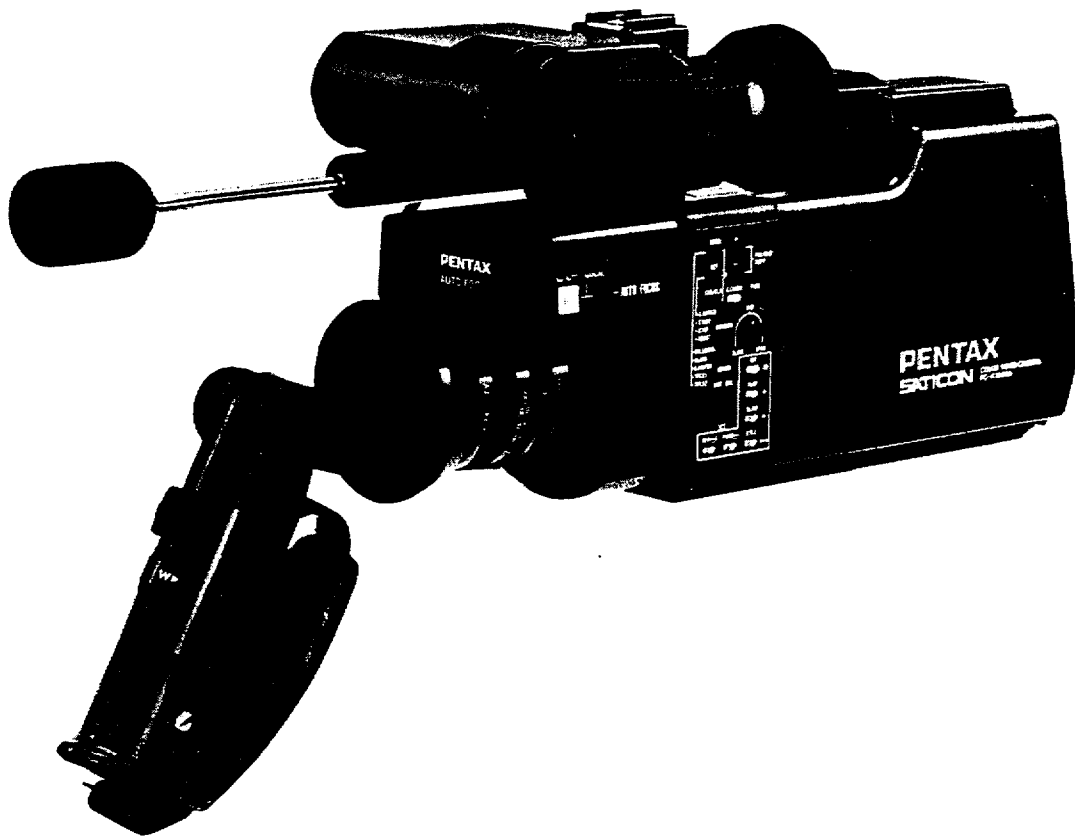


**PENTAX**

**COLOR VIDEO CAMERA**

**MODEL PC-K1500A**

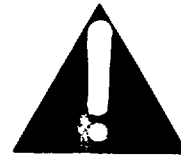
**INSTRUCTION MANUAL**





**CAUTION**

**RISK OF ELECTRIC SHOCK  
DO NOT OPEN**



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

**Explanation of Graphical Symbols**



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING: TO REDUCE THE RISK OF FIRE OR  
ELECTRIC SHOCK, DO NOT EXPOSE THIS  
APPLIANCE TO RAIN OR MOISTURE.**

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Read this instruction manual carefully so you will be able to enjoy all the features in your color camera and then keep the manual in a safe place for future reference.

It is recommended to make a test shooting before you plan to make recordings of such important events as weddings, etc. The loss of recorded material because of the Camera or VTR malfunction is not covered by the Pentax warranty.

# 1. FEATURES

The portable color camera is a single frequency separation type high-sensitivity color camera using 1/2-inch SATICON™ tube which ensures clear and sharp pictures even in dim light. It also has various functions such as character displays by a microcomputer, auto focus and auto white balance.

## **Beautiful and clear picture**

Since this camera uses a SATICON tube and a bias light just like television cameras used for the broadcasting industry, it is possible to obtain clear pictures with a minimum of after-image or noise even in dimly lighted scenes with only about 30 lux of light.

## **Auto focus function**

The auto focus system enables the focus adjustment automatically. Thanks to this function, the focus operation is extremely easy.

## **6X power zoom lens with macro function**

The lens is a 6X zoom lens with auto/manual iris. Since it has a macro function, extreme close-up shooting is possible.

## **Character display by microcomputer system**

Titles, date, time, stopwatch, operation check display and warning can be displayed in the viewfinder screen by means of a microcomputer.

## **VTR remote function**

The VTR functions: Record, Play, Forward Search, Reverse Search, Slow, Still and Record Check can be controlled from the camera, when connected with the Pentax portable VTR.

## **Auto white balance**

White balance adjustment is achieved by simply pressing down the white balance switch.

## **Fade-in/Fade-out switch**

The picture and sound automatically fade in or out by one touch control.

## **Boom-type condenser microphone**

A boom-type unidirectional electret condenser microphone is provided as an accessory. This microphone is removable.

## **Electronic viewfinder can be attached to right or left side**

The electronic viewfinder can be mounted on either the right or left side of the camera, depending on which side is most convenient for you. The viewfinder can be tilted.

## **Low power consumption**

The consumption is approx. 4.4W. As it is low, VTR's battery lasts longer. To reduce power consumption, this camera also has a STAND-BY switch.

## 2. HOW TO ASSEMBLE

Before using the camera, mount the electronic viewfinder and boom microphone on the camera head. Install batteries for calendar and clock in the grip of the camera, and set calendar and clock. (See page 4, Item 2.4. for calendar and clock setting.)

### 2.1 How to mount the electronic viewfinder

The electronic viewfinder can be mounted on either the right or left side of the camera. Mount it on the side which is more comfortable for you to use.

**To mount on the right as illustrated in Fig. A.**

- (1) Attach the electronic viewfinder to the camera.  
Turn the mounting knob in the direction of arrow (See Fig. B.), and tighten it firmly.
- (2) Turn the lock lever in the direction of arrow to secure the viewfinder. (See Fig. B.)
- (3) Plug the connection cable of the electronic viewfinder into the jack marked "VF".
- (4) Check that the picture inversion switch is set to "R" position to obtain a normal view. (See Fig. D.)

**To mount on the left as illustrated in Fig. C.**

- (1) Attach the electronic viewfinder to the camera in the same way as above item (1).
- (2) Turn the lock lever in the direction of arrow to secure the viewfinder. (See Fig. B.)
- (3) Plug the connection cable of the electronic viewfinder into the jack marked "VF".
- (4) Set the inversion switch to "L" position. This switch inverts the picture position to obtain a normal view. (See Fig. D.)

#### Notes:

1. To shift the viewfinder position right or left, turn the lock lever to the opposite direction of arrow to loosen and slide the viewfinder then turn the lock lever in the direction of arrow.
2. To remove the viewfinder, press down the lock lever to unlock and then turn the mounting knob to detach the viewfinder.

#### Cautions:

1. Be sure to set the picture inversion switch to "R" side or "L". Set the **STANDBY/OPERATE** switch to **STANDBY** or cut off the power supplied to the camera, when the picture inversion switch is selected. In case the switch is not set completely to either position, the cathode-ray tube may be damaged. If the viewfinder picture is upside down, the switch is in the wrong position.
2. Since the contrast and brightness of the picture on the viewfinder are accurately adjusted at the factory, no adjustment is required. Do not adjust them unless necessary. When it is desired to control them, insert a small screwdriver through the respective adjustment holes and perform the adjustment.

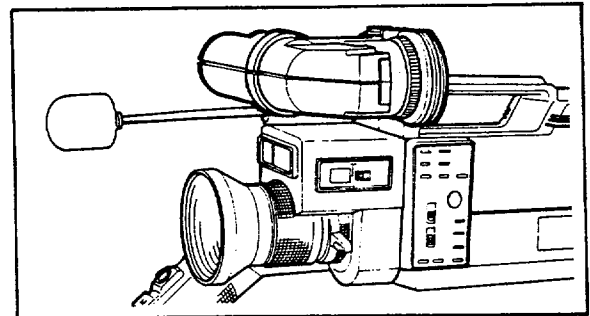


Fig. A For right-handed people

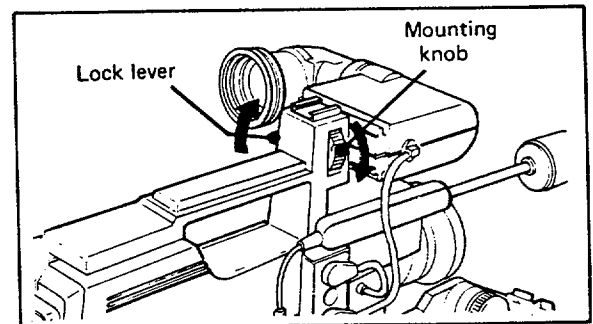


Fig. B

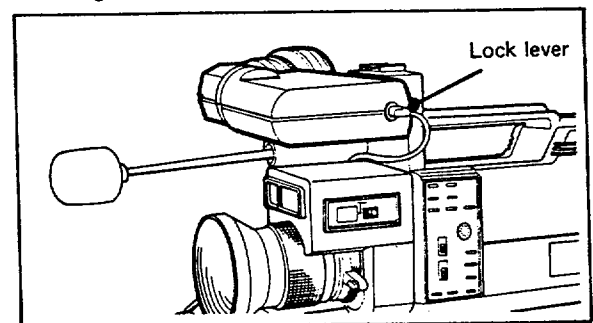


Fig. C For left-handed people

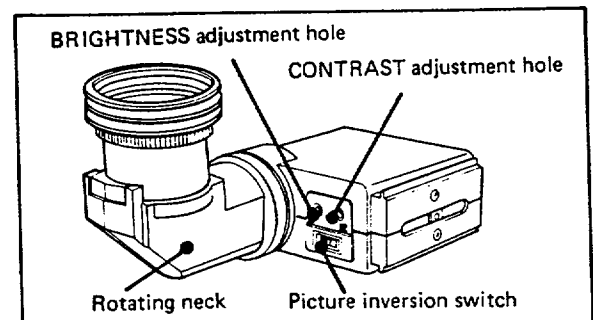


Fig. D

## 2.2 How to mount the boom microphone

- (1) Attach the boom microphone to the camera. Turn the lock knob in the direction of arrow. (See Fig. E.)
- (2) Connect the microphone cable with the INT MIC jack on the camera.

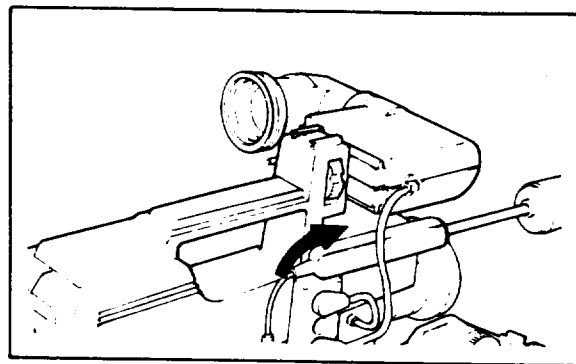
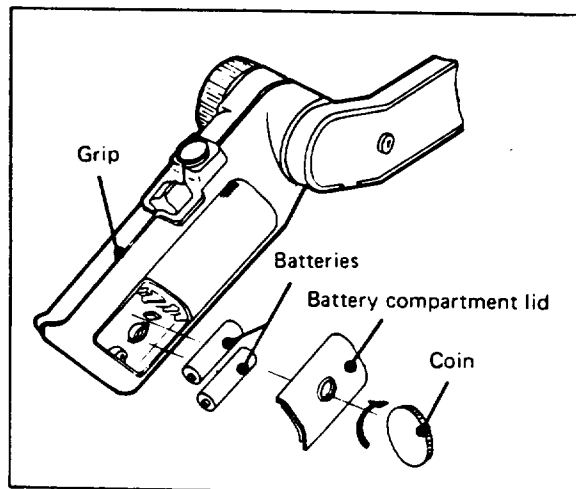


Fig. E

## 2.3 How to install the batteries

Calendar and clock can be stored in the camera by means of built-in manganese batteries. Two batteries R1 (N) are used in it.

- (1) Remove the battery compartment lid with a coin.
- (2) Install the two batteries so that the battery polarity markings meet the hand grip's.
- (3) Put the lid back on and tighten the screw.



### Cautions:

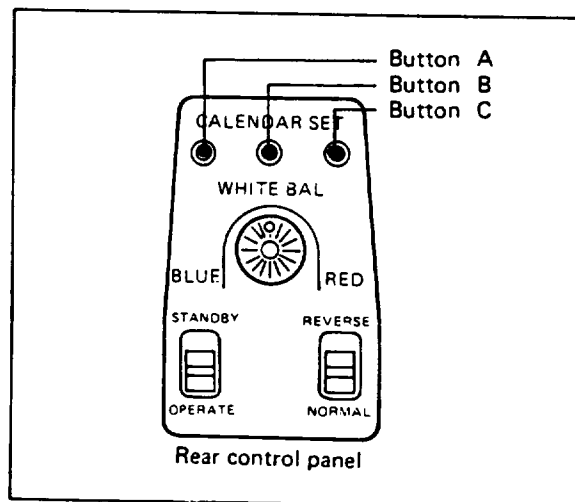
1. Use only the supplied manganese battery R1 (N) 1.5V. Replace with the same type.
2. Follow the instructions to avoid explosion and leakage.
  - (1) Load the batteries by setting polarities ( $\oplus$ ,  $\ominus$ ) as indicated.
  - (2) Do not combine a new battery and an old one at the same time when replacing.
  - (3) Do not short-circuit, do not take it apart or heat it or place it in a fire.
  - (4) Do not recharge as the manganese battery is not rechargeable.
3. Leakage of battery may occur after a year or so. It is recommended to replace batteries every year.

