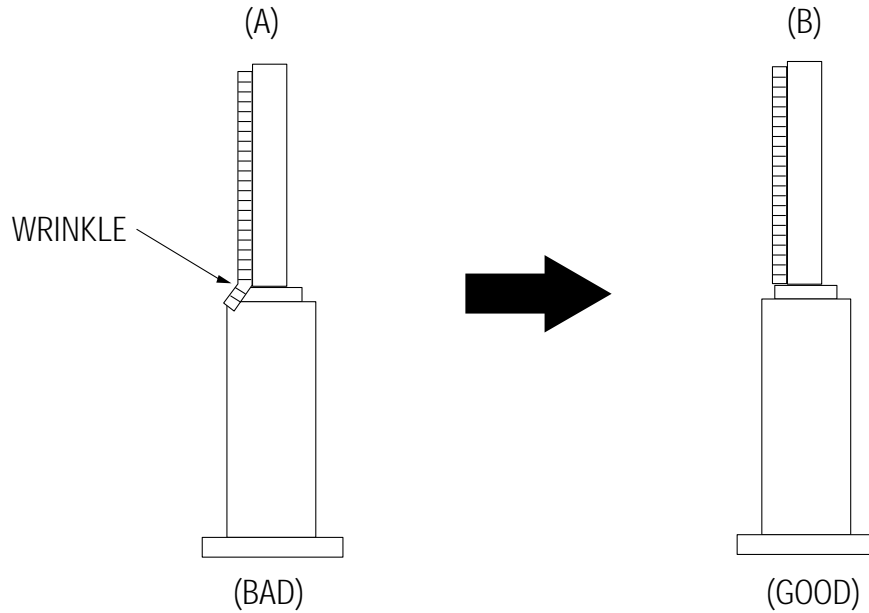


Fig. 6-12 Tape Guide Check

c. AUDIO AZIMUTH ADJUSTMENT

- 1) Load alignment tape (Mono scope) and playback the 6KHz signal.
- 2) Connect channel-1 scope probe to audio output.
- 3) Adjust screw (B) to achieve maximum audio level. (See Fig. 6-10)

#### d. ACE HEAD POSITION (X-POINT) ADJUSTMENT

- 1) Playback the alignment tape (Color bar)
- 2) Intermittently short-circuit the two Test Points on VCR Main PCB . (See Fig. 6-2)
- 3) Press the “0, 5” remote control buttons, then adjustment is operates automatically. (See Fig. 6-1)
- 4) Connect the CH-1 probe to “Envelope” the CH-2 probe to “H’D switching pulse” and then trigger to CH-1.
- 5) Insert the (-) driver into the X-Point adjustment hole and adjust it so that envelope waveform is maximum.

**Test point:** W568 (Audio Output)  
W569 (Envelope)  
W570 (H’D S/W -Trigger)  
W571 (Control Pulse)

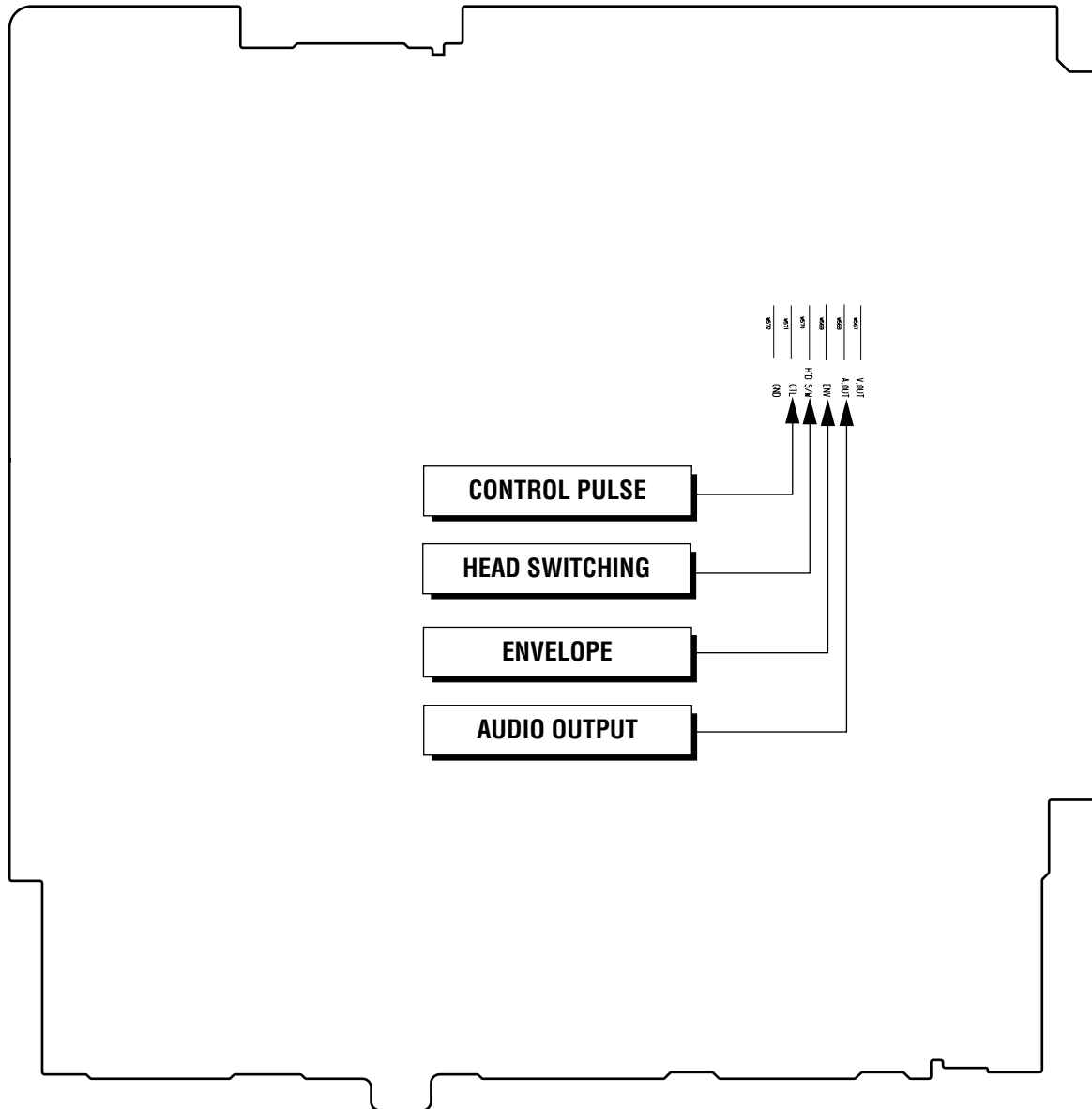


Fig. 6-13 Location of Test point (VCR Main PCB-Top View)

**(2) Linearity adjustment (Guide roller S, T adjustment)**

- 1) Playback the Mono Scope alignment tape (SP mode).
- 2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
- 3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 6-14.  
If it does not, adjust as follows :

**Note:**

- a=Maximum output of the video RF envelope.
- b=Minimum output of the video RF envelope at the entrance side.
- c=Minimum output of the video RF envelope at the center point.
- d=Maximum output of the video RF envelope at the exit side.

- 4) If the section A in Fig. 6-15 does not meet the specification, adjust the guide roller S up or down.
- 5) If the section B in Fig. 6-15 does not meet the specification, adjust the guide roller T up or down.

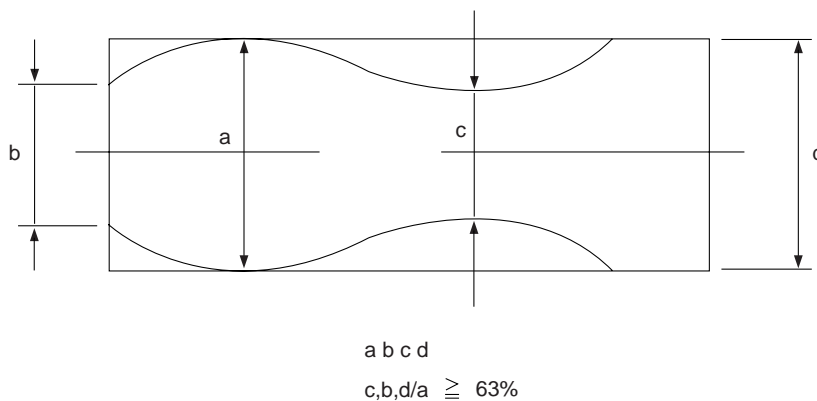


Fig. 6-14 Envelope Waveform Adjustment

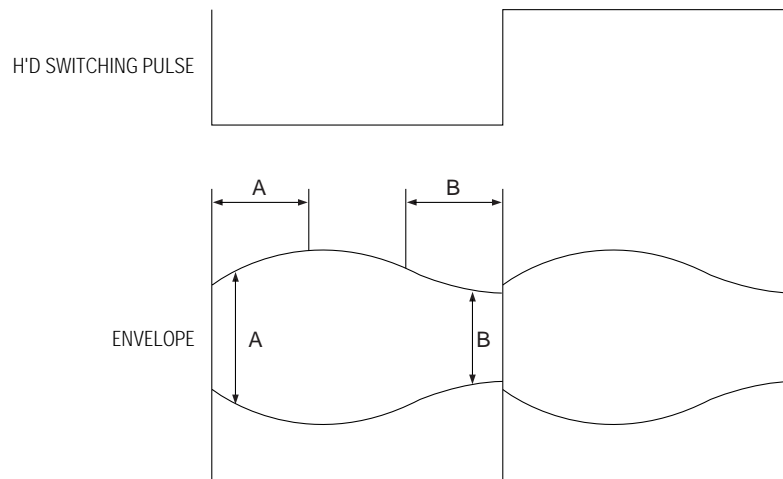


Fig. 6-15 Adjustment Points

- 6) Play back the Mono Scope alignment tape (SP mode).
- 7) Connect an oscilloscope CH-1 to the "Envelope" and CH-2 to the "H'D SW Pulse" for triggering.
- 8) Turn the guide roller heads with a flat head (🔩) driver to obtain a flat video RF envelope as shown in Fig. 6-16.

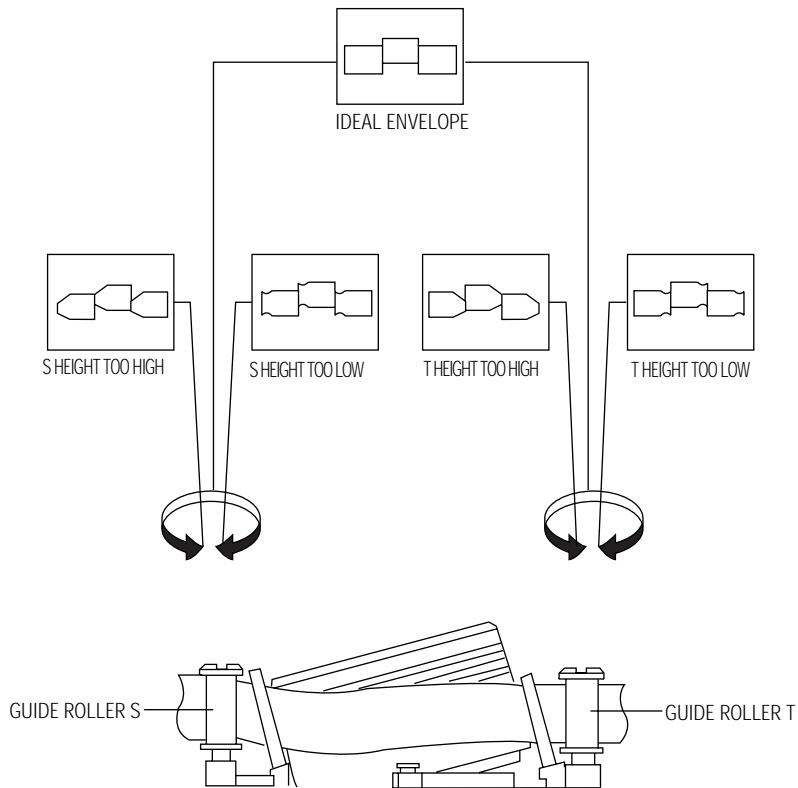


Fig. 6-16 Guide Roller S, T Height Adjustment

### (3) Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode : Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 6-17).

If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

- 1) Make sure there is no gap between the supply roller lower flange and the tape.  
If there is a gap, adjust the supply guide roller again.
- 2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

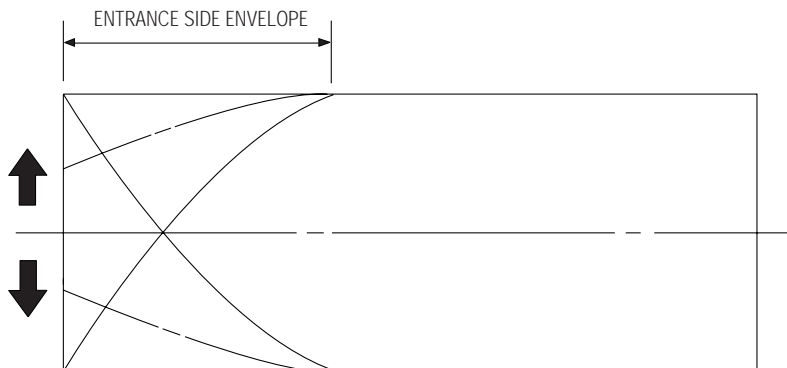


Fig. 6-17 Video Envelope Rising when Operation mode Changes from RPS to Play Mode



#### (4) Envelope Check

- 1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.  
Make sure the playback output envelope meets the specification as shown in Fig. 6-18.
- 2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120)).  
The video envelope should meet the specification as shown in Fig. 6-18.  
In SP mode, (A) should equal (B).  
If the head gap is wide, upper cylinder should be checked.

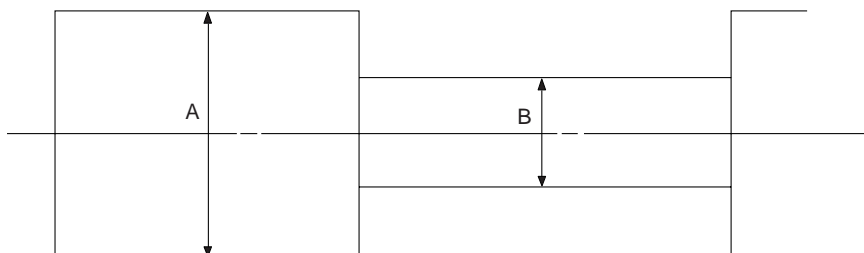


Fig. 6-18 Envelope Input and Output Level

#### (5) Tape Wrinkle Check

- 1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
- 2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :
  - ◆ Tape wrinkle at the guide roller S, T section : Linearity adjustment.
  - ◆ Tape wrinkle at tape guide flange : ACE head assembly coarse adjustment.

### 6-3-3 Reel Torque

- 1) The rotation of the capstan motor causes the holder clutch ass'y to rotate through the belt pulley.
- 2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idler by rotation of gear center ass'y.
- 3) Brake is operated by slider cam at FF/REW mode.
- 4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

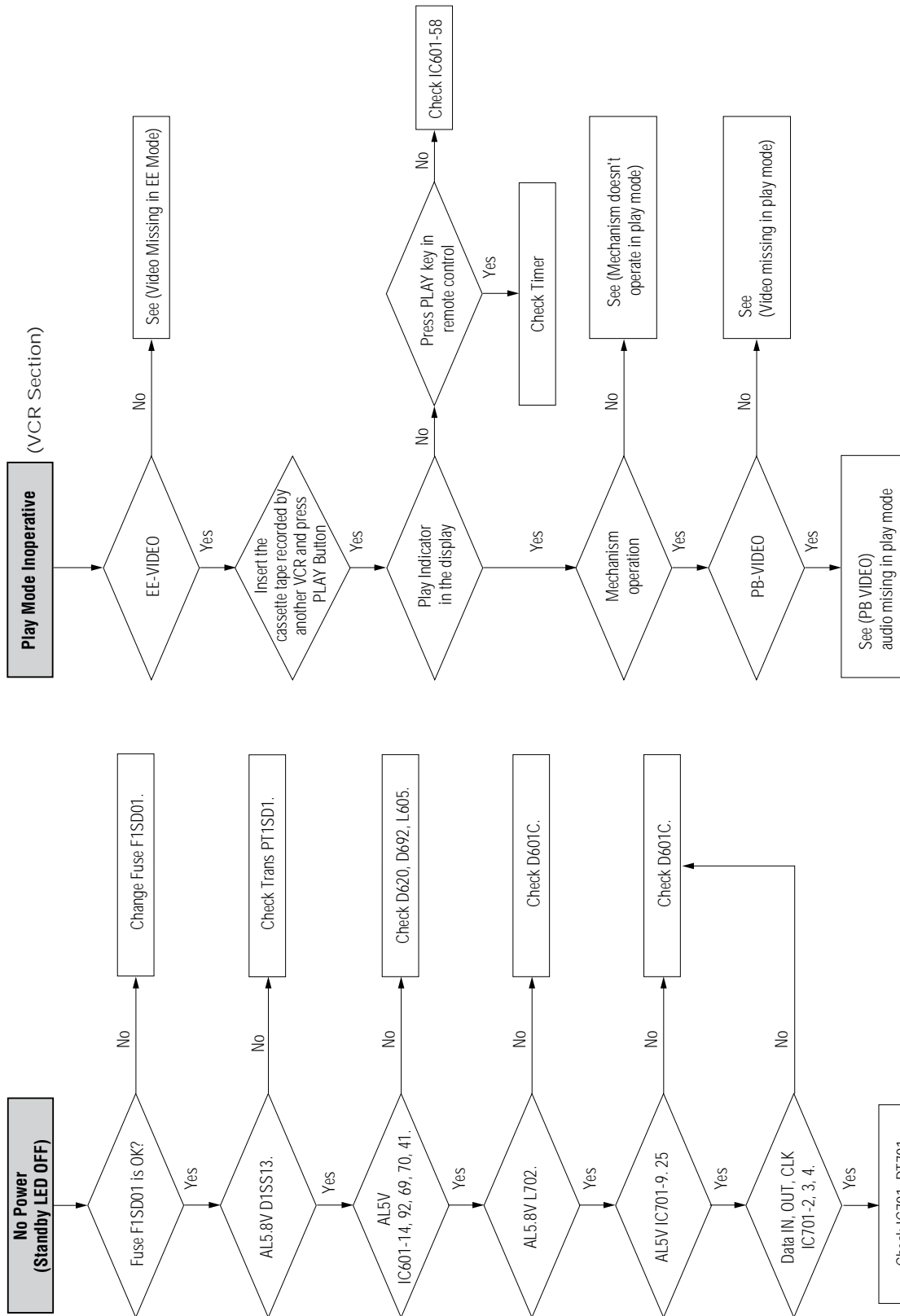
**Note:** If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

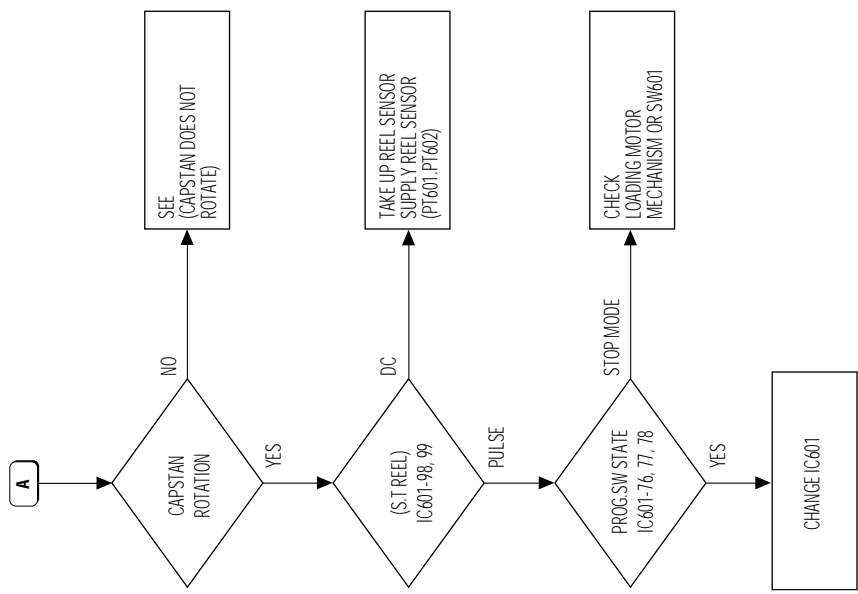
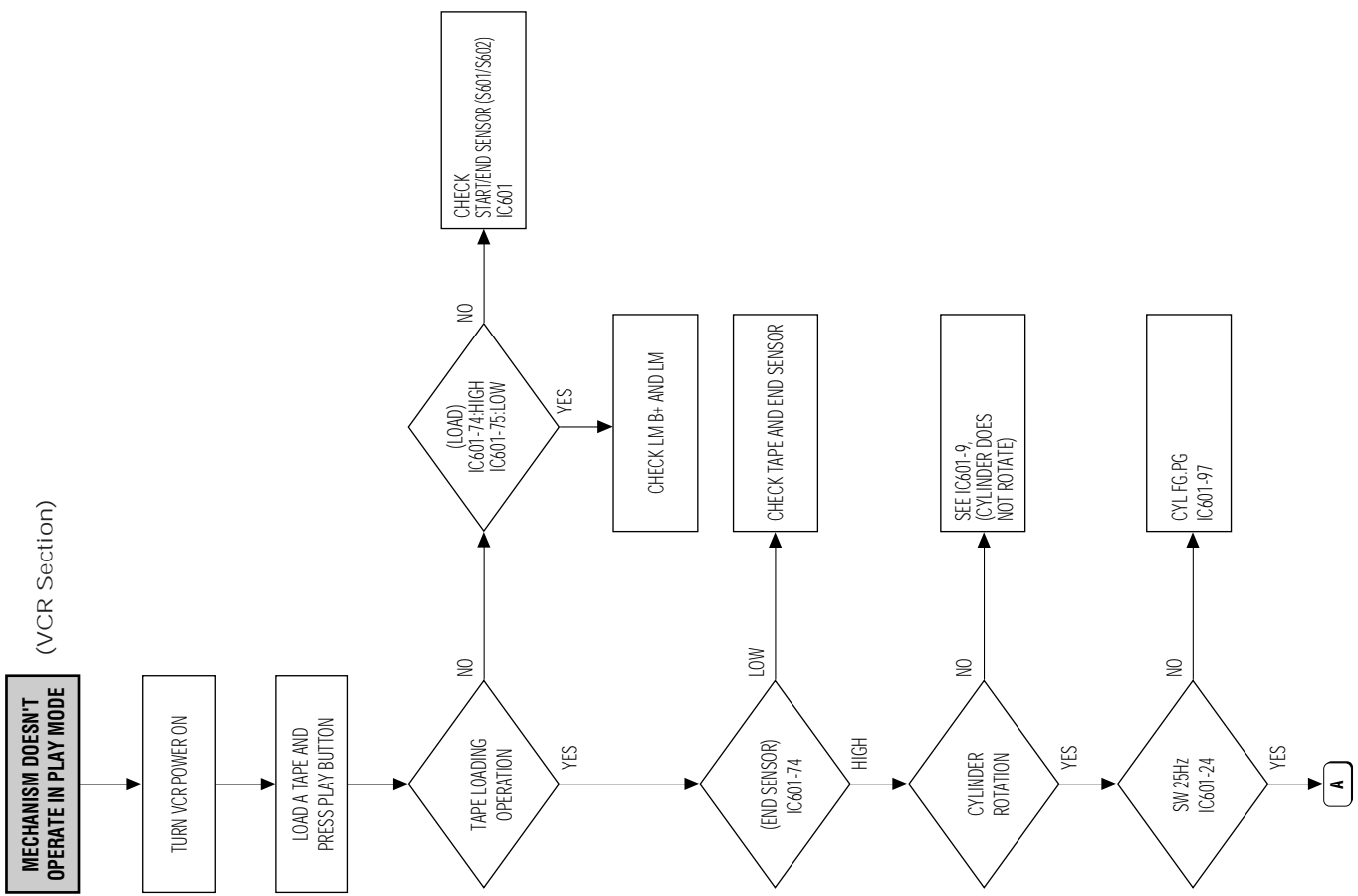
< Table 6-3 >

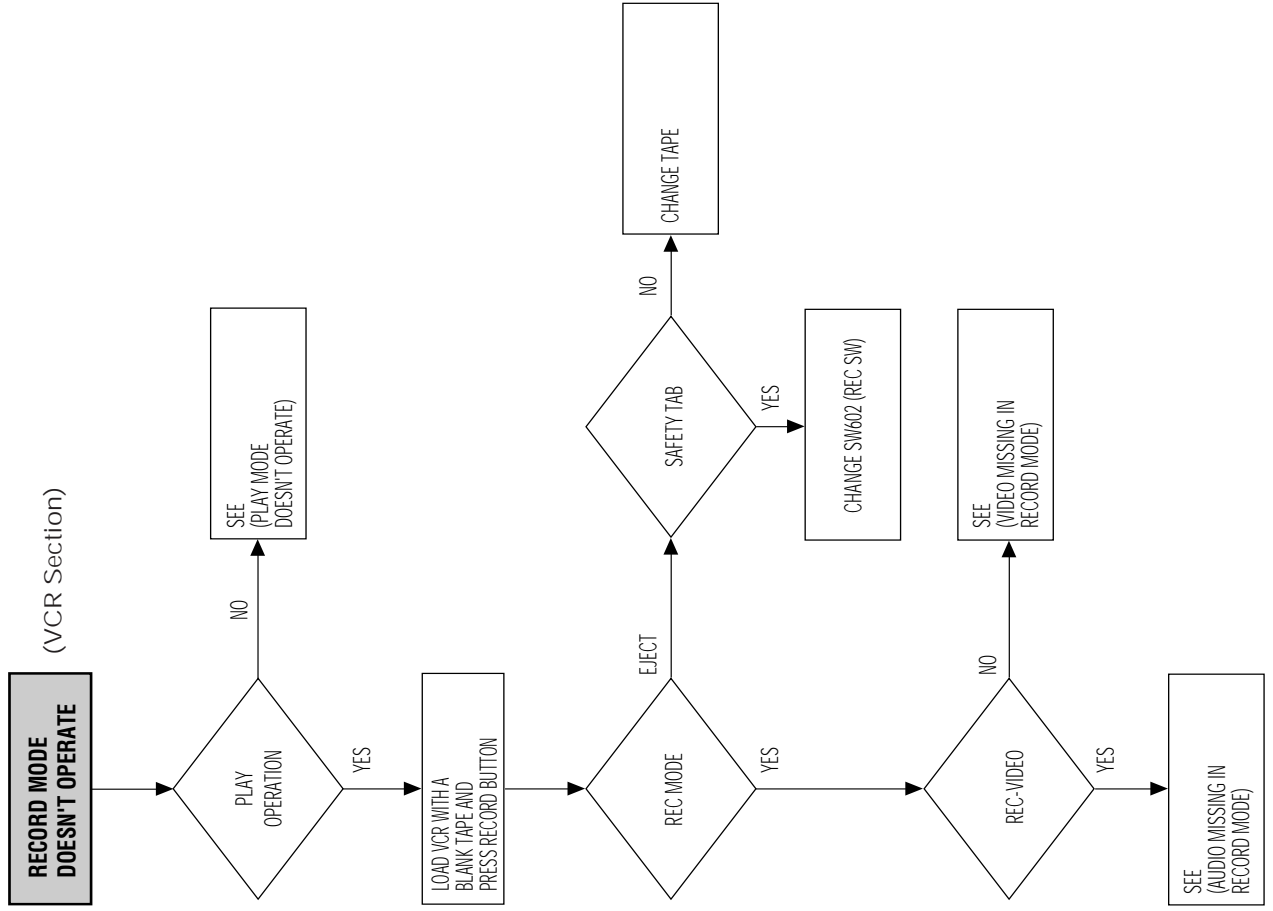
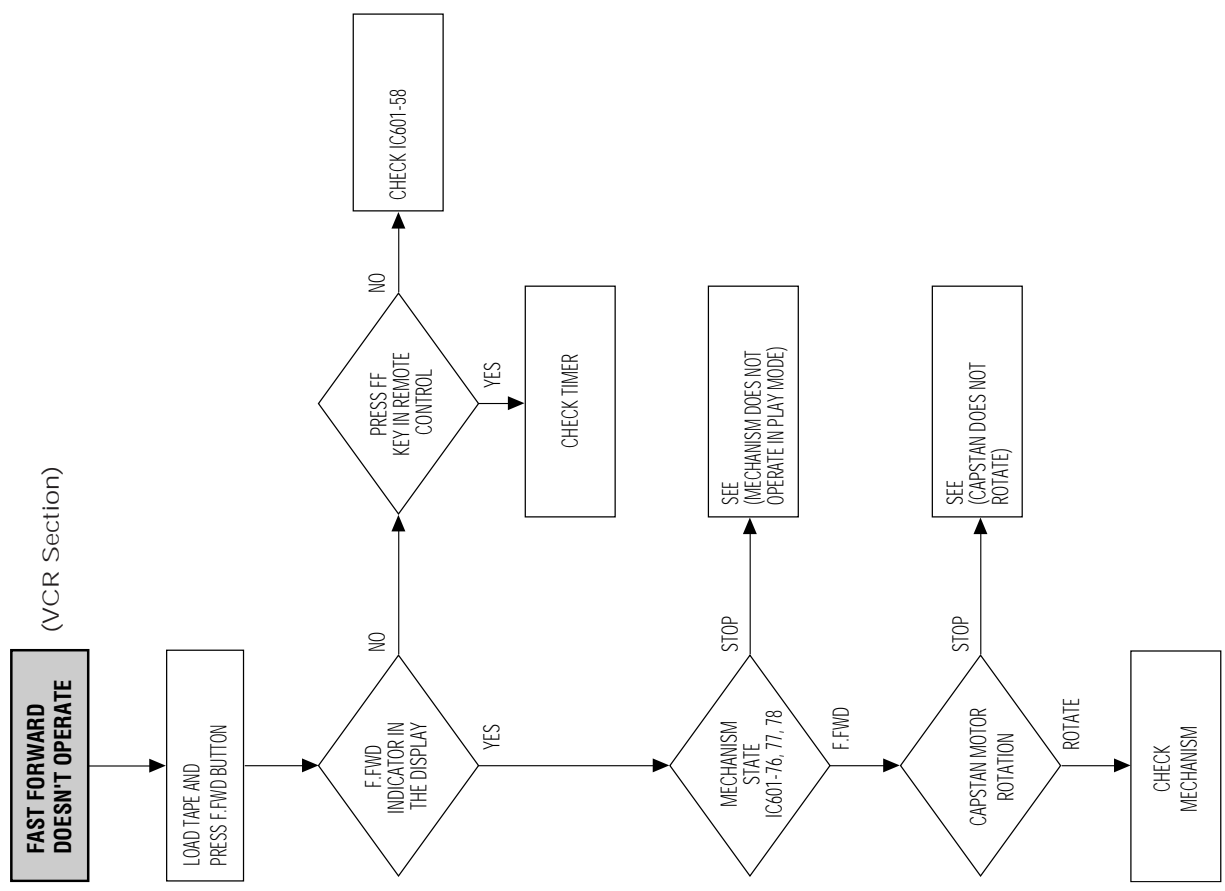
MODE	TORQUE g/cm	GAUGE
PB	$42 \pm 11$	Cassette Torquemeter
RPS	$145 \pm 30$	Cassette Torquemeter

