

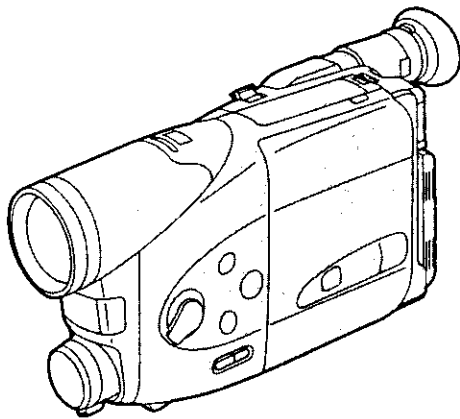
**Panasonic** **VHS**  
PAL

**Hi-Fi HQ**

VHS-C Movie

**NV-R33E/B/A**  
**NV-R330EN**

**DL-MECHANISM**



**SPECIFICATIONS**

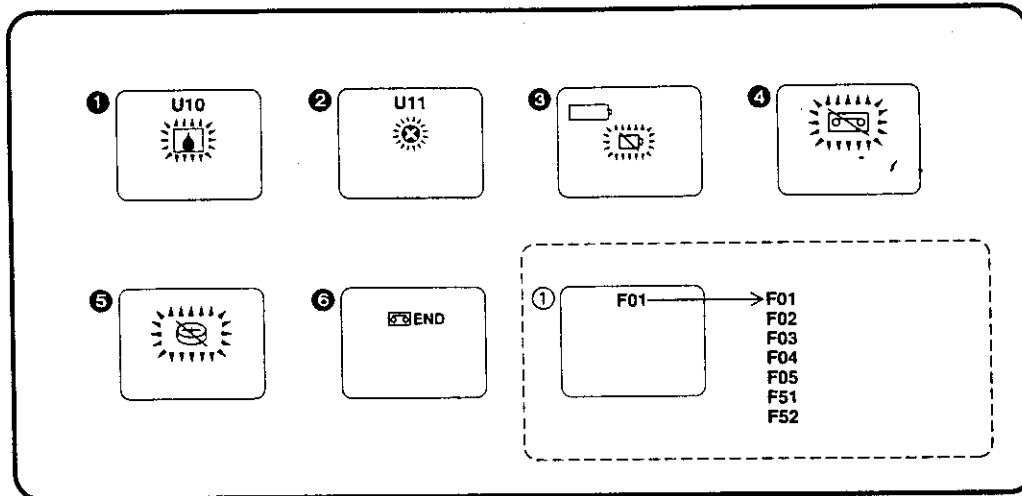
ITEM	SPECIFICATION	ITEM	SPECIFICATION
POWER	Source: Battery Pack: 4.8V DC AC Adaptor: 6.0V DC Consumption: 7.2W (Battery Pack Operation)	VIDEO	HEADS: 4 rotary heads, 1 flying erase head
			OUTPUT: PHONO CONNECTOR: 1.0Vp-p 75Ω unbalanced
VIDEO RECORDING SYSTEM	4 rotary heads, helical scanning system PAL	AUDIO	HEAD: 1 Stationary head (Normal-Mono) 4 rotary heads; 2 channels (Hi-Fi Sound-Stereo)
TAPE FORMAT	VHS-C Cassette Tape (Tape width 12.7mm)		OUTPUT: PHONO CONNECTOR: -6dB, 47kΩ loaded
TAPE SPEED	SP mode: 23.39mm/s LP mode: 11.7mm/s (NV-R33B/A, NV-R330EN) Record/Playback Time: SP: 45min. with NV-EC45XG LP: 90min. with NV-EC45XG (NV-R33B/A, NV-R330EN) FF/REW Time: less than 5min. with NV-EC45XG	WEIGHT	INPUT: MIC IN (M3); -70dB 4.7kΩ or more unbalanced
			DIMENSIONS
CAMERA	PICK-UP ELEMENT: CCD (Charge Coupled Device)	STANDARD ACCESSORIES	1 pc. AC Adaptor 1 pc. Battery Pack 1 pc. Cassette Adaptor 1 pc. Shoulder Strap 1 pc. DC Input Cable 1 pc. Battery for Cassette Adaptor Operation 1 pc. AC Cable 1 pc. 21 Pin Adaptor (NV-R33E/B) 1 pc. AV Output Cable
	STANDARD ILLUMINATION: 1,400 lux		
	MINIMUM REQUIRED ILLUMINATION: 1 Lux (Low Light Mode)		
	LENS: 10:1 Power Zoom Lens with Digital AI Auto Focus, Auto Iris, Auto Focus System, F1.8 (3.9~39mm), Filter Diameter 43mm		
	IMAGE SENSOR: 1/3 inch CCD Image Sensor		
	VIEWFINDER: 0.5 inch Electronic Viewfinder		

