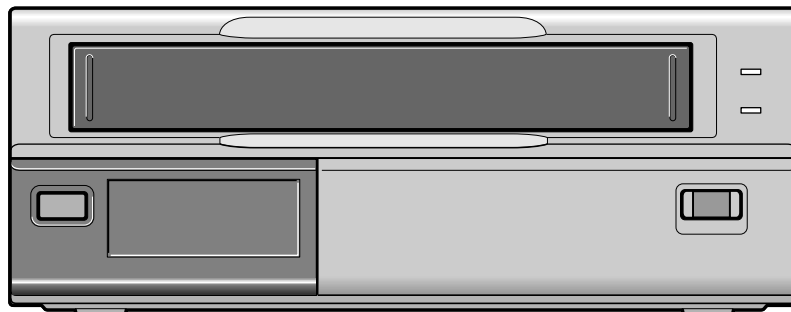




## INSTRUCTION MANUAL

# SRT-612DC

## 24-Hour Real Time Video Recorder



Please read this manual and accompanying "IMPORTANT SAFETY INSTRUCTIONS" sheet carefully before connecting your VCR and operating it for the first time.

Be sure to read carefully and follow all the PRECAUTIONS on page 2.

Keep the manual in a safe place for future reference.

# PRECAUTIONS

**CAUTION:** TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**WARNING:** To reduce the risk of fire or electric shock, do not expose this appliance to rain or other moisture.

**CAUTION:** Changes or modifications not expressly approved by the manufacturer may void the user's authority to operate this equipment.

## Location

For safe operation and satisfactory performance of your VCR, keep the following in mind when selecting a place for its installation:

- Shield it from direct sunlight and keep it away from sources of intense heat.
- Avoid dusty or humid places.
- Avoid places with insufficient ventilation for proper heat dissipation. Do not block the ventilation holes at the top and bottom of the VCR. Do not place the unit on a carpet because this will block the ventilation holes.
- Install the VCR in a horizontal position only.
- Avoid locations subject to strong vibrations.
- Avoid moving the VCR between cold and hot locations (see "Moisture Condensation Problems", this page).
- Do not place the VCR directly on top of the TV, as this may cause playback or recording problems.

## Avoiding Electrical Shock and Fire

- Do not handle the power cord with wet hands.
- Do not pull on the power cord.
- If any liquid is spilled on the VCR, unplug the power cord immediately and have the unit inspected at a factory-authorized service center.
- Do not place anything directly on top of this VCR.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## Moisture Condensation Problems

### Cause:

When the VCR is first installed, moved from a cold area to a warm area or placed in a location with high humidity, dew (moisture) may form in the unit. The Dew indicator (d d d d) blinks. If you operate the VCR with dew inside, damage may result.

### Prevention:

- ① Make all necessary connections.
- ② Do not operate the VCR for approximately 2 hours.

When the VCR reaches room temperature, the Dew indicator (d d d d) will turn off and the VCR will be ready to operation.

## For the customers in Canada

"This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of the Department of Communications."

# FEATURES

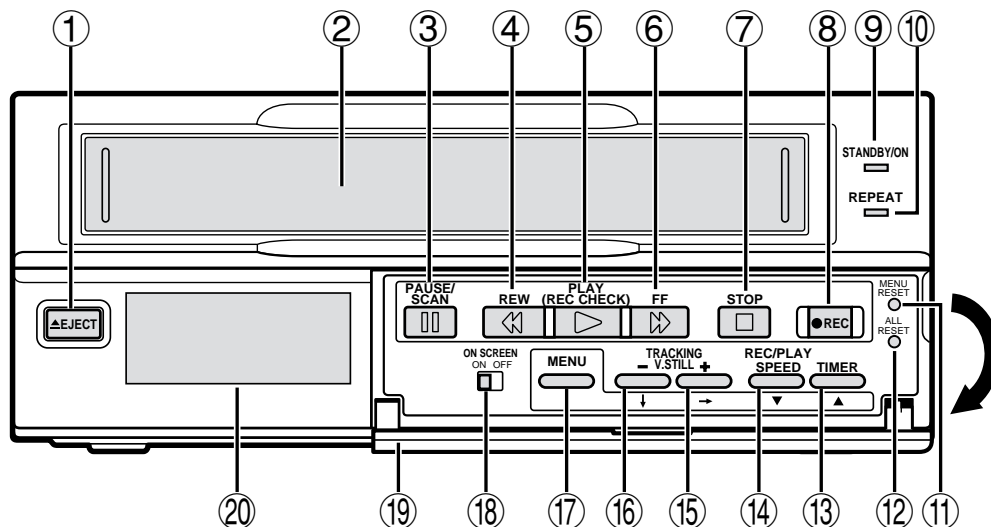
- Clog detection
- High-speed Fast Forward/Rewind
- Field recording/playback
- 8, 24-hour mode recording audio playback
- Autorepeat recording
- Alarm recording function
- On-screen mode setting
- Integrated time date generator
- Alarm scan function
- Forward field advance function
- 30-day memory backup
- Security lock
- Recording check function
- Head-cleaning function

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# LOCATIONS OF CONTROLS AND INDICATORS

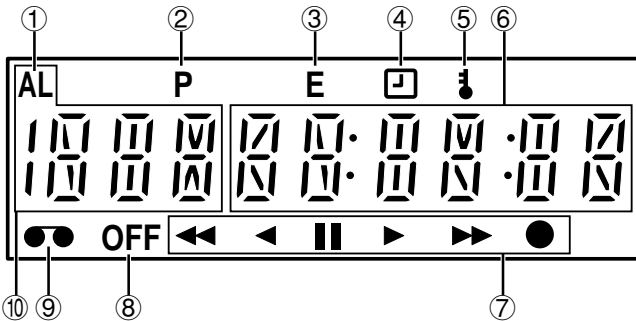
## Front Panel



- ① **EJECT** button
- ② Cassette loading slot
- ③ **PAUSE/SCAN** button
- ④ **REW** (rewind/review) button
- ⑤ **PLAY (REC CHECK)** button
- ⑥ **FF** (fast forward/cue) button
- ⑦ **STOP** button
- ⑧ **REC** (record) button
- ⑨ **STANDBY/ON** LED
- ⑩ **REPEAT** LED (autorepeat recording indicator)
- ⑪ **MENU RESET** button
- ⑫ **ALL RESET** button
- ⑬ **TIMER** button
- ⑭ **REC/PLAY SPEED** button  
(recording/playback speed)
- ⑮ **TRACKING/V. STILL +** button
- ⑯ **TRACKING/V. STILL -** button
- ⑰ **MENU** button  
Press this button to display the menu.  
Buttons ⑬, ⑭, ⑮ and ⑯ are used for menu control.
- ⑱ **ON SCREEN** switch
- ⑲ Front door
- ⑳ Digital display panel

# LOCATIONS OF CONTROLS AND INDICATORS

## Digital Display



### ① Alarm indicator

Flashes when an alarm is being recorded:



Comes on after the alarm has been recorded:



### ② Power Loss indicator

Comes on after a power loss.

### ③ External input indicator

Comes on when recording using the **EXT TIMER IN** input terminal.

### ④ Timer Recording indicator

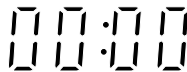
Comes on when in timer recording stand-by mode, or during a timer recording.

### ⑤ Security lock indicator

Comes on when the security lock is engaged.

### ⑥ Counter display

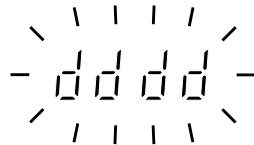
- Time display



- Linear time counter display



- Dew display



## ⑦ Operation Indicators

- They display the actual operation mode.

Operation Mode	Indicator
Record (REC)	●
Record pause (REC PAUSE)	● + -  -
Playback (PLAY)	▶
Still image (STILL)	▶ + -  -
Fast forward (FF)	▶▶
Rewind (REW)	◀◀
Cue (CUE)	▶ + ▶▶
Review (REVIEW)	▶ + ◀◀
Field shift forward (FIELD SHIFT +)	+ ▶

- Clog detection indicator



Flashes when the recording quality deteriorates due to dirty VCR heads.

