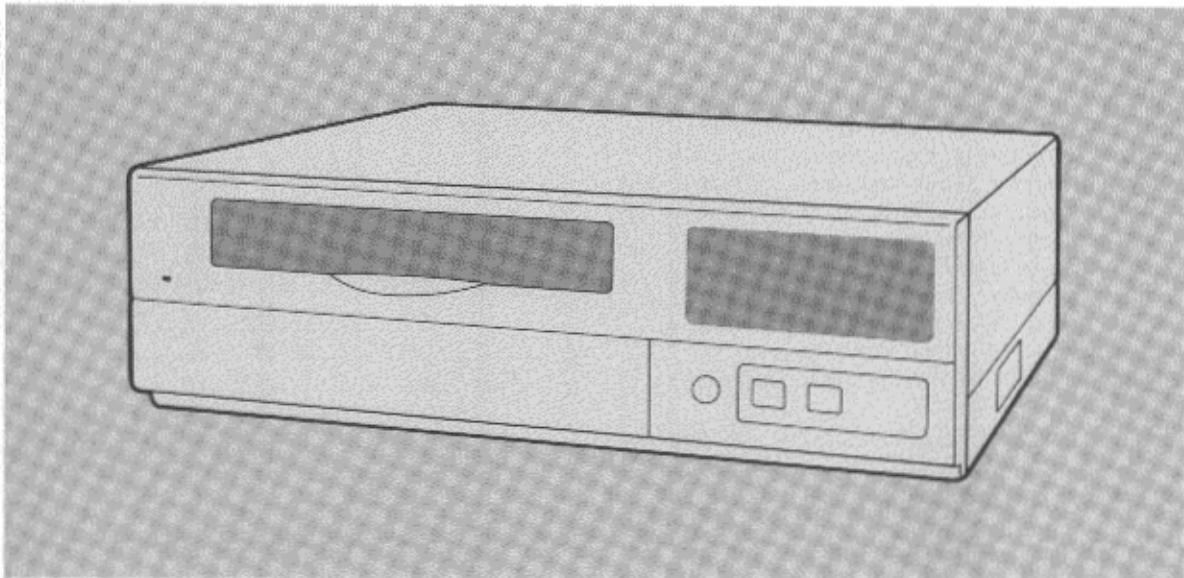# Panasonic®

Operating Instructions

S VHS / VHS

Professional/Industrial Video

Model AG-6730/6040 P

- Model AG-6730 is an S-VHS type of video recorder.
- Model AG-6040 is a VHS type of video recorder.

Time Lapse Recorder

Before attempting to use this unit, read through these instructions and follow the proper operating procedures. Keep these instructions in a safe place for future reference.

- These models are not compatible with Panasonic's model NV-8050 and AG-6050 time lapse recorders.
- A tape recorded using the S-VHS format cannot be used on a model which is designed to accommodate only the VHS format.

For Your Safety

USE ONLY
FCC NOTE:
This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

This equipment has been tested and found to comply with the limits for a Class A 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.

CANADA ONLY/CANADA SEULEMENT
Caution:
This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.
Attention:
L'interférence radioélectrique générée par cet appareil numérique de type A ne dépasse pas les limites éconcées dans le Règlement sur le perturbations radioélectriques, section appareil numérique, du Ministère des Communications.

- Do not insert fingers or any other objects into the video cassette compartment.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the recorder and to the tape.
- This unit is supplied with a 3-pin grounded AC plug—do not try to defeat its purpose.
- Do not spray any cleaner or wax directly on the unit.
- If the unit is not going to be used for a length of time, protect it from dirt and dust.
- Do not leave a cassette in the recorder when not in use.
- Do not block the ventilation slots on the top of the unit.
- Use this unit horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can be used for either Color or Black & White recording.
- Do not attempt to disassemble the recorder. There are no user serviceable parts inside.
- If any liquid spills inside the recorder, have the recorder examined for possible damage.
- Refer any needed servicing to qualified service personnel.

WARNING:
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION:
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

is the safety information.

Table of Contents

Features

Highly reliable IQ (intelligent quest) mechanism

■ 2 reel motors
Each of the two reels for taking up and advancing the tape has its own motor.

■ New brush-less motors
Newly developed and extremely durable brush-less motors are used for the direct drive (DD) motors.

■ Large-diameter impedance rollers (model AG-6730 only)
These large-diameter rollers made of pure brass have a large mass to keep the tape tension constant.

■ 16-bit digital servo system
This controls the tape transport system to a high degree of accuracy and stabilizes tape transport. It improves the recording and playback accuracy and enhances the picture quality overall.

S-VHS system with high picture quality
(model AG-6730 only)

The adoption of the S-VHS system enables high-definition pictures with a horizontal resolution of over 400 lines to be achieved.

Horizontal resolution of 400 lines
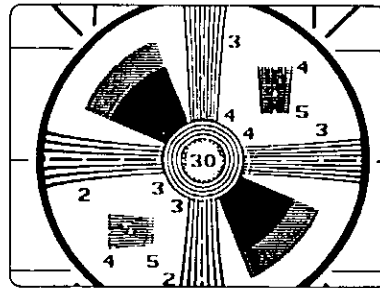
■ Conditions for achieving a horizontal resolution of over 400 lines

Camera	Tape	Recording/ playback	Monitor
Camera with a horizontal resolution of over 400 lines	Using a Panasonic S-VHS tape	Recording/ playback in the S-VHS mode monitor	Monitor with a horizontal resolution of over 400 lines
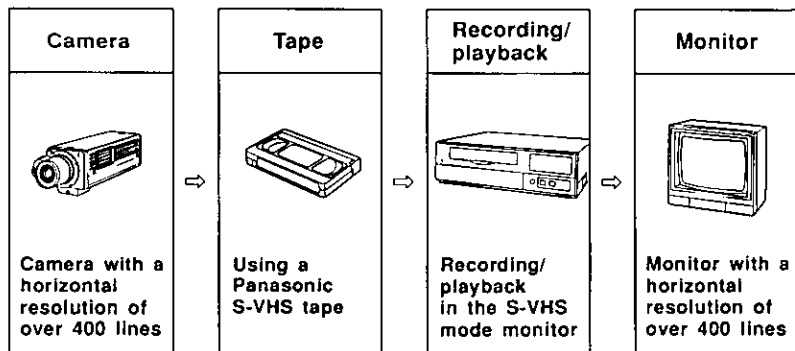
Multiple-function recording modes

■ Wide variety of recording time modes enabling long-duration recording
• 2-, 6-, L12-, L18-, L24-, 24-, 48-, 72-, 84-, 120-, 180-, 240- and 480-hour recording modes (6H is AG-6730 only)
• 1-shot recording mode
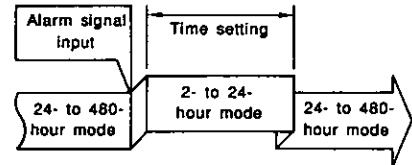
■ Internal timer recording modes for achieving the automation and labor-saving of monitoring functions

■ External timer recording modes for even more reliable operation

■ Alarm recording mode which, when an alarm signal is input, switches the VTR to an hour mode enabling high-fidelity pictures to be recorded

Coupled to emergency bell and alarm
• **Corners where a cash dispenser or automatic teller machine is installed**
• **Convenience stores, etc.**

Alarm signal input	Time setting	
24- to 480-hour mode	2- to 24-hour mode	24- to 480-hour mode

■ Sensor recording mode which starts recording when an alarm signal is input even when the VTR is shut down or when the power is OFF (emergency recording)

• **Sensor recording is possible even when the VTR is standing by in the internal timer recording mode.**

Alarm signal input	Time setting	
Standing by (OFF)	2- to 24-hour mode	Shutdown (OFF)
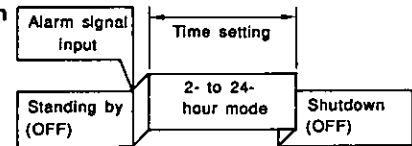
(It is also possible to prevent the time mode from being changed during alarm recording or sensor recording.)

Other Features
■ The cleaning roller automatically cleans the head cylinder each time a tape is loaded.
■ When the optional RS-232C interface adaptor AG-IA670 is mounted, a personal computer can be used to control the VTR.
Also, VITC time codes can be recorded (see page 83).
(Scheduled to be launched on market in fall of 1992)

System Configuration
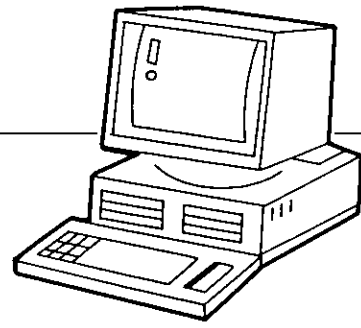
Personal computer

RS-232C communication is possible when the optional RS-232C interface adaptor AG-IA670 is mounted.

Sequential switcher

This makes it possible to automatically switch between a multiple number of cameras for recording at the desired time settings.

• Do not supply signals from both color cameras and monochrome cameras to the camera input connectors at the same time. This may cause a loss of synchronization on the monitor screen and noise generation.
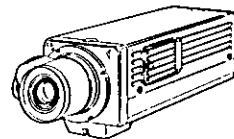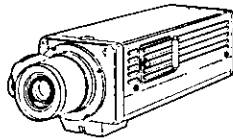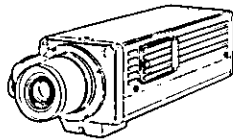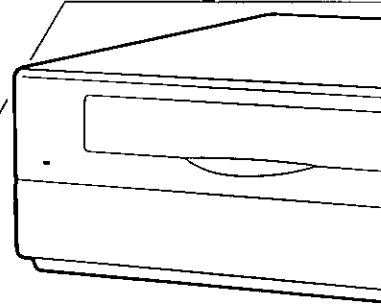
TV cameras

• Video cameras providing gen-lock are recommended when configuring a system with the sequential switcher.

Automatic time setting
(model AG-6730 only)

• With this unit serving as the master VTR, it is possible to set the time of other time lapse recorders (only Panasonic time lapse recorders equipped with a time adjust input terminal).
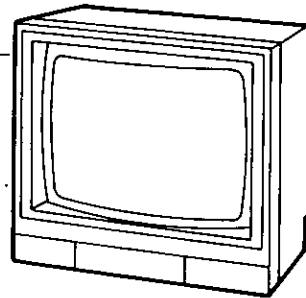• Using an external switch, it is also possible to set this unit's time to any time setting (this can be done on menu screen 3).
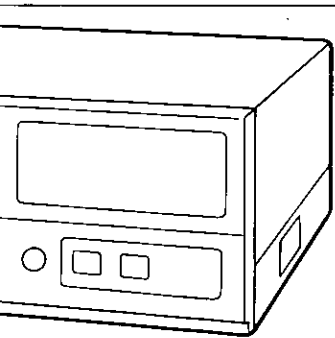
TV monitor

This normally shows the pictures and menu screens.
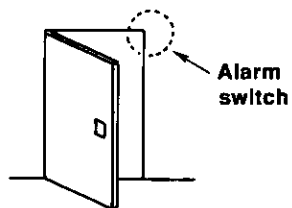
Alarm lamp

Alarm switch

External alarm output unit

• Alarm recording or sensor recording can be activated as soon as the alarm switch is set ON.
• The VTR's status can be monitored by activating an externally installed alarm unit such as the alarm output, tape-end output, auto OFF output or dew output.

Controls and
Their Functions

Front Panel

❶ Power Lamp
This lights when the power is turned on.

❷ Cassette Holder (see page 14)

❸ Display Section (see page 10)

❹ EJECT Button (see page 14)

❺ REC REVIEW Button (see page 16)
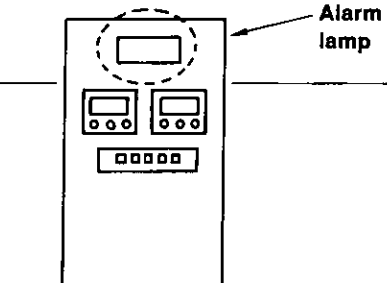When this is pressed while recording is in progress, the recording can be monitored.

❻ REC Button (see page 18)

Sub Panel

❼ POWER Button

❽ TRACKING Controls (see page 31)
Used to adjust the tracking.

❾ REC MODE Button (see page 17)
Used to select the recording mode.

❿ REV PLAY Button (see page 30)

⓫ PLAY Button (see page 30)

⓬ STOP Button (see page 14)

⓭ PAUSE/STILL Button (see page 15)
Used for temporarily stopping recording or for still-picture playback.

⓮ TIME MODE Buttons (see page 17)
Used to select the time mode.

Front panel
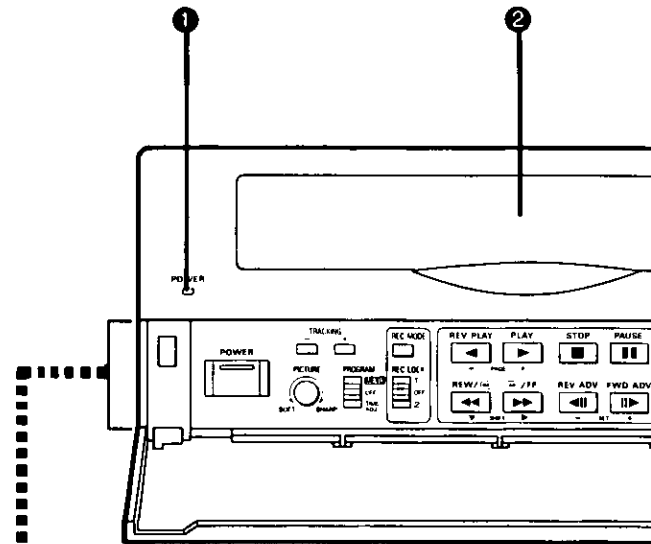
Expanded view of sub panel
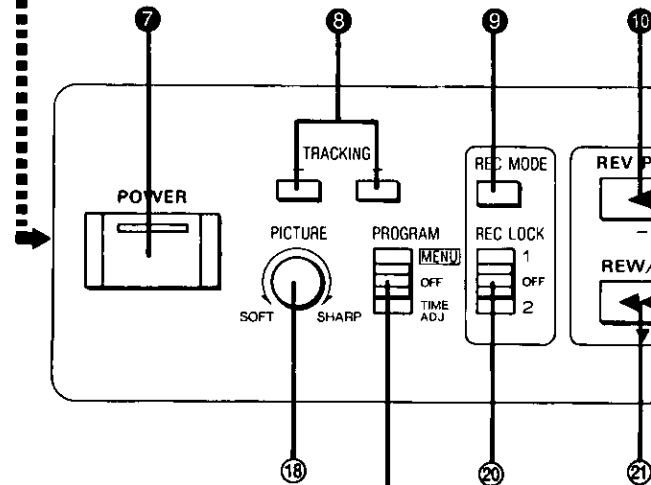
The button functions change depending on whether the switch has been set to MENU or TIME ADJ.

Sub Panel
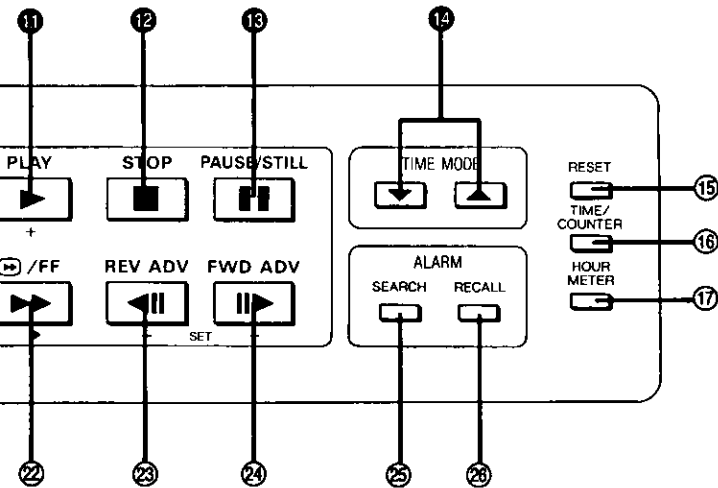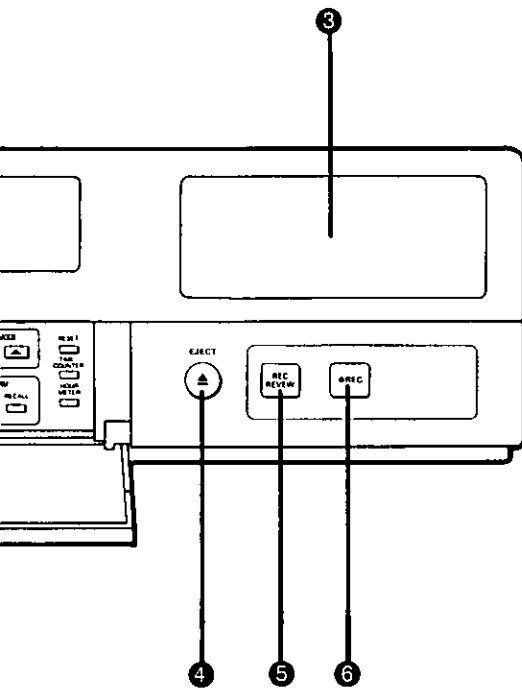
⑮ **RESET Button** (see pages 17, 23, 44)
Used to reset the tape.

⑯ **TIME/COUNTER Display Selector Button** (see page 17)
Used to switch between the time display and counter display.

⑰ **HOUR METER Button**
(see page 81)
Press this to display the total time that the VTR has been used (the cylinder has turned).

⑱ **PICTURE Control** (see page 31)
Used to adjust the playback picture quality.

⑲ **PROGRAM Switch** (see pages 16, 34, 39)
Used to display the menus and set the time.
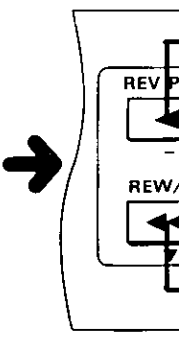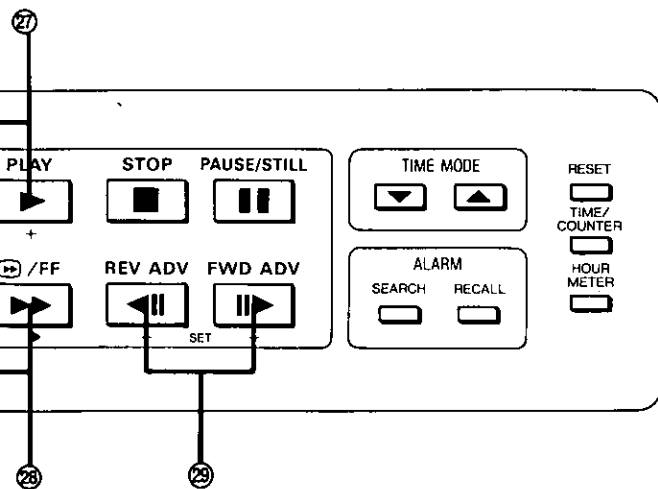
⑳ **REC LOCK Switch** (see page 17)
Used to set the recording lock mode.

㉑ **REW Button** (see pages 15, 32)

㉒ **FF Button** (see pages 15, 32)

㉓ **FIELD ADV (REV) Button**
(see page 15)

㉔ **FIELD ADV (FWD) Button**
(see page 15)

㉕ **ALARM SEARCH Button**
(see page 33)
Used to set the alarm search function.

㉖ **ALARM RECALL Button**
(see page 23)
Used to display the alarm memory data on the monitor screen.

㉗ **PAGE Buttons** (see page 39)
Used to move the menu screen up or down by one page.

㉘ **SHIFT Buttons** (see page 39)
Used to select items on the menu screen.

㉙ **SET Buttons** (see page 39)
Used to select the setting items.

9

Description of Displays

S-VHS   TIME MODE   EXT TIMER

REC *8 8 8* H INT TIMER   ALARM

YEAR COUNT MONTH TIME DAY

◁◁ ▷▷ AS *8 8·8 8·8 8.*
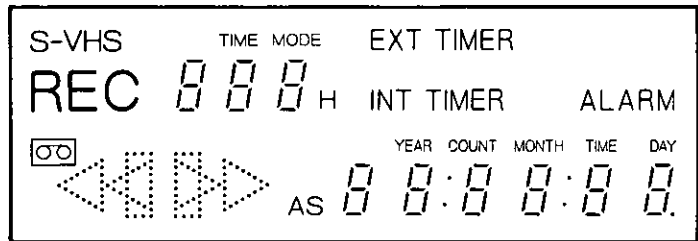
Various information relating to the VTR appears on the large-sized display on the front panel.

| S-VHS | Appears during playback/recording in the S-VHS mode. (Model AG-6730 only) |

| REC | Lights up during recording. |

| TIME MODE *8 8 8* H | Indicates the hour mode. |

| EXT TIMER | Indicates the recording mode.
No display: Regular mode
EXTERNAL TIMER: External timer recording mode
INTERNAL TIMER: Internal timer recording mode (when this mode is selected, the power is turned off). |

| ALARM | Appears when the alarm recording mode is set.
It appears when "MODE" on menu screen 4 is set to any of the options except "OFF." (See page 46) |

| ⊙⊙ | Appears when a cassette is inserted.
After the recording review, this flashes when an error occurs. (See page 77) |

| ◁◁ ▷▷ | Indicates the VTR's operating mode.
▷   : Playback
◁   : Reverse playback
REC ▷ : Recording, monitoring of recording
REC ▯▯ : Recording pause
▯▯   : Still-picture, frame advance
▷▷   : Fast forward, search forward
◁◁   : Rewind, search reverse |

| AS | Appears when the alarm search mode is established. (see page 33) |

| *8 8·8 8·8 8.* | Indicates the time or tape counter value. |

| *E - 2* | Indicates an error code when an error occurs. (See page 77) |

For First-Time Operators

Operation Map

The sequence of steps to be taken from connecting the VTR to playback is described on these pages.

Connections/preparations
(see page 67)

Time & date setting
(see page 34)

Menu setting
(see page 37)

Time mode setting
(see page 17)

Recording mode setting
(see page 17)

Recording
(see page 18)

Recording check
(see page 17)

Playback
(see page 30)
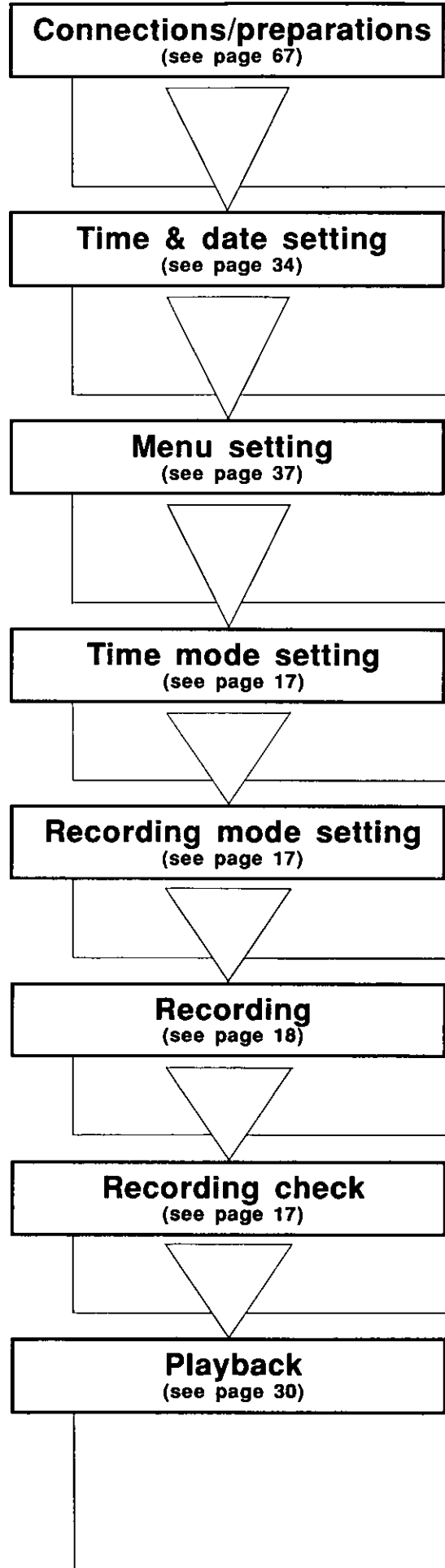
- Connect the cameras, monitors, sequential switcher, alarm switch, sensor switch, buzzer, etc. to the VTR as required.
- Turn on the power to the VTR and to the units which have been connected to it.
- Check that a clear picture from the camera appears on the TV monitor.
- Insert the cassette tape.

PROGRAM
MENU
OFF
TIME ADJ

Set the time and date.

PROGRAM
MENU
OFF
TIME ADJ

Set the menus.
(Operation is possible only when in the eject or stop mode and when the recording lock switch is OFF.)

TIME MODE
▼ ▲

The mode can be set when REC T-MODE on menu screen 3 is set to "OFF."

REC MODE
☐

Select one of the following 3 modes.
- Regular mode
- External timer mode
- Internal timer mode

●REC

Recording starts when this is pressed.

REC REVIEW

The material just recorded can be checked while the recording is actually in progress.