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

**Panasonic**

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# SECTION 1 GENERAL DESCRIPTIONS



## Indications in the Viewfinder

### ■ Warning/Alarm Indications

- ① **Condensation**
- ② **Video Head Clogging**
- ③ **Remaining Battery Power**  
When the last segment of this indication has disappeared, the "CAMERA" Indication Lamp flashes for a few seconds, and then the Movie Camera automatically switches off. Replace the Battery Pack with a fully charged one.
- ④ **Tape**  
When no video cassette is inserted, or when the tab of the inserted video cassette is broken out, this indication flashes. Insert a video cassette with intact tab.
- ⑤ **Built-In Lithium Battery**  
The built-in Lithium Battery is exhausted; charge it.

### ⑤ End of the Tape

When the tape has reached its end, this indication lights. Insert a new Video Cassette.

### ① Error Code

(Error codes are for service personnel information.)  
If the "F" Indication appears in the Viewfinder, some malfunction has occurred. If the indicated error code is between "F01" and "F05", the Movie Camera will turn itself off automatically one minute after the "CAMERA" Lamp has started to flash. (If the indication is "F51" or "F52", the Movie Camera will not turn off automatically.)  
In this case, write down the error code and tell it to the service personnel.

- F01: Locked Take Up-Reel
- F02: Locked Supply-Reel
- F03: Locked Unloading Mechanism
- F04: Locked Loading Mechanism
- F05: Locked Cylinder
- F51: Locked Focus Motor
- F52: Locked Zoom Motor

## NOTE

### Precautions for the Movie Camera

In the event of abnormal operation (e.g. if the unit emits smoke or an unusual smell), immediately stop operating the unit and consult qualified service personnel.

#### ■ Precautions When Using the Movie Camera

- Do not disassemble or reconstruct it.
- Do not subject it to strong vibrations or shocks. (Handle it with care to prevent accidentally dropping it.)
- When a thunderstorm approaches, stop using it. (If the AC Adaptor is being used, disconnect it from the mains outlet.)
- Do not aim the Lens at the sun. (This could damage internal parts of the Movie Camera.)
- Do not use it in places with high temperature and high humidity.
- Do not use it in the water or in places where water or some other liquid could splash on it. (If it is accidentally dropped into water while the AC Adaptor is being used, disconnect it from the mains.)
- Do not use it with the cassette compartment facing down. (This could cause uneven winding of the tape.)
- Do not insert or remove the video cassette in dusty places.
- Do not use the Viewfinder as a carrying handle when transporting the Movie Camera.
- Do not insert any foreign objects into the Movie Camera nor spill water into it.
- Do not use it near magnets or magnetized objects.
- Do not use it in areas with strong electric fields. (This could negatively influence the picture quality.)
- Do not operate it near a TV set or a radio. (This could distort the picture and sound reception.)
- Do not use it in places with steam or oily smoke.

#### ■ Precautions When Storing the Movie Camera

- Do not store the Movie Camera in the following places:
  - Places exposed to direct sunlight.
  - Places with high temperature and high humidity (e.g. in a closed car or in a bathroom).
  - Near heaters.
- Do not leave it in direct contact with rubber or plastic products for a long time.
- Keep it out of reach of children.

#### ■ Precautions When Transporting the Movie Camera

- When not actually shooting, carry it in a camera bag or camera case for maximum protection.
- Keep the packing materials. When transporting it in the future, pack it in the same way as you purchased it.

### If the Video Heads Become Clogged with Dirt, Shooting Clean Pictures is No Longer Possible.

#### ■ Symptoms of Dirty Video Heads

- When the following symptoms occur, the video heads are clogged.
  - ① The "U11/O" indication in the Viewfinder flashes. (When shooting immediately after replacing the video cassette, this indication may disappear temporarily.)
  - ② The picture is distorted.
- When the video heads are excessively clogged, the Movie Camera's recording and playback capacity is impaired. When the above symptoms occur, consult qualified personnel.

### Precautions against Condensation

#### ■ Symptoms of Condensation

If the following symptoms occur, condensation has formed inside the Movie Camera.

- ① The Condensation Indication "U10/☁" in the Viewfinder flashes. (A few seconds later, the Movie Camera automatically turns itself off.)
- ② When turning on the Movie Camera, it turns itself off. (However, the Movie Camera also turns off when the Battery Pack is exhausted!)