- Overwrite inhibit indicator



When in MENU 3 (SET UP), "OVERWRITE INHIB." is set to Y, this indicator flashes when the **REC** button is pressed and the system is fast-forwarding to the counter position where the previous recording was stopped.

### ⑧ OFF indicator

Comes on when the tape end has been reached after a recording, except during autorepeat recording mode.

#### NOTE:

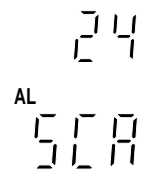
- The buzzer will be heard as long as "OFF" is displayed on the digital display. To cancel the "OFF" display, press the **EJECT**, **PLAY**, **STOP**, **FF** or **REW** button.

### ⑨ Cassette indicator

Comes on when a cassette is loaded.

### ⑩ Mode display

- Recording/playback speed mode
- Alarm scan mode

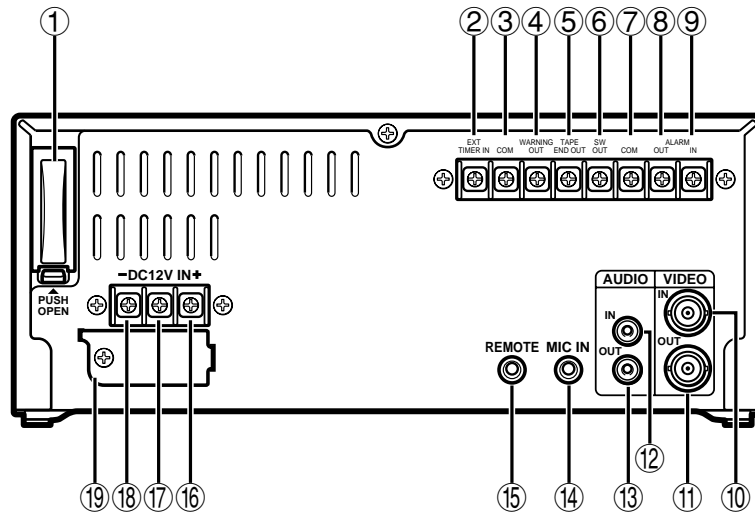


#### NOTE:

- To erase the "P" and/or "AL" from the digital display, press the **MENU RESET** button when no on-screen menu is displayed on the monitor TV screen.

# LOCATIONS OF CONTROLS AND INDICATORS

## Back Panel



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>① Battery compartment cover</li> <li>② EXT TIMER IN (external timer input) terminal</li> <li>③ COM (common) terminal</li> <li>④ WARNING OUT (warning output) terminal</li> <li>⑤ TAPE END OUT (tape end output) terminal</li> <li>⑥ SW OUT (switch output) terminal</li> <li>⑦ COM (common) terminal</li> <li>⑧ ALARM OUT (alarm output) terminal</li> <li>⑨ ALARM IN (alarm input) terminal</li> </ul> | <ul style="list-style-type: none"> <li>⑩ VIDEO IN (video input) jack</li> <li>⑪ VIDEO OUT (video output) jack</li> <li>⑫ AUDIO IN (audio input) jack</li> <li>⑬ AUDIO OUT (audio output) jack</li> <li>⑭ MIC IN (microphone input) jack</li> <li>⑮ REMOTE (remote control input) jack</li> <li>⑯ DC 12 V IN “+” input terminal</li> <li>⑰ Do not use</li> <li>⑱ DC 12 V IN “-” input terminal</li> <li>⑲ Fuse cover</li> </ul> |
|--|--|

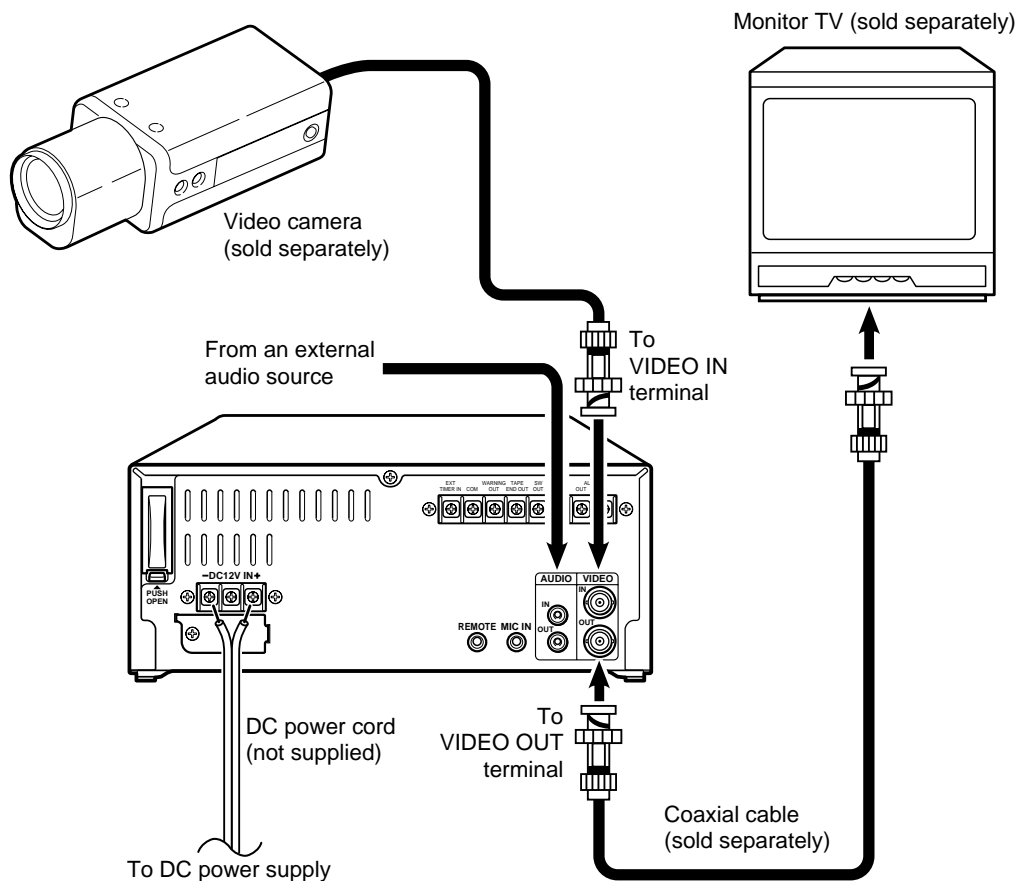
### NOTES:

- This terminal board may be damaged by 5 kg-cm or more torque and using  $\phi 6$  mm-tip or more size screndrivers.
- Pay attention to the polarity of the DC 12 V input terminal (“+”: red screw, “-”: black screw).

# CONNECTIONS

Connect the video camera and monitor TV as shown in the figure below.

**NOTE:** Before making the connections, make sure all the devices are disconnected from the DC power supply.



## About the memory reset

If the VCR location is changed or to cancel previous settings, please reset the memory as described below.

The timer and date will be reset.

To reset the memory, press the **ALL RESET** button.

## NOTES:

- For more details, please refer to the manuals accompanying all other devices. If the connections are not made properly, it may cause a fire or damage the equipment.
- Use a DC power cord rated A.W.G 16 or more, of a maximum length of 6 m.
- The DC power supply source should be able to supply 8 A or more. If the power supply is not sufficient, the VCR may not operate properly.

# VIDEO CASSETTE TAPES

Use only video cassette tapes bearing the **VHS**. This VCR was primarily designed for use with T-160 cassette tapes, it is recommended to use T-160 VHS video cassette tapes for optimal performance.

## Handling Cassette Tapes

The cassette tapes should always be stored vertically, in their cases, away from high temperatures, magnetic fields, direct sunlight, dirt, dust and locations subject to mold formation.

Do not tamper with the cassette mechanism and never touch the tape with your fingers.

Protect the cassette tapes from shocks or strong vibrations.