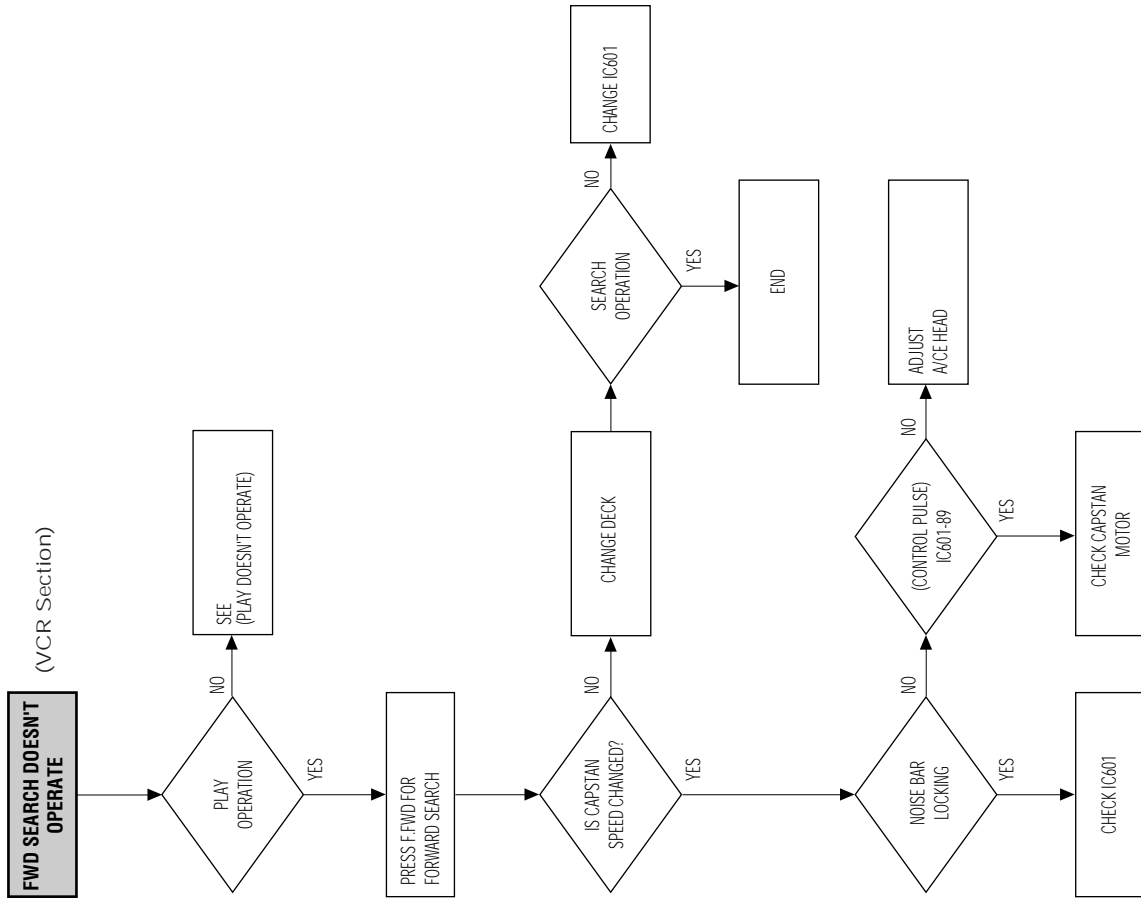
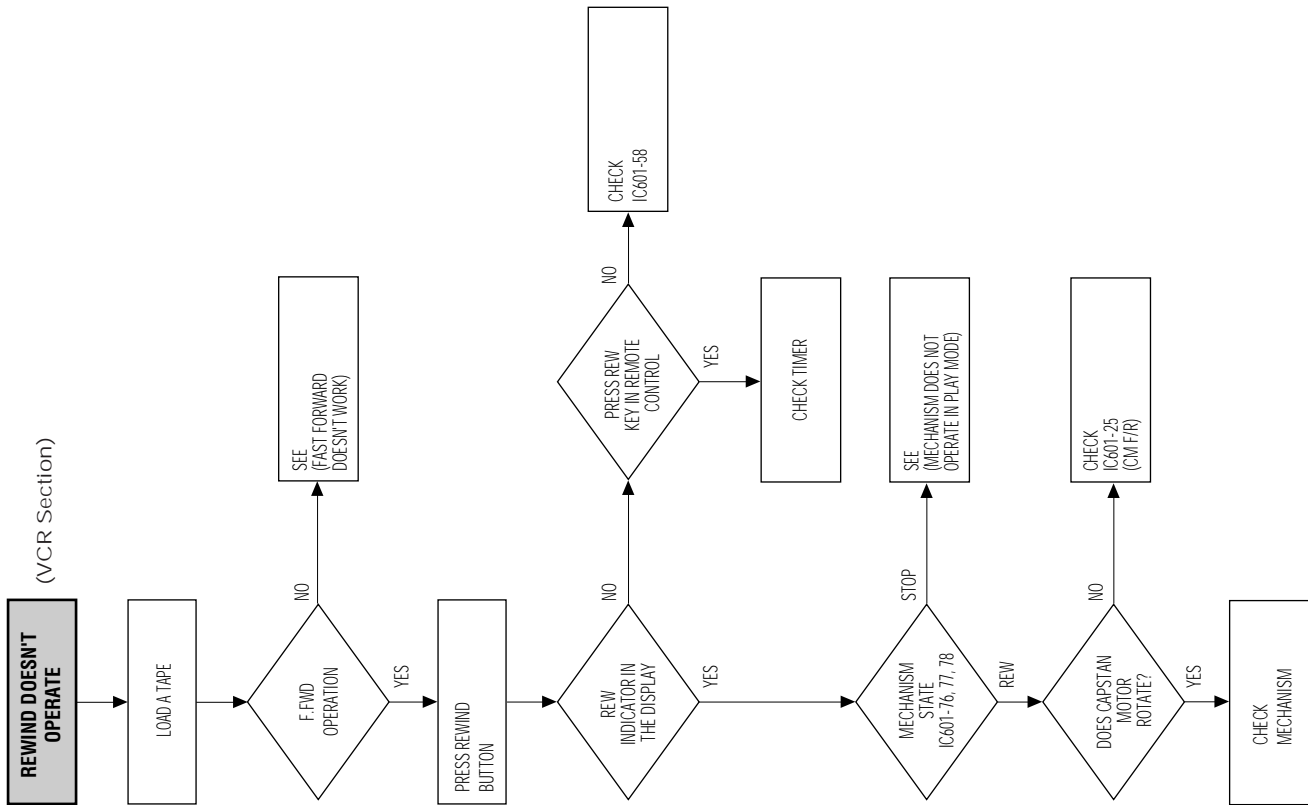
MEMO

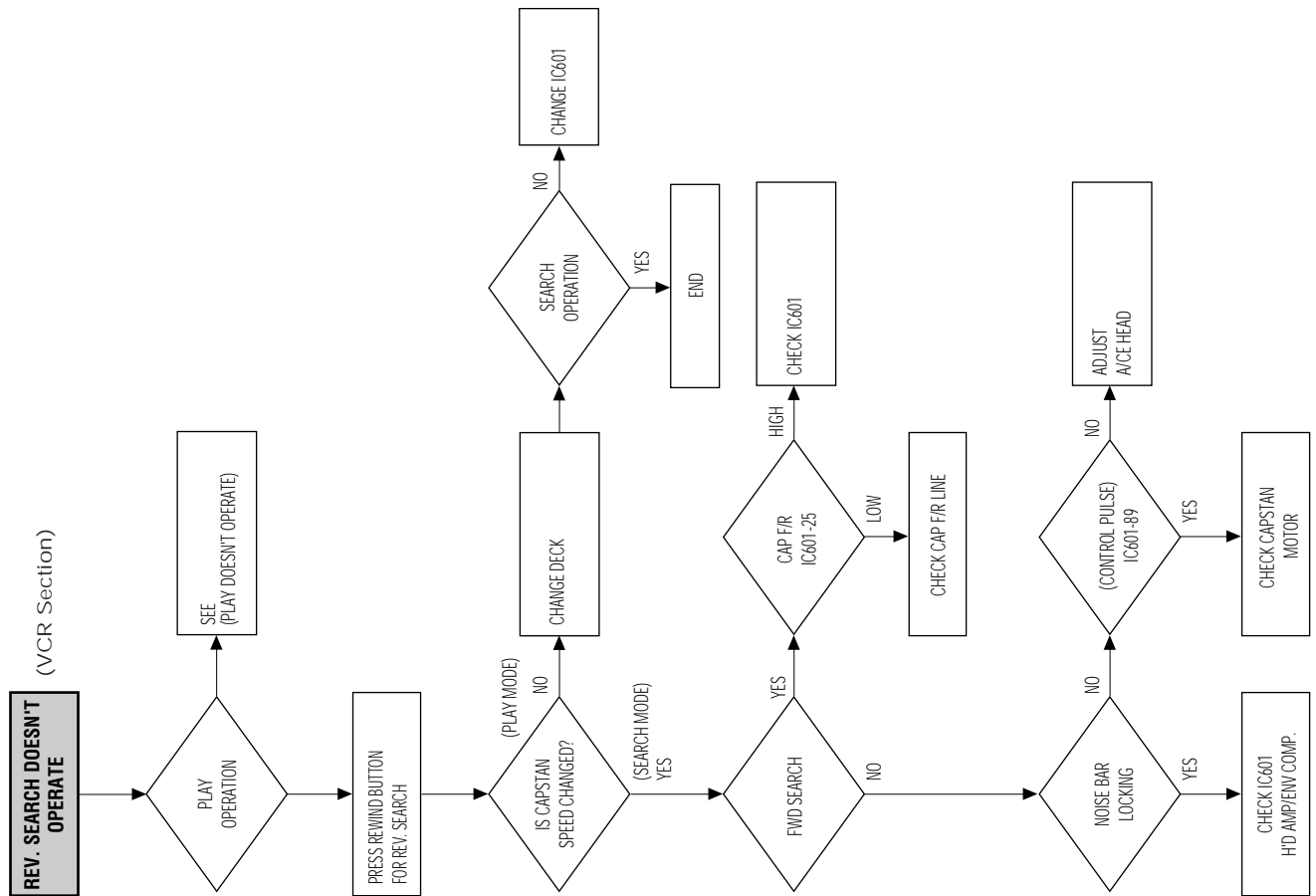
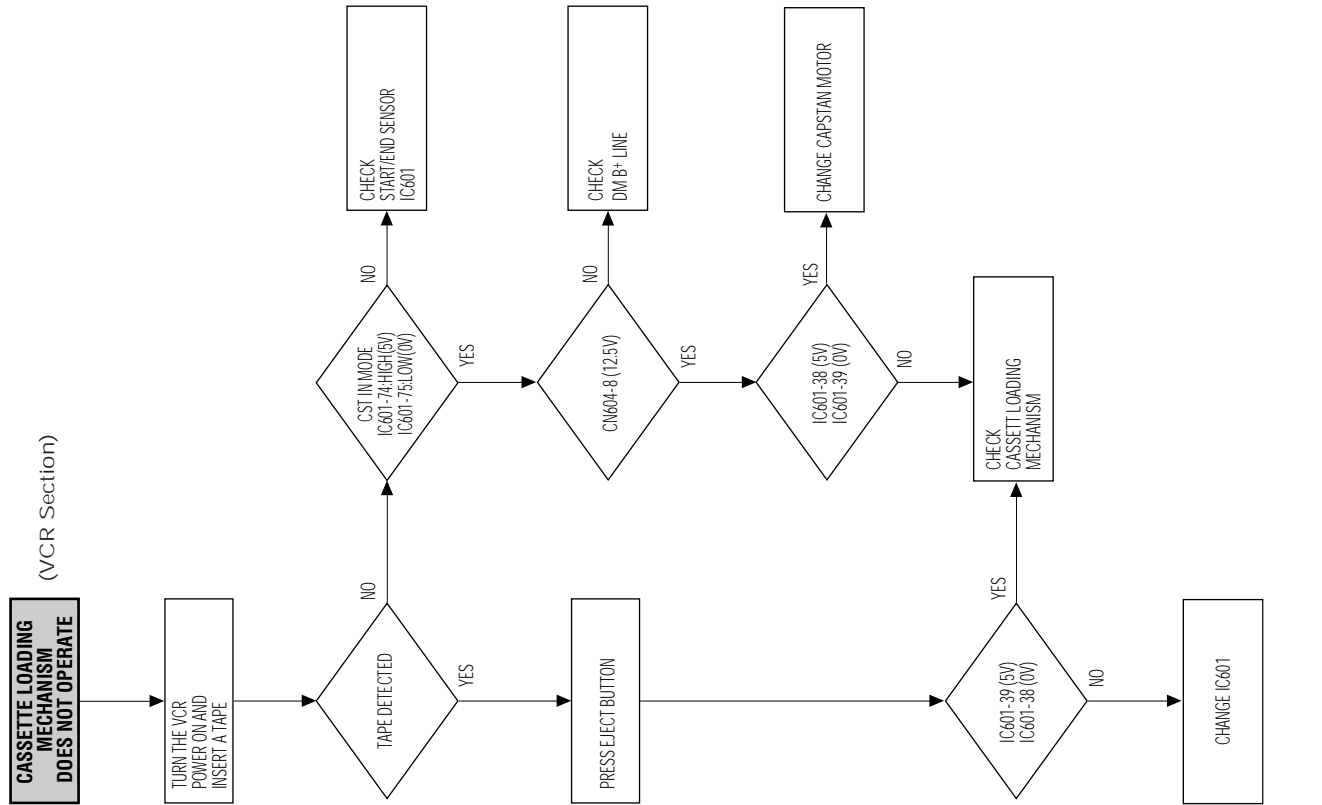
## 7. TROUBLESHOOTING

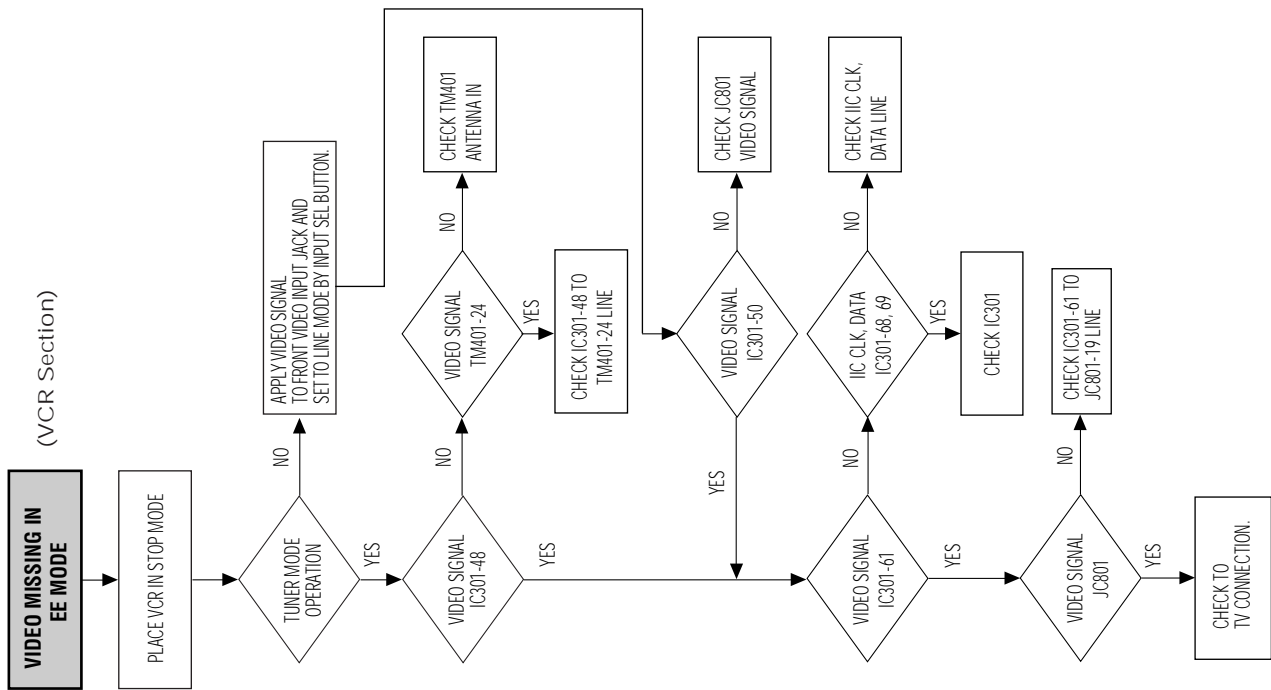
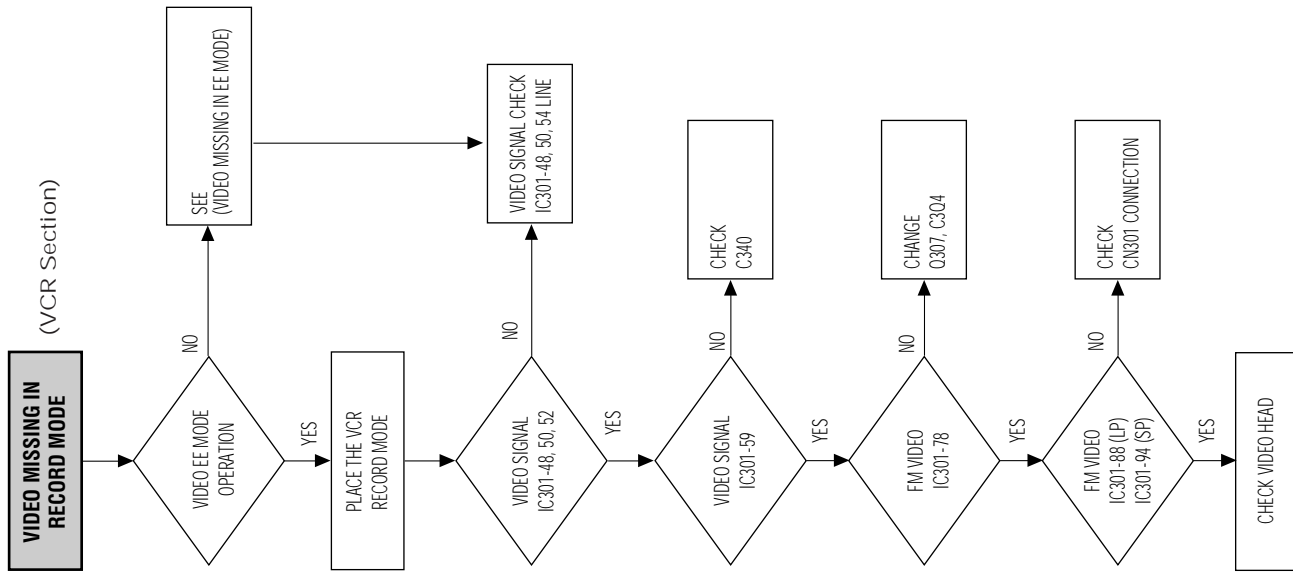




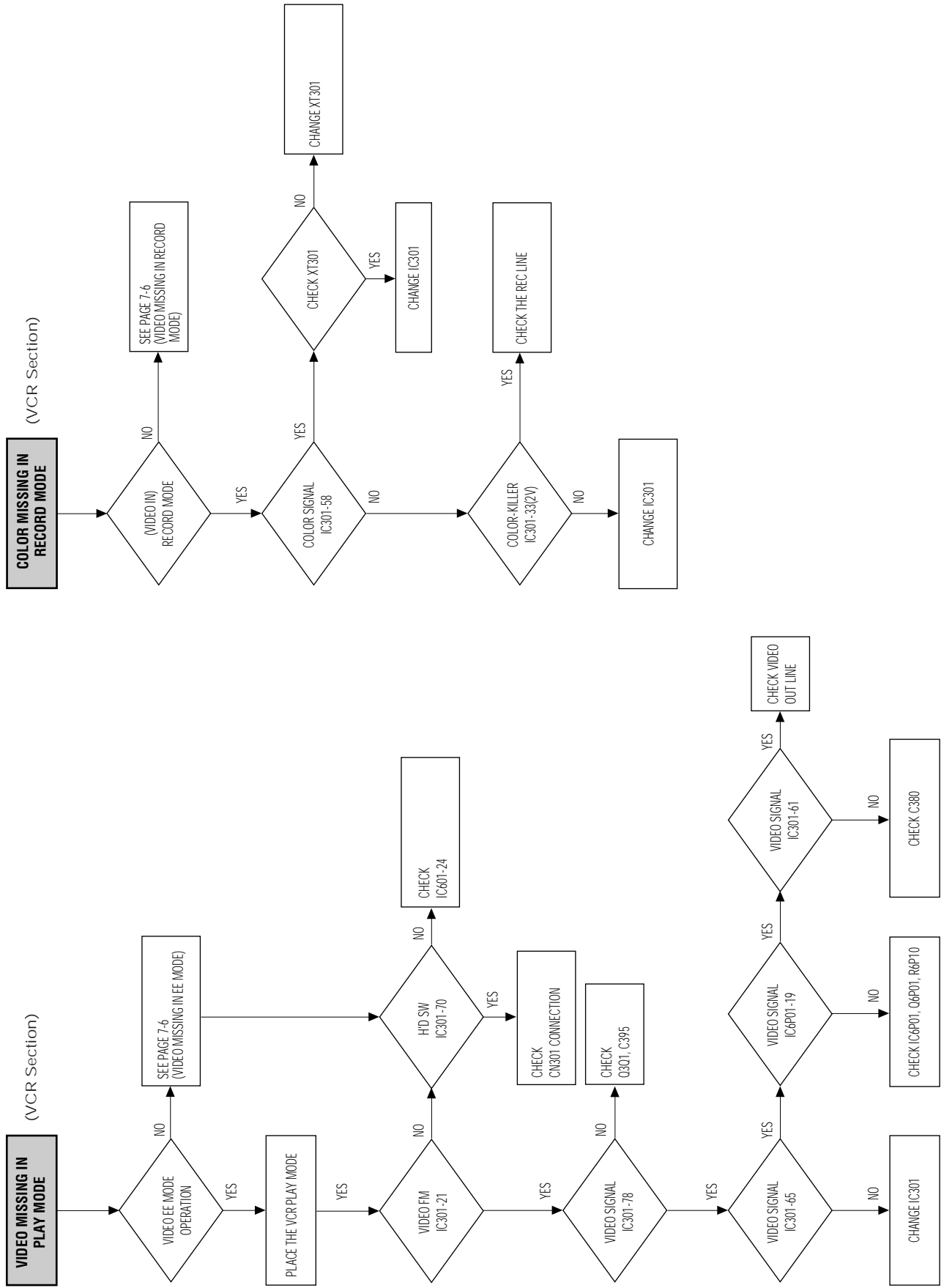


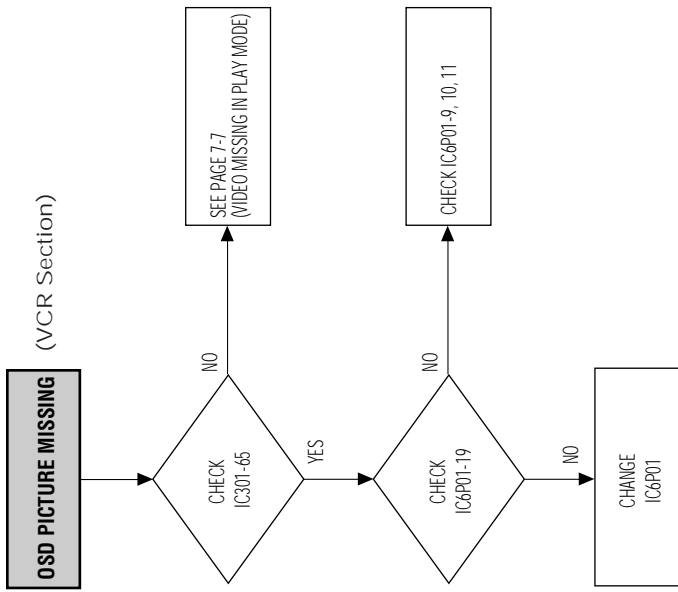
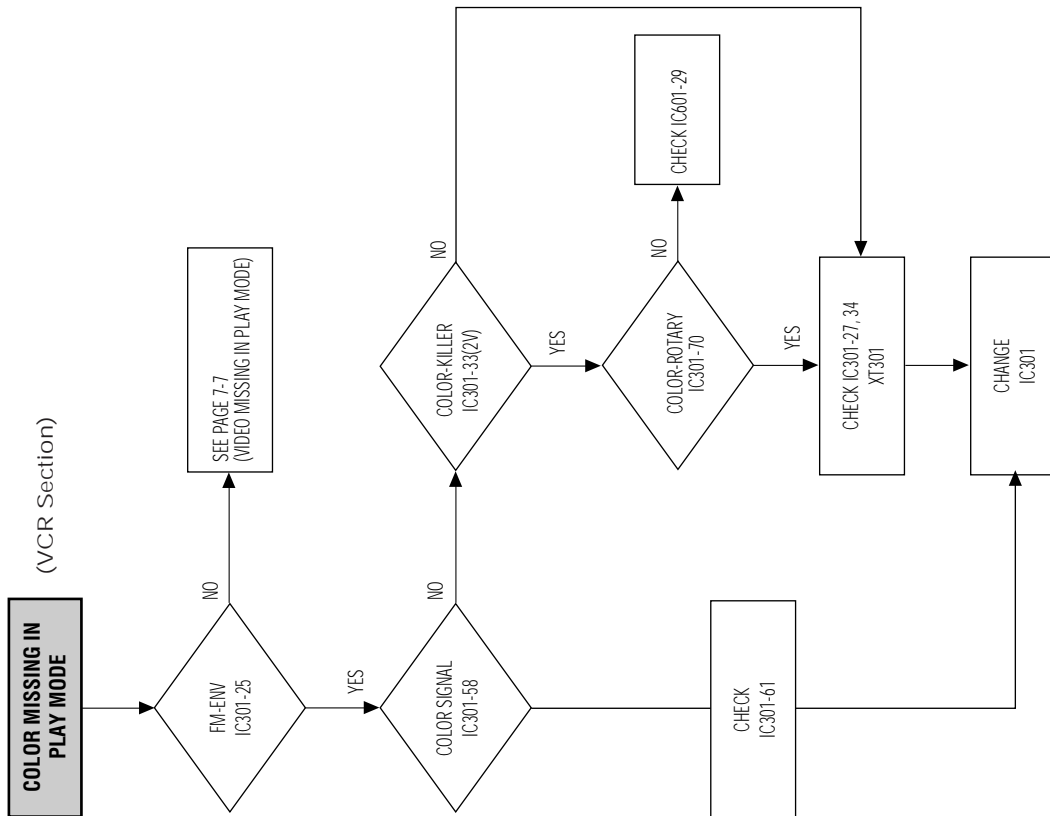