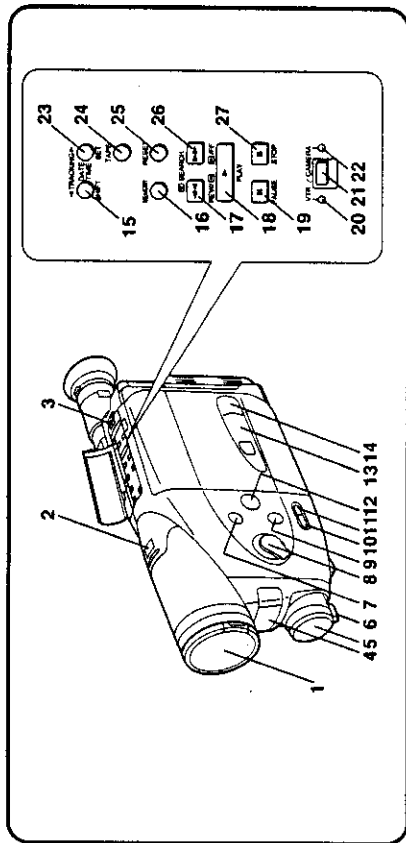
#### ■ Remedy

1. Wait a few hours before operating the Movie Camera again. (The actual time depends on the surrounding conditions.)
2. Turn on the Movie Camera.
3. Confirm that the Condensation Indication is not displayed any more.
4. For added safety, wait about 1 more hour.

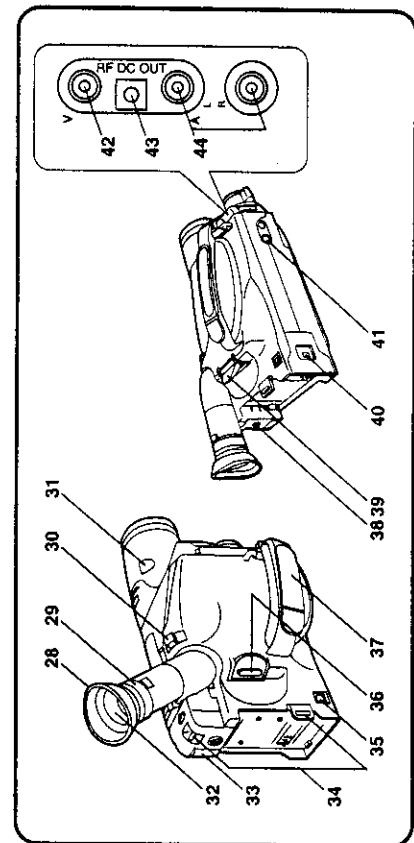
#### ■ Notes about Condensation

- Condensation can form when the Movie Camera is suddenly brought from cold surroundings to a place which is hot or humid. To prevent condensation from forming in such a case, keep it in a tightly closed plastic bag or something similar for 1 to 2 hours before shooting or storing the Movie Camera at its new place.
- Since condensation forms gradually, there may already be some condensation inside the Movie Camera even before the Condensation Indication begins to flash.
- In an extremely cold place, condensation may freeze and turn into frost. As the Movie Camera cannot detect frost, the Condensation Indication does not appear until the frost melts and turns into condensation.

- 28 Eyecup
- 29 Eyepiece Corrector Ring
- 30 [W-T] Zoom Lever
- 31 [MIC] Socket
- 32 Viewfinder
- 33 [BATT. EJECT] Button
- 34 Shoulder Strap Holders
- 35 [DC IN] Socket
- 36 Start/Stop Button
- 37 Grip Belt
- 38 [EDIT] Socket
- 39 [POWER SAVE] Switch
- 40 [POWER SAVE] Switch
- 41 Tripod Receptacle
- 42 [VIDEO OUT] Socket
- 43 [RF DC OUT] Socket
- 44 [AUDIO OUT L/R] Sockets



- ### Controls and Components
- 1 Lens Cap
  - 2 White Balance Sensor
  - 3 [▲ EJECT] Lever
  - 4 Microphone
  - 5 Focus Ring
  - 6 [IMAGE STABILIZER] Selector
  - 7 [BACKLIGHT] Button
  - 8 [AE] Selector
  - 9 [DATE/TIME] Button
  - 10 [FOCUS] Button
  - 11 [W.B] Button
  - 12 [FADE] Button
  - 13 Cassette Compartment Cover
  - 14 Cassette Compartment [LOCK] Button
  - 15 [DATE/TIME/SHIFT • ◀ TRACKING] Button
  - 16 [MEMORY] Button
  - 17 [◀▶] Button
  - 18 [▶] Button
  - 19 [H] Button
  - 20 "VTR" Indication Lamp
  - 21 [VTR/CAMERA] Button
  - 22 "CAMERA" Indication Lamp
  - 23 [DATE/TIME/SET • TRACKING ▶] Button
  - 24 [TAPE] Button
  - 25 [RESET] Button
  - 26 [▶▶] Button
  - 27 [M] Button