REV PLAY   PLAY
◄   ►

- Playback
- Reverse playback
- Search forward
- Search reverse
- 1-frame forward
- 1-frame reverse
- Still-picture playback
(See page 15)

Menu screens

```
((DISPLAY))
  MODE         T/D
  CHARACTER    WHITE
  POSITION     L-UPPER
  TIME SELECT  24HOURS
  DATA         ON
  TIME         ON
  T-MODE       ON
```
Menu screen 1
Menu display setting

▼

```
((VTR MODE SELECT 1))
  (REC T-MODE)   OFF
  (TAPE IN)
  MODE           STOP
  (TAPE END)
  MODE           STOP
  ALARM IN       STOP
  (EJECT OPERATION)
  MODE           EJECT
```
Menu screen 2
VTR mode setting 1

▼

```
((VTR MODE SELECT 2))
  (POWER LOSS MEMORY)
  ** **-**-** **:**
  (VIDEO)
  MODE           AUTO
  IN             LINE
  S-VHS REC      ON
  (TIME ADJUSTING)
  SET TIME       9:00
  OPERATION      SLAVE
```
Menu screen 3
VTR mode setting 2

▼

```
((ALARM/SENSOR REC))
  MODE           OFF
  DURATION       0.5MIN
  BUZZER         OFF
  REPEAT IN      OFF
  (RESET PULSE)
  INPUT LEVEL    HIGH
  (CAMERA SW)
  TIMING         1FIELD
  MODE           TM2
```
Menu screen 4
Alarm recording mode setting

▼

```
((1-SHOT REC))
  FIELD          1
  INTERVAL       3MIN
```
Menu screen 5
1-shot recording mode setting

▼

```
((INTERNAL TIMER REC ))
  (TIMER)START END   T-M
  SUN OFF
  MON OFF
  TUE OFF
  WED OFF
  THU OFF
  FRI OFF
  SAT OFF
  DLY OFF
```
Menu screen 6
Internal timer recording mode setting

▼
(To return to menu screen 1)

- The following screens will also appear when the optional RS-232C interface adaptor AG-IA670 is mounted.

```
((RS-232C PARAMETER))
  BIT LENGTH     7BIT
  STOP BIT       STOP-1
  PARITY         ODD
  BAUD RATE      9600
```
Menu screen 7
RS-232C parameter setting

▼

```
((TIME CODE))
  MODE           REGEN
  VITC REC       ON
  POSITION       11H.13H
  TC PRESET 00:00:00:00
  UB PRESET 00 00 00 00
```
Menu screen 8
Time code setting

▼
(To return to menu screen 1)

13

Basic First Steps For Operation
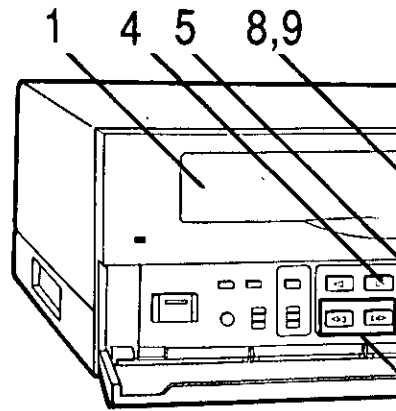
When starting to use the VTR, make sure that you have acquainted yourself with at least these basic operations.

■ Installing the cassette
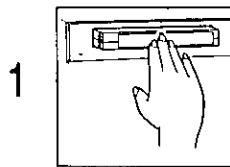
1 | **Press the middle part of the cassette.**

Do not force it in!
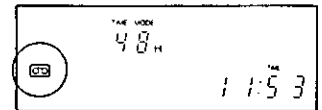
■ Ejecting the cassette
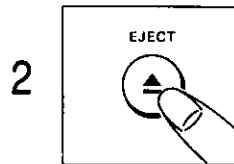
2 | **Press this button.**

(No operation results unless the control is pressed down firmly.)

■ Recording
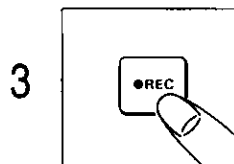
3 | **Press this button.**

[See Note 1]
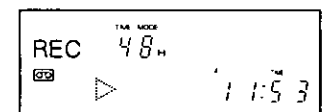
■ Playback
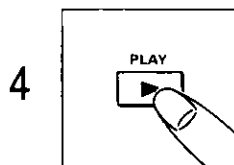
4 | **Press this button.**
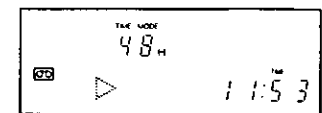
■ Stop
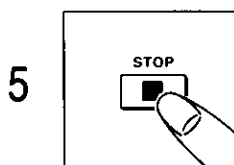
5 | **Press this button.**

This will stop all tape travel.

■ Opening the sub panel

Press this corner gently with your finger.

5,7 10　　2　3
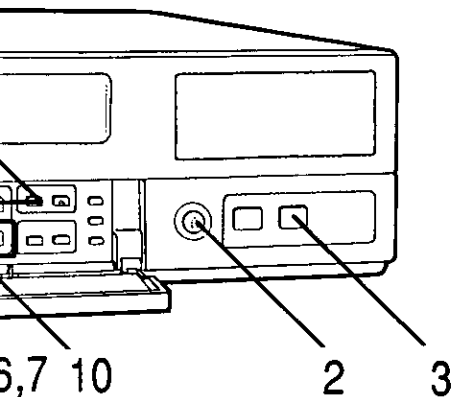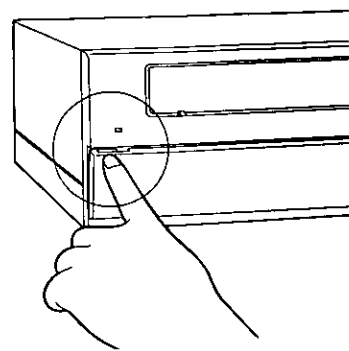
■ Fast forwarding/rewinding

6

REW/⏪　⏩/FF
or
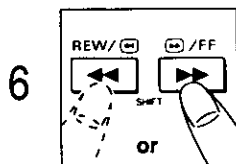
Press one of these buttons when the tape is stopped.

TIME MODE
48H
⊡　▷▷　11:53

■ Search forward/search reverse

7

REW/⏪　⏩/FF
or
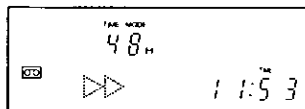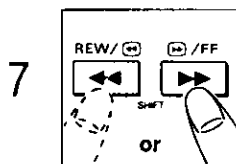
Keep one of these buttons depressed during playback.

[See Note 2]

TIME MODE
48H
⊡　▷▷　11:53
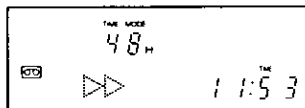
■ Temporarily suspending recording

8

PAUSE/STILL

Press this button during recording.
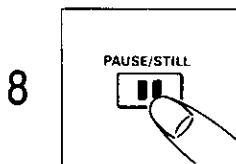
[See Note 3]

TIME MODE
REC　48H
⊡　□□　11:53

■ Still-picture playback

9

PAUSE/STILL
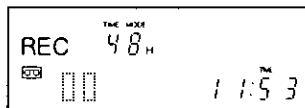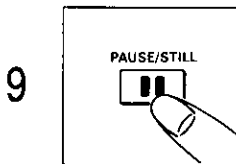
Press this button during playback.

[See Note 3]

TIME MODE
48H
⊡　□□　11:53
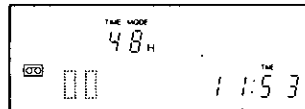
■ Frame advance/reverse playback

10

REV ADV　FWD ADV
or
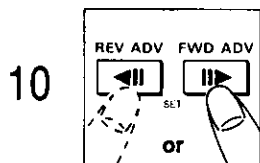
Press one of these buttons during still-picture playback.

[See Note 3]

TIME MODE
48H
⊡　□□　11:53
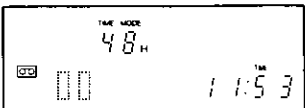
NOTES

[Note 1]
If the cassette's accidental erasure prevention tab is missing, the cassette is ejected. (See page 36)

[Note 2]
Continuous search forward or search reverse operations can be initiated by pressing the FF or REW button once if the alarm search mode has been established. (See page 32)

[Note 3]
The pause or still-picture mode gives way to the stop mode when a fixed period of time has elapsed. This is to protect the tape.

[Auto head cleaning function]
Any dirt on the video heads is automatically removed whenever recording or playback is started from the stop mode, whenever the unit is placed in the stop mode from the recording or playback mode so that, as a result, a clear picture is obtained.
Nevertheless, the video heads may become dirty after prolonged use of the VTR, in which case they must be cleaned. The optional NV-TCLP (non-abrasive) cassette for head cleaning is recommended.

15

2 6   8   10

3   4,5
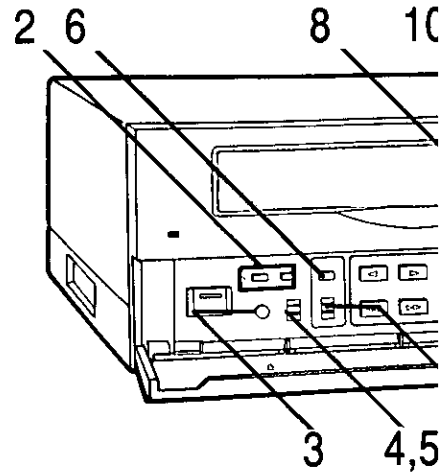
■ Monitoring the recording

1

REC REV...
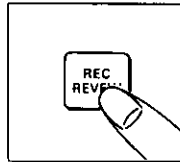
Press the button during recording.

[See Note 1]

■ Adjusting the tracking

2
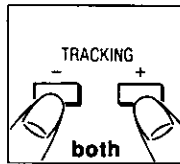
TRACKING
–   +

both

Press both buttons together during playback.

If the tracking still cannot be adjusted, press the "+" or "–" button separately. (See page 31)

■ Adjusting the picture quality

3

PICTURE

S   SH
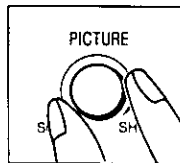
Turn this control (during playback).

(See page 31)

■ Bringing up the menu screen

4

PROGRAM
MENU
OFF
TIME ADJ
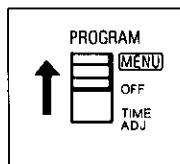
Set the switch to MENU when the tape has stopped or when it has been ejected.

```
((DISPLAY))
MODE            T/D
CHARACTER       WHITE
POSITION        L-UPPER
TIME SELECT     24HOURS
DATA            ON
TIME            ON
T-MODE          ON
```

■ Bringing up the time setting display

5

PROGRAM
MENU
OFF
TIME ADJ
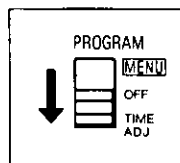
Set the switch to TIME SET when the tape has stopped or when it has been ejected.
• When the switch is set to this position during recording, the time setting screen will be recorded.

TIME ADJUST

8-25-92 TUE
13:22:00
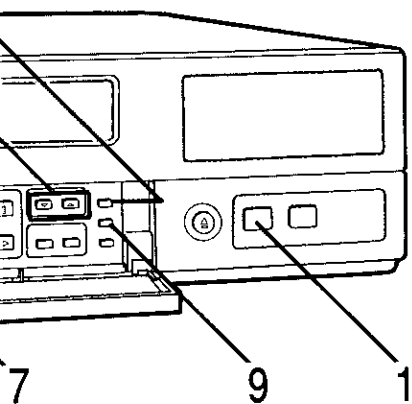
■ Opening the sub panel
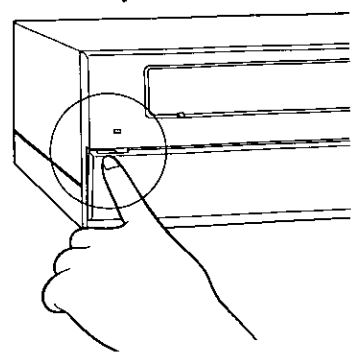
Press this corner gently with your finger.

■ Selecting the recording mode

6 REC MODE
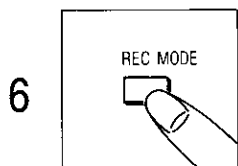
Press this button and select the mode before proceeding with the recording.
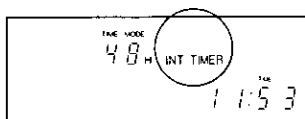
[See Note 2]

■ Locking the recording

7 REC LOCK 1 OFF 2
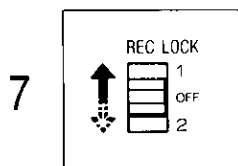
Set the switch to "1" or "2" during recording.

[See Note 3]

■ Selecting the time mode

8 TIME MODE or
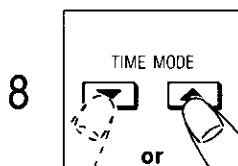
Press this button before (or during) recording or playback.

[See Note 4]
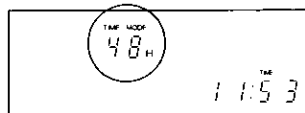
■ Switching between the time and tape counter display
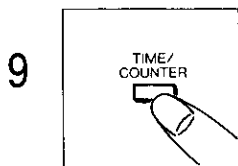
9 TIME/ COUNTER

The display is switched each time this button is pressed.
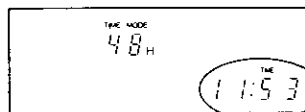
■ Resetting the tape counter

10 RESET
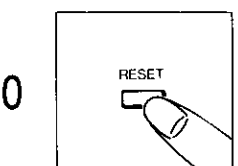
Press this button while the counter value is displayed.
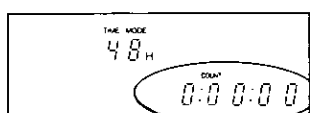
NOTES

[Note 1]
The pictures immediately before the REC REVIEW button was pressed during recording are partially played back, and then operation returns to the recording mode.
(It takes about 3 seconds for the playback picture to appear.)
The cassette mark ([☉☉]) on the display flashes if it was not possible for the proper video level to be obtained after the recording review operation due to dirt on the heads or deterioration of the tape. (See page 77)
• It is also possible to set the function which automatically carries out the recording review each time the recording starts.
(See page 66)

[Note 2]
The recording mode is set to the EXTERNAL TIMER, INTERNAL TIMER and NO DISPLAY in sequence each time the REC MODE button is pressed.
When the internal timer mode is established, the power is set OFF.
(See page 27)

[Note 3]
When recording is locked, the regular operations can no longer be performed.
1:    Recording review only.
OFF: Regular operations can be performed.
2:    Recording review, eject only.
(The HOUR METER button always can be operated.)

[Note 4]
The time (hour) modes are as follows.

2H mode:	Standard mode
* 6H mode:	×3 speed mode
L12~L24H mode:	Continuous low-speed (linear slow) mode
24~480H mode:	Intermittent (time lapse) mode
000H mode:	1-SHOT mode

("*" applies to model AG-6730 only.)
Refer to page 42 for more details on the recording time modes.

17
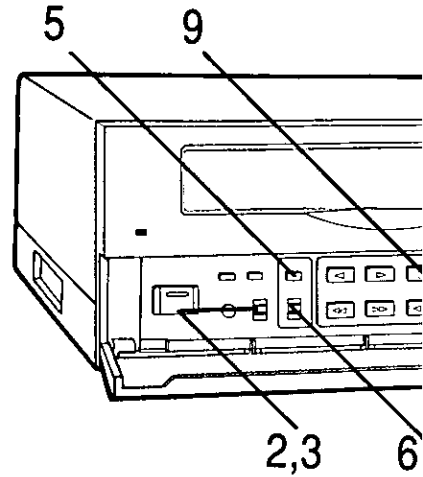
Recording

The sequence of steps to be taken from the start of recording to its completion is described on these pages.

■ **Connect the equipment and prepare the units for operation.** (See page 67)
■ **Turn on the power.**

1 ■ **Install a cassette with its accidental erasure prevention tab intact.** (See page 36)
[See Note 1]

2

PROGRAM
MENU
OFF
TIME ADJ

Adjust the time and date.
(See page 34)

[See Notes 2, 3]

```
TIME ADJUST

8-25-92 TUE
13:22:00
```

3

PROGRAM
MENU
OFF
TIME ADJ

Set the menu.
(See page 37)

[See Note 3]

```
[(DISPLAY)]
  MODE         T/D
  CHARACTER    WHITE
  POSITION     L-UPPER
  TIME SELECT  24HOURS
  DATA         ON
  TIME         ON
  T-MODE       ON
```

4

TIME MODE

or

Press these buttons to set the hour mode.

[See Note 4]

5

REC MODE

Press this button to set the recording mode.

[See Note 5]

■ Opening the sub panel

Press this corner gently with your finger.

4 8 7

6

REC LOCK
1
OFF
2
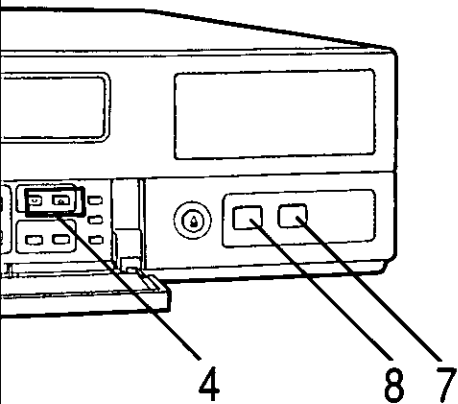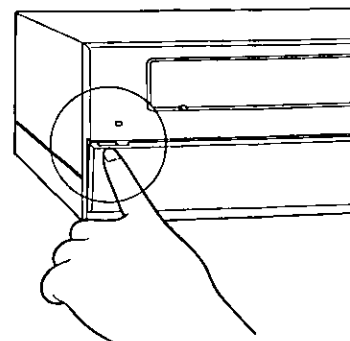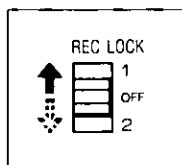
Set the switch to "1" or "2" to lock the recording.

7

●REC
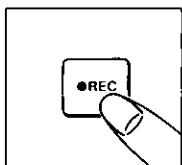
Press this button to start the recording.

REC ⁴⁸ₕ ▷ 11:53

8

REC REVIEW
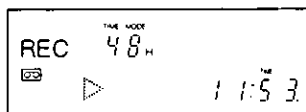
The recording can be monitored if this button is pressed while the recording is in progress.

9
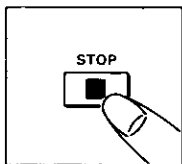
STOP
■

Press this button to stop the recording.
[See Note 6]

■ Recommended tapes

This time lapse recorder has been designed to yield the high degree of reliability which is required in such applications as monitoring, security and observation. In order to assure this reliability in recording, it is recommended that the following Panasonic tapes be used.
VHS tapes: NV-T30, T60, T90, T120 series
S-VHS tapes: NV-ST60, ST90, ST120 series

Alarm Recording
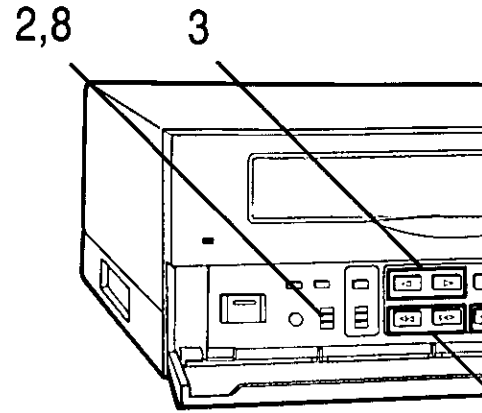
When there is an alarm input during time lapse recording, the alarm recording function changes the time mode to a setting which enables recording to be conducted clearly so that the scene of the emergency will be recorded faithfully.

1 Complete steps 1 to 4 on page 18.
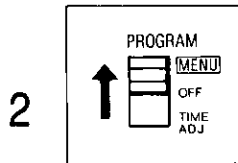
2

```
PROGRAM
  [MENU]
  OFF
  TIME
  ADJ
```

Set this switch to "MENU."

```
[(DISPLAY)]
  MODE          T/D
  CHARACTER     WHITE
  POSITION      L-UPPER
  TIME SELECT   24HOURS
  DATA          ON
  TIME          ON
  T-MODE        ON
```

3

```
REV PLAY   PLAY
  ◄         ►
     PAGE
     or
```
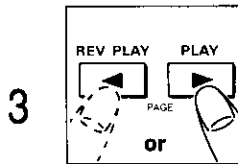
Press one of these buttons to display menu screen 4.

```
[(ALARM/SENSOR REC)]
  MODE          OFF
  DURATION      0.5MIN
  BUZZER        OFF
  REPEAT IN     OFF
  (RESET PULSE)
   INPUT LEVEL  HIGH
  (CAMERA SW)
   TIMING       1FIELD
   MODE         TM2
```

4

```
REW/◄   ►/FF
  ◄◄     ►►
     SHIFT ►
```

Press this button.

```
[(ALARM/SENSOR REC)]
  (MODE          OFF)
   DURATION      0.5MIN
   BUZZER        OFF
   REPEAT IN     OFF
  (RESET PULSE)
   INPUT LEVEL   HIGH
  (CAMERA SW)
   TIMING        1FIELD
   MODE          TM2
```

5

```
REV ADV   FWD ADV
  ◄II       II►
      SET
      or
```
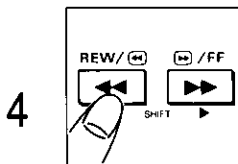
Press one of these buttons to select the recording time mode for alarm recording.

[See Note 1]
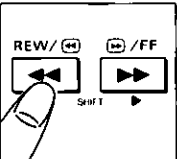
```
[(ALARM/SENSOR REC)]
  (MODE          2H)
   DURATION      0.5MIN
   BUZZER        OFF
   REPEAT IN     OFF
  (RESET PULSE)
   INPUT LEVEL   HIGH
  (CAMERA SW)
   TIMING        1FIELD
   MODE          TM2
```

[Menu setting buttons]
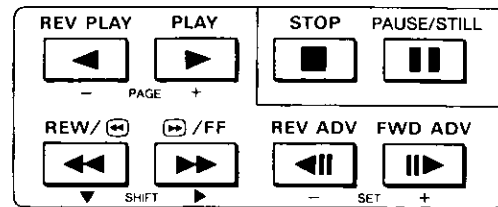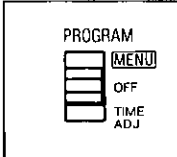
REV PLAY	PLAY	STOP	PAUSE/STILL
◀	▶	■	❚❚
	− PAGE +		

REW/◀◀	▶▶/FF	REV ADV	FWD ADV
◀◀	▶▶	◀❚❚	❚❚▶
▼ SHIFT ▶		− SET +	

PAGE (−) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (−) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

4,6 5,7 9

---

6 Press this button.

```
[[ALARM/SENSOR REC]]
  MODE            2H
 (DURATION      0.5MIN)
  BUZZER          OFF
  REPEAT IN       OFF
 [RESET PULSE]
  INPUT LEVEL    HIGH
 [CAMERA SW]
  TIMING       1FIELD
  MODE            TM2
```

---
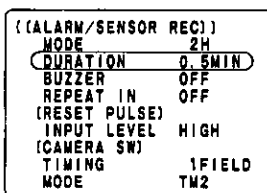
7 Press one of these buttons to select the recording duration.

[See Note 2]

```
[[ALARM/SENSOR REC]]
  MODE            2H
 (DURATION      3.0MIN)
  BUZZER          OFF
  REPEAT IN       OFF
 [RESET PULSE]
  INPUT LEVEL    HIGH
 [CAMERA SW]
  TIMING       1FIELD
  MODE            TM2
```

---

8 Set this switch to OFF.

[See Note 3]

NORMAL PICTURE

---
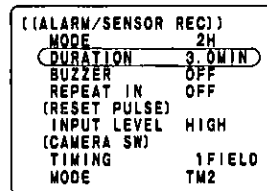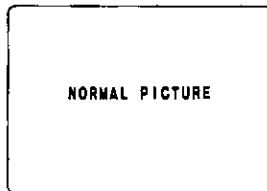
9 Press this button.

```
REC   48H           ALARM
▷               11:53
```

---
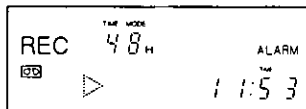
10 **Recording now commences.**
Refer to page 18 for details on the recording procedure.
(Continued overleaf)

NOTES

[Note 1]
• Set to OFF when alarm recording is not going to be performed.
• "ALARM" appears on the display when "MODE" is set to any position other than "OFF."
• The recording time setting options are listed below:
2-, 6-, L12-, L18-, L24-, 24-hour, NO CHANGE
(The 6H settings are available on the model AG-6730 only.)
(See page 46)

[Note 2]
The "recording duration" is the length of time during which alarm recording is executed. (See page 46)

[Note 3]
The settings made on the menu screens are entered when the PROGRAM switch has been set to "OFF."