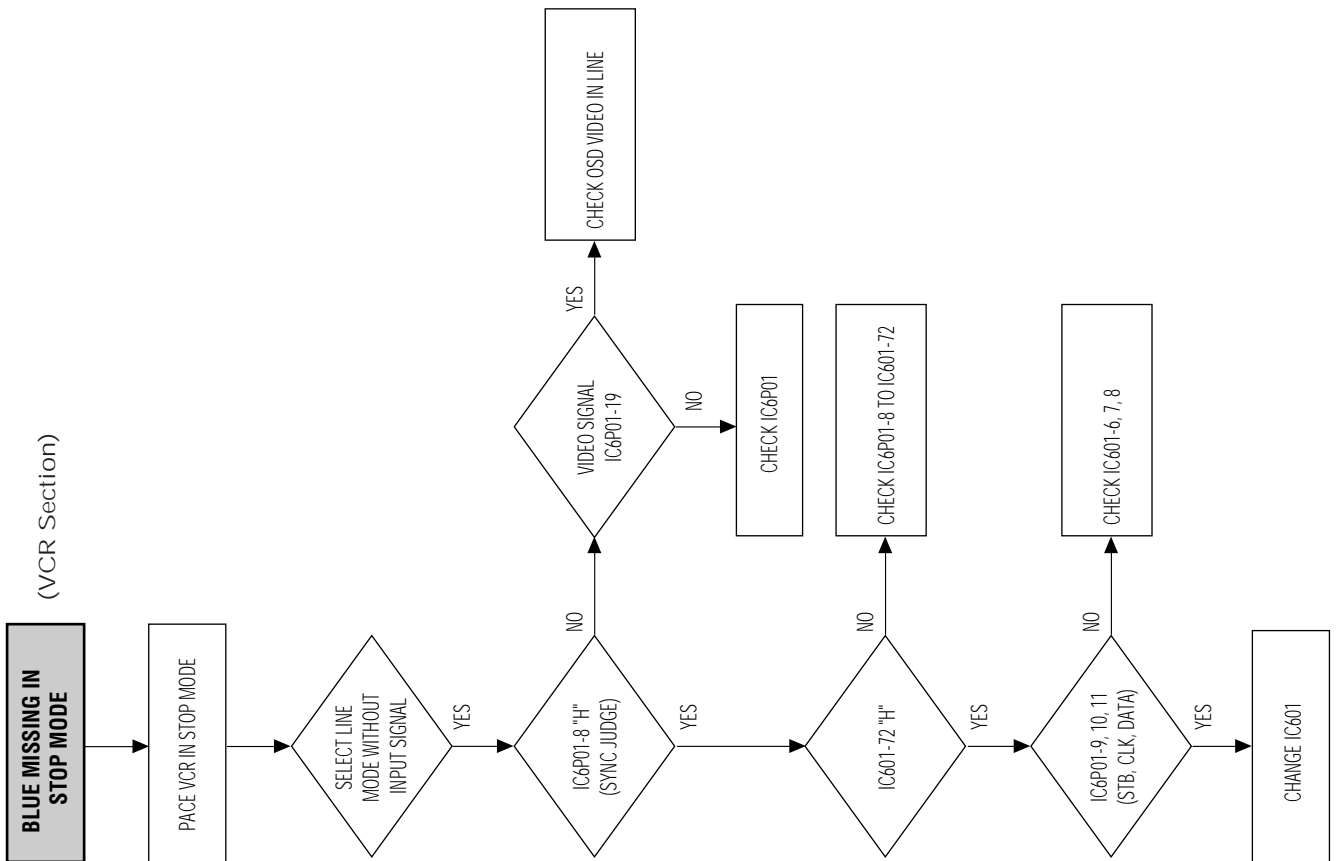




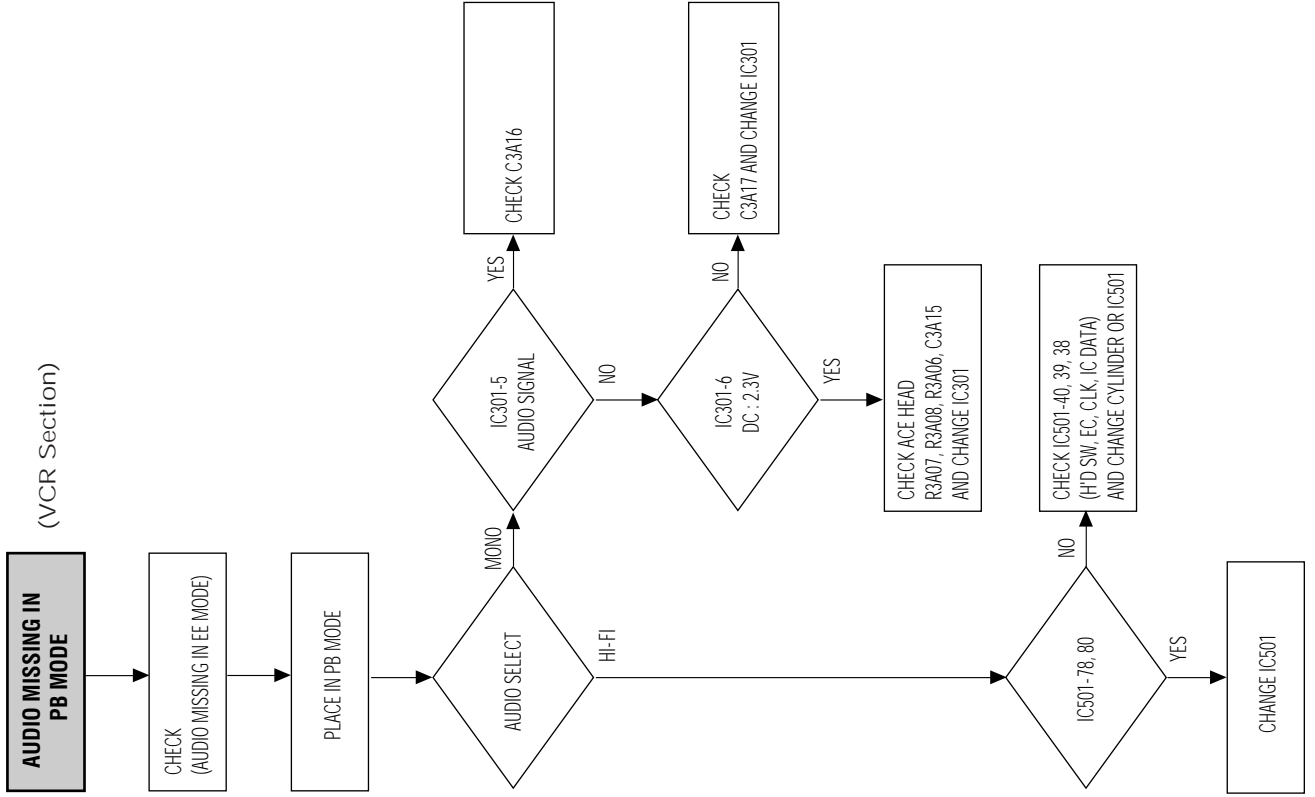


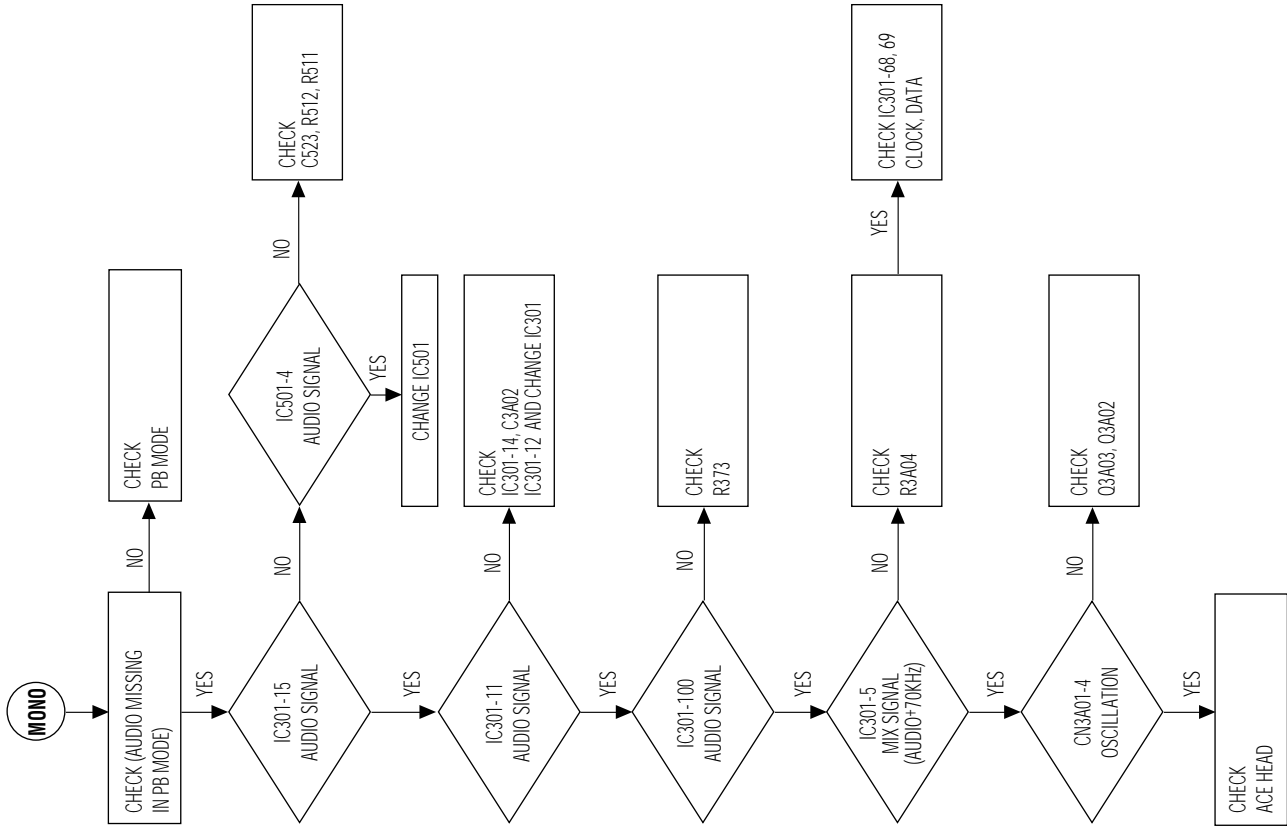
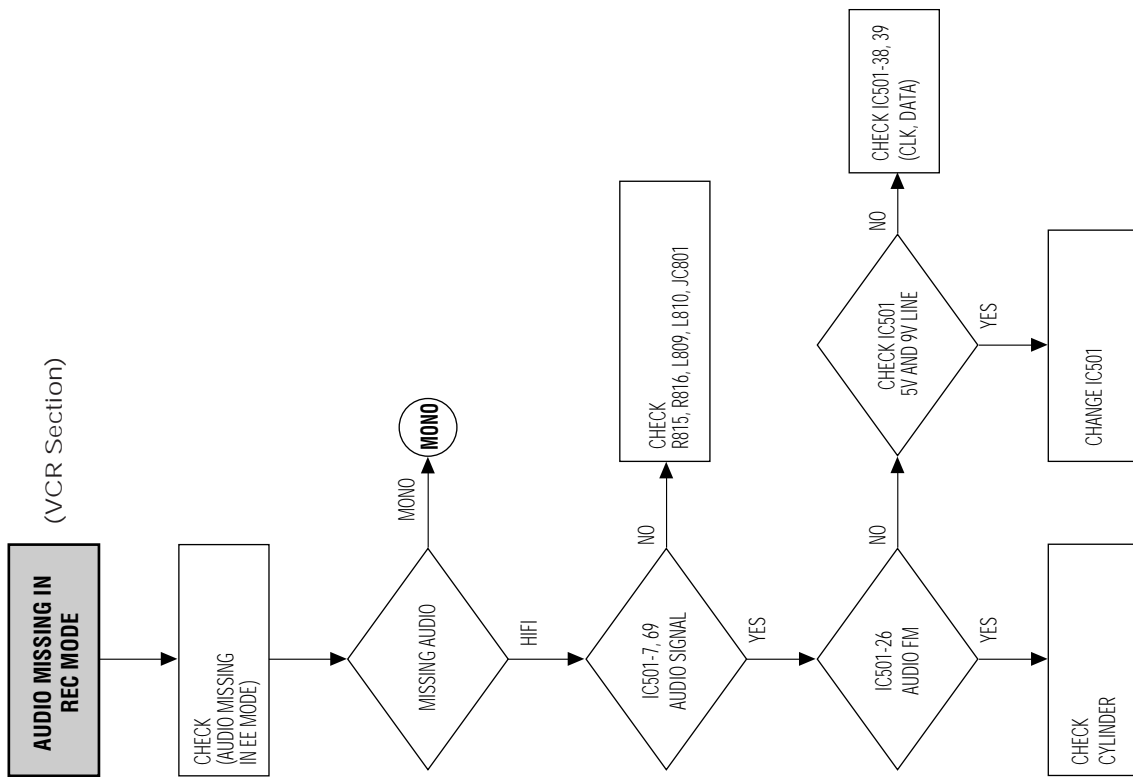


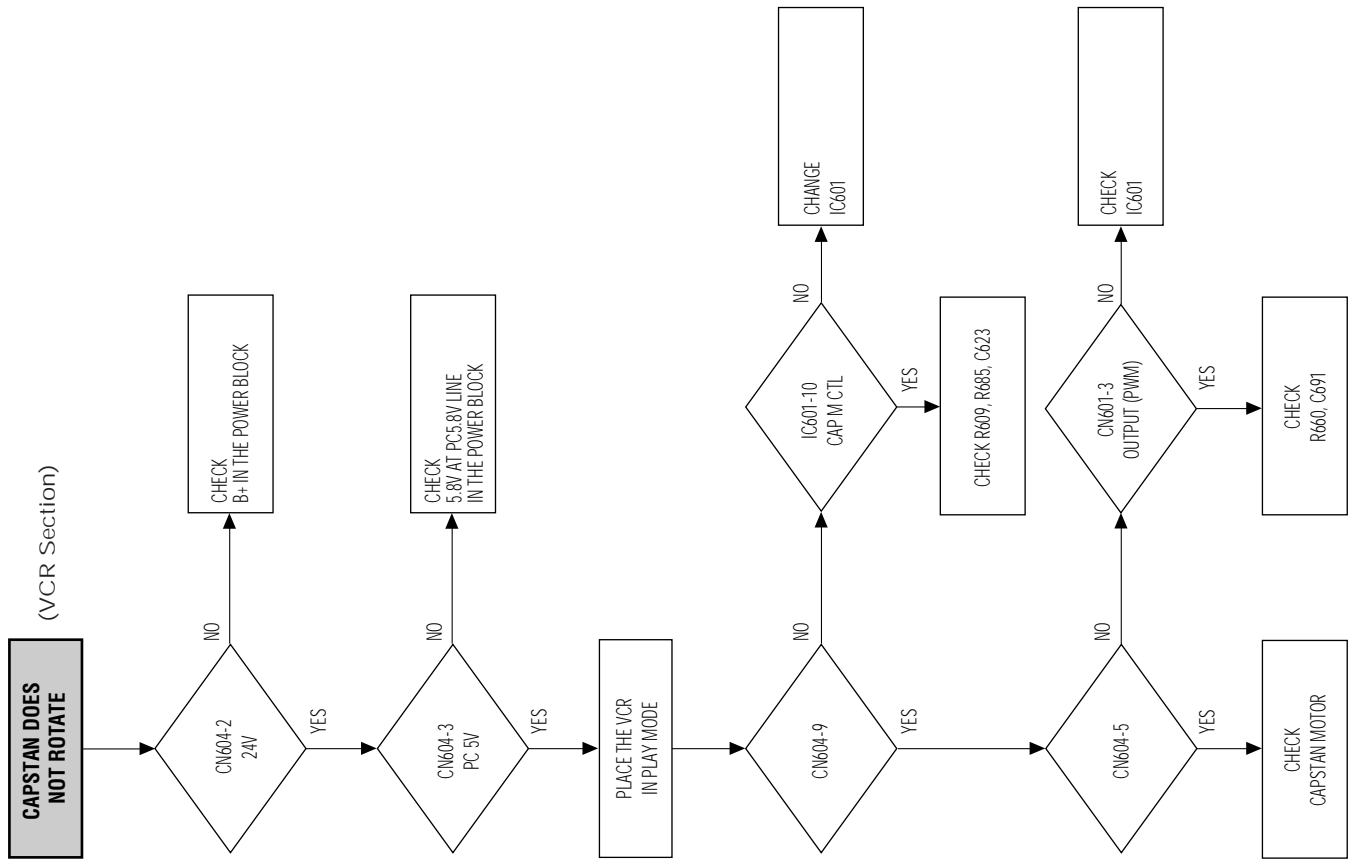
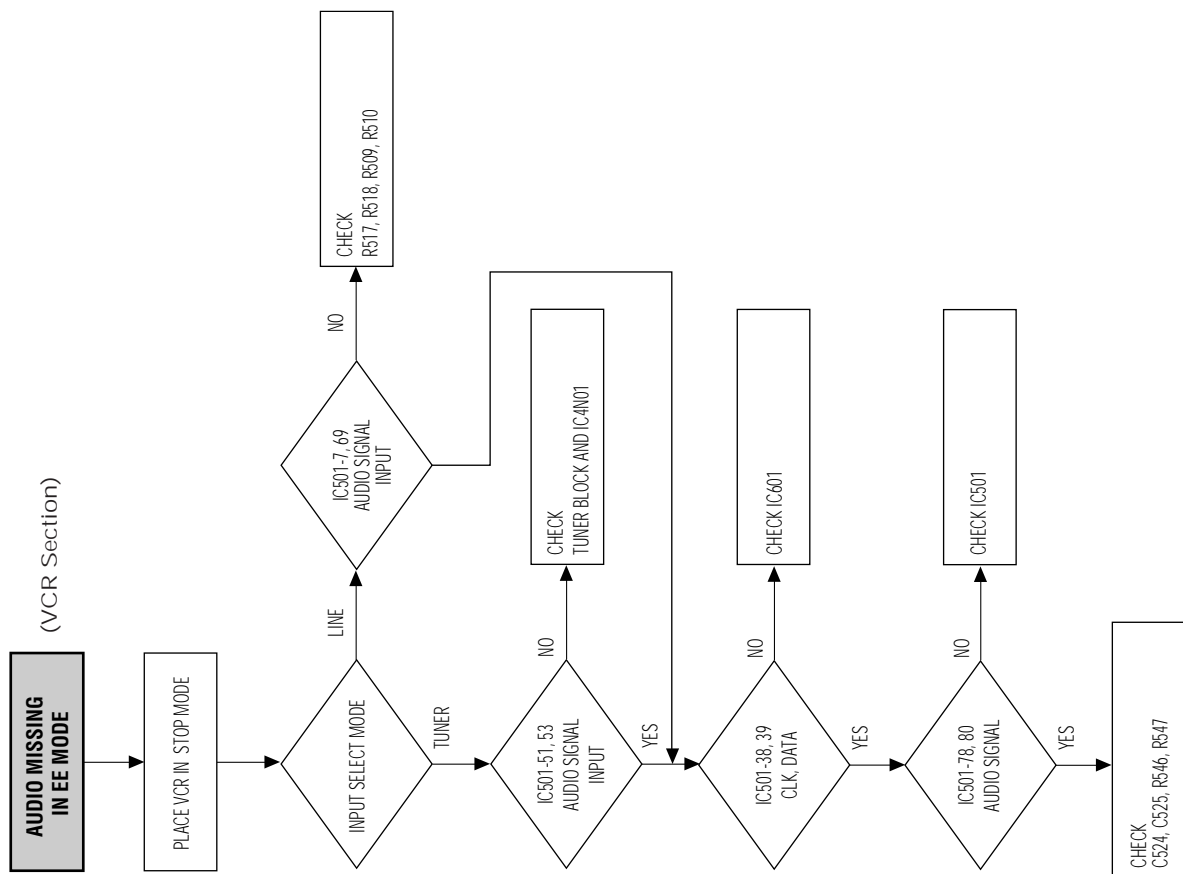
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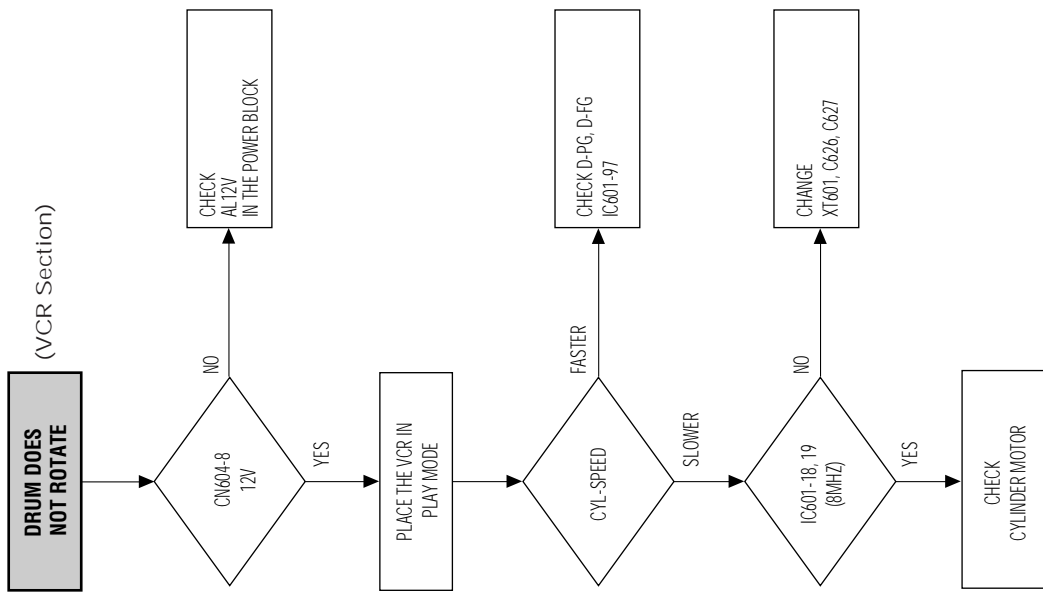


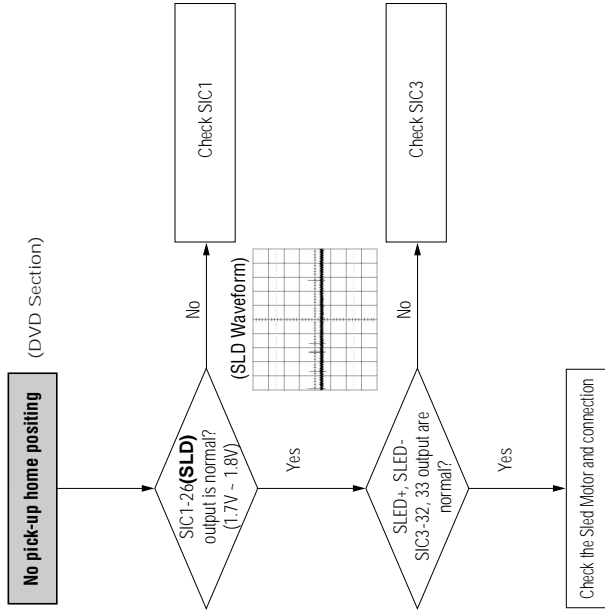
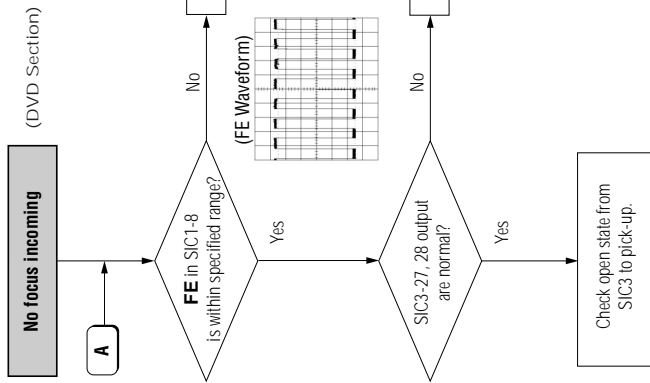
(VCR Section)