## BATTERY PACK

### Charging Time and Maximum Time for Continuous Shooting and Manual Operation

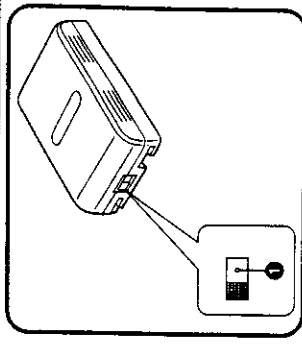
Battery Pack No.	Supplied	Charging Time	Max. Continuous Shooting Time
VW-VBS10E	Approx. 60 min.	Approx. 40 min.	Approx. 40 min.
VW-VBS20E	Approx. 65 min.	Approx. 45 min.	Approx. 45 min.
VW-VBH10E	Approx. 130 min.	Approx. 90 min.	Approx. 90 min.
VW-VBH20E	Approx. 80 min.	Approx. 55 min.	Approx. 55 min.
	Approx. 160 min.	Approx. 110 min.	Approx. 110 min.

**Notes:**

- The use of the zoom and other functions increases the power consumption, so that the actual recording time per Battery Pack may actually be 30%–50% less than the max. continuous shooting time listed above.
- Do not dispose of the exhausted Battery Pack with your household waste. When purchasing a new Battery Pack, return the old Battery Pack to your dealer for environmentally correct disposal.

**How to charge a Battery Pack if its operation time has become too short for practical use, or if it has been stored for a long time:**  
 Continue charging for 24 hours even after the Charging Indication Lamp on the AC Adaptor goes out. (If this does not result in an operation time sufficient for practical use, the service life of this Battery Pack has reached its end. Replace it with a new one.)

**How to Use the Charge Confirmation Marker**  
 Use this marker to distinguish between charged and discharged Battery Packs.  
 For example, slide the knob so that the dot is visible after the charging is completed.



### Precautions for the Battery Pack

- Do not try to disassemble or reconstruct it.
- Do not throw the exhausted Battery Pack into a fire.
- Make sure that no metal objects touch the connectors of the Battery Pack.
- When carrying it in a bag or similar, take care that keys, coins, etc. do not contact it.
- For charging, be sure to use only the specially designed AC Adaptor or Car Battery Charger.
- When the operation time even after proper charging is too short for normal use, the service life of the Battery Pack has reached its end (It can be charged approx. 200 times.)
- During use, it may become warm. However, this is normal and not a malfunction.
- Do not leave it in places with high temperature, e.g. exposed to direct sunlight.
- When the Battery Pack has become exhausted and the Movie Camera has turned off automatically, remove the Battery Pack before connecting the DC Input Cable from the AC Adaptor to the Movie Camera, otherwise the Movie Camera cannot be turned on.
- Do not dispose of the exhausted Battery Pack with your household waste. When purchasing a new Battery Pack, return the old Battery Pack to your dealer for environmentally correct disposal.

### Precautions for the AC Adaptor

- Before connecting the AC Adaptor to a mains outlet, confirm that the local AC mains voltage and frequency and within the voltage and frequency range specified on the rating plate.
- Do not use it for any purpose other than supplying the Movie Camera with power and charging the Battery Pack.
- Do not operate it very close to a radio, TV etc. (Reception may be distorted.)
- When unplugging the Mains Cable, pull it by the plug, not by the cable.
- Do not bend the cables excessively.
- Do not expose the cables to high temperature and chemicals.
- Do not handle the AC Adaptor with wet hands.
- Before cleaning the AC Adaptor, make sure that it is disconnected from the AC mains socket.

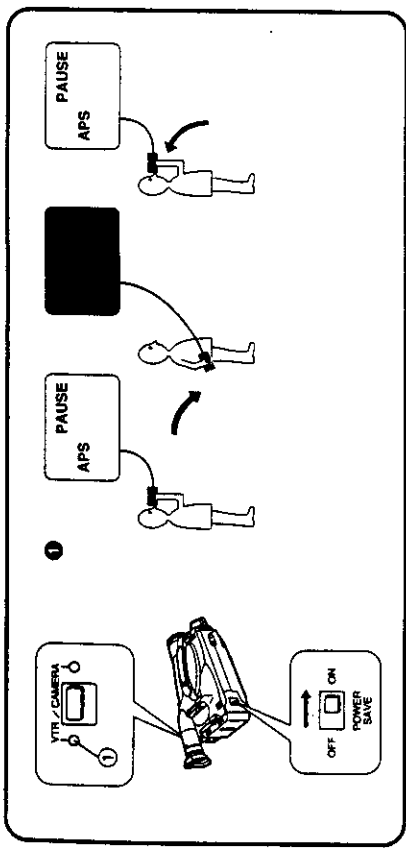
**2 Anti-Ground-Shooting Function**  
(in the Shooting Mode)

- The Battery Pack can be used longer for shooting.
- The Movie Camera automatically switches over to the Shooting Pause Mode to stop the unintentional shooting when you forget to press the Start/Stop Button at the end of a scene.