[Other notes]
Besides the settings mentioned here, the following can also be set on menu screen 4.
• Buzzer ON/OFF during alarm recording (BUZZER)
• Repeat-in function setting (REPEAT IN)
• Alarm reset pulse level selection (RESET PULSE)
• Camera switchover timing (CAMERA SW) (See page 46)

12
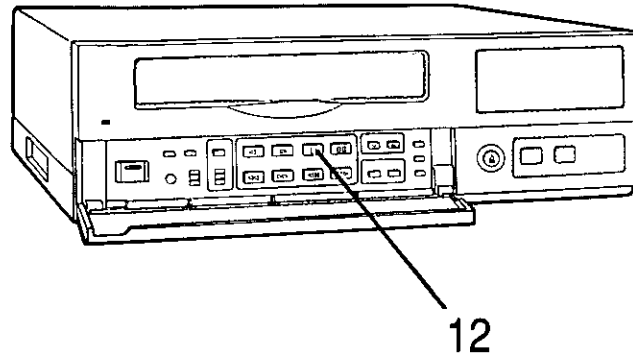
■ **The alarm recording mode is established when there is an alarm input.**

Alarm input
↓

11

	Recording	Alarm recording	Recording
		Recording duration	

↑
Faithful recording in the time (hour) mode set
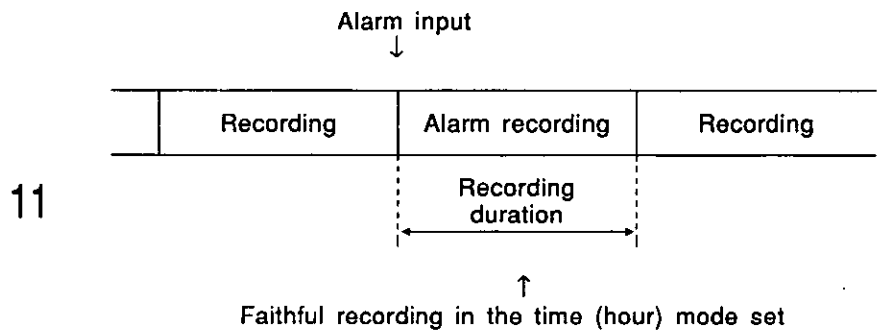
• Once an alarm recording is conducted, "alarm" flashes on the display. Pressing the stop button turns off the display.

12
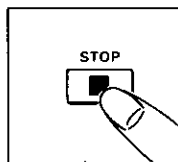
STOP

Press this button to stop recording.

Sensor (emergency) recording mode

- Even if the power is off or operation has stopped, sensor (emergency) recording is started as soon as there is an alarm input.

- What happens in the sensor recording and the alarm recording mode is the same.

- The sensor recording function does not work when "MODE" on menu screen 4 is set to "OFF."

Alarm input $\left(\begin{array}{l}\text{The alarm input pulse is "100ms} \leqq \text{T} \leqq \text{1s"} \\ \text{during internal timer standby mode.}\end{array}\right)$
↓

Power OFF/operation stopped/internal timer on standby	Sensor recording	Power OFF/operation stopped/internal timer on standby
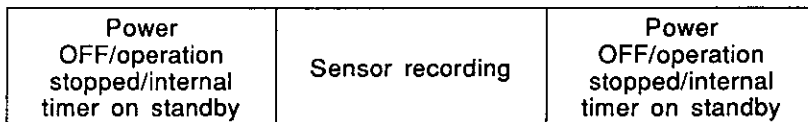
↑
Recording is started with the settings made on menu screen 4.

Alarm memory recall function

This function stores in the memory the dates and number of times that alarm recording has been activated.

Right side of sub panel

ALARM
SEARCH   RECALL
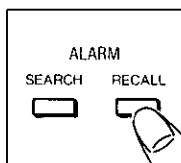
When this is pressed, the alarm list is displayed.

- Data for the last alarm recordings (up to 8) is stored.

- The alarm count extends up to 99, after which the count returns to 00.

- The memory can be cleared by pressing the RESET button while the alarm recall screen is displayed.

- The display is cleared automatically after 30 seconds have elapsed. It is also cleared by pressing the ALARM RECALL button again.

- As with alarm recording, sensor recording data is also stored in the alarm memory.

Monitor

```
((ALARM RECALL MEMORY))
NO.     DATE        TIME
09    10-22-92      7:00
08    10-09-92      6:00
07    10-01-92      7:00
06     9-28-92     12:00
05     9-21-92      9:00
04     9-12-92     10:00
03     8-13-92     17:00
02     8-11-92     23:00
```

Alarm number:
The data on the most recent alarm recordings appears in chronological order with the test at the top.

Dates and times of alarm inputs

■ The following appears on the screen when there has been no alarm recording or when the alarm memory has been reset.

```
((ALARM RECALL MEMORY))
NO.     DATE        TIME
**    **-**-**     **:**
**    **-**-**     **:**
**    **-**-**     **:**
```

Internal Timer Recording
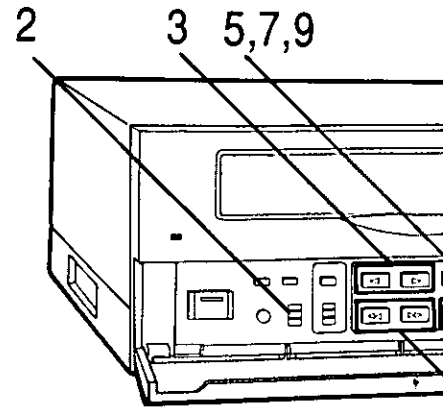
Using the internal timer, recording can be made to start and finish at any time settings.

2   3   5,7,9

1   **Complete steps 1 and 2 on page 18.**

2

```
PROGRAM
  [MENU]
  OFF
  TIME
  ADJ
```

**Set this switch to "MENU."**

[See Note 1]

```
[[DISPLAY]]
  MODE        T/D
  CHARACTER   WHITE
  POSITION    L-UPPER
  TIME SELECT 24HOURS
  DATA        ON
  TIME        ON
  T-MODE      ON
```
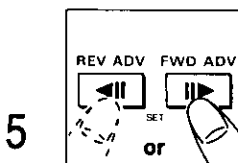

3

```
REV PLAY   PLAY
   ◄         ►
    PAGE
      or
```

Press one of these buttons to display menu screen 6.

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

↓ This is the first step for the weekly timer setting.

4

```
REW/◄   ►/FF
  ◄◄     ►►
    SHIFT ►
```

Press this button.

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

5

```
REV ADV  FWD ADV
  ◄II      II►
     SET
```

Press one of these buttons to select "ON."

[See Note 2]

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN ON  0:00   0:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

[Menu setting buttons]

REV PLAY	PLAY	STOP	PAUSE/STILL
◄	►	■	❚❚
− PAGE +			

REW/◄◄	►►/FF	REV ADV	FWD ADV
◄◄	►►	◄❚❚	❚❚►
▼ SHIFT ►		− SET +	
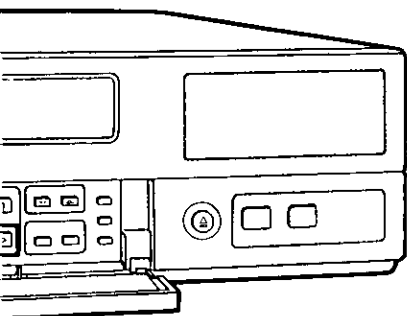
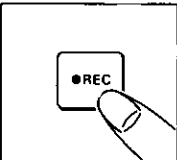| PAGE (−) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to Item below
SHIFT (►) button:	Move to item on the right
SET (−) button:	Change item (decrement numerical value)
SET (+) button:	Change Item (increment numerical value)

---

6 REW/◄◄ ►►/FF

Press this button.

This sets the start time.

```
((INTERNAL TIMER REC ))
 (TIMER)START END    T-M
SUN ON  (0)00   0:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

---

7 REV ADV FWD ADV or
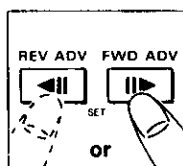
Press one of these buttons to set the "hours" of the start time.

```
((INTERNAL TIMER REC ))
 (TIMER)START END    T-M
SUN ON  (10)00  0:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

---

8 REW/◄◄ ►►/FF
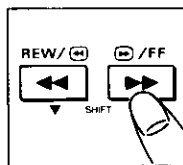
Press this button.

```
((INTERNAL TIMER REC ))
 (TIMER)START END    T-M
SUN ON  10(00)  0:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

---

9 REV ADV FWD ADV or
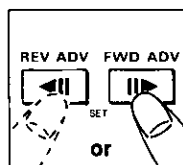
Press one of these buttons to set the "minutes" of the start time.

```
((INTERNAL TIMER REC ))
 (TIMER)START END    T-M
SUN ON  10(30)  0:00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

---

10 REW/◄◄ ►►/FF
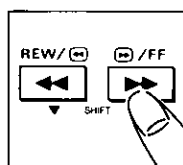
Press this button. This sets the end time.

```
((INTERNAL TIMER REC ))
 (TIMER)START END    T-M
SUN ON  10:30  (0)00  72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

↓ (Continued overleaf)

NOTES

[Note 1]
The menu screen can be displayed only when the VTR is in the stop or eject mode.

[Note 2]
Keep the PROGRAM switch at the "OFF" position if timer recording is not going to be set.

[Other notes]
Be sure to complete the date/time setting stage before setting the internal timer.

19,20 13,16

18
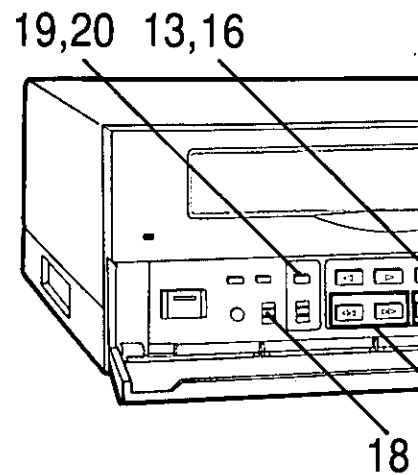
11 Set the "hours" and "minutes" of the end time in the same way as for the start time (steps 7 to 9).

12

REW/◄◄ ►►/FF
◄◄ ►►
▼ SHIFT

Press this button.

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN ON  10:30  12:00   72
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

13

REV ADV FWD ADV
◄II II►
SET
or

Press one of these buttons to select the recording hour mode. [See Note 1]

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN ON  10:30  12:00   48
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

14 Repeat steps 4 to 13 to set the recording start and end times and the recording time mode (in hours) for each day of the week.

↑ This is the last step for the weekly timer setting. [See Note 2]

↓ This is the first step for the daily timer setting. [See Note 2]

15

REW/◄◄ ►►/FF
◄◄ ►►
SHIFT ►

Press this button.

```
[[INTERNAL TIMER REC ]]
  [TIMER] START END    T-M
SUN ON  10:00  12:00   48
MON ON  10:00  16:00   72
TUE OFF
WED OFF
THU ON  10:00  18:00   72
FRI OFF
SAT ON   9:00  12:00   48
DLY OFF
```

[Menu setting buttons]

REV PLAY	PLAY	STOP	PAUSE/STILL
◄	►	■	❚❚
	— PAGE +		

REW/◄◄	►►/FF	REV ADV	FWD ADV
◄◄	►►	◄❚❚	❚❚►
▼ SHIFT ►		— SET +	

PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (►) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

---

16 Press one of these buttons to select "ON."

[See Note 3]

```
[(INTERNAL TIMER REC )]
 (TIMER) START END    T-M
SUN ON  10:00  12:00  48
MON ON  10:00  16:00  72
TUE OFF
WED OFF
THU ON  10:00  18:00  72
FRI OFF
SAT ON   9:00  12:00  48
DLY(ON) 10:00   0:00  72
```

17 Repeat steps 7 to 12 to set the recording start and end times and the recording time mode (in hours) in the same way as for the weekly timer.

18 PROGRAM MENU OFF TIME ADJ
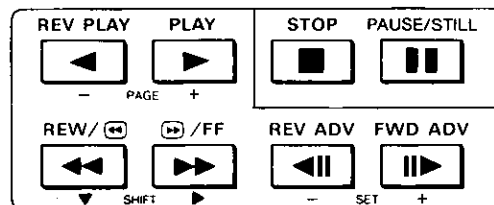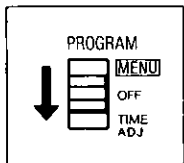
Set this switch to the "OFF" position.

[See Note 4]

NORMAL PICTURE

19 REC MODE
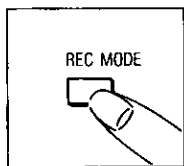
Press this switch to display "INTER-NAL TIMER."

[See Note 5]

20 REC MODE
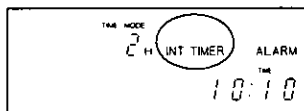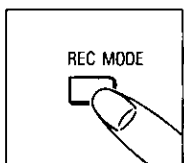
To release the mode, press this switch and turn off the "INTER-NAL TIMER" display.

NOTES

[Note 1]
The daily timer takes priority in terms of the recording time mode (in hours) when daily timer and weekly timer settings overlap the same time zones. (See page 51)

[Note 2]
Weekly (day of the week) timer
The timer can be set for recording at different times each day of the week.

Daily (every day) timer
The timer can be set for recording at the same time every day.

[Note 3]
When the daily timer is not going to be set, press one of the buttons in step 16 and set "OFF."

[Note 4]
The settings made on the menu screen are entered when the PROGRAM switch is returned to the "OFF" position. Once set and entered, the settings are retained semi-permanently.

[Note 5]
When the recording mode is set to "INTER-NAL TIMER," the power is switched off. At the set time, recording will start automatically.

External Timer Recording

3

By connecting an externa timer to the VTR, the power to the VTR can be switched ON and OFF to perform timer recordings.

1   Complete step 1 to 4 on page 18.

2   Connect the external timer.

AM9:00

Power cable
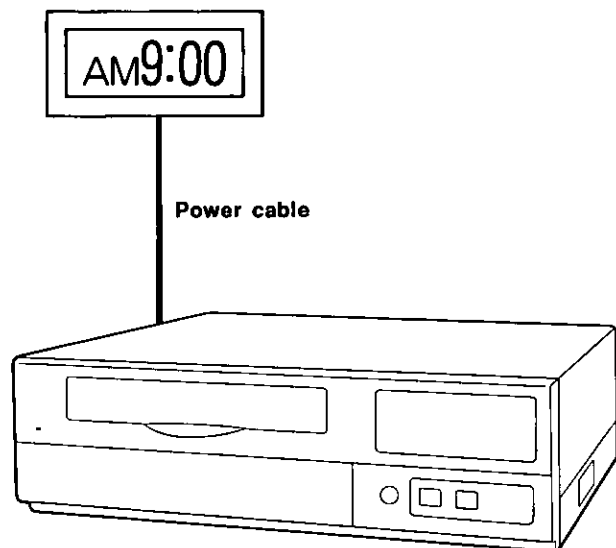
■ Leave the VTR's power on until the setting procedure is completed.

28

3

REC MODE
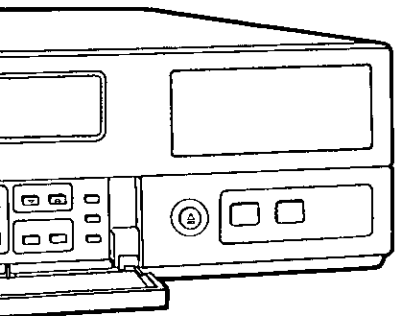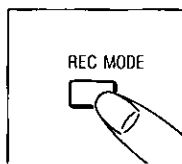
Press this button to display "EXTERNAL TIMER."

[See Note 1]

TIME MODE (EXT TIMER) ALARM
48н
11:53
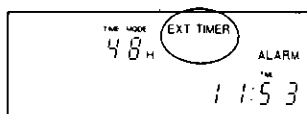
4

Set the external timer.

[See Note 2]

5

Recording starts at the time set by the external timer.

6

REC MODE
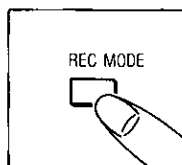
To release the mode, press this button with power supplied to the VTR and clear the "EXTERNAL TIMER" display.

TIME MODE ALARM
48н
11:53
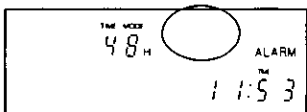
[Note 1]
When a cassette has not been installed or when the accidental erasure prevention tab on the cassette installed has been broken out, the buzzer sounds and "EXTERNAL TIMER" flashes.

[Note 2]
For details on how to set the external timer, refer to the operating instructions accompanying the timer.

[Other notes]
In the external timer recording mode, sensor recording will not start even with an alarm input if the VTR's main power is OFF.

Playback
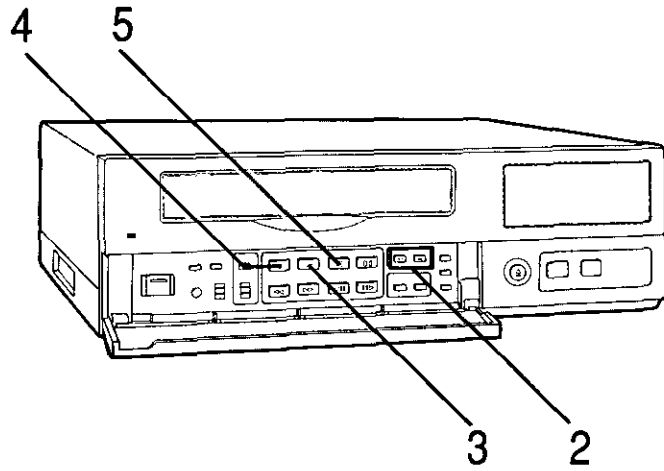
This operation visually displays what has been recorded.

1
- ■ **Complete the connections and ready the units connected for operation.** (See page 67)
- ■ **Turn on the power.**
- ■ **Install a prerecorded cassette.**

2

TIME MODE

or
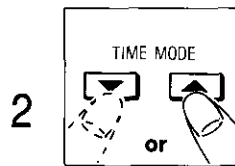
Press one of these buttons to select the time (hour) mode.

[See the section on the time modes on the right-hand page.]

3
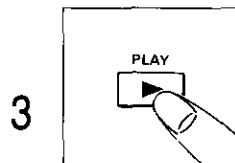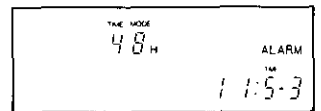
PLAY

Press this button for regular playback.

4

REV PLAY
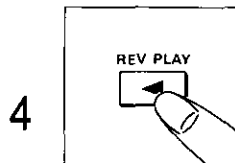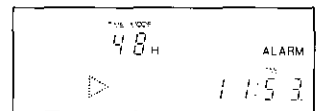
Press this button for reverse playback.

Reverse playback of 1-shot recording is not possible.

5
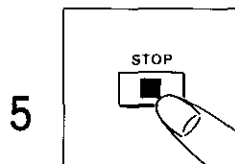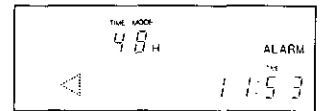
STOP

Press this button to stop playback.

Tracking adjustment

Adjust the tracking if noise similar to that shown below appears on the playback picture.

TRACKING
−   +

both
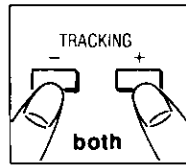
■ This VTR comes with an auto tracking function to obviate the need to adjust the tracking under normal circumstances. However, should noise similar to that shown on the right appear, re-adjust the tracking.

■ Press the "+" and "−" buttons at the same time. If noise still appears, press the "+" and "−" buttons separately.

Vertical Lock Adjustment (model AG-6040 only)

V-LOCK
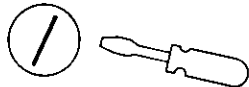
If picture jitters vertically in the Still mode, adjust the V-Lock Control on the bottom panel of VTR using the screwdriver.
If the TV Monitor has a vertical hold control, adjust the control together with the V-Lock Control.

Picture quality adjustment

When adjusting the playback picture:

PICTURE

S   SH
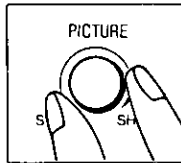
■ Turning the control clockwise yields a sharply defined picture.

■ Turning the control counterclockwise yields a softly defined picture.

Time modes

■ Bear in mind the following points when playing back an intermittently recorded tape in the same time mode.
  • The picture may shake slightly in the lateral direction but this is not indicative of malfunctioning.
  • There may be some slight distortion at the top of the picture but this is not indicative of malfunctioning.
  • The picture may dance in any of the L12 to L24 modes. This is normal and not indicative of malfunctioning.
  • The sound is not reproduced perfectly. This is normal and not indicative of malfunctioning.

■ The time mode in which the tape can be played back depends on the time mode used for the recording.

Recording time mode	Time mode enabling playback	Remarks
2H, L12H to 480H	2H, L12H to 480H	A tape will not be played back in the 6H mode even if the playback time mode is set to 6H.
6H	6H, L12H to 480H	A tape will not be played back in the 2H mode even if the playback time mode is set to 2H.

• (The 6H mode is provided by model AG-6730 only.)

■ When a tape recorded in a 12H or longer mode is played back in the 2H mode, it can be played back at quick motion.
■ If, when the sound was recorded, the mode in which the sound was recorded differs from the mode in which it is played back, the pitch of the sound will also change.

Other notes
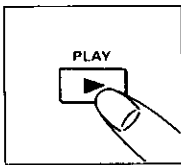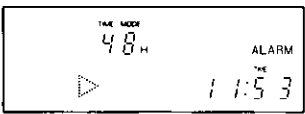
■ No sound will be heard during reverse playback.
■ Reverse playback is not possible with the tape recorded in the 1-shot recording mode.
■ When the 2H time mode was used for the recorded tape, the 2H mode is automatically selected for playback; when the 6H mode was used, the 6H mode is automatically selected. (Model AG-6730 only)
■ The picture may dance while the tape is being played back in any L (linear slow) mode. This is normal and not indicative of a failure.
■ Although a great deal of noise will appear on the screen when playing back in the linear slow mode a tape which was recorded in the 6H mode, this is normal and not indicative of a failure. (Model AG-6730 only)
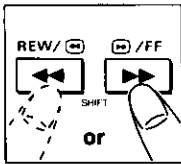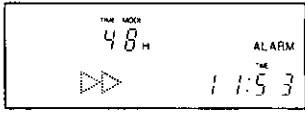
Search
Operations
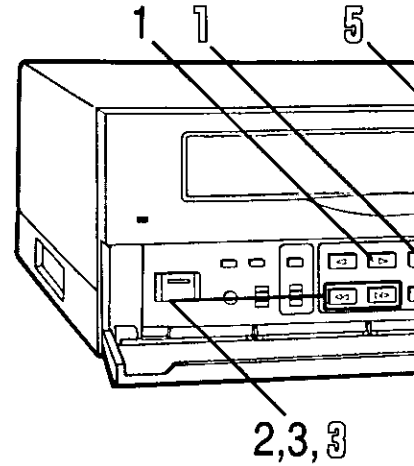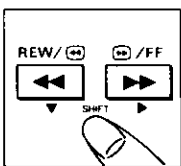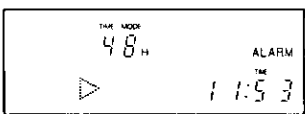
These operations are for initiating search playback and alarm search playback.

■ Search playback (search forward/search reverse)

1 | **Press this button to start playback.**

2 | **Keep one of these buttons depressed.**

[See Note 1]

3 | **Release the button to return to regular playback.**
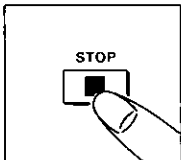
■ To continue the search operation, establish the alarm search mode. (See right-hand page)

• If the fast forward or rewind button is pressed during playback, the search operation is performed continuously.
• When the play button is pressed again, operation returns to regular playback.

② (label pointing to unit)
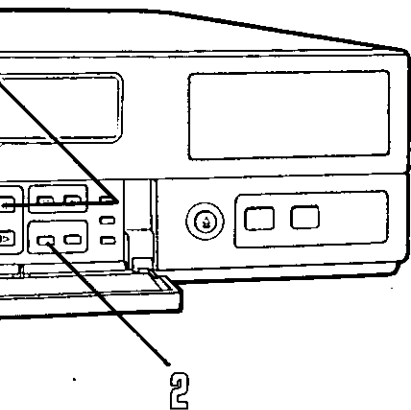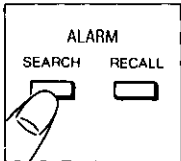
■ Alarm search procedure

1
STOP
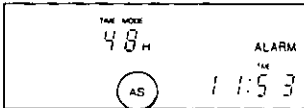
Press this button and set the VTR to the stop mode.

2
ALARM
SEARCH   RECALL
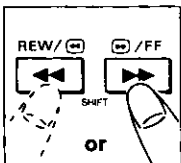
Press this button to display "AS."

[See Note 2]

```
 ™  MODE
  4 8 H          ALARM
 ( AS )    1 1:5 3
```

3
REW/⊖   ⊕/FF
SHIFT
or
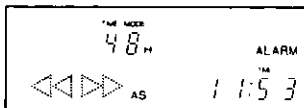
Press one of these buttons to fast forward or rewind the tape.

```
 ™  MODE
  4 8 H          ALARM
 ◁◁ ▷▷  AS   1 1:5 3
```
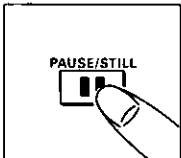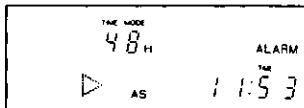
4
■ The fist alarm recorded section on the tape is searched in the direction corresponding to the button pressed, and the VTR is set to the still-picture playback mode.
[See Note 3]

5
PAUSE/STILL

Press this button to play back the section.

