Introducing Samsung DVD Recorder & VCR (DVD-VR375)

2008.2.
Samsung Electronics Co. LTD
Digital AV Division
Samsung DVD Recorder & VCR

General Introduction

☐ Model No : DVD-VR375
☐ Market Introduction Date

: APR 2008 (EU)

Characteristics

1. Super picture & sound quality recording with MPEG-2(VBR) on DVD-RW, DVD-R compatible with A/V & PC (Playback only for DVD-RAM)

2. Convenient control through random accessibility of optical discs

   - One touch recording : Automatic empty area recording
   - Program Navigation
   - High Speed Search and Play

3. Advanced playback functions for multiple purposes

   (Compatible with DVD, Audio-CD, CD-R/RW(MP-3), DVD-R, DVD-RW Disc)
### Progressive Scan

By scanning all 576 lines in one pass, progressive scanning provides high vertical resolution and flicker-free, high-density image output that does not suffer from the loss of quality during subject movement -- which is characteristic of the conventional interlaced scanning method.

### Program Navigator

Recorded programs are shown as thumbnail pictures, and information such as title, recording dates and times are displayed on menu screen. User can choose a desired program.

### Editing

Simple non-linear editing is possible on menu screen without additional editing system. User can delete part of a program or entire program, and edit program title.
**DVD-VR375 Key Features**

- **Recording Features**
  - MPEG-2 VBR (Variable Bit Rate) Recording
  - Creating a DVD video title using DVD-RW/DVD-R
  - Automated Quality Adjustment for Timer Recording
  - Copying data from a digital camcorder using a DV input jack
  - Selectable Recording Mode

- **Playing Features**
  - Progressive Scan both DVD and VCR modes
  - Program Navigation

- **Other Features**
  - Easy Editing
  - Quick Recording
  - Auto Chaptering
  - HDMI out /w up-scale
    - Anynet+ (HDMI CEC), up to 1080P
’08 DVD Recorder New Features

**Samsung’s Unique Features**
- EZ REC mode
- 1 sec Quick Recording on All Format

**Differential Features**
- -R Dual Layer Recording
- DivX Playback
- EVQ (Enhanced Video Quality)

**Convenience**
- EZ REC Mode (DVDR Like VCR)

**Design**
- Slim & Deluxe Design Identity
Dual Layer Recording (only for -R disc)

1 dual layer disc is enough for 3hrs movie (SP mode)

Single Layer Disc

- 4.7GB
- HQ (60min), HSP(90MIN)
- SP (120MIN), LSP(150MIN)
- ESP (180MIN), LP(240MIN)
- EP (360MIN), SLP(480MIN)

Dual Layer Disc

- 8.5GB
- HQ (108min), HSP(162MIN)
- SP (217MIN), LSP(271MIN)
- ESP (325MIN), LP(434MIN)
- EP (651MIN), SLP(868MIN)
**EVQ (Enhanced Video Quality)**

- **Video Noise Reduction**
  Reduce the pixel noise, produced during Digital signal processing

- **False Color Reduction**
  False Color reduction filter reduces the cross color phenomenon produced by in complemented separation of Y & C signal

- **Sharpness Enhance**
EZ REC Mode

- DVD Recorder like VCR

**Complicate...**

Finalize, Format, Unfinalize, Select V/VR mode, Disc Manager, Edit Playlist, Edit Chapter... etc

**Simple!**

Like VCR

- REC
- STOP
- PLAY

Press EZ REC Mode
EZ REC Mode

- DVD Recorder like VCR

1. Auto Setting for All Formats

Operated in their separate ways

<table>
<thead>
<tr>
<th></th>
<th>Initialize</th>
<th>Finalize</th>
<th>Format</th>
<th>Edit</th>
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<tbody>
<tr>
<td>DVD-RAM</td>
<td>O</td>
<td>–</td>
<td>V/VR</td>
<td>Play list</td>
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<tr>
<td>DVD-RW</td>
<td>O</td>
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<td>V/VR</td>
<td>Play list</td>
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<td>DVD+RW</td>
<td>O</td>
<td>O</td>
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<td>Chapter</td>
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<td>DVD-R</td>
<td>–</td>
<td>O</td>
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<td>DVD+R</td>
<td>O</td>
<td>O</td>
<td>O</td>
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</table>

What’s Format?

Samsung DVD Recorder does setting itself for all Formats

There is One Format from now on

Don’t need to know about it!
Beginner Mode

- DVD Recorder like VCR

2. UI Identity for All formats

Operated in their separate ways

Different UI for each format!

Same UI to operate DVD Recorder with All Format

- Different Menu
- Different UI Scenario
- Different Menu Naming

Same Menu
Same UI Scenario
For All Format
HDMI (High Definition Multimedia Interface)
- Pure Digital for Perfect Vision

- **HDMI Output** - High Definition DIGITAL Video Out (Up to 1080P)
- Samsung DVD is perfect matching with Full HD TV
HDMI CEC

HDMI (High Definition Multimedia Interface)
- 100% Digital way of AV Streaming without Loss
- Up Scaled Video Output upto 1080P: Better DVD
- HDMI CEC(Command go each Devices through HDMI Cable)

Intellectual Action

1) One Touch Play
2) System Stand-By
3) Deck Control
4) Device Menu Control
5) Remote Control Pass Through

Disc In → TV ON → Auto Setting → AutoPlay

- Power Off by one Click
- Play, Stop, Pause with Any Remote
- Send menu command by TV remote
- Channel, Volume Up / DN