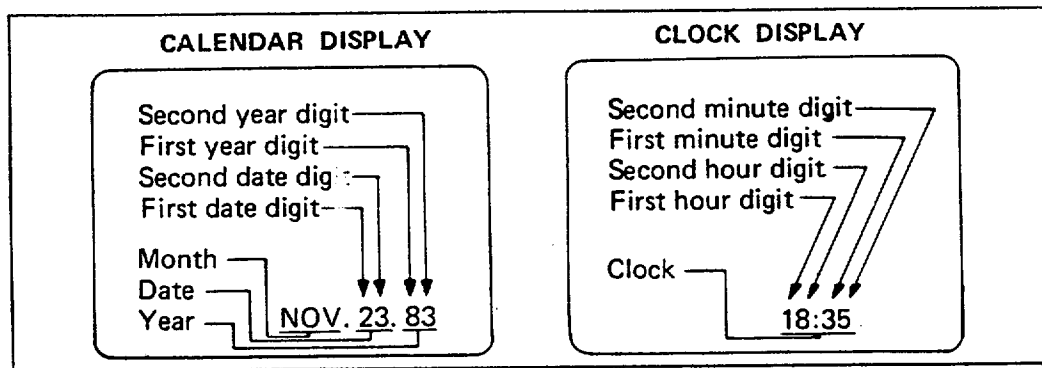
## 2.4 How to set calendar and clock

At initial installation of the batteries, the display will appear at random. Therefore it is necessary to set the calendar and clock.

The setting sequence order is; month, day, year and clock.

Operate the CALENDAR SET buttons A, B and C on the rear control panel by using something like a ball point pen. (Refer to next page setting procedures.)





An example of the setting calendar, November 23, 1983, and clock, 18:35 is given as below.

Set the MODE button in calendar mode.

Setting procedures	Viewfinder screen	Setting procedures	Viewfinder screen	Setting procedures	Viewfinder screen
① Push button A, the month display will be blinking.	JAN. 1.00	⑧ Push button B, to select "8" of the first year digit.	NOV. 23.00	⑮ Push button C, the first minute digit will be blinking.	18.00
② Push button B to select "NOV".	NOV. 1.00	⑨ Push button C, the second year digit will be blinking.	NOV. 23.80	⑯ Push button 3 to select "3" of the first minute digit.	18.30
③ Push button C, the first date digit will be blinking.	NOV. 01.00	⑩ Push button B to select "3" of the second year digit.	NOV. 23.83	⑰ Push button C, the second minute digit will be blinking.	18.30
④ Push button B to select "2" of the first date digit.	NOV. 02.00	⑪ Push button C, the calendar "NOV. 23. 83" will go off and the clock display will be seen. The first hour digit will be blinking.	00:00	⑱ Push button B to select "5" of the second minute digit.	18:35
⑤ Push button C, the second date digit will be blinking.	NOV. 02.00	⑫ Push button B to select "1" of the first hour digit.	01:00	⑲ Push button C, the time display will go off and "NOV" will be blinking.	NOV. 23. 83
⑥ Push button B to select "3" of the second date digit.	NOV. 02.30	⑬ Push button C, the second hour digit will be blinking.	01:00	⑳ Push button A ONCE ONLY, the clock starts to operate.	NOV. 23. 83
⑦ Push button C, the first year digit will be blinking.	NOV. 23.00	⑭ Push button B to select "8" of the second hour digit.	18:00	Setting is now completed. Note: When the desired character is blinking, push button C to fix the character without pushing button B.	

**Notes:**

- The clock used is of 24-hour type.  
Accuracy of clock:  $\pm 50$  sec/month
- Pushing button A in Step ⑳ should be limited to only once. If pushed more than once, all of the above steps will need to be done over.
- The zero second setting is made when button A is pushed to the correct time in Step ⑳.
- When a character already set is found mistaken, resetting should be made in accordance with the following procedures.
  - Push button C to move the blinking position to the resetting character.

- (2) Push button B to select the desired character.
- (3) Push button C to fix the character.
5. When the calendar and clock correction is required, resetting should be made by repeating the above Steps ① to ②0.

### 2.5 For easy operation

For easy operation adjust the angles or positions of the movable parts as illustrated below.

- (1) The angle of the electronic viewfinder can be raised or lowered up to  $90^\circ$  in either direction. (See Fig. F.)
- (2) The angle of the grip can be varied within the range of  $192^\circ$  from B to D. (See Fig. F.) When the angle is varied more than  $80^\circ$ , the stop lever must be pushed to release the grip to the position from C to D. (See Fig. F.)
- (3) The hood with magnifying lens can be opened out  $90^\circ$  horizontally. This permits the picture on the viewfinder screen to be seen clearly at a distance of 30 cm or more.
- (4) For eyepiece correction, rotate the eye cup until the best picture is obtained. (See Fig. G.)
- (5) The electronic viewfinder can be moved horizontally about 56 mm in space for ease of viewing. (See Fig. G.)

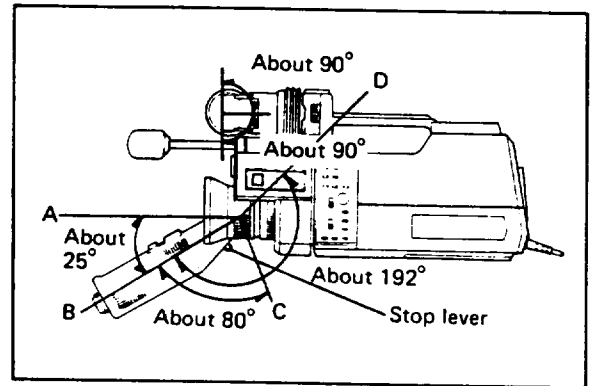


Fig. F

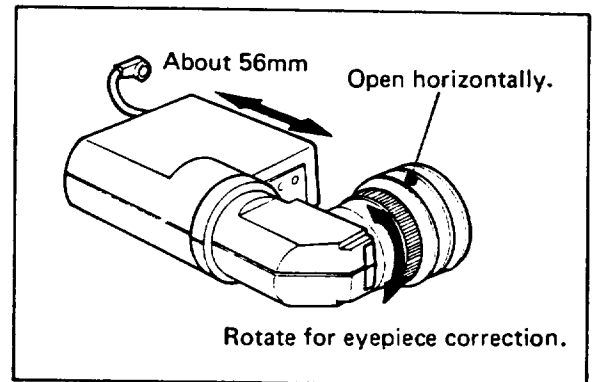
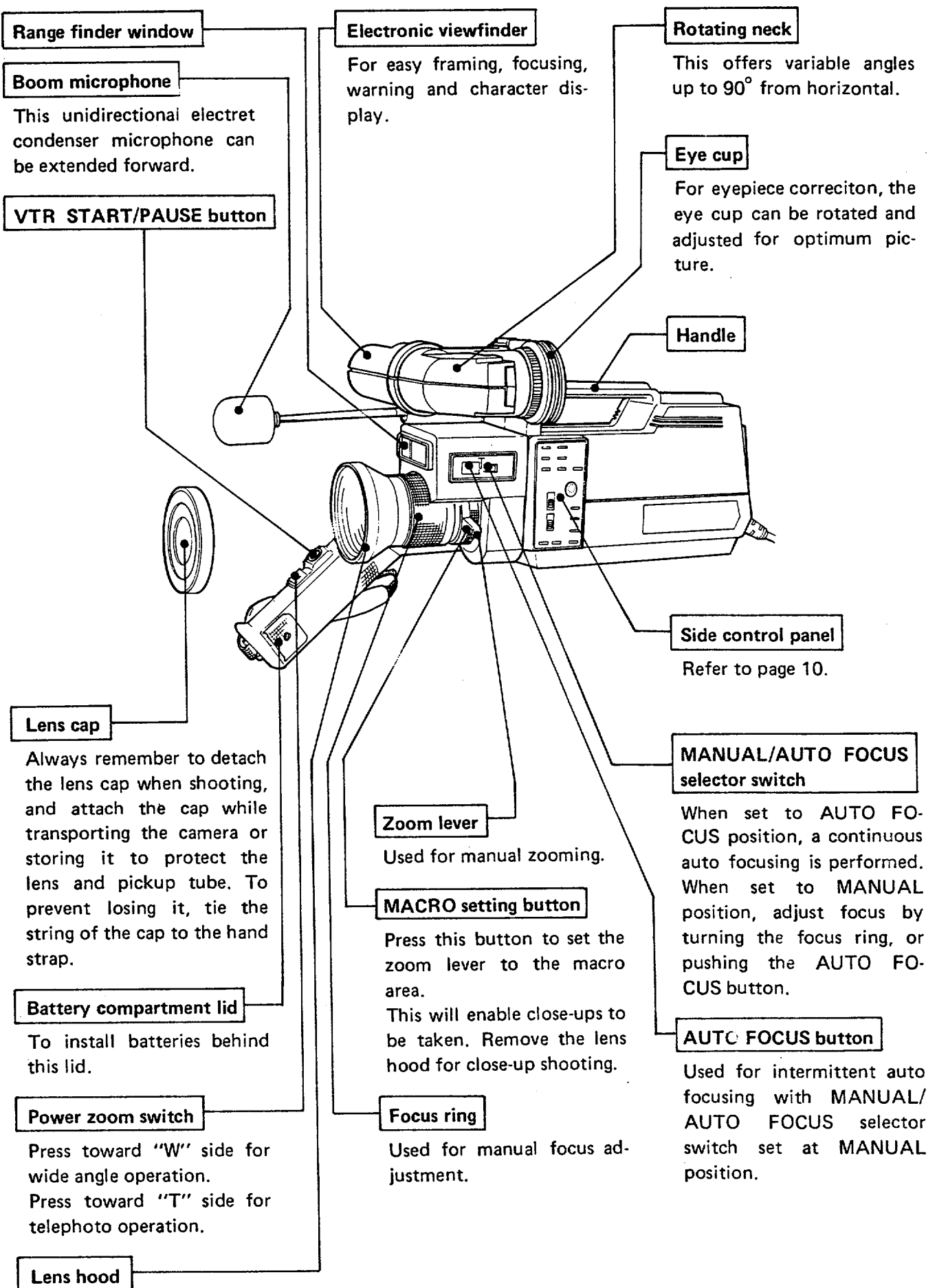
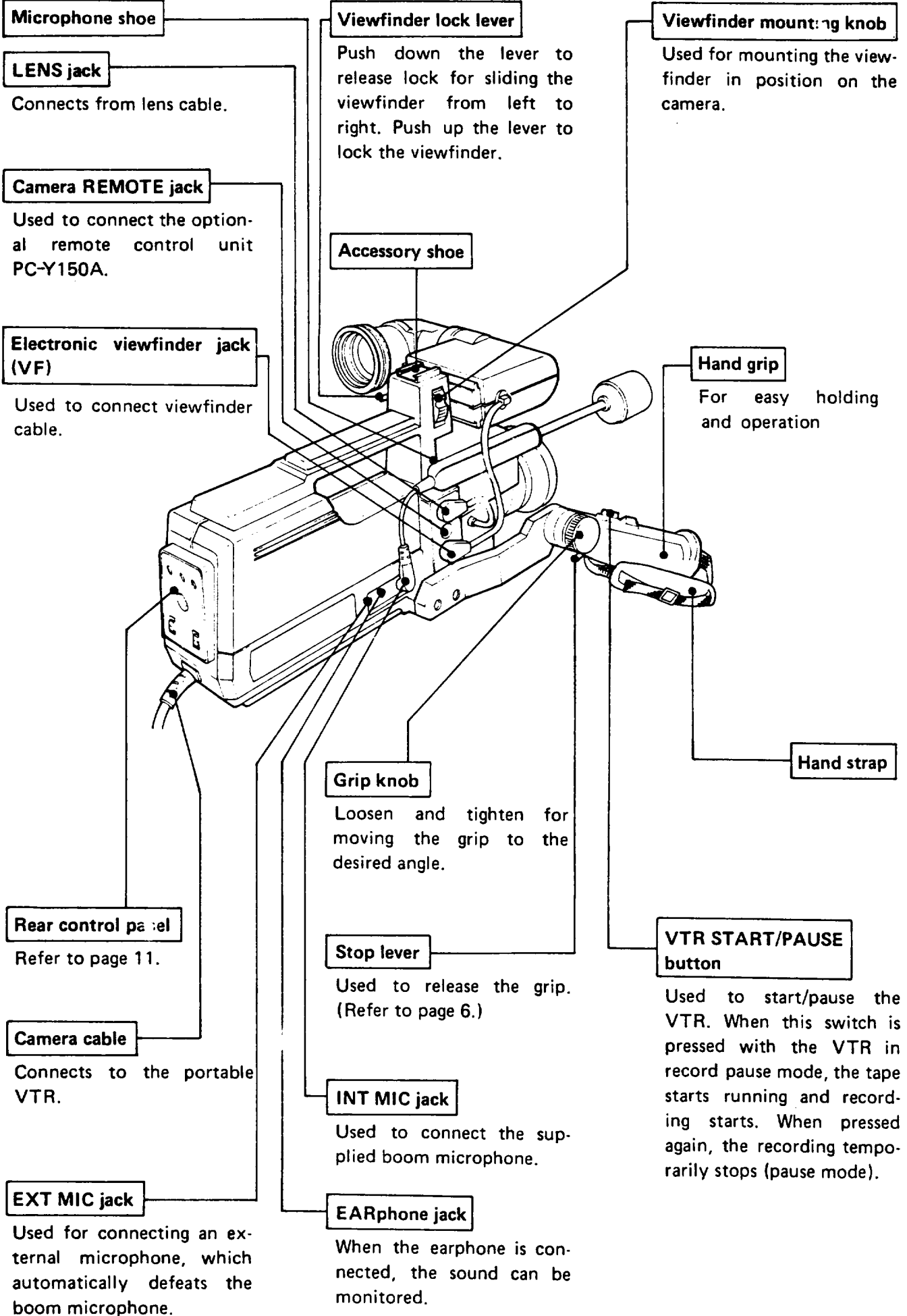