```
 ™  MODE
  4 8 H          ALARM
 ▷   AS   1 1:5 3
```

NOTES

[Note 1]
If the REW button is pressed during search playback, the tape will be played back in the reverse direction at 7 times the regular tape speed; if the FF button is pressed instead, it will be played back in the forward direction at 7 times the regular tape speed.
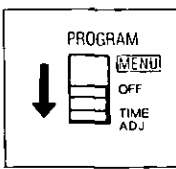
[Note 2]
To release the alarm search mode, press the ALARM SEARCH button again and clear "AS" from the display.
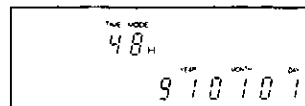
[Note 3]
Only an alarm recorded section which was recorded in the 2H or 6H mode can be searched using the alarm search function.

Time & Date Setting

2,4,6,8

1,10
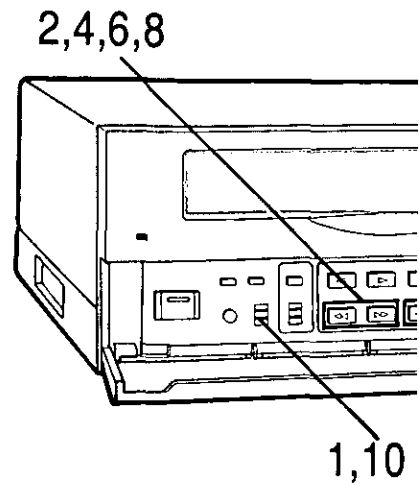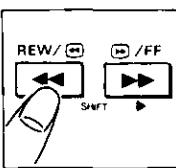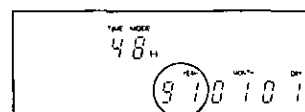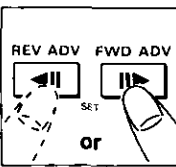
This section describes how the time and date are set.
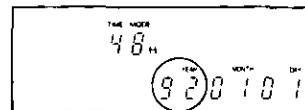
1 Set this switch to **"TIME ADJ."**

[See Notes 1, 2 and 3]
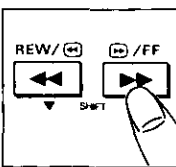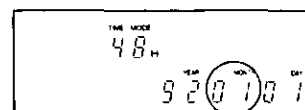
2 Press this button.

"Year" flashes.

3 Press one of these buttons to set the number for the year.

4 Press this button.

5 Repeat steps 3 and 4 to set the month and then the day.

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[Time setting buttons]

REV PLAY   PLAY   STOP   PAUSE/STILL

◄   ►   ■   ▌▌

– PAGE +

REW/◄◄   ►►/FF   REV ADV   FWD ADV

◄◄   ►►   ◄▌▌   ▌▌►

▼ SHIFT ►   – SET +
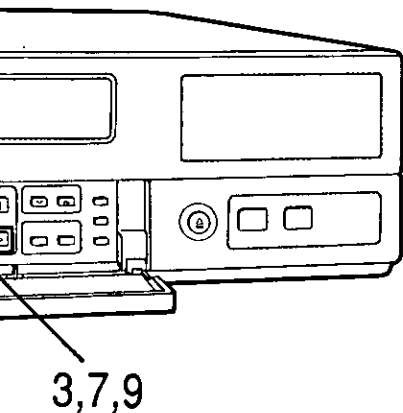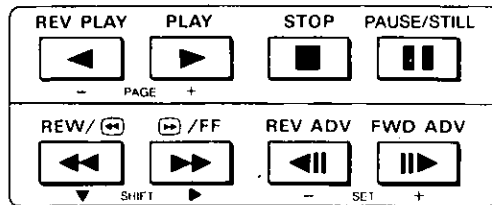
SHIFT (▼) button: Move to item
SHIFT (►) button: Move to item
SET (–) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

3,7,9

6
Press this button after the date (year/month/day) has been set.

[See Note 4]
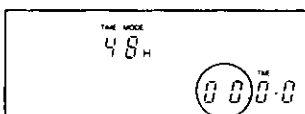
7
Press one of these buttons to set the "hours."
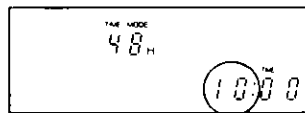
8
Press this button once.
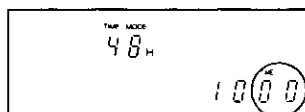
9
Press one of these buttons to set the "minutes."
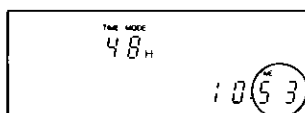
10
Set this switch to "OFF."

[See Note 5]
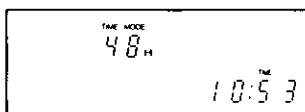
NOTES

[Note 1]
If the time is set during recording, the screen on which the time was set will be recorded.

[Note 2]
The screen appears below on the TV monitor.

```
TIME ADJUST
1-01-92 WED
0:00:00
```
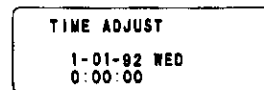
[Note 3]
The default display is 92 01 01 (January 1, 1992). The date can be set up to 07 12 31 (December 31, 2007).

[Note 4]
The default display is 00:00:00. The maximum time which can be displayed is 23:59:59 (although only the hours and minutes actually appear on the display).

[Note 5]
The time starts elapsing from the moment that step 10 is performed. The time can be set accurately if the switch is set to "OFF" as soon as the time signal is heard.

[Other notes]
• The maximum monthly time error is 60 seconds.
• The time and date data will be retained in the event of a power failure provided that it does not last longer than one month (AG-6730) or one week (AG-6030). (For the data to be retained, power must have been supplied for at least 40 hours.)
• Adjustment for leap years is automatic.

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Operating Precautions

Operating precautions

- If the PAUSE/STILL button is pressed during recording in any time mode from 2H to L24H, the tape will run in the reverse direction for about 3 seconds before stopping.
  When the same button is pressed again, the tape will run for about 3 seconds before recording is resumed.

- Time lapse recording is performed in the 24H or longer recording time mode. By omitting frames while recording the pictures, it is possible to record over long periods of time. However, since the picture is not continuous, the sound cannot be recorded.

- When the recording time mode has been set to any position other than "OFF" on menu screen 2, it cannot be changed using the TIME MODE button on the sub panel during recording. When it has been set to "OFF," the time mode can be changed even during recording using the TIME MODE button on the sub panel.

- When the power is restored after a power failure and power is again supplied to the VTR, the power loss memory screen shown below will appear on the monitor screen for 15 seconds.
  While the power loss memory display appears on the monitor screen, menu screen and time settings cannot be conducted.

> **POWER LOSS   05 10-31-92**
>   **17:42**

- The TIME MODE button does not work during alarm recording.

- When the REC button is pressed during still-picture playback, the VTR is set to the recording pause mode, and the E-E picture appears on the monitor.

- If frame advance and frame reverse operations are repeated many times in the same place on the tape, noise may appear. It will disappear when frame advance or frame reverse is continued.

Accidental erasure prevention tab

- Valuable recordings can be protected from accidental erasure by breaking out the tab on the cassette.

- To re-record over a tape in a cassette whose tab has been broken out, stick a double layer of cellophane tape over the tab opening.
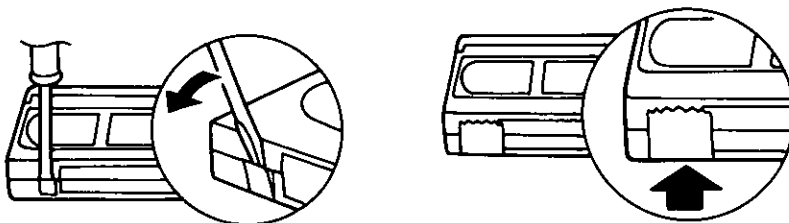
Break out the tab in the direction of the arrow.

Menu Screens

Menu Screens

Set the switch to "MENU."

- The previous setting screen appears.
- Menu screen 1 appears when settings are to be performed for the first time.

The VTR's many functions can be set on-screen.

■ Menu screen 1 (screen display settings)

```
[[DISPLAY]]
MODE        T/D
CHARACTER   BLACK
POSITION    L-UPPER
TIME SELECT 24HOURS
DATA        ON
TIME        ON
T-MODE      ON
```

The information displayed on the TV monitor is set on this screen.

■ Menu screen 2 (VTR mode settings 1)

```
[[VTR MODE SELECT 1]]
(REC T-MODE)   OFF
(TAPE IN)
 MODE          STOP
(TAPE END)
 MODE          STOP
 ALARM IN      STOP
(EJECT OPERATION)
 MODE          EJECT
```

- Recording time mode setting
- Setting for operation when cassette is installed
- Tape-end operation settings
- Eject operation setting

■ Menu screen 3 (VTR mode settings 2)

```
[[VTR MODE SELECT 2]]
(POWER LOSS MEMORY)
 ## ##-##-## ##:##
(VIDEO)
 MODE          AUTO
 IN            LINE
 S-VHS REC     ON
(TIME ADJUSTING)
 SET TIME      9:00
 OPERATION     SLAVE
```

- Power loss memory display
- Video signal selection (model AG-6730 only)
- Time adjustment function settings (model AG-6730 only)

■ Menu screen 4 (alarm recording mode settings)

```
[[ALARM/SENSOR REC]]
 MODE          OFF
 DURATION      0.5MIN
 BUZZER        OFF
 REPEAT IN     OFF
(RESET PULSE)
 INPUT LEVEL   HIGH
(CAMERA SW)
 TIMING        1FIELD
 MODE          TM2
```

- Alarm recording mode settings
- Reset pulse selection
- Camera switch setting

■ Menu screen 5 (1-shot recording mode settings)
(model AG-6730 only)

```
[[1-SHOT REC]]
 FIELD         1
 INTERVAL      3MIN
```

- 1-shot recording mode setting
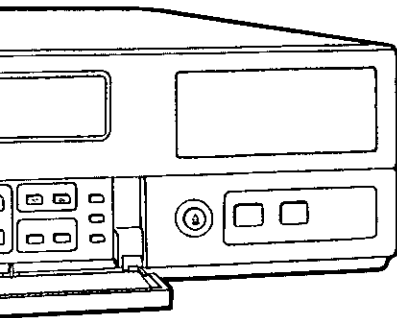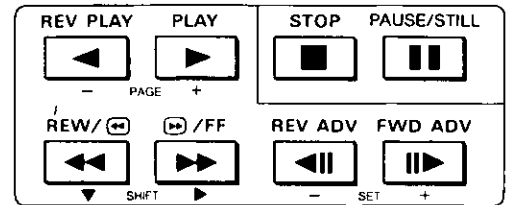
PAGE (−) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (▶) button: Move to item on the right
SET (−) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

■ Menu screen 6 (internal timer recording mode settings)

```
((INTERNAL TIMER REC ))
  (TIMER) START END    T-M
SUN  OFF
MON  OFF
TUE  OFF
WED  OFF
THU  OFF
FRI  OFF
SAT  OFF
DLY  OFF
```

• Daily timer settings
• Weekly timer settings

■ The menu screens below appear only when the optional RS-232C Interface Adaptor AG-IA670 is installed.
(See page 83)

■ Menu screen 7 (RS-232C parameter settings)

```
((RS-232C PARAMETER))
  BIT LENGTH   7BIT
  STOP BIT     STOP-1
  PARITY       ODD
  BAUD RATE    9600
```

• RS-232C parameter settings

■ Menu screen 8 (time code settings)

```
((TIME CODE))
  MODE       REGEN
  VITC REC   ON
  POSITION   11H.18H
  TC PRESET  00:00:00:00
  UB PRESET  00 00 00 00
```

• Time code settings

NOTES

• The menu screens can be displayed only when the VTR is in the stop or eject status.

• Menu screen setting method
1) Set the program switch to "MENU."
2) Use the "+" and "−" buttons to select the desired menu screen. The page following the last page is the first page; the page before the first page is the last page.
3) The first line flashes when the (▼) shift button is pressed.
4) Select the setting items using the (▼) and (▶) shift buttons.
5) Use the "+" and "−" set buttons for the settings.
6) Upon completion of the settings, return the program switch to the "OFF" position. The item settings will now be entered.

Menu Screen 1
(Screen display settings)

```
((DISPLAY))
AG-6730 ──────→ MODE          T/D
only            CHARACTER     WHITE
                POSITION      L-UPPER
                TIME SELECT   24HOURS
                DATA          ON
                TIME          ON
                T-MODE        ON
```
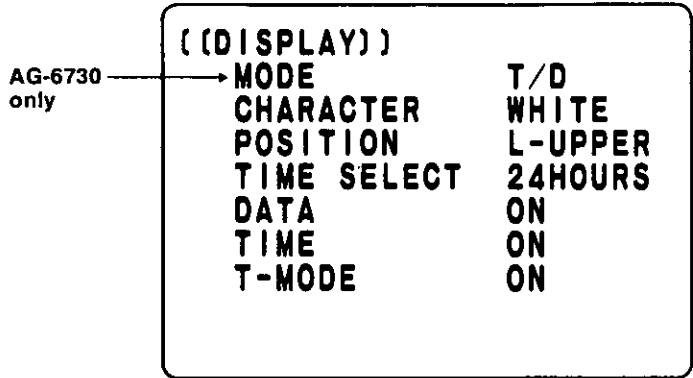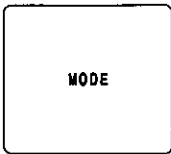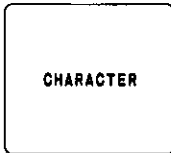
What is displayed on the TV monitor is set on this screen.
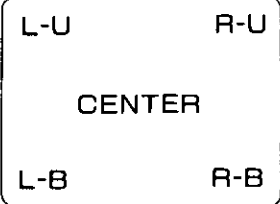
■ Display mode selection (for model AG-6730 only; fixed at T/D for model AG-6040)

1 | MODE |

Select the screen which is to be usually displayed.
T/D: Time and date display screen
LAP: Lap time display screen
PAGE: Page count display screen [see Note 1]
(This appears only when the time mode has been set to "000H.")

■ Display character type selection

2 | CHARACTER |

Select the type of characters to be displayed.
WHITE: White characters = ABCDF
BLACK: Outline characters = ABCDF
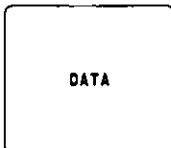
■ Display position selection

3 | POSITION |

Select the display position.
L-UPPER: Upper left
R-UPPER: Upper right
L-BOTTOM: Bottom left
R-BOTTOM: Bottom right
CENTER: Center

```
L-U            R-U

       CENTER

L-B            R-B
```

■ Time display mode selection

4 | TIME SELECT |

Select whether the time is to be displayed on a 24-hour or AM/PM basis.
24 HOURS: 24-hour basis = 22:10:45
AM/PM: AM/PM basis = 10:10:45P

■ Date display ON/OFF

5 | DATA |

Set the date display ON or OFF.
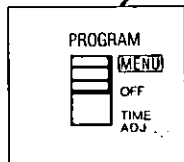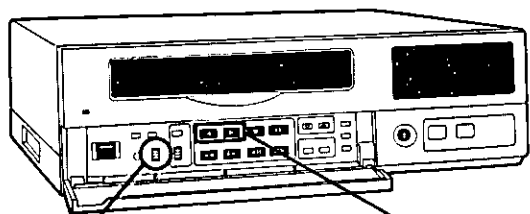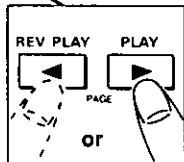
PROGRAM
MENU
OFF
TIME ADJ

Set to "MENU."

Press one of these buttons until the desired menu screen appears.

REV PLAY ◄ PLAY ►
PAGE
or

[Menu setting buttons]

REV PLAY	PLAY		STOP	PAUSE/STILL
◄	►		■	❚❚
—	PAGE +			

REW/◄◄	►►/FF		REV ADV · FWD ADV	
◄◄	►►		◄❚❚	❚❚►
▼	SHIFT ►		— SET +	
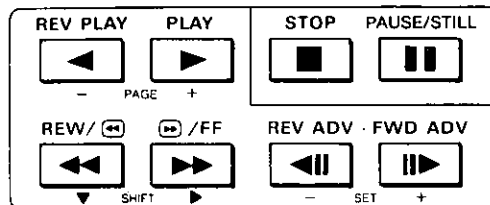
PAGE (–) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (►) button: Move to item on the right
SET (–) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

■ Time display ON/OFF

6 | TIME

Set the time display ON or OFF.

■ Time mode display ON/OFF

7 | T-MODE

Set the time mode display ON or OFF.

■ Regular screen

TV monitor

L-UPPER   R-UPPER

CENTER

Bottom right (R-BOTTOM) display position
↓
12-24-92 72H
10:15:30 A01

L-BOTTOM
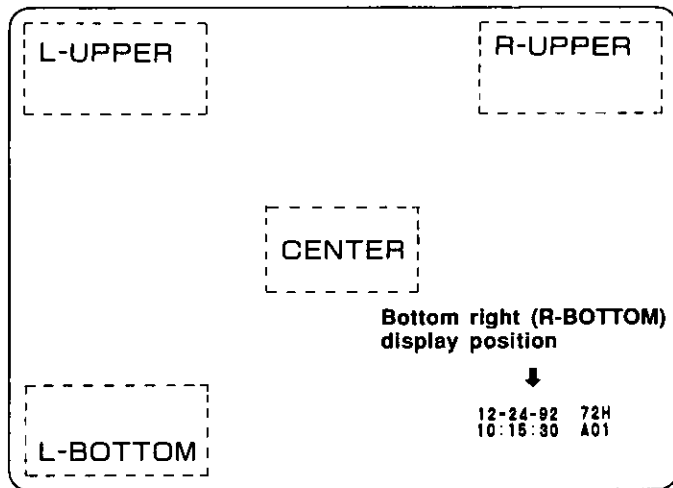
NOTES

[Note 1]
Time and date display screen

Date   Time (hour) mode

```
12-24-92  72H
10:15:30  A01
```

Time   Alarm count
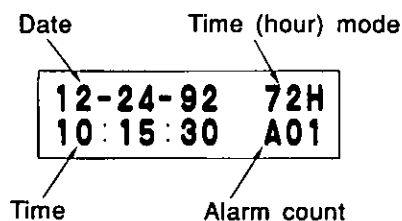
Lap time display screen
(model AG-6730 only)
The total recording time starting from the point in time when recording commenced is indicated in a second increments regardless of the present time. (The recording time is not incremented in the recording pause mode.)

```
LAP 0:00:00
```

When the RESET button is pressed, the lap time display can be reset to "0:00:00".

Page count display screen
(model AG-6730 only)
During 1-shot recording, each frame recorded counts as a page, and the total number of pages (frames) is displayed on this screen. (For details on 1-shot recording, see pages 48, 60.)

```
999999
```

When the RESET button is pressed, the page count display can be reset to "0."

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

```
[[VTR MODE SELECT 1]]
  (REC T-MODE]    OFF
  (TAPE IN)
    MODE          STOP
  (TAPE END)
    MODE          STOP
    ALARM IN      STOP
  (EJECT OPERATION)
    MODE          EJECT
```

The VTR mode settings are performed on this screen.

■ Recording time mode selection

| 1 | REC T-MODE |

The recording time mode is set.
When the recording is started, the unit is always placed in the time mode which was set. (See page 56)

OFF: The time mode can be set as desired using the time mode button on the VTR's sub panel. The mode can be changed even during recording.
2H: 2-hour mode (compatible with the standard mode of ordinary VTRs).
*6H: 6-hour mode (compatible with the ×3 speed mode of ordinary VTRs).
L12H: 12-hour mode (linear slow recording)
L18H: 18-hour mode (linear slow recording)
L24H: 24-hour mode (linear slow recording)
24H: 24-hour mode (time lapse recording at 0.2 sec. intervals)
48H: 48-hour mode (time lapse recording at 0.4 sec. intervals)
72H: 72-hour mode (time lapse recording at 0.6 sec. intervals)
84H: 84-hour mode (time lapse recording at 0.7 sec. intervals)
120H: 120-hour mode (time lapse recording at 1.0 sec. intervals)
180H: 180-hour mode (time lapse recording at 1.5 sec. intervals)
240H: 240-hour mode (time lapse recording at 2.0 sec. intervals)
480H: 480-hour mode (time lapse recording at 4.0 sec. intervals)
000H: 1-shot recording mode (see pages 48, 60).
("*" applies to model AG-6730 only.)
[See Notes 1 and 2]
■ Sound cannot be recorded in the time lapse recording or 1-shot recording modes.

■ Selection of operation when cassette is installed

| 2 | (TAPE IN) MODE |

Select how the VTR is to operate when the cassette is installed.
STOP: Stop mode
REC: Automatic recording mode [see Note 3]
AUTO: When a cassette tape is loaded, it is first rewound to its beginning and then recording is commenced automatically.

■ Selection of operation at tape-end

| 3 | (TAPE END) MODE |

Select how the VTR is to operate at the tape-end.
STOP: Stop mode
BUZZER: Stop and the buzzer sounds.
REW: Automatic rewinding mode [see Note 4]
REPEAT: Repeat recording mode [see Note 5]

[Displaying the screens]
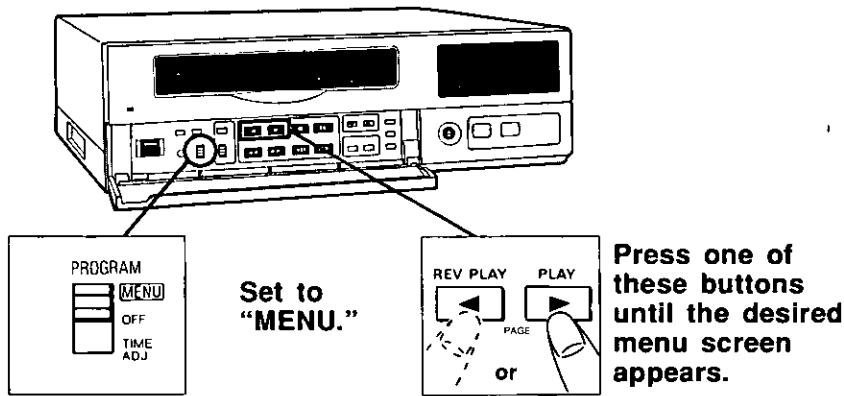
PROGRAM
MENU
OFF
TIME ADJ

Set to "MENU."

REV PLAY | PLAY
◀ | ▶
PAGE
or

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]

REV PLAY	PLAY		STOP	PAUSE/STILL
◀	▶		■	❚❚

– PAGE +

REW/◀◀	◀◀/FF	REV ADV	FWD ADV
◀◀	▶▶	◀❚❚	❚❚▶
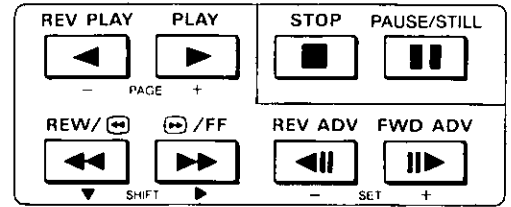
▼ SHIFT ▶   – SET +

PAGE (–) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (▶) button: Move to item on the right
SET (–) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

■ Setting auto rewind function release when an alarm input is generated

4   [TAPE END] ALARM IN

This setting selects whether the auto rewind function is to be released when there is an alarm input while recording is in progress.

STOP: The auto rewind function is released. The VTR is set to the stop mode at the tape-end.

CONTINUE: The auto rewind function is not released.

■ Selection of cassette EJECT button

5   [EJECT OPERATION] MODE

Select the operation which is to be performed when the EJECT button is pressed.

EJECT: The cassette is ejected as soon as the button is pressed.

AUTO: When the button is pressed, the tape is automatically rewound to its start before the cassette is ejected.

NOTES

[Note 1]
The VTR's time (hour) modes are based on the use of a 2-hour tape. If the cassette used has a different duration, the hour modes will be as follows:
• 90-minute tape: 3/4 of selected time
• 60-minute tape: 1/2 of selected time
• 30-minute tape: 1/4 of selected time

[Note 2]
Linear slow recording
With this kind of recording, the tape travel speed is reduced and the sound is recorded continuously. (Sound can be recorded.)

Time lapse recording
Long-duration recording is possible by recording while advancing the tape intermittently. (Sound cannot be recorded.)

[Note 3]
Automatic recording mode
Recording is started automatically just by installing the cassette.

[Note 4]
Auto rewind function
When the tape reaches its end during recording, it is automatically rewound to its start.

[Note 5]
Auto repeat recording function
When the tape reaches its end during recording, it is automatically rewound to its start and recorded again (or repeatedly).

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 3
(VTR mode settings 2)

```
((VTR MODE SELECT 2))
   (POWER LOSS MEMORY)
   ** **-**-** **:**
   (VIDEO)
   MODE          AUTO
   IN            LINE
   S-VHS REC     ON
   (TIME ADJUSTING)
   SET TIME      9:00
   OPERATION     SLAVE
```

AG-6730 only
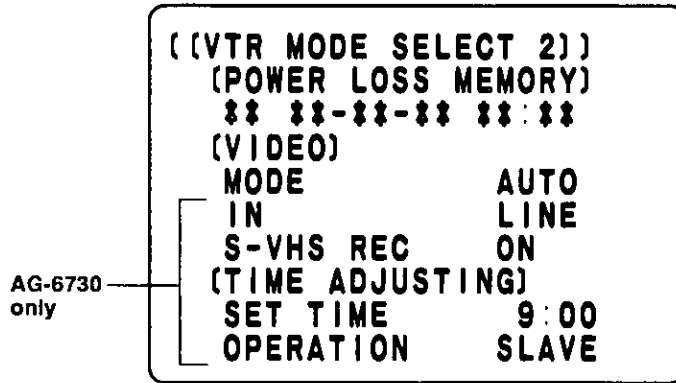
The VTR mode settings are performed on this screen.

■ Power loss memory display   [See Note 1]
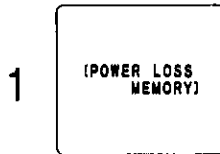
1 [POWER LOSS MEMORY]

This screen displays the power loss memory.

• When the SHIFT (▼) button is pressed so that the number flashes and then the SET "+" or "−" button is pressed, data in the memory on up to the last four power failures is indicated in sequence.

• The power loss memory data can be cleared as below.