13) Vendor Specific Commands
## Specification – Product Specifications

<table>
<thead>
<tr>
<th>Category</th>
<th>Specification</th>
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<tbody>
<tr>
<td><strong>Power requirements</strong></td>
<td>AC 220-240V, 50Hz</td>
</tr>
<tr>
<td><strong>Power consumption</strong></td>
<td>30 Watts/4 Watts (Standby mode)</td>
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<tr>
<td><strong>Weight</strong></td>
<td>4.4Kg</td>
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<tr>
<td><strong>Dimensions</strong></td>
<td>430(W) X 331(D) X 79(H)</td>
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<td><strong>Operating temp</strong></td>
<td>+5°C to + 35°C</td>
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<td><strong>Other conditions</strong></td>
<td>Keep level when operating. Less than 75% operating humidity</td>
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<td><strong>Video input (Rear)</strong></td>
<td>Euro Scart socket: 1.0 Vp-p (unbalanced) 75Ω</td>
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<tr>
<td><strong>Audio input (Rear)</strong></td>
<td>Euro Scart socket: -8dBm, 47Kohm unbalanced</td>
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<tr>
<td><strong>Front input</strong></td>
<td>RCA jack, DV (DVD-VR375 only)</td>
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<tr>
<td><strong>RF out</strong></td>
<td>UHF 21-69 (Initial CH60)</td>
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<tr>
<td><strong>Audio (DVD, VCR)</strong></td>
<td>RCA Jack, Euro Scart socket, Audio L/R</td>
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<tr>
<td><strong>Audio (DVD, Only)</strong></td>
<td>Digital audio out OPTICAL, COAXIAL</td>
</tr>
<tr>
<td><strong>Video (DVD, VCR)</strong></td>
<td>RCA JACK (composite): 1.0Vp-p, 75Ω Component out Euro Scart socket (composite) (RGB) HDMI output [480P, 720P, 1080i, 1080P (DVD-VR375 only)]</td>
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<td>VHS type video tape</td>
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<td><strong>Tuning System</strong></td>
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<tr>
<td><strong>Video S/N</strong></td>
<td>Above 43dB (standard recording)</td>
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<tr>
<td><strong>Resolution</strong></td>
<td>Above 240 lines (standard recording)</td>
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<td><strong>Audio S/N</strong></td>
<td>Above 68dB (Hi-Fi), 39dB (Mono)</td>
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<tr>
<td><strong>Audio frequency characteristics</strong></td>
<td>20Hz-20KHz(Hi-Fi)</td>
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<td><strong>Picture compression format</strong></td>
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<td><strong>Audio compression format</strong></td>
<td>Dolby AC-3 256kbps</td>
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<td><strong>Recording Quality</strong></td>
<td>HQ (Approx. 1 hour), HSP (Approx. 1 hour 30 minutes), SP (Approx. 2 hours), LSP (Approx. 2 hours 30 minutes), ESP (Approx. 3 hours), LP (Approx. 4 hours), EP (Approx. 6 hours), SLP (Approx. 8 hours)</td>
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<td><strong>Video S/N</strong></td>
<td>Ratio Min. 50dB at standard recording</td>
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<td><strong>Audio S/N</strong></td>
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<td><strong>Audio frequency characteristics</strong></td>
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# Specification – Chassis Product Specifications

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<tr>
<th>General</th>
<th>Model Name</th>
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<th>DVD-VR375</th>
<th>DVD-VR370</th>
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<tbody>
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<td>MPEG-2</td>
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<td>Recording Speed (Drive Speed)</td>
<td>x2</td>
<td>1H/1.5H/2H/2.5H/3H/4H/6H/8H</td>
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<td>Quick Dubbing (x8 Speed)</td>
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<td>Quick Start(1sec Recording)</td>
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Front Panel Display

1. In Disc Indicator
2. Progressive Scan Indicator
3. DVD view Indicator
4. VCR view Indicator
5. STATUS Indicator
6. TIMER Indicator
7. Disc Media Indicator
Disassembly and Reassembly

3-1 Cabinet and PCB

3-1-1 Cabinet Top Removal

3-1-3 Ass'y Front Panel Removal

3-1-2 Ass'y Bottom Cover Removal

Fig. 3-1 Cabinet Top Removal

Fig. 3-2 Ass'y Bottom Cover Removal

Fig. 3-3 Ass'y Front Panel Removal (Top View)

Fig. 3-4 Ass'y Front Panel Removal (Bottom View)
5. Disassemble / Reassemble
3-1-5 VCR PCB Removal

1. REMOVE 4 SCREWS
   (4x12 WHITE)

When installing the ass' y full deck on the Main PCB, be sure to align the assembly point of mode switch.

.Mode Switch

Fig. 3-6 VCR PCB Removal
3-2 Circuit Board Locations

Fig. 3-7 Circuit Board Locations

VCR PCB
MAIN PCB
JACK PCB
3-3 VCR Deck Parts Locations

3-3-1 Top View

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

Fig. 3-8 Top parts Location-1
Fig. 3-10 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 ASS’Y CLUTCH
9 BELT PULLEY
10 SLIDER CAM
3-4 VCR Deck

3-4-1 Ass’y Holder Cassette Removal

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

Note : Be sure to insert Lever Lock 2 in the direction of “A” to prevent separation and breakage of the Lever Lock 2 at disassembling and reassembling.

3-4-2 Ass’y Lever Arm Removal

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

Fig. 3-11 Ass’y Holder Cassette Removal

Fig. 3-12 Ass’y Lever Arm Removal
3-4-3 Lever Door Removal

1) Release the Hook ① and Remove the Lever Door ① in the direction of arrow “A”.

![Diagram of Lever Door Removal]

Fig. 3-13 Lever Door Removal

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

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

Note : When reinstalling be sure to reassemble Slider FL drive ① after you insert the Boss of Lever ARM R in Groove of Slider FL drive ①.

Assembly : Align the Gear FL Cam ② with the Gear worm wheel Post as shown drawing. (Refer to Timing point)

![Diagram of Slider FL Drive Removal]

Fig. 3-14 Slider FL Drive Removal

![Diagram of Gear FL Cam, Gear Worm]

Fig. 3-15 Gear FL Cam, Gear Worm
3-4-5 Gear Worm Wheel Removal

1) Remove the Gear Worm wheel ①.