## To Protect your Recordings

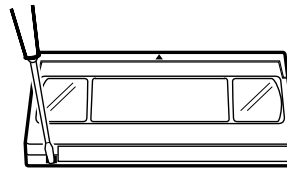
After having recorded a tape, if you wish to keep the recording, use a flathead screwdriver to break off the erasure-prevention tab on the cassette.

To record again on a tape without erasure-prevention tab, cover the hole with adhesive tape.

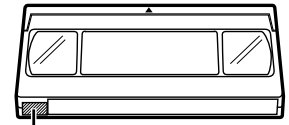
### NOTES:

- If you try to record on a cassette without erasure-prevention tab, the VCR will eject the cassette.
- If the **TIMER** button is pressed when a cassette without erasure-prevention tab is loaded, the timer recording indicator (□) will start flashing and a buzzer will sound.

## Erasure-prevention tab



To prevent accidental erasure, remove the tab after recording.

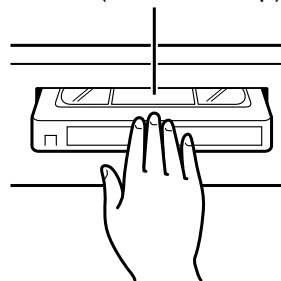


To record again, cover the hole with vinyl tape.

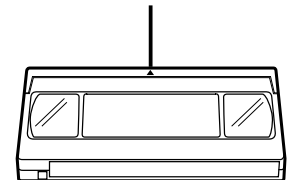
## Loading

- 1 Place the cassette, label side up, in the loading slot. Gently push the centre of the cassette until it is loaded automatically.
  - When the cassette is loaded, the cassette indicator “●●” will light on the digital display.
  - The time display will switch to the reset counter “0<sub>H</sub> 00<sub>M</sub> 00<sub>S</sub>” display.

Label (Arrow side up)



Arrow mark



## Unloading

- 1 In STOP mode, press the **EJECT** button.
  - The cassette is automatically ejected.

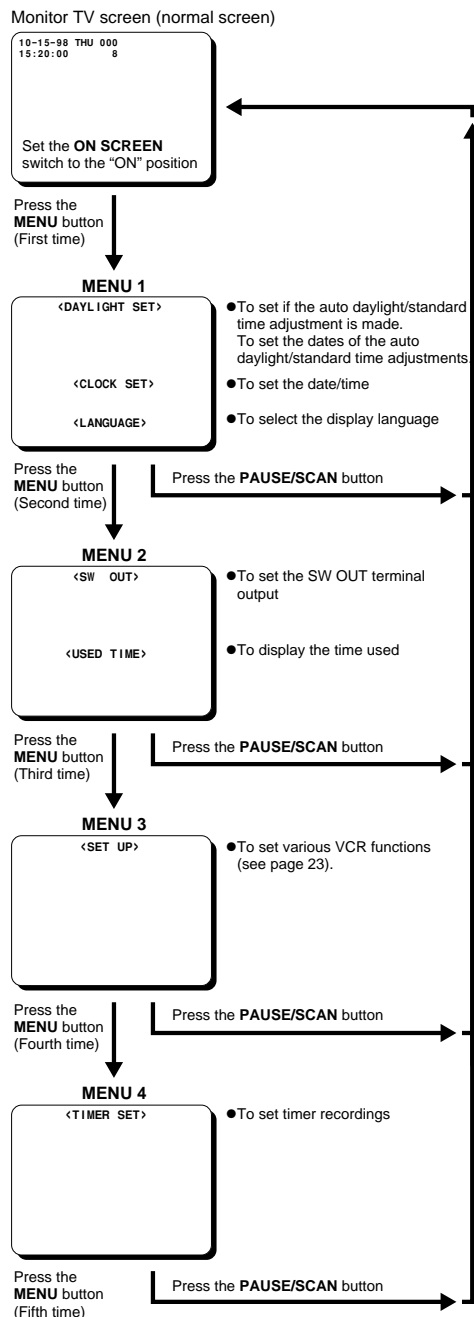
### NOTES:

- Do not insert any object in the cassette loading slot, as that may cause injury and damages to the VCR.
- If your hand gets stuck in the cassette loading slot, unplug the power cord and consult the dealer where the unit was bought. Do not forcibly pull the hand out as that may cause severe injuries.

# TYPES OF ON-SCREEN DISPLAYS AND DISPLAY SEQUENCE

## NOTES:

- If the VCR is in timer recording stand-by mode (the "□" indicator displayed on the digital display), the on-screen displays will not be available. First press the **TIMER** button, to cancel the recording stand-by mode, then proceed with the VCR programming. When finished, press the **TIMER** button again to return the VCR to timer recording stand-by mode.
- When a menu is displayed, recording will not be possible.
- Press the **PAUSE/SCAN** button, the setting procedure is now completed then the normal screen is displayed.
- During recording or playback the menus cannot be displayed.
- To reset the settings of a menu to their original values, select the desired menu then press the **MENU RESET** button. The MENU 2 (USED TIME) data cannot be reset.



## Buttons functions

Button ↓: To move down

Button →: To move to the right

Button ▼: To select numbers or switch settings in reverse order

Button ▲: To select numbers or switch settings in order

# SETTING THE CLOCK AND LANGUAGE

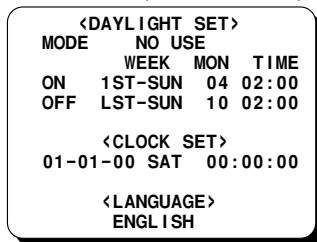
## MENU 1

**Example:** To set the clock to October 15, 1998 at 3:20 PM (15:20).

### Clock and Language Setting

- 1 Turn the power on to all devices used.
- 2 Press the **MENU** button, the MENU 1 (CLOCK SET) is displayed.

MENU 1 (Initial screen)



- 3 Press the ▼ (or ▲) button, to set the auto daylight/standard time adjustment.  
NO USE . . . . . No daylight/standard time adjustment made.  
USE . . . . . The auto daylight/standard time adjustment made.
- 4 Press the ↓ button.
- 5 Press the ▼ (or ▲) button, to set the date the clock is switched to daylight saving time, then press the → button.  
1ST, 2ND, 3RD, 4TH or LST (first, second, third, fourth or last)  
SUN, MON, TUE, ..... SAT (Sunday, Monday, Tuesday....Saturday)
- 6 Press the ▼ (or ▲) button, to set which month the daylight saving time adjustment is made, then press the → button.  
01, 02,.....11, 12 (for January, February.....November, December)
- 7 Press the ▼ (or ▲) button, to set the time the daylight saving time adjustment is made.
- 8 Press the ↓ button.
- 9 Following the same procedure as above (steps 5 to 7), set when the time is changed back from daylight saving time to standard time.
- 10 Press the ↓ button.
- 11 Press the ▼ (or ▲) button, to set the month (ex: 10), then press the → button.

o The day of week is set automatically.

- 12 Press the ▼ (or ▲) button, to set the day (ex: 15), then press the → button.
- 13 Press the ▼ (or ▲) button, to set the year (ex: 98 for 1998), then press the → button.

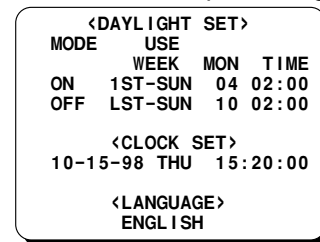
#### NOTE:

- The last 2 digits only are displayed.

- 14 Press the ▼ (or ▲) button, to set the hours (ex: 15 for 3 PM), then press the → button.
- 15 Press the ▼ (or ▲) button, to set the minutes (ex: 20), then press the → button.
- 16 For accurate clock setting, press the ▼ button timed with a time broadcast, or other accurate time signal, this will start the seconds counting from 00.
- 17 Press the ↓ button.
- 18 Press the ▼ (or ▲) button, to set the language.

o Each time the ▼ (or ▲) button is pressed, a different language, ENGLISH – FRANCAIS – SPANISH, is selected.