```
08 12-25-02  2:08
```
While flashing

⬇
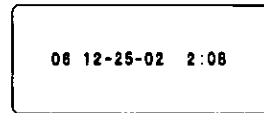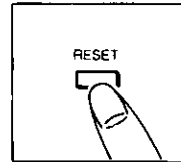
```
RESET
```
Press this button

⬇
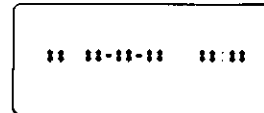
```
** **-**-**   **:**
```
The memory is now cleared.

• The following display appears for the power loss memory data if the time/date has not been set or when there is no data in the memory.

```
** **-**-**   **:**
```
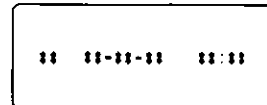
■ Selecting the video signal mode

2 (VIDEO) MODE

Select the operation of the auto color/b&w selector circuit.

AUTO: The circuit is automatically switched to color or black-and-white, whichever corresponds to the input signal. (Regular setting) [See Note 1]

COLOR: For color signal input only

B/W: For black-and-white signal input only [See Note 2]

[Displaying the screens]
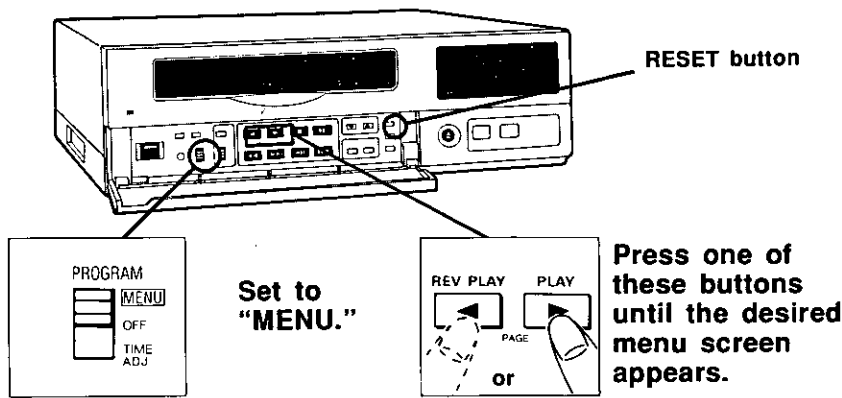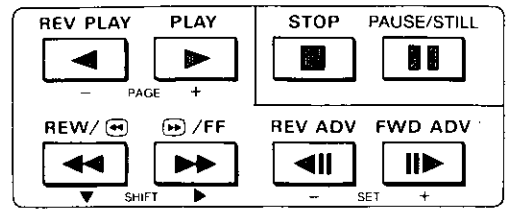
RESET button

PROGRAM
MENU
OFF
TIME ADJ

Set to "MENU."

REV PLAY   PLAY

Press one of these buttons until the desired menu screen appears.

or

[Menu setting buttons]

REV PLAY	PLAY	STOP	PAUSE/STILL
◄	►	■	▐▐
	− PAGE +		
REW/◄◄	◄◄ /FF	REV ADV	FWD ADV
◄◄	►►	◄▌▌	▌▌►
	▼ SHIFT ►	− SET +	

PAGE (−) button: Page down
PAGE (+) button: Page up
SHIFT (▼) button: Move to item below
SHIFT (►) button: Move to item on the right
SET (−) button: Change item (decrement numerical value)
SET (+) button: Change item (increment numerical value)

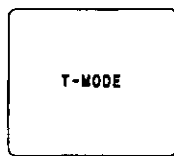## ■ Selecting the input video signal (model AG-6730 only)

3 (VIDEO) IN

Select the input video signal.
LINE: The signal supplied to the video input connector (line) serves as the input video signal.
S-VIDEO: The signal supplied to the S video connector serves as the input signal.

■ Setting the S-VHS recording mode (model AG-6730 only)

4 S-VHS REC

Select the S-VHS recording mode.
ON: Whether the tape is VHS or S-VHS is automatically identified, and recording proceeds in the corresponding mode.
OFF: Recording always proceeds in the VHS mode regardless of the type of cassette used. During playback, the tape type is automatically identified.

■ Time adjust function time setting (model AG-6730 only)

5 (TIME ADJUST) SET TIME

Set the time.
Only the "hours" can be set.
The "minutes" remains at "00."

Set the time using the set "+" or "−" button.

■ Time adjust function selection (model AG-6730 only)
[See Note 4]

6 (TIME ADJUST) OPERATION

Select the time adjust function.
SLAVE: The VTR's time is set by the external switch or master VTR.
MASTER: Using the VTR as the master clock, the time of another VTR is set.

NOTES

[Note 1]
Power loss memory
When power failures have occurred, the number of occurrences together with their dates and times are counted up to a maximum of 99 times, and the data of the 4 most recent occurrences is stored in the memory.

[Note 2]
Do not mix black-and-white and color signals when supplying them to the video input connectors. This will cause sync fluctuations and generate noise.

[Note 3]
When supplying signals which may cause the circuit to make an error in its automatic identification, set to COLOR for color signals and to B/W for black-and-white signals.
When color signal are supplied with a B/W setting or black-and-white signals are supplied with a COLOR setting, unnatural video signals will be recorded.

[Note 4]
SLAVE mode
• When the rear panel's time adjust input terminal is shorted to ground, the VTR's time is set to the time established in step 5, and pulses (L) are output from the time adjust output terminal.

MASTER mode
• Pulses (L) are output from the time adjust output terminal when the VTR's time tallies with the set time.

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

45

Menu Screen 4

(Alarm recording mode settings)

```
((ALARM/SENSOR REC))
    MODE           OFF
    DURATION       0.5MIN
    BUZZER         OFF
    REPEAT IN      OFF
   (RESET PULSE)
    INPUT LEVEL    HIGH
   (CAMERA SW)
    TIMING         1FIELD
    MODE           TM2
```

The alarm recording mode settings are performed on this screen.

■ Selecting the alarm recording time mode

1 | MODE |

Select the recording time mode when an alarm input is received.

OFF: No alarm recording.
2H: 2-hour mode
*6H: 6-hour mode
L12H: 12-hour mode (linear slow)
L18H: 18-hour mode (linear slow)
L24H: 24-hour mode (linear slow)
24H: 24-hour mode (time lapse)
NO CHANGE: The recording time remains unchanged even if there is an alarm input.

("*" applies to model AG-6730 only.)

```
                    Alarm input
← Tape start            ↓           Tape end →
```

Recording	Alarm recording mode	Recording
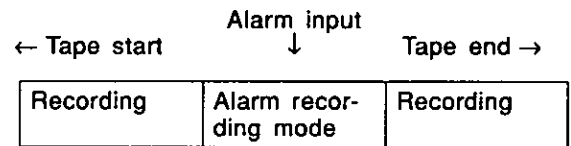
• When there is an alarm input during recording in one of the time lapse modes, the recording time mode switches to the designated mode and the emergency scene is faithfully recorded.

■ Setting the alarm recording duration

2 | DURATION |

Set how long the alarm recording is to last from the start to the end.

0.5MIN-3.0MIN: The time can be set in 30-second increments from 0.5 to 3 minutes.
CONTINUE: Alarm recording continues until the tape-end.
MANUAL: Alarm recording is performed while the alarm input continues to be received.

[Displaying the screens]
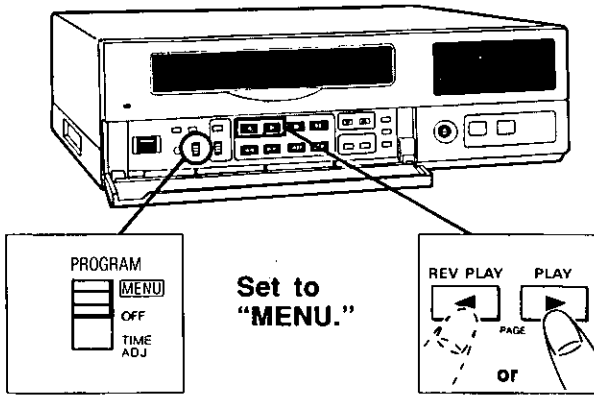
PROGRAM
[MENU]
OFF
TIME
ADJ

Set to "MENU."

REV PLAY   PLAY
◄   ►
     PAGE

Press one of these buttons until the desired menu screen appears.

or
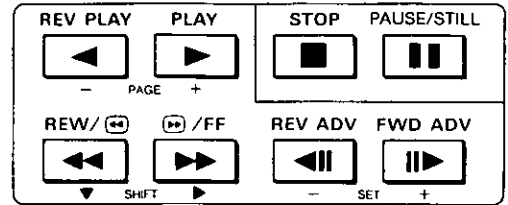
■ Buzzer ON/OFF

3 | BUZZER |

Set whether the buzzer is to sound during alarm recording.
OFF: The buzzer does not sound.
ON: The buzzer sounds while alarm recording is in progress.

• Press any function button to release the buzzer.

■ Setting the repeat-in function

4 | REPEAT IN |

Set whether alarm recording is to proceed when there has been an alarm input while the tape was being rewound automatically in the recording mode.
OFF: No alarm recording.
ACCEPT: Alarm recording [See Note 1]

■ Selecting the alarm reset pulse acceptance level

5 | (RESET PULSE) INPUT LEVEL |
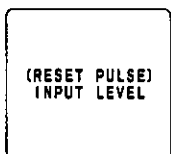
Select the acceptance level of the alarm reset pulse.
HIGH: The high level is set.
LOW: The low level is set. (See page 74)

■ Setting the timing

6 | (CAMERA SW) TIMING |

Set the camera switchover timing signal which is to be output by the external sequential switcher during recording.
The cameras are switched every 1-, 2-, 3-, 4-, 5-, 10-, 20-, 30- or 60-fields. [See Note 2]

■ Selecting the camera switchover mode

7 | (CAMERA SW) MODE |

Select whether the camera switching is to be done in field or frame units. [See Note 3]
TM2: Switching in field units.
TM1: Switching in frame units.

NOTES

[Note 1]
When "ACCEPT" is selected in the repeat-in function, be sure to set to other modes than "OFF" in step 1. If "ACCEPT" is selected when the repeat-in function is "OFF" in step 1, the unit may cause an error.

[Note 2]
When "TM1" has been selected as the camera switchover mode in step 7, the cameras are switched in frame units.

[Note 3]
Select "TM1" when the WJ-FS10A frame switcher is connected and "TM2" when any other sequential switcher is connected.

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 5

### (1-shot recording mode setting)

(Model AG-6730 only)

```
[[1-SHOT REC]]
    FIELD           1
    INTERVAL       3MIN
```

The alarm recording mode settings are performed on this screen.

■ Selecting the 1-shot recording time
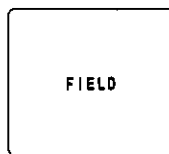
1 | FIELD | Select the time for recording one frame in the 1-shot recording mode in field units: 1, 2, 3, 4, 5, 10, 15, 20, 30, 40, 50, 60. [See Note 1]

■ Setting the interval time for 1-shot recording

2 | INTERVAL | Set the duration of the intervals for 1-shot recording.
1: 1-shot recording at 1-minute intervals.
2: 1-shot recording at 2-minute intervals.
3: 1-shot recording at 3-minute intervals.

Recording time
↓

		Interval duration		Interval duration

■ For model AG-6040

The 1-shot recording mode for the model AG-6040 is fixed to the settings given below.
• Time for recording one frame: 1 field
• Interval duration: 3 minutes

[Displaying the screens]
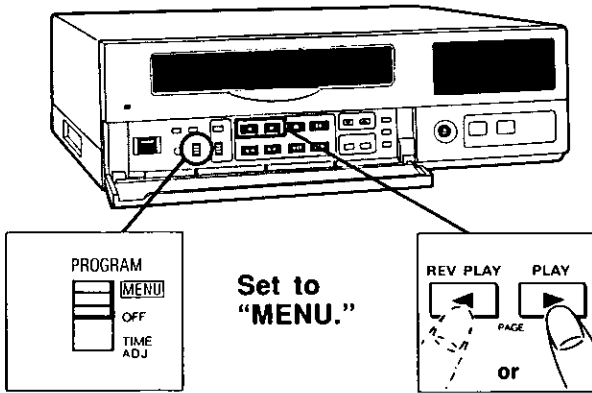
PROGRAM
MENU
OFF
TIME ADJ

Set to "MENU."

REV PLAY   PLAY
◄   ►
PAGE

or

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]

REV PLAY   PLAY   STOP   PAUSE/STILL
◄   ►   ■   ❙❙
      – PAGE +

REW/◄◄   ►►/FF   REV ADV   FWD ADV
◄◄   ►►   ◄❙❙   ❙❙►
      ▼ SHIFT ►   – SET +
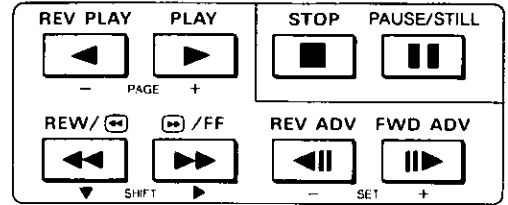
PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (►) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

■ **The lengths of time during which recording can be performed in the 1-shot recording mode are as follows (using a 120-minute tape).**

		Interval duration (minutes)		
		1	2	3
Time for recording one frame (in fields)	1	7,200	14,400	21,600
	2	3,660	7,260	10,860
	3	2,480	4,880	7,280
	4	1,890	3,690	5,490
	5	1,536	2,976	4,416
	10	828	1,548	2,268
	15	592	1,072	1,552
	20	474	834	1,194
	30	356	596	836
	40	297	477	657
	50	261	405	549
	60	238	358	478

Unit (hours)

NOTES

[Note 1]
The recording interval per field among the fields set is one second.

[Other notes]
The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

Menu Screen 6
(Internal timer recording mode settings)

```
[[INTERNAL TIMER REC ]]
  (TIMER) START END      T-M
SUN OFF
MON OFF
TUE OFF
WED OFF
THU OFF
FRI OFF
SAT OFF
DLY OFF
```

The internal timer recording modes are set on this screen.
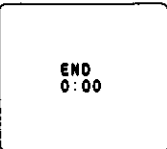
■ **Internal timer mode ON/OFF**

1 | (TIMER) SUN ON

Set the internal timer mode ON or OFF.
ON: The internal timer recording mode is established.
OFF: The internal timer recording mode is not established.
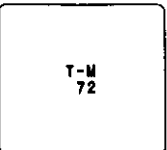
■ **Setting the timer recording start time**

2 | START 0:00

Set the time at which the internal timer recording is to start.

Select the setting items using the SHIFT buttons and set the numerical values using the SET buttons.

■ **Setting the timer recording end time**

3 | END 0:00

Set the time at which the internal timer recording is to end.

Select the setting items using the shift buttons and set the numerical values using the SET buttons.

■ **Setting the recording time mode**

4 | T-M 72

Set the recording time mode for internal timer recording.
2H, *6H, L12H, L18H, L24H, 24H, 48H, 72H, 84H, 120H, 180H, 240H, 480H, 000H
("*" applies to model AG-6730 only.)
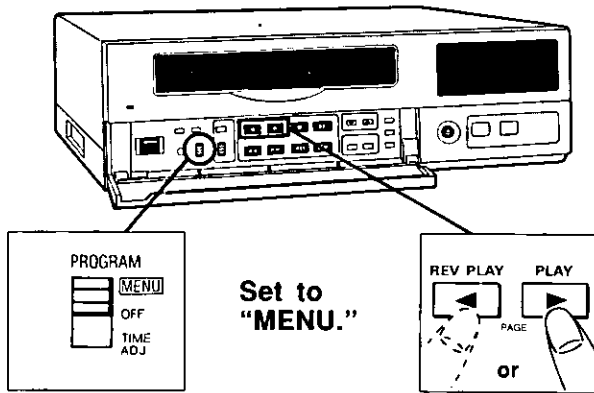
Set to "MENU."

Press one of these buttons until the desired menu screen appears.
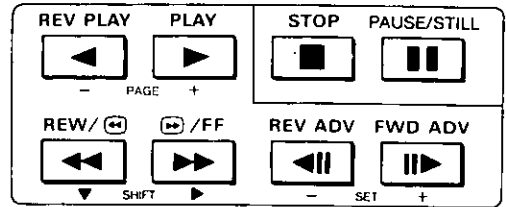
PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

■ Weekly timer recording

The internal timer recording start and end times can be set once a day for each day of the week from Sunday through Saturday.

For each day of the week, set the internal timer ON/OFF mode, recording start and end times, and recording mode.

```
(TIMER)  START   END   T-M
SUN ON    8:00   8:00   72
MON ON   12:00  14:00   72
TUE OFF
WED OFF
THE ON   14:00  23:00   72
FRI OFF
SAT ON   16:00   8:00   48
```

■ Daily timer recording

Internal timer recording can be started and ended at the the same preset times every day.

```
DLY ON  18:00   8:00
```

■ Using the weekly and daily timers in combination

```
((INTERNAL TIMER REC ))
(TIMER) START END     T-M
SUN ON   8:00   8:00   72
MON ON  12:00  14:00   72
TUE OFF
WED OFF
THE ON  14:00  23:00   72
FRI OFF
SAT ON  12:00   8:00   48
DLY ON  18:00   8:00   72
```

When the settings are as per the screen shown on the left, the weekly and daily timer recording and the actual recording durations on the tape will be as follows.
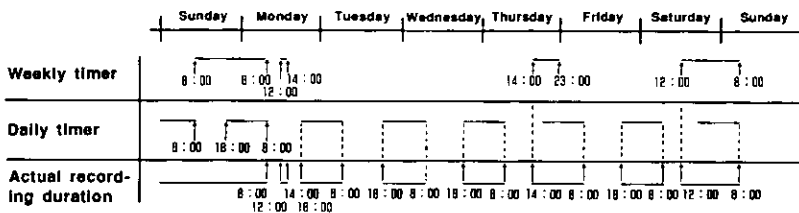
■ If the recording times overlap in places between the weekly and daily settings, the daily timer recording time (hour) mode takes precedence.

NOTES

[Notes]
- Internal timer recording is not activated if the date and time have not been set.
- The time setting display (24-hour or PM/AM basis) accords with the mode assigned by the time/date setting.
- If the internal timer mode is set "OFF" after the start and end times have been set with the mode "ON", the time setting display will be cleared but will then re-appear when the mode is set back to "ON."
- When the weekly timer and daily timer recording functions are used in combination, the time mode set for the daily timer recording takes precedence if there should be any overlap between the two time settings.
- The item settings are entered when the PROGRAM switch is returned to the "OFF" position.

■ This screen appears only when the optional RS-232C connector has been installed.

Menu Screen 7
(RS-232C parameter setting)

```
((RS-232C PARAMETER))
   BIT LENGTH   7BIT
   STOP BIT     STOP-1
   PARITY       ODD
   BAUD RATE    9600
```

■ **Setting the character length**

1   BIT LENGTH

Set the character length.
7BIT: 7 bits
8BIT: 8 bits

[see Note 1]

■ **Setting the stop bit**

2   STOP BIT

Set the stop bit.
STOP-1: 1 bit
STOP-2: 1 bits

[see Note 2]

■ **Setting the parity bit**

3   PARITY

Set the parity bit
ODD: Odd number
EVEN: Even number
NONE: None

[see Note 3]

■ **Setting the baud rate**

4   BAUD RATE

Set the baud rate (data transmission speed).
1200: 1200 bits per second
2400: 2400 bits per second
4800: 4800 bits per second
9600: 9600 bits per second

[see Note 4]

[Displaying the screens]
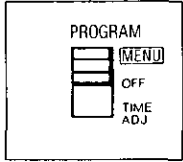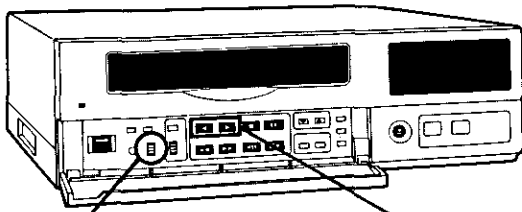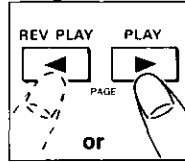
PROGRAM
- MENU
- OFF
- TIME ADJ

Set to "MENU."

Press one of these buttons until the desired menu screen appears.

[Menu setting buttons]

REV PLAY	PLAY
STOP	PAUSE/STILL
REW/◄◄	►►/FF
REV ADV	FWD ADV
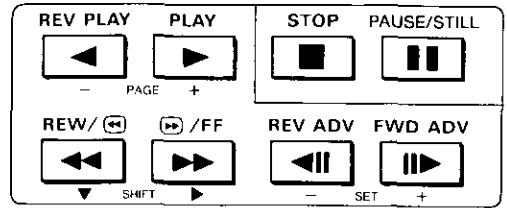
PAGE (−) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (►) button:	Move to item on the right
SET (−) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

■ RS-232C

"RS-232C" is an interface standard for data terminals and data communications equipment employing serial binary data exchange as stipulated under the RS-232 EIA standard. Using this RS-232C interface, this VTR can be controlled by a personal computer.

■ Code format

Bit length: 7BIT
Stop bit: STOP-1
Parity: EVEN
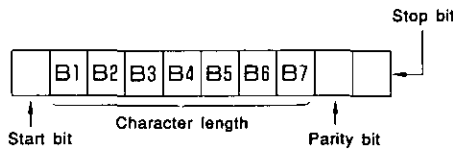
Bit length: 7BIT
Stop bit: STOP-2
Parity: ODD
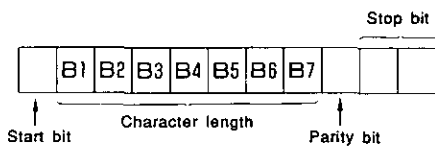
Bit length: 8BIT
Stop bit: STOP-1
Parity: EVEN
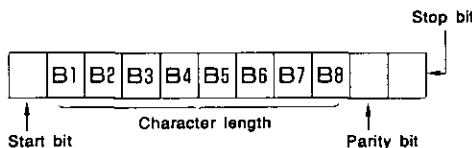
Bit length: 8BIT
Stop bit: STOP-2
Parity: ODD
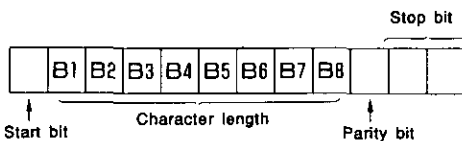
NOTES

[Note 1]
Character (data) length
This is the number of bits that configure the character data.

[Note 2]
Stop bit
Added to each character are the start bit which indicates the start of the data and the stop bit which indicates the end of the data. The start bit is fixed at 1 bit but the stop bit can be set to either 1 or 2 bits.

[Note 3]
Parity bit
The parity bit is added for checking transmission errors. When data is to be transmitted, the total number of ones for the character is made an even number or odd number of ones depending on the setting of this bit, and this is checked at the receiving end.

Total number of ones: odd number

1	0	1	1	0	0	1	1
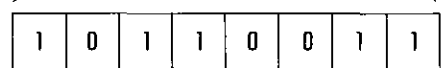
Character   **Parity bit**

In the above case:
Parity error for an even number under parity check.
No parity error for an odd number under parity check.

[Note 4]
Baud rate (data transmission rate)
This is the volume of data which can be sent in one second. For instance, a rate of 2400 bps means that 2400 bits of data is sent in one second.

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■ This screen appears only when the optional RS-232C connector has been installed.

Menu Screen 8

(Time code setting)