![Gear Worm Wheel Removal](image1)

Fig. 3-16 Gear Worm Wheel Removal

3-4-6 Cable Flat Removal

1) Remove the Drum connecting part of Cable Flat ① from Connector Wafer ②, ③.

![Cable Flat Removal](image2)

① CABLE FLAT
② CONNECTOR WAFER
③ CONNECTOR WAFER

Fig. 3-17 Cable Flat Removal
3-4-7 Ass'y Motor Loading Removal

1) Remove the Screw 1.
2) Remove the Ass'y Motor Loading 2.

3-4-8 Bracket Gear, Gear Joint 2, 1 Removal

1) Remove the Screw 1.
2) Remove the Bracket Gear 4.
3) Remove the Gear Joint 2 3.
4) Remove the Gear Joint 1 6.

Assembly:
1) Be sure to align dot mark of Gear Joint 1 1 with dot mark of Gear Joint 2 4 as shown Fig 3-20. (Refer to Timing point1)
2) Confirm the Timing Point 2 of the Gear Joint 2 4 and Slider Cam 5.

Fig. 3-18 Ass'y Motor Loading Removal

Fig. 3-19 Bracket Gear, Gear Joint 1,2 Removal

Fig. 3-20 Gear Joint 1,2 Assembly
3-4-9 Gear Loading Drive, Slider Cam, Assy’y Lever Load S, T Removal

1) Remove the Belt Pulley. (Refer to Fig. 3-38)
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 Assy’y Lever Load S ③ & Assy’y Lever Load T ④.

---

3-4-10 Gear Loading Drive, Slider Cam, Assy’y Lever Load S, T Assembly

1) When reinstalling, be sure to align dot of Assy’y Lever Load T ① with dot of Assy’y Lever Load S 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 Assy’y 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. 3-21 Gear Loading Drive, Slider Cam, Assy’y Lever T, S Load Removal

TIMING POINT 1

---

TIMING POINT 2

---

TIMING POINT 3

---

Fig.3-22 Gear Loading Drive, Slider Cam, Assy’y Lever Load S, T Assembly
**3-4-11 Lever Pinch Drive, Lever Tension Drive Removal**

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

![Image of Lever Pinch Drive and Lever Tension Drive](image1)

**3-4-12 Ass'y Lever Tension, Ass'y Band Brake Removal**

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

*Note:*
1) When replacing the Ass'y Lever Tension ②, 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 Ass'y Band brake.
3) After Ass'y Lever Tension seated, Rotate stopper of Main Base to the Mark[B].

![Image of Ass'y Lever Tension and Band Brake](image2)

---

Fig. 3-23 Lever Pinch Drive, Lever Tension Drive Removal

Fig. 3-24 Ass'y Lever Tension, Ass'y Band Brake Removal
3-4-13 Assy'y Lever Brake S, T Removal

1) Release the Hook [A] and the Hook [B], [C] in the direction of arrow as shown in Fig 3-25.
2) Lift the Assy’y Lever S, T Brake ①, ② with spring brake ③.

Assembly:
1) Assembly the Assy’y Lever S Brake ① on the Main Base.
2) Assembly the Assy’y Lever T Brake ② with spring brake ③.

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

3-4-14 Assy’y Gear Idle Removal

1) Push the Lever Idle ① in the direction of arrow “A”, “B”.
2) Lift the Lever Idle ①.

Assembly:
1) Apply oil in two Bosses of Lever Idle ①.
2) Assemble the Gear Idle ② with the Lever Idle ①.

Note: When replacing the Gear Idle ②, be sure to add oil in the boss of Lever Idle ①.

Fig. 3-25 Assy’y Lever Brake S, T Removal

Fig. 3-26 Assy’y Gear Idle Removal
3-4-15 Disk S, T Reel Removal

1) Lift the Disk S, T Reel ①, ②.

---

3-4-16 Ass'y Holder Clutch Removal

1) Remove the Washer Slit ①.
2) Lift the Ass’y Holder Clutch ②.

Note: When you reinstall Ass’y Holder Clutch,
1) Check the condition of spring as shown in detail A.
2) Don't push Ass’y Holder Clutch 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 Ass’y Gear Center as shown in detail B.
3-4-17 Ass'y Lever Up Down, Ass'y Gear Center Removal

1) Remove the 2 hooks in the direction of arrow as shown Fig. 3-29 and lift the Ass'y Lever Up Down ①.
2) Lift the Ass'y Gear Center ②.

Assembly:
1) Insert the Ass'y Lever Up Down ① in the rectangular holes on Main Base as shown in Fig 3-30.
2) Lift the Lever Ass'y Up Down ① about 35°. (Refer to Fig 3-30)
3) Insert Ring of the Ass'y Gear Center ③ in the Guide of the Ass'y Lever Up Down ①.
4) Insert the Ass'y Gear Center ② in the post on Main Base.
5) Push down the Ass'y Lever Up Down ① 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 Ass'y Gear Center ③ is in the Guide of the Ass'y Lever Up Down ① after finishing assembly of Ass'y Lever Up Down ① and Ass'y Gear Center ②.

3-4-18 Guide Cassette Door Removal

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

Note: After reinstalling the Guide Cassette Door ① make sure the Hook [A].
3-4-19 Ass'y Lever Unit Pinch, Plate Joint, Spring Pinch Drive Removal

1) Lift the Ass'y Unit Pinch 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.

3-4-20 Ass'y Lever #9 Guide Removal

1) Remove the Spring #9 Guide ①.
2) Lift the Ass'y Spring #9 Guide 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.
**3-4-21 FE Head Removal**

1) Remove the Screw ①.
2) Lift the FE Head ②.

![Fig. 3-34 FE Head Removal](image)

**3-4-22 Ass’y AC Head Removal**

1) Pull out the FPC from connector of Ass’y AC Head ①.
2) Remove the screw ①.
3) Lift the Ass’y AC Head ②.