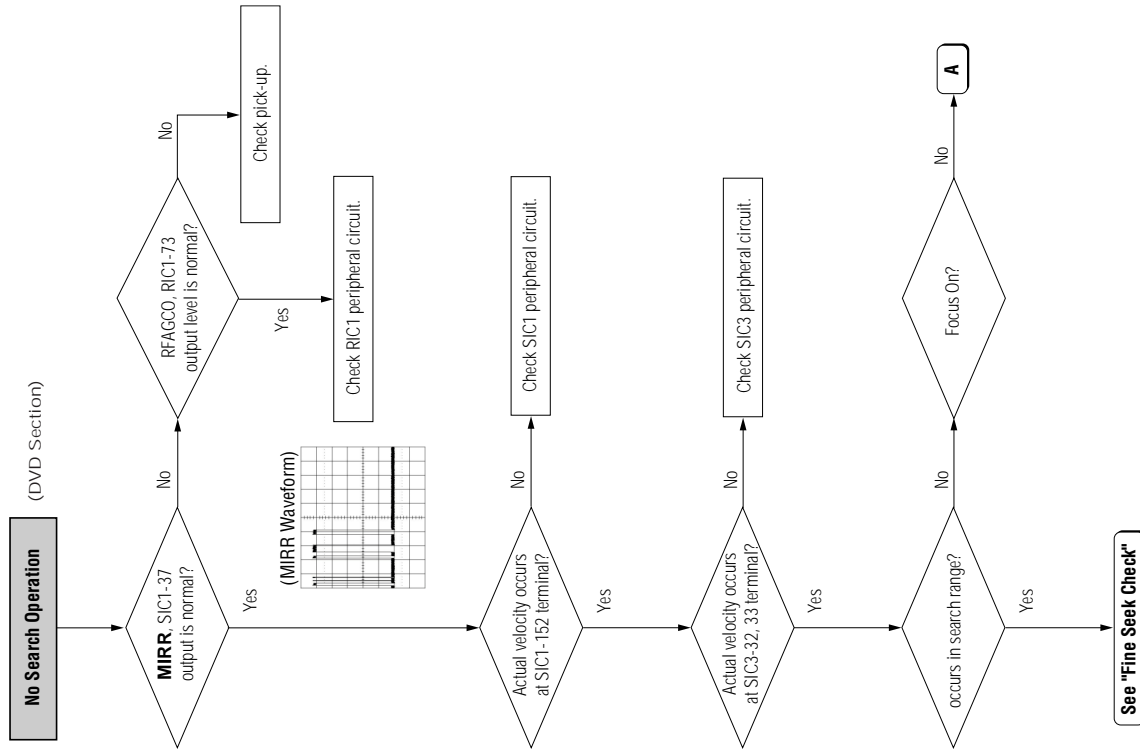
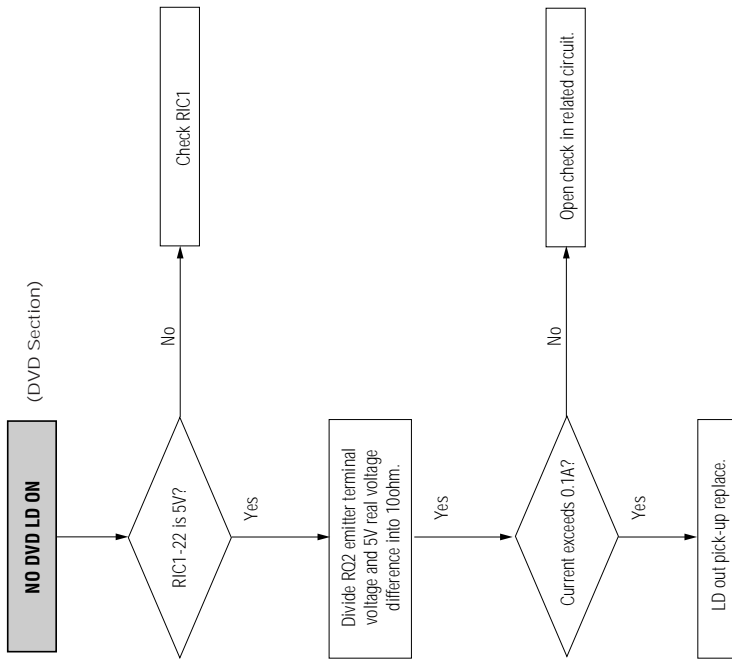




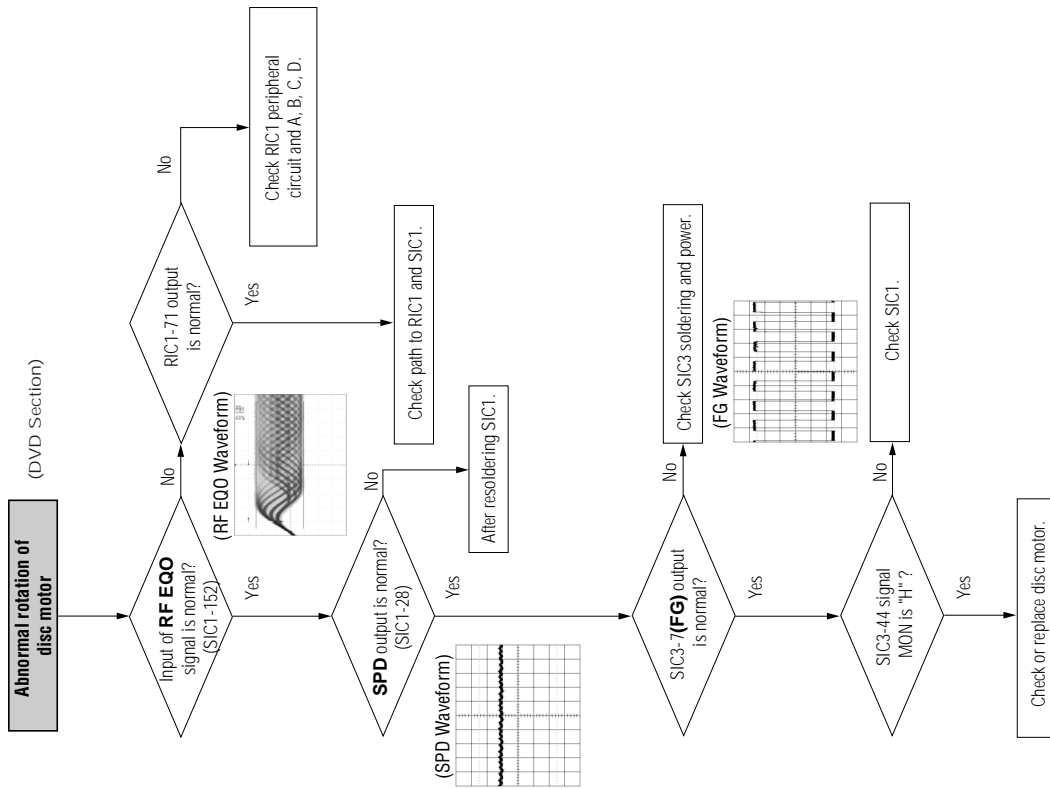
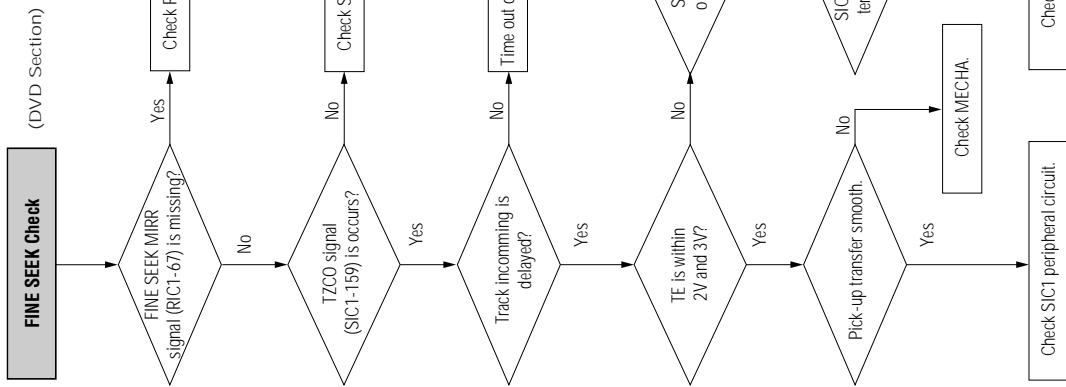


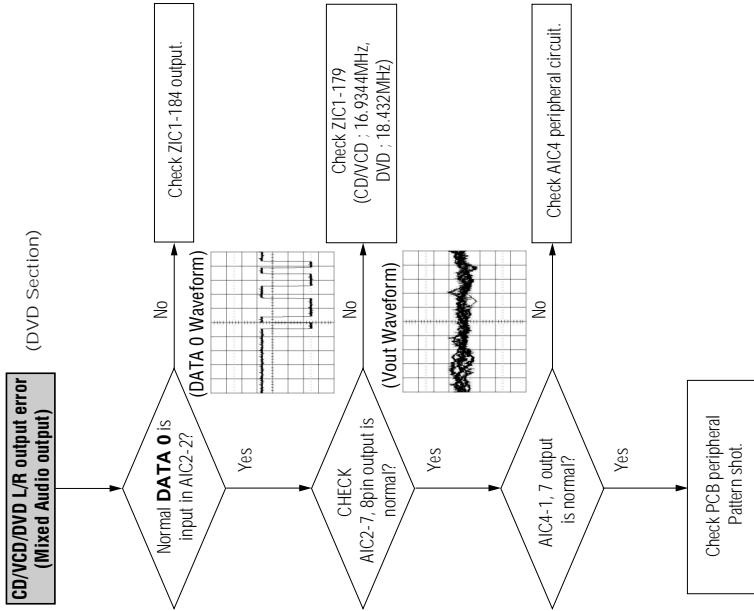
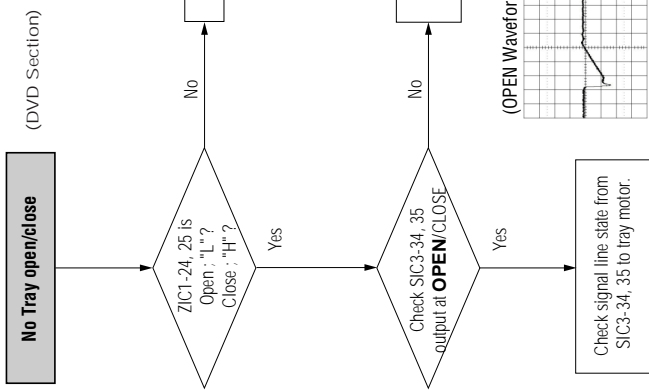


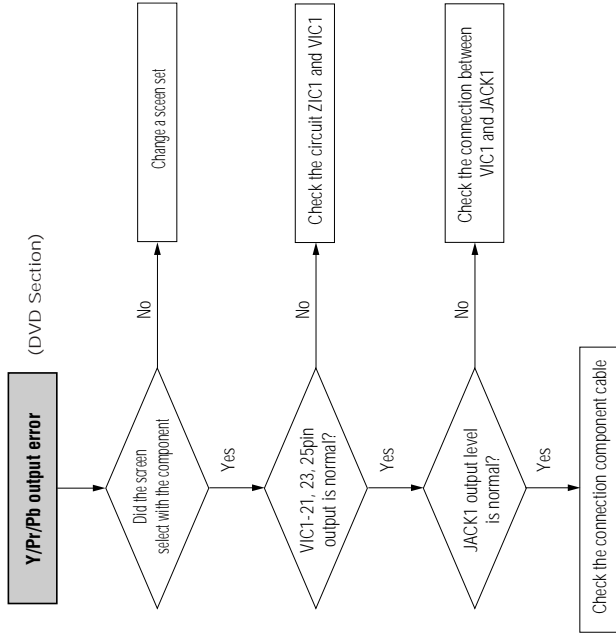
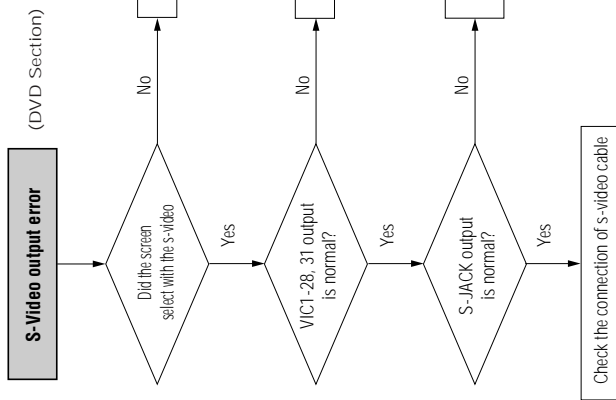


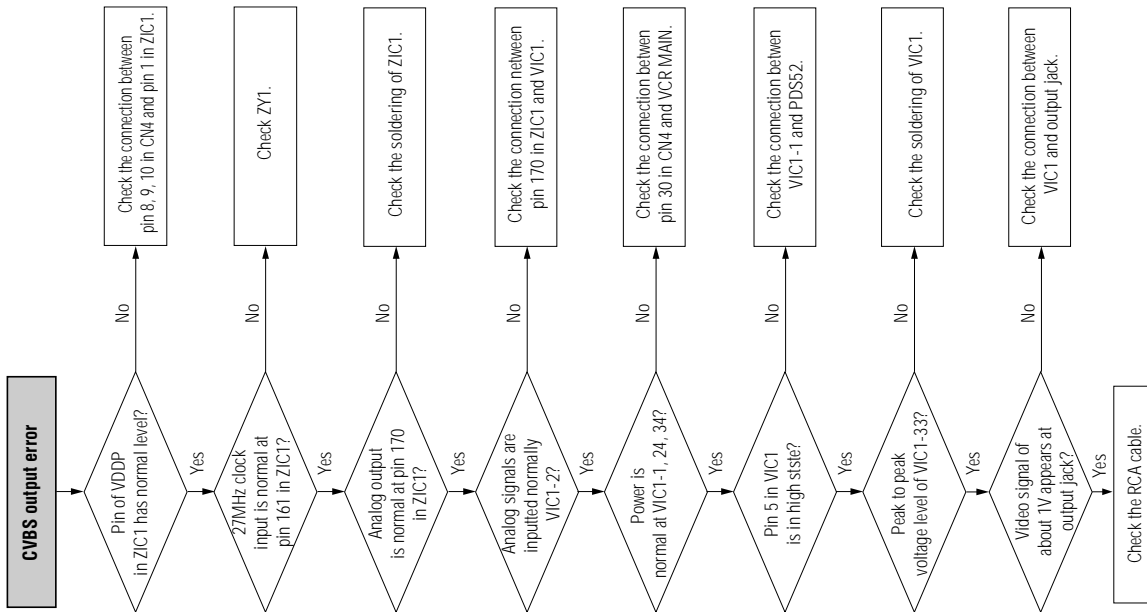












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## 8. REPAIR PARTS LIST

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<b>8-1 Exploded Views</b> .....	<b>8-2</b>
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<b>8-1-3 VCR Mechanical Parts (Bottom Side)</b> .....	<b>8-5</b>
<b>8-1-4 DVD Mechanical Parts</b> .....	<b>8-6</b>
<b>8-2 Electrical Parts List</b> .....	<b>8-7</b>

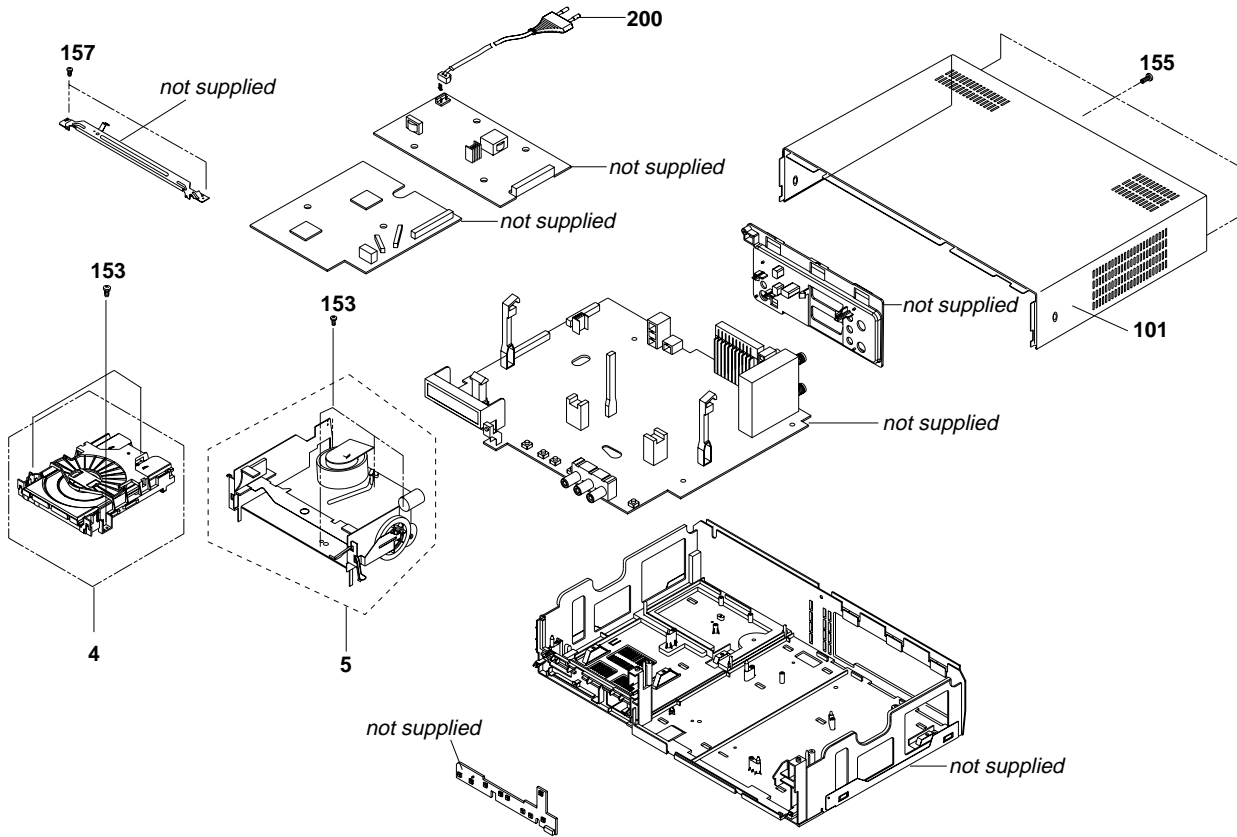
# 8-1 EXPLODED VIEWS

**NOTE:**

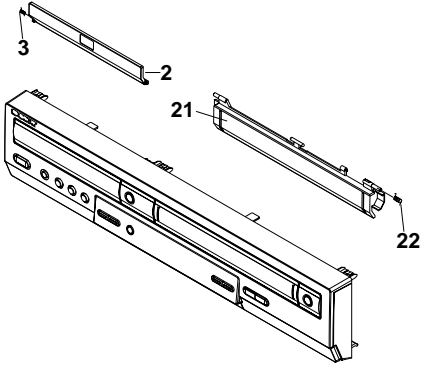
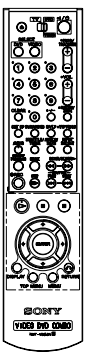
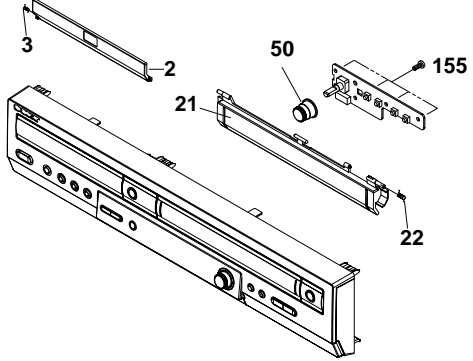
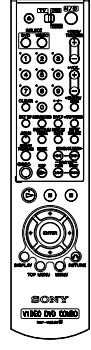
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

## 8-1-1 Cabinet Assembly

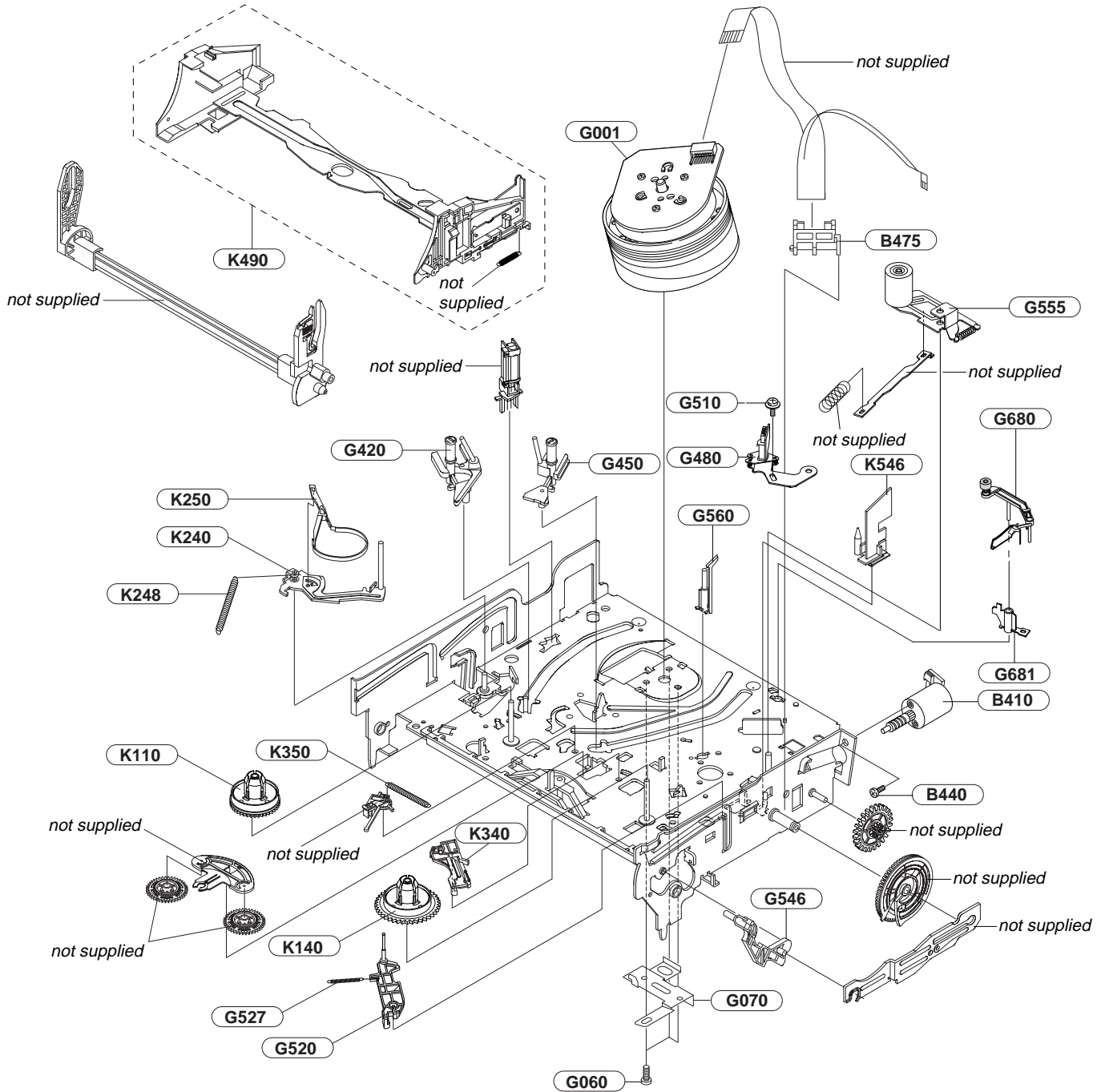


Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
4	9-885-037-38	ASSY DVD DECK		155	3-078-566-01	SCREW TAP M3 L10 BLK	
5	3-084-083-01	ASSY DECK		157	3-075-262-01	SCREW BH 4X12	
101	9-885-043-09	CASE (COMBO PAL), UPPER		$\triangle$ 200	1-823-023-11	POWER CORD KKP419C (EXCEPT D950GI)	
153	3-075-256-01	SCREW TAP 3X12		$\triangle$ 200	1-823-025-11	POWER CORD Y352 (D950GI)	

Models	1	UT01
SLV-D910		
SLV-D950		

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
1	9-885-043-21	ASSY PANEL FRONT (D910B/D910E/D910N)		21	9-885-037-26	DOOR CASSETTE	
1	9-885-043-22	ASSY PANEL FRONT (D950B/D950E)		22	9-885-037-13	SPRING ETC MASK	
1	9-885-043-23	ASSY PANEL FRONT (D950GI)		50	1-786-352-11	SW-DIAL TIMER (D950B/D950E/D950GI/D910AZ)	
1	9-885-043-24	ASSY PANEL FRONT (D910R)		UT01	9-885-043-07	COMMANDER (RMT-V503A)	
1	9-885-043-25	ASSY PANEL FRONT (D910AZ)				(D910B/D910E/D910N/D910R/D910AZ)	
2	9-885-037-27	DOOR TRAY		UT01	9-885-043-08	COMMANDER (RMT-V503B)	
3	9-885-037-28	SPRING ETC-DOOR TRAY				(D950B/D950E/D950GI)	

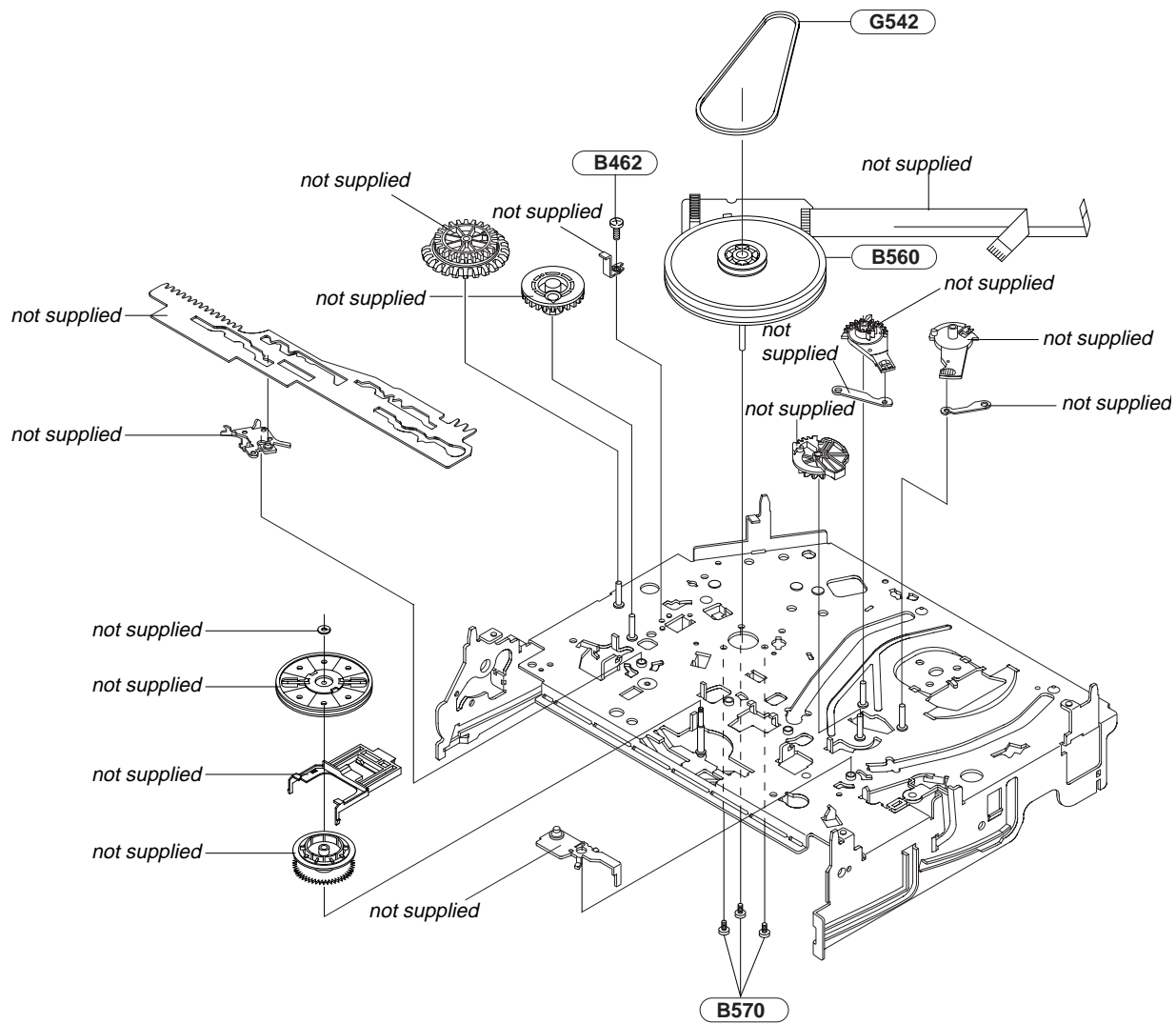
## 8-1-2 VCR Mechanical Parts (Top Side)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
B410	1-763-836-11	LOADING ASSY, MOTOR		G555	3-067-784-01	LEVER-UNIT PINCH	
B440	3-075-253-01	SCREW ASSY MAC 2.6X5		G680	3-075-021-01	AUTO HEAD CLEANER (G680)	
B475	1-796-433-11	DAMPER CAPSTAN		G681	3-075-022-01	AUTO HEAD CLEANER (G681)	
B480	3-075-241-01	ASSY ACE HEAD		K110	3-075-047-01	DISK S REEL	
G001	1-796-704-11	ASSY CLYNDER 6HD (SECAM)		K140	3-075-046-01	DISK T REEL	
G060	3-075-254-01	SCREW ASSY MAC 3X6		K240	3-067-781-01	LEVER-TENSION	
G070	3-067-796-01	PLATE-GROUND DECK		K248	3-067-782-01	SPRING-TENSION LEVER	
G420	3-079-347-01	SLIDER-SUPPLY ASSY		K250	3-067-783-01	BAND-BREAK	
G450	3-079-346-01	SLIDER-TAKE UP ASSY		K340	3-067-785-01	LEVER-T. BRAKE	
G510	3-084-091-01	SCREW TAP 2.6X5		K350	3-067-786-01	SPRING-BRAKE	
G520	3-067-779-01	LEVER-#9 GUIDE		K490	3-067-788-01	HOLDER-FL CASS.	
G527	3-067-780-01	SPRING-#9 GUIDE		K546	3-067-789-01	GUIDE-CASS.DOOR	
G546	3-067-787-01	LEVER-FL DOOR					