```
((TIME CODE))
    MODE        REGEN
    VITC REC    ON
    POSITION    11H.13H
    TC PRESET   00:00:00:00
    UB PRESET   00 00 00 00
```

Recording the time code is a handy way of finding absolute positions on the tape.

■ **Selecting the time code.**

1 | MODE |
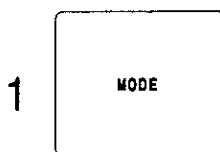
Select the time code mode.
REGEN: The regeneration mode is established.
The VTR's clock value serves as the time code value, and the data and alarm count are written into the user's bit.
P FREE-RUN: The count starts from a preset time code value. The count continues to advance regardless of whether the VTR is recording or stopped.
[See Note 1]
P REC-RUN: The count starts from a preset time code value. The count advances only during recording.
[See Note 2]

■ **Setting the time code (VITC) recording ON/OFF**

2 | VITC REC |

Set the time code (VITC) recording ON or OFF.
ON: The time code is recorded.
OFF: The time code is not recorded.

[See Note 3]

■ **Setting the time code (VITC) insertion lines**

3 | POSITION |
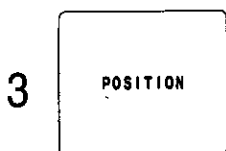
Set the lines at which the VITC code is to be inserted.
10H-19H: Select two insertion lines which are not side by side.

[See Note 4]

■ **Setting the time code preset (default) value**

4 | TC PRESET |

Set the time code default value.
00:00:00:00: Set the values for hours/minutes/seconds/frames.

• Any value from 00:00:00:00 to 23:59:59:29 can be set.

[Displaying the screens]
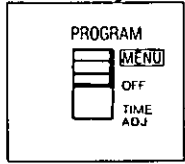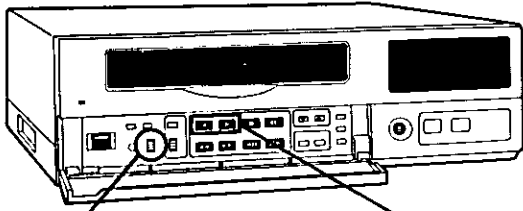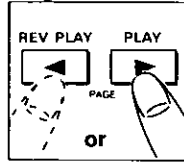
PROGRAM	
MENU	
OFF	
TIME ADJ	

Set to "MENU."

REV PLAY   PLAY

Press one of these buttons until the desired menu screen appears.

or

[Menu setting buttons]

REV PLAY	PLAY	STOP	PAUSE/STILL
◀	▶	■	‖

PAGE +

REW/	/FF	REV ADV	FWD ADV
◀◀	▶▶	◀‖	‖▶
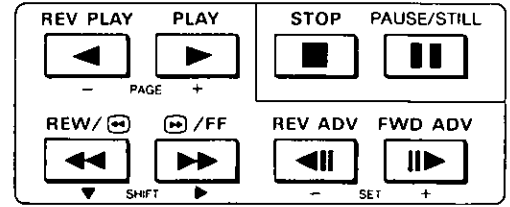
▼ SHIFT ▶   — SET +

PAGE (–) button:	Page down
PAGE (+) button:	Page up
SHIFT (▼) button:	Move to item below
SHIFT (▶) button:	Move to item on the right
SET (–) button:	Change item (decrement numerical value)
SET (+) button:	Change item (increment numerical value)

■ Setting the user's bit preset value

5 | UB PRESET |

Set the user's bit preset value.
00:00:00:00: Set an 8-digit alphanumeric string.
- Any of the following 16 alphanumerics can be used: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F.

[See Note 5]

■ Time code

00 : 00 : 00 : 00

Hours : minutes : seconds : frames   1 second = Approx. 30 frames

Position where the time code is recorded on the tape

— Audio signals

— Video signals and VITC time code

— Control signal
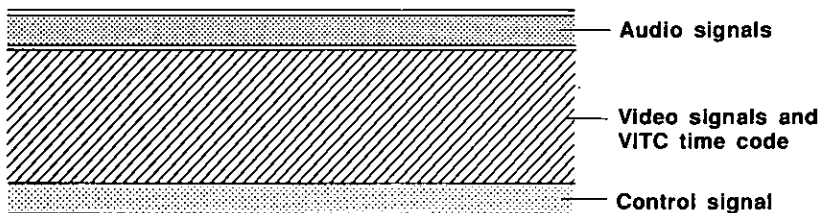
- The VTR's time code is forcibly recorded on the drop-frame mode.
  To make up for the time lag between color synchronizing and actual time over a long time, two frames (00, 01) each are skipped from the beginning of each minute except 0, 10, 20, 30, 40, 50 minutes.

NOTES

[Note 1]
Free-running mode
In this mode, the time code is counted at all times. It is useful when recording durations in real time.

[Note 2]
Rec-running mode
In this mode, the time code is counted only while the VTR is in the recording mode. It is handy when ascertaining accurately an absolute position on the tape.

[Note 3]
VITC
This stands for vertical interval time code. It is a signal which is recorded on the vertical lines on the tape. It is recorded together with the video signals.

[Note 4]
Insertion line
This refers to the vertical line position where the VITC is recorded. Two lines are selected.

[Note 5]
User's bit
This is a code which the user sets as desired. It is useful for recording a control number or a tape's serial number, for instance, on the tape.

Checkpoints For Menu Setting

■ The menu screens appear only when the VTR is in the stop or eject status and when the recording lock switch is OFF. They do not appear when it is recording or playing back a tape, etc.

■ Internal timer recording is not activated unless the time and date have been set.

■ Whatever has been set on the menu screens is entered when the PROGRAM switch is returned to the "OFF" position.

■ How to select time modes
Refer to the table below and select the modes which fit the objective of the intended application.

Mode		Recording enable time (in hours)			Video recording interval (in seconds)	Audio recording	Camera switchover interval (in seconds)		Type of tape travel
		120-minute tape	90-minute tape	60-minute tape			TM1	TM2	
2H		2	1.5	1	1/60	Possible	1/30	**1/30	Continuous travel
6H		6	4.5	3	1/60	Possible	1/30	**1/30	Continuous travel
L12H		12	9	6	0.1	Possible	0.2	0.1	Continuous travel at low speed
L18H		18	13.5	9	0.15	Possible	0.3	0.15	Continuous travel at low speed
L24H		24	18	12	0.2	Possible	0.4	0.2	Continuous travel at low speed
24H		24	18	12	0.2	Not possible	0.4	0.2	Intermittent travel
48H		48	36	24	0.4	Not possible	0.8	0.4	Intermittent travel
72H		72	54	36	0.6	Not possible	1.2	0.6	Intermittent travel
84H		84	63	42	0.7	Not possible	1.4	0.7	Intermittent travel
120H		120	90	60	1.0	Not possible	2.0	1.0	Intermittent travel
180H		180	135	90	1.5	Not possible	3.0	1.5	Intermittent travel
240H		240	180	120	2.0	Not possible	4.0	2.0	Intermittent travel
480H		480	360	240	4.0	Not possible	8.0	4.0	Intermittent travel
Note 000H	Manual	Approx. 120	Approx. 90	Approx. 60	Approx. 1.0	Not possible	—	—	Intermittent travel
	1 min.	7,200	5,400	3,600	60	Not possible	—	—	Intermittent travel
	2 min.	14,400	10,800	7,200	120	Not possible	—	—	Intermittent travel
	3 min.	21,600	16,200	10,800	180	Not possible	—	—	Intermittent travel

* The figures in the table apply when TM1 and TM2 for CAMERA SW TIMING on menu screen 4 have been set to 1 FRAME and 1 FIELD, respectively. To ascertain the camera switchover interval when TM1 and TM2 have been set to other timing values, multiply the timing setting by the figure given in the above table for the mode in question.

**1/30
Since the cameras cannot be switched over in 1-field units in the 2H or 6H mode, the switchover takes place at 1/30-second intervals.
Use 1/60-second as the basis for multiplication involving two or more fields. (For instance, with a 2 FIELD setting, multiply 1/60 by 2 which yields 1/30 sec.; with a 3 FIELD setting, multiple 1/60 by 3 which yields 1/20 sec.)

Note: The figures for 000H (1-shot recording) apply when the 1-shot recording time on menu screen 5 has been set to 1 field.

• The 6H mode is provided by model AG-6730 only.
• The actual recording enable time will be slightly longer than the "Recording enable time" given in the above table although this will depend on the tape used.
For instance, it is possible to record for about 26 hours using a 120-minute tape in the 24H mode.

Helpful Functions

Applications

Series Recording

(Model AG-6730 only)

1,7   2
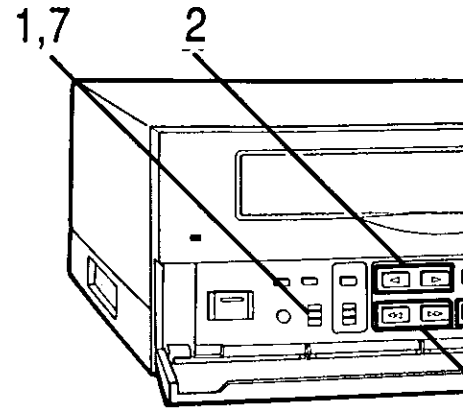
The steps for continuous recording using several time lapse VTRs are described in this section.

1
```
PROGRAM
  MENU
  OFF
  TIME
  ADJ
```
Set this switch to "MENU."

```
[(DISPLAY)]
MODE         T/D
CHARACTER    WHITE
POSITION     L-UPPER
TIME SELECT  24HOURS
DATA         ON
TIME         ON
T-MODE       ON
```

2
REV PLAY   PLAY

or

Press one of these buttons to display menu screen 2.

```
[(VTR MODE SELECT 1)]
(REC T-MODE)  OFF
(TAPE IN)
MODE          STOP
(TAPE END)
MODE          STOP
ALARM IN      STOP
(EJECT OPERATION)
MODE          EJECT
```

3
REW/◄◄   ►►/FF
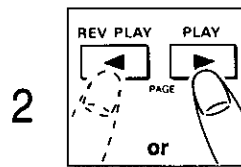
Press this button to select "TAPE END MODE."

```
[(VTR MODE SELECT 1)]
(REC T-MODE)  OFF
(TAPE IN)
MODE          STOP
(TAPE END)
MODE          STOP
ALARM IN      STOP
(EJECT OPERATION)
MODE          EJECT
```

4
REV ADV   FWD ADV

or
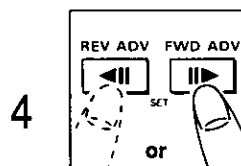
Press one of these buttons to set to "REW."

```
[(VTR MODE SELECT 1)]
(REC T-MODE)  OFF
(TAPE IN)
MODE          STOP
(TAPE END)
MODE          REW
ALARM IN      STOP
(EJECT OPERATION)
MODE          EJECT
```

5
REW/◄◄   ►►/FF

Press this button to select "TAPE END ALARM IN."

```
[(VTR MODE SELECT 1)]
(REC T-MODE)  OFF
(TAPE IN)
MODE          STOP
(TAPE END)
MODE          REW
ALARM IN      STOP
(EJECT OPERATION)
MODE          EJECT
```

3,5 4,6

6

REV ADV FWD ADV
SET
or

Press one of these buttons to set to "CONTINUE."

```
((VTR MODE SELECT 1))
(REC T-MODE)   OFF
(TAPE IN)
 MODE          STOP
(TAPE END)
 MODE          REW
 ALARM IN      CONTINUE
(EJECT OPERATION)
 MODE          EJECT
```

7

PROGRAM
MENU
OFF
TIME
ADJ

Set this switch to "OFF."

NORMAL PICTURE
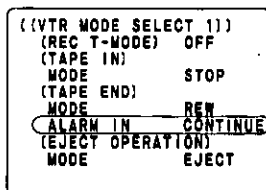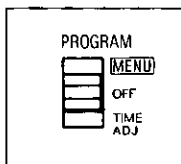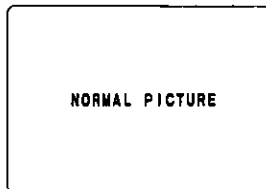
■ **Series recording with 2 or more time lapse VTRs**

The second VTR starts recording as soon as the tape-end in the first VTR is detected.

■ **Alternate recording with 2 VTRs**

The second VTR starts recording as soon as the tape-end in the first VTR is detected.

The first VTR starts recording again as soon as the tape-end in the second VTR is detected.

NOTES

■ After having completed the settings, proceed with the regular recording operation using the first VTR.

■ Set the power switches of the second and subsequent VTRs to the "ON" position.

■ In order to prevent errors occurring in operation, it is recommended that the REC LOCK switch is set to "1" or "2."

1-Shot Recording

1,10   2,5
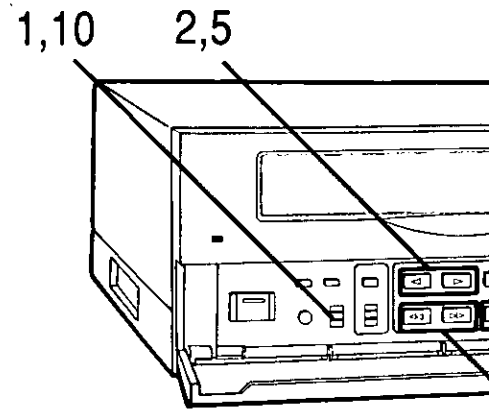
The steps for 1-shot recording used for data files and animation, for instance, are described in this section.

1

PROGRAM
MENU
OFF
TIME ADJ

Set this switch to "MENU."

```
[[DISPLAY]]
  MODE          T/D
  CHARACTER     WHITE
  POSITION      L-UPPER
  TIME SELECT   24HOURS
  DATA          ON
  TIME          ON
  T-MODE        ON
```

2

REV PLAY   PLAY
PAGE
or

Press one of these buttons to display menu screen 2.

```
[[VTR MODE SELECT 1]]
  [REC T-MODE]   OFF
  [TAPE IN]
    MODE         STOP
  [TAPE END]
    MODE         STOP
    ALARM IN     STOP
  [EJECT OPERATION]
    MODE         EJECT
```

3

REW/⏪   ⏩/FF
SHIFT ►

Press this button to select "REC T-MODE."

```
[[VTR MODE SELECT 1]]
  [REC T-MODE]   OFF
  [TAPE IN]
    MODE         STOP
  [TAPE END]
    MODE         STOP
    ALARM IN     STOP
  [EJECT OPERATION]
    MODE         EJECT
```

4

REV ADV   FWD ADV
SET
or
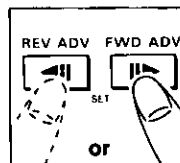
Press one of these buttons to display "000H."

[See Note 1]

```
[[VTR MODE SELECT 1]]
  [REC T-MODE]   000H
  [TAPE IN]
    MODE         STOP
  [TAPE END]
    MODE         STOP
    ALARM IN     STOP
  [EJECT OPERATION]
    MODE         EJECT
```

5

REV PLAY   PLAY
PAGE
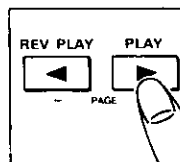
Press this button to display menu screen 5.

(This step applies to model AG-6730 only.)

```
[[1-SHOT REC]]
  FIELD          1
  INTERVAL       3MIN
```
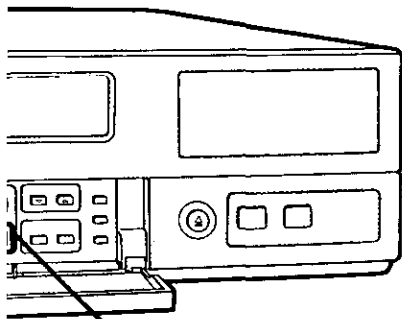
3,6,8   4,7,9
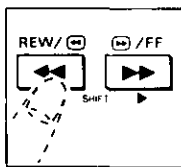
| 6 | | **Press one of these buttons to select "FIELD."**
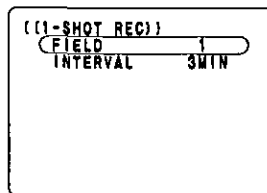
(This step applies to model AG-6730 only.) | |

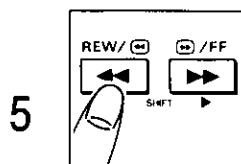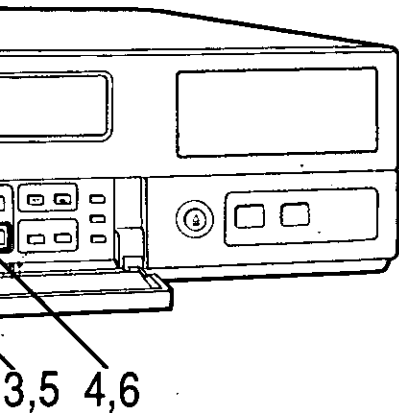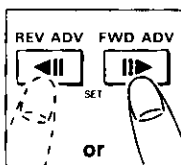| 7 | | **Press one of these buttons to set the 1-shot recording time.**
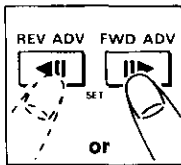
[See Note 2]
(This step applies to model AG-6730 only.) | |

| 8 | | **Press this button to select "INTER-VAL."**
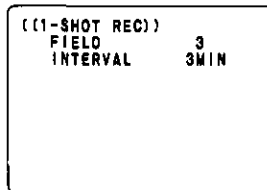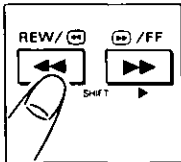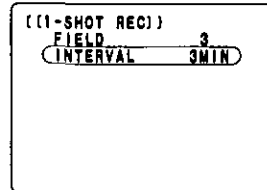
(This step applies to model AG-6730 only.) | |

| 9 | | **Press one of these buttons to set the interval time.**
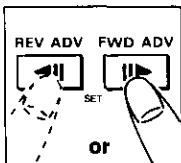
[See Note 3]
(This step applies to model AG-6730 only.) | |

| 10 | | **Set this switch to "OFF."**
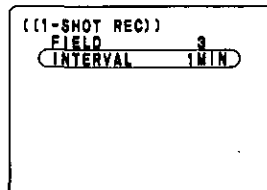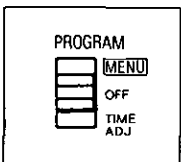
↓ (Continued overleaf) | NORMAL PICTURE |
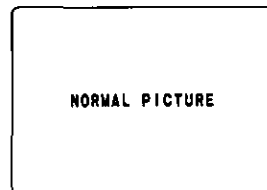
NOTES

[Note 1]
When "REC T-MODE" on menu screen 2 is "OFF," the time mode can be set to "000H" also by pressing the TIME MODE button on the front sub panel.

[Note 2]
Each time the SET button is pressed, the time for recording one frame is successively changed as follows: 1 → 2 → 3 → 4 → 5 → 10 → 15 → 20 → 30 → 40 → 50 → 60 → 1 → 2 ... (Unit: field)
(This time is fixed at 1 field for model AG-6040.)

[Note 3]
Each time the SET button is pressed, the interval time is successively changed as follows: 1 → 2 → 3 → 1 ... (Unit: minute)
(This time is fixed at 3 minutes for model AG-6040.)

61

1-Shot Recording
(Continued)
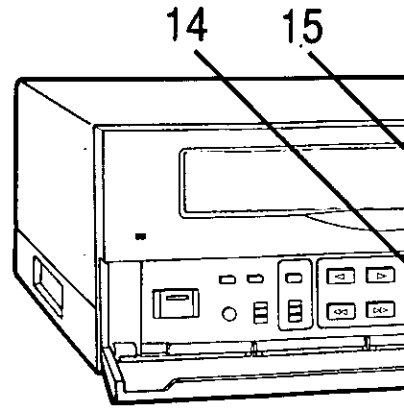
11
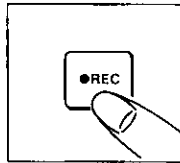
When this button is pressed, few shots are recorded and the VTR is set to the recording standby mode.

REC 000ₕ ▷ 11:53

12
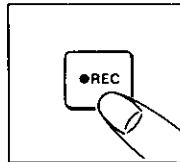
When the button is pressed again, 1 shot is recorded and the VTR is set to the recording standby mode.

REC 000ₕ ▷ 11:53
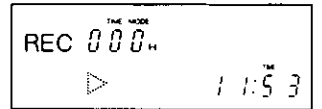
13

■ One frame (shot) is recorded each time this button is subsequently pressed.
■ If the REC button is not pressed, one frame (shot) is recorded automatically when the interval time elapses.

14
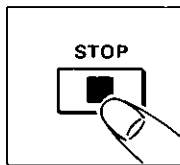
Press this button to stop 1-shot recording.

15
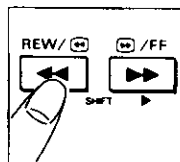
To release this mode, set to any position except "000H."

```
[[VTR MODE SELECT 1]]
(REC T-MODE)    OFF
(TAPE IN)
MODE            STOP
(TAPE END)
MODE            STOP
ALARM IN        STOP
(EJECT OPERATION)
MODE            EJECT
```
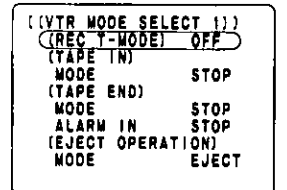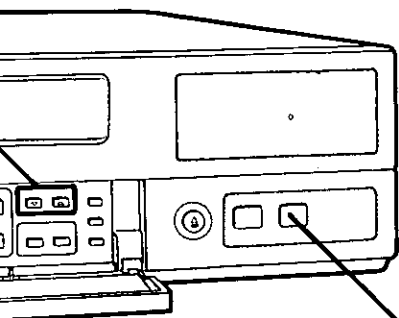
11,12

■ 1-shot recording using a remote switch
Besides activating 1-shot recording by pressing the
REC button on the VTR's front panel, it is also possible to connect a
remote switch and activate 1-shot recording from a distance by remote
control.

• Ask your dealer to give you details about a remote switch.
• The ON time for the remote switch must be at least 100ms.
• An interval of at least 1 second is required to turn on the remote switch.
  Refer to page 74 for the signal levels.

NOTES

[Other notes]
Refer to page 49 for the lengths of time
during which recording can be performed in
the 1-shot recording mode.

Automatic Time Setting

(Model AG-6730 only)
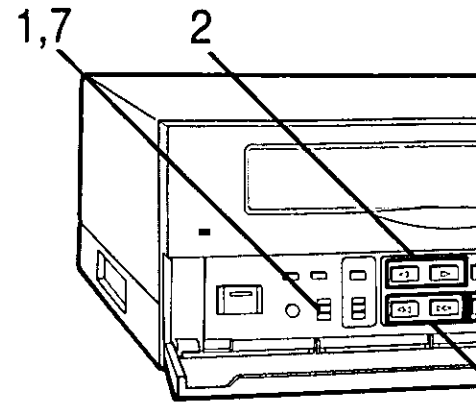
Using an external switch, for instance, it is also possible to set this unit's time to any time setting.
With this unit serving as the master clock, it is possible set the time of other time lapse recorders (only Panasonic time lapse recorders equipped with a time adjust input connector).

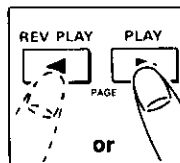**1** Set this switch to "MENU."
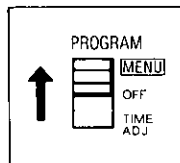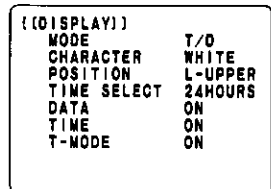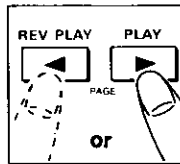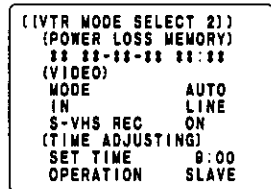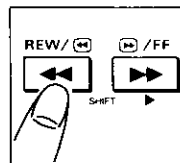
```
[[DISPLAY]]
MODE         T/D
CHARACTER    WHITE
POSITION     L-UPPER
TIME SELECT  24HOURS
DATA         ON
TIME         ON
T-MODE       ON
```
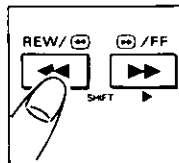
2 Press one of these buttons to display menu screen 3.

```
[[VTR MODE SELECT 2]]
[POWER LOSS MEMORY]
## ##-##-## ##:##
[VIDEO]
MODE         AUTO
IN           LINE
S-VHS REC    ON
[TIME ADJUSTING]
SET TIME     0:00
OPERATION    SLAVE
```

3 Press this button to select "TIME ADJUST SET TIME."

```
[[VTR MODE SELECT 2]]
[POWER LOSS MEMORY]
## ##-##-## ##:##
[VIDEO]
MODE         AUTO
IN           LINE
S-VHS REC    ON
[TIME ADJUSTING]
SET TIME     0:00
OPERATION    SLAVE
```

4 Press one of these buttons to set the time.

```
[[VTR MODE SELECT 2]]
[POWER LOSS MEMORY]
## ##-##-## ##:##
[VIDEO]
MODE         AUTO
IN           LINE
S-VHS REC    ON
[TIME ADJUSTING]
SET TIME     11:00
OPERATION    SLAVE
```

5 Press this button to select "TIME ADJUST OPERA-TION."