MENU 1 Example setting

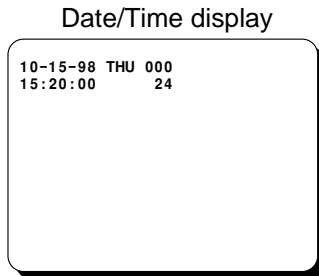


- 19 When finished, press the **PAUSE/SCAN** button to save the settings.

# CHANGING THE DISPLAY POSITION

## Changing the Date/Time Display Position

- ❶ Turn the power on to all devices used.
- ❷ Set the **ON SCREEN** switch to the “ON” position.
  - *The date and time are displayed.*



- ❸ Press the → (or ↓) button.
  - *The display will move towards the right (or the bottom).*

### NOTE:

- If the → (or ↓) button is kept pressed for 1 second or more the display will move at a faster speed.

# NORMAL RECORDING

## Normal Recording

- 1 Turn the power on to all devices used.
- 2 Load a cassette tape with erasure-prevention tab.

### NOTE:

- If in the MENU 3 (SET UP), TAPE IN is set to "REC", recording will start.

- 3 Set the **ON SCREEN** switch to the "ON" position.
- 4 Press the **REC/PLAY SPEED** button to set the recording speed.
  - o *The recording speed is displayed on-screen and on the digital display.*
- 5 Press the **REC** button.
  - o *The "●" indicator is displayed on the digital display and recording starts.*

### NOTE:

- Even if **OVERWRITE INHIB.** in MENU3 (SET UP) is set to "Y", the tape will not be fast-forwarded before recording starts when the **REC** button is pressed after the tape end has been reached during recording and the tape has been rewound.

- 6 To stop recording, press the **STOP** button.

### NOTES:

- A tape recorded on this VCR cannot be played back on another make of time lapse VCR.
- If you press on the **REC** button and the loaded cassette has no erasure-prevention tab, the VCR will eject the cassette.
- During recording, the **MENU** button will not function (the menu cannot be displayed).
- During recording, the tape speed cannot be changed.

## [Recording Speed]

Recording speed	Maximum recording duration (with an T-160 cassette tape)		Recording interval	Audio recording	Tape motion
8	Standard mode	8 hours	1/60 second	Possible	Continuous
24	Real time mode	24	3/60		

### TAPE COUNTER NOTE:

- There is no tape counter indication for the blank portions of the tape.
- In the 8-hour recording speed mode only, the tape counter indicates real hours, minutes and seconds.
- In the other recording speed modes, the tape counter indication is a ratio of the 8-hour mode base indication. (In 24-hour recording mode, each "second" of the tape counter actually represents approximately  $24/8 = 3$  real seconds.)
- There may be a slight discrepancy between the position shown on the tape counter and the actual tape position.
- When rewinding the tape past the "0<sub>H</sub> 00<sub>M</sub> 00<sub>S</sub>" position, a minus (-) sign will be displayed.

## NORMAL RECORDING

### Record Pause

Recording can be interrupted temporarily.

- 1 Press the **PAUSE/SCAN** button during recording.
  - o The “●” and “||” indicators are displayed on the digital display.

#### NOTES:

- The image appears on-screen but it is not recorded.
  - If a recording pause continues for 5 minutes or more, the VCR will go into stop mode to avoid damaging the tape.
- 2 To resume recording, press the **REC** button, or press the **PAUSE/SCAN** button again.

### Recording Check

The image being recorded can be checked.

- 1 During recording, press the **PLAY (REC CHECK)** button.
  - o The tape will be rewound and then played back. The VCR will then return to the previous recording mode.

#### NOTE:

- During recording check operations, recording is suspended momentarily.

### Clog Detection

The recording quality is monitored automatically. When the heads are dirty and the recording quality deteriorates, the output at the WARNING OUT terminal becomes 0V (Low), the “●” indicator flashes on the digital display, and the buzzer sounds.

For more information on how to set this function, refer to (SET UP) MENU SETTINGS AND SETUP on page 23.

#### NOTES:

- To cancel the “●” indicator display and reset the WARNING OUT terminal output, press the **STOP** or **EJECT** button.
- Clog detection is not possible if recording in 8-hour recording mode.

### Autorepeat Recording

The same tape can be recorded over many times.

- 1 Press the **MENU** button to display the MENU 3 (SET UP).

o The "REC TAPE END" setting is flashing.

MENU 3 (Initial screen)

<SET UP>	
REC TAPE END	REW
ALARM DURATI ON	20S
ALARM SPEED	8H
TAPE IN	STOP
OVERWRITE INHIB.	N
RMOTE	MODE1
WARNING OUT	MODE1
CLOG DETECT.	Y

- 2 Press the ▼ (or ▲) button to set the "REPEAT 1" or "REPEAT 2".

REPEAT 1 . . . . . The autorepeat mode is automatically canceled if there is an alarm trigger

REPEAT 2 . . . . . Autorepeat recording takes place even if there is an alarm trigger

o The REPEAT LED will light.

- 3 Press the **PAUSE/SCAN** button, the normal screen is displayed.

o The setting procedure is now completed.

- 4 Press the **REC** button.

o Recording will start. When the tape end is reached, the VCR will rewind it to the beginning, and recording will resume.

### NOTE:

- Even if OVERWRITE INHIB. in MENU3 (SET UP) is set to "Y", the tape will not be fast-forwarded before recording starts.

### NOTES:

- If during autorepeat recording there is an alarm trigger, "AL" is displayed on the digital display and alarm recording will take place. (Please refer to page 18, "ALARM RECORDING".)
- If the "REC TAPE END" setting is REPEAT 1, the REPEAT LED will go off if there is an alarm trigger. The recording will continue to the end of the tape then it will be rewound to the beginning and stop. "OFF" will be displayed on the digital display.

# PROGRAM TIMER RECORDING ①

## MENU 4

There are two program timer recording methods, daily recording or recording on certain days of the week.

**Example 1:** To record on every Saturday from 9:00 AM to 5:00 PM (17:00), in 24-hour mode (recording speed).

- ❶ Make sure that the set date and time are correct.
- ❷ Load a cassette tape with erasure-prevention tab.
- ❸ Press the **MENU** button to display the MENU 4 (TIMER SET).
  - "SUN" (Sunday) will be flashing.

MENU 4 (Initial screen)

	<TIMER SET>			
	START	STOP	SPD	
SUN	---:--	---:--	---	N
MON	---:--	---:--	---	N
TUE	---:--	---:--	---	N
WED	---:--	---:--	---	N
THU	---:--	---:--	---	N
FRI	---:--	---:--	---	N
SAT	---:--	---:--	---	N
DLY	---:--	---:--	---	N
EXT	*****	*****	---	N

- ❹ Press the **↓** button, until "SAT" (Saturday) is flashing.
- ❺ Press the **→** button.
  - The recording start hour position starts flashing.
- ❻ Press the **▼** (or **▲**) button to set the recording start hour (ex: 09), then press the **→** button.
  - The recording start minutes position starts flashing.
- ❼ Press the **▼** (or **▲**) button to set the recording start minutes (ex: 00), then press the **→** button.
  - The recording stop hour position starts flashing.
- ❽ Press the **▼** (or **▲**) button to set the recording stop hour (ex: 17), then press the **→** button.
  - The recording stop minutes position starts flashing.

**NOTE:**

- If the set stop time is earlier than or the same time as the set start time, the VCR will consider the stop time to be the following day, and "T" will be displayed next to the recording stop time.

- ❾ Press the **▼** (or **▲**) button to set the recording stop minutes (ex: 00), then press the **→** button.
  - The "SPD" (recording speed) position will start flashing.
- ❿ Press the **▼** (or **▲**) button to select the recording speed (ex: 24), then press the **→** button.
  - "N" will start flashing.
- ⓫ Press the **▼** (or **▲**) button to select "Y".
  - Y. . . . . recording will take place
  - N. . . . . recording will not take place

Programmed timer recording Example 1

	<TIMER SET>			
	START	STOP	SPD	
SUN	---:--	---:--	---	N
MON	---:--	---:--	---	N
TUE	---:--	---:--	---	N
WED	---:--	---:--	---	N
THU	---:--	---:--	---	N
FRI	---:--	---:--	---	N
SAT	09:00	17:00	24	Y
DLY	---:--	---:--	---	N
EXT	*****	*****	---	N

- Repeat steps ❹ to ⓫ to program timer recordings for other days of the weeks.
- ⓬ Press the **PAUSE/SCAN** button, the normal screen is displayed.
  - ⓭ Press the **TIMER** button.
    - The timer recording indicator "□" will light on the digital display, the VCR is now in timer recording stand-by mode.