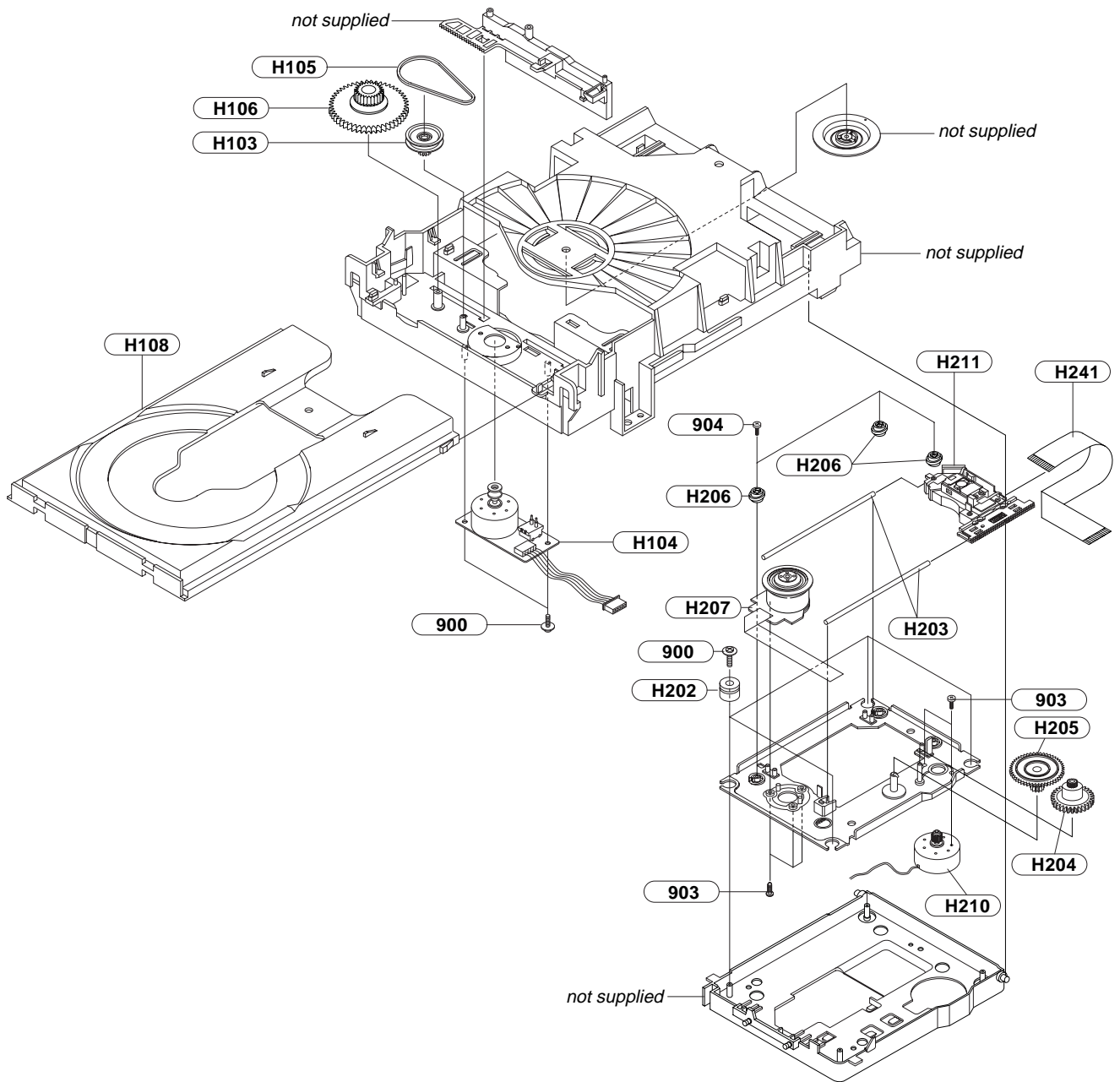


### 8-1-3 VCR Mechanical Parts (Bottom Side)



Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
B462	3-075-260-01	SCREW MAC 3X3		B570	3-075-259-01	SCREW CAP 2.6X6	
B560	1-796-432-11	MOTOR CAPSTAN		G542	3-067-790-01	BELT-PULLEY	

## 8-1-4 DVD Mechanical Parts



The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
900	3-078-592-01	SCREW TAP 2X6		H203	3-078-588-01	SHAFT PU	
903	9-885-037-07	SCREW MAC 1.7X3		H204	9-885-037-31	GEAR FEED A	
904	9-885-037-08	SCREW TAP 1.7X5		H205	9-885-037-32	GEAR FEED B	
H103	9-885-037-29	PULLEY GEAR		H206	9-885-037-23	HOLDER-CAM SKEW	
H104	9-885-037-20	MOTOR LOADING ASSY		H207	9-885-037-21	MOTOR-SPINDLE	
H105	3-078-583-01	BELT RECTANGULAR		H210	9-885-037-22	MOTOR FEED ASSY	
H106	9-885-037-30	GEAR TRAY		$\triangle$ H211	9-885-037-37	ASSY PICK UP	
H108	9-885-037-24	TRAY DISC		H241	9-885-037-06	CABLE FLAT 24P	
H202	9-885-037-35	RUBBER INSULATOR					

## 8-2 ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS  
All resistors are in ohms.  
METAL: metal-film resistor  
METAL OXIDE: Metal Oxide-film resistor  
F: nonflammable
- Not all of the parts are listed.

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS  
In each case, u:  $\mu$ , for example:  
uA...:  $\mu$ A... , uPA... ,  $\mu$ PA... ,  
uPB... ,  $\mu$ PB... , uPC... ,  $\mu$ PC... ,  
uPD... ,  $\mu$ PD...  
• CAPACITORS:  
uF:  $\mu$ F  
• COILS  
uH:  $\mu$ H

When indicating parts by reference number, please include the board name.

The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks
		DVD MAIN BOARD *****	
	9-885-043-18	PWB MAIN ASSY (EXCEPT D910R/D910AZ)	
	9-885-043-19	PWB MAIN ASSY (D910R)	
	9-885-043-20	PWB MAIN ASSY (D910AZ)	
		< DIODE >	
DD1	1-805-013-11	DIODE DAP202K	
		< IC >	
AIC2	1-805-024-11	IC (DA CONVERTER)	
AIC4	1-805-028-11	IC (OP AMP 4560)	
PIC1	1-805-030-11	IC 1563 (V REGULATOR)	
PIC2	9-885-037-02	IC (POS. FIXED)	
RIC1	9-885-037-19	IC S5L1463A01 (ASIC)	
SIC1	9-885-037-18	IC S5L1455X01 (ASIC)	
SIC2	9-885-036-98	IC 41LV16256 (DRAM)	
SIC3	9-885-036-97	IC FAN8728 (MOTOR DRIVER)	
VIC1	9-885-037-03	IC LA73054 (VIDEO)	
ZIC1	9-885-043-28	IC ZR36742 (DECODER)	
ZIC2	9-885-036-99	IC IS42S16400A-7T (DRAM)	
ZIC3	9-885-050-82	IC (FLASH MEMORY) (EURO W) (D950B/D950GI/D950E/D910E/D910B)	
ZIC3	9-885-050-83	IC (FLASH MEMORY) (EURO E) (D910N/D910R)	
ZIC3	9-885-050-85	IC (FLASH MEMORY) (AZ) (D910AZ)	
ZIC7	1-805-027-11	IC 24C021 (EEPROM)	
ZIC8	1-805-022-11	IC 74VHCT125A (CMOS LOGIC)	
		< TRANSISTOR >	
DQ1	1-805-016-11	TRANSISTOR KSC1623-L	
DQ2	1-805-016-11	TRANSISTOR KSC1623-L	
DQ3	1-805-016-11	TRANSISTOR KSC1623-L	
RQ1	1-805-014-11	TRANSISTOR KSA1182-Y	
RQ2	1-805-014-11	TRANSISTOR KSA1182-Y	
		< VIBRATOR >	
SY1	1-795-749-11	CRYSTAL UNIT (33.8688MHz)	
ZY1	1-795-750-11	CRYSTAL UNIT (27MHz)	

Ref. No.	Part No.	Description	Remarks
		FUNCTION BOARD *****	
		< SWITCH >	
SW704	1-786-353-11	TACT SW (TAPPING 5mm) (D910B/D910E/D910N/D910R)	
SW705	1-786-353-11	TACT SW (TAPPING 5mm) (D910B/D910E/D910N/D910R)	
SW706	1-786-353-11	TACT SW (TAPPING 5mm) (D910B/D910E/D910N/D910R)	
SW708	1-786-353-11	TACT SW (TAPPING 5mm)	
SW709	1-786-353-11	TACT SW (TAPPING 5mm) (D910B/D910E/D910N/D910R)	
		S. M. P. S. BOARD *****	
FC1SS1	1-576-527-11	FUSE CLIP	
FC1SS2	1-576-527-11	FUSE CLIP	
SC01	3-075-256-01	SCREW TAP 3X12	
		< CAPACITOR >	
$\triangle$ C1SD02	1-165-573-11	CONDENSER FILM	0.1uF
$\triangle$ C1SS01	1-165-573-11	CONDENSER FILM	0.1uF
		< DIODE >	
D1P101	1-804-409-11	DIODE IN4002	
D1P103	1-804-407-11	DIODE IN4148	
D1P104	1-804-407-11	DIODE IN4148	
D1SF01	1-804-407-11	DIODE IN4148	
D1SF02	1-804-412-11	DIODE FIT4	
D1SS01	1-804-413-11	DIODE IT5	
D1SS02	1-804-413-11	DIODE IT5	
D1SS03	1-804-413-11	DIODE IT5	
D1SS04	1-804-413-11	DIODE IT5	
D1SS11	1-804-408-11	DIODE UF4007	
D1SS12	1-805-041-11	DIODE SE55	
D1SS13	1-805-041-11	DIODE SE55	
D1SS14	1-805-041-11	DIODE SE55	
D1SS15	1-804-412-11	DIODE FIT4	
D1SS16	1-804-411-11	DIODE UG2D	

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
D1SS17	1-804-412-11	DIODE FIT4		D702	1-804-407-11	DIODE IN4148	
D1SS19	1-804-412-11	DIODE FIT4		D703	1-804-407-11	DIODE IN4148	
ZD1P02	1-804-418-11	DIODE MTZJ12B		D704	1-804-407-11	DIODE IN4148	
ZD1P03	1-804-417-11	DIODE MTZJ9.1B		D705	1-804-407-11	DIODE IN4148	
ZD1SS1	9-885-036-94	DIODE MTZJ20B		D805	1-804-407-11	DIODE IN4148 (EXCEPT D910AZ)	
ZD1SS2	1-805-265-11	DIODE MTZJ4.3B		D80A	1-804-407-11	DIODE IN4148 (EXCEPT D910AZ)	
		< FET >		D81A	1-804-407-11	DIODE IN4148 (EXCEPT D910AZ)	
SCS11A	9-885-036-95	FET SILICON		D899	1-804-409-11	DIODE IN4002	
		< FUSE >		D4N01	1-804-407-11	DIODE IN4148	
△ F1SD01	1-576-526-11	FUSE (1.6A/250V)		D4N02	1-804-407-11	DIODE IN4148	
		< IC >		D601C	1-804-409-11	DIODE IN4002	
△ IC1S02	1-804-784-11	IC PHOTO COUPLER		D6P01	1-804-407-11	DIODE IN4148	
IC1S03	1-804-445-11	IC KA4318		D1P105	1-804-407-11	DIODE IN4148	
IC1SS2	9-885-037-01	IC (PWM CONTROLLER)		D1P107	1-804-407-11	DIODE IN4148	
		< COIL >		D1P108	1-804-407-11	DIODE IN4148	
△ L1SS01	1-424-831-11	LINE FILTER 20uH		DAA801	1-805-012-11	DIODE DAN202K	
△ L1SS02	1-424-831-11	LINE FILTER 20uH		DAA802	1-805-009-11	DIODE DAN217	
		< TRANSFORMER >		DAA803	1-805-012-11	DIODE DAN202K	
△ PT1SD1	9-885-043-32	TRANS SWITCHING EER3530		DAA804	1-805-012-11	DIODE DAN202K	
		< TRANSISTOR >		DAA805	1-805-012-11	DIODE DAN202K	
Q1P101	1-804-424-11	TRANSISTOR KSC2328AY		DAA810	1-805-012-11	DIODE DAN202K (D910AZ)	
Q1P104	1-804-424-11	TRANSISTOR KSC2328AY		DAA811	1-805-012-11	DIODE DAN202K (D910AZ)	
				RD801	1-804-407-11	DIODE IN4148	
				RD802	1-804-407-11	DIODE IN4148	
				VZ1	1-805-011-11	DIODE UDZ9.1B	
				VZ2	1-805-011-11	DIODE UDZ9.1B	
				VZ3	1-805-011-11	DIODE UDZ9.1B	
				VZ4	1-805-011-11	DIODE UDZ9.1B	
				VZ5	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
				VZ6	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
				VZ9	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
				VZ10	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
				ZD01C	1-804-417-11	DIODE MTZJ9.1B (EXCEPT D910AZ)	
				ZD02C	1-805-011-11	DIODE UDZ9.1B (EXCEPT D910AZ)	
				ZD03C	1-804-417-11	DIODE MTZJ9.1B (EXCEPT D910AZ)	
				ZD04C	1-805-011-11	DIODE UDZ9.1B (EXCEPT D910AZ)	
				ZD401	1-804-414-11	DIODE UZP33B	
				ZD701	1-805-011-11	DIODE UDZ9.1B	
				ZD801	1-804-803-11	DIODE MTZ6.2B (EXCEPT D910AZ)	
				ZD806	1-805-011-11	DIODE UDZ9.1B	
				ZD807	1-805-011-11	DIODE UDZ9.1B	
JC801S	3-078-566-01	SCREW TAP M3 L10 BLK (EXCEPT D910AZ)		ZD809	1-805-011-11	DIODE UDZ9.1B (EXCEPT D910AZ)	
PIC3S	3-075-255-01	SCREW TAP 3X8		ZD810	1-805-011-11	DIODE UDZ9.1B (EXCEPT D910AZ)	
		< DIODE >		ZD811	1-805-011-11	DIODE UDZ9.1B (EXCEPT D910AZ)	
D301	1-804-407-11	DIODE IN4148		ZD1P04	1-804-416-11	DIODE MTZJ5.1B	
D302	1-804-409-11	DIODE IN4002		ZD1P05	1-804-418-11	DIODE MTZJ12B	
D401	1-804-409-11	DIODE IN4002		ZD1P06	1-804-416-11	DIODE MTZJ5.1B	
D501	1-804-409-11	DIODE IN4002		ZDA880	1-804-417-11	DIODE MTZJ9.1B (EXCEPT D910AZ)	
D603	1-804-407-11	DIODE IN4148		ZDA881	1-804-417-11	DIODE MTZJ9.1B (EXCEPT D910AZ)	
D620	1-804-409-11	DIODE IN4002		ZDA885	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
D688	1-804-407-11	DIODE IN4148		ZDA886	1-805-011-11	DIODE UDZ9.1B (D910AZ)	
D692	1-804-409-11	DIODE IN4002					
D701	1-804-407-11	DIODE IN4148					

## VCR MAIN BOARD

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9-885-043-36 PWB MAIN ASSY VHS (D950B)  
9-885-043-37 PWB MAIN ASSY VHS (D950GI)  
9-885-043-38 PWB MAIN ASSY VHS (D950E)  
9-885-043-39 PWB MAIN ASSY VHS (D910E)  
9-885-043-40 PWB MAIN ASSY VHS (D910B)

9-885-043-41 PWB MAIN ASSY VHS (D910N)  
9-885-043-42 PWB MAIN ASSY VHS (D910R)  
9-885-043-43 PWB MAIN ASSY VHS (D910AZ)

**Note :**

The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref. No.	Part No.	Description	Remarks	Ref. No.	Part No.	Description	Remarks
		< FUSE >					
△ FZ01	1-576-729-11	FUSE-RADIAL LEAD1A		Q814	1-805-016-11	TRANSISTOR	KSC1623-L (EXCEPT D910AZ)
△ FZ02	1-576-729-11	FUSE-RADIAL LEAD1A		Q815	1-805-016-11	TRANSISTOR	KSC1623-L (EXCEPT D910AZ)
△ FZ03	1-576-729-11	FUSE-RADIAL LEAD1A		Q816	1-805-016-11	TRANSISTOR	KSC1623-L (EXCEPT D910AZ)
△ FZ04	1-576-729-11	FUSE-RADIAL LEAD1A		Q880	1-804-429-11	TRANSISTOR	KSR2001 (EXCEPT D910AZ)
		< IC >		Q882	1-804-429-11	TRANSISTOR	KSR2001 (EXCEPT D910AZ)
DIC1	1-805-039-11	IC M74HCU04		Q3A01	1-804-421-11	TRANSISTOR	KSC945
IC301	1-804-702-11	IC (VIDEO)		Q3A02	1-804-420-11	TRANSISTOR	KSA733
IC501	1-804-703-11	IC (HIFI)		Q3A03	1-804-422-11	TRANSISTOR	KTC3023
IC604	1-804-704-11	IC (RESET) (EXCEPT D910AZ)		Q3A04	1-804-422-11	TRANSISTOR	KTC3023
IC604	1-804-773-11	IC (RESET) (D910AZ)		Q3A05	1-804-422-11	TRANSISTOR	KTC3023
IC605	1-804-432-11	IC 524C80D81		Q3A06	1-804-420-11	TRANSISTOR	KSA733
IC608	1-804-705-11	IC (POWER DETECT) (D910N/D910R/D910AZ)		Q6P01	1-804-420-11	TRANSISTOR	KSA733
IC701	9-885-043-27	IC (LED DRIVER)		Q6P02	1-804-420-11	TRANSISTOR	KSA733
IC802	9-885-036-96	IC BU4053BCFV (CMOS LOGIC)		Q6P04	1-804-421-11	TRANSISTOR	KSC945
IC803	9-885-036-96	IC BU4053BCFV (CMOS LOGIC)	(EXCEPT D910AZ)	Q1P102	1-804-429-11	TRANSISTOR	KSR2001
IC3S01	1-804-701-11	IC (SECAM) (D950B/D910B/D910R)		Q1P103	1-804-421-11	TRANSISTOR	KSC945
IC4N01	1-805-156-11	IC MSP3417D (PQFP) (AUDIO)		Q1P105	1-804-424-11	TRANSISTOR	KSC2328AY
IC6P01	1-804-453-11	IC (PDC/OSD) (EXCEPT D910R/D910AZ)		Q1P106	1-804-424-11	TRANSISTOR	KSC2328AY
IC6P01	1-804-454-11	IC (OSD) (D910R/D910AZ)		Q1P107	1-804-424-11	TRANSISTOR	KSC2328AY
ICA811	1-805-028-11	IC 4560 (OP AMP) (EXCEPT D950B/D910B)		Q1P108	1-804-429-11	TRANSISTOR	KSR2001
PIC3	1-805-031-11	IC 3RD13 (V REGULATOR)		Q1P109	1-804-421-11	TRANSISTOR	KSC945
		< LED >		Q1P110	1-804-424-11	TRANSISTOR	KSC2328AY
LD601	1-804-438-11	LED-IR (T/S REEL)		Q1P111	1-804-424-11	TRANSISTOR	KSC2328AY
LD701	9-885-043-30	LED DISPLAY (D950B/D950G/D950E)		QA801	1-805-016-11	TRANSISTOR	KSC1623-L
LD701	9-885-043-31	LED DISPLAY	(D910E/D910B/D910N/D910R/D910AZ)	QA802	1-805-016-11	TRANSISTOR	KSC1623-L
		< TRANSISTOR >		QAA801	1-805-017-11	TRANSISTOR	200MW
PT601	1-804-770-11	TRANSISTOR	PHOTO INTERRUPTER	QAA802	1-805-018-11	TRANSISTOR	KSR2103
PT602	1-804-770-11	TRANSISTOR	PHOTO INTERRUPTER	QAA803	1-805-015-11	TRANSISTOR	KSA812
Q302	1-804-421-11	TRANSISTOR	KSC945	QAA804	1-805-018-11	TRANSISTOR	KSR2103
			(D950B/D910B/D910R)	QAA805	1-805-017-11	TRANSISTOR	200MW
Q305	1-804-429-11	TRANSISTOR	KSR2001	QAA806	1-805-016-11	TRANSISTOR	KSC1623-L
Q351	1-804-420-11	TRANSISTOR	KSA733	QAA807	1-805-018-11	TRANSISTOR	KSR2103
Q3Q1	1-804-421-11	TRANSISTOR	KSC945	QAA808	1-805-016-11	TRANSISTOR	KSC1623-L
Q3Q2	1-804-421-11	TRANSISTOR	KSC945	QAA809	1-805-017-11	TRANSISTOR	200MW
Q3Q3	1-804-421-11	TRANSISTOR	KSC945	QAV802	1-805-015-11	TRANSISTOR	KSA812 (EXCEPT D910AZ)
Q3Q4	1-804-421-11	TRANSISTOR	KSC945			< MODULE >	
Q3Q6	1-804-428-11	TRANSISTOR	KSR1004	RM701	1-477-308-11	REMOCON MOD (TSOP2238WE1)	
Q3Q7	1-804-421-11	TRANSISTOR	KSC945			< PHOTO TRANSISTOR >	
Q601	1-804-428-11	TRANSISTOR	KSR1004	S601	1-804-439-11	PHOTO TRANSISTOR (END SENSOR)	
Q802	1-804-428-11	TRANSISTOR	KSR1004 (EXCEPT D910AZ)	S602	1-804-439-11	PHOTO TRANSISTOR (START SENSOR)	
Q803	1-804-428-11	TRANSISTOR	KSR1004 (EXCEPT D910AZ)			< SWITCH >	
Q804	1-804-429-11	TRANSISTOR	KSR2001 (EXCEPT D910AZ)	SW601	1-786-198-11	SWITCH MODE (PROGRAM SWITCH)	
Q808	1-804-428-11	TRANSISTOR	KSR1004	SW602	1-786-199-11	SWITCH REC (REC SWITCH)	
Q809	1-804-421-11	TRANSISTOR	KSC945 (EXCEPT D910AZ)			< TUNER >	
Q810	1-804-421-11	TRANSISTOR	KSC945	TM401	1-693-633-11	TUNER PAL (D950B/D910B)	
Q811	1-804-421-11	TRANSISTOR	KSC945 (EXCEPT D910AZ)	TM401	9-885-043-35	TUNER PAL (EXCEPT D950B/D910B)	
Q812	9-885-043-26	TRANSISTOR	KSR1104				
Q813	9-885-043-26	TRANSISTOR	KSR1104				

**Note :**  
 The components identified by mark △ or dotted line with mark △ are critical for safety.  
 Replace only with part number specified.

# VCR MAIN

Ref. No.	Part No.	Description	Remarks
		< VIBRATOR >	
XT301	1-795-330-11	VIBRATOR CRYSTAL (4.433619MHZ)	
XT601	1-795-332-11	VIBRATOR CRYSTAL (32.768kHz)	
		(D910AZ/D910N/D910R)	
XT602	1-795-331-11	VIBRATOR CRYSTAL (8MHZ)	
XT4N01	9-885-043-29	CRYSTAL (18.432MHZ)	

## MISCELLANEOUS \*\*\*\*\*

△ 200	1-823-023-11	POWER CORD KKP419C (EXCEPT D950GI)	
△ 200	1-823-025-11	POWER CORD Y352 (D950GI)	
B410	1-763-836-11	LOADING ASSY, MOTOR	
B560	1-796-432-11	MOTOR CAPSTAN	
G001	1-796-704-11	ASSY CLYNDER 6HD (SECAM)	
H104	9-885-037-20	MOTOR LOADING ASSY	
H207	9-885-037-21	MOTOR-SPINDLE	
H210	9-885-037-22	MOTOR FEED ASSY	
△ H211	9-885-037-37	ASSY PICK UP	
H241	9-885-037-06	CABLE FLAT 24P	

## ACCESSORIES & PACKING MATERIALS \*\*\*\*\*

3-084-914-12	MANUAL, INSTRUCTION (FRENCH) (D910E)	
3-084-914-22	MANUAL, INSTRUCTION (ITALIAN) (D910E)	
3-084-914-32	MANUAL, INSTRUCTION (SPANISH)	
	(D910E/D950E)	
3-084-914-42	MANUAL, INSTRUCTION (GERMAN)	
	(D910E/D950E)	
3-084-914-52	MANUAL, INSTRUCTION (DUTCH)	
	(D910E/D950E)	
3-084-915-12	MANUAL, INSTRUCTION (ENGLISH) (D950GI)	
3-084-916-12	MANUAL, INSTRUCTION (FRENCH)	
	(D910B/D950B)	
3-084-917-11	MANUAL, INSTRUCTION (ENGLISH) (D910N)	
3-084-917-21	MANUAL, INSTRUCTION (POLISH) (D910N)	
3-084-917-31	MANUAL, INSTRUCTION (HUNGARIAN) (D910N)	
3-084-917-41	MANUAL, INSTRUCTION (CZECH) (D910N)	
3-084-917-51	MANUAL, INSTRUCTION (RUSSIAN) (D910R)	
3-084-918-12	MANUAL, INSTRUCTION (ENGLISH) (D910AZ)	
9-885-043-07	COMMANDER (RMT-V503A)	
	(D910B/D910E/D910N/D910R/D910AZ)	
9-885-043-08	COMMANDER (RMT-V503B)	
	(D950B/D950E/D950GI)	
9-885-043-33	CABLE RCA (RED)	
9-885-043-34	CABLE RCA (YEL)	

### Note :

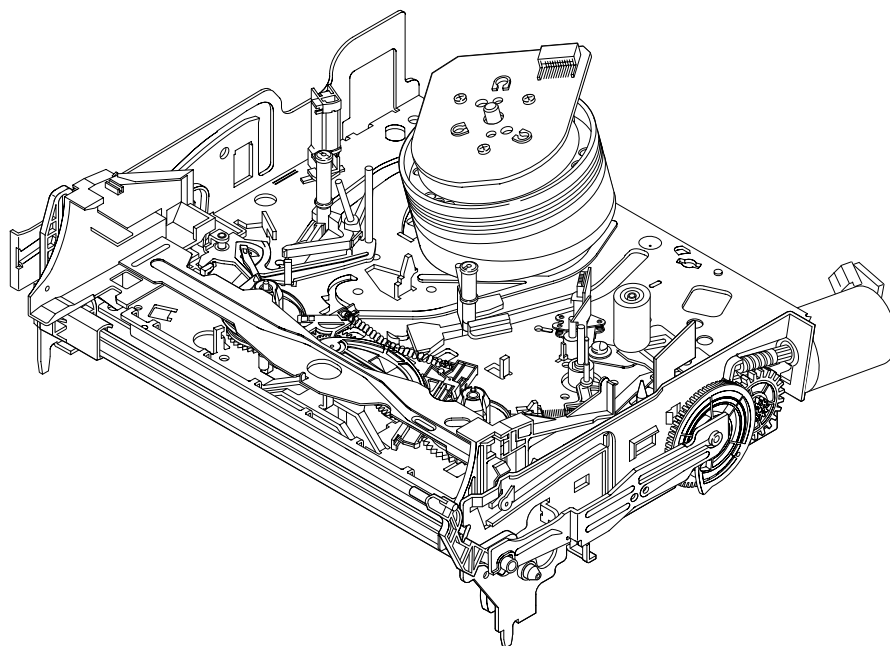
The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

**SLV-D910AZ/D910B/D910E/D910N/D910R/  
D950B/D950E/D950GI**

# VHS MECHANICAL ADJUSTMENT MANUAL VII

## TS-10 MECHANISM

Please use this manual with the service manual.