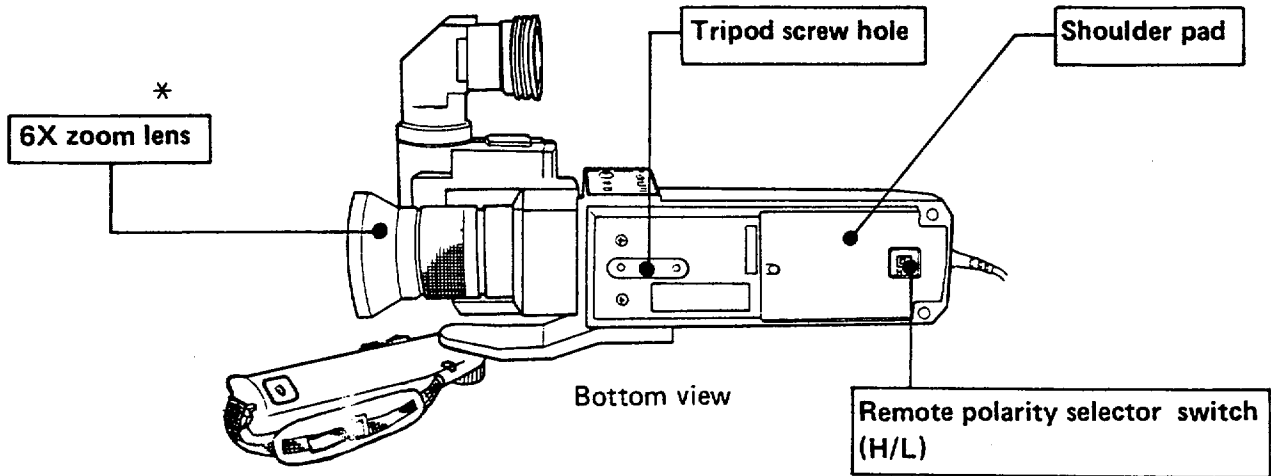
Fig. G



### 3. IDENTIFICATION AND OPERATION OF CONTROLS







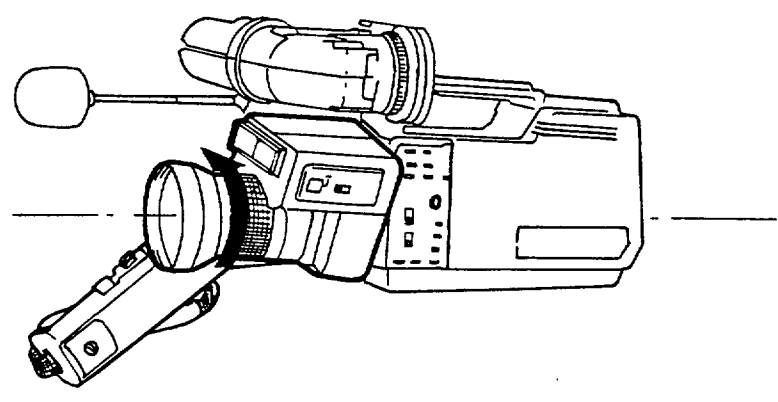
To be switched in accordance with VTR to be used with camera:

\*  
The lens mount is C-mount. In case of lens replacement, consult your local Pentax dealer.

at "H" position  
... for Pentax VHS portable VTR  
at "L" position  
... for other VHS portable VTRs whose REC display on the viewfinder disappears while recording.

**Note:**

When the lens assembly is tilted as illustrated below, simply align it with the camera head; this is not a mechanical fault but is due to a slip-ring construction and does not represent any problem for picture-taking.



**CHARACTER DISPLAY buttons**

Many functions can be controlled and displayed on the viewfinder.  
(Refer to pages 20 to 23 for details.)

**MODE button**

Used to select the following display modes on the screen.

- (1) Calendar
- (2) Clock
- (3) Stopwatch
- (4) Title-1
- (5) Title-2

**SET button**

Used to:

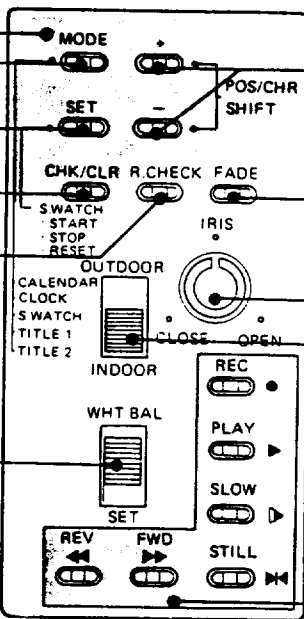
- (1) Set cursor position for titling
- (2) Set character
- (3) Start stopwatch
- (4) Stop stopwatch
- (5) Reset stopwatch

**CHK/CLR button**

Used to:

- (1) Display the functional checkpoints on the screen of the viewfinder. (Note: Recording and mode selection will not be made during this display. Press the button again to clear it for recording and for mode selection.)
- (2) Clear any character display modes while recording.

Side control panel



**POS/CHR SHIFT buttons**

Used to shift the title character display on the viewfinder rightward (+) and leftward (-) and to select a character. When held pressed, shifting goes rapidly.

**FADE button**

Picture as well as sound fades in and out. (Refer to page 26 for details.)

**IRIS OPEN/CLOSE control**

Usually sets to the center click position, the lens iris automatically adjusts itself to the object brightness. When the object brightness is so dark or bright, adjust it manually.

**OUTDOOR/INDOOR switch**

Select it in accordance with the shooting location.

**VTR remote control buttons**

When the camera is connected to the Pentax portable VTR, these buttons allow you to control the following VTR modes: Record, Play, Forward Search, Reverse Search, Slow, Still and Record Check. (Refer to page 24 for details.)

**WHITE BAL switch**

To adjust the white balance, press down this spring back switch for 3 sec until WHITE BALANCE display disappears on the viewfinder.

**R. CHECK button**

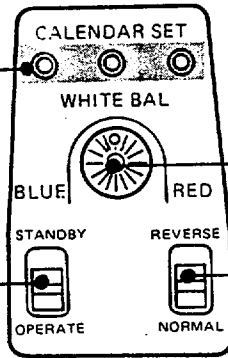
An instantaneous video recording review is made available by pressing this switch at pause mode. The recorded tape rewinds itself and the last 2 sec of recording is played back and displayed on the viewfinder when the camera is connected with the Pentax portable VTR.

**Calendar/clock setting buttons**

For setting calendar and clock.

(Refer to page 4 for calendar/clock setting).

Rear control panel



**WHITE BAL control knob**

The red and blue colors are balanced at the center click position which usually provides accurate color.

**Picture REVERSE/NORMAL switch**

This switch reverses the video signal. In normal shooting, set it to the NORMAL position. At REVERSE position, the video signal is reversed in hue and brightness. (Refer to page 25 for details.)

**STANDBY/OPERATE switch**

Used to save the battery power of portable VTR.

Set it to STANDBY position, when leaving the camera and VTR in pause mode for a prolonged time. Then, the picture disappears on the electronic viewfinder. When set to OPERATE position, the camera and portable VTR are ready to record.

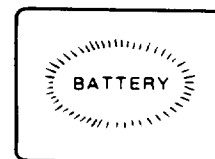
## 4. DISPLAYS ON THE VIEWFINDER

The following displays can be made on the screen of viewfinder with the microcomputer built in the camera.

### 4.1 Warning displays (These warning displays are not recorded on the shooting pictures.)

#### (1) BATTERY

When the battery is low, the characters of BATTERY will appear and blink, when the camera is connected with the Pentax portable VTR. Replace it quickly with a charged battery, or some functions cannot work normally.



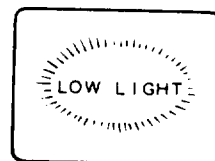
#### (2) WHITE BALANCE

When white balance is not set, the characters of WHITE BALANCE will appear and blink. Set the white balance.



#### (3) LOW LIGHT

At insufficient illumination, the characters of LOW LIGHT will appear and blink. Apply more light to the object. At sufficient illumination, when the IRIS OPEN/CLOSE control is turned counterclockwise to close the iris, the picture on the screen becomes dark, but the LOW LIGHT display does not appear, except when the control is rotated almost to the full stop.



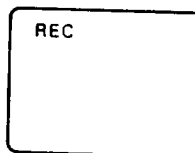
#### Notes:

- When more than two warnings among (1), (2) and (3) should occur at one time, only one warning display appears blinking according to the described order. For example, when the WHITE BALANCE display appears, the LOW LIGHT display does not appear even if the two warnings occur simultaneously.
- Even when white balance or low light warning is blinking, TITLE-1 or TITLE-2 mode can be selected by pressing the MODE button. In this case, the blinking warnings will not appear.

### 4.2 Operation displays (These displays are not recorded on the shooting pictures.)

#### (1) Recording

When the VTR starts to record by pressing the START/PAUSE button on the grip, REC will be displayed to indicate recording is ON.



#### (2) Fade

When FADE button is pressed, "F" will be displayed to indicate readiness for fade-in/-out operating.



#### Note:

The character size and position of "REC" and "F" displays in the TITLE-2 mode are slightly different from those in the TITLE-1 mode.

### 4.3 Operation check displays (These check displays are not recorded on the tape.)

When the CHK/CLR button is pressed, the check list as shown will be displayed on the viewfinder screen for quick operational checking.

#### (1) BATTERY run-down

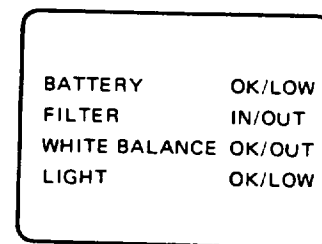
OK : Sufficient battery  
LOW : Replace it with a charged battery

#### (2) FILTER selection (OUTDOOR/INDOOR switch position)

IN : INDOOR  
OUT : OUTDOOR

#### (3) WHITE BALANCE adjustment

OK : Already set  
OUT : Not set



(Blinking means a warning.)

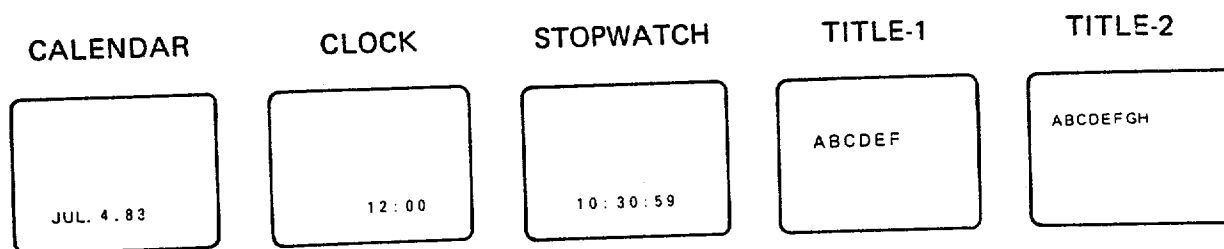
- (4) LIGHT  
OK : Sufficient light  
LOW : Insufficient light

**Note:**

Operation check display does not work while a VTR is recording. To make the display available, press the VTR START/PAUSE button on the grip to establish pause mode, then press the CHK/CLR button.