```
[[VTR MODE SELECT 2]]
[POWER LOSS MEMORY]
## ##-##-## ##:##
[VIDEO]
MODE         AUTO
IN           LINE
S-VHS REC    ON
[TIME ADJUSTING]
SET TIME     11:00
OPERATION    SLAVE
```

6

REV ADV	FWD ADV
◀I I	I I▶
SET	
or	
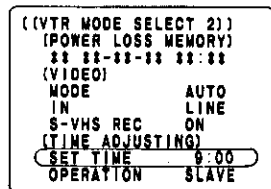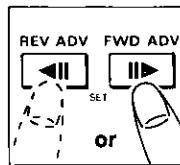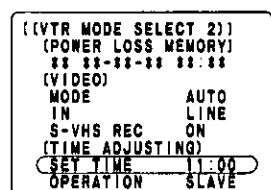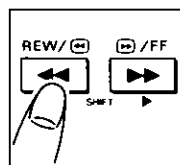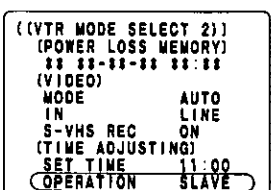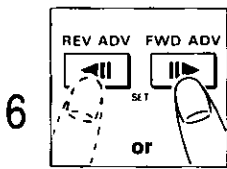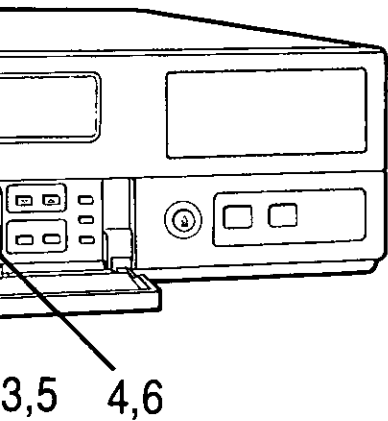
Press one of these buttons to select the time setting mode.

[See Note 1]