**VHS** MECHANISM DECK

**SONY**®



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# 1. Disassembly and Reassembly

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## 1-1 Deck Parts Locations

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### 1-1-1 Top View

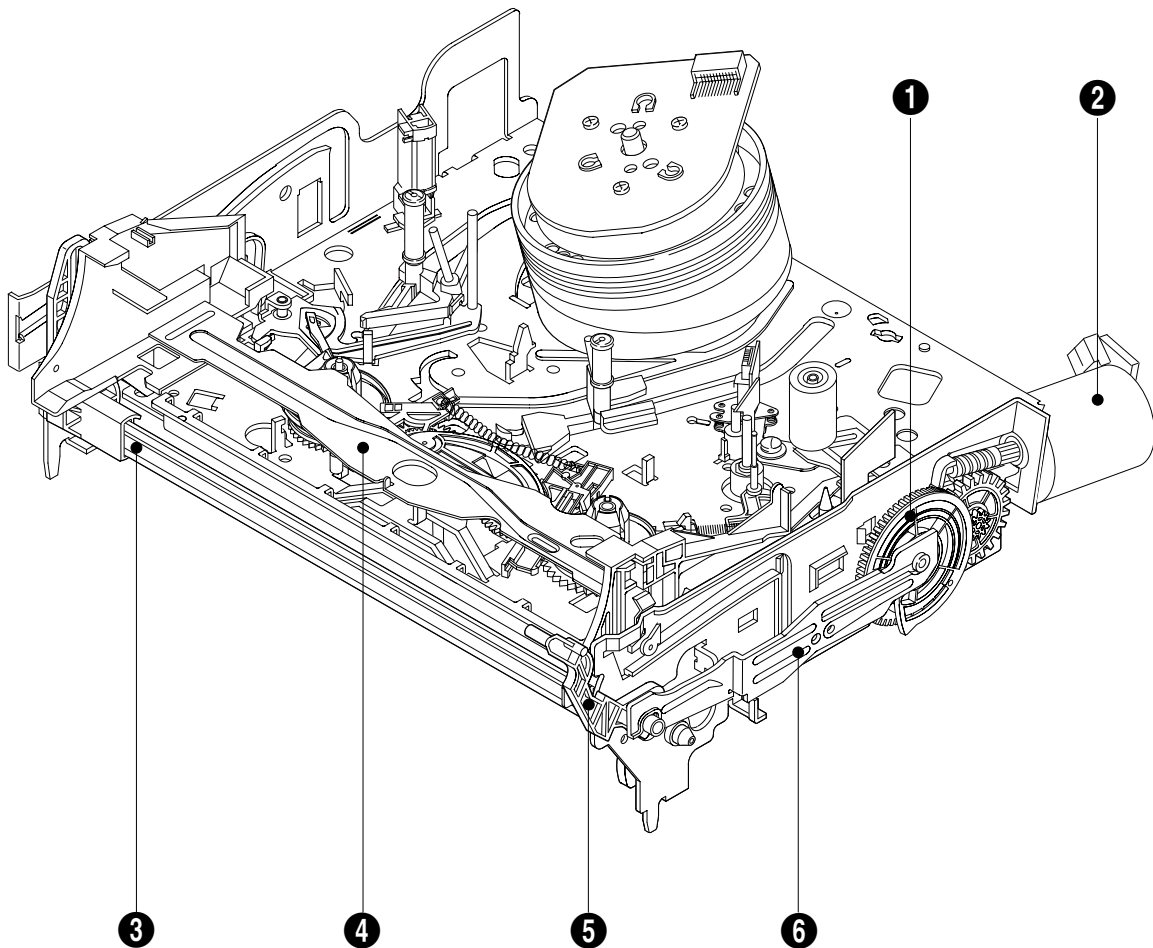


Fig. 1-1 Top parts Location-1

- ❶ GEAR FL CAM
- ❷ MOTOR LOADING ASS'Y
- ❸ LEVER FL ARM ASS'Y
- ❹ HOLDER FL CASSETTE ASS'Y
- ❺ LEVER FL DOOR
- ❻ SLIDER FL DRIVE

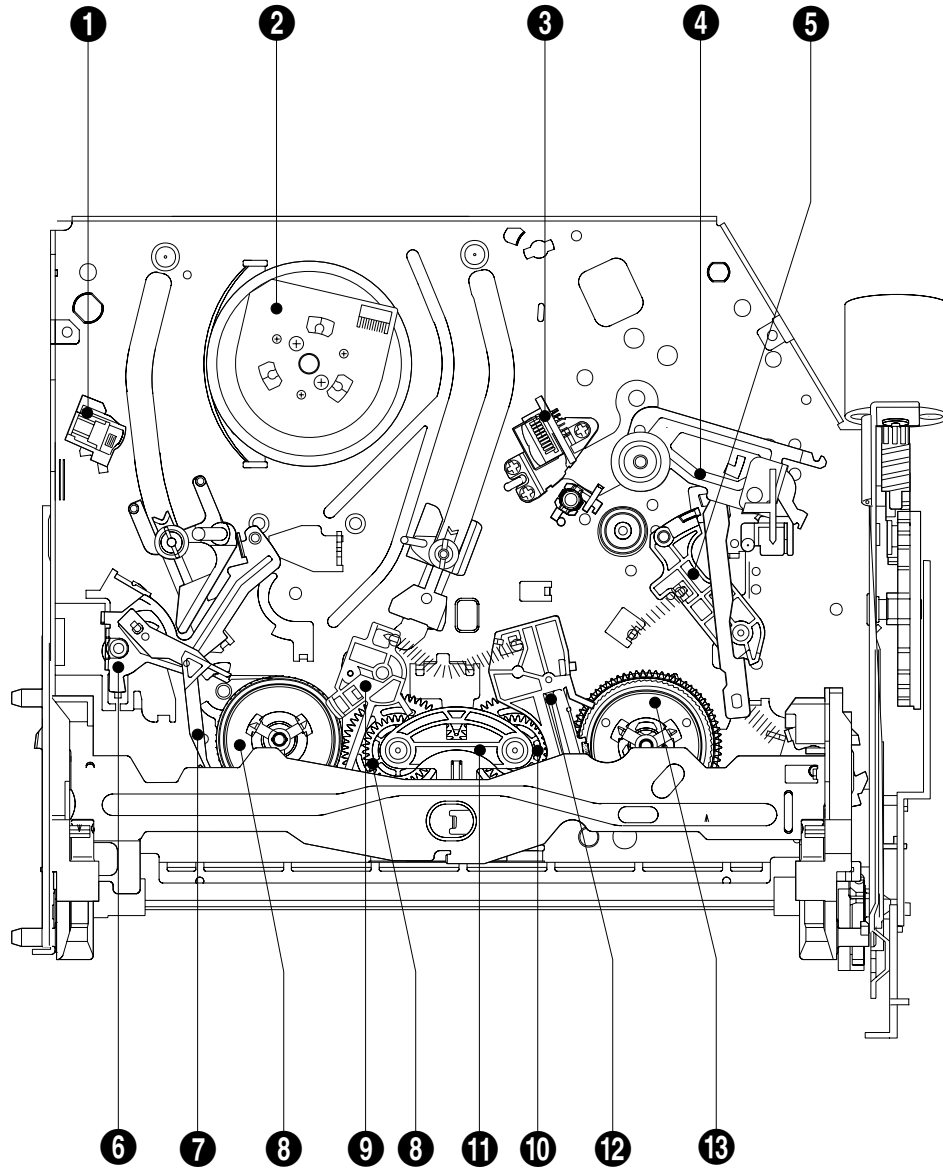


Fig. 1-2 Top Parts Location-2

- |                          |                       |
|--------------------------|-----------------------|
| ① FE HEAD                | ⑧ DISK S REEL         |
| ② CYLINDER ASS'Y         | ⑨ LEVER S BRAKE ASS'Y |
| ③ ACE HEAD ASS'Y         | ⑩ GEAR IDLE           |
| ④ LEVER UNIT PINCH ASS'Y | ⑪ LEVER IDLE          |
| ⑤ LEVER #9 GUIDE ASS'Y   | ⑫ LEVER T BRAKE ASS'Y |
| ⑥ LEVER TENSION ASS'Y    | ⑬ DISK T REEL         |
| ⑦ BAND BRAKE ASS'Y       |                       |

## 1-1-2 Bottom View

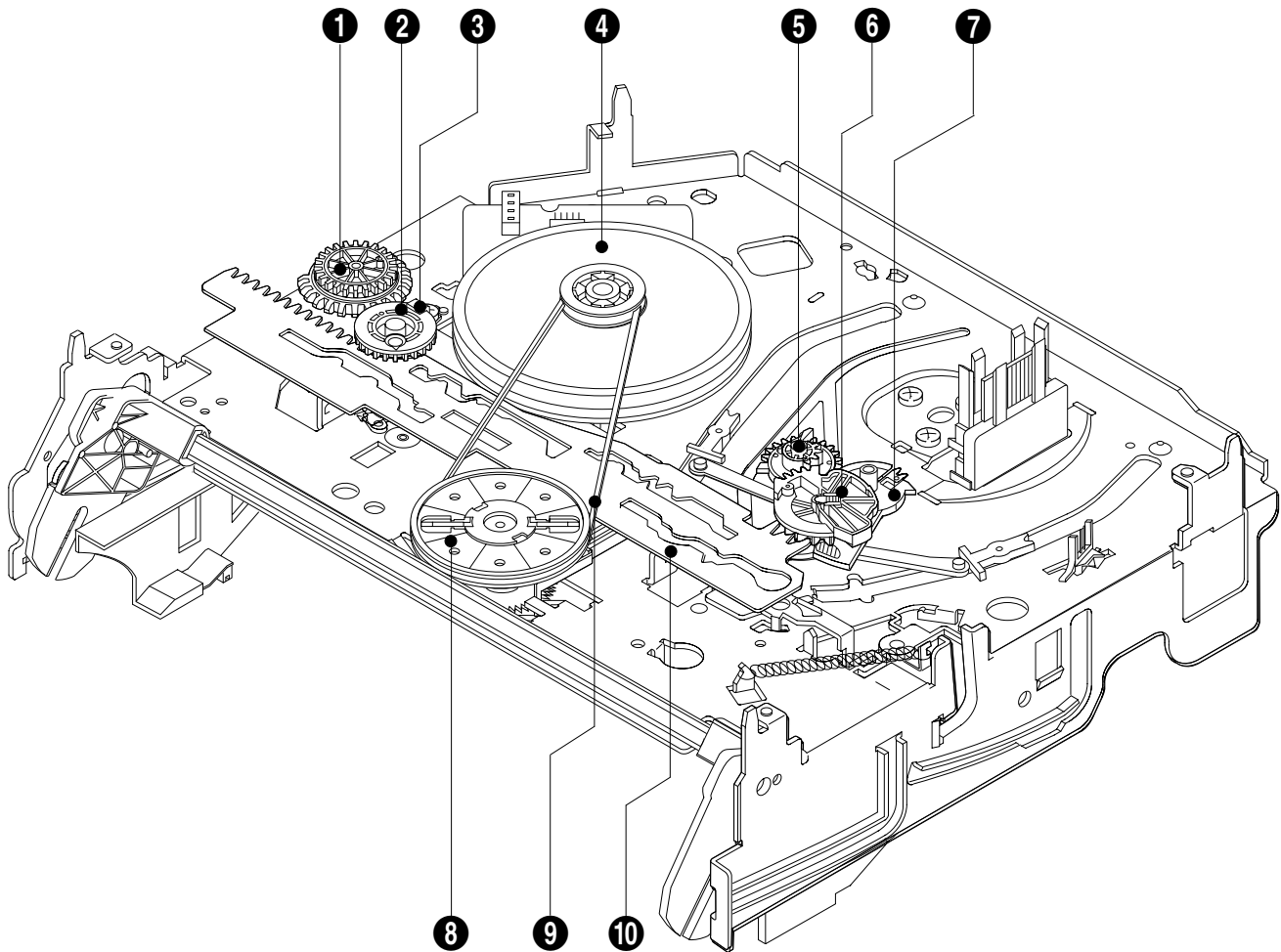


Fig. 1-3 Bottom Parts Location

- ① GEAR JOINT 1
- ② GEAR JOINT 2
- ③ BRACKET GEAR
- ④ MOTOR CAPSTAN ASS'Y
- ⑤ LEVER T LOAD ASS'Y
- ⑥ GEAR LOADING DRIVE
- ⑦ LEVER S LOAD ASS'Y
- ⑧ HOLDER CLUTCH ASS'Y
- ⑨ BELT PULLEY
- ⑩ SLIDER CAM

## 1-2 Main Deck

### 1-2-1 Lever FL Door Removal

- 1) Push the Holder FL Cassette Ass'y ❶ about 20mm in the direction of arrow "A".
- 2) Rotate the Lever FL Door ❷ in the direction of arrow "B".
- 3) Release the Hook ❸ and Remove the Lever FL Door ❷ in the direction of arrow "C".

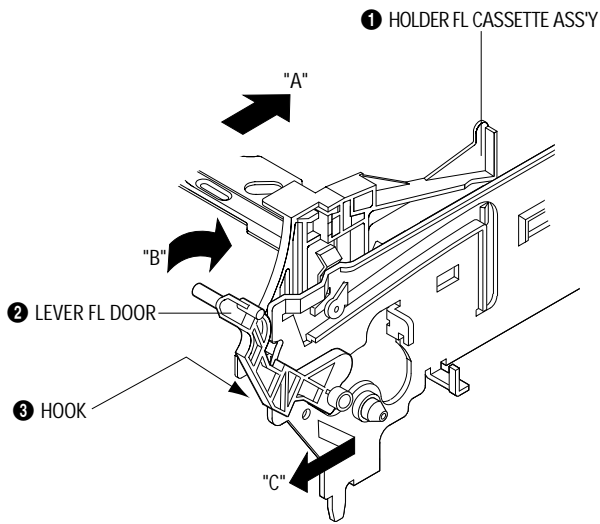


Fig. 1-4 Lever FL Door Removal

### 1-2-2 Holder FL Cassette Ass'y Removal

- 1) Pull the Holder FL Cassette Ass'y ❶ to the eject position.
- 2) Pull the Holder FL Cassette Ass'y ❶ as grasping the Holder FL Cassette Ass'y ❶ and Lever FL Cassette-R ❷ in the same time to release hooking from Main Base until the Boss [A] of Holder FL Cassette Ass'y ❶ is taken out from the Rail [B].
- 3) Lift the Holder FL Cassette Ass'y ❶, in this time, you have to grasp the Lever FL Cassette-R ❷ continuously until the Holder FL Cassette Ass'y ❶ is taken out completely.

**Note :** Be sure to insert Lever FL Cassette-R ❷ in the direction of "A" to prevent separation and breakage of the Lever FL Cassette-R ❷ at disassembling and reassembling.

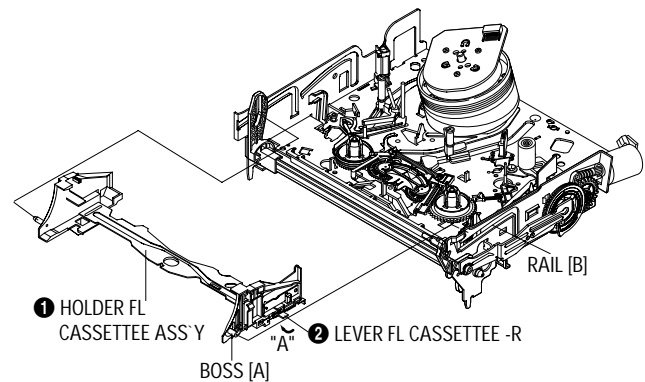


Fig. 1-5 Holder FL Cassette Ass'y Removal

### 1-2-3 Slider FL Drive, Gear FL Cam Removal

- 1) Pull the Slider FL Drive ❶ to the front direction.
- 2) Remove the Slider FL Drive ❶ in the direction of arrow. (Refer to Fig. 1-6)
- 3) Remove the Gear FL cam ❷.

**Note :** When reinstalling be sure to reassemble Slider FL drive ❶ after you insert the Boss of Lever FL ARM-R in Groove of Slider Fl drive ❶.

**Assembly :** Align the Gear FL Cam ❶ with the Gear worm wheel Post as shown drawing. (Refer to Timing point)

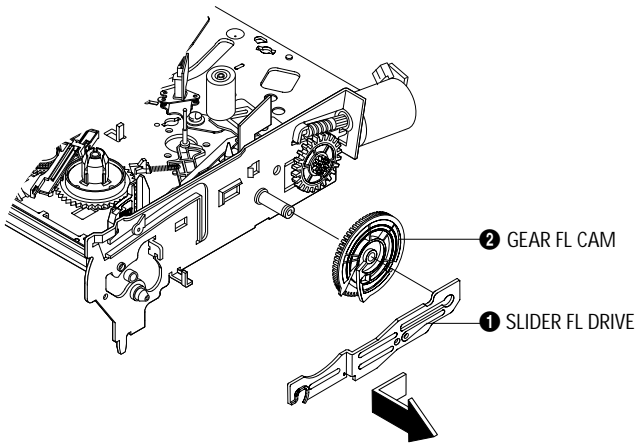


Fig. 1-6 Slider FL Drive Removal

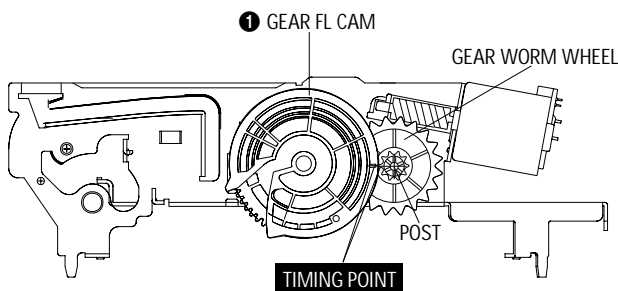


Fig. 1-7 Gear FL Cam, Gear Worm

### 1-2-4 Lever FL Arm Ass'y Removal

- 1) Push the hole "A" in the direction of arrow "B" use the pin. (about Dia.2.5)
- 2) Pull out the Lever FL Arm Ass'y ❶ from the Boss of Main Base.
- 3) Remove the Lever FL Arm Ass'y ❶ in the direction of arrow "C".

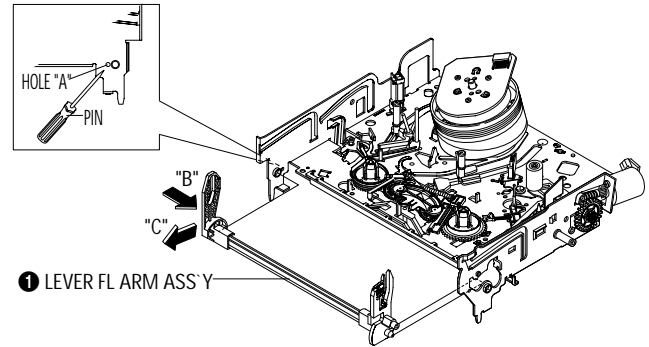


Fig. 1-8 Lever FL Arm Ass'y Removal

### 1-2-5 Gear Worm Wheel Removal

- 1) Remove the Gear Worm wheel ❶.

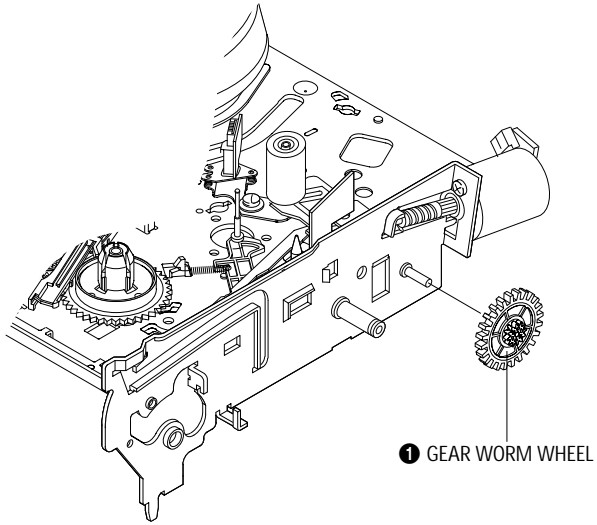


Fig. 1-9 Gear Worm Wheel Removal

### 1-2-6 Motor Loading Ass'y Removal

- 1) Remove the screw ❶.
- 2) Remove the Motor Loading Ass'y ❷.

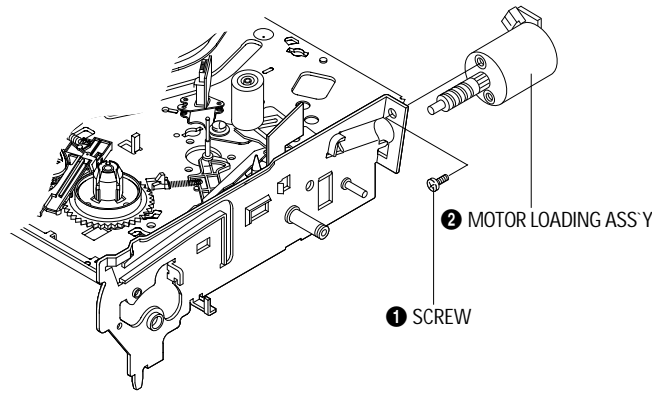


Fig. 1-10 Motor Loading Ass'y Removal

### 1-2-7 Bracket Gear, Gear Joint 2, 1 Removal

- 1) Remove the SCREW ❶.
- 2) Remove the Bracket Gear ❷.
- 3) Remove the Gear Joint 2 ❸.
- 4) Remove the Gear Joint 1 ❹.

#### Assembly :

- 1) Be sure to align dot mark of Gear Joint 1 ❶ with dot mark of Gear Joint 2 ❷ as shown Fig 1-12. (Refer to Timing point1)
- 2) Confirm the Timing Point 2 of the Gear Joint 2 ❷ and Slider Cam ❸.

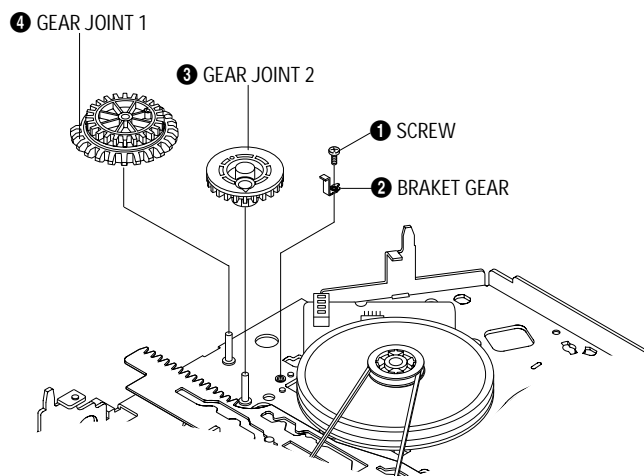


Fig. 1-11 Bracket Gear, Gear Joint 1,2 Removal

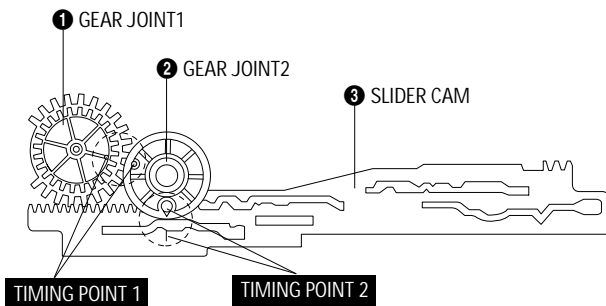


Fig. 1-12 Gear Joint 1,2 Assembly

### 1-2-8 Gear Loading Drive, Slider Cam, Lever Load S, T Ass'y Removal

- 1) Remove the Belt Pulley. (Refer to Fig. 1-30)
- 2) Remove the Gear Loading Drive ❶ after releasing Hook [A] in the direction arrow as shown in detail drawing.
- 3) Remove the Slider Cam ❷.
- 4) Remove the Lever Load S ❸, Link Load S ❺ & Lever Load T ❹, Link Load T ❻.

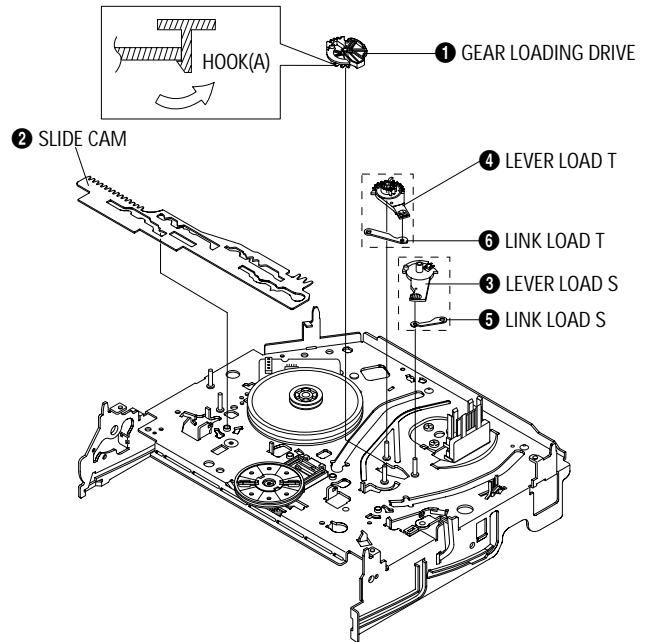


Fig. 1-13 Gear Loading Drive, Slider Cam, Lever T, S Load Ass'y Removal



1-2-9 Gear Loading Drive, Slider Cam,  
Lever Load S, T Ass'y Assembly

- 1) When reinstalling, be sure to align dot of Lever Load T Ass'y **1** with dot of Lever Load S Ass'y **2** as shown in drawing, (Refer to Timing Point 1).
- 2) Insert the Pin A,B,C,D into the Slider Cam **3** hole,
- 3) Be sure to align dot of Lever Load T **1** and dot of Gear Loading Drive **4**, (Refer to Timing Point 2).
- 4) Aline dot of Gear Loading drive **4** with mark of Slider Cam **3** as shown in drawing(Refer to Timing Point 3).

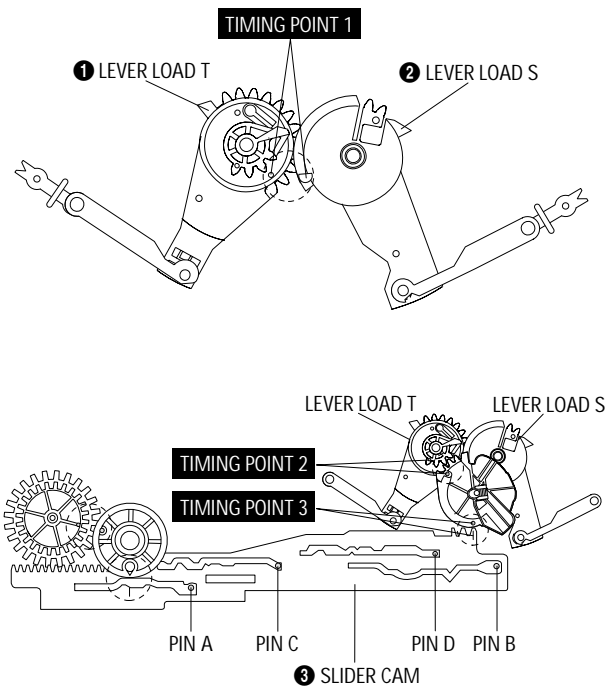


Fig. 1-14 Gear Loading Drive, Slider Cam,  
Lever Load S, T Ass'y Assembly

1-2-10 Lever Pinch Drive,  
Lever Tension Drive Removal

- 1) Remove the Lever Pinch Drive **1**, Lever Tension Drive **2**.