**4.4 Character displays**

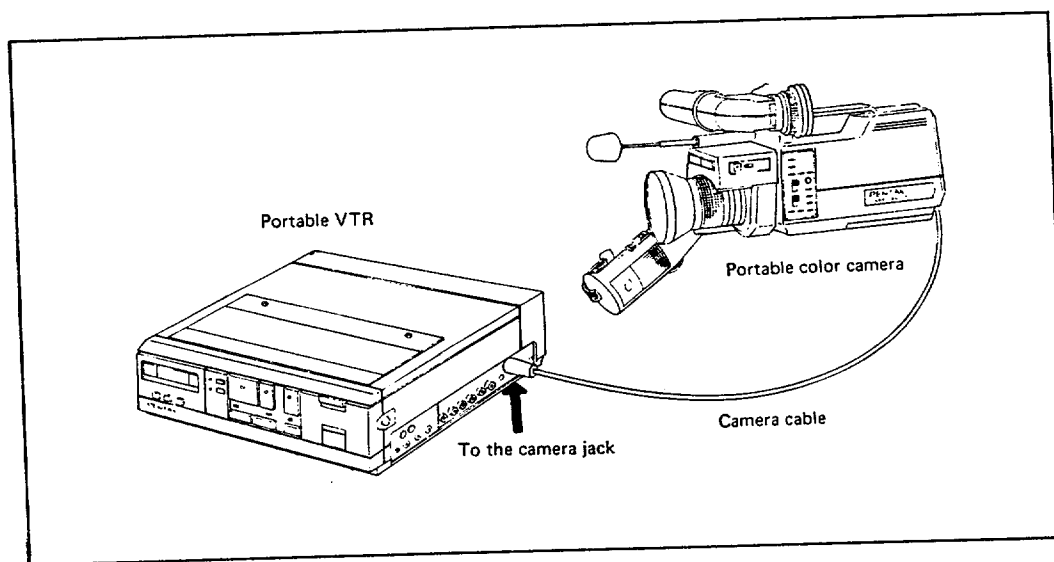
The character displays, such as illustrated below, can be recorded along with a picture.



(Refer to pages 20 through 23 for details.)

## 5. CONNECTION TO A PORTABLE VTR

Connect the camera cable of the portable color camera to the camera jack on the portable VTR.



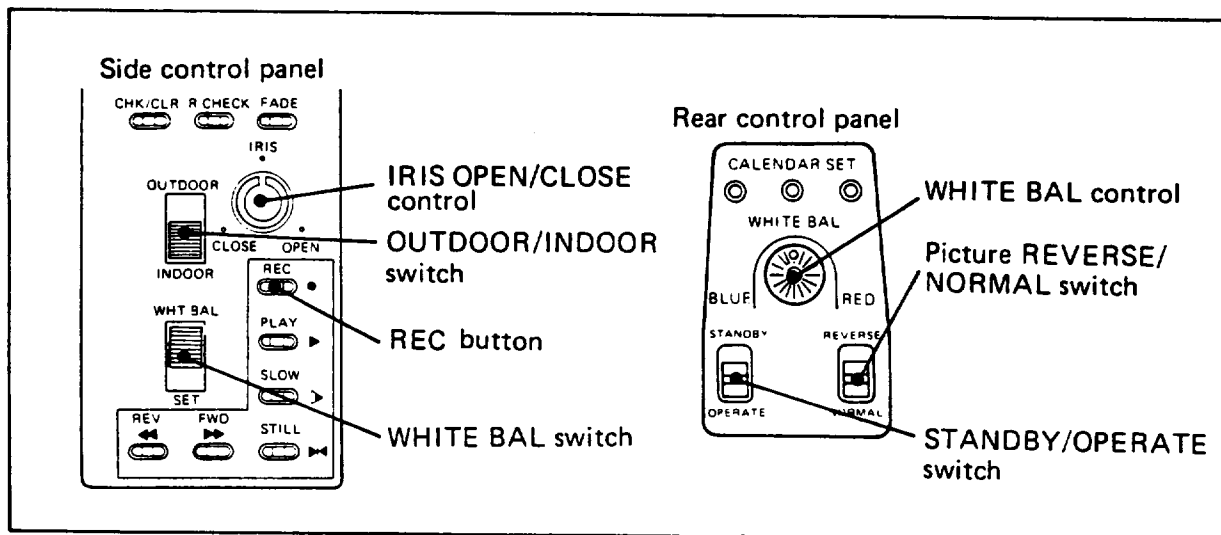
**Cautions:**

1. When using VTR, contact your local Pentax sales office, because some kind of VTR's may not be used.
2. It is not recommended to use the extension cable if the portable VTR is being powered by batteries. When the battery voltage drops and when a voltage is dropped further in the extension cable, the camera can not be operated properly.

## 6. BASIC OPERATION

It is recommended to make test shootings so as to facilitate the camera.

- (1) Set the switches and controls as illustrated below.



- 1) Set the IRIS OPEN/CLOSE control to the center click position.
  - 2) Select the OUTDOOR/INDOOR switch in accordance with the shooting location.
  - 3) Set the WHITE BAL control to the center click position.
  - 4) Set the picture REVERSE/NORMAL switch to NORMAL.
  - 5) Set the STANDBY/OPERATE switch to OPERATE.
- (2) Turn the VTR power ON.  
Press the REC button, then the VTR is set to pause mode.
  - (3) Remove the lens cap.
  - (4) Press the CHK/CLR button to make camera operation check. (See page 12.)
  - (5) Set the WHITE BAL switch to SET to adjust white balance. (See page 15.)
  - (6) Press the CHK/CLR button, and operation check display will disappear.
  - (7) Frame the picture and focus by setting AUTO/MANUAL switch to either position.
  - (8) Press the VTR START/PAUSE button to start recording, and REC appears on the viewfinder.
  - (9) Shoot the objects by operating the power zoom switch or zoom ring.
  - (10) Press the VTR START/PAUSE button again to pause recording. The REC display disappears.



# 7. HOW TO ADJUST THE WHITE BALANCE

The human eye tends to adapt itself to the light and a white object may appear to be white both with indoor and outdoor illuminations. However, the camera does not have the same ability to adapt, and depending on the color temperature of the light source, the white object may appear reddish or bluish. The white balance control is provided in order to compensate for this. This control should be used as a preparatory step to shoot objects in their natural colors. The alternation order from Blue to Red of the light source color temperature is: Cloudy day, Clear day, Fluorescent lamp and Tungsten lamp.

## 7.1 White balance setting

- (1) Set the IRIS control and WHITE BAL control to their center click positions.
- (2) Select the OUTDOOR/INDOOR switch according to the light source of the object.
- (3) Check to see if the illumination of object is sufficient to shoot.
- (4) Point the camera at a whitish object (white wall, shirt, etc.).
- (5) Press down the WHITE BAL switch for a few seconds, until the blinking WHITE BALANCE display on the viewfinder goes off.

### Note:

When the color temperature of illumination is changed, for example, an indoor shooting switches to an outdoor shooting, white balance should be reset.

## 7.2 For hue fine adjustment

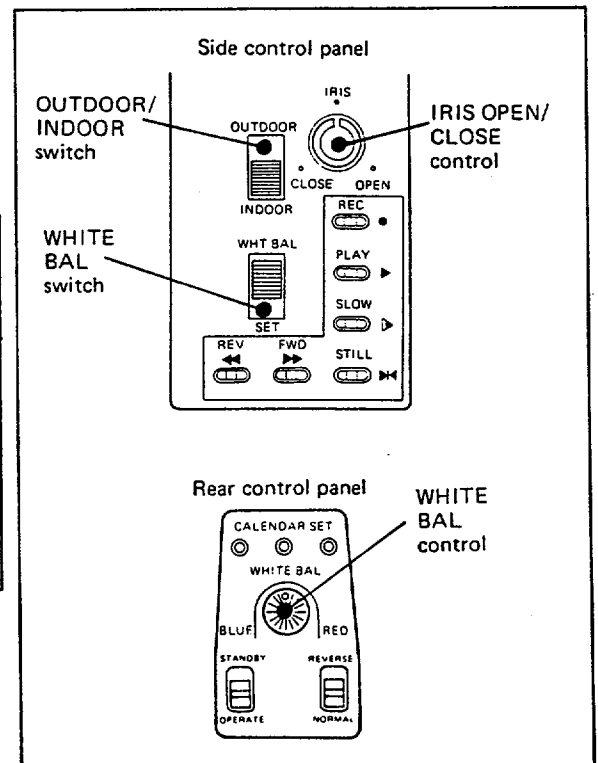
The WHITE BAL control is equipped to adjust hue finely. Monitoring a color monitor, rotate the control clockwise for reddish pictures; rotate it counterclockwise for bluish pictures.

### Notes:

1. For accurate white-balance adjustment, to point the camera at a white object is recommended. If a white object is not available, avoid a big extremely-colored such as red or blue object. Set the zoom lens to "Wide" side, then press down the WHITE BAL switch.
2. When shooting under the mixed illumination of lamp and outdoor light, set the OUTDOOR/INDOOR switch to whichever is brighter.
3. The WHITE BAL switch may not function in the following cases.
  - (1) When shooting at insufficient illumination.
  - (2) For about 6 seconds before a picture becomes stable after turning on the power.
  - (3) When a camera or object is moving.
  - (4) For about 3 seconds immediately after pointing the camera to a strong light.

The table listed below shows approximate color temperature of illumination. Select the OUTDOOR/INDOOR switch accordingly.

Illumination	INDOOR/ OUTDOOR switch	Color temperature
Tungsten lamp	INDOOR	3,000-3,200 K
Fluorescent lamp	INDOOR or OUTDOOR	4,000-5,000 K
Clear day	OUTDOOR	5,500 K
Cloudy day	OUTDOOR	6,000-7,000 K

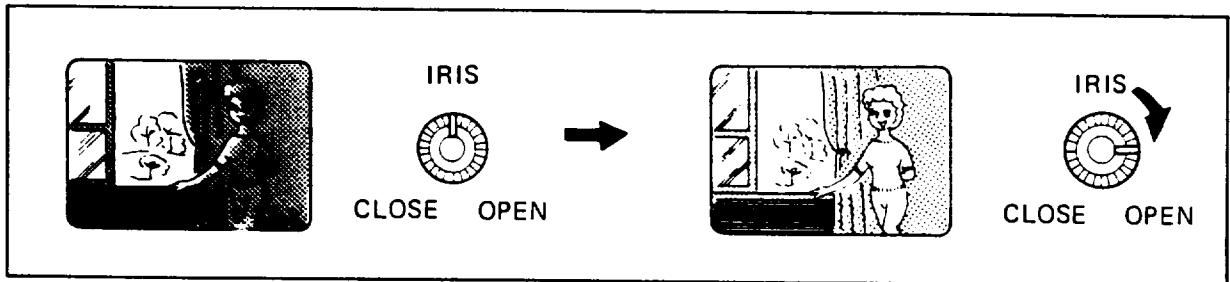


## 8. IRIS MECHANISM

This camera is provided with an auto iris mechanism which automatically adjusts the lens aperture in accordance with the incident light. When the object is dark, the iris opens automatically, and it closes when the object is bright. When the camera's power is switched off, the iris is automatically set to the fully closed position. The camera is also provided with manual iris function. The IRIS OPEN/CLOSE control should be set to the center click position for normal shooting. In the case of the conditions below, adjust the IRIS control manually.

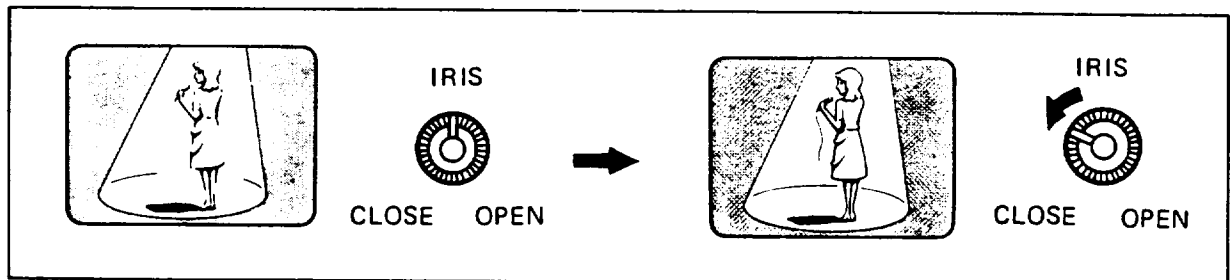
### 8.1 Dark object due to bright back light

The object may appear dark when bright back light exists. In this case, turn the IRIS OPEN/CLOSE control toward OPEN and allow more light to enter the lens from the object.



### 8.2 Bright object due to dark back light

The object may appear bright when dark back light exists. In this case, turn the IRIS OPEN/CLOSE control toward CLOSE and reduce light from the object.



#### Notes:

1. The object with highly contrasted back light may come out dark even after the above operation in back light conditions.
2. Be careful of back light conditions so that strong light does not enter the lens.

# 9. HOW TO FOCUS

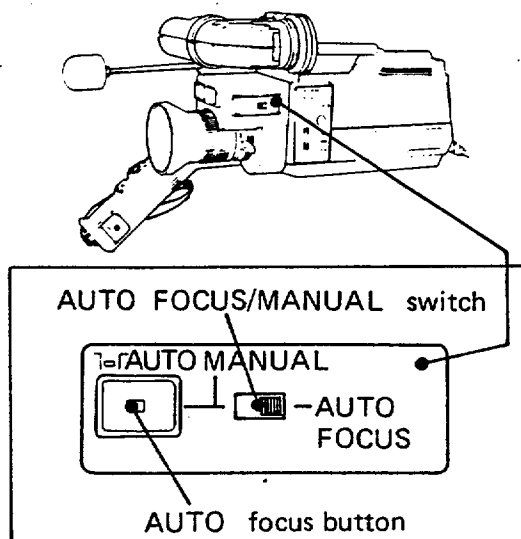
The auto focus device can measure the distance from the range finder window to the object and turn the focus ring automatically to adjust the focus.

## 9.1 For continuous auto focusing

Simply set the AUTO FOCUS/MANUAL selector switch to AUTO FOCUS position, and it is ready for shooting.