When you tilt the Movie Camera downwards by more than about 70° from the normal horizontal shooting position for more than a few seconds, and:

- 1) walk with the Movie Camera held in the hand or;
- 2) tilt the Movie Camera quickly downwards when not walking;

the Viewfinder turns off and the "VTR" Indication Lamp flashes.



**4 How to Use the POWER SAVE Switch**

If you set the [POWER SAVE] Switch to "ON", the "APS" Indication is displayed in the Viewfinder, and the Auto Power Save Function and the Anti-Ground-Shooting Function prevent you from wasting battery power and from the accidentally shooting the ground when you forget to stop shooting.

When you don't want to use these functions, set the [POWER SAVE] Switch to "OFF".

When changing locations between scenes or when not planning to shoot for a longer period of time, it is recommended to turn off the Movie Camera with the [POWER] Switch.

- 1 Auto Power Save Function (in the Shooting Mode)
  - The Battery Pack can be used longer for shooting.
  - The Movie Camera automatically prevents shooting even when the Start/Stop Button is pressed accidentally.

When you tilt the Movie Camera downwards by more than about 70° from the normal horizontal shooting position for more than a few seconds, the Viewfinder turns off and the "VTR" Indication Lamp ① flashes.

**To Resume Shooting**

When you return the Movie Camera to an approximately horizontal position, the Movie Camera is again in the Shooting Pause Mode and you can restart shooting by pressing the Start/Stop Button.

**Notes:**

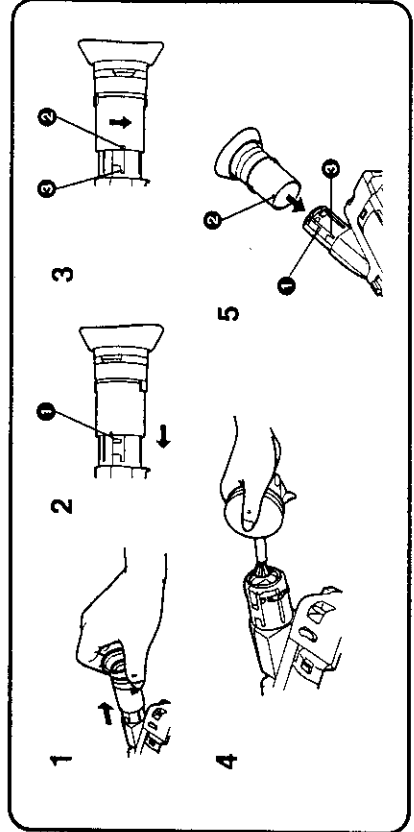
- When the Auto Power Save Function becomes activated, the Auto Focus and the Zoom Motor do not work.
- When you restart the shooting after this function was activated, the Auto White Balance Adjustment may not be precise for the first few seconds.

**To Resume Shooting**

When you return the Movie Camera to an approximately horizontal position, the "CHK" (=check) Indication flashes in the Viewfinder. Since the shooting may have continued for several seconds, rewind the tape a little using the Camera Search Function to locate the exact end of the last desired scene, and then start shooting again.

**Notes:**

- The Anti-Ground Shooting Function is designed so that it does not become activated when you tilt the Movie Camera slowly downwards during shooting, as shown above ①.
- This function is not intended to replace the manual stopping of shooting.
- When this function becomes activated, the Auto Focus and the Zoom Motor do not work.
- When you restart shooting after this function became activated, the Auto White Balance Adjustment may not be precise for the first few seconds.