**NOTES:**

- To modify, cancel or stop timer recording, press the **TIMER** button to cancel the timer recording mode.
- A timer recording of more than 24 hours can only be set on the last two (7th and 8th) lines. On the 7th line, set the recording start time and set "★★" for the rest of the line. On the 8th line, set "★★" for the START time position, then set the recording stop time, recording speed, and select "Y" or "N".

### Changing a Program Timer Recording

- ❶ Press the **MENU** button to display the MENU 4 (TIMER SET).
- ❷ Press the **→** (or **↓**) button, until the setting to correct is flashing.
- ❸ Press the **▼** (or **▲**) button, to correct the setting.
- ❹ Press the **PAUSE/SCAN** button, the normal screen is displayed.
- ❺ Press the **TIMER** button.

### To Cancel a Program Timer Recording

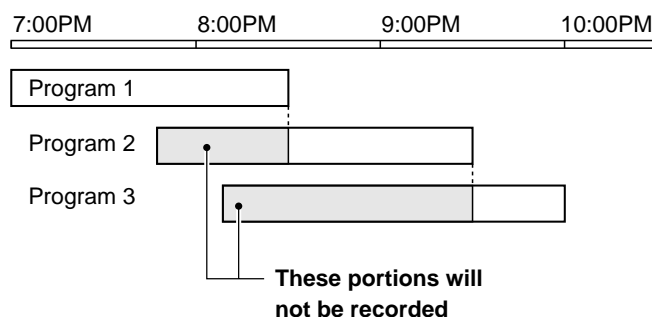
- ❶ Press the **MENU** button to display the MENU 4 (TIMER SET).
- ❷ Press the **→** (or **↓**) button, until the "Y" corresponding to the timer recording to cancel is flashing.
- ❸ Press the **▼** (or **▲**) button, to select "N".
- ❹ Press the **PAUSE/SCAN** button, the normal screen is displayed.
- ❺ Press the **TIMER** button.

### To Cancel all Program Timer Recordings

- ❶ Press the **MENU** button to display the MENU 4 (TIMER SET).
- ❷ Press the **MENU RESET** button.
  - *All programmed timer recordings are erased.*
- ❸ Press the **SPAUSE/SCAN** button, the normal screen is displayed.

### NOTES:

- During timer recording or timer recording stand-by, all the buttons on the VCR, except the **TIMER** button, are disabled.
- If the power fails, the recording will be interrupted. When the power is restored, the recording will resume if the stop time has not yet been reached, and "P" will be displayed on the digital display. The VCR internal battery is completely recharged after the VCR has been connected to a live outlet for 48 hours, and it will maintain all the VCR settings memory for up to 30 days.
- Set the timer recordings so that the recording times do not overlap. If they do, the one with the earliest recording start time will have priority. (See chart below.)



- To set two or more timer recordings for a same day of the week, press the **→** (or **↓**) button, until the day of the week for the second recording is flashing, then press the **▼** (or **▲**) button, to set the desired day of the week.
- If no timer recording is set, when the **TIMER** button is pressed the timer recording indicator "□" will start flashing and a buzzer will be heard.
- If "OFF" is displayed on the digital display, timer recording is not possible in order to prevent the recorded tape to be recorded over.
- Even if OVERWRITE INHIB. in MENU3 (SET UP) is set to "Y", the tape will not be fast-forwarded before recording starts.

# RECORDING USING AN EXTERNAL TIMER INPUT

## MENU 4

Recording can be controlled by an external start/stop signal input at the **EXT TIMER IN** terminal.

**Example 2:** To record using the signal input at the **EXT TIMER IN** terminal, in 24-hour mode.

### NOTES:

- External timer input recording can only be set on the 9th line ("EXT") of the MENU 4 (TIMER SET).
- When there is a single being input at the **EXT TIMER IN** terminal, "E" will be displayed on the digital display and recording is conducted.

- 1 Follow steps 1 to 3 under "PROGRAM TIMER RECORDING 1".

MENU 4 (Initial screen)

	START	STOP	SPD	
SUN	---:--	---:--	---	N
MON	---:--	---:--	---	N
TUE	---:--	---:--	---	N
WED	---:--	---:--	---	N
THU	---:--	---:--	---	N
FRI	---:--	---:--	---	N
SAT	---:--	---:--	---	N
DLY	---:--	---:--	---	N
EXT	*****	*****	---	N

← 9th line

- 2 Press the ↓ button, until "EXT" (External) setting is flashing.
  - The "SPD" (recording speed) position will start flashing.
- 3 Press the ▼ (or ▲) button to select the recording speed (ex: 24), then press the → button.
  - "N" will start flashing.
- 4 Press the ▼ (or ▲) button to select "Y".

Example 2

	START	STOP	SPD	
SUN	---:--	---:--	---	N
MON	---:--	---:--	---	N
TUE	---:--	---:--	---	N
WED	---:--	---:--	---	N
THU	---:--	---:--	---	N
FRI	---:--	---:--	---	N
SAT	---:--	---:--	---	N
DLY	---:--	---:--	---	N
EXT	*****	*****	24	Y

- 5 Follow steps 12 and 13 under "PROGRAM TIMER RECORDING 1".
  - When an external signal is input, "E" will light on the digital display and recording will take place.

### NOTES:

- Other timer recordings using the standard procedure can also be programmed.
- The external input signal must be input at the **EXT TIMER IN** input terminal.

By connecting the **ALARM IN** terminal to a door switch, an interphone, etc., a recording can be done only when necessary.

### Alarm Recording Setting

Alarm recording is performed when there is an input (trigger) at the **ALARM IN** terminal, "AL" is displayed on the digital display.

- 1 Make all necessary connections.
- 2 Press the **MENU** button to display the MENU 3 (SET UP).

MENU 3 (Initial screen)

<SET UP>	
REC TAPE END	REW
ALARM DURATION	20S
ALARM SPEED	8H
TAPE IN	STOP
OVERWRITE INHIB.	N
RMOTE	MODE1
WARNING OUT	MODE1
CLOG DETECT.	Y

- 3 Press the ↓ button, until the "ALARM DURATION" setting is flashing.
- 4 Press the ▼ (or ▲) button to select the desired alarm recording duration (20 seconds – 5 minutes, CC or TRIG.)
  - 20S~5M . Recording only for the displayed duration.
  - CC . . . . . Recording as long as the alarm signal is being input (minimum recording of 5 seconds)
  - TRIG. . . . Will switch between recording and recording pause every time an alarm trigger is received.

#### NOTE:

- When set to TRIG., the alarm counter will not register the alarm trigger inputs at the **ALARM IN** terminal, and all the alarm recording settings will be ignored.

- 5 Press the ↓ button.

- 6 Press the ▼ (or ▲) button to select the recording speed.
  - 8H. . . . . 8-hour mode recording
  - NC . . . . . Recording at the speed already set
- 7 Press the **PAUSE/SCAN** button, the normal screen is displayed.
  - o *The setting procedure is now completed.*

#### NOTES:

- During alarm recording all buttons are disabled.
- If "OFF" is displayed on the digital display, alarm recording is not possible in order to prevent the recorded tape to be recorded over.
- If an alarm trigger is received while alarm recording is in progress, recording duration for the second alarm will be calculated from that point. The alarm counter will register the alarm, but it will not be found during alarm scan or alarm search.
- If there is a power failure during alarm recording, and the power is restored within the recording set duration, alarm recording will continue.
- If the alarm scan functions will be used to review the recordings, set the recording speed to 8-hour mode and the recording duration to 20 seconds or more.
- Even if OVERWRITE INHIB. in MENU3 (SET UP) is set to "Y", the tape will not be fast-forwarded before recording starts.