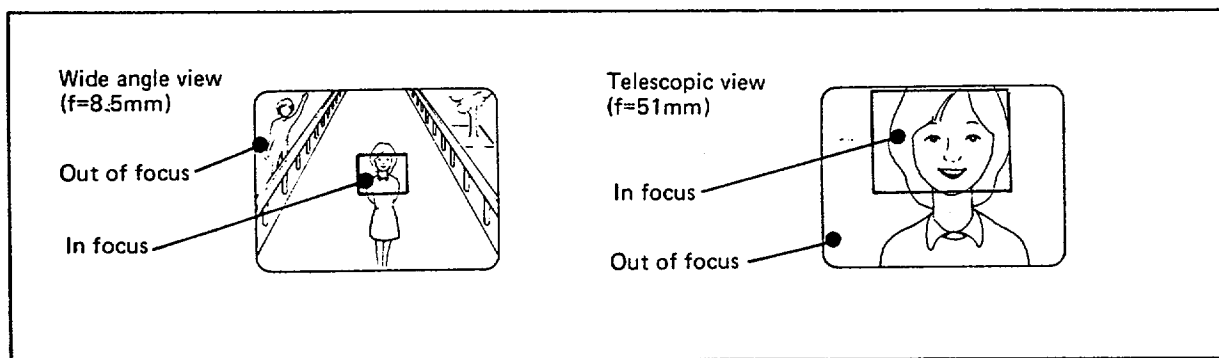
## 9.2 For semi-auto focusing

- (1) Set the AUTO FOCUS/MANUAL selector switch to MANUAL position.
- (2) Auto focusing is activated only when the AUTO FOCUS button is pressed.



### Notes:

1. Do not touch the focus ring during the auto focus operation. Do not block the range finder window.
2. Set the AUTO FOCUS/MANUAL selector switch to MANUAL position while not shooting.
3. Frame the object in the center of the viewfinder for auto focusing.

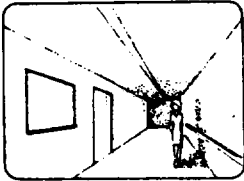


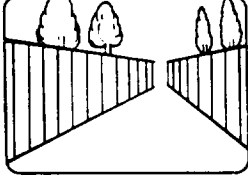
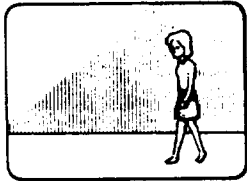
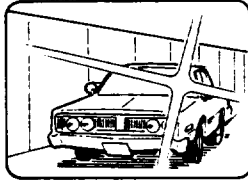


## 9.3 For manual focusing

- (1) Set the AUTO FOCUS/MANUAL selector switch to MANUAL position.
- (2) Zoom in on the object to first obtain a telephoto picture for focusing it by the manual focus ring.
- (3) Adjust the zooming as desired after focusing.

### 9.4 Objects hard to auto focus

For auto focusing, the distance between the range finder window and the object is electronically measured and the focus ring is automatically turned. However, with the scenes shown below, the auto focus may not function properly. In such cases, perform focusing manually.

1. Object is dark. (less than approx. 30 lux)	2. Light and shade are not clear.	3. Overlapping object matter	4. Continuation of similar objects in distance, such as fence bars
			
5. Objects with fine patterns	6. Too bright a scene to be focused on	7. Rapidly moving objects	
			

# 10. HOW TO ZOOM

This camera has a power zoom function for easy zooming operation.

## 10.1 For zooming by the power zoom switch

Press the power zoom switch to "T" or "W" position.

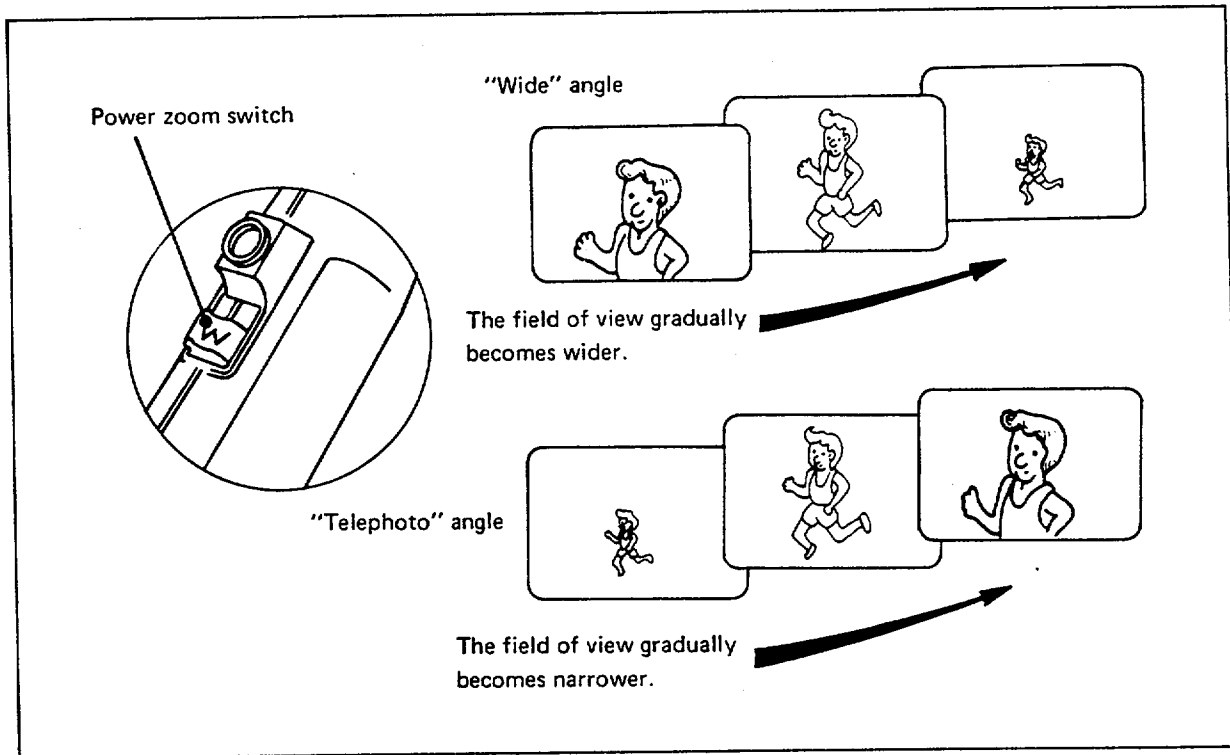
(Press the switch slightly, and it takes about 10 seconds from wide angle to telephoto angle and vice versa. Press it further, and the time is shortened to about 6 seconds.)

## 10.2 For manual zooming

Turn the zoom ring by hand.

### Note:

Do not zoom by hand during the power zoom operation.

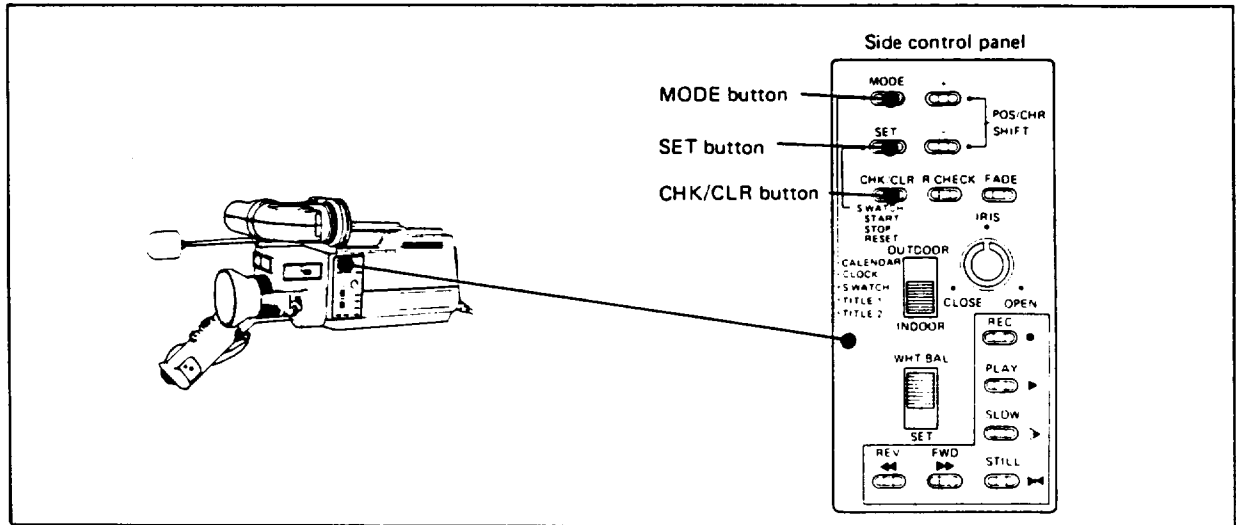


# 11. RECORDING OF CHARACTER DISPLAY

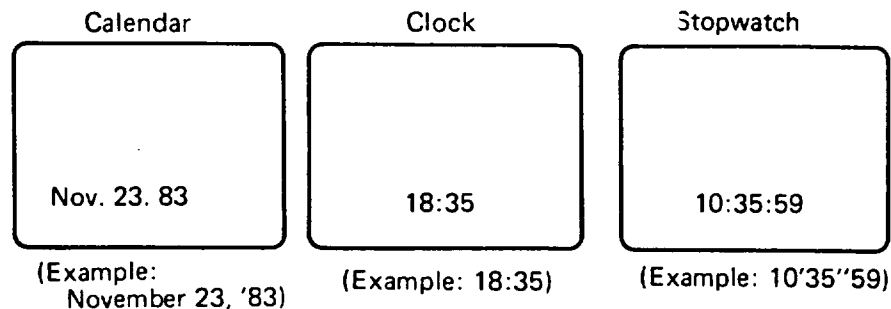
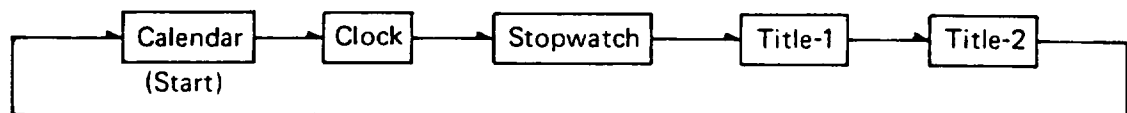
## 11.1 Calendar, clock and stopwatch displays

This camera can record displays of the calendar, clock and stopwatch with desired picture. When these displays are not necessary, only picture can be recorded. When once the calendar and the clock are set, they are kept stored in memory by the built-in battery even after the power is turned off.

(Set the calendar and the clock previously with reference to Item 2.4, page 4)



- (1) Check that the pause mode is established on the VTR. If the MODE button is pressed during recording, the kind of displays is not changed.
- (2) Check that operation check display does not appear on the viewfinder. When the check display appears, mode change is impossible. Press the CHK/CLR button to erase the display.
- (3) Press the MODE button to select the calendar, clock and stopwatch. The displays change as follows by every pressing of the MODE button.



**Stopwatch display:** Press the MODE button several times until the display of "STOPWATCH and 00:00:00" appears on the picture. Then, press the SET button to start the stopwatch. Press the SET button again to stop it. Press the SET button once more, and "00:00:00" appears again.

### Notes:

1. Press the CHK/CLR button to erase the calendar display in the recording mode. Press the CHK/CLR button again, and the same calendar appears.
2. Press the CHK/CLR button twice to erase the calendar display when the VTR is in the pause mode. When the calendar display is needed again, press the CHK/CLR button to erase operation check

- display and press the MODE button to display the calendar.
- The maximum number of the stopwatch display is "99:59:99". When the time reaches one hundred minutes, it resets to "00:00:00".
  - While the character of STOPWATCH is displayed, the VTR would not start recording, even the START/PAUSE button is pressed.

### 11.2 Title displays (TITLE-1 and TITLE-2)

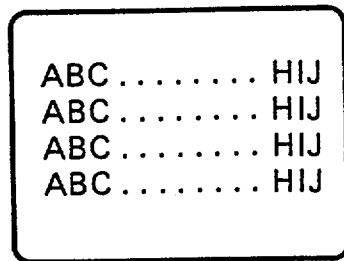
The title can be recorded with picture. When the title recording is not necessary, only picture can be recorded. The title is erased when the power is turned off.

#### The numbers of the characters, symbols, etc.

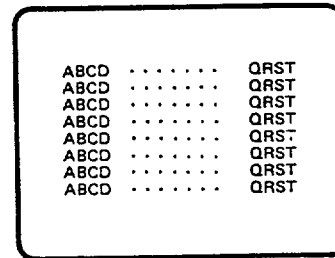
The number of the letters, figures, symbols, etc. are 56 except for the invisible "erasers". ("Selecting of characters" shows details.)

#### Sizes of characters and the maximum numbers of display

Two kinds of character size can be selected. TITLE-1 is the larger one and TITLE-2 is the smaller one.