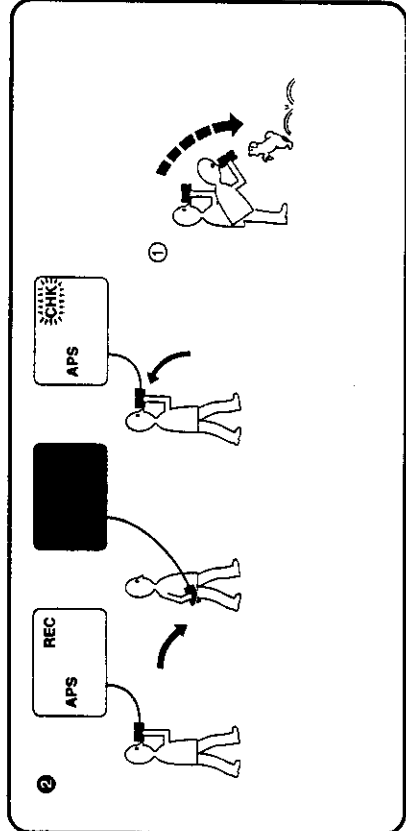
**Cleaning**

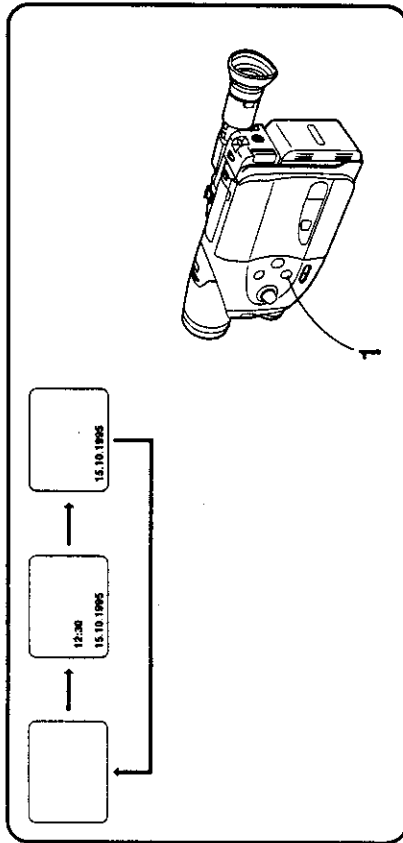
- 1 How to Clean the Viewfinder
  - 1 Grasp the projections on either side of the Viewfinder and fully extend it.
  - 2 Push the Viewfinder back approx. 3 mm so that its front edge is precisely aligned with the notch ①.
  - 3 Turn the Viewfinder counterclockwise so that the mark ② is aligned with the line ③ and pull it off.
    - While turning it, some increased resistance can be felt; however, be sure to turn it to the line ③.
  - 4 Remove dust with a blower brush.

- 5 To re-attach the Viewfinder, align the mark ② with the line ③, slip the Viewfinder on as far as the notch ① and turn it clockwise.

**2 How to Clean the Movie Camera**

- Notes:**
1. Do not use benzine, thinner or other chemicals for cleaning, because they could change the colour and damage the surface of the camera body.
  2. When using a chemically treated cloth for cleaning, carefully follow the instructions for its use.
    - Wipe the Movie Camera with a clean, dry cloth.
    - Never use cleaning fluid or other chemicals.
    - Clean the lens only with a blower brush (used for photo cameras) or special lens cleaning tissue (used for glasses and cameras).





**■ If you Make a Mistake during Setting, Restart from Step 3.**

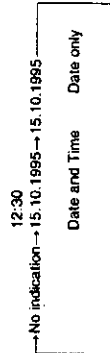
**■ Changing the Figures of the Date/Time Indication**  
By pressing the [SET] Button repeatedly, the Date/Time Indication can be changed in the following order:

Year: 1990 → 1991 → ..... → 2089 → 1990 → .....  
 Month: 1 → 2 → ..... → 12 → 1 → .....  
 Day: 1 → 2 → ..... → 31 → 1 → .....  
 Hour: 0 → 1 → ..... → 23 → 0 → .....  
 Minute: 00 → 01 → ..... → 59 → 00 → .....

**2 Inserting and Deleting the Date and Time**

You can insert (and delete) the Date and Time Indications during shooting and when in the Shooting Pause Mode.

**1 Press the [DATE/TIME] Button.**  
• By pressing this button repeatedly, you can change the Date/Time Indication in the Viewfinder in the following order. Select the desired indication.



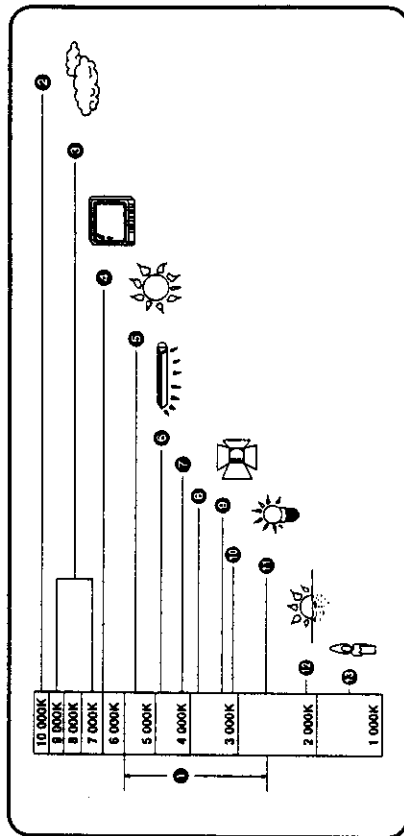
**3 The Built-in Lithium Battery**

A built-in rechargeable lithium battery maintains the operation of the built-in clock when the Movie Camera is turned off. When the Movie Camera is in operation, this battery is charged automatically.