![Fig. 3-35 Ass’y AC Head Removal](image)
3-4-23 Assy' y Slider S, T Removal

1) Move the Assy' y Slider S, T ①, ② to slot, and then lift it to remove. (Refer to arrow)

Fig. 3-36 Assy' y Slider S, T Removal

3-4-24 Plate Ground Deck, Assy' y Cylinder Removal

1) Remove the 3 Screws ①.
2) Lift the Plate Ground Deck ⑥.
3) Lift the Assy' y Cylinder ③.

Assembly:
1) Match the 3 holes in the bottom of Assy' y Cylinder ③ to the 3 holes of Main Base as attending not to drop or knock the Assy' y Cylinder ③.
2) Tighten the 1 Screw ⑥.
3) Match the Plate Ground Deck ② to the Hole of Base Main.
4) Tighten the other 2 Screws ①.

Note:
1) Take care not to touch the Assy' y Cylinder ③ and the tape guide post at reinstalling.
2) When reinstalling, Don't push down too much on Screw Driver.

Fig. 3-37 Plate Ground Deck, Assy' y Cylinder Removal
3-4-25 Hook Capstan, Belt Pulley Removal

1) Remove the Hook Capstan ① after releasing Hook in the direction arrow as shown in detail drawing.
2) Remove the Belt Pulley ②.

Note: Take extreme care not to get grease on Belt Pulley ② at assembling or reassembling.

3-4-26 Ass'y Motor Capstan Removal

1) Remove the 3 Screws ①.
2) Remove the Ass'y Motor Capstan ②.

Assembly:
1) Match the 3 holes of Ass’y Motor Capstan ② to the 3 holes of Main Base. Be careful not to drop or knock the Ass’y Motor Capstan ②.
2) Tighten the 3 Screws ① in the direction of arrow as shown detail drawing.

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.
3-4-27 Ass’y Post #8 Guide Removal

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

3-4-28 Ass’y Level Head Cleaner Removal (Optional)

1) Release the Hook ①.
2) Lift the Ass’y Lever Head Cleaner ②.

Fig. 3-40 Ass’y Post #8 Guide Removal

Fig. 3-41 Ass’y Lever Head Cleaner Removal
3-4-29 How to Eject the Cassette Tape (If the tape is stuck in the unit)

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

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.3-43)
   (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 unwinedg tape in the state of set horizently.)

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.3-42)
### 3-5 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 3-1 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>
<thead>
<tr>
<th>*</th>
<th>Parts Name</th>
<th>Checking Period</th>
<th>Remark</th>
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<td>POST TENSION</td>
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<td>Δ</td>
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<td>SLANT POST S, T</td>
<td>Δ</td>
<td>Δ</td>
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<td>#8 GUIDE SHAFT</td>
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<td>Δ</td>
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<td></td>
<td>CAPSTAND SHAFT</td>
<td>Δ</td>
<td>Δ</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>#3 GUIDE POST</td>
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<td>♦</td>
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<tr>
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<td></td>
<td>BRAKE T ASS'Y</td>
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</tr>
</tbody>
</table>

Δ : Cleaning  ○ : Check and replacement in necessary  ♦ : Add Oil
Front-Micom Interface

- Front–Micom UPD78F4928GF(IC601, NEC) is used to control Power, LED Module, MTS Block, KEY Input Matrix etc.
- The SPI (Serial Peripheral Interface) port provides a bus for a serial interface with AV–CODEC MS9301
• MIC1 (MPEG2 Encoder/Decoder) diverges from the 13.5MHz crystal, then generates V–SYNC and H–SYNC.

• MIC1 does RGB encoding, copy guard processing and D/A conversion of 10bit Video signal converted into analog signal is outputted via amplifier of analog part.

• MIC1 inputted from pin 131 with 13.5MHz generates HSYNC and VSYNC which are based on video signal. It is synchronous signals with decoded video signal.

• The above signals, which are CVBS (Composite Video Blanking Sync), Y(S_Video)/C(S_Video), Y(Component)/Cb(component)/Cr(component), R(Red)/G(Green)/B(Blue) are selectively outputted 576i(interlaced Video Output), 576P(progressive Video Output).

• MIC1 adopts 10bit D/A converter. It performs video encoding as well as copy protection.

• IC801(MM1764) switch whole the I/O signals of jack block. This switching IC is controlled by I2C protocol between IC601(IO front micom).
Video Decoder (SAA7138) is a high quality NTSC, PAL, and SECAM video decoder plus YPbPr component inputs designed for multimedia applications.

This AVIC1 (SAA7138) includes three 10-bit high speed ADCs converters, and A/D conversion of 10bit analog Video signal converted into Digital Video signal (ITU-R656 Format) is outputted via CVBS inputs, the user can control video characteristics such as contrast, Brightness, saturation, and hue via an I2C DIC1 port interface.

A built-in versatile VBI slice and VBI data pass-through capability support common data services (VPS/PDC, auto clock search)
Analog Video MUX with AMP. (M1764AQ)

- IC801 is analog MUX. As SCL,SDA[Pin 38,39] of the IC801 are controlled by the Front Micom, IC801 select AV 1 of CVBS[Pin 56] , AV 2 of CVBS[Pin 58] and RF signal.
- The analog Video Signal of IC801 output is selected by the IC601 via AVIC1 (Video Decoder : SAA7138) of analog Video input parts.

- IC801 includes 6dB amplifier.
- Based on CVBS signal, the final output level must be 2Vpp without 75ohm terminal resistance. Because the level of video encoder output is only 1Vpp, the level is adjusted with the special amplifier.
- CVBS, Y, C, Y(R), Cb(B), Cr(R) outputted from video encoder are inputted to AVIC1[Pin 2,8,6,11,14,16] respectively.
- The signal to which gain is adjusted by amplifier is outputted from jack via 75ohm Resistance (VR30, 31, 32, 33, 34).
Audio Interface
1. Input block

DVD-VR375 has two stereo line input terminals and internal TV–audio from RF Tuner Block. These three analog audio signal sources are converted to digital data by Input Block. Input block has a Multiplexer (IC801), A/D converter inner AV–codec. IC801 change its output by selection control signal from IC601(front micom).