TITLE-1  
(40 character setting spaces)



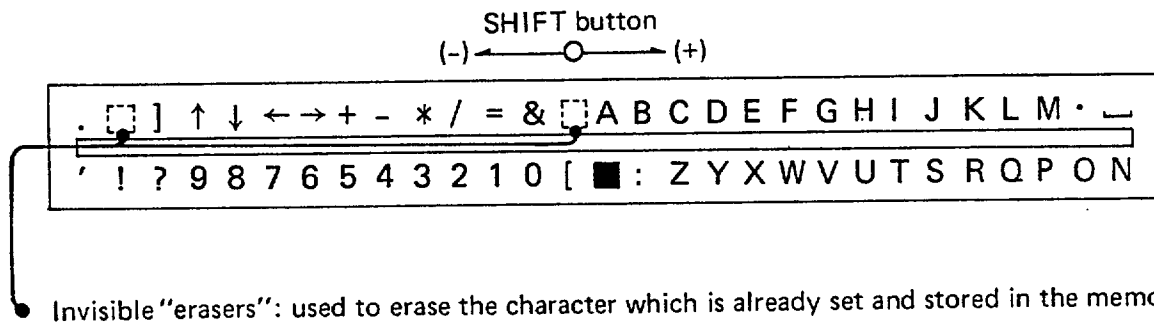
TITLE-2  
(160 character setting spaces)

#### Selecting of characters

The following characters and markings are available for the display that can be recorded along with picture and each of them is shifted for selection on the viewfinder by controlling the buttons as illustrated bellow.

#### Notes:

- When POS/CHR SHIFT (+) is pressed, displays are made in the sequence of A, B, C.
- When POS/CHR SHIFT (-) is pressed, displays are made in the reverse sequence.

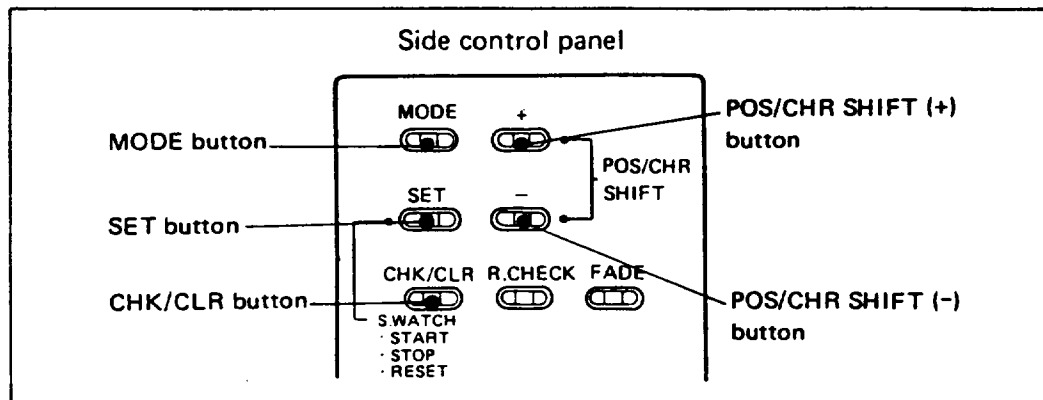


Invisible "erasers": used to erase the character which is already set and stored in the memory.

#### Note:

Press the POS/CHR SHIFT (+ or -) button once, and character or the position of cursor (□) changes once. Continue to press it, and the character or the position of cursor changes one after another.

## Recording of "TITLE-1" or "TITLE-2"



### Procedures

- (1) Press the MODE button until "TITLE-1" or "TITLE-2" display is selected on the viewfinder. Then "TITLE-1" or "TITLE-2" will disappear in a few seconds, and a cursor will appear at the upper left corner of the screen.  
(Note: The cursor (□) is to indicate the place where a character display input can be made.)
- (2) Press the POS/CHR SHIFT button ( + or - ) to select the cursor position.
- (3) Press the SET button to fix and store the cursor position in the memory. The blinking cursor will disappear.
- (4) Press the POS/CHR SHIFT button ( + or - ) to select one of the 56 characters and invisible erasers in the position where the cursor was.
- (5) Press the SET button, and the character just selected will be fixed in the memory and on the screen. The blinking cursor will appear in the next position.
- (6) Press the SET button again, and the blinking cursor will disappear.
- (7) Press the POS/CHR SHIFT button ( + or - ) to select the next desired character.
- (8) Press the SET button to store the character. The blinking cursor will appear in the next position.
- (9) Press the SET button again to remove the blinking cursor and proceed as above to select the next character.
- (10) Repeat the above steps until the title is complete. You are now ready to record the title along with the picture.

### Notes:

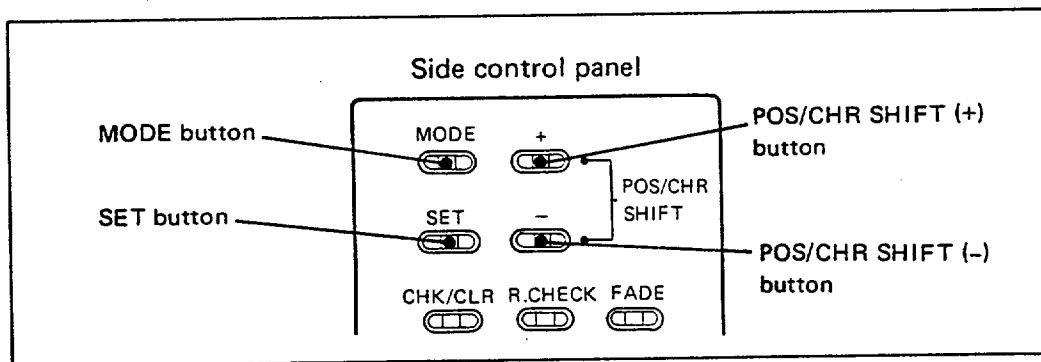
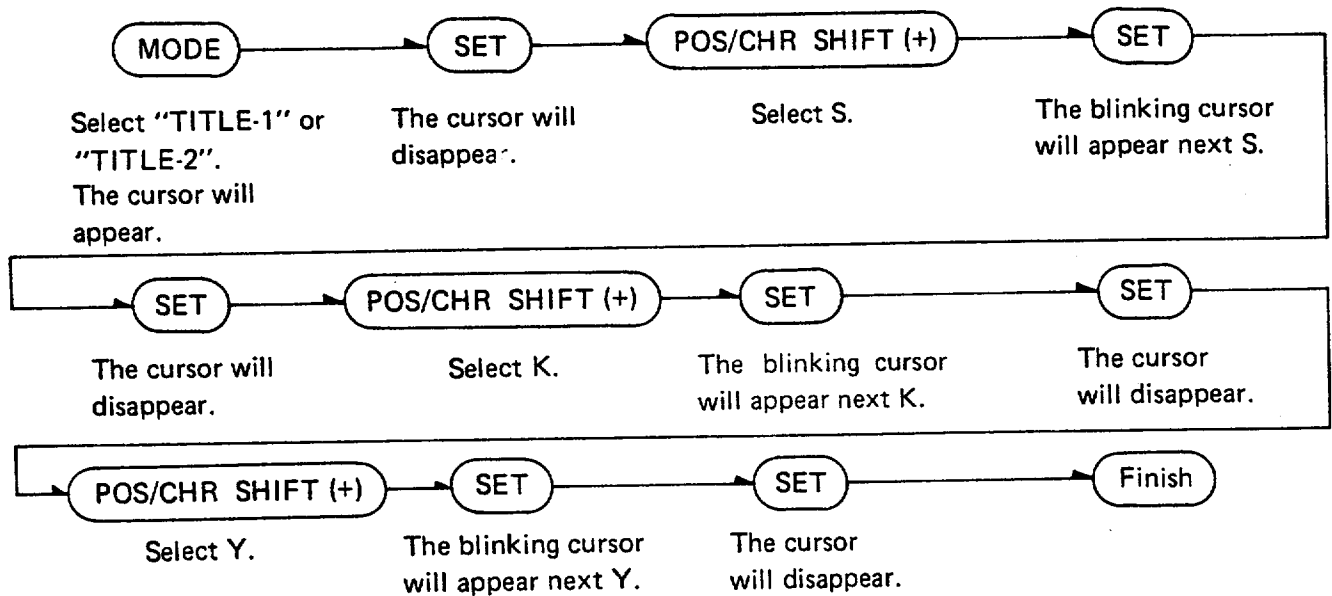
1. When the VTR is in the recording mode, the MODE button does not operate. Be sure to set titles when the VTR is in the pause or stop mode.
2. When the operation check display appears on the viewfinder, setting to the title mode is impossible. Press the CHK/CLR button again to erase the check display and press the MODE button.
3. Press the CHK/CLR button to erase TITLE-1 display in the recording mode. When the CHK/CLR button is pressed again, the same title appears on the screen. However, the character display stored in TITLE-2 is erased when the MODE or CHK/CLR button is pressed.
4. Press the CHK/CLR button in the pause mode, then the character displays disappear and the operation check display appears on the viewfinder. For title display, press the CHK/CLR button to erase operation check display. And press the MODE button until the title display mode is selected.
5. When the STANDBY/OPERATE switch is set to STANDBY, TITLE-1 is stored in the memory but TITLE-2 is erased. When the camera power is turned off, TITLE-1 and TITLE-2 are erased.
6. In order to erase the blinking warnings of the LOW LIGHT and WHITE BALANCE on the viewfinder in the pause mode, press the MODE button until TITLE-1 or TITLE-2 display mode is selected.

### Caution:

Take care not to touch and press the SET or POS/CHR SHIFT button ( + or - ) while recording, or the title display will be changed.

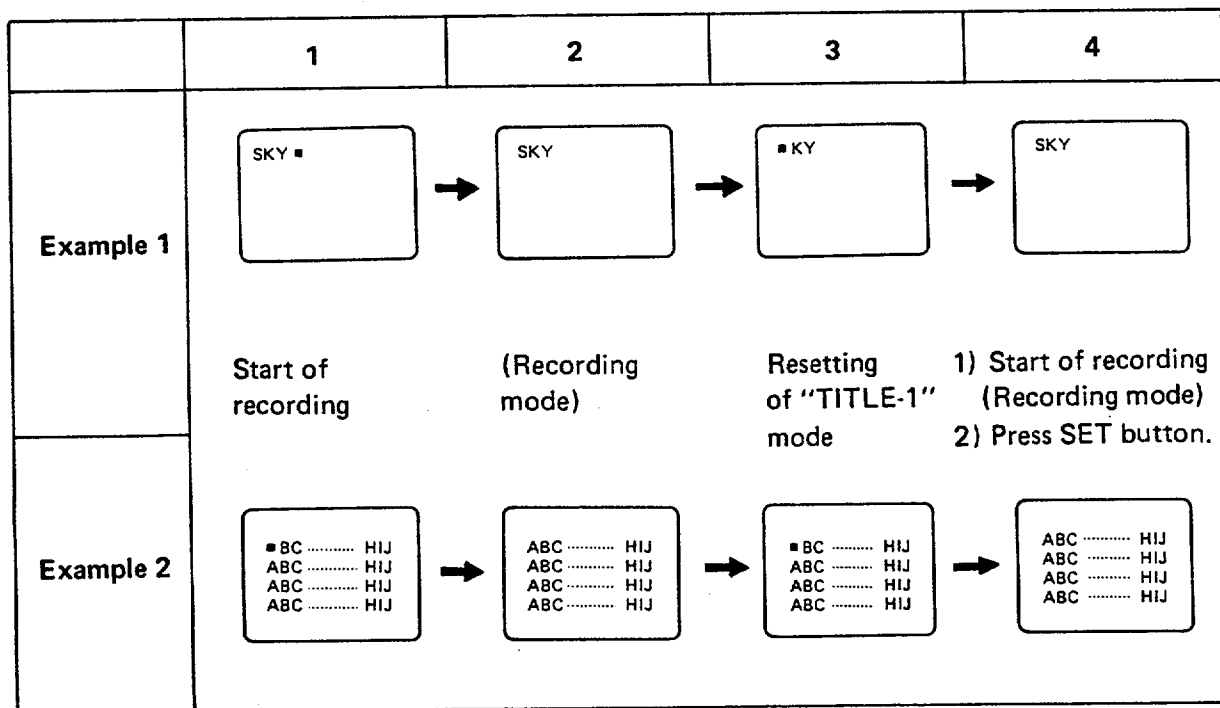


**Example procedure of titling**  
**Example: SKY**



**Note:**

When the VTR START/PAUSE button on the grip is pressed to start recording, the blinking cursor will disappear from the viewfinder. The blinking cursor is not recorded. Reset "TITLE-1" mode by pressing the MODE button, and the blinking cursor will appear again upper left corner of the screen. The condition described above is normal. See the following illustration.



## 12. HOW TO CHECK THE RECORDING

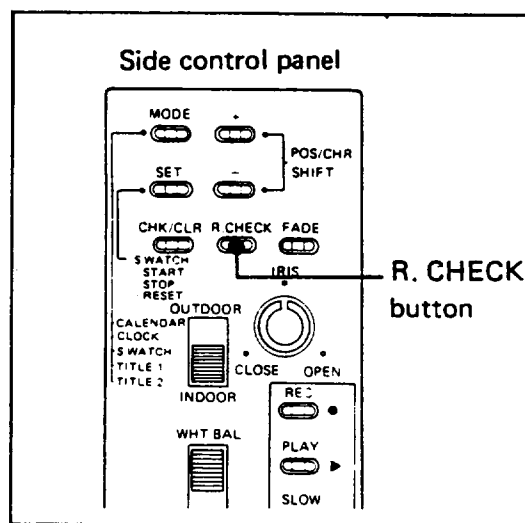
The R. CHECK button is available for the instantaneous video recording review.