# ALARM RECORDING

## Alarm Recording Counter Display

- During alarm recording, “**RL**” will be flashing on the digital display.
- If the **ON SCREEN** switch is set to the “ON” position, the number of alarms will flash on the monitor screen.
- The maximum display number of alarm triggers is “999”, at the next alarm recording the counter will indicate “000”.

## Connections to the ALARM IN/OUT Terminals

- Alarm input signal  
Connect a make-contact (no voltage) switch between the **ALARM IN** and **COM** terminals.
- Alarm output signal  
Normally DC 5V are output between the **ALARM OUT** and the **COM** terminals. When an alarm input (trigger) is received and the unit is recording, the output falls to 0V. Once the alarm recording is over, the output returns to DC 5V.

# NORMAL PLAYBACK

## Normal Playback

- ❶ Turn on the power to the VCR and TV monitor.
- ❷ Load the video cassette tape.
- ❸ Press the **REC/PLAY SPEED** button to select the playback speed.
  - *The selected playback speed is displayed on the digital display.*

### NOTE:

- A slow motion effect or accelerated playback effect can be achieved by using a slower or faster playback speed than the speed used for recording.

- ❹ Press the **PLAY** button.
  - *Playback starts.*
  - *If necessary, adjust the tracking to eliminate the noise from the picture.*
- ❺ To stop playback, press the **STOP** button.
  - *To advance or rewind the tape, press the **FF** or **REW** button.*

### NOTES:

- A tape recorded on another make of time lapse VCR cannot be played back on this unit.
- A tape recorded on this VCR cannot be played back on another make of time lapse VCR.

## Tracking Control

If there is noise in the image during playback,

- ❶ While looking at the playback picture, press and hold the **TRACKING/V. STILL+** button to minimize the noise.
- ❷ If it cannot be minimized, press the **TRACKING/V. STILL-** button.

## Audio Playback

- The playback speed has to be the same as the recording speed, for normal playback of the audio.

# SPECIAL PLAYBACK

## Picture Search

- 1 Press the **FF** (or **REW**) button, during normal playback.
  - o *The image can be seen while the tape is advanced (or rewound) at high speed.*
- 2 To return to normal playback, press the **PLAY** button.

### NOTES:

- During picture search, noise (horizontal bars) will appear in the picture.
- The sound is muted.

## Still Image

- 1 Press the **PAUSE/SCAN** button, during normal playback.
  - o *A still image can be viewed.*
- 2 To return to normal playback, press the **PLAY** button.

### NOTES:

- If still mode continues for 5 minutes or more, the VCR will go into stop mode to avoid damaging the tape.
- If the image is unstable (rolling vertically), adjust the vertical lock control to correct.

## Vertical Lock Control

During still image mode,

- 1 Press and hold the **TRACKING/V. STILL+** button to reduce the vertical rolling of the image.
- 2 If it cannot be corrected, press the **TRACKING/V. STILL-** button.

## Frame Advance

- 1 Press the **FF** button, during still image mode.
  - o *The still image is advanced of one image (field).*
- 2 To return to normal playback, press the **PLAY** button.

## Alarm Scan

To look for an alarm recording by viewing the first 5 seconds of each alarm recording.

- 1 Press the **PAUSE/SCAN** button during stop mode.
  - o *"AL SCAN" will be displayed on screen.*
- 2 Press the **FF** (or **REW**) button.
  - o *The unit will advance (or rewind) the tape at high speed and playback the first 5 seconds of every alarm recording.*
  - o *To cancel the alarm scan mode, press the **STOP** button.*
- 3 While the desired recording is being played back, press the **PLAY** button.
  - o *Playback will start, alarm scan mode is cancelled.*

### NOTE:

- The alarm scan functions will only be possible if the recording speed was set to 8-hour mode and the recording duration to 20 seconds or more.

# SETTING THE SECURITY LOCK

The security lock function is designed to prevent accidental stopping of recording if the **STOP** button is pressed inadvertently.

- 1 While holding the **TRACKING/V.STILL +** button, press the **REC/PLAY SPEED** button.

- o "1" is displayed on the digital display.

To cancel the security lock, while holding the **TRACKING/V.STILL +** button, press the **REC/PLAY SPEED** button, "1" will be erased from the digital display.

## NOTES:

- While the security lock is engaged all commands, except the one to cancel the security lock, are disabled.
- The security lock cannot be engaged while a menu is displayed.

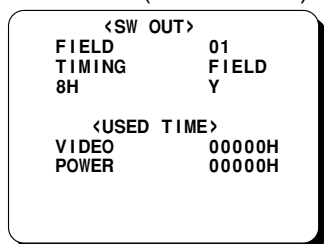
# SETTING THE SW OUT TERMINAL OUTPUT

## MENU 2

While recording, different outputs can be selected for the **SW OUT** terminal.

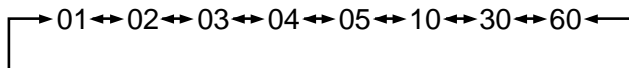
- 1 Press the **MENU** button to display the MENU 2 (SW OUT).

MENU 2 (Initial screen)



- 2 Press the **▼** (or **▲**) button to set the "FIELD" (or "FRAME").

- o With each press of the button, the setting will change as indicated below.



## NOTE:

- If "TIMING" is set to FRAME (see step 4), "FRAME" will be indicated instead of "FIELD".

- 3 Press the **↓** button.

- o The "TIMING" setting starts flashing.

- 4 Press the **▼** (or **▲**) button to set the "TIMING".  
FIELD . . . 1 pulse is output after each set number of fields.  
FRAME . . 1 pulse is output after each set number of frames.
- 5 Press the **↓** button.
  - o The "8H" setting starts flashing.
- 6 Press the **▼** (or **▲**) button to set the "8H".  
Y . . . . . When recording in 8-hour mode, a pluse signal is output.  
N . . . . . When recording in 8-hour mode, a pulse signal is not output.
- 7 Press the **PAUSE/SCAN** button, the normal screen is displayed.
  - o The setting procedure is now completed.

The SET UP menu lets you enter settings for the following functions:

Action to take when the tape reaches the end during recording, the alarm recordings duration and speed, action to take when a tape is loaded, the overwrite inhibition mode, the remote control operation mode, the WARNING OUT terminal output mode and the clog detection mode.

- 1 Press the **MENU** button to display the MENU 3 (SET UP).

- o The "REC TAPE END" setting is flashing.

MENU 3 (Initial screen)

<SET UP>	
REC TAPE END	REW
ALARM DURATION	20S
ALARM SPEED	8H
TAPE IN	STOP
OVERWRITE INHIB.	N
RMOTE	MODE1
WARNING OUT	MODE1
CLOG DETECT.	Y

### Action to take when the tape reaches the end during recording

- 2 Press the ▼ (or ▲) button, to set the desired mode.
  - REW. . . . . Rewinds the tape to the beginning, then goes to stop mode
  - STOP . . . . . Goes to stop mode
  - REPEAT 1 . . . The autorepeat mode is automatically cancelled if there was an alarm trigger
  - REPEAT 2 . . . Autorepeat mode is active even if there was an alarm trigger

### Alarm recordings duration and speed

- 3 Press the ↓ button.
  - o The "ALARM DURATION" setting starts flashing.
- 4 Press the ▼ (or ▲) button, to select the desired alarm recordings duration.
  - 20S~5M . . . Recording for the selected duration.
  - CC . . . . . Recording for as long as the alarm trigger signal is being input (5 seconds minimum).
  - TRIG. . . . . Switches between recording and recording pause every time an alarm trigger is received.
- 5 Press the ↓ button.
  - o The "ALARM SPEED" setting starts flashing.

- 6 Press the ▼ (or ▲) button, to set the desired alarm recording speed.
  - 8H. . . . . 8-hour mode recording
  - NC . . . . . Recording at the speed already set.

### Action to take when a tape is loaded

- 7 Press the ↓ button.
  - o The "TAPE IN" setting starts flashing.
- 8 Press the ▼ (or ▲) button, to set the desired mode.
  - STOP . . . . . Stays in stop mode.
  - REC . . . . . Goes into recording mode.