However, if the Movie Camera is not used for a very long time, the lithium battery can become exhausted. In this case, the "E" Indication in the Viewfinder flashes and the date returns to the initial Indication "1.1.1990".

**■ How to Charge the Built-in Lithium Battery**  
If the "E" Indication in the Viewfinder flashes for approx. 10 seconds when you turn the Movie Camera on, the lithium battery is exhausted and must be charged as explained below.

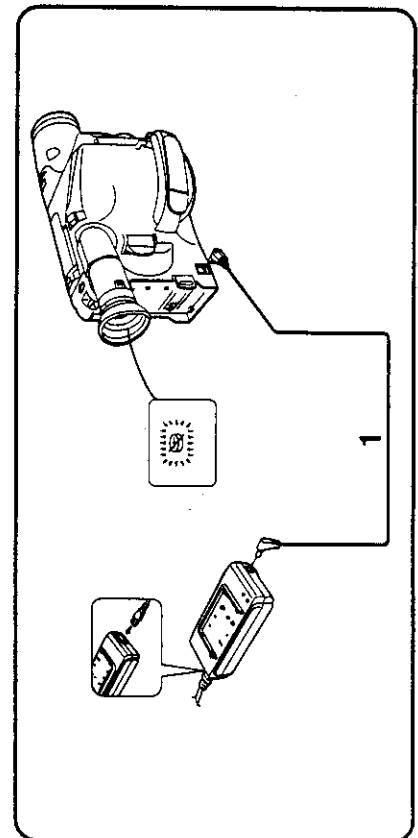
- 1 Connect the Movie Camera to the AC Adaptor.**
  - After the lithium battery has been charged for approx. 4 hours, it can maintain the operation of the clock for approx. 3 months.

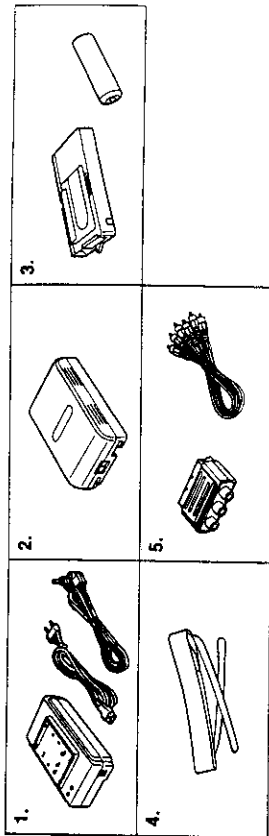


**Colour Temperature and White Balance**

The colour temperature of the light source is measured in Kelvin (K). The higher the Kelvin value is, the more bluish is the light; the lower the value, the more reddish is the light. This is not directly related to the brightness. The table shows the relationship between natural light, artificial light and colour temperature.

- 1 Control range of the Auto White Balance Function
- 2 Blue sky
- 3 Cloudy sky (rain)
- 4 TV screen
- 5 Sunlight
- 6 White fluorescent lamp
- 7 2 hours after sunrise or before sunset
- 8 1 hour after sunrise or before sunset
- 9 Halogen light bulb
- 10 30 minutes after sunrise or before sunset
- 11 Incandescent light bulb
- 12 Sunrise or sunset
- 13 Candlelight





**Before Shooting**

**1 Standard Accessories**

1. AC Adaptor  
For supplying power to the Movie Camera or for charging the Battery Pack
2. DC Input Cable and AC Mains Cable  
For connection to the AC Adaptor
3. Battery Pack  
For supplying power to the Movie Camera
4. Shoulder Strap  
For connection to a TV set or VTR
5. 21-pin Adaptor and Audio/Video Cable  
For connection to a TV set or VTR

- Notes:**
1. Before connecting, confirm that all systems are turned off and that the connection cables are not damaged.
  2. Do not expose the connection cables to high temperature, chemicals and objects with sharp edges; also do not bend the cables excessively.
  3. Do not connect the cables with wet hands.
  4. When unplugging the Mains Cable, pull it by the plug, not by the cable.