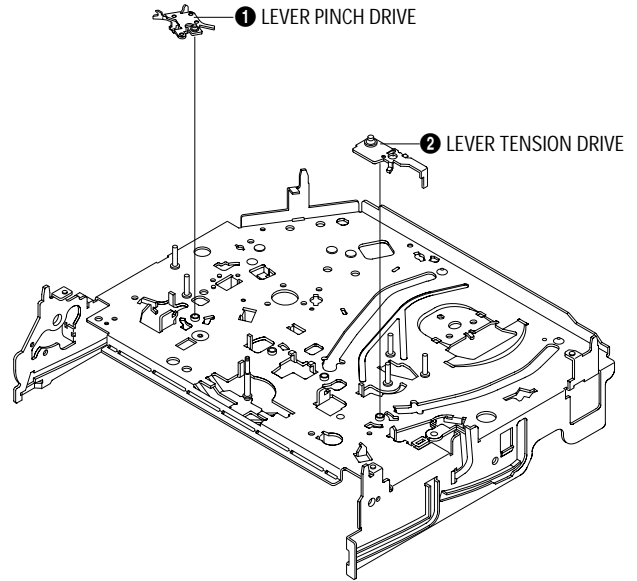


Fig. 1-15 Lever Pinch Drive,  
Lever Tension Drive Removal

### 1-2-11 Lever Tension Ass'y, Band Brake Ass'y Removal

- 1) Remove the Lever Brake S Ass'y (Refer to Fig 1-17).
- 2) Remove the Spring Tension Lever ❶.
- 3) Rotate stopper of Main Base in the direction of arrow "A".
- 4) Lift the Lever Tension Ass'y ❷ & Band brake Ass'y ❸.

**Note :**

- 1) When replacing the Lever Tension Ass'y ❷, be sure to apply Grease on the post,
- 2) Take care not to touch stain on the felt side, and not to be folder and broken Band brake Ass'y
- 3) After Lever Tension Ass'y seated, Rotate stopper of Main Base to the Mark[B].

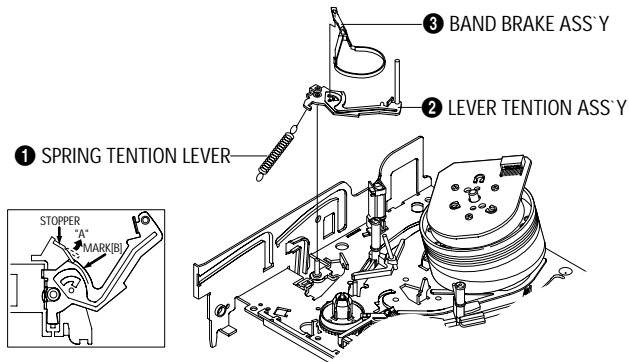


Fig. 1-16 Lever Tension Ass'y,  
Band Brake Ass'y Removal

### 1-2-12 Lever Brake S, T Ass'y Removal

- 1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 1-17.
- 2) Lift the Lever S, T Brake Ass'y ❶, ❷ with spring brake ❸.

**Assembly :**

- 1) Assembly the Lever S Brake Ass'y ❶ on the Main Base.
- 2) Assembly the Lever T Brake Ass'y ❷ with spring brake ❸.

**Note :** Take extreme care not to be folded and transformed Spring Brake at removing or reinstalling.

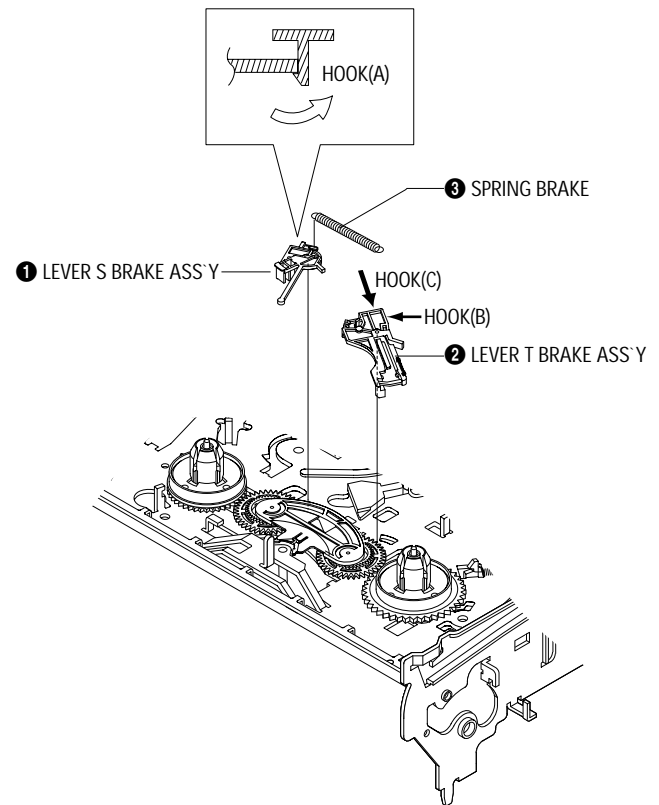


Fig. 1-17 Lever Brake S, T Ass'y Removal

### 1-2-13 Gear Idle Ass'y Removal

- 1) Push the Lever Idle ❶ in the direction of arrow "A", "B".
- 2) Lift the Lever Idle ❶.

#### Assembly :

- 1) Apply oil in two Bosses of Lever Idle ❶.
- 2) Assemble the Gear Idle ❷ with the Lever Idle ❶.

**Note :** When replacing the Gear Idle ❷, be sure to add oil in the boss of Lever Idle ❶.

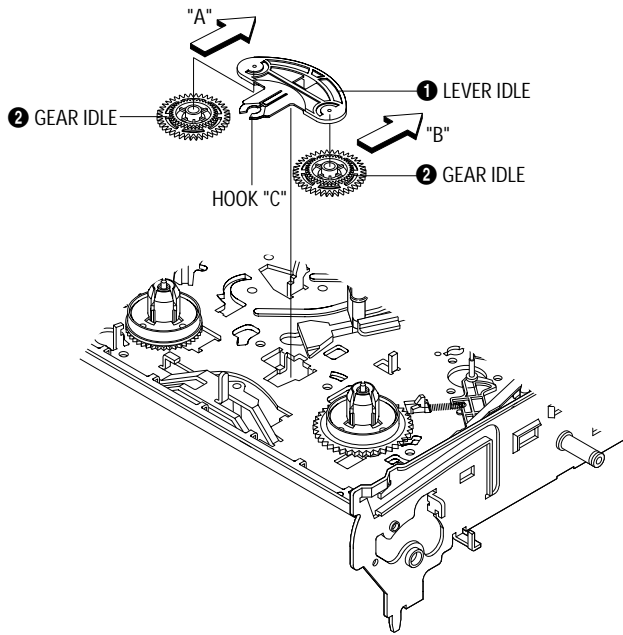


Fig. 1-18 Gear Idle Ass'y Removal

### 1-2-14 Disk S, T Reel Removal

- 1) Lift the Disk S, T Reel ❶, ❷.

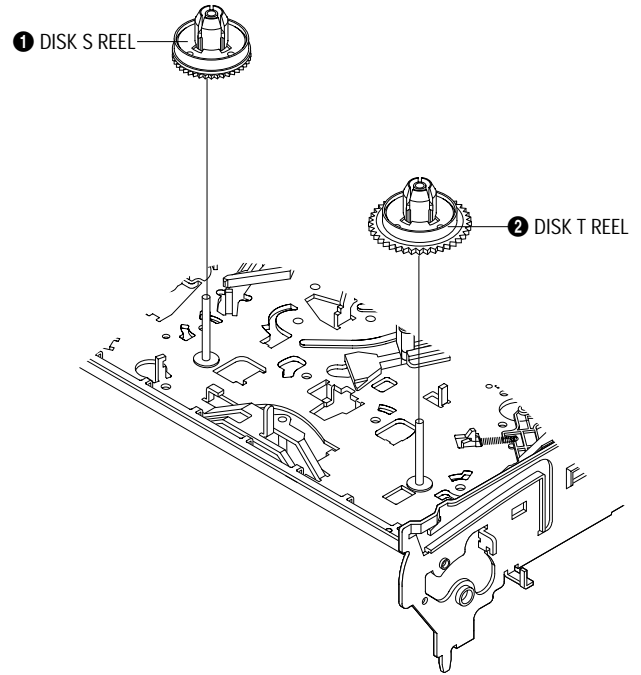


Fig. 1-19 Disk S, T Reel Removal

## 1-2-15 Holder Clutch Ass'y Removal

- 1) Remove the Washer Slit ❶.
- 2) Lift the Holder Clutch Ass'y ❷.

**Note :** When you reinstall Holder Clutch Ass'y

- 1) Check the condition of spring as shown in detail A.
- 2) Don't push Holder Clutch Ass'y down with excessive force Just insert Holder Clutch Ass'y into post center with dead force and Rotate it smoothly. Be sure to confirm that spring is in the slit of Gear Center Ass'y as shown in detail B.

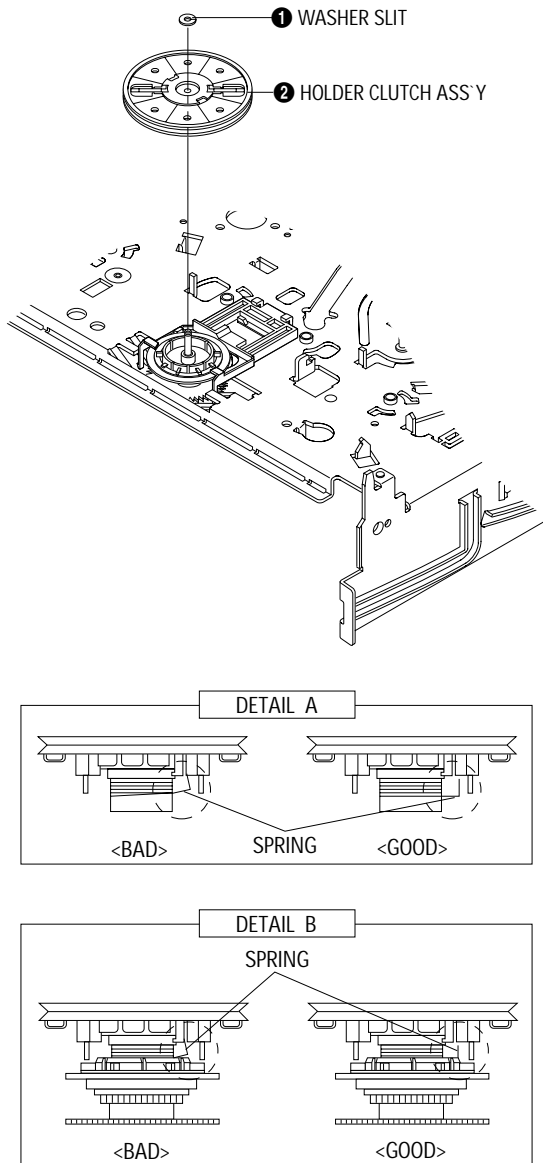


Fig. 1-20 Holder Clutch Ass'y Removal

## 1-2-16 Lever Up Down Ass'y, Gear Center Ass'y Removal

- 1) Remove the 2 hooks in the direction of arrow as shown Fig. 1-21 and lift the Lever Up Down Ass'y ❶.
- 2) Lift the Gear Center Ass'y ❷.

**Assembly :**

- 1) Insert the Lever Up Down Ass'y ❶ in the rectangular holes on Main Base as shown in Fig 1-22.
- 2) Lift the Lever Up Down Ass'y ❶ about 35 degree.(Refer to Fig 1-22)
- 3) Insert Ring of the Gear Center Ass'y ❷ in the Guide of the Lever Up Down Ass'y ❶.
- 4) Insert the Gear Center Ass'y ❷ in the post on Main Base.
- 5) Push down the Lever Up Down Ass'y ❶ for locking of the Hook.

**Note :**

- 1) Take care not to separate and sentence does not mark sense.
- 2) Be sure to confirm that Ring of the Gear Center Ass'y ❷ is in the Guide of the Lever Up Down Ass'y ❶ after finishing assembly of Lever Up

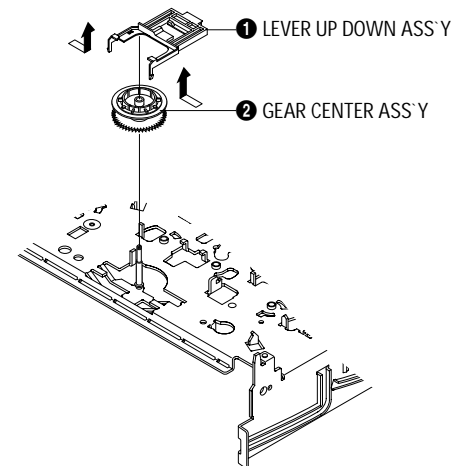


Fig. 1-21 Lever Up Down Ass'y Removal

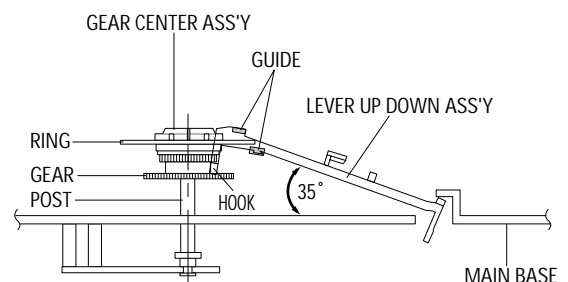


Fig. 1-22 Lever Up Down Ass'y Removal

## 1-2-17 Guide Cassette Door Removal

- 1) Lift the Hook [A].
- 2) Rotate the Guide Cassette Door ❶ in the direction of arrow.

**Note :** After reinstalling the Guide Cassette Door ❶ sure the Hook [A].

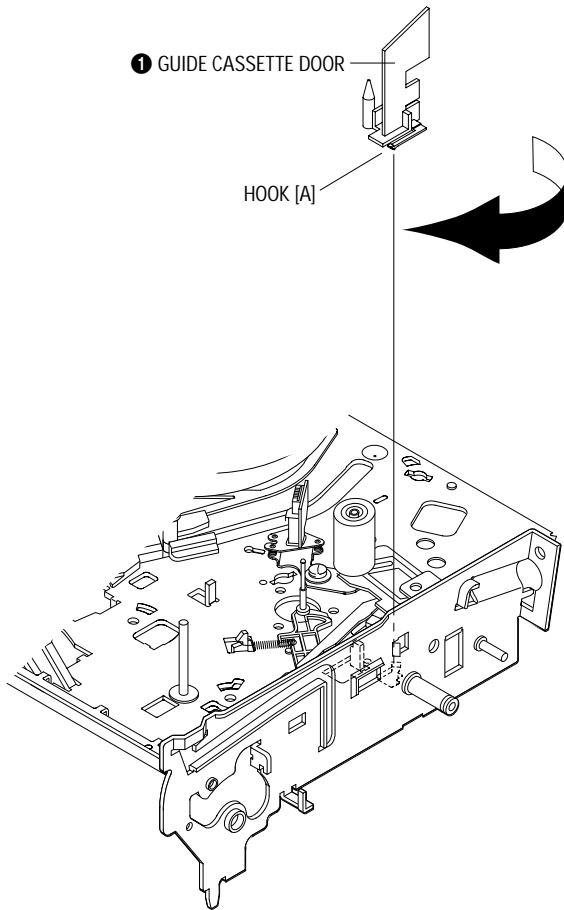


Fig. 1-23 Guide Cassette Door Removal

## 1-2-18 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

- 1) Lift the Unit Pinch Ass'y ❶.
- 2) Remove the Plate Joint ❷ from Lever Pinch Drive.
- 3) Remove the Spring Pinch Drive ❸.

**Note :**

- 1) Take extreme care not to touch the grease on the Roller Pinch.
- 2) When reinstalling, be sure to apply grease on the post pinch roller.

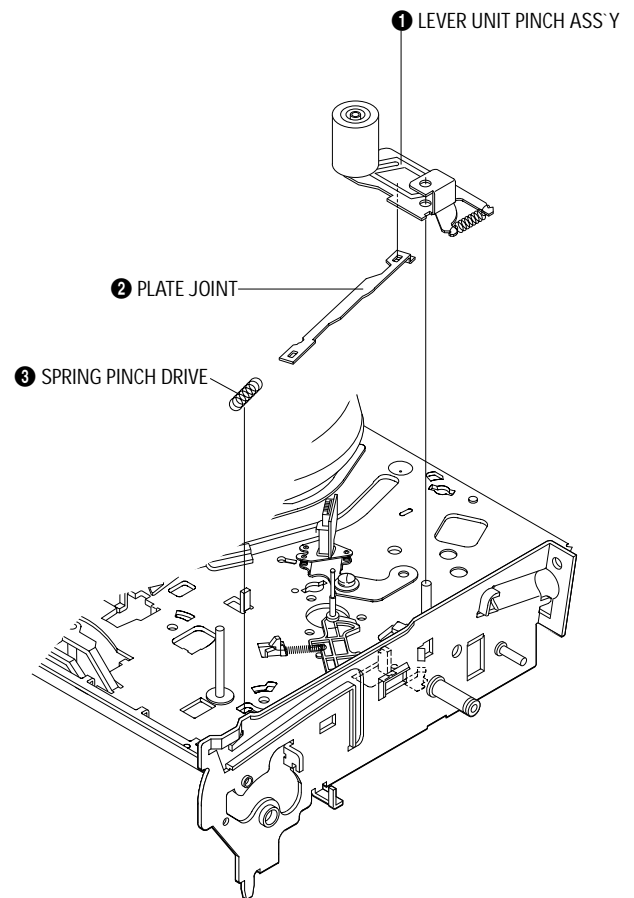


Fig. 1-24 Lever Unit Pinch Ass'y, Plate Joint, Spring Pinch Drive Removal

### 1-2-19 Lever #9 Guide Ass'y Removal

- 1) Remove the Spring #9 Guide ❶.
- 2) Lift the Spring #9 Guide Ass'y ❷ in the direction of arrow "A".

#### Note :

- 1) Take extreme care not to get grease on the tape Guide Post.
- 2) After reinstalling, check the bottom side of the Post #9 Guide to the top side of Main Base.

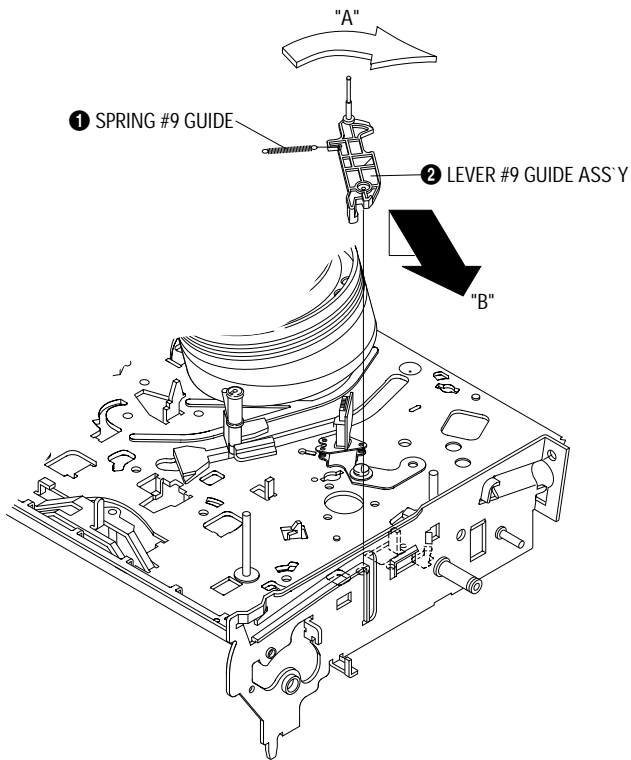


Fig. 1-25 Lever #9 Guide Ass'y Removal

### 1-2-20 FE Head Removal

- 1) Remove the screw ❶.
- 2) Lift the FE Head ❷.

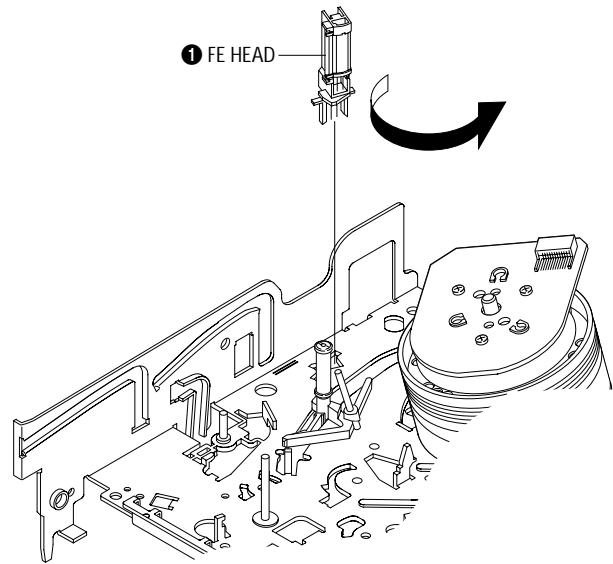


Fig. 1-26 FE Head Removal

### 1-2-21 ACE Head Removal

- 1) Pull out the FPC from connector of ACE Head Ass'y ②.
- 2) Remove the screw ①.
- 3) Lift the ACE Head Ass'y ②.

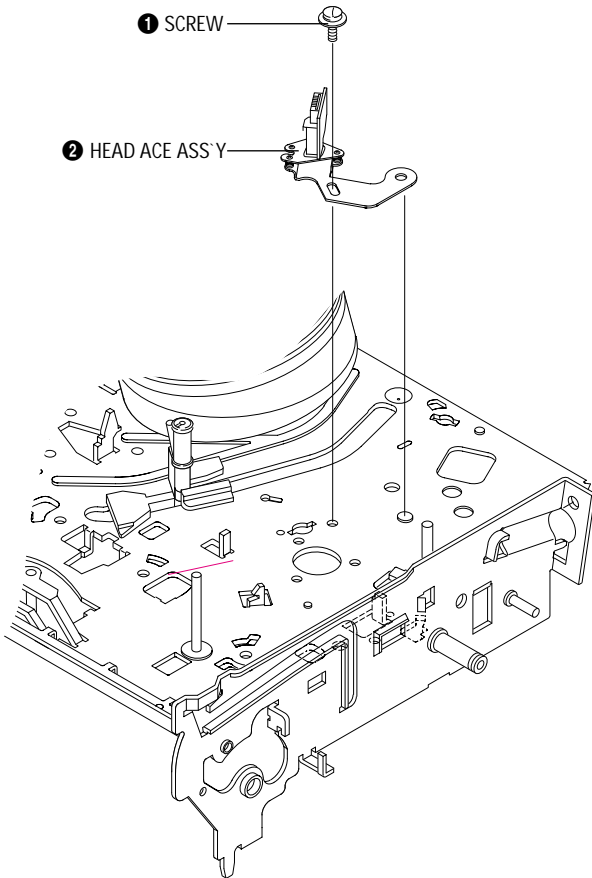


Fig. 1-27 ACE Head Removal

### 1-2-22 Slider S, T Ass'y Removal

- 1) Move the Slider S, T Ass'y ①, ② to slot, and then lift it to remove. (Refer to arrow)

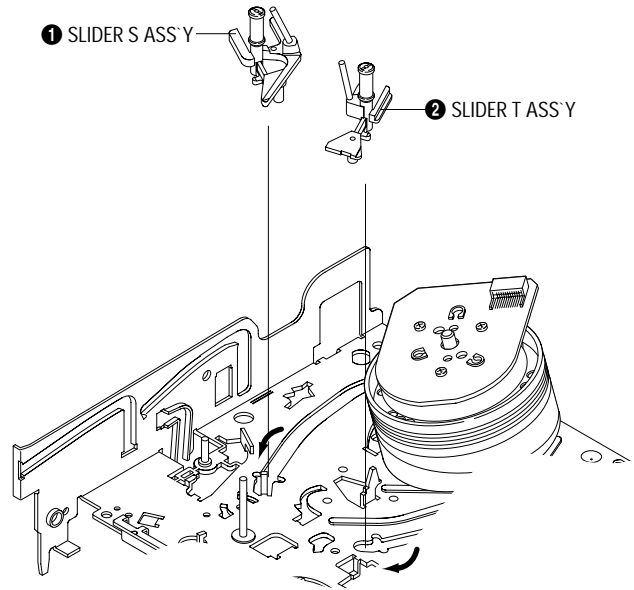


Fig. 1-28 Slider S, T Ass'y Removal

## 1-2-23 Plate Ground Deck, Cylinder Ass'y Removal

- 1) Remove the 3 Screws ❶.
- 2) Lift the Plate Ground Deck ❷.
- 3) Lift the Cylinder Ass'y ❸.

### Assembly :

- 1) Match the 3 holes in the bottom of Cylinder ass'y ❸ to the 3 holes of Main Base as attending not to drop or knock the Cylinder ass'y ❸.
- 2) Tighten the 1 Screw ❶.
- 3) Match the Plate Ground Deck ❷ to the Hole of Base Main.
- 4) Tighten the other 2 Screws ❶.

### Note :

- 1) Take care not to touch the Cylinder Ass'y ❸ and the tape guide post at reinstalling.
- 2) When reinstalling, Don't push down too much on Screw Driver.

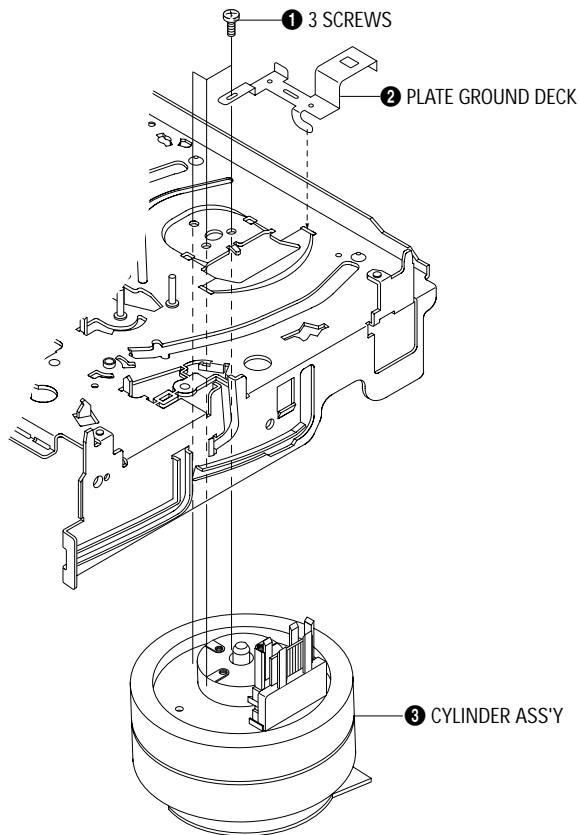


Fig. 1-29 Plate Ground Deck, Cylinder Ass'y Removal

## 1-2-24 Belt Pulley Removal

- 1) Remove the Belt Pulley ❶.

**Note :** Take extreme care not to get grease on Belt Pulley ❶ at assembling or reassembling.

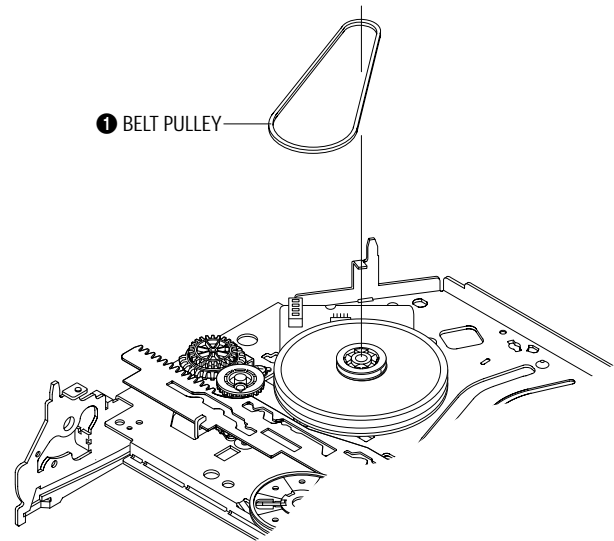


Fig. 1-30 Belt Pulley Removal

## 1-2-25 Level Head Cleaner Ass'y Removal

- 1) Release the Hook ❶.
- 2) Lift the Lever Head Cleaner Ass'y ❷.