### Overwrite inhibition mode (Recording end search and recording)

If OVERWRITE INHIB. is set to "Y", when the **REC** button is pressed after the recording has been stopped and the tape rewound, this function will first fast-forward the tape to the counter reading where the previous recording was stopped, then recording will start.

#### NOTE:

In the following conditions, the tape will not be advanced before recording starts even if OVERWRITE INHIB. in MENU3 (SET UP) is set to "Y".

- Timer recording and alarm recording with "OFF" not displayed
- Auto repeat recording
- When the **REC** button is pressed after the tape end has been reached during recording and the tape has been rewound.

### Overwrite inhibition mode

- 9 Press the ↓ button.
  - o The "OVERWRITE INHIB." setting starts flashing.
- 10 Press the ▼ (or ▲) button, to set the desired mode.
  - N. . . . . No overwrite protection.
  - Y. . . . . When the **REC** button is pressed, the tape will be fast-forwarded to the counter position where the previous recording was stopped, then recording will start.

#### NOTE:

- If the **EJECT** button has been pressed to eject the tape, the counter position memory will be cancelled.

Continued on the next page ➔.

Remote control operation mode

- 11 Press the ↓ button.
  - o The "REMOTE" setting starts flashing.
- 12 Press the ▼ (or ▲) button, to set the desired mode.
  - MODE 1 . . . . . All buttons will operate.
  - MODE 2 . . . . . All buttons will operate, except the **MENU** button.

WARNING OUT terminal output mode

- 13 Press the ↓ button.
  - o The "WARNING OUT" setting starts flashing.
- 14 Press the ▼ (or ▲) button, to set the desired mode.
  - MODE 1 . . . . . There will be an output, if there is any condition that stops the tape or other problem.
  - MODE 2 . . . . . There will be an output, if there is any condition that stops the tape or other problem, and when the tape reaches the end.

Clog detection mode

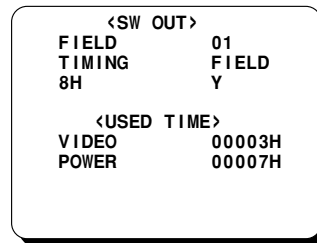
- 15 Press the ↓ button.
  - o The "CLOG DETECT." setting starts flashing.
- 16 Press the ▼ (or ▲) button, to set the desired mode.
  - Y . . . . . The recording quality is monitored automatically. When the heads are dirty and the recording quality deteriorates, the output at the WARNING OUT terminal becomes 0V (Low), the "●" indicator flashes on the digital display, and the buzzer sounds.
  - N . . . . . The recording quality is not monitored.
- 17 When finished, press the **PAUSE/SCAN** button to erase the menu.
  - o The setting procedure is now completed.

- 1 Press the **MENU** button to display the MENU 2 (USED TIME).
  - (USED TIME) . . . . . The video heads usage duration and the power on duration are displayed.
- 2 Press the **PAUSE/SCAN** button, the normal screen is displayed.

NOTE:

- The (USED TIME) data cannot be reset.

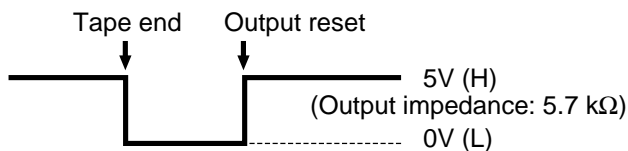
MENU 2 Sample display



# ABOUT THE OUTPUT TERMINALS

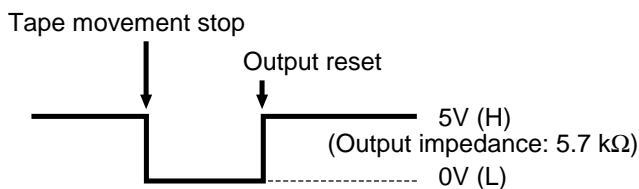
## TAPE END OUT Terminal

- During recording, when the end of the tape is reached the output becomes 0V (Low). When the end of the tape is reached, "OFF" will be displayed on the digital display.
- During autorepeat recording, when the end of the tape is reached, the output become 0V (Low) for about 2 seconds only.
- To reset the output, press the **STOP** or **EJECT** button.



## WARNING OUT Terminal

- If the tape stops or other problem, the output becomes 0V (Low).
- To reset the output, unplug the power cord then plug it back in or press the **ALL RESET** button.



### NOTE:

- If the output is 0V (Low) due to the clog detect function, it can be reset by simply pressing the **STOP** button.

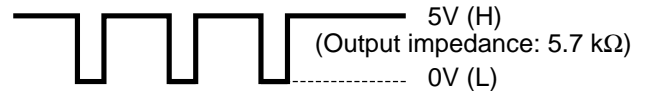
## COM Terminal

- Common GND (ground) terminal when connecting other terminals to external devices.

## SW OUT Terminal

When recording, a pulse signal is output at the **SW OUT** terminal after each recording period.

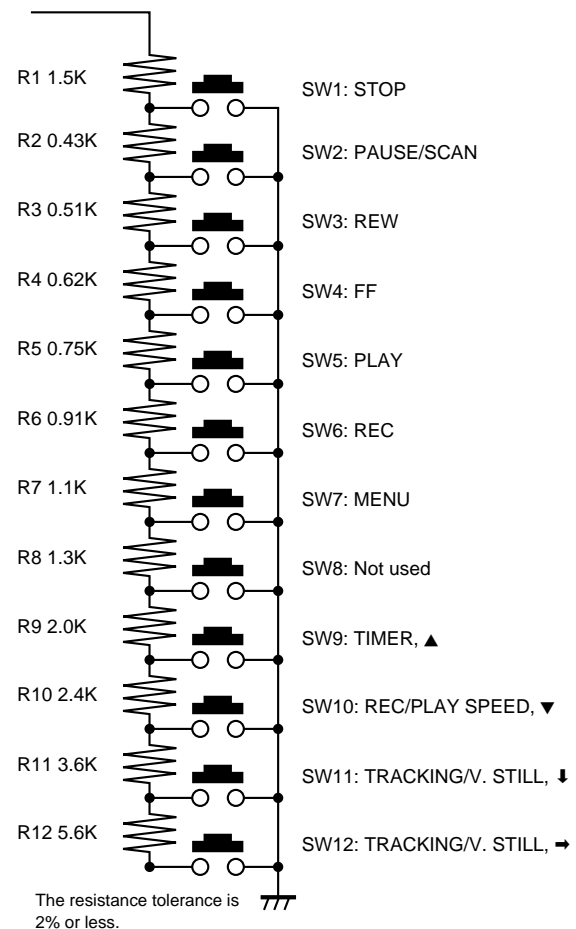
This terminal is usually connected to the switch input (SW IN) of devices like a camera switcher unit, or a quad compressor.



## REMOTE Jack

- Remote control of the VCR is possible by connecting a remote controller with a circuit such as indicated below, to the **REMOTE** jack.
- Use a 3.5 mm mini-jack type plug.
- The connection should be done using a shielded cable no more than 5 meters long.

Remote control circuit



# DAILY INSPECTION

The following daily inspections are recommended in order to assure long-term and trouble-free operation of the unit.

The daily inspections are particularly important if using autorepeat recording.

## Inspection Procedure

- ❶ Turn the power on to all devices used.
- ❷ Check that the image received on the TV monitor is correct.
- ❸ Check that the on-screen display of the date and time is correct.
- ❹ Press the **REW** button to rewind the recorded tape a few seconds.
- ❺ Press the **PLAY** button and check that the playback image is correct.
- ❻ Check that the recorded date and time are correct.

## NOTES:

- If the security lock is engaged, it has to be released before proceeding to the inspection.
- If any problem is discovered during the inspection, unplug the power cord then consult your dealer.

# TROUBLESHOOTING GUIDE

If the unit does not operate normally when you follow the instructions indicated in the manual, please refer to the table below.