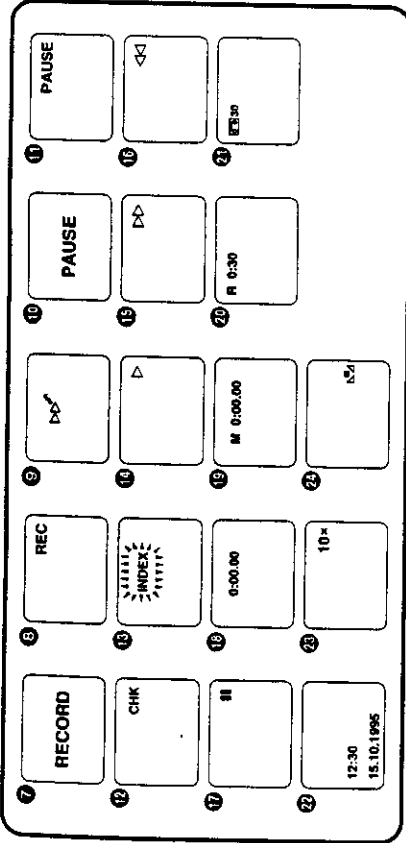
**CAUTION:**  
TO REDUCE THE RISK OF FIRE OR SHOCK  
HAZARD AND ANNOYING INTERFERENCE,  
USE THE RECOMMENDED ACCESSORIES  
ONLY.

1. VW-VBS10E VW-VBH10E	2. VW-VBS20E VW-VBH20E	3. VW-KBC2E	4. VW-ACC2E	5. VW-K10E	6. VZ-LDCS13E
7. VW-SK9E	8. VW-LF43E	9. VZ-CT55E	10. VZ-CT75E	11. VW-RF7E	12. VW-EC310E
13. VW-EC1E	14. VW-TCA7E	15. VW-VT1E			

**ENGLISH**

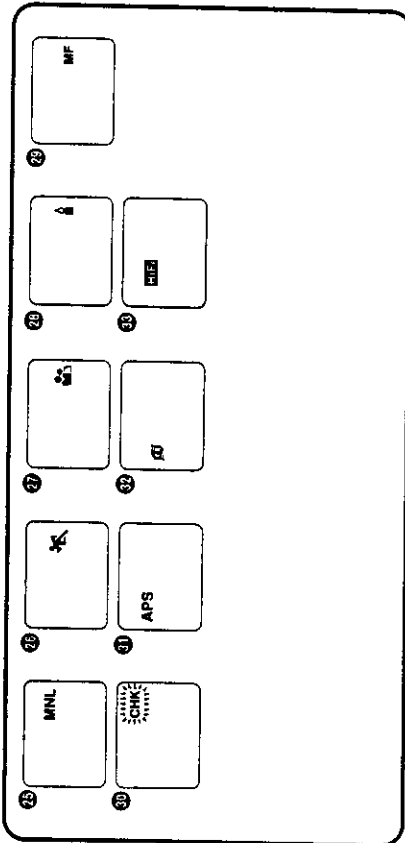
**Optional Accessories**

1. VW-VBS10E (Ni-Cd Battery Pack)
  2. VW-VBS20E (Ni-MH Battery Pack)
  3. VW-VBH10E (Ni-Cd Battery Pack)
  4. VW-VBH20E (Ni-MH Battery Pack)
  5. Car Battery Charger
  6. Car Battery Cord
  7. 5-Pin Synchron Cord
  8. Video DC Light
  9. Shoe Adaptor
  10. Filter Kit
  11. Standard Tripod
  12. Deluxe Tripod
  13. RF Adaptor
  14. Editing Controller
  15. Editing Controller
  16. Cassette Adaptor
  17. Video Tilter
- Notes:**
- Some accessories are not available in some countries.
  - To mount the Video DC Light on the Movie Camera, the Shoe Adaptor (optional) is necessary.



**Shooting and Playback Indications**

1. Shooting Mode (large indication)
2. Shooting Mode (small indication)
3. Tape Run Mode
4. Shooting Pause Mode (large indication)
5. Shooting Pause Mode (small indication)
6. Recording of Index Signal
7. Playback/Camera Search Mode
8. Fast Forward/Cue Mode
9. Rewind/Review/Camera Search Mode
10. Still Playback Mode
11. Tape Counter
12. Tape Counter with activated Memory Stop Function
13. Remaining Tape Time
14. Tape Length
15. Date and Time
16. Zoom Magnification
17. Manual White Balance Mode



**Manual Shooting Mode**

25. Manual Shooting Mode
26. Sports Mode
27. Portrait Mode
28. Low Light Mode
29. Manual Focus Mode
30. Anti-Ground-Shooting Check
31. Power Save Mode
32. Image Stabilizer Mode
33. HiFi Mode