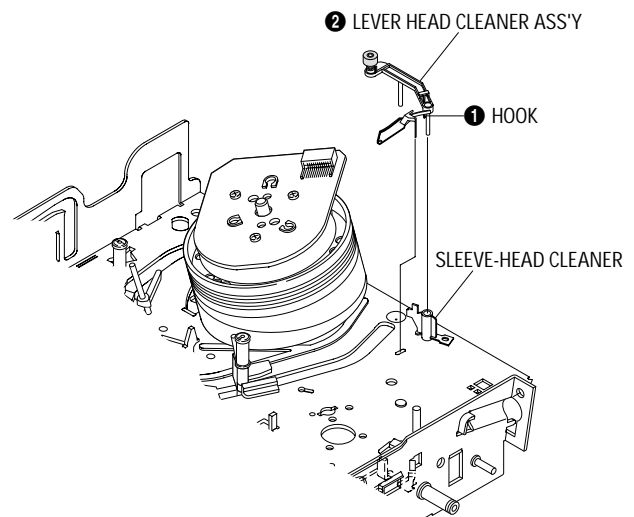


Fig. 1-31 Level Head Cleaner Ass'y Removal



## 1-2-26 Damper Capstan, Motor Capstan Ass'y Removal

- 1) Remove the Damper Capstan ❶ in the direction of arrow.
- 2) Remove the 3 Screws ❷.
- 3) Remove the Motor Capstan Ass'y ❸.

### Assembly :

- 1) Match the 3 holes of Motor Capstan Ass'y ❸ to the 3 holes of Main Base. Be careful not to drop or knock the Motor Capstan Ass'y ❸.
- 2) Tighten the 3 Screws ❷ in the direction of arrow as shown detail drawing.
- 3) Assemble the Damper Capstan ❶.

**Note :** After tightening screws, check if there is gap between the head of screws and the top side of Main Base. There should have no gap between the head of screws and the top side of Main Base. After reinstalling, adjusting the tape transport system again.

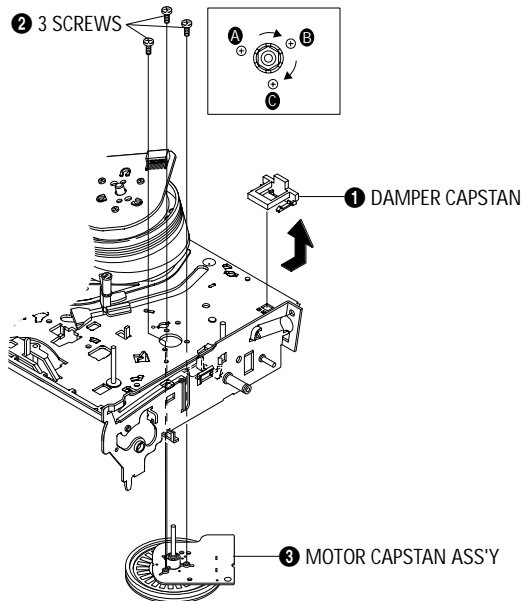


Fig. 1-32 Damper Capstan, Motor Capstan Ass'y Removal

## 1-2-27 How to Eject the Cassette Tape (If the unit does not operate on condition that is inserted into housing ass'y)

- 1) Turn the Gear worm ❶ clockwise with screw driver. (Refer to arrow)  
(Other method : Remove the Screw of Motor Load Ass'y, Separate the Motor Load Ass'y)

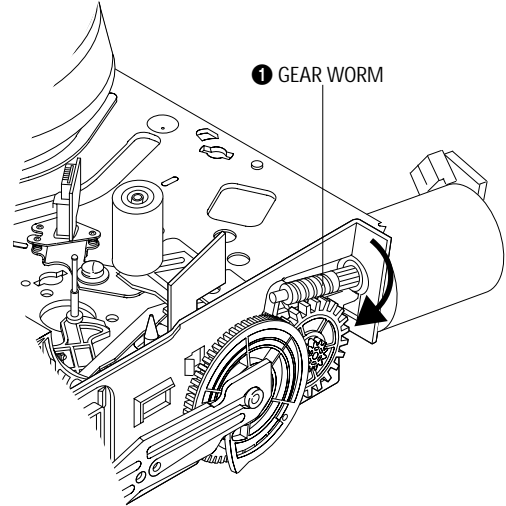


Fig. 1-33

- 2) When Slider S,T are approached in the position of unloading, rotate holder Clutch counterclockwise after inserting screw driver in the hole of frame's bottom in order to wind the unwinded tape. (Refer to Fig.1-34)  
(If you rotate Gear Worm ❶ continuously when tape is in state of unwinding, you may cause a tape contamination by grease and tape damage. Be sure to wind the unwinded tape in the state of set horizontally.)
- 3) Rotate Gear Worm ❶ clockwise using screw driver again up to the state of eject mode and then pick out the tape. (Refer to Fig.1-33)

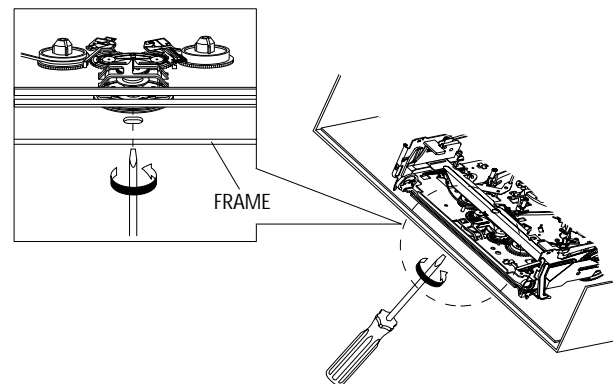


Fig. 1-34

### 1-3 The table of clearing, Lubrication and replacement time about principal parts

- 1) The replacement time of parts is not life of parts.
- 2) The table 1-1 is that the VCR Set is in normal condition (normal temperature, normal humidity).  
The checking period may be changed owing to the condition of use, runtime and environmental conditions.
- 3) Life of the Cylinder Ass'y is depend on the condition of use.
- 4) See exploded view for location of each parts.

<Table 1-1>

*	Parts Name	Checking Period										Remark
		500	1000	1500	2000	2500	3000	3500	4000	4500	5000	
T A P E  P A T H  S Y S T E M	POST TENSION	△	△	△	△	△	△	△	△	△	△	- To clean the parts, use patch and alcohol (solvent).  - After cleaning, use the video tape after alcohol is gone away completely.  - We recommend to use oil [NT-68] or solvent.  - One or two drops of oil should be applied after cleaning with alcohol.  - Periodic time of applying oil (Apply oil after cleaning) - The excessive applying oil may be the cause of malfunction.
	SLANT POST S, T	△	△	△	△	△	△	△	△	△	△	
	#8 GUIDE SHAFT	△	△	△	△	△	△	△	△	△	△	
	CAPSTAN SHAFT	△	△	△	△	△	△	△	△	△	△	
	#9 GUIDE POST	△	△	△	△	△	△	△	△	△	△	
	#3 GUIDE POST	△	△	△	△	△	△	△	△	△	△	
	GUIDE ROLLER S, T	△	△	△	0	0	0	0	0	0	0	
	CYLINDER ASS'Y	△	0	0	0	0	0	0	0	0	0	
	FE HEAD	△	△	△	0	0	0	0	0	0	0	
	ACE HEAD	△	0	0	0	0	0	0	0	0	0	
	PINCH ROLLER	△	0	0	0	0	0	0	0	0	0	
	POST REEL S, T		◆		◆		◆		◆		◆	
	SLEEVE TENSION		◆		◆		◆		◆		◆	
	POST CENTER		◆		◆		◆		◆		◆	
LEVER IDLE BOSS (2Point)		◆		◆		◆		◆		◆		
D R I V I N G  S Y S T E M	CAPSTAN MOTOR PULLEY	△	△	△	△	△	0	0	0	0	0	
	BELT PULLEY				0	0	0	0	0	0	0	
	HOLDER CLUTCH ASS'Y	△	0	0	0	0	0	0	0	0	0	
	GEAR CENTER ASS'Y		0	0	0	0	0	0	0	0	0	
	GEAR IDLE (2Point)		0	0	0	0	0	0	0	0	0	
	LOADING MOTOR		0	0	0	0	0	0	0	0	0	
B R A K E  S Y S T E M	BAND BRAKE ASS'Y		0	0	0	0	0	0	0	0	0	
	BRAKE T ASS'Y		0	0	0	0	0	0	0	0	0	

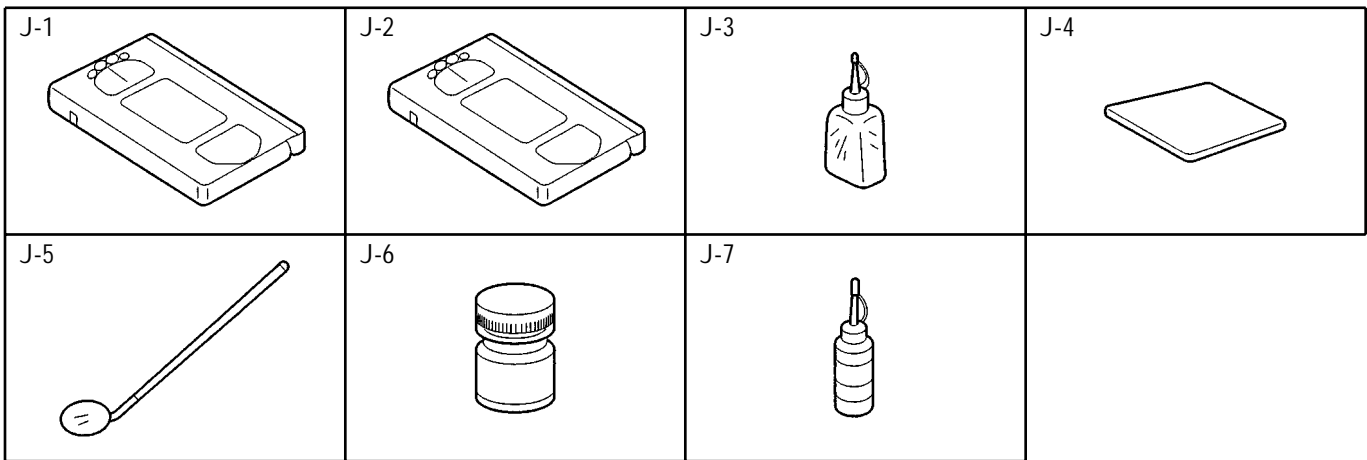
△ : Cleaning

0 : Check and replacement in necessary

◆ : Add Oil

## 1-4 Tools and fixtures required for service

Ref. No.	Name	Part No.	Caved Jig No.	Remarks
J-1	Torque Measurement Cassette VHT-103S	J-6090-072-A		For FWD & back tension torque measurement
	Torque Measurement Cassette VHT-404S	J-6082-012-A		For CUE and REVIEW torque measurement
J-2	Alignment Tape	KRV-52NE (NTSC)	8-192-605-41	Tape path, Audio azimuth, X-value adjustments
		KRV-51N2 (NTSC)	8-192-605-32	Electrical adjustments, Operation check
		KRV-52PL (PAL)	8-192-605-46	Tape path, Audio azimuth, X-value adjustments
		KRV-51P (PAL)	8-192-605-36	Electrical adjustments, Operation check
J-3	Cleaning Fluid	Y-2031-001-0	—	
J-4	Chamois Leather	2-034-697-00	—	
J-5	Dental Mirror (with Handle)	J-6080-029-A	SL-5052	Tape path and tape traveling adjustments or checks
	Dental Mirror (Mirror)	J-6080-030-1		
J-6	Grease Molykote EM 30LG	J-6090-014-A		Net. 20 g
J-6	Diamond Oil NT-68	7-661-018-18		



<Fig 1-35>

## 2. Alignment and Adjustment

### 2-1 Tape Transport System and Adjustment Locations

The tape transport system has been adjusted precisely in the factory. Alignment is not necessary except for the following :

- 1) Noise observed on the screen.
- 2) Tape damage.
- 3) Parts replacement in the tape transport system.

Lower flange height of tape guide is used as the reference for the transport adjustment.

To maintain the height of the tape guide and prevent damage, do not apply excessive force onto the main base.

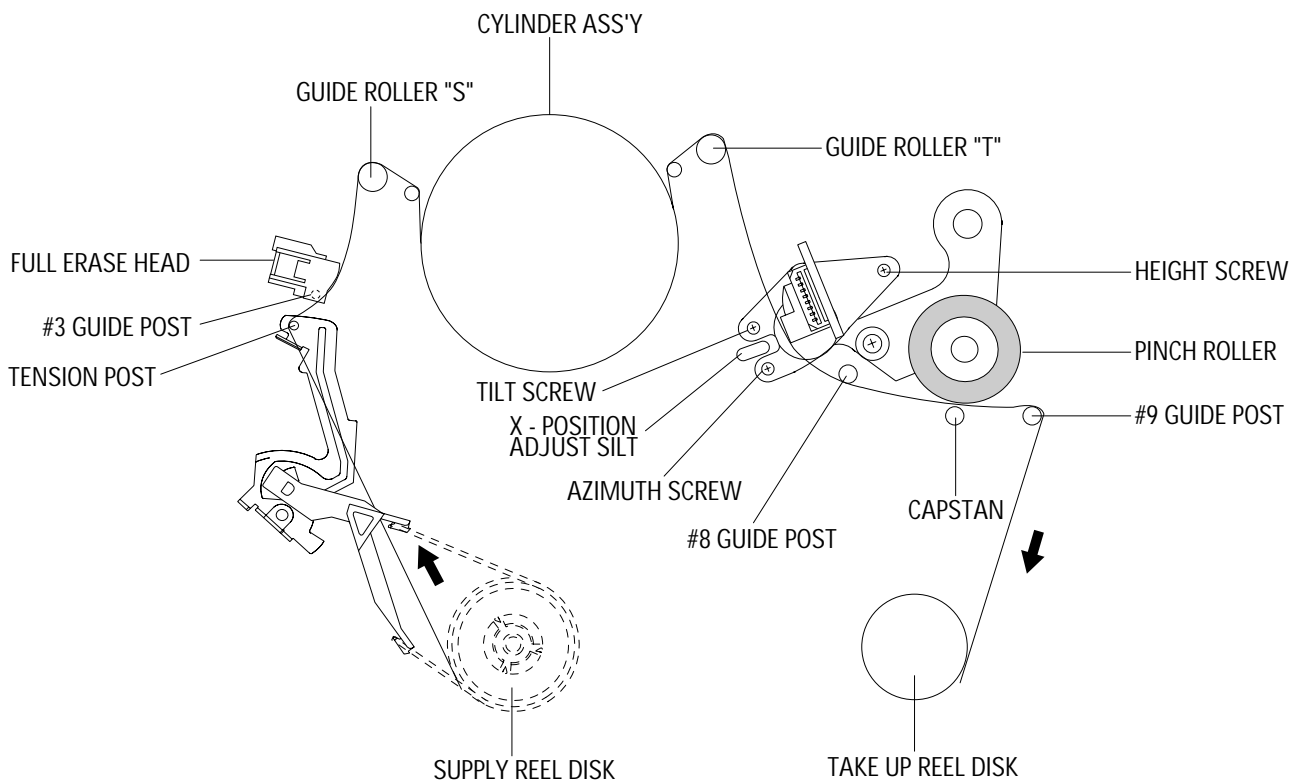


Fig. 2-1 Location of Tape Transport Adjustment

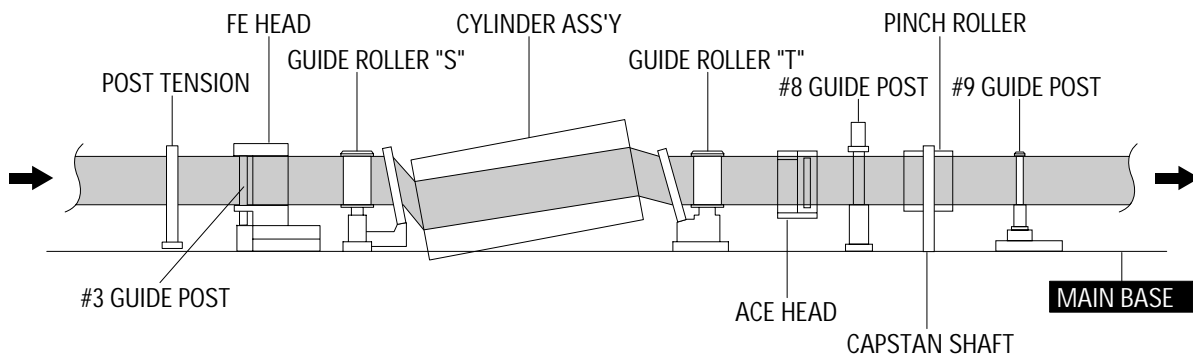


Fig. 2-2 Tape Travel Diagram

## 2-2 Tape Transport System Adjustment

When parts are replaced, perform the required adjustments by referring to procedures for the tape transport system. If there are any changes to the tape path, first run a T-120 tape and make sure excessive tape wrinkle does not occur at the tape guides.

- 1) If tape wrinkle is observed at the guide roller S, T, turn the guide roller S, T until wrinkle disappears.
- 2) If the tape wrinkle is still observed at the tape guide, perform the tilt adjustment of the ACE head. (See page 5-3 of the Service Manual for Test Point Locations.)

### 2-2-1 ACE Head Assembly Adjustment

#### 2-2-1(a) ACE HEAD HEIGHT ADJUSTMENT

- 1) Run the alignment tape (KRV-52NE (NTSC)/52PL (PAL)) in the playback mode.
- 2) Observe surface of the audio head using a dental mirror.
- 3) Turn screw (C) clockwise or counterclockwise until the gap of lower tape edge and the lower edge of the control head is about 0.25mm. (Refer to Fig. 2-3 and 2-4)

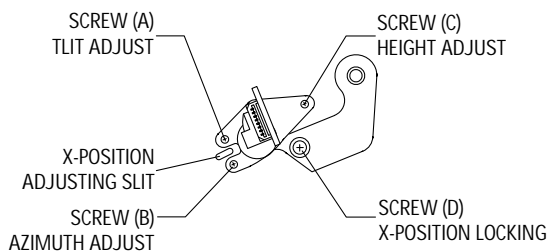


Fig. 2-3 Location of ACE Head Adjustment Screw

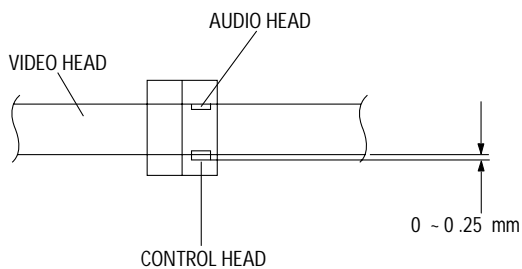


Fig. 2-4 ACE Head Height Adjustment

#### 2-2-1(b) ACE HEAD TILT ADJUSTMENT

- 1) Playback a blank tape and observe the position of the tape at the lower flange of tape guide.
- 2) Confirm that there is no curl or wrinkle at the lower flange of tape guide as shown in Fig. 2-5 (B).
- 3) If a curl or wrinkle of the tape occurs, slightly turn the screw (A) tilt adjust on the ACE head ass'y.
- 4) Reconfirm the ACE head height.

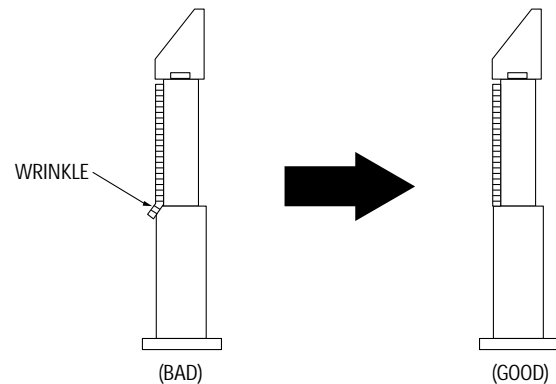


Fig. 2-5 Tape Guide Check

#### 2-2-1(c) AUDIO AZIMUTH ADJUSTMENT

- 1) Load alignment tape (KRV-52NE (NTSC)/52PL (PAL)) and playback the NTSC : 5KHz (PAL : 4KHz) signal.
- 2) Connect channel-1 scope probe to audio output test point.
- 3) Adjust screw (B) to achieve maximum audio level. (See Fig. 2-3)

#### 2-2-1(d) ACE HEAD POSITION (X-POINT) ADJUSTMENT

- 1) See "2. Alignment and Adjustment" for ACE Head position (X-Point) adjustment.

## 2-2-2 Linearity Adjustment (Guide roller S, T adjustment)

- 1) Playback the alignment tape (KRV-51N2 (NTSC)/51P (PAL)) (SP mode, Mono Scope).
- 2) Observe the video envelope signal on an oscilloscope (triggered by the video switching pulse).
- 3) Make sure the video envelope waveform (at its minimum) meets the specification shown in Fig. 2-6.

If it does not, adjust as follows :

### Note :

a=Maximum output of the video RF envelope.

b=Minimum output of the video RF envelope at the entrance side.

c=Minimum output of the video RF envelope at the center point.

d=Maximum output of the video RF envelope at the exit side.

- 4) If the section A in Fig. 2-7 does not meet the specification, adjust the guide roller S up or down.
- 5) If the section B in Fig. 2-7 does not meet the specification, adjust the guide roller T up or down.

6) Play back the alignment tape (SP mode, Mono Scope).

7) Connect an oscilloscope CH-1 to the Envelope and CH-2 to the H'D SW Pulse for triggering.

8) Turn the guide roller heads with a flat head (  ) driver to obtain a flat video RF envelope as shown in Fig. 2-8.

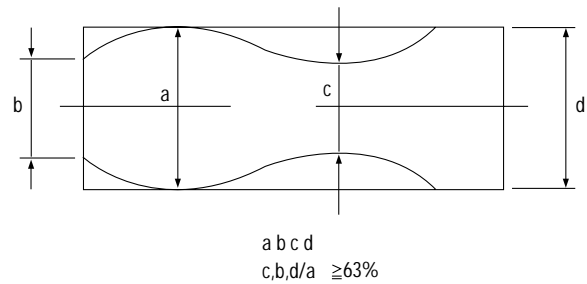


Fig. 2-6 Envelope Waveform Adjustment

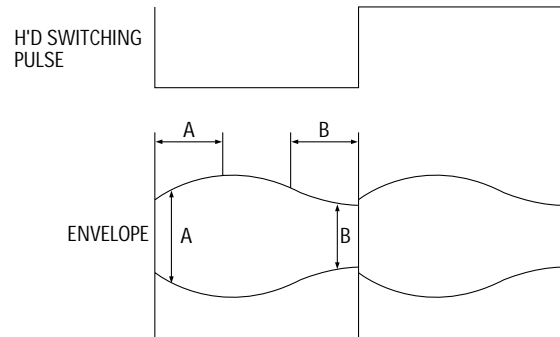


Fig. 2-7 Adjustment Points

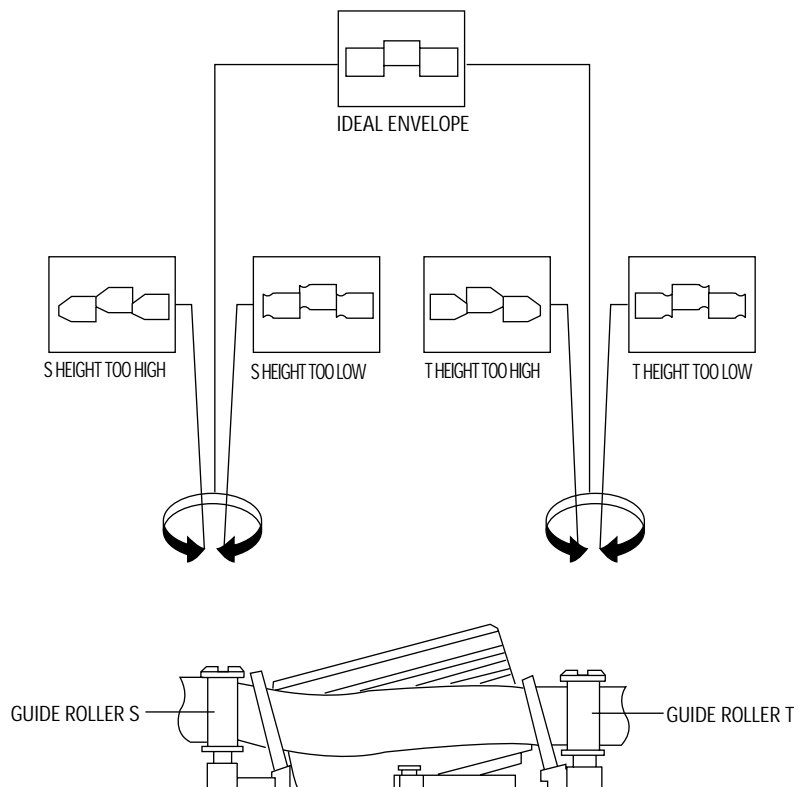


Fig. 2-8 Guide Roller S, T Height Adjustment

### 2-2-3 Check Transitional Operation from RPS to Play

Check transition from RPS mode to play mode :  
 Using a pre-recorded SP tape, make sure the entry side of envelope comes to an appropriate steady state within 3 seconds (as shown in Fig. 2-9).  
 If the envelope waveform does not reach specified peak-to-peak amplitude within 3 seconds, adjust as follows :

- 1) Make sure there is no gap between the supply roller lower flange and the tape.  
 If there is a gap, adjust the supply guide roller again.
- 2) Change operation mode from the RPS to the play mode (again) and make sure the entry side of envelope rises within 3 second.

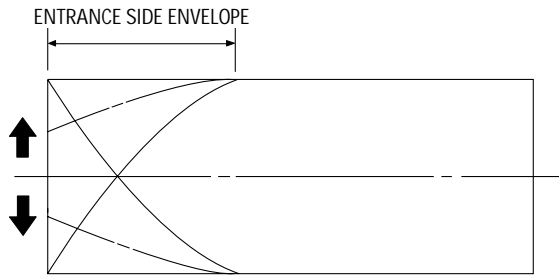


Fig. 2-9 Video Envelope Rising when Operation mode Changes from RPS to Play Mode

### 2-3 Reel Torque

- 1) The rotation of the capstan motor causes the Holder Clutch Ass'y to rotate through the Belt Pulley.
- 2) The spring wrap PLAY/REV of holder clutch ass'y drives the disk reel S, T through gear idle by rotation of gear center ass'y.
- 3) Brake is operated by slider cam at FF/REW mode.
- 4) Transportation of accurate driving force is done by gears. (Gear Center Ass'y)

**Note :** If the spec. does not meet the followings specifications, replace the holder clutch ass'y and then recheck.

### 2-2-4 Envelope Check

- 1) Make recordings on T-120 (E-120) and T-160 (E-180) tape.  
 Make sure the playback output envelope meets the specification as shown in Fig. 2-10.
- 2) Play back a self recorded tape (recording made on the unit using with T-120 (E-120)).  
 The video envelope should meet the specification as shown in Fig. 2-10.  
 In SP mode, (A) should equal (B).  
 If the head gap is wide, upper cylinder should be checked.

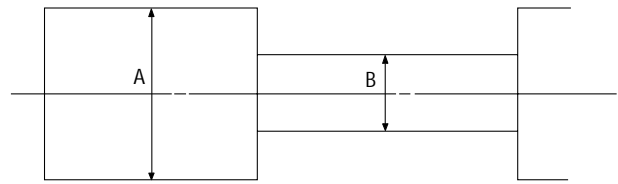


Fig. 2-10 Envelope Output and Output Level

### 2-2-5 Tape Wrinkle Check

- 1) Run the T-160 (E-180) tape in the playback, FPS, RPS and Pause modes and observe tape wrinkle at each guide.
- 2) If excessive tape wrinkle is observed, perform the following adjustments in Playback mode :
  - ◆ Tape wrinkle at the guide roller S, T section :  
 Linearity adjustment.
  - ◆ Tape wrinkle at tape guide flange :  
 ACE head assembly coarse adjustment.

<Table 2-1>

MODE	TORQUE g/cm	GAUGE
PB	42 ± 11	Cassette Torquemeter
RPS	145 ± 30	Cassette Torquemeter