2. Output Block

DVD-VR375 has two stereo analog line out terminals and one digital output terminal. Decoded signal by MIC1 is inputted to AVIC1 (D/A converter inner video decoder) then filtered and amplified by AIC4(OP–AMP). And the digital audio signal (SPDIF) is outputted in Coaxial terminal.
Stereo/Bilingual
(MTS inner Video decoder, SAA7138)

➢ summary

1) MTS SIGNAL: MONO(L+R), STEREO(L,R), MONO+SAP, STEREO+SAP

2) SAP: Sub Audio Program Signal (American MTS system only)

< MTS system base-band spectrum >
### <MTS signal table>

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<th>signal</th>
<th>item</th>
<th>Signal freq. Band</th>
<th>Signal Processing System</th>
<th>Maximum Audio Carrier dev(KHz)</th>
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<td>Stereo Signal (L - R)</td>
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<td>SAP Signal</td>
<td>50Hz~10KHz</td>
<td>FM modulation(Carrier frequency 5fh) Maximum frequency deviation 10KHz dbx Noise Reduction processing</td>
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<td>Telemetry Signal</td>
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<td>FM modulation(Carrier frequency 6.5fh) Maximum frequency deviation 3KHz)</td>
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<tr>
<td></td>
<td>Data 0Hz~1.5KHz</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Signal route

1) SIF signal from tuner (TM1) is connected to Video decoder (MTS processor block, SAA7138 33pin).
   * SIF: Sound Intermediate Frequency

2) MTS processor block (Inner SAA7138) detect the stereo and sap signal and send the detecting state to front micom (IC601) by I^2C data.
   It will display the screen by OSD.
   * OSD: On Screen Display

3) MTS processor block decode the SIF signal and send the decoded audio signal to 106 pin (L out) and 107 pin (R out).

4) L out (106 pin) and R out (107 pin) of MTS processor block go to IC801 for audio processing.
Tuner

<Block diagram of Tuner >
VCR System Control

- The system control circuit inputs the commands given by the operator to set the mechanism and circuit to the commanded mode.

- The circuit also inputs the detected output from the tape and mechanism protection sensor and protects the VCR and tape against abnormal operation.

- The system control is performed by 4 control sections. (System and timer control, Servo control, F/S Tuner, On Screen Display).
The servo system is divided into two loops. The cylinder servo controls the rotation of video heads and the capstan servo controls the tape speed. In addition it’s necessary to control cylinder motor, especially during trick play in 4H’D models.

The cylinder servo loop controls the phase and speed of the cylinder motor. The speed is kept at a constant 1800 RPM and the phase determines the mechanical position relative to the vertical Sync signal.

The capstan servo loop controls the phase and speed of the capstan motor so that the video head can trace the video track correctly. It keeps tape speed constant according to the mode (SP, SLP) during playback and recording.
The selected video input signal goes to pin 50 of Lumi/Chroma processor IC (IC301). And then it enters VIDEO AGC circuit.

The gain of AGC circuit is controlled by AGC detector so that the output is constant (approx. 2Vp–p).

The output signal of AGC is clamped by the FBC (Feed Back Clamp) circuit. This signal appears at pin 65, after being amplified at the internal video amp and driver.

The output signal from the clamp circuit enter the detail enhancer circuit.

In the detail enhancer circuit, the low level high frequency video signal is emphasized to improve the original signals frequency characteristics.
Nonlinear emphasis circuit is employed to improve S/N and frequency response characteristics together with the following main emphasis.

Noise effects the FM wave at a higher frequency, so the S/N can be improved by emphasizing the higher frequency before recording and by suppressing the play signal during demodulation.

The difference of non linear emphasis from main emphasis is that the emphasis characteristics change is depending on the input level.

The gain of the emphasis circuit is inversely proportional to the level of the high frequency component of the signal.

That is, if the high frequency portion of the signal is low the main emphasis circuit will amplify the signal.
Hi-Fi circuit consists of Hi-Fi audio LPF, VCO, BPF, FM detect circuit and switching noise compensator, PRE-AMP etc. Linear audio consists of an ALC circuit, REC EQ circuit and a PB EQ circuit.

Hi-Fi and Linear audio share the same input selector, output selector and mute circuit.
The on screen display circuit consist of a character generator decoder, video mixer, sync separator and sync generator, sync detector circuit.

The data is decoded and generates characters in syncro with composite video signal applied pin 13, 15. Also the sync detector circuit discriminates the presence of a video signal by detecting sync, if no sync is detected, a blue screen is displayed.

In other word, the OSD circuit displays character on the video when there is a video signal or on blue screen when there is no video signal. (No sync).
9. MICOM Initialization & Update

.DVD Software Update (1)

(1). Introduction
Samsung will often support software update to improve the performance of DVD Recorder & VCR to the latest status, through Samsung Internet Site.

(2). How to make an update disc
• Write the downloaded file onto a blank CD-R or CD-RW disc, using the following settings:
  1) You have to download a new file through Samsung Internet site. (www.samsung.com)
  2) Write the file to disc using the CD-RW of your computer.

NOTE:
• Recommended Application Program
  - Nero Burning / Easy CD Creator ..etc
• Option
  - Only single session
  - CD close & disc at once
  - ISO 9660 or joliet format
  - Extension name : "*.UPD“ (DVD Software)
    : "*.SMD“ (Loader Software)
**WARNING:**
It is very important: please read the below notice below before updating your unit.
The following events may interrupt the update process and MAY RESULT IN PERMANENT DAMAGE TO THE UNIT WHILE UPDATING
1. Unplugging the power cord.
2. Power Outage.
3. Dirt or Scratches on the disc.
4. Opening a disc tray during processing.
1) Press **OPEN/CLOSE** to open the disc tray.
2) Insert the update CD-R disc with the software update, label facing up.
3) Press **OPEN/CLOSE** to close the disc tray.
   * If you don't see the message above, try another disc. Generally, this is caused by disc quality and by disc creating problem.