### Operating procedures

- (1) After shooting, press the VTR START/PAUSE button on the grip to set the VTR in the pause mode.
- (2) Press the R. CHECK button.  
The last few seconds scene can be reversed-searched. (In this reversed-search, noise may occur on the screen.)  
Then, the last few seconds scene is played back on the viewfinder.  
After the operation, the camera and VTR are reset to the pause mode.
- (3) Press the VTR START/PAUSE button to record again.

### Note:

Some VTRs other than the Pentax portable VTR can not be used for this operation.



## 13. HOW TO CONTROL VTR REMOTELY

The camera has remote-control buttons on the side control panel. When connected with the Pentax portable VTR, the VTR REC, PLAY, SLOW, STILL and VISUAL SEARCH modes are controlled by those buttons.

### For visual search

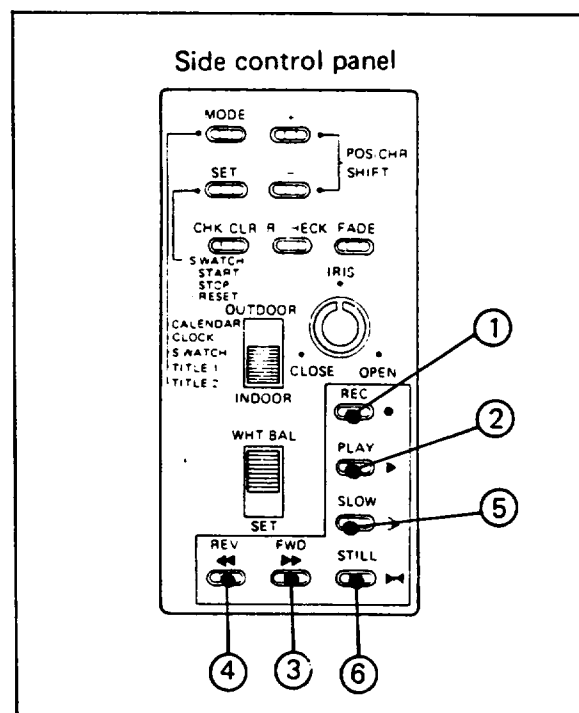
- (1) Press the PLAY button ②.
- (2) Hold the FWD ③ or REV ④ button pressed.
- (3) Release the button to resume play mode.

### For recording

- (1) Press the REC button ①. Then VTR will be set to pause in record mode.
- (2) Press the START/PAUSE button on the grip to start recording.

### For playback

- (1) Press the PLAY button ②. The VTR tape will be played back and the picture can be monitored on the viewfinder.
- (2) Press the REC button ① to stop playback. Now, you are ready to resume the recording.



#### For SLOW picture

- (1) Press the PLAY button ②.
- (2) Press the SLOW button ⑤.
- (3) Press the PLAY button ② again to resume playback.

#### For STILL picture

- (1) Press the PLAY button ②.
- (2) Press the STILL button ⑥.
- (3) Press the STILL button ⑥ again to resume play mode.

#### Notes:

1. VTR can be controlled by its own controls even with camera connected.
2. To stop recording, press the START/PAUSE button on the grip to set the VTR in the pause mode. Then, press the STOP button on the VTR. Be sure to press the START/PAUSE button first for pause mode, or a damage will be caused to the VTR and the camera.

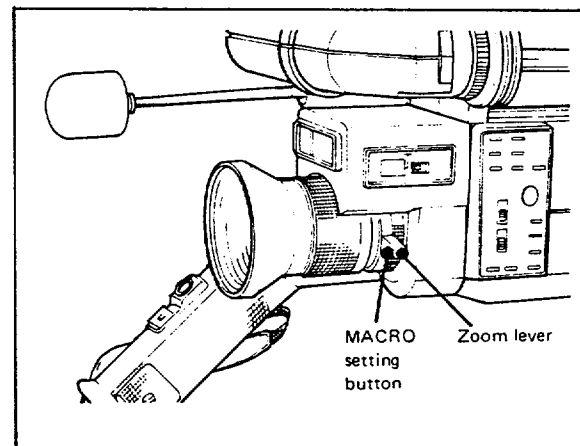
## 14. HOW TO USE MACRO FUNCTION

Permits you to shoot objects as close as 1 cm from the lens front. Remove the lens hood previously.

- (1) Turn the zoom ring to MACRO position by pressing the MACRO setting button on the zoom lever.
- (2) Set an angle of view by adjusting the distance from the camera to an object.
- (3) Zoom within the MACRO range (within the green range on the zoom ring) and focus.

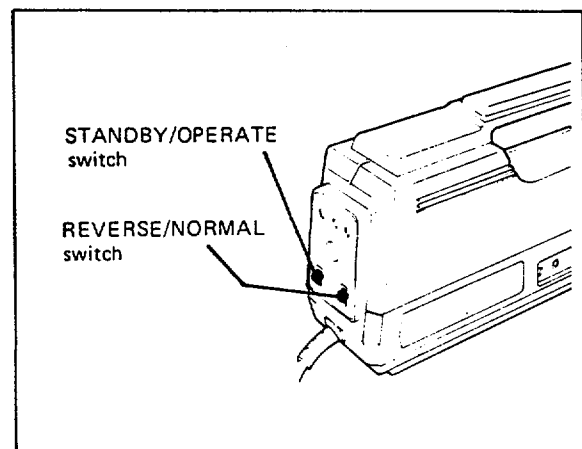
#### Notes:

1. When the object is very close to the lens, make sure that the illumination does not become inadequate or uneven.
2. The auto focus mechanism does not operate when the lens is in MACRO position. Set the AUTO FOCUS/MANUAL selector switch to MANUAL position.



## 15. RECORDING OF REVERSED PICTURE

The picture reversed in hue and brightness (negative) can be recorded with the REVERSE/NORMAL switch set at REVERSE position. This feature allows you to make a video album (positive picture recording) out of still negative film by use of an appropriate magnifying adaptor and with proper lighting.

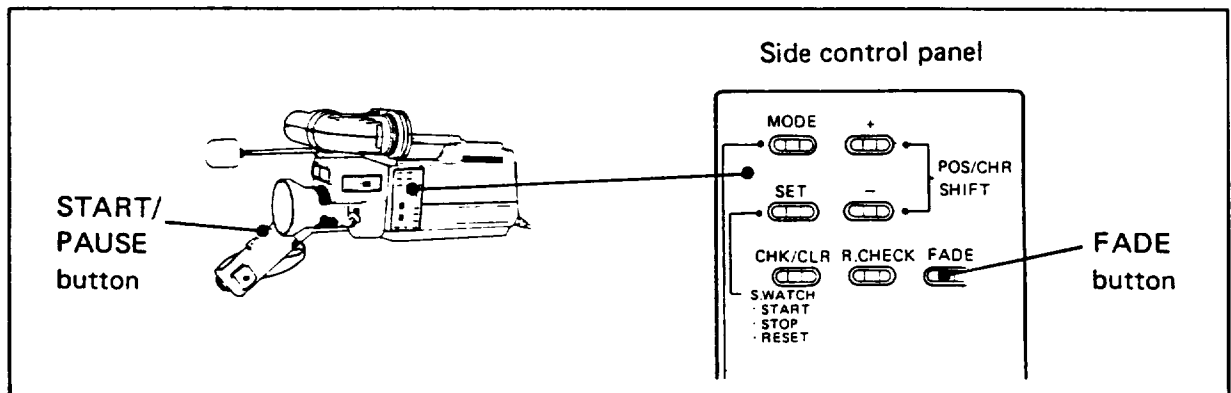


## 16. HOW TO USE STANDBY SWITCH

- (1) Set the STANDBY/OPERATE switch to STANDBY position, then the camera is in the warming-up mode. In this case, shooting is impossible.
- (2) If an interval between shots lasts more than several minutes, set the switch to STANDBY position. This can save the battery power.

## 17. HOW TO FADE-IN/FADE-OUT

Fade-in and fade-out are shooting techniques to soften the transition of the scene from one cut to another. The fade-in causes the picture to start out dark, gradually increasing in brightness and make the sound gradually loud. In the fade-out, the opposite takes place, a bright picture gradually darkens and sound diminishes until they disappear completely.



### 17.1 FADE-IN

- (1) Press the FADE button in the PAUSE mode for recording.  
Now, it is ready for fade-in ("F" appears at right upper corner of the screen in the viewfinder.)
- (2) Press the START/PAUSE button on the grip.  
Now, the fade-in recording starts, and will be completed in about 10 seconds. ("F" on the screen will be automatically turned off.)

### 17.2 FADE-OUT

- (1) Press the FADE button in the RECORD mode.  
Now, it is ready for fade-out. ("F" appears at right upper corner of the screen in the viewfinder.)
- (2) Press the START/PAUSE button on the grip.  
Now, the fade-out recording starts and will be completed in about 6 seconds.
- (3) After the fade-out recording is completed, the mode goes into PAUSE automatically.

Fade-in				Fade-out			
Fade-in starts from PAUSE mode.				Fade-out starts from RECORD mode.			
Operation	Fade-in	Display	VTR mode	Operation	Fade-out	Display	VTR mode
1. Press FADE button. 2. Press START/PAUSE button on the grip.	About 2 seconds Start ↓ About 10 seconds ↓ Finish		PAUSE	1. Press FADE button. 2. Press START/PAUSE button on the grip.	Start ↓ About 6 seconds ↓ Finish		REC
			↓				↓
			↓				↓
			↓				↓
			↓				↓
			↓				↓
			↓				↓
						 Picture comes back in about 2 seconds.	PAUSE

**Notes:**

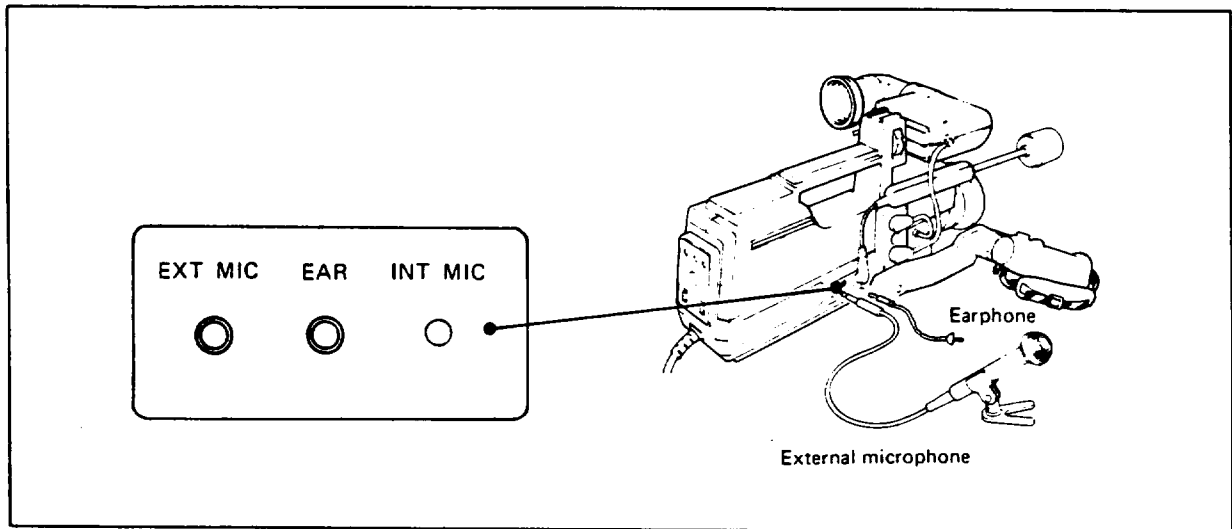
1. When fade function is operated, the VTR START/PAUSE button is not activated until fade-in or fade-out is finished.
2. When the FADE button is pressed by mistake, press it again to release it before the VTR START/PAUSE button is pressed.

## 18. HOW TO MONITOR THE SOUND

Connect a magnetic earphone with the EAR jack to monitor the sound.

## 19. CONNECTION OF AN EXTERNAL MICROPHONE

The boom microphone on the camera can be used for recording the sound. But when connecting an external microphone, connect it to the EXT MIC jack as illustrated below.



Use a low impedance microphone (-65 dB) with a mini-plug (3.5 mm in diameter).