SYMPTOM	POSSIBLE CAUSE	CORRECTIVE ACTION
No power	The power cord is not connected	Connect the power cord
No image displayed on the monitor TV	The connections are not correct	Check that all connections are correct
	The power to the camera and/or monitor TV is not turned on	Turn all connected devices power on
The buttons do not respond	A cassette tape is not loaded	Load a cassette and turn the power on
	All functions are suspended due to condensation	Wait for the "ddd" indicator to go off
	Alarm recording	Wait for the alarm recording to end
	The security lock is engaged	Cancel the security lock
Recording is not possible (the tape is ejected)	The loaded cassette has no erasure-prevention tab	Load a cassette tape with erasure-prevention tab or cover the tab hole with adhesive tape
Autorepeat recording is not possible	"AL" is displayed on the digital display	Press the <b>MENU RESET</b> button to turn off the "AL" indicator
Timer recording is not possible	The date and time are not set correctly	Set the date and time correctly
	The unit is not set to timer recording stand-by mode	Press the <b>TIMER</b> button to display "□" on the digital display
	"N" is selected for the timer recordings	Be sure to select "Y" for the programmed timer recordings
Alarm recording is not possible	"OFF" is displayed on the digital display	Press the <b>EJECT, STOP, FF, REW</b> or <b>PLAY</b> button to turn the indicator off
Noise in the playback picture	The video heads need cleaning	Clean the video heads
The date and time are not recorded	The <b>ON SCREEN</b> switch is set to the "OFF" position	Set the <b>ON SCREEN</b> switch to the "ON" position
The cassette tape cannot be ejected	Problem with the system	Turn the power off, then on again

## Periodic Inspection and Maintenance

Periodic inspection and maintenance should be referred to your dealer.

If there is noise in the playback picture, and it cannot be corrected using the tracking control, it may indicated that the video heads need cleaning.

The video heads should be inspected every 1,000 hours of use to determine if they need to be replaced.

The video heads usage can be checked using the MENU 2 (USED TIME).

## After a Power Failure

If after a power failure the recording speed is reset to 8-hour mode, it is due to insufficient backup battery charge. This is not a malfunction.

## System Down

If the unit does not function at all, try the following.

- ❶ Unplug the power cord then plug it back in.
- ❷ Reset the memory. (Press the **ALL RESET** button. Under normal conditions, do not touch the **ALL RESET** button.)
- ❸ If the problem is not corrected after performing steps ❶ and ❷ a few times, consult your dealer.

# SPECIFICATIONS

## General Specifications

Recording method	Dual-azimuth 2-head rotating helical scanning system
Audio recording	In 8- and 24-hour modes
Tape speed	11.12 mm /sec (8-hour mode)
Specified video cassette tape	VHS 1/2 inch video cassette tape
Recording/playback time	8 and 24 hours (when using T-160 tape)
Fast forward/rewind time	approximately 3 minutes 30 seconds (when using T-160 tape)
Television system	NTSC color TV system

## Video

Recording method	Luminance signal: FM recording Chrominance signal: Down-converted direct recording
Video input	1 Vp-p, BNC, 75 $\Omega$ , unbalanced
Video output	1 Vp-p, BNC, 75 $\Omega$ , unbalanced
Horizontal resolution	Black & white mode            350 line or more Color mode                        300 line or more

## Audio

Input	-8 dBs, RCA pin jack, 27 k $\Omega$ , unbalanced
Output	-8 dBs, RCA pin jack, 600 $\Omega$ , unbalanced
Microphone input	-60 dBs, 3.5 mm mini jack, 10 k $\Omega$ , unbalanced

## Connectors

Alarm input	Contact closes with no voltage
Alarm output	DC 5 V ( $\pm 0.5$ )/5.7 k $\Omega$
Tape end output	DC 5 V ( $\pm 0.5$ )/5.7 k $\Omega$
Warning output	DC 5 V ( $\pm 0.5$ )/5.7 k $\Omega$
Switch output	DC 5 V ( $\pm 0.5$ )/5.7 k $\Omega$
Ext timer input	Contact closes with no voltage
Common	0 V (GND)
Remote control input	3.5 mm mini jack

## Other Specifications

Operating temperature range	5°C to 40°C
Operating humidity range	80% or less
Power requirements	DC 12 V (10 V to 16 V)
Power consumption	18 W
Dimensions	240 (W) x 96.5 (H) x 335 (D) mm
Weight	approximately 3.8 kg

**NOTE:** The specifications and external appearance of this unit are subject to change without notice.

# SANYO INDUSTRIAL VIDEO VCR LIMITED WARRANTY

## OBLIGATIONS

In order to obtain warranty service, the product must be delivered to and picked up from an Authorized Sanyo Service Center at the user's expense, unless specifically stated otherwise in this warranty. The names and addresses of Authorized Sanyo Service Centers may be obtained by writing to SFS Corporation, SFC's warranty administrator, at any of the addresses listed below, or by calling (toll-free) 1-800-421-5013.

<b>New Jersey Office</b> 210 Riser Road Little Ferry, NJ 07643 201-641-3000	<b>California Office</b> 1200 W. Artesia Blvd. Compton, CA 90220 310-537-5830	<b>Illinois Office</b> 900 N. Arlington Heights Rd. Itasca, IL 60143 708-775-1414
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THIS WARRANTY IS VALID ONLY ON SANYO PRODUCTS PURCHASED OR RENTED IN THE UNITED STATES OF AMERICA, EXCLUDING HAWAII AND ALL U.S. TERRITORIES AND PROTECTORATES. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL RETAIL USER. THE ORIGINAL DATED BILL OF SALE, SALES SLIP OR RENTAL AGREEMENT MUST BE SUBMITTED TO THE AUTHORIZED SANYO SERVICE CENTER AT THE TIME WARRANTY SERVICE IS REQUESTED.

Subject to the OBLIGATIONS above and EXCLUSIONS below, SANYO FISHER COMPANY warrants this SANYO product against defects in materials and workmanship for the periods specified below. SFC will repair or replace (at its option) the product and any of its parts which fail to conform to this warranty. The warranty period commences on the date the product was first purchased or rented at retail.

LABOR	PARTS	VIDEO HEADS
90 DAYS	1 YEAR	90 DAYS

## EXCLUSIONS

This warranty does not cover (A) the adjustment of customer-operated controls as explained in the appropriate model's instruction manual, or (B) the repair of any product whose serial number has been altered, defaced or removed.

This warranty shall not apply to the cabinet or cosmetic parts, broken or damaged video heads, knobs or routine maintenance.

This warranty does not apply to uncrating, setup, installation, removal of the product for repair or reinstallation of the product after repair.

This warranty does not apply to repairs or replacements necessitated by any cause beyond the control of SFC including, but not limited to, any malfunction, defect or failure caused by or resulting from unauthorized service or parts, improper maintenance, operation contrary to furnished instructions, shipping or transit accidents, modification or repair by the user, abuse, misuse, neglect, accident, incorrect power line voltage, fire, flood or other Acts of God, or normal wear and tear.

The foregoing is in lieu of all other expressed warranties and SFC does not assume or authorize any party to assume for it any other obligation or liability.

THE DURATION OF ANY WARRANTIES WHICH MAY BE IMPLIED BY LAW (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS) IS LIMITED TO THE TERM OF THIS WARRANTY. IN NO EVENT SHALL SFC BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM OWNERSHIP OR USE OF THIS PRODUCT, OR FOR ANY DELAY IN THE PERFORMANCE OF ITS OBLIGATIONS UNDER THIS WARRANTY DUE TO CAUSES BEYOND ITS CONTROL. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS AND/OR DO NOT ALLOW THE EXCLUSION OR LIMITATION OF CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU.

THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

## ATTENTION

For your protection in the event of theft or loss of this product, please fill in the information below for you own personal records.

**Model No.** \_\_\_\_\_ **Serial No.** \_\_\_\_\_

(Located on back or bottom side of unit.)

**Date of Purchase** \_\_\_\_\_ **Purchase Price** \_\_\_\_\_

**Where Purchased** \_\_\_\_\_



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21605 Plummer Street,  
Chatsworth, California 91311

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