4) Press the **"Execute"** button on the remote control.
   -. The disc tray will be opened automatically. Remove the disc on the tray.
   -. The message below will be displayed on the screen while on updating.
5) It takes about 1~2 minutes to complete the update.
6) Turn off the unit with power button. And there after turn on the unit with power button. The drive firmware is now completed.

After checking old and new version, select.  
"Execute" or "Cancel" with "◄" or "►" on the remote control.  
* The Version is indicated by
Troubleshooting

No Power Detected (stand by LED OFF)

1FS01 is normal?
- Yes
- No
  → Change fuse

1SD5, 1SD7, 1SZ02 SHORT and OPEN are normal?
- Yes
- No
  → Change short circuited or opened parts

Is there voltage at Collector of Q1501?
- Yes
- No
  → Check 2'nd

Operation of Q1501 is normal?
- Yes
- No
  → Replace Q1501

Check feedback 15IC02
Key Operation or Remote Control Error

Is the measurement of power within normal value?

Yes

XT602 8MHz oscillation is normal?

Yes

Check the circuitry around IC601 reset?

Yes

Check the soldering around IC601 good?

Yes

Key operations such as STOP, PLAY, OPEN are normal?

Yes

End repairs

No

Check power and front connector.

No

Check the circuitry around the clock.

Check the circuitry around IC601 reset.

Check the soldering around the IC601.

Check the circuitry around the switch, check the condition of communication with Main Micom (IC601, 52, 66, 11, 42, 44, RR, RO, SRO, SCLK, DATA-IN, DATA-OUT).

STOP, PLAY, OPEN Key operations are normal?

Yes

End repairs

No

Change IC701
Play Mode Inoperative (VCR)

EE-VIDEO

No

SEE (VIDEO MISSING IN EE MODE)

Yes

INSERT THE CASSETTE TAPE RECORDED BY ANOTHER VCR AND PRESS PLAY BUTTON

Yes

PLAY INDICATOR IN THE DISPLAY

No

PRESS PLAY KEY IN REMOTE CONTROL

No

CHECK IC601, XT602

Yes

CHECK PLAY Button and Pattern

Yes

SEE (MECHANISM DOES NOT OPERATE IN PLAY MODE)

No

PB-VIDEO

No

SEE VIDEO MISSING IN PLAY MODE

Yes

SEE (PB VIDEO) AUDIO MISSING IN PLAY MODE
Record Mode Doesn’t Operate (VCR)

PLAY OPERATION

- No: SEE (PLAY MODE DOESN’T OPERATE)
- Yes: LOAD VCR WITH A BLANK TAPE AND PRESS RECORD BUTTON

LOAD VCR WITH A BLANK TAPE AND PRESS RECORD BUTTON

- Yes: REC MODE
- No: SAFETY TAB

REC MODE

- No: SAFETY TAB
- Yes: CHANGE TAPE

SAFETY TAB

- No: CHANGE TAPE
- Yes: CHANGE SW602

CHANGE TAPE

FULL ERASE(H) IC601 68

- No: CHECK IC601
- Yes: SEE (VIDEO MISSING IN RECORD MODE)

CHECK IC601

- No: FULL ERASE(H) IC601 68
- Yes: REC-VIDEO

REC-VIDEO

- No: SEE (VIDEO MISSING IN RECORD MODE)
- Yes: SEE (AUDIO MISSING IN RECORD MODE)

SEE (AUDIO MISSING IN RECORD MODE)

SEE (VIDEO MISSING IN RECORD MODE)

CHECK IC601
Fast Forward Doesn’t Operate (VCR)

- LOAD TAPE AND PRESS F.FWD BUTTON

  - F.FWD INDICATOR IN THE DISPLAY
    - No
      - PRESS FF KEY IN REMOTE CONTROL
        - No
          - CHANGE IC601, XT602
        - Yes
          - CHECK TIMER

  - Yes
    - CHECK CN804
      - PIN2: 15V, PIN3: 5V PIN8: 12V?
        - No
          - CHECK POWER BLOCK
        - Yes
          - IC301 PIN 71 FG PULSE?
            - No
              - SEE CAPSTAN DOES NOT ROTATE
            - Yes
              - Refer to a pattern image of Table 4-1

- CHECK MECHANISM
Cassette Loading Mechanism Does Not Operate (VCR)

TURN THE VCR POWER ON AND INSERT A TAPE

Yes

TAPE DETECTED

No

IC601 : PIN72:LOW?

No

CHECK SW604

Yes

IC601-3: HIGH(5V)
IC601-39: LOW(0V)

No

CHECK CASSETT LOADING MECHANISM

Yes

IC601-25: HIGH(5V)

No

CHANGE IC601

Yes

CN604 8pin 12V?

No

CHECK DM B+ LINE

Yes

CHANGE IC601
Video Missing In EE Mode (VCR)

PLACE VCR IN STOP MODE

TUNER MODE OPERATION

IC801-1 VIDEO IN

IC801-2,3 VIDEO DATA/CLOCK

IC801

CHECK IC801

IC801-50 VIDEO IN

IC801-2,3 VIDEO DATA/CLOCK

CHANGE IC801

IC801-65 VIDEO OUT

CHECK IC801

IC801-22

C830, C834, C840, C812, C842, C849

CHANGE IC801

CHANGE IC801
Video Missing In Record Mode (VCR)

IC301-50 VIDEO signal out?
No: E-E mode and IC801
    CHECK VIDEO signal out
Yes:

IC301-78 CHECK REC FM signal?
No: CHECK C392
Yes:

IC301-94 (SP)
IC301-88 (SLP) CHECK REC FM signal?
No: CHECK CN301
Yes:

NO DEFECT RECORD MODE
Color Missing In Record Mode (VCR)

(VIDEO IN) RECORD MODE
- No: SEE PAGE 9-6 (VIDEO MISSING IN RECORD MODE)
- Yes: COLOR signal IC301-58
  - No: CHECK XT301
    - No: CHANGE XT301
      NOTE: XT301 - Always (3.579545MHz)
    - Yes: CHECK THE REC LINE
  - Yes: COLOR KILLER IC301-33 (2V)
    - No: CHECK THE REC LINE
    - Yes: CHANGE IC301
Color Missing In Play Mode (VCR)

- **FM-ENV IC301-25**
  - No → See Page 9-7 (Video Missing In Play Mode)
  - Yes → **COLOR-MONITOR IC301-58**
    - No → **COLOR-KILLER IC301-33(2V)**
      - No → **COLOR ROTERY IC301-57**
        - No → Check IC601-29
        - Yes → Check IC301-27, 34, XT301
          - Yes → Note:XT301 - Always (3.579545MHz)
    - Yes → Check IC801-10
      - Yes → Change IC301
      - No → Change IC301
OSD Picture Missing (VCR)

2FSC-IN IC6P01-2
   No   →  CHECK IC6P01
   Yes

OSC IN IC6P01-6
   No   →  CHECK L6P05, C6P04, C6P05
   Yes

STB, CLK, DATA IC6P01-9, 10, 11
   Yes →  CHANGE IC6P01
Bule Missing In Stop Mode (VCR)

SELECT LINE MODE WITH INPUT SIGNAL

IC301-66 "H"
- No: CHECK IC301
- Yes:
  IC601-59 "H"
  - No: CHECK IC301-66 TO IC601-59
  - Yes:
    IC6P01-9, 10, 11 (STB, CLK, DATA)
    - No: CHECK IC601-6, 7, 8
    - Yes: CHANGE IC601

Audio Missing In EE Mode (VCR)

VCR STOP MODE

INPUT CHOICE MODE

AV1/AV2/AV3

TUNER

IC4N01-43
Audio Signal Input

ICHECK CLK, DATA IC4N01-12, 13Pin

IC4N01-31, 30 Audio Signal

IC801-27, 28 AUDIO SIGNAL

CHECK C814, C851, C8SC04, C8SC06, C807, C827

Refer to a pattern image of Table 4-3

CHECK Tuner and C4N25

CHECK IC601

CHECK IC4N01, XT4N01

CHECK IC801

CHECK L808, L807, R814, R813
Audio Missing In Rec Mode

CHECK AUDIO MISSING IN EE MODE

Yes

MISSING AUDIO MONO

MONO

HI-FI

IC501-7, 69 AUDIO SIGNAL

No

CHECK R510, R509, R518, R517

Yes

IC501-38, 39 CLK, DATA

No

CHECK IC601, R570, R571

Refer to a pattern image of Table 4-4

Yes

IC501-24, 27 Audio Signal

No

CHANGE IC501

Yes

IC501-26 AUDIO FM

No

CHANGE IC501, R503, C513

Yes

CHECK CYLINDER
MONO

CHECK AUDIO MISSING IN PB MODE

IC301-15 AUDIO SIGNAL

IC301-11 AUDIO SIGNAL

IC301-100 AUDIO FM SIGNAL

IC301-5 MIX SIGNAL (AUDIO+70KHz)

CN3A01-4 OSCILLATION

CHECK Q3A02, Q3A03, Q3A06

CHECK R3A06, C3A15, R3A07

CHANGE IC501

CHECK IC301-58 AND CHANGE IC301

CHANGE IC301

CHANGE IC501

CHECK R3A04

IC301-68, 69 CHECK (CLOCK, DATA)

CHECK PB MODE

CHECK ACE HEAD

Refer to a pattern image of Table 4-5
Fig. 4-5
Audio Missing In PB Mode (VCR)

CHECK "AUDIO MISSING IN EE MODE"

YES

PLACE THE VCR IN PB MODE

YES

AUDIO SELECT

MONO

HI-FI

IC501-78, 80 AUDIO FM (MIXED)

NO

CHECK IC501-40 (A.H.D SW) CHANGE CYLINDER OR IC501

YES

CHANGE IC501

IC301-5 AUDIO SIGNAL

NO

CHECK ACE HEAD C3A16 AND CHANGE IC301

YES

CHECK L3A01, R3A25 CHANG IC301
No Servo Lock (VCR)

PLAY

IC601-93 C-FG
No
CHECK CN604-1
Yes

IC601-87 CTL PULSE
No
CHECK A/CE HEAD
Yes

CHECK CTL PULSE AC LEVEL (SP. SLP: OVER 1Vp-p)
No

CHANGE IC601
Capstan Does Not Rotate (VCR)

1. **CN604-8 15V**
   - Yes: PLACE THE VCR IN PLAY MODE
   - No: CHECK B+ IN THE POWER BLOCK

2. **CN604-3 AL 5V**
   - Yes: PLACE THE VCR IN PLAY MODE
   - No: CHECK 5V AT AL5V LINE IN THE POWER BLOCK

3. **CN604-9 3.2V**
   - Yes: CHANGE IC601
   - No: IC601-10 OUTPUT(PWM)
     - Yes: CHECK R609
     - No: IC601-3 OUTPUT(PWM)
       - Yes: CHECK IC601
       - No: CHECK R660

4. **CN604-5 2.6V**
   - Yes: CHECK CAPSTAN MOTOR
   - No: CHECK R660
Drun Does Not Rotate (VCR)

- CN604-6 12V
  - No: CHECK 12V AT AL12V LINE IN THE POWER BLOCK
  - Yes: CN604-3 5V
    - No: CHECK 12V AT AL12V LINE IN THE POWER BLOCK
    - Yes: CN604-12 2.5V
      - No: IC601-5,9 DRUM_CTL_L
        - No: CHANGE IC601
        - Yes: CHECK R608, R617, C661
      - Yes: CHECK CYLINDER MOTOR
Tray repeating open/close operation

Is (key PCB) mounted correctly?

Yes

Is the connection right between CNO1 (VCR AND JACK PCB)?

Yes

Check the short between KEY1 and SEG7

No

Check the connection between CNO1 (VCR AND JACK PCB)

No

Check the soldering of Key PCB
Disc loading error

Are main and deck power OK?
  No → Check the power
  Yes → Is the 40pin FFC cable (between main & deck) inserted correctly?
    No → Reinsert FFC cable correctly
    Yes → MIC3 PIN26: 3.3V? (Main PCB)
      No → Change the deck
      Yes → Change the main board
No Analog Audio Output

- Proper vcc and vdd of AVIC1 (main PCB) and AIC4 (JACK PCB)
  - No: Check SMPS board
  - Yes: Output from pin109 and pin110 of AVIC1 of main PCB
    - No: Proper data between AVIC1 and MIC1 (main PCB)
      - Yes: Proper output on pin1 and pin7 of AIC4
        - Yes: Check the board to board connector between JACK PCB and main PCB
        - No: Check the passive components around jack pin
No digital audio out

- Check the digital audio setting
  - Checking
  - Refer to user manual
- Skip setting check (hardware problem)
  - 5V vcc of IC1P07-2PIN (VCR PCB)
    - No
      - Proper signal input on pin1 of IC1P07?
    - Yes
      - Check the VCC line
        - No
          - Check DOL3 and DOL4 (JACK PCB)
            - No
              - Replace main PCB
            - Yes
              - Check optical and coaxial output terminal and passive components around them.
        - Yes
          - Replace VCR jack
No audio on line input mode or recorded disc playback

- Check select signal of pin 43, 44, 46, 47 in IC801 (JACK)
  - No: check pin 13, 14 (input select) of IC801
  - Yes: Continue

- Check all the VCC of Audio ICs
  - No: Replace main PCB
  - Yes: Continue

- Check I2C clock of IC801 pin 38, 39
  - No: Refer to a pattern image of Table 4-6
  - Yes: Check passive components around jack-pin and IC801
Refer to a pattern image of Main PCB page 6-4

Refer to a pattern image of DC/DC Page 7-18

1 IIC_CLOCK
IC801(Pin38)

2 IIC_DATA
IC801(Pin39)

Fig. 4-6
CVBS output error

- Analog signals are inputted normally to IC801 [Yes/No]
  - Yes: Check the connection between 51pin in IC801 and JACK1
  - No: Power is normal at IC801-2,19,37,53? (JACK PCB) [Yes/No]
    - Yes: Pin38,39 in IC801 are normal I2C? [Yes/No]
      - Yes: Refer to a pattern image of Table 4-7
      - No: Check the connection between IC801-38,39 and VCR Micom. check IC801 peripheral circuit
    - No: Check the connection between IC801 and power
- No: Video signal of about 1V appears at output jack? [Yes/No]
  - Yes: Check the RCA cable
  - No: Check the connection between IC801 and output jack
Refer to a pattern image of Main PCB page 6-4

Fig. 4-7
Component output error

- Analog signals are inputted normally in IC801
  - Yes: Refer to a pattern image of Table 4-8
  - No: Check the connection 30, 31, 32 pin in IC801 and JACK2

- Power is normal at IC801-2, 19, 37, 53?
  - Yes: Check the connection between IC801 and power
  - No: Check the connection between IC801 and output jack

- Video signals of about 1V appears at output jack?
  - Yes: Check the RCA cable
  - No: Check the connection between IC801 and output jack
Refer to a pattern image of Main PCB page 6-4

Refer to a pattern image of DC/DC Page 7-18

1. Y(Color-bar)
   IC801(Pin30)

2. Pb(Color-bar)
   IC801(Pin31)

3. Pr(Color-bar)
   IC801(Pin32)

Fig. 4-9
Progressive output error

Is there 'PSO' Mark on FLT?

- No: To release progressive scan mode press 3times key on the Front panel.
- Yes: Check the RCA cable
AV1 CVBS Video Input Error

Pin56 in IC801 has normal level? (JACK PCB)

- No: Check the connection between pin56 in IC801 and AV1 pin-jack
- Yes: Pin52 in IC801 has normal level?

- No: Check pin 2, 19, 37, 53 in IC801 of input power
- Yes: Pin10 in AVIC1 of main PCB has normal level?

- No: Check the connection between pin10 in AVIC1 of main PCB and pin 52 in IC801
- Yes: Pin72 and pin 75~84 in AVIC1 of main PCB has clock and digital video signal normal level?

- No: Check AVIC1 peripheral circuit
- Yes: Check feedback
AV2 CVBS Video Input Error

- Pin58 in IC801 has normal level? (JACK PCB)
  - No: Check the connection between pin58 in IC801 and AV2 pin-jack
  - Yes: Pin52 in IC801 has normal level?
    - No: Check pin2,19,37,53 in IC801 of input power
    - Yes: PIN9 in AVIC1 of main PCB has normal level?
      - No: Check the connection between PIN9 in AVIC1 of main PCB and pin52 in IC801
      - Yes: Pin72 and pin 75~84 in AVIC1 of main PCB have clock and digital video signal normal level?
        - No: Check AVIC1 peripheral circuit
        - Yes: Change main PCB
AV3 Video Input Error

- Pin 64 in IC801 has normal level? (JACK PCB)
  - No: Check the connection between pin 64 in IC801 and Front Jack
  - Yes: PIN 16 in AVIC1 of main PCB has normal level?
    - No: Check the connection between PIN 16 in AVIC1 of JACK PCB and CNJ03 PIN 14
    - Yes: Pin 72 and pin 75-84 in AVIC1 of JACK PCB has clock and digital video signal normal level?
      - No: Check AVIC1 peripheral circuit
      - Yes: Change main PCB
These are the waveforms of DVD-VR37E.
Caution There can be some differences (Voltage, Frequency, etc.) among sources.
These are the waveforms of DVD-VRSITE.
Caution: There can be some differences (Voltage, Frequency, etc.) among sources.