**Note:**

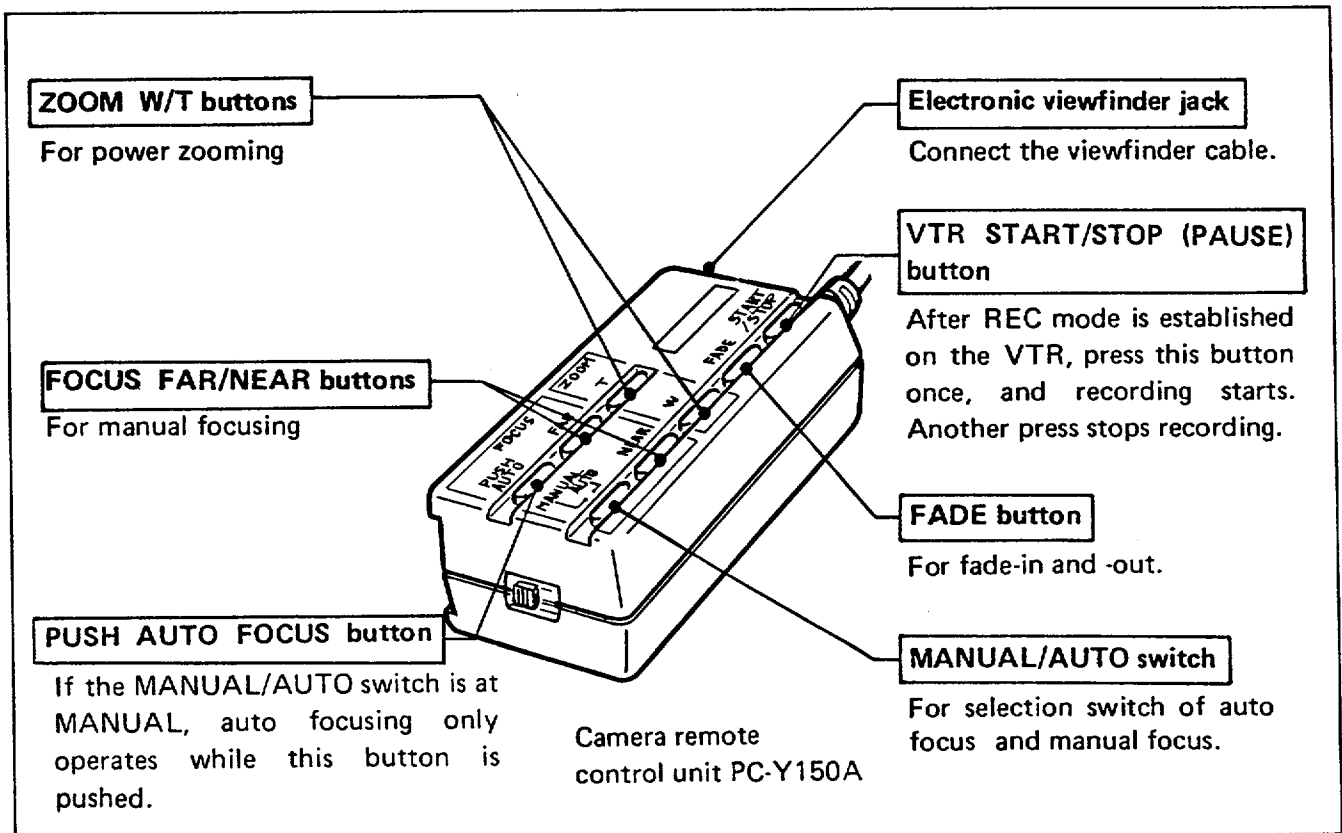
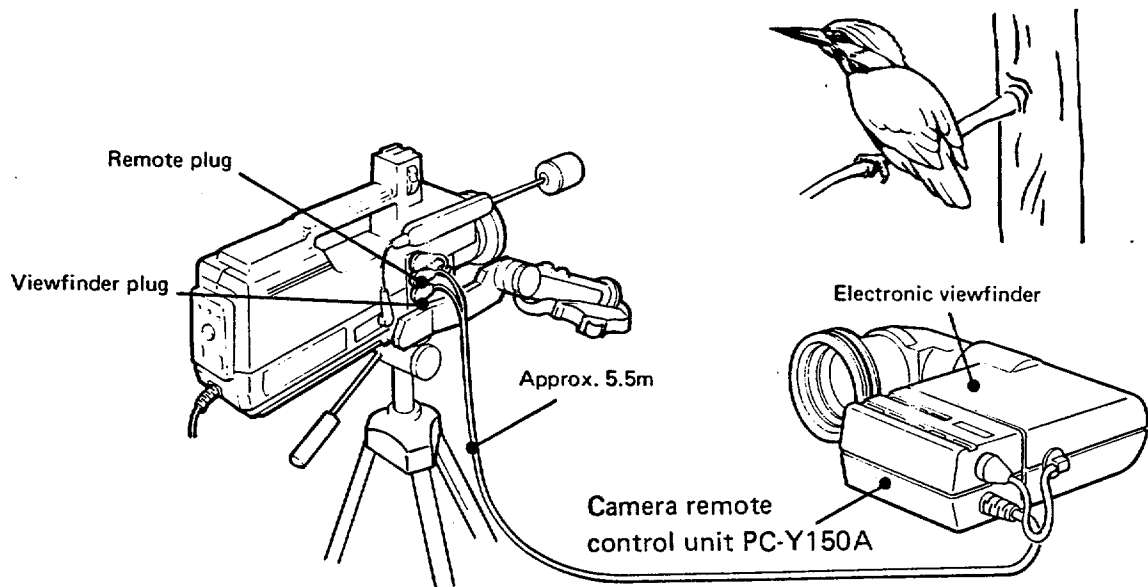
When the external microphone output plug is inserted into EXT MIC jack, the sound from the boom microphone on the camera is automatically cut-off.

## 20. HOW TO USE CAMERA REMOTE CONTROL UNIT PC-Y150A

Optional Camera Remote Control Unit remotely controls the camera from 5.5 m distance. By connecting the electronic viewfinder of the camera to the PC-Y150A, recording pictures also can be monitored.

### Preparations for the PC-Y150A

- 1) Remove the electronic viewfinder of the camera. (See page 3.)
- 2) Mount the electronic viewfinder onto the PC-Y150A.
- 3) Connect the remote plug of the PC-Y150A into the REMOTE jack on the camera.
- 4) Connect the viewfinder plug of the PC-Y150A into the VF jack on the camera.



## 21. PRECAUTIONS

The video camera functions to convert the light images through the lens into electric signals by means of a pickup tube, and sends these signals to the VTR (video tape recorder) or color TV. The PC-K1500A uses a special pickup tube.

The pickup tube is the heart of the video camera and it is fragile. Therefore, bear in mind the following precautions relating to the use and storage of the camera.

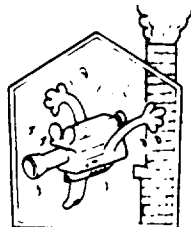
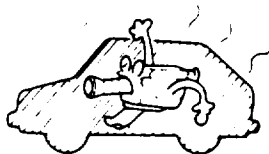
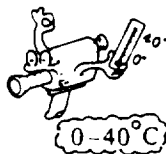
- \* When the camera is used for the first time or when the camera has not been used for an extended period, set the **STANDBY/OPERATE** switch to **STANDBY** side for 30 to 60 minutes. This is prevention of no picture and greenish picture. Check that normal pictures are obtained, then start to record.

- \* **Avoid high and low temperatures and high level of humidity.**

Avoid using or storing the camera in locations exposed to temperature of over 40°C and under 0°C and also to high level of humidity. This may cause the picture quality to deteriorate or, in serious cases, may cause a breakdown or mold may grow.

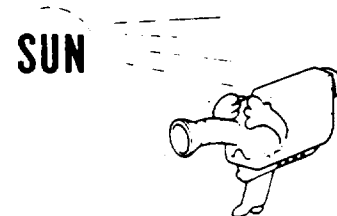
Do not leave the camera in a vehicle with all the doors and windows shut in the direct sunlight. The temperature inside such a vehicle becomes very high and this may deform the case or parts and cause a failure.

A sudden change of atmosphere, such as bringing the camera into heated room after outdoor locations, can cause condensation, and lens may cloud over and dew will form inside the camera.



- \* **Never point the lens at the sun or any other strong light.**  
Do not shoot excessively bright objects to

prevent the pickup tube from damage. When you are not using the camera, switch off its power and attach the lens cap.

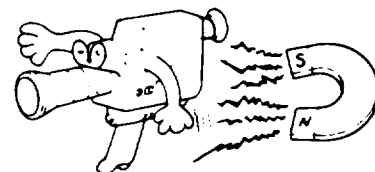


- \* If one particular object is shot for a long period of time and then the camera is turned to shoot another object rapidly, the image of the first object may remain. This is normal and the image will disappear in a few minutes.

- \* The hue sometimes changes for a short while when the camera is turned sharply during shooting. This is the effect of the earth's magnetism and it does not indicate that anything is wrong with the camera.

- \* **Whenever possible, avoid using the camera in locations exposed to strong radio waves or magnetism.**

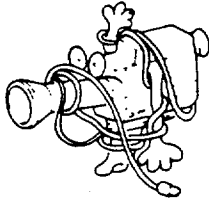
When the camera is used near a radio or TV transmitting antenna or in a location where a strong magnetic field is being generated by a magnet or motor, for instance, stripe interference may appear on the screen or the picture may shake or be bent.



- \* When dust has adhered to the lens, clean gently with a blower or lens brush.

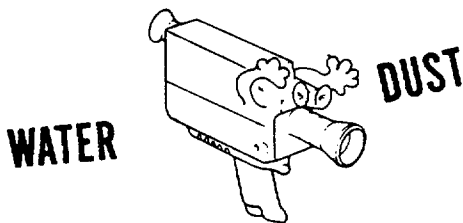


- \* Do not wind the power cord, camera cable or VTR cable around the camera itself. Marks may be left if the cord and cables are left like this for a long time.



- \* Disconnect the camera cable from the portable VTR when not in use.
- \* Do not point the magnifying lens to sunlight since it is a convex lens. If it is left for a long period pointing at the sun, it may cause a fire.

- \* Do not use benzine, thinner, alcohol or other chemical agents to clean the magnifying lens. Since it is made of plastic, wipe it clean with a dry cloth.
- \* **Keep away from water and dust.**  
Breakdowns are caused by water and dust entering the camera. Avoid using the camera in the rain or snow.


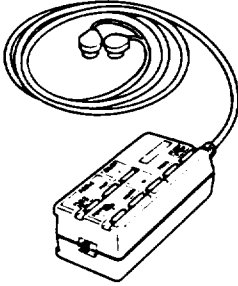


## 22. TROUBLESHOOTING

Before calling Pentax Service, have you checked the following chart on symptoms and solutions?

Symptoms	Solutions
No picture on electronic viewfinder screen	<ul style="list-style-type: none"> <li>* Check if camera cable is connected to VTR.</li> <li>* Check if viewfinder cable is connected.</li> <li>* Check if power switch of VTR is ON.</li> <li>* Check if STANDBY switch is in OPERATE.</li> <li>* Check if lens is uncapped.</li> </ul>
Neither picture nor sound recorded	<ul style="list-style-type: none"> <li>* Check if camera cable is connected to VTR.</li> <li>* Check if STANDBY switch is in OPERATE.</li> <li>* Check if BATTERY is blinking on the viewfinder.</li> </ul>
Abnormally colored picture	<ul style="list-style-type: none"> <li>* Check if white balance is set.</li> <li>* Check if REVERSE switch is in NORMAL.</li> <li>* Adjust illumination.</li> <li>* Adjust color of TV set.</li> <li>* Check if WHITE BAL control is set to proper position.</li> <li>* Check if OUTDOOR/INDOOR switch is set to proper side.</li> </ul>
Not auto focusing	<ul style="list-style-type: none"> <li>* Check if AUTO FOCUS switch is set to AUTO FOCUS.</li> <li>* Check if range finder window is not interrupted.</li> <li>* Check if lens connector is connected.</li> </ul>
No character displayed on electronic viewfinder	<ul style="list-style-type: none"> <li>* Check if the proper procedures for operating buttons are taken.</li> </ul> <p>(See pages 12, 13 and 20 to 23.)</p>

## 23. OPTIONAL ACCESSORIES

<p>Extension cable 10m VK-CK61E</p> 	<p>Camera remote control unit PC-Y150A</p> 
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Optional accessories and design are subject to change without notice.

## 24. SPECIFICATIONS

<b>Pickup tube:</b>	1/2-inch single frequency separation type SATICON™
<b>Color system:</b>	NTSC
<b>Sync system:</b>	Internal sync, 2:1 interlace
<b>Scanning lines:</b>	NTSC: 525 lines
<b>Video output:</b>	1 Vp-p, 75-ohm (unbalanced)
<b>Horizontal resolution:</b>	250 lines (at center)
<b>Video signal-to-noise ratio:</b>	More than 45 dB (Luminance channel)
<b>Recommended illumination:</b>	500 lux
<b>Minimum illumination:</b>	10 lux
<b>Automatic sensitivity control range:</b>	10 to 100,000 lux
<b>Microphone:</b>	Unidirectional electret condenser
<b>External mic:</b>	-65 dB, low impedance
<b>Audio line output:</b>	-20 dB, low impedance
<b>Lens:</b>	f1.4, 8.5 to 51mm, 6x zoom (with auto focus, auto/manual iris, power zoom, macro function, and zoom speed selectable of about 10 sec./6 sec.)
<b>Filter screw diameter:</b>	52 mm (0.75 mm screw pitch)
<b>Lens mount:</b>	C-mount
<b>Viewfinder:</b>	Electronic viewfinder Picture tube: 1-inch (B/W) Indicators: low light, battery warning, white balance, under recording, under fading, operation check display, calendar, clock, stopwatch and title -1 and -2.
<b>White balance:</b>	Auto white balance
<b>Power requirements:</b>	12V DC (Supplied from the portable VTR)
<b>Power consumption:</b>	Approx. 4.4W (When the power zoom and auto focus are not operated)
<b>Operating temperature range:</b>	0 to 40°C
<b>Dimensions:</b>	193(W) x 230(H) x 453(D) mm (7.59 x 9.05 x 17.83 in) (including electronic viewfinder, microphone and grip)
<b>Weight:</b>	Approx. 2.6 kg (5.72 lbs.) (including electronic viewfinder, microphone, grip and camera cable)

The specifications and design are subject to change without notice.



**PENTAX**

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