```
((VTR MODE SELECT 2))
 (POWER LOSS MEMORY)
 ** **-**-** **:**
 (VIDEO)
 MODE         AUTO
 IN           LINE
 S-VHS REC    ON
 (TIME ADJUSTING)
 SET TIME     11:00
 OPERATION    MASTER
```

7

PROGRAM
MENU
OFF
TIME ADJ

Set this switch to "OFF."

NORMAL PICTURE
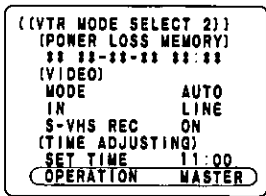
NOTES

[Note 1]

■ When SLAVE is selected:

When the rear panel's time adjust input terminal is shorted to ground, this VTR is set to the time which was set in step 4 and, at the same time, the pulses are output to the other VTRs.

■ When MASTER is selected:

Pulses are output to the other VTRs when this VTR is set to the time which was set in step 4.
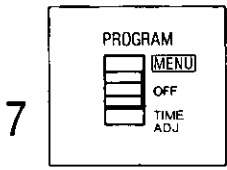
Other Functions

Power restoration recording

When there was a power failure during recording, the VTR is automatically set to the recording mode provided that the power is restored within one month.

■ Immediately after the power has failed, the VTR is set to the tape protection mode so as to protect the video heads and tape.

■ The VTR status established after the power is restored depends on the status established prior to the power failure and on the recording mode, as follows.

Mode \ Status	Recording	Playback, stop, fast forward, rewind	Auto rewinding during auto repeat recording
Alarm	Recording	Stop	Recording after tape is rewound to its start
Internal timer	Resume the recording as per the settings of the internal timer.		Recording after tape is rewound to its start
External timer	Recording	Recording	Recording after tape is rewound to its start

■ In the event of power failure lasting more than one month, recording will be forcibly started by the recorder in the 72H mode once the power has been restored if a tape has been loaded.

Automatic recording review function

This function conducts the recording review automatically when recording has been commenced from the stop mode.

First, recording is conducted for several seconds, and then what has been recorded is automatically reviewed. If, after a review of the recording, the proper video level was not achieved due to dirt on the heads or tape deterioration, the cassette mark ($\boxed{\overline{\bigcirc\bigcirc}}$) flashes on the display tube and, at the same time, the automatic head cleaning operation is repeated 3 times. After this, recording is again conducted for several seconds, and then what has been recorded is automatically reviewed. If the result of the review is acceptable, the cassette mark stops flashing.and the recording is commenced.

If the result of the review is not acceptable, the recording is commenced with the cassette mark still flashing. (See page 77)

Function setting method

Connect the 1-shot recording terminal to ground and short-circuit.

| 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 |

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT
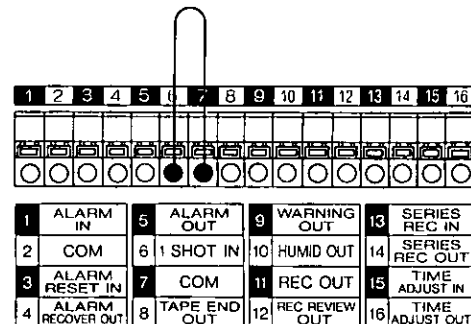
■ When the automatic recording review function is set, do not use the unit's 1-shot recording facility.

■ Do not press the REC REVIEW button when automatic recording review function is conducting.

Connections

Equipment Connections

VIDEO IN connectors (BNC)
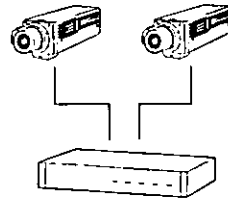
Connect the external video input signal from a sequential switcher or other unit.

• **Do not mix black-and white and color signals when supplying them to the video input connectors. This will cause the picture to fluctuate and generate noise.**

RS-232C connector (option)
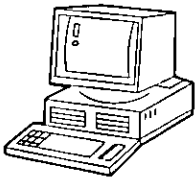
Use this to connect a personal computer for controlling the VTR.

Personal computer

GND

Terminal secti(
(see page 70)

REMOTE (serial) connector (M3)

This is used to connect the optional AG-A67 remote controller.

**AG-A67
(option)**

MIC IN jack (M3)
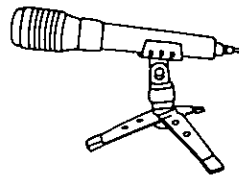
This is used to connect the audio input signals from a microphone (with a 600Ω impedance).

Microphone
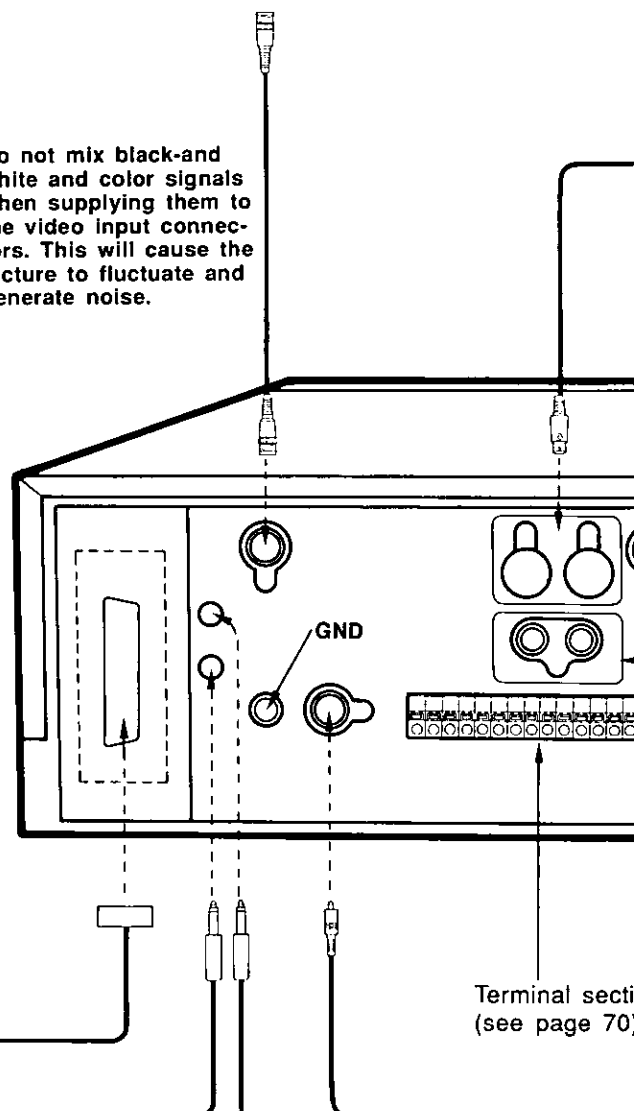
S-VIDEO IN/OUT connectors

S-VIDEO IN connector:	Used for connecting the VTR with a unit provided with an S video output connector.
S-VIDEO OUT connector:	Used for connecting the VTR with a unit provided with an S video input connector.

VIDEO OUT connector (BNC)
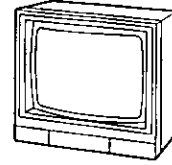
Video signals are output from this connector.
(Noise may be generated depending on the TV monitor used.)

TV monitor
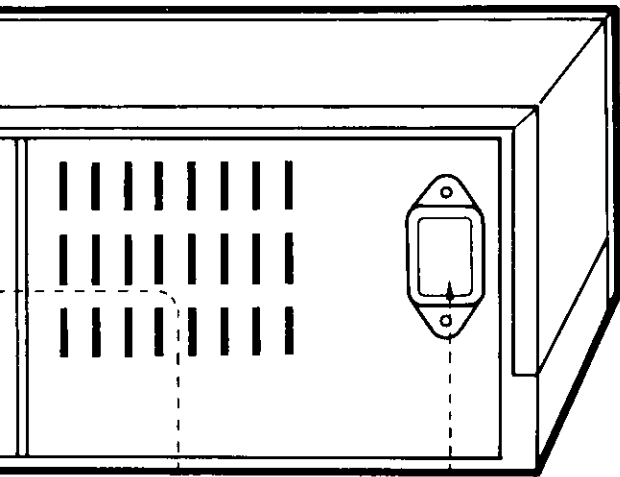
Power socket

Connect one end of the accessory power cable to this socket and the other end to an AC 120V household power outlet.

CAMERA SW OUT connector (RCA)
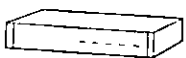
This connector outputs the signal that changes the camera switchover timing to the sequential switcher, etc.

Sequential switcher, etc.

AUDIO IN/OUT connectors (RCA)
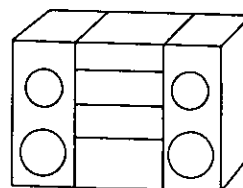
These input/output audio signals.
When the audio input connectors and mic jack are used at the same time, the recording of the sound from the mic jack takes precedence.

Audio system

Terminal Connections

Connections for alarm recording

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT
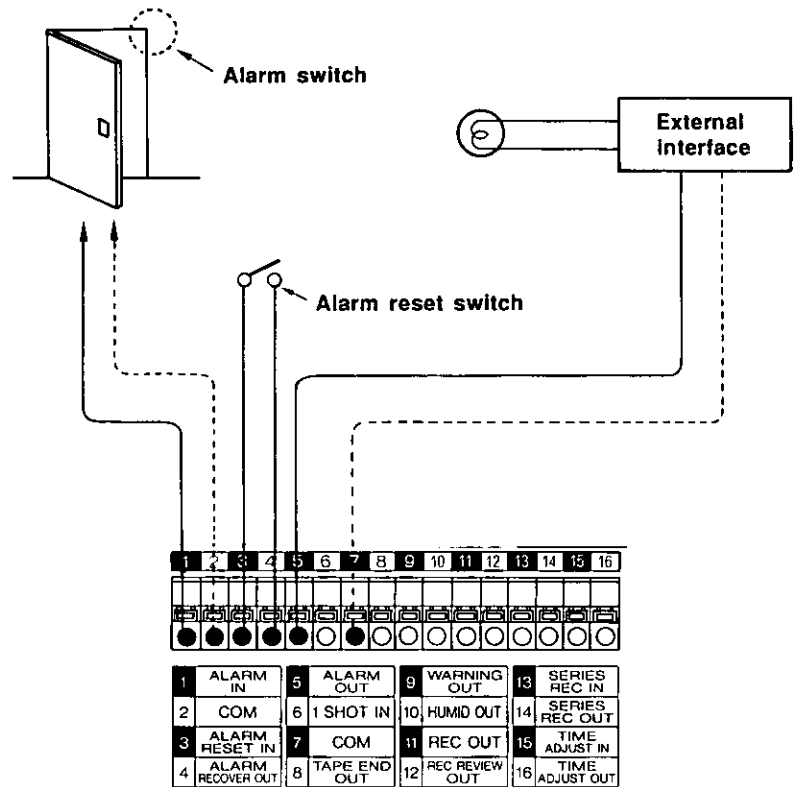
- ■ Alarm recording is commenced when the alarm switch is set ON.
- ■ Alarm recording is released when the alarm reset switch is set ON.
- ■ When alarm recording is started, the alarm lamp and buzzer are activated. Use a +12V alarm lamp and buzzer.

Terminal section of model AG-6040

1	ALARM IN	4	ALARM RECOVER OUT	7	COM
2	COM	5	ALARM OUT	8	TAPE END OUT
3	ALARM RESET IN	6	1 SHOT IN	9	WARNING OUT
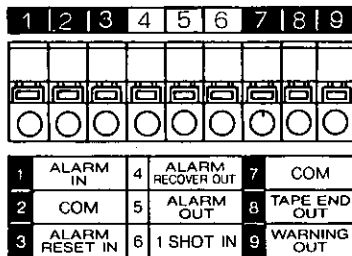
External interfacing specifications

Example of lamp lighting with high signal.
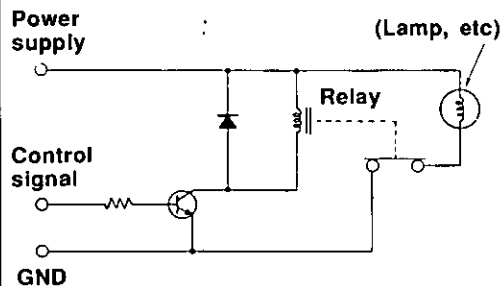
- ■ Use devices with ratings which match the actual conditions of use.

Connections for 1-shot recording

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT
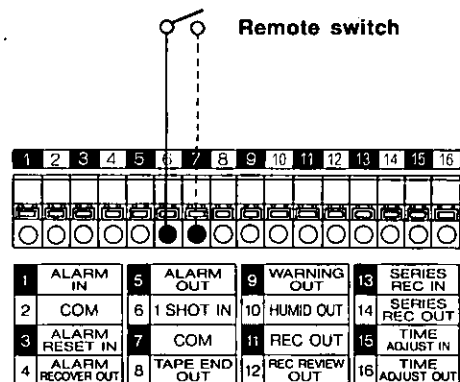
- ■ When the remote switch is set ON, one shot (frame) is recorded.
- ■ The ON time for the remote switch must be at least 200ms.
- ■ An interval of at least 1 second is required to turn on the remote switch.

Connections for tape-end output

1	ALARM IN	**5**	ALARM OUT	**9**	WARNING OUT	**13**	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	**7**	COM	**11**	REC OUT	**15**	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Lamp/buzzer

External Interface
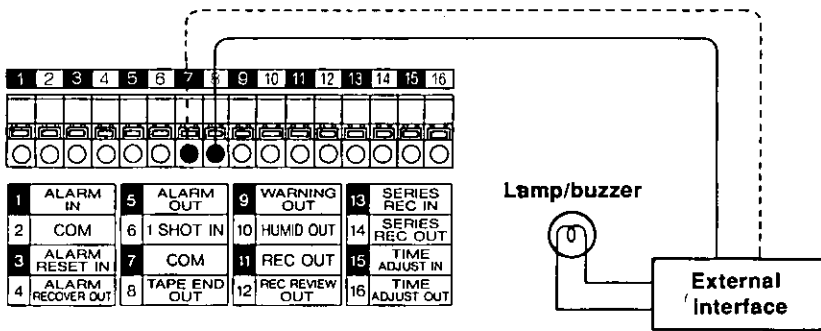
■ When the cassette tape reaches its end during recording, the alarm unit connected externally is activated.

Connections for auto OFF output

1	ALARM IN	**5**	ALARM OUT	**9**	WARNING OUT	**13**	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	**7**	COM	**11**	REC OUT	**15**	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Lamp/buzzer

External Interface
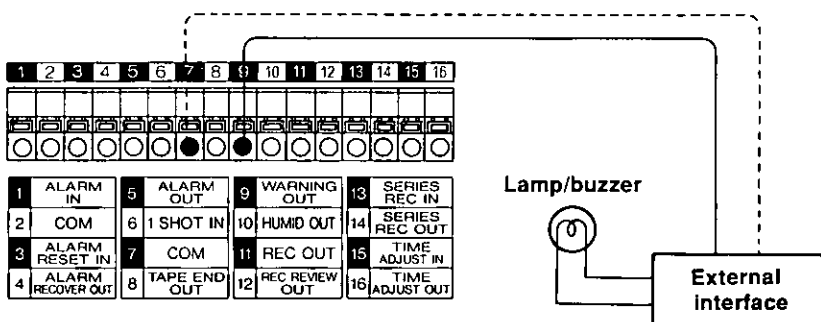
■ When a malfunction has occurred in this VTR, the alarm unit connected externally is activated.

In such a case, an error code will appear on the display (see page 77).

Connections for dew output (model AG-6730 only)

1	ALARM IN	**5**	ALARM OUT	**9**	WARNING OUT	**13**	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	**7**	COM	**11**	REC OUT	**15**	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Lamp/buzzer

External Interface
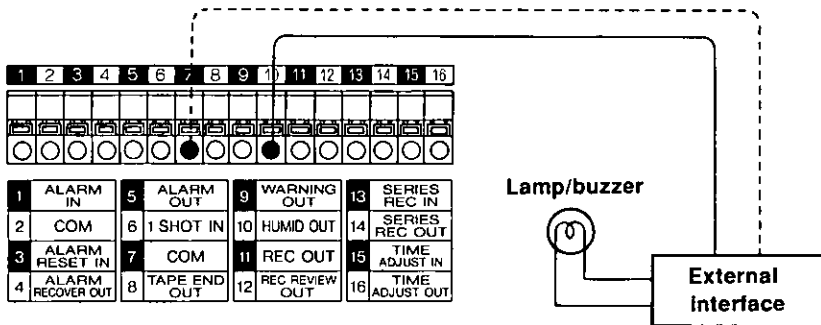
■ When dew (condensation) has formed inside this VTR, the alarm unit connected externally is activated.

In such a case, "d" will appear on the display (see page 76).

Connections for recording output (model AG-6730 only)

1	ALARM IN	**5**	ALARM OUT	**9**	WARNING OUT	**13**	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	**7**	COM	**11**	REC OUT	**15**	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Lamp/buzzer

External interface
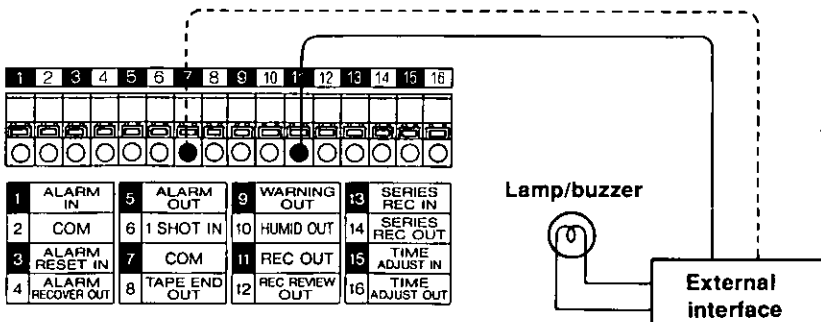
■ When the VTR is set to the recording mode, the alarm unit connected externally is activated.

Terminal Connections

(Continued)

Connections for recording review
(model AG-6730 only)

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Lamp/buzzer

External interface
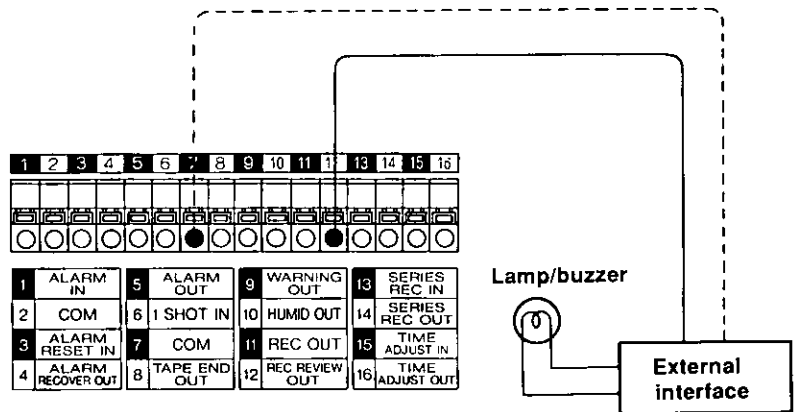
■ The external unit is actuated if it was not possible for the proper video level to be obtained after the recording check operation due to dirt on the heads or deterioration of the tape. At the same time, the cassette mark ([⊙⊙]) on the display tube will flash. (See page 77)

Connections for series recording
(model AG-6730 only)

First VTR

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Second VTR

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

■ The second VTR starts recording as soon as the tape in the first VTR reaches its end.
■ The first VTR starts recording again as soon as the tape in the second VTR reaches its end.
■ When a third VTR is connected, the series output of the second unit is connected to the series input of the third unit.

Connections for time setting (model AG-6730 only)

■ Setting the time of another VTR using this VTR

First VTR

Second VTR

1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT
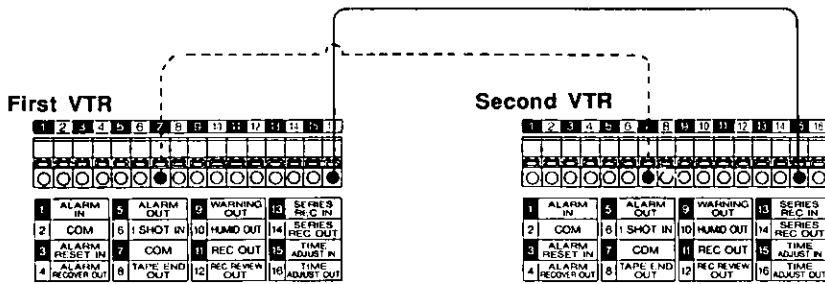
• Set "TIME ADJUST OPERATION" on menu screen 3 of this VTR to "MASTER."
• When this VTR is set to the time which was set by "TIME ADJUST SET TIME" on menu screen 3, pulses are output and all the other VTRs are set to the time.

■ Setting this VTR's time using the external switch
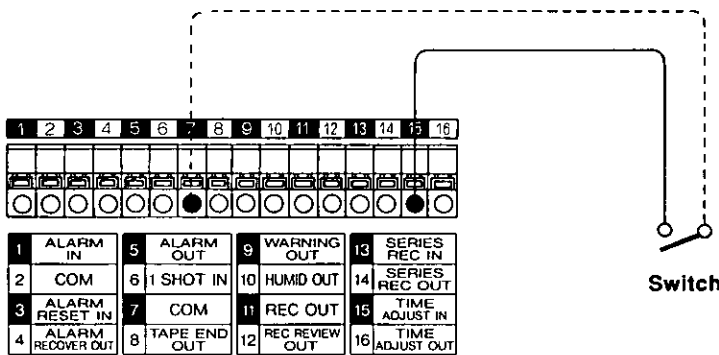
1	ALARM IN	5	ALARM OUT	9	WARNING OUT	13	SERIES REC IN
2	COM	6	1 SHOT IN	10	HUMID OUT	14	SERIES REC OUT
3	ALARM RESET IN	7	COM	11	REC OUT	15	TIME ADJUST IN
4	ALARM RECOVER OUT	8	TAPE END OUT	12	REC REVIEW OUT	16	TIME ADJUST OUT

Switch

• Set "TIME ADJUST OPERATION" on menu screen 3 of this VTR to "SLAVE."
• When the TIME ADJUST IN terminal is connected to ground (COM) and short-circuited using an external switch, the time is set to what was set by "TIME ADJUST SET TIME" on menu screen 3.

■ Setting the time of several VTRs using the external switch
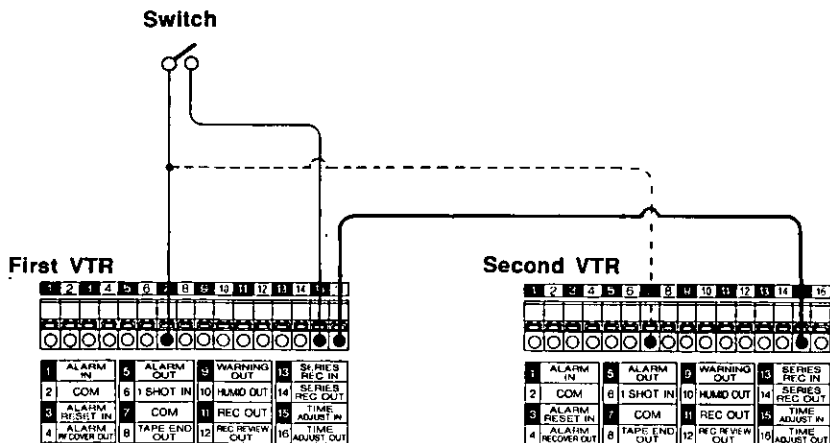
Switch

First VTR

Second VTR

• Set "TIME ADJUST OPERATION" on menu screen 3 of this VTR to "SLAVE."
• When the TIME ADJUST IN terminal is connected to ground (COM) and short-circuited using an external switch, the time is set to what was set by "TIME ADJUST SET TIME" on menu screen 3, and the other VTRs are also set to the time.

■ Other time lapse recorders which can be connected to this unit are limited to Panasonic models equipped with time setting terminals.
(This unit's time can be set to any hour and minute but bear in mind that the time on the model AG-6750/6750A is fixed at AM9:00.)

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Terminal Signal Levels

Name of terminal	Signal level		Remarks
Alarm input	V IH, V IL, T	$V_{IL}=0\sim0.6V$ $T\geqq100mS$	Ground input
Alarm reset input	V IH, V IL, T, (H) / V IH, V IL, T, (L)	$V_{IH}=4\sim5V$ $V_{IL}=0\sim0.6V$ $T\geqq100mS$	High/low input (H) or (L) can be selected on menu screen 4.
Alarm reset output	V OH, V OL	$V_{OH}=5\pm0.5V(200\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$	High output
Alarm output	V OH, V OL, Reset	$V_{OH}=11\sim13V(4700\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$	High output
1-shot recording input	T, V IL	$V_{IL}=0\sim0.6V$ $T\geqq100mS$	Ground input
Tape-end output	Auto repeat VOH Tape-end STOP, V OL, T, V OL, T, Reset	$V_{OH}=11\sim13V(4700\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$ $T=approx.2s$	Ground output
Auto OFF output	V OH, V OL	$V_{OH}=11\sim13V(4700\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$	Ground output
Dew output (model AG-6730 only)	V OH, V OL, T	$V_{OH}=4\sim5.5V(10K\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$	Ground output
Recording output (model AG-6730 only)	V OH, V OL, REC	$V_{OH}=11\sim13V(4700\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$	High output
Recording check output (model AG-6730 only)	V OH, OK, V OL, NG	$V_{OH}=11\sim13V(4700\Omega)$ $V_{OL}=0\sim0.6V(Max.3mA)$ OK when reset	Ground output
Series recording input (model AG-6730 only)	V IH, V IL, T	$V_{IL}=0\sim0.6V$ $T\geqq100mS$	Ground input
Series recording output (model AG-6730 only)	OPEN, OPEN, V OL, T	$V_{OL}=0\sim0.6V$ $T\geqq approx.700mS$	Ground output
Time set input (model AG-6730 only)	V IH, V IL, T	$V_{IL}=0\sim0.6V$ $T\geqq100mS$	Ground input
Time set output (model AG-6730 only)	OPEN, OPEN, V OL, T	$V_{OL}=0\sim0.6V$ $T=approx.1s$	Ground output

Precautions For Use

Dew ("d")
Display

■ When dew forms inside the VTR, the " d " mark appears on the display.

Wait a few hours until the " d " mark is cleared before proceeding any further with operation.

$$d$$
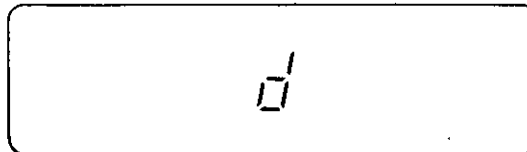
" d " refers to the first letter of the word "dew."

Dew (or condensation) refers to the phenomenon whereby droplets of water form, for instance, on the window pane of a warm room in winter.

■ **When dew has formed:**
• " d " appears on the display.
• The VTR cannot be operated until " d " is cleared from the display. Wait until it is cleared.
• When dew forms with the power OFF, the power is automatically switched on and the " d " mark appears.
• If a cassette has been installed, it is ejected half-way.
• If a cassette has not been installed, one cannot be installed until " d " is cleared from the display.

■ **When the dew status is released:**
• The VTR is restored to the state where regular operation is possible.
• If a cassette was installed, it is set to the stop mode.
• If dew formed during recording, the VTR is reset to the recording mode after the dew status is released.

■ **Take care even while dew is forming!**
Dew normally forms gradually, and the " d " mark may not flash for the first 10 to 15 minutes of dew formation. If the room temperature or humidity has changed, wait 20 minutes or so before using the VTR.

■ **Conditions conductive to dew-forming**
• When the VTR or cassette is moved from one location to another where the temperature or humidity is significantly different from the original location
• Where the humidity is high
• When the VTR or cassette is moved rapidly from a cool place to where the temperature or humidity is high
• A room immediately after it has been heated up

Error Display

■ An error display appears on the display tube when a failure or malfunction has occurred in the unit. The error display indicated on the display denotes the nature of the failure or malfunction.

Take the remedial action described below.

■ Error codes

$$E\text{-}2$$
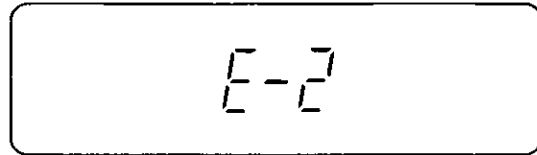
■ Cassette mark flashing error

◀ Mark flashes

When a malfunction occurs in the VTR, an error code appears on its display.

■ **When an error code appears:**
• An error code appears on the display.
• All operations are shut down when an error code appears on the display.
• **If the error is not released even after taking the remedial action described below, switch off the power, disconnect the power cable from the power outlet, and contact your dealer immediately.**

■ List of error codes

Error code	Malfunction	Remedial action
$E\text{-}2$	Malfunction in elevator section	These errors may occur if the video cassette has not been loaded properly. Try switching the power off and turning it back on again.
$E\text{-}3$	Malfunction in loading section	
$E\text{-}4$	Malfunction in cylinder section	These errors may occur if there is something wrong with the state of the video cassette. Try switching the power off and turning it back on again and replacing the video cassette.
$E\text{-}5$	Malfunction in reel section	
$E\text{-}6$	Incorrect tape tension	
$E\text{-}7$	Malfunction in reel solenoid	Try switching the power off and turning it back on again.
$E\text{-}8$	Malfunction in audio recording circuitry	Try switching the power off and turning it back on again.

■ Cassette mark flashing error

Mark flashes	The cassette mark (⊙) on the display tube flashes if it was not possible for the proper video level to be obtained after the recording review operation due to dirt on the heads or deterioration of the tape. VTR operation can still be continued but be sure to clean the heads or replace the cassette tape.

Safety Precautions

Be sure to heed these safety precautions to prevent fire, electric shocks and injury.
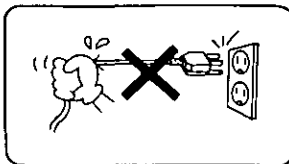
Always hold the plug when connecting and disconnecting the power cable!

Do not bring the power cable near hot appliances!
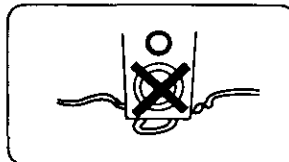
Do not place heavy objects on top of the power cable!
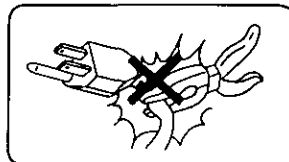
Do not tamper with the power cable!
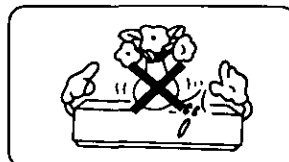
Do not place a container with water on top of the VTR or bring it close to the VTR!
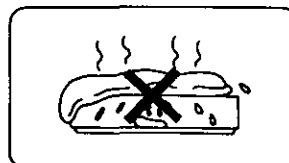
Do not block the ventilation holes!
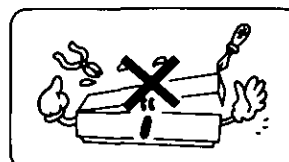
Do not remove the cabinet panels!
Touching the inside parts is not only dangerous but can also lead to breakdowns. Do not poke metal objects inside the VTR.
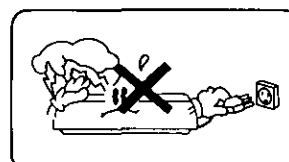
Do not use the VTR in a thunderstorm!
Disconnect the power plug as soon as possible.

Do not insert any object other than a video cassette into the cassette loading slot!
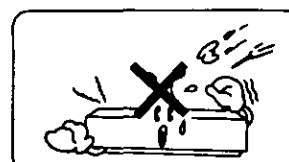
Stop using the VTR if smoke, malodors or unusual sounds come from it!
Contact your dealer immediately.

Handling Precautions

Be sure to heed these handling precautions to prevent failures and breakdowns.
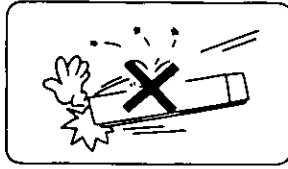
When moving the VTR:
• Do not subject it to impact.
• Be sure to disconnect all the wires connected to it.
• Hold it securely so that it will not fall on your feet.
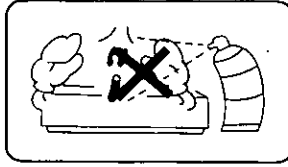
Do not spray insecticides or volatile substances onto the VTR!
These may cause discoloring or the paint to peel off.
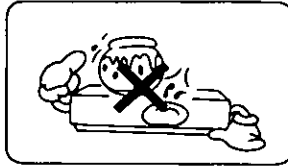
Do not place heavy objects on top of the VTR.
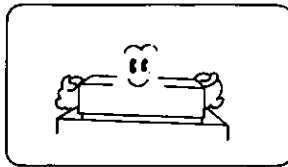
Install the VTR on a level and stable surface.
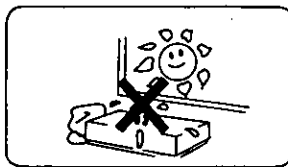
Avoid installing the VTR at a location which is exposed to direct sunlight.
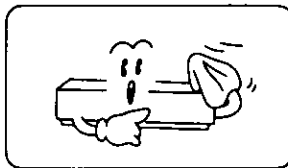
Wipe off any dirt using a soft cloth.
• Dip the cloth into diluted neutral detergent and wipe off the dirt.
Be sure to wipe the VTR dry afterwards.
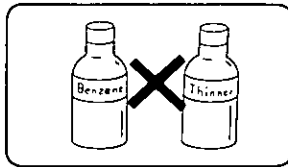
Do not use benzene or paint thinners to clean this unit.
These may cause discoloring or the paint to peel off.

■ The top panel and rear parts will become quite warm after extended use. This is normal and not indicative of a failure or malfunction.
■ When the VTR is not going to be used, be sure to remove the cassette and set the power switch to "OFF."

Daily Inspections/ Regular Inspections
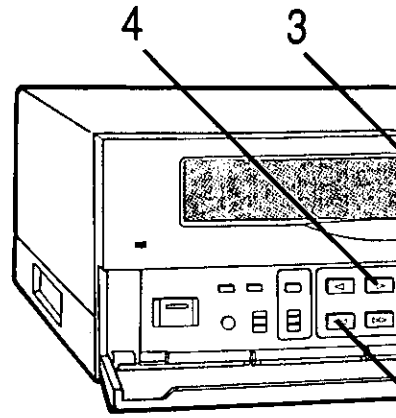
This unit is designed to withstand prolonged use. However, do not forget to perform the daily and regular inspections.

■ Daily inspections

Turn on the power to all the units.

1
• Is the TV monitor showing the correct picture?
• Are the time and date set properly?
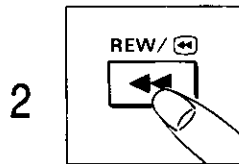
2

Slightly rewind the tape in a cassette used for recording on the previous day.

3
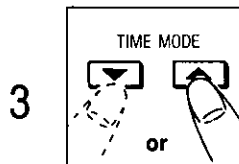
Press one of these buttons to set the time (hour) mode to "2H."

4
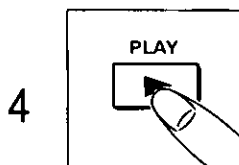
Press this button to monitor the pictures.

• Is the playback picture free from problems?
• Are the recorded time and date correct?
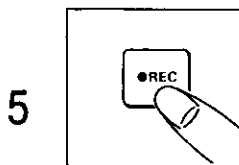
5

Try recording in the 2-hour mode.

• Play back the recording. Is there anything abnormal?

2   6   5
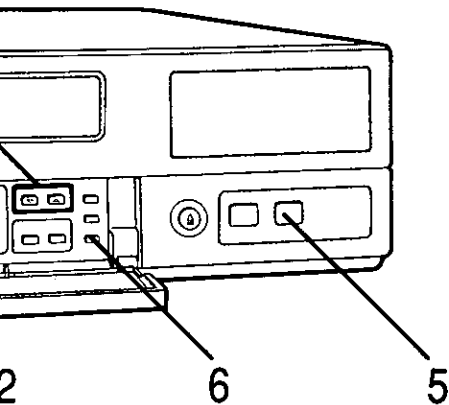
■ Regular inspections

• The regular inspections are performed by your dealer.
• This unit comes with a function (hour meter) which displays the number of hours that it has been used, and this display serves as a general guideline for the regular inspections.
• Depending on the total number of hours that the VTR has been used (the cylinder has turned), parts inside the unit must be replaced or cleaned.
• For further details, consult with your dealer.

6
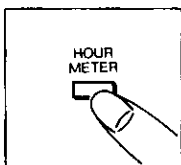
Press this button.

The total number of hours now appears on the display.
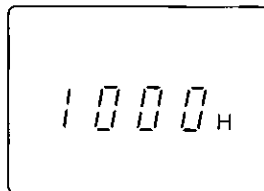
• If a problem has arisen after the daily inspection, refer to the "Troubleshooting Q&A" page, and try to remedy the cause of the problem.

If the malfunction still cannot be remedied, switch off the power, hold the power plug and disconnect the power cable from the power outlet, and consult your dealer.

• Do not forget to perform the daily inspections particularly with auto repeat recording.

Optional Accessories

A variety of optional accessories are available to enable you to make the maximum use of this VTR's functions.

AG-A67 Remote Controller

This VTR can be operated by remote control instead of using its function buttons if the optional AG-A67 remote controller is connected to the remote controller input connector on the VTR's rear panel.

■ The functions which can be controlled using the AG-A67 remote controller are listed below:

REC, REC REVIEW, REW, FF, PLAY, PAUSE/STILL, REV ADV, FWD ADV

■ Do not connect headphones, etc. to the REMOTE control input connector.
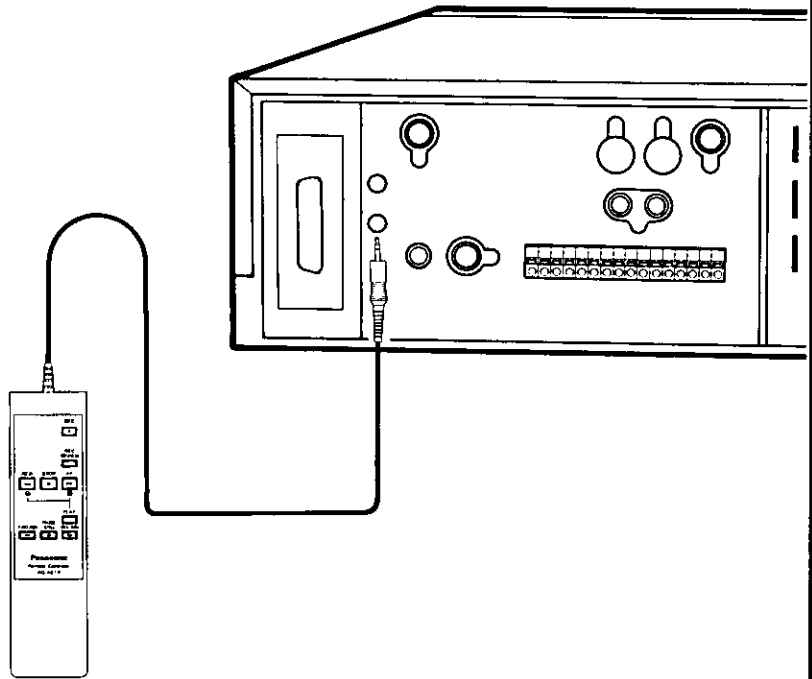
AG-IA670 RS-232C Interface Adaptor (Scheduled to be launched on market in fall of 1992)
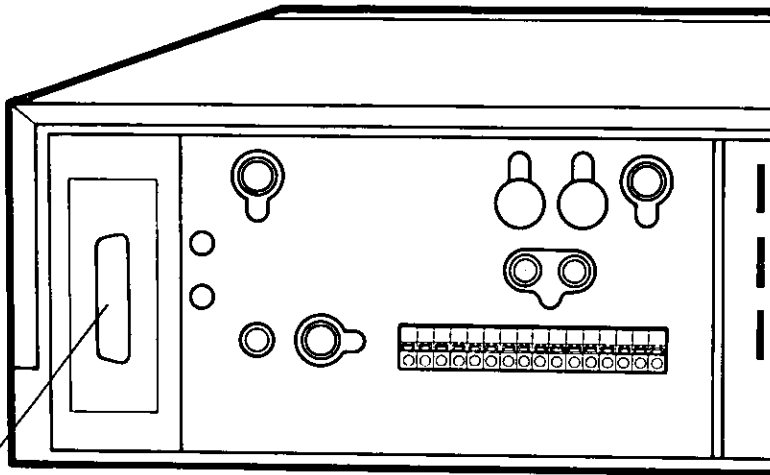
AG-IA670 RS-232C interface adaptor

The functions listed below can be added by mounting the RS-232C interface board adaptor.

RS-232C communication functions
The VTR can be controlled using a personal computer. Menu screen 7 (RS-232C parameter settings) is added.

VITC time code recording/playback function
Time code signals can be recorded onto the tape. These come in handy for searches by locating absolute positions on the tape.
Menu screen 8 (time code settings) is added.

WJ-FS10A Frame Switcher
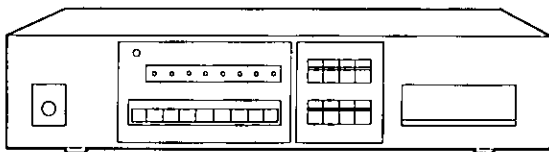
Continuous recording (using 4 cameras) in 2H/6H mode

Camera switchover timing
(A signal selected every 1/30 sec. (every frame) is output from the frame switcher.)

VTR recording screen
(Continuous recording for 1/60 sec. (one field))

Recording tracks on tape
(One screen (1 field) is recorded onto one track. If 4 cameras are used, 8 tracks (4 frames) are used in sequence.)

Playback (via frame switcher)
(The picture of the selected camera alone can be viewed.)
Example: When camera 1 is selected
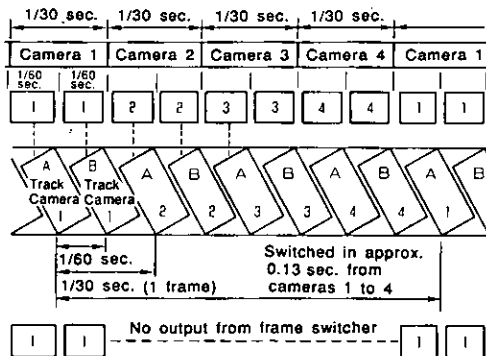
24-hour mode (using 4 cameras)

Camera switchover timing
(A signal selected every 0.4 sec. is output from the frame switcher.)

VTR recording screen
(Each 0.2 sec., one screen (1 field) is recorded for 1/60 sec.)

Recording tracks on tape
(Recording and pause are alternated each track (1 field). If 4 cameras are used, 8 tracks (4 frames) are used in sequence.)

Playback (via frame switcher)
(The picture of the selected camera alone can be viewed.)
Example: When camera 1 is selected
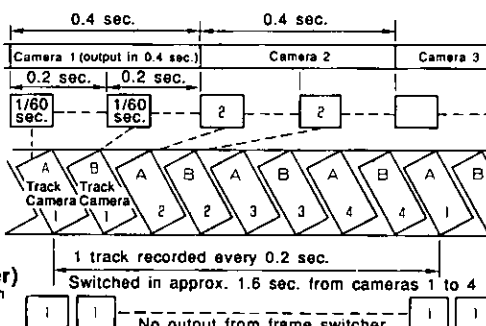
The pictures of 8 cameras can be switched with each frame and recorded, and only the picture of the camera selected during playback can be viewed and continuously played back.

• In the continuous recording mode, each camera is switched in 1/30 sec., and pictures from 8 cameras are recorded. With all 8 cameras switched in just 0.26 sec., there is no space not covered.
During playback, only the pictures of the same camera can be output through the frame switcher.

• The frame switcher can be used even during time lapse recording. In the 24-hour mode, for instance, time lapse recording is done at 0.2-second intervals with camera switchover at 0.4-second intervals. Recording proceeds with switching performed every 2 fields (1 frame) per camera.

• When the WJ-FS10A frame switcher is used, set the camera switchover timing mode on menu screen 4 to "TM1." (See page 47)

• The WJ-FS10A frame switcher cannot be used when the VTR is used in the L12, L18 or L24 time mode.

• Do not record the VITC time code when using the WJ-FS10A frame switcher. This will cause the unit to operate incorrectly during playback.

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Troubleshooting (Q&A)

Trouble	Check	Remedy

■ Power supply

Trouble	Check	Remedy
No power	• Has the power plug been disconnected from the outlet?	Connect the power plug properly.
	• Is an external timer connected?	Operate the external timer and supply power to the VTR.

■ Operation

Trouble	Check	Remedy
No operation no matter which function button is pressed.	• Has an error code appeared on the display?	See page 77.
	• Has the "d" mark appeared on the display?	See page 76.
	• Is the recording mode set to INTERNAL TIMER?	Press the REC MODE button.
	• Has the cassette been loaded properly?	Load it again properly.

■ Recording

Trouble	Check	Remedy
No recording	• Has the "tab" on the cassette tape been broken out?	See page 36.
	• Is the tape at its end?	Rewind it.
	• Has the PAUSE/STILL button been pressed?	Release it.
Recording cannot be stopped.	• Is the REC LOCK switch set to "1" or "2"?	Set the REC LOCK switch to "OFF."
No power restoration recording.	• Has the power failure lasted a month or more?	See page 66.
No internal timer recording.	• Have the time and date been set?	Complete the time/date settings. (See page 34)

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Trouble	Check	Remedy

■ Recording

Trouble	Check	Remedy
No auto repeat recording	• Is "TAPE END MODE" on menu screen 2 set to "REPEAT"?	Set to "REPEAT." (See page 43)
No alarm recording.	• Is "MODE" on menu screen 4 set to any position other than "OFF"?	Set to any position other than "OFF." (See page 46)
	• Are the alarm switch connections complete?	Complete the connections. (See page 70)
No buzzer at tape-end.	• Is "TAPE END MODE" on menu screen 2 set to "BUZZER"?	Set to "BUZZER." (See page 43)

■ Playback

Trouble	Check	Remedy
No playback	• Has a pre-recorded cassette been loaded?	Load the cassette properly.
Noise on playback screen.	• Any tracking deviation?	Press the TRACKING buttons to adjust the tracking. (See page 31)
	• Dirty heads?	Clean the heads with the optional cleaning tape. If the problem is not remedied, consult your dealer.
	• Old tape?	Replace with a new cassette tape.
Playback picture shakes vertically.	• Does the vertical hold on the TV monitor need adjusting?	Adjust the vertical hold on the TV monitor.

■ Menu screens

Trouble	Check	Remedy
No menu screens	Is the VTR in the stop or eject mode?	The menu screens appear only when the VTR is in the stop or eject mode.
	Is the recording lock switch at the "OFF" position?	The menu screen will not appear if this switch is set to "1" or "2."

■ Clock displays

Trouble	Check	Remedy
Time is not displayed correctly.	Is the internal battery capacity still sufficient?	Keep the power supplied continuously for at least 40 hours. (See page 35) If the time is still not displayed correctly, the internal battery may have reached the end of its service life.

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Specifications

(AG-6730)

| Power Source: | 120V AC, 50-60Hz |
| Power Consumption: | Approx. 30W |

■■■■■ is the safety information.

General

Operating Temperature:	41° to 104°F
Operating Humidity:	35% to 80%
Dimensions:	15"(W) x 4-7/16"(H) x 13-7/16"(D)
Weight:	Approx. 16.5 lbs.
Video recording system:	2 rotary heads, Azimuth recording system, VHS/S-VHS formats
Tape Speed:	1-5/16ips (2H mode) 7/16ips (6H mode)
Tape format:	S-VHS/VHS tape
Recording time:	2/6/L12/L18/L24/24/48/72/84/120/240/480 hours and 1-shot mode
FF/REW time:	Approx. 3min. (with 120-minute tape)

VIDEO

Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal	
Modulation System:	Luminance;	Frequency modulation recording
	Color signal;	Converted subcarrier phase shift recording
S-VIDEO input(4P):	Y;	1.0Vp-p, 75 ohms, unbalanced
	C;	0.286Vp-p, 75 ohms, unbalanced
Video input(BNC):	1.0Vp-p, 75 ohms, unbalanced	
S-VIDEO output(4P):	Y;	1.0Vp-p, 75 ohms, unbalanced
	C;	0.286Vp-p, 75 ohms, unbalanced
Video output(BNC):	1.0Vp-p, 75 ohms, unbalanced	
Horizontal resolution:	B/W mode;	300 lines(VHS) 400 lines(S-VHS)
	Color mode;	240 lines(VHS) 400 lines(S-VHS)
S/N:	B/W mode;	more than 46 dB (2H mode)
	Color mode;	more than 46 dB (2H mode)

AUDIO

Line input (RCA):	−10 dBv, 47 kohms, unbalanced
Mic input (M3):	−60 dBv, 600 ohms to 4.7 kohms, unbalanced
Line output (RCA):	−8 dBv, 600 ohms, unbalanced
Tracks:	1 track
S/N:	43 dB (2H mode)
Frequency Response:	50 Hz to 10,000 Hz (2H mode)

Standard accessory

Power cord:	x1

Weight and dimensions show are approximate.
Specifications are subject to change without notice.

Specifications

(AG-6040)

Power Source:	120V AC, 50-60Hz
Power Consumption:	Approx. 25W

███████ is the safety information.

General

Operating Temperature:	41˚ to 104˚F
Operating Humidity:	35% to 80%
Dimensions:	15"(W) x 4-7/16"(H) x 13-7/16"(D)
Weight:	Approx. 16.5 lbs.
Video recording system:	2 rotary heads, Azimuth recording system, VHS formats
Tape Speed:	1-5/16ips (2H mode)
Tape format:	VHS tape
Recording time:	2/L12/L18/L24/24/48/72/84/120/240/480 hours and 1-shot mode
FF/REW time:	Approx. 3min. (with 120-minute tape)

VIDEO

Television System:	EIA Standard (525 lines, 60 fields) NTSC color signal	
Modulation System:	Luminance;	Frequency modulation recording
	Color signal;	Converted subcarrier phase shift recording
Video input(BNC):	1.0Vp-p, 75 ohms, unbalanced	
Video output(BNC):	1.0Vp-p, 75 ohms, unbalanced	
Horizontal resolution:	B/W mode;	300 lines
	Color mode;	240 lines
S/N:	B/W mode;	more than 46 dB (2H mode)
	Color mode;	more than 46 dB (2H mode)

AUDIO

Line input (RCA):	−10 dBv, 47 kohms, unbalanced
Mic input (M3):	−60 dBv, 600 ohms to 4.7 kohms, unbalanced
Line output (RCA):	−8 dBv, 600 ohms, unbalanced
Tracks:	1 track
S/N:	43 dB (2H mode)
Frequency Response:	50 Hz to 10,000 Hz (2H mode)

Standard accessory

Power cord:	x1

Weight and dimensions show are approximate.
Specifications are subject to change without notice.

Panasonic

Communications & Systems Company
Division of Matsushita Electric Corporation